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09 00 00	FINISHES
09 01 00	Maintenance of Finishes
	<u>Part 1 – General</u>
	Finishes shall be designed so they are easy to maintain. For example, rocks shall not be specified for under stairwells as they are hard to keep clean.
	<u>Part 2 – Products</u>
	N/A
	<u>Part 3 – Execution</u>
	N/A
09 20 00	PLASTER AND GYPSUM BOARD
09 21 00	Gypsum Board Assemblies
	<u>Part 1 – General</u>
	This required specification describes various levels of finish gypsum board surfaces prior to the application of specific types of final decoration. The recommended level of finish of gypsum wallboard and the ceiling surfaces varies with the final decoration to be applied and can also be dependent on their location in a structure and the type of illumination striking the surface. Each recommended level of finish is described within typical applications.
	<u>Definitions</u>
	Accessories: Metal or plastic beads, trim, or molding used to protect or conceal corners, edges, or abutments of the gypsum board construction.
	Critical Lighting: Strong side lighting from windows or surface-mounted light fixtures. (See “comments” section of this document).
	Joint Photographing: The shadowing of the finished joint areas through the surface decoration.
	Primer Sealer: A paint material formulated to fill the pores and equalize the suction between gypsum board surface paper and the compound used on finish joints, angles, fastener heads, and accessories, and over skim coatings.
	Skim Coating: A thin coat of joint compound over the entire surface to fill imperfections in the joint work, smooth the paper texture, and provide uniform surface for decorating.
	Texture: Regular or irregular pattern typically produced by applying a mixture of joint compound and water, or proprietary texture materials including latex-based texture paint, to a gypsum board surface previously coated with primer/sealer.
	Texturing: A decorative treatment of gypsum board surfaces.

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Design

Owner requires a minimum level 4 finish with texture unless areas are not accessible to the public or inhabitants of the structure (attics, mechanical rooms, etc.). However, these areas must still be finished to adequately meet fire code standards such as level 1 or 2.

Level 0: No taping, finishing or accessories required. **This level of finish may be useful in temporary construction or whenever the final decoration has not been determined.**

Level 1: All joints and interior angles shall have tape embedded in joint compound. Surfaces shall be free of excess joint compound. Tool marks and ridges are acceptable. Frequently specified in plenum areas above ceilings, in attics, in areas where the assembly would generally be concealed, or in building service corridors and other areas not normally open to public areas with pedestrian traffic. Some degree of sound and smoke control is provided; in some geographic areas this level is referred to as “fire taping”. Where a fire resistance rating is required for the gypsum board assembly, details of construction shall be in accordance with reports of fire tests of assemblies that have met the fire rating equipment.

Level 2: All joints and interior angles shall have tape embedded in joint compound and one separate coat of joint compound applied over all joints, angles, fastener heads, and accessories. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable. Specified where water resistance gypsum backing board (ASTM c630) is used as a substrate for tile; may be specified in garages, warehouse storage or other similar areas where surface appearance is not of primary concern.

Level 3: All joints and interior angles shall have tape embedded in joint compound and two separate coats of joint compound applied over all joints, angles, fastener heads, and accessories. All joint compounds shall be smooth and free of tool marks and ridges. Note: It is recommended that the prepared surface be coated with a primer/sealer prior to the application of final finishes. See painting/wallcovering specification in this regard. Typically specified in appearance areas which are to receive heavy or medium texture (spray or hand applied) finishes before final painting, or where heavy grade wallcoverings are to be applied as the final decoration. **This level of finish is *not to be used* where smooth painted surfaces or light to medium weight wallcoverings are specified.**

Level 4: All joints and interior angles shall have tape embedded in joint compound and three separate coats of joint compound applied over all joints, angles, fastener heads, and accessories. All joint compounds shall be smooth

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and free of tool marks and ridges. Note: The prepared surface shall be coated with a primer/sealer prior to the application of final finishes. See painting/wallcovering specification in this regard. ***This level should not be specified without texture. It is acceptable where wallcoverings are to be applied.*** The weight, texture, and sheen level of wallcoverings applied over this level of finish should be carefully evaluated. Joints and fasteners must be adequately concealed if they wallcovering material is lightweight, contains limited pattern, has a gloss finish, or any combination of these features is present. Unbacked vinyl wallcoverings are not to be used over this level of finish.

Level 5: All joints and interior angles shall have tape embedded in joint compound and three separate coats of joint compound applied over all joints, angles, fastener heads, and accessories. A thin skim coat of joint compound, or a material manufactured especially for this purpose, shall be applied to the entire surface. The surface shall be smooth and free of tool marks and ridges. Note: The prepared surface shall be coated with a primer/sealer prior to the application of finish paint. **This level of finish is to be used where gloss, semi-gloss, enamel, or non-textured flat paints are specified or where severe lighting conditions occur.**

Part 2 –Products

5/8" fire rated gypsum panels

5/8" fiber rock panels where specified

5/8" fire rated aqua block gypsum panels (green board) where specified

Aqua Block Gypsum panels (green board) shall be used at all wet walls at a minimum.

Cement board panels shall be used at all showers, tubs, etc.

Part 3 – Execution

Sheetrock will be installed by fastening with coated drywall screws. The screws must penetrate no less than 5/8" into the studs. All end joints will be broken at a stud. All joints will be staggered by a minimum of 24". Joints will not be broken at the edge of a door jam or window; they must continue past the edge by a minimum of 10". Screw heads must be countersunk enough to allow joint compound over them without causing a ridge, but not enough to break the paper on the gypsum rendering the fastener non-functional. All blisters, loose paper, broken corners, and feathered paper must be removed before any taping or finishing can occur. Corner bead installed with metal stud construction must be pated on type or metal. The metal type must be fastened with screws a minimum of 8" on the center apart. In the event of wood construction, metal corner bead may be fastened with 1 ¼" staples at a minimum of 6" on center. All corner beads (except tape on type) must then be taped at the edges with joint

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tape.

If contractor is using backer board/cement board for wet environments it must be installed according to manufacturers' specifications with the specified fasteners or equivalent.

Screw Schedule

Screw Type	Minimum spacing	Sheer wall spacing	Green board spacing
Drywall #8	8" o.c.	6" o.c.	6" o.c. ceiling 8" o.c. walls

This screw schedule is applicable to walls and ceilings unless specified otherwise (as in green board schedule).

Texturing

NO TAPING WILL OCCUR UNTIL ALL BLISTERS AND OR FEATHERED EDGES, AND LOOSE PAPER ARE REPAIRED.

Texture must be applied evenly, specific to the type of texture, free of any tool marks or ridges.

09 24 00 CEMENT PLASTERING
09 24 23 Cement Stucco

Part 1 – General

N/A

Part 2 – Products

N/A

Part 3 – Execution

Installation of Exterior Sheathing Materials

- A. Acceptable Materials. There are several code recognized wall sheathing products intended for use under stucco applications. In local residential construction, the most common include plywood and oriented strand board (OSB). Owner requires greater stiffness for wall sheathing when stucco is to be applied.
- B. Panel Selection and Application. To increase stiffness, panels should be applied with the strength axis across the studs. For stud spacing of 16 inches on center, APA makes the following recommendations:
 - 1. With the strength axis perpendicular to the studs – 3/8" and 7/16" minimum panel thickness and minimum span ratings of 24/0 and 24/16

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2. With the strength axis parallel to the studs – 15/32" and 1/2 " minimum panel thickness and a minimum span rating of 32/16 for OSB or 5-ply/5-layer plywood. Structural 1 Rated Sheathing (OSB) 7/16" thickness and span rated 24/16 may also be used.
 3. The above will require sheathing to be installed with the long side horizontal (where the strength axis runs in the long panel dimension). With blocking between studs along horizontal panel joints.
- C. Spacing Requirements. Spacing of 1/8" is required at panel ends and edges. This allows for some minor panel swelling if wetting occurs during the construction process. Greater spacing may be required at locations of expected movement, such as the band joist, particularly when using surfaced green dimensional lumber.
- D. Nailing Pattern / Schedule. Owner requires nailing 6" o.c. along supported panel edges and 12" o.c. at intermediate supports with 6d common nails, or 16 ga. 7/16" crown 1-3/4" leg staples, or 1-5/8" length nails with a shank diameter of .097" - .099". All fasteners are to be located 3/8" from panel edges. For shear wall applications closer spacing, or different sizes will be necessary.

Installation of Weather Resistive Barrier (WRB) Or Secondary Drainage Plane

This is a layer, separate from, and in addition to, the paper found immediately behind the stucco lath. While there are several materials that can be used to create a drainage plane, there is similarity in their installation. All are installed in a shingle type fashion, so as to shed water from the upper layer(s), out over the lower layers, and ultimately back to the outside of the wall. Installation starts at the bottom of the wall and works upward, overlapping successive courses. This installation must be continuous and prevent water from finding its way into the wall cavity. As such, special attention must be paid to details of interfaces between the secondary drainage plane and windows, doors, roofs, flashings, etc. With the drainage plane installed no sheathing (i.e. OSB) should be exposed and any tears in the drainage plane must be repaired. The drainage plane must run under windows, corner boards, window wraps and around corners.

- A. Acceptable Materials. There are several code-recognized materials for this purpose. Commonly used materials are grade D building paper, 15 pound asphalt building felt, and housewrap. The material must be vapor permeable to allow water vapor to pass thru the wall, however, it must be water resistant.

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- B. Installation Methods for Building Paper and Felt. Paper can be installed prior to, or after, window installation. Special care must be taken at the interface with windows and doors (see Installation of Windows). The installation starts with the bottom course being applied. Subsequent courses are installed horizontally (not at an angle) working upwards, in shingle fashion. The horizontal lap must be at least 2". At end laps there must be at least a 6" lap. At corners (inside or outside), the paper must run at least 6" around the corner. At inside corners, care must be taken to keep the weather resistant barrier tight to the corner so lath can later be installed. Where intersecting a roof the paper should overlap the upturned leg of step or headwall flashings. Paper should be fastened with wide crown staples (at least 1"), cap nails, or large head nails every 12" to 18". Best practice is to fasten to studs, not sheathing, so the lath installer can locate studs.
- C. Installation Methods for Housewrap. Housewrap can be installed prior to, or after, window installation. Special care must be taken at the interface with windows and doors (see Installation of Windows). The installation starts with the bottom course being applied. Subsequent courses are installed horizontally (not at an angle) working upwards, in shingle fashion. Some housewraps can be applied in only one direction (StuccoWrap), some have an inside and outside face. The horizontal lap must be at least 6". At end laps there must be a 6" lap. At corners (inside or outside), the housewrap must run 6" around the corner. Care must be taken to keep the weather resistant barrier tight to the corner so that lath can later be installed. Where intersecting a roof, the housewrap should overlap the upturned leg of step or headwall flashings. Housewrap should be fastened with wide crown staples (at least 1"), cap nails, or large head nails every 12" to 18". Refer to the manufacturer's installation instructions for further information. Best practice is to fasten through sheathing to studs, so the lath installer can locate studs.

Installation of Windows, Doors, and Trim & Integration to Drainage Plane

- A. Window Installation. It is required that the installation of the first layer of protection (the one closest to the sheathing), the weather resistive barrier, be done prior to the windows and doors being installed.
1. Installing windows with brick mold creates additional considerations. Housewrap must be installed before the window is installed. First, housewrap is installed, and then a pan flashing should be installed at the rough sill and integrated with the housewrap. A bead of sealant must be applied to the backside of the brick mold, or on the wall to bed the brick mold on three sides, before installation of the window. Drip cap flashing must be installed at the head of the brick mold. The use of casing bead, backer rod and proper caulk will be used for the head, sides, and sill.

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2. Window Trims. When trimming windows with wood trim the contractor must be aware of the dissimilar movement between the various materials when changes in temperature and moisture occur. For example, vinyl windows will move more than wood trim, which will move more than stucco. Because of this, backer rod and proper caulk at these joints, along with a properly designed joint, will be used.
- B. Door Installation. When installing doors, which typically have brick mold, the steps outlined for windows will be followed. Extra care should be given to doors that are not protected by some form of overhang. Casing bead, backer rod and proper caulk at the joint between stucco and brick mold will be used.
- C. Drip Cap Flashing Integration. Drip cap flashing will be installed above all projecting wood trim and above windows that do not have a self-flashing nailing fin. This flashing is installed with the vertical back leg on the outside of the drainage plane. When the paper immediately under the lath is installed, it will overlap the back leg in a shingle type fashion.

Roofing Integration to the Drainage Plane

- A. Key Elements:
1. Roof flashings must provide proper “kick out” from behind all siding, stucco and others.
 2. The vertical “back leg” of roof flashings must be installed behind the drainage plane.
 3. Stucco must not be installed until proper kick out of flashings is achieved.
- B. Providing proper “kick out”
1. Roof installation is to be performed in a fashion whereby roof flashings are installed to provide proper “kick out” to divert precipitation (run-off) to the exterior of the siding product.
 2. Owner requires contractors to furnish and install “oversized” kick out flashings at all areas of the roof where flashings must be deliberately drawn out from behind the siding. Specifically, pre-manufactured, oversized kick out flashings are recommended at the 1st course or row of roofing, when the 1st course or row of roofing abuts stucco. The 1st flashing, where abutting a stucco wall, should be an oversized / pre-manufactured kick out flashing to divert water from behind the stucco into gutter.
 3. At all exterior corners where “kick out” is required, flashings must extend sufficiently past the corners. 2-inches minimum extension is recommended. The vertical leg of roof flashings should be a minimum of 3-inches tall, but should be fabricated to only rise 2inches vertically at the

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extended portion of the flashing (portion of flashing properly extending past corner). This allows the stucco contractor to then install their casing bead 2-inches above the roof deck, providing an approximately 1-inch overlap of the vertical leg of the roof flashing, without having to modify the roofing contractors' work, where flashing extends past the corner. If any modification of roof flashings or roofing materials is believed necessary, it is recommended the roofing contractor be called upon to perform it.

4. With the intent of being able to provide for the future replacement, maintenance, and repair of roof flashings at wall junctures, best practice will insure that flashings are not permanently imbedded behind stucco siding. Two possible means by which this can be achieved include:
 - a. Wall flashings may be covered by wood trim, which is installed with a drip cap.
 - b. The casing bead channel at the bottom of stucco siding can be installed in a fashion which allows for roof flashings to be easily maneuvered behind the "J" channel flashing or out from behind the "J" channel flashing.
- C. Roof flashings properly installed behind drainage plane
1. Flashings, for the purpose of this discussion shall be defined as those building materials used in effort to provide a watertight "connection" between the roof and any protrusion through, or adjacent to, the roof plane (i.e. sidewalls, chimneys, vent pipes, skylights, etc.)
 2. Drainage plane, for the purpose of this discussion shall be defined as the inner most water resistive barrier, installed on the exterior of the sheathing for the purpose of protecting the interior from the intrusion of water.
 3. The back leg of all roof flashings must be installed with the upturned vertical leg behind the drainage plane.
 4. All roof flashings must be installed in a fashion whereby proper "kick out" of flashings from behind the drainage plane is achieved, as necessary to divert precipitation (run-off) to the exterior of siding.
- D. Stucco shall not be installed until proper kick out is provided
1. Those installing stucco siding must be sufficiently knowledgeable in recognizing the proper installation of necessary kick out flashings.
 2. The stucco contractor bears responsibility for knowing that application of stucco siding over flashings that do not divert water to the exterior of siding will likely result in water intrusion of the interior and is therefore improper.

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3. If there is any question that flashings will not provide proper kick out, the stucco contractor shall not install stucco at questionable areas until the flashing unquestionably provides proper kick out.
4. Under no circumstance should stucco siding be installed over flashings which would fail to properly divert precipitation / moisture past the exterior surface of the stucco siding.

Integration of Penetrations to the Drainage Plane

- A. Generally, small penetrations through the stucco can be caulked to successfully keep water out of the wall. Several areas that warrant specific attention are listed below.
- B. Plumbing Penetrations. Sillcocks, installed in walls that are to have stucco applied, should be held out of the wall to accommodate the thickness of the stucco. After the stucco has been installed the sillcock should be caulked to the stucco wall.
- C. Electrical Penetrations. Electrical boxes, used in walls that are to have stucco applied, should be held out of the wall to accommodate the thickness of the stucco. After the device is installed, it should be caulked to the stucco wall. Examples include lighting fixtures, weatherproof receptacles, etc.
- D. Electric Meters. Electric meters, in walls that are to have stucco applied, should be installed over the drainage plane, or installed with a weather resistive barrier behind it, to later interface with the drainage plane. A drip cap flashing should be considered for placement above the meter can. The vertical back leg of the flashing should be on top of the drainage plane. The paper behind the lath should go over this back leg. After installation of the stucco, the meter can sides and bottom should be caulked to the stucco.
- E. Other Penetrations. Walls may have many other penetrations such as dryer vents, fireplace termination caps, and furnace exhaust. Each of these must be sealed to the stucco wall with an appropriate sealant.

Lath Installation Requirements

- A. Lap metal lath ½" minimum on sides (the long dimension) and 1" on ends (the short dimension). End laps should occur over studs.
- B. For paper backed lath, the vertical and horizontal joints should be backing-to-backing, and metal on metal. The paper should never extend over the lath and should be shingled.

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- C. Metal plaster bases should be attached to framing members (studs) at not more than 7" along framing members. It is intended to have the lath attached to the studs. The attachment should be thru the self-furring mechanism only, i.e. fasten through dimples or v-groove, so as not to reduce embedment of the lath in the stucco. In lieu of wire tying the lath, a limited number of staples may be utilized to secure the lath to the exterior facade.
- D. Care should be taken so as to not over staple self-furring lath. Over stapling can depress the lath to a point where it is impossible to get the lath imbedded into the plaster cement.
- E. The fasteners used to attach the metal base must penetrate studs $\frac{3}{4}$ ". As staples are prevalent, they would need to be a minimum of $1\frac{1}{4}$ " in length (assuming $\frac{7}{16}$ inch sheathing), with a crown of not less than $\frac{3}{4}$ ".
- F. Metal lath should be applied with the long dimension at right angles to supports. For narrow wall panels (less than 24 inches), it is generally acceptable to apply the long dimension parallel to the framing members. It shall be permissible to follow the roof rake on gables.
- G. Ends of adjoining plaster bases should be staggered.
- H. Lath will not be continuous through control (expansion and contraction) joints. It will be cut, with the accessory attached over the lath and attached (wire tied or stapled) at each side, not more than 7" o.c. When cutting the lath care must be taken not to damage the weather resistant barrier (the drainage plane closest to the sheathing).
- I. Control/expansion joints should be installed to delineate areas of not more than 144 sq. ft.
- J. The distance between control/expansion joints shall not exceed 18 ft. in any direction or a $2\frac{1}{2}$ to 1 length to width ratio. Control/expansion joints should be located where movement is anticipated.
- K. Where expansion joints intersect in a perpendicular fashion the vertical member shall be installed first and be continuous.
- L. External corner reinforcement shall be used where corner bead is not used.
- M. At internal corners, there are various details that one may follow dependent upon the situation. When installing the lath or accessory, extreme caution

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and care should be taken to avoid damaging the weather resistive barrier (WRB). To avoid tearing, try to keep the WRB tight to the corner.

- N. The size of the casing bead and other accessories shall be compatible with the thickness of the plaster that is to be applied. For traditional ¾ inch stucco work, these accessories shall be ¾ inches. Smaller sizes may be used with listed stucco products.
- O. Lath is to terminate above stoops and other concrete flatwork. Framing must be protected from pouring concrete directly against it.
- P. Owner requires the use of foundation weep screeds. The purpose of the weep screed is to allow any water that may be flowing across the drainage membrane a means to escape. There are some architectural details which show how a casing bead may be utilized as a weep screed when applied over both layers of paper.

Stucco Application

- A. A three-coat stucco system shall consist of a separate scratch, brown, and finishing coat with a total thickness of 7/8".
- B. Owner recognizes alternative materials and methods of construction. Products that have received an evaluation report and number from the ICC-Evaluation Service would fall under the category of "alternative materials". There are several proprietary "one coat" products that have a ICC-Evaluation Service listing. Typically, these products come premixed, and when applied according to the manufacturer's installation instructions, they may be applied in one coat with a second topcoat being applied at a later time.
- C. Stucco wall covering of any kind shall not be applied until the drywall and roofing materials have been installed. This allows loading of the wall systems as well as eliminating any hammering on the exterior walls that could potentially cause cracking to occur.
- D. There are several types of acceptable topcoats. Some are a portland based finish, acrylic, elastomeric, and latex. The contractor should be aware of potential incompatibility between some of the finishes and the base coat(s) due to the alkalinity of the stucco.

Weatherproofing and Application of Sealants

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- A. Backer rod limits the depth of the caulk. The depth of a caulk joint should not exceed its width. The minimum width of a caulk joint should be $\frac{1}{4}$ ". This is the most watertight type of caulk joint.
- B. The ability of the joint to flex and remain adhered is greatly influenced by the type of caulking material used. A good quality acrylic-latex shall be used for some applications that are less critical. For joints where water sealing is critical, or difficult to access, the use of a better material such as urethane or silicon will be used.
- C. It is recommended that all joints between dissimilar surfaces in a stucco wall be caulked. This would include, but not be limited to, windows to wood trim, wood trim to stucco (wraps, corners, bands, etc.). Do not caulk metal head flashings, z-bar flashing, or anywhere water would normally escape the wall.

****END OF SECTION****

Section Number	Title
09 30 00	TILING
09 30 13	Ceramic Tiling

Part 1 – General

Ceramic tile products should be specified that can endure high impact, low water absorption rates, and have low dimensional and color variations per order.

Floor Tile sizes are pending approval from project manager, but shall have matte finish (abrasive finish if exterior or lobby applied), and comply with current ADA and Building Code requirements and the following requirements:

Floor

- Through color, 3/8" minimum thickness;
- Cove tile bases shall be used in all restroom applications;
- Tile inserts or accents in a predominantly matte or abrasive finish field may be polished or glazed;
- Grout joints should not exceed 1/8". On flooring, a dark grout shall be specified.

Wall

- Minimum wall tile dimensions shall be 4" x 4" x 5/16" (unless a mosaic design is anticipated, which case the minimum dimensions will be 2" x 2"), and comply with the following requirements:
- Restrooms to be glazed, flat tile, thick-set on wet wall(s), thin-set other. Tile shall be full height on the wet wall(s).
- Grout joints should not exceed 1/16";
- Interior walls other than restrooms (glazed only) may be glazed or matte finish.

A color of tile and grout should be chosen that is easily maintainable and repairable. Epoxy mortars and grouts shall be used in all exterior applications, wet locations, areas subject to heavy traffic and areas that may come into contact with solvents, chemicals or continuous immersion in water.

Tile used on step treads shall have an abrasive finish or receive a rough finish imbed a minimum of 2" wide at the stair nosing, running the length of the tread.

Part 2 - ProductProduct Extra

Contractor must provide an appropriate amount of product extra stock (minimum 10%) of each color and style of tile to be turned over to Owner for future repairs prior to project closeout.

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Part 3 – Execution

N/A

****END OF SECTION****

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09 50 00	CEILINGS
09 51 00	Acoustical Ceilings

Part 1 – General

N/A

Part 2 – Products

24" x 24" or 24" x 48" x 5/8" thick, mineral fiber or noncombustible fiberglass panels, not less than 2" thick.

Minimum NRC factor of 0.45 to 1.00, minimum STC rating of 30, minimum reflectance 75%.

Concealed ceiling grid systems are not acceptable.

Part 3 – Execution

Contractor must provide a 2% extra stock material, over actual area used, of each color, size and style.

Suspension grid to be 15/16" thick exposed or regular, medium or heavy duty T type.

Lighting, diffusers, and sprinklers should be designed to occur in the system at regular or predetermined intervals. Fire Sprinkler heads shall be located in the center of a tile. Require sub-trades to locate ceiling penetrations in locations that are the center of a panel.

No stud walls are to run to the underside of the ceiling grid acoustical system.

All ceiling grid layouts are to be centered in the room, with no less than 6" cut tile at the perimeter of the room. If the ceiling grid cannot be centered in a room for other architectural or building systems reasons, layout is to be approved by NAU project manager.

Surface texture(s) should offer low maintenance, can be cleaned periodically, and are readily available. Pattern should be in-stock, non-special order.

****END OF SECTION****

Section Number	Title
09 60 00	FLOORING
09 62 00	Specialty Flooring
09 62 23	Bamboo Flooring
	<u>Part 1 – General</u>
	While Owner understands the sustainable benefits of bamboo flooring, it is prohibited for use.
	<u>Part 2 – Products</u>
	N/A
	<u>Part 3 – Execution</u>
	N/A
09 65 00	Resilient Flooring
	<u>Part 1 – General</u>
	N/A
	<u>Part 2 – Products</u>
	Linoleum sheet goods generally are not acceptable. Exception to this is that sheet goods may be specified for areas in temporary or modular buildings requiring them per health department regulations.
	<u>Part 3 – Execution</u>
	N/A
09 65 13	Resilient Base and Accessories
	<u>Part 1 – General</u>
	N/A
	<u>Part 2 – Products</u>
	When a composition base material is utilized, it is to be a rubber base rather than vinyl. All outside corners shall be pre-formed, Base shall be 4" x 1/8" cove base, dark in color (to hide impact marks), matte finish.
	Carpet base is acceptable if appropriate for the project.
	<u>Part 3 – Execution</u>
	Exposed or junction edges of the tile shall receive vinyl or aluminum reducer strips.

Section Number	Title
09 65 19	Resilient Tile Flooring

Part 1 – General

Tile shall be applied with suitable waterproof mastic. In the event of existing tile in the area, DP shall specify removal and suitable preparation for application of new surface.

Part 2 – Products

Tile shall be a minimum of 12" x 12" x 1/8" Composition 1, asbestos free, rated as heavy duty commercial. A minimum of two percent or one box of product as extra for maintenance purposes required. Product extra requirements apply to each type/color or product if more than one is specified. Product should be scratch-resistant.

Part 3 – Execution

N/A

09 66 00 Terrazzo FlooringPart 1 – General

Installers shall be limited to companies specializing in full bed terrazzo applications with documented experience and a member of the National Terrazzo and Mosaic Association and have a minimum of 5 years relative experience in size and scope similar to the project.

Part 2 – Products

Total terrazzo minimum thickness not less than 3/4".

Reinforcing mesh, minimum 2" x 2" x 16 gauge, galvanized should be specified.

Aluminum oxide non-slip aggregate to match surface aggregate should be specified.

Control and divider strips shall be 1/4" width, zinc topped, recommended maximum placement not exceeding 8'x8'.

An aggregate and matrix color should be chosen that is easily maintainable.

Cove terrazzo bases shall be used where terrazzo is used as a flooring material.

1/4" sand cushion is recommended over the structural floor substrate.

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Terrazzo used on step treads shall be grooved or have a rough finish imbed with a minimum of 2” wide at the stair nosing, running the length of the tread.

Part 3 – Execution

N/A

09 68 00

Carpeting

Part 1 – General

Selection of broadloom carpet and/or carpet tile shall be discussed with Owner’s Project Manager. Carpet tile is preferred over broadloom.

Carpet tile is acceptable in some applications; minimum requirements are same as broadloom carpet above. Factory applied carpet tile is required for removable computer raised floor systems. Carpet tile to be the same size as the removable floor panel. Contractor to provide the required claw and/or tool to remove the floor panel and carpet as one unit.

A color and pattern should be specified that is easily maintainable.

A seaming diagram, if using broadloom, must be submitted prior to carpet purchase, for review by Owner. For carpet tile, if a floor pattern with different color and patterned carpet tile is being considered, a submittal of the carpet pattern is required for Owner approval.

1% - 5% additional material over actual area used (depending on size of project) shall be provided.

All firms that will bid this section must have a minimum of not less than 5 years of carpeting installation experience, similar to the size and scope contained in the project.

All carpet must conform to the Owner’s sustainability requirements. Carpet shall have a high recycle content. All demolished carpet to be recycled when renovations occur. Contact Owner Sustainability Program Manager for additional information. Carpet tile with lower recycled content may be accepted if it can be verified as compliant with material health protocols such as Cradle to Cradle or Living Building Challenge.

Part 2 – Products

The standards set by Owner are for all parties involved to meet the minimum requirements below. Quality and style of carpet is to be selected to meet the service requirements of the area.

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Throughout the project, carpet shall be of the same type and manufacturer.

Minimum Performance Requirements:

Yarn

100% first quality, Type 6 or 6,6 bulk continuous filament (BCF) nylon offering a construction and performance standards testing program by fiber producer. Yarn Modification Ratio must meet a 1.8 or less. Mill extruded nylon is prohibited.

Static Control

By permanent means (i.e. antistatic filaments) and without chemical treatment, static generation below 3.0 kilovolts. Electrostatic Propensity (Step): AATCC 134. For any areas with computers, static generation, should be below 2.0 km.

Dye Method

100% Solution dyed.

Carpet Tile Pile Weight

Shall be a minimum of 17 oz/yd² per ASTM D5848-07, maximum 24 oz per yard (lower face weights are preferable if equal or superior performance can be substantiated by Texture Appearance Retention Testing).

Broadloom Pile Weight

Shall be a minimum of 24 oz/yd².

Pile Density

The density shall be a minimum of 7,000 oz/cubic yard for heavy traffic areas and 8,000 extreme traffic areas. Pile density = 36 x pile wt(oz./sq yd)/ pile thickness (inches) (Pile Thickness: ASTM D6859 or ASTM D7241).

Gauge

Shall be a minimum of 1/12 inch.

Dimensional Stability

Aachen method/ISO 2551, Maximum Change +/- 0.20%.

Flammability

ASTM 648, >0.45 watts/cm² critical radiant flux and/or federal, state or local requirements.

Smoke Density

Section Number	Title
	<p>ASTM E662 Rating to be less than 450 Dm in flaming mode (or to State Code). Must meet Federal Flammability standard CPSC FF1-70 (Methenamine Pill test ASTM D2859).</p> <p><u>Colorfastness to Light</u> AATCC 16 part 3, 80 AFU, AATCC Gray Scale for Color Changing rating of 4 or better.</p> <p><u>Colorfastness to atmospheric contaminants</u> AATCC 164 (oxides of nitrogen) and AATCC 129 (ozone) for 2 cycles, AATCC Gray Scale for Color Change rating of 4 or better.</p> <p><u>Wall Base</u> 4" x 1/8" covered rubber bases, dark in color to hide impact marks, matte finish. Carpet base is acceptable if appropriate for the project.</p> <p><u>Colorfastness to crocking</u> AATCC 165, minimum rating of 4 on AATCC Chromatic Transference Scale.</p> <p><u>Resistance to Delamination</u> ASTM D3939 minimum 4.0lbs/inch</p> <p><u>Primary Backing</u> 100% woven or non-woven synthetic.</p> <p><u>Secondary Backing</u> Vinyl or urethane backing system or equivalent.</p> <p><u>Stain Resistance</u> AATCC 171 (HWE) for 2 washings to simulate removal of topical treatments by hot water extraction, followed by AATCC 175. Minimum rating of 8 using AATCC Red 40 Stain Scale. The stain resistive properties must be inherent, topical stain resistant treatments will not be acceptable, properties must not be able to be removed by commercial cleaning or abrasive wear.</p> <p><u>Coloration</u> Minimum 5 color hues. Hue values to be in medium to medium-dark range for optimum soil hiding capability.</p> <p><u>Appearance Retention</u> Vettermann Drum Test, ASTM D5417 for 22,000 cycles. A minimum rating of 3.0 using CRI-3 Loop Pile Reference Scale. Testing without underpad or brushing.</p>

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Environmental Requirements

Products must be NSF 140 Platinum as certified by third party. Carpet manufacturer must supply certificate as part of the procurement documentation.

Indoor Air Quality

Maximum 0.5 mg/m²hr total VOC emission per ASTM D5116. Meet CRI Green Label Plus certification. The carpet and floor adhesive (for glue-down installations) must meet the Green Label Plus (GLP) and floor adhesive (for direct glue down) requirements of the Carpet and Rug Institute (CRI). GLP number must be provided. Carpet and all installation components including adhesives, sealers, seam welds and seam sealers must meet the Low Emitting Materials standards as outlined in U.S. Green Building Council LEED criteria.

Recycling

New Carpet: Carpet must be eligible for recycling by the supply mill or fiber producer to an existing operational third party certified recycling center; submit program parameters. Landfills are not an option.

Used Carpet

Remove carpet and recycle regardless of manufacturer, fiber type or construction. Reclamation Agency and Carpet Remover shall certify in writing the used carpet was removed and recycled. Landfills are not an option. Recycle content of the total product weight must be either pre-consumer or post-consumer content or a combination of:

- Broadloom – minimum of 10%
- Modular Tile – minimum of 30%

Installation Method

No wet adhesives as approved by manufacturer.

Warranties

- Wear: Warrant that the carpet will lose no more than 10% by weight of pile face fiber during the life of the carpet when installed and maintained in accordance with manufacturer's procedures.
- Static Protection: warrant that the carpet will give protection from static discharge in excess of 3.0 KV when tested under the standard Shuffle Test Method (at 70 degrees F and 20% R.H.) during the Life of the Carpet.
- Backing De-lamination: Warrant that the secondary backing of the carpet will not de-laminate during the life of the carpet.
- Edge Ravel: Warrant that under normal use, the carpet will not ravel at the seams or at the edge during the life of the carpet. Seam sealers or seam

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welds should not be required for warranties.

- No dimensional instability (i.e., shrinkage, curling and doming) which adversely affect the ability of the tile to lie flat.
- Specify that a special project warranty from the installer of a minimum of a 2-year full warranty to fix, repair or replace carpeting failure as the result of defective workmanship.

Substitutions

Substitutions will be considered when a written request has been submitted Owner following Division 0 Substitution Procedures. It is the sole responsibility of the party submitting the alternate to include complete descriptive and technical information, along with a physical sample, so a complete evaluation can be made. No substitutions without prior written approval will be permitted.

Approved Carpet Manufacturers

Owner will consider any manufacturer that will offer products matching above minimum requirements.

Part 3 – Execution

Protection

It must be the contractor's responsibility to protect all furniture, walls, doors, etc. from any damages during installation of carpet and base, and removing existing carpet and base where applicable. Any items moved shall be replaced in original position. The Contractor will be responsible for all damages.

Job Conditions

Installer must examine the substrate and conditions under which the carpeting is to be installed, and notify the contractor, in writing, of conditions detrimental to the proper and timely completion of the work.

Carpet Finish

Carpet shall have metal or vinyl carpet reducers at juncture with other material or at entrances.

****END OF SECTION****

Section Number	Title
09 70 00	WALL FINISHES
09 72 00	Wall Covering

Part 1 – General

N/A

Part 2 – Products

- A. A special project warranty is required from the installer of a minimum of a 2 year full warranty to fix, repair or replace covering failure as the result of defective workmanship.

Part 3 – Execution

- A. Installers must have a minimum of 3 years of wall covering experience, similar to the size and scope contained in the project.
- B. Two full rolls of same size material used shall be provided for maintenance stock.

****END OF SECTION****

Section Number	Title
09 90 00	PAINTING AND COATING
09 91 00	Painting

Part 1 - General

Paint products provided should be locally available, in order to minimize attic stock, unless special permission is granted by Owner (Paint department).

Low VOC paint shall be used, with a preference for NO VOC containment.

DP shall specify ventilation and isolation requirements to avoid complaints regarding noxious fumes.

All paint material required per the scope of work for a project is to be bid and purchased by awarded contractor. Owner will not be purchasing paint material for any projects.

Part 2 – Products

All paint materials shall be manufacturers' premium grade product. Products may be submitted for approval to the Owner/DP.

Insofar as possible, all components of the paint system shall be products of the same manufacturer.

Part 3 – ExecutionDelivery and Storage

Deliver materials to job site in original, new and unopened packages and containers bearing manufacture's name, paint identification, formula number, batch number, etc. with labels intact.

Job Conditions

Coatings shall be applied in accordance with the manufacturer's printed directions for the paint used. Special attention will be given to applying a coating when temperature, humidity, and other weather factors are acceptable by the manufacturer and/or owner. No paint shall be applied until preceding coat has dried. Successive coats shall have colors varied by tinting sufficiently to permit easy visual check of the coverage unless otherwise stated.

The Owner reserves the right to take samples of materials for chemical analysis; to assess wet or dry film thickness; or to utilize any other standard inspection procedures necessary to assure quality and compliance with requirements of the Contract Documents.

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Submittals

The contractor shall submit specifications for proposed products for approval prior to application.

Close-out requirements shall include:

- product extra requirements of a minimum of one gallon, from the same batch of each color and each type of paint used on the project. Gallon cans shall be labeled with manufacturer’s name, color name & formula.

Provide paint schedule with a typed list, by area, of paint type used including: manufacturer, year purchased, color name, finish type (Satin, semi-gloss ect.), formula and color card sample.

An exception to this is projects that have multiple colors, 4”x4” color cards may be accepted, including color reference, project name and number at the back of each card.

09 91 13 Exterior Painting

Part 1 – General

All paint schedules shall be provided to Owner prior to work commencing.

Part 2 – Products

Provide the following coating systems for substrates indicated. Apply each material at the coverage rate required to produce the total composite dry film thickness (DFT) indicated. Materials containing low solids content by volume shall be applied in multiple coats as required to build specified DFT.

Primers are not required on substrates specified to be factory primed under other sections unless required as a bond coat.

Galvanized Steel	1st Primer	Best Quality Exterior Latex Primer	1.5
	2nd Coat	Best Latex Exterior SG or Flat	1.5
	3rd Coat	Best Latex Exterior SG or Flat	<u>1.5</u>
		Total Mil Thickness	4.5
Ferrous Metal	1st Primer	Best Exterior Primer for System	1.5
	2nd Coat	Best Exterior Primer for System	1.5
	3rd Coat	100% Solids Urethane Semi Gloss	<u>4.0</u>
		Total Mil Thickness	7.0
Exterior Stucco	1st Coat	Best Exterior Latex Primer	2.0
	2nd Coat	Best Exterior Latex Flat	<u>2.0</u>
		Total Mil Thickness	4.0

Section Number	Title			
	Exterior Wood	1st Primer	Best Exterior Latex Primer	1.5
		2nd Coat	Best Exterior Latex SG or Flat	1.5
		3rd Coat	Best Exterior Latex SG or Flat	<u>1.5</u>
			Total Mil Thickness	4.5
	Exterior Wood	1st Coat	Best Quality Exterior Transparent Stain*	
		2nd Coat	Best Quality Exterior Transparent Stain*	
	* No film build requirement, just even coloration			

09 91 23 Interior Painting

Part 1 – General

All paint schedules shall be provided to Owner prior to work commencing.

Part 2 – Products

Provide the following coating systems for substrates indicated. Apply each material at the coverage rate required to produce the total composite dry film thickness (DFT) indicated. Materials containing low solids content by volume shall be applied in multiple coats as required to build specified DFT.

Primers are not required on substrates specified to be factory primed under other sections unless required as a bond coat.

Concrete, Plaster, or Gypsum Wallboard	1st Primer	Best Quality Latex Primer	1.5
	2nd Coat	Best Quality Latex Semi Gloss	1.5
	3rd Coat	Best Quality Latex Semi Gloss	<u>1.5</u>
		Total Mil Thickness	4.5
Ferrous Metal	1st Primer	Best Quality Primer	1.5
	2nd Coat	Best Quality Primer	1.5
	3rd Coat	Best Alkyd or Latex Finish Coat	<u>2.0</u>
		Total Mil Thickness	5.0
Galvanized Metal	1st Primer	Best Quality Latex Primer	1.5
	2nd Coat	Best Quality Latex Primer	1.5
	3rd Coat	Best Alkyd or Latex SG or Flat	<u>1.5</u>
		Total Mil Thickness	4.5
Wood	1st Primer	Best Quality Latex Primer	1.5
	2nd Coat	Best Quality Latex SG or Flat	1.5

Section Number	Title	
	3rd Coat	Best Quality Latex SG or Flat Total Mil Thickness
		1.5 4.5

Note: These paint systems are general in nature. They may not apply to special job requirements and may be changed prior to bid acceptance. Specifications will be provided in writing in the event of a change.

General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.

Remove or protect hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items that are not to be painted to insure that no paint is applied to these surfaces. Reinstall or remove protection upon completion of painting of the adjacent surfaces.

Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces.

Wood: Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand paper smooth those finished surfaces and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer, before application of priming coat. After priming fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried.

Prime, stain, or seal wood required to be job-painted. Prime edges, ends, faces, undersides, and backsides of such wood.

Seal tops, bottoms and cut-outs of un-primed wood doors with a heavy coat of varnish or equivalent sealer.

Ferrous Metals: Clean ferrous surfaced, which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.

Galvanized Surfaces: Clean free of oil and surface contaminants with non-petroleum based solvent and apply pre-wash or bond coat as indicated.

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APPLICATION

General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied. Understand and honor all applicable OSHA safety and local, State or Federal VOC requirements.

Apply additional coats when undercoats, stain or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently-fixed equipment or furniture.

Paint interior surfaces of ducts, where visible through registers or grilles, with a flat black paint.

Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.

Finish exterior doors on tops, bottoms and side edges same as exterior faces, unless otherwise indicated.

Sand lightly between each succeeding enamel or varnish coat.

Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pre-treated to otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

Allow sufficient time between successive coats to permit proper drying. Do not re-coat until paint has dried and application of another coat will not cause lifting and loss of adhesion of the undercoat.

Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.

Prime Coats: Apply prime coat to material which is required to be painted or finished, and which has not been prime coated previously. Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in

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first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.

Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling such as laps, irregularity in texture, skid marks or other surface imperfections.

Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.

Metal doors and hollow metal door and window frames shall be spray painted unless otherwise stated.

Transparent and Semi-Transparent: Use multiple coats to produce glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections. Provide satin finish for final coats, unless otherwise indicated.

Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

CLEAN-UP AND PROTECTION

Clean-Up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each work day. Contractor will furnish his own trash receptacles and removal. Contractors will not use NAU trash containers unless approval is granted.

Upon completion of painting work, clean window glass and other paint-splattered surfaces. Remove splattered paint by proper methods of washing and scraping, using care not to scratch to otherwise damage finished surfaces.

Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct and damage by cleaning, repairing or replacing, and repainting, as acceptable to Design Professional.

Provide "Wet Paint" signs as needed to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations. At the completion of work of other trades, touch-up and restore all damages to painted surfaces.

Section Number	Title
09 96 00	High-Performance Coatings
09 96 13	Abrasion-Resistant Coatings
	<p><u>Part 1 – General</u> Floorings at entrances and entry walls shall be an easily maintained, non-slip surface when wet.</p> <p><u>Part 2 – Products</u> N/A</p> <p><u>Part 3 – Execution</u> N/A</p>
09 96 23	Graffiti Resistant Coatings
	<p><u>Part 1 – General</u> Application of graffiti-resistant coatings is discouraged because of potential difficulties in future maintenance, however, it is recognized that in some instances a clear anti-graffiti coating may be necessary to provide protection of certain exterior façade materials, such as stone.</p> <p><u>Part 2 – Products</u></p> <p>A. Graffiti-resistant coating shall be permanent and shall not require re-application upon removal of graffiti.</p> <p>B. Graffiti-resistant coating shall leave the finished surfaces uniform in appearance and not alter the natural color and texture of the material to which it is applied.</p> <p>C. The DP shall submit a sample of the graffiti-resistant coating applied to the intended substrate material at the final schematic design submittal.</p> <p><u>Part 3 – Execution</u> N/A</p>
09 96 53	Elastomeric Coatings
	<p><u>Part 1 – General</u> Elastomeric coating is not authorized by Owner.</p>

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Part 2 – Products

N/A

Part 3 – Execution

N/A

09 97 00

Special Coatings

09 97 35

Dry Erase Coatings

Dry Erase Coatings, also known as white board paint, is not authorized by Owner. The use of physical white boards/fixed dry markerboards is recommended and detailed in the Design Guidelines.

****END OF SECTION****