SECTION 00 0101
HRA PROJECT TITLE PAGE

655 COOK

INVEST SAINT PAUL INITITIVE
NEIGHBORHOOD STABILIZATION PROGRAMS
AND REBUILDING PLAN 2009-2013
PAYNE - PHALEN PLANNING COUNCIL

OWNER
The Housing and Redevelopment Authority of Saint Paul, Minnesota
25 West Fourth Street, Saint Paul, MN 55102, Suite 1100
Marty McCarthy
(651) 266- 6552

HRA SCOPE WRITER
Neighborhood Development Alliance
481 South Wabasha, Saint Paul, MN 55107
Gail Merriam
651/292-0131 ex 254
gmerriam@nedahome.org

HRA Construction Manager
Neighborhood Development Alliance
481 South Wabasha, Saint Paul, MN 55107
Gail Merriam
651/292-0131 ex 254
gmerriam@nedahome.org

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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 655 Cook. 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: Insert HRA PMs email

1.05 OWNER'S CONSULTANT(S)

Owner's Project Specification Consultant: Neighborhood Development Alliance

1. Specification Writer's Name: Gail Merriam
2. Address: 481 South Wabasha, Saint Paul, MN 55107
3. Phone Number: 651/292-0131 ex 254
   Email: gmerriam@nedahome.org

A. Owner's Construction Manager Consultant: Neighborhood Development Alliance

1. Construction Manager's Name: Gail Merriam
2. Address: 481 South Wabasha, Saint Paul, MN 55107
3. Phone: 651/292-0131 ex 254
4. Email: gmerriam@nedahome.org

1.06 IMPORTANT BID DATES

A. Bids Issued: Instert Bid Date

B. Mandatory Pre-Bid Site Tour: Insert mm/dd/yyyy from Insert 0:00 am to 0:00 pm

C. **BID DUE DATE ON OR BEFORE:** Insert mm/dd/yyyy 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

Suite: 1100

F. Executed Contract: Within 30 days of the bid award.

G. Construction Start Date (Approximate): ASAP after contract execution

H. Construction Completion Date: 120 days from the time of issued Notice to Proceed.

END OF BID INVITATION

SECTION 00 4003

HRA INSTRUCTIONS FOR BIDDERS

PART 1 GENERAL BID DIRECTIONS

1.01 EACH BIDDER SHALL FULLY INFORM HIM / HERSELF AND ANY SUBCONTRACTORS PRIOR TO BIDDING AS TO ALL EXISTING CONDITIONS AND LIMITATIONS INCLUDING COMPLIANCE REQUIREMENTS UNDER WHICH THE WORK IS TO BE PERFORMED AND SHALL INCLUDE IN THE BID A SUM TO COVER THE COST OF ALL ITEMS NECESSARY TO PERFORM THE WORK AS SET FORTH IN THE BID PROJECT MANUAL. THE SUBMISSION OF A BID SHALL BE CONSTRUED AS CONCLUSIVE EVIDENCE THAT THE BIDDER HAS MADE SUCH EXAMINATION.

1.02 BID FORMS

A. The Bid Submission forms are available online at http://www.stpaul.gov/nsp.

B. Each bid must be submitted on the Bid Submission forms identified in the provided checklist. It is expected that the Contractor retain a copy of their entire submittal for their records. The copy of the bid submitted must be signed at every place that a signature is requested.

1.03 CORRECTIONS

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

1.04 BID ENVELOPE

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

1.05 INTERPRETATIONS OF SCOPE OF WORK

A. Every request for an interpretation shall be in writing, unless otherwise documented by the Specification Writer. Questions will be taken until 3 days before bids are due.

B. Interpretations will be in the form of an addenda which will be on file at the website, and in the offices of the Specification Writer at least three calendar days before bids are opened.

C. It shall be the bidder's responsibility to make inquiry as to addenda issued.
   1. All such addenda shall become a part of the contract and all bidders shall be bound by such addenda.

1.06 CONFLICT WITH DOCUMENTS

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

1.07 MATERIALS APPROVED:

A. Where items of equipment and material are specifically identified herein by a trade name, model or catalog number, only such specified items may be used in the base bid.

B. Contractors desiring approval of substitute products may submit data cut sheets and product information for approval during the bidding cycle.

C. Contractors will be notified only by addendum of additional approved products.

D. Material identifications made in work specifications are considered as minimal quality for acceptance in bidding and installation.

1.08 ALLOWANCES:

A. The Contractor shall include in the bid proposal the cash allowances listed.

B. Unless otherwise indicated, the lump sum amount shall be for the material / product.

C. Labor to install the material / product must be submitted separately.

1.09 ALTERNATES:

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

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

1.10 TIME FOR RECEIVING BIDS:

A. Bids are to be delivered to the HRA's office.

B. Bids received prior to the time of opening will be securely kept.

C. Bids received by phone or fax will not be considered.

D. Modification of bids already submitted will be considered if received prior to the hour set for receiving the bids and written confirmation of such modification - with the signature of the bidder - is placed in the mail and postmarked and / or delivered to the HRA prior to the time set for bid opening.

1.11 OPENING OF BIDS:

A. At the time and place fixed for the opening of bids, every bid received within the time fixed for receiving bids will be opened irrespective of any irregularities.

B. The opening of the bids will be an "open process" (open to the public).

1.12 WITHDRAWAL OF BIDS:

A. Bids may be withdrawn in writing, by phone, or by fax prior to the time fixed for opening; provided that written confirmation of any phoned or faxed withdrawal is placed in the mail and postmarked and / or delivered prior to the time set for bid opening.

B. Negligence on the part of the bidder in preparing their bid confers no right of withdrawal or modification of his bid after such bid has been opened.

PART 2 BID ANALYSIS PROCESS

2.01 CONTRACTOR SELECTION DATE: <u>EARLIEST PRACTICAL DATE</u>

A. This project is funded by the Neighborhood Stabilization Program (NSP), a federal stimulus program created to rehabilitate vacant housing or construct new housing on vacant lots within targeted areas of the City of Saint Paul.

B. The Housing and Redevelopment Authority of Saint Paul, Minnesota reserves the right to check the qualifications of contractors for each project; previous experience working on projects with the The Housing and Redevelopment Authority of Saint Paul, Minnesota, will not automatically deem a contractor qualified.

2.02 MINIMUM CONTRACTOR QUALIFICATIONS

A. Please note the following minimum qualifications that apply to all bidders:

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

2) For a 90 day project, the contractor shall demonstrate the ability to pay 65% of the bid amount.
3) Demonstration of capacity can be in the form of:
(a) Line of credit from banking or lending institution
(b) Cash balances from banking or lending institution

3. **Ability to Perform**
a. Up-to-date submittals to Affirmative Action, Section 3, and Vendor Outreach programs.
b. Adherence to timelines confirmed from professional references.
c. Use of certified subcontractors for environmental remediation including:
1) Insulation: contractor must be on Xcel Energy approved contractor list
2) Asbestos: contractor must be certified for asbestos removal by the State of Minnesota
3) Lead: either general contractor or subcontractor must be certified for lead abatement by the State of Minnesota
4) Radon: contractor must be on Minnesota Department of Health approved radon mitigation list.

4. **Bid Award Policy**
a. Contractors that meet the criteria for qualification above, yet have not worked with The Housing and Redevelopment Authority of Saint Paul, Minnesota on a Neighborhood Stabilization Program project previously will initially be awarded one house, even if the contractor is low bidder for more than one house.
b. Once the contractor demonstrates quality workmanship, financial capacity, and ability to perform timely completion, they may be awarded more than one house at the same time for subsequent bids on a case-by-case basis.

5. **Other Qualifications**
a. Each property has its own unique characteristics and challenges. Variables include items relating to environmental conditions, historic nature of structures, etc.
b. Depending on the specific property , there may be other qualifications needed by the bidder which will be specified by the HRA in its request for bids.

PART 3 POST AWARD REQUIRMENTS

3.01 CONSTRUCTION CONTRACT REQUIRMENTS

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

B. Attendance of a Pre-Construction Conference
1. The selected Contractor and all Subcontractors will be required to attend a Pre-Construction Conference.
2. Time, date, and place of the Pre-Construction Conference will be announced by the Neighborhood Development Alliance and/or HRA.

C. Computerized System for Compliance Tracking and Reporting:
   1. The Contractor is required to use the B2Gnow/LCPtracker reporting system. Refer to attachment.

PART 3 WAGE REQUIREMENTS

4.01 THE FOLLOWING ARE WAGE REQUIREMENTS ASSOCIATED WITH THIS PROJECTS

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

END OF SECTION

SECTION 00 4101

HRA BID SUBMISSION DOCUMENTS

SECTION 1 GENERAL

1.01 BID SUBMISSION DOCUMENTS, LOCATED AT HTTP://WWW.STPAUL.GOV/NSP

A. Bid Submittal Checklist

B. Bid Cover Sheet

C. Bid Proposal and Non-Collusive Affidavit

D. Preliminary Section-3 Action Plan

E. Contractor Application / Statement of Qualifications

F. Itemized Cost Breakdown and Scope of Work Bid (Section 004102)

END OF SECTION

SECTION 00 4102

HRA LINE ITEM BID SHEET

PART 1 MANUAL BID SHEET - LINE ITEM BREAKDOWN OF WORK

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012000 - PAYMENT PROCEDURES	$ _____
012100 - HRA Allowances	$ _____
016000 - Product Requirements	$ _____
016116 - Volatile Organic Compound (VOC) Content Restrictions	$ _____
017000 - Execution and Closeout Requirements	$ _____
017419 - Construction Waste Management and Disposal	$ _____
017700 - Closeout Procedures and Submittals	$ _____
018113 - Sustainable Design Requirements	$ _____

DIVISION 02 - EXISTING CONDITIONS

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

DIVISION 03 - CONCRETE

030100 - Maintenance of Concrete	$_____
033000 - Cast in Place Concrete	$_____

DIVISION 04 - MASONRY

040100 - Maintenance of Masonry	$_____
042300 - Glass Unit Masonry	$_____

DIVISION 05 - METALS

057300 - Decorative Metal Railings	$_____

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	$_____

077123 - Manufactured Gutters and Downspouts $_____

DIVISION 08 - OPENINGS

081100 - Exterior Insulated Metal Doors and Frames $_____

081429 - Wood Doors $_____

081613 - Fiberglass Doors $ _____

083323 - Overhead Garage Door $_____

085213 - Metal-Clad Wood Windows $_____

DIVISION 09 - FINISHES

090160 - HARDWOOD FLOORING RESTORATION $ _____

092116 - Gypsum Board Installation $_____

093000 - Tiling $_____

096492 - Wood Strip Flooring $_____

096516 - Resilient Flooring $_____

099000 - Painting and Coating $_____

09 9600 - Staining and Transparent Finishing $ _____

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 $_____

224000 - Plumbing Fixtures $_____

DIVISION 23 - HEATING, VENTILATING AND AIR CONDITIONING

230000 - Residential Ventilation $ _____

235214 - Gas-Fired Ultra Efficient Boiler $_____

236210 - Multi Zone Ductless Mini Split AC $_____

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

321313 - Concrete Paving $_____

323113 - Chain Link Fence	$ _____
323223 - Segmental Retaining Walls	$_____
329223 - Sodding	$_____
329300 - Planting	$_____

END OF SECTION

SECTION 01 0010

HRA GENERAL REQUIREMENTS

PART 1 GENERAL

1.01 PROJECT SUMMARY

A. The project located at 655 Cook is to be rehabilitated as a single family home. All work shall be completed in compliance with this Scope of Work, the Drawings, the Construction Contract, the General Conditions, and all codes and standards of quality workmanship for the industry.

1.02 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.

1.03 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.

1.04 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 an 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, 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.

2.04 SUSTAINABLE DESIGN REQUIRMENTS, SEE SECTION 018113

A. Interim Saint Paul PED / HRA Sustainability Initiative
1. NOTE: Edited for Single Family Rehab. For full policy see: http://www.stpaul.gov/index.aspx?NID=2659

B. Objective of the Initiative
1. To make future development projects in Saint Paul more environmentally and financially sustainable by identifying and incorporating proven and tested practices that demonstrate significant measurable results and return on investment.

C. All rehabilitated single-family or duplex homes are required to participate in Xcel Energy’s Home Performance with ENERGY STAR. Rehabilitated buildings must receive third-party verification from an accredited organization.

D. 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.

E. This policy applies to all projects that have not yet reached the design development phase.

F. City Contact: Kurt Schultz
1. Address: 1300 City Hall Annex, 25 West 4th Street
2. St. Paul, MN 55102
3. 651-266-6590

4. kurt.schultz@ci.stpaul.mn.us

PART 3 PRICE AND PAYMENT PROCEDURES

3.01 SCHEDULE OF VALUES

A. Form to be used: Sworn Construction Statement.

3.02 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Submit at intervals stipulated in the Agreement.

B. Execute certification/pay application by signature of authorized officer.

C. Submit two copies of each Application for Payment to Construction Manager.

PART 4 CONTRACT MODIFICATION PROCEDURES

4.01 HRA WINTER WORK POLICY

A. The Housing and Redevelopment Authority of the City of St. Paul (HRA) recognizes that there are weather related exterior items that cannot be completed in winter conditions ("Weather Conditional Work"), including but not limited to:
   1. Exterior painting
   2. Sod
   3. Foundation plantings
   4. Rain garden installation
   5. Concrete sidewalks, steps, landings, curbs, garage slabs, and asphalt driveways

B. The HRA defines winter conditions as "temperatures consistently below a high of 50 degrees Fahrenheit". Winter conditions are typically in effect from November 15th through April 15th each year, although there is potential for an earlier or later start and end date depending on weather.

