
PROJECT MANUAL

SPECIFICATIONS

**974 ELM STREET
INDIANAPOLIS, INDIANA**

PREPARED FOR:

**SOUTHEAST NEIGHBORHOOD
DEVELOPMENT, INC.**

DATE: August 17, 2010

**Mark Beebe Architect, LLC
2122 N. Delaware Street
Indianapolis, Indiana 46202
(317) 750-5373**

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MARK R. BEEBE, AIA, LEED AP

INDEX

DIVISION 1 – GENERAL REQUIREMENTS

01200 Allowances

DIVISION 2 – SITE CONSTRUCTION

02230 Site Clearing
02300 Earthwork
02315 Excavation and Fill
02750 Rigid Pavement
02763 Painted Pavement Markings
02923 Landscape Grading
02925 Sodding

DIVISION 3 - CONCRETE

03300 Cast-In-Place Concrete
03360 Concrete Finishes

DIVISION 4 - MASONRY

04065 Masonry Mortar and Grout
04810 Unit Masonry Assemblies

DIVISION 5 - METALS

05500 Metal Fabrications

DIVISION 6 – WOOD AND PLASTICS

06112 Framing and Sheathing
06114 Wood Blocking and Curbing
06200 Finish Carpentry
06410 Cabinets

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

07461 Siding
07614 Sheet Metal Roofing and Siding
07900 Joint Sealers

DIVISION 8 – DOORS AND WINDOWS

08111 Steel Doors
08212 Flush Wood Doors

08620 Windows and Patio Doors

DIVISION 9 - FINISHES

09260 Gypsum Board Assemblies
09300 Tile
09650 Resilient Flooring
09686 Sheet Carpet
09900 Paints and Coatings

DIVISIONS 10 - 16

Not Used.

END OF INDEX

SECTION 01200

ALLOWANCES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Cash allowances.

1.2 CASH ALLOWANCES

- A. Costs Included in Cash Allowances: Cost of product to Contractor or Subcontractor, less applicable trade discounts; delivery to site and applicable taxes.
- B. Costs Not Included in Cash Allowances But Included in Contract Sum/Price: Product handling at site, including unloading, uncrating, and storage; protection of products from elements and from damage; and labor for installation and finishing.
- C. Allowances Schedule:
 - 1. Allow the lump sum of \$4000.00 for purchase, delivery, and installation of plants and trees.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 02230

SITE CLEARING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Removing surface debris.
 - 2. Removing designated plant life.
 - 3. Removing abandoned utilities.
 - 4. Excavating topsoil.

1.2 QUALITY ASSURANCE

- A. Conform to applicable code.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 PREPARATION

- A. Call Local Utility Line Information service.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.

3.2 PROTECTION

- A. Locate, identify, and protect utilities indicated to remain, from damage.
- B. Protect bench marks from damage or displacement.

3.3 CLEARING

- A. Clear areas required for access to site and execution of Work.
- B. Clear undergrowth and deadwood, without disturbing subsoil.

3.4 REMOVAL

- A. Remove debris, rock, and extracted plant life from site.

- B. Continuously clean-up and remove waste materials from site. Do not allow materials to accumulate on site.
- C. Do not burn or bury materials on site. Leave site in clean condition.

3.5 TOPSOIL EXCAVATION

- A. Excavate topsoil from areas to be further excavated, relandscaped, or regraded, without mixing with foreign materials for use in finish grading.
- B. Do not excavate wet topsoil.
- C. Stockpile in area designated on site.
- D. Remove excess topsoil not intended for reuse, from site.

END OF SECTION

SECTION 02300

EARTHWORK

PART 1 GENERAL

1.1 DESCRIPTION

- A. Excavation, hauling, construction and compaction not covered by other items. The construction shall be in accordance with the Specifications and in close conformance with the lines, grades, and consideration of all pavement thicknesses shown.

1.2 CLASSIFICATION

- A. Topsoil Excavation: Excavation of sandy loam, sandy clay loam or clay loam from within the topsoil stripping limits that is suitable for use as topsoil.
- B. Common Excavation: Common excavation shall consist of all excavation not included as rock excavation or excavation which is otherwise classified and paid for, including flexible type pavement and all rippable materials.
- C. General Fill: Approved material obtained from common excavation, unsuitable material excavation, and off-site borrows locations if necessary for backfilling and embankment construction in all areas not within the zone of influence and meeting the specified material requirements.

1.3 DUST CONTROL

- B. The Contractor shall take adequate measures to control dust on the site. The Contractor shall have on the site an adequate number of watering vehicles to control dust by his operations.

PART 2 PRODUCTS

2.1 EXCEPT AS OTHERWISE NOTED HEREIN, THE FOLLOWING MATERIALS SHALL BE PROVIDED AS SPECIFIED IN THIS SECTION.

- B. General fill material is defined as a soil material that conforms to the following:
 - 1. Contains no more than five (5) percent organic material and is free of trash, rubble, or other man-made objects.
 - 2. On-site clays, silts and sands that contain less than 2% organic material.
- C. "B" borrow shall be clean granular material complying with Section 211.02 of the INDOT Standard Specifications latest edition.

PART 3 EXECUTION

3.1 GENERAL

- A. Excavations and embankments shall be finished to reasonably smooth and uniform surfaces. No materials shall be wasted without permission. Excavation operations shall be conducted so that material outside the limits of slopes will not be disturbed. Prior to beginning excavation, grading, embankment operations in any area, all necessary clearing, grubbing and topsoil removal in that area shall have been performed.
 - 1. All spongy and yielding material which will not readily compact when approximately dry, and all vegetation shall be removed from within clearing limits and to such depths as ordered. None of this removed material shall be used in embankments.
- B. When the Contractor performs grading operations after daylight hours, he shall provide and maintain at his expense sufficient artificial lighting to permit proper construction and inspection.
- C. Grading operations shall be kept well in advance of paving operations in order to take advantage of maximum time for settlement.

3.2 DEWATERING AND SURFACE WATER CONTROL

- B. The Contractor shall keep the site free of standing water. The Contractor shall construct all necessary temporary ditches, swales and other means to keep stormwater away from work. When the permanent storm drainage system or portions thereof are constructed, stormwater shall be directed to the permanent stormwater collection systems. Upon completion of the work and anytime necessary during construction operations, the permanent stormwater collection system shall be cleaned of all sediment or debris which may enter the system.
- C. The Contractor shall provide sufficient pumps to dewater all areas of the site where excavations are made or fills are placed in such a manner that creates a sump or depression that may hold water.

3.3 EXCAVATION

- A. Excavation slopes shall be maintained in a stable condition at all times and shall not be steeper than 1.5 horizontal to 1 vertical unless proper precautions, as stipulated by OSHA, are taken.
- B. The base of the excavation shall be protected against any damage, which affects the strength and compressibility characteristics of the exposed soil. Factors, which may damage the exposed excavation, are freezing, groundwater seepage inflow, equipment traffic, etc.

3.4 COMPACTION

- L. All fill shall be of an approved material starting on an approved subgrade. Each lift shall be compacted to a dry density not less than the following percentage of maximum dry density determined by the Modified Proctor Test (ASTM D-1557):

USAGE

COMPACTION %

Beneath footings, foundation slabs

(limit based upon 5 feet from footing
or foundation slab and extruding outward
at a 45 degree angle to natural ground
surface) 95

Unreinforced subgrade and embankment
beneath pavements and sidewalks 95

END OF SECTION

SECTION 02315
EXCAVATION AND FILL

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Excavating for building foundations.
 - 2. Excavating for paving.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 PREPARATION

- A. Call Local Utility Line Information service before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.
- B. Identify required lines, levels, contours, and datum.
- C. Notify utility company to remove and relocate utilities.
- D. Protect utilities indicated to remain from damage.
- E. Protect plant life, lawns, and other features remaining as portion of final landscaping.
- F. Protect bench marks, survey control points.

3.2 EXCAVATION

- A. Underpin adjacent structures which may be damaged by excavation work.
- B. Excavate subsoil to accommodate building foundations.
- C. Compact disturbed load bearing soil in direct contact with foundations to original bearing capacity.
- D. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- E. Trim excavation. Remove loose matter.

SECTION 02750
RIGID PAVEMENT

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Aggregate base course.
 - 2. Concrete paving for:
 - a. Concrete sidewalks.
 - b. Concrete stair steps.
 - c. Concrete parking areas.

1.2 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301.
- B. Obtain cementitious materials from same source throughout.

1.3 ENVIRONMENTAL REQUIREMENTS

- A. Do not place concrete when base surface temperature is less than 40 degrees F, or surface is wet or frozen.

PART 2 PRODUCTS

2.1 FORM MATERIALS

- A. Wood or Steel form material, profiled to suit conditions.
- B. Joint Filler: ASTM D1751; Asphalt impregnated fiberboard or felt, 1/4 inch thick.

2.2 REINFORCING

- A. Deformed Reinforcing: Steel: ASTM A615/A615M, 40 ksi yield grade, plain billet bars, uncoated finish.
- B. Welded Plain Wire Fabric: ASTM A185/A185M; in flat sheets or coiled; unfinished.

2.3 CONCRETE MATERIALS

- A. Concrete Materials: As specified in Section 03300. Provide pervious concrete mix where indicated on the drawings.
- B. Water: ASTM C94/C94M; potable, without deleterious amounts of chloride ions.

C. Air Entrainment: ASTM C260.

2.4 ACCESSORIES

A. Curing Compound: ASTM C309.

B. Joint Sealers: ASTM D6690.

PART 3 EXECUTION

3.1 BASE COURSE

A. Prepare base course in accordance with State and Municipality standards.

3.2 PREPARATION

A. Moisten substrate to minimize absorption of water from fresh concrete.

3.3 FORMING

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

B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.

3.4 REINFORCING

A. Place reinforcing as indicated on Drawings.

3.5 PLACING CONCRETE

A. Place concrete in accordance with State and Municipality standards.

B. Ensure reinforcing, inserts, embedded parts, and formed joints are not disturbed during concrete placement.

C. Place concrete continuously over the full width of the panel and between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.

3.6 JOINTS

A. Place contraction joints at 20 foot intervals. Align curb, gutter, and sidewalk joints.

B. Place joint filler between paving components and building or other appurtenances.

C. Saw cut contraction joints 3/16 inch wide at an optimum time after finishing. Cut 1/3 into depth of slab.

3.7 FINISHING

- A. Area Paving: Light broom.
- B. Sidewalk Paving: Light broom, radius and trowel joint edges.

3.8 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- C. Cure floor surfaces in accordance with State and Municipality standards.

END OF SECTION

3.2 PREPARATION

1. Clean and dry paved surface prior to painting.
2. Blow or sweep surface free of dirt, debris, oil, grease or gasoline.
3. Spot location of final pavement markings as specified and as indicated on Drawings by applying pavement spots 25 feet on center.

3.3 APPLICATION

- A. Agitate paint for 1-15 minutes prior to application to ensure even distribution of paint pigment.
- B. Dispense paint at to wet-film thickness of 15 mils, except dispense edge markings to wet-film thickness of 12 mils.
- C. Apply markings to indicated dimensions at indicated locations.
- D. Prevent splattering and over spray when applying markings.
- E. Unless material is track free at end of paint application convoy, use traffic cones to protect markings from traffic until track free. When vehicle crosses a marking and tracks it or when splattering or over spray occurs, eradicate affected marking and resultant tracking and apply new markings.
- F. Collect and legally dispose of residues from painting operations.

3.4 PROTECTION OF FINISHED WORK

- A. Protect painted pavement markings from vehicular and pedestrian traffic until paint is dry and track free. Follow manufacturer's recommendations or use minimum of 30 minutes. Consider barrier cones as satisfactory protection for materials requiring more than 2 minutes dry time.

END OF SECTION

SECTION 02923
LANDSCAPE GRADING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Final grade topsoil for finish landscaping.

PART 2 PRODUCTS

2.1 MATERIAL

- A. Topsoil: Re-use existing free from weeds.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify building and trench backfilling have been inspected.
- B. Verify substrate base has been contoured and compacted.

3.2 PREPARATION

- A. Protect landscaping and other features remaining as final Work.

3.3 SUBSTRATE PREPARATION

- A. Eliminate uneven areas and low spots.

3.4 PLACING TOPSOIL

- A. Place topsoil in areas where sodding, and planting is required. Place topsoil during dry weather.
- B. Fine grade topsoil to eliminate rough or low areas. Maintain profiles and contour of subgrade.
- C. Remove roots, weeds, rocks, and foreign material while spreading.
- D. Remove surplus subsoil and topsoil from site.

END OF SECTION

SECTION 02925

SODDING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Sod installation.

PART 2 PRODUCTS

2.1 SOD

- A. Sod: Nursery grown grade; cultivated grass sod; with strong fibrous root system, free of stones, burned or bare spots; containing no more than 5 weeds per 1000 sq ft.

2.2 SOIL MATERIALS

- A. Topsoil: Excavated from site and free of weeds.

2.3 ACCESSORIES

- A. Fertilizer: Commercial grade; recommended for grass, with fifty percent of elements derived from organic sources; of proportion necessary to eliminate deficiencies of topsoil.
- B. Water: Clean, fresh and free of substances or matter capable of inhibiting vigorous growth of grass.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify prepared soil base is ready to receive the Work of this section.

3.2 PREPARATION OF SUBSOIL

- A. Prepare sub-soil and eliminate uneven areas and low spots.
- B. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- C. Remove foreign materials and undesirable plants and their roots. Do not bury foreign material beneath areas to be sodded.

- D. Remove contaminated subsoil.
- E. Scarify sub-soil to depth of 4 inches where topsoil is to be placed.
- F. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.

3.3 LAYING SOD

- A. Moisten prepared surface immediately prior to laying sod.
- B. Lay sod immediately after delivery to site to prevent deterioration.
- C. Lay sod tight with no open joints visible, and no overlapping; stagger end joints 12 inches minimum. Do not stretch or overlap sod pieces.
- D. Lay smooth.
- E. Do not place sod when temperature is lower than 32 degrees F.
- F. Water sodded areas immediately after installation. Saturate sod to 4 inches of soil.

END OF SECTION

SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes cast-in-place concrete.

1.2 REFERENCES

- A. American Concrete Institute:
1. ACI 301 - Specifications for Structural Concrete.
 2. ACI 305 - Hot Weather Concreting.
 3. ACI 306.1 - Standard Specification for Cold Weather Concreting.
 4. ACI 308.1 - Standard Specification for Curing Concrete.
 5. ACI 318 - Building Code Requirements for Structural Concrete.

1.3 QUALITY ASSURANCE

- A. Codes and Standards:
1. In addition to complying with all pertinent codes and regulations, comply with all Pertinent requirements of the following ACI Publications:
 - a. ACI 117 – Standard Specification for Tolerances for Concrete Construction and Materials.
 - b. ACI 211.1 –Standard Practice for Selecting Proportions for Normal, Heavy Weight, and Mass Concrete.
 - c. ACI 211.2 – Standard Practice for Selecting Proportions for Structural Lightweight Concrete.
 - d. ACI 214 – Recommended Practice for Evaluation of Strength Test Results of Concrete.
 - e. ACI 305 – Recommended Practice for Hot Weather Concreting.
 - f. ACI 306 – Recommended Practice for Cold Weather Concreting.
 2. Where provisions of pertinent codes and standards conflict with this section of the Project Manual, the more stringent provisions shall govern.

PART 2 PRODUCTS

2.1 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type I - Normal Portland type; manufactured by one manufacturer throughout the project.
- B. Fine and coarse Aggregates: ASTM C33.
1. Class: Severe weathering region, but no less than 3S.
 2. Normal maximum aggregate size: one (1) inch for footing, foundation, slabs, curb and gutters.

3. Norma maximum aggregate size: 3/4 inch for walls and structural framing.
- C. Water: Clean and not detrimental to concrete.

2.2 ADMIXTURES

- A. Air Entrainment: ASTM C260.
- B. Chemical: ASTM C494
 1. Type A – Water Reducing
 - a. Contain not more than 0.1% chloride ions, by weight of cement.
 - b. Subject to compliance with requirements, provide one of the following products:
Eucon WR-75; Euclid Chemical Co.
Possolith 344 or 122 N; Master Builders.
Plastocrete 160; Sika Chemical Corp.
Chemtard; Chem-Masters Crop.
Daracem 55; W.R. Grace
Catexol 1000N; Solvay Construction Materials, Inc.
Or approved equal.
 2. Type F – Water Reducing, High Range or Type G – Water Reducing, High Range and Retarding
 - a. Contain not more than 0.1% chloride ions, by weight of cement.
 - b. Subject to compliance with requirements, provide one of the following products:
Daracem 100; W.R. Grace.
PSP; Protex Industries, Inc.
Super P; Anti-Hydro.
Sikament; Sika Chemical Corp.
Mighty 150; Euclid Chemical Co.
PSI Super; Gifford-Hill.
Pozzolith 400; Master Builders.
Catexol 1000 SP-MN; Solvay Constr. Materials, Inc.
Or approved equal.
 3. Type E – Water Reducing and Accelerating or Type C Accelerating
 - a. Contain not more than 0.1% chloride ions, by weight of cement; shall be used only with the Architect's approval.
 - b. Subject to compliance with requirements, provide one of the following products:
Accelguard 80; Euclid chemical Co.
Pozzalith 500; Master Builders.
Polarset; W. R. Grace.
Or approved equal.
 4. Type D – Water Reducing and Retarding
 - a. Contain not more than 0.1% chloride ions, by weight of cement.
 - b. Subject to compliance with requirements, provide one of the following products:
Edoco 20006; Edoco Technical Products.
Pozzolith 300-R or 122R; Master Builders.

Eucon Retarder 75; Euclid chemical Co.
Daratard-17; W. R. Grace
Plastiment; Sika Chemical Co.
Or approved equal.

- C. Fly Ash: ASTM C618 Class C or F.
 - 1. Fly Ash shall not replace more than 15% of the cement.

2.3 ACCESSORIES

- A. Bonding Agent: Polyvinyl Acetate or acrylic base, rewettable type (cosmetic repairs).
 - 1. Subject to compliance with requirements, provide one of the following products:
J-40 bonding Agent; Dayton Superior Corp.
Weldcrete; Larsen Products.
Everbond; L & M Construction Chemicals.
EucoWeld; Euclid Chemical Co.
Hornweld; A.C. Horn.
Sonocrete; Sonneborn-Contech.
Acrylic Bondcrete; The Burke Co.
Or approved equal.
- B. Vapor Retarder: Three-ply, nylon-or polyester-cord-reinforced, laminated, high-density polyethylene sheet; 10 mil minimum thickness. Furnish joint tape recommended by manufacturer.

2.4 CONCRETE MIX

- A. Proportion normal-weight concrete mix as follows:
 - 1. Compressive Strength (28 Days): 4000 psi.
 - 2. Maximum Slump: 4 inches
 - 3. Minimum Cementitious Content: 564 pounds per cubic yard.
 - 4. Coarse aggregate: Any locally available aggregate meeting ASTM C33.
 - 5. Maximum Slump for concrete Containing High-Range Water-Reducing Admixture: 8 inches after admixture is added to concrete with 2-to 4-inch slump.
 - 6. Water-Cement Ratio (non-air-entrained): 0.46 Maximum.
 - 7. Water-Cement Ratio (air-entrained) 0.40 Maximum.
- B. Exterior Concrete: Proportion normal-weight concrete mix as follows:
 - 1. Compressive Strength (28Days): 4000 psi
 - 2. Minimum Cementitious Materials Content: 564 lb/cu.yd.
 - 3. Maximum Slump: 4 inches
 - 4. Coarse aggregate: Crushed limestone aggregate meeting ASTM C33.
 - 5. Maximum Slump for Concrete Containing High-Range Water-Reducing Admixture: 8 inches after admixture is added to concrete with 2-to 4-inch slump.
 - 6. Water-Cement Ratio (non-air-entrained): 0.46 maximum.
 - 7. Water-Cement Ratio (air-entrained): 0.40 maximum.

- C. Cementitious Materials: For concrete exposed to deicers, limit percentage, by weight, of cementitious materials other than Portland cement according to ACI 301 requirements.
- D. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than Portland cement in concrete as follows:
 - 1. Fly Ash: 15 percent.
- E. Maximum Water-Cementitious Materials Ratio: 0.45 for concrete exposed to deicers or subject to freezing and thawing while moist.
- F. Air Content: Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows within a tolerance of plus 1 or minus 1.5 percent, unless otherwise indicated:
 - 1. Air Content: 5.5 percent for 1-1/2 inch- normal maximum aggregate size.
 - 2. Air Content: 6 percent for 1 inch-normal maximum aggregate size.
 - 3. Air Content: 6 percent for 3/4 inch-normal maximum aggregate size.
- G. Do not air entrain concrete to trowel-finished interior floors and suspended slabs. Do not allow entrapped air content to exceed 3 percent.
- H. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- I. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, as required, for placement and workability.
 - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
 - 3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
- J. Concrete Mixes:
 - 1. Ready-Mix Concrete: Comply with requirements of ASTM C94, and herein specified.
 - 2. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C94 may be required.
 - a. When air temperature is between 85 degrees F (30 degree C) and 90 degrees F (32 degrees C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes.
 - b. When air temperature is above 90 degrees F (32 degree C), reduce mixing and delivery time to 60 minutes.

PART 3 EXECUTION

3.1 PLACING CONCRETE

- A. Place concrete in accordance with ACI 301 ACI 318.

3.2 CONCRETE FINISHING

- A. Finish concrete floor surfaces in accordance with ACI 301.

3.3 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
 - 1. Protect concrete footings from freezing.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- C. Cure concrete in accordance with ACI 308.

END OF SECTION

SECTION 03360
CONCRETE FINISHES

1 GENERAL

1.1 SECTION INCLUDES

- A. Concrete Floor Stain.
- B. Polymer Stain.
- C. Concrete Floor Sealer.
- D. Concrete Floor Wax.
- E. Concrete Floor Polish.

2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Kemiko Concrete Stains, which is located at: 8029 SW Cirrus Drive, Portland OR 97008; Tel: 503-627-0111; Fax: 503-627-0400; E-Mail: jo@kemikostain.com Web: www.kemikostain.com
- B. Contact Information: Kemiko; 8029 SW Cirrus Drive, Beaverton OR 97008; Tel: (503) 627-0111; Fax: (503) 627-0400; E-Mail: jo@kemikostain.com Web: www.kemikostain.com.
- C. Or equal.

2.2 CONCRETE STAIN

- A. Kemiko Stone Tone Stain: Combination of acid solution, wetting agents, and metallic ions. When mixed with water and applied to Portland cement, chemically combines to form permanent color.

2.3 CONCRETE SEALER

- 1. Stone Tone Sealer: Acrylic water-based, non-yellowing urethane clear sealer.
- 2. Solids (By Volume): 30 percent.
- 3. Gloss: High gloss
- 4. Gloss: Flat to satin gloss.
- 5. Resistant to blush.
- 6. VOC: Less than 50 g/L. Meets final SCAQMD Rule 1113 (2008).
- 7. Pencil Hardness, ASTM D 3363: 2H.
- 8. Dry Tape Adhesion, ASTM D 3359: 5A-5B.
- 9. Dry Time at 70F (21C) with 50 percent RH:
 - a. Recoat: 1 hour.
 - b. Foot Traffic: 4 hours.

- c. Full Cure: 48 hours.
- B. Kemiko Stone Tone Buff-On Wax: Non-yellowing, fast drying, aliphatic petroleum wax.
 - 1. Dry Time at 70F (21C) with 50 percent RH: 20 -30 Minutes.
 - 2. Coverage: 250 to 350 sq ft per gallon
- C. Sta-Natural: Waterborne silane / siloxane emulsion for sealing stained concrete and other cementitious substrates.
 - 1. Gloss: Clear flat gloss (Natural Sheen).
 - 2. Solids (By Volume): 10 percent.
 - 3. Weight per gallon: 9.5 lbs (4.3kg).
 - 4. Dry Time at 70F (21C) with 50 percent RH:
 - a. Recoat: 1 hour.
 - b. Foot Traffic: 4 hours.
 - c. Full Cure: 48 hours.
 - 5. VOC: 0 g/L (Meets final SCAQMD Rule 1113 (2008)).

2.4 FLOOR POLISH

- A. Easy Shine: Water based acrylic polymer interior floor polish.
 - 1. Gloss (1 coat at 60F): 90+ (2 thin coats recommended).
 - 2. Viscosity, CPS at 73 F, RFV., #1 at 20 RPM: Less than 20.
 - 3. Specific Gravity at 73 F: 8.67.
 - 4. Solids (By Weight): 20 percent.
 - 5. Weight per gallon: 9.5 lbs (4.3kg).
 - 6. Dry Time at 73F (21C) with 40 percent RH: 20 minutes.
 - 7. VOC: 0 g/L (Meets final SCAQMD Rule 1113 (2008)).

2.5 POLYMER STAIN

- A. Rembrandt Polymer Concrete Stain: Water-extended, acrylic urethane polymer solution with added pigments.

2.6 CLEAR TOPCOAT

- A. Apply a clear topcoat sealer.

3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly, in accordance with manufacturer's instructions.
- B. Protection:
 - 1. Protect walls and surrounding surfaces not to receive concrete floor stain.

2. Do not allow stain to come in contact with wood or metal surfaces.
- C. Prepare concrete surface in accordance with manufacturer's instructions.
- D. Concrete shall be as specified in Section 03300. Ensure concrete is a minimum of 28 days old.
- E. Ensure surface is clean, dry, structurally sound, and free from dirt, dust, oil, grease, solvents, paint, wax, asphalt, concrete curing compounds, sealing compounds, surface hardeners, bond breakers, adhesive residue, and other surface contaminants.
- F. Do not acid wash or use heavy alkali cleaners.

3.3 INSTALLATION - KEMIKO STONE TONE ACID STAINS AND TOPCOATS

- A. Install in accordance with manufacturer's instructions.
- B. Apply stain in accordance with manufacturer's instructions at locations indicated on the drawings.
- C. Control depth of color by adjusting volume of stain applied.
- D. Apply 2 coats of stain. Allow to completely dry after each coat. Do not scrub clean between coats.
- E. After area has completely dried, scrub off residue in accordance with manufacturer's instructions. Allow to completely dry.
- F. Concrete Buff-On Floor Wax: Apply concrete floor wax over interior concrete floor stain in accordance with manufacturer's instructions.
- G. Concrete Floor Sealer: Apply concrete floor sealer over concrete floor stain in accordance with manufacturer's instructions.
- H. Concrete Floor Polish: Apply floor polish over Stone Tone Sealer in accordance with manufacturer's instructions.
- I. Keep material containers closed when not in use to avoid contamination.

3.4 INSTALLATION - REMBRANDT POLYMER STAINS AND TOPCOATS

- A. Install in accordance with manufacturers instructions.
- B. Concrete Floor Sealer: Apply concrete floor sealer over concrete floor stain in accordance with manufacturer's instructions.
- C. Concrete Floor Polish: Apply floor polish over Stone Tone Sealer in accordance with manufacturer's instructions.
- D. Keep material containers closed when not in use to avoid contamination.

3.5 PROTECTION

- A. Protect stained surfaces from damage during construction.
- B. Protect surfaces from foot traffic for a minimum of 24 hours.
- C. Do not wash surfaces for a minimum of 48 hours.

END OF SECTION

SECTION 04065

MASONRY MORTAR AND GROUT

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes mortar and grout for masonry.

1.2 REFERENCES

- A. American Society for Testing and Materials:
 1. ASTM C91 - Standard Specification for Masonry Cement.
 2. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar.
 3. ASTM C150 - Standard Specification for Portland Cement.
 4. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes.
 5. ASTM C270 - Standard Specification for Mortar for Unit Masonry.
 6. ASTM C387 - Standard Specification for Packaged, Dry, Combined Materials for Mortar and Concrete.
 7. ASTM C404 - Standard Specification for Aggregates for Masonry Grout.
- B. The Masonry Society:
 1. TMS MSJC - Building Code for Masonry Structures (ACI 530/ASCE 5/TMS 402), Specification for Masonry Structures (ACI 530.1/ASCE 6/TMS 602) and Commentaries.

1.3 ENVIRONMENTAL REQUIREMENTS

- A. Hot and Cold Weather Requirements: TMS MSJC Specification.

PART 2 PRODUCTS

2.1 MORTAR AND MASONRY GROUT

- A. Manufacturers:
 1. Blue Circle Cement.
 2. Citadel Cement.
 3. CTS Cement Manufacturing Co.
 4. Lehigh Portland Cement.
 5. Medusa Cement Co.
 6. The Quikrete Companies.
 7. Solomon Colors.
 8. Southern Grouts and Mortars.

2.2 COMPONENTS

- A. Portland Cement: ASTM C150, Type I, gray color.
- B. Blended Cement: ASTM C595, Type I, gray color.
- C. Masonry Cement: ASTM C91, Type S, gray color.
- D. Mortar Cement: ASTM C1329, Types S, gray color.
- E. Extended Life Mortar: ASTM C1142, Types S, using gray color cement.
- F. Premix Mortar: ASTM C387, Type S, using gray color cement.
- G. Mortar Aggregate: ASTM C144, standard masonry type.
- H. Hydrated Lime: ASTM C207, Type S.
- I. Grout Aggregate: ASTM C404, fine and coarse.
- J. Water: Clean and potable.
- K. Mortar Color: Mineral oxide pigment; color as selected by the Architect.
- L. Cold Weather Admixture: Accelguard 80 by Euclid or Trimix-NCA Sonneborn Div. Of ChemRex.
- M. Water Repellent Admixture: Dry-block by W.R. Grace or Rheopel by Master Builders.
- N. Calcium chloride is not permitted.

2.3 MIXES

- A. Mortar Mixes:
 - 1. Use ASTM C270, Type M, for masonry below grade and in contact with earth, and where indicated.
 - 2. Use ASTM C270, Type N, for exterior, above-grade loadbearing and non-loadbearing walls; and for other applications where another type is not indicated.
- B. Mortar Mixing:
 - 1. Thoroughly mix mortar ingredients in accordance with ASTM C270 in quantities needed for immediate use.
 - 2. Achieve uniformly damp sand immediately before mixing process.
 - 3. Add mortar color and admixtures to achieve uniformity of mix and coloration.
 - 4. Re-temper only within two hours of mixing.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install mortar and grout in accordance with TMS MSJC Specification.

END OF SECTION

SECTION 04810

UNIT MASONRY ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes concrete masonry units.

1.2 REFERENCES

- A. The Masonry Society:
 - 1. TMS MSJC - Building Code for Masonry Structures (ACI 530/ASCE 5/TMS 402), Specification for Masonry Structures (ACI 530.1/ASCE 6/TMS 602) and Commentaries.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with TMS MSJC Code and TMS MSJC Specification.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Cold Weather Requirements: IMIAC – Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.
- C. Perform the following construction procedures while masonry work is progressing. Temperature ranges indicated below apply to air temperatures existing at time of installation except for grout. For grout, temperature ranges apply to anticipated minimum night temperatures. In heating mortar and grout materials, maintain mixing temperature selected within 10 degrees F.
 - 1. 40 degrees F to 32 degrees F:
 - a. Mortar: Heat mixing water to produce mortar temperature between 40 degrees F and 120 degrees F.
 - b. Grout: Follow normal masonry procedures.
 - 2. 32 degrees F to 25 degrees F:
 - a. Mortar: Heat mixing water and sand to produce mortar temperatures between 40 degrees F and 120 degrees F; maintain temperature of mortar on boards above freezing.
 - b. Grout: Heat grout materials to 90 degrees F to produce in-place grout temperature of 70 degrees F at end of work day.
 - 3. 25 degrees F to 20 degrees F:
 - a. Mortar: Heat mixing water and sand to produce mortar temperatures between 40 degrees F and 120 degrees F; maintain temperature of mortar on boards above freezing.

- b. Grout: Heat grout materials to 90 degrees F to produce in-place grout temperature of 70 degrees F at end of work day.
 - c. Heat both sides of walls under construction using salamanders or other heat sources.
 - d. Use windbreaks or enclosures when wind is in excess of 15 mph.
4. 20 degrees F and below:
- a. Mortar: Heat mixing water and sand to produce mortar temperatures between 40 degrees F and 120 degrees F.
 - b. Grout: Heat grout materials to 90 degrees F to produce in-place grout temperature of 70 degrees F at end of work day.
 - c. Masonry Units: Heat masonry units so that they are above 20 degrees F at time of laying.
 - d. Provide enclosure and auxiliary heat to maintain an air temperature of at least 40 degrees F for 24 hours after laying units.
 - e. Do not heat water for mortar and grout to above 160 degrees F.
- D. Protect completed masonry and masonry not being worked on in the following manner. Temperature ranges indicated apply to mean daily air temperatures except for grouted masonry. For grouted masonry temperature ranges apply to anticipated minimum night temperatures.
- 1. 40 degrees F to 32 degrees F:
 - a. Protect masonry from rain or snow for at least 24 hours by covering with weather-resistive membrane.
 - 2. 32 degrees F to 25 degrees F:
 - a. Completely cover masonry with weather-resistive membrane for at least 24 hours.
 - 3. 25 degrees F to 20 degrees F:
 - a. Completely cover masonry with weather-resistive insulating blankets or similar protection for at least 24 hours, 48 hours for grouted masonry.
 - 4. 20 degrees F and below:
 - a. Except as otherwise indicated, maintain masonry temperature above 32 degrees F for 24 hours using enclosures and supplementary heat, electric heating blankets, infrared lamps or other methods proven to be satisfactory. For grouted masonry maintain heated enclosure to 40 degrees F for 48 hours.

PART 2 PRODUCTS

2.1 COMPONENTS

- A. Hollow Load Bearing Concrete Masonry Units (CMU): ASTM C90, Type I - Moisture Controlled; normal weight.

- B. Decorative Concrete Masonry Units: ASTM C90, Type I - Moisture Controlled; color as selected to the following design:
 - 1. Split face.

2.2 ACCESSORIES

- A. Single Wythe Joint Reinforcement: Truss type; steel wire, hot dip galvanized to ASTM A641 Class 3 after fabrication; 3/16 inch side rods with 9 gage cross ties.
- B. Mortar and Grout: As specified in Section 04065.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Administrative Requirements: coordination and project conditions.
- B. Verify field conditions are acceptable and are ready to receive work.
- C. Verify items provided by other sections of work are properly sized and located.
- D. Verify built-in items are in proper location, and ready for roughing into masonry work.

3.2 INSTALLATION

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form bed and head joints of uniform thickness.
- C. Coursing of Concrete Masonry Units:
 - 1. Bond: Running. Unless Stacked is indicated.
 - 2. Coursing: One unit and one mortar joint to equal 8 inches.
 - 3. Mortar Joints: Concave typical; Flush where a direct applied finish occurs other than paint.
- D. Coursing of Decorative Units:
 - 1. Bond: Stacked. Unless otherwise indicated.
 - 2. Coursing: One unit and one mortar joint to equal 8 inches.
 - 3. Mortar Joints: Concave.
- E. Placing And Bonding:
 - 1. Lay solid masonry units in full bed of mortar, with full head joints.
 - 2. Lay hollow masonry units with face shell bedding on head and bed joints.
 - 3. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
 - 4. Remove excess mortar as work progresses.
 - 5. Interlock intersections and external corners.

SECTION 05500

METAL FABRICATIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes shop fabricated metal items.
 - 1. Lintels.

PART 2 PRODUCTS

2.1 LINTELS

- A. Lintels: Steel sections, size and configuration as indicated on Drawings, length to allow specified bearing on both sides of opening as indicated on the drawings.
 - 1. Exterior Locations: Galvanized.
 - 2. Interior Locations: Prime paint, one coat.

2.2 FABRICATION

- A. Fit and shop assemble items in largest practical sections, for delivery to site.
- B. Fabricate items with joints tightly fitted and secured.
- C. Continuously seal joined members by continuous welds.
- D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.3 FACTORY APPLIED FINISHES - STEEL

- A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- B. Do not prime surfaces in direct contact with concrete or where field welding is required.
- C. Prime paint items with one coat except where galvanizing is specified.

- D. Galvanized Items: Galvanized after fabrication to ASTM A123. Furnish minimum 2.0 oz/sq ft galvanized coating.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify field conditions are acceptable and are ready to receive Work.

3.2 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Make provisions for erection stresses. Install temporary bracing to maintain alignment, until permanent bracing and attachments are installed.

END OF SECTION

SECTION 06112

FRAMING AND SHEATHING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes structural floor, wall, and roof framing; floor, wall, and roof sheathing; sill gaskets and flashings; preservative treatment of wood; fire retardant treatment of wood; miscellaneous framing and sheathing.

1.2 REFERENCES

- A. American National Standards Institute:
 - 1. ANSI A208.1 - Mat-Formed Wood Particleboard.
- B. American Wood-Preservers' Association:
 - 1. AWWPA C1 - All Timber Products - Preservative Treatment by Pressure Process.
 - 2. AWWPA C20 - Structural Lumber - Fire-Retardant Treatment by Pressure Processes.
- C. National Institute of Standards and Technology:
 - 1. NIST PS 20 - American Softwood Lumber Standard.
- D. Northeastern Lumber Manufacturers Association:
 - 1. NELMA - Standard Grading Rules for Northeastern Lumber.
- E. Southern Pine Inspection Bureau:
 - 1. SPIB - Standard Grading Rules for Southern Pine Lumber.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with the following:
 - 1. Lumber Grading Agency: Certified by NIST PS 20.
 - 2. Wood Structural Panel Grading Agency: Certified by EWA - The Engineered Wood Association.
- B. In lieu of grade stamping exposed to view lumber and wood structural panels, submit manufacturer's certificate certifying Products meet or exceed specified requirements.

PART 2 PRODUCTS

2.1 LUMBER MATERIALS

- A. Lumber Grading Rules: AF&PA, NELMA, NLGA, RIS, SPIB, WCLIB, WWPA.

- B. Beam Framing: Douglas Fir species, Select Structural grade; Southern Pine species, No. 1 Dense SR; for timbers 5" and thicker; free of heart center, 15 percent maximum moisture content.
- C. Joist Framing: Douglas Fir, Larch, Hem-Fir, Southern Pine species, No. 2 grade or better, 19 percent maximum moisture content.
- D. Rafter Framing: Douglas Fir, Larch, Hem-Fir, Southern Pine species, No. 2 grade or better, 19 percent maximum moisture content.
- E. Non-structural Light Framing: Any species, Standard grade for stud framing 2" to 4" thick, 2" to 6" wide, 10" and shorter; 19 percent maximum moisture content.
- F. Below Grade Wood Foundation Framing: Douglas Fir, Larch, Hem-Fir, Southern Pine species, No. 2 grade; 19 percent maximum moisture content, pressure preservative treated.
- G. Miscellaneous Framing: Douglas Fir, Larch, Hem-Fir, Southern Pine species, No. 2 grade; 19 percent maximum moisture content, pressure preservative treat.

2.2 SHEATHING MATERIALS

- A. Wood Structural Panel Roof Sheathing: EWA Rated Sheathing; Structural I, Oriented Strand Board Span Rating as required to suit indicated joist spacing; Exposure Durability 1; unsanded.
- B. Wood Structural Panel Wall Sheathing: EWA Rated Sheathing, Structural I, Oriented Strand Board Span Rating as required to suit indicated stud spacing; Exposure Durability 1; unsanded.
- C. Wood Structural Panel Floor Sheathing: EWA Rated Sheathing, Structural I, Oriented Strand Board, Span Rating as required to suit indicated joint spacing; Exposure Durability 1; sanded.

2.3 UNDERLAYMENT MATERIALS

- A. Plywood Underlayment: EWA Underlayment, Structural I, Span Rating as required for joist spacing indicated; Exposure Durability 1; sanded.

2.4 ACCESSORIES

- A. Fasteners and Anchors:
 1. Fasteners: Hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
 2. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt or ballistic fastener for anchorages to steel.

- B. Structural Framing Connectors: Hot dipped galvanized steel, sized to suit framing conditions, manufactured by Simpson Strong-Tie Co.
- C. Sill Gasket on Top of Foundation Wall: 1/4 inch (6 mm) thick, plate width, closed cell polyethylene foam from continuous rolls.
- D. Subfloor Glue: EWA AFG-01, waterproof.
- E. Building Paper: No.15 asphalt felt.

2.5 FACTORY WOOD TREATMENT

- A. Wood Preservative (Pressure Treatment): AWWPA Treatment C1 using water borne preservative with 0.25 percent retainage.
- B. Wood Preservative (Surface Application): Clear type, manufactured by Thompsons Waterseal.

PART 3 EXECUTION

3.1 FRAMING

- A. Set structural members level and plumb, in correct position.
- B. Make provisions for erection loads, and for sufficient temporary bracing to maintain structure safe, plumb, and in alignment until completion of erection and installation of permanent bracing.
- C. Place horizontal members, crown side up.
- D. Construct load bearing framing and curb members full length without splices.
- E. Double members at openings. Space short studs over and under opening to stud spacing.
- F. Construct double joist headers at floor and ceiling openings and under wall stud partitions parallel to floor joists. Frame rigidly into joists.
- G. Place sill gasket directly on cementitious foundation. Puncture gasket clean and fit tight to protruding foundation anchor bolts.
- H. Curb roof openings except where prefabricated curbs are provided. Form corners by alternating lapping side members.

3.2 SHEATHING

- A. Secure roof sheathing with longer edge (strength axis) perpendicular to framing members and with ends staggered and sheet ends over bearing.

- B. Use sheathing clips between sheets between roof framing members.
- C. Secure wall sheathing with long dimension perpendicular to wall studs, with ends over firm bearing and staggered.
- D. Place wood structural panel sheathing at building corners for horizontal distance of 48 inches.
- E. Place building paper horizontally over wall sheathing; weather lap edges and ends.
- F. Secure subfloor sheathing with longer edge perpendicular to floor framing and with end joints staggered and sheet ends over bearing. Attach with subfloor glue and galvanized screws.
- G. Install plywood to two span continuous.
- H. Place building paper between floor underlayment and subflooring.
- I. Install flooring underlayment after dust and dirt generating activities have ceased and prior to application of finished flooring. Apply perpendicular to subflooring, stagger joints of underlayment. Secure with deformed shank type fasteners.
- J. Install telephone and electrical panel back boards with plywood sheathing material where required. Size back boards 12 inches (300 mm) beyond size of electrical panel.

3.3 SITE APPLIED WOOD TREATMENT

- A. Apply preservative treatment.
- B. Brush apply two coats of preservative treatment on wood in contact with cementitious materials, roofing and related metal flashings. Treat site-sawn cuts.
- C. Allow preservative to dry prior to erecting members.

3.4 TOLERANCES

- A. Framing Members: 1/4 inch (6 mm) from indicated position, maximum.
- B. Surface Flatness of Floor: 1/4 inch in 10 feet (2 mm/m) maximum, and 1/2 inch in 30 feet (12 mm in 9 m) maximum.

END OF SECTION

SECTION 06114

WOOD BLOCKING AND CURBING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes nailers, blocking in wall and roof openings; wood furring and grounds; concealed wood blocking for support of toilet and bath accessories, wall cabinets, wood trim, millwork, doors, window frames, and other items.
- B. Wood treatment.

1.2 REFERENCES

- A. American National Standards Institute:
 - 1. ANSI A208.1 - Mat-Formed Wood Particleboard.
- B. American Wood-Preservers' Association:
 - 1. AWPA C1 - All Timber Products - Preservative Treatment by Pressure Process.
 - 2. AWPA C20 - Structural Lumber - Fire-Retardant Treatment by Pressure Processes.
- C. National Institute of Standards and Technology:
 - 1. NIST PS 20 - American Softwood Lumber Standard.
- D. The Redwood Inspection Service:
 - 1. RIS - Standard Specifications for Grades of California Redwood Lumber.
- E. Southern Pine Inspection Bureau:
 - 1. SPIB - Standard Grading Rules for Southern Pine Lumber.
- F. West Coast Lumber Inspection Bureau:
 - 1. WCLIB - Standard Grading Rules for West Coast Lumber.
- G. Western Wood Products Association:
 - 1. WWPA G-5 - Western Lumber Grading Rules.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with the following:
 - 1. Lumber Grading Agency: Certified by NIST PS 20.
 - 2. Plywood Grading Agency: Certified by APA/EWA.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Lumber Grading Rules: AP&PA, RIS, SPIB, WCLIB, WWPA G-5.
- B. Miscellaneous Framing: Stress Group D , yellow pine species, 19 percent maximum moisture content, pressure preservative treat.
- C. Plywood: APA/EWA Rated Sheathing Structural I, Grade C-D; Exposure Durability 1; unsanded.

2.2 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Fasteners: Stainless steel for high humidity and treated wood locations, unfinished steel elsewhere.
 - 2. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt or ballistic fastener for anchorages to steel.

2.3 FACTORY WOOD TREATMENT

- A. Wood Preservative (Pressure Treatment): AWPA C1 using water borne preservative with 0.25 percent retainage.
- B. Wood Preservative (Surface Application): Clear type, manufactured by Thompsons Waterseal.
- C. Fire Retardant Treatment: Pressure treatment, AWPA C20 for lumber and AWPA C27 for plywood, Interior Type, chemically treated and pressure impregnated; capable of providing a maximum flame spread/smoke development rating of 25/450.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify substrate conditions are ready to receive blocking, curbing and framing.

3.2 PREPARATION

- A. Coordinate placement of blocking, curbing and framing items.

3.3 INSTALLATION

- A. Set members level and plumb, in correct position.

- B. Place horizontal members, crown side up.
- C. Space framing and furring 16 inches (400 mm) oc.
- D. Secure sheathing to framing members with ends over firm bearing and staggered.

3.4 SITE APPLIED WOOD TREATMENT

- A. Apply preservative treatment.
- B. Brush apply two coats of preservative treatment on wood in contact with cementitious materials, and roofing and related metal flashings. Treat site-sawn cuts.
- C. Allow preservative to dry prior to erecting members.

END OF SECTION

SECTION 06200
FINISH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes finish carpentry items; wood door frames, glazed frames; wood casings and moldings; and hardware and attachment accessories.

1.2 QUALITY ASSURANCE

- A. Perform work in accordance with AWI (Architectural Woodwork Institute) Architectural Woodwork Quality Standards Illustrated, Custom Grade.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Protect work from moisture damage.

1.4 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

1.5 SEQUENCING

- A. Sequence work to ensure utility connections are achieved in orderly and expeditious manner.

1.6 COORDINATION

- A. Administrative Requirements: Coordination and project conditions.
- B. Coordinate work with plumbing rough-in, electrical rough-in, and installation of associated and adjacent components.

PART 2 PRODUCTS

2.1 COMPONENTS

- A. Hardwood Lumber: AWI Grade I; maximum moisture content of 6-8 percent; and the following:
 - 1. Species of Wood: Poplar.
 - 2. Cut or Slicing of Wood: Plain.
 - 3. Matching of Individual Leaves to Each Other: book matching.

2.2 ACCESSORIES

- A. Fasteners: Of size and type to suit application.
- B. Concealed Joint Fasteners: Threaded steel.
- C. Lumber for Shimming, and Blocking, Softwood lumber of any species.
- D. Veneer Edge Band: Standard wood veneer edge band matching face veneer.

2.3 FABRICATION

- A. Fabricate to AWI Custom standards.
- B. Shop assemble work for delivery to site, permitting passage through building openings.
- C. Fit exposed sheet material edges with matching hardwood edging. Use one piece for full length only.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Administrative Requirements: Coordination and project conditions.
- B. Verify adequacy of backing and support framing.
- C. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

3.2 INSTALLATION

- A. Install work in accordance with AWI Custom quality standard.
- B. Set and secure materials and components in place, plumb and level.
- C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch (1 mm). Do not use additional overlay trim to conceal larger gaps.
- D. Install components and trim with nails, screws and bolts with blind fasteners at 8 inch on center. Wall adhesive by gun application.
- E. Preparation For Site Finishing:
 - 1. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.
 - 2. Site Finishing: Refer to Section 09900.
 - 3. Before installation, prime paint surfaces of items or assemblies to be in contact with cementitious materials.

3.3 ERECTION TOLERANCES

- A. Maximum Variation from Indicated Position: 1/16 inch (1.5 mm).
- B. Maximum Offset from Alignment with Abutting Materials: 1/32 inch (0.7 mm).

3.4 SCHEDULES

- A. Exterior:
 - 1. Standing and Running Trim: Red Cedar; WWPA – Grade: No. 1 Clear. Smooth surfaced, field painted.
 - 2. Exterior Soffits: APA grade plywood complying with PS-1. Units shall be 3/8” thick, rough sawn, group 4, No. 303, exterior grade siding. Field painted.
 - 3. Items as indicated on the Drawings.
- B. Interior:
 - 1. Standing and Running Trim for Transparent Finish: Plain sawn poplar.
 - 2. Standing and Running Trim for Painted Finish: Poplar.
 - 3. Wood Molding Patterns: Any Western softwood species graded and inspected by WWPA. N-Grade for transparent finish. P-Grade for painted finish.
 - 4. Wood Shelves For Transparent Finish (stained or clear): No. 1 Clear Fir or White Pine of size(s) and thickness as indicated. At Contractor’s option, provide 3/4” thick, grade A-a, interior plywood with hardwood nosings in lieu of solid lumber as herein indicated.
 - 5. Items as indicated on the Drawings.

END OF SECTION

SECTION 06410

CABINETS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes cabinet units; counter tops; cabinet hardware; and preparation for installing utilities in cabinets.

1.2 REFERENCES

- A. National Electrical Manufacturers Association:
 - 1. NEMA LD 3 - High Pressure Decorative Laminates.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Protect units from moisture damage.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. During and after installation of Work of this section, maintain same temperature and humidity conditions in building spaces as will occur after occupancy.

1.5 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. IKEA AKURUM

2.2 CABINETS:

- A. Style: NEXUS brown-black.

- B. Hardware: standard.

2.3 TOPS

- A. High Pressure Decorative Laminate: NEMA LD 3, GP50 for horizontal surfaces; color, pattern, and surface texture as selected from Wilsonart.

2.4 ACCESSORIES

- A. Adhesive for High Pressure Decorative Laminates: Type recommended by laminate manufacturer to suit application.
- B. Fasteners: Size and type to suit application.
- C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application.

2.5 FABRICATION

- A. Shop assemble casework for delivery to site in units easily handled and to permit passage through building openings.
- B. Apply high pressure decorative laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Locate counter butt joints minimum 2 feet (600 mm) from sink cut-outs.
- C. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
- D. Mechanically fasten back splash to counter tops with steel brackets at 16 inches (400 mm) on center.
- E. Fabricate cabinets and counter tops with cutouts for plumbing fixtures, inserts, appliances, outlet boxes, fixtures and fittings. Verify locations of cutouts from on-site dimensions. Seal cut edges.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Administrative Requirements: Coordination and project conditions.
- B. Verify adequacy of backing and support framing.
- C. Verify location and sizes of utility rough-in associated with work of this section.

3.2 INSTALLATION

- A. Set and secure casework in place; rigid, plumb, and level.
- B. Use fixture attachments in concealed locations for wall mounted components.
- C. Use concealed joint fasteners to align and secure adjoining cabinet units and counter tops.
- D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch (1 mm). Do not use additional overlay trim for this purpose.

- E. Secure cabinet and counter bases to floor using appropriate angles and anchorages.
- F. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.3 ADJUSTING

- A. Adjust moving or operating parts to function smoothly and correctly.

3.4 CLEANING

- A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

SECTION 07468

SIDING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes preformed siding system for walls with related flashings and accessory components.

1.2 DELIVERY, STORAGE, AND HANDLING

- A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.
- B. Prevent contact with materials capable of causing discoloration or staining.

1.3 COORDINATION

- A. Coordinate Work for installation of vapor retarder and air barrier seals.
- B. Coordinate Work with installation of windows, louvers, and adjacent components or materials.

PART 2 PRODUCTS

2.1 MANUFACTURED SIDING

- A. Manufacturers:
 - 1. JamesHardie or equal.

2.2 COMPONENTS

- A. HardiePlank Lap Siding:
 - 1. Thickness: 5/16 inch.
 - 2. Weight: 2.3 lbs/sq ft
 - 3. Length: 12' planks
 - 4. Widths: 5 inch exposure.
- B. HardieTrim Boards:
 - 1. Thickness: 3/4 inch
 - 2. Texture: smooth

2.3 ACCESSORIES

- A. Sealants: Manufacturer's standard type suitable for use with installation of system; non-staining, non-shrinking and non-sagging; ultra-violet and ozone resistant; to match siding.
- B. Fasteners: Manufacturer's standard type to suit application.
- C. Simplicity Tool metal pre-formed trim corners for mitered lap siding.
- D. Metal Fry Reglet reveal joints.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Administrative Requirements: Coordination and project conditions.
- B. Verify framing members are ready to receive panel system.

3.2 INSTALLATION

- A. Follow manufacturer's instructions.

3.3 ERECTION TOLERANCES

- A. Maximum Offset From Indicated Alignment Between Adjacent Members Butting or In Line: 1/16 inch (1.6 mm).
- B. Maximum Variation from Plane or Location Indicated on Drawings: 1/8 inch.

END OF SECTION

SECTION 07614

SHEET METAL ROOFING AND SIDING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Sheet metal roofing and siding.
 - 2. Underlayment.
 - 3. Eave protection.
 - 4. Metal facias, flashings, and trim.
 - 5. Metal gutters and downspouts.
 - 6. Snow guards.

1.2 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials causing discoloration or staining.

1.3 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

PART 2 PRODUCTS

2.1 MANUFACTURED SHEET METAL ROOFING AND SIDING

- A. Manufacturers:
 - 1. Midwest Manufacturing – “40 Year Exposed Panel System”

2.2 SHEET METAL MATERIALS

- A. Pre-Finished Galvanized Steel Sheet: ASTM A755/A755M coil coated.
 - 1. Exposed Finish: Pre-finished in color as selected.
 - 2. Unexposed Finish: Manufacturer’s standard coating.

2.3 ACCESSORIES

- A. Fasteners: Galvanized steel.
- B. Underlayment: ASTM D226, organic roofing felt, Type II, Number 30.

- C. Eave Protection Sheet: Rubberized asphalt bonded to sheet polyethylene, 40 mil (1 mm) total thickness, with strippable treated release paper; manufactured by W.R. Grace, Johns Manville, Henry Co. or Polyguard.
- D. Provide pre-fabricated seam-mounted bar-type snow guards, SnoBar by Riddell & Co. or SnoFence by LM Curbs.
- E. Splash Pads: Precast concrete type, of size and profiles indicated; minimum 3000 psi (21 MPa) at 28 days, with minimum 5 percent air entrainment.

2.4 FABRICATION

- A. Form sections shape as indicated on Drawings, accurate in size, square, and free from distortion or defects.

PART 3 EXECUTION

3.1 INSTALLATION - EAVE PROTECTION

- A. Extend eave protection sheet minimum 6 feet upslope beyond interior face of exterior wall.
- B. Place single width eave protection sheet centered over valley, hips and ridges.
- C. Place single width eave protection sheet along gable, parallel to gable edge.

3.2 INSTALLATION

- A. Apply underlayment over entire roof area in single layer fastened to substrate.
 - 1. Install underlayment laid perpendicular to slope.
 - 2. Weather lap edges 2 inches (50 mm) and nail in place.
 - 3. Stagger end joints minimum 24 inches (600 mm).

3.3 INSTALLATION - METAL ROOFING AND SIDING

- A. Install in accordance with the Manufacturer's recommendations.
- B. Seal metal joints watertight.

3.4 INSTALLATION - FLASHING

- A. Conform to SMACNA details.
- B. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- C. Seal metal joints watertight.

3.5 INSTALLATION - GUTTERS AND DOWNSPOUTS

- A. Conform to SMACNA.
- B. Secure gutters and downspouts in place using fasteners.
- C. Slope gutters minimum 1/8 inch per foot (20 mm/m).
- D. Seal gutters watertight. Seal joint of gutter to downspout.
- E. Connect downspouts to downspout boots at 24 inches above grade.
- F. Set splash pads under downspouts.

3.6 INSTALLATION - SNOW GUARDS

- A. Install snow guards in accordance with manufacturer's instructions.

3.7 PROTECTION OF INSTALLED CONSTRUCTION

- A. Do not permit traffic over unprotected roof surface.

END OF SECTION

SECTION 07900

JOINT SEALERS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes sealants and joint backing, and accessories.

1.2 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

PART 2 PRODUCTS

2.1 JOINT SEALERS

- A. Products Description:
1. High Performance General Purpose Exterior (Nontraffic) Sealant Silicone.
 - a. Color: Colors as selected by the Architect.
 - b. Acceptable Manufacturers/Products:
 - 1) Dow Corning; 790.
 - 2) GE Silicones; Silpruf
 - 3) GE Silicones: UltraPruf SCS2300.
 - 4) Pecora; 864.
 - 5) Pecora; 890.
 - 6) BASF; Omniseal.
 - 7) Tremco; Spectrem 1.
 2. High Performance General Purpose Exterior (Nontraffic) Sealant Polyurethane; ASTM C920, Grade NS, Class 25, Uses M, G, and A; multi-component.
 - a. Color: Colors as selected by the Architect.
 - b. Acceptable Manufacturers/Products:
 - 1) Pecora; Dynatrol II.
 - 2) Sika; Sikaflex – 2c NS.
 - 3) Tremco; Dymeric 511.
 - 4) Bostik; Chem-Calk 2641.
 - 5) BASF; NP 2.
 3. High Performance General Purpose Exterior (Nontraffic) Sealant Polyurethane; ASTM C920, Grade NS, Class 25, Uses M, G, and A; single-component.
 - a. Color: Colors as selected by the Architect.
 - b. Acceptable Manufacturers/Products:
 - 1) Sika; Sikflex – 1a.
 - 2) BASF; NP 1.
 - 3) Bostik; Chem-Calk 900.

- 4) Mameco; Vulkem 921.
 - 5) Pecora; Dynatrol I.
 - 6) Tremco; DyMonic.
4. General Purpose Traffic Bearing Sealant Polyurethane; ASTM C920, Grade P, Class 25, Use T; multi-component.
- a. Color: Colors as selected by the Architect.
 - b. Acceptable Manufacturers/Products:
 - 1) Bostik; Chem-Calk 550.
 - 2) W.R. Meadows; Pourthane.
 - 3) Pecora; NR-200 Urexpan.
 - 4) Pecora; NR-300 Urexpan, Type M.
 - 5) Sika; Sikaflex – 2c SL.
 - 6) BASF; SL 2.
 - 7) Tremco; THC-900.
 - 8) Tremco; THC-901.
5. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, single component, paintable.
- a. Color: Colors as selected by the Architect.
 - b. Acceptable Manufacturers/Products:
 - 1) Bostik; Chem-Calk 600.
 - 2) Pecora; AC-20.
 - 3) BASF; Sonolac.
 - 4) Tremco; Tremflex 834.
6. Plumbing Fixture Sealant: Silicone; ASTM C920, Uses M and A; single component, mildew resistant.
- a. Color: White.
 - b. Acceptable Manufacturers/Products:
 - 1) Dow Corning; 786 Mildew Resistant.
 - 2) GE Silicones; Sanitary 1700.
 - 3) Pecora; 898 Silicone Sanitary Sealant.
 - 4) Tremco; Tremsil 600 white.

2.2 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: Round foam rod compatible with sealant; ASTM C 330; oversized 30 to 50 percent larger than joint width.
 - 1. Type: C: Closed-cell material with surface skin.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Administrative Requirements: Coordination and project conditions.
- B. Verify substrate surfaces and joint openings are ready to receive work.
- C. Verify joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

- A. Remove loose materials and foreign matter impairing adhesion of sealant.
- B. Clean and prime joints.
- C. Perform preparation in accordance with ASTM C1193.
- D. Protect elements surrounding Work of this section from damage or disfiguration.

3.3 INSTALLATION

- A. Perform installation in accordance with ASTM C1193.
- B. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.
- C. Install bond breaker where joint backing is not used.
- D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- E. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- F. Tool joints concave.
- G. Precompressed Foam Sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 1/8 to 1/4 inch (3 to 6 mm) below adjoining surface.

3.4 CLEANING

- A. Clean adjacent soiled surfaces.

3.5 SCHEDULE

- A. Exterior Sealants:
 - 1. Door and window frame perimeters: silicone.
 - 2. All joints and openings with dissimilar materials: silicone.
 - 3. Expansion joints in a vertical plane: silicone.

4. Masonry control joints: silicone.
5. Unit masonry joints at lintels: silicone.
6. Expansion Joints in a horizontal plane: polyurethane.
7. Sheet metal joints, flashing, reglets: silicone.
8. Plaza sealants: self-leveling polyurethane.

B. Interior Painted Caulks:

1. Door and window frame perimeters: acrylic latex.

C. Interior Non-Painted Caulks:

1. Door and window frame perimeters: acrylic latex.
2. All joints and openings with dissimilar materials: acrylic latex.
3. Vertical expansion joints and masonry control joints: silicone.
4. Horizontal expansion joints: polyurethane.
5. Plumbing fixture perimeters: mildew resistant silicone.
6. Exposed concrete control joints: self-leveling polyurethane.
7. Counter tops: silicone.

END OF SECTION

SECTION 08111

STEEL DOORS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes steel doors.

PART 2 PRODUCTS

2.1 STEEL DOORS

- A. Manufacturers:
 - 1. Mastercraft.
- B. Product Description:
 - 1. Design:
 - a. Exterior Doors shall be insulated with custom sized lites.

2.2 SHOP FINISHING

- A. Primer: Air dried.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify opening sizes and tolerances are acceptable.

3.2 INSTALLATION

- A. Install doors in accordance with Manufacturer's recommendations.

3.3 ADJUSTING

- A. Adjust door for smooth and balanced door movement.

END OF SECTION

SECTION 08212
FLUSH WOOD DOORS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes flush wood doors, paint-grade.

PART 2 PRODUCTS

2.1 FLUSH WOOD DOORS

- A. Manufacturers:
 - 1. Mohawk or equal.
- B. Product Description: Solid core flush wood doors for paint finish.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions.

3.2 ADJUSTING

- A. Adjust door for smooth and balanced door movement.

END OF SECTION

SECTION 08620

WINDOWS AND PATIO DOORS

PART 1 GENERAL

1.1 SUMMARY

- A. Vinyl windows and patio doors.

PART 2 PRODUCTS

2.1 WINDOWS AND PATIO DOORS

- A. Manufacturers:
 - 1. Silverline.

2.2 WINDOW FEATURES

- A. Silverline Series 7550 casement and fixed.
- B. Color: white
- C. Glass: Insulating, tempered where required by code.
- D. Frames: fusion welded.
- E. Cam locks.
- F. Fiberglass insect screens in aluminum frame.

2.3 PATIO DOOR FEATURES

- A. Silverline Series 5800.
- B. Color: white
- C. Glass: Insulating, tempered.
- D. Frames: fusion welded.
- E. Standard hardware.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify dimensions, tolerances, and method of attachment with other Work.
- B. Verify wall openings and adjoining air and vapor seal materials are ready to receive Work of this Section.

3.2 INSTALLATION

- A. Follow manufacturer's recommendations.

3.3 CLEANING

- A. Wash down surfaces with solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.
- B. Remove excess sealant by method acceptable to sealant manufacturer.

3.4 PROTECTION OF INSTALLED CONSTRUCTION

- A. Protect finished Work from damage.

END OF SECTION

SECTION 09260

GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes gypsum board and joint treatment.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM C36 - Standard Specification for Gypsum Wallboard.

PART 2 PRODUCTS

2.1 GYPSUM BOARD ASSEMBLIES

- A. Gypsum Board and Related Product Manufacturers:
 - 1. CertainTeed Gypsum
 - 2. G-P Gypsum Corp.
 - 3. Lafarge.
 - 4. National Gypsum Co.
 - 5. United States Gypsum Co.

2.2 COMPONENTS

- A. Gypsum Board Materials:
 - 1. Standard Gypsum Board: ASTM C36; ½ and 5/8 inch thick, maximum available length in place; ends square cut, tapered edges.

2.3 ACCESSORIES

- A. Corner Beads: Metal.
- B. Edge Trim: Type U exposed reveal bead.
- C. Joint Materials:
 - 1. Typical: ASTM C475; reinforcing tape, joint compound, adhesive, and water.
 - 2. For mold resistant gypsum board use joint materials as recommended by the Manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify site conditions are ready to receive work and opening dimensions are as indicated on shop drawings.

3.2 INSTALLATION

- A. Gypsum Board Installation:
 - 1. Erect single layer standard gypsum board vertical, with ends and edges occurring over firm bearing.
 - 2. Place control joints consistent with lines of building spaces. Distance between control joints shall not to exceed 30 ft.
 - 3. Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials.
- B. Joint Treatment:
 - 1. Finish in accordance with GA-214 Level 4.

3.3 SCHEDULES

- A. Finishes in accordance with GA-214 Level:
 - 1. Level 1: Above finished ceilings concealed from view unless a higher level of finish is required for fire-resistance-rated assemblies.
 - 2. Level 4: Walls exposed to view.
 - 3. Level 4: Ceilings exposed to view.

END OF SECTION

SECTION 09300

TILE

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Ceramic tile.
 - 2. Tile floor edging.

1.2 REFERENCES

- A. American National Standards Institute:
 - 1. ANSI A108.1 - Installation of Ceramic Tile, A collection.
 - 2. ANSI A108.10 - Specifications for Installation of Grout in Tilework.
 - 3. ANSI A118.6 - Ceramic Tile Grouts.
 - 4. ANSI A137.1 - Ceramic Tile.
- B. Tile Council of America:
 - 1. TCA - Handbook for Ceramic Tile Installation.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with TCA Handbook and ANSI A108 Series/A118 Series.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Protect adhesives and grouts from freezing or overheating.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Do not install adhesives and grouts in unventilated environment.
- B. Maintain ambient and substrate temperature of 50 degrees F during installation of mortar materials.

PART 2 PRODUCTS

2.1 TILE

- A. Manufacturers:
 - 1. Tile
 - a. American Olean.
 - b. Dal-Tile.

- c. Florida Tile.
- d. Royal Mosa.

2.2 COMPONENTS

- A. Tile: ANSI A137.1, conforming to the following:
 - 1. Composition: Porcelain.
 - 2. Colors/Patterns: As selected.
- B. Base and Trim: Match floor tile for moisture absorption, surface finish, and color.

2.3 MORTAR AND GROUT MATERIALS

- A. Manufacturers:
 - 1. Bonsal, W.R., Company.
 - 2. Bostik
 - 3. C-Cure.
 - 4. Custom Building Products.
 - 5. LATICRETE International Inc.
 - 6. MAPEI Corporation.
 - 7. Summitville Tiles, Inc.
 - 8. TEC Specialty Products, Inc.
- B. Mortar Materials:
 - 1. Mortar Bed Materials: Portland cement, sand, latex additive and water.
 - 2. Mortar Bond Coat Materials:
 - a. Latex-Portland Cement type: ANSI A118.4.
- C. Grout Materials:
 - 1. Standard Grout: Latex-Portland cement type as specified in ANSI A118.6.
 - a. Color: As selected.

2.4 ACCESSORIES

- A. Tile Floor Edging: Angle or L-shape, height to match tile and setting bed thickness, metallic designed specifically for flooring applications. Provide Schiene-AE by Schluter Systems L.P. (800-472-4588).

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify surfaces are ready to receive work.

3.2 PREPARATION

- A. Protect surrounding work from damage.
- B. Vacuum clean surfaces and damp clean.
- C. Seal substrate surface cracks with filler. Apply crack suppression membrane over all cracks in substrate.
- D. Level existing substrate surfaces to acceptable flatness tolerances.

3.3 INSTALLATION

- A. Install tile and grout in accordance with applicable requirements of ANSI A108.1 through A108.10, and TCA Handbook recommendations.
- B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
- C. Place edge strips at exposed tile edges.
- D. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly using all trim pieces available. Align floor, base and wall joints.
- E. Place tile with joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.
 - 1. Tile: 1/4 inch.
- F. Form internal angles coved and external angles bullnosed.
- G. Install ceramic accessories rigidly in prepared openings.
- H. Sound tile after setting. Replace hollow sounding units.
- I. Keep control joints free of adhesive or grout. Apply sealant to joints.
- J. Allow tile to set for a minimum of 48 hours prior to grouting.
- K. Grout tile joints. Use standard grout at ceramic mosaic tile and use epoxy grout at quarry tile.
- L. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.
- M. Installation - Floors - Thin-Set Methods:
 - 1. Install in accordance with TCA Handbook.
- N. Installation - Wall Tile:
 - 1. Over gypsum wallboard on wood studs install in accordance with TCA Handbook Method.

3.4 CLEANING

- A. Clean tile and grout surfaces.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

- A. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION

SECTION 09650
RESILIENT FLOORING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Resilient tile flooring.
 - 2. Resilient base.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile.
 - 2. ASTM F1861 - Standard Specification for Resilient Wall Base.

1.3 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature in storage area between 55 degrees F (13 degrees C) and 90 degrees F (32 degrees C).
- B. Store materials for not less than 48 hours prior to installation in area of installation at temperature of 70 degrees F (21 degrees C) to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F (13 degrees C).

PART 2 PRODUCTS

2.1 VINYL COMPOSITION TILE FLOORING

- A. Manufacturers:
 - 1. Armstrong World Industries, Inc.
 - 2. Azrock by Tarkett.
 - 3. Mannington Commercial.
- B. Vinyl Composition Tile: ASTM F1066:
 - 1. Size: 12 x 12 inch.
 - 2. Pattern/Color: As selected by the Architect.

2.2 RESILIENT BASE

- A. Manufacturers:
 - 1. Armstrong World Industries, Inc.
 - 2. Azrock by Tarkett.
 - 3. Freudenberg Building Systems, Inc., Nora Rubber Flooring Div.

4. Johnsonite, Div. of Duramax, Inc.
 5. Marley Floors-Flexco.
 6. Roppe Corp..
 7. VPI Floor Products Div.
- B. Base: ASTM F1861 Rubber; top set covered:
1. Height: 4 inch.
 2. Thickness: 0.125 inch thick.

2.3 ACCESSORIES

- A. Subfloor Filler: White pre-mix latex; type recommended by adhesive material manufacturer.
- B. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.
- C. Moldings and Edge Strips: Same material as flooring manufactured by Roppe or Johnsonite.
- D. Sealer and Wax: Types recommended by flooring manufacturer.

PART 3 EXECUTION

3.1 PREPARATION

- A. Remove sub-floor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.
- B. Prohibit traffic until filler is cured.
- C. Clean substrate.
- D. Apply primer as required to prevent "bleed-thru" or interference with adhesion by substances cannot be removed. Apply primer to surfaces as recommended by the flooring manufacturer.

3.2 INSTALLATION - TILE FLOORING

- A. Mix tile from container to ensure shade variations are consistent when tile is placed.
- B. Lay flooring with joints and seams parallel unless otherwise indicated to building lines to produce symmetrical tile pattern.
- C. Install tile to basket weave pattern. Allow minimum 1/2 full size tile width at room or area perimeter.
- D. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

- E. Where floor finishes are different on opposite sides of door, terminate flooring under centerline of door.
- F. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
- G. Install flooring in recessed floor access covers. Maintain floor pattern.
- H. At movable partitions, install flooring under partitions without interrupting floor pattern.
- I. Fit joints tightly.

3.3 INSTALLATION - BASE

- A. Fit joints tightly and make vertical.
- B. Miter internal corners. At external corners, 'V' cut back of base strip to 2/3 of its thickness and fold. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

3.4 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean, seal, and maintain resilient flooring products.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.
- B. Cover and protect installed flooring.

END OF SECTION

SECTION 09686

SHEET CARPET

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes carpet direct-glued to substrate and accessories.

1.2 ENVIRONMENTAL REQUIREMENTS

- A. Store materials in area of installation for 48 hours prior to installation.
- B. Maintain minimum 70 degrees F (21 degrees C) ambient temperature 3 days prior to, during and 24 hours after installation.
- C. Ventilate installation area during installation and for 3 days after installation.

PART 2 PRODUCTS

2.1 CARPET

- A. Manufacturers:
 - 1. J & J.
 - 2. Interface.
 - 3. Lees.

2.2 COMPONENTS

- A. Carpet:
 - 1. Yarn: 100% Nylon.
 - 2. Dye Method: Solution Dyed.

2.3 ACCESSORIES

- A. Pad: ¼ inch thick.
- B. Moldings and Edge Strips: Rubber or vinyl, color as selected. Manufactured by Johnsonite.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install carpet in accordance with the manufacturer's instructions.

- B. Verify carpet match before cutting to ensure minimal variation between dye lots.
- C. Trim carpet neatly at walls and around interruptions.
- D. Complete installation of edge strips, concealing exposed edges.

3.2 CLEANING

- A. Clean and vacuum carpet surfaces.

3.3 PROTECTION OF INSTALLED CONSTRUCTION

- A. Do not permit traffic over unprotected floor surface.
- B. Cover carpeting in traffic areas with protective non-staining building paper. Do not use plastic sheeting.

END OF SECTION

SECTION 09900

PAINTS AND COATINGS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and field application of paints and coatings as indicated.
- B. Work includes all painting and finishing of interior and exterior exposed items and surfaces, throughout project, except as otherwise indicated.
 - 1. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified as work of other sections.
- C. "Paint" as used herein means all coating systems materials including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as primer, intermediate or finish coats.
- D. Surfaces to be Painted: Except where natural finish of material is specifically noted as a surface not to be painted, paint exposed surfaces whether or not colors are designated in "schedules". Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, the Architect will select these from manufacturer's standard range of colors or finishes.
- E. Sheen to specific applications is as follows:
 - 1. Flat (0-10)
 - 2. Eggshell (10-20)
 - 3. Satin (20-40)
 - 4. Semi-Gloss (45-65)
 - 5. Gloss (75+)

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM D16 - Standard Terminology Relating to Paint, Varnish, Lacquer, and Related Products.
- B. Painting and Decorating Contractors of America:
 - 1. PDCA - Architectural Painting Specification Manual.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when surface and ambient temperatures are outside temperature ranges required by paint product manufacturer.
- B. Do not apply exterior coatings during rain or snow when relative humidity is outside humidity ranges, or moisture content of surfaces exceed those required by paint product manufacturer.
- C. Minimum Application Temperatures for Latex Paints: 45 degrees F (7 degrees C) for interiors; 50 degrees F (10 degrees C) for exterior; unless required otherwise by manufacturer's instructions.
- D. Minimum Application Temperature for Varnish and Finishes: 65 degrees F (18 degrees C) for interior or exterior, unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 ft candle (860 lx) measured mid-height at substrate surface.

PART 2 PRODUCTS

2.1 PAINTS AND COATINGS

- A. Manufacturers:
 - 1. Benjamin Moore & Co.
 - 2. Devoe Paint Co.
 - 3. Duron Inc.
 - 4. The Glidden Co.
 - 5. ICI Paints.
 - 6. MAB Paints.
 - 7. Porter Paints.
 - 8. PPG Architectural Finishes, Inc.
 - 9. Sherwin-Williams.

2.2 COMPONENTS

- A. Coatings: Ready mixed, except field catalyzed coatings. Prepare coatings:
 - 1. To soft paste consistency, capable of being readily and uniformly dispersed to homogeneous coating.
 - 2. For good flow and brushing properties.
 - 3. Capable of drying or curing free of streaks or sags.

- B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve finishes specified; commercial quality.
- C. Patching Materials: Latex filler.
- D. Fastener Head Cover Materials: Latex filler.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify surfaces and substrate conditions are ready to receive Work as instructed by product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report conditions capable of affecting proper application.
- C. Test shop applied primer for compatibility with subsequent cover materials.
- D. Measure moisture content of surfaces using electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 - 1. Gypsum Wallboard: 12 percent.
 - 2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
 - 3. Interior Wood: 15 percent, measured in accordance with ASTM D4442.
 - 4. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.

3.2 PREPARATION

- A. Surface Appurtenances: Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- B. Surfaces: Correct defects and clean surfaces capable of affecting work of this section. Remove or repair existing coatings exhibiting surface defects.
- C. Marks: Seal with shellac those which may bleed through surface finishes.
- D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- E. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.
- F. Interior Wood Items Scheduled to Receive Paint Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.

- G. Interior Wood Items Scheduled to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats.
- H. Exterior Wood Scheduled to Receive Paint Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior paintable caulking compound after prime coat has been applied.
- I. Wood Doors Scheduled for Painting: Seal wood door top and bottom edge surfaces with tinted primer.
- J. Metal Doors Scheduled for Painting: Prime metal door top and bottom edge surfaces.

3.3 APPLICATION

- A. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- B. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless specified otherwise.
- C. Sand wood and metal surfaces lightly between coats to achieve required finish.
- D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- E. Where clear finishes are required, tint fillers to match wood. Work fillers into grain before set. Wipe excess from surface.
- F. Prime concealed surfaces of interior and exterior woodwork with primer paint.
- G. Prime concealed surfaces of interior wood surfaces scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with thinner.

3.4 CLEANING

- A. Collect waste material which may constitute fire hazard, place in closed metal containers, and remove daily from site.

3.5 SCHEDULE - EXTERIOR SURFACES

- A. Wood - Painted (Opaque):
 - 1. One coat of latex or alkyd primer sealer.
 - a. MAB – Four Season Latex Primer
 - 2. Two coats of alkyd or latex enamel, gloss.
 - a. MAB – Four Seasons Acrylic Latex Trim Enamel
- B. Concrete Masonry Units:

1. Filler coat:
 - a. MAB – Block Kote # 1000
2. Two coats of latex or alkyd, flat.
 - a. MAB – Four Season Acrylic Latex 361 Line

3.6 SCHEDULE - INTERIOR SURFACES

- A. Wood - Painted:
 1. One coat of latex or alkyd prime sealer.
 - a. MAB – Rich Lux Latex Sealer/Undercoater
 2. Two coats of alkyd or latex enamel, semi-gloss.
 - a. MAB – Rich Lux Semi-Gloss Latex Enamel
- B. Wood - Transparent:
 1. Filler coat (for open grained wood only).
 - a. MAB – None required
 2. Two coats of stain.
 - a. MAB – Interior Alkyd Wood Stain
 3. One coat sealer.
 - a. MAB – Minit Dry Sanding Sealer
 4. Two coats of varnish, gloss or satin.
 - a. MAB – Rich Lux Polyurethane Wood Finish
- C. Concrete Masonry Units:
 1. Filler coat:
 - a. MAB – Block Kote # 1000
 2. Two coats of latex or alkyd, satin.
 - a. MAB – Rich Lux Eggshell Latex Enamel
- D. Steel - Unprimed:
 1. One coat of alkyd or latex primer.
 - a. MAB – Rust-O-Lastic Anti-Corrosive Primer
 2. Two coats of alkyd or latex enamel, semi-gloss.
 - a. MAB – Rich Lux Semi-Gloss Latex Enamel
- E. Steel - Primed:
 1. Touch-up with alkyd or latex primer.
 - a. MAB – Rust-O-Lastic Anti-Corrosive Primer
 2. Two coats of alkyd or latex enamel, semi-gloss.
 - a. MAB – Rich Lux Semi-Gloss Latex Enamel
- F. Gypsum Board Walls and Ceilings:
 1. One coat of latex primer sealer.
 - a. MAB – Rich Lux Prime Fast
 2. Two coats of alkyd or latex enamel, satin.
 - a. MAB – Rich Lux Eggshell Latex Enamel

3.7 SCHEDULE - COLORS

A. As selected.

END OF SECTION