Specifications
716 Wilson
Dayton's Bluff Housing Corporation
Saint Paul, Minnesota

November 15, 2012

716 Wilson Avenue is a 1-¾ story house, whose Colonial Revival style, prevalent in the early Twentieth Century, is defined by architectural features such as a steep gabled roof with slightly flared eaves, narrow lap siding and wide door and window trim. The house's façade provides a well-balanced composition of windows, wide gable trim and an enclosed front porch. Its west side, highly visible from Wilson Avenue, has a slightly extending Dining Room bay with a prominent side roof gable above. The house's original exterior architecture is intact, and the proposed design documents intend to maintain the Colonial Revival character in accordance with the building's status in the Dayton's Bluff Historic District.

The renovation will consist of a thorough kitchen and bath remodeling and complete new basement which will provide two additional bedrooms and bath, in addition to the two bedrooms on the second floor. Completely new plumbing, heating, air conditioning, and electrical system, as well as hardwood floor polyurethane finish, with all interior painted surfaces and trim refinishing will give the house a more comfortable and extended life. The property will gain a new detached garage at the rear of the property, and a new concrete retaining wall along the east property boundary will provide an improved back yard.

Division One: General Conditions

The General Conditions of the contract for construction are AIA document A201, 1976, bound herein or available upon request.

Division One General Requirements

101. **Contract Documents**: The project consists of the complete construction within the scope of these contract documents; **including all labor, materials, equipment, accessories and related services necessary to furnish and install the work complete and as indicated on the drawings and specifications.** The agreement between the owner and contractor, the conditions of the contract, instructions to bidders, performance and payment bonds, the drawings, the specifications, all addenda issued prior to execution of the contract and all modifications thereto shall constitute the contract documents for the project. All work shall be completed as indicated in these documents. Any variation in the work from that shown in the documents which would affect the architectural design or the technical quality of the project must be approved in writing by the owner or the construction manager. In submitting a proposal and in acceptance of a contract award, the contractor represents that he/she has examined the site and reviewed the entire set of contract documents, including those for other contracts, and agrees to be bound by all the conditions of the site; existing conditions, and all construction documents without additional cost to the owner.

<u>These Specifications were drafted with the State of Minnesota in mind. Please consider the following recommendation:</u>

- There are many advantages in specifying a particular brand and model for a component. Where a particular brand and model number is specified in this document we suggest that you investigate the availability of that product or comparable products and call for what is readily available in your market.

Substitution Approval Process:

Any requests for substitutions of specified proprietary items must accompany the initial proposal and shall include: the manufacturer's specifications, full installation instructions and warranties. The agency and owner will notify the contractor of decision at contract award.

102. For purposes of clarifying intent, the following contract documents take precedence in descending order, with "1" being first: 1) Addenda; 2) Instructions to Bidders; 3) Special Conditions; 4) General Conditions of the Contract; 5) General Requirements; 6) Technical Specifications; 7) Drawings.
Unless otherwise noted, the contractor will be furnished with all copies of drawings and specifications reasonably necessary for execution of the work.

103. **Project Architect:** The Project Architect is the person responsible for preparation of drawings and specifications that constitute the contract documents. Nothing contained in the contract documents shall create any contractual relationship between the Project Architect and the general contractor.

104. **Owner:** The term owner means the owner or its authorized representatives. In this case, the owner, the City of Saint Paul, has designated the Dayton's Bluff Housing Services, as its authorized representative.

105. **Construction Management:** Jeffrey Garetz, Load-Bearing, Inc, is the owner's representative for this project. He shall be identified in this document as the Construction Manager. Jeff Garetz is under contract by the Dayton's Bluff Housing Services.

106. **General Contractor:** The term general contractor means the contractor with ultimate responsibility for this project or his/her authorized representative.

107. General Structural Notes

A. The structural engineer of record (SER) has prepared a document of pertinent structural information that will accompany these specifications. The applicable information in the structural engineer's document has been incorporated into appropriate sections of these specifications where they relate to the technical references.

B. All engineering design provided by others and submitted to the SER for review shall bear a certification stamp and signature of a qualified professional engineer who is licensed in the state where the project is located. The contractor shall review and stamp all submittals prior to the SER's review.

C. **Coordination - Architectural, Civil, Mechanical and Electrical Items**
The contractor shall verify all dimensions and conditions on site and on the plans before construction begins. All discrepancies shall be reported immediately. Location, dimensions and details of recesses, depressions, openings, and equipment supports shall be verified by reference to architectural, civil, electrical and mechanical drawings.

D. **Existing Conditions**
The contractor shall verify all dimensions, elevations, and details of existing structure where they affect the structural work. Notify architect and SER if there are any deviations from the contract documents. The contractor shall field verify dimensions and elevations prior to fabrication of structural members.

E. **Design Loads**

Snow load	39 psf
Live load	40 psf
Wind	90 mph (3 second gust)

Exposure B, I = 1.0

F. **Design Codes**
Minnesota State Building Code (2007)
International Building Code (2006)
American National Standards Institute/American Society of Civil Engineers - (ANSI/ASCE 7 – 05)
American Institute of Steel Construction (ASD/LRFD – 2005)
American Welding Society Standards for Welding as modified by AISC Spec. (2004)
Structural Welding Code (ANSI/AWS D1.1)
American Concrete Institute (ACI 318 – 2005)
National Concrete Masonry Association (MSJC/ACI 530 – 05)
American Institute of Timber Construction Manual (5^{th} ed.)
National Design Specifications for Wood Construction (NDS – 2005)
American National Standards Institute/Truss Plate Institute (ANSI/TPI 1-2002)
Guidelines for the Rehabilitation of Existing Structures (1st Edition)

108. **Guarantee:** The over-all guarantee for the work including all labor and materials under this contract is one year, unless otherwise noted for a longer period than the contract documents for stipulated items. Other

guarantees in excess of this one year shall be as specified by manufacturers. Other guarantees in excess of this one year shall be as specified by manufacturers. Furnish the owner with all guarantee certificates and other evidence as to the quality and kind of materials and equipment used.
The Guarantee period, required by this sub-paragraph for those items remaining to be completed, (corrected or adjusted after the date of Substantial Completion) shall begin on the date of Final Completion.

109. Permits: The contractor shall secure and pay for a building permit for the project. Subcontractors shall secure and pay for any permits necessary for their work. Notice of start of work or other notices for inspections as required by building inspection agencies are the responsibility of the contractor. At the completion of construction the contractor shall obtain all inspection department sign-offs including a certificate of code compliance and all other certificates required for occupancy, prior to receiving final payment.

110. Allowances: The Contractor shall include in his/her proposal allowances as noted in this Allowances list. The allowance sum amount shall include materials/product and all installation costs, unless otherwise indicated. In some cases, specification references may stipulate materials and associated items only, by which labor is to be included. Before or after the contract amount is agreed to, the contractor shall present the established costs for each allowance item, and the difference between allowance amount and established cost shall be adjusted in the contract to decrease or increase each item amount.

List of Allowances:

1. Ceramic Tile: $8.00 per square foot tile materials only; labor, grout, concrete and miscellaneous materials not included in allowance.
2. Carpet: $30.00/sq. yd., carpet and pad. Selection by Load-Bearing from Contractor supplied samples.
3. Light fixtures: See Section 1640
4. Landscaping: $1,000 for plants, shrubs and trees only (sod to be included in the base bid)
5. Faucets: $250.00/fixture

111. Alternates: The Contractor shall submit bids for each alternative item listed in the alternates list. The amount of each alternative shall be added or deducted from the base bid as the case may be if the owner elects to accept the alternate or alternates. The base bid cost of the project will be the total cost of the project without considering any add or deduct alternates.
Voluntary Alternates - Contractors may attach to this bid, alternates for materials specified; for evaluation after bid selection. Prior approval not required.

112. Time Schedule: The Contractor and Owner will prepare a schedule for completion of the project, and a schedule of payments which shall be a part of the owner/contractor contract. Periodic progress meetings shall be held at the job site to insure the orderly and timely completion of the work. The Contractor will be required to perform within the limits of the schedule as defined in the contracts

113. Regulatory Agencies and Quality Control: The Contractor shall comply with all laws, ordinances, and orders of any public authority bearing on the performance of the work. Documents which describe particular materials and methods of performance and are listed in the specifications are herein incorporated by reference into this specification.

The Contractor is responsible for notifying the Architect and/or Owner of any discrepancies between the plans and specifications or between the plans and specifications and published code requirements.

114. Shop Drawings/Submittals: The Contractor and sub-contractors shall submit complete shop drawings, manufacturer's data and installation instructions for all products and/or systems as required and/or as requested by the architect for all products or systems to be installed in the project. No work may proceed without shop drawings approved by both the architect and general contractor. Where there is a choice of color, pattern or texture for a material, the contractor shall submit samples to the Owner/Architect for approval. Before final payment the contractor shall deliver to the Owner a complete list of all products used in the project, a list of all sub-contractors, copies of all products and/or system guarantees and manufacturer's operating or maintenance instructions for all materials and systems. Provide 3 sets of operating or maintenance manuals.

During construction the Contractor shall maintain a clean set of drawings for the sole purpose of recording changes and actual "as installed" information. Marking of this record set shall be done in clear, neat manner and in a contrasting color. This record set shall be delivered to the Owner at the completion of the project.

The Contractor shall provide on site instruction to the Owner's designated personnel as required to fully instruct them in correct operating and maintenance procedure, for all equipment installed under the electrical, plumbing, heating and ventilating contracts.

115. Substitutions: All requests for substitutions of products, materials or methods from that listed in the specifications must be submitted to the architect in writing. Products, materials, or methods may not be substituted without prior approval.

116. Cutting and Patching of Work: Each Contractor and sub-contractor shall be responsible for cutting and patching of all holes and openings through walls, partitions, floors, ceilings and roofs necessary for the installation of his/her work. If the location of a hole is through a joist, beam or column, the Contractor must notify the Architect who will instruct him how to proceed. Cutting will be done carefully to minimize repair and patching shall be done in a workmanlike manner to match adjacent surfaces.

117. Product Handling: All materials must be delivered to the project site in original packages or containers clearly labeled to identify manufacturer, brand name, quality or grade. Store all materials in original undamaged packages or containers. Comply with the manufacturer's instructions and recommendations in regard to storage and protection. Unpackaged or unwrapped materials must be stored inside and protected from damage. Damaged materials will be replaced at the contractor's expense.

118. Temporary Facilities and Services: The Contractor shall provide and pay for any temporary facilities, field office, enclosures, fences, barriers, and storage as required in the performance of the work. Contractor shall provide and pay for any temporary heating, cooling, electrical power, water, toilets, etc., required for construction

119. Sub-Contractors: A sub-contractor is a person or organization who has a direct contract with the contractor to perform any of the work on the project. The Contractor shall pay each sub-contractor upon receipt of payment from the Owner, an amount for the sub-contractor's work equal to the percentage of completion allowed to the Contractor.

120. Separate Contracts: The Owner reserves the right to award other contracts in connection with other portions of the project under these or other similar conditions of the contract.

121. Miscellaneous Provisions: Performance Bond/Labor and Material Bond: where bonds are required as a condition of the owner/contractor agreement, they shall be executed by any acceptable surety company or companies authorized to execute such in the State of Minnesota, and be written in favor of the owner. The cost of such bonds will be paid for by the Contractor.

122. Testing: If standard testing for the conformance of a material or assembly to the specifications (not including existing environmental conditions) is required, the owner may request and pay for such tests. If after testing, the work in question is found to not meet the requirements of the specifications, the contractor will be required to correct all deficiencies at his own expense including the costs of test taken by the Owner to reveal noncompliance and the costs of any additional tests required to demonstrate compliance with these specifications.
Tests have been performed for the presence of lead, and that report is available from the Construction Manager.
Tests to be performed shall be: compaction of subsoil, asphalt, concrete, paint (DFT), manufacturers' representative inspections.

123. Time: The contract time is the period of time allotted in the contract documents. The date of commencement of the work is the date established in a notice to proceed. The date of substantial completion is the date certified by the Architect when the construction is sufficiently complete so the owner may occupy the work or a designated portion of the use of which it is intended.

124. Payments and Completion: The Contractor shall prepare a schedule of payments before the first application for payment. For each payment request, the contractor shall submit to the Architect and Construction Manager a schedule of values of the various portions of the work on the standard AIA form "Request for Payment". The General contractor shall also submit a lien waiver that includes all subcontractors and suppliers, including lien waivers from the previous payment period.

At least ten days before each progress payment falls due, the contractor shall submit to the Architect an itemized application for payment and all sub-contracts. Each request for payment must be accompanied by complete lien waivers for the previous months payments, covering all portions of the work.
In addition to lien waivers from all sub-contractors, the general contractor must provide a general lien waiver covering the total cost of the project at completion.

125. Protection of Persons and Property: The General Contractor shall comply with all applicable laws, ordinances, rules, regulations and lawful orders of authorities having jurisdiction for the safety of persons and property. The General Contractor is responsible for the protection of adjacent property and structures throughout the duration of the project.

126. Insurance: The general contractor and his sub-contractors must carry all necessary, appropriate and required insurance to cover the scope of work under his/her contract. Certificates of Insurance (copies) must be submitted to the Owner. The General Contractor shall provide a list of additional insurance certificates and amounts listed with Loadbearing, Inc. Dayton's Bluff Housing Services, Saint Paul Housing and Redevelopment Authority and the City of Saint Paul.

Before commencing work, the Contractor and each of his/her subcontractors shall furnish the Owner with evidence showing that the following insurance is in force and will cover all operations under the Contract:

1. Worker's Compensation, in accordance with State or Territorial Worker's Compensation laws
2. Independent Contractor - Bodily Injury: lOO/300,000 Property Damage:100,000.
3. Product including completed operations - Bodily Injury: 100/300,000 Property Damage 500,000.
4. Hold Harmless (Contractual) - Bodily Injury 100/300,000; Property Damage100,000
5. Auto Owned, Hired or Leased - Bodily Injury: 100/300,000; Property Damage50,000
6. (In lieu of the above) Single Limit Policy: 1,000,000 Policy: each occurrence

127. Changes in the Work Change Orders, Credits and Extras: The Owner, the Architect or the Contractor may request changes, alterations, additions, and/or deletions from work included in the contract documents. If such changes would effect the dollar amount or completion time of the contract, the Architect shall prepare plans and specifications of the changes and the Contractor shall prepare a detailed cost proposal of labor and materials for the change, plus a maximum 5 per cent fee for supervision and administration of the change.

The change order must be approved by the Construction Manager prior to the start of work on the change. If job conditions necessitate change in work to begin before owner is available, the project architect may authorize change in work after consulting with the contractor, understanding involved costs and observing site conditions. Any work performed without authorization may be considered not subject to reimbursement. These conditions are the same for extras and/or credits. The Contractor will not be reimbursed for unauthorized extra work.

The Construction Manager is responsible for preparing the standard AIA change order forms, typed and with sufficient copies ready for signature of Owner, Architect and Contractor. The Contractor submits requests for Change Orders.

If work is covered that must first have been observed by the Architect, the Contractor shall uncover the work for his observation and replace at no additional expense to the Owner.

128. Termination of the Contract: Under the provisions of the general conditions the work may be terminated for specified cause.

129. Special Conditions

1. All SAC and WAC charges are to be included in the contractor base bid.
2. Project security, fences, temporary closures. (See 123, 115)

3. Special clean-up requirements.
4. Owner provided power/water, etc. (See 115)
5. Historic Designation: The building is listed as a contributing property in the Dayton's Bluff Historic District, as administered by the Saint Paul Heritage Preservation Commission. Any work performed affecting exterior architectural surfaces, features and details shall require approval by the Saint Paul Preservation Commission or its staff. This application procedure, including the public hearing session and follow-up reviews, will be performed by the Architects in coordination with the Owner and Construction Management.

130. Lead Abatement

PART 1: GENERAL

1. GENERAL INFORMATION
   A. Projects funded in whole or in part with federal funds must comply with the "Regulation on Lead-Based Paint Hazards in Federally Owned Housing and Housing Receiving Federal Assistance." As a component of Title X, Sections 1012 and 1013, rehabilitation projects receiving more than $25,000 of federal funds must abate all lead.
   B. Properties built after 1/1/78 and properties needing emergency rehab assistance are exempt from Lead-Based Paint Regulations.
2. PRICE AND PAYMENT PROCEDURES
   A. Provide a price for the appropriate methods of abatement required by this scope of work.
3. SUBMITTALS
   A. Project Plan: The General Contractor must prepare a written project plan and communicate it to the Construction Manager, Project Manager, and MN Department of Health. 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
4. QUALITY ASSURANCE
   A. Licensed Lead Abatement Supervisor: Only General or Subcontractors who are State licensed to conduct lead hazard reduction work are allowed to bid on projects involving lead hazard reduction work. See Minnesota Statutes 144.9501-144.9512 and Minnesota Rules 4761.2000- 4761.2700 for applicable safety precautions, disposal regulations, and other compliance regulations that apply to abatement activities.
   B. Per MN Statute, Contractors must provide a 5 day notification to the Minnesota Department of Health prior to beginning lead abatement activities. During lead abatement, a MN Licensed Lead Abatement Supervisor must be on site and workers conducting lead abatement must be MN Licensed Lead Abatement Workers. See the MDH website for additional information: http://www.health.state.mn.us/divs/eh/lead/prof/notification.html

PART 3: EXECUTION

1. ABATEMENT
   A. When the Risk Assessment process determines that a Project contains a lead-based paint hazard, the General Contractor shall comply with the abatement measures defined by HUD in 24 CFR Part 35 Subpart A through R 35.1325
   http://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/enforcement/lshr
   and by the EPA in 40 CFR 745.227(e).
   http://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol31/pdf/CFR-2011-title40-vol31-sec745-227.pdf
   and lead hazard reduction methods defined in Minnesota Statutes 144.9501-144.9512 and Minnesota Rules 4761.2000-4761.2700
   http://www.health.state.mn.us/divs/eh/lead/rule.html
   1. Component Replacement: The removal of building components that contain lead-based paint. It is most appropriate for items such as doors, windows, trim, and cabinets.
   2. Paint Removal: The separation of paint from the substrate using safe heat, chemical, or abrasive methods. It may be done on- or off-site. Abrasive methods can create a great deal of dust, are the most hazardous, and require the greatest care and most thorough clean-up.

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

2. LEAD-BASED PAINT HAZARD CLEARANCE TESTING

A. Where lead-based paint hazard control or reduction work has been performed by the General Contractor, the General Contractor will contact a certified third party risk assessor from Ramsey County Department of Public Health or other certified testing agency for clearance testing.

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

C. If sample results fail, Minnesota rules 4761.2670 subpart 2 and subpart 3 must be repeated. If test results of samples fail to meet clearance standards, surfaces must be retreated or recleaned at no additional cost to the Owner until clearance standard is met.

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

Division Two: Sitework

200. Site General Notes

1. The site for 716 Wilson shall be the total undivided site area for the three buildings within the revised property description that also include 208-210 Bates and 216-218 Bates, their garages and associated driveways and open site areas. The following notes apply to the total site, but do not include the total scope of work for the entire site to be described in a separate document.
2. Contractor shall verify locations of underground utilities in the area of work; protect underground utilities as required.
3. Contractor shall review all site conditions and related site work with Construction Manager before proceeding with his/her work.
4. Site preparation: General contractor shall prepare site as necessary for construction: excavation, removals, construction junk and debris, concrete or asphalt flatwork, etc. Overhead electric and utility lines shall be noted for retention or relocation.

202. Removals

1. Remove all excess site materials, demolition materials and construction debris as indicated on the drawings or as otherwise necessary to execute the work. All excavated earth shall be deposited in an area on the site as designated by the owners. All other removed materials shall be disposed in an official area or landfill as designated by local authority; all costs of disposal shall be included as part of the general work by the contractor.

Items as noted in the Removal Schedule and on drawings should be considered schematic; contractor shall perform removals as required to accommodate new construction, including items not specifically listed in the removals schedule

2. Removals Schedule: (preliminary)

Exterior:

A. The foundation and footings in their entirety, including basement floor (after house-lifting procedures have the house structure fully shored.)
B. Remove existing chimney
C. All metal lap siding, metal wrapping over trim, front steps and railings, rear deck and railings
D. Porch skirt panels
E. Siding at porch.
F. Remove window at second floor Bath, doorway at second floor south elevation.
G. Window and patio doors at Kitchen; window and doors at Rear Entry.
H. Existing lighting fixtures as determined during walk through with Architect and C. M.

Site Removals:

I. All earth surrounding house required for house lifting operations, site area where new garage is to be located and maple tree west of the house.
J. All fencing within property lines, masonry barbeque pit
K. Site detritus not intended for new remodeling work.
L. Concrete walkway at east side of the house, concrete walk in front of house.
M. Timber retaining wall
N. Remove rain leaders.

Interior:

O. Refer to Removals Plan for walls and furred ceilings intended for removal.
P. Interior partition framing members, plaster and gypsum board, as noted on Demolition Plan; wood trim not required for new floor planAll interior wall paneling not original to building, all suspended ceiling tile, carpet and floor covering or other covering over existing hardwood flooring.
Q. All mechanical and electrical equipment, fixtures, devices, piping, etc. and associated connections, except as noted for retention.
R. Existing crown mold at Bedrooms 1 and 2.
S. Sheet vinyl – all layers down to underlayment
T. Remove imitation wood wrapped beam in rear area of kitchen.
U. Bath: remove wood paneling; remove existing window; all plumbing fixtures.
V. Remove plaster and lath at all second floor sloped ceilings
W. Remove plaster and lath at second floor south wall of Stairway, at east wall of Bedroom 2, at Dining Room south and east walls.
X. Remove existing base shoe at all base areas where hardwood floors to be refinished.

3. Retained Items Schedule:

A. All existing wood flooring throughout
B. All existing plaster except where noted for removal for new partitions
C. All windows except as noted for removal
B. All existing interior doors and casing for possible re-use where new framing is to be built.
C. Retain px cables in Basement, furnace and ductwork, water heater; turn over to Owner.
D. Retain existing laundry tub, reinstall.
E. Retain existing dishwasher and butcher block countertops, reinstall.
F. Retain existing lights as noted on plans.

203. Building shoring, stabilization / construction

1. Shoring

The Contractor shall be responsible for temporary shoring for existing construction until new construction is in place and properly anchored in final form. Shoring shall be designed and certified by an engineer licensed in the state in which the project is located and the final design shall be submitted to SER for review.

2. The building, after removals are completed will consist of its first and second floors in their entirety, except for items as noted above.
3. The Contractor shall provide general coordination to the construction manager and shall build the footings and foundation per Divisions Three and Four, build new interior structural support and basement stairway opening framing. Before footings are built, General Contractor shall determine exact location by extending

plumb lines from outside face of framing.

206. Excavation / Fill

1. General Contractor shall coordinate excavation work with Construction Manager.
2. Excavate earth as required for footing depths and below-grade foundations and to establish grades for concrete walkways
3. Store suitable earth material on site for re-use as is practicable.
4. Backfill shall use clean fill with no debris or stones, shall be applied in lifts and compacted as required. See reference 204 above. Backfill may accommodate drain tile system(s).
5. Fill procedures for basement in 218: see Reference 211 below.

207. Drain tile system

1. Drain Tile System: Install drain tiles system at outside near footings. Set perforated PVC pipe in crushed rock bed approximately 16" x 16", sloped as necessary per site conditions, connected to storm drain.

208. Sheet Waterproofing

Scope of Work: Waterproofing as described below shall be installed at east below-grade foundation walls to 716 Wilson, 208-210 Bates and 216-218 Bates.

Materials:

A. Composite Laminate Membrane: 56 mil polymeric waterproofing membrane on heavy duty 4 mil cross-laminated polyethylene carrier film; sheet width: 38.5 inches minimum; seaming materials, membrane sealant, termination bars, surface conditioner and adhesives. as recommended by membrane manufacturer.

B. Accessories: Protection course by W. R. Meadows: multi-ply semi-rigid core with mineral reinforced asphalt core formed between 2 outside layers of asphalt-impregnated reinforced mats in accordance with ASTM D 6506. Cant strips of pre-molded composition material, with detail strip by W.R. Meadows, with flexible flashings as recommended by membrane manufacturer.

Methods:

A. Verify existing conditions on site before beginning work;

B. Verify substrates are durable and free of matter detrimental to adhesion or application of waterproofing system;

C. Verify that items penetrating surfaces receive waterproofing are securely installed;

D. Protect all surfaces not designated to receive waterproofing;

E. Clean and prepare surfaces to receive waterproofing in accordance with manufacturer's instructions;

F. Do not apply waterproofing to surfaces unacceptable to membrane manufacturer;

G. Seal cracks and joints with sealant using depth to width ratio as recommended by sealant manufacturer; apply surface conditioner at rate recommended by manufacturer.

H. Install membrane waterproofing in accordance with manufacturer's instructions.

I. Roll out membrane in accordance with manufacturer's instructions. Self-adhering membrane: minimize wrinkles and bubbles; overlap edges and ends; seal by method recommended by manufacturer, minimum 3 inches. Seal and permanently waterproof. Apply uniform bead of caulk of sealant to edge.

J. Reinforce membrane with multiple thicknesses of membrane material over joints; weatherlap joints on sloped substrate in direction of drainage. Seal joints and seams.
Install flexible flashings. Seal items penetrating through membrane with flexible flashings. Install counter-flashing over all exposed edges.

K. Place Carlisle CCW MiraDRAIN with integrated filter fabric directly against membrane; butt joints. Scribe and cut boards around all projections.

L. At completion, flood horizontal membrane installation and dam area for flood testing. Flood to minimum depth of 1" clean water. After 48 hours test for leaks. If leaking is found, remove water, repair leaking areas with new waterproofing materials as directed by architect; repeat flood test. Repair damage to building.

M. When area is proven watertight, drain water and remove dam.

209. Landscaping

1. The Architect has prepared a site plan for the purposes of general site orientation of 716 Wilson to the land parcels containing nearby 216 - 218 Bates and 208-210 Bates. The site plan will also delineate grading, parking areas and driveways. Provide an allowance of $1,000 per site for plants, shrubs and trees only. All remaining disturbed soil areas not paved to be sodded as provided in the base bid.

210. Grading

1. Contractor shall contour earth for grade lines as shown on site plan, sloping 6" in 4 feet, or as required, away from walls, using stored material from excavation; new grades shall be eased into existing contours per site conditions.
2. Provide and grade a loam topsoil to create at least a 1 to 4 positive drainage away from house 4 feet from foundation. Sod with a local grass approved by the local USDA Extension Office and dehydrated cow manure. Lightly water to saturation.
   See www.csrees.usda.gov/Extension/index.html for a listing of USDA Extension Offices.

211. Concrete Flatwork

Install 3 ½" walkways from Rear Entry at south elevation leading to garage and from new front porch to public sidewalk. See Site Plan.

212. Site / Building Protection

Building Security: General contractor shall exercise reasonable precaution to board up first floor windows; install secure temporary door and padlocks and other measures to prevent trespassers from entering building.

Division Three: Concrete

Scope of Work: All concrete work, cast-in-place, as shown on plans and specifications, including, but not limited to, footings, slabs, pads, driveway, and other components as required for a complete project.

Quality Assurance: Work shall conform to standard practice and CRSI recommended practices for placing reinforcing bars, ACI for standard practice for concrete mixture, placement and protection, and ACI-301-83 building code requirements for building code requirements for reinforced concrete.

Concrete surface finishes shall be done by experienced journeymen concrete finishers.

No concrete shall be placed when temperature is below 45 degrees F. without proper protection.

300. Concrete Structural Notes

Material Strengths:

A. **Concrete** f 'c = compressive strength in 28 days
4,000 psi unless noted otherwise
3,000 psi for footings
3,000 psi for masonry corefill

B. **Footings / Foundations**

Wall footings are cast-in-place concrete with continuous reinforcing placed 3" clear of bottom and 2" clear at top and sides. Provide 30 bar diameter lap at splices and full crossing lap at corners and intersections. Wall footings are centered under walls and column footings under columns. Footing elevations shown on plan are to top of footing. Footings for walls not noted otherwise shall be 12" thick with a minimum projection of 4" each side with 2-#5 continuous bottom bars.

Maintain minimum frost depth for all exterior footings. Frost depth is equal to 48" minimum, 60" at unheated spaces, and is measured from finished grade elevation to bottom of footing. Cast dowels in footing for foundation walls above. Dowels are to be the same quantity, size, and spacing as the vertical wall reinforcing. Dowels shall extend to 3" clear of bottom of footing with standard hook and develop a class-B splice with wall reinforcing.

Contractor shall be responsible to implement hot weather concrete requirements per ACI 305 and cold weather concrete requirements per ACI 306. Shore all foundation walls appropriately before backfilling and compacting. The contractor shall verify the location of all existing underground utilities and tanks prior to beginning excavation.

C. **Concrete**

Provide ready-mixed concrete per ASTM C94. Portland cement shall be ASTM C150, Type I. Use only one brand of cement throughout the work. Provide concrete aggregates meeting the requirements of ASTM C33. Water shall be clean, free of deleterious amounts of acids, alkalis, or organic materials, and shall be considered potable. Provide admixtures to reduce water content, provide air-entrainment, or alter the quality of the concrete to meet the job conditions. Admixtures shall be indicated in the mix designs. All concrete

exposed to weather, freeze-thaw conditions or de-icing chemicals shall contain 5% - 7% entrained air. Slump shall be determined by ASTM C143 as follows:

Footings	3" - 4"
Walls, columns	3" - 5"
Slabs on grade	3" - 4"
Structural slabs, beams	3" - 4"
Masonry grout	8" - 11"

Workability of the concrete shall be maintained so that concrete will completely fill forms without voids and will embed and bond to reinforcing without separation of materials. Mix and deliver concrete in accordance with ASTM C94. Cooled or heated water shall be used in accordance with ACI 306 and 305. Ready mixed concrete shall be transported to the site in watertight agitators or mixer trucks loaded not in excess of rated capacities. Discharge at the site shall be within one hour after charging. Air-entraining and chemical admixtures, if approved, shall be charged into mixer as a solution as recommended by the manufacturer.

Concrete placed during cold weather shall conform to the requirements of ACI 306.1. For hot weather conditions, apply recommendations of ACI 305. Place concrete in accordance with ACI 304 "Guide for Measuring, Mixing, Transporting, and Placing Concrete". Use mechanical vibrating equipment for consolidation. Protect fresh concrete from premature drying and excessively hot or cold temperatures and maintain with minimal moisture loss at a relatively constant temperature above 55 degrees Fahrenheit. Provide wire, plastic, or precast concrete spacers, chairs, slab bolsters, support bars, etc. for support of reinforcing steel in proper position while placing concrete. Chairs/bolsters shall be stable and resist tipping.

D. **Slabs on grade**

Slabs on grade shall be 4" thick and reinforced with 3.0 pounds per cubic yard polypropylene fiber. Stair slabs on grade shall be a minimum of 6" thick and reinforced with #4 at 12" on center, each way, with 3" cover at bottom. Construction and/or control joints shall occur at a maximum of 10'-0" on center at exterior slabs on grade, and at a maximum of 16'-0" on center at interior slabs on grade. Construction and/or control joints shall be laid out in a rectangular pattern with long to short side ratio less than or equal to 1.5 and with no re-entrant corners.

Control joints for slabs on grade shall be saw-cut as soon as concrete can accept it without raveling. Do not cut structural slabs or topping slabs. All control/construction joints shall be continuous and not staggered or offset. Control joints shall be cleaned and sealed for curing purposes as soon as possible. Verify floor finishes and control/construction joint locations with owner and architect.

E. **Concrete Cover On Reinforcing**

Footings	3" clear, bottom and sides
Drilled Piers	3" clear, bottom and sides
Walls	1-1/2" clear, outside face and 1" clear inside face
Slab on Grade	Center reinforcing in slab

310. Concrete Formwork

Methods:

1. Contractor shall be responsible for proper layout and building of formwork
2. Verify with subcontractors locations of openings, offsets, etc. for work by others.

335. Surface Finishes

1. Poured concrete slabs shall be screeded, floated and trowelled to proper levels and pitches; steel trowel to dense, smooth hard surfaces; bullnose all joints and exposed edges.
2. First floor concrete shall be substrate for finish material directly applied to concrete surface; workmanship in finish work shall provide smooth surface capable of applied direct finish material.

340. Poured Concrete Foundations

1. Poured concrete foundation walls: see plans and section references for structural details and steel reinforcing.
2. Place all reinforcing bars and wire per standard industry practices, as required to achieve proper clearances and concrete coverages; anchor as necessary to avoid displacement during pouring.

342. Basement Concrete Work

1. Build new concrete floor per structural references above.

2. Build concrete footing under new partition wall per plan references.
3. Build concrete post footings per plan references.

350. Garage concrete slab

1. Build 4" thick concrete slab abutting concrete masonry frost footings, construction to follow structural notes above. Slope concrete floor 1/8"/ft down to overhead door. Verify top of garage floor elevation with Construction Manager and Architect before establishing concrete formwork.

Division Four: Masonry

400. Masonry: General Notes

1. All masonry work shall be performed by qualified masons.
2. All masonry units shall be modular unless otherwise noted.
3. Coordinate masonry work with other sub-contractors to provide any necessary sleeves, anchors, etc.

402. Masonry Structural Notes:

A. **Material Strengths:**

Concrete Masonry Units – ASTM C90

f 'm = net area compressive strength of masonry based on IBC table 2105.2.2.1.2: 2,000 psi

410. Mortar

Materials:

1. Mortar shall conform to ASTM C270-86
2. Exterior and loadbearing: Type S mortar; 1 part portland cement, 1/4 to 1/2 parts hydrated lime putty, 2 3/4 to 3 1/4 parts granular sand
3. Interior and non-loadbearing: Type O mortar, 1 part portland cement, 1 1/4 to 1 1/2 parts hydrated lime putty, 5 to 10 parts granular sand
4. Clean water shall be added several times during mixing in amounts no more sufficient to achieve stiff but workable mortar.
5. Mortar shall match existing in color and texture

Methods:

1. Concrete block: tool with smooth concave finish.
2. Mortar joints shall be straight from one end of wall to the other; masonry units shall be laid to provide consistent and smooth masonry wall surface.

422. Concrete Block Masonry

Materials:

1. All concrete block units modular unless otherwise noted
2. Hollow core loadbearing: ASTM C-90 85 grade N-1
3. Solid loadbearing: ASTM C-145 grade SW
4. Color and texture: standard below grade, rock-face above grade.
5. Bond beams where indicated on plan, filled with concrete and reinforcing

Methods:

1. Lay all concrete block in running bond with full mortar bedding; shove units tight; strike and tool all joints to form a tight seal
2. Provide solid block or bond beam at top of all walls unless otherwise noted. Provide solid curb block at all wood frame bearing walls.
3. Coordinate and build all recesses, anchors, etc. for work by subcontractors; as work progresses, fill solid and tight around such work by others as required.
4. Fill all reinforcing block cores where required per structural references above.
5. For lintels at masonry openings: see structural notes on drawings. Sizes vary on drawings.
6. Garage: build 12" concrete block foundations to frost depth at north and west walls.

425. Miscellaneous Masonry: Clad new chimney enclosure with 1" thick Real Brick with grouted joints. Install galvanized metal cap with flanges covering top ½" of brick course.

Division Six: Carpentry Work

Scope of Work: All carpentry and wood work including but not limited to framing, finish wood work, blocking, temporary enclosures, cabinets and other pre-finished built-in systems, backing, hardware installation, and all equipment and accessories required for a finished job.

Submittals: provide complete shop drawings for all cabinets and millwork. Provide structural calculations and certification for load-bearing capacity for all manufactured wood trusses.

Quality Assurance: Work to conform to standard carpentry practices and "Wood Frame Construction" U.S.D.A. Bulletin and Chapter 251 UBC, Wood Frame Construction. All carpentry work shall be performed by experienced, qualified carpenters. Below grade work to conform to AWWF American Plywood Association Standards. Millwork to conform to AWI quality standards. All lumber to have less than 19 percent moisture content, kiln-dried. All wood products must be stored covered and protected from weather and construction conditions.

All references to thicknesses, weights, etc. of building materials in this section, with the exception to nominal-sized framing lumber, shall mean that the full dimension as noted shall be supplied and installed, irregardless of "industry standards" not recognized in these specifications. For example, 6 mil polyethylene vapor barrier shall be an actual 4 mil thickness.

600. Carpentry / General Notes

1. Contractor shall insure that concealed solid wood or metal blocking is provided for all mounted items shown in the plans and specifications including but not limited to hardware, door stops, stair railings, cabinets, shelving, tracks, etc. (or specifications) as required to support door and window frames, cabinets and plumbing fixtures.
2. Finish wood material: where a specific species is called for, all finish wood shall be of same species and consistent within variety of species (oak shall be all red or all white)
3. The existing original structure, as constructed, shall remain in place except for wall removals and other removals per Demolition Plan.

601. STRUCTURAL NOTES

1. DIMENSION LUMBER

Design assumes lumber is free of significant splits and checks, and contractor will visually inspect during installation. All lumber is to be grade stamped, which is to contain grading agency, mill number or name, grade of lumber, species or species grouping or combination designation, rules under which graded, where applicable, and condition of seasoning at time of manufacture. All lumber shall be seasoned to a moisture content of 19% or less, with the indication of "S-Dry" on the grade stamp. All lumber shall be protected from the elements. Lumber grading rules and wood species shall conform to Voluntary Product Standard PS 20-99 as published by the Department of Commerce. Grading rules shall be by an agency certified by the Board of Review of the American Lumber Standards Committee.

Performance requirements, adhesive bond performance, panel construction and workmanship, dimensions and tolerances, marking, and moisture content of Wood-based Structural-use Panels shall conform to Voluntary Product Standard PS 2-92, as published by the Department of Commerce. Sills and all other lumber in contact with concrete or masonry and within 8" of finished grade shall be preservative treated wood. In crawlspaces or unexcavated areas within the building foundation, wood shall be preservative treated for joists within 18" of exposed ground and/or girders within 12" of exposed ground. Preservative treated wood shall be in accordance with the American Wood Protection Association, Standard U1.

Sill plates to be bolted to foundation wall with 5/8" diameter anchor bolts at 4'-0" on center maximum. Bolts to extend 13" minimum into solidly grouted foundation wall. Each sill plate to have a minimum of 2 bolts with one bolt located not more than 12 inches or less than 4 ½" from each end of the plate section. Use 1/8" x 2" washers, slightly crushing plate. Minimum nailing to be in accordance with Table 2304.9.1 of IBC.

All walls shall have a single bottom plate and double top plate. Exterior walls shall be 2 x 6 studs @ 16" on center. Interior bearing shall be 2 x 6 studs @ 16" on center. Interior non-load bearing walls shall be 2 x 4 studs @ 16" on center. Typical openings to have a minimum of 2 bearing (trimmer or jack) studs and 1 full-height king stud. Headers not noted to be 2 – 2 x 6 up to 4'-0" span and 2 – 2 x 8 from 4'-0" to 6'-0" span. Wood headers shall have a minimum 3" length of bearing at each end or bear the entire length of the bearing

studs. Beams shall bear on a minimum of 3" along their length and fully along their width. Beams or headers made of 2 - 2x's with 1/2" spacer shall be nailed together with 16d nails (.162" x 3 ½") at 16" o.c. along each edge, typical for each lumber ply.

Wood joists shall bear the full width of supporting members (stud wall, beams, etc.). Provide solid vertical blocking at all joist spaces below wood columns. Provide matching columns to foundation at lower levels below columns comprised of 3 or more studs. All beams and joists not bearing on supporting members shall be framed with prefabricated joist hangers. Spacing of bridging for joists shall not exceed 8'-0". Double all joists under parallel partitions.

All plywood and OSB shall be installed per American Plywood Association standards, including the use of construction adhesive for fastening to floor joists. All fasteners and hangers in contact with treated lumber shall be G185 hot dipped galvanized or equal.

2. **WOOD TRUSSES**

Responsibilities of the contractor, building designer, truss manufacturer, and truss designer shall follow the publication "TPI 1-2002 National Design Standard for Metal Plate Connected Wood Truss Construction." Truss supplier shall notify SER of any proposed revisions to the layout indicated on this plan. Revisions that affect the structural design will not be allowed without prior written approval by the SER. Verify allowable bearing locations for girder trusses with SER prior to final design stage. Provide metal bearing enhancers as necessary to utilize stud columns shown on plan.

All prefabricated wood trusses shall be furnished in accordance with designs prepared by a professional engineer licensed in the state in which the project is located, using the design loads and span conditions indicated, including designing gable end truss webs for perpendicular to face wind loads. Submit certified calculations with shop drawings. Truss manufacturer shall provide a truss layout and certified truss drawings prior to beginning construction. Trusses shall be designed for top and bottom chord superimposed dead and live loads as indicated above. Truss supplier shall design trusses to support additional dead load from, but not limited to; sprinkler lines, and rain leader systems, piping, cable trays, ductwork, etc., as per IBC. Coordinate with mechanical/electrical as required. General contractor to verify location and magnitude of all such loads with truss supplier and SER prior to fabrication of trusses. See architectural plans for attic draft stop locations and design roof trusses accordingly.

Live load deflection of roof trusses shall be limited to 1/240 of the span. Live load deflection of floor trusses shall be limited to 1/480 of the span. Design trusses for top chord bearing or bottom chord bearing as shown on drawings.

Truss configuration, pitch, overhang, etc. shall be indicated on the architectural drawings. Spacing of roof trusses shall not exceed 24" on center. Spacing of floor trusses shall not exceed 19.2" on center lumber for wood trusses shall be in accordance with manufacturer's recommendations.

Truss manufacturer to provide girder trusses, hip jacks, and step-down trusses as required and designed to support all superimposed loads. Provide hip-sets, dormers, and piggy-back trusses as required.

Truss manufacturer to specify if roof sheathing needs to be applied before placing "over-framing". Provide metal framing anchors at truss bearing to mechanically fasten truss to bearing wall or supporting member as shown in details. Truss manufacturer shall provide truss to truss connection hangers. Bridging, and bracing of truss compression and tension members, shall be installed in accordance with the truss manufacturer's design and directions. No cutting, notching, or modifications of trusses will be allowed without the manufacturer's written approval.

Contractor shall provide permanent and temporary diagonal, lateral, and cross bracing in accordance with the publication "BCSI 1-03 Building Component Safety Information, Guide to Good Practice for Handling, Installing and Bracing of Metal Plate Connected Wood Trusses" by the Truss Plate Institute and Wood Truss Council of America and as otherwise necessary.

3. **FLOOR SHEATHING**

New floor sheathing shall be minimum 3/4" thick tongue and groove APA rated panels, rated for spacing of supporting members. A minimum of 48/24 span rating is recommended. Provide Exposure 1 grade. Panels shall be continuous over two or more spans, and long dimension of panel shall be perpendicular to supports. Fasten sheathing with construction adhesive and 10d nails (.148" diameter x 3") spaced at 4" on center at supported edges and 8" on center at intermediate supports.

4. **ROOF SHEATHING**

Roof sheathing shall be minimum 3/4" thick APA rated panels, rated for spacing of supporting members. A minimum of 40/20 span rating is recommended. Provide panel clips, one between each support, for supports spaced greater than 16" on center. Provide Exterior or Exposure 1 grade. Panels shall be continuous over two or more spans, and long dimension of panel shall be perpendicular to supports. Fasten roof sheathing with 8d nails (.131" diameter x 2 1/2") spaced at 4" on center at supported edges and 8" on center at intermediate supports. Leave an 1/8" gap at all end and edge joints to allow for expansion. Design of roof sheathing assumes that the roof will be properly insulated and ventilated. Refer to APA publication N335N "Proper Installation of APA Rated Sheathing for Roof Applications."

5. **ENGINEERED LUMBER MEMBERS**
   LVL (laminated veneer lumber), PSL (parallel strand lumber) and LSL (laminated strand lumber) are as manufactured by the iLevel Weyerhaeuser Company, or equal. Sizes shown on the drawings are actual size.
6. **ADHESIVE/EXPANSION ANCHORS**
   Adhesive and expansion anchors shall be provided and installed in strict accordance with the manufacturer's instructions. Adhesive anchoring system to be Hilti HIT-RE 500-SD adhesive. Expansion anchoring system to be HILTI Kwik Bolt TZ. Alternate anchoring system may be submitted for approval. "Fast Set epoxy" is not permitted. Reference drawings for additional information and requirements.

610. Rough Framing Carpentry

Materials:

1. All new structural framing, headers, beams, blocking, backing, bracing and support for all equipment: cabinets, mirrors, grab bars, shelves, closet rods, door frames, hardware, etc., and as required for the support and anchoring of work to be performed in coordination with other trades as required for a complete building. Openings and headers in framing necessary to support, anchor, or enclose mechanical and electrical equipment and/or runs must be constructed in accordance with USAD wood frame construction.
2. Existing framing and associated sheathing, etc. shall remain as is, after reviewed for structural integrity. Contractor shall assume wood structural system to be adequate for all intended purposes unless noted for examination, repair or replacement in these construction documents.
3. New framing lumber: See reference 600 – Dimension Lumber above
4. Building wrap: Tyvec, asphaltic rolled sheets, lapped as required.

Methods:

1. All carpentry work shall be performed by qualified carpenters.
2. All framing shall be installed plumb, level, or parallel-consistent with existing finish surfaces; such framing work to be clad with gypsum board shall be plumb and level at time of installation and not intended for correction by gypsum board installers.
3. All framing shall be 1'-4" o.c. unless otherwise noted; double stud at all openings and at ends of stub walls; Provide single sole plates and double top plates at all walls.
4. Half-high or partial height open-top type walls with end(s) not connected to adjoining walls shall have stud framing extending below floor level to be anchored to full depth of joist beneath.
5. Build new beams per plan references and structural notes in these specifications.
6. Frame all rough openings of doors and windows, built-in equipment, with manufacturers' dimensions, clearances and related installation instructions. Verify site conditions.
7. Install headers in all load-bearing and non-load-bearing walls as noted.
8. Install solid blocking under all posts supporting beams and headers
9. Blocking must be installed for all hardware, all wall-mounted items, and all gypsum board recesses, soffits, and special openings. Blocking and furring shall be 2x4s 1'-4" o.c. unless otherwise noted. Furrings and soffits shall be built per plan references and per equipment, cabinet, ductwork, plumbing chase requirements. Verify integration of framing with adjacent structure and with finish surfaces.
10. Verify framing conditions with mechanical and plumbing contractors for all header openings, furring, chases, required for their work.
11. Completely remove all factory product marks on framing lumber intended to be exposed.
12. Carpentry work shall include all framing anchors, fasteners, nails appropriate to work conditions, required for a secure and complete job. See 612
13. Fire-stopping and draft-stops for wood frame construction shall conform to UBC requirements.

611. Exterior Wood Framing

1. Infill exterior walls where windows/doors are to be removed with framing and finish materials similar to typical house: at second floor bathroom, at exterior wall at second floor south elevation where door is to be removed, at kitchen window and patio door and at door and window at rear entry.

612. Interior Wood Framing

1. Install new wood-framed partitions at new wall areas per plan.
2. Build new 2x2 furring strips at underside of sloped ceiling rafters.
3. Build structural beams and headers per plan references.
4. Build new porch floor framing as required to replace removed flooring with 2x8 joists @ 1'-4" o.c. with ¾" plywood subfloor, 1x4 fir t&g finish flooring

613. Framing Anchors / ties / hangers / bracing

Materials:

1. Provide nails appropriate to fastening conditions, screws, nuts, lag bolts, anchors, ties, corner braces, etc, necessary to support the work. size and type shall be selected to meet structural condition, finish materials conditions, and other job requirements.
2. Manufacturer for framing anchors: Simpson or approved equal

Methods:

1. Configuration and anchoring method for above devices shall be appropriate to structural conditions, all framing conditions standard industry practices and manufacturers' instructions
2. All framing anchor and connector devices at interior conditions are intended to be concealed unless specifically noted for exposure. All such devices understood to be exposed shall be installed so that locations shall be in an orderly and consistent visual pattern

620. Interior Finish Carpentry

Materials:

1. Existing hardwood: reuse per references to follow.
2. New hardwood at surfaces of new walls and revised walls in kitchen and basement: new hardwood wood casing: 3 ¼" hook strip at jamb locations with 1x4 hardwood head casing, 1x4 hardwood base, with hardwood base cap: JBO 172

Methods:

1. Existing hardwood casing to be reused and repaired to the extent possible, except as noted.
2. Install re-used existing trim at Second Floor where new walls doors and windows are to be built.
3. Install re-used existing trim at First Floor where new walls, doors and windows are to be built, except at Kitchen where new trim will be installed at new doors and windows except as noted.
4. Existing hardwood flooring: examine all hardwood floors scheduled for refinishing to determine areas in need of repair; perform repairs with identical hardwood species and reinsert t&g members as required to achieve smooth consistent surfaces.
5. All new finish materials as specified shall be visually unblemished without labels, stains, cracks, or natural irregularities.
6. New finished work is that work which is exposed to view in any way, exterior and interior, and shall be free of blemishes and surface cracks; open knots; closed knots shall not exceed 1/2" diameter at exterior wood surfaces, 1/8" diameter at interior wood surfaces
7. Contractor shall provide at least one carpenter for this work who is fully familiar with and can be sufficiently responsible for specification requirements, who has sufficient experience with all particular finish carpentry work that may be required for this job, and can direct the skilled work to be performed to fulfill the requirements of the job.
8. All finish work shall be straight; fit with tight, evenly-cut joints; free of visual blemishes caused by insufficient workmanship or caused by unsightly irregularities in the material itself.
9. Scribe and cut work to fit smoothly to adjacent surfaces.
10. Secure finish work with appropriate finish nails, countersunk, without splitting wood member.
11. Materials length shall be sized to the maximum extent as possible; stagger joints in adjacent related members. Scarf all end to end joints; cope all returns and miter all corners. No butt joints allowed.
12. All construction grade wood exposed to view shall be free of obvious surface blemishes at view side, with no open or closed knots, no closed knots larger than 1/2 " diameter+- .
13. Install all built-in items and miscellaneous hardware according to manufacturers' instructions.

14. New trim members for casing, base, etc at new walls (second floor) shall be of similar profiles and dimensions as original trim.
15. Install new base shoe at base areas where hardwood floors are to be refinished.

621. Exterior Siding and Trim

Materials:

1. Siding: install new Hardie fiber-reinforced cementitious lap siding at areas to the main body of the house and porch where original siding has been removed. Exposed lap shall be 4". Garage: install siding similar to new house siding.
2. Hardie-trim: fiber-reinforced cementitious members
3. New door and window casing: cedar or pine/fir: 5/4 Hardie trim, typical face width 4 ¼".
4. Preserve-treated 1x4s or 1x6s for wall areas at grade or flat roof
5. Miscellaneous trim: see Exterior Elevations

Methods:

1. See 620
2. See exterior elevations. Siding shall be installed strictly in accordance with James Hardie HZ5 Best Practices document: http://www.jameshardie.com/builder/bestPractices.shtml.
2. New Windows: exterior window casing shall be integral to window units and per window opening requirements, with sill horn extensions appropriate to casing widths.
3. Install preserve-treated wood members between bottom of Hardie paneling and trim at grade or flat roofs.
4. Existing trim and casing: Retain and repair as required all exterior and interior trim. Repair work shall result in finish surfaces to be relatively smooth and free of blemishes that can be viewed from more than 6 feet away. Repair worn surfaces as required with sanding, infilling wood putty in small cracks and crevices. Repair open cracks and minor deteriorated members with a liquid wood consolidant, Abatron Products. Wood members with larger deteriorated material shall be replaced with new material matching or closely resembling existing members.

626. Stairway Construction

1. Before construction, perform layout measurements to determine field conditions.
2. Build treads and risers on notched 2x12 LVL carriage board members (3 per run): refer to plans for riser and tread dimensions.
3. Anchor top and bottom of 2x12s securely to framed opening structure.
4. Tread and riser material and workmanship shall accommodate carpet finish to all tread and riser surfaces.
5. Install 1x8 notched skirtboard to both sides of stairs treads and risers.
6. Install code-required round hand rail at one side of stairways on metal brackets with continuous railing in areas where stairway turns, with code-required turns to walls at top and bottom of stair runs.

627. Existing Stairway

1. Repair existing stairway as necessary. Prepare for carpet runner full width.

628. New Exterior Stairway

1. Build new wood stairway near south elevation with Trex treads, Hardie trim risers on notched pressure treated 2x12 LVL carriage boards (3). Riser height shall not exceed 7 ¾"; treads shall be 11" width. Top deck shall be built with 2:2x10 rim joists at perimeter, with 2x10 rim joist anchored securely to house framing with 5/8" X 4" length anchor bolts spaced 1'-4" o.c
2. Support posts shall be anchored to concrete pier foundation set at frost depth.
3. Build 3'-0" high 2x6 railings with 2x4 upright backer for steps and top deck with 4x4 posts and newels, 2x6 top rail, 2x4 bottom rail, with 2x2 balusters at 4" o.c. spacing.
4. Build concrete stoop at bottom per plan and sections.
5. Install code-required wood handrail anchored to solid framing with metal brackets.

629. Front Steps

1. Build new steps, platform and railings similar to rear stairway.

630. Chimney Enclosure

1. Build new chimney enclosure to same architectural profile as existing removed chimney with preservative-treated wood framing material: 2x4 framing anchored to existing roof framing, two layers ¾" plywood

sheathing, with tapered prefinished metal cap with flanges covering top ½" of brick course. Install 1" thick Real Brick veneer brick per Division Four references.

631. Miscellaneous Wood and Metal Elements

1. Closet shelving: See Division 10, #5
2. Linen Closet: ¾" AC plywood shelving with finished edges, spaced 12" o.c., with 4" enclosed base.
3. Existing Second Floor linen closet: realign doors as required for smooth operation.

632. Wood Treatment: Weather /Water

Materials:

1. All wood in contact with concrete, all wood used in roofing and flashing systems: AWPA C2, plywood AWPA L-2
2. All wood in contact with earth, or located within 6" of grade: AWPA LP-22

Methods:

1. Install treated wood as designated above in above-mentioned locations.
2. Avoid handling treated materials with contact to bare skin.

635. Garage construction

1. See Division Three for concrete references.
2. Verify top of garage floor elevation with construction manager and architect before establishing concrete formwork. Garage floor shall slope slightly downward 1/8"/ft to the west.
3. Build new garage per plan references with east and south garage walls built as part of site retaining wall system. North and west walls shall be supported on frost depth footings. Build 2x4 wall construction with ½" sheathing, pre-engineered roof trusses, Hardie lap siding and trim similar to house. Install new GAF HD Lifetime roof shingles, color selection by Construction Manager. Roofer to provide roof spec warranty. See Division Eight for garage door and service door references. See Division Nine for exterior painting; See Division Sixteen for electrical references.

640. Wood Casework / Countertops

Scope of Work: Cabinet supplier to supply and install casework with countertops under contract with General Contractor.

Materials and Methods:

1. Base Cabinets: Install base cabinets constructed of solid hardwood face-frames, doors and drawer fronts. Drawers, dove-tail construction, solid hardwood. No particleboard permitted.
   Install rubbed bronze knobs & "D" pulls on all doors & drawers even when routed finger grooves exist. CM will choose style & finish from those available in line proposed by contractor.
   Cabinet style shall be "Shaker," with solid drawer front construction. Install Smartmotion FX heavy duty drawer glides.
2. Wall Cabinets: NOTE: Upper cabinets will be either: a) 42" installed to ceiling OR b) will be 36" trimmed with a clear maple, OR c) will be 36" with a trimmed drywall or plywood soffit. Install upper cabinets constructed of solid hardwood face-frames and doors. No particleboard permitted. Install brushed nickel knobs & pulls on all doors even when finger grooves exist. Hinges shall be Titus, 110 degree concealed type. Construction Manager will choose style & finish from those available in line proposed by contractor.
3. Countertops: Plastic laminate, Wilsonart, standard selection. Field measure for sizing. Seal all bare wood and wood composite surfaces including the underside of the countertop with a low VOC sealant. Screw to base cabinet a square edged plastic laminate counter top. Provide end-caps and cutout for sink. Caulk countertop to adjoining walls with low VOC caulking to match wall color.
4. Provide complete shop drawings, color and finish samples.
5. Mount upper cabinets to solid blocking or on cleats screw-fastened to wall.
6. Scribe countertops to wall as required; shim base with floor if necessary.
7. Verify all countertop heights where equipment will be installed under counter.
8. Cabinet, door and drawer faces shall be maple.
9. Cabinets and countertops to be formaldehyde free.

Division Seven: Thermal and Moisture Protection

Scope of Work: All thermal and moisture protection for floors, walls, ceilings and roofs as shown on plans and specifications as required including all accessories necessary for complete function of systems. Where a thermal or moisture protection system or material is indicated to separate two environments (inside-outside) (outside-outside) (inside-inside) it is the intent of this specification that the separation be a complete barrier between the two environments unless otherwise noted.

Submittals: Provide samples, guarantees and performance data for all materials as required. Provide color samples as requested. Provide shop drawings for skylights and other openings through weatherproof systems.

Quality Assurance: All roofing and associated work shall be provided by a single firm and performed by experienced workers. All materials and systems shall have resting certification by Underwriters Laboratories and other relevant industry performance standards.

Job Conditions: Proceed with roofing and moisture protection work only when weather conditions are in conformance with material manufacturer recommended limitations.

700. Thermal and Moisture Protection / General Notes

1. All roofing systems, insulation materials, and other systems must be installed strictly according to manufacturers instructions; all work directed by experienced supervisors.
2. Protect other work from spillage of roofing, adhesive and sealant materials.

712. Vapor Barrier

Materials:

1. 6 mil polyethylene sheet at all new construction. Construction manager shall set pre-construction meeting with Contractor and Dupont representative to review Tyvek, and associated self-sealing membrane at penetrations of doors, windows, etc
2. Building wrap: Tyvek

Methods:

1. 1 layer on the interior of all exterior walls, directly under the surface of finish materials
2. 1 layer on the interior of all exterior ceilings, directly under the surface of finish materials
3. Lap all joints of poly a minimum 6", taped at joints and taped to rough opening framing, to floors and ceiling substrates.
4. Building wrap: Sheets lapped as required, minimum 6"; tape seams as required.

721. Perimeter Insulation

Materials:

1. Styrofoam or approved equal, exterior grade type

Methods:

1. Install under new concrete slab in its entirety.
2. Install at inside face of frost depth foundation walls, West and South Elevations per exterior elevation references - from top of footing to underside of wood framing.

723. Wall Insulation

Materials:

1. Polyisocyranate (PIR) foam-applied full depth insulation in all sloped ceilings and in all exterior walls which are less than 6" deep. Where walls are standard 2x6 construction, use R-19 fiberglass batt insulation.
2. Blown-in fiberglass or cellulose, moisture-retardant type) in main ceiling
3. Foam tight at crevices and miscellaneous gaps

Methods:

1. Foam type insulation: Applicators shall coordinate work with construction manager before application commences, with observation of all sloped ceiling cavities for obstructions and other conditions that would interfere with appropriate application. Material shall be applied in all exterior wall cavities by experienced work-persons, and inspected by Construction Manager.

724. Ceiling Insulation

Materials and Methods:

1. After adding 2x2 furring strips, chutes for venting and air sealing (Spec # 16-4903), pneumatically blow in borax treated (no ammonium sulfate permitted), cellulose insulation per manufacturer's specifications to R45 where applicable. Density shall be 1.6 lbs per sq ft. Maintain ventilation routes from soffit and other vents with baffles. Install barriers as required to prevent insulation contact with heat-producing devices. Replace all

material removed or cut to gain access to match existing materials. If access is via a hatch, insulate the hatch with 3" of reflective foil faced polyisocyanurate foam and seal edges with compatible foil tape.

735. Roof Venting

1. Install 1 SF of combined Soffit and Ridge ventilation for every 300 SF of attic floor area. A minimum of 40% of the total required ventilation must be provided by the free air space rating of ridge vents. A minimum 60% of the total required ventilation must be provided by the free air space rating of Soffit vents. All vents must be screened and if exposed must be factory painted.
2. Continuous ridge vent, Cobra Winter II.

740. Rain Gutters

1. Install new color clad rain gutters with 4"+/- wide opening, with metal downspouts similar to gutters in size, profile and color, with 4 foot extenders and splashblocks. Downspouts shall be located at lower grade slopes.

760. Flashing/Expansion Joints

Materials:

1. 26 gauge, bonderized sign metal

Methods:

1. Coordinate work with other related work for the correct sequence of items which make up the entire system of weatherproofing and rain drainage. All flashing shall be permanent and watertight
2. Provide for thermal expansion of all flashing exceeding 15 feet length.
3. Provide flashing at all exterior windows, doors and exterior wall mounted devices such as electric meters, etc.

790. Sealants/caulking

Materials:

1. Horizontal Joints: F9-TT-S-00230C, Sikaflex1-A, Sonneborn NT-1
2. Vertical Joints: same as above
3. Fixture Joints: Silicone interior use at sinks, bath fixtures
4. Fire-stopping: Dow Corning 3-6548 Silicone RTV
5. Acoustic Control:Sealant Dow 784, 785
6. Infiltration Control: Sealant Dow 784, 785
7. Spray Foam: Dow Foam RTV 3-6548

Methods:

1. All caulking and sealant installation shall be done by workers experienced with specified materials
2. Seal around all plumbing fixtures with white silicone
3. Seal all materials intersections, joints, gaps, at walls, roofs, doors, windows, skylights and vents and other projections as required. Where required or appropriate, apply sealant over closed cell backer rod.
4. Foam around all electrical outlets in exterior walls
5. Seal completely around all penetrations and openings through fire-rated floor, wall, ceiling assemblies with approved fire-stopping materials and methods
6. Apply sealant in Kitchen areas to all edges of finish wall materials and casework that abut kitchen equipment with code-approved materials

Division Eight: Doors, Windows, Hardware

Scope of Work: All doors, windows, glass, frames, storm and screen combination units, and accessories and hardware required for a complete project. Window units shall be aluminum clad, wood units, clear finish at wood interior surfaces.

Submittals: Approved shop drawings as required. Provide color samples as requested. Provide a complete hardware schedule including a key schedule. Provide test data and label certification for all doors and windows as required.

Quality Assurance: All doors, windows, and hardware must meet the specifications of the acceptable manufacturers as listed in this specification. Install door hardware strictly in accordance with manufacturer's instructions.

800. Doors and Windows: General Notes