



State of Utah

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## ADDENDUM #1

Date: May 4, 2007  
To: Contractors  
From: Wayne Smith, Project Manager, DFCM  
Reference: Building 3020 Renovation – Camp Williams  
Utah National Guard – Bluffdale, Utah  
DFCM Project No. 05228480  
Subject: **Addendum No. 1**

Pages	Addendum	1	page
	<u>Architects Specification</u>	<u>71</u>	<u>pages</u>
	<b>Total</b>	<b>72</b>	<b>pages</b>

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**Note: This Addendum shall be included as part of the Contract Documents. Items in this Addendum apply to all drawings and specification sections whether referenced or not involving the portion of the work added, deleted, modified, or otherwise addressed in the Addendum. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to Disqualification.**

- 1.1 **SCHEDULE CHANGES** – There are no changes to the Project Schedule.
- 1.2 **GENERAL** – Vincent Design Group – Specifications.

**End of Addendum #1**

**SPECIFICATION**

**UTAH NATIONAL GUARD  
REMODEL OF BUILDING 3020  
CAMP WILLIAMS**

**For**

**DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT**  
DFCM Project No. 05228480

## SPECIFICATIONS

### TITLE

### SUBJECT

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### LIST OF DRAWINGS

### SHT. NO.

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AE-102	BUILDING A ELEVATION, ENLARGED PLANS, DETAILS & NOTES

## SECTION 01300

### SUBMITTALS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Submittal procedures.
- B. Construction progress schedules.
- C. Proposed products list.
- D. Shop drawings.
- E. Product data.
- F. Samples.
- G. Manufacturers' instructions.
- H. Manufacturers' certificates.

##### 1.02 RELATED SECTIONS

- A. Section 01400 - Quality Control: Manufacturers' field services and reports.
- B. Section 01700 - Contract Closeout: Contract, warranty, and manufacturer's certificates and closeout submittals.

##### 1.03 SUBMITTAL PROCEDURES

- A. Transmit each submittal to Architect/Engineer for approval.
- B. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and detail number (s) and specification section number, as appropriate.
- C. Apply Contractor's stamp, signed or initialed certifying that review, verification of products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the work and contract documents.
- D. Schedule submittals to expedite the project, and deliver to Architect/Engineer at business address. Coordinate submittal of related items.
- E. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of the completed work.
- F. Provide space for Contractor and Architect/Engineer review stamps.
- G. Revise and resubmit submittals as required; identify all changes made since previous submittal.
- H. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

##### 1.04 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial progress schedule in duplicate within 20 days after date established in Notice to

Proceed for Architect/Engineer review.

- B. Revise and resubmit as required.
- C. Submit computer generated network analysis diagram using the critical path, PERT method, or generally as outlined in Associated General Contractors of American (AGC) publication "The Use of CPM in Construction - A Manual for General Contractors and the Construction Industry".
- D. Show complete sequence of construction by activity, identifying work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.
- E. Indicate estimated percentage of completion for each item of work at each submission.
- F. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates, including those Owner furnished and under allowances.

#### 1.05 SHOP DRAWINGS

- A. Submit the number of opaque reproductions which Contractor requires, plus four copies which will be retained by Architect/Engineer.
- B. After review, reproduce and distribute in accordance with Article on Procedures above and for Record Documents described in Section 01700 - Contract Closeout.

#### 1.06 PRODUCT DATA

- A. Submit the number of copies which the Contractor requires, plus four copies which will be retained by the Architect/Engineer.
- B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this project.
- C. After review distribute in accordance with Article on Procedures above and provide copies for Record Documents described in Section 01700 - Contract Closeout.

#### 1.07 SAMPLES

- A. Submit samples to illustrate functional and aesthetic characteristics of the product with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- B. Submit samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for Architect/Engineer's selection.
- C. Include identification on each sample with full project information.
- D. Submit the number of samples specified in individual specification sections; one of which will be retained by Architect/Engineer.
- E. Reviewed samples which may be used in the work are indicated in individual specification sections.

#### 1.08 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing in quantities specified for Product Data.
- B. Identify conflicts between manufacturers' instructions and Contract Documents.

1.09 MANUFACTURER'S CERTIFICATES

- A. When specified in individual specification sections, submit manufacturers' certificate to Architect/Engineer for review in quantities specified for Product Data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect/Engineer.

END OF SECTION

SECTION 01400

QUALITY CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Quality assurance and control of installation.
- B. References.
- C. Field samples.
- D. Inspection and testing laboratory services.
- E. Manufacturers' field services and reports.

1.02 RELATED SECTIONS

- A. Section 01300 - Submittals Submission of Manufacturers' Instructions and Certificates.
- B. Section 01600 - Material and Equipment: Requirements for material and product quality.

1.03 QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce work of specified quality.
- B. Comply fully with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- D. Comply with specified standards as a minimum quality for the work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified quality.
- F. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.04 REFERENCES

- A. Conform to reference standard by date of issue current on date of Contract Documents.
- B. Obtain copies of standards when required by Contract Documents.
- C. Should specified reference standards conflict with Contract Documents, request clarification for Architect/Engineer before proceeding.
- D. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.05 FIELD SAMPLES

- A. Install field samples at the site as required by individual specifications sections for review.

- B. Acceptable samples represent a quality level for the work.
- C. Where field sample is specified in individual sections to be removed, clear area after field sample has been accepted by Architect/Engineer.

1.06 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. Submit qualifications of observer to Architect/Engineer 30 days in advance of required observations. Observer subject to approval of Architect/Engineer.
- B. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment as applicable and to initiate instructions when necessary.
- C. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- D. Submit report in duplicate within 30 days of observation to Architect/Engineer for review.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

## SECTION 01600

### MATERIAL AND EQUIPMENT

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Products.
- B. Transportation and handling.
- C. Storage and protection.
- D. Product options.
- E. Substitutions.

##### 1.02 RELATED SECTIONS

- A. Section 01400 - Quality Control: Product quality monitoring.

##### 1.03 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the work.
- B. Provide interchangeable components of the same manufacturer for similar components.

##### 1.04 TRANSPORTATION AND HANDLING

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

##### 1.05 STORAGE AND PROTECTION

- A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weathertight, climate controlled enclosures.
- B. For exterior storage of fabricated products, place on sloped supports above ground.
- C. Provide off-site storage and protection when site does not permit on-site storage or protection.
- D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- E. Store loose granular materials on solid flat surfaces in a well-drained area. Provide mixing with foreign matter.
- F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

- G. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

#### 1.06 PRODUCT OPTIONS

- A. Products specified by naming one or more manufacturers with a provision for substitutions: Submit a request for substitution for any manufacturer not named.

#### 1.07 SUBSTITUTIONS

- A. Architect/Engineer will consider requests for substitutions only within 5 days of Bid Opening.
- B. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- D. A request constitutes a representation that the Bidder:
  - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
  - 2. Will provide the same warranty for the substitution as for the specified product.
  - 3. Will coordinate installation and make changes to other work which may be required for the work to be complete with no additional cost to Owner.
  - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
  - 5. Will reimburse Owner for review or redesign services associated with reapproval by authorities.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure:
  - 1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
  - 2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence.
  - 3. Architect/Engineer will notify Contractor in writing of decision to accept or reject request.

#### PART 2 PRODUCTS

Not Used.

#### PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01700

CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Adjusting.
- D. Project record documents.
- E. Operation and maintenance data.
- F. Warranties.
- G. Spare parts and maintenance materials.

1.02 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect/Engineer's inspections, Owner prefinal and final.
- B. Provide submittals to Architect/Engineer and Owner that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted contract sum, previous payments, and sum remaining due.
- D. Owner will occupy all portions of the building upon final acceptance of project.

1.03 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Clean equipment and fixtures to a sanitary condition.
- D. Clean and replace filters of operating equipment.
- E. Clean debris from roofs, gutters, downspouts, and drainage systems.
- F. Clean site, sweep paved areas, rake clean landscaped surfaces.
- G. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.04 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

1.05 PROJECT RECORD DOCUMENTS

- A. Maintain on site, one set of the following record documents; record actual revisions to the work:
  - 1. Contract drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the contract.
  - 5. Reviewed shop drawings, product data, and samples.
- B. Store record documents separate from documents used for construction.
- C. Record information concurrent with construction progress.
- D. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
  - 1. Manufacturer's name and product model and number.
  - 2. Product substitutions or alternates utilized.
  - 3. Changes made by Addenda and modifications.
- E. Record documents and shop drawings: Legibly mark each item to record actual construction including.
- F. Submit documents to Architect/Engineer with claim for final Application for Payment.

#### 1.06 OPERATION AND MAINTENANCE DATA

- A. Submit three sets prior to final inspection bound in 8-1/2 x 11 inch text pages, three ring binders with durable plastic covers.
- B. Prepare binder covers with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS" and title of project.
- C. Internally subdivide the binder contents with permanent page dividers logically organized as described below with tab titling clearly printed under reinforced laminated plastic tabs.
- D. Contents: Prepare a Table of Contents for each volume, with each product or system description identified.
- E. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.
- F. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. Identify the following:
  - 1. Significant design criteria.
  - 2. List of equipment.
  - 3. Parts list for each component.
  - 4. Operating instructions.
  - 5. Maintenance instructions for equipment and systems.
  - 6. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.
- G. Part 3: Project documents and certificates, including the following:
  - 1. Shop drawings and product data.
  - 2. Air and water balance reports.
  - 3. Certificates.
  - 4. Photocopies of warranties.
- H. Submit one copy of completed volumes in final form at prefinal inspection. This copy will be returned with Architect/Engineer comments. Revise content of documents as required prior to final submittal.

I. Submit final volumes revised within ten days after final inspection.

1.07 WARRANTIES

A. Provide duplicate notarized copies.

B. Execute and assemble documents from subcontractors, suppliers, and manufacturers.

C. Submit prior to final Application for Payment.

1.08 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification sections.

B. Deliver to project site and place in location as directed by Owner; obtain receipt prior to final payment.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 02072

MINOR DEMOLITION FOR REMODELING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Saw cutting and removal of designated concrete for changes in plumbing lines.
- B. Removal of designated construction.
- C. Refer to items as indicated on the drawings.

1.02 REGULATORY REQUIREMENTS

- A. Submit under provisions of GENERAL CONDITIONS.

1.03 REGULATORY REQUIREMENTS

- A. Conform to I.B.C. code for demolition work, safety of structure, dust control and Owner access and exit requirements.
- B. Notify and coordinate with Owner on affected utilities before starting work and comply with their requirements.
- C. Do not close or obstruct egress width to exits.
- D. Conform to procedures applicable when discovering hazardous or contaminated materials.

1.04 SEQUENCING

- A. Sequence work under the provisions of GENERAL CONDITIONS and Owner operations.

1.05 SCHEDULING

- A. Schedule work to coincide with new construction.
- B. Describe demolition removal procedures and schedule.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 PREPARATION

- A. Provide, erect, and maintain temporary barriers at locations required by remodel work.
- B. Protect existing materials and Owner merchandise and fixtures which are not to be demolished.
- C. Prevent movement or damage to structure; provide required bracing and shoring.
- D. Mark location of utilities and verify with Owner before commencing cutting where utility lines are located in walls and floor/tunnel.

3.02 DEMOLITION REQUIREMENTS

- A. Conduct demolition to minimize interference with adjacent occupied building spaces.
- B. Cease operations immediately if structure appears to be in danger. Notify Architect/Engineer. Do not resume operations until directed.
- C. Maintain protected egress and access to the Work.

3.03 DEMOLITION

- A. Disconnect, remove, cap, and identify designated utilities within demolition areas. Make sure that Owner's equipment is isolated and off prior to cutting. Reconnect services to Owner equipment immediately required to business functions.
- B. Demolish in an orderly and careful manner. Protect existing supporting structural members and provide any necessary shoring and bracing required..
- C. Except where noted otherwise, remove demolished materials from site. Do not burn or bury materials on site.
- D. Remove and legally dispose of all demolished materials from site as work progresses. Upon completion of work, leave areas in clean condition.
- E. Remove temporary work.

END OF SECTION

SECTION 06001

CARPENTRY WORK

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Rough carpentry and finish carpentry. Refer to Schedule located at the end of this Section.

1.02 RELATED WORK

- A. Setting anchorage in stud walls for work of this Section.
- B. Job layout and supervision of trades thru project.
- C. Section 08712 - Hardware: Supply of cabinet hardware as required for this Section.
- D. Section 09900 - Painting: Site finishing of finish carpentry and cabinetwork.

1.03 QUALITY ASSURANCE

- A. Rough Carpentry Lumber: Visible grade stamp, of agency certified by National Forest Products Association (NFPA).

