

# Anderson County Government

## Request for Bids

100 North Main Street, Suite 214  
Courthouse  
Clinton, Tennessee 37716  
(865) 457-6218 Office  
(865) 457-6252 Fax

[purchasing@andersoncountyttn.gov](mailto:purchasing@andersoncountyttn.gov)

**Bid No.: 2248**

---

**Date Issued: May 26, 2022**

**Bids will be received until  
2:30 p.m. Eastern Time on June 23, 2022**

---

Sealed bids are subject to the General Terms and Conditions of this bid, and any other data attached or incorporated by reference. Bids will be received in the Anderson County Purchasing Office until the date and time specified above, and at that time publicly opened and read aloud.

ANDERSON COUNTY RESERVES THE RIGHT TO WAIVE ANY INFORMALITIES  
IN OR TO REJECT ANY OR ALL BIDS AND TO ACCEPT THE BID DEEMED  
FAVORABLE AND IN THE BEST INTEREST OF ANDERSON COUNTY.

---



Robert J. Holbrook, Director of Finance

---

BID DESCRIPTION
-----------------

Bid for County Clerk & Archive Renovations.

Vendors are to submit one (1) original and one (1) copy. Bids must be submitted in a sealed envelope with the Bid # clearly labeled.

Pre-bid walk through and pre-bid meeting will take place as detailed in the bid document.

**Bidders should note that the Time Clock in the Purchasing runs 6 minutes fast. Bids must be received by the deadline as recorded by the date stamp on this Time Clock.**

Questions are to be emailed to [purchasing@andersoncountyttn.gov](mailto:purchasing@andersoncountyttn.gov) and [kajmeri@andersoncountyttn.gov](mailto:kajmeri@andersoncountyttn.gov)



# ANDERSON COUNTY COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION

KNOXVILLE, TENNESSEE

**PROJECT MANUAL OF SPECIFICATIONS**

PROJECT NO. 20-15 Bid #2248

CONTRACT DOCUMENTS

February 4, 2022

BLANKENSHIP & PARTNERS, LLC

A R C H I T E C T S & P L A N N E R S

1120 E. WEISGARBER ROAD, 2<sup>nd</sup> FLOOR

KNOXVILLE, TENNESSEE 37909

PHONE : 865.251.2585

**PROJECT MANUAL FOR**

**ANDERSON COUNTY COURTHOUSE  
COUNTY CLERK & ARCHIVE  
RENOVATION**

**100 N MAIN STREET  
CLINTON, TENNESSEE**

**B&P PROJECT NUMBER: 20-15**

**DATE: February 4, 2022**

**ARCHITECT:**

**BLANKENSHIP & PARTNERS, LLC  
ARCHITECTS AND PLANNERS  
1120 E. Weisgarber Road, 2<sup>nd</sup> Floor  
Knoxville, Tennessee 37909**



	COVER SHEET	
	SEAL PAGE	1-2
00 01 00	TABLE OF CONTENTS	00 01 00 1-3
00 01 05	LIST OF DRAWINGS	00 01 05 1
<b>DIVISION 00-CONTRACTING REQUIREMENTS</b>		<b>Pages</b>
00 11 16	INVITATION TO BID	00 11 16 1
00 21 13	INSTRUCTIONS TO BIDDERS	00 21 13 1
00 41 13	BID FORM	00 41 13 1-2
00 52 00	AGREEMENT FORM	00 52 00 1
00 72 00	GENERAL CONDITIONS OF THE CONTRACT	00 72 00 1
00 73 00	SUPPLEMENTARY CONDITIONS	00 73 00 1-9
<b>DIVISION 01-GENERAL REQUIREMENTS</b>		<b>Pages</b>
01 10 00	SUMMARY	01 10 00 1-3
01 26 00	CONTRACT MODIFICATION PROCEDURES	01 26 00 1-3
01 29 00	PAYMENT PROCEDURES	01 29 00 1-5
01 31 00	PROJECT MANAGEMENT AND COORDINATION	01 31 00 1-8
01 32 00	CONSTRUCTION PROGRESS AND DOCUMENTATION	01 32 00 1-7
01 33 00	SUBMITTAL PROCEDURES	01 33 00 1-9
01 40 00	QUALITY REQUIREMENTS	01 40 00 1-9
01 42 00	REFERENCES	01 42 00 1-2
01 50 00	TEMPORARY FACILITIES AND CONTROLS	01 50 00 1-12
01 60 00	PRODUCT REQUIREMENTS	01 60 00 1-10
01 73 00	EXECUTION	01 73 00 1-6
01 73 29	CUTTING AND PATCHING	01 73 29 1-3
01 77 00	CLOSEOUT PROCEDURES	01 77 00 1-5
01 78 39	PROJECT RECORD DOCUMENTS	01 78 39 1-4
<b>DIVISION 03-CONCRETE</b>		<b>Pages</b>
03 62 00	NON-SHRINK GROUT	03 62 00 1-2
<b>DIVISION 04-MASONRY – not used</b>		<b>Pages</b>
<b>DIVISION 05-METALS</b>		<b>Pages</b>
05 12 00	STRUCTURAL STEEL	05 12 00 1-14
05 50 00	METAL FABRICATIONS	05 50 00 1-5
<b>DIVISION 06-WOOD, PLASTICS, AND COMPOSITES</b>		<b>Pages</b>
06 10 00	ROUGH CARPENTRY	06 10 00 1-5
06 40 23	INTERIOR ARCHITECTURAL WOODWORK	06 40 23 1-6
<b>DIVISION 07-THERMAL AND MOISTURE PROTECTION</b>		<b>Pages</b>
07 21 00	THERMAL INSULATION	07 21 00 1-3
07 27 00	AIR/VAPOR BARRIER MEMBRANE	07 27 00 1-2
07 84 13	THROUGH PENETRATION FIRESTOP SYSTEMS	07 84 13 1-6
07 84 46	FIRE-RESISTIVE JOINT SYSTEMS	07 84 46 1-4
07 92 00	JOINT SEALANTS	07 92 00 1-9
<b>DIVISION 08-OPENINGS</b>		<b>Pages</b>
08 11 13	HOLLOW METAL DOORS AND FRAMES	
08 14 16	FLUSH WOOD DOORS	
08 32 23	COUNTER SHUTTERS	03 32 23 1-3
08 41 13	ALUMINUM FRAMED ENTRANCES AND STOREFRONTS	08 41 13 1-10
08 71 00	DOOR HARDWARE	08 71 00 1-10
08 80 00	GLAZING	08 80 00 1-10

**DIVISION 09-FINISHES**

	<b>Pages</b>
09 20 99 RESTORATION OF PLASTER CEILING AND WALL SURFACES	09 20 99 1-2
09 22 16 NON-STRUCTURAL METAL FRAMING	09 22 16 1-5
09 29 00 GYPSUM BOARD	09 29 00 1-7
09 51 23 ACOUSTICAL TILE CEILINGS	09 51 23 1-5
09 65 13 RESILIENT BASE AND ACCESSORIES	09 65 13 1-4
09 65 19 RESILIENT TILE FLOORING	09 65 19 1-4
09 66 00 TERRAZZO FLOORING	09 66 00 1-2
09 68 13 TILE CARPETING	09 68 13 1-3
09 84 13 ACOUSTICAL WALL TREATMENTS	09 84 13 1-3
09 91 00 PAINTING	09 91 00 1-6

**DIVISION 10-SPECIALTIES**

	<b>Pages</b>
10 44 13 FIRE EXTINGUISHER CABINETS	10 44 13 1-4
10 44 16 FIRE EXTINGUISHERS	10 44 16 1-2

**DIVISION 26 - ELECTRICAL**

	<b>Pages</b>
26 00 00 GENERAL ELECTRICAL	26 00 00 1-4
26 05 19 LOW VOLTAGE, 600-VOLT CONDUCTORS	26 05 19 1
26 05 33 RACEWAYS AND BOXES	26 05 33 1-3
26 05 53 EQUIPMENT IDENTIFICATIN AND LABELING	26 05 53 1
26 24 16 PANELBOARDS	26 24 16 1-2
26 27 26 WIRING DEVICES	26 27 26 1
26 51 19 LED INTERIOR LIGHTING	26 51 19 1-4
26 53 00 EXIT SIGNS	26 53 00 1

**DIVISION 27 - COMMUNICATIONS**

	<b>Pages</b>
27 05 10 MISCELLANEOUS COMMUNICATIONS WIRING	27 05 10 1

**END OF SECTION 00 01 00**

**GENERAL – LIST OF DRAWINGS**

---

COVER

**ARCHITECTURAL**

---

G1 LIFE SAFETY PLAN – FIRST FLOOR  
G2 LIFE SAFETY PLAN – THIRD FLOOR  
G3 UL DETAILS  
A0.1 DEMOLITION PLAN – FIRST FLOOR  
A0.2 DEMOLITION PLAN – THIRD FLOOR  
A2.0 FIRST FLOOR PLAN  
A2.1 THIRD FLOOR PLAN  
A2.2 ENLARGED FLOOR PLAN  
A3.0 REFLECTED CEILING PLAN – FIRST FLOOR  
A3.1 REFLECTED CEILING PLAN – THIRD FLOOR  
A3.2 GRID CEILING PLAN & DETAILS  
A5.0 WALL SECTIONS & DETAILS  
A5.1 WALL SECTIONS & DETAILS  
A6.0 INTERIOR ELEVATIONS & MILLWORK  
A6.1 MILLWORK DETAILS  
A8.0 DOOR & WINDOW DETAILS  
A9.0 FINISH PLANS & SCHEDULE

**MECHANICAL**

---

M1 FIRST FLOOR PLAN HVAC  
M2 THIRD FLOOR PLAN HVAC

**ELECTRICAL**

---

E1.1 FIRST FLOOR PLAN – LIGHTING  
E1.2 FIRST FLOOR PLAN – POWER & COMMUNICATION  
E2.1 THIRD FLOOR PLAN – LIGHTING  
E2.2 THIRD FLOOR PLAN – POWER & COMMUNICATION

**END OF SECTION 00 01 15**

**SECTION 00 11 16 – INVITATION TO BID**

**Project:** Anderson County Courthouse, County Clerk & Archive Renovation, 100 N. Main Street, Clinton, Tennessee, 37716.

The owner is inviting General Contractor bids for the Work of this project. Contractors may examine the documents at the Designer's office on or after May 31, 2022.

Bidding documents including drawings and Project Manual are available in electronic (PDF) form at no cost via download from link provided in email to individual designated by each Bidder. Bid Envelope and Bid Form will be provided to all Bidders. Bidders may obtain additional copies of Bidding Documents from Designer at cost (nonrefundable).

Bidders must be licensed and qualified per state law. Five percent (5%) Bid Security is required in the form of a Bid Bond or check (certified or cashier's) made payable to Blankenship & Partners. Non-discrimination policy applies.

**Building Walk-Through At:**

100 N. Main Street, Suite 118, Clinton, Tennessee 37716 at 9 AM (Eastern Time) Tuesday, June 7, 2022. This is the only walk-through opportunity that will be offered.

**Pre-Bid Conference (Mandatory) At:**

100 N. Main Street, Suite 118, Clinton, Tennessee 37716 at 2 PM (Eastern Time) Tuesday, June 7, 2022.

**Bids Received At:**

100 N. Main Street, Suite 118, Clinton, Tennessee 37716 at 2:30 PM (Eastern Time) Thursday, June 23, 2022.

**Designer:**

Blankenship & Partners, LLC, 1112 E. Weisgarber Rd, 2<sup>nd</sup> Floor, Knoxville, Tennessee 37909.

**END OF SECTION 00 11 16**

**SECTION 00 21 13- INSTRUCTIONS TO BIDDERS**

**1.1 GENERAL**

Instruction to Bidders shall conform to American Institute of Architect's Document A701-1997 "Instruction to Bidders".

**END OF SECTION 00 21 13**



**SECTION 00 41 13 – BID #2248 FORM**

TO: Bill Blankenship  
Blankenship & Partners , LLC  
1120 E. Weisgarber Road, 2<sup>nd</sup> Floor  
Knoxville, Tennessee 37909

FROM: \_\_\_\_\_ (Name of Bidder)  
\_\_\_\_\_ (Address of Bidder)  
\_\_\_\_\_  
\_\_\_\_\_

FOR: Anderson County Courthouse  
County Clerk & Archive Renovation  
100 N. Main Street  
Clinton, Tennessee 37716

The Bidder acknowledges in submitting this bid that:

1. This Bidder has received, read and understands the Bidding Documents and this bid is made in accordance therewith.
2. This Bidder has visited the site and become familiar with the local conditions under which the work is to be performed, and has correlated all observations with the requirements of the Bidding Documents.
3. This Bidder has received the following addenda:
  - Addendum No. \_\_\_\_\_ dated \_\_\_\_\_.
  - Addendum No. \_\_\_\_\_ dated \_\_\_\_\_.
  - Addendum No. \_\_\_\_\_ dated \_\_\_\_\_.
4. The required Bid Security, in the amount of five percent (5%) of the total amount bid, is attached hereto.
5. The person who signs this bid on behalf of the Bidder is required to be legally empowered to bind the bidder to a Contract.
6. Failure to complete this Bid Form or to provide required attachments may be cause for rejection of the bid.
7. Bidder understands and agrees that the lump sum bid price includes all taxes such as sales, use, excise, licenses, etc., now or hereafter imposed by federal, state or other government agencies upon the equipment, labor and materials specified, and that all said taxes shall be paid by the Contractor.
8. This Bidder agrees to:
  - A. Honor this bid for a period of sixty (60) days following the date of the scheduled opening of bids.
  - B. Enter into and execute a contract, if presented on the basis of this bid, and to furnish the bond(s) and certificates(s) of insurance as required.

- C. Accomplish the work in accordance with the Contract Documents.
- D. Achieve substantial completion of the project within \_\_\_\_ days from and including the date stipulated in the Notice to Proceed.
- E. Accept the conditions for liquidated damages in the amount of \$500.00 per calendar day.

**BASE BID**

This Bidder agrees to complete the work of the base bid for this project for the lump sum of (show amount in both words and figures):

\_\_\_\_\_ and \_\_\_\_/100ths Dollars

\$ \_\_\_\_\_

This bid is submitted by:

Authorized Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Type or print  
Name and Title: \_\_\_\_\_

On Behalf of  
(Name of Bidder): \_\_\_\_\_

Bidder's Address: \_\_\_\_\_  
\_\_\_\_\_

Bidder's Telephone  
Number: \_\_\_\_\_

**END OF SECTION 00 41 13**

**SECTION 00 52 00 – AGREEMENT FORM**

**PART 1 – GENERAL**

**1.1 SUMMARY**

The Agreement Form shall be American Institute of Architects Document A101 “Standard Form of Agreement Between Owner and Contractor – Stipulated Sum”, 2007 Edition. A copy is included for reference purposes.

**END OF SECTION 00 52 00**

**SECTION 00 72 00 – GENERAL CONDITIONS**

**PART 1 - GENERAL**

“General Conditions of the Contract for Construction”, American Institute of Architects Document A201, 2007 Edition, Articles 1 through 14, shall be part of this Document and is incorporated herein as fully as if here set forth.

**END OF SECTION 00 72 00**

**SECTION 00 73 00 - SUPPLEMENTARY CONDITIONS****PART 1 – GENERAL**

Relation to General Conditions of the Contract: The following supplements modify the "General Conditions of the Contract for Construction," AIA Document A201, 2007 Edition. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

**ARTICLE 1: GENERAL PROVISIONS****1.2 CORRELATION AND INTENT OF THE DOCUMENTS**

Add the following new subparagraph 1.2.1.1 in its entirety:

**1.2.1.1** If there is any conflict or discrepancy within or between any of the Contract Documents involving the quality or quantity of Work required, it is the intention of the Contract that the Work of highest quality or greatest quantity shown or specified shall be furnished.

**1.4 INTERPRETATION**

Add the following new subparagraph 1.4.1 in its entirety:

**1.4.1** Whether or not the word "all" is used in the Contract Documents, coverage is intended to be complete, except where partial coverage is specifically and expressly noted. In all cases where an item is referred to in the singular number, it is intended that the reference shall apply to as many such items as are required to complete the work. Words such as "install", "provide", "furnish", and "supply" shall be construed as meaning complete furnishing, installing, and constructing unless modified by additional information.

**ARTICLE 2: OWNER****2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER**

Replace subparagraph 2.2.5 with the following:

**2.2.5** The Contractor will be furnished free of charge twenty (20) copies of Drawings and Project Manuals. Additional sets will be furnished at the cost of reproduction, postage, and handling.

**ARTICLE 3: CONTRACTOR****3.1 GENERAL**

Add the following new subparagraph 3.1.4 in its entirety:

**3.1.4** No verbal agreement or conversation with any officer, representative, agent, or employee of the Owner or Architect, either before or after the execution of this contract shall affect or modify the terms or obligations herein contained.

**3.2 REVIEW OF CONTRACT DOCUMENT AND FIELD CONDITIONS BY CONTRACTOR**

A. Add the following new subparagraph 3.2.1.1 in its entirety:

**3.2.1.1** The Contractor and its subcontractors and vendors shall examine carefully the various conditions and limitations under which the work is to be performed including, but not limited to, the following:

- .1** The location, conditions, character, and arrangement of the site, its environs, and contiguous properties thereto.
- .2** The availability and competence of labor required to properly complete the Work.
- .3** The weather conditions, climatic range and precipitation generally prevailing in the region and immediate vicinity of the site.

- .4 The availability and cost of materials, tools, equipment, and resources necessary to properly complete the Work.
- .5 Other similar matters.

Neither Owner nor Architect assumes any responsibility or liability for the above listed matters or others similar thereto, nor for their determination or existence.

- B. Add the following new subparagraph 3.2.1.2 in its entirety:

**3.2.1.2** Neither Owner nor Architect warrant the accuracy of grades, elevations, dimensions, clearances, or locations indicated on the Drawings issued by the Architect nor for Work installed by separate contractors. The Contractor shall verify the accuracy of all such grades, elevations, dimensions, clearances, and locations to its satisfaction. Dimensions of existing or other Work at the site shall be verified by the Contractor for connection to Work under this contract. Failure of the Contractor to verify grades, elevations, dimensions, clearances, or locations resulting in errors in the Work shall be the sole responsibility of the Contractor and correction of such errors resulting from such failure shall be corrected at no additional cost to the Owner.

- C. Add the following new subparagraph 3.2.5 in its entirety:

**3.2.5** If the Contractor discovers any errors, inconsistencies or omissions in the Documents, no work affected thereby shall be started, or if started, shall be stopped immediately until the Contractor and the Architect agree upon clarification of the errors, inconsistencies or omissions.

### **3.4 LABOR AND MATERIALS**

- A. Add the following to the end of subparagraph 3.4.2:

After the Contract has been executed, the Owner and the Architect will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in the General Requirements (Division 1 of the Specifications).

- B. Add the following new subparagraphs 3.4.2.1 in its entirety:

**3.4.2.1** By making requests for substitutions based on Subparagraph 3.4.2, above, the Contractor:

- .1 represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
- .2 represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;
- .3 certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and
- .4 will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

- C. Add the following new subparagraphs 3.4.4 in its entirety:

**3.4.4** The standards of the work required throughout shall be of such grade as will bring results in compliance with the specifications and recognized construction industry standards. All materials permanently installed in the project shall be new unless otherwise specified or approved by the Architect. New materials shall have been recently manufactured and shall not be obsolete or untested.

### **3.7 PERMITS, FEES AND NOTICES**

- Add the following new Subparagraphs 3.7.5 and 3.7.6 their entirety:

**3.7.6** The Contractor shall pay for all highway fees and for all damages to sidewalks, streets, or other public or private property, or to any public utilities.

**3.7.7** The Contractor shall secure all certificates of inspection and of occupancy which may be required by authorities having jurisdiction over the work, including the Board of Fire Underwriters' certificates and the State Fire Marshal's inspection for occupancy. These shall be delivered to the Architect upon completion of the work.

### **3.8 ALLOWANCE**

Delete the semicolon at the end of sup-paragraph 3.8.2.2 and add the following:

, except that if installation is included as part of an allowance in Division 1-16 of the Specifications, the installation cost, labor, overhead and profit, for greater or lesser quantities of Work shall be determined in accordance with Sub-Paragraph 7.3.6;

### **3.14 CUTTING AND PATCHING OF WORK**

Add the following new Subparagraphs 3.14.3 and 3.14.4 in their entirety:

**3.14.3** Perform all cutting of work in place in a neat workmanlike manner and patch and restore to good condition and appearance. Do not cut any structural members under any circumstances, except where expressly and particularly authorized by the Architect.

**3.14.4** Cutting of work necessary for installation of mechanical and electrical work is specified in Division 15 and 16, but patching of finished work required because of such cutting shall be performed by trades having experience in that type of work..

### **3.16 ACCESS TO WORK**

Add the following new subparagraph 3.16.1 in its entirety:

**3.16.1** The Contractor shall provide the Testing Agency retained by the Owner access to the Work in preparation and progress wherever located.

## **ARTICLE 4: ARCHITECT**

### **4.2 ADMINISTRATION OF THE CONTRACT**

Add the following new subparagraph 4.2.15 in its entirety:

**4.2.15** The Architect shall not have the authority or the responsibility to supervise or direct the construction operations.

## **ARTICLE 5: SUBCONTRACTORS**

### **5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK**

Delete Subparagraph 5.2.3 in its entirety.

### **5.3 SUBCONTRACTURAL RELATIONS**

Add the following new subparagraphs 5.3.1 and 5.3.2 in their entirety:

**5.3.1** The contractor shall be directly responsible for all of the Work included in the Contract, whether performed by his own forces or by his subcontractors. Except in extreme emergencies, all instructions, clarifications, and approvals will be given by the Architect to subcontractors only through the Contractor and all shop drawings, samples and correspondence from the subcontractors shall be submitted to the Architect through the Contractor.

**5.3.2** Insofar as it does not affect the quality of workmanship or materials, the Contractor shall settle all questions of responsibility arising among his various subcontractors and shall determine the extent of Work and responsibility of each of the subcontractors.

## **ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

No modifications required.

## **ARTICLE 7: CHANGES IN THE WORK**

**7.2 CHANGE ORDERS**

Add the following new subparagraph 7.2.2 and 7.2.3 in their entirety:

**7.2.2** Change Order Proposals, except those so minor that their propriety can be seen by inspection, shall include, but not be limited to, a complete itemization of costs including labor, materials, and subcontracts on a form similar to Schedule of Values. Where major cost items involve Subcontracts, they shall also be itemized. In no case will a change involving over \$500.00 be approved without such itemization.

**7.2.3** For extra work performed other than work involving separate contracts, the combined allowance for overhead and profit included in total cost to the Owner shall be based on the following schedule:

- .1** To Contractor for Work, which will be performed with its own forces: 10% for overhead and 5% for profit on the net additional cost including bond costs.
- .2** To Subcontractor for Work, which it performs with its own forces: 10% for overhead and 5% for profit on the net additional cost including bond costs.
- .3** To Contractor for Work performed by other than its own forces: 5% for profit.
- .4** If a change results in a credit to the Owner from the Contractor or the Subcontractor, the credit shall be net cost without crediting the overhead and profit.

**7.3 CONSTRUCTION CHANGE DIRECTIVES**

- A. In subparagraph 7.3.3.3, delete the words “a mutually acceptable fixed or percentage fee” and insert in their place the words “overhead and profit as stipulated in subparagraph 7.2.4”.
- B. Add the following new subparagraph 7.3.11 in its entirety:

**7.3.11** In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials, and Subcontracts.

**ARTICLE 8: TIME****8.3 DELAYS AND EXTENSIONS OF TIME**

- A. In Subparagraph 8.3.2, add the following words to the end of the sentence:

except that neither the Owner nor the Architect shall be obligated or liable to the Contractor for, and the Contractor hereby expressly waives any claims against the Owner and the Architect on account of any damages, costs, or expenses of any nature which the Contractor, its subcontractors, or sub-subcontractors or any other person may incur as a result of any delays, interferences, suspensions, changes in sequence or the like arising from or out of any act or omission of the Owner or the Architect, it being understood and agreed that the Contractor’s sole and exclusive remedy in such event shall be an extension of the Contract Time, but only in accordance with the provisions of the Contract Documents.”.

- B. Delete Paragraph 8.3.3 in its entirety and substitute the following:

**8.3.3** Notwithstanding anything to the contrary in the Contract Documents, an extension in the Contract Time, to the extent permitted under Paragraph 8.3.1, shall be the sole remedy of the Contractor for any (1) delay in the commencement, prosecution or completion of the Work, (2) hindrance or obstruction in the performance of the Work, (3) loss of productivity, or (4) other similar claims (collectively referred to in this Paragraph 8.3.3 as Delays) whether or not such Delays are foreseeable, unless a Delay is caused by acts of the Owner constituting active interference with the Contractor’s performance of the Work, and only to the extent such acts continue after the Contractor furnishes the Owner with notice of such interference. In no event shall the Contractor be entitled to any compensation or recovery of any damages, in connection with any Delay, including, without limitation, consequential damages, lost opportunity costs, impact damages or similar remuneration. The Owner’s exercise of any rights or remedies under the Contract Documents (including, without Work), regardless of the extent or frequency of the Owner’s exercise of such rights or remedies, shall not be construed as active interference with the Contractor’s performance of the Work.



**ARTICLE 9: PAYMENTS AND COMPLETION****9.2 SCHEDULE OF VALUES**

Add the following at the end of subparagraph 9.2:

The Schedule of Values shall be divided into not less than one part for each section of the Specifications.

**9.3 APPLICATIONS FOR PAYMENT**

A. Add the following new clause 9.3.1.3:

**9.3.1.3** Progress payments may be requested monthly and shall be for 90% of the approved amount properly allocable to materials and equipment incorporated in the work and materials covered with applicable insurance and suitably stored in approved location on the date of the request. After 50% of the work has been completed, the Architect may at any time recommend that any of the remaining partial payments be paid in full.

B. Add the following at the end of subparagraph 9.3.2:

The Owner and the Architect reserve the right to request additional information including, but not limited to, invoices for material stored. Furnish a separate Certificate of Insurance covering full value of any material stored off site and subsequent transportation to the job site. Owner shall be named insured on the Certificate of Insurance.

**9.6 PROGRESS PAYMENTS**

Add the following at the end of subparagraph 9.6.2:

Failure by the Contractor to pay such payments shall, when brought to the attention of Owner or Architect, result in sufficient funds being withheld from current or future Applications. Such failure of the Contractor when properly substantiated shall be brought to the attention of the Surety.

**9.10 FINAL COMPLETION AND FINAL PAYMENT**

A. In subparagraph 9.10.2, change "and (5)" to read "and (6)", and add a new clause (5) as follows:

", (5) all Certificates of Occupancy required by the Contract Documents and Authorities having jurisdiction,"

B. In subparagraph 9.10.2 (6), delete the words "if required by the Owner".

**ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY****10.1 SAFETY PRECAUTIONS AND PROGRAMS**

Add the following new subparagraph 10.1.1 in its entirety:

**10.1.1** Neither Owner nor Architect assumes any responsibility or liability for safety of the Site, Work, Workplace, Property, or Persons, these being the sole responsibility of the Contractor.

**10.2 SAFETY OF PERSONS AND PROPERTY**

A. Add the following to the end of clause 10.2.1.3:

The Contractor shall be solely responsible, at its own expense, for all necessary measures to protect adjacent properties from damage.

B. Add the following new subparagraph 10.2.4.1 in its entirety:

**10.2.4.1** When use or storage of explosives, or other hazardous materials, substances or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall give the Owner reasonable advance notice.

**ARTICLE 11: INSURANCE AND BONDS****11.1 CONTRACTOR'S LIABILITY INSURANCE**

Add the following new clauses 11.1.2.1, 11.1.2.2, and 11.1.2.3 in their entirety:

- 11.1.2.1** Insurance to be purchased and maintained by the Contractor shall be in a company or companies to which the Owner has no reasonable objection.
- 11.1.2.2** Worker's Compensation and Employer's Liability Insurance shall be obtained and maintained during the term of the Contract and all work performed thereunder, covering each and every worker employed in connections with the Work under the Contract, as provided for in each and every statute applicable to Worker's Compensation.
- 11.1.2.3** The Contractor's Comprehensive General Liability Insurance shall be obtained and maintained during the term of the Contract, including broad form Contractual Liability coverage, with the following limits of liability:
- .1** Bodily Injury and Personal Injury Liability
    - \$1,000,000 - each person
    - \$3,000,000 - each occurrence aggregate limit
    - \$1,000,000 - aggregate products (see .3 below)
  - .2** Property Damage Liability
    - \$1,000,000 - each occurrence
    - \$1,000,000 - aggregate operations
    - \$1,000,000 - aggregate contractual
    - \$1,000,000 - aggregate products (see .3 below)
  - .3** Products / Completed Operations Liability Insurance shall be provided for a period of not less than one (1) year after Completion of the Work. Such insurance shall include XCU coverage with respect to Explosion, Collapse, and Underground Damage.
  - .4** Comprehensive Automobile Liability Insurance shall be obtained with not less than the following limits of liability:
    - .1** Bodily Injury Liability:
      - \$1,000,000 - each person
      - \$3,000,000 - each accident
    - .2** Property Damage Liability:
      - \$500,000 - each accident
    - .3** This insurance shall apply to all owned, non-owned, or hired automobiles to be used by the Contractor in the furtherance of the Work.
  - .5** The Contractor shall either (1) require each of his Subcontractors to procure and to maintain during the life of his subcontract Subcontractor's Comprehensive General Liability, Automobile Liability, and Property Damage Liability Insurance of the type and in the same amounts as specified in this subparagraph, or (2) insure the activity of his Subcontractors in his own policy. The Contractor's and Subcontractors' liability insurance shall include adequate protection against any of the special hazards which may be encountered in the performance of this Contract, including those enumerated below:
    - Premises and Operation
    - Explosion and Hazards
    - Underground Hazards
    - Products and Completed Operations
    - Contractual Liability
    - Broad Form Property Coverage
    - Personal Injury Endorsements
    - Workmen's Compensation

## Automobile Liability

- .6 The Contractor shall furnish certificate(s) of the insurance, which shall contain thirty (30) days prior written notice to the Owner of cancellation of or material change in the insurance.
- .7 All policies insuring the Contractor and Subcontractors pursuant to paragraphs 11.1.2, and all subparagraphs, shall be endorsed to include, as additional insureds, both the Owner and Architect.

**11.3 PROPERTY INSURANCE**

- A. Modify the first sentence of Subparagraph 11.3.1 as follows:
  - a) Delete "Unless otherwise provided, the Owner" and substitute "the Contractor".
  - b) After the word "companies", insert the words: "satisfactory to the Owner and".
  - c) Add the following sentences:

The form of policy for this coverage shall be Completed Value. If the Owner is damaged by the failure of the Contractor to maintain such insurance, then the Contractor shall bear all reasonable costs properly attributable thereto.
- B. Delete Clause 11.3.1.2, in its entirety.
- C. Delete Clause 11.3.1.3, in its entirety.
- D. In the first sentence of Subparagraph 11.3.2, delete the word "Owner" and insert in its place the word "Contractor" and, after the word "insurance", delete the words "required by the Contract Documents or by Law".
- F. Delete Subparagraph 11.3.4.
- G. Delete Subparagraph 11.3.6 and substitute the following:

**11.3.6** Before an exposure to loss may occur, the Contractor shall file with the Owner two certified copies of the policy or policies providing this Property Insurance coverage, each containing those endorsements specifically related to the Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Contractor.
- H. Modify Subparagraph 11.3.7 by substituting "Contractor" for "Owner" at the end of the first sentence.
- I. Modify Subparagraph 11.3.8 by Substituting "Contractor" for "Owner" as fiduciary; except that at the first reference to "Owner" in the first sentence, the word "this" should be substituted for "Owner's."
- J. Modify Subparagraph 11.3.9 by substituting "Contractor" for "Owner" each time the latter word appears.
- K. Modify Subparagraph 11.3.10 by substituting "Contractor" for "Owner" each time the latter word appears.

**11.4 PERFORMANCE BOND AND PAYMENT BOND**

- A. Delete Subparagraph 11.4.1 and substitute the following:

**11.4.1** The Contractor shall furnish and pay the cost for a Performance Bond and a Labor and Material Payment Bond in the amount of the Contract as security for the faithful performance of the Contract and payment of all obligations arising thereunder. Bonds shall be on a form approved by the Owner. Bonds shall be written by a Surety Company licensed to do business in the State of Tennessee and approved by the Owner.

B. Add the following new clauses 11.4.1.1 and 11.4.1.2:

**11.4.1.1** The Contractor shall deliver the required bonds to the Owner not later than three days following the date the Agreement is entered into, or if the Work is to be commenced prior thereto in response to a letter of intent, the Contractor shall, prior to the commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished.

**11.4.1.2** The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

## **ARTICLE 12: UNCOVERING AND CORRECTION OF WORK**

### **12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION**

Add the following new subparagraphs 12.2.1.2 and 12.2.1.3:

**12.2.1.2** If all or a portion of the mechanical or electrical system is used beneficially by any party other than the installing Contractor, with the prior written authorization of the Owner, the guarantee and warranty period shall commence on the date when such system or portion thereof is placed in operation. The beneficial user, if other than the Owner, shall restore such system or portion thereof to a first class operating condition without cost to the Owner and before acceptance by the Owner.

**12.2.1.3** Guarantee and warranty requirements shall extend to correction, without cost to the Owner, of all work found to be defective or nonconforming to the contract documents. The Contractor shall bear the cost of correcting all damage resulting from such defects or nonconformance with contract documents exclusive of repairs required as a result of improper maintenance or operation, or of normal wear.

## **ARTICLE 13: MISCELLANEOUS PROVISIONS**

No modifications required.

## **ARTICLE 14: TERMINATION OR SUSPENSION OF THE CONTRACT**

No modifications required.

## **ARTICLE 15: CLAIMS AND DISPUTES**

### **15.1.5 CLAIMS FOR ADDITIONAL TIME**

- A. In subparagraph 15.1.5.1, delete the words “cost and of” from the second sentence.
- B. In subparagraph 15.1.5.2, after the word “by”, delete the word “data” and insert the words “Local Climatological Data, Monthly Summary, recorded by the Weather Service Office nearest to the site as compiled and published by the National Climatic Data Center, Asheville, North Carolina...”
- C. Add the following new subparagraphs 15.1.5.3 and 15.1.5.4 in their entirety:

**15.1.5.3** Claims for increase in the Contract Time shall set forth in detail the circumstances that form the basis for the Claim, the date upon which each cause of delay began to affect the progress of the Work, the date upon which each cause of delay ceased to affect the progress of the Work and the number of days’ increase in the Contract Time claimed as a consequence of each such cause of delay. The Contractor shall provide such supporting documentation as the Architect or the Owner may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim.

**15.1.5.4** The Contractor shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which may have concurrent or interrelated effects on the progress of Work, or for concurrent delays due to the fault of the Contractor.

## **15.4 ARBITRATION**

- A. Delete Paragraph 15.4 in its entirety.

- B. Delete all references to arbitration.

**END OF SECTION 00 73 00**

**SECTION 01 10 00 - SUMMARY****PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section includes the following:
1. Work covered by the Contract Documents.
  2. Work under other contracts.
  3. Use of premises.
  4. Owner's occupancy requirements.
  5. Specification formats and conventions.

**1.2 WORK COVERED BY CONTRACT DOCUMENTS**

- A. Project Identification: **Anderson County Courthouse, County Clerk & Archive Renovation**
- B. Project Location: **100 N. Main Street  
Clinton, Tennessee 37716**
- C. Owner: **Anderson County  
100 N. Main Street  
Clinton, Tennessee 37716**
- D. Architect: **Blankenship & Partners, LLC  
1112 E. Weisgarber Rd, 2<sup>nd</sup> Floor, Knoxville, Tennessee 37909  
Phone: 865-251-2585**
- E. The Work consists of the following:
1. Provide labor materials, equipment, services, and perform work necessary for the construction of the Project located in Clinton, Tennessee.
  2. Project consists of selective demolition in on the first floor and third floor of the existing building, and construction of those spaces into new configurations. Sequencing of the work in coordination with the Owner is required to allow continued operation of County government. Areas for demolition include the County Clerk's office and adjacent spaces and the Archives. New spaces to be constructed, relocated, or reconfigured include the County Clerk's office and adjacent spaces, the Archives, and new Witness Rooms.
  3. The work includes, but is not necessarily limited to, selective demolition, structural steel, masonry, aluminum storefront, aluminum entrances, interior metal stud gypsum board partitions, electrical, lighting, telecommunications, interior finishes, and all necessary incidental work.
- F. General Building Construction. Project will be constructed under a single prime contract.

### 1.3 WORK UNDER OTHER CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.

### 1.4 USE OF PREMISES

- A. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Construction Limit Lines.
- B. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
  - 1. Limits: Confine construction operations to Contractor Staging Area indicated on Drawings and to that portion of the Contract Limits allotted for the current Phase as indicated on Drawings.
    - a. Normal working hours shall not be restricted.
  - 2. Owner Occupancy: Allow for Owner occupancy of Project site and use by the public, except for that portion of the Contract Limits allotted for the current Phase as indicated on Drawings.

### 1.5 OWNER'S OCCUPANCY REQUIREMENTS

- A. Owner Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed areas of building, before Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and partial occupancy shall not constitute acceptance of the total Work.
  - 1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the work Work to be occupied before Owner occupancy.
  - 2. Obtain a Certificate of Occupancy from authorities having jurisdiction before Owner occupancy.
  - 3. Before partial Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of building.
  - 4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of building.

### 1.6 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 33 division format and CSI/CSC's "Master Format" numbering system.
  - 1. Division 01: Sections in Division 01 govern the execution of the Work of all Sections in the Specifications.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated,

- shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
    - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

**5. PRODUCTS (Not Used)**

**6. EXECUTION (Not Used)**

**END OF SECTION 01 10 00**



**SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES****PART 1 – GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Sections include Division 01 Section “Product Requirements” for administrative procedures for handling requests for substitutions made after Contract award.

**1.3 SUBMITTALS**

- A. “Proposal for Change” Form:
  - 1. Identification: Include the following Project identification on the “Proposal for Change”:
    - a. Project name and location.
    - b. Name of Owner.
    - c. Contract Date.
    - d. Name of Architect.
    - e. Architect’s project number.
    - f. Contractor’s name and address.
    - g. Date of submittal.
  - 2. Number of Copies: Submit 3 (three) copies of each “Proposal for Change”. Architect will return one copy with “Change Order” or “Construction Change Directive”.
  - 3. Provide sequential numbers for each “Proposal for Change” and provide reference to architect’s proposal request number, if applicable.

**1.4 MINOR CHANGES IN THE WORK**

Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

**1.5 PROPOSAL REQUESTS**

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

## Contract Modification Procedures

1. "Proposal Request" issued by the Architect is for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
  2. Within 14 (fourteen) days after receipt of "Proposal Request", submit a "Proposal for Change" including estimated cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    - c. Include costs of labor and supervision directly attributable to the change.
    - d. Include an updated "Contractor's Construction Schedule" that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a "Proposal for Change" to the Architect.
1. Include a statement outlining reasons for the change and the effect of the change on the work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
  2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
  3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  4. Include costs of labor and supervision directly attributable to the change.
  5. Include an updated "Contractor's Construction Schedule" that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
  6. Comply with requirements in Division 01 Section "Material and Equipment" if the proposed change requires substitution of one product or system for product or system specified.
- C. Architect's Action:
1. If necessary, Architect will request additional information or documentation for evaluation within 7 (seven) days of receipt of a "Proposal Request".
  2. Architect will notify Contractor of acceptance or rejection of "Proposal Request" within 21 (twenty-one) days of receipt of request, or 14 (fourteen) days of receipt of additional information or documentation, whichever is later.

**1.6 CHANGE ORDER PROCEDURES**

On Owner's approval of a "Proposal for Change", Architect will issue a "Change Order" for signatures of Owner and Contractor on AIA Document G701.

**1.7 CONSTRUCTION CHANGE DIRECTIVE****A. Construction Change Directive:**

1. Architect may issue a "Construction Change Directive" on AIA Document G714. "Construction Change Directive" instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a "Change Order".
2. "Construction Change Directive" contains a complete description of change in the Work. It also designates method to be followed to determine change in the contract sum or the contract time.

**B. Documentation:**

1. Maintain detailed records on a time and material basis of work required by the "Construction Change Directive".
2. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

**PART 2 – PRODUCTS (Not Used)****PART 3 – EXECUTION (Not Used)****END OF SECTION 01 26 00**

**SECTION 01 29 00 - PAYMENT PROCEDURES****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Sections include the following:
  - 1. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
  - 2. Division 01 Section "Construction Progress Documentation" for administrative requirements governing preparation and submittal of "Contractor's Construction Schedule" and "Submittals Schedule".
  - 3. Division 01 Section "Closeout Procedures" for requirements to obtain "Certificate of Substantial Completion".

**1.3 DEFINITIONS**

"Schedule of Values": A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing "Contractor's Applications for Payment".

**1.4 SUBMITTALS**

- A. "Schedule of Values"
  - 1. Submit the "Schedule of Values" to Architect at earliest possible date but no later than 7 (seven) days before the date scheduled for submittal of initial "Application for Payment".
  - 2. Submit a current copy of the "Schedule of Values" with each "Application for Payment".
- B. "Application for Payment"
  - 1. Submit 3 (three) signed and notarized original copies of each "Application for Payment" to Architect by a method ensuring receipt within 24 (twenty four) hours. One copy shall include waivers of lien and similar attachments if required.
  - 2. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- C. Waiver of Liens and Claims: Submit with each "Application for Payment".
- D. Permits, Licenses, and Certificates: Submit with "Initial Application for Payment".
- E. Insurance Certificates and Bonds: Submit with "Initial Applications for Payment".
- F. Contractor's Affidavit of Payment of Debts and Claims: Submit with "Final Application for Payment".
- G. Contractor's Affidavit of Release of Liens: Submit with "Final Application for Payment".
- H. Final Utilities Meter Readings: Submit with "Final Application for Payment".
- I. Final Utilities Meter Readings: Submit with "Final Application for Payment".

**1.5 SCHEDULE OF VALUES**

- A. Coordination: Coordinate preparation of the “Schedule of Values” with preparation of “Contractor's Construction Schedule”.
1. Correlate line items in the “Schedule of Values” with other required administrative forms and schedules, including the following:
    - a. “Application for Payment” forms with Continuation Sheets.
    - b. “Submittals Schedule”.
    - c. “Contractor's Construction Schedule”.
- B. Format and Content: Use the “Project Manual” table of contents as a guide to establish line items for the “Schedule of Values”. Provide at least one line item for each Specification Section.
1. Identification: Include the following Project identification on the “Schedule of Values”:
    - a. Project name and location.
    - b. Name of Architect.
    - c. Architect's project number.
    - d. Contractor's name and address.
    - e. Date of submittal.
  2. Arrange the “Schedule of Values” in tabular form with separate columns to indicate the following for each item listed:
    - a. Related Specification Section or Division.
    - b. Description of the Work.
    - c. Name of Subcontractor.
    - d. Name of Manufacturer or Fabricator.
    - e. Name of Supplier.
    - f. Change Orders (numbers) that affect value.
    - g. Dollar value.
    - h. Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
  3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of “Applications for Payment” and “Progress Reports”. Coordinate with the “Project Manual” table of contents. Provide several line items for principal subcontract amounts, where appropriate.
  4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
  5. Provide a separate line item in the “Schedule of Values” for each part of the Work where “Applications for Payment” may include materials or equipment purchased or fabricated and stored, but not yet installed.
    - a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.
    - b. If items are stored off-site, indicate location where items are stored and provide a “Bill of Sale” including values and a “Certificate of Insurance” showing Owner as an Additional Insured.
  6. Provide separate line items in the “Schedule of Values” for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
  7. Each item in the “Schedule of Values” and “Applications for Payment” shall be complete.

8. Provide separate line items in the "Schedule of Values" for temporary facilities and other major cost items that are not direct cost of actual work-in-place.
9. Provide separate line items in the "Schedule of Values" for general overhead and profit.
10. Schedule Updating: Update and resubmit the "Schedule of Values" before the next "Application for Payment" when "Change Orders" or "Construction Change Directives" result in a change in the Contract Sum.

#### **1.6 APPLICATIONS FOR PAYMENT**

- A. Each "Application for Payment" shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
- B. Payment Application Times: The date for each progress payment is indicated in the "Agreement between Owner and Contractor". The period of construction Work covered by each "Application for Payment" is the period indicated in the Agreement.
- C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 "Continuation Sheets" as form for "Applications for Payment".
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
  1. Entries shall match data on the "Schedule of Values" and "Contractor's Construction Schedule". Use updated schedules if revisions were made.
  2. Include amounts of "Change Orders" and "Construction Change Directives" issued before last day of construction period covered by application.
- E. Waivers of Liens and Claims: With each "Application for Payment", submit waivers of liens and claims from every entity who is lawfully entitled to file a lien or claim, including but not limited to subcontractors, sub-subcontractors, and suppliers, for construction period covered by the previous application.
  1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
  2. When an application shows completion of an item, submit final or full waivers.
  3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
  4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- F. "Initial Application for Payment": Administrative actions and submittals that must precede or coincide with submittal of first "Application for Payment" include the following:
  1. List of subcontractors.
  2. Schedule of Values.
  3. Contractor's Construction Schedule (preliminary if not final).
  4. Products list.
  5. Schedule of unit prices.
  6. Submittals Schedule (preliminary if not final).
  7. List of Contractor's staff assignments.
  8. List of Contractor's principal consultants.
  9. Acceptance of existing conditions.
  10. Copies of building permits.
  11. Copies of authorizations, licenses, and certificates from authorities having jurisdiction for performance of the Work.

12. Initial progress report.
13. Minutes of pre-construction conference.
14. Insurance Certificates and Bonds:
  - a. Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
  - b. With each Application for Payment update the current status of insurance or bonding coverage.
15. Data needed to acquire Owner's insurance.
16. Initial settlement survey and damage report if required.
- G. "Application for Payment" at Substantial Completion: After Architect issues the "Certificate of Substantial Completion", submit an "Application for Payment" showing 100 percent completion for portion of the Work claimed as substantially complete.
  1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  2. This application shall reflect "Certificates of Partial Substantial Completion" issued previously for Owner occupancy of designated portions of the Work.
- H. "Final Payment Application": Submit "Final Application for Payment" with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
  1. Evidence of completion of Project closeout requirements.
  2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
  3. Updated final statement, accounting for final changes to the Contract Sum.
  4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims".
  5. AIA Document G706A, "Contractor's Affidavit of Release of Liens".
  6. AIA Document G707, "Consent of Surety to Final Payment".
  7. Evidence that payments, debts, and claims have been settled.
  8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
  9. Final, liquidated damages settlement statement.

#### **1.7 INSURANCE CERTIFICATES AND BONDS**

- A. Submit with "Initial Application for Payment" written information indicating current status of required insurance and/or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- B. If the status of required insurance and/or bonding coverage changes, submit with the next "Application of Payment" written information indicating the change and the current status of required insurance or bonding coverage.
- C. If Owner needs to acquire insurance, provide information indicating the date that Owner's insurance needs to take effect.

#### **PART 2 - PRODUCTS (Not Used)**

#### **PART 3 - EXECUTION (Not Used)**

B&P 20-15

ANDERSON COUNTY COURTHOUSE  
COUNTY CLERK & ARCHIVE RENOVATION

01 29 00-5  
Payment Procedures

**END OF SECTION 01 29 00**



**SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. Coordination Drawings.
2. Administrative and supervisory personnel.
3. Subcontractor List.
4. Key Personnel List.
5. Project meetings.
6. Requests for Interpretation (RFIs).

B. Related Sections include the following:

1. Division 01 Section "Construction Progress Documentation" for preparing and submitting "Contractor's Construction Schedule".
2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

**1.3 DEFINITIONS**

RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

**1.4 COORDINATION**

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.
4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.

B. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's Construction Schedule.
  2. Preparation of the Schedule of Values.
  3. Installation and removal of temporary facilities and controls.
  4. Delivery and processing of submittals.
  5. Progress meetings.
  6. Preinstallation conferences.
  7. Project closeout activities.
  8. Startup and adjustment of systems.
  9. Project closeout activities.
- D. Conservation:
1. Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
  2. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work.

## 1.5 SUBMITTALS

- A. "Coordination Drawings": Prepare "Coordination Drawings" if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
1. Content: Project-specific information, drawn accurately to scale. Do not base "Coordination Drawings" on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
    - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
    - b. Indicate required installation sequences.
    - c. Indicate dimensions shown on the "Contract Drawings" and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
  2. Sheet Size: At least 8-1/2 by 11 inches but no larger than 24 by 36 inches.
  3. Number of Copies:
    - a. Submit 1 (one) opaque copy of each submittal.
    - b. Retain 1 (one) copy as a "Project Record Drawing" and provide additional copies where "Coordination Drawings" are required for operation and maintenance manuals.
  4. Refer to individual Sections for "Coordination Drawing" requirements for Work in those Sections.
- B. "List of Key Personnel": Within 15 (fifteen) days of "Notice to Proceed", submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site and other administrative and supervisory personnel as required for proper performance of the Work.
1. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers.

## Project Management and Coordination

2. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
  3. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.
- C. "Subcontract List": Within 15 (fifteen) days of "Notice to Proceed", submit a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
1. Name, address, and telephone number of entity performing subcontract or supplying products.
  2. Number and title of related Specification Section(s) covered by subcontract.
- D. Meeting Records: Minutes of pre-construction conference.
- E. Meeting Records: Minutes of pre-installation conference.
- F. Meeting Records: Minutes of progress meetings.

**1.6 ADMINISTRATIVE AND SUPERVISORY PERSONNEL**

General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

**1.7 PROJECT MEETINGS**

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
  2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
  3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within 3 (three) days of the meeting.
- B. Pre-Construction Conference: Schedule a pre-construction conference before starting construction, at a time convenient to Owner, and Architect, but no later than 15 (fifteen) days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Tentative construction schedule.
    - b. Critical work sequencing and long-lead items.
    - c. Designation of key personnel and their duties.
    - d. Procedures for processing field decisions and Change Orders.
    - e. Procedures for RFIs.
    - f. Procedures for testing and inspecting.
    - g. Procedures for processing Applications for Payment.

- h. Distribution of the Contract Documents.
  - i. Submittal procedures.
  - j. Preparation of Record Documents.
  - k. Work restrictions.
  - l. Responsibility for temporary facilities and controls.
  - m. Construction waste management and recycling.
  - n. Parking availability.
  - o. Office, work, and storage areas.
  - p. Equipment deliveries and priorities.
  - q. First aid.
  - r. Security.
  - s. Progress cleaning.
  - t. Working hours.
3. Minutes: Record meeting minutes including significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present, to parties who should have been present, and to Architect.
- C. Pre-Installation Conferences: Conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
  - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    - a. The Contract Documents.
    - b. Options.
    - c. Related RFIs.
    - d. Related Change Orders.
    - e. Purchases.
    - f. Deliveries.
    - g. Submittals.
    - h. Review of mockups, if required.
    - i. Possible conflicts.
    - j. Compatibility problems.
    - k. Time schedules.
    - l. Weather limitations.
    - m. Manufacturer's written recommendations.
    - n. Warranty requirements.

- o. Compatibility of materials.
  - p. Acceptability of substrates.
  - q. Temporary facilities and controls.
  - r. Space and access limitations.
  - s. Regulations of authorities having jurisdiction.
  - t. Testing and inspecting requirements.
  - u. Installation procedures.
  - v. Coordination with other work.
  - w. Required performance results.
  - x. Protection of adjacent work.
  - y. Protection of construction and personnel.
3. Minutes: Record meeting minutes including significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  4. Reporting: Distribute minutes of the meeting to each party present, to parties who should have been present, and to Architect.
  5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at regular intervals, acceptable to Architect and Owner. Coordinate dates of meetings with preparation of payment requests.
1. Attendees: In addition to representatives of Owner, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. "Contractor's Construction Schedule":
      - 1) Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to "Contractor's Construction Schedule". Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
      - 2) Review schedule for next period.
    - b. Review present and future needs of each entity present, including the following:
      - 1) Interface requirements.
      - 2) Sequence of operations.
      - 3) Status of submittals.
      - 4) Deliveries.
      - 5) Off-site fabrication.
      - 6) Access.

- 7) Site utilization.
  - 8) Temporary facilities and controls.
  - 9) Work hours.
  - 10) Hazards and risks.
  - 11) Progress cleaning.
  - 12) Quality and work standards.
  - 13) Material Locations Report.
  - 14) Status of correction of deficient items.
  - 15) Field observations.
  - 16) RFIs and RFI Log.
  - 17) Status of proposal requests.
  - 18) Pending changes.
  - 19) Status of Change Orders.
  - 20) Pending claims and disputes.
  - 21) Documentation of information for payment requests.
3. Minutes: Record meeting minutes including significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  4. Reporting: Distribute minutes of the meeting to each party present, to parties who should have been present, and to Architect.
  5. Schedule Updating: Revise "Contractor's Construction Schedule" after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the minutes of each meeting.

#### **1.8 REQUESTS FOR INTERPRETATION (RFIs)**

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an "RFI" in the form specified.
  1. "RFIs" shall originate with Contractor. "RFIs" submitted by entities other than Contractor will be returned with no response.
  2. Contractor shall review and attempt to respond to questions submitted by sub-contractors and suppliers before submitting an "RFI" to the Architect.
  3. Coordinate and submit "RFIs" in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
  4. "RFIs" shall be submitted in an electronic format that the Architect can forward to consultants and the Architect can modify with the response.
- B. Content of the "RFI": Include a detailed, legible description of item needing interpretation and the following:
  1. Project name.
  2. Date.
  3. Name of Contractor.

4. Name of Architect.
  5. "RFI" number, numbered sequentially.
  6. Specification Section number and title and related paragraphs, as appropriate.
  7. Drawing number and detail references, as appropriate.
  8. Field dimensions and conditions, as appropriate.
  9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the "RFI".
  10. Contractor's signature.
  11. Attachments:
    - a. Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
    - b. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
- C. Software-Generated "RFIs":
1. Software-generated form with substantially the same content as indicated above.
  2. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. Architect's Action: Architect will review each "RFI", determine action required, and return it. Allow 7 (seven) working days for Architect's response for each "RFI". "RFIs" received after 1:00 p.m. will be considered as received the following working day.
1. The following "RFIs" will be returned without action:
    - a. Requests that are not in electronic format.
    - b. Requests for approval of submittals.
    - c. Requests for approval of substitutions.
    - d. Requests for coordination information already indicated in the Contract Documents.
    - e. Requests for adjustments in the Contract Time or the Contract Sum.
    - f. Requests for interpretation of Architect's actions on submittals.
    - g. Incomplete "RFIs" or "RFIs" with numerous errors.
  2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
  3. Architect's action on "RFIs" that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit "Proposal for Change" according to Division 01 Section "Contract Modification Procedures". If Contractor believes the "RFI" response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 (ten) days of receipt of the "RFI" response.
- E. On receipt of Architect's action, update the "RFI Log" and immediately distribute the "RFI" response to affected parties. Review response and notify Architect within 7 (seven) days if Contractor disagrees with response.
- F. "RFI Log": Prepare, maintain, and submit a tabular log of "RFIs" organized by the "RFI" number. Submit and review log at progress meeting. Include the following:
1. Project name.

2. Name and address of Contractor.
3. Name and address of Architect.
4. "RFI" number including "RFIs" that were dropped and not submitted.
5. "RFI" description.
6. Date the "RFI" was submitted.
7. Date Architect's response was received.
8. Identification of related Minor Change in the Work, "Construction Change Directive", and "Proposal Request", as appropriate.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION 01 31 00**



**SECTION 01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Preliminary Construction Schedule.
2. Contractor's Construction Schedule.
3. Submittals Schedule.
4. Daily construction reports.
5. Material location reports.
6. Field condition reports.
7. Special reports.
8. Construction Photographs.

B. Related Sections include the following:

1. Division 01 Section "Payment Procedures" for submitting the Schedule of Values.
2. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
3. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
4. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.

**1.3 SUBMITTALS**

A. Qualification Data: For scheduling consultant, if required.

B. "Submittals Schedule": Submit 1 (one) copy of schedule. Arrange the following information in a tabular format:

1. Scheduled date for first submittal.
2. Specification Section number and title.
3. Submittal category (action or informational).
4. Name of subcontractor.
5. Description of the Work covered.
6. Scheduled date for Architect's final release or approval.

C. "Preliminary Construction Schedule": Submit 1 (one) opaque copy.

D. "Contractor's Construction Schedule":

## Construction Progress and Documentation

1. Submit 1 (one) opaque copy of initial schedule, large enough to show entire schedule for entire construction period.
  2. Submit an electronic copy of schedule, using software indicated, on CD-R, and labeled to comply with requirements for submittals. Include type of schedule (Initial or Updated) and date on label.
- E. "Daily Construction Report": Submit 1 (one) copy at weekly intervals.
- F. "Material Location Report": Submit 1 (one) copy at progress meeting.
- G. "Field Condition Report": Submit 1 (one) copy at time of discovery of differing conditions.
- H. "Special Reports": Submit 2 (two) copy directly to the Architect at time of unusual event.
- I. "Construction Photographs": Submit 2 (two) prints of each photographic view within 7 (seven) days of taking photographs. Submit construction photographs in the following format:
1. Digital Images: Provide two digital images on two 8 ½ by 11 inch sheets of paper punched for standard 3-ring binder.
- J. Meeting Records: Minutes of pre-scheduling conference.

**1.4 QUALITY ASSURANCE**

- A. Scheduling Consultant: Engage an experienced specialist in scheduling and reporting. This requirement will be waived if Contractor employs skilled personnel with experience in scheduling and reporting techniques. Submit qualification for scheduling consultant or personnel. Scheduling personnel shall attend all meetings related to Project progress, alleged delays, and time impact.
- B. Pre-Scheduling Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to the "Preliminary Construction Schedule" and "Contractor's Construction Schedule", including, but not limited to, the following:
1. Review software limitations and content and format for reports.
  2. Verify availability of qualified personnel needed to develop and update schedule.
  3. Discuss constraints, including phasing, work stages, area separations, interim milestones, and partial Owner occupancy.
  4. Review delivery dates for Owner-furnished products.
  5. Review time required for review of submittals and resubmittals.
  6. Review requirements for tests and inspections by independent testing and inspecting agencies.
  7. Review time required for completion and startup procedures.
  8. Review and finalize list of construction activities to be included in schedule.
  9. Review submittal requirements and procedures.
  10. Review procedures for updating schedule.
  11. Minutes: Record meeting minutes including significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  12. Reporting: Distribute minutes of the meeting to each party present, to parties who should have been present, and to Architect.

**1.5 COORDINATION**

- A. Coordinate "Contractor's Construction Schedule" with the "Schedule of Values", list of subcontracts, "Submittals Schedule", progress reports, payment requests, and other required schedules and reports.

## Construction Progress and Documentation

1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

**PART 2 - PRODUCTS****2.1 SUBMITTALS SCHEDULE**

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
  1. Coordinate "Submittals Schedule" with list of subcontracts, the "Schedule of Values", and "Contractor's Construction Schedule".
  2. Initial Submittal: Submit concurrently with "Preliminary Construction schedule". Include submittals required during the first 60 (sixty) days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
  3. Final Submittal: Submit concurrently with the first complete submittal of "Contractor's Construction Schedule".

**2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL**

- A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling".
- B. Time Frame: Extend schedule from date established for the "Notice to Proceed" to date of Final Completion. Contract completion date shall not be changed by submission of a schedule that shows an early or late completion date, unless specifically authorized by "Change Order".
- C. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
  1. Activity Duration: Define activities so no activity is longer than 20 (twenty) days, unless specifically allowed by Architect.
  2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 (sixty) days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
  3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in "Contractor's Construction Schedule" with "Submittals Schedule".
  4. Startup and Testing Time: Include time for startup and testing.
  5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
- D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
  1. Work Restrictions: Show the effect of the following items on the schedule:
    - a. Provisions for future construction.
    - b. Seasonal variations.
    - c. Environmental control.
  2. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

## Construction Progress and Documentation

- a. Subcontract awards.
  - b. Submittals.
  - c. Purchases.
  - d. Mockups and Sample Panels.
  - e. Fabrication.
  - f. Sample testing.
  - g. Deliveries.
  - h. Installation.
  - i. Tests and inspections.
  - j. Adjusting.
  - k. Curing.
  - l. Startup and placement into final use and operation.
3. Area Separations: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
- a. Structural completion.
  - b. Permanent space enclosure.
  - c. Completion of mechanical installation.
  - d. Completion of electrical installation.
  - e. Substantial Completion.
- E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.
- F. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.
- G. Computer Software: Prepare schedules using a program that has been developed specifically to manage construction schedules.

**2.3 PRELIMINARY CONSTRUCTION SCHEDULE**

- A. General: Submit preliminary construction schedule within 7 (seven) days of date established for the "Notice to Proceed".
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 60 (sixty) days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

**2.4 CONTRACTOR'S CONSTRUCTION SCHEDULE**

- A. General: Submit construction schedule at the earliest date possible, but no later than with the first Application for Payment.
- B. Initial Issue of Schedule: Identify critical activities. Prepare tabulated reports showing the following:
  1. Contractor or subcontractor and the Work or activity.

2. Description of activity.
  3. Principal events of activity.
  4. Immediate preceding and succeeding activities.
  
  5. Early and late start dates.
  6. Early and late finish dates.
  7. Activity duration in workdays.
  8. Average size of workforce.
- C. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
1. Identification of activities that have changed.
  2. Changes in early and late start dates.
  3. Changes in early and late finish dates.
  4. Changes in activity durations in workdays.
  5. Changes in the critical path.
  6. Changes in the Contract Time.

## **2.5 REPORTS**

- A. "Daily Construction Reports": Prepare a "Daily Construction Report" recording the following information concerning events at Project site:
1. List of subcontractors at Project site.
  2. List of separate contractors at Project site.
  3. Approximate count of personnel at Project site.
  4. Equipment at Project site.
  5. Material deliveries.
  6. High and low temperatures and general weather conditions.
  7. Accidents.
  8. Meetings and significant decisions.
  9. Unusual events (refer to special reports).
  10. Stoppages, delays, shortages, and losses.
  11. Meter readings and similar recordings.
  12. Emergency procedures.
  13. Orders and requests of authorities having jurisdiction.
  14. Change Orders received and implemented.
  15. Construction Change Directives received and implemented.
  16. Services connected and disconnected.
  17. Equipment or system tests and startups.
  18. Partial Completions and occupancies.

## Construction Progress and Documentation

19. Substantial Completions authorized.

- B. "Material Location Reports": At regular intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.
- C. "Field Condition Reports": Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

## 2.6 SPECIAL REPORTS

- A. General: Submit special reports directly to Architect within 2 (two) day of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Architect in advance when these events are known or predictable.

## 2.7 CONSTRUCTION PHOTOGRAPHS

- A. "Construction Photographs":
  - 1. Identification: On back of each print provide an applied label or rubber-stamped impression with the following information:
    - a. Name of Project.
    - b. Name and address of photographer.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Date photograph was taken.
    - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
  - 2. Retain 1 (one) set of "Construction Photographs" as a Project Record Document.
  - 3. Digital Images: Submit a complete set of digital image electronic files concurrently with Project Record Document. Identify electronic media with date photographs were taken. Submit images that have the same aspect ratio as the sensor, uncropped.
- B. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.
- C. "Preconstruction Photographs": Before starting construction, take a minimum of 3 (three) photographs of Project site and surrounding properties from different vantage points. Show existing conditions adjacent to property. Architect may indicate desired vantage points.
- D. "Periodic Construction Photographs": Take a minimum of 3 (three) photographs weekly, coinciding with cutoff date associated with each Application for Payment. Take photographs from select vantage points to

## Construction Progress and Documentation

best show status of construction and progress since last photographs were taken. Architect may indicate desired vantage points.

- E. "Final Completion Construction Photographs": Take a minimum of 3 (three) photographs after date of Substantial Completion. Take photographs from select vantage points to best show final condition of the project, the project site, and adjacent property. Architect may indicate desired vantage points.

**PART 3 - EXECUTION****3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE**

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule 1 (one) week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
  2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
  3. As the Work progresses, indicate Actual Completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect, Owner, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
  2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

**END OF SECTION 01 32 00**

**SECTION 01 33 00 - SUBMITTAL PROCEDURES****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Sections include the following:
1. Division 01 Section "Payment Procedures" for submittal requirements for, but not limited to, the following:
    - a. "Applications for Payment".
    - b. "Schedule of Values".
  2. Division 01 Section "Contract Modification Procedures" for submittal requirements for, but not limited to: "Proposal for Change".
  3. Division 01 Section "Project Management and Coordination" for submittal requirements for, but not limited to, the following:
    - a. "Coordination Drawings".
    - b. "List of Key Personnel".
    - c. "Subcontractor List".
    - d. "Minutes" of Meetings and Conferences.
  4. Division 01 Section "Construction Progress Documentation" for submittal requirements for, but not limited to, the following:
    - a. "Submittals Schedules".
    - b. "Construction Photographs".
    - c. "Contractor's Construction Schedule".
    - d. Special Reports.
  5. Division 01 Section "Quality Requirements" for submittal requirements for, but not limited to, the following:
    - a. Sample Panels.
    - b. Qualification Data.
    - c. "Schedule of Tests and Inspection".
    - d. Reports.
    - e. Permits, Licenses, and Certificates.
    - f. Manufacturer's Instructions.
    - g. Design Data.
  6. Division 01 Section "Product Requirements" for submittal requirements for, but not limited to, the following:



- a. "Product List".
  - b. "Substitution Request".
  - c. "Comparable Product Request".
7. Division 01 Section "Execution" for submittal requirements for, but not limited to, "Final Property Survey".
  8. Division 01 Section "Operation and Maintenance Data" for submittal requirements for, but not limited to, "Operation and Maintenance Manuals".
  9. Division 01 Section "Closeout Procedures" for submittal requirements for, but not limited to, the following:
    - a. Request for Substantial Completion Inspection.
    - b. "Punch List".
    - c. "Warranties".
  10. Division 01 Section "Project Record Documents" for submittal requirements for, but not limited to, the following:
    - a. "Record Drawings".
    - b. "Record Specifications".
    - c. "Record Product Data".
    - d. "Miscellaneous Record Submittals".
    - e. "Record Construction Photographs".
  11. Division 01 Section "Demonstration and Training" for submittal requirements for, but not limited to, the following:
    - a. Instructional program outline.
    - b. Instructional program attendance record.
    - c. Instructional program evaluation record.
    - d. Demonstration and training DVD.
  12. Divisions 02 through 49 Sections for specific requirements for submittals in those Sections.

### **1.3 DEFINITIONS**

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

### **1.4 SUBMITTALS**

Material Safety Data Sheets (MSDSs)

### **1.5 ELECTRONIC COPIES OF CAD DRAWINGS**

General: Electronic copies of CAD Drawings of the Contract Drawings will not be provided. Drawings will be available in PDF format only.

### **1.6 SUBMITTAL PROCEDURES**

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
  3. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 15 (fifteen) days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
  2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  3. Resubmittal Review: Allow 15 (fifteen) days for review of each resubmittal.
  4. Concurrent Consultant Review: Where the Contract Documents indicate that submittals shall be transmitted simultaneously to Architect and to Architect's consultants, allow 21 (twenty one) days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
    - a. Submittals that shall be transmitted simultaneously to Architect and to Architect's consultants include, but are not limited, to the following:
      - 1) Submittals related to Civil Engineering Work.
      - 2) Submittals related to Landscaping Work.
      - 3) Submittals related to Structural Engineering Work.
      - 4) Submittals related to Mechanical Engineering Work.
      - 5) Submittals related to Electrical Engineering Work.
- C. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
  2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
  3. Include the following information on label for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name and address of Architect.
    - d. Name and address of Contractor.
    - e. Name and address of subcontractor.
    - f. Name and address of supplier.
    - g. Name of manufacturer.
    - h. Submittal number or other unique identifier, including revision identifier. Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
    - i. Number and title of appropriate Specification Section.
    - j. Drawing number and detail references, as appropriate.

- k. Location(s) where product is to be installed, as appropriate.
    - l. Other necessary identification.
  - D. Deviations: Highlight or otherwise specifically identify deviations from the Contract Documents on submittals.
  - E. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
  - F. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.
    1. Transmittal Form: Use AIA Document G810 or Contractor's standard transmittal form, approved by Architect.
    2. Transmittal Form: Provide locations on form for the following information:
      - a. Project name.
      - b. Date.
      - c. Destination (To:).
      - d. Source (From:).
      - e. Names of subcontractor, manufacturer, and supplier.
      - f. Category and type of submittal.
      - g. Submittal purpose and description.
      - h. Specification Section number and title.
      - i. Drawing number and detail references, as appropriate.
      - j. Transmittal number, numbered consecutively.
      - k. Submittal and transmittal distribution record.
      - l. Remarks.
      - m. Signature of transmitter.
    3. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
  1. Note date and content of previous submittal.
  2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  3. Re-submit submittals until they are marked "Approved" or "Approved Subject to Correction Noted".
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Use only final submittals with mark indicating "Approved" or "Approved Subject to Correction Noted".
- J. Maintain copy of final "Approved" or "Approved Subject to Correction Noted" action submittals and information submittals at Project site. Provide access to submittals for Architect's reference during normal working hours.

- K. Maintain copy of final "Approved" or "Approved Subject to Correction Noted" action submittals and information submittals for transmittal to the Owner as part of Project Record Documents.

## **PART 2 - PRODUCTS**

### **2.1 ACTION SUBMITTALS**

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- B. Action Submittals include, but are not limited to, the following:
1. Product Data.
  2. Shop Drawings.
  3. Samples.
  4. "Application for Payment".
  5. Mockups and Sample Panels.
  6. "Substitution Request".
  7. "Operation and Maintenance Manuals".
- C. Concurrent Consultant Review: Where the Action Submittals are to be reviewed by Architect's Consultants, transmit submittals directly to Architect's Consultants. Include 1 (one) additional copy for Architect's Consultants records and transmit 1 (one) copy directly to the Architect, unless otherwise indicated.
- D. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
  2. Mark each copy of each submittal to show which products and options are applicable.
  3. Include the following information, as applicable:
    - a. Manufacturer's written recommendations.
    - b. Manufacturer's product specifications.
    - c. Manufacturer's installation instructions.
    - d. Standard color charts.
    - e. Manufacturer's catalog cuts.
    - f. Wiring diagrams showing factory-installed wiring.
    - g. Printed performance curves.
    - h. Operational range diagrams.
    - i. Mill reports.
    - j. Standard product operation and maintenance manuals.
    - k. Compliance with specified referenced standards.
    - l. Testing by recognized testing agency.
    - m. Application of testing agency labels and seals.
    - n. Notation of coordination requirements.
  4. Submit Product Data before or concurrent with Samples.

5. Number of Copies: Submit 3 (three) copies of Product Data, unless otherwise indicated. Architect will return 2 (two) copies. Mark up and retain one returned copy as a Project Record Document.
- E. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Dimensions.
    - b. Identification of products.
    - c. Fabrication and installation drawings.
    - d. Roughing-in and setting diagrams.
    - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
    - f. Shopwork manufacturing instructions.
    - g. Templates and patterns.
    - h. Schedules.
    - i. Design calculations.
    - j. Compliance with specified standards.
    - k. Notation of coordination requirements.
    - l. Notation of dimensions established by field measurement.
    - m. Relationship to adjoining construction clearly indicated.
    - n. Seal and signature of professional engineer if specified.
    - o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
  2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 24 by 36 inches.
  3. Number of Copies: Submit 5 (five) opaque (bond) copies of each submittal. Architect will return 2 (two) of 3 (three) copies. Retain one returned copy as a Project Record Document. See requirements for concurrent consultant review for additional copies.
- F. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  2. Identification: Attach label on unexposed side of Samples that includes the following:
    - a. Generic description of Sample.
    - b. Product name and name of manufacturer.
    - c. Sample source.
    - d. Number and title of appropriate Specification Section.
  3. Concurrent Consultant Review of Samples: Where the Samples are to be reviewed by Architect's Consultants, do not include any additional sets. Transmit a copy of the "Transmittal From" to the Architect.
  4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine

final acceptance of construction associated with each set. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.

5. Samples for Initial Selection:
  - a. Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
  - b. Number of Samples: Submit 1 (one) full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
  - a. Number of Samples: Submit 2 (two) sets of Samples. Architect will retain 1 (one) Sample sets; remainder will be returned. Retain the returned Sample set as a Project Record Sample.
    - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
    - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least 3 (three) sets of paired units that show approximate limits of variations.

## 2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
  1. Number of Copies: Submit 1 (one) copy of each submittal, unless otherwise indicated. Architect will not return copies.
  2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
  3. Retain 1 (one) copy as a Project Record Document.
- B. Concurrent Consultant Review: Where the Informational Submittals are to be reviewed by Architect's Consultants, transmit 1 (one) submittal directly to Architect's Consultants and 1 (one) copy directly to the Architect, unless otherwise indicated.
- C. Informational Submittals include, but are not limited to, the following:
  1. Bonds.
  2. Permits, Licenses, and Certificates.
  3. Coordination Drawings.
  4. Data.
  5. Forms.
  6. Instructions.
  7. Instructional program outline and training manual and DVD.
  8. Lists
  9. Photographs.

10. Plans.
11. Record Documents.
12. Reports.
13. Schedules.

### **PART 3 - EXECUTION**

#### **3.1 CONTRACTOR'S REVIEW**

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

#### **3.2 ARCHITECT'S ACTION**

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect's action does not constitute a waiver of requirement to comply with the Contract Documents. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
  1. Approved: The Architect has found no corrections or modifications that need to be made. That part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final acceptance will depend upon that compliance.
  2. Approved Subject to Corrections Noted: The Architect has found limited corrections or modifications that need to be made. Items noted for correction must not be fabricated or furnished without corrections as noted. The submission must be corrected and resubmitted for record purposes only.
  3. Resubmit: The Architect has found major corrections or modifications that need to be made. The item is rejected as not in accordance with the contract requirements, or for other justified cause. The submission must be corrected and resubmitted. No item is to be fabricated or furnished under this stamp.
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.
- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

**END OF SECTION 01 33 00**

**SECTION 01 40 00 - QUALITY REQUIREMENTS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Delegated Design Services: Requirements for the Contractor to provide professional design services or certifications.
- D. Related Sections include the following:
  - 1. Division 01 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.
  - 2. Division 01 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.
  - 3. Divisions 02 through 49 Sections for specific test and inspection requirements.

**1.3 DEFINITIONS**

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Sample Panels: Full-size, physical assemblies that are constructed on-site. Sample panels are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups and sample panels establish the standard by which the Work will be judged.
- D. Pre-Construction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.



1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector:
1. Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  2. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- J. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of 5 (five) previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

#### **1.4 CONFLICTING REQUIREMENTS**

- A. General: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement.
- C. Contract Documents: If there is any conflict or discrepancy within or between any of the Contract Documents involving the quality or quantity of Work required, it is the intention of the Contract that the Work of highest quality or greatest quantity shown or specified shall be furnished.

#### **1.5 SUBMITTALS**

- A. Qualification Data: For agencies, individuals, and/or corporations specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
1. Specification Section number and title.
  2. Description of test and inspection.
  3. Identification of applicable standards.
  4. Identification of test and inspection methods.
  5. Number of tests and inspections required.
  6. Time schedule or time span for tests and inspections.
  7. Entity responsible for performing tests and inspections.

8. Requirements for obtaining samples.
  9. Unique characteristics of each quality-control service.
- C. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
  2. Project title and number.
  3. Name, address, and telephone number of testing agency.
  4. Dates and locations of samples and tests or inspections.
  5. Names of individuals making tests and inspections.
  6. Description of the Work and test and inspection method.
  7. Identification of product and Specification Section.
  8. Complete test or inspection data.
  9. Test and inspection results and an interpretation of test results.
  10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  12. Name and signature of laboratory inspector.
  13. Recommendations on retesting and reinspecting.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.
- E. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
1. Preparation of substrates.
  2. Required substrate tolerances.
  3. Sequence of installation or erection.
  4. Required installation tolerances.
  5. Required adjustments.
  6. Recommendations for cleaning and protection.
  7. Number of Copies: As required by Division 1 Section "Submittal Procedures". Provide additional copies to everyone concerned.
- F. Manufacturer's Field Reports: Provide the number of Copies as required by Division 1 Section "Submittal Procedures". Provide additional copies to everyone concerned.
- G. Design Data:
1. Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2. Number of Copies: As required by Division 1 Section "Submittal Procedures". Provide additional copies to everyone concerned.

## 1.6 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated. Requirement for specialists shall not supersede building codes and regulations governing the Work.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

## 1.7 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
  1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
  2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
  1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  2. Notify testing agencies at least 24 (twenty four) hours in advance of time when Work that requires testing or inspecting will be performed.

3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Pre-Construction Testing: Where testing agency is indicated to perform pre-construction testing for compliance with specified requirements for performance and test methods, comply with the following:
1. Contractor responsibilities include the following:
    - a. Provide test specimens representative of proposed products and construction.
    - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
    - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
    - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
    - e. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.
  2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- D. Manufacturer's Field Services:
1. Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections.
  2. Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
    - a. Name, address, and telephone number of factory-authorized service representative making report.
    - b. Statement on condition of substrates and their acceptability for installation of product.
    - c. Statement that products at Project site comply with requirements.
    - d. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
    - e. Results of operational and other tests and a statement of whether observed performance complies with requirements.
    - f. Statement whether conditions, products, and installation will affect warranty.
    - g. Other required items indicated in individual Specification
- E. Mockups and Sample Panels: Before installing portions of the Work requiring mockups or sample panels, build mockups or sample panels for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups or sample panels in location and of size indicated or, if not indicated, as directed by Architect.
  2. Notify Architect 7 (seven) days in advance of dates and times when mockups or sample panels will be constructed.

3. Demonstrate the proposed range of aesthetic effects and workmanship.
  4. Architect's Action: Architect will review each mockup or sample panel and approve mockup or sample panel in writing, indicating corrections or modifications required, in writing. Architect's action does not constitute a waiver of requirement to comply with the Contract Documents. Allow 7 (seven) days for initial review and each re-review of each mockup or sample panel.
  5. Obtain Architect's approval, in writing, of mockups or sample panels before starting work, fabrication, or construction.
  6. Maintain mockups or sample panels during construction in an undisturbed condition as a standard for judging the completed Work.
  7. Demolish and remove mockups or sample panels when directed, unless otherwise indicated.
- F. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- G. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  6. Do not perform any duties of Contractor.
- H. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
  2. Incidental labor and facilities necessary to facilitate tests and inspections.
  3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  4. Facilities for storage and field curing of test samples.
  5. Delivery of samples to testing agencies.
  6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  7. Security and protection for samples and for testing and inspecting equipment at Project site.
- I. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting. Schedule times for tests, inspections, obtaining samples, and similar activities.
- J. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 (thirty) days of date established for the Notice to Proceed.

- K. Distribution: Distribute schedule to Owner, Architect, Architect's Consultants, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.
- L. Reports
1. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
  2. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
  3. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
  4. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
  5. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
  6. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
    - a. Name of evaluation organization.
    - b. Date of evaluation.
    - c. Time period when report is in effect.
    - d. Product and manufacturers' names.
    - e. Description of product.
    - f. Test procedures and results.
    - g. Limitations of use.
- M. Certificates:
1. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
  2. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
  3. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
  4. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

5. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

### **1.8 SPECIAL TESTS AND INSPECTIONS**

- A. Special Tests and Inspections: Owner may engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
- B. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
  1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
  2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
  3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
  4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
  5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
  6. Retesting and reinspecting corrected work.

### **1.9 DELEGATED DESIGN**

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Submittal:
  1. In addition to Shop Drawings, Product Data, and other required submittals, submit 2 (two) copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional. Retain 1 (one) copy as a Project Record Document.
  2. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.1 TEST AND INSPECTION LOG**

- A. Prepare a record of tests and inspections. Include the following:
  1. Date test or inspection was conducted.
  2. Description of the Work tested or inspected.
  3. Date test or inspection results were transmitted to Architect.
  4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to "Test and Inspection Log" for Architect's reference during normal working hours.

### **3.2 REPAIR AND PROTECTION**

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  - 1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
  - 2. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching".
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

**END OF SECTION 01 40 00**



**SECTION 01 42 00 - REFERENCES****PART 1 – GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.2 DEFINITIONS**

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract. Architect's approval does not constitute a waiver of requirement to comply with the Contract Documents.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

**1.3 INDUSTRY STANDARDS**

- A. Conflicting Requirements: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- C. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
- D. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

**1.4 ABBREVIATIONS AND ACRONYMS**

- A. General: In the event Contractor is unable to determine the meaning of an abbreviation or acronym, the Architect will provide such information.
- B. Abbreviations and Acronyms for Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations.
- C. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale Research's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."
- D. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities.
- E. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities.
- F. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the State of Tennessee.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION 01 42 00**

**SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.
- B. Temporary utilities include, but are not limited to, the following:
  - 1. Sewers and drainage.
  - 2. Water service and distribution.
  - 3. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities.
  - 4. Heating and cooling facilities.
  - 5. Ventilation.
  - 6. Electric power service.
  - 7. Lighting.
  - 8. Telephone service.
- C. Support facilities include, but are not limited to, the following:
  - 1. Temporary roads and paving.
  - 2. Traffic Controls
  - 3. Project identification and temporary signs.
  - 4. Waste disposal facilities.
  - 5. Janitorial services.
  - 6. Field offices.
  - 7. Storage and fabrication sheds.
  - 8. Lifts and hoists.
  - 9. Temporary stairs.
  - 10. Existing stair usage.
  - 11. Construction aids and miscellaneous services and facilities.
- D. Environmental protection facilities include, but are not limited to, the following:
  - 1. Environmental protection.
  - 2. Soil stabilization.
  - 3. Stormwater control.
  - 4. Dewatering facilities and drains.
  - 5. Erosion and sediment controls.

6. Inspection and maintenance of erosion and sediment control measures.
  7. Chemicals and pollutants controls.
  8. Pest control.
- E. Security facilities include, but are not limited to, the following:
1. Site enclosure fence.
  2. Security enclosure and lockup.
  3. Barricades, warning signs, and lights.
  4. Covered walkways.
  5. Temporary enclosures.
  6. Temporary partitions.
  7. Fire protection.
- F. Related Sections include the following:
1. Division 01 Section "Summary" for limitations on utility interruptions and other work restrictions.
  2. Division 01 Section "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
  3. Division 01 Section "Execution" for progress cleaning requirements.
  4. Divisions 02 through 49 Sections for temporary heat, ventilation, and humidity requirements for products in those Sections.
  5. Division 31 Section "Asphalt Paving" for construction and maintenance of asphalt paving for temporary roads and paved areas.
  6. Division 32 Section "Concrete Paving" for construction and maintenance of cement concrete pavement for temporary roads and paved areas.

### 1.3 DEFINITIONS

Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

### 1.4 USE CHARGES

- A. General: Cost or use charges for temporary facilities are not chargeable to Owner or Architect and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
1. Owner and Owner's personnel.
  2. Architect and Architect's consultants.
  3. Testing agencies.
  4. Personnel of authorities having jurisdiction.
- B. Sewer Service: Pay sewer service use charges for sewer usage by all entities for construction operations.
- C. Water Service: Pay water service use charges for water used by all entities for construction operations.
- D. Electric Power Service: Pay electric power service use charges for electricity used by all entities for construction operations.

### 1.5 SUBMITTALS

## Temporary Facilities and Controls

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Temporary Utility Reports: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- C. Utility Implementation and Termination Schedule: Concurrent with submittal of Contractor's Construction Schedule, submit a schedule indicating implementation and termination of each temporary utility.
- D. Erosion and Sediment Control Plan: Before any clearing or excavation, submit written description and site drawings showing erosion and sediment controls.
  - 1. Proposed controls shall be acceptable to the Owner, Architect, and authorities having jurisdiction before earthwork operations are started.
  - 2. Describe the sequences and methods of installing these controls.
  - 3. Show final and intermediate grading plans and storm water storage capacity.
  - 4. Indicate controls, which will ensure that storm water drainage from areas to be stripped or modified passes through a filter system before being discharged.
  - 5. Show measures to be used to control wind erosion.
  - 6. Submit revisions to the Control Plan as conditions change during the course of the Work.

**1.6 QUALITY ASSURANCE**

- A. Comply with applicable provisions of the following specifications and documents, latest edition unless otherwise noted:
  - 1. ANSI A10.6, NECA's "Temporary Electrical Facilities", and NFPA 241.
  - 2. NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
  - 3. All applicable local, state, and federal ordinances, rules and regulations concerning erosion, sedimentation control and storm water run-off.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

**1.7 PROJECT CONDITIONS**

- A. Temporary Utilities: At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service.
- B. Temporary Use of Permanent Facilities: Assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.
- C. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
  - 1. Keep temporary services and facilities clean and neat.
  - 2. Relocate temporary services and facilities as required by progress of the Work.

**PART 2 - PRODUCTS****2.1 MATERIALS**

- A. Pavement: Comply with "Asphalt Paving" and "Concrete Paving" requirements.
- B. Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch-OD top rails, with galvanized barbed-wire top strand.

## Temporary Facilities and Controls

- C. Portable Chain-Link Fencing: Minimum 2-inch, 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top and bottom rails. Provide galvanized steel bases for supporting posts.
- D. Lumber and Plywood: Comply with requirements in Division 06 Section "Rough Carpentry".
- E. Gypsum Board: Minimum 5/8 inch thick by 48 inches wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36/C 36M.
- F. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.
- G. Paint: Comply with requirements in Division 09 painting Sections.
- H. Tarpaulins: Fire-resistive labeled with flame-spread rating of 15 or less.
- I. Water: Potable.

**2.2 TEMPORARY FACILITIES**

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Common-Use Field Office: Of sufficient size to accommodate needs of construction personnel. Keep office clean and orderly. Furnish and equip offices as follows:
  - 1. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
  - 2. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with not less than 1 receptacle on each wall. Furnish room with conference table, chairs, and 4-foot-square tack board.
  - 3. Drinking water and private toilet with water closet and lavatory.
  - 4. Coffee machine and supplies.
  - 5. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F.
  - 6. Lighting fixtures capable of maintaining average illumination of 20 fc at desk height.
- C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations. Store combustible materials apart from building.

**2.3 EQUIPMENT**

- A. General: Provide equipment suitable for use intended.
- B. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- C. Drinking-Water Fixtures: Drinking-water fountains or containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F.
- D. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.
- E. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.

## Temporary Facilities and Controls

1. Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
  2. Provide 4-gang outlets, spaced so 100-foot extension cord can reach each area for power hand tools and task lighting. Provide a separate 125-V ac, 20-A circuit for each outlet.
- F. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
  2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
  3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return air grille in system and remove at end of construction.

**PART 3 - EXECUTION****3.1 INSTALLATION, GENERAL**

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

**3.2 TEMPORARY UTILITY INSTALLATION**

- A. General: Install temporary service or connect to existing service. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.
- C. Water Service:
  1. Install water service and distribution piping in sizes and pressures adequate for construction.
  2. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.
  1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
  2. Toilets: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use. Provide separate facilities for male and female personnel.
  3. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Provide separate facilities for male and female personnel.
  4. Wash Facilities: Use of Owner's existing wash facilities for personnel who handle materials that require wash up will be permitted, as long as facilities are cleaned and maintained in a condition

## Temporary Facilities and Controls

acceptable to Owner. Supply cleaning compounds appropriate for each type of material handled. At Substantial Completion, restore these facilities to condition existing before initial use. Provide separate facilities for male and female personnel.

5. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel who handle materials that require wash up. Dispose of drainage properly. Supply cleaning compounds appropriate for each type of material handled.
  6. Drinking Water Facilities: Use of Owner's existing drinking water facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use. Provide separate facilities for male and female personnel.
  7. Drinking Water Facilities: Provide drinking-water fixtures.
- E. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- G. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
1. Install electric power service overhead, unless otherwise indicated.
  2. Connect temporary service to Owner's existing power source, as directed by Owner.
- H. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
1. Use of Owner's existing lighting will be permitted, as long as it maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use. Provide separate facilities for male and female personnel.
- I. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install a minimum of 1 (one) telephone line for each field office. Provide an additional dedicated telephone line for each facsimile machine.
1. At each telephone, post a list of important telephone numbers.
    - a. Police and fire departments.
    - b. Ambulance service.
    - c. Contractor's home office.
    - d. Architect's office.
    - e. Engineers' offices.
    - f. Owner's office.
    - g. Principal subcontractors' field and home offices.
  2. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.



## Temporary Facilities and Controls

- J. Electronic Communication Service: Provide temporary electronic communication service, including electronic mail for computers in common-use facilities.

**3.3 SUPPORT FACILITIES INSTALLATION**

- A. General: Comply with the following:

1. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.
2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

- B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas in same location as permanent roads and paved areas. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.

1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Division 31 Section "Earth Moving".
3. Recondition base after temporary use, including removing contaminated material, regrading, proofrolling, compacting, and testing.
4. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Division 32 Section "Asphalt Paving".

- C. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

- D. Parking: Provide temporary parking areas for construction personnel.

- E. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

- F. Project Identification and Temporary Signs:

1. Provide 2 (two) 8'-0" by 12'-0" foot Project identification including the following information:
  - a. Project Title and Project Rendering, if available.
  - b. Owner's Name
  - c. Contractor's Name and/or Logo.
  - d. Architect's Name and/or Logo.
  - e. Architect's Consultants Name.
2. Install signs where indicated and where necessary to inform public and individuals seeking entrance to Project.
3. Provide signs as required by authorities having jurisdiction.
4. Provide temporary, directional signs for construction personnel and visitors.

## Temporary Facilities and Controls

5. Maintain and touchup signs so they are legible at all times.
  6. Unauthorized signs are not permitted.
  7. Obtain a "Sign Permit", if required.
  8. Project Identification and temporary signs shall be constructed out of painted exterior grade play, edge trim and pressure treated lumber or other materials approved by Architect.
- G. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.
1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.
  2. Develop a waste management plan for Work performed on Project. Indicate types of waste materials Project will produce and estimate quantities of each type. Provide detailed information for on-site waste storage and separation of recyclable materials. Provide information on destination of each type of waste material and means to be used to dispose of all waste materials.
  3. Burning of waste at the project site is not permitted.
- H. Janitorial Services: Provide janitorial services on a daily basis for temporary offices, first-aid stations, toilets, wash facilities, lunchrooms, and similar areas.
- I. Lifts and Hoists:
1. Provide facilities necessary for hoisting materials and personnel.
  2. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- J. Temporary Elevator Use: Refer to Division 14 Sections for temporary use of new elevators.
- K. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
- L. Temporary Use of Permanent Stairs: Cover finished, permanent stairs with protective covering of plywood or similar material so finishes will be undamaged at time of acceptance.

**3.4 ENVIRONMENTAL PROTECTION**

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near Project site.
- B. Soil Stabilization: Apply soil stabilization within 14 days to all disturbed areas that are to be dormant for a period longer than 30 calendar days after reaching final grade.
1. Stabilize soil with mulch anchored per criteria of authorities having jurisdiction.
  2. Temporarily revegetate areas that will remain in an interim condition for more than three months.
  3. Roads and parking areas indicated to be paved may be covered with an appropriate aggregate base course in lieu of mulch.
  4. Soils that will be stockpiled for more than 30 days must be mulched and seeded or covered with plastic or tarpaulin within 14 days after stockpile construction. If covered, securely stake or weight plastic or tarpaulin to prevent displacement.

## Temporary Facilities and Controls

5. Final stabilization shall be achieved through permanent vegetation and landscaping after construction of all buildings and paved surfaces.
- C. Stormwater Control: Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of stormwater from heavy rains.
- D. Dewatering Facilities and Drains: Comply with requirements in applicable Division 2 Sections for temporary drainage and dewatering facilities and operations not directly associated with construction activities included in individual Sections. Where feasible, use same facilities. Maintain Project site, excavations, and construction free of water.
1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining property nor endanger permanent Work or temporary facilities.
  2. Before connection and operation of permanent drainage piping system, provide temporary drainage where roofing or similar waterproof deck construction is completed.
  3. Remove snow and ice as required to minimize accumulations.
- E. Erosion and Sediment Control Measures: Temporary erosion and sediment control measures shall be taken during construction. Temporary erosion and sediment controls shall consist of silt dams, traps, silt fence, barriers, and appurtenances at the top of spoil and borrow area slopes and where runoff water exits the site.
1. The sediment capacity of sediment retainage areas shall be sufficient to contain a twenty-five (25) year storm's silt.
  2. Prevent sediment from entering adjacent streets and property.
  3. Protect existing storm inlets adjacent to the site by a gravel filter approved by the authorities having jurisdiction.
  4. Locate stone stabilization pads at all points of vehicular ingress and egress to the construction site.
  5. Provide temporary erosion controls consisting of berms at the top of slopes and interceptor ditches at the ends of berms and at those locations which will eliminate or minimize erosion during construction, along with temporary seeding, temporary diversion, chutes, and down pipes and lining of water courses.
  6. Hay bales may be used at specific locations to provide temporary filtration of sediment from runoff.
  7. Remove and replace hay bales, which have deteriorated, and filter stone or cloth, which has become dislodged.
  8. Excavate the future detention/water quality pond and construct the outlet structure/storm sewer such that the pond may function as a sediment basin during development of the site. Construct the sediment basin in accordance with the criteria of the authorities having jurisdiction. Provide temporary lined swales to convey site runoff to the pond.
- F. Inspection and Maintenance of Erosion and Sediment Control Measures: Inspect erosion and sediment control measures weekly during construction and immediately after any significant runoff or snowmelt, which results in runoff.
1. Repair or replace any damage to the erosion and sediment control measures at no additional cost to the Owner.
  2. Maintain the available silt holding capacity of silt dams, fence traps and barriers until no longer needed. Prior to removal, obtain concurrence of the Owner, Architect and authorities having jurisdiction.
  3. Remove accumulated sediment and debris from the erosion and sediment control measures when the sediment level reaches one-half the height of the erosion and sediment control measures, or at any time the sediment or debris adversely impacts the functioning of the erosion and sediment control measures.

## Temporary Facilities and Controls

4. Maintain retention ponds in a condition which will retain unfiltered water.
- G. Chemicals and Pollutants Control Measures:
1. Store construction materials and chemicals that could contribute pollutants to the runoff within an enclosure, container, or dike located around the perimeter of the storage area, to prevent discharge of these materials into runoff from the construction site.
  2. Locate areas used for collection and temporary storage of solid and liquid waste away from the storm drainage system. Provide covering or fencing as required to prevent windblown materials; construct perimeter dike to contain liquid runoff. These measures may not be necessary if materials are immediately placed in covered waste containers.
  3. Perform equipment maintenance in designated areas using measures such as drip pans to control petroleum products.
  4. Immediately clean up and properly dispose of spills of construction related materials such as paints, solvents, or other chemicals.
- H. Pest Control: Before deep foundation work has been completed, retain a local exterminator or pest-control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Engage this pest-control service to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Engage this pest-control service to perform an inspection at Substantial Completion to verify that Project is free of pests and their residues at Substantial Completion and provide a written report. Obtain an extended warranty for a period of one year beyond Substantial Completion for the Owner. Perform control operations lawfully, using environmentally safe materials.

**3.5 SECURITY**

- A. Site Enclosure Fence: Before construction operations begin install chain-link or portable chain-link enclosure fence with lockable entrance gates. Locate where indicated, or enclose entire Project site or portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering site except by entrance gates.
1. Provide gates in sizes and at locations necessary to accommodate delivery vehicles and other construction operations.
  2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Provide Owner with one set of keys.
- B. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- C. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- D. Covered Walkway: Erect a structurally adequate, protective, covered walkway for passage of persons along adjacent public street. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction.
1. Construct covered walkways using scaffold or shoring framing.
  2. Provide wood-plank overhead decking, protective plywood enclosure walls, handrails, barricades, warning signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
  3. Extend back wall beyond the structure to complete enclosure fence.
  4. Paint and maintain in a manner approved by Owner and Architect.

## Temporary Facilities and Controls

5. For safety barriers, sidewalk bridges, and similar uses, provide minimum ~~5/8-inch~~ thick exterior plywood.
- E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
  2. Vertical Openings: Close openings of 25 sq. ft. or less with plywood or similar materials.
  3. Horