

ADDENDUM NO.: 6

DATE OF ADDENDUM: August 25, 2015

**CAMPUS RENOVATIONS
ASNUNTUCK COMMUNITY COLLEGE
170 ELM STREET
ENFIELD, CT
BI – CTC-437**

Original Bid Due Date / Time:

September 2, 2015

1:00 PM

Previous Addendums: Addendum #1, July 23, 2015; Addendum #2, August 4, 2015, Addendum #3; August 13, 2015; Addendum #4 August 20, 2015 & Addendum #5 August 24, 2015.

TO: Prospective Bid Proposers:

This Addendum forms part of the "Contract Documents" and modifies or clarifies the original "Contract Documents" for this Project dated 04/27/2015. Prospective Bid Proposers shall acknowledge receipt of the total number the Addenda issued for this Project on the space provided on Section 00 41 00 Bid Proposal Form. Failure to do so may subject Bid Proposers to disqualification.

The following clarifications are applicable to drawings and specifications for the project referenced above.

Item 1

Substitution Request:

Section 07 42 13.13 FORMED WALL PANELS. See attached **APPROVED** substitution request form #7001

Item 2

Section 07 42 13.13 FORMED METAL MATERIAL WALL PANELS:

REVISE paragraph 2.04 CONCEALED FASTENER, INTERLOCKING LAP-SEAM METAL WALL PANELS, section A, item 1 as follows:

ADD Metal Tech USA, EL Zinc Flat Lock Panels as an approved equal to the specified products.

Item 3

Section 00 30 00 AVAILABLE INFORMATION:

ADDED section 00 31 63 SITE LOGISTICS PLAN, see attached.

Item 4

Pre-Bid Request For Information:

Question: Are unlabeled wall types A3-0? What is the wall type between Function Room #E108 and Corridor #111? I do not see a code a code safety plan so I assume it is not a fire or smoke wall?

Answer: Per General Note #10 on floor plans A2.101, A2.102, A2.103 & A2.104: "UNLESS NOTED OTHERWISE ALL WALLS ARE TYPE A3-0".

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Item 5

Pre-Bid Request For Information:

Question: Reference drawing A8.202 Opening types F9 and B3, and door schedule 08 06 10-1door numbers 206, & 207. Please clarify which opening should be fire rated, hollow metal or aluminum. Both doorways are marked 206 on the elevations I believe F9 is intended to be fire rated but B3 has fire rated glass noted. And confirm if B3 is to be Hollow Metal as noted on the door schedule.

Answer: The correct elevation for door #206 is elevation F9/A8.202. Elevation F9/A8.202 has been revised to show 1 hour fire rated glazing and elevation B3/A8.202 has been deleted from the project. As indicated in section 08 06 10 'Schedule of Openings', door #206 is a 1 hour fire rated aluminum and glass door with a 1 hour fire rated aluminum frame. Door #207 is a non-rated solid core wood door (SCW) with a non-rated hollow metal frame type HM-1.

Additionally, all aluminum doors, aluminum frames and aluminum entrance systems indicated to be of 1 hour fire rated construction on the drawings or in section 08 06 10 'Schedule of Openings' shall be constructed of a fire rated curtain wall system as specified in section 08 44 33 'Fire-Rated Glazed Curtain Walls'.

Item 6

Pre-Bid Request For Information:

Question: Please confirm all sanitary waste, and vent lines should be cast iron.

Answer: All Sanitary waste and vent lines shall be cast iron as specified.

Item 7

Pre-Bid Request For Information:

Question: S0.01 not 16 refers to spray on fireproofing, please provide specifications for this work.

Answer: Spray on Fireproofing is not required.

Item 8

Pre-Bid Request For Information:

Question: Please provide the elevations of the existing first floor slab and bottom of steel for the first floor, as well as the second floor. This information is critical to price up shoring of the existing building

Answer: Elevation of the existing first floor slab is listed on the drawing as 0'-0". The elevation of the exiting second floor slab is 11'-6 5/8" +/- per the original architectural plans. Depth of the existing steel framing varies and bottom of framing elevations will need to be field verified.

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Item 9

Pre-Bid Request For Information:

Question: S4.00 detail 11 denotes damaged roof deck replacement. Is a portion of the existing decking required to be replaced, i.e. a percentage of deck?

Answer: Refer to General Note #2 on drawing A1.105 - ROOF DEMOLITION PLAN and specification section 01 20 00 CONTRACT CONSIDERATIONS.

Item 10

Pre-Bid Request For Information:

Question: A1.103 shows the existing acoustical ceiling demolition complete (grid and tile), identified by hatched lines. The other areas on this drawing do not show hatched lines but show dashed, does this mean tile gets replaced and existing grid is to remain?

Answer: As indicated in the Legend on drawing A1.103 First Floor Reflected Ceiling Plan, the diagonal hatched lines depict the extent of existing construction to be demolished in its entirety for construction of the new entry addition. The dashed 2x2 & 2x4 grids indicated existing ceilings (grids & tiles) to be demolished.

Item 11

Pre-Bid Request For Information:

Question: Please provide specification for the removable bench cushions.

Answer: Refer to specification 06 40 23 INTERIOR ARCHITECTURAL WODWORK, paragraph 2.8 BANQUETTES.

Item 12

Pre-Bid Request For Information:

Question: Please confirm that the millwork contractor is required to have the AWI and QCP certifications as noted in the specifications. Please verify this as it limits the number of contractors that the General Contractor can solicit bids from.

Answer: Millwork contractor is required to have all certifications called for in the project specifications.

Item 13

Pre-Bid Request For Information:

Question: Please advise what wall type C6-0 consists of? This is shown on the first floor layout but not noted in the wall types.

Answer: Wall type C6-0 is a one sided gypsum board partition similar to wall type C3-0, but with 6" metal studs instead of the 3 5/8" metal studs called for in the C3-0 wall type.

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Item 14

Pre-Bid Request For Information:

Question: Regarding the display case, details show we are wrapping the millwork with 1/8" steel plates. Was this an oversight and wrapping the millwork is not necessary? If you wrap the millwork you would be left with individual sheets bent to match the millwork and fastened to the millwork. Meaning you will see screw heads throughout the display case, was this the intent? Was there a specific product with a make and model of this display case that was noticed in a catalog that we can buy direct? Please provide additional information regarding this?

Answer: 1/8" thick steel plate to be **REPLACED** with 15ga (1/16" thick) steel plate. Steel plates to be laminated to millwork sub-straight with adhesive or contact cement approved for such usage.

Item 15

Pre-Bid Request For Information:

Question: Please confirm the steel work is required to be completed by an AISC certified fabricator?

Answer: Steel fabricators are required to have all certifications called for in the project specifications.

Item 16

Pre-Bid Request For Information:

Question: A2.203 finish products lists states a basis of design, alternate 1 and alternate 2, but these do not correlate with the supplemental bid submissions noted in specification section 012313. Please advise which product to choose.

Answer: The headings 'FIRST ALTERNATE' and 'SECOND ALTERNATE' on the material list to be replaced with headings 'FIRST APPROVED EQUAL' and 'SECOND APPROVED EQUAL'. Bidders can choose any one of the (3) specified products for each material.

Item 17

Pre-Bid Request For Information:

Question: Please advise of any limits associated with any rooms connected to the existing school spaces, i.e. off work hours, limited noise, etc. Specifically within the following rooms: multifunction room e108, corridor e100a, information e180, corridor e155f, e121, hallway e2003, e200c, allied health lab, corridor e200a, and classroom e201.

Answer: The spaces listed above are to remain operational during construction. The General Contractor will need to coordinate construction activities in these areas with Asnuntuck Community College in order to minimize disruptions to the schools day to day activities.

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Item 18

Pre-Bid Request For Information:

Question: J10/A1.105 Roof Demolition Detail states to remove lightweight concrete crickets if found not to be structurally sound. How should this be quantified for bidding purposes?

Answer: Section 01 20 00 has been revised to include Unit pricing for this work, see attached.

Item 19

Section 01 20 00 Contract Considerations

Revised paragraph 1.5D UNIT PRICE SCHEDULE – MISCELLANEOUS to include unit pricing for demolition and removal of existing concrete roof crickets, see attached.

Item 20

Pre-Bid Request For Information

Question: Are details available for countertop in center if room for Magazine #209?

Answer: This is a free floating plastic laminated counter support by file cabinets provided by others. The counter top is 10'-0" long x 4'-0" wide and similar to detail C4/A6.301 with all (4) exposed edges finished.

Item 21

Pre-Bid Request For Information

Question: Is the "Asnuntuck Community College" sign shown on G8/A4.201 to be included in the GC scope?

Answer: This sign is to be provided & installed by Asnuntuck Community College. General contractor shall provide solid wood blocking for attachment of signage provided by owner.

Item 22

Pre-Bid Request For Information

Question: Provide required model numbers for lock cylinders that are to be integrated with existing MEDICO system.

Answer: Provide MEDECO BI Lever cylinders to match the existing facility MEDECO system.

Item 23

Pre-Bid Request For Information

Question: In reference to detail J10 on drawing A1.105 & detail E8 on drawing A2.406, please clarify whether to demolish and replace existing metal counter flashing and thru wall flashing

Answer: The existing metal counter flashing shall be demolished; the existing thru wall flashing is to remain.

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Item 24

Pre-Bid Request For Information

Question: In reference to detail E5 on drawing A2.406 – Typical Roof Membrane Detail & specification section 07 54 23, 1.02 Summary, A2 Roof Insulation; please clarify whether to install a 1/2" Dens Deck cover board. Detail E5 does not show the cover board while the specification section 07 54 23 3.07H calls for it. Roofing manufacturer recommends cover board to achieve 95mph wind speed warranty.

Answer: Furnish and install 1/2" dens deck (or equal) per specification.

Item 25

Pre-Bid Request For Information

Question: Project specification section 00 31 26 (1.2A.1) indicates that asbestos abatement is performed by the owner. Section 00 41 00 (4.4.2) noted the requirement for contractors to provide asbestos abatement insurance, please confirm?

Answer: The General Contractor shall carry asbestos abatement insurance in their bid per the project specifications.

Item 26

Pre-Bid Request For Information

Question: Please confirm that any required mud slab work will be performed on a unit price basis as noted in specification section 01 20 00 (4.D.2.B) and is not to be included in the base bid or as an allowance?

Answer: Any required mud slab work will be performed on a until cost basis as indicated in the project specification.

Item 27

Pre-Bid Request For Information

Question: Please confirm that there is no interior signage required to be provided by the contractor?

Answer: Minimum ADA signage to be provided at new toilet rooms and egress stair. See Attached signage specification section 10 14 00.

Item 28

Section 10 14 00 SIGNAGE

ADDED section 10 14 00 SIGNAGE, see attached.

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Item 29

Pre-Bid Request For Information

Question: Please confirm the scope of work that is required to be performed by the contractor under the base bid if Supplemental Bid Items #1 & #3 are not incorporated, (i.e. mechanical and electrical rough in, loam and seed....)

Answer: Supplemental Bid #1 - MEP rough ins for kitchen equipment shall be included under base bid.
Supplemental Bid #3 - Loam and grass are to be provided under base bid.

Item 30

Pre-Bid Request For Information

Question: Project specification section 01 11 00 (1.9.A) indicates that there are no owner furnished products. Project design drawings indicate owner furnished products, (i.e. food service equipment, toilet accessories, wall mounted TV...) Please confirm.

Answer: Project specification section 00 11 00 (1.9.A) is not correct, owner furnished products will be provided as indicated on the design drawings.

Item 31

Pre-Bid Request For Information

Question: Drywall specifications call for type x and abuse sheetrock. The wall types do not delineate which sheetrock to utilize. Please clarify where the abuse rock will be used?

Answer: Spec section 09 21 16 GYPSUM BOARD ASSEMBLIES, paragraph 3.07 has been revised to indicated areas where the Abuse resistant Gypsum wall board is to be used, see attached

Item 32

Section 09 21 16 GYPSUM BOARD ASSEMBLIES

ADDED paragraph 2.05D - MOISTURE AND MOLD RESISTANT GYPSUM BOARD, see attached.
REVISED PARAGRAPH 3.07A - APPLYING INTERIOR GYSUM BOARD, see attached.

Item 33

Pre-Bid Request For Information

Question: Security grille is required per base bid, and not to be included in the alternate, correct?

Answer: The security grille (aka rolling door) is part of Supplemental.Bid #1 and not to be included in the base bid.

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Section 00 11 16 INVITATION TO BID:

ADDED Special Requirements:

A separate DAS/DCS Project BI-CTC-488 New Manufacturing Technology Center building is anticipated to be simultaneously in construction during a portion or all of the duration of this project. Project BI-CTC-488 shall be constructed in the area of the existing sports track behind Asnuntuck Community College. It should be noted that there are certain work activities for Project BI-CTC-488 that are adjacent to project BI-CTC-437. In addition, construction traffic for both projects will utilize the same entrance and exits to the school property. Both projects shall be coordinated with one another in such a manner to ensure continued complete student and faculty non-interrupted College occupancy.

Item 35

Section 00 11 11 SUMMARY OF WORK:

REVISED paragraph 1.5D SCOPE REVIEW, added the following language:

3. The General Contractor's scope review will be done on Friday September 4, 2015 at the office of DAS/DCS.

All questions must be in writing (not phone or e-mail) and must be forwarded to the consulting Architect/Engineer (Tecton Architects, 860-522-6251) with copies sent to the DCS Project Manager (Lisa Humble, 860-713-7270).

End of Addendum #6



Mellanee Walton, Associate Fiscal Administrative Officer
Department of Administrative Services
On Behalf of the Division of Construction Services

7001
**Equal or Substitute
 Product Request**

Request Phase Pre-Bid Post Bid (See Article 15 Materials; Standards, General Conditions)
 (If Pre-bid only) Current Bid Due Date: 9-2-2015 Request No.: _____ Dated: 8-18-2015
 To: State of Connecticut CTDCS Project No.: B2-CTC-437
 Department of Construction Services Project Name / Location:

ASHWORTH Community College
ENFIELD, CT 06082

References:	Specification(s):	Section(s): <u>0742.13</u>	Paragraph(s): <u>2.01 A</u>
	Drawing(s):	Drawing(s) No(s):	Detail(s) No(s):
Contractually Specified Product:	<u>IMETCO UNITED ZINC FLATLOCK</u>		
Contractor Proposed Product:	<u>METAL TECH-USA EL ZINC FLATLOCK</u>		
Proposed Product is:	Equal: <input checked="" type="checkbox"/>	Substitute: <input type="checkbox"/>	Model No.: <u>EL ZINC FLATLOCK</u>
<i>See attached data for both specified and proposed products as required by Article 15 General Conditions.</i>			
Data attached:	Drawings: <input type="checkbox"/>	Product Data: <input checked="" type="checkbox"/>	Reports: <input type="checkbox"/> Samples: <input checked="" type="checkbox"/>
	Tests: <input checked="" type="checkbox"/>	Other:	
Reason(s) for not providing the Specified Product: <u>COST SAVINGS FOR EQUAL ALTERNATE PRODUCT, BETTER LEAD TIMES</u>			
Similar Installation: Project: <u>JACKSON LAB, CREC AEROSPACE REC DISCOVERY</u> Architect: _____ Address: <u>CONNECTICUT</u> Owner: _____ Date Installed: _____			

Will proposed substitution impact other parts of the Work? No Yes *If yes attach explanation.*
 Will proposed substitution increase Contract Time? No Yes *by number of Days*

Actual Dollar Savings to the State of Connecticut if substitution is accepted: \$ 10% +/- MATERIAL SAVINGS

The Undersigned Certifies that the proposed Request for an Equal or Substitute Product conforms to all of the requirements of Division 01 General Requirements, Section 01 25 00 Substitution Procedures.

