Jay Raskin
Architect

Permit

Project Manual

Roberts Residence

Nenana Aveune

Cannon Beach, Oregon 97110

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DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 11 00 SUMMARY OF WORK

1.01 GENERAL

A. Project Description:
   1. A new two story house with one car garage located on tax lot 51031AA00600 in Cannon Beach, Oregon.The garage is located on the second floor.
   2. The house will be accessed by an elevated roadway, designed by Miller Consulting Engineers.
   3. Contractor Responsibilities:
      a. The General Contractor shall provide all labor, materials, equipment, tools and temporary facilities required to properly execute and complete the work in this contract. He shall fully inform the Subcontractors of their responsibilities and coordinate the work of the same.
   4. Drawings illustrate locations, arrangements, dimensions and details to determine the general character of the Work. Specifications describe performances and qualities required of the materials and of methods.

B. Permits: The Contractor shall obtain and pay for all permits.

C. Insurance:
   1. The Contractor shall secure and maintain a comprehensive General Liability Insurance Policy for the projects.
   2. The Contractor shall secure and maintain Comprehensive Automobile Liability Insurance for all owned, non-owned, and hired vehicles, and shall require Subcontractors to provide the same for the project.
   3. The Contractor and all Subcontractor shall comply with Worker's Compensation laws and other insurance laws and regulations of the State of Oregon.
   4. A Certificate of Insurance for the above shall be provided to the Owner prior to mobilizing on the site.

SECTION 01 31 13 COORDINATION

1.01 GENERAL

A. Before proceeding with any portion of the Work, the Contractor shall verify dimensions and configurations on the Drawings, these Specifications, and at the Site. The Contractor shall coordinate with the appropriate subcontractors. The Contractor shall notify the Architect of any discrepancies before work proceeds.

B. Details as shown are typical; for special conditions, conflicts and unusual conditions, consult the Architect.

C. Framing and foundation dimensions are largely given on the plans and details. All framing and foundation dimensions are to face of stud, unless noted otherwise. Dimensions on interior elevation are face of finish dimensions.

D. Written dimensions on plans govern over dimensions scaled from drawings.

SECTION 01 33 00 SUBMITTALS

1.01 GENERAL

A. The Contractor shall submit to the Owner before or at execution of the contract:
   1. Proof of licensing by the Oregon State Builder's Board as well as insurance and bonding required by that license for the full duration of their involvement with this project.
   2. A list of proposed subcontractors.
   3. A Work Schedule indicating the estimated progress of the Work.

B. The Contractor shall inform the Architect and Owner of changes to the subcontractors or schedule during construction.

SECTION 01 40 00 REGULATORY REQUIREMENTS & REFERENCE STANDARDS

1.01 GENERAL

A. Comply with the current editions of the following codes. Drawings do not indicate all details of conventional code requirements:
   1. State of Oregon, 2017 Oregon Residential Specialty Code.
   2. All other applicable codes.

SECTION 01 50 00 TEMPORARY FACILITIES AND CONTROLS

1.01 GENERAL

A. The Contractor shall take all precautions to protect persons, including the workers, subcontractors and their employees, and property affected in any way by the work; especially guard against or eliminate hazardous conditions.

B. Barricades, fences, railings, and similar safety precautions will be provided in accordance with governing Codes and Standards.

C. Scaffolding, cranes, hoists or chutes, bracing and shoring to be used where necessary in the prosecution of the Work.

D. Fire Extinguishers and other equipment for fire protection will be provided during construction. Use of this equipment will be limited to fire protection only.

E. Notices, signs, and safeguards required by law or ordinance shall be posted and maintained.

F. The site shall be kept clean during the progress of the work. All excess materials and debris resulting from the work shall be promptly removed and legally disposed of. At the conclusion of the work the site shall be left in a clean, orderly condition.

2.01 PRODUCTS

A. Materials incidental to temporary facilities and controls to be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

SECTION 01 60 00 PRODUCT REQUIREMENT

1.01 GENERAL

A. Material and equipment incorporated into the Work will conform to applicable specifications and standards, be new, and comply with size, make, type, and quality specified.

B. Material and equipment shall be transported and stored in accordance with manufacturer's instructions, with seals and labels intact and legible.

C. Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations.

D. For products specified by naming one or more products or manufacturers, followed by the words "or equal" submit a request for substitutions. The request for substitution shall include product name and information, performance and test data, samples (as applicable), and other information necessary for evaluation.

SECTION 01 70 00 EXECUTION AND CLOSEOUT REQUIREMENTS

1.01 GENERAL

A. When the Contractor considers the Work is complete, he shall inform the Architect that the Contract Documents have been reviewed, that the work has been inspected for compliance with the Contract Documents, that the equipment and systems have been tested and are operational, and that is complete and ready for review.

B. Within seven days from receipt of the Contractor's Notice of Completion, the Architect, the Owner and the Contractor shall make a joint inspection of the work and note any deficiencies. The Architect will note any deficiencies (punch list) and send copies to the Owner and Contractor.

1. Should deficiencies be observed, the Contractor shall remedy stated deficiencies in a timely manner.

C. Upon completion of the Work a final cleaning shall be done by the Contractor to remove all scars, stains, paint marks, tags, labels (except required labels), etc. shall be removed. All paint work and equipment shall be cleaned and touched up as required. All hardware, light fixtures, and mirrors, and glass shall be cleaned.

D. The Contractor shall give the Owner one copy of Warranty, Operations and Maintenance Manuals for each piece of equipment and appliance installed by the Contractor and other relevant information. This information to be arranged in a loose leaf binder.

E. Extra materials for Owner Maintenance to include paints, finishes, tiles, and floor coverings.

DIVISION 2 SITE WORK

SECTION 02 30 00 GEOTECHNICAL INVESTIGATIONS

1.01 GENERAL

A. The project is in a slide zone and has pin piles and grade to support the house and reduce lateral movement.

B. The foundation design is based on:

1. Proposed Residence at Tax Lot 600 - North of Nenana ROW Cannon Beach, Oregon by Geotech Solutions Inc.
2. Geotech Solutions Inc. reviews the foundation design.

SECTION 02 40 00 CONSTRUCTION DEBRIS

1.01 GENERAL

A. The Contractor shall take steps, as practical, to create a construction debris management plan for the project to reduce solid wastes and increase recycling.

B. Solid waste reduction to include the following:

1. Yard debris to be taken to composting facilities WOW, McEwans, etc) as feasible.

C. Provide on site recycling of cardboards, grayboard, paper, cans, glass, and plastic.

1. Designate onsite crew member to be in charge of recycling on site and to inform subcontractors of waste reduction efforts.

DIVISION 3 CONCRETE

SECTION 03 30 00 CAST-IN-PLACE CONCRETE

1.01 GENERAL

A. Work to include grade beam and foundations for house, garage, and porches as well as concrete flat work.

B. See Structural specifications for additional information.

C. Concrete rat slab to be poured over 1 perm vapor barrier rated for use in contact with concrete.

D. Coordinate with other trades for location of reservations for plumbing, electrical, gas, and other utilities.

E. Flat surfaces to be sloped to drain 1/8"/ft minimum.

F. Properly dispose of leftover or waste concrete.

DIVISION 5 METALS

SECTION 055000 METAL FABRICATION

1.01 GENERAL

A. This work in this section includes metal fabrications, miscellaneous metal, and related accessory items, galvanized and prime painted, complete, as shown and specified. The work includes, but is not limited to, the following
   1. Steel stairs and railings.

B. References:
   1. General: The publications listed below form a part of this Specification to the extent referenced. The publications are referred to in the text by the basic designation only. The edition/revision of the referenced publications shall be the latest date as of the date of the Contract Documents, unless otherwise specified.
   2. AISC, "Specifications for the Design of Cold-Formed Steel Structural Members."
   3. AWS, "Structural Welding Code, D1.1."
   4. SSPC, "Steel Structures Painting Council."

C. Submittals:
   1. Submit calculations for guardrails signed by a Structural Engineer licensed to practice in the State of Oregon for guardrails, and shop drawings of fabricated items for review before fabrications and installations.
      a. Indicate profiles sizes, connections, attachments, reinforcing, anchorage, size and type of fasteners, and accessories.
   2. Submit certification that manufactured products (including bolts, nuts and washers) meet or exceed specified requirements. Certification numbers must appear on product containers for bolts, nuts and washers and the numbers shall correspond to the identification numbers on the Manufacturer's certificate. The manufacturer's symbol and grade markings must appear on bolts, nuts and washers.

D. Quality Insurance:
   1. Structural performance: Shop-engineer, fabricate, and install steel stairs and railings to meet Oregon code requirements.
   2. Make field measurements as required prior to fabrication and installation.
   3. Coordinate with other trades to ensure proper sequencing and fitting of construction
   4. Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordination of installation.

E. Delivery, Storage and Handling:
   1. Store steel materials, either plain or fabricated, above ground on platforms, pallets, skids, or other supports. Keep material free from dirt, grease, and other foreign matter and protect from corrosion.

2.01 PRODUCTS

A. Materials:
   1. Steel Sections: ASTM A992, hot-dip galvanized for exterior use.

2. Steel Pipe: ASTM A53, Type S, Grade B, Schedule 40 typical unless used for handrails and railings shall be powder coated for exterior use.
3. Steel Tubing: Cold formed, ASTM A500; or hot rolled, ASTM A501; seamless.
4. Cold rolled Carbon Steel Sheets: ASTM AA653. Provide "Commercial galvanizing, for exterior use.
5. Bolts, nuts and washers: ASTM A307. Provide zinc-coated fasteners for exterior use or where built into exterior walls.
6. Welding Materials: AWS D1.1; type required for materials being welded.
7. Primers: Prime paint to be free of chromate or lead.
8. Non-shrink grout: Master Builder "Embeco", Sonneborn "Ferrolih G Redi-Mixed Grout, or equal.

B. Fabrications

1. Use materials of size and thickness shown or, if not shown, of size and thickness to produce strength and durability in the finished product for the utility intended.
2. Fabricate items with joints tightly fitted and secured. Make exposed joints butt tight, flush, and hairline.
3. Grind exposed welds flush and smooth with adjacent finished surface. Erase expose edges o small uniform radius.
4. Fit and shop assemble in largest practical sections, for delivery to site and handling onsite.
5. Provide components required for anchorage of metal fabrications. Fabricate anchorage and related components of same material and finish as metal fabrication, except where specially noted otherwise.
6. Verify dimensions on site prior to shop fabrication. Coordinate metalwork with adjoining work for details of attachment and fit. Be responsible for fabrication detailing and correct fitting of steel members to each other and to their supports.

C. Fabrication Assemblies

1. Form rails and posts from steel pipe and shapes as shown on Drawings, with welded jointing Fabricate right-angle and 45 degree abends of rail with 3 inches radius to center line of pipe without flattening the rail member noticeably.
2. For fittings, elbows, wall brackets, and escutcheons provide machined steel. Provide splice connectors of steel as shown.
3. Provide return at free ends of handrails to 1 inch from face of wall. Provide end caps for free ends of tube handrails and railings. Weld joints, end caps, returns, and transitions. Grind smooth and make flush.
4. Provide extensions for handrails and railings at edges of stairs and ramp to comply with Oregon Structural Specialty Code (2014) Chapter 11 requirements for the physically handicapped.
5. Provide mounting brackets and flanges, for secure anchorage of handrails and railings.
6. Fabricate guardrails to comply with the specified loading requirements.

D. Welding:

1. All surfaces shall be clean, free of rust, paint, and foreign matter of any kind. Burned edges to be welded shall be chipped clean and wire brushed before welding. Clamp members as required, space and alternate welds, as may be necessary to prevent warping or misalignment.
2. Weld Metal: Weld metal shall be thoroughly fused with the base metal along surfaces and edges of the union. Penetration shall be 1/8 inch (4 mm) minimum and shall be into the root of the joint.
3. Weld Quality: Welds shall present a uniform surface, free of imperfections, without undercutting or overlapping, and free from excessive oxides, gas pockets, and nonmetallic inclusions. Welds shall be made with the proper number of beads or passes to secure sound, thoroughly fused joints. Provide backup bars, temporary backup bars, or backup welds for full-penetration butt welds. Each deposit shall not exceed 1/2 inch (12 mm) of weld for each pass of bead. Preceding layers shall be cleaned by wire brushing or preening to remove scale and slag before placing new weld material.
4. Faulty and Defective Welding: Welding showing cracks, slag inclusion, lack of fusion, bad undercut, or other defects ascertained by visual or other means of inspection, shall be chipped out and properly replaced.

E. Finish
1. Cleaning: Thoroughly clean mill scale, rust, dirt, grease and other foreign matter from ferrous metal prior to galvanizing, powder coating or painting.
   a. Remove oil, grease, and similar contaminate in accordance with SSPC SP-1, "Solvent Cleaning".
2. Shop Priming: Shop-paint metal except members of portions of members to be embedded in concrete, surfaces and edges to be field welded, and galvanized surfaces.
   a. Immediately after surface preparation, brush or spray on primer in accordance with the paint manufacturer's instructions and at a rate to provide uniform dry-film thickness of 2.0 mils for each coat. Use painting methods which will result in full coverage of joints, corners, edges, and exposed surfaces.
   b. Apply one shop coat to metal items, except apply two coats to surfaces inaccessible after assembly or erection. Change color of the second coat to distinguish it from the first.
3. Galvanizing: Provide a zinc coating for exposed exterior items (unless specified to be powder coated) and items to be embedded in concrete, complying with the following:
   a. For galvanizing iron and steel hardware, ASTM A153.
   b. For galvanizing rolled, pressed, and forges steel shapes, plates, bars, and strips 3m thick and heavier, ASTM-A123.

3.01 EXECUTION

A. Installation of stairs to be done one stair at a time before the removal of southern stair of C-Building

B. Examination: Examine the substrate and conditions in which the work is to be installed. Correct unsatisfactory substrate and conditions prior to start of installation.

C. Preparation:
1. Furnish setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as concrete inserts, anchor bolts, and miscellaneous items having integral anchor, which are to be embedded in concrete construction. Coordinate delivery of such items to project site.

2. Coordinate metalwork with adjoining work. Do cutting, shearing, drilling, punching, threading, tapping, etc., required for metal work and for attachment of adjacent work. Drill or punch holes; do not use cutting torch. Shearing and punching shall leave true lines and surfaces.
3. Obtain Architect-Engineer's review prior to site cutting or making adjustments to structural members not indicated to be cut or adjusted.
4. Clean and strip primed steel items to bare metal where site welding is to be done.
5. Make provision for erection loads with temporary bracing. Keep work in alignment.

D. Installation:

1. Fastening to In-Place Construction: Provide anchorage devices and fasteners for securing metal work to in-place construction, including threaded fasteners for concrete inserts, through bolts, lag bolts, screws, and other connectors as required.
   a. Conceal fastenings where practical. Thickness of metal and details of assembly and supports shall give ample strength and stiffness. Form joints exposed to weather to exclude water.
2. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installation of metal work. Set work accurately in location, alignment, and elevation, plumb, level, true, and free of rack, measured from established lines and levels. Provide temporary bracing anchors in formwork for items which are to be built into concrete or similar construction.
   a. Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch up shop paint coat. Do not weld, cut, or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.
3. Field Welding: Comply with AWS D1.1 for procedures of manual shielded metal-arc welding, appearance and quality of welds made, and methods used in correcting welding work.
   a. Corrosion Protection: Protect dissimilar metals from galvanic corrosion by pressure tapes, coating, or isolators as acceptable to Architect-Engineer.
4. Grouting: Do grouting of frames, plates, sills, bolts, and similar items with non-shrink grout.
5. Alignment: Verify alignment of items with adjacent construction. Coordinate related work.
6. Handrails: Secure steel handrails with bracket. Unless otherwise noted, locate brackets 6 inches (150 mm) from ends of handrail, 6 feet (1.8 m) on center maximum, and space brackets equidistant at each handrail. Where bracket is fastened to stud wall, provide steel plate backing securely fastened to studs; toggle bolt secured to gypsum wallboard is not acceptable.

E. Clean and Touch-up: Immediately after erection, clean field welds, bolted connections, and abraded areas and paint exposed areas with same materials as used for shop painting. Apply by brush or spray to provide a minimum dry-film thickness of 2.0 mils.

DIVISION 4 WOOD

SECTION 06 10 00 ROUGH CARPENTRY

1.01 GENERAL

A. See Structural specifications for rough carpentry standards and materials:

B. Exterior deck guard rails
   1. Material to be clear cedar.

C. Provide proper handling and storage of materials to prevent damage to edges, ends, and surfaces. Keep materials dry and stacked off of ground on level flat forms.

2.01 PRODUCTS

A. Material to be clear cedar.

B. Rough Hardware to be galvanized or stainless steel
   1. Framing nails to be hot dipped galvanized box nails.
   2. Bolts to be hexagonal heads, Grade A conforming to ASTM A307, hot dipped galvanized or stainless steel.
   3. Washers to be provided under bolt heads and nuts bearing against wood, malleable iron or steel plate equal in area to 16 times that of receiving bolt or lag screw.
   4. Exposed Exterior nails or screws to be stainless steel.
   5. Fabricated sheet metal fasteners to be stainless steel. Nails and nailing shall conform to the manufacturer's instructions. Types as noted on plans. Simpson or equal.
   6. Joist and truss hangers to be stainless steel, types as indicated on plans.

3.01 EXECUTION

A. All workmanship is to be of first-class quality, plumb, true, straight, clean, and tidy. Verify dimensions before proceeding and lay out all lines, levels, openings and fastening locations as required.

B. General Framing Requirements
   1. Set all horizontal or sloped members with crown up.
   2. Make all bearings full unless otherwise shown and finish all bearing surfaces on which structural members rest to give sure and even support.
   3. Align framing members to receive finished surface to vary not more than 1/8-inch from the plane of surfaces of adjacent framing and furring members.

C. Connections:
   1. Make connections adequate to resist dead and live loads and lateral forces.
   2. Pre-drill where required to prevent splitting or as otherwise required for proper installation.
   3. Bolt hole diameters: In steel, bolt diameter plus 1/16-inch; in wood, bolt diameter plus 1/32-inch.
   4. Tighten nuts on erection; retighten prior to closing in.

D. Blocking
   1. Install blocking required to support all types of finishes, finish carpentry, flashings, fittings, fixtures, specialty items, accessories, mechanical and electrical work and items of similar nature.

E. Lateral Loading Framing
   1. Review and coordinate the framing, sheathing, and nailing requirements for the lateral loading system (including steel framing) from the foundation to the roof before the start of construction.

F. Moisture content of framing to be 19% before applying interior finishes.

SECTION 06 20 00 FINISH CARPENTRY

1.01 GENERAL

A. The work shall conform to all applicable codes and standards

B. Section includes, but is not limited to, finish carpentry items:
   1. Wood casework
   2. Wood window & door trim
   3. Bases and casing
   4. Casework hardware
   5. Shelves in closets
   6. Underlayment

C. Submit shop drawings and samples before work begins on casework.

D. Deliver finish carpentry to job site only after proper facilities are available for handling, storing and protecting items; receiving areas are broom cleaned; exterior openings are closed up; wet work and mechanical and electrical rough-ins are completed.

2.01 MATERIALS

A. Supply all materials and labor for construction and installation of millwork and cabinets as shown in the drawings and specified herein.

B. Interior finish wood to be 1x wood, wood, natural finish.

A. Closets: Materials to be 3/4"melamine boards, white with wood edge band.

B. Cabinets: Material to be wood, painted finish, Shaker style.

C. Cabinet hardware to be selected by Owner.

D. Supply and install all counter tops, self edges, and back splashes for kitchen and baths. Material to be stone slab, selected by Owner.

3.01 EXECUTION

A. Installation
   1. Set work square, level, plumb with edges scribed, accurately and secure in place with fastenings, clips, braces, brackets, anchors, shims and blocks as required.
   2. Conceal nailing and screwing where possible and set nail heads for putty in exposed portions and conceal screws as possible.

B. Verify all dimensions on site before construction of cabinets. Note and resolve any discrepancies between actual and planned dimensions, before construction of the cabinets.

C. Allow adequate side rails at corners to shim and scribe to fit. Allow adequate room in inside corners for doors drawers and appliances to open without rubbing.

D. Verify all plumbing fixture and appliance dimensions where they are installed in or next to the cabinets and insure that they shall fit properly. General Contractor shall provide a list of the plumbing fixtures and the appliances, and installation dimensions for the appliances, to the Cabinet Subcontractor. Cabinet Subcontractor shall obtain sink and valve cutout templates from the Plumbing Subcontractor.

E. At any point where window jamb casing comes within one inch of adjacent material add 1/2" deep material to fill gap.

DIVISION 7 THERMAL AND MOISTURE PROTECTION

SECTION 07 18 13 PEDESTRIAN TRAFFIC COATINGS

1.01 GENERAL

A. Section includes acrylic modified cementitious waterproof system for plywood surfaces.

B. Submittals:
   1. Product Data, including manufacturer's product data sheets on each product and system to be used:
      a. Preparation instructions and recommendations
      b. Storage and handling requirements
      c. Installation methods
      d. Maintenance requirements

C. Convene a pre-application meeting review installation of coating system.

D. Installation to be done within the environmental conditions recommended by the manufacturer. Protect work during application.

E. Work to be done with a qualified contractor/applicator and able to give five-year warranty.

2.01 MATERIALS:
   1. Westcoat ALX Standard Finish System to include https://www.westcoat.com/systems/alx/):
      a. WP-240 Sheet membrane for complete plywood coverage.
      b. WP-25 ALX Metal Lath 2.5 pounds per sq. yard hot dipped galvanized
      c. Minimum 1" crown staples, non-corrosive WP-10
      d. Base coat TC-1 cement.
      e. Slurry coat: TC-1 cement
      f. Knock Down texture coat, TC-3
      g. Top Coat SC-10 Acrylic
   2. Stainless steel flashing
   3. https://www.westcoat.com/systems/alx/

3.01 EXECUTION

A. Surfaces to be prepared following recommendations of manufacturer.

B. Installation to be done following manufacturer's recommendations.

C. Allow proper cure time and protect surface.

SECTION 07 21 00 INSULATION

1.01 GENERAL

A. Insulation to be installed in first floor joists, roof/ceiling, exterior walls, above slab in heated rooms.under floor and pipe insulation as shown on the plans.

B. Sound insulation to be installed in ceilings, bedroom, bathroom, and toilet walls.

2.01 MATERIALS

A. Thermal Insulation to be , as follows:

1. Roof Insulation:
   a. Vaulted ceilings: 2" closed cell spray foam under roof sheathing w/ R-30 Rockwool.
2. Wall Insulation: R-23 Rockwool batt insulation.
3. Below Grade insulation: Crawl space to be conditioned, non-vented. R-15 rigid insulation on stemwalls, R-21 closed cell spray foam (ccSPF) on rim joists
4. Floor Insulation: R-38 batt insulation, foil faced, formaldehyde free.
5. Sound insulation: R-15 Rockwool sound batt insulation to be provided in interior walls.

3.01 EXECUTION

A. Insulation to be installed following manufacturer's recommendations.

B. All insulation to be neatly and carefully installed to achieve the best possible performance from those materials.

1. Insulation is to be carefully fitted around and behind all pipes, wires and electrical boxes, lighting fixtures and ducts.

C. Fill cracks around all doors and windows with approved foam rope or sealant.

D. Sound insulation to be placed in bathroom walls and floors and ceilings to provide acoustic separation with bedrooms and living areas.

E. Install floor insulation in a manner to insure that floor insulation remains in place.

SECTION 074113 METAL ROOFING

1.01 GENERAL

A. Section to include pre-finished, prefabricated structural standing seam roof system with continuous interlocking field formed seams.

B. Reference Standards:
   1. ASTM A653: Steel Sheet, Zinc Coated (Galvanized) Class G90 by the Hot Dip Process.
   2. SMACNA Architectural Sheet Metal Manual

C. Delivery, Storage and Handling
   1. Keep panels and accessory items dry.
   2. Protect against damage and discoloration
   3. Handle panels with non-marring slings.
   4. Support panels to prevent permanent deformation.
   5. Store panels above ground, with one end elevated for drainage.
   6. Protect panels against standing water and condensation between adjacent surfaces.
   7. If panels become wet, immediately separate sheets, wipe dry with clean cloth, and keep sheets separate for air-drying.
   8. Painted panels shall be shipped with protective plastic sheeting or a strippable film coating between panels. Remove strippable film coating prior to installation. Do not allow strippable film coating to remain on panels in extreme heat, cold, or direct sunlight or other UV source.
   9. Do not allow panels to contact treated lumber.

D. Warranties: Verify with Owner

2.01 MATERIALS

A. The metal panel roofing system to be MS-100, Taylor Metal Products, 16” width, flat pan, with 1” smooth vertical rib, floating clip, concealed fasteners.
   1. Material: 24 gauge Kynar 500 Painted Steel 0.0236” (thickness prior painting).
   2. Finish: Paint color to be selected by Owner from 20 standard colors.
   3. Seam sealant to be factory apply high grade butyl mastic sealant within the confines of the panel’s female leg, design to seal against adjacent male panel leg.

3.01 EXECUTION

A. Panels and Trim: Comply with manufacturer's instructions for assembly, installation and erection for weather tight installation

B. Accessories: Install trims, flashings, and roofing specialties according to Drawings and manufacturer's recommended details

C. Sealant Installation: Apply according to SMACNA Architectural Sheet Metal Manual recommendations to provide airtight and waterproof installation.

D. Repairs: Touch up paint is not required with panel with scratches that do not expose metal. Panels or flashing with finish damage exposing metal or with substrate damage shall be replaced.

E. Protect work as required to ensure that roofing will be without damage at Final Completion

SECTION 07 46 23 CEDAR SHINGLES

1.01 GENERAL

A. Section to include new cedar shingles for the whole house.

B. Deliver, store, and handle shingles and accessories in a manner to prevent damage or deformation.

2.01 MATERIALS

A. Exterior siding to be cedar shingles left natural.

B. Side wall shingles to be applied over Home Slicker 10 rainscreen http://www.benjaminobdyke.com/visitor/product/key/homeSlicker or equal, over 30 lb ASTM approved building paper and stainless steel nails or staples of sufficient length to penetrate sheathing 1/2-3/4".

C. Bitumen flashing: Grace Vycor "Ice & Water Shield" or Fortifiber Fortiflash.

3.01 EXECUTION

A. Cedar shingles to be installed according to the Cedar and Shake Bureau Manual.
   1. http://www.cedarbureau.org
   2. Exposure to be 6 inches.
   3. Install Home Slicker 10 under shingles on all walls.

B. Clean the work area and remove all scraps and excess materials from the site. Repair or replace defective work as directed by the Architect."

C. Clean the work area and remove all scraps and excess materials from the site.

SECTION 07 60 00 FLASHING, SHEET METAL, GUTTERS

1.01 GENERAL

A. Section to include, but not limited to, gutters, down spouts, door and window flashing, crickets, roof edges, roof valleys, roof intersections, and door pans.

2.01 MATERIALS

A. Gutters to be continuous aluminum gutters, ogee style, white.
   1. Down spouts to be aluminum, gray to match weathered shingles. Provide clean outs at bottom of downspouts.

B. Flashing at window and door heads, roof flashings, and pans at door thresholds to be stainless steel.

C. Provide stainless steel door pans under all exterior door thresholds.

D. Stainless steel pans under hot water heater.

3.01 EXECUTION

A. Verify exact locations of down spouts before installation. Gutters to be "seamless", fabricated on site from a continuous roll.
   1. Gutters and temporary downspouts to be installed immediately after the roofing sheathing to protect the ground from erosion during construction.

B. Install work watertight; insure that items are installed in true and accurate alignment with other items and related work, that joints are accurately fitted, that corners are reinforced and that exposed surfaces are free of dents.

C. The installation flashing for vents and skylights shall be coordinated with relevant subcontractors to insure proper installation.

D. Provide waterproof washers wherever fasteners penetrate flashings.

SECTION 07 90 00 JOINT PROTECTION

1.01 GENERAL

A. Section to include sealants for exterior joints at trim and siding at windows, doors, corners, and other areas to prevent water penetration.

2.01 MATERIALS

A. Exterior sealant to be Volkum or equal.

3.01 EXECUTION

A. Sealant to be installed according to manufacturer's recommendations.

DIVISION 8 DOORS & WINDOWS

SECTION 08 20 00 DOORS AND FRAMES

1.01 GENERAL

A. Provide and install doors and door hardware as per plans and schedule.

B. Deliver, store, and handle doors in a manner to prevent damage.

2.01 MATERIALS

A. See door schedule and plans for size, style, and location of doors.

B. Exterior Doors to be:
   1. Front Entry Door: Mavin Wood Clad
   2. Laundry Mudroom Door: ThermaThru
   3. Sliding Doors: Marvin Wood Clad

C. Interior doors to be 1 3/8", wood, assume 6-panel style.

D. Garage to be 1 3/4" fire rated door, assume 6-panel style.

E. See Hardware Schedule and Section 08700 for Hardware information.

3.01 EXECUTION

A. Set frames accurately in position, plumb, aligned and attached securely to structure. Install smooth swing and proper close with frame.

B. Exterior doors to have stainless steel pans under thresholds.

SECTION 08 50 00 WINDOWS

1.01 GENERAL

A. Provide and install new vinyl windows as indicated on the plans.

B. Deliver, store, and handle windows in a manner to prevent damage.

2.01 MATERIALS

A. Windows to be Marvin Wood Clad. Windows to meet or exceed U-0.30 value.

B. Windows to have coastal package.

C. See plans for size, type, and location.

D. Screens to be provided for all operable windows.

E. Interior jambs and extensions: See Section 06200 Finish Carpentry.

F. Bitumen flashing,: Grace Vycor "Ice & Water Shield", Fortifiber Fortiflash, or equal

G. Windows to have stainless steel pans under sills.

3.01 EXECUTION

A. Install windows according to manufacturer's installation instructions.

B. Install bitumen flashing at lower corners of windows. For windows located on south and west sides, install bitumen flashing at sill and lower corners of windows. Follow "Guideline for Window Installation in Exposed Locations" found on architectural drawings.

C. Align window frame plumb and level, free of warp or twist. Coordinate attachment and seal of air and vapor barrier materials. Install perimeter type sealant and insulation.

D. Remove labels, paint spots, and other defacements from glass and clean.

SECTION 08 70 00 HARDWARE

1.01 GENERAL

A. Finish hardware including, but not limited to, lock sets and latch sets, hinges, push/pulls, closers, stops and holders, and thresholds.

2.01 MATERIALS

A. Hardware to be Schlage, oil rubbed bronze.

B. Provide 3 hinges per door, to match door hardware finish.

C. Thresholds
   1. Provide and install aluminum thresholds, bronze anodized, at exterior doors.

D. Door Stops
   1. Provide and install Ives door stops, with finish to match lock sets where specific door stops are not indicated on hardware schedule.

3.01 EXECUTION

A. Coordinate hardware to work to which hardware attaches and install according to manufacturer's templates and instructions.

B. Ensure that operating parts move freely and smoothly without binding, sticking or excessive clearance, or noise.

C. After the work has otherwise been completed, examine hardware in place for complete and proper installation. Lubricate bearing surfaces of moving parts an adjust latching and holding devices for proper function, and test keys.

D. Key all locks the same.

E. Verify location of door stops with Owner.

DIVISION 9 FINISHES

SECTION 09 29 00 GYPSUM BOARD SYSTEMS

1.01 GENERAL

A. Work in this section to include gypsum wall board as indicated.

2.01 MATERIALS

A. Gypsum board shall be as follows:
   1. Walls: 1/2" gypsum board
   2. Ceilings: 5/8" ceiling board
   3. Bathroom: 1/2" Cement backerboard

B. Paper on gypsum to be 100% recycled paper on the face, back, and sides (Gold Bond or equal).

C. Texture on walls to be light orange peel.

D. Screws to be self drilling, self-tapping, length as recommended by drywall manufacturer.

E. Metal edges to be square.

F. Tape used in bathrooms to be fiberglass joint tape bedded with a setting-type joint compound.

3.01 EXECUTION

A. All seams, joints, corners etc. to be taped and finished so that they are not visible when the job is complete.

B. Provide mockup at site to verify texture of walls and ceiling with Owner before texturing begins.

C. Floors to be left scraped and "broom clean" and all sheet rock waste and debris from the job site.

SECTION 09 30 00 TILE

1.01 GENERAL

A. The work in this section to include any tile work in entry, fireplace surround, bathrooms, or kitchen determined by Owner.

2.01 MATERIALS

A. Tile to be selected by Owner.

3.01 EXECUTION

A. Examine surfaces to receive tile and verify that:
   1. Surfaces are free of defects that would adversely affect tile work
   2. Surfaces are firm, level or plumb, dry, clean and free of oily or waxy film.
   3. Grounds , anchors, plugs, hangers, and electrical and mechanical work in or behind tile have been installed prior to installation of tile.

B. Tile Layout: Provide shop drawings to confirm layout and pattern before start of work.
   1. Center fields and patterns on area so that no tile is less than half size.
   2. Set tile with uniform joints. Align joints both vertically and horizontally; no staggered joints.
   3. Cut and drill tile and trim shapes accurately without damage.

C. Grout to be sealed with appropriate sealer.

D. Tile installation methods shall comply with TCA "Handbook for Ceramic Tile Installation".

E. Floor tile to be installed over Schluter mat.

SECTION 09550 WOOD FLOORING

1.01 GENERAL

A. This section to include wood flooring in the living room, kitchen, entry, and stairs.

B. Delivery of flooring to take place after building is closed with outside windows and doors in place and sheet rock installed. The building should be thoroughly dry.

C. Flooring to broken up into individual boards and stored in the rooms where it will be installed for 7-10 minimum days to become acclimated to the job site. Temperature and humidity levels should be maintained at or near occupancy levels.

2.01 MATERIALS

A. Wood Flooring to be white oak.

B. The floor to be finished with water based, satin, finish.

3.01 EXECUTION

A. Follow manufacturer's recommendations for handling and installation.

B. Verify that surfaces are smooth and flat and ready to receive work.

C. Wood floors to be laid over kraft paper or equal.

D. Take all necessary measures to minimize cracks and squeaks in floor.

E. Provide protection of floor after installation until completion of project.

F. End joints of boards to be installed with biscuit to prevent movement.

G. Leave expansion space around perimeter of wood floor to allow for expansion.

H. The floors to be sanded before laying of floor finish. The floor to have 3 coats of floor finish, semi-gloss (verify with Owner), sand between coats.

SECTION 09650 RESILIENT FLOORING

1.01 GENERAL

A. Provide and install resilient flooring in Laundry/Mudroom.

2.01 MATERIALS

A. Resilient Flooring to be selected by Owner/Interior designer.

B. Base to be wood trim.

C. Subfloor filler, primers, adhesives to be types recommended by flooring material manufacturer.

D. See Section 06200 Finish Carpentry for underlayment.

3.01 EXECUTION

A. Verify that surfaces are smooth and flat and ready to receive work, with a maximum of 1/8-inch in 10 feet variation.

B. Install in accordance with manufacturer's installation instructions. Layout center of field or pattern on room or area with no border tile less than one-half of field tile.

1. Install sheet or tiles with grain or pattern of adjacent tiles running in the same direction, unless otherwise indicated.

2. Fit flooring material neatly and tightly into breaks an recesses, against bases, reducer strips and thresholds, around pipes and penetrations, under saddles an around permanent cabinets and equipment.

SECTION 09 68 00 CARPET

1.01 GENERAL

A. The work in this section to include carpet in bedrooms and family room.

2.01 MATERIALS

A. Carpet to be selected by Owner/Interior designer.

B. Carpet pad to be selected by Owner/Interior designer.

3.01 EXECUTION

A. Verify that subfloor is completely dry, free of harmful substances, and in satisfactory condition to receive carpeting materials. Follow carpet manufacturer's recommendations and instructions to ensure that subfloor is properly prepared to receive the carpet. Fill all cracks, gaps, and depressions using carpeting manufacturer's recommended materials and methods.

B. Level off all high spots or ridges to prevent excessive carpet wear.

C. Install carpet according manufacturer's recommendations.

D. Maintain uniformity of carpet direction and lay of pile, center doorway seams directly under doors, do not align seams with direction of traffic at doorways.

E. Remove and dispose of debris and unusable scraps. Vacuum carpet and remove spots. Replace carpet where spots cannot be removed.

F. Follow recommendations of carpet manufacturer and installer to ensure that carpeting will be without deterioration or damage at time of Substantial Completion.

SECTION 09 90 00 PAINTING

1.01 GENERAL

A. The work in this section to include interior and exterior painting. Work to meet all applicable codes and manufacturer's instructions.

2.01 MATERIALS

A. Exterior window and door trim, soffits and eaves to be painted white. Exterior trims to be pre-primed before installation and receive two (2) coats of paint. Other exterior surfaces as indicated on drawings.

B. All interior walls and ceilings to receive one coat primer and finished with (2) coats Benjamin Moore or equal. Assume two wall colors, trim color, and one ceiling color.
   1. Walls to be selected by Owner/Interior designer.
   2. Ceilings to be white, flat.
   3. Trim to be painted white, satin finish
   4. All interior paints to be non-VOC and formaldehyde free.

C. Cabinetry to be pre-finished by Cabinet Subcontractor with natural finish.

3.01 EXECUTION

A. Protect the work of other trades from damage with tarps, masking or whatever means necessary.

B. All surfaces shall be properly prepared before application.

C. Paint to sharp, true lines and edges with a finished surface which is free from runs, drops, ridges, waves, laps brush marks, and variations in color, texture and finish.

D. Upon completion of work, remove surplus materials and rubbish, and clean off spilled or splattered paint resulting from this work.

DIVISION 10 SPECIALTIES

SECTION 10 28 13 TOILET ACCESSORIES

1.01 GENERAL

A. Provide and install toilet accessories.

2.01 Materials

A. Toilet accessories for bathrooms and toilet to include towel bars, towel hooks, toilet paper holders, shower enclosure, shower rod, and mirror.

B. Toilet accessories to be selected by Owner/Interior designer.

3.01 EXECUTION

A. Install accessories in accordance with manufacturer's installation instructions and with proper blocking. Verify blocking requirements before gypsum board is installed.

B. Coordinate with work of other Sections to insure proper backing.

C. Do not install accessories until after completion of finish painting.

SECTION 10 30 00 FIREPLACES

1.01 GENERAL

A. This section to include gas fireplace in living room.

2.01 Materials

A. Gas fireplace to be 36", Heatnglo, top vent.

B. All metal flashings to be stainless steel.

DIVISION 11 EQUIPMENT

SECTION 11450RESIDENTIAL EQUIPMENT

1.01 GENERAL

A. Provide and install the appliances and other residential equipment.

2.01 MATERIALS

A. Mudroom/Laundry appliances to be selected by Owner:
   1. Washer:
   2. Dryer: Match washer, gas
   3. Outlet boxes:
   4. Refrigerator:
   5. Microwave:
   6. Range:
   7. Dishwasher
   8. Disposal:

3.01 EXECUTION

A. Install appliances and equipment in accordance with manufacturer's installation instructions and applicable codes.

B. Coordinate with work of other Sections.

DIVISION 22 MECHANICAL

SECTION 22 00 00 PLUMBING EQUIPMENT

1.01 GENERAL

A. Work in this section provide plumbing system, including dual ejector pump, connection to house and rough and finish plumbing.

B. Plumbing fixtures to meet EPA WaterSense standards.

C. All work to conform to applicable codes and manufacturer's instructions.

2.01 MATERIALS

A. Hot tub to be HotSpring Prodigy.

B. Dual ejector pump is specified by civil engineer.

C. Water lines inside house to be Pex. Provide copper lines from Pex lines to plumbing fixtures at wall.
   1. Provide and install plumbing fixtures. See Plumbing Schedule for fixtures and locations.

D. All vent lines to be ABS plastic. Drainage below first floor living space to be ABS plastic.

E. Hot water to be high efficiency gas unit.

F. Drain/waste piping to be hubless cast iron from the finished floor level of the 1st floor to a point at least 12 inches above the finished floor level pf the 2nd floor.

G. Provide at least two frost free hose bibs at locations selected by Owner.

H. Plumbing fixtures: See plumbing schedule.

I. Pipe insulation to be R-5 foam pipe insulation where pipes are not insulated by in walls.

3.01 EXECUTION

A. All water supply lines in the exterior walls shall be placed 1 1/2" from the inside face of the studs so that insulation can be placed outside the water pipes.
   1. Wrap pipes with insulation when there are exposed runs.

B. Verify that water heaters is secured to wall with restraint system. Install as per Code and Manufacturer's installation.

C. Provide and install covers to adequately protect fixtures from damage by other trades during construction.

D. Coordinate location of plumbing (lines and fixtures) with the other trades. Provide electrical subcontractor with electrical requirements of hot water tanks, pump, and any other plumbing fixtures needing power.

E. Provide supply line for refrigerator ice machine.

F. Verify compatibility of sinks, lavs, and faucets.

G. Install supply and waste lines to be quiet.

H. Provide metal pan with drain to hot water heaters.

I. Hot tub to be installed according to manufacturer’s recommendations.

SECTION 23 00 00 HVAC

1.01 GENERAL

A. The heating system to be either gas forced air furnace.

B. Conditioned space to include crawl space.

2.02 MATERIALS

A. Gas Furnace to be Trane or equal, with an AFU 94% rating

3.01 EXECUTION

A. Install furnace according to manufacturer's recommendations.

SECTION 23 30 00 DUCTWORK

1.01 GENERAL

A. Provide and install ductwork for furnace, mudroom fan, powder fan, and Bathroom fans.

2.02 MATERIALS

A. Ducts and vents shall be fabricated of prime galvanized steel unless otherwise allowed by code and manufacturer of equipment to be ducted.

B. Verify duct layout with Architect before layout of wood framing.

3.01 EXECUTION

A. Install heating ducts to minimize noise from air flow, minimize noise traveling in ducts between rooms.

DIVISION 26 ELECTRICAL

SECTION 26 00 00 ELECTRICAL GENERAL PROVISIONS AND SYSTEMS

1.01 GENERAL

A. The work includes, but is not limited, to the following:
   1. Meter, 200 amp panel and emergency panel with transfer switch and required wiring.
   2. Power outlets and convenience receptacles
   3. Lighting and switches
   4. Cable TV outlets
   5. Telephone lines (including boxes and trim)
   6. Exhaust fans

B. The work to comply with all current codes, ordinances and regulations, as well as with requirements of NFPA, UL and all other applicable codes.

2.01 MATERIALS

A. New electrical service to be underground.

B. Provide and install lighting fixtures and fans. See Lighting schedule for type and location.

C. Outlets and switches to be: Decora style, Levitron or equal
   1. See location and type of switches on plans.

D. Provide Category 5 wiring.

E. Telephone and cable outlets to be combined in one box.

3.01 EXECUTION

A. Verify locations with Owner of all switches, lights, outlets, fans before running wires.
   1. Verify with client the location of switches, outlets and fixtures for the emergency panel.
B. Coordinate with other trades for the location of the Exhaust Fan ducting and fans, water heater, equipment, and appliances.
C. Installation of all fixtures and appliances to be in accordance with manufacturer's recommendations.
D. Tests shall be conducted during the construction period and at completion to determine if system if operating properly.
E. All circuits at the main panel to be clearly labeled.
F. Location of cable outlets indicated on plans. Verify with Owner.

DIVISION 28 ELECTRONIC SAFETY AND SECURITY

SECTION 28 30 00 SMOKE DETECTION SYSTEM

1.01 GENERAL

A. Smoke detectors to be installed in house.

2.01 MATERIALS

A. Fire protection system to include smoke detectors in each bedroom and hallways in front of bedroom to meet code. All detectors to be mounted on ceiling.
   1. Provide heat sensor in kitchen and garage.
   2. Provide Carbon Monoxide sensors

3.01 EXECUTION

A. Coordinate installation with other trades, particularly the electrical, to insure proper functioning of the system.

DIVISION 33 UTILITIES

SECTION 334100 SITE DRAINAGE

1.01 GENERAL

A. The work in this section is in providing drainage for the site. Drains to connect to new City storm sewer system in Nenana Avenue.

B. Prior to laying any pipe or drains, verify all elevations that affect the Work. Install drains and pipes with proper slope as site conditions dictate.

C. Take all necessary care to assure thorough compaction of the fill during backfill without damage or misalignment of pipe. Fill material to be clean without debris.

D. All storm drains to be coordinated with the placement of sewer and utility conduits.