1.04 SUBMITTALS

- A. Submit shop drawings under provisions of GENERAL CONDITIONS.
- B. Submit samples under provisions of GENERAL CONDITIONS of standard colors and patterns of plastic laminate for Architect/Engineers selection.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver shop fabricated carpentry items until site conditions are adequate to receive the work. Protect items from weather while in transit.
- B. Store indoors, in ventilated areas with a constant, minimum temperature of 60 degrees F, maximum relative humidity of 25 to 55 percent.

PART 2 PRODUCTS

2.01 ROUGH CARPENTRY MATERIALS

- A. Lumber: PS 20; graded in accordance with established Grading rules; maximum moisture content of 6 percent; of following species and grades:
  - 1. Structural Light Framing: Stress group Douglas Fir, Larch; No. 2 grade.
  - 2. Studding: Stress group Douglas Fir, Larch; stud grade.
  - 3. All wood plates and sills shall be No. 2 Hemlock, Fir, treated with 0.25#/ft. of CCAC.
- B. Nails, Spikes and Staples: Galvanized for exterior locations, high humidity locations and treated wood; plain finish for other interior locations; size and type to suit application.
- C. Bolts, Nuts, Washers, Lags, Pins and Screws: Medium carbon steel; sized to suit application, galvanized for exterior locations, high humidity locations and treated wood; plain finish for other interior locations.

- D. Fasteners: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolts or power activated type for anchorage to steel.
- E. Exposed Boards: Provide lumber with 19 percent maximum moisture content and any of the following species and grades:
  - 1. Species and Grade: Eastern white pine, D Select per NELMA or NLGA rules.
  - 2. Species and Grade: Western or Idaho white pine, Choice per NLGA or WWPA rules.
- F. Fasteners: Size and type indicated. Where miscellaneous carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A153 or of Type 304 stainless steel.
  - 1. Power-Driven Fasteners: CABO NER-272.

## 2.02 FINISH CARPENTRY AND MATERIALS

- A. Softwood Lumber: PS 20; graded in accordance with the requirements of AWI; maximum moisture content of 6 percent for interior work and 10 percent for exterior work; of following species and grades:
 

<u>Item</u>	<u>Species</u>	<u>Quality</u>
Trim & moldings	Pine	Custom (painted)
- B. New Doors: Solid Core Oak, custom grade (stain, varnish).
- C. Countertops: Custom plastic laminate with rolled edges and splash.
- D. Melomine: Two sided laminate surface for shelves interior, ends, and unexposed surface.
- E. Plastic Laminate: General purpose type; minimum 1/16 inches thick; manufactured by Formica, Wilsonart, or Nevamar.
- F. Adhesive: Contact type manufactured by Formica. For shop fabricated work, adhesive of type recommended by millwork manufacturer to suit application.
- G. Nails: Use common nails; all nailing shall be per latest IBC.
- H. Bolts, Nuts, Washers, Lags, Pins and Screws: Size and type to suit application; galvanized finish in concealed and exposed locations.

## PART 3 EXECUTION

### 3.01 SCHEDULE

- A. Rough Carpentry Work:
  - 1. Building layout and supervision.
  - 2. Framing and furring for wall finishes and stud walls.
  - 3. Miscellaneous furring and blocking.
  - 4. Setting and installation of doors, frames, and hardware.
- B. Interior Finish Carpentry Work:
  - 1. Doors. (Oak to match existing.)
  - 2. Door hardware.
  - 3. Door and Toilet Room hardware, trim, stops, etc.

END OF SECTION

## SECTION 06112

### FRAMING

#### PART 1 GENERAL

##### 1.01 WORK INCLUDED

- A. Structural wall framing.
- B. Preservative treatment of wood in contact with concrete.

##### 1.02 REFERENCES

- A. ALSC - American Lumber Standards Committee: Softwood Lumber Standards.
- B. AWWPA - American Wood Preservers' Association: Book of Standards.
- C. NFPA - National Forest Products Association.
- E. WCLIB - West Coast Lumber Inspection Bureau: Standard Grading Rules for West Coast Lumber.
- F. WWPA - Western Wood Products Association.

##### 1.03 QUALITY ASSURANCE

- A. Lumber Grading Agency: Certified by ALSC.

##### 1.04 DELIVERY, STORAGE, AND HANDLING

- A. Store and protect products under provisions of GENERAL CONDITIONS.

#### PART 2 PRODUCTS

##### 2.01 LUMBER MATERIALS

- A. Lumber Grading Rules: NFPA, WWPA.
- B. Premanufactured/Engineered Trusses: Douglas Fir species, #2 and better grade, 2" and better size classification, 19 percent maximum moisture content.
- C. Non-structural Light Framing: Douglas Fir species, #2 grade, 2" and better size classification, 19 percent maximum moisture content.
- D. Studding: Douglas Fir species, #2 and better grade, 2" and better size classification, 19 percent maximum moisture content.

##### 2.02 ACCESSORIES

- A. Fasteners: Hot-dipped galvanized steel for exterior, high humidity, and treated wood locations; plain finish elsewhere; size and type to suit condition.
- B. Drywall Screws: Bugle head, steel, power driven type length of three times thickness of sheathing.

##### 2.03 WOOD TREATMENT

- A. Wood Preservative (Surface Application): Clear, type; manufactured by 'Penta'.

#### PART 3 EXECUTION

3.01 SITE APPLIED WOOD TREATMENT

- A. Brush apply one coat of preservative treatment on wood in contact with cementitious materials.
- B. Apply preservative treatment in accordance with manufacturer's instructions.
- C. Treat site-sawn ends.
- D. Allow preservative to cure prior to erecting members.

3.02 FRAMING

- A. Erect wood framing members level and plumb.
- B. Construct framing members full length without splices.

3.03 TOLERANCES

- A. Framing Members: 1/4 inch maximum from true position.

END OF SECTION

SECTION 07212

BOARD INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Board insulation at perimeter walls.

1.02 RELATED SECTIONS

- A. Section 09260 - Gypboard systems.

1.03 REFERENCES

- A. ASTM C578 - Preformed Cellular Polystyrene Thermal Insulation.
- B. FS HH-I-530 - Insulation Board, Thermal, Unfaced, Polyurethane.

1.04 PERFORMANCE REQUIREMENTS

- A. Materials of this Section shall provide continuity of thermal barrier at building enclosure elements in conjunction with thermal insulating materials.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS - INSULATION MATERIALS

- A. U. S. G.
- B. Owens-Corning
- C. U. S. Rockwool
- D. Substitutions: Under provisions of GENERAL CONDITIONS.

2.02 INSULATION MATERIALS

- A. Polystyrene Insulation: ASTM C578, Type III; molded bead type, conforming to the following:

Thermal Resistance	R of 7.5
Thickness	1-1/2 inch thick
Board Size	24 x 96 inch
Compressive Strength	Minimum 10 psi
Water Absorption	In accordance with ANSI/ASTM D2842 2 percent by volume maximum
Edges	Square edges
- B. Urethane Insulation: expanded cellular type, conforming to the following:

Thermal Resistance	Aged R of 7.5
Thickness	1-1/2 inch thick
Board Size	24 x 96 inch
Compressive Strength	Minimum 10 psi
Water Absorption	In accordance with ANSI/ASTM D2842 2 percent by volume maximum
Edges	Square edges.
Facing	None

### 2.03 MANUFACTURERS - ADHESIVES (As recommended)

### 2.04 ACCESSORIES

- A. Tape: Bright aluminum Polyethylene Polyester self- adhering type, mesh reinforced, 2 inch wide.
- B. Insulation Fasteners: Impale clip of galvanized steel, to be mechanically fastened to surface to receive board insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify site conditions under provisions of GENERAL CONDITIONS.
- B. Verify that substrate, adjacent materials, and insulation boards are dry and ready to receive insulation.
- C. Verify substrate surface is flat, free of honeycomb, fins, and irregularities.

### 3.02 INSTALLATION - EXTERIOR MASONRY WALLS

- A. Install boards on inside wall surface, vertically. Place membrane surface of insulation against adhesive. Block in between vertical 'Z' metal furring members and push into adhesive.
- B. Place boards in a method to maximize contact bedding. Stagger end joints. Butt edges and ends tight to adjacent board and to protrusions.

### 3.03 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of GENERAL CONDITIONS.
- B. Do not permit Work to be damaged prior to covering insulation.

END OF SECTION

## SECTION 07611

### SHEET METAL STANDING SEAM ROOFING (To match existing Base metal roofing for color and product) (See Alternate #1)

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Precoated galvanized steel roofing and associated flashings.
- B. Counterflashings.
- C. Ridge and eave caps and flashings.

##### 1.02 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

- A. Furnish counterflashings.
- B. Furnish flashing reglets and accessories.

##### 1.03 RELATED SECTIONS

- A. Section 07900 - Joint Sealers.
- B. Section 09900 - Painting: Prime and finish painting.

##### 1.04 REFERENCES

- A. ASTM A361 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process for Roofing and Siding.
- B. ASTM A446 - Steel Sheet, Zinc Coated, (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.
- C. ASTM D226 - Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- D. NAAMM - Metal Finish Handbook.
- E. NRCA (National Roofing Contractors Association) - Roofing Manual.
- F. SMACNA - Architectural Sheet Metal Manual.

##### 1.06 SUBMITTALS

- A. Submit samples under provisions of GENERAL CONDITIONS.
- B. Submit two samples 12 x 18 inch in size of metal roofing mounted on plywood backing and illustrating typical flat standing seam, external corner, ridge, junction to vertical dissimilar surface, material, and finish.
- C. Submit specified Association installation instructions.

##### 1.07 QUALITY ASSURANCE

- A. Installer: Company specializing in sheet metal roof installations with 3 years experience.

#### 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of GENERAL CONDITIONS.
- B. Store and protect products under provisions of GENERAL CONDITIONS.
- C. Stack preformed and prefinished material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- D. Prevent contact with materials during storage which may cause discoloration or staining.

#### 1.09 SEQUENCING AND SCHEDULING

- A. Coordinate with the work for installing flashing reglets.

#### 1.10 WARRANTY

- A. Provide two year warranty.
- B. Warranty: Include coverage for degradation of metal finish and water tightness.

### PART 2 PRODUCTS

#### 2.01 MANUFACTURERS

- A. Metal Sales.
- B. Berdidge.
- C. Steelco
- D. Substitutions: Under provisions of GENERAL CONDITIONS.

#### 2.02 SHEET MATERIALS

- A. Precoated Galvanized Steel Stand Seam: ASTM A446, Grade A, G90 zinc coating; 24 gage core steel, shop pre-coated with modified silicone coating of selected color.

#### 2.03 ACCESSORIES

- A. Fasteners: Concealed galvanized steel with neoprene washers. Finish exposed fasteners same as flashing metal.
- B. Underlayment: ASTM D226, D2178, No. 30 asphalt saturated roofing felt.
- C. Slip Sheet: Rosin sized building paper.
- D. Primer: Galvanized iron type.
- E. Protective Backing Paint: Bituminuous.
- F. Sealant: Acrylic type specified in Section 07900.
- G. Bedding Compound: Rubber-asphalt type.
- H. Plastic Cement: FS SS-C-153, Type I - Asphaltic base cement.

- I. Reglets: Recessed type, galvanized steel; face and ends covered with plastic tape.
- J. Solder: FS QQ-S-571 type.
- K. Flux: FS O-F-506.
- L. Metal clamp type snow stops to match roof.

#### 2.04 FABRICATION

- A. Form sections in 12" maximum width, true to shape, accurate in size, square, and free from distortion or defects.
- B. Fabricate cleats of same material as sheet, interlockable with sheet, per manufacturer's recommendations.
- C. Fabricate starter strips of same material as sheet, continuous, interlockable with sheet.
- D. Form pieces in longest practical lengths. (No horizontal end joints.)
- E. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- F. Form material with standing seams.
- G. Pretin edges of metal sheet. Solder shop formed metal joints. After soldering, remove flux. Wipe and wash solder joints clean. Weather seal joints.
- H. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
- I. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.
- J. Fabricate flashings to allow toe to extend 2 inches over roofing. Return and brake edges.
- K. Standing seam to be continuous at corners where turned down to fascia.
- L. Attach metal snow stops as per manufacturer's recommendation.

#### 2.05 SHOP FINISHING

- A. Shop prepare and prime exposed ferrous metal surfaces.
- B. Backpaint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

### PART 3 EXECUTION

#### 3.01 EXAMINATION

- A. Inspect roof deck to verify deck is clean and smooth, free of depressions, waves, or projections, properly sloped to eaves.
- B. Verify deck is dry. Verify flutes in steel deck are dry.
- C. Verify correct placement of wood nailers.
- D. Verify roofing membrane termination and base flashings are in place, sealed, and secure.

E. Beginning of installation means acceptance of existing conditions.

### 3.02 PREPARATION

A. Field measure site conditions prior to fabricating work.

B. Install starter and edge strips, and cleats before starting installation.

C. Install surface mounted reglets true to lines and levels. Seal top of reglets with sealant.

D. Protect elements surrounding work of this Section from damage or disfigurement.

### 3.03 INSTALLATION

A. Conform to drawing details included in NAAMM, SMACNA, NRCA manual.

B. Apply underlayment in 1 layer of 30 lb. felt.

C. Apply slip sheet in one layer, laid loose.

D. Cleat and seam all joints.

E. Use bedding compound for joints between metal and bitumen or metal and felts.

F. Aligning transverse joints of roofing sheets is not allowed.

G. Solder intersection joints. After soldering, wash metal clean with neutralizing solution and rinse with water.

H. Apply ice and water shield at all eaves.

I. Install snow stops in areas above entry doors; see drawings.

### 3.04 STANDING SEAM ROOFING

A. Conform to SMACNA details, Plates 85, 86, and 87.

### 3.05 FLASHINGS

A. Conform to SMACNA details, Plates 54.

B. Seal metal joints watertight.

### 3.06 FIELD QUALITY CONTROL

A. Field inspection will be performed under supervision of manufacturer's representative.

B. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

END OF SECTION

## SECTION 07900

### JOINT SEALERS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Preparing sealant substrate surfaces.
- B. Sealant and backing.

##### 1.02 RELATED SECTIONS

- A. Section 08111 - Standard Steel Framing: Sealants used in conjunction with door frames.

##### 1.03 REFERENCES

- A. ASTM C790 - Use of Latex Sealing Compounds.
- B. FS TT-S-00227 - Sealing Compound: Elastomeric Type, Multi-Component.

##### 1.04 SUBMITTALS

- A. Submit product data under provisions of GENERAL CONDITIONS.
- B. Submit product data indicating sealant chemical characteristics, performance criteria, limitations, and color availability.

##### 1.05 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum 3 years documented experience.
- B. Conform to Sealant and Waterproofers Institute requirements for materials and installation.

##### 1.06 ENVIRONMENTAL REQUIREMENTS

- A. Do not install solvent curing sealants in enclosed building spaces.
- B. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

##### 1.07 SEQUENCING AND SCHEDULING

- A. Coordinate the work of this Section with all Sections referencing this Section.

##### 1.08 WARRANTY

- A. Provide 3 year warranty.
- B. Warranty: Include coverage of installed sealants and accessories which fail to achieve air tight and watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

#### PART 2 PRODUCTS

##### 2.01 SEALANTS

- A. Polysulphide Sealant: FS TT-S-00227, Type II - non-sag, Class A; white color; manufactured by Thiokol; color to match surrounding surfaces.

## 2.02 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: ANSI/ASTM D1056; round, cell polyethylene foam rod; oversized 30 to 50 percent larger than joint width.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that surfaces and joint openings are ready to receive work and field measurements are as shown on Drawings and recommended by the manufacturer.
- B. Beginning of installation means installer accepts existing surfaces.

### 3.02 PREPARATION

- A. Clean and prime joints in accordance with manufacturer's instructions.
- B. Remove loose materials and foreign matter which might impair adhesion of sealant.
- C. Verify that joint backing and release tapes are compatible with sealant.
- D. Perform preparation in accordance with sealant manufacturer's instructions.
- E. Protect elements surrounding the work of this Section from damage or disfiguration.

### 3.03 INSTALLATION

- A. Install sealant in accordance with manufacturer's instructions.
- B. Measure joint dimensions and size materials to achieve required width/depth ratios.
- C. Install joint backing to achieve a neck dimension no greater than 1/3 the joint width.
- D. Install bond breaker where joint backing is not used.
- E. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- G. Tool joints concave.

### 3.04 CLEANING AND REPAIRING

- A. Clean work under provisions of GENERAL CONDITIONS.
- B. Clean adjacent soiled surfaces.

C. Repair or replace defaced or disfigured finishes caused by work of this Section.

3.05 PROTECTION OF FINISHED WORK

A. Protect finished installation under provisions of GENERAL CONDITIONS.

B. Protect sealants until cured.

END OF SECTION

## SECTION 08111

### STANDARD STEEL DOOR FRAMES

#### PART 1 GENERAL

##### 1.01 WORK INCLUDED

- A. Non-rated frames for doors.

##### 1.02 RELATED WORK

- A. Section 08712 - Hardware.
- B. Section 09900 - Painting: Field painting of door frames.

##### 1.03 REFERENCES

- A. ASTM E152 - Methods of Fire Tests of Door Assemblies.
- B. DHI - Door Hardware Institute: The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.
- C. SDI-100 - Standard Steel Doors and Frames.
- D. SDI-105 - Recommended Erection Instructions for Steel Frames.

##### 1.04 QUALITY ASSURANCE

- A. Conform to requirements of SDI-100.

##### 1.05 SUBMITTALS

- A. Submit shop drawings and product data under provisions of GENERAL CONDITIONS.
- B. Indicate frame configuration, anchor types and spacings, location of cutouts for hardware, reinforcement, and finish.
- C. Submit manufacturer's installation instructions under provisions of GENERAL CONDITIONS.

##### 1.06 DELIVERY, STORAGE AND PROTECTION

- A. Protect products under provisions of GENERAL CONDITIONS.
- B. Protect frames with resilient packaging sealed with heat shrunk plastic.
- C. Break seal on-site to permit ventilation.

#### PART 2 PRODUCTS

##### 2.01 ACCEPTABLE MANUFACTURERS

- A. Amweld
- B. Republic
- C. Kewanee

- D. Steelcraft
  - E. Substitutions: Under provisions of GENERAL CONDITIONS.
- 2.02 DOOR FRAMES
- A. Frames: 16 gage thick material, core thickness to accommodate wall and door construction.
- 2.03 ACCESSORIES
- A. Rubber Silencers Resilient rubber.
- 2.04 PROTECTIVE COATINGS
- A. Primer: Zinc chromate baked gray primer type.
- 2.05 FABRICATION
- A. Fabricate frames as welded unit type.
  - B. Fabricate frames with hardware reinforcement plates welded in place.
  - C. Prepare frame for silencers. Provide three single rubber silencers for single doors on strike side.
- 2.06 FINISH
- A. Primer: Baked on.
- PART 3 EXECUTION
- 3.01 INSTALLATION
- A. Install frames in accordance with SDI-105.
  - B. Coordinate with wallboard, and wall construction for anchor placement.
- 3.02 TOLERANCES
- A. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.
- 3.03 ADJUSTING AND CLEANING
- A. Adjust hardware for smooth and balanced door movement.

END OF SECTION

SECTION 08712

DOOR HARDWARE

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Hardware for doors.

1.02 WORK FURNISHED BUT INSTALLED UNDER OTHER SECTIONS

- A. Furnish templates to Section 08111 - Standard Frames for doors.
- B. Furnish door hardware to Section 06001 - Carpentry Work for installation.

1.03 RELATED WORK

- A. Section 06001 - Carpentry Work: Door frames.
- B. Section 08111 - Standard Galvanized Steel Door Frames.

1.04 REFERENCES

- A. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.
- B. BHMA - Builders' Hardware Manufacturers Association.
- C. DHI - Door and Hardware Institute.
- B. NFPA 101 - Life Safety Code.
- E. SDI - Steel Door Institute.

1.05 COORDINATION

- A. Coordinate work of this Section with other directly affected Sections involving manufacturer of any internal reinforcement for door hardware.

1.06 QUALITY ASSURANCE

- A. Manufacturers: Companies specializing in manufacturing door hardware with minimum three years experience.
- B. Hardware Supplier: Company specializing in supplying commercial door hardware with three years experience and approved by manufacturer.
- C. Hardware Supplier Personnel: Employ a qualified person to assist in the work of this Section.

1.07 REGULATORY REQUIREMENTS

- A. Conform to I. B. C. and A. D. A. for requirements.
- B. Conform to the applicable sections of Chapter 5 of NFPA 101.

## 1.08 SUBMITTALS

- A. Submit schedule, shop drawings, and product data under provisions of GENERAL CONDITIONS.
- B. Indicate locations and mounting heights of each type of hardware to comply with handicapped and State of Utah standards.
- C. Provide product data on specified hardware.
- D. Submit manufacturer's parts lists, templates, and installation instructions.

## 1.09 OPERATION AND MAINTENANCE DATA

- A. Submit operation and maintenance data under provisions of GENERAL CONDITIONS.
- B. Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

## 1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of GENERAL CONDITIONS.
- B. Store and protect products under provisions of GENERAL CONDITIONS.
- C. Package hardware items individually; label and identify package with door opening code to match hardware schedule.
- D. Deliver keys to Owner by security shipment direct from hardware supplier.
- E. Protect hardware from theft by cataloging and storing in secure area.

## 1.11 WARRANTY

- A. Provide five year warranty.
- B. Warranty: Include coverage of door closers, locksets, cylinders, and hinges.

## 1.12 MAINTENANCE MATERIALS

- A. Provide special wrenches and tools applicable to each different or special hardware component.
- B. Provide maintenance tools and accessories supplied by hardware component manufacturer.

## PART 2 PRODUCTS

### 2.01 ACCEPTABLE SUPPLIERS

- A. Corbin
- B. Russwin
- C. Sargeant
- D. Best
- E. Substitutions: Under provisions of GENERAL CONDITIONS and Architect approval (5) working

days prior to bidding.

## 2.02 ACCEPTABLE MANUFACTURERS

- A. Hinges: Stanley, Hagar, Corbin
- B. Latch Sets: Best, Corbin, Russwin (Note: Latch sets must have 'Best' key cores to match Guard keying system).
- C. Substitutions: Under provisions of GENERAL CONDITIONS and Architect approval (5) working days prior to bidding. Approval by State, National Guard required.

## 2.03 KEYING

- A. Door Locks: Keyed in like-groups and Master keyed to existing building system including construction keying.
- B. Supply 2 keys for each lock.
- C. Supply keys in the following quantities:
  - 1. 2 master keys.
  - 2. 2 construction keys.

## 2.04 FINISHES

- A. Finishes are identified in Schedule at end of this Section.

## PART 3 EXECUTION

### 3.01 INSPECTION

- A. Verify that doors and frames are ready to receive work and dimensions are as indicated on shop drawings.
- B. Beginning of installation means acceptance of existing conditions.

### 3.02 INSTALLATION

- A. Install hardware in accordance with manufacturer's instructions.
- B. Use the templates provided by hardware item manufacturer.
- C. Mounting heights for hardware from finished floor to center line of hardware item:
  - 1. Locksets: 40-5/16 inches
  - 2. Push/Pulls: 45 inches
  - 3. Dead Locks: 48 inches
  - 4. Panic Devices: 40-5/16 inches
- D. Conform to ANSI A117.1 for positioning requirements for the handicapped.

### 3.03 SCHEDULE

- A. See Drawings, Door Schedule, and Hardware Groups.

END OF SECTION

SECTION 09260

GYPSUM BOARD SYSTEMS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Stud wall framing.
- B. Gypsum board.
- C. Outside gypboard on 'Z' furring and insulation.
- D. Taped and sanded joint treatment.

1.02 RELATED WORK

- D. Section 06112 - Framing and Sheathing
- B. Section 07212 - Board Insulation: Thermal insulation.
- C. Section 08111 - Standard Steel Door Frames.

1.03 REFERENCES

- A. ANSI/ASTM C36 - Gypsum Wallboard.
- B. ANSI/ASTM C475 - Joint Treatment Materials for Gypsum Wallboard Construction.
- C. ANSI/ASTM C754 - Installation of Framing Members to Receive Screw Attached Gypsum Wallboard, Backing Board, or Water Resistant Backing Board.
- D. GA-201 - Gypsum Board for Walls and Ceilings.
- E. GA-216 - Recommended Specifications for the Application and Finishing of Gypsum Board.

1.04 QUALITY ASSURANCE

- A. Applicator: Company specializing in gypsum board systems work with three years experience.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - GYPSUM BOARD SYSTEM

- A. U. S. Gypsum Co.
- B. Other acceptable manufacturers offering equivalent products:
  - 1. Georgia Pacific.
  - 2. National Gypsum.
- C. Substitutions: Under provisions of GENERAL CONDITIONS.

2.02 FRAMING MATERIALS

- A. Studs: Wood; structural grade. See Section 06112.
- B. Furring: 1-1/2" galvanized 'Z' studs at top and bottom bracks.

- C. Fasteners: ANSI/ASTM C646.

## 2.03 GYPSUM BOARD MATERIALS

- A. Standard Gypsum Board: ANSI/ASTM C36; 5/8 inch thick, maximum permissible length; ends square cut, tapered edges.
- B. Fire Rated Gypsum Board: ANSI/ASTM C36; fire resistive type, UL rated; 5/8 inch thick, maximum permissible length; ends square cut, tapered edges. Ceilings and walls down to top of ceramic tile.

## 2.04 ACCESSORIES

- A. Corner Beads: Metal.
- B. Edge Trim: GA 201 and GA 216 bead.
- C. Joint Materials: ANSI/ASTM C475; reinforcing tape, joint compound, adhesive, water, and fasteners.

## PART 3 EXECUTION

### 3.01 INSPECTION

- A. Verify that site conditions are ready to receive work and opening dimensions are as indicated on drawings.
- B. Beginning of installation means acceptance of existing surfaces and substrate.

### 3.02 FRAMING INSTALLATION

- A. Install studding in accordance with ANSI/ASTM C754.
- B. Stud Spacing: 16 inches on center.
- C. Partition Heights: Varies above finished floors.
- D. Door Opening Framing: Install double studs at door frame jambs. Install stud tracks on each side of opening, at frame head height, and between studs and adjacent studs.
- E. Blocking: Bolt or screw steel channels to studs. Install blocking for support of plumbing fixtures, toilet partitions, wall cabinets, toilet accessories, and hardware. Wood which is in contact with concrete is to be treated.
- F. Coordinate installation of bucks, anchors, blocking, electrical and mechanical work placed in or behind partition framing.

### 3.03 EXTERIOR WALL FURRING INSTALLATION

- A. Install in accordance with ANSI/ASTM C754.
- B. Install floor and ceiling 1-1/2" tracks and vertical 1-1/2" 'Z' metal studs spaced at 24" o.c. with rigid 1-1/2" insulation; see also Section 07212
- C. Reinforce around windows and doors. Return gypboard back to existing windows.

### 3.04 GYPSUM BOARD INSTALLATION

- A. Install gypsum board in accordance with manufacturer's instructions.

- B. Erect single layer fire rated gypsum board horizontally (long dimension at right angles to framing members) with edges and ends occurring over firm bearing on both walls and ceilings.
- C. Use screws when fastening gypsum board to metal furring or ceiling framing and metal studs.
- D. Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials as indicated.

3.05 JOINT TREATMENT

- A. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
- B. Feather coats onto adjoining surfaces so that camber is maximum 1/16 inch.
- C. Taping, filling, and sanding is not required at surfaces behind adhesive applied ceramic tile.

3.05 TOLERANCES

- A. Maximum Variation from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 09650

RESILIENT FLOORING & RUBBER BASE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient tile flooring.
- B. Resilient base.

1.02 RELATED SECTIONS

- A. Section 06112 - Carpentry: Wood framing.

1.03 REFERENCES

- A. FS L-F-475 - Floor Covering, Vinyl Surface (Tile), with Backing.
- B. FS SS-T-312 - Tile, Floor: Vinyl Composition.
- C. FS SS-W-40 - Wall Base: Rubber and Vinyl Plastic.

1.04 REGULATORY REQUIREMENTS

- A. Conform to State and I. B. C. for flame/ fuel/smoke rating requirements.

1.05 SUBMITTALS

- A. Submit samples under provisions of GENERAL CONDITIONS.
- B. Submit two samples 3 x 3 inches in size, illustrating color and pattern for each floor material specified.
- C. Submit two 4-inch long samples of base material for each color specified.
- D. Submit manufacturer's installation instructions.

1.06 OPERATION AND MAINTENANCE DATA

- A. Submit cleaning and maintenance data under provisions of GENERAL CONDITIONS.
- B. Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Store materials for three days prior to installation in area of installation to achieve temperature stability.
- B. Maintain ambient temperature required by adhesive manufacturer three days prior to, during, and 24 hours after installation of materials.

1.08 EXTRA MATERIALS

- A. Provide 8 lineal feet of base of each material specified.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS - TILE FLOORING

- A. Armstrong.
- B. Azrock.
- C. GAF.
- D. Substitutions: Under provisions of GENERAL CONDITIONS.

### 2.02 TILE FLOORING MATERIALS

- A. Vinyl Composition Tile: FS SS-T-312, Type IV, Composition 1; 12 x 12 inch, 1/8 inch thick; marbled design.

### 2.03 ACCEPTABLE MANUFACTURERS - BASE MATERIALS

- A. Flexcove.
- B. Azrock.
- C. Armstrong.
- D. Substitutions: Under provisions of GENERAL CONDITIONS.

### 2.04 BASE MATERIALS

- A. Base: FS SS-W-40, Type I rubber, 4 inch high; 1/8 inch thick; top set coved and toeless; premolded external corners. NOTE: Coved for VC tile and toeless for carpet.
- B. Base Accessories: Premolded end stops and external corners, of same material, size, and color as base.

### 2.05 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by flooring material manufacturer.
- B. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.
- C. Edge Strips: Flooring material.
- D. Sealer and Wax: Types recommended by flooring manufacturer.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that surfaces are smooth and flat with maximum variation of 1/8 inch in 10 ft, and are ready to receive Work.
- B. Verify concrete floors are dry to a maximum moisture content of 7 percent, and exhibit negative alkalinity, carbonization, or dusting.
- C. Beginning of installation means acceptance of existing substrate and site conditions.

### 3.02 PREPARATION

- A. Remove subfloor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with subfloor filler.
- B. Apply, trowel, and float filler to leave a smooth, flat, hard surface.
- C. Prohibit traffic from area until filler is cured.
- D. Vacuum clean substrate.
- E. Apply primer where necessary.

### 3.03 INSTALLATION - TILE MATERIAL

- A. Install in accordance with manufacturers' instructions.
- B. Mix tile from container to ensure shade variations are consistent.
- C. Spread only enough adhesive to permit installation of materials before initial set.
- D. Set flooring in place, press with heavy roller to attain full adhesion.
- E. Lay flooring with joints and seams parallel to building lines to produce symmetrical tile patterns.
- F. Install tile to square grid pattern with all joints aligned, with pattern grain alternating with adjacent unit to produce basket weave pattern. Allow minimum 1/2 full size tile width at room or area perimeter.
- G. Terminate flooring at centerline of door openings where adjacent floor finish is dissimilar.
- H. Install edge strips at unprotected or exposed edges, and where flooring terminates.
- I. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

### 3.04 INSTALLATION - BASE MATERIAL

- A. Fit joints tight and vertical. Maintain minimum measurement of 18 inches between joints.
- B. Miter internal corners. At external corners, use premolded units. At exposed ends use premolded units.
- C. Install base on solid backing. Bond tight to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

### 3.05 PROTECTION

- A. Prohibit traffic on floor finish for 48 hours after installation.

### 3.06 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean, seal, and wax floor and base surfaces in accordance with manufacturer's instructions.

END OF SECTION

SECTION 09688

CARPET-GLUE DOWN

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Carpeting glue down method.

1.02 REFERENCES

- A. ANSI/ASTM E648 - Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.
- B. ASTM E84 - Surface Burning Characteristics of Building Materials.
- C. FS DDD-C-95 - Carpets and Rugs, Wool, Nylon, Acrylic, Modacrylic.
- D. FS DDD-C-0095 - Carpet and Rugs, Wool, Nylon, Acrylic, Modacrylic, Polyester, Polypropylene.
- E. FS DDD-C-1559 - Carpet, Loop, Low Pile Height, High Density, Woven or Tufted with Attached Cushioning.

1.03 SUBMITTALS

- A. Submit shop drawings and product data under provisions of GENERAL CONDITIONS.
- B. Indicate seaming plan, method of joining seams, direction of carpet.
- C. Provide product data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
- D. Submit samples under provisions of GENERAL CONDITIONS.
- E. Submit two samples 12 x 12 inch in size illustrating color and pattern for each carpet material specified.
- F. Submit manufacturer's installation instructions under provisions of GENERAL CONDITIONS.

1.04 OPERATION AND MAINTENANCE DATA

- A. Submit operation and maintenance data under provisions of GENERAL CONDITIONS.
- B. Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning and shampooing.

1.05 QUALITY ASSURANCE

- A. Manufacturer: State contract carpet (Wall 2 Wall, locate contractor/supplier) specializing in tufted carpet.
- B. Installer: Wall 2 Wall, Salt Lake City, Utah (801-288-2694).

1.06 REGULATORY REQUIREMENTS

- A. Conform to IBC code for carpet flamability requirements.
- B. Conform to ANSI/ASTM E648.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Store materials for three days prior to installation in area of installation to achieve temperature stability.
- B. Maintain minimum 70 degrees F. ambient temperature three days prior to, during, and 24 hours after installation of materials.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS

- A. Biglow (Cross Country) Broadloom.

### 2.02 MATERIALS

- A. Carpet: Type Olefin, Class Tufted.
  - 1. Gauge -1/10
  - 2. Pile Weight - 26.0 oz.
  - 3. Pile Thickness - 137 in.
  - 4. Solution dyed.
- B. Tufted Carpet: Conforming to Utah State contract carpet criteria.

### 2.03 ACCESSORIES

- A. Sub-floor Filler: White premix latex; type recommended by carpet manufacturer.
- B. Primers and Adhesives: Waterproof; of types recommended by carpet manufacturer.
- C. Edge Strips: Metal type, aluminum finish.
- D. Base Gripper: As recommended by manufacturer.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that substrate surfaces are smooth and flat with maximum variation of 1/8 inch in 10 feet and are ready to receive work.
- B. Verify concrete floors are dry to a maximum moisture content of 7 percent and exhibit negative alkalinity, carbonization, or dusting.
- C. Beginning of installation means acceptance of existing substrate and site conditions.

### 3.02 PREPARATION

- A. Remove floor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with sub-floor filler.
- B. Apply, trowel, and float filler to leave smooth, flat, hard surface.
- C. Prohibit traffic until filler is cured.
- D. Vacuum floor surface.

### 3.03 INSTALLATION

- A. Apply carpet and adhesive in accordance with manufacturer's instructions.

- B. Lay out rolls of carpet for approval.
- C. Verify carpet match before cutting to ensure minimal variation between dye lots.
- D. Double cut carpet to allow intended seam and pattern match. Make cuts straight, true, and unfrayed. Edge seam carpet at all areas.
- E. Locate seams in area of least traffic.
- F. Fit seams straight, not crowded or peaked, free of gaps.
- G. Lay carpet on floors with run of pile in same direction as anticipated traffic.
- H. Do not change run of pile in any room where carpet is continuous through a wall opening into another room. Locate change of color or pattern between rooms under door centerline.
- I. Cut and fit carpet around interruptions.
- J. Fit carpet tight to intersection with vertical surfaces without gaps.

3.04 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean and vacuum carpet surfaces.

3.05 PROTECTION

- A. Prohibit traffic from carpet areas for 24 hours after installation.

END OF SECTION

## SECTION 09900

### PAINTING

#### PART 1 GENERAL

##### 1.01 WORK INCLUDED

- A. Surface preparation.
- B. Surface finish schedule.
- C. Color selection schedule furnished by Architect or Owner.

##### 1.02 RELATED WORK

- A. Section 05120 - Miscellaneous Steel and 08111 - Standard Door Frames: Shop primed items.

##### 1.03 REFERENCES

- A. ANSI/ASTM D16 - Definitions of Terms Relating to Paint, Varnish, Laquer, and Related Products.
- B. ASTM D2016 - Test Method for Moisture Content of Wood.

##### 1.04 DEFINITIONS

- A. Conform to ANSI/ASTM D16 for interpretation of terms used in this Section.

##### 1.05 QUALITY ASSURANCE

- A. Product Manufacturer: Company specializing in manufacturing quality paint and finish products with three years experience.
- B. Applicator: Company specializing in commercial painting and finishing with three years experience.

##### 1.06 REGULATORY REQUIREMENTS

- A. Conform to local code for flame/fuel/smoke rating requirements for finishes.

##### 1.07 SUBMITTALS

- A. Submit product data under provisions of GENERAL CONDITIONS.
- B. Provide product data on all finishing products.
- C. Submit samples for color and product approval prior to commencing work.
- D. Submit two samples 2 X 2 inch in size illustrating range of colors available for each surface finishing product scheduled, for selection.

##### 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of GENERAL CONDITIONS.
- B. Store and protect products under provisions of GENERAL CONDITIONS.
- C. Deliver products to site in sealed and labeled containers; inspect to verify acceptance.



## PART 3 EXECUTION

### 3.01 INSPECTION

- A. Verify that surfaces and substrate conditions are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- C. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
  - 1. Gypsum Wallboard: 12 percent.
  - 2. Interior Located Wood: 15 percent, measured in accordance with ASTM D2016.
  - 3. Concrete Floors and Concrete Block: 12 percent.
- D. Beginning of installation means acceptance of existing surfaces and substrate.

### 3.02 PREPARATION

- A. Remove electrical plates, hardware, light fixture trim, and fittings prior to preparing surfaces or finishing.
- B. Correct minor defects and clean surfaces which affect work of this Section.
- C. Shellac and seal marks which may bleed through surface finishes.
- D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- E. Concrete Floors: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
- F. Gypsum Board Surfaces: Latex fill minor defects. Spot prime defects after repair.
- G. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- H. Uncoated Steel and Iron Surfaces: Remove grease, scale, dirt, and rust. Where heavy coatings of scale are evident, remove by wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.
- I. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
- J. Interior Wood Items Scheduled to Receive Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.
- K. Metal Doors Scheduled for Painting: Seal top and bottom edges with primer.

### 3.03 PROTECTION

- A. Protect elements surrounding the work of this Section from damage or disfiguration.
- B. Repair damage to other surfaces caused by work of this Section.

- C. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces.
- D. Remove empty paint containers from site daily.

#### 3.04 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Do not apply finishes to surfaces that are not dry.
- C. Apply each coat to uniform finish.
- D. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
- E. Sand lightly between coats to achieve required finish.
- F. Allow applied coat to dry before next coat is applied.
- G. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- H. Prime back surfaces of interior and exterior woodwork with primer paints.
- I. Prime back surfaces of interior woodwork scheduled to receive stain or varnish finish with glass varnish reduced 25 percent with mineral spirits.

#### 3.05 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Paint shop primed equipment.
- B. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- C. Replace identification markings on mechanical or electrical equipment when painted accidentally.
- D. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.
- E. Replace electrical plates, hardware, light fixture trim, and fittings removed prior to finishing.

#### 3.06 CLEANING

- A. As Work proceeds, promptly remove paint where spilled, splashed, or spattered.
- B. During progress of Work maintain premises free of unnecessary accumulation of tools, equipment, surplus materials, and debris.
- C. Collect cotton waste, cloths, and material which may constitute a fire hazard, place in closed metal containers and remove daily from site.

#### 3.07 SCHEDULE - INTERIOR SURFACES

- A. Wood - Painted
  1. One coat alkyd prime sealer.
  2. Two coats alkyd enamel, eggshell.

- B. Steel - Primed
  - 1. Touch-up with original primer.
  - 2. Two coats alkyd enamel, semi-gloss.
  
- C. Existing Painted Surfaces
  - 1. Two coats acrylic enamel, semi-gloss
  
- D. New Gypsum Board
  - 1. One coat acrylic primer sealer.
  - 2. Two coats acrylic enamel, semi-gloss

3.08 SCHEDULE - COLORS

- A. To be scheduled by Architect at a later date.

END OF SECTION

## SECTION 10800

### TOILET ROOM ACCESSORIES AND MISCELLANEOUS HARDWARE

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Toilet Accessories.
- B. Toilet Room mirrors.
- C. Attachment hardware.
- D. Miscellaneous hardware.

##### 1.02 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

- A. Section 09260 - Gypsum Board System: Installation of backing plate reinforcement.

##### 1.03 RELATED SECTIONS

- A. Section 09260 - Gypsum Board System: In wall framing and plates for support of accessories.

##### 1.04 REFERENCES

- A. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible To and Usable by Physically Handicapped People.
- B. ANSI/ASTM A123 - Zinc (Hot-Dip Galvanized) Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars and Strips.
- C. ASTM A167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.

##### 1.05 SUBMITTALS

- A. Submit product data under provisions of GENERAL CONDITIONS.
- B. Provide product data on accessories describing size, finish, details of function, attachment methods.

##### 1.06 REGULATORY REQUIREMENTS

- A. Conform to applicable construction and handicapped codes for installing work in conformance with ANSI A117.1 and State.

##### 1.07 SEQUENCING AND SCHEDULING

- A. Coordinate the work of this Section with the placement of internal wall reinforcement and reinforcement of toilet partitions to receive anchor attachments.

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURERS

- A. Bobrick

- B. Bradley
- C. Hall Mack
- D. Quality or Ives
- E. Substitutions: Under provisions of GENERAL CONDITIONS.

## 2.02 MATERIALS

- A. Sheet Steel: ANSI/ASTM A366.
- B. Stainless Steel Sheet: ASTM A167, Type 304.
- C. Tubing: ASTM A269, stainless steel.
- D. Adhesive: Contact type, waterproof.
- E. Fasteners, Screws, and Bolts: Hot dip galvanized tamper proof.
- F. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

## 2.03 FABRICATION

- A. Weld and grind smooth joints of fabricated components.
- B. Form exposed surfaces from single sheet of stock, free of joints.
- C. Form surfaces flat without distortion. Maintain flat surfaces without scratches or dents.
- D. Back paint components where contact is made with building finishes to prevent electrolysis.
- E. Shop assemble components and package complete with anchors and fittings.
- F. Provide steel anchor plates, adapters, and anchor components for installation.
- G. Hot dip galvanize exposed and painted ferrous metal and fastening devices.

## 2.04 FACTORY FINISHING

- A. Galvanizing: ANSI/ASTM A123 and A386 to 1.25 oz/sq yd.
- B. Shop Primed Ferrous Metals: Pretreat and clean, spray apply one coat primer and bake.
- C. Enamel: Pretreat to clean condition, apply one coat primer and minimum two coats electrostatic baked enamel.
- D. Chrome/Nickel Plating: ANSI/ASTM B456, Type SC 2 satin finish.
- E. Stainless Steel: No. 4 satin luster finish.

## PART 3 EXECUTION

### 3.01 EXAMINATION

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

drawings.

- B. Beginning of installation means acceptance of existing conditions and substrate.

### 3.02 PREPARATION

- A. Deliver inserts and rough-in frames to site at appropriate time for building-in.
- B. Provide templates and rough-in measurements as required.
- C. Verify exact location of accessories for installation.

### 3.03 INSTALLATION

- A. Install fixtures, accessories and items in accordance with manufacturers' instructions.
- B. Install plumb and level, securely and rigidly anchored to substrate.

### 3.04 SCHEDULE

- A. Furnish and install the following: (See drawings for quantity)

For Rest Room (all fasteners concealed and vandal proof):

1. Robe Hook: Chrome-plated satin finish, Bobrick #B-2116, complete with concealed fastening, similar by Hall-Mack or Charles Parker. One in Toilet Room by lavatory, mounted at 48".
2. Mirror: Polished plate glass in stainless steel frames with concealed fasteners. Bobrick #B-165, 24" x 34" or similar by Charles Parker or Hall-Mack. One above lavatory at mounting height as noted on the drawings. See detail.
3. Paper Dispenser: One each Toilet Stall, stainless steel satin finish with concealed fastening. Bobrick B-288 or equivalent by accepted manufacturers.
4. Paper Towel Dispenser: Bobrick B262 or equivalent by accepted manufacturers.
5. Soap Dispenser: Bobrick B4112, surface mounted, or equivalent by accepted manufacturer.
6. Grab Bars: In toilet stall for handicapped shall be 1-1/2" round x 42" long at side and 36" long at rear, smooth, stainless steel rail complete with wall brackets. One in handicapped stall on wall nearest the water closet. Same as Bobrick B-620, Parker, Bradley, or Hall-Mack. 1-1/2" (not 2") standoff and smooth finish. Mount 2" above top of water closet.
7. Signage: Rest Room - Plastic blue background with white raised letters; munt at door handle side of doors at 60".

### 3.05 GUARANTEE

- A. Furnish one-year unconditional guarantee on these items and their operation. Supply Owner with written guarantee.

END OF SECTION

## DIVISION 15 - MECHANICAL

### SECTION 15010 GENERAL REQUIREMENTS

#### 1.01 GENERAL AND SPECIAL CONDITIONS

The General and Special conditions are hereby made a part of this Division.

#### 1.02 SCOPE

This work consists of, but is not limited to, the furnishing of all plant, labor, materials and equipment in connection with the installation of a complete plumbing system as shown on the drawings, herein specified, or both as follows:

General Mechanical Requirements - Section 15010

Plumbing - Section 15400

Plumbing Fixtures - Section 15450

#### 1.03 DRAWINGS AND SPECIFICATIONS

The plans and specifications are to be taken as an integral unit and items called for on one and not the other shall be furnished and installed as though shown and called for in both.

#### 1.04 ORDINANCES AND CODES

The work shall be installed in accordance with the Local, State and any other government code or ordinance that governs the type of work covered by these specifications. Work shall be in accordance with "International Plumbing Code", "International Mechanical Code" and U.L..

#### 1.05 FEES AND PERMITS

No fees or permits are required.

#### 1.06 WORKMANSHIP

Workmanship shall be the best quality of its kind for the respective industries, trades, crafts and practices and shall be acceptable in every respect to the Architect. Nothing contained herein shall relieve the Contractor from making good and perfect work in all details of the construction.

#### 1.07 SUBSTITUTIONS

The procedure for request and approval of substitute materials, as outlined in the General Conditions, shall be strictly adhered to.

#### 1.08 SCHEDULES OF MATERIAL AND EQUIPMENT

As soon as practicable, and within thirty (30) days after date of award of Contract and before commencement of work, a complete schedule of equipment and materials proposed for installation shall be submitted to the Architect by the Contractor for the Architect's approval or rejection. The schedules shall include catalogs, cuts, drawings and such other descriptive data or samples that are requested by the Architect. Five copies shall be submitted.

#### 1.09 REMOVAL OF DEBRIS

Upon completion of this Division of work, remove all surplus materials and rubbish. Clean all spots resulting from this work from hardware, floors, glass, walls, etc. Do all required patching, repair all work of other trades damaged by this division of work and leave the premises in a clean, orderly condition.

#### 1.10 UNDERGROUND WORK

The Contractor shall perform all excavating and backfilling necessary in the construction of ductwork, water and sewer lines. Backfilling and compacting shall be performed as outlined in Division 2. All pipes and fitting laid in trenches after backfilling is done shall be graded on the premises as directed.

1.11 CUTTING AND PATCHING

Any cutting, patching or filling necessary for the proper execution of this work shall be done by the Contractor. Where holes or recesses must be cut in walls, floors or ceilings, or any other part of the building, it shall be done by a competent workman in a neat and workmanlike manner. No rough or unsightly work will be allowed and cutting of the structural members shall be done only on approval of the Architect.

1.12 PIPE SLEEVES AND COLLARS

All pipes passing through floors, beams or wall are to be fitted with galvanized iron sleeves two (2) sizes larger than pipe passing through them. These sleeves are to be cast in the concrete or brick unless openings have been provided in precast concrete members.

1.13 FLOOR AND WALL PLATES

Where uninsulated pipes pass through floor, ceilings or partitions in the finished part of the building, chromium plates shall be provided on all pipe work.

1.14 PIPE LOCATION, ARRANGEMENT AND INSTALLATION

All hot and cold water pipe shall run overhead wherever possible or as noted on the drawings.

Where water pipe runs underground, it shall be Type "K" copper.

All piping throughout the building is to be arranged to permit free expansion and contraction without injury to pipe or connections.

All pipe shall be reamed at the ends and free of all inside scale or burrs.

Threads shall be cut clean and sharp and to a length equal to one and one-eighth (1-1/8) the length of the female thread receiving the pipe. The pipe shall be screwed in the full length of the female thread.

Pipe shall be made tight with thread lubricant worked into male thread only. Surplus material shall be wiped off and the joint left neat and clean. Lubricant shall be powdered graphite and linseed oil or plumbago and linseed oil.

All suspended piping shall be securely supported from the floor to ceiling at not more than ten foot (10') centers for two inches (2) and above and six foot (6') centers for one and one half inches (1-1/2") and below.

Hangers shall be malleable iron split ring adjustable type suspended by wrought iron rods proportional to the size of the pipe. Rods shall be suspended from the concrete inserts designed to set in place on the forms for concrete or form joints. Plumber's tape, chain or wire will not be permitted.

Outside pipe placed underground shall be buried three feet (3') minimum to protect against freezing or as noted on drawings.

Horizontal runs shall be graded 1/4" per foot or as shown on drawings.

1.15 VALVES

The valves are to be installed with stem above the horizontal unless otherwise shown.

Unless otherwise shown, all valves are to be globe valves.

Valves located outside the building shall be installed in cast iron curb boxes with cast iron cover.

Valves shall be Jenkins, Crane or Walworth.

Access panels shall be provided for all valves, etc., where necessary to perform necessary repair or adjustments. Size shall be as required to perform work.

1.16 FLASHING

All pipes passing through the roof shall be neatly flashed and counter-flashed with water tight #4 pound sheet lead or sixteen (16) ounce copper flashing, fitting snugly around the pipes and secured to pipe with mechanical pipe clamp. The flange around the base shall be at least sixteen inches (16) square.

1.17 ELECTRICAL WIRING

This Contractor is to furnish and set all motors that pertain to this division of the specifications, but all power wiring and disconnects will be furnished and installed by the Electrical Contractor.

Exceptions for furnishing of starters by the Electrical Contractor will be in those pieces of equipment where the starter is incorporated into package units. See individual equipment descriptions in specifications for those exceptions.

1.18 TESTS AND ADJUSTMENTS

Upon the completion of the job, make all necessary adjustments to the system

Following these adjustments, run tests as in actual services, of at least eight (8) hours duration during which all systems equipment shall function properly and to the satisfaction of the Owner.

Before any piping is covered, tests shall be made in presence of the Architect and any leaks or defective work corrected. No caulking or threaded work will be permitted. Waste and vent system shall be filled to the roof level with water and show no leaks for a period of one (1) hour. Like wise, the water supply system shall be subjected to the 100 psi pressure for four (4) hours and shall show no leaks..

The Contractor shall remove all stains or grease marks on walls, or elsewhere, caused by his workman or for which he is responsible. He shall also remove all stickers on fixtures, adjust all flush valves, pressure reducing valves, etc., and shall leave the premises in first class order.

1.19 GREASING AND OILING

Prior to placing the equipment in operation, the bearings on all motors, etc., shall be properly lubricated with a lubricant suitable for the service.

If the instructions are on bearings or equipment, the lubricant specified shall be used and instructions left on the equipment for the Owner's future use.

1.20 PAINTING

All equipment furnished in finished painted condition by the Contractor shall be left without mark or scratch.. Any necessary refinishing to match original shall be done. Do not paint over name plates, motors or serial numbers.

1.21 OPERATING INSTRUCTIONS AND CATALOG INFORMATION

The Contractor shall provide to Owner two copies of complete operating and maintenance instructions. A blueprint showing the operations of the control system shall be included in the above.

The Contractor shall compile in a loose leaf binder a catalog of every product used by him in the completion of the Contract, including all valves and specialties. At the completion of the work and before final acceptance by the Architect, he shall turn over to the Owner this compilation of catalog data. A double index shall be provided, one giving an alphabetical list of products for which catalogs are included and one giving and alphabetical list of all manufacturer's representatives, together with their addresses, whose products are included

in the work.

1.22 GUARANTEE

The Contractor shall guarantee the system for a period of one (1) year from date of final acceptance.

Make, free of charge, any repairs necessary due to defective workmanship or materials that may show during a period of one (1) year.

The Contractor's system shall be free from all noise in operation that may develop as the result of failure to construct the system in a workmanlike manner and in strict accordance with the drawings and these specifications.

END OF SECTION

## SECTION 15400 - PLUMBING

### 1.01 GENERAL AND SPECIAL CONDITIONS

The General and Special Conditions are hereby made a part of this division.

### 1.02 SCOPE

This Division shall include complete installation of the following:

A complete cold water and hot water distribution system to new and replaced fixtures.

A complete waste and vent system; tie into existing for new and existing fixtures.

Repair or replacement of any piping, insulation, etc., damaged by this project.

### 1.03 MATERIAL

All domestic cold water and hot water piping above grade shall be copper type "L" with wrought copper fittings. All cold water piping below grade shall be type "K" copper with wrought copper fittings. Water piping outside building shall be copper type "K". Solder shall be 95/5.

All soil, waste and vent piping inside building, and to 5'-0" outside building shall be spun service weight no-hub cast iron soil pipe with standard fittings. Pipe shall be coated inside and out with coat tar varnish. Mechanical joints shall be used.

All vent piping two inches (2") and smaller, except those below grade, shall be ASTM A-120 Schedule 40, galvanized steel pipe with malleable iron fittings. Vent piping 2-1/2" and larger or below grade shall be service weight cast iron.

Drain piping shall be type "M" copper with wrought copper fittings.

Where water, waste or events penetrate wood members or are supported by hangers, they shall be wrapped with 1/4" felt or neoprene equal to "trisulator" such that no piping shall be in direct contact with wood or steel.

### 1.04 TRAPS

Each fixture and appliance installed in the work and discharging water into the sewer or drainage lines shall have a seal trap arranged in connection with a complete venting system and installed so that all gases shall pass freely to the atmosphere with no pressure for siphon condition on the water seal.

### 1.05 VENTS

The entire system shall be properly vented to an atmosphere and discharge all gases at points not less than 12" above roof line. The main building drainage line and all soil and waste branch lines, together with each fixture vent line, shall be vented. The vent lines shall be joined together into the least practicable number of pipes to be projected through the roof, and where vent lines are joined or grouped in the common vent, lines shall be properly increased in size. The joining of vents shall be no lower than six (6") above the highest fixture. Each fixture shall be back vented on all gases to atmosphere. Vent lines shall be offset, if necessary, so that they will not pierce the roof at a point within 2'0" of the edge of the roof.

### 1.06 CLEANOUT

Full size cleanouts shall be installed at the base of each soil or rainwater stack and at the end of each horizontal run of sanitary piping. The distance between cleanouts in horizontal runs of piping shall not exceed 100'0". Install all other cleanouts where shown on the drawings and where required by State, Local, or National Plumbing Codes.

Cleanouts shall have iron bodies with threaded brass screw plugs. They shall be full size of the pipe lines in which they are installed up to and including four inches (4") in size. Cleanouts in lines over four inches (4") in size shall be four inches (4"). Cleanouts in ABS lines shall be of like materials.

All cleanouts shall be installed in locations easily accessible for roddings. Where stacks or other piping are concealed, cleanouts shall be installed above the floor with extension made to the finished wall surface.

Cleanouts shall be J.R. Smith Co. or equal in areas as follows:

- Finished Floors #4023 with nickel bronze top.
- Walls, toilet room and tile #4253.
- Exterior panel areas #4253.
- Concrete floors #4223 with cast iron top.

#### 1.07 VACUUM BREAKERS

All water outlets with hose ends shall be complete with vacuum breakers. Where vacuum breaker is not specified with fixture trim, the breaker shall be installed in the supply line to the fixture.

#### 1.08 DISINFECTING

After the entire system is completed, tested for pressure and just before the building is ready to be occupied, this Contractor shall disinfect the system as follows: After flushing the mains, introduce a water and chloride solution for a period of not less than three (3) hours before final flushing out of the system.

#### 1.09 TEST AND ADJUSTMENTS

The pressure shall remain on all parts of the system for a sufficient period of time to permit complete examination and inspection. All defects in materials and workmanship which appear during the test shall be promptly remedied and the test reapplied.

Any piping which is to be insulated, placed within the construction or otherwise concealed, shall be carefully tested before being permanently enclosed.

All testing shall be performed in the presence of the Architect and Plumbing Inspector and shall meet with their approval. Instruments required for making the tests shall be provided by this Contractor.

#### 1.10 PLUMBING FIXTURES

This Contractor shall furnish and install all fixtures shown or specified hereinafter and make all parts complete and leave the entire system in perfect working order. He shall clean and adjust all fixtures before leaving job. Any damaged or cracked fixtures shall be replaced at the Contractor's expense.

The fixtures shall be all new and complete as shown or described in catalog or required for the work, including accessible loose key compression stops above floor in supplies to all fixtures and cast brass "P" traps unless otherwise shown. Trim for all fixtures shall be chrome-plated and all trim shall match in design. All exposed piping occupied spaces shall be chrome-plated.

Supply faucets shall have renewable seats and barrels.

Stops shall be provided in all water lines to individual sinks, etc., as part of plumbing contract.

Provide all ground and supports for fixtures and equipment. Arrange with contractors for installation of built-in items, blocking and additional necessary supports. Pay all costs in connection therewith.

Vitreous China Fixtures to be twice-fired, all exposed surfaces with opaque vitreous glaze. Cast iron fixtures to be finished inside with acid-resisting porcelain enamel. See plans for Plumbing Fixture Schedule.

Fixtures are indicated on Plumbing Fixtures Schedule. Equivalent toilet fixtures manufactured by American Standard, Kohler, and Eljer are approved.

END OF SECTION

## SECTION 15450 - PLUMBING FIXTURES

### PART 1 GENERAL

#### 1.01 SUPPLEMENTAL DOCUMENTS

The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements apply to the work specified in this section.

Requirements of Section 15010, "General Requirements" apply to this section.

Requirements of Section 15400, "Plumbing Systems" apply to this section.

#### 1.02 SCOPE OF WORK

The work includes all necessary labor, materials, equipment, accessories, transportation, service fees and permits in providing plumbing fixtures in the building as shown on the drawings and as described below.

Furnish and install all plumbing fixtures, fixture trim, specialties, drains, etc., as indicated on the drawings for the complete plumbing system.

Connect plumbing fixtures to piping as indicated.

#### 1.03 CODES AND STANDARDS

All work included in the scope of this specification shall conform to the latest adopted versions of the applicable codes and standards, including the following:

International Plumbing Code  
International Building Code  
International Mechanical Code

#### 1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

Deliver plumbing fixtures individually wrapped in factory fabricated containers.

Handle plumbing fixtures carefully to prevent breakage, chipping and scoring the fixture finish. Don't install damaged plumbing fixtures, replace and return damaged units to manufacturer.

### PART 2 PRODUCT AND WORKMANSHIP

#### 2.01 TRAPS

Each plumbing fixture and piece of equipment requiring connection to the drainage system shall be equipped with a P-trap.

P-trap shall be compatible with the fixture. Traps, unless integral type or as noted otherwise, shall be cast iron, or of a recessed drainage pattern on threaded pipe. Furnish cleanout plugs on all traps above grade.

#### 2.02 PLUMBING FIXTURES

##### General

Plumbing fixtures shall be new with catalog number of American Standard being used unless noted otherwise.

The fixtures shall be complete as shown or described in catalog or as required for the work.

Where more than one type of fixture is indicated, selection is installer's option: but all fixtures of the same type

must be furnished by a single manufacturer.

The fixtures shall include accessible compression stops above floor in supplies to all fixtures and a minimum 17 gauge P-trap unless otherwise shown.

All exposed supply piping and piping from stops shall be chrome plated.

Supply faucets shall have renewable inserts.

All gooseneck faucet spouts must have a union type connection on the inlet and must be readily convertible from rigid to swing or swing to rigid without disturbing the faucet or fitting body.

Operating unit stems with spline connections for handles are not acceptable and all handles must be interchangeable.

Stops shall be provided in all water lines to individual sinks as part of the plumbing contract.

All fixtures shall be caulked to the floor or wall with a water resistant butyl runner caulking compound.

Carriers shall be provided for all wall hung equipment. Carrier shall have cast iron supports of either graphitic gray iron ductile iron, or malleable iron as indicated.

Where fixture supplies and drains penetrate walls, provide chrome plated cast brass escutcheons with set screw.

Comply with additional fixture requirements contained in the plumbing fixture schedule.

Approved Manufacturers:

Plumbing fixture:	American Standard: U.S. Plumbing Products Eljer Plumbingware Div., Household International Co. Kohler
Fixture Trim:	American Standard: U.S. Plumbing Products Chicago Faucet Co. Kohler Co.
Flush Valves:	Coyne & Delaney Co. Sloan Valve Co.
Fixture Seats:	Forbes-Wright Industries; Church Products Beneke Corp. Olsonite Corp.
Fixture Carriers:	J.R. Smith Zurn
Drains:	J.R. Smith Zurn ACO

Plumbing Fixtures

Water Closets

American Standard 2216.143, 1.6 GPF, floor mounted, tank type, vitreous china, elongated bowl, (2) bolt caps, 17" rim height.

Olsonite No. 95 open front seat with stainless steel hinge posts and concealed checks.

## Lavatory

1. Counter Top Fixture -
  - a. American Standard - 0491.019, ADA compliant or approved equal.
2. Fittings -
  - a. Faucet & Drain -
    - 1) Approved Accessories
      - a) Faucet by Sloan - Self-actuating ETF-80-2-LT.
      - b) Grid strainer drain with offset chrome plated tail piece.
      - c) Frost 5024-217 ga., chrome plated P-trap with wall plate.
      - d) Brass craft angle valve CR1912A, supplies, and stainless steel escutcheons.

## Urinals

1. Wall hung with coordinated concealed carrier.
  - a. Kohler K-4989-R.
  - b. Sloan-195-1 ES-S.
  - c. Mount one (1) urinal each Men's Restroom to ADA required height.

Hose Bibb - Standard below lavatory sink.

## Shower

1. Prefabricated insert 'LASCO' #1363-BFS, ADA, unit complete with fold-down ADA shower seat, ADA glass shower door, drain and shower control #2050.11; chrome with shower head.

## Flow Control Fittings:

Fittings are manufactured by Omni Products Inc., 9774 Crescent Center Drive, Rancho Cucamonga, California 91730 (714) 980-2626 or approved equal by American Standard, Kohler, or Eljer.

Fittings shall be vandal proof type and fit faucet spout of fixture used.

Fittings shall be vandal proof type and fit faucet spout of fixture used.

Fittings shall be used on all lavatories and sinks and shall limit flow to 0.5 GPM.

## PART 3

### EXECUTION

#### 3.01 PLUMBING FIXTURE INSTALLATION

Installer of plumbing fixtures must examine roughing in work domestic water and waste piping systems to verify actual locations of piping connections prior to installing fixtures. Also examine floors and conditions under which work is to be accomplished. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

Install plumbing fixtures and specialties of types indicated where shown and at indicated heights; in accordance with fixture manufacturer's written instruction, roughing in drawings, and within recognized industry practices. Ensure that plumbing fixtures comply with requirements and serve intended purposes. Comply with applicable requirements of the Local Plumbing Code pertaining to installation of plumbing fixtures.

Fasten plumbing fixtures securely to indicated supports of building structure, and ensure the fixtures are level and plumb.

Upon completion of installation of plumbing fixtures and after units are water pressurized, test fixtures to demonstrate capability and compliance with requirements. Correct all malfunctioning fixtures. If fixtures or accessories can not be corrected on site, remove and replace with new fixture and proceed with retesting.

Inspect each installed fixture and accessory for damage to finish. Restore and match finish to original condition. If fixture cannot be repaired on site, remove fixture and replace with new fixture. Feasibility and match will be determined by the Architect/Engineer. Remove cracked or dented fixtures and replace with new fixture.

Clean plumbing fixtures, trim, and strainers of dirt, and debris upon completion of installation.

Adjust water pressure at drinking fountains, faucets and flush valves to provide proper flow stream and specified flow capacity.

### 3.02 INSPECTION AND PREPARATION

Installer of plumbing fixture must examine roughing in work of domestic water and waste piping systems to verify actual locations of piping connections prior to installing fixtures. Also examine floors and conditions under which work is to be accomplished. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to the installer.

Install plumbing fixtures and specialties of types indicated where shown, and at indicated heights; in accordance with fixture manufacturer's written instructions, roughing in drawings and within recognized industry practices.

Ensure that plumbing fixtures comply with requirements and serve intended purpose. Comply with applicable requirements of the Local Plumbing Code pertaining to installation of plumbing fixtures.

Fasten plumbing fixtures securely to indicated supports of building structure, and ensure the fixtures are level and plumb.

### 3.03 CLEAN AND PROTECT

Clean plumbing fixtures of dirt and debris upon completion of installation.

Protect installed fixtures from damage during the remainder of the construction period.

### 3.04 DAMAGE BY LEAKS

The Contractor shall be responsible for all damage to any part of the premises caused by leaks or breaks in pipes or fixtures furnished and or installed under this section for a period of one year from date of acceptance of the work by the Owner. The Contractor shall make all necessary repairs to the Owner's satisfaction and at no cost to the Owner.

END OF SECTION

## SECTION 15450 - PLUMBING FIXTURES

### PART 1 GENERAL

#### 1.01 SUPPLEMENTAL DOCUMENTS

The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements apply to the work specified in this section.

Requirements of Section 15010, "General Requirements" apply to this section.

Requirements of Section 15400, "Plumbing Systems" apply to this section.

#### 1.02 SCOPE OF WORK

The work includes all necessary labor, materials, equipment, accessories, transportation, service fees and permits in providing plumbing fixtures in the building as shown on the drawings and as described below.

Furnish and install all plumbing fixtures, fixture trim, specialties, drains, etc., as indicated on the drawings for the complete plumbing system.

Connect plumbing fixtures to piping as indicated.

#### 1.03 CODES AND STANDARDS

All work included in the scope of this specification shall conform to the latest adopted versions of the applicable codes and standards, including the following:

- International Plumbing Code
- International Building Code
- International Mechanical Code

#### 1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

Deliver plumbing fixtures individually wrapped in factory fabricated containers.

Handle plumbing fixtures carefully to prevent breakage, chipping and scoring the fixture finish. Don't install damaged plumbing fixtures, replace and return damaged units to manufacturer.

### PART 2 PRODUCT AND WORKMANSHIP

#### 2.01 TRAPS

Each plumbing fixture and piece of equipment requiring connection to the drainage system shall be equipped with a P-trap.

P-trap shall be compatible with the fixture. Traps, unless integral type or as noted otherwise, shall be cast iron, or of a recessed drainage pattern on threaded pipe. Furnish cleanout plugs on all traps above grade.

#### 2.02 FLOOR DRAIN PANS

Floor drains shall have a three pound lead sheet pan 36 inches as noted. Floor drains with clamping collars shall be used where drains are cast in concrete.

#### 2.03 PLUMBING FIXTURES

##### General

Plumbing fixtures shall be new with catalog number of American Standard being used unless noted otherwise.

The fixtures shall be complete as shown or described in catalog or as required for the work.

Where more than one type of fixture is indicated, selection is installer's option: but all fixtures of the same type must be furnished by a single manufacturer.

The fixtures shall include accessible compression stops above floor in supplies to all fixtures and a minimum 17 gauge P-trap unless otherwise shown.

All exposed supply piping and piping from stops shall be chrome plated.

Supply faucets shall have renewable inserts.

All gooseneck faucet spouts must have a union type connection on the inlet and must be readily convertible from rigid to swing or swing to rigid without disturbing the faucet or fitting body.

Operating unit stems with spline connections for handles are not acceptable and all handles must be interchangeable.

Stops shall be provided in all water lines to individual sinks as part of the plumbing contract.

All fixtures shall be caulked to the floor or wall with a water resistant butyl runner caulking compound.

Carriers shall be provided for all wall hung equipment. Carrier shall have cast iron supports of either graphitic gray iron ductile iron, or malleable iron as indicated.

Where fixture supplies and drains penetrate walls, provide chrome plated cast brass escutcheons with set screw.

Comply with additional fixture requirements contained in the plumbing fixture schedule.

Approved Manufacturers:

Plumbing fixture:	American Standard: U.S. Plumbing Products Eljer Plumbingware Div., Household International Co. Kohler
Fixture Trim:	American Standard: U.S. Plumbing Products Chicago Faucet Co. Kohler Co.
Flush Valves:	Coyne & Delaney Co. Sloan Valve Co.
Fixture Seats:	Forbes-Wright Industries; Church Products Beneke Corp. Olsonite Corp.
Fixture Carriers:	J.R. Smith Zurn
Drains:	J.R. Smith Zurn ACO

Plumbing Fixtures

Water Closets (WC-1)

American Standard 2216.143, 1.6 GPF, floor mounted, tank type, vitreous china, elongated bowl, (2) bolt caps,

17" rim height.

Olsonite No. 95 open front seat with stainless steel hinge posts and concealed checks.

#### Lavatory (L-1)

1. Counter Top Fixture -
  - a. American Standard - 0491.019, ADA compliant or approved equal.
2. Fittings -
  - a. Faucet & Drain -
    - 1) Approved Accessories
      - a) Faucet by Sloan - Self-actuating ETF-80-2-LT.
      - b) Grid strainer drain with offset chrome plated tail piece.
      - c) Frost 5024-217 ga., chrome plated P-trap with wall plate.
      - d) Brass craft angle valve CR1912A, supplies, and stainless steel escutcheons.

#### Urinals (U-1)

1. Wall hung with coordinated concealed carrier.
  - a. Kohler K-4989-R.
  - b. Sloan-195-1 ES-S.
  - c. Mount one (1) urinal each Men's Restroom to ADA required height.

#### Hose Bibb (HB-1)

Zurn Z-1315 nonfreeze for wall thickness shown.

#### Flow Control Fittings:

Fittings are manufactured by Omni Products Inc., 9774 Crescent Center Drive, Rancho Cucamonga, California 91730 (714) 980-2626 or approved equal by American Standard, Kohler, or Eljer.

Fittings shall be vandal proof type and fit faucet spout of fixture used.

Fittings shall be vandal proof type and fit faucet spout of fixture used.

Fittings shall be used on all lavatories and sinks and shall limit flow to 0.5 GPM.

### PART 3

#### EXECUTION

##### 3.01 PLUMBING FIXTURE INSTALLATION

Installer of plumbing fixtures must examine roughing in work domestic water and waste piping systems to verify actual locations of piping connections prior to installing fixtures. Also examine floors and conditions under which work is to be accomplished. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

Install plumbing fixtures and specialties of types indicated where shown and at indicated heights; in accordance with fixture manufacturer's written instruction, roughing in drawings, and within recognized industry practices. Ensure that plumbing fixtures comply with requirements and serve intended purposes. Comply with applicable requirements of the Local Plumbing Code pertaining to installation of plumbing fixtures.

Fasten plumbing fixtures securely to indicated supports of building structure, and ensure the fixtures are level and plumb.

Upon completion of installation of plumbing fixtures and after units are water pressurized, test fixtures to

demonstrate capability and compliance with requirements. Correct all malfunctioning fixtures. If fixtures or accessories can not be corrected on site, remove and replace with new fixture and proceed with retesting.

Inspect each installed fixture and accessory for damage to finish. Restore and match finish to original condition. If fixture cannot be repaired on site, remove fixture and replace with new fixture. Feasibility and match will be determined by the Architect/Engineer. Remove cracked or dented fixtures and replace with new fixture.

Clean plumbing fixtures, trim, and strainers of dirt, and debris upon completion of installation.

Adjust water pressure at drinking fountains, faucets and flush valves to provide proper flow stream and specified flow capacity.

### 3.02 INSPECTION AND PREPARATION

Installer of plumbing fixture must examine roughing in work of domestic water and waste piping systems to verify actual locations of piping connections prior to installing fixtures. Also examine floors and conditions under which work is to be accomplished. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to the installer.

Install plumbing fixtures and specialties of types indicated where shown, and at indicated heights; in accordance with fixture manufacturer's written instructions, roughing in drawings and within recognized industry practices.

Ensure that plumbing fixtures comply with requirements and serve intended purpose. Comply with applicable requirements of the Local Plumbing Code pertaining to installation of plumbing fixtures.

Fasten plumbing fixtures securely to indicated supports of building structure, and ensure the fixtures are level and plumb.

### 3.03 CLEAN AND PROTECT

Clean plumbing fixtures of dirt and debris upon completion of installation.

Protect installed fixtures from damage during the remainder of the construction period.

### 3.04 DAMAGE BY LEAKS

The Contractor shall be responsible for all damage to any part of the premises caused by leaks or breaks in pipes or fixtures furnished and or installed under this section for a period of one year from date of acceptance of the work by the Owner. The Contractor shall make all necessary repairs to the Owner's satisfaction and at no cost to the Owner.

END OF SECTION

## SECTION 16055

### GENERAL ELECTRICAL REQUIREMENTS

#### PART 1 GENERAL

##### 1.1 SUBMITTALS

A. See Section 01300.

B. Product Data

1. Submit for following -

- a. Wiring devices
  - b. Disconnects
  - c. Lighting fixtures
2. Provide following information for each item of equipment -
    - a. Catalog Sheets.
    - b. Assembly details or dimension drawings.
    - c. Installation instructions.
    - d. Manufacturer's name and catalog number
    - e. Name of local supplier.
  3. Do not purchase equipment before approval of product data.

Closeout Submittals

1. Operations & Maintenance Manual Data -
  - a. Modify and add to requirements of Section 01700 as follows -
    - 1) Provide operating and maintenance instructions for each item of equipment submitted under Product Data.

##### 1.2 QUALITY ASSURANCE

A. Requirements of Regulatory Agencies

1. NEC and local ordinances and regulations shall govern unless more stringent requirements are specified.
2. Material and equipment provided shall be new, meet standards of NEMA or UL, and bear their label wherever standards have been established and label service is available.

PART 2 PRODUCTS - Not Used

#### PART 3 EXECUTION

##### 3.1 EXAMINATION

A. Confirm dimensions, ratings, and specifications of equipment to be installed and coordinate these with site dimensions and with other Sections.

##### 3.2 INSTALLATION

A. Mounting Heights

1. Unless otherwise indicated, mount center of outlets or boxes at following heights above finish floor -
  - a. Receptacles - existing heights
2. Refer special conditions to Architect before rough-in and locate outlet under his direction.

##### 3.3 FIELD QUALITY CONTROL

- A. Site Tests - Test systems and demonstrate equipment as working and operating properly. Notify Architect prior to test. Rectify defects at no additional cost to Owner.

END OF SECTION

## SECTION 16110

### RACEWAYS

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Includes But Not Limited To
  - 1. Quality of material and installation procedures for raceway and fittings used on Project.
- B. Related Sections
  - 1. Section 16055 - General Electrical Requirements
  - 2. See Sections specifying individual electrical systems for additional requirements.

#### PART 2 PRODUCTS

##### 2.1 COMPONENTS

- A. Raceway
  - 1. 1/2 inch unless indicated otherwise and use restricted as indicated by product.
  - 2. Galvanized rigid steel or galvanized intermediate metal conduit (IMC) is allowed for use in all areas.
  - 3. Galvanized Electrical Metallic Tubing (EMT) -
    - a. Allowed for use only in indoor dry locations where it is -
      - 1) Not subject to damage.
      - 2) Not in contact with earth.
      - 3) Not in concrete slabs on grade.
  - 4. Flexible Steel Conduit -
    - a. 1/2 inch minimum
    - b. Required for final connections to indoor mechanical equipment, length not to exceed 36 inches.
    - c. Also allowed for use in indoor dry locations -
      - 1) In accessible ceilings not to exceed 72 inches.
      - 2) Where concealed in walls and inaccessible floors and ceilings.
  - 5. Prohibited Raceway Materials -
    - a. Aluminum conduit.
    - b. Electrical Nonmetallic Tubing (ENT) conduit.
    - c. Armored cable type AC (BX) cable
    - d. Metal-clad cable type MC cable
- B. Fittings For
  - 1. Rigid Steel Conduit & IMC - Threaded and designed for conduit use.
  - 2. EMT -
    - a. Compression type
    - b. Steel set screw housing type.
  - 3. PVC Conduit -
    - a. PVC components, (conduit, fittings, cement) shall be from same Manufacturer.
  - 4. Flexible Steel Conduit - Screw-in type
  - 5. Prohibited Fitting Materials -
    - a. Crimp-on, tap-on, indenter type fittings.
    - b. Cast set-screw fittings for EMT.
    - c. Spray (aerosol) PVC cement.

#### PART 3 EXECUTION

##### 3.1 INSTALLATION

- A. Conceal raceways within ceilings, walls, and floors, except at Contractor's option, conduit may be exposed on walls or ceilings of mechanical equipment areas and above acoustical panel suspension ceiling systems. Install exposed raceway runs parallel to or at right angles to building structure lines. Keep raceway runs 6 inches minimum from hot water pipes.
- B. Securely support raceway within 3 feet of every outlet box, junction box, device box, cabinet, conduit body, and other termination with approved straps, clamps, or hangers. Space supports every 10 feet maximum. Securely mount raceway supports, boxes, and cabinets in an approved manner by
  - 1. Expansion shields in concrete or solid masonry.
  - 2. Toggle bolts on hollow masonry units.
  - 3. Wood screws on wood.
  - 4. Metal screws on metal.
- C. Cap raceway ends during construction. Clean or replace raceway in which water or foreign matter have accumulated.
- D. Install insulated bushings on each end of raceway 1-1/4 inches in diameter and larger.
- E. Do not bore holes in floor and ceiling structure without permission from Architect.

F Prohibited Procedures

- 1. Use of wooden plugs inserted in concrete or masonry units for mounting raceway, supports, boxes, cabinets, or other equipment.
- 2. Installation of raceway which has been crushed or deformed.
- 3. Boring holes in truss members.
- 4. Notching of structural members.
- 5. Supporting raceway from ceiling system support wires.
- 6. Nail drive straps for supporting raceway.

END OF SECTION

UTAH NATIONAL GUARD STATEMENT OF WORK  
PERFORMING TELECOMMUNICATION PROJECTS  
UT-G6-C (5/4/2007)

**Section 16250 - GENERAL INFORMATION AND CONDITIONS**

Purpose and Intent:

The Utah National Guard (UTNG) desires to have Telecommunication parts installed in accordance with Industry Standard TIA/568B. All projects must be coordinated and approved through the UTNG State Telecommunications Manager (Mike Hansen, pager (801) 249-3838) to ensure that industry standards are adhered to.

Key Dates:

Proposal Review: The Contractor should allow the Owner two weeks for review of proposals and award. A start date will be provided in the Notice of Award.

Site Visits:

Site visits for telecommunication projects will be arranged by contacting Mike Hansen by telephone at 801-523-4118(office) or 801-249-3838(pager), or by e-mail at [mike.hansen@ut.ngb.army.mil](mailto:mike.hansen@ut.ngb.army.mil)

Questions:

Questions regarding this Statement of Work should be presented in writing to:

Utah Army National Guard  
UT-G6-C, ATTN: Mike Hansen  
P.O. Box 1776  
Draper, UT 84020  
FAX (801) 523-4844

E-mail questions to [mike.hansen@ut.ngb.army.mil](mailto:mike.hansen@ut.ngb.army.mil)

A written answer to any such questions will be provided to all respondents to this request for proposals.

**CONTRACT INFORMATION**

Proposal Organization: The Contractor should break down his proposal deliverables and costs into parts and labor.

Cost Basis: The Contractor should show a unit price breakdown for the personnel, materials and tasks to be provided, as well as lump sum prices per project.

Selection Criteria: The UTNG will use the following criteria, equally weighted, to select the successful Contractor for this work.

***Technical Abilities and Approach:*** The qualifications and experience of key personnel, as well as the proposed methodologies and resources will be considered.

***Past Performance:*** The experiences of the Contractor most closely related to this project will be considered, particularly successful completion of projects using Industry Standard TIA/568B.

***Responsiveness:*** The ability of the Contractor to dedicate sufficient resources to the project and to be readily available will be considered.

***Cost:*** The overall costs proposed by the Contractor and the completeness of detail of these costs will be considered.

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Award of Contract: Award of any Contract is contingent upon availability of state/federal funds to perform this work. The UTNG anticipates award of all work to a single Contractor, but reserves the right to split the award or make a partial award.

**BACKGROUND**

Agency Need Description: The UTNG requires that the following parts (brand specific or equal) be used in conjunction with TIA/568B guidelines:

**Telecommunication standards for all Utah Army National Guard facilities, except AGCW.  
MDF / IDF (Main or Intermittent Distribution Frame)**

Standard Equipment:

1. Siemon HD5-89D-12 Patch Panels.
2. Siemon HD6-89D-12 Patch Panels. \*\*\*
3. Siemon S210MB2-192 \*\*
4. Siemon S188-300 Vertical Wire Management \*\*
5. Siemon S188WD Horizontal Wire Management \*\*
6. Siemon S110M-WM-300 Vertical Wire Management \*\*
7. Siemon S210MB2-300 \*\*
8. Siemon S210C-4 \*\*
9. Siemon CT-5-C5-02 Angled Jack.
10. Siemon CT-C6-C6-02 Angled Jack. \*\*\*
11. Siemon CT2-FP-02 Faceplate.
12. Siemon SPB-V1 24 Port Patch Panel.
13. Commscope CAT 5E Blue 55N4R BL
14. Commscope CAT 5E Yellow 55N4R YL
15. Commscope CAT 6 Blue 75N4 BL \*\*\*
16. Commscope CAT 6 Yellow 75N4 YL\*\*\*
17. Green Backboard Metal M183 B2 (VAR)
18. Blue Backboards Metal M183 B1 (VAR)
19. Yellow Backboards Metal M183 B5 (VAR)
20. Full Spool boards. M187 B1 (VAR)
21. Marconi R66P25QC Lighting Protection Panel.
22. Marconi R66P50QC Lighting Protection Panel.
23. Marconi R66P100QC Lighting Protection Panel.
24. SECOR WIC 012 LIU can.
25. Siemon Rack Mount LIU FCP3-Rack. \*\*
26. Gas Protection Fuses 104410147

**MDF (Main Distribution Frame) for AGCW**

Standard Equipment:

1. AVAYA 107894966 100 Pair Lighting Protection 110 termination style.
2. SECOR CCH03U 72 Strand Rack Mount LIU.

The MDF at AGCW is in building 617. To gain access to this area you will have to contact Mike Hansen at (801) 249-3838 or Toby Adamson at (801) 241-9942. **All work to be bid on or done at AGCW will contact Mike or Toby prior to starting.**

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**IDF (Intermittent Distribution Frame) for AGCW**

Standard Equipment:

3. Siemon HD5-89D-12 Patch Panels.
4. Siemon HD6-89D-12 Patch Panels. \*\*\*
5. Siemon CT-C5-C5-02 Angled Jack.
6. Siemon CT-C6-C6-02 Angled Jack. \*\*\*
7. Siemon CT2-FP-02 Faceplate.
8. Siemon SPB-V1 24 Port Patch Panel.
9. Commscope CAT 5E Blue 55N4R BL
10. Commscope CAT 5E Yellow 55N4R YL
11. Commscope CAT 6 Blue 75N4 BL \*\*\*
12. Commscope CAT 6 Yellow 75N4 YL\*\*\*
13. Green Backboard Metal M183 B2 (VAR)
14. Blue Backboards Metal M183 B1 (VAR)
15. Yellow Backboards Metal M183 B5 (VAR)
16. Full Spool boards. M187 B1 (VAR)
17. Marconi R66P25QC Lighting Protection Panel.
18. SECOR WIC 012 LIU can.
19. Gas Protection Fuses 104410147

**Manholes**

1. Copper Splice Cases 3M KB6 (is the series). You will need to talk to Mike or Toby to determine what ends need to be placed on the ends of the splice case.
2. Fiber Splice Case Coyote 80805514 (Splice tray will depend on amount of fiber)

There are several Manholes at AGCW. When pulling Backbone Cable you will leave a 20 ft maintenance loop in every manhole between the IDF and the MDF. All splices will be sealed water tight. If a case is open, it will be resealed to maintain a water tight seal. All splices in the fiber cable will be fusion spliced. Splices in the copper cable will be done in a splice case and made water tight. To find a path from the IDF to the MDF you will need to speak with Mike or Toby.

All telecommunication work to be done on any Utah Army National Guard Facility will be coordinated and approved through Mike Hansen (pager # (801) 249-3838) or Toby Adamson (pager # (801) 241-9942). Layout for telecommunication closets will be as followed. There will be 1 or more sheets of ¾ inch plywood placed on the wall of the telecommunication closet. From left to right the positioning of the metal backboards will be Green, Blue, and Yellow. You will leave proper space between the blue and yellow boards to accommodate future growth. Along the bottoms of each of the backboards you will install full spool boards. On the Green backboard you will install the copper feeds for the building. The copper feeds will be terminated to lighting protection and then to the Siemon 24 port patch panel. On the Blue backboard, the Blue Commscope CAT 5E 55N4R BL\*\*\*, will be terminated to the Siemon HD5-89D-12 \*\*\* patch panel. On the Yellow backboard, the Yellow Commscope CAT 5E 55N4R YL\*\*\*, will be terminated to the Siemon HD5-89D-12 \*\*\* patch panel. Fiber will be terminated in an LIU can. Termination of fiber will be either ST or SC. This will depend on location. You will need to speak with Mike or Toby in order to know what facility has what termination.

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\*\* This equipment is being used in the Draper facility

\*\*\* There are some Facilities that have CAT 6 horizontal cable. You will have to speak with Mike or Toby in order to know what is required at each Facility.

### **PROJECT DELIVERABLES**

The Contractor will provide progress reports throughout the term of the Contract to the UTNG Telecommunications Manager.

All wire must be tested by the contractor with a cable analyzer for its appropriate rating in accordance with TIA/568B standards. The Contractor will turn-in written results of the cable analyzer testing to the UTNG Telecommunications Manager.

### **PROPOSAL PREPARATION INSTRUCTIONS**

The proposal must include the following components: a technical proposal, a cost proposal, a delivery schedule, and a presentation of the Contractor's personnel qualifications and experience. Proposals that do not include the specified elements may be rejected. The Contractor is encouraged to submit copies of relevant projects performed (TIA/568B) within the last two years within his proposal.

Technical Proposal: The technical proposal should describe the tasks to be performed, the methods to be used and the proposed parts to be installed.

Cost Proposal:

The cost proposal should be provided as lump sums by project, and each project should be broken down by task. The cost proposal should include projected labor categories, hours and billing rates. The cost proposal should identify any proposed subcontractors and their labor categories, hours and billing rates.

Delivery Schedule:

The Contractor should provide a proposed schedule of activities, both on-site and in office, identifying work to be performed for each location.

Personnel, Qualifications and Experience:

The proposal should identify Contractor resources, offices, and personnel available to the project. The proposal should identify the actual personnel proposed for use on the project, including their relevant qualifications and experience with TIA/568B standards. Contractors must be certified installers of the parts and equipment proposed and install in accordance with manufacturer warranty. Experience should be listed in the following categories: Similar work performed in Utah, similar work performed in the Western United States, and similar work performed for DOD and specifically National Guard. Failure to use the proposed personnel may be grounds for termination of the project.

### **PROPOSAL SUBMISSION**

The completed proposal should be mailed to:

Utah Army National Guard  
UT-AAG-SMD, ATTN: Claire Gee  
P.O. Box 1776  
Draper, UT 84020

Electronic copies should be sent to [cgee@utah.gov](mailto:cgee@utah.gov) accompanied by a hard copy cover letter on letterhead.