



## TECHNICAL SPECIFICATIONS

COPPER ADMIN BUILDING  
INTERIOR RENOVATION

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**ALLOWANCES**

**Fire Sprinkler System Modification: Not to exceed: \$25,000.00, labor and materials**  
Provide design and modifications (labor and material costs) of the existing fire sprinkler system for a complete system compliant with NFPA 13. Submit engineered, State Fire Marshal approved, drawings for Gila County approval, prior to doing the work.

**Fire Alarm System: Not to exceed: \$20,000.00, labor and materials**  
Provide design and installation of (labor and material costs) fire alarm system in accordance with NFPA 72. Submit engineered, State Fire Marshal approved, drawings for Gila County approval, prior to doing work.

**Millwork: Not to exceed \$125,000, material cost only**  
Material costs only. Labor costs to be included in Base Bid millwork installation. See submittals requirements in the Technical Specifications.

**Unforeseen Conditions: Not to exceed \$50,000**  
Contingency Fund for Change Orders in regards to unforeseen conditions and changes to Scope of Work required to complete the work originally intended in an acceptable manner. See Change Orders (90-03).

## **DEMOLITION**

To minimize impact and disruption of business in the surrounding offices/buildings and parking area, the Contractor is to confine all work to the project site area for his own storage, staging and parking areas. Contractor access through the existing parking areas, for deliveries and equipment shall not interfere with the existing parking areas usage or access.

During demolition and removal of debris throughout the course of the construction, the contractor shall maintain all building egress paths, parking area access, and keep clean of any debris and dust that might be hazards.

Contractor to restore or repair any damaged floors, walls, ceilings, sidewalks, curbs, utilities, etc. damaged by the contractor, or his subcontractors, during construction. The Owner to review repair work with the Contractor and approve prior to final acceptance and payment.

## **SUBMITTALS REQUIRED:**

### **Drawings and/or Engineering**

#### **Fire Sprinkler System Modifications:**

Provide engineered, State Fire Marshal approved, drawings for Gila County approval, prior to doing the work.

#### **Fire Alarm System:**

Provide engineered, State Fire Marshal approved, drawings for Gila County approval, prior to doing work.

#### **Millwork:**

Provide manufacturer's shop drawings and details for review and approval, prior to doing the work. Also provide color samples for both cabinets and countertops.

#### **Final Door Hardware Schedule:**

Provide door hardware listing by door number, as noted on the drawings, for review and approval, prior to ordering.

#### **Aluminum Metal Storefront Door/Window Units:**

Provide manufacturer's shop drawings and details for review and approval, prior to doing the work. Compatibility with Keycard Access System where required.

### **Submittal: Color selection only**

Paint: Provide color samples for Owners selection.

#### **Bathroom Partitions:**

Manufacturer: Accurate Partitions Corp.

Type: Powder Coated Steel

**COPPER ADMIN BUILDING  
INTERIOR RENOVATION****ROUGH CARPENTRY**

All lumber shall be rated, graded and stamped, identified as such, in accordance with the currently adopted version of the IBC and consistent with the Bid Documents.

**Wall Framing:**

No exterior or load bearing walls are proposed for this project.

All interior, non-load bearing walls shall be a minimum 2x4 Doug Fir #2 or better, at 16" O.C., unless noted otherwise on the drawings.

All non-bearing headers to be (2) 2x8 Doug Fir #2 or better for spans up to 8'.

**Fire Blocking:**

Fireblocking shall be provided to cut off all concealed draft openings (both vertical and horizontal) and to form an effective barrier between stories. Fireblocking shall be provided in wood-frame construction in the following locations:

- Stud walls and partitions, including furred spaces and parallel rows of studs or staggered studs: Vertically at the ceiling and floor levels, and Horizontally at intervals not exceeding 10'.
- At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings and cove ceilings.
- At openings around vents, pipes, and ducts at ceiling and floor level, with an approved material to resist the free passage of flame and products of combustion.

**GYPSUM BOARD**

All walls, except restrooms: ½" gypsum board with a light orange peel texture, to match existing, unless noted otherwise.

Restrooms and wet areas: When gypsum board is used as a base for tile or wall panels for tubs, shower or water closet compartment walls, water-resistant gypsum backing board shall be used as a substrate.

Accessories such as grab bars, towel bars, paper dispensers and soap dishes, provided on or within walls, shall be installed and sealed to protect structural elements from moisture.

Water-resistant gypsum backing board shall not be used in the following locations:

- Over a vapor retarder in shower or bathtub compartments.
- Where there will be direct exposure to water or in areas subject to continuous high humidity.
- On ceilings where frame spacing exceeds 12" OC for ½", or exceeds 16" OC for 5/8" thickness.

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**FRP (FIBER REINFORCED PLASTIC) PANELS**

Manufacturer: Marlite

Type: Standard FRP Artizan

Style: Stone Grid, Textured Finish

Color: T936-G44 Milan (4x4 score, 1/8" groove with white core)

Installation shall be per the manufacturer's specifications, instructions and details.

Prefinished polyester glass reinforced plastic sheets and adhered to unfinished gypsum wallboard.

Conform to building code requirements for interior finish for smoke and flame spread requirements as tested in accordance with ASTM E 84 (Method of test for surface burning characteristics of building Materials), Class C minimum.

**Panels:**

Fiberglass reinforced thermosetting polyester resin panel sheets complying with ASTM D 5319.

Coating: Multi-layer print, primer and finish coats or applied over-layer.

Dimensions:

Thickness: 0.090" (2.29mm) nominal

Width: 4'-0" (1.22m) nominal

Length: 8'-0" (2.4m) nominal

Tolerance:

Length and Width: +/- 1/8" (3.175mm)

Square: Not to exceed 1/8" for 8' panels

Properties:

Resistant to rot, corrosion, staining, denting, peeling, and splintering.

Flexural Strength:  $1.0 \times 10^4$  psi per ASTM D790 (7.0 kilogram-force/square millimeter).

Flexural Modulus:  $3.1 \times 10^5$  psi per ASTM D790 (217.9 kilogram-force/square millimeter).

Tensile Strength:  $7.0 \times 10^3$  psi per ASTM D 638 ( 4.9 kilogram-force/square millimeter).

Tensile Modulus:  $1.6 \times 10^5$  psi per ASTM D 638 (112.5 kilogram-force/square millimeter).

Water Absorption: 0.72% per ASTM D 570.

Barcol Hardness (scratch resistance) of 35 55 as per ASTM D 2583.

Izod Impact Strength of 72 ft. lbs./in ASTM D 256.

**Base:**

Manufacturer: Johnsonite

Type: ColorMatch

Style: Traditional Wall Base

Color: Brown (47)

Size: 4"

All outside corners shall be pre-formed.

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**Trim:**

SaniSeal Trim: Co-extruded, dual-durometer polypropylene/monprene profiles with Dual-Seal Technology and high performance pressure sensitive adhesive.  
Color Tan (or best match with Milan)

**Accessories:**

Fasteners: Non-staining nylon drive rivets. Match panel colors. Length to suit project conditions.

Adhesive: Either of the following construction adhesives complying with ASTM C 557.

Marlite C-551 FRP Adhesive – Water-resistant, non-flammable adhesive.

Marlite C-375 Construction Adhesive – Flexible, water-resistant, solvent based adhesive, formulated for fast, easy application.

Titebond Advanced Polymer Panel Adhesive – VOC compliant, non-flammable, environmentally safe adhesive.

Sealant: Marlite brand, color to match.

**Preparation:**

Examine backup surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean and free from foreign matter, nails countersunk, joints and cracks filled flush and smooth with the adjoining surface.

Verify stud spacing does not exceed 24” on-center.

Repair defects prior to installation. Level wall surfaces to panel manufacturer’s requirements. Remove protrusions and fill indentations.

**Installation:**

Deliver materials factory packaged on strong pallets. Store panels and trim lying flat, under cover and protected from the elements. Allow panels to acclimate to room temperature (70 degrees) for 48 hours prior to installation. Building shall be fully enclosed prior to installation with sufficient heat and ventilation consistent with good working conditions for finish work.

During installation and for not less than 48 hours before, maintain an ambient temperature and relative humidity within limits required by type of adhesive used and recommendation of adhesive manufacturer. Provide ventilation to disperse fumes during application of adhesive as recommended by the adhesive manufacturer.

Comply with manufacturer’s recommended procedures and installation sequence. Install panels with manufacturer’s recommended gap for panel field and corner joints.

Adhesive trowel and application method to conform to adhesive manufacturer’s recommendations.

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Apply panel moldings to all panel edges using silicone sealant providing for required clearances. Apply sealant to all moldings, channels and joints between the system and different materials to assure watertight installation.

Remove excess sealant from panels and moldings. Wipe panel down using a damp cloth and mild soap solution or cleaner. Refer to manufacturer's specific cleaning recommendations. Do not use abrasive cleaners.

Warranty: Furnish two year guarantee against defects in material and workmanship.

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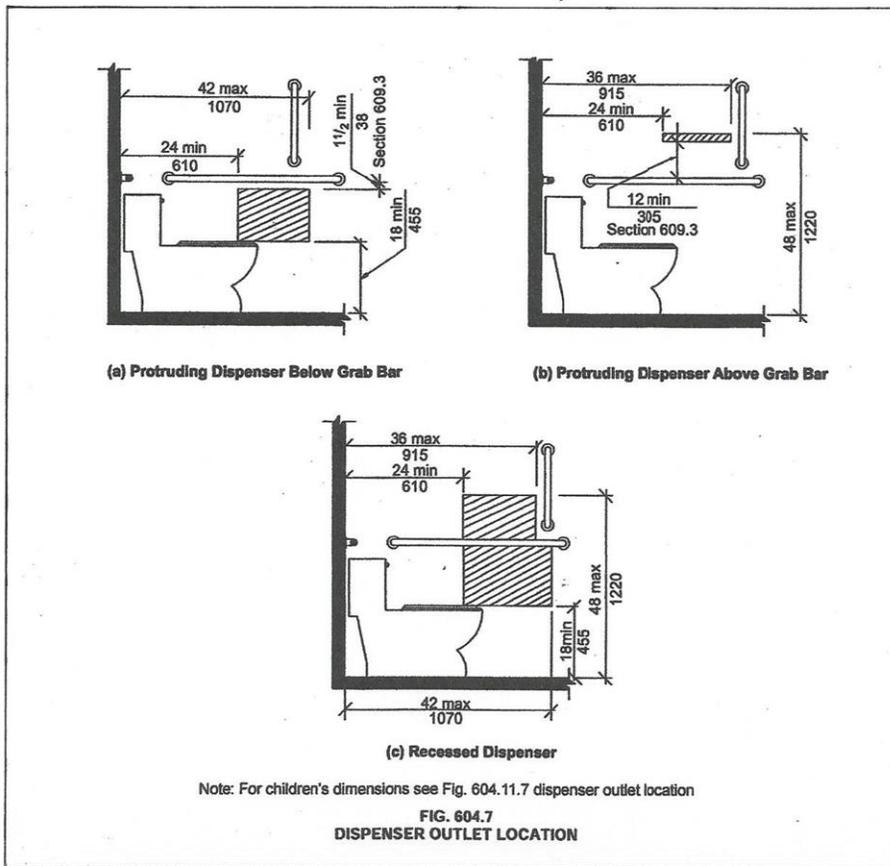
**BATHROOM PARTITIONS**

Manufacturer: Accurate Partitions Corp.  
Type: Powder Coated Steel  
Style: Floor Anchored / Overhead Braced

Installation shall be per the manufacturer's specifications, instructions and details.

Submittal Required: Color selection to Owner for selection and approval.

**ADA GRAB BAR DETAILS:**



## **ARCHITECTURAL WOODWORK**

### **Custom Casework Locations:**

- See Millwork Elevation Drawings, Sheets A7, A8 and A9 and floor plans.
- Bathroom Counters (no base unit): 4 total, See Plan.
- Field verify dimensions.