Request Submitted By General Contractor / CMR: METAL TECH - USA
 (Firm's Typed Name)

By: MICHAEL LOVE SR PROJECT MGR [Signature] 8/20/2015
 (Typed Name) (Title) (Signature) (Date)

CONTRACTOR / CMR Send copies to DCS PM: CA/OR:

Consultant's Review - This Substitution Request Is: Request Received on (Date): _____

Approved: (Submittals in accordance with Div. 01 General Requirements, Section 01 33 00 Submittal Procedures.)
 Approved as Noted: (Submittals in accordance with Div. 01 General Requirements, Section 01 33 00 Submittal Procedures.)
 Rejected: Use Specified Materials.
 Rejected: Request Not Received Within Specified Time Period - Use Specified Materials.

Reviewed Issued By: Timothy Mailloux
 Tecton Architects Timothy Mailloux 08/21/2015
 (Typed Name) (Signature) (Date)

CONSULTANT Send copies to: DCS PM: CA/OR: Chief Architect Chief Engineer

If Approved: As noted by Consultant,
 DCS Chief Architect: [Signature] 8/25/15
 (Signature) (Date)

Copies: Project File Red R2

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK:

A. Site Logistics Plan:

1. The Site Logistics Plan SLP1.0 prepared by the Construction Manager is attached at the end of this Section and is included for the Contractor's information.

END SECTION 00 31 62

NOTES



Stop Sign at all Gates



No trespassing (located 30' on-center around perimeter fence and gates)



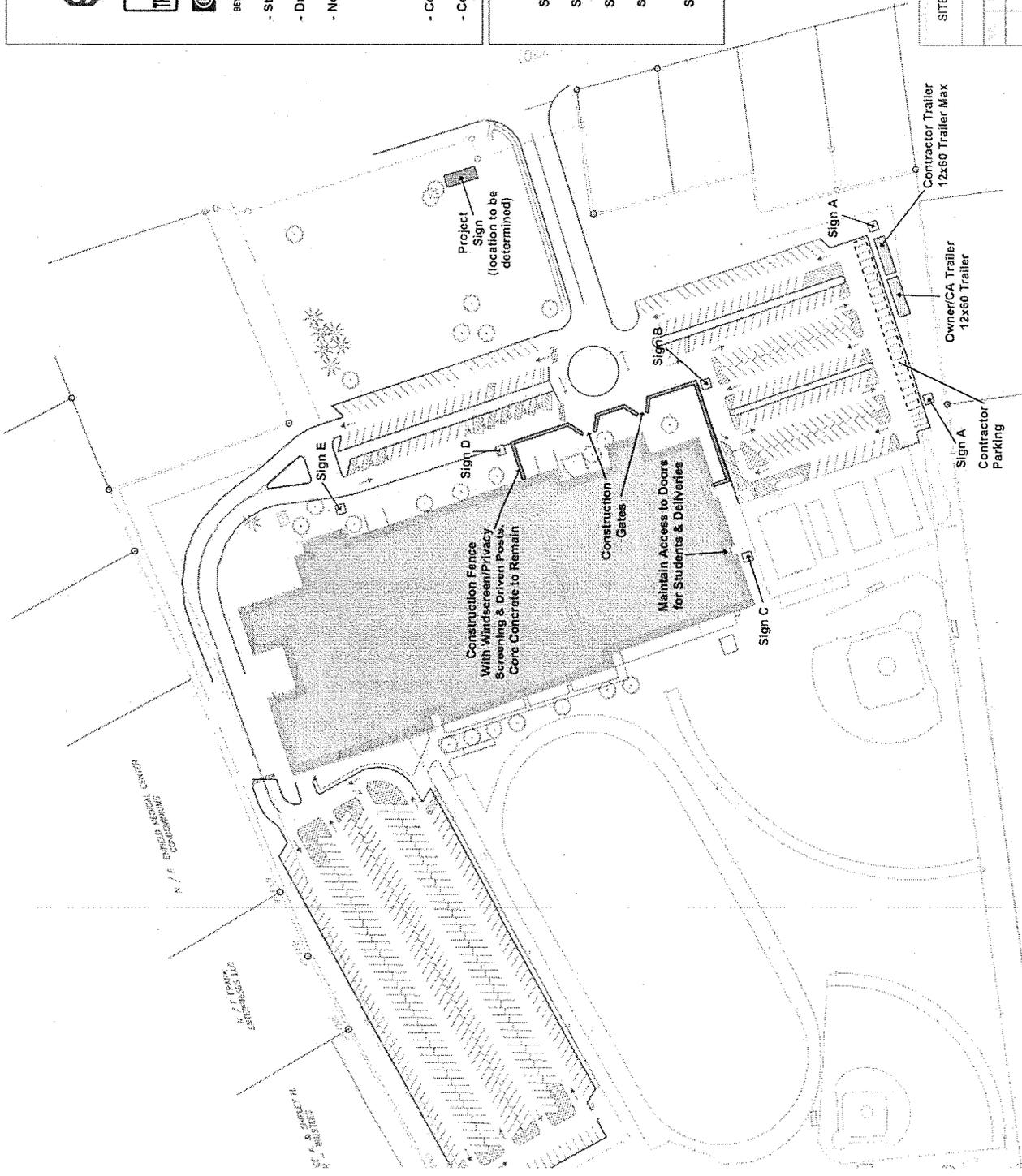
Danger Hard Hat Required Beyond This Point (located at gates)

- Stockpiles/laydown area to be located within construction limits
- Dumpsters and on-site toilets to be located within construction limits
- No deliveries are to be made during these times:
Between: 8:30AM - 9:15AM
10:15AM - 10:45AM
12:00PM - 1:00PM
3:00PM - 3:30PM
- Construction parking in designated spots only
- Contractor to provide measures to ensure cleanliness of site

SIGNAGE LEGEND

- Sign A - "Construction Personnel Parking Only Between Signs"
- Sign B - "Sidewalk Closed - Use Side Entrance"
- Sign C - "Side Entrance"
- Sign D - "Main Entrance Under Construction Use Temporary Main Entrance"
- Sign E - "Temporary Main Entrance"

SITE LOGISTICS PLAN	STATE OF CONNECTICUT DEPARTMENT OF ADVANCED EDUCATION SERVICES DIVISION OF CONSTRUCTION SERVICES	4-27-2015
	TECTON ARCHITECTS ONE HARTFORD SQUARE WEST HARTFORD, CT 06106	
	CAMPUS RENOVATIONS - ASUNUTUK COMMUNITY TECHNICAL COLLEGE 170 ELM STREET ENFIELD, CT	
		BI-CTC-437
		SLP1.0



PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Contract Documents and general provisions of the Contract, including General and Supplementary Conditions, other Division 01 Specification Sections, and Section 00 41 00 "Bid Proposal Form" apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
1. Allowances.
 2. Unit Prices.
- B. **Related Sections:** The following Sections contain requirements that relate to this Section:
1. Division 01 Section 01 23 13 "Supplemental Bids".
 2. Division 01 Section 01 26 00 "Contract Modification Procedures".
 3. Division 01 Section 01 29 76 "Progress Payment Procedures".
 4. Division 01 Section 01 77 00 "Closeout Procedures".
 5. Division 05 Section 05 31 00 "Steel Decking".

1.3 ALLOWANCES

- A. This Section includes administrative and procedural requirements for Allowances.
- B. **Related Sections:** The following Sections contain requirements that relate to this Section:
1. Division 01 Section 01 26 00 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
 2. Division 05 Section 05 31 00 "Steel Decking".
- C. **Cash Allowances:**
1. The Contractor's costs for unloading and handling, labor, installation costs, storage, insurance, overhead and profit and other expense related to the Allowance item shall be included in the Lump Sum Bid Amount and not in the Allowance unless stated otherwise in the Allowance Schedule of this section.
 2. **Architect/Engineer:**
 - a. Consult with Contractor for consideration of Products, suppliers and installers.
 - b. Select Products in consultation with the Project Manager and Agency Representatives and transmit decision to Construction Administrator.
 - c. Prepare Change Order.
 3. **Construction Administrator Responsibilities:**
 - a. Consult with Architect/Engineer, Contractor, Project Manager and Agency Representatives for consideration of Products, suppliers and installers.
 - b. Select Products in consultation with Architect/Engineer, Project Manager and Agency Representatives and transmit decision to Contractor
 - c. Prepare Change Order.
 4. **Contractor Responsibilities:**
 - a. Assist Architect/Engineer and Construction Administrator in selection of Products and Suppliers.
 - b. Obtain proposals from Suppliers and offer recommendations.
 - c. On notification of selection by Construction Administrator execute purchase agreement with designated supplier.
 - d. Arrange for and process shop drawings, product data, and samples. Arrange for delivery.

- e. If the actual cost of an Allowance item is more or less than the given amount, the Contract Sum will be adjusted by Change Order.

5. Allowance Schedule:

- a. Section 05 31 00 - "Steel Decking": Include the Stipulated Sum of **\$100,000** for removal and disposal of existing roof deck that has been determined by the engineer to be deteriorated and the replacement and installation with new roof deck.
- b. Include the Unit Pricing for Mud Slabs as scheduled, consisting of 2,500 psi lean concrete in areas where groundwater hampers the installation of concrete foundations.

1.4 UNIT PRICES - GENERAL

A. This Section includes administrative and procedural requirements for unit prices.

B. Related Sections: The following Sections contain requirements that relate to this Section:

- 1. Division 01 Section 01 26 00 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
- 2. Division 01 Section 01 29 76 "Progress Payment Procedures" for procedures for submitting Application for Payments.

C. Definitions:

- 1. **Unit Price:** Amount the General Contractor acknowledges in the Bid Proposal Form as a price per unit of measurement for materials or services as described in the Bidding Documents or in the Contract Documents.

D. Procedures:

- 1. Unit Prices included in the Contract Documents are to be used for determining compensation to the Contractor or Owner for changes to the scope of the work indicated in the Contract Documents, and included in the Lump Sum Contract Price. Special Unit Prices are for items complete, in place, and shall be inclusive of furnishing and installing of all material, labor, trucking, overhead, profit, equipment, hoisting, engineering, scaffolding, power hookups, protection, shop drawings, taxes, permits, appliances, delivery, insurance, supervision, cost of bond, etc. and shall remain in effect until completion of the Contract.
- 2. **Unit Price:** Is identified by the Owner as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if the estimated quantities of Work required by the Contract Documents are increased or decreased.
 - a. Should the amount of the Work required be increased or decreased because of changes in the work ordered in writing by the Project Manager, the Contractor agrees that the following supplemental UNIT PRICES will be decreased 10% for a reduction of work. Each Unit Price shall include all equipment, tools, labor, permits, fees, etc., incidental to the completion of the work involved. All items marked with an asterisk (*) in the unit price schedules shall include the completion of the excavation, formation and compaction of sub-grade and the disposal of surplus or unsuitable materials in accordance with the Plans and Specifications or as directed by the Construction Administrator.
- 3. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices, and to have this work measured, at the Owner's expense, by an independent surveyor acceptable to the Contractor.
- 4. **Defect Assessment:** Replace the Work, or portions of the Work, not conforming to the specified requirements. If, in the opinion of the Architect/Engineer, it is not practical to remove and replace the work the Architect/Engineer will direct an appropriate remedy or adjust the payment.
- 5. **Unit Price Schedule:** A "Unit Price Schedule" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials described under each unit price.

1.5 UNIT PRICE SCHEDULES

A. Unit Price Schedule - Earth and Rock Excavation: This Section includes administrative and procedural requirements for the following unit prices and provisions are to be included in and become part of this Contract to be used in evaluating additions to or deductions from the work called for in the specifications and/or plans.

1. Unless otherwise specified elsewhere in these documents, Contractors are to assume that all excavation is earth; however, if unspecified rock is encountered, it will be paid for at the given unit prices listed in Paragraph "C". Rock prices are net in that allowances for reduced quantities of earth are also included in the unit prices. The prices given include all costs for overhead, profit and rock surveys.
2. Wherever rock to be excavated is encountered, the Contractor shall strip or expose the rock to such an extent that in the Owner's opinion the necessary measurements can be taken. The Contractor shall provide the Owner with a survey by a licensed land surveyor indicating top of rock elevations at points of intersection on a rectilinear grid with lines spaced sufficiently close to show accurately the rock surface contours. At the Owner's option, an additional survey may be furnished by the Owner from a licensed surveyor.
3. If the conditions of the excavation work indicated are clearly of a special nature, the Contractor may ask the Owner for reconsideration of the established unit prices and if granted, the unit prices will not apply, and prices will be negotiated in accordance with Article 13 of the General Conditions.

B. Definitions:

1. "EARTH" - is defined as excavation shall include removal of all materials other than 'water' and 'rock'.
2. "ROCK" - is defined as a boulder of one cubic yard or more in volume (1/2 cubic yard for a boulder in trenches), and rock in definite ledge formation and masonry structures of one cubic yard or more in volume, the removal of which requires the use of mechanical equipment or the use of explosives. Rock removed by scarification or ripping method is considered as a separate classification under Paragraph 4.c.(1).
3. "ORIGINAL GRADE" - is defined as being the grade which exists at the time of Contract Award.
4. "ROUGH GRADE" - is defined as being the completed surface of required excavations greater than 13' in width.
5. "MASS" - excavation is to be considered as an open area whose minimum horizontal dimensions exceed 13'.
6. "TRENCH" - is defined as excavation is defined as the removal of material from areas 13 feet or less in its minimal horizontal dimensions and below the elevation of rough grade or original grade, whichever is lower.

C. Procedures:

1. **Rock Excavation in Trenches: Basis for Horizontal Measurement:**
 - a. **Horizontal Measurements:** Will be taken between the vertical planes as defined below.
 - b. **The Minimum Width of Trenches in Rock:** Will be taken as 3' 0".
 - c. **Excavation For Walls Or Piers With Footings:** The measurements will be taken parallel to and one foot outside of the edges of the concrete footings as called for in the plans (i.e. for 4' 0" footing, rock will be taken as 6' 0" in width).
 - d. **Excavation For Walls Or Piers Without Footings:** The limits of the excavation will be 1' 6" outside of the line of concrete at bottom as shown or called for in the plans (i.e. for a wall with a bottom thickness of 1' 0", the width of the trench will be considered to be 4' 0"). (Caissons are excluded from these measurements).
 - e. **Excavation for Pipe Lines:** Will be measured at 2' 0" more than the nominal inside diameter of the pipe but in no case less than 3' 0" wide.
 - f. **Excavation For Tanks, Vaults, Manholes, Pits, Etc.:** Will be measured as 2' 0" greater in both length and width or diameter than the actual exterior dimensions of the structures and this excavation is considered to be trench only if any measured horizontal dimensions is 13' or less.
 - g. No allowance will be made for rock removed beyond the above limits.
2. **Rock Excavation in Trenches - Basis for Vertical Measurement:**
 - a. To determine depth of trench, vertical measurements will be taken from original grade or rough grade, (whichever is applicable), to the bottom of required excavation. These measurements will define the maximum depths for payments.
 - b. To determine quantity of rock in trench, vertical measurements will be taken from the top of rock as encountered in the trench to 12" below the bottom of required rock excavation. Any over excavation below the required elevation shall be filled with concrete or other material as specified at no cost to the Owner.

- c. No allowance will be made for rock removed beyond the above limits.
3. **Earth Excavation in Trenches - Basis of Measurement: (Horizontal & Vertical):** The basis of measurements and allowance limit for earth excavation in trenches is identical to that indicated for rock excavation in trenches, except that there will be no allowance for 12" below the required elevation. In addition the following will prevail:

- a. **Maximum allowable widths for earth excavation in trenches without shoring:**

Trench Depth - Classification		Add To Nominal ID Of Pipe Or To Footing Width
	0 ft. - 6 ft.	3 ft.
Over	6 ft. - 10 ft.	5 ft.
Over	10 ft. - 15 ft.	7 ft.
Below 15 ft. deep the width of the trench shall be based on the individual case. The final depth of trench will determine the actual width for payment.		

