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The Plat or Section / Township / Range and Legal Description listed below may be an abbreviated legal description - Do not use to prepare legal documents

Section / Township / Range 33-29-22**Plat** Auditor's Subdivision No. 20**Legal Description** Lot 9

To determine whether your property is Abstract or Torrens, call (651)266-2000

Most Recent Sale**Sale Date** 09-08-1997**Sale Price** \$54,000**Certificate of Real Estate Value** 247136**Number** Qualified Sale**Sale Status****Sale Description**

[2010 Property Tax
Statement](#)

[Minnesota State Form
M1PR](#)



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S p e c i f i c a t i o n s

208 - 210 Bates

Dayton's Bluff Housing Corporation

Saint Paul, Minnesota

November 15, 2012

The Schacht Building at 208-210 Bates Avenue is a two-story flat-roofed masonry building constructed in the Italianate Style as side-by-side stores and flats in 1885. The symmetrical facade has three bays, two storefronts with recessed entrances, two bracketed oriel windows and a bracketed, pressed metal cornice. The property is categorized as pivotal to the Dayton's Bluff Historic District.

The building will receive a thorough rebuilding, including a nearly complete replacement of its First Floor structure with new masonry walls while retaining and restoring the storefront facade's Italianate Style ornamental features to conform to the building's historic role. The entire structure will contain a fully insulated exterior envelope. New brick will clad its wood framed second floor walls. New windows will be installed using the same dimensions and architectural profiles. A new garage will be built at the rear of the property.

The building's interior will be completely reframed for conversion into two up and down four bedroom units, with new mechanical and electrical services, each unit having a new kitchen and two and a half baths. New interior wood trim of similar width to original members will contribute to the building's original architectural character.

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 and architect. 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.

These Specifications were drafted with the State of Minnesota in mind. Please consider the following recommendations:

- 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 (5th 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. 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 per 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 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 month's 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: 100/300,000 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, including 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 a 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 208-210 Bates shall be the total undivided site area for the three buildings within the revised property description that also includes 216-218 Bates, 716 Wilson, 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:

Exterior:

- A. Remove all brick and stone feature material at all elevations, all windows, doors, miscellaneous exterior wood materials. Remove stone foundation, basement interior walls and floor in their entirety. Remove roof covering material, including parapet roof flashing.
- B. All miscellaneous items on site interfering with new work.
- C. Remove First Floor West Elevation wood framing and facing materials, doors and windows.
- D. Note: see Retained Items for West Elevation architectural elements.

Interior:

- E. Refer to Demolition Plans for walls and furred ceilings intended for removal.
- F. Remove various existing ceilings furred down from original ceiling; remove plaster and lath at underside of roof framing and inside face of exterior walls lath and plaster and other facing materials.
- G. Remove carpet and floor covering or other covering over existing flooring.
- H. All mechanical and electrical equipment, fixtures, devices, piping, etc. and associated connections, except as noted for retention.
- I. All interior doors.
- J. All Windows, including frames

3. Retained Items Schedule:

- A. Existing parapet architectural components, unless determined to be too deteriorated for retention.
- B. Retain brackets supporting Bay structure: support as required during building lifting phase.
- C. These First Floor materials shall be removed and stored for re-installation: cast iron columns, dentillated strips at existing at First floor West Elevation window heads, stone base elements. Cast iron columns to be stripped of paint and prepped for repainting.
- D. Furnace and water heater from each unit shall be removed and turned over to owner.

203. Building shoring, stabilization / construction

1. Shoring

The contractor shall be responsible for temporary shoring for existing construction until new construction (foundation, brick veneer, First Floor storefront re-framing is in place and properly anchored in final form. Shoring loads for existing structure not shown in documents to be determined by an engineer licensed in the state in which the project is located. 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. Temporary Bracing

All structural members are designed for in-place loads. The contractor is responsible for bracing, without overstressing, all structural elements as required at all stages of construction until completion of this project. Provide temporary lateral support for all walls until walls are adequately braced by permanent structure. Provide required temporary bracing for structural steel until permanent bracing and walls are in place.

3. The building, after removals are completed, will consist of its Second Floor North, East, South and West exterior wall framing, roof framing second floor and associated material. The General Contractor will provide exterior wall shoring as required to maintain structural integrity. All procedures shall be coordinated with the Construction Manager.

4. The Contractor shall provide general coordination to the Construction Manager and shall build the foundation at North, East and South walls per Divisions Three and Four, build new interior structural support and stairways.

206. Excavation / Fill

1. General Contractor shall coordinate excavation work with Construction Manager.

2. Excavate earth as required.

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).

207. Drain tile system:

1. Drain Tile System: Install drain tile 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. When area is proven watertight, drain water and remove dam.

209. Grading

1. Contractor shall contour earth for grade lines as shown on site plan at north and south elevations, from east elevation to east wall of new garage, 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. Verify extent of grading with construction manager.
2. Provide and grade a loam topsoil to create at least a 1 to 4 positive drainage away from building per grading note above. 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.

210. Landscaping

1. The Architect has prepared a site plan for the purposes of general site orientation of 208 - 210 Bates to the land parcels containing nearby 216 - 218 Bates and 716 Wilson. 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.

211. Concrete Flatwork

Install 3 1/2" walkways from Rear Entry at east elevation leading to garage. See Site Plan.

220. Site / Building Protection

1. **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. Window board-ups shall continue after new windows are installed until time agreed by owner and contractor.

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, and other components as required for a complete project.

Quality of 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.

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. Do not use vibrators against forms to consolidate concrete. 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
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.

330. Cast-in-place concrete: Footings, Pads

Materials:

1. See structural notes above.

Methods:

1. See structural notes above.
2. Fill all visible holes in slab wearing surfaces and slab edges where exposed to view
3. Allow 48 hours curing before placing loads on material.

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 at exterior locations. Interior concrete floors: apply grinding methods as required to prepare for dyed and hardened concrete finish surfaces.

340. Poured Concrete Foundations

1. Poured concrete foundation walls: steel reinforcing: see structural notes above.
2. Place all reinforcing bars and wire per standard industry practices, as required to achieve proper clearances and concrete coverage's; anchor as necessary to avoid displacement during pouring.

345. Concrete Steps

1. Concrete platforms shall be sloped slightly to drain; steps shall be maximum 7" risers with 12" treads, built on frost depth footings.

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. Where new masonry abuts existing masonry, new units shall match existing in color, texture, and joint configuration; new masonry shall be laid in bonded courses
4. 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

B. MASONRY LINTELS

All openings in non load bearing masonry walls not specifically indicated to have other types of lintels shall have reinforced masonry lintels as follows:

1. 8" deep for spans up to 4'-0".
2. 16" deep for spans from 4'-0" to 8'-0".
3. 4" and 6" wide units to be reinforced with 1 - #5 bottom.
4. 8", 10" and 12" wide units to be reinforced with 2 - #5 bottom.

405. Brick Masonry

Materials:

1. Modular type, Belden Belcrest 730, or approved equal, with consistent red color, slight blend.
2. Provide new brick sample mock-up panel board closely matching existing for selection by Architect and Owners and for HPC review and approval.
3. For lintels at masonry openings: see structural notes on drawings. Sizes vary on drawings.

Methods:

1. Brick shall be applied as veneer on existing wood framing. Fasten DW10 anchor and tri tie to wood sheathing every 2'-0" vertical and 4'-0" horizontal.
2. Brick shall be laid in typical running bond at typical face conditions. 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.
3. Mortar joints shall be 3/8" width, dragged type (no tooled joints, with consistent joint width, texture, color and profile across entire walls.
4. See Drawing Details for window and door conditions. Build arched heads with wood curved forms supported by wood framing, with arched forms removed when brick arch is completely set.
5. Build rowlock brick sills at all new brick window openings.

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. 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 at typical locations, rockface where indicated on exterior elevations
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. Arched window openings: Build arched heads with wood curved forms supported by wood framing, with arched forms removed when arch is completely set.
5. Openings in concrete block walls for flat lintels (unless specifically noted for other lintels):
 - a. 1' to 8' wide: 12" deep with 2 #5 rods
 - b. 8' to 12' wide: 16" deep lintel with 2 #5 rods
6. Extend all lintels a minimum 8" bearing beyond opening and fill block cores 2 courses below with concrete
7. Fill all reinforcing block cores (if noted on plan) and horizontal bond beams with 3000# concrete and 2 #4 rods for all exceeding 5 feet height at concrete block walls.

Division Five: Metals: Structural / Miscellaneous / Ornamental

Scope of Work: All structural, miscellaneous metal work and accessories as shown on plans and specifications, including, but not limited to, beams, columns, plates, angles, lintels, hangers sleeves, brackets, bolts, nuts, and other miscellaneous metal items necessary for a complete project.

Submittals:

Quality Assurance: Work shall conform to standard practice and AISC specifications for design fabrication and erection of structural steel; AWS standard qualification for welding. All steel shall be shop-prime painted.

510: Structural beams and columns: None required

Division Six: Wood / 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 particleboard components shall meet ANSI A208.1 for formaldehyde emission limits or all exposed particleboard edges shall be sealed with a low-VOC sealant or have a factory applied low-VOC sealant prior to installation. All MDF edges shall meet ANSI A208.2 for formaldehyde emission limits or all exposed MDF edges shall be sealed with a low-VOC sealant or have a factory applied low-VOC sealant prior to installation.

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 (minus the wood-framed addition), as constructed, shall remain in place except for interior 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" o.c. 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 1/2 inches 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 1/2") 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. **WALL SHEATHING**

Wall sheathing shall be minimum 15/32" thick APA rated panels, rated for spacing of supporting members. A minimum 32/16 span rating is recommended. Provide Exterior or Exposure 1 grade. Panels shall be continuous over two or more spans, and long dimension of panel may be either perpendicular or parallel to supports. All edges shall be blocked. Fasten wall 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. Stagger end joints of panels. Refer to plan and notes for any special shear wall nailing and bolting conditions. Gypsum sheathing to be a minimum of 1/2" thick fastened with 6d cooler or wallboard nails at 7" on center to all framing members.

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. **FLOOR SHEATHING**

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.

6. **ENGINEERED LUMBER I-JOISTS**

I-joist members noted on drawings are manufactured by the iLevel - Weyerhaeuser Company. Alternate at contractors option of equal design properties. Depths shown on plan are actual. Notching or cutting of I-joist flanges is not permitted. Web openings may occur under strict limitations indicated by the joist manufacturer. I-joists shall bear the full width of supporting members. Install web stiffeners, blocking between members, and nail to supporting members as per manufacturers recommendations.

7. **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.

8. **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.

9. 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, regardless of "industry standards" not recognized in these specifications. For example, 6 mil polyethylene vapor barrier shall be an actual 4 mil thickness.

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. See structural notes above.
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 or with subsequent observations during the removals process.
3. New framing lumber 94S, P 20, Douglas fir F-100: for all load-bearing; standard construction grade may be used for non-load-bearing conditions.
 - a. Exposed; appearance grade WCLB
 - b. Concealed: construction grade WCLB
 - c. Framing in contact with concrete: treated and marked AWPB-FDN
 - d. Framing in contact with earth: treated and marked AWPB-FDN

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. Double floor joists under parallel wall partitions above.
6. Frame all rough openings of doors and windows, built-in equipment, with manufacturers' dimensions, clearances and related installation instructions. Verify site conditions.
7. Headers: 3' span:
 - 2-2x4 4' to 5' span
 - 2-2x6 5' to 7' span
 - 2-2x8 8' to 10' span
 - 2-2x10: 10' to 12'span
8. Install headers in all load-bearing and non-load-bearing walls as noted.
9. Install solid blocking under all posts supporting beams and headers
10. 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.
11. Verify framing conditions with mechanical and plumbing contractors for all header openings, furring, chases, required for their work.
12. Completely remove all factory product marks on framing lumber intended to be exposed.
13. Carpentry work shall include all framing anchors, fasteners, nails appropriate to work conditions, required for a secure and complete job. See 612
14. Fire-stopping and draft-stops for wood frame construction shall conform to UBC requirements for combustible wood frame construction. Fire-stop at all floor levels and at ceiling line of each story in an approved framing method.

611. Interior Wood framing

1. Install new wood-framed partitions at new wall areas per plan; integrate as required with existing framing and architectural components to provide consistent framing and architectural finish surfaces.
2. Build new rear stairway per plans, sections and details.
3. Build new window headers for new window openings per structural engineer's notes.
4. Perform necessary repairs to second floor framing to provide a solid and stable structure for new work.

612. 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.

613. Subfloor/underlayment

1. Existing hardwood floor surfaces to remain except for Bathrooms. Other floor areas, install 3/8" plywood underlayment for finish flooring.

618. Roof Rafters

1. Retain existing roof rafter / ceiling joists system; repair as necessary. See Structural Section and structural engineering notes.

619. Wood Framing for Windows and Doors

1. Build wood framing for rough openings and casings for all doors and window units. See Exterior Elevations. Build typical insulation, vapor barrier, interior gypsum board.
2. 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.

620. Interior Finish Carpentry

Materials:

1. New wood casing: hardwood maple 3 1/4" hook strip with 1x4 hardwood head extending 1/4" each side of jamb; base: 1x4 hardwood with hardwood base cap: JBO 172
2. New Main Stairway, miscellaneous trim: main stairway railing: 1x6 hardwood cap with quarter-round wrapped under cap.
3. Miscellaneous trim per details

Methods: (New Woodwork)

1. All new finish materials as specified shall be visually unblemished without labels, stains, cracks, or natural irregularities.
2. New finished work is that work that is exposed to view in any way, exterior and interior, 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
3. 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.
4. 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.
5. Scribe and cut work to fit smoothly to adjacent surfaces.
6. Secure finish work with appropriate finish nails, countersunk, without splitting wood member.
7. 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.

8. 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+/-
9. Install all built-in items and miscellaneous hardware according to manufacturers' instructions.
10. New trim members for casing, base, etc at new walls shall be of similar profiles and dimensions as original trim.

621. Exterior Trim/Soffit/ Fascia – where required for new construction

Materials:

1. Typical trim: Hardie trim
2. Storefront trim: Hardie trim
3. Door and window casing: 5/4 Hardie trim, typical face width 4 1/4" for wood clad elevations, 2 1/2" face width for masonry window and door openings.
4. Refer to James Hardie manual for installation and finishing requirements including paint.
5. Miscellaneous trim: see Exterior Elevations

Methods:

1. See 620
2. James Hardie product installation shall conform to the most recent version of the James Hardie HZ5 Best Practices Guide (Version 6.1 – June 2012 as of the release of these specifications).
3. New Windows: exterior window casing shall fit to be integral to window units and per window opening requirements, with sill horn extensions appropriate to casing widths.
4. No factory-supplied brick-mold permitted.

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. Sloped and level railings shall be 2x4 framing, gypsum board clad, wood cap as described above: 620.2
7. 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.

628. Miscellaneous Wood and Metal Elements

1. Closet shelving: See Division 10, #5
2. Linen Closets: 3/4" AC plywood with hardwood strip facing, spaced 12" o.c., with 4" enclosed base.

630. Wood Treatment: Weather /Water

Materials:

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

Methods:

1. Install treated wood as designated above in above-mentioned designated 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 north.
3. Build new garage per plan references on concrete slab with east and south garage walls built with 12" concrete block. Build 2x4 wall construction with 1/2" 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 brushed nickel 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. Note: Formaldehyde free.
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.

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.

721. Perimeter Insulation (at new construction)

Materials:

1. Styrofoam or approved equal, exterior grade type

Methods:

1. Install under new concrete slab in its entirety

723. Wall Insulation (at new construction)**Materials:**

1. Polyisocyanate (PIR) foam-applied full depth insulation in all exterior walls which are less than 6" deep. Where walls are standard 2x6 construction, use R-19 fiberglass batt insulation.
2. R-13 friction fit fiberglass batt at demising walls between units.
3. Foam tight at crevices and miscellaneous gaps.

Methods:

1. Stuff fiberglass insulation or apply foam insulation in all voids in walls to a density approximately 40% of its normal uncompressed volume. 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.

724. Ceiling Insulation**Materials:**

1. Above-ceiling areas: R-50 fiberglass blown-in insulation

Methods:

1. After air sealing (Spec # 16-4903), pneumatically blow in borax treated (no ammonium sulfate permitted), cellulose insulation per manufacturer's specifications to R50 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

725. Building wrap

1. Tyvek, lapped 6" at seams or as required, tight to all door and window openings. Preconstruction meeting required with Dupont Rep for building wrap and self sealing membranes at all windows, doors and penetrations.

731. Membrane Roofing**Materials:**

1. EPDM 60 mm thickness, Carlisle or approved equal, Provide 20 year No Dollar limit manufacturer warranty/ 10 year installer warranty.
2. Accessories: seaming materials, washers and fasteners, joint tape, adhesives and other accessories as selected by manufacturer
3. Flashing: flexible type as recommended or supplied by manufacturer
4. Note: accessories must be selected strictly in accordance with manufacturer's requirements and must be compatible with membrane
5. Cant edges, scuppers as appropriate with job requirements

Methods:

1. Contractor shall examine substrate to verify surface is dry, smooth, and solid and is prepared for membrane application; verify wood joints are tight and smooth; verify slope to be adequate for complete drainage.
2. Contractor shall employ experienced work-persons with working experience and thorough familiarity with selected membrane.
3. Install appropriate flashing at all roof protrusions
4. Apply membrane with fully-adhered method; seal membrane to vertically flashed elements and to scuppers as required. Install counterflashing reglets over all termination bars.

735. Roof Venting

1. Install louver vents at top of wall between each joist along at top of brick at. Install tall capped vents on roof along west side, both units.

740. Roof Drain

1. Portals Plus, 6" diameter (or larger as required to accommodate roof size and its rainwater loads), #61171, PVC drain with aluminum strainer dome. Drain package shall contain all clamp devices, extension pipe, bearing pan, expansion coupling and other accessories as required for complete installation. Drain unit shall be installed in complete accordance with manufacturer's instructions and conforming to existing conditions.

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

763. Metal Scuppers

Materials:

1. Galvanized metal, 26 gauge, or aluminum of similar thickness with 4" extender; with clamps and anchoring devices.

Methods:

1. Install at parapet area as noted on roof plan, integrated into opening at parapet. Scupper outlet shall extend 4" +/- over fascia to allow runoff drop past vertical wall surfaces. Scupper outlet shall be constructed to cantilever from roof without support at fascia.

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. hardware for fire doors must comply with NBFU #8 and NFPA #80. Install door hardware strictly in accordance with manufacturer's instructions.

800. Doors and Windows: General Notes

1. See Door Schedule

2. Window manufacturer must certify that egress windows as designated on plans and in specifications must meet IBC and applicable codes for opening size
3. Windows, door glass and miscellaneous glazing must be thoroughly cleaned, including removal of all labels, prior to substantial completion.
4. New units for masonry openings with arched heads may require sash and frames to be custom-sized to fit masonry openings.

810. Doors, Exterior:

1. Entrances: Mastercraft E-2, or approved equal, fiberglass panel type with smooth finish (no imitation grain surfaces allowed).
2. Reinforce door head frame where transom unit is above door.
3. Garage service door: Jeld-Wen, steel, 6 panel, or approved equal.
4. Garage Service door: Install fixed door at center of West Elevation with wood framing backer: see plan reference

822. Overhead Garage Doors

Materials and Methods:

1. Overhead Garage Door Co or approved equal, metal overhead garage doors (2) with Stockton clear glazing 90 mph rating and two operators required. Install with all necessary track system, connecting devices, lockset, manual and remote operations, with remote electronic opener device. Door shall be capable of shutting and closing smooth operation.

820. New Wood Doors/frames, interior

Materials:

1. Door manufacturer: Builders' choice, clear pine panel type
 - a. Panel type hardwood birch or oak veneer; performance standards shall require maximum allowable gap or warp between door face and frames : 3/16"
 - b. Closet doors: hinged type, with all necessary
 - c. Warp: maximum allowable warp or gap between any door face and frame measured diagonally between opposite corners - 3/16"

Methods:

1. Install with proper interior temperature conditions
2. Doors shall be installed by workers experienced in finish carpentry
3. Verify wood base and casing conditions before installation

860. Wood Clad Windows

Materials:

1. Window manufacturer: Kolbe Classic Series or equal, low E argon-filled glazing, double-hung, except as noted, clad type exterior with wood interior, 5/8" insulating glazing, crank operators for awning and casements units.
2. Combination units: SP Carpentry or equal, wood surround with aluminum inserts at double-hung locations
3. Window units shall have exterior casing as indicated on plan details or spec references. No brick-mold accepted.

Methods:

1. Install strictly in accordance with manufacturer's instructions.
2. New window units shall be sized as required for new masonry openings.
3. Installation in masonry openings shall include jamb extenders, miscellaneous wood elements as required for complete weathertight and smooth operation.

880. Hardware

Materials: Schlage Residential Series brushed nickel finish

1. Hinges shall be brushed nickel finish 1 1/2 butts per door;
2. Locksets shall be installed at each exterior door and unit entry door, keyed deadbolt at entry side with thumb-release at interior side
3. See Hardware Schedule for hardware types, door stops, etc.
4. Sliding doors: provide sliding type track and associated devices

Methods:

1. Install per manufacturer's instructions; provide smooth operation
2. Verify hardware types with hardware schedule with owners
3. Provide owners with three sets keys at time of completion

Division Nine: Finishes, Interior and Exterior

Scope of Work: All finishing work and materials necessary for a complete project and for completely finished surfaces at all occupiable areas. It is the intention of these plans and specifications that all surfaces exterior and interior shall receive finish paint coat or pre-finished surface treatment. All surfaces must be prepared as required: washing, sanding, cleaning, etc. before finish surface is applied. Defective substrates shall be examined by contractor and project architect to determine proper remedy or replacement.

Submittals: Submit color samples for all finish materials and surfaces for final approval by owner or project architect.

Quality Assurance: All finish work must conform to standard practices of the appropriate trades. References by the American Gypsum Association, Handbook for Ceramic Tile Installation, Tile Council of America. Carpet and Rug Institute of America. Install finish materials strictly in accordance with manufacturer's instructions.

Job Conditions: Protect all adjacent surfaces during finish work procedures. Work shall be performed only under temperate weather conditions and proper interior temperature conditions.

900. Finishes: General Notes

1. See Room Finish Schedule

925. Gypsum Board/Drywall**Materials:**

1. All gypsum board, materials and labor and accessories necessary for complete installation so as to provide substrate for finish surfaces for all interior walls, ceilings, soffits, bulkheads, partial height walls, etc. for all occupiable spaces.
2. Gypsum Board: ASTM C-36, United States Gypsum, National Gypsum or equal
3. Regular board except where otherwise noted
4. Gypsum board and taping materials as required for fire-rated separations
5. Water resistant Gypsum board: ASÂ C-630
6. Joint treatment: ASTM 475 complete system conforming to the requirements of the board manufacturer, with perforated tape, corner bead, J-bead where required; joint compound shall be 2 separate grades: bedding and filling, and topping and sanding; miscellaneous materials as required
7. All ceilings shall be taped as required to prepare for flat paint finish: no spray texture.
8. Screws shall be ASTM 646 where required

Methods:

1. Install gypsum board in strict accordance with manufacturer's requirements and finishing standards ASTM C 840 and GA 216.
2. All board 5/8" thickness at walls and typical ceilings.
3. Install whole boards wherever possible, avoiding small pieces at typical walls; doorway and window openings shall receive large enough boards to eliminate joints at upper corners of openings.
4. Gypsum board wrapped passage openings shall have straight, plumb and square surfaces that will be subject to inspection by project Architect.
5. New gypsum board walls and ceilings shall integrate finish surfaces with adjacent plaster surfaces to achieve consistent integration of existing and new surfaces.
6. Provide proper and continuous temperature during entire tape joint procedures. Contractor shall be responsible for temporary heat; new furnace shall not be used for taping procedures.

960. Ceramic Tile**Materials:**

1. Install 5/8" fiberglass reinforced cement composition boards such as Durock® or HardieBacker™ in area specified to accept ceramic tile. Space edges 1/4" from adjoining surfaces and fasten with minimum 1-1/4" long No. 8 x 0.375" HD self-drilling corrosion-resistant ribbed wafer-head screws (i.e. High-Low Rock On screws) designed specifically for backer board. Use product specified by manufacturer for particular

application (such as walls or floors). For floors bond backer board to plywood subfloor with thinset mortar using a 1/4' square notched trowel. On walls, all edges of backer boards must be supported by full face 2' framing secured to the structure. On floors, backer board must be installed on 3/4' plywood over joists 16" on center or the joist/subfloor assembly must meet the manufacturer's specifications.

2. All ceramic floor or shower stalls to have membrane under water proofing.
3. Typical Ceramic tile allowance: \$8.00 per square foot materials only. Ceramic tile shall include all floor, base, and wall tile, including bullnose edges where edges exposed to view. Base shall be minimum 4" in height.
4. Concrete setting bed for floor tile with reinforcing woven wire mesh, adhesive for wall tile, standard grey grout.
5. Ceramic wall tile shall consist of 6'-0" high tile walls at shower – see Interior Elevations.
6. Install built-in soap dish in ceramic tile shower wall

Methods:

1. Install per standard industry practice; layout set with lines parallel to long walls so that tile segment coursing adjacent to walls are at least one third of full size.

962. Hardwood Flooring Finishing

1. Examine condition of hardwood for refinishing: see reference 620.
2. Clean all wood floor surfaces thoroughly before applying polyurethane.
3. Counter sink all nails and fill holes. Drum sand and edge floor finishing with 120 grit sandpaper. Vacuum and tack rag room. Apply a coat of Minwax Water Based Polyurethane Base Coat followed by 3 coats of Minwax Water-Based Polyurethane for Floors, or a floor finish that complies with regulation 8, rule 51, of the Bay Area Air Quality Management District <http://www.baaqmd.gov/dst/regulations/rq0851.pdf> and may not exceed 250 grams of VOC per liter of coating as thinned to the manufacturer's maximum recommendation, excluding the volume of any water, exempt compounds, or colorant added to the tint bases.

966. Resilient Flooring

Materials and Methods:

1. See Room Finish Schedule for areas of application.
2. Congoleum Endurance, vinyl plank, direct glue adhered to concrete. Installation must strictly follow manufacturer's instructions.

968. Carpet

Materials and Methods:

1. Install FHA approved, Nylon/Olefin blend cut pile weave carpet. Install over a matched 1/2" medium density rebond pad w/ a minimum of seams. Carpet and Pad must meet the Carpet and Rug Institute's Green Label certification. Stretch carpet to eliminate puckers, scallops & ripples. Cover entire stair treads and risers. ALLOWANCE: Carpet & pad \$30.00/sy.
2. Comply with manufacturer's instructions and recommendations for seam location and direction of carpet weave, maintain uniformity of direction and lay of pile. Seams shall be at center of doors, perpendicular to traffic.
3. Provide cut-outs where required, and bind or roll-edge cut edges where edge of carpet is not intended to be concealed.
4. Carpet Manufacturer: several manufacturers shall be available for selection; \$24.00 per yard materials and labor allowance; carpet shall meet or exceed FHA Bulletin UM44d with minimum 26 ounce weight, polypropylene back
5. Pad: per contractor selection
6. Comply with manufacturer's instructions and recommendations for seam location and direction of carpet weave, maintain uniformity of direction and lay of pile.
7. Provide cut-outs where required, and bind or roll-edge cut edges where edge of carpet is not intended to be concealed.

990. Painting: Exterior/Interior

Materials:

1. All paints and primers must meet the Green Seal G-11 Environmental Standard <http://www.greenseal.org/certification/standards/paints.cfm>
2. Benjamin Moore, Fuller O'Brien or approved equal, Low VOC paint, Low-VOC primer at exterior surfaces.
3. Satin finish latex enamel at toilet walls and ceilings and kitchen walls.

4. Latex eggshell finish at typical interior walls.
5. Semi-gloss enamel at interior trim where indicated.
6. Varnish (water-based polyurethane) at typical interior wood trim, doors, railings, miscellaneous wood trim.
7. Primers, cleaning materials as required.
8. Ultra-flat latex at all ceilings except toilets.
9. Exterior Hardie trim and siding. Follow James Hardie specifications for paint, 2.88 DFT; Super Paint or Duration are the only approved products.
10. Elastomeric "safe encasement" 20 year lead encapsulant paint on all retained wood siding and trim.

Methods:

1. Examine all areas to be painted or varnished to verify completion of sanding, typical cleaning, puttying and other work by related trades and other trades
2. Verify paint and stain/varnish colors with project architect before proceeding.
3. If lead paint is determined to be present:
Using lead work safe practices, remove & properly dispose all loose materials prior to installation of new materials. Using lead work safe practices, prepare existing wood surfaces specified for stabilization prior to paint application by securing, replacing or repairing all loose, broken, rotted, or deteriorated materials to provide a sound surface for paint application. Prepare wood surfaces by removing all loose paint using lead work safe practices & according to paint manufacturer's recommendations. Use a 25-year or better paintable Low-VOC caulk matched for color to fill all cracks, voids, holes, etc. prior to painting. Apply a compatible exterior Low-VOC primer to all bare areas. Apply two coats of quality exterior LOW VOC paint to specified trim. All paints and primers must meet the Green Seal G-11 Environmental Standard:
<http://www.greenseal.org/certification/standards/paints.cfm>.
Adhesives must comply with Rule 1168 of the South Coast Air Quality Management District. All caulks and sealants must comply with regulation 8, rule 51, of the Bay Area Air Quality Management District <http://www.baaqmd.gov/dst/regulations/rq0851.pdf>. Match existing color as close as possible. All work to be done in a neat & professional manner. Use care to protect all surfaces not intended for paint coverage.
4. Prior to commencing finish work, prepare work areas with taped masking, fixture cover removal and other protection of items with finish surface that could be marred by paint or varnish.
5. Paint and varnish shall be applied in a smooth and uniform manner, with no visible signs of abrupt change of brush or roller direction, removal of drips and blemishes; cut-in edges with adjacent finishes or other surfaces with neat and straight line edge.
6. Varnish work shall include light sanding between coats
7. Re-install all surface-mounted items and masking materials after paint is thoroughly dry
8. Provide touch-up work as required
9. Provide three colors for exterior finish
10. Provide three colors for interior walls; ceilings shall be white unless otherwise noted
11. Backprime exterior trim and wood panels (except James Hardie siding – trim can be backprimed).
12. Special painting, interior: apply paint to walls with "cutting in" at ceiling; ceiling to be painted white; white color exclusive of three colors per reference #10 above

Division Ten: Specialties

1. Toilet Accessories: Delta or equal, brushed nickel, 18" towel rod, 12" towel rod, paper holder
2. Window Shades: mini-blinds, no lead permitted.
3. Medicine Cabinet: Nutone Model 781021, Recess Mount Cabinet - polished stainless
4. Mail box, house address numbers: provide construction manager with mail box selection options; Provide options for house address numbers, 4" height, to be mounted at house front and garage near overhead door.
5. Closet shelving:
Manufacturer: Closet Maid 5631 SuperSlide, shelf with closet rod
Materials: Steel Wire: Basic cold drawn, Grade C-1006, average tensile strength over 100,000 psi; Coating: Proprietary heavy-duty poly-vinyl chloride (PVC) formula resin, plasticizers, stabilizers, pigments and other additives. Thickness: 9 to 11 mils; Classification: No ingredients listed as hazardous per OSHA 29CFR1910.0017.
Provide intermediate support for spans over 3'-5" or less if recommended by manufacturer.
Wire shelving: coated steel wire, 1/2 to 1 inch incremental cross-deck spacing.
Hang rod: 1 inch diameter by 20ga epoxy-coated tubular steel.

Accessories: wall clips; end brackets; support brackets; poles; standards, shelf brackets, pole clips, anchors.

Division Eleven: Appliances

1. Refrigerator: GE 6TH 181BDWW, Energy Star, 18 cu. ft., white
2. Range: Whirlpool WFE510SOAW 4.8 c. ft. electric range with self-cleaning oven, white.
3. Range hood: See 1540
4. Grease Shield: Sears Kenmore, color to match range
5. Dishwasher: GE built-in, model #GSD 4000DWW
6. Laundry:
 - A. Kenmore 3.4 cu. ft. Top-Load Washer, item #: 21202 Model #: 2120
 - B. Kenmore 7.0 cu. ft. Gas Dryer - White; item #02671202000 Mfr. model #71202
 - C. Laundry vent: contractor selection: rigid venting with exterior grille.
7. Install 4" rigid aluminum vent tubing from the specified dryer location to a 4" wall mounted dryer vent hood with a back-flow preventer and NO screening. Do not fasten with nails, screws or other fasteners that protrude into the interior of the exhaust duct. Seal all seams in the system with duct mastic or aluminum foil tape, not duct tape. Secure duct and hood to framing.

Division 15: HVAC and Plumbing

Part One: HVAC

1500. Heating and Ventilation

Scope of Work: All heating and ventilating as shown on plans and specifications including all accessories, connections, devices, etc. required for complete installation and operation. HVAC contractor shall provide heat loss/heat gain calculations and final system design size to meet all the requirements of the building as described in the drawings and specifications and to conform to all related codes and ordinances. Provide instruction and operating manuals for all equipment.

Verify location of all HVAC and related equipment for clearance and access to maintenance and inspection before fixing them in place. Immediately notify General Contractor of any conflicts with fixed equipment or structure/architectural surfaces.

1510. Furnace

- A. Use the Air Conditioning Contractors of America (ACCA) 8th Edition of their Manual J Heat loss calculation tool [http://www.acca.org/tech/manual J/](http://www.acca.org/tech/manual_J/) (calculate manual J based on the post rehab building envelope), and use ACCA's Manual S for equipment selection. NOTE: Provide both Manual J & S reports with first Draw documents.
AIR CONDITIONING: Carrier Performance 16 Central Air Conditioner 24ACC6
- B. FURNACE: Carrier 59MN7A Infinity Modulating 4-Way Multipoise Condensing Gas Furnace with 95% AFUE rating. New furnace to be vented with PVC piping per manufacturer's specifications. Provide with manufacturer's longest guarantee. Include auto set back thermostat controls, vent pipe & new shut-off valve.
Ductwork layout shall be presented to construction manager and architects for review before installation. Ductwork layout shall allow gypsum board wrapped enclosures to integrate with architectural spaces. Locate cold air return if necessary to ensure easy access, good fit & easy replacement of air filter. An exterior return air filter box shall be installed on one side, both sides, or bottom of new furnace. Seal all exposed duct joints as a part of this item with Duct Mastic.
First floor shall have in-floor sealed joint PVC ducts. Soffits may be necessary for second floor supply.
- C. All ventilating fan units shall be vented with ductwork to the exterior.
- D. Mechanical heating system for this project shall be included with the general contractor's bid. The system shall be based the total heating requirements for the project and all applicable code requirements.
- E. Mechanical contractor shall coordinate planning of duct layout with general contractor before commencement of work. Any irregular duct layouts or furnace and flue locations or any layouts that conflict with architectural spaces shall be reported to the project architect so that a mutually agreeable and workable layout can be achieved..

- F. Forced air system shall not be used for heating during gypsum board taping operations.
- G. Ductwork interiors shall be vacuum-cleaned as required before final completion.

1522. Temporary Heat

- 1. General contractor shall be responsible for temporary heat as required for finish surface installations. Heat supply shall be continuous and at proper temperature for finish material installation as required by standard practices and finish material requirements.

1530. Toilet and Bath Ventilation

- 1. Install a Panasonic Whisper Green-Lite II Model # FV-08VKML1 ceiling mounted Fan only fixture with a modulating DC motor capable of 80 CFM operating at less than .3 Sones, switched by a built in motion detector and night light, vented w/ damper to exterior. <http://www.panasonic.com/business/building-products/ventilation-systems/products/whisper-green-lite.asp> Install 4" galvanized metal duct (not flex duct) and vent to the exterior ideally through a wall or gable end using a 4" hooded vent with damper. All duct seams and connections shall be sealed with duct mastic. Insulate the ductwork with vinyl or foil faced R 6 minimum duct insulation. Repair any damage to the ceiling installation and air seal fan/light assembly to the ceiling with low VOC caulk. Set the continuous level of ventilation to meet ASHRAE 62.2. Fan shall be wired to room lighting: high speed when light is on, with time delay switch fan continues on high speed to 20 minutes.

1540. Kitchen Range Vent Hood

- 1. Install Broan QSE130WW, 30" 220 CFM white under cabinet range hood with integral fan control and light switched separately, with exterior ducting. Attach hood to cabinet with screws. Include metal vent with all seams sealed with duct mastic, and roof or wall cap/damper assembly flashed appropriately for the exterior finish.

Part Two: Plumbing

Scope of Work: All plumbing as shown on plans and specifications including street connections, all supplies required for installation, wastes, vents, supply pipes, fire protection, filler valves, shut-offs, mixers, fixture hardware and accessories necessary for complete installation and efficient operation, and applicable for all local and state codes.

Verify location of all plumbing fixtures and related items for clearance and access to maintenance and inspection before fixing them in place. Immediately notify General Contractor of any conflicts with fixed equipment or structure/architectural surfaces.

Plumbing products proposed for substituted fixtures may be determined to be equal by the Construction Manager.

Submittals: General contractor and Mechanical contractor shall verify plumbing layouts of supply lines, waste lines, vents so as to verify complete integration with architectural design conditions.

1540. Plumbing General Notes

- 1. Verify location of system for clearance and access to controls before fixing system in place. Notify General Contractor of conflicts with other systems, structure or revision of architectural design.
- 2. Plumbing Contractor shall be responsible for proper excavation, fill, backfill, cutting, patching, and repair necessary for complete work, including repair to site, public walks, curbs and street.
- 3. Plumbing system shall be installed within the insulated building envelope that will be protected from freezing.
- 4. Install each fixture with traps easily removable for servicing and cleaning. Install shut-off valves in readily accessible locations for servicing. Install escutcheons to cover pip penetrations through walls and floors.
- 5. Verify exact location of plumbing fixtures with dimensions of architectural plans.

1551. Floor Drains

- 1. Josam or equal cast iron grate, set in sloped concrete area, at Mechanical/Storage/Laundry areas.

1552. Exterior Sillcocks

- 1. Install 2 non-freezable type devices with shut-off valves, location to be determined by owner.

1554. Plumbing Fixtures

1. Water Closet: Install a 1.3 GPF close coupled, white, vitreous china commode such as an American Standard FloWise Compact Cadet 3 EL 3305.000, or any commode tested through the latest "Maximum Performance" (MaP) testing sponsored by Canadian Water and Wastewater Association (CWWA), the California Urban Water Conservation Council (CUWCC), the U.S.-Canadian Alliance for Water Efficiency (AWE) and Veritec Consulting Inc. that has shown to score 800 or better on the MaP Flush Performance test (grams of solid waste removed in a single flush). See the following link for the November 2008 report. <http://www.allianceforwaterefficiency.org/MaP-main.aspx>. Include a manufacturer's approved plastic or pressed wood white seat, supply pipe, shut-off valve, and wax seal.
2. Tub: white 5' American Standard Cambridge Americast w/ Delta single lever diverter valve, shower head with a maximum 2.0 GPM flow rate & friction fit chrome shower rod; (note: exterior wall sections behind the tub shower unit must be completely air-sealed prior to installation)
3. Shower valve: install a chrome plated brass shower head with a maximum 2.0 gallons per minute flow rate. Include arm where required. Note: any low-flow showerhead should be controlled by a valve that has been designed, tested, and verified to function safely at the reduced flow rate.
4. Lavatory: American Standard Aqualyn
5. Lav faucets: Install a washerless, single control, metal bodied faucet with a 15 year drip-free warranty and a maximum flow rate of 2.0 GPM, Delta or Moen. Allowance \$250.00 per fixture. Include chromed brass shut off valves and trap.
6. Sink: install a 22 gauge 33"x22"x7" double bowl, stainless steel, self rimming kitchen sink including a steel, metal body faucet, rated at 2.0 GPM or less, with a 15 year drip-free warranty, grease trap, supply lines, full port ball type shut-off valves & escutcheon plates on all supply & drain lines. NOTE: All copper is to be soldered (no compression fittings) & all PVC fittings glued.
7. Faucet, Kitchen: Install a single lever, washerless, metal bodied faucet with 15 year drip-free guarantee and maximum flow of 2 gallons per minute. Delta or Moen with sprayer. Allowance of \$250.00 per fixture.

1555. Miscellaneous Plumbing Fixtures, Devices

1. Laundry overflow basins under stacking laundry washer/dryers, discharge to drains
2. Faucet boxes for laundry washer/dryers: contractor selection; install as required

1561. Rough-in Plumbing:

1. Install plumbing backcheck valve if required by local code requirements and job conditions

1565. Water Heater

1. A.O. Smith ProMax, power vented, 40 gallon gas hot water heater; glass lined, insulated to R-7, with a 6 year warranty. Include pressure & temperature relief valve, discharge tube to within 6" of floor, condensate pump, owner's manual & all duct work to power vent to exterior. Provide separate electrical circuit & new gas piping from shut-off valve to fixture. Discharge tube shall be directed into a floor drain.

Division 16: Electrical

Scope of Work: All electrical work, equipment, fixtures, devices, connections and accessories required for complete operation of electrical system as indicated per schematic reference and specifications. All electrical runs shall be concealed unless other wise noted.

Submittals: Provide manufacturers' data and catalog cuts for all lighting fixtures for final selection by owner. Provide load calculations and power requirements. For commercial projects, provide lighting power calculations required for building permit submission.

Quality Assurance: Electrical contractor is responsible for verifying the system size, service size, proper over-load protection, load balance and other requirements to comply with the current National Electrical Code, International Building Code, and all other local requirements. System shall include connection to and cost of power company connection from nearby power lines to building masthead and meter.

1600 Electrical / General Notes:

1. The electrical contractor is responsible for all excavation, cutting, adjustments, patching, and repair necessary to accomplish electrical work. No structural members may be cut without permission of the project architect.

2. All parts of the electrical system except fixtures must be concealed unless otherwise noted. No exposed conduit runs in occupied rooms will be accepted without prior approval.
3. Provide temporary power and lighting as directed by the general contractor.
4. Verify location of masthead, electrical meter and panels with project architect. Clearly mark all circuits as to size and area use.
5. All outlets within 5' of a sink shall be GFI.
6. Electrical Contractor shall provide approved rated covers for all fixtures installed in rated ceilings and for fixtures installed in insulated ceilings.
7. Verify cover or fixture plate to cover wall or ceiling opening; do not install until general contractor has corrected situation.
8. All fixtures must be installed with flanges flush to finish surfaces, be anchored securely so as not to be moved by touching them. Provide all necessary blocking, backing, spacers, and anchors necessary for secure installation. Identify with colored marker all special circuits (computer circuits, exhaust fan switches, GFI, etc.
9. Verify exact location of smoke detectors, doorbell chime devices, thermostats, TV cable outlets, etc. before final installation.
10. Provide GFI outlets (2) and light fixture in garage; 20 amp circuit.

1603. Electrical System Design:

1. The electrical contractor, as selected by the general contractor to be awarded this project, shall provide a design/build electrical system for this project to be included with the general contractor's bid. The system shall be based the total electrical requirements for the project and all applicable code requirements.
2. The system may be based on the existing electrical system in the building that may contain elements that can be removed, left in place inactive, revised.
3. The design/build system shall be proposed to the owner and project architects for review before contract signing and commencement of work
4. The Architects will prepare a schematic lighting plan as part of final architectural document references in this section are intended for general scope of work, and may not include all items required for total project requirements, and may be modified and supplemented by the electrical contractor per/design/build documents.
5. The design/build plans shall include low voltage and computer connection system.
6. Coordination of openings for equipment, shafts, ductwork, piping and other significant openings as is essential for the Work of this Project.
7. Contractor: Coordinate meetings with the following Sub-contractors and Design-Build Trades:
 - A. Masonry: items passing through shaft walls, rated walls
 - B. Carpentry: Items passing through floor and roof assembly, shaft walls
 - C. Gypsum Wallboard/ Plaster: items passing through shaft walls, rated walls

1610. Service Distribution

1. Per design/build system
2. System shall be 200 Amp, one panel at each unit.

1614. Panel Boards

1. Locate panel accessible and according to code, with secure cover.
2. Contractor to properly balance all circuits per area and power requirements. Clearly mark all circuits as to size and use.
3. Provide separate circuits for:
 - A. Equipment
 - B. HVAC
 - C. Computers, if identified for special requirements in specifications

1620. Switching locations

1. See electrical plan for schematic references

1621. Wiring / Receptacles / 220 V / Special

1. All wiring shall be romex in concealed locations.
Wire gauge and size to be determined by load requirements and code.
2. All devices, switches, receptacles, plates, etc. shall be contractor selection unless otherwise noted.

3. See 1622 for GFI, smoke detector installations.
4. Contractor shall include in contract price provision for three additional receptacles for installation if required by field conditions.

1622. Weatherproof Receptacles / GFI

1. Install GFI receptacles (with re-set device at receptacle) per code requirements and electrical plan.

1630. Equipment / Appliance Connection

1. Install connections to all equipment as required. Verify locations of service connections on appliances for appropriate installation.
 - a. Refrigerator / 115
 - b. Range, electric 220
 - c. Clothes Washer / 115
 - d. Clothes Dryer / 115
 - e. Smoke detectors /115
 - f. Door Bell / 115
 - g. Range Exhaust Hood / 115
 - h. Dishwasher / 115
 - i. Bath Exhaust Fans /115

1640. Lighting Fixtures Interior / Exterior

1. Provide Electrical Plan with schematic references to construction manager
2. Lighting fixture Allowance: \$75.00 per light fixture
3. Lighting fixture Allowance for Dining Room fixture: \$150.00 per unit
4. Install exterior lighting fixtures at each entrance (3); install floodlighting fixtures, exclusive of fixture allowance, (2 double-lamp type) at garage and at 1 additional location to be determined by construction manager.

1650. Smoke Detectors, Carbon Monoxide Detectors

1. 115v smoke detectors, ionization type, direct wired, 4 devices to be located per code requirements, with final locations by advice of construction manager on site.
2. Carbon Monoxide detectors: Install at each sleeping area, minimum of one per floor, a hard wired or plug-in carbon monoxide detector with audible alarm, battery back up and with a digital display capable of showing both peak CO level recorded by the alarm since it was last reset or unplugged, and the present level of carbon monoxide the unit is sensing.

1653. Telephone System

1. Coordinate installation with local telephone system; install 4 phone jacks, including jacks in living room, kitchen and master bedroom for each unit

1660. Intercom System

1. Install intercom at exterior door to serve both units: Nutone NPS104WH 4 Wire Retrofit Outdoor Remote Station.

1662. Cable TV

1. Prewire Cable for all rooms

**208-210 Bates, 216-218 Bates, and 716 Wilson
Bid Tally**

The following bids were submitted:

Contractor	Total Base Bid	Site Work - all properties	208-210 Bates	216-218 Bates	716 Wilson
Pollock Construction	\$1,641,541.03	\$216,711.59	\$622,231.44	\$539,237.76	\$263,360.24
AA Contracting	\$1,655,150.00	\$117,500.00	\$625,710.00	\$640,740.00	\$271,200.00
Synergy Builders	\$1,839,239.00	\$410,718.00	\$607,281.00	\$565,800.00	\$255,440.00
Flannery Construction	\$1,992,329.00	\$218,000.00	\$760,264.00	\$612,036.00	\$402,031.00
Building Code Tech: bid withdrawn	\$794,000.00				





8

210-208
CARS



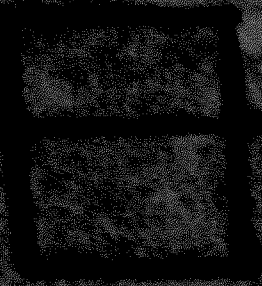





9

204

GARAGE
CAPCY: 18 CARS.
WRT. STOVE
LIGHTS ELEC.



10

		117.40	40	-
		5		
		6	4	3
	7	90	0	1
	8	117.22		7
		9		
		100		
		10	11	