C. In the case of NSP homes where a notice to proceed is issued between October and February, the time parameter of winter conditions could mean that the entire timeline for construction completion (typically 90-120 days) is within winter conditions.

D. It is the responsibility of the contractor to communicate, to the Owner, the exterior line items in the scope of work that are Weather Conditional Work as a component of the timeline submission required prior to issuance of a notice to proceed.

E. Contractors are also responsible for ensuring that all Weather Conditional Work is completed within the manufacturer's or industry standards recommended temperature range.

F. The Contractor is responsible for prioritizing Weather Related Work when winter conditions are not present, in order to complete the house within the construction timeline whenever possible.

G. The HRA's objective is to ensure that remodeling work on NSP projects is substantially complete within the timeline for construction completion (90-120 days) so that the project can be issued a certificate of occupancy and sold to a new homeowner; the contractor is responsible for ensuring that temporary, structurally sound solutions are implemented when Weather Related Work will effect the ability to secure a Certificate of Occupancy.

H. In the event that winter conditions are present throughout the 120 day construction contract period, the HRA will escrow 1 and 1/2 times the cost for Weather Conditional Work (150%), to be completed within 30 days of the end of winter conditions.

4.02 SUBSTITUTIONS

A. Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the General Contractor after award of the Contract are considered to be requests for substitutions.

B. Submit requests according to procedures required for change-order proposals.

C. Substitution requests shall include a complete list of changes or modifications needed in the Scope of Work in order to accommodate the proposed substitution.

D. Provide samples and product data, including drawings and descriptions of products as well as fabrication and installation procedures, where applicable or where requested by the Owner or Project Manager.

E. Indicate the substitution's effect on the Contractor's Construction Schedule, if any. Indicate cost information, including a proposal of the net change, if any, in the Contract Sum. Acceptance will be in the form of a written Change Order signed by the Owner and Project Manager.

PART 5 COMPLIANCE INFORMATION AND REQUIRMENTS

5.01 SEE HRA NSP WEBSITE FOR COMPLIANCE REQUIRMENTS.

A. http://www.stpaul.gov/nsp

B. Review the document labeled: *Section II - Compliance Information and Requirments.*

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 CONTRACT COMPLIANCE MONITORING SYSTEM - B2GNOW/LCP TRACKER

A. In an effort to assist contractors in their compliance with legal and contractual requirements, the City of Saint Paul ("City") and the Housing and Redevelopment Authority ("HRA") has instituted an online contract compliance monitoring system. The system was designed to help reduce the contractor's administrative costs and to provide various work-flow automation features that improve the project reporting process, as well as to assist the City in more efficient monitoring of data provided.

B. The prime contractor and all participating subcontractors awarded contracts as a result of this bid process are to be aware that they WILL be required to use the secure web-based system to submit project information, including, but not limited to, monthly progress payment reports including payrolls and other data including Vendor Outreach goals if applicable. The City and the HRA may also require additional information related to the contract to be provided electronically through the system at any time, before, during or after the contract is finalized.

C. The Contract Compliance Monitoring Software selected is B2Gnow/LCPtracker and has been designed to streamline the reporting process, reduce or eliminate paperwork, and assist contractors and subcontractors in complying with the program's reporting requirements.

D. Procedural differences between the previous conventional reporting and the new web-based system include:

E. Progress payment status reports will be submitted via the web-based system.

F. Paper copies will no longer be required.

G. Contractors will be required to enter data for payments made to subcontractors and subcontractors will be required to enter data for payments received into the web-based system.

H. Information regarding accessing the system will be provided to the contractor's designated point of contact during the pre-construction conference. The prime contractor and all subcontractors are responsible for responding by any noted due date to any instructions or requests for information and for checking the B2Gnow/LCPtracker system on a regular basis to manage contact information and contract records.

I. The prime contractor will be responsible for ensuring all subcontractors have completed all requested items and that their contact information is accurate and up-to-date. Training

sessions on the new web-based compliance monitoring system will be available for Contractors and assistance will be given by City and HRA staff as needed.

5.03 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.

5.04 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.

5.05 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. See section 02 8200

B. 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. see section 02 8313

B. 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 recieving over $25,000 of HUD funds per unit for rehabilitation, must abate all Lead-based paint hazards.

C. **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.

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

E. 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.

F. 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.

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

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

I. 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.

J. 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>

K. 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

A. The General Contractor is to develop a construction waste management plan to reduce the amount of materials sent to the landfill by at least 25% for rehabilitation projects or to the maximum extent possible.

B. The General Contractor must arrange for and provide dumpsters and removal service required for the complete project.

C. The General Contractor and its Subcontractors will recycle construction trash, waste, and cardboard to the greatest possible extent and use a transfer center to sort what can be recycled prior to transfer of remaining construction waste to a landfill.

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.

PART 7 EXECUTION AND CLOSEOUT REQUIRMENTS

8.01 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 the 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 test results of samples fail to meet clearance standards, surfaces must be retreated or re-cleaned at no additional cost to the Owner until clearance standards are met.

D. When the Clearance Report indicates that clearance standards have been met, and all other requirements of this Section have been met, the Project Manager and Owner will approve the final pay application.

8.02 ENERGY IMPROVEMENTS AUDIT

A. Contractor must coordinate with the Neighborhood Energy Connection (NEC) for a final inspection to verify insulation and air sealing has been completed to meet the requirements of “Specifications for Energy Improvement Upgrades” provided by the Neighborhood Energy Connection during the bidding process.

B. The NEC Energy Auditor will conduct a visual assessment of completed work and blower door test. If test results fail to meet air sealing and insulation standards of the Home Performance with Energy STAR program, Contractor is responsible for implementing NEC specifications for meeting standards at no additional cost to the Owner until Home Performance with Energy STAR standards are met.

C. When the NEC Energy Audit indicates that Home Performance with Energy STAR standards are met, and all other requirements of this Section have been met, the Project Manager and Owner will approve the final pay application.

8.03 FINAL INSPECTION

A. Upon completion of the Work, the Owner and Project Manager will make a final inspection.

B. Following the inspection, the Owner and Project Manager will prepare a punch list to advise the General Contractor of construction that must be completed or corrected.

C. The Final Pay Application will not be signed by Owner and Project Manager until all punch list items are completed and corrected and until written documentation of final sign off for all permits.

8.04 WARRANTIES, PRODUCT INFORMATION, AND MAINTENANCE MANUALS:

A. Turn over to the Owner a copy of any operation and maintenance instruction for products installed at the site, as well as all copies of property keys and garage door opener.

8.05 FINAL CLEAN UP

A. Final clean up must be performed when all work, including final punch list, is complete and prior to submission of the final pay application.

B. At completion of work, remove waste materials, rubbish, tools, equipment, machinery, and surplus materials, and clean all exposed surfaces, including the interior of appliances and cabinets, to a condition free of dust, stains, films, or other noticeable defects, including heating vents and ducts of radiators; remove labels that are not required as permanent labels; leave project site clean and ready for occupancy.

C. Glass: Clean transparent material, including mirrors and glass in doors and windows, to a polished condition. Remove putty and other substances that are noticeable as vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.

D. Floors: removed manufacturer's labels, scuffs, and other marks; wash vinyl floors; wash hardwood floors with solution of water and ammonia; wash concrete floors with detergent water; vacuum carpeted surfaces.

E. Mechanical: Wipe surfaces of mechanical and electrical equipment clean: remove excess lubrication and other substances; clean plumbing fixtures to a sanitary condition; shine faucets; clean all dust and debris from heating ducts or radiators.

F. Exterior: Clean the entire site of rubbish, litter, and other foreign substances. Sweep paved areas to a broom clean condition; remove stains, spills, and other foreign deposits. Rake grounds or utilize magnets as necessary to remove all debris, including shingles and nails.

8.06 FINAL PAY APPLICATION

A. Prepare and submit the final application for payment, showing 100% of the contract amount and change order amount billed out.

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

7. Permit Sign-offs/Certificate of Code Compliance
8. Winter Work/Weather Related Work Escrow
9. Certificate of Substantial/Final Completion

C. See Section 01 7700 - Closeout Procedures and Submittals, for additional information.

END OF SECTION

SECTION 01 2100

HRA ALLOWANCES

PART 1 GENERAL

1.01 ALLOWANCES GENERAL REQUIRMENTS

A. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation.

B. At the earliest practical date after award of the Contract, provide to the Project Manager and Owner a deadline date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the work.

C. At the Owner or Project Manager's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the work.

D. Note: All allowances are per-unit with the exception of the Landscaping Allowances which is per Lot.

E. **Allowances are for material only**

1.02 SUBMITTALS

A. Contractor must provide receipts documenting purchases of materials up to the allowance amount.

PART 2 PRODUCTS

2.01 SCHEDULE OF ALLOWANCES:

Name of Allowance	Section Number	Value of Allowance	Notes
Tiling	09-3000	$3.00 per/sf	
Laminate Flooring	09-6219	$4.50 per/sf	
Sheet Vinyl Flooring	09-6516	$20.00 per/sy	
Carpeting (and pad)	09-6800	$18.00 per/sy	Includes pad
Residential Appliances	11-3100	$3,200	Range, hood/microwave combo, refrigerator, dishwasher, clothes washer and clothes dryer
Mail Box and House Numbers	12-1110	$50	
Bathroom Furnishings	12-1111	$440	
Residential Casework (cabinets and countertop)	12-3530	$7,000	
Plumbing Fixtures	22-4000	$2,850	Kitchen Sink and Faucet, All Bathroom Fixtures.
Lighting	26-5101	$2,000	Lighting Fixtures only
Planting	32-9300	$1,500	For plants and mulch, not sod or retaining wall

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, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.

D. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

PART 2 PRODUCTS

2.01 MATERIALS

A. All VOC-Restricted Products: Provide products having VOC content of types and volume not greater than those specified in State of California Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions From Various Sources Using Small-Scale Environmental Chambers.
   1. Evidence of Compliance: Acceptable types of evidence are:
      a. Current GREENGUARD Children & Schools certification; www.greenguard.org.
      b. Current Carpet and Rug Institute Green Label Plus certification; www.carpet-rug.org.
      c. Current SCS Floorscore certification; www.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 GreenSeal GS-36.
1. Evidence of Compliance: Acceptable types of evidence are:
    a. Current GreenSeal Certification.

D. Paints and Coatings applied within building waterproof envelope:
1. Comply with VOC Content limits (as noted in Criterion 6.1) of Green Seal Standard GS-11 "Paints," First Edition; Standard GC-03 "Anti Corrosive Paints," and MPI GPS-2-8, as follows (in grams/Liter):
    a. Flat: 50
    b. Non-flat: 50
    c. Anti-Corrosive and Anti Rust: 250
    d. Floor Coatings: 100

E. Carpet and Adhesive: Provide products having VOC content not greater than that required for CRI Green Label Plus certification.
1. Evidence of Compliance: Acceptable types of evidence are:
    a. Current Green Label Plus Certification.
    b. Report of laboratory testing performed in accordance with requirements.

F. Carpet, Carpet Cushion, and Adhesive: Provide products having VOC content as specified in Section 09 6800.

G. Carpet Cushion: Provide products having VOC content not greater than that required for CRI Green Label Plus certification.
1. Evidence of Compliance: Acceptable types of evidence are:
    a. Current Green Label Plus Certification.
    b. Report of laboratory testing performed in accordance with requirements.

H. Composite Wood and Agrifiber Products and Adhesives Used for Laminating Them: Provide products having no added urea-formaldehyde resins.
1. Evidence of Compliance: Acceptable types of evidence are:
    a. Current SCS "No Added Urea Formaldehyde" certification; www.scscertified.com.
    b. Published product data showing compliance with requirements.
    c. Certification by manufacturer that product complies with requirements.

I. 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.

2.02 UNACCEPTABLE METHODS OF WASTE DISPOSAL

A. Burning or incinerating on or off project site

B. Burying on project site, other than fill.

C. Dumping or burying on other property, public or private, other than official landfill.

D. Illegal dumping or burying.

END OF SECTION

SECTION 01 7700

CLOSEOUT PROCEDURES AND SUBMITTALS

PART 1 GENERAL

1.01 SUBMITTALS

A. All documents required to create a complete Final Payment Application can be downloaded from https://sites.google.com/site/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
3. Verify the final performance of the building with performance testing

2.03 OPERATION AND MAINTENANCE MANUALS

A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

B. Prepare data in the form of an instructional manual.

END OF SECTION

SECTION 01 8113

SUSTAINABLE DESIGN REQUIREMENTS

PART 1 GENERAL

1.01 ENERGY CONSERVATION

A. This property 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 Performace Homes custom consulting program, certifies independent consultants who provide developers with specific information about how to increase the energy efficiency of thier 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 piece. Alternative styles may be approval by the HRA.

PART 3 EXECUTION

3.01 CONSTRUCTION WASTE MANAGEMENT

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

3.02 CONSTRUCTION INDOOR-AIR-QUALITY MANAGEMENT

A. Change all air filters regularly durring 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. Basement/Mechanical
      a. The heating system: the boiler and all related piping
         1) Boiler Piping: contains asbestos See Section 02 8200 Asbestos Remediation
      b. Thermostat
      c. Water heater
      d. All water and waste piping
      e. Basement window(s) All.
      f. Any appliances
      g. Laundry/Utility tub
   2. Kitchen
      a. Any appliances
      b. Soffits
      c. Cabinets and counter tops
      d. Kitchen Windows (east wall)
      e. Flooring
         1) Including subflooring to expose hardwood flooring.

3. Bathroom Second Floor
    a. Flooring
        1) Including subflooring _____.
    b. Medicine cabinets (built in) and bath accessories
    c. Shower
    d. Tub
    e. Toilet
4. Throughout
    a. Trim Base, Shoe, Casing, and Crown
    b. Windows
    c. Unnecessary hooks, nails, brackets, etc from walls.
    d. All non-code compliant issues, including but not exclusively electrical and plumbing.
    e. Lighting Fixtures All.
    f. Hazardous wiring, outlets, switch plate and receptacle covers All.
    g. Interior Doors All. Salvage any antique locksets, hinges.
    h. Entry Doors All.
    i. Carpeting
        1) Include padding and tack strips
    j. All shelving
    k. All other items as per Plan.
    l. Back Stair to Second Floor
        1) Remove stair treads as per lead report
        2) Remove wainscotting
    m. Main and Upper Floors:
        1) Remove all lath and plaster from all walls and ceilings.
        2) Remove all trim work.
        3) Remove Walls as per Plans
    n. Front Stair:
        1) Remove entire stair as per Plan
    o. Floor Coverings/Underlayment
        1) Remove and salvage linoleum at back bedroom floor.
        2) Remove all vinyl floor covering and underlayment to bare subfloor.
    p. Chimney

E. Exterior Demolition to Include:
1. Exterior
    a. Siding, Soffit and fascia on house (except decorative trim above bay window on west side of house)
    b. Cable Wiring, TV antennas or cable dishes
    c. Front Porch as necessary for rebuild.
        1) Retain wood pillars for restoration, etc.
    d. Garage:
        1) Remove entire garage, garage foundation, concrete pads, apron
2. Site Demolition:
    a. Chain link fence
    b. Sidewalks All.
    c. Concrete Stairs at sidewalk
    d. Concrete Stoop to Side Porch
    e. Concrete Stairs to Front Porch
    f. Retaining Walls-Front (retain hosta for replanting) and East side of house.
    g. Timber and wood retaining wall at north end of lot
    h. Tree(s) -weed trees shrubs and vines along fence lines and retaining walls, include entire east side of house. Dig out roots.

2.04 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

END OF SECTION

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 nonfriable 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.

PART 3 EXECUTION

2.01 LOCATIONS

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

B. Asbestos has been identified at the following locations: packing around Drip-T, Pipe insulation.

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."

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 Manger. 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 Lead Abatement Supervisors are allowed to bid on projects involving lead hazard reduction work.

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 described below
   1. Component Replacement: The removal of building components that contain lead-based paint. It is most appropriate for items such as doors, windows, trim, and cabinets.
   2. Paint Removal: The separation of paint from the substrate using safe heat, chemical, or abrasive methods. It may be done on- or off-site. Abrasive methods can create a great deal of dust, are the most hazardous, and require the greatest care and most thorough clean-up.
   3. Enclosure: The installation of a barrier (such as gypsum board or paneling) that is mechanically attached to the building component, with all edges and seams sealed to prevent escape of lead-based paint dust. It is most appropriate for large surfaces, such as walls, ceilings, floors, and exteriors.
   4. Encapsulation: The application of a liquid or adhesive material that covers the component and forms a barrier that makes the lead-based paint surface inaccessible by relying upon adhesion. It may be appropriate for many kinds of smooth surfaces but it cannot be used effectively on friction surfaces, surfaces in poor condition, or surfaces that may become wet. It also must be compatible with existing paint.
   5. Soil Removal: The removal of at least the top six inches of topsoil is adequate for most projects. In areas with heavy contamination, up to two feet may have to be removed, and must be disposed of using proper waste management techniques that comply with local requirements. The maximum lead concentration in replacement soil shall not exceed 200 ug/g. Sod or seeding of new soil should occur.

6. Soil Cultivation: The mixing of low lead soil with high lead soil is an appropriate method if the average lead concentration of the soil to be abated is below 1,500 ug/g. Thorough mixing is required, and pilot testing of various techniques may be needed to ensure that thorough mixing does occur.
7. Paving: The covering of highly contaminated soil with high quality concrete or asphalt. Paving is common in high traffic areas but not appropriate in play areas. The need for uncontaminated replacement soil is eliminated as is waste disposal costs. Paving often turns out to be the most economical recourse, despite its aesthetic disadvantages.

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 Clearance Technician 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 test results of samples fail to meet clearance standards, surfaces must be retreated or recleaned at not 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 RESTORATION

A. Decorative trim above bay window, porch columns..

2.04 RE-INSTALLATION

A. Same as above for restoration..

2.05 LOCATIONS

A. Review Lead Report, attached in this Manual, to identify locations of lead contamination.

SECTION 03 0100

MAINTENANCE OF CONCRETE

PART 1 GENERAL **$_____**

1.01 SECTION INCLUDES

A. Cleaning of existing concrete surfaces.

B. Repair of exposed structural, shrinkage, and settlement cracks.

C. Resurfacing of concrete surfaces having spalled areas and other damage.

D. Repair of deteriorated concrete.

PART 2 PRODUCTS

2.01 CLEANING MATERIALS

A. Detergent: Non-ionic detergent.

2.02 CEMENTITIOUS PATCHING AND REPAIR MATERIALS

A. Cementitious Repair Mortar, Trowel Grade: One- or two-component, factory-mixed, polymer-modified cementitious mortar; in-place material capable of withstanding freeze/thaw conditions.

B. Cementitious Hydraulic Waterstop: Very fast setting, low slump, hand formable, and capable of stopping active water leaks; in-place material capable of withstanding freeze/thaw conditions.

PART 3 EXECUTION

3.01 CLEANING EXISTING CONCRETE

A. Clean concrete surfaces of dirt or other contamination using the gentlest method that is effective.
   1. Try the gentlest method first, then, if not clean enough, use a less gentle method taking care to watch for impending damage.
   2. Clean out cracks and voids using same methods.

B. The following are acceptable cleaning methods, in order from gentlest to less gentle:
   1. Water washing using low-pressure, maximum of 100 psi, and, if necessary, brushes with natural or synthetic bristles.
   2. Increasing the water washing pressure to maximum of 400 psi.
   3. Adding detergent to washing water; with final water rinse to remove residual detergent.
   4. Steam-generated low-pressure hot-water washing.

3.02 CONCRETE SURFACE REPAIR USING CEMENTITIOUS MATERIALS

A. Clean concrete surfaces, cracks, and joints of dirt, laitance, corrosion, and other contamination using method(s) specified above and allow to dry.

B. Apply coating of bonding agent to entire concrete surface to be repaired.

C. Apply repair mortar by steel trowel to a minimum thickness of 1/4 inch (6 mm) over entire surface, terminating at a vertical change in plane on all sides.

D. Trowel finish to match adjacent concrete surfaces.

3.03 LOCATIONS

A. Basement Walls

B. Basement Floor

END OF SECTION

SECTION 03 3000

CAST-IN-PLACE CONCRETE

PART 1 GENERAL **$_____**

1.01 LOCATIONS

A. Provide parking pad and sub-base.

B. Provide concrete walks and steps as shown on landscape and site plans.
   1. Note: Garage door to be at back of garage as per site plan.

C. Provide footings for new garage foundation walls.

D. Provide concrete apron/drive to alley at new garage.

1.02 SECTION INCLUDES

A. Concrete formwork.

B. Slab on grade.

C. Concrete reinforcement.

D. Joint devices associated with concrete work.

E. Concrete curing.

1.03 RELATED REQUIREMENTS

A. Section 32 1313 - Concrete Paving: Sidewalks, curbs and gutters.

1.04 REFERENCE STANDARDS

A. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials; American Concrete Institute International ; 2010.

B. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; American Concrete Institute International ; 1991 (Reapproved 2002).

C. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International ; 2010.

D. ACI 302.1R - Guide for Concrete Floor and Slab Construction; American Concrete Institute International ; 2004 (Errata 2007).

E. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; American Concrete Institute International ; 2000.

F. ACI 305R - Hot Weather Concreting; American Concrete Institute International ; 2010.

G. ACI 306R - Cold Weather Concreting; American Concrete Institute International ; 2010.

H. ACI 308R - Guide to Curing Concrete; American Concrete Institute International ; 2001 (Reapproved 2008).

I. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; American Concrete Institute International ; 2008.

J. ACI 347 - Guide to Formwork for Concrete; American Concrete Institute International ; 2004.

K. ASTM A185/A185M - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete ; 2007.

L. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement ; 2009b.

M. ASTM C33 - Standard Specification for Concrete Aggregates ; 2011.

N. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete ; 2011.

O. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or (50-mm) Cube Specimens) ; 2008.

P. ASTM C150 - Standard Specification for Portland Cement ; 2011.

Q. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method ; 2010b.

R. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete ; 2010a.

S. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete ; 2010a.

T. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete ; 2008a.

U. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing ; 2010.

V. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete ; 1999 (Reapproved 2008).

W. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink) ; 2011.

X. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types) ; 2004 (Reapproved 2008).

Y. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs ; 2009.

1.05 QUALITY ASSURANCE

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

B. Follow recommendations of ACI 305R when concreting during hot weather.

C. Follow recommendations of ACI 306R when concreting during cold weather.

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.

C. Footings
   1. 10" thick x 20" wide, continuous.
      a. Detatched garage frost footing.
      b. Step frost footings at top and bottom of steps.
   2. 8" dia. x 5'-0" deep piers at fence and handrails.

D. Steps
   1. 6" risers and 12" treads. Provide number of treads and risers required to conform to existng grades.
   2. Provide 6" minimum slab thickness, perpendicular to the slope, from bottom of riser to underside of slab.
   3. Provide 8" thick stringer from transition of earth retaining wall to top of steps, both sides.
      a. Structurally integrate with earth retaining wall and steps.
      b. Provide 3/4" chamfered top edges, flush with each nosing edge.

2.02 REINFORCEMENT

A. Reinforcing Steel: ASTM A615/A615M Grade 60 (420).
   1. Footings
      a. Two #5 bar, continuous at garage footings.
      b. Three #5 bar, continuous at earth retaining wall footings.
   2. Steps
      a. One #3 bar at concrete stair nosings.
      b. #4 bar @ 12" each way at concrete stair slab.

c. Stringers: Provide continuous #4 bar from slab reinforcing, 12" on center. Tie into 2 #4 bar at top corners of stringer.

3. Type: Deformed billet-steel bars.

B. Steel Welded Wire Reinforcement: ASTM A185/A185M, plain type.

1. Slab-on-grade

a. Form: Coiled Rolls.

b. Mesh Size: 6 x 6 (150 x 150).

c. Wire Gage: W 4 x W 4 (MW 25 x MW 25).

d. Contractor option to use fiber reinforcement in lieu of welded wire at garage slabs.

C. Reinforcement Accessories:

1. Tie Wire: Annealed, minimum 16 gage (1.5 mm).

2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

2.03 CONCRETE MATERIALS

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

1. Acquire all cement for entire project from same source.

B. Fine and Coarse Aggregates: ASTM C33.

1. Acquire all aggregates for entire project from same source.

C. Fly Ash: ASTM C618, Class C.

D. Water: Clean and not detrimental to concrete.

E. Fiber Reinforcement: Alkali-resistant polypropylene complying with ASTM C1116/C1116M.

1. Fiber Length: 0.75 inch (19 mm), nominal.

2.04 CHEMICAL ADMIXTURES

A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

B. Air Entrainment Admixture: ASTM C260.

C. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.

D. Water Reducing Admixture: ASTM C494/C494M Type A.

2.05 ACCESSORY MATERIALS

A. Underslab Vapor Retarder: Multi-layer, fabric-, cord-, grid-, or aluminum-reinforced polyethylene or equivalent, complying with ASTM E1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. The use of single ply polyethylene is prohibited.

1. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations in vapor retarder.

2. Products:

a. Stego Industries, LLC ; Stego Wrap Vapor Barrier 15-mil (Class A): www.stegoindustries.com.

B. Non-Shrink Cementitious Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.

1. ASTM C1107/C1107M; Grade A, B, or C.

2. Minimum Compressive Strength at 48 Hours: 2,400 psi (17 MPa).

3. Minimum Compressive Strength at 28 Days: 7,000 psi (48 MPa).

2.06 BONDING AND JOINTING PRODUCTS

A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059 Type II.

B. Slab Isolation Joint Filler: 1/2 inch (13 mm) thick, height equal to slab thickness, with removable top section that will form 1/2 inch (13 mm) deep sealant pocket after removal.

1. Material: ASTM D1751, cellulose fiber.

2.07 CURING MATERIALS

A. Moisture-Retaining Sheet: ASTM C171.
   1. Curing paper, regular.
   2. Polyethylene film, clear, minimum nominal thickness of 0.0040 in. (0.10 mm).
   3. White-burlap-polyethylene sheet, weighing not less than 10 oz/per linear yd, 40 inches wide (305 grams per sq. meter).

2.08 CONCRETE MIX DESIGN

A. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended by manufacturer.

B. Fiber Reinforcement: Add to mix at rate of 3.0 pounds per cubic yard (____ kg per cubic meter), or as recommended by manufacturer for specific project conditions.

C. Normal Weight Concrete:
   1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 4,000 psi (27.6 MPa).
   2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight, typical.
      a. 20 percent at slabs on grade.
      b. 25 percent at footings.
   3. Water-Cement Ratio: Maximum 50 percent by weight.
   4. Total Air Content: 1.5 percent, determined in accordance with ASTM C173/C173M.
   5. Maximum Slump: 4 inches (100 mm).
   6. Maximum Aggregate Size: 3/4 inch (19 mm), typical.
      a. 1.5 inch at footings.

2.09 MIXING

A. On Project Site: Mix in drum type batch mixer, complying with ASTM C685. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.
   1. Fiber Reinforcement: Batch and mix as recommended by manufacturer for specific project conditions.

B. Transit Mixers: Comply with ASTM C94/C94M.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 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.
   1. Use latex bonding agent only for non-load-bearing applications.

C. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

D. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Lap joints minimum 6 inches (150 mm). Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.
   1. Vapor Retarder Over Granular Fill: Install compactible granular fill before placing vapor retarder as shown on the drawings. Do not use sand.

3.03 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.

B. Install welded wire reinforcement in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.

3.04 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.

B. Place concrete for floor slabs in accordance with ACI 302.1R.

C. Notify Construction Manager not less than 24 hours prior to commencement of placement operations.

D. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

E. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.

F. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.05 SLAB JOINTING

A. Anchor joint fillers and devices to prevent movement during concrete placement.

B. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.

C. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 3/16 inch (5 mm) thick blade and cut at least 1 inch (25 mm) deep but not less than one quarter (1/4) the depth of the slab.

3.06 SLAB FLATNESS AND LEVELNESS TOLERANCES

A. Garage Slab:
   1. Slope at rate of 1" in 10' for drainage.

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.

3.07 CONCRETE FINISHING

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

B. 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.
   3. Other Surfaces to Be Left Exposed: "Steel trowel" as described in ACI 302.1R, minimizing burnish marks and other appearance defects.

3.08 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.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

C. Surfaces Not in Contact with Forms:
   1. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.

2. Final Curing: Begin after initial curing but before surface is dry.

3.09 DEFECTIVE CONCRETE

A. Repair or replacement of defective concrete will be determined by the Construction Manager. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

B. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Construction Manager for each individual area.

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

B. Remove all parging at exterior foundation walls.

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.

2.04 LOCATIONS

A. Interior and exterior foundation walls

END OF SECTION

SECTION 04 2300

GLASS UNIT 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 2 PRODUCTS

2.01 GLASS UNITS

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

2.02 MORTAR MIXING

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

PART 3 EXECUTION

3.01 INSTALLATION

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

3.02 LOCATIONS

A. Basement windows with vents; replace All. (3)

END OF SECTION

SECTION 05 7300

DECORATIVE METAL RAILINGS

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 RAILING SYSTEMS

A. Railings - General: Factory- or shop-fabricated in design indicated, to suit specific project conditions, and for proper connection to building structure, and in largest practical sizes for delivery to site.
   1. Design Criteria: Design and fabricate railings and anchorages to resist the following loads without failure, damage, or permanent set; loads do not need to be applied simultaneously.
      a. Lateral Force: 75 lb (333 N) minimum, at any point, when tested in accordance with ASTM E935.
      b. Distributed Load: 50 pounds per foot (0.73 kN per m) minimum, applied in any direction at the top of the handrail, when tested in accordance with ASTM E935.
      c. Concentrated Loads on Intermediate Rails: 50 pounds per square ft (0.22 per sq m), minimum.
      d. Concentrated Load: 200 pounds (888 N) minimum, applied in any direction at any point along the handrail system, when tested in accordance with ASTM E935.
   2. Field Connections: Provide sleeves to accommodate site assembly and installation.

B. Cast Iron: At cast iron railings and guardrails: 1-1/2" outside diameter pipe with horizontal rails spaced no more than 5-1/2" o.c.. At Square pipe railing and guardrails: 1-1/2" square posts, 1-1/2 X 1/2 top and bottom rails, 1/2" solid square bar vertical pickets spaced 4" on center maximum. Top rails to be 2'10" above stair nosing and extends 12" at top and bottom of stairs.
   1. Finishes: Prepare raw material by "Brush-Off Blast Cleaning". Rust inhibiting alkyd primer (1 coat and flat black finish (2 coats), applied in ship to all exposed surfaces of metal, even if not normally visible.

PART 3 EXECUTION

3.01 INSTALLATION

A. Comply with manufacturer's drawings and written instructions.

B. Install components plumb and level, accurately fitted, free from distortion or defects and with tight joints, except where necessary for expansion.

C. Anchor posts in concrete by inserting into formed or core-drilled holes and grout space between post and concrete.

D. Anchor handrail ends to concrete and masonry with round flanges connected to rail ends and anchored tow wall construction will drilled in expansion anchors.

E. Anchor securely to structure.

3.02 LOCATIONS

A. Front steps from sidewalk anchored to concrete steps.

B. Steps to garage

END OF SECTION

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. Species: Douglas Fir-Larch, unless otherwise indicated.
   2. 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.
   3. 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.
   4. 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 as indicated on drawings, S4S.

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.
   3. Shims: Continuous shim of beveled cedar siding at all new window installations.

2.03 TIMBERS

A. Sizes: Nominal sizes as indicated on drawings, S4S.

B. Moisture Content: S-dry (23 percent maximum).

C. Beams 5 inches (125 mm) and over in thickness:
   1. Grade: Select Structural.

2.04 CONSTRUCTION PANELS

A. Subfloor/Underlayment Combination: APA PRP-108, Rated Sturd-I-Floor.
   1. Exposure Class: Exterior.
   2. Span Rating: 24 inches (610 mm).
   3. Thickness: 3/4 inches (19 mm), nominal.

4. Edges: Tongue and groove.

B. Roof Sheathing: Oriented strand board structural wood panel with factory laminated roofing underlayment layer.

C. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood, or medium density fiberboard; 3/4 inch (19 mm) thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.

2.05 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. Provide _____ manufactured by _____.
   1. For contact with preservative treated wood in exposed locations, provide minimum G185 (Z550) galvanizing per ASTM A653/A653M.

2.06 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 members full length without splices unless otherwise specifically detailed.

C. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and AFPA Wood Frame Construction Manual.

D. Install horizontal spanning members with crown edge up and not less than 1-1/2 inches (38 mm) of bearing at each end.

3.03 INSTALLATION OF CONSTRUCTION PANELS

A. Subflooring/Underlayment Combination: Glue and nail to framing; staples are not permitted.

B. Underlayment: Secure to subflooring with nails and glue.

3.04 LOCATIONS

A. Construct new two car garage as per attached plan. **Position entry door and window to face rear yard.** Coordinate service door location with new concrete walks.

B. Underlayment: secure to kitchen and mudroom floor for resilient flooring installation as per manufacturer.

C. Frame all partition walls and closets as per plan.

D. Front Porch, treated framing lumber; cedar deck, etc.according to drawing A2.

E. Provide stud framing as per plans, include solid backing for closet hardware and bath accessories.

F. Provide framing for Closet Maid Pantry System and doors.

G. Jack and level first floor at NW part of house. Work to be performed by a contractor experienced in jacking and leveling.

H. Provide beam under floor at NW corner of house as per City Inspection Report

I. Plinth Blocks (see 033000) and Wood Posts in Basement: Provide temporary shoring and bracing. Set new precast plinth block on sound concrete slab or footing, directly under post(s). Provide shims to maintain post at proper bearing height.

J. Appropriate supports and hand railings to meet code requirements. Locate at Back and basement stair.

K. Provide continuous beveled cedar shims at all new window installations.

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, Section 09 9300 for staining and sealing.

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.

2.03 LUMBER MATERIALS

A. Softwood Lumber: Pine species, _____ maximum moisture content of 6 percent; with vertical grain, pre-primed.
   1. Baseboard system: #2 1X6 with 3/16 Radius shoulder with finger jointed WM-65fj 11/16" x 1 3/8" base cap molding.
   2. Window Trim: Pre-primed header, stop, stool, apron and casing using 1"X4", #2 grade pine or better.
      a. Ease all outside edges with 1/16" radius.
   3. Door Trim: #2 1x 4 including plinth blocks as per plans.

B. Hardwood Lumber: maple species, _____ sawn, maximum moisture content of 6 percent ; with vertical grain , of quality suitable for transparent finish.

2.04 SHEET MATERIALS

A. Hardwood Plywood: Face species as indicated, plain sawn, book matched, medium density fiberboard core; HPVA HP-1, Grade AA, Type ____; glue type as recommended for application.

2.05 FABRICATION

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

2.06 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. Mitre 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.

3.02 LOCATIONS

A. All new trim throughout; trim will be new pine #2 or better (Plan A5 has examples).
B. New hardwood stair treads to the second floor at back stair.
C. Front porch as per plan A2.
D. Wainscotting and cap at stair to second floor (match original, change height to 4')
E. New pre-primed hardwood bench at front entry as per plan A7.
F. New bench and storage at mudroom as per plan A7.

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.

PART 3 EXECUTION

3.01 APPLICATION

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

3.02 LOCATION

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

B. Insulate and air seal all open walls and second floor ceilings to R-19

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 pour and bulk for pneumatic placement.
   1. R-Value: 19 if possible
   2. Density: 3.5 Lbs. per Cubic Foot for the entire cavity

PART 3 EXECUTION

3.01 INSTALLATION

A. Drill 2 inch (50 mm) diameter insulation access ports from the exterior in side porch walls to permit equipment access.

B. Place cellulose insulation pneumatically to completely fill rafter, bay window spaces and side porch walls .NEC 616, 526

C. Insulate open attic spaces to R50.

D. New attic access door to be insulated to R50 and insulation dam constructed around it. Weatherstrip opening to provide a tight seal. NEC 532

E. Completely fill all 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.

3.02 LOCATIONS

A. ATTIC: Total r-value: R-50 (about 36" with foamed in place in ceiling) according to NEC requirements.

B. WALLS, SLANTS, ABOVE BAY WINDOWS: Where walls and roofs are unopened, externally dense pack insulation to R-19 if possible or 3.5 lbs.per cubic foot per cavity.

C. MUD ROOM WALLS AND ATTIC: R19 and R50 respectively

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 Housewrap

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

A. Weather Barrier Membrane: Spunbonded polyolefin, non-woven, non-perforated, wether barrier
   1. Manufacturer: DuPont Tyvek HomeWrap or like product to be approved by owner.

B. Seam Tape: DuPont Tyvek or like product

C. Flashing: DuPont Tyvek or like product

D. Fasteners: DuPont Tyvek or like product

PART 3 EXECUTION

3.01 INSTALLATION

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

B. Water-Resistive Barriers: Install continuous barrier over surfaces indicated, with sheets lapped to shed water but with seams not sealed.

C. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturers 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. Install self-adhesive flexible flashing at window jambs and sill according to Manufacturer's instructions. Refer to 06 1000 Rough Carpentry for continuous beveled wood shim at window sills.

3.02 LOCATION

A. Provide weather barrier systems at exterior walls. System to include wrapping and flashing at all window and door openings.

END OF SECTION

SECTION 07 2700

AIR BARRIER SYSTEM (SEALING OF BYPASSES)

PART 1 GENERAL **$_____**

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. 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.

B. 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. 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 with 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.

C. 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. Seal the roof curb at ductwork penetrations.
      c. Install continuous air barrier at the intersection of the porch roof and conditioned space.
   4. Use air sealing with polyurethane caulk for following areas:
      a. Slab openings
      b. Slab penetrations
      c. Control or expansion joints
   5. 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.

3.02 LOCATION

A. Exterior and Interior Throughout, including attic.

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. Timetex Ice and Water Shield 15 lb. felt.
      c. Color: as selected

B. Roof sheathing replacement: OSB
   1. Unit of measurement: Square Foot.

1.02 QUALITY ASSURANCE

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

1.03 RELATED REQUIREMENTS

A. Section 07 7123 - Manufactured Gutters and DownSpouts.

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: Pewter Grey.

2.02 SHEET MATERIALS

A. Eave Protection Membrane: Asphalt-coated organic roll roofing, with smooth asphalt coating both sides, complying with ASTM D224, Type I or IV.

B. Underlayment: Asphalt-saturated organic roofing felt, unperforated, complying with ASTM D226 , Type I ("No.15").

2.03 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.

2.04 METAL FLASHINGS

A. Metal Flashings: Provide sheet metal eave edge, gable edge, ridge, open valley flashing, and dormer flashing.

PART 3 EXECUTION

3.01 INSTALLATION - EAVE PROTECTION MEMBRANE

A. Install eave protection membrane from eave edge to minimum 2 ft (600 mm) up-slope beyond interior face of exterior wall.

3.02 INSTALLATION - VALLEY PROTECTION

A. At Exposed Valleys: Install one layer of sheet metal flashing, minimum 24 inches (600 mm) wide, centered over open valley and crimped to guide water. Weather lap joints minimum 2

inch (50 mm) wide band of lap cement along each edge of first, press roll roofing into cement, and nail in place minimum 18 inches (450 mm) on center, 1 inch (25 mm) from edges.

3.03 INSTALLATION - SHINGLES

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

3.04 LOCATION

A. Replace all sloped shingle roofing on main building and new roofing on new garage. Include roof vents to code and water shield and pre-finished metal drip edge.

B. Provide cost per sq. ft. of sheathing to be replaced as required.

END OF SECTION

SECTION 07 4646

FIBER CEMENT SIDING

PART 1 GENERAL **$_____**

1.01 UNIT PRICE

A. Siding 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 Siding
   2. Pre-purchased materials:
      a. Pre-primed Hardie Plank Siding and corner trim. **(House Only)**
      b. Cost of Hardie Siding for Garage, Hardie trim, soffit and fascia not included in pre-purchase and should be included in the contractors bid.

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): 4-1/4 inches (___ 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 manufacturers full range of available colors.
   8. Warranty: 50 year limited; transferable.

B. Window and door trim, fascia
   1. Individual made of cement and cellulose fiber formed under high pressure with integral surface texture, complying with ASTM C1186 Type A Grade II; with squared edges.
   2. Style: 5/4 HardieTrim NT3 Boards.
   3. Texture: Smooth.
   4. Width (Height): 5.50 inches.
   5. Thickness: 1 inch, nominal.
   6. Finish: Factory applied primer. Finish painting to be applied by contractor.
   7. Color: As selected by Construction Manager (see section 09 9000).
   8. Warranty: 15 year limited; transferable.
   9. 4.5" wide
   10. Factory applied primer

C. Soffit Panels: Panels 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. Texture: Smooth.
   2. Length: 96 inches (2400 mm), nominal.
   3. Width: Match original
   4. Thickness: 5/16 inch (8 mm), nominal.
   5. Finish: Factory applied primer.
   6. Color: As selected by Construction Manager from manufacturers full range of available colors.

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. 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.

3.02 LOCATION

A. House (Siding Material Pre-purchased)

B. House
   1. Window and Door Trim
   2. Soffit and Fascia (retain decorative corbel at west bay window).

C. Garage
   1. Siding, Trim, Soffit, Fascia.

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. Anchoring Devices: Type recommended by fabricator.
   2. Gutter Supports: Brackets.
   3. 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

A. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions.

B. Where feasible, a minimum of 6' offset extension shall be installed at the ends of all downspouts to divert water away from foundation.

C. Downspouts shall divert the entire water load in the direction of the rain garden according to the Landscape Plan.

D. Include 10" NDS Catch Basin installed in walkway as per Landscaping Plan.

E. Install 4" Schedule 40 PVC pipe under concrete walkway connecting to catch basin as per Plan

3.02 LOCATION

A. Replace gutters and downspouts at house roof. See Site and Landscape plans for locations.

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. Garage Service Door:
   1. Product: Mastercraft, 4-Panel - E-1

2.02 ALUMINUM STORM DOORS

A. Front Door:
   1. Product: Larson, Screen-Away "Meadowview" aluminum storm doors (3/4 view) at main entry door. 64 686 at Menard's

B. Side Door:
   1. Product: Larson Screen-Away" "Meadowview" aluminum storm door (1/2 view) at rear entrance.

C. Color: To be selected by Construction Manager from full range.

2.03 ACCESSORIES

A. DOOR HARDWARE: Door hardware finish to be Oil Rubbed Bronze

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 a 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

3.03 ADJUSTING

A. Adjust Doors for smooth operation.

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

3.04 LOCATIONS

A. Front Entrance - Storm

B. Side Entrance - Storm

C. Garage Service door

END OF SECTION

SECTION 08 1429

WOOD DOORS

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 INTERIOR WOOD DOORS

A. Quality Level: Premium Grade , in accordance with AWI/AWMAC/WI Architectural Woodwork Standards.

B. Wood products that Emit Low or No Formaldehyde

C. Wood products that Emit Low or No VOC

D. Interior Doors: 1-3/4 inches (44 mm) thick unless otherwise indicated; solid lumber construction; mortised and tenoned joints.
   1. Mastercraft/Midwest Manufacturing Custom Doors
      a. Wood: Pine
   2. Pre-hung
   3. Solid Core
   4. Raised Four Panel
   5. Primed
   6. Folding door: Raised Panel 2 / 4
   7. Pantry Doors: Raised Two Panel
   8. Swinging Doors: Double 10 light
   9. Front Foyer Closet: Raised Four Panel Double Door
   10. French Door: 15 light

2.02 ACCESSORIES

A. Hinges: Oil Rubbed Bronze

B. Door Hardware: Schlage Georgian knobs in oil rubbed bronze.

C. Swinging Doors:
   1. Astragal with head and foot pins and ball catch
   2. Include magnetic catches to hold doors open

D. Door stops as needed - oil rubbed bronze or dark finish

PART 3 EXECUTION

3.01 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and AWI/AWMAC Quality Standards requirements.

B. Coordinate installation of doors with installation of frames and hardware.

3.02 TOLERANCES

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

3.03 LOCATIONS

A. All interior doors

B. Folding door at top of basement stair

C. Swinging double doors at living to dining room

D. French door as per plan

E. Pantry

F. Front Hall Closet double door

G. SEE DRAWINGS for locations, sizes and swing. A3, A5, A7.

END OF SECTION

SECTION 08 1613

FIBERGLASS DOORS

PART 1 GENERAL **$ _____**

1.01 WARRANTY

A. Provide five (5) year manufacturer warranty covering materials and workmanship, including degradation or failure due to chemical contact.

PART 2 PRODUCTS

2.01 DOOR AND FRAME ASSEMBLIES - ALL ENERGY STAR RATED

A. Front Door
   1. Product: Therma-Tru Smooth Star two panel 3/4 light with tempered and double-paned low e clear glass.

B. Kitchen and Mudroom Doors (2)
   1. Therma-Tru Smooth Star two panel 1/2 light with tempered and double-paned low e clear glass.

2.02 ACCESSORIES

A. Door Hardware: to be finished in Oil Rubbed Bronze
   1. Front Door Handleset: Schlage Camelot with Georgian interior knob
   2. Mudroom and kitchen: Schlage Georgian knobs and deadbolts
   3. Hinges: Adjustable or Classic Craft finished in Oil Rubbed Bronze

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions; do not penetrate frames with anchors.

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

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

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

3.02 SYSTEMS INTEGRATION

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

END OF SECTION

SECTION 08 3323

OVERHEAD GARAGE DOORS

PART 1 GENERAL **$ _____**

1.01 QUALITY ASSURANCE

A. Products Requiring Electrical Connection: Listed and classified by testing firm acceptable to the authority having jurisdiction as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.01 COILING DOORS

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

2.02 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 Type 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

3.01 INSTALLATION

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

B. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.

C. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.

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

E. Coordinate installation of electrical service with Section 26 2717.

F. Complete wiring from disconnect to unit components.

3.02 ADJUSTING

A. Adjust operating assemblies for smooth and noiseless operation

3.03 CLEANING

A. Clean installed components

B. Remove labels and visible markings

3.04 LOCATION

A. Provide overhead garage door and electric opener at new garage

END OF SECTION

SECTION 08 5213

METAL-CLAD WOOD WINDOWS

PART 1 - GENERAL

1.01 LOCATIONS

A. Remove all storm windows, window sashes, and window frames. Completely remove small basement windows and frames back to masonry openings.

B. Replace all windows with style and operation type to match existing. Window installation to include flexible rubberized flashing at sill, rubberized straight flashing at jamb and head,(07 2500) and pre-finished metal flashing at head (07 6200). Paint interior to match existing trim and casing.

C. Bow window in dining room to be venting picture window.

D. One window per bedroom must meet local egress requirements. Provide center horizontal muntin to match double hung.

1.02 SECTION INCLUDES

A. This Section includes:
   1. Clad wood windows.

1.03 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: beveled wood shims for window opening preparation.

B. Section 07 2500 - Weather Barriers: rubberized straight flashing, flexible rubberized flashing.

1.04 REFERENCE STANDARDS

A. AAMA/WDMA/CSA 101/I.S.2/A440 - Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors; American Architectural Manufacturers Association ; 2008.

1.05 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.

B. Performance Ratings: Meet AAMA/WDMA performance ratings as follows: minimum ODP 80 for air infiltration, DP40 for water infiltration, and DP40 for structural performance. Unit U-value of 0.34.

PART 2 - PRODUCTS

2.01 CLAD WOOD WINDOWS

A. Marvin Windows: Clad Ultimate.

B. Windows: Kiln dried wood, pre-primed and suitable for painted finish; water repellent and preservative treated; clad on the exterior with 0.055-inch thick extruded aluminum; sash corners slot and tenoned. Extrusion for frame may be different color than sash. Double hung type with top sash factory fixed in place for single-hung function, except fixed windows where indicated on Drawings. Operable sash may be tilted inward 90 degrees from bottom. Furnished with snap-on nailing fins or masonry clips where noted on drawings.

C. Glass: Clear insulating Low E Maximizer Plus glass, 3/4” thick with a low-conductance spacer, argon filled. Fixed in place with interior, removable wood stops. Provide tempered glass in windows in hazardous locations as defined in International Residential Code. Solar heat gain coefficient of 0.33 maximum.

D. Finish: Exterior aluminum cladding, available in 50 standard colors, conforming to AAMA 2604. Interior wood to be painted and finished under Section 09 9000 - Painting. Color to be determined.

E. Window Hardware:
   1. Surface Mounted Sash Lift: Zinc die-cast with oil rubbed bronze finish.
   2. Locks: Zinc die-cast cam lock and keeper with oil rubbed bronze finish.

3. Track: Vinyl extrusion, with Talon wood jamb liner on interior and aluminum exterior cover inserts.
4. Balancing System: Coil spring block and tackle system with nylon cord and fiber filled nylon clutch.

F. Screens: Provide screens on all operable windows. Half screen only on all single-hung windows (lower sash only). In lieu of standard fiberglass mesh cloth on screens, equip units with charcoal gray coated aluminum mesh insect screens on operable sashes.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Preparation: Prepare exterior sheathing and opening with air barrier and flashing as described in 07 2500 Weather Barriers and 06 1000 Rough Carpentry. Verify that size of rough opening vertically and horizontally is sufficient to allow for window unit, air barrier, flashings, shims, window anchorage accessories, chinking and sealant, etc. as described in the window manufacturer's requirements.

B. Installation: Comply with manufacturer's instructions. Set sash units plumb, level, and true to line, without warp or rack of frames and panels. Provide support and anchor tracks securely in place. Provide flashings, chinking and sealant. Install as per plan.

C. Adjust operating sashes, screens, and hardware for a tight fit at contact points and weatherstripping for smooth operation and weathertight closure.

END OF SECTION

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 LOCATIONS

A. First Floor:
   1. Living Room
   2. Dining Room
   3. Front Foyer

B. Second Floor:
   1. Throughout
   2. Except bathroom

END OF SECTION

SECTION 09 2116

GYPSUM BOARD 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:
   1. Application: Surfaces behind tile in wet areas including tub and shower surrounds and shower ceilings.
   2. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.

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, coated glass fiber 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. Cementitious Backing Board: Install over wood framing members where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.

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.

3.03 LOCATIONS

A. As required by suggested demolition, including but not limited to:
   1. All interior walls and ceilings

SECTION 09 3000

TILING

PART 1 GENERAL **$_____**

1.01 ALLOWANCES

A. Allowances for Wall Tile of $3.00 per square foot.

B. Allowances for hexogonal foor tile of $6.50 per square foot

1.02 FIELD CONDITIONS

A. Do not install adhesives in an unventilated environment.

B. Maintain ambient and substrate temperature of 50 degrees F (10 degrees C) during installation of mortar materials.

PART 2 PRODUCTS

2.01 TILE

A. Manufaturer: DalTile or Construction Manager approved equal

B. Ceramic Hexagonal Mosaic Tile : ANSI A137.1 , and as follows:
   1. Surface Finish: Unglazed Porcelain.
   2. Colors: To be selected by Construction Manager from manufacturer's standard range.

C. Glazed Wall Tile Type Ceramic: ANSI A137.1 , and as follows:
   1. Size and Shape: subway tile (_____).
   2. Surface Finish: High gloss.
   3. Colors: To be selected by Construction Manager from manufacturer's standard range.

2.02 TRIM AND ACCESSORIES

A. Ceramic Accessories: Glazed finish, same color and finish as adjacent field tile; same manufacturer as tile.
   1. Soap Dish: With handle, clam shell design, recess mounted; cast strength sufficient to resist lateral pull force of 75 lbs (34 Kg).

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

C. Thresholds: Marble, white or gray, 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 SETTING MATERIALS

A. Mortar Bond Coat Materials for Thin-Set Installations:

2.04 GROUTS

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

2.05 THICK-BED MATERIALS

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.

3.02 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over wood substrates, install in accordance with The Tile Council of North America Handbook Method F142, with standard grout, unless otherwise indicated.
   1. Where epoxy bond coat and grout are indicated, install in accordance with The Tile Council of North America Handbook Method F143.

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 AND BATHTUB WALLS

A. 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.

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

C. Grout with standard grout as specified above.

3.05 INSTALLATION - WALL TILE

A. On exterior walls install in accordance with The Tile Council of North America Handbook Method W202, thin-set over concrete and masonry with latex-Portland cement grout.

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

3.06 LOCATIONS

A. Bathtub Tile Surround
   1. 2nd Floor Bath

B. Bathroom Tile Floor
   1. 1st Floor Bath
   2. 2nd Floor Bath

SECTION 09 6429

WOOD STRIP AND PLANK FLOORING

PART 1 GENERAL **$ _____**

PART 2 PRODUCTS

2.01 MATERIALS

A. Wood Strip Flooring - Type to match existing:
   1. Grade: First.

B. Flooring Nails: Type recommended by flooring manufacturer.

C. Sleepers and Shims: Softwood lumber, pressure treated for moisture protection, 2 x 4 inch (50 x 100 mm) size.

PART 3 EXECUTION

3.01 INSTALLATION

A. Wood Flooring:
   1. Install in accordance with manufacturer's, MFMA, and NOFMA instructions; predrill and blind nail to sleepers.
   2. Lay flooring parallel to length of room areas. Verify alignment as work progresses.

B. Finishing: Specified in Section 09 9000.

3.02 LOCATION

A. Repair hardwood flooring as needed throughout

END OF SECTION

SECTION 09 6500

RESILIENT FLOORING

PART 1 GENERAL **$_____**

1.01 SUBMITTALS

A. Selection Samples: Submit manufacturer's complete set of color samples for Construction Manager's initial selection.

1.02 FIELD CONDITIONS

A. Maintain temperature in storage area between 55 degrees F (13 degrees C) and 90 degrees F (72 degrees C).

PART 2 PRODUCTS

2.01 SHEET FLOORING

A. Linoleum Sheet Flooring: Homogeneous wear layer bonded to backing, with color and pattern through wear layer thickness:
   1. Minimum Requirements: Comply with ASTM F2034, Type corresponding to type specified.
   2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
   3. Backing: Jute fabric.
   4. Wear Layer Thickness: 0.080 inch (2.0 mm), minimum, excluding backing.
   5. Pattern: Solid color.
   6. Color: To be selected by Construction Manager from manufacturer's full range.
   7. Seams: Heat welded.

B. Linoleum Welding Rod: Solid color linoleum produced by flooring manufacturer for heat welding seams, in color in color matching predominant flooring color.

2.02 STAIR COVERING

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Spread only enough adhesive to permit installation of materials before initial set.

C. Fit joints tightly.

D. Set flooring in place, press with heavy roller to attain full adhesion.

3.02 SHEET FLOORING

A. Lay flooring with joints and seams parallel to longer room dimensions, to produce minimum number of seams. Lay out seams to avoid widths less than 1/3 of roll width; match patterns carefully at seams.

B. Finish seams in linoleum by heat welding.

3.03 LOCATION

A. Kitchen to bottom of Second Foor Stair.

B. Mud Room

C. Space under Second Floor Stair

END OF SECTION

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 Manger.
   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 and Sealants: 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.
   1. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.

2.04 EXTERIOR PAINT SYSTEMS

A. Wood Traffic Surfaces:
   1. Applications include but are not limited to Decks, Stairs, and Porch and Mudroom Floors.
   2. _____: EXT 6.5B Alkyd Floor Enamel: Alkyd Floor Enamel MPI #27 or 59, gloss .
   3. EXT 6.5D Deck Stain: Wood Preservative MPI #37, Deck Stain MPI #33.

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.

B. Woodwork (Not Floors or Stairs):
1. Applications include but are not limited to casework, cabinets, and trim:

C. Wood Stairs:
1. _____: INT 6.5A Alkyd Floor Enamel: Floor Enamel MPI #27 or 59.

D. Plaster and Gypsum Board:
1. Applications include but are not limited to walls, ceilings, soffits, and bulkheads.

2.06 JOINT SEALANTS

A. Exterior Sealants:
1. Silicone, ASTMC920, Grade NS, Class 100/50, Uses M, G, O and A; single component.
a. Product: Tremco, Spectrum 3
b. Color: Match adjacent finished surfaces.
c. Use for:
1) joints between concrete and other materials.
2) joints between metal frames and other materials.
3) Joints between doors and windows and other materials.
4) Other exterior joints for which no other sealant is indicated.

B. Interior Sealants:
1. Silicone, ASTMC920, Grade NS, Class 100/50, Uses M, G, O and A; single component.
a. Product: GE Silicone II manufactured by Momentive Performance Materials, Inc.
b. Use for vertical surfaces and horizontal non-traffic surfaces:
1) Perimeter joints of exterior openings.
2) Horizontal joints between kitchen countertops/backsplash and gypsum board walls.
3) Horizontal joints between window sills and Jamb/head extensions.
4) Other interior joints for which no other type of sealant is indicated.

PART 3 EXECUTION

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.
   1. Remove, refinish or repaint work not complying with requirements.

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
   1. Walls and Ceilings: Sherwin Williams Low VOC
      a. Wall Color: to be determined by Construction Manager - eggshell finish
      b. Ceiling Color: Ceiling White - flat finish
   2. Interior Trim and Doors, including pantry cupboard doors Interior of fiber glass doors: Semi-gloss Sherwin Williams Low VOC
      a. Trim Color:to be determined by Construction Manager
   3. Stair to 2nd floor: Alkyd Floor enamel
      a. Color to be determined

B. Kitchen and Bath
   1. Walls and Ceilings: Eggshell Sherwin Williams Low VOC
      a. Wall Color: to be determined by Construction Manager
      b. Ceiling Color: Ceiling white
      c. Trim: to match cabinetry

C. Basement:
   1. Stairway to include treads and risers.
   2. Color: To be determined

D. Exterior:
   1. Paint all exterior siding, trim, soffit and fascia, entry doors and frames.
   2. Doors: Semi-gloss enamel acrylic as per manufacturer.
   3. Front Porch, Mudroom Floors, Stair to 2nd floor - Alkyd floor enamel
      a. Color: to be determined by Construction Manager.

END OF SECTION

SECTION 09 9300

STAINING AND TRANSPARENT FINISHING

PART 1 GENERAL **$_____**

1.01 SUMMARY

A. Additional product requirements, execution, and surfaces not to be finished are specified in Section 09 9000.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Base Manufacturer:
   1. Minwax: www/minwax.com
   2. Products of other manufacturers may be used under conditions specified in Section 09 9000.

2.02 INTERIOR TRANSPARENT FINISH SYSTEMS

A. Interior Wood - Natural Clear Finish: For all interior wood items unless otherwise indicated:
   1. Clean bead board walls and ceilings with soap and water, rinse.
   2. Include preparation as specified by manufacturer.
   3. Satin : 2 coats Minwax Polycrylic Water Based Protective Finish.
   4. Apply as per Manufacturer.

B. Interior Wood - Oil Stain with Clear Finish: For Mud Room Storage and bench.
   1. Preparation as specified by manufacturer.
   2. Open-Grained Wood: Fill and stain simultaneously with filler mixture as specified by manufacturer, using Tonetic Oil Wood Stain.
   3. Close-Grained Wood: 1 coat Tonetic Oil Wood Stain.
   4. 1 coat Sanding Sealer recommended by manufacturer.
   5. Satin : 2 coats Minwax Polycrylic Water Based Protective Finish.

PART 3

3.01 LOCATION:

A. MUDROOM WALLS AND CEILINGS: CLEAN AND SEAL.

B. MUDROOM STORAGE UNIT AND BENCH: SAND, STAIN AND SEAL.

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 EXECUTION

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 - DryLock by UGL in white, 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. 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.

PART 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 AreaWalls, 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:
   a. Refrigerator: FFHT2126LS/K Energy Star Rated 21 cu ft top mounted refrigerator, stainless steel, with icemaker
   b. Range: FFGF3053LS Frigidaire 30" Free-standing Gas Range, Self Clean, Clock
   c. Microwave/Hood: FFMV162LS Over the Range Micro/Hood, to be vented to exterior
   d. Dishwasher: FGHD2433KF Energy Star 24" Built-in Dishwasher, including dishwasher cord.
   e. Washer: FAFW3801LW Energy Star Residential Front Load Washer
   f. Dryer: FAQG7001LW Residential Gas Dryer

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, pluming 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

A. Allowances: See Section 01 2100 - $50 Allowance, for Mailbox and House Number

PART 2 PRODUCTS

2.01 APPLICATIONS

A. As per Construction Manager

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

3.02 LOCATION

A. House Number and Mailbox at Front Entrance

B. One House Number at Garage Overhead Entrance

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, 3 - 24" towel bars and toilet paper holder at 2nd Floor

B. Install metal 24" towel bar, toilet paper holder at 1st Floor

C. Manufacturer: Saga Series Toilet Accessories or equal to be determined by construction manager
   1. Hand Towel Ring: Model # DN6886xx
   2. Towel Bar: Model # DN6818xx
   3. Toilet Paper Holder: Model # DN6808xx

D. Finish to match faucet. (chrome)

2.02 MEDICINE CABINET

A. Install a medicine cabinet with hinged plate glass mirror and two shelves over sinks.

B. Manufacturer: to be determined
   1. Recessed
   2. Wood frame
   3. Color: white

2.03 SHOWER CURTAIN ROD

A. Install a show curtain rod using wall anchors.

B. Manufacturer: Moen, Adjustable Shower Rod. Model # DN2160xx

C. Chrome finish to match faucet

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

3.02 LOCATIONS

A. 1st floor powder room.

B. 2nd floor bathroom

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. Kitchen and Bathroom Cabinet and Counter Top Allowance = $7000

C. Allowance covers material and not labor

1.02 SUBMITTALS

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

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 Schrock Select, Medallion or Mid-Continent
   1. Cabinets: Schrock Select Graton Square -maple
   2. Color: Alpine Cocoa

B. Pantry cupboard as per plan and attached shopping list: Closet Maid
   1. Door style and finish: See 08 429 and 09 900

2.02 COMPONENTS

A. Kitchen Cabinets: See Kitchen Design

B. Bathroom Vanity Cabinet: Single 48 inch Vanity Cabinet:
   1. Schrock Select Graton Square -maple
   2. Color: Alpine Cocoa

C. Cabinet Construction: Plywood sides and bases.

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.
   2. Manufacturer:

E. Door and Drawer Fronts: Solid wood.

F. Drawer Box Construction: Plywood with dovetail joinery

2.03 HARDWARE

A. Drawer and Door Pulls: Schrock True Traditional Knob _____, ___ inches (___ mm)

B. Drawer Slides: Extension arms, steel construction.

2.04 FABRICATION

A. Shop assemble casework for delivery to site in units easily handled and to permit passage through building openings.

B. Fabricate corners and joints without gaps or inaccessible spaces or areas where dirt or moisture could accumulate.

2.05 FINISHES

A. Exposed To View Surfaces: Glaze of Alpine Cocoa color as selected.

PART 3 EXECUTION

3.01 LOCATIONS

A. Kitchen Cabinets & Counter Top: Kitchen

B. Bathroom Vanity: 2nd floor bath

3.02 INSTALLATION

A. Install casework, components and accessories in accordance with manufacturer's instructions.

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

3.03 LOCATIONS

A. Provide base and wall cabinets and plastic laminate countertops at Kitchen. Countertop installation to include side and back splashes.

B. Provide bath vanity cabinets at 2nd floor bath, including integral sink.

C. Provide cabinet over toilet at second floor to match.

D. Provide Closet Maid pantry cupboard with light at kitchen.

1. See attached for Closet Maiid pantry system shopping list.

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

2.01 RESIDENTIAL INDIRECT-FIRED WATER HEATER

A. GENERAL REQUUIREMNTS
   1. Hot water tanks shall be designed for production of domestic hot water using hot water as heating source. The principle consist of two concentric tanks. The inner tank contains domestic hot water and the outer tank contains heating systems water.
   2. The inner tank material shall be 304L corrugated stainless steel or higher corrosion resistance stainless steel and have a maximum working pressure of 150 psi. The cold water connection into this tank shall extend to near the bottom of the tank. The hot water connection shall be at the top of the tank. Thanks shall be designed to be self-descaling.
   3. The outer tank shall be surrounded with a minimum of 2 inches of CFC/HCFC-free rigid polyurethane foam insulation with an equivalent "R" value of R-16.

B. MANUFACTURER: Amtrol Inc., Boilermate or like product approved by Project Manager
   1. Hot water tank shall have ETL certification.

2.02 ACCESSORIES

A. Power control wiring

B. Expansion tank

C. Circulation pump

D. Set-back Thermostat

PART 3 EXECUTION

3.01 INSTALLATION

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

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

C. Hot water tank shall be installed by a heating contractor whose principal occupation is the sale and installation of plumbing, heating, and or air conditioning equipment and shall be installed in compliance with all applicable codes.

D. Provide water & gas supply & flue piping

3.02 LOCATIONS

A. Replace water heater with a power-vented water heater with an EF of .67 or greater. Include pressure and temperature release valve, discharge tube to within 6' of floor and PVC flue to power vent to exterior.

B. Provide venting for water heater through rim joist.

C. Water Heater - basement

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

E. Refer to NEC Specification located in the appendix for additional information

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

A. Kitchen Sink:
   1. Sink: Install a 18 gauge 33"x22"x9" double bowl, stainless steel, self rimming kitchen sink. Manufacturer: Franke, Model number DFD901BX, or like product to be approved by Project Manger
   2. CA87004
   3. Faucet: Manufactured by Moen, (Chrome) Model CA87004 or like product to be approved by Project Manager
      a. Flow Rate: 1.5 GPM maximum

B. Laundry Tub: Remove existing sink to code legal dump.
   1. Sink: Install single bowl, 24" fiberglass laundry tray to fin under faucet.
   2. Faucet: 1.5 GPM

C. Bathroom Vanity:
   1. Sink: 49 inch solid recessed oval bowl vanity top Manufactured by Imperial Marble. Model number RCxx22SPW - White.
   2. Faucet: Double lever faucet with 1.5 GPM maximum flow rate
      a. High Arch Faucet: Manufactured by Moen, Model Number (Chrome) CA84003

D. Bathroom Pedestal:
   1. Sink: Install a white, vitreous china, pedestal lavatory
      a. SKU # 607-6796 and 607-6797 at Menard's
   2. Faucet: Single lever faucet with 1.5 GPM maximum flow rate
      a. High Arch Faucet: Manufactured by Moen, Model Number (Chrome) CA84003

2.02 DUAL FLUSH TOILET

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

A. Bathtub: ASME A112.19.4M porcelain on steel bathtub with slip resistant surface, contoured front apron, 60 inches (1500 mm) long, 30 inches deep, 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. Moen "Traditional" tub faucet and Tub/shower valve in chrome.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install each fixture with trap, easily removable for servicing and cleaning.

B. Install new PVC or ABS waste and vent piping from basement to kitchen sink, all bathroom fixtures, and laundry sink.

C. Install flexible PEX piping with a minimum number of coupling to all fixtures. Install mechanical connectors and shut off valves if appropriate for each fixture.
   1. Six 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. Replace the water meter to comply with city replacement program and existing code.

F. Provide chrome plated rigid or flexible supplies to fixtures with loose key stops, reducers, and escutcheons.

G. Install components level and plumb.

H. Install and secure fixtures in place with wall supports and bolts.

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

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

K. Solidly attach water closets to floor with lag screws. Lead flashing is not intended hold fixture in place.

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

3.02 LOCATIONS

A. Exterior:
   1. Frost proof Hose Bibb - move to more accessible location at west side of home.

B. Basement:
   1. Laundry tub installation
   2. Laundry appliance hook up
   3. Domestic Water
   4. Indirect-Fired Water Heater
   5. Provide valves on gas supply to water heater, boiler and clothes dryer

C. Main Level:
   1. Bathroom:
      a. Dual Flush Toilet
      b. Pedestal Sink
   2. Kitchen:
      a. Kitchen Sink
      b. Dishwasher
      c. Replace gas line to range

D. Second Floor
   1. Bathroom:
      a. Dual Flush Toilet
      b. Vanity Sink
      c. Bath Tub/Shower

END OF SECTION

SECTION 23 0000

RESIDENTIAL VENTILATION

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 BATHROOM VENT FAN/LIGHT FIXTURE:

A. All vent fans shall be energy star rated ceiling mounted fan/light fixtures rated for a minimum 100 watt exterior ducted vent fan capable of a minimum of 80 CFM

B. Product: Panasonic Whisper Quiet with light or like product to be approved by the Project Manger

C. Switch: Light and fan shall use separate switches and fan shall be **equipped with a humidistat sensor.**

D. Ducting: Install 4" metal duct and vent to the exterior ideally through a gable end using a 4" hooded vent with damper.

1. All duct seams shall be sealed with duct mastic. Insulate duct work with vinyl or foil faced R-6 minimum duct insulation.
2. Repair any damage to the ceiling installation or air seal fan/light assembly to the ceiling with low VOC caulk.

2.02 DUCT ASSEMBLIES

A. Low Pressure Supply (Heating Systems): 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.

B. Low Pressure Supply (System with Cooling Coils): 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.

C. General Exhaust: 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.

D. Kitchen Cooking Hood Exhaust: 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.

2.03 DUCTWORK FABRICATION

A. Fabricate and support in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated.

B. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.

C. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.

D. Fabricate continuously welded round and oval duct fittings in accordance with SMACNA HVAC Duct Construction Standards - Metal. Insulated to R6.

2.04 KITCHEN HOOD EXHAUST DUCTWORK

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

PART 3 EXECUTION

3.01 INSTALLATION

A. Kitchen, Bathroom, Powder room as per plans.

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.

E. Baseboards: Weil McLain Snug Cast Iron Baseboards.

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. Gas Burner: Atmospheric type for natural gas adjustable combustion air supply, pressure regulator, gas valves, manual shut-off, intermittent spark or glow coil ignition, flame sensing device, and automatic 100 percent shut-off.

B. Gas Burner Safety Controls: Energize ignition, limit time for establishment of flame, prevent opening of gas valve until pilot flame is proven, stop gas flow on ignition failure, energize blower motor, and after air flow proven and slight delay, allow gas valve to open.

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

D. 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. New base board radiators: Weil-McLain cast iron Snug Radiator

B. Power control wiring

C. Expansion Tank

D. Circulation Pump

E. Set-back Thermostat

PART 3 EXECUTION

3.01 INSTALLATION

A. Install according to manufacturers installation instructions.

B. All work to be done in neat and workmanlike manner.

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

D. Provide all piping to radiators.

E. 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.

C. Install radiators as needed throughout as per plan.

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 silhouette, 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. Performace 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 footcandle at grade level for security.
6. **Exterior lighting** at garages is required to be adequate so as to not endanger health or safety. An average of one footcandle at the pavement is required. Exterior lighting must be in conformance with other city codes.
7. **Basement:** One lighting outlet is required for each 200 square feet of floor space. At least one of the required basement lighting outlets shall be switched 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. Provide all new wiring and devices as required by the work covered in the Scope of Work.

E. Replace existing electrical service with a residential, 150 amp, single phase, 3 wire electric service 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 Coverplates: Provide all White 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 Rangehood 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: Panasonic Whisper Quiet or like product to be approved by the Project Manger
   2. Switch: Light and fan shall use separate switches. Fan shall be equipped with a humidistat sensor at 2nd floor bath. See section 23 0000
   3. Ducting: Install 4" rigid 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

A. Install in accordance with manufacturer's instructions.

B. Building Codes: The extent of electrical work indicated in the Scope of work is stated generally to indicate end result of work. The Contractor is responsible for making a thororugh 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 requirments and must pass City of Saint Paul field inspection. Any work that does not meet codes or pass inspection must be corrected to the satisfaction of the city inspector at no additional cost to the Owner.

C. Remove and dispose of all abandoned wiring and devices. Modify existing wiring and devices as indicated.

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

E. All new recepticals and switches

F. All new outlet covers

G. All drilling, cutting and fastening shall be neat and true, and shall not critically damage framing members.

3.02 LOCATIONS

A. Throughout
   1. House
   2. Garage

B. Bath Fans:
   1. Second floor bath to be equipped with humidistat
   2. Powder room and second floor sized to room.

END OF SECTION

SECTION 26 5101

HRA LIGHTING

PART 1 GENERAL **$_____**

1.01 PRICE AND PAYMENT PROCEDURES

A. Allowances: See Section 01 2100 - Allowances, for cash allowances affecting this section.
   1. $2,000 allowance for all lighting fixtures.
   2. Allowance does not include labor.

PART 2 PRODUCTS

2.01 INTERIOR LIGHTING

A. Progress Lighting (available at Home Depot)
   1. Product Series: "Madison", Antique Bronze Finish
      a. Flush Ceiling Light: Model P3311-20 (3)
      b. Flush Ceiling Light: Model P3312-20 (4)
      c. Mini Pendant: Model P5708-20
      d. 2 Light Vanity: Model P3162-20
      e. 4 Light Vanity: Model P3164-20
      f. Foyer and Top of Stair: Model P3792-20 (2)
      g. 5 Light Chandelier: Model P428-20 - install arms up
      h. 3 Light Chandelier: Model P3663-20

B. Miscelaneous Kitchen Lighting
   1. Provide and install Energy Star Rated under cabinet lighting (2)
   2. Provide and install Energy Star Rated pantry light.

2.02 EXTERIOR LIGHTING

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

B. Progress LIghting
   1. Product Series: "Reside" Collection in Oil Rubbed Bronze
      a. 1-light Wall Lantern Model # P5977-108 (2)
      b. 1-light Hanging Lantern Model # P6502-108
      c. Color: Oil Rubbed Bronze

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. Additional ceiling mounted pull chain lights in various location throughout the basement where necessarily.

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

A. Replace all light fixtures

B. Provide hardwired and switched undercabinet light fixtures at kitchen (2).

C. Provide wiring and switch for pantry cabinet interior, switched inside.

D. Provide basement lighting as per 2.03

E. FIRST FLOOR - **See A8 for Lighting Plan and Switches**

1. Front Foyer - Ceiling fixture.
2. Living-room - Ceiling Mounted.
3. Dining room - Ceiling Mounted
4. Kitchen - Ceiling Mounted
5. Kitchen: Pendant over sink
6. 2nd Floor stair landing - Ceiling fixture
7. Bathroom - 2 light vanity
8. Base of Stair to 2nd Floor: - ceiling light.
9. Mud room - ceiling light

F. UPPER LEVEL: **See A8 for Lighting Plan and Switches**

1. Hall - 2 ceiling lights
2. Bedroom 1 - Ceiling fixture
3. Bedroom 2 - Ceiling fixture
4. Bedroom 3 - Ceiling fixture
5. Closets: Contractor provided as per plan
6. Bathroom - Vanity Light, wall switch. Fan/Light combo, wall switch and humidistat.

G. EXTERIOR:

1. Front porch - ceiling fixture, wall switch inside front door
2. Rear entry - Wall Lantern, wall switch inside kitchen door
3. Motion detector at garage
4. Wall Lantern at garage service door, wall switch inside kitchen door and garage service door (3-way)

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 (2) 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 Marty McCarthy by email at Insert HRA PMs 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. Build up ground slope at foundation wall using clean fill.

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

C. Adjust window wells for new slope.

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

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

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

2.03 LOCATIONS

A. See Landscape Plan.

1. This plan does include a raingarden

END OF SECTION

SECTION 32 1313

CONCRETE PAVING

PART 1 GENERAL **$_____**

1.01 SUMMARY

A. Refer to 03 3000 for cast in place concrete.

PART 2 PRODUCTS

2.01 PAVING ASSEMBLIES

A. Concrete Sidewalks: 3,000 psi (20.7 MPa) 28 day concrete, 4 inches (100 mm) thick, buff color Portland cement, exposed aggregate finish.

2.02 FORM MATERIALS

A. Wood form material, profiled to suit conditions.

PART 3 EXECUTION

3.01 FORMING

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

3.02 COLD AND HOT WEATHER CONCRETING

A. Follow recommendations of ACI 305R when concreting during hot weather.

B. Follow recommendations of ACI 306R when concreting during cold weather.

C. Do not place concrete when base surface temperature is less than 40 degress F (4 degrees C), or surface is wet or frozen.

3.03 FINISHING

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

3.04 LOCATIONS

A. See Landscape and Site Plans

B. Include 10" NDS Catch Basin installed in walkway as per Landscaping Plan.

C. Install 4" Schedule 40 PVC pipe under concrete walkway connecting to catch basin as per Plan

END OF SECTION

SECTION 32 3113

CHAIN LINK FENCES AND GATES

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 MATERIALS AND COMPONENTS

A. Materials and Components: Conform to CLFMI Product Manual.

B. Fabric Size: CLFMI Heavy Industrial service.

C. Intermediate Posts: Type I round.

D. Terminal, Corner, Rail, Brace, and Gate Posts: Type II round.

2.02 FINISHES

A. Components (Other than Fabric): Galvanized in accordance with ASTM A123/A123M, at 1.7 oz/sq ft (530 g/sq m).

B. Hardware: Hot-dip galvanized to weight required by ASTM A153/A153M.

C. Color(s): Black.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install framework, fabric, accessories and gates in accordance with ASTM F567.

B. Set intermediate posts plumb , in concrete footings with top of footing 2 inches above finish grade. Slope top of concrete for water runoff.

3.02 LOCATION

A. Top of retaining wall: east lot line.

END OF SECTION

SECTION 32 3223

SEGMENTAL RETAINING WALLS

PART 1 GENERAL **$ _____**

1.01 SUBMITTALS

A. Concrete Units:
   1. Manufacturer's product data.

B. Soil Reinforcement:
   1. Manufacturer's product data.

C. Shop Drawings: Engineering drawings for installation, including elevations, large-scale details of elevations, typical sections, details, and connections, soil reinforcement, and drainage provisions.

D. Soil Reinforcement to Unit Connector: One connector.

PART 2 PRODUCTS

2.01 RETAINING WALLS

A. Contractor is responsible for design of the retaining walls.

B. Design Standard: Design retaining walls to be capable of withstanding the effects of gravity loads due to soil pressures resulting from grades indicated, determined in accordance with NCMA TR 127 Design Manual for Segmental Retaining Walls; perform all stability analyses specified in this standard.

C. Shear Resistance: Design the wall not to exceed the capacity of materials and soils to resist shear:

D. Soil Reinforcement:
   1. Test reinforcement to be used in accordance with ASTM D6706 using soil taken from project site.

E. Drainage: Design to prevent water accumulation in retained soil; use drainage fill and drainage pipe as required; provide outlets at 50 foot (15 m) intervals along length of wall, minimum.

2.02 MATERIALS

A. Retaining Wall Units: Machine-formed concrete blocks of shapes and sizes suitable for the retaining wall configuration required and complying with ASTM C1372 and the following:
   1. Face Color: Natural cement gray ; all units from the same production run.
   2. Texture: Split face, on all exposed surfaces.

B. Cap Units: Portland cement concrete machine-formed solid blocks, matching segmental concrete units, complying with ASTM C1372, with abutting edges saw cut or formed to provide tight fitting, flush end-to-end joints.
   1. Depth: To fully cover wall units.

C. Shear Connectors: Connection method to withstand design stresses and prevent movement of segmental units, and to hold soil reinforcement in proper design position during grid pre-tensioning and backfilling.

D. Soil Reinforcement: Polymeric geosynthetic specifically fabricated for use as soil reinforcement, dimensionally stable and able to retain geometry under manufacture, transport, and installation.
   1. Polymeric Material: 100 percent virgin resin with maximum of 5 percent in-plant regrind material; polypropylene, polyethylene, or polyester.

E. Drainage Filter: Geosynthetic textile.

F. Aggregate for Leveling Pad: Compacted sand, gravel, or crushed rock complying with one of the following:
   1. Meeting requirements of ASTM D1241, Gradation C.
   2. Do not use pea gravel.

G. Concrete for Leveling Pad: Unreinforced concrete with compressive strength of 3,000 psi (20 MPa)

H. Drainage Fill: Clean, freely draining aggregate placed within, between, or immediately behind segmental units; do not use pea gravel; use one of the following:
   1. Aggregate as approved by Construction Manager.
   2. Aggregate meeting requirements of ASTM D448, Size No. 57.
   3. Crushed stone or coarse gravel, 3/8 to (3/4 mm); no more than 5 percent passing No. 200 sieve.
   4. Crushed stone or coarse gravel, meeting requirements of ASTM D422.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer instructions, and applicable codes and regulations and as per landscaping plan.

B. Segmental Concrete Units:
   1. Place first course of units on leveling pad; check alignment and level. Check for full contact with base and for stability.
   2. Do not leave gaps between units.
   3. Place succeeding courses. Check for proper alignment and batter.

C. Soil Reinforcement: Install each layer on fully compacted fill.

D. Drainage Fill: Place drainage fill in, between, and behind units.

E. Backfill: Place, spread, and compact backfill from behind drainage fill to undisturbed soil.

F. Cap Units: Install and top two courses of units with masonry adhesive.

END OF SECTION

SECTION 32 9223

SODDING

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 MATERIALS

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

PART 3 EXECUTION

3.01 LAYING SOD

A. Moisten prepared surface immediately prior to laying sod.

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

C. Lay sod smooth and tight with no open joints visible, and no overlapping; stagger end joints 12 inches (300 mm) minimum. Do not stretch or overlap sod pieces.

D. Water sodded areas immediately after installation. Saturate sod to 4 inches (100 mm) of soil.

3.02 MAINTENANCE

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

3.03 LOCATION

A. See Landscape Plan

B. Site Work, as needed. (no bare soil permitted)

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 or materials for retaining walls.

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. Plan includes a River Birch tree and a Service Berry shrub.

2.02 MULCH MATERIALS

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

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 Raingarden 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

END OF SECTION

Neighborhood Energy Connection

Residential Energy Specification

Customer: City of Saint Paul

Address: 655 Cook Ave E

Auditor: Michael Childs

Phone: 651-221-4462 x145

Spec ID#	Spec Title	Specification	Location / Notes
204	Replace Boiler with 90% AFUE+ Hot Water Boiler & Sidearm water heater	Replace existing boiler with a gas fired, modulating, direct vent, 90% AFUE+ hot water boiler. Installation to include all power & control wiring, a setback thermostat, expansion tank, one circulation pump, water & gas supply & flue piping. The installation is required to maintain a minimum 70 F indoor temperature evenly throughout the conditioned space when outdoor temperature is - 10 F. Install an indirect fired 40 gallon water tank as a separate zone on their boiler with a maximum heat loss rating of 1 degree per hour. Remove existing boiler, recycle all metal components and dispose of all other materials in a code legal dump.	
310	Install Central Air Conditioning Unit	Install 13 EER split system central air conditioning unit, following local building code. Using OEM performance information and industry-approved procedures, confirm that the selected equipment satisfies/meets the load requirements at the system design conditions.	Look into Modulating Ductless Mini-split option

500	Seal Attic Bypasses	Contractor shall seal all attic bypasses. Bypasses shall be defined as any break in the envelope of a house between a heated living space and an unheated area or exterior. Bypass locations include, but are not limited to, the following areas: chimneys, soil stacks, end walls, dropped ceilings, open plumbing walls, beneath knee walls and around duct work, electrical work and attic access points. Bypasses shall be sealed in such a manner that the movement of air through the bypass is essentially stopped. "Essentially stopped" means that air leakage will not be detected by an infrared scan when the house is pressurized to 30 Pascals. Materials to be used for sealing bypasses depend on the size and location of the bypass and meet code requirements. These materials include high quality caulks (20-year life span), polyethylene rod stock, foam, sheetrock, sheet metal, extruded polystyrene and densely packed insulation.	
510	Blow Open Attic to R-50	All bypasses shall be sealed before insulating in such a manner that the movement of air through the bypass is essentially stopped. Blow insulation to depth indicated on manufacturer's coverage chart, consistently and evenly to R-50. Insulation in the peak attic must be marked with a ruler to measure depth and a sign with the number of bags used and the date of the installation.	
516	Insulate Slants to capacity	Determine cavities are free of hazards and can support dense packing pressures, locate drilling hazards, control dust when drilling from interior. Dense pack cellulose to a minimum density of 3.5 lbs/ft^2 or dense pack spider fiberglass per manufacturer's instructions.	
524	Insulate Flat Roof	All bypasses shall be sealed before insulating in such a manner that the movement of air through the bypass is essentially stopped. Insulate to R-50. If there is not enough room, insulate to capacity.	**Dormer roof.**

526	Insulate Above Bay Window	Insulate space above bays to capacity. Insulate floor to capacity. Access holes must be patched, plugged and painted as necessary.	**These are the 2nd floor overhangs on the west side.**
532	Build Dam, insulate and weather strip attic hatch	Access hatch door to attic shall be insulated to R-50 and insulation dam constructed around opening. Opening shall be weather stripped to provide a tight seal.	
610	Wall insulation - Exterior Application: Remove Vinyl Siding, Drill, Dense Pack, Plug and Replace Siding	Siding shall be removed before drilling access holes. Determine cavities are free of hazards and can support dense packing pressures, locate drilling hazards, control dust when drilling from interior. Completely fill each cavity to a consistent density. Dense pack cellulose to a minimum density of 3.5 lbs./cubic foot or dense pack spider fiberglass per manufacturer's instructions. Siding must be replaced without damage and nailed back with appropriate galvanized nails.	**Option 1.**
616	Wall insulation - Interior Application: Dense Pack Cellulose	Exterior walls insulated from inside the house shall be drilled through to provide access.	**Option 2.**
620	Wall insulation - Interior Application: Spray foam open cavities	Follow manufacturer's instructions to completely and evenly fill the cavity. Call the NEC for inspection before sheet rocking.	**Option 3.**
800	Air Seal Rim Joist	Seal cracks and holes in rim joist using caulk, foam or other air tight materials.	
1000	Install ENERGY STAR Rated Kitchen Fan	Install an ENERGY STAR rated exhaust fan connected with insulated rigid ductwork into a dampered vent.	

1010	Install ENERGY STAR Rated 2-stage Bathroom Fan	Install an ENERGY STAR rated two-speed bathroom fan .8 sones or less, with a pre-set low-speed of 10-30 CFM and a high-speed boost capability of 70-110 CFM initiated by a wall switch or motion detector. Vent bathroom fan using rigid duct and insulated with fiberglass and vented out with dampered roof vent.	
1200	Replace incandescents with CFLs	Replace incandescent bulbs with ENERGY STAR rated compact fluorescent lights. Install fixtures that meet the lighting needs of the particular area.	
1210	Install ENERGY STAR Rated Washing Machine	Connect new ENERGY STAR rated clothes washer sized appropriately for the household. Use braided steel water supply lines and a smooth rubber drain line connected to a 2 inch drain with trap.	
1212	Install ENERGY STAR Rated Dishwasher	Install ENERGY STAR rated dishwasher including all alterations and connections to plumbing and electric system. Remove existing dishwasher, recycle all metal components and dispose of all other materials in a code legal dump.	
1214	Install ENERGY STAR Rated Refrigerator	Install ENERGY STAR rated refrigerator sized appropriately for the household. Remove existing refrigerator, recycle all metal components and dispose of all other materials in a code legal dump.	

Color and Material Schedule

Project Address: 655 Cook Avenue

Contractor:

	Location	Description	Manufacturer	Finish	Color	Notes
Lighting	Second Floor Hall, Kitchen at stair to 2nd floor. (3)	Flushmount Ceiling 1 light	Progress Lighting, Madison		Oil Rubbed Bronze	at Lowes
	Living Room, Bedrooms, Bonus Room, Mudroom (5)	Flushmount Ceiling 2 light	Progress Lighting, Madison			
	Powder Room	2-Light Vanity	Progress Lighting, Madison		Oil Rubbed Bronze	at Lowes
	Bathroom	4 Light Vanity	Progress Lighting, Madison		Oil Rubbed Bronze	at Lowes
	Kitchen	Pendant Above Sink	Progress Lighting, Madison		Oil Rubbed Bronze	at Lowes
	Kitchen	3 Light Chandelier	Progress Lighting, Madison		Oil Rubbed Bronze	at Lowes
	Kitchen	Recessed or Track lighting	to be determined			
	Kitchen	Under Cabinet lighting (2)	to be determined			
	Dining Room	5 Light Chandelier	Progress Lighting, Madison		Oil Rubbed Bronze	at Lowes
	Front Foyer, 2nd floor Stair landing	Mini Chandelier P3792-20	Progress Lighting, Madison		Oil Rubbed Bronze	at Lowes
	Garage Service Door, Mudroom Entrance	1- Light Wall Lantern	Progress Lighting, Reside		Oil Rubbed Bronze	at Lowes
	Front Porch Ceiling	1 - Light Hanging Lantern	Progress Lighting, Reside		Oil Rubbed Bronze	at Lowes
	Garage Door	Ceiling Light	Motion Detector as per Section 26 5101			at Menard's
	Garage Lighting	Contractor Provided to Code				
	Closet Lighting	Contractor Provided to Code				
	Bathroom Fans (2)	Panasonic Whisper Quiet with Humidistat				
	Basement Lighting	Contractor Provided to Code				
	Outlet and Switch plate Covers				White	
Plumbing Fixtures	Kitchen	Kitchen Faucet	Moen, Chrome Model: CA87004		Chrome	at Menards
	Kitchen	Kitchen Sink	Franke 33x22x9" Model: DFD901BX		Stainless	Special Order at Menard's
	Bath and Powder Rooms (2)	Bathroom Faucet	Moen, High Arc CA84003		Chrome	at Menards
	Bathroom	Recessed Oval Bowl Vanity Top	Imperial Marble, RCxx22SPW		White	at Menards
	Bathroom	Shower	Moen Traditional Posi-Temp Model: 82008		Chrome	at Menards
Casework and Furnishings	Kitchen	Kitchen Cabinets	Schrock Select "Graton Square"	See Plan	Alpine Cocoa	Maple cabinet
	Kitchen	Kitchen Cabinet Hardware	Schrock "True Traditional" knob		oil-rubbed bronze	Menards/Home Depot
	Kitchen	Kitchen Counter Top	WilsonArt		to be determined	at Menards
	Kitchen	Bathroom Vanity	Schrock Select "Graton Square"		Alpine Cocoa	at Menards
	Bathroom	Medicine Cabinet	To be determined		White	at Menards/Home Depot
	Bathroom	Toilet Topper	To be determined		White	at Menards/Home Depot
	Bathroom	Towel Ring	Sage Series Model: DN6886		oil-rubbed bronze	at Menards
	Bathroom	Towel Bar	Sage Series Model: DN6818		oil-rubbed bronze	at Menards
	Bathroom	Toilet Paper Holder	Sage Series Model: DN6808		oil-rubbed bronze	at Menards
	Bathroom	Curved Shower Rod	Moen Adjustable Model: DN2160		Chrome	at Menards
	Walls Throughout	Wall Paint	Sherwin Williams	eggshell	to be determined	
	Walls Kitchen	Wall Paint	Sherwin Williams No VOC	eggshell	to be determined	

	Walls Bathroom	Wall Paint	Sherwin Williams No VOC	eggshell	to be determined	
	Walls Bathroom	tile	Daltile Subway tile	high gloss	White	
	Ceilings Throughout (except kitchen and bathroom)	Ceiling Paint	Sherwin Williams No VOC	eggshell	Ceiling White	Knock Down Finish
	Ceiling Kitchen and Bath	Ceiling Paint	Sherwin Williams No VOC	semi-gloss	High Reflectance White	Smooth Finish
	Trim/Doors Throughout	Trim	Sherwin Williams No VOC	semi-gloss	to be determined	
	Mudroom walls, ceilings, built-ins	Stain/Seal	MinWax Polycrylic Water Base	?	match w.w./clear	
	New stair treads	Floor	Alkyd Floor Enamel	semi-gloss	to be determined	

Flooring	LR, DR, Halls, Bedrooms	Refinished Wood			clear	
	1st & 2nd Floor Baths	Tile	DalTile hexagonal unglazed porcelain	flat	White	at Menard's
	Kitchen, Mud Room, Kitchen Hall	Resilient Flooring	Linoleum Sheet		to be determined	
Appliances	Kitchen	Range	Frigidaire 30" Gas Rang FFGF3053LS		white	
	Kitchen	Microhood	FFMV16LS Vented to Exterior		white	
	Kitchen	Refrigerator	Energy STAR, 30" wide FFHT21261LS/K		white	
	Kitchen	Dishwasher	Energy STAR, 24" Frigidaire FGHD2433KF		white	
	Basement	Washer	Energy STAR, FAFW380ILW		white	
	Basement	Dryer	Gas FAQG700ILW		white	
Doors						
	Front Entry	Insulated Fiberglass	Therma-Tru Smooth Star 2 Panel 3/4 Light			at Lowes - Order
	Rear and Kitchen Entry	Insulated Fiberglass (2)	Therma-Tru Smooth Star 2 Panel 1/2 Light			at Lowes - Order
	Garage Service Door	Insulated Steel	Master Craft 4 or 6 panel			at Menards
	Interior doors	Wood (pine)	Mastercraft Custom 4 Panel		pre-primed white	at Menard's - order
	Interior French and Swinging	Wood and glass	Mastercraft Custom 15 and 10 light		pre-primed white	at Menard's - order
	Door Hardware	Interior Doors	Schlage Georgian knobs		oil-rubbed bronze	at Menard's
	Door Hardware - Exterior	Main Entry	Schlage Camelot with interior Georgian knob		oil-rubbed bronze	at Menard's
	Door Hardware - Exterior	Garage, Kitchen and Rear Entry	Schlage Georgian knobs		oil-rubbed bronze	at Menard's
Exterior Finishes	Roof		GAF Elk 30 year HD shingle		Weathered Wood	
	Corbels and Porch Columns	original to the house	Safe Encasement Products paint	flat		at Diamond Vogel
	Soffit Panels	Hardie		semi gloss	to be determined	
	House/ Garage Siding	Lap Siding	Sherwin Williams Low/No VOC	flat	to be determined	
	House/Porch/Garage Trim		Sherwin Williams Low/No VOC	semi gloss	to be determined	
	Entry Doors/Garage Door		Sherwin Williams	semi gloss	to be determined	
	Porch Deck	Alkyd Enamel		gloss	to be determined	
	Gutters/Downspouts		Edco		to be determined	at United Products