- b. If shoring is required the measurement shall be taken between the exterior walls of the shoring not to exceed 4' plus the I.D. of the pipe (for all depths).
- c. To determine quantity of earth in trench, vertical measurements will be taken from the original or rough grade to actual bottom of earth excavation required.
4. **Unit Prices - Earth and Rock Excavation (Basis for Payment):** Prices include backfill with excavated material if it is suitable. Prices also include all excavation and disposal of all surplus or unsuitable material. Where replacement with the excavated material is prohibited or a particular backfill material is specified, the cost of the delivered replacement material in a volume equal to the above excavation pay limits minus the volume of the items installed in the trench shall be paid for a prior negotiated price. Prices do not include costs of shoring and de-watering but do include sloping for sides of excavation. Payment and credit amounts shall be determined in the following manner: Widths and depths of trench excavation as indicated. The total quantity of earth or rock excavation encountered in each depth payment category shall be paid for at its respective unit price as shown below. For example, in a 15' trench the first 6' will be paid for at the 0' - 6' price; the next 4' will be paid for at the over 6' - 10' price and the next 5' will be paid for at the over 10' - 15' price. Thus three different price brackets will prevail.

a EARTH EXCAVATION - HAND			UNIT	\$ ADD	\$ DEDUCT
(1)	In Trenches - 0' - 6'		C.Y.	36.00	28.80
(2)	In Trenches Below 6' Deep,		Prices Must Be Negotiated Before Work Is Started.		
b EARTH EXCAVATION - MACHINE			UNIT	\$ ADD	\$ DEDUCT
(1)	Open Area	All Depths	C.Y.	18.81	15.05
(2)	In trenches	0' - 4' deep	C.Y.	14.27	11.40
	Over	0' - 10' deep	C.Y.	19.71	15.75
	Over	0' - 15' deep	C.Y.	35.00	28.00
	Over	0 - 20' deep	C.Y.	75.00	60.00
c ROCK EXCAVATION			UNIT	\$ ADD	\$ DEDUCT
(1)	Open Areas, Rock Removed By Ripping (Any Amount), Net Rock		C.Y.	103.50	82.80
(2)	Open Areas, With Explosives - Net Rock -				
		Total Quantity Up To 100	C.Y.	126.00	100.80
		Total Quantity Up To 1,000	C.Y.	60.00	48.00
		Total Quantity Up To 1,000 or more	C.Y.	28.00	22.40
(3)	In Trenches, Boulders, Remove By Machine		C.Y.	45.00	36.00
(4)	In Trenches, Ripping Of Rock By Machine		C.Y.	105.00	84.00
(5)	In trenches, with explosives Net Rock				
		0' - 4' Deep	C.Y.	95.60	76.50
(6)	In trenches, with explosives				

	Net Rock	0' - 10' Deep	C.Y.	125.00	100.00
c	ROCK EXCAVATION (cont.)		UNIT	\$ ADD	\$ DEDUCT
(7)	In trenches, with explosives				
	Net Rock	0 - 15' Deep	C.Y.	150.00	120.00
(8)	In trenches, with explosives				
	Net Rock	Over 15' - 10' Deep	C.Y.	200.00	160.00
(9)	In trenches, with explosives -				
	Net Rock	0 - 20' Deep,	Prices Must Be Negotiated Before Start Of Work.		
(10)	Jack Holes (For Hydraulic Lift/Elevators)		L.F.	95.00	76.00
(11)	Open Or Mass Areas - If Explosives Are Prohibited				
	Net Rock		C.Y.	125.00	100.00
(12)	Trench Excavation - If Explosives Are Prohibited				
	Net Rock/With Rock Splitters And Jack Hammer or Hoe Ram		C.Y.	150.00	120.00

D. Unit Price Schedule - Miscellaneous:

1. **Related Documents:** Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
2. **Unit Price Schedule – Miscellaneous:**

a	Metal Decking		UNIT	\$ ADD	\$ DEDUCT
(1)	Removal and replacement of existing roof deck		S.F.	10.00	9.00
b	Mud Slab				
(1)	Unreinforced 2,500 psi lean concrete		C.Y.	\$200	
c	Concrete roof crickets		S.F.	5.00	
(1)	Removal and disposal of existing concrete roof crickets deemed not structurally sound.				

3. Unit Prices shall be negotiated if there is a change in scope of work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01 20 00

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.01A, entitled "Related Documents."

1.02 SUMMARY

- A. This Section includes the following:
1. Exterior non-load-bearing wall framing.
 2. Non-load-bearing steel framing members for the following applications:
 - a. Interior framing systems (e.g., supports for partition walls, framed soffits, furring, etc.).
 - b. Interior suspension systems (e.g., supports for ceilings, suspended soffits, etc.).
 3. Interior gypsum board.
 4. Exterior gypsum sheathing.
- B. Related Sections include the following:
1. Division 06 Section "Miscellaneous Rough Carpentry" for wood blocking built into gypsum board assemblies.
 2. Division 07 Section "Thermal Insulation" for thermal and sound attenuation insulation installed in assemblies that incorporate gypsum board.
 3. Division 07 Section "Fire-Resistive Joint Systems" for head-of-wall assemblies that incorporate gypsum board.
 4. Division 09 Section "Tiling" for tile backer board.
 5. Division 09 Section "Painting" for primers applied to gypsum board surfaces.

1.03 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide interior and exterior non-load-bearing metal framing capable of withstanding design loads within limits and under conditions indicated.
1. Design Loads: In accordance with the Connecticut State Building Code and the following:
 - a. Wind Loads:
 - 1) Entire height of building: 30 psf.
 - 2) Within 4 feet of corners for entire height of building: 35 psf.

2. Deflection Limits: Design framing systems to withstand design loads without deflections greater than the following:
 - a. Exterior Non-Load-Bearing Framing: Horizontal deflection of 1/600 of the wall height.
 - b. Interior Framing Systems:
 - 1) Maximum Deflection: L/240 at 5 psf, stud spacing at 16 inches o.c.
 3. Design framing systems to provide for movement of framing members without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change of 120 deg F.
 4. Design framing system to maintain clearances at openings, to allow for construction tolerances, and to accommodate live load deflection of primary building structure as follows:
 - a. Upward and downward movement of 3/4 inch.
- B. Cold-Formed Steel Framing, General: Design according to AISI's "Standard for Cold-Formed Steel Framing - General Provisions."
1. Design exterior non-load-bearing wall framing to accommodate horizontal deflection without regard for contribution of sheathing materials.
 2. Provide interior framing systems sized to accommodate maximum deflection using limiting heights of metal studs without contribution of gypsum wallboard (non-composite).

1.04 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show layout, spacings, sizes, thicknesses, and types of cold-formed metal framing; fabrication; and fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.
 1. For non-load-bearing metal framing indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer licensed in the State of Connecticut responsible for their preparation.
 2. Include calculations for span capabilities of cold-formed metal framing for deflection criteria specified.
- C. Samples: For the following products:
 1. Trim Accessories: Full-size Sample in 12-inch- long length for each trim accessory indicated.
- D. Qualification Data: For professional engineer.
- E. Product Test Reports: From a qualified testing agency, unless otherwise stated, indicating that each of the following complies with requirements, based on evaluation of comprehensive tests for current products:

1. Steel sheet.
 2. Expansion anchors.
 3. Power-actuated anchors.
 4. Mechanical fasteners.
- F. Research/Evaluation Reports: For cold-formed metal framing.
- G. Warranty: Special warranty included in this Section.

1.05 QUALITY ASSURANCE

- A. Engineering Responsibility: Preparation of Shop Drawings, design calculations, and other structural data by a qualified professional engineer.
- B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the State of Connecticut and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of cold-formed metal framing that are similar to those indicated for this Project in material, design, and extent.
- C. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E 329 to conduct the testing indicated.
- D. Product Tests: Mill certificates or data from a qualified independent testing agency indicating steel sheet complies with requirements, including base-metal thickness, yield strength, tensile strength, total elongation, chemical requirements, and metallic-coating thickness.
- E. AISI Specifications and Standards: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" and its "Standard for Cold-Formed Steel Framing - General Provisions."
- F. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- G. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.
- H. Mockups: Before beginning gypsum board installation, install mockups of at least 100 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Install mockups for the following:
 - a. Each level of gypsum board finish indicated for use in exposed locations.
 2. Apply or install final decoration indicated, including painting and wallcoverings, on exposed surfaces for review of mockups.
 3. Simulate finished lighting conditions for review of mockups.
 4. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling.
- B. Store cold-formed metal framing, protect with a waterproof covering, and ventilate to avoid condensation.
- C. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack gypsum panels flat to prevent sagging.