### **Minimum Construction Standards:**

- All cabinet and millwork tops, sides, dividers, shelving, etc., shall be 3/4" minimum stock.
- Stained veneer materials shall conform to AWI custom grade, minimum thickness 1/16".
- Unexposed framing shall be nominal 1 x 2 hardwood, AWI custom grade.
- Doors and drawer fronts shall be 3/4" minimum core stock.
- Drawer boxes shall be 1/2" minimum with minimum 1/4" plywood bottoms.
- ADA compliant locations, noted on drawings, shall meet the standards of ADA currently adopted by the State of Arizona.
- Built-in shelving or free standing modular shelving height should not exceed 6' from finished floor and be securely anchored to studs reinforced to accept the loading.
- All shelving should be designed as fully adjustable, 3/4" minimum thickness.
- "Line bore and pin" method of shelving adjustment (either in cabinets or standing shelving) is desired. Shelf standards mortised in with brackets is also acceptable.
- All millwork and accessory hardware shall comply with ANSI A156.9, minimum quality level Type 2 (institutional). Hinges, guides, slides, etc., shall utilize bearings complying with BHMA 201.
- All cabinet hinges should be self closing. Amerock spring loaded or approved equal.
- Drawer slides should allow full extension (1" longer than total drawer depth) and be specified as heavy duty (100 lb. minimum), Blum or approved alternate.
- The use of painted particleboard as the finish for cabinets and tops is not acceptable. Particle board is allowable as core stock in low/no moisture areas when receiving a high pressure plastic laminate finish.
- Particle board is not an acceptable material for shelving with greater than a 2 foot unsupported span.
- The use of melamine or other similar low mill finishes (less than .020") as interior cabinet lining or underside of shelving is not acceptable. Melamine thermo fused 3/4" is acceptable for interior finish of cabinets only.
- All exposed cabinet hardware should be specified with a permanent, durable finish that is easily cleanable.
- All countertops designed as work surfaces shall be of an appropriate height to accommodate the physically disabled.
- All millwork designed to support electrical equipment (computers, phones, clocks, etc.) shall have grommet openings allowing cords, interconnect cables, etc., to be concealed or routed internally. Grommets shall be 2-1/2" minimum diameter plastic, color to match adjacent finish.
- The use of plastic laminate tops and splashes is not recommended for high moisture areas such as lav tops, coffee bar tops, or work surfaces that are repeatedly subjected to spillage, water cleaning, or subject to chemical substances.

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**Plastic Laminate**

Synthetic counter tops shall be high pressure laminate, or, in extra heavy duty use applications, equal to "Corian", 5/8" minimum thickness

Guides for minimum plastic laminate finishing are as follows:

- .050" exposed horizontal surfaces;
- .028" exposed vertical surfaces;
- .020" cabinet linings and concealed backing.

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**WINDOWS:**

See Interior Elevation drawings, Sheet A7, A8 and A9. Provide interior laminated glass windows with hollow metal frames at locations show.

Provide transaction window opening at locations shown. Opening shall be designed to provide for nighttime and after hours closing and locking of opening locations.

Frames: Hollow Metal, painted per Owners requirements.

Glass: 1/4" thickness, clear laminated glass.

**DOORS: GENERAL**

Doors and door hardware are to be installed only by qualified persons and all work must meet appropriate codes.

All doors, hardware, openers, etc. shall be institutional grade throughout.

Final acceptance of any hardware installations shall be subject to approval by the Gila County Facility Services.

All hardware submittals shall be routed through the Gila County Facility Services for review and approval prior to purchase.

**HOLLOW METAL FRAMES**

Commercial heavy duty hollow metal frames required. Frames shall be commercial heavy duty quality.

Kickplates are required on both sides of all doors that are subject to high traffic. See Door Schedule and Hardware Groups.

All frames shall be welded. Knock-downs are not acceptable. An inspection of anchoring method must be made prior to drywall or closing up of walls.

Frames shall have wall anchors a maximum of 16" O.C. per jamb.

All door frames shall be no lighter than 14 gauge steel. Seamless end channel closure pieces at door heads.

Doors shall have a minimum of 3 heavy duty industrial type hinges per door.

Doors and frames shall have a spray applied finish.

Door stops required on all installations, closures required if doors open into a rated space.

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**WOOD DOORS**

Wooden doors are acceptable for interior applications only, must be solid core, and have adhesives that are 100% waterproof.

All doors shall be 3'0" x 6'8", solid core flush (100% waterproof adhesives) with veneer faces, commercial heavy duty minimum grade, 1-3/4" thick, unless noted otherwise.

All doors should be specified from a single manufacturer.

Formaldehyde off-gassing rates to be less than .03 milligrams per square foot of surface/hr in accordance with ASTM D5116-90.

Doors shall carry a life of installation warranty from the manufacturer. All doors that are warped, after installation, shall be replaced prior to substantial completion.

Door receiving a stained finish shall be specified as having premium quality face veneers, minimum thickness 1/16".

Doors used as a normal means of ingress and egress shall have either vision panels or adjacent sidelights (where allowable by code) in metal frames. See Door Schedule for locations and size.

All doors subject to heavy traffic shall have kickplates both sides. See Door Schedule for locations.

**ENTRANCES AND STOREFRONTS**

**Remove existing exterior pairs of doors, 4 locations, and replace with new storefront door and sidelite per door type shown on drawings and identified on Door Schedule.**

**Aluminum Storefronts**

Field verify existing conditions. Contractor to provide manufacturer's installation detail for such condition, for approval, prior to ordering. See Submittals Required.

**Doors to accommodate panic hardware and electronic keypad control system, to be installed by Owner.**

**DOOR HARDWARE**

**Cylindrical locksets with lever handles:**

**Marks USA 175RAB/26D**

Locksets Survivor Series

175RAB Lever Lockset

Grade 2

2 3/4" Backset

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IC Core Model  
26D Chrome Finish

**All electronic systems:** By Others

**Exit devices: By Owner.**

Shall be rim type, installed with a mullion in double doors.  
Vertical rod systems shall not be used unless necessary to make an existing doorway meet Handicap code requirements for width.  
Finish to match other door hardware.  
Approved Model: Precision Hardware Inc., APEX Series

**Door closers:**

Shall have **extra heavy duty** arms and be mounted with thru bolts.  
Approved Model: LCN 4041, EDA, TB

**Cylinders and Cores:**

Gila County Facility Services will key all locks, specify which system, and the keyway to be used. **Only** original Best cylinders and interchangeable cores shall be used. Pinning and key cutting will be done by the Facility Services. Key blanks and cylinders/cores will be provided by and paid for by the contractor and should be shipped directly to the Facility Services.

**Hinges:**

All doors will be mounted with three 4-1/2" X 4-1/2" full mortise hinges. Doors larger than 3'x7' will be mounted with four hinges that are the same size as above.  
Approved Models: Hager BB1168, McKinney TA2714, Stanley FBB168  
Roton continuous hinge or equal continuous hinge for high traffic exterior doors

**Thresholds:**

Shall meet ADA requirements.  
Thresholds shall be aluminum and rated for heavy duty traffic.

**HARDWARE GROUPS**

**See drawings for Door Schedule w/ hardware identified**

**See Schedule for location of Keypad controlled door locations. Contractor to coordinate with Keypad Control contractor to accommodate installation.**

**GROUP 1: OFFICE**

Lockset with lever handle  
Hinges  
Kickplates required at custodial closets  
Add foot kickstop to hold door open at door 114

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**GROUP 2: STORAGE**

Lockset with lever handle  
Hinges

**GROUP 3: RESTROOM**

Lockset with lever handle  
Hinges  
Door Closer  
Kickplates

**GROUP 4: CONFERENCE ROOM**

Lockset with lever handle  
Hinges

**GROUP 5: HALLWAY**

Lockset with lever handle  
Hinges  
Kickplates

**GROUP 6: EXTERIOR STOREFRONT**

Panic Hardware and Electronic Keypad System by Owner  
Hinges  
Closer  
Threshold  
Weatherseal gasket  
Kickplates: By Door Manufacture

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**ACOUSTICAL TREATMENT**

**Acoustical Ceilings and Support System**

Careful consideration should be given during installation in regards to the location of all lighting fixtures, diffusers or any other ceiling projections identified on the drawings.

**Ceiling Tiles:**

**Manufacturer: Armstrong**  
**Type: Cortega Second Look II**  
**Style: 2767**

Size: 24" x 48" x 3/4"  
Style: 15/16" Angled Tegular  
Color: White

**Suspension System:**

**Manufacturer: Armstrong**  
**Type/Style: 15/16" Prelude XL w/ 7/8" Hemmed angle wall molding**  
**Color: White**

Install per manufacturer's specifications, instructions and details.

Lighting, diffusers, and sprinklers shall be located in the system at regular or predetermined intervals. Fire Sprinkler heads shall be located in the center of a tile. Require subtrades to locate ceiling penetrations in center of a panel.

Where walls run to the underside of the system, provide an acoustical seal at junction.

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**RESILIENT FLOORING**

**Protection:**

It shall be the contractor's responsibility to protect all furniture, walls, doors, etc from any damages during installation of flooring and base, and removing existing floor finishes, 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 flooring is to be installed and notify the contractor, in writing, of conditions detrimental to the proper and timely completion of the work, per the manufacturer's installation requirements.

**Installation:**

All contractors that bid this work, shall have a minimum of not less than 5 years vinyl tile installation experience, similar to the size and scope contained in the project, and provide a minimum 2 year full warranty to fix, repair or replace carpeting failure as the result of defective workmanship. Shall be installed/applied with a suitable waterproof mastic for the conditions of use.

**Extra Stock:**

Contractor shall provide a minimum **5%** additional material over actual area used as extra stock, to be provided to Owner prior to or at final completion. All extra stock shall be full tiles, not cut pieces, and shall be from the same dye lot / manufacturing batch as the tiles used on the job.

**Manufacturer: Armstrong Commercial Flooring**

**Type: Luxury Vinyl Tile**

**Style: Natural Creations, Arbor Art**

**Color: TP036 Roan-Oak Warm**

**Size: 4" x 36"**

**Product Data:**

Size: 4" x 36"  
Overall Thickness: .125"  
Wearlayer Thickness: .020"  
Finish: UV-cured Polyurthane

**Installation:**

Full spread adhesives: S-288 Premium, S-543 High-Moisture, S240 Eposy

Static Load Limit: No visually apparent indentation, 250 psi

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**Testing:**

Heat Stability (ASTM F-1514):	Exceeds
Stain & Chemical Stability (ASTM F-925):	Meets or Exceeds
Light Resistance (ASTM F1515):	Exceeds
Flexibility (ASTM F137):	Exceeds, No cracks or breaks
Fire Test Data: Flame Spread (ASTM E648):	0.45 watt/cm <sup>2</sup> or more Class 1
Fire Test Data: Smoke Evolution (ASTM 662):	450 or less
FloorScore Indoor Air Quality:	CHPS 01350 Certified
Sustainability Assessment:	Gold Level Certified
Certified Low Emitting Product:	LEED EQ4.3
Certified Low Emitting Adhesive:	LEED EQ4.1

**Warranty:**

Limited 10 Year Commercial Warranty

**VINYL BASE**

Manufacturer: Johnsonite  
Type: ColorMatch  
Style: Traditional Wall Base  
Color: Brown (47)  
Size: 4"

All outside corners shall be pre-formed.

**CARPETING: GENERAL NOTES**

**Protection:**

It shall 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, per the manufacturer's installation requirements.

**Installation:**

All contractors that bid this work, shall have a minimum of not less than 5 years of carpeting installation experience, similar to the size and scope contained in the project, and provide a minimum 2 year full warranty to fix, repair or replace carpeting failure as the result of defective workmanship. Installation per manufacturer's requirements and specifications.

Metal or vinyl carpet reducers shall be provided at all exposed or junction edges with other material or at entrances.

**Extra Stock:**

Contractor shall provide a minimum 10% additional material over actual area used as extra stock, to be provided to Owner prior to or at final completion. All extra stock shall be full carpet tiles, not cut pieces, and shall be from the same dye lot / manufacturing batch as the carpet tiles used on the job.

**MODULAR (CARPET TILES)**

**Locations: All Conference Rooms and Weekend Reporting Room 239**

**Manufacturer: Lees**

**Type: Work It! Modular 26**

**Style : GT143**

**Size: 24" x 24"**

**Color: Natural Hybrid 228**

**Product Data:**

Construction:	Tufted
Dye Method:	Solution Dyed
Surface Texture:	Level Multi-Colored Loop
Gauge:	1/10 (39.37 rows per 10cm)
Stitches Per Inch:	8.5 (33.46 per 10cm)
Density:	6118
Weight Density:	159,068
Finished Pile Thickness:	0.153"

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Yarn Weight: 26 oz./yd<sup>2</sup>  
 Backing: EcoFlex ICT  
 Face Yarn: Duracolor Premium Nylon  
 Protective Treatments: Sentry Plus  
 Sustainable Content: Contains a minimum 35% pre-consumer recycled content by total weight

Performance:  
 Static Control: AATCC-134 <3.5 KV  
 Flammability: ASTM E 648 class 1 (Glue Down)  
 Smoke Density: ASTM E-662 <450  
 Soil Resistance: Passes GSA requirements for permanent stain resistant carpet  
 CRI Green Label Plus: 1098

Warranties:  
 Lifetime Limited Modular Warranty  
 Lifetime Duracolor Stain Warranty  
 Lifetime Static

**BROADLOOM**

**Locations:**  
**All Offices, HR Testing /Storage Room 118, HR Reception 122, Library Storage 130, and Library Workroom 135**

**Manufacturer: Lees**  
**Type: Work It! 26**  
**Style : GL143**  
**Size: 12' width**  
**Color: Natural Hybrid 228**

**Product Data:**  
 Construction: Tufted  
 Dye Method: Solution Dyed  
 Surface Texture: Level Multi-Colored Loop  
 Gauge: 1/10 (39.37 rows per 10cm)  
 Stitches Per Inch: 11.8 (46.46 per 10cm)  
 Density: 6933  
 Weight Density: 180,258  
 Finished Pile Thickness: 0.135"  
 Yarn Weight: 26 oz./yd<sup>2</sup>  
 Backing: UniBond Flex  
 Face Yarn: Duracolor Premium Nylon  
 Protective Treatments: Sentry Plus

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Performance:

Static Control: AATCC-134 <3.5 KV  
Flammability: ASTM E 648 class 1 (Glue Down)  
Smoke Density: ASTM E-662 <450  
Soil Resistance: Passes GSA requirements for permanent stain resistant carpet  
CRI Green Label Plus: 4952

Warranties:

Lifetime Limited Unibond Flex Warranty  
Lifetime Duracolor Stain Warranty  
Lifetime Static

**Submittal required:** No

**VINYL BASE**

Manufacturer: Johnsonite  
Type: ColorMatch  
Style: Traditional Wall Base  
Color: Brown (47)  
Size: 4"

All outside corners shall be pre-formed.

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**Submittal required:** Color selection for approval, prior to doing the work.

Painting products shall be specified from one of the following manufacturers: Dunn Edwards, Frazee, Kelly Moore, Sherwin Williams, or Glidden. Alternative manufacturers may be submitted for approval.

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

Coatings shall be applied in accordance with the manufacturer's printed directions for the paint used. Special attention shall be given to applying a coating when temperature, humidity, and other weather factors are acceptable by the manufacturer requirements 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.

In occupied buildings, the contractor shall do all painting that produces noxious fumes or smells, during nights, weekends and off hours to prevent disruption of Gila County business and services to the public.

**Materials:**

All paint materials shall be of manufacturers' premium grade product.

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

**Extra Stock:**

Prior to final completion, the contractor shall provide 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.

**Surface Preparation:**

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 all surfaces to be painted, stained or sealed before applying paint or surface treatments.

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Prime 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 all 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.

**Application:**

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.

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.

**Clean-up And Protection:**

During progress of work, remove from site discarded all materials, rubbish, cans and rags at end of each work day.

Upon completion of 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 the Owner.

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Provide "Wet Paint" signs as required 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.

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**MECHANICAL MATERIALS AND METHODS**

**SEE MECHANICAL ENGINEERING DESIGN AND SPECIFICATIONS ON  
DRAWINGS.**

**COPPER ADMIN BUILDING  
INTERIOR RENOVATION**

**PLUMBING GENERAL REQUIREMENTS**

All cleanouts, meters, controllers, valves, etc. must be installed in boxes with removable lids and or access panels.

Provide isolation valves for each floor and for every bathroom. **All isolation valves shall be ball valves.**

**Plumbing Piping**

Domestic water lines shall be a minimum of Type L copper or PEX.  
Waste and vent piping shall be ABS.

Plumbing lines shall not be located in outside walls, unheated attics, basements, or other unconditioned areas without specific approval from Facility Services.

**Plumbing Insulation**

Provide minimum R-5 insulation at all exposed plumbing piping to prevent freezing.

**Plumbing Fixtures**

All fixtures required to be ADA compliant shall meet the requirements of Division 1 of the Specifications.

Plumbing fixtures shall be **low flow**:

Toilets: 1.6 gallons per flush

Urinals: one gallon per flush, No urinals shall be installed using a timing device to flush periodically, regardless of demand.

Lavatory faucets: 3 gallons per minute, at a pressure of 80 psi

Kitchen faucets: 3 gallons per minute, at a pressure of 80 psi

Showerheads: 3 gallons per minute, at a pressure of 80 psi. Showerheads shall be tamper resistant.

Plumbing fixtures as manufactured by the following (or approved equal), unless noted otherwise: American Standard, Chicago, Elger.

**Water Closets:** American Standard Madera, 2234.58 Floor Mount

FloWise 15" height, 1.28 gpf, Top Spud bowl and Selectronic Flush Valve.

**Water Fountain:** Elkay Wall Mount Water Cooler, Model EZS4

**Urinal:** American Standard Washbrook Urinal

**Flush Valves:** Regal XL

**Faucets:** Chicago Faucets Deck Mounted 4" centers

Lavatory Faucet 802-V317ABCP

**Lavatory:** Ohio Oval Countertop Sink (White) Model 0439

**Mop Sink:** Zurn Z1996-24 (24"x24" White) Stainless steel drain with Dome Strainer, Lint Basket and Locking Nut.

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**Mob Sink Faucet: T&S Brass and Bronze Works, Inc. Model: B-0665-BSTR**  
Breakroom Sink: Elkay Model #DSE233223  
Breakroom Sink Faucet: American Standard 4175.300.075

**COPPER ADMIN BUILDING  
INTERIOR RENOVATION****ELECTRICAL GENERAL REQUIREMENTS**

All work shall comply with the Night Sky Lighting ordinances, as adopted by the Gila County Board of Supervisors, with all requirements of the National Electrical Code (latest edition adopted by Gila County), and requirements of Arizona Public Service.

All materials shall be new, Underwriter listed, and standard first line products of their respective kinds.

**Materials and Methods:**

In general, no more than six circuits shall be run in a single  $\frac{3}{4}$ " homerun, if conductors are #12's or smaller. Size of all homerun conduits shall be  $\frac{3}{4}$ " minimum. Do not combine homeruns when shown separate. If conduit is greater than  $\frac{3}{4}$ ", fill shall be no more than 50% allowed by NEC.

Neutral conductors shall be #10 AWG minimum, where 2 or more 15 or 20 amp circuits share a common neutral.

Metallic tags or labels shall not be used inside switchboards, panels and/or MCC's.

Telephone plates and devices or jacks (modular) shall match electrical device plates and devices, in color and material.

Panelboards, gutters, junction boxes and other electrical equipment with removable covers shall not be painted other than original factory paint and necessary touch up paint.

Different systems shall be run in separate conduits as complete systems with conduit, wireways, boxes, etc. Examples of separate systems are as follows: 120/208 volts, 277/480 volts, fire alarm, emergency lighting and power, computer, telephone, intrusion alarms, building automation, and energy management

All wiring shall be in conduits or raceways regardless of voltage. All main service, main feeder, and general circuitry wiring shall be specified as copper. Telephone cable and power limiter cable for fire alarm systems shall be in conduit unless they are plenum rated. All shall be properly installed and supported.

Sleeves shall be specified for penetration through floor and shall extend a minimum of 1 inch AFF (above finished floor). Fireproofing shall be provided for all penetrations.

All electrical equipment, disconnects, starters, panels, devices and plates shall be installed plumb and true. All adjacent boxes shall be aligned and level. Devices will be installed with enough clearance and access to allow maintenance, repair, or calibration.

Conductor splices shall be in outlet boxes, gutters, junction boxes or pull boxes.

**COPPER ADMIN BUILDING  
INTERIOR RENOVATION****Raceways:**

Raceway systems shall be installed as complete systems. Support shall be every 10 feet and within 3 feet of boxes, cabinets, or fittings and within 18" of each change in direction.

Wiremold or similar, and equal, wireways shall be installed as complete systems using accessory fittings (elbows, end plates, tees, etc.) according to the manufacturer's recommendations assuring a rigid mechanical and electrical connection between parts. Removable wireway covers shall be accessible except as in N.E.C. 362.2. Wiremold is acceptable only in exposed locations. If a box is located behind the raceway, the opening in the raceway shall be of the same dimension as the box opening. The opening shall be provided with a bushing.

Raceway installations shall be made in such a way that no wrench or tool teeth marks are evident.

**Conduits:**

**All conduit shall be a minimum of 3/4". Exception: 1/2" conduit may be used in walls for dead end runs only.**

**Flexible Steel Conduits:**

Flexible Steel Conduits shall be used only where approved by the Owner for connection to equipment which is moveable for adjustment, mounted on isolation units for elimination of vibration and sound or for connection from a close by junction box to lay-in type light fixtures in a "T" grid ceiling. Run green ground wire in all flexible conduits. Seal tight flex shall be spirally wound steel.

Connectors for flexible steel conduit shall be of steel type. Twist on type connectors shall also be made of steel type. Under no circumstances shall runs of flexible conduit exceed six feet. Junction boxes shall be as close as possible to fixtures. Junction boxes shall be fully accessible without removing the fixture.

Type "MC" cable shall be the exception and not the norm. It shall only be used by special permission from the authority having jurisdiction. Type "MC" cable shall be of the **steel** type, color coded along its entire external length. Minimum size wire shall be #12. Light fixtures with factory "MC" whips are acceptable when approved by the Owner.

Use of Flexible Metallic Tubing or non-metallic flexible conduit is **prohibited**.

**Rigid Heavy Wall Steel conduit:**

Rigid heavy wall steel conduit shall be installed with double locknuts and an insulated metallic bushing. All surface conduits exposed to weather or subject to mechanical damage shall be Rigid Heavy Wall Steel Conduit or I.M.C. unless otherwise stated.

Where conduits enter from below, install a threaded rigid conduit coupling flush with the concrete to permit removal of the conduit above the floor.

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When conduit is removed a threaded conduit plug can be installed flush with the floor for abandonment.

Changing from one raceway to another shall be accomplished at an approved box only.

Rigid Heavy Wall Steel Conduit shall be half lap wrapped with Scotch Wrap #50 or an approved equal when installed in concrete or in earth. Rigid heavy wall steel conduit shall be hot-dipped galvanized mild steel, full weight, with clean cut sharp threads. Only approved full radius benders shall be used.

Rigid conduit shall be used in all tunnels, in concrete pours (high voltage only), wherever subjected to physical damage and shall be used in mechanical rooms 10' and below.

**General**

- Feeders of more than 100 amps, rigid or I.M.C. is acceptable.
- EMT is allowable except where physical damage might occur.
- High voltage (12,470 volts) shall be installed in rigid or IMC.
- Only **steel** compression or set screw fittings are acceptable.
- Malleable or cast construction is not acceptable.

**EMT Electrical metallic tubing**

- EMT shall be hot-dipped galvanized and shall conform to the NEC requirements.
- Only UL approved steel fittings shall be used with all EMT. Fittings may be compression type or steel set screws. Only approved full radius benders shall be used.
- Minimum size EMT shall be 3/4". 1/2" EMT may be used for dead-end runs.
- EMT may be used in furred spaces, in either metal or wood stud walls, and either exposed or concealed.
- The use of EMT over 2" ID is not acceptable.
- EMT is not approved for use in masonry walls.
- EMT shall not be installed so as to come into contact with the earth.

Where wires or cables enter or exit a conduit which is used to provide support or protection from physical damage, a fitting such as a connector and ground bushing shall be provided on the end(s) of the conduit or tubing to protect the wires or cables from abrasion and to ground the conduit. All bushings to be insulated metallic bushings appropriately rated.

Spare conduits shall be extended up from flush mounted panels to the space above false ceilings and capped. If there is no false ceiling, these conduits shall extend to an accessible location and terminate in a labeled junction box with suitable blank cover. A minimum of 1-1" spare conduit shall be provided for each 3 (or fraction thereof) one-pole spares/spaces, with at least 3 spare conduits provided.

Surface conduits shall be painted same color as surface it is attached to. Panels, gutters and other electrical equipment with removable covers shall not be painted. Conduits concealed, run in tunnels or equipment rooms shall not be painted.

**COPPER ADMIN BUILDING  
INTERIOR RENOVATION****Installation of Conduit**

Conduit shall be run concealed except in certain approved locations. Conduit shall be secured both horizontally and vertically against movement. Listed mechanical fasteners shall be used. Tie wire may only be used for securing horizontal conduit runs within stud walls. Outlet boxes, junction and pull boxes, etc., shall be installed so as not to interfere with any piping, fixtures or equipment. All boxes shall be fully accessible. Exposed conduits shall be grouped in neat parallel lines, properly supported, following the lines of the building structure as closely as possible and as directed.

Conduit shall not run through any structural member of the building except as specifically directed by a structural engineer, licensed in the State of Arizona.

No running threads will be permitted. Union fittings may be used as necessary. Rigid conduit threadless connectors or couplings, split couplings that bolt together, self-threading fittings or couplings permanently attached to conduit shall not be used unless approved by Gila County.

Ninety degree bends in conduit 1-1/2" and larger shall be made with factory bent standard conduit elbows or by hydraulic type benders.

No more than four 90 degree bends (360 degrees) shall be used between pull, or junction, boxes. No more than three 90 degree bends (270 degrees) shall be used between pull, or junction, boxes on data, communications or phone conduits.

The ends of all conduits shall be cut square, carefully reamed to full size and shouldered in fittings. EMT shall be fully seated in connector and couplings. Drip pans shall be used under threading equipment. Roller type tubing cutters shall not be used.

Conduit installation shall be such that conduits are not abraded, scraped, flattened, dented or wrinkled and the interior diameter is not effectively reduced. Install conduit in such a way that condensation or water cannot be trapped.

Perforated strap iron or plumbers tape shall not be used for hanging conduit or boxes. Use standard pipe hangers with rings and rods for all conduits suspended from ceilings. Standard 16.5 gauge Ty Wire is acceptable with prior approval but only when tied per ironworkers tie.

Runs of one conduit suspended shall be on rings with rod hangers with self-drilling anchors or other approved methods. Runs of more than one conduit suspended, shall be on a strut trapeze support with clamps. Trapeze supports shall be 1-5/8" x 1-5/8" strut channel supported by minimum 3/8" rods.

Strut clamps shall be of the nut and bolt type, minimum 300 lb. static load limit.

Drive-it straps are not acceptable. Plastic sleeve, lead anchor, rawl plugs or power driven anchors are not acceptable.

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When using all thread or bolts they must be backed on both sides with washers, lock-washers and nuts. (Floating unistrut/conduit straps etc. are not acceptable)

Electrical metallic conduits shall not touch any plumbing pipe. Where unavoidable, approved insulation shall be used.

Upon completion of all runs, all conduits shall be properly sealed until ready to pull wires.

Install pull cord in all empty conduits and install plates on all communication boxes. All boxes shall have covers or plates.

Provide moisture tight hubs for entrance from above or sides of exterior boxes, gutter, panelboards, switchboards, etc.

Short pulling elbows and 90 degree connectors shall not be used on conduit sized greater than 1".

Bushings shall be insulated throat metallic bushings, appropriately rated.

All conduit shall be terminated with a box, cabinet, panel, gutter, or a piece of electrical equipment. In fixtures, surface metal raceways and boxes where conductors pass through either factory or field punched, cut or drilled slots or holes in metal members, the conductors shall be protected by bushing material or grommets securely fastened in the opening prior to installation of the unit. Units shall have mechanical and electrical continuity. When conduits for communications, telephone or data are to be terminated by being clamped to cable tray, a threaded bushing and connector may be used in lieu of other terminal fittings at the cable tray. A Gedney CTC clamp or approved equal shall be used to clamp conduit to cable tray.

Conduit containing cables rated over 600 volts shall be identified at least every 20 feet with high visibility labeling. Transformers, switches, equipment, pull boxes, cabinets, junction boxes and gutters having voltages of more than 600 volts shall be identified as to the voltage of the cables within. Letters and numbers shall be a minimum of 2" and are to be highly visible contrasting colors. "DANGER - HIGH VOLTAGE - KEEP OUT" signs shall be permanently attached to the primary section door on transformers and on doors of sectionalizing switches of 600 volts or more. Signs are to be bilingual Spanish/English sized according to OSHA codes.

**The Firewall integrity shall not be compromised.**

**Wire and Cable**

Wire shall be 600v insulated NEC standard of the type specified below for different applications, shall bear the Underwriter's label, and shall be brought to the job in unbroken packages, showing the date of manufacture and the maximum allowable voltages. Manufacture date to be within the past year. Approved wire is Caltec, Hi-Tec, Capitol, Rome, Essex, or General. All wire shall be copper soft-drawn, annealed, having conductivity of not less than 98% pure copper.

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Wire shall be type THHN (THWN in damp locations).

Minimum wire size shall be #12 except for controls wiring. Wire of size #10 and larger shall be stranded, all motor related wiring and controls shall be stranded.

Wire shall be color coded throughout its entire length, except feeders shall be identified with multiple rings or spirals of color coding tape at terminal points and any other accessible points. Grounded and grounding conductors shall be identified continuously at all visible points.

Circuits and feeder wires shall be continuous from switch to terminal or most distant outlet.

Continuity of all conductors shall not be dependent upon device connections, where the removal of such devices would interrupt the continuity of other conductors in the circuit.

Only approved wire lubricant may be used. Any conduit run that does not allow conductors to be pulled readily, will be condemned and the run must be replaced by other conduit satisfactory to the Owner.

Joints in wiring #8 B & S gauge, and larger, shall be made with compression only connectors.

Branch circuits shall be tagged in the load centers, with circuit numbers to correspond to the plans.

Joints shall be covered with a layer of rubber tape, then thermoplastic tape. Plastic electrical insulating tape shall be flame retardant and weather resistant, of premium grade vinyl plastic, resistant to hot and cold weather, 7 mil tape that applies well at 0 degree F, has an operating range up to 220 degrees F, and shall meet the requirements of ASTM D-3005-72, Type 1, UL 510 and HHI-595C. CAS Bulletin No. 561A (105 degrees C.).

When using twist on wire connectors, wires shall be twisted together, with pliers, before applying connector.

Carefully cable all wires, in panelboards, gutters, and wireways, in a neat arrangement, with termination located directly opposite terminals. Leave wire loops not less than 6" long, in each outlet box, even if wires do not stop in the box.

Color code wire throughout including feeders, branch circuits and equipment ground conductors, as specified and as indicated:

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PHASE	120/208 VOLTS	277/480 VOLTS
A	BLACK	BROWN
B	RED	ORANGE
C	BLUE	YELLOW
NEUTRAL	WHITE	GRAY
GROUND	GREEN	GREEN
Isolated Grnd	GREEN/Orange Stripe	GREEN/Orange Str.

Wiring for switches shall be the same color as phase wire. Colored insulation shall be used up through No. 6 conductors. Conductors No. 4 and larger may be phase coded with multiple bands of 1/2" wide color coding tape at all accessible locations. Grounded wires (neutral) and ground wires shall have a continuous color coding at all accessible locations. Maintain the same conductor color coding from incoming line to last device.

**Boxes:**

Boxes shall be 4" square as a minimum. For convenience outlets, switch, data, telephone, fire alarm system or intercom outlets use a 4" square or larger box with plaster ring.

Outlet boxes, junction boxes and switch boxes shall be galvanized code-gauge steel. Conduit body type case FD/FS boxes with cast lugs shall be used where exposed to the weather and where subject to moisture or mechanical damage. FD/FS covers shall be used with these boxes. Do not compromise integrity of FD/FS boxes by drilling holes in box for fastening.

For outlets in unplastered masonry walls use masonry boxes of the proper depth. The face of all boxes shall be vertical and not more than 1/4" in from the finished surface. The mason and electrical contractor shall be mutually responsible for the proper execution of masonry work. Handy boxes or handy box extension rings shall not be used.

Use of more than one extension ring is not acceptable.

Ceiling outlet boxes shall be equipped with 3" plaster rings. Fixture studs shall be provided, if fixture is to be mounted directly on box.

Boxes shall not be installed back to back, even if associated with different systems.

Receptacles installed in a horizontal manner shall be installed so that the neutral is to the top.

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All boxes shall be grounded to conduit system, and bonded to the equipment ground, which shall be bonded to the equipment ground screw, on all devices.

In walls or ceilings of non-combustible material, boxes will not set back more than 1/4". In walls of wood or other combustible material, boxes shall be flush with the finished surface. There shall be no broken surfaces, gaps or open spaces at the edge of boxes.

All surface mounted fire alarm break stations shall be mounted on back-boxes specifically made for the purpose and red in color.

**Pull and Junction Boxes**

Pull boxes and junction boxes shall be identified as to which circuit and panel the run feeds from, i.e., Panel E - Cir. 16-18-20.

Boxes shall be galvanized or metal with baked enamel. Boxes shall be constructed with suitable barriers separating the different systems. Boxes shall be provided with removable covers, secured with machine screws. Gangable boxes shall be used for remodel fish jobs only.

Conduit shall enter boxes through tight fitting bored or punched clearance holes and be secured to boxes. Provide inserts, or expansion anchors, rods and angle iron members to support pull boxes independently of the conduit runs. Conduit shall enter boxes at right angle with no binding. Offsets shall be used as necessary for proper fit. Offset connectors are not acceptable.

Install junction boxes or pull boxes in order to facilitate the pulling in of wires or cables. Runs shall not exceed 90 feet between boxes.

Branch circuits shall be left tagged in the panel boards and pull boxes for the purpose of distinguishing the various circuits. Tags to be plainly marked with indelible ink, and attached to the wires.

Conduit bodies larger than 1-1/4" shall not be used. SLB fittings are not approved.

Conduit connections shall not be made to box covers.

Pull and junction boxes shall be grounded to conduit system, and bonded to the equipment ground, which shall be bonded to the equipment ground screw, on all devices.

**Support of Boxes**

Boxes shall be accurately placed, rigidly and securely supported from the structure. Boxes for concealed work shall be set flush with the finished surfaces of the walls or ceilings. Boxes may be supported by rods from the ceilings, only when fitted with approved support devices.

Approved bar hangers, fitted with fixture studs, shall be used to support boxes in ceilings.

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Data and telephone outlet boxes shall be located at heights to match adjoining receptacles unless noted differently for wall mount phone. In remodeled locations box heights shall match existing.

**Receptacles**

Typical Receptacles: Leviton 20A-125V TR Decora, T5825-W

Provide GFCI and Dedicated Outlets as shown on the drawings and as required by NEC.

Receptacles shall be 18" to bottom in stud walls (per the requirements of the Americans With Disabilities Act of 1990), or 48" or 40" where table, work benches and counters occur, or as noted

Cover plates: Matching Leviton plates. White nylon. All plates shall be commercial spec grade. Plates shall be specified for all openings, with devices or blank. All plates shall match devices.

**Switches**

Typical Switch: Leviton SP WHT 20A, 5621-2W Color: White

3-Way Switch: Leviton 3WAY WHT 20A, 5623-2W Color: White

All switches to have body securely locked to bridge by staked screw assembly. Back wire through a hole with clamp type wiring assembly suitable for stranded wire.

Toilet rooms shall be equipped with motion sensing switches for both lights and fans.

Switch plate covers: Matching Leviton plates. White nylon in low impact areas or stainless steel, where required by the Owner. Matching plates in exposed wiring, j-box, to be steel, rounded to box edge. Oversized plates are not acceptable.

Wall switches shall be on the latching side of doors. All switches shall be 48" high to the bottom of the switch, except where located in cabinets, see details.

**LIGHTING-****Ceiling Lighting Fixtures:**

Manufacturer: Elite

**Offices:** 24-OT-3-32-T8-A12-L35K-C3

Manufacturer: Hubbell

**Bathrooms:** JT822-232U6G-FSA12-EU-FO735-C388

**Exterior Light:**

Hubbell

Type: 1NC-9LU-5K-3-1 (20 watt LED 120/277 bronze exterior fixture with acrylic diffuser)

**Emergency Light: Combo exit and Emergency light:**

Manufacturer: Compass

Type: CCR

**Exit Sign Only: CER**

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Fixtures mounted in plaster or drywall ceiling shall be rigidly supported in approved manner with channel supported across plaster framing. Provide proper plaster frames for all fixtures requiring them. Wiring for fluorescent fixtures is to be accessible after fixture installation, without requiring removal of the fixture from the ceiling. Mount all fixtures with a minimum of three 1/4" bolts for 1' x 8' fixtures, two 1/4" bolts for 1' x 4' fixtures, and four 1/4" bolts for 2' x 4' fixtures. Only approved anchors shall be used (Toggle bolt may not be used in damp location).

Recessed fixtures shall be supported to the supporting building structure above (not the roof deck). All fixtures shall be supported on at least two points (opposite corners each individual fixture). Support shall be with #12 gauge wire with a minimum of 3 twists of wire at each point of attachment. Two or more wires shall not be supported by a single anchor. Two or more fixtures shall not be supported by a single wire. Points of attachment and anchoring shall be approved by the Engineer. Install strut channel as necessary to provide support between building structure.

Contractor shall note that if certain areas in the building contain fire rated ceilings which require fire rated enclosures, the fixtures supplied for use in these areas shall be approved and suitable for the purpose.

**PHONE / DATA:**

Contractor shall coordinate with Gila County Facility Services' subcontractor and/or in-house personnel whom will be installing these systems. Contractor shall provide wall, floor or ceiling box at location identified on the plan, conduit and pull wiring in place for phone and data wiring use.

**SECURITY SYSTEMS:**

Contractor shall coordinate with Gila County Facility Services' subcontractor and/or in-house personnel whom will be installing these systems.