1.07 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.
- B. Do not install interior products until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or blotchy surface contamination and discoloration.

1.08 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace exterior gypsum sheathing that fails in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 EXTERIOR NON-LOAD-BEARING WALL FRAMING

- A. Manufacturers: Subject to compliance with requirements, provide cold-formed metal framing by one of the following:
 - 1. ClarkDietrich Building Systems.
 - 2. MarinoWare; a division of Ware Industries.
 - 3. SCAFCO Steel Stud Company.
- B. Framing Members, General: Comply with ASTM C 754 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
 2. Protective Coating: ASTM A 653/A 653M, G60, hot-dip galvanized unless otherwise indicated.
- C. Steel Studs: ASTM C 645, manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, and as follows:
1. Minimum Base-Metal Thickness: As required by structural performance.
 2. Flange Width: 1-5/8 inches.
- D. Steel Track: ASTM C 645, manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with unstiffened flanges, and as follows:
1. Minimum Base-Metal Thickness: As required by structural performance.
 2. Flange Width: 1-1/4 inches.
- E. Single Deflection Track: Manufacturer's single, deep-leg, U-shaped steel track; unpunched, with unstiffened flanges, of web depth to contain studs while allowing free vertical movement, with flanges designed to support horizontal and lateral loads and transfer them to the primary structure, and as follows:
1. Minimum Base-Metal Thickness: As required by structural performance.
 2. Flange Width: 1 inch plus the design gap for 1-story structures and 1 inch plus twice the design gap for other applications.
- F. Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches, wall attachment flange of 7/8 inch, 20 gauge minimum but not less than that required to meet structural performance requirements, and depth required to fit insulation thickness indicated.
- G. Hat-Shaped, Rigid Furring Channels: ASTM C 645.
1. Minimum Design Thickness: 0.018 inch.
 2. Depth: 7/8 inch.

2.02 INTERIOR NON-LOAD-BEARING STEEL FRAMING

- A. Manufacturers: Subject to compliance with requirements, provide cold-formed metal framing by one of the following:
1. ClarkDietrich Building Systems; ProSTUD Series.
 2. MarinoWare; a division of Ware Industries.
 3. SCAFCO Steel Stud Company.
- B. Interior Framing Members, General: Comply with ASTM C 645 for conditions indicated.
1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
 2. Protective Coating: Comply with ASTM C 645; roll-formed from hot-dipped galvanized steel; complying with ASTM A 1003/A 1003M and ASTM A 653/A 653M G40 or having a coating that provides equivalent corrosion resistance. A40 galvanized products are not acceptable.

- a. Coatings shall demonstrate equivalent corrosion resistance with an evaluation report acceptable to the authority having jurisdiction.
- C. Steel Studs and Runners: ASTM C 645.
 - 1. Non-Structural Studs: Cold-formed galvanized steel C-studs as per ASTM C 645 for conditions indicated below:
 - a. Flange Size: 1-1/4-inch.
 - b. Web Depth: As indicated on Drawings.
 - 1) Minimum Thickness: 0.033 inch.
 - 2) Minimum Design Thickness: 0.0346 inch.
- D. Slip-Type Head Joints: Where indicated, provide the following:
 - 1. Double-Runner System: ASTM C 645 top runners, inside runner with 2-inch- deep flanges in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.
- E. Firestop Tracks: Top runner manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. ClarkDietrich Building Systems; Brady SLP-TRK.
 - b. Fire Trak Corp.; Fire Trak attached to studs with Fire Trak Posi Clips.
 - c. Metal-Lite, Inc.; The System.

2.03 SUSPENSION SYSTEM COMPONENTS

- A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.0625-inch- diameter wire, or double strand of 0.0475-inch- diameter wire.
- B. Hanger Attachments to Concrete:
 - 1. Anchors: Fabricated from corrosion-resistant materials with holes or loops for attaching wire hangers and capable of sustaining, without failure, a load equal to 5 times that imposed by construction as determined by testing according to ASTM E 488 by an independent testing agency.
 - a. Type: Postinstalled, expansion anchor.
 - 2. Powder-Actuated Fasteners: Suitable for application indicated, fabricated from corrosion-resistant materials with clips or other devices for attaching hangers of type indicated, and capable of sustaining, without failure, a load equal to 10 times that imposed by construction as determined by testing according to ASTM E 1190 by an independent testing agency.
- C. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.162-inch diameter.

- D. Carrying Channels: Cold-rolled, 16 gauge, commercial-steel sheet with minimum 1/2-inch- wide flanges.
 - 1. Depth: 1-1/2 inches.
- E. Furring Channels (Furring Members): Cold-Rolled Channels: 16 gauge, with minimum 1/2-inch- wide flanges, 3/4 inch deep.
- F. Grid Suspension System for Ceilings: ASTM C 645, direct-hung, double-web suspension system composed of main beams and cross-furring members that interlock.
 - 1. Furring Runners: Manufactured from 0.020 inch thick steel, 1-1/2-inches wide by 1-1/2-inches high.
 - 2. Furring Tees: Manufactured from 0.020 inch thick steel, 1-1/2-inches wide by 1-1/2-inches high with staked-on clip couplings, factory punched cross tee slots, and hanger holes.
 - 3. Products: Subject to compliance with requirements, provide one of the following:
 - a. Armstrong World Industries, Inc.; Drywall Grid Systems.
 - b. Chicago Metallic Corporation; 660-C Drywall Furring System.
 - c. USG Corporation; Drywall Suspension System.

2.04 GYPSUM PANELS, GENERAL

- A. Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.05 INTERIOR GYPSUM BOARD

- A. General: Complying with ASTM C 36 or ASTM C 1396, as applicable to type of gypsum board indicated and whichever is more stringent.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Continental Building Products.
 - b. G-P Gypsum.
 - c. National Gypsum Company.
 - d. USG Corporation.
- B. Type X:
 - 1. Thickness: 5/8 inch.
 - 2. Long Edges: Tapered.
- C. Abuse-Resistant and Moisture- and Mold-Resistant Gypsum Board: Manufactured to produce greater resistance to surface indentation and abrasion than standard, regular-type and Type X gypsum board.
 - 1. Core: 5/8 inch, Type X.
 - 2. Long Edges: Tapered.

3. Mold Resistance: ASTM D 3273, score of 10.
 4. Abuse-Resistant Performance: Comply with ASTM C 1629 and the following:
 - a. Surface Abrasion: ASTM D 4977 modified with 25 lbs of additional weight, 0.059" maximum (Level 2).
 - b. Surface Indentation: ASTM D 5420, 0.10" maximum (Level 1).
 - c. Soft-Body Impact: ASTM E 695, surface failure at 195 ft.-lbs minimum (Level 2).
 - d. Hard-Body Impact: ASTM E 1629 Annex A.1, surface failure at 50 ft.-lbs minimum (Level 1).
 5. Products: Subject to compliance with requirements, provide one of the following:
 - a. Continental Building Products; Protecta AR 100.
 - b. National Gypsum Company; Gold Bond Hi-Abuse Brand XP Gypsum Board.
 - c. USG Corporation; Mold Tough AR Panels.
- D. Moisture- and Mold-Resistant Gypsum Board, ASTM C 1396/C 1396M. With moisture- and mold-resistant core and coated surfaces.**
1. Thickness: 5/8 inch.
 2. Long Edges: Tapered.
 3. Mold Resistance: ASTM D 3273, score of 10.
 4. Products: Subject to compliance with requirements, provide one of the following:
 - a. Continental Building Products; Mold Defense.
 - b. G-P Gypsum; ToughRock Moisture-Guard Gypsum Board.
 - c. National Gypsum Company; Gold Bond XP Gypsum Board.
 - d. USG Corporation; Mold Tough Panels.

2.06 EXTERIOR SHEATHING

- A. Glass-Mat Gypsum Wall Sheathing: ASTM C 1177.**
1. Product: Subject to compliance with requirements, provide one of the following:
 - a. CertainTeed; GlasRoc Sheathing.
 - b. Continental Building Products; Weather Defense Platinum Sheathing.
 - c. G-P Gypsum Corporation; Dens-Glass Gold.
 - d. National Gypsum; Gold Bond Brand e²XP Sheathing.
 - e. USG Corporation; Securock Glass-Mat Sheathing Panels.
 2. Type and Thickness: Type X, 5/8- inch thick.
- B. Sealant for Glass-Mat Gypsum Sheathing Board: Single component, nonsag sealant type compatible with exterior gypsum sheathing and as recommended by sheathing manufacturers for covering exposed fasteners.**
- C. Sheathing Tape for Glass-Mat Gypsum Sheathing Board: Self-adhering glass-fiber tape, minimum 2 inches wide, 10 by 10 or 10 by 20 threads/inch, of type recommended by sheathing and tape manufacturers for use with sealant in sealing joints in glass-mat gypsum sheathing board and with a history of successful in-service use.**

2.07 TRIM ACCESSORIES

- A. Interior Trim: ASTM C 1047.
 - 1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet.
 - 2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - d. Expansion (control) joint.
- B. Aluminum Trim: Extruded accessories of profiles and dimensions indicated.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Fry Reglet Corp.
 - b. Gordon, Inc.
 - c. Pittcon Industries.
 - 2. Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B 221, Alloy 6063-T5.
 - 3. Finish: Corrosion-resistant primer compatible with joint compound and finish materials specified.

2.08 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475/C 475M.
- B. Joint Tape:
 - 1. Interior Gypsum Wallboard: Paper.
- C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
 - 1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
 - 2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
 - 3. Fill Coat: For second coat, use drying-type, all-purpose compound.
 - 4. Finish Coat: For third coat, use drying-type, all-purpose compound.
 - 5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.

2.09 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Sound Attenuation Blankets: As specified in Division 07 Section "Thermal Insulation."
 - 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- C. Acoustical Sealant: As specified in Division 07 Section "Joint Sealants."
- D. Thermal Insulation: As specified in Division 07 Section "Thermal Insulation."
- E. Isolation Strip at Exterior Walls: Provide one of the following:
 - 1. Asphalt-Saturated Organic Felt: ASTM D 226, Type I (No. 15 asphalt felt), nonperforated.
 - 2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch thick, in width to suit steel stud size.

2.10 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - 1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
 - 1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
- C. Screws for Fastening Gypsum Sheathing to Cold-Formed Metal Framing: Steel drill screws, in length recommended by sheathing manufacturer for thickness of sheathing board to be attached, with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117.
 - 1. For steel framing less than 0.0329 inch thick, attach sheathing to comply with ASTM C 1002.
 - 2. For steel framing from 0.033 to 0.112 inch thick, attach sheathing to comply with ASTM C 954.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance.

- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Commencement of work indicates acceptance of areas and substrates.

3.02 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C 754, except comply with framing sizes and spacing indicated.
 - 1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.
- B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- C. Install bracing at terminations in assemblies.
- D. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.03 INSTALLING SUSPENSION SYSTEMS

- A. Install suspension system components in sizes and spacings indicated on Drawings, but not less than those required by referenced installation standards for assembly types and other assembly components indicated.
- B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.
- C. Suspend hangers from building structure as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
 - a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
 - a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.
 - 3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
 - 4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for

- structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.
 - 5. Do not attach hangers to steel roof deck.
 - 6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
 - 7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
 - 8. Do not connect or suspend steel framing from ducts, pipes, or conduit.
- D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.
- E. Seismic Bracing: Sway-brace suspension systems with hangers used for support.
- F. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.
- G. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

3.04 INTERIOR NON-LOAD-BEARING WALL INSTALLATION

- A. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- B. Install studs so flanges within framing system point in same direction.
- 1. Space studs for all applications at 16 inches o.c., unless otherwise indicated.
- C. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.
- 1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
 - 2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
 - a. Install two studs at each jamb, unless otherwise indicated.
 - b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch clearance from jamb stud to allow for installation of control joint in finished assembly.
 - c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
 - 3. Other Framed Openings: Frame openings other than door openings the same as required for door openings, unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.

4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
 - a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.
 5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
 6. Curved Partitions:
 - a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.
 - b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of not less than 2 studs at ends of arcs, place studs 6 inches o.c.
- D. Direct Furring:
1. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.
- E. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.05 EXTERIOR NON-LOAD-BEARING WALL INSTALLATION

- A. Install continuous tracks sized to match studs. Align tracks accurately and securely anchor to supporting structure as indicated.
- B. Fasten both flanges of studs to top and bottom track, and to bottom track only where deflection track is indicated. Space studs as follows:
 1. Stud Spacing: 16 inches o.c.
- C. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar requirements.
- D. Isolate non-load-bearing steel framing from building structure to prevent transfer of vertical loads while providing lateral support.
 1. Install single-leg deflection tracks and anchor to building structure, where indicated.
- E. Install horizontal bridging in wall studs, spaced in rows indicated on Shop Drawings but not more than 48 inches apart. Fasten at each stud intersection.
 1. Top Bridging for Single Deflection Track: Install row of horizontal bridging within 12 inches of single deflection track. Install a combination of flat, taut, steel sheet straps of width and thickness indicated and stud or stud-track solid blocking of width and thickness matching studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges.
 - a. Install solid blocking at 96-inch centers.

- F. Install miscellaneous framing and connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, fasteners, and stud girts, to provide a complete and stable wall-framing system.

3.06 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
 - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- I. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.

3.07 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
1. Type X: Typical walls and ceilings, unless otherwise indicated below.
 2. Abuse-Resistant Type: Walls in open public spaces and all corridors to a height of 8'-0" a.f.f., with Type X to top of wall/structure above.
 3. Mold and Moisture Resistant Type: Walls and ceilings/soffits in toilet rooms, janitor closets, Café and food prep areas, with the exception of walls to receive tile.
 4. Tile Backer: Furnished and installed by Division 09 Section "Tiling."
- B. Single-Layer Application:
1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.
 2. On partitions/walls, apply gypsum panels either vertically (parallel to framing) or horizontally (perpendicular to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
 3. Fastening Methods: Apply gypsum panels to supports with steel drill screws.
- C. Multilayer Application:
1. On ceilings, apply gypsum board indicated for base layers before applying face layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints 1 framing member, 16 inches minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly.
 2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
 3. Fastening Methods: Fasten base layers and face layers separately to supports with screws.
- D. Curved Surfaces:
1. Install panels horizontally (perpendicular to supports) and unbroken, to extent possible, across curved surface plus 12-inch- long straight sections at ends of curves and tangent to them.
 2. For double-layer construction, fasten base layer to studs with screws 16 inches o.c. Center gypsum board face layer over joints in base layer, and fasten to studs with screws spaced 12 inches o.c.

3.08 GYPSUM SHEATHING INSTALLATION, GENERAL

- A. Apply panels perpendicular to supports, with end joints staggered and located over supports.
 - 1. Install with 1/4-inch open space where panels abut other construction or structural penetrations.
 - 2. Fasten with corrosion-resistant screws.
- B. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- C. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction, unless otherwise indicated.
- D. Securely attach to substrate by fastening as indicated, complying with the following:
 - 1. Table 2304.9.1, "Fastening Schedule," in ICC's "International Building Code."
- E. Coordinate wall sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- F. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.
- G. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

3.09 GYPSUM SHEATHING INSTALLATION

- A. Comply with GA-253 and with manufacturer's written instructions.
 - 1. Fasten gypsum sheathing to cold-formed metal framing with screws.
 - 2. Install boards with a 3/8-inch gap where non-load-bearing construction abuts structural elements.
 - 3. Install boards with a 1/4-inch gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.
- B. Apply fasteners so heads bear tightly against face of sheathing boards but do not cut into facing.
- C. Horizontal Installation: Install sheathing with V-grooved edge down and tongue edge up. Interlock tongue with groove to bring long edges in contact with edges of adjacent boards without forcing. Abut ends of boards over centers of studs, and stagger end joints of adjacent boards not less than one stud spacing. Attach boards at perimeter and within field of board to each steel stud.
 - 1. Space fasteners approximately 8 inches o.c. and set back a minimum of 3/8 inch from edges and ends of boards.

- D. Vertical Installation: Install board vertical edges centered over studs. Abut ends and edges of each board with those of adjacent boards. Attach boards at perimeter and within field of board to each stud.
 - 1. Space fasteners approximately 8 inches o.c. and set back a minimum of 3/8 inch from edges and ends of boards.

3.10 SHEATHING JOINT-AND-PENETRATION TREATMENT

- A. Seal exterior gypsum sheathing joints according to sheathing manufacturer's written instructions.
 - 1. Apply glass-fiber sheathing tape to glass-mat gypsum sheathing board joints, and apply and trowel silicone emulsion sealant to embed entire face of tape in sealant. Apply sealant to exposed fasteners with a trowel so fasteners are completely covered. Seal other penetrations and openings.

3.11 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints at locations indicated on Drawings, or if not indicated, according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- C. Interior Trim: Install in the following locations:
 - 1. Cornerbead: Use at outside corners.
 - 2. LC-Bead: Use at exposed panel edges.
- D. Aluminum Trim: Install in locations indicated on Drawings.

3.12 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 4: At panel surfaces that will be exposed to view.

3.13 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.01A, entitled "Related Documents."

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Panel signs.
- B. Related Sections include the following:
 - 1. Division 01 Section "Temporary Facilities and Controls" for temporary Project identification signs and for temporary information and directional signs.
 - 2. Division 26 Sections for illuminated Exit signs.

1.03 DEFINITIONS

- A. Accessible: In accordance with the accessibility standard.

1.04 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show fabrication and installation details for signs.
 - 1. Include fabrication and installation details and attachments to other work.
 - 2. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
 - 3. Provide message list, typestyles, graphic elements, including tactile characters and Braille, and layout for each sign.
- C. Samples for Initial Selection: For each type of sign material indicated that involves color selection.
 - 1. Include representative Samples of available typestyles and graphic symbols.
- D. Samples for Verification: For each of the following products and for the full range of color, texture, and sign material indicated, of sizes indicated:
 - 1. Panel Signs: Not less than 12 inches square.

1.05 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For fabricator.
- B. Warranty: Special warranty specified in this Section.

1.06 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For signs to include in maintenance manuals.

1.07 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative of signage manufacturer.
- B. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
- C. Source Limitations for Signs: Obtain each sign type indicated from one source from a single manufacturer.
- D. Handicapped Accessibility Guidelines: Comply with the handicapped accessibility requirements of the 2010 ADA Standards and ICC/ANSI A117.1.

1.08 COORDINATION

- A. Coordinate placement of anchorage devices with templates for installing signs.

1.09 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: One year from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 PANEL SIGNS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide **ASI Sign Systems; InTouch**, or a comparable product by one of the following:
 - 1. APCO Graphics, Inc.
 - 2. Best Sign Systems, Inc.
 - 3. Mohawk Sign Systems, Inc.

- B. Interior Panel Signs: Provide smooth sign panel surfaces constructed to remain flat under installed conditions within a tolerance of plus or minus 1/16 inch measured diagonally from corner to corner, complying with the following requirements:
1. Provide manufacturer's standard one-piece construction:
 - a. Phenolic-Backed Photopolymer Sheet: Provide light-sensitive, water-wash photopolymer face layer bonded to a phenolic base layer to produce a composite sheet with overall, face-layer, and base-layer thickness of 1/4-inch; and a Type D Shore durometer hardness of 80.
 2. Edge Condition: Square cut.
 3. Corner Condition: Chamfered, as indicated on Drawings.
 4. Mounting: Unframed.
 - a. Wall mounted with mechanical fasteners, two-face tape, or hook and loop tape required by substrate.
 5. Colors: As selected by Architect from manufacturer's full range.
 6. Font: Century Gothic.
 7. Character proportion: Width to height ratio between 3:5 and 1:1, and a stroke-width-to-height ratio between 1:5 and 1:10.
 8. Size of characters and symbols: As indicated on Drawings, but not less than the following.
 - a. Room numbers: 1-inch.
 - b. Room letters: 5/8-inch minimum.
 9. Pictograms: Accompanied by the equivalent verbal description placed directly below the pictogram. The border dimension of the pictogram to be no less than 6 inches in height.
 10. Finish and Contrast: Characters, symbols and background to be matte or other non-glare finish. Characters and symbols to be in contrasting color to the background; either light characters on a dark background or dark characters on a light background.
 11. Tactile Characters: Characters and Grade 2 Braille raised 1/32 inch above surface with contrasting colors. Glue-on characters or etched backgrounds are not permitted.
 - a. Manufacturer's standard process for producing text and symbols complying with 2010 ADA Standards and ICC/ANSI A117.1. Produce precisely formed characters with square-cut edges free from burrs and cut marks; Braille dots with domed or rounded shape.
 - b. Braille to be separated from corresponding raised characters or symbols by 1/2-inch.
- C. Panel Sign Schedule: Provide symbols indicated and Grade 2 Braille at each sign.
1. Sign Type: ROOM ID – TOILET ROOMS.
 - a. Text: Room number and function, including male and female symbols and international symbol of handicapped accessibility.
 - b. Quantity: One at each interior entrance door to toilet room.

2. Sign Type: EXIT.
 - a. Text: EXIT.
 - b. Quantity: One adjacent to each door to an exit passageway, and the exit discharge, as indicated.
3. Sign Type: EXIT STAIR.
 - a. Text: EXIT, include stair symbol with verbal description placed directly below.
 - b. Quantity: One at each interior stair exit door, as indicated.

2.02 ACCESSORIES

- A. Anchors and Inserts: Provide nonferrous-metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion-bolt devices for drilled-in-place anchors.
- B. Two-Face Tape: Manufacturer's standard high-bond, foam-core tape, 0.045 inch thick, with adhesive on both sides.

2.03 FABRICATION

- A. General: Provide manufacturer's standard signs of configurations indicated.

2.04 FINISHES, GENERAL

- A. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of signage work.
- B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.
- C. Verify that anchor inserts are correctly sized and located to accommodate signs.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Locate signs and accessories where indicated, using mounting methods of types described and complying with manufacturer's written instructions.
1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
 2. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
 3. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.
 4. Interior Wall Signs: Install signs on walls adjacent to latch side of door where applicable. Where not indicated or possible, such as double doors, install signs on nearest adjacent walls.
 - a. Locate top of sign edge at 60-inches above the finish floor with baseline of tactile characters 48" minimum above finish floor.
 - b. Locate signs so that clear floor area 18 inches minimum by 18 inches minimum centered on the tactile character, is provided beyond the arc of any door swing between the closed position and 45 degree open position.
 - c. At double doors with two active leafs, mount sign on wall to the right hand side of the door. At double doors with one inactive leaf, mount sign on inactive leaf unless otherwise indicated.
- B. Wall-Mounted Signs: Comply with sign manufacturer's written instructions except where more stringent requirements apply.
1. Mechanical Fasteners: Use non-removable mechanical fasteners placed through predrilled holes. Attach signs with fasteners and anchors suitable for secure attachment to substrate as recommended in writing by sign manufacturer.
 2. Two-Face Tape: Clean bond-breaking materials from substrate surface and remove loose debris. Apply tape strips symmetrically to back of sign and of suitable quantity to support weight of sign without slippage. Keep strips away from edges to prevent visibility at sign edges. Place sign in position, and push to engage tape adhesive.
 - a. Mount signs to glass only. Do not use this method for any other substrate.
 3. Signs Mounted on Glass: Provide matching opaque plate on opposite side of glass to conceal mounting materials.

3.03 ADJUSTING AND CLEANING

- A. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.
- B. Remove temporary protective coverings and strippable films as signs are installed.

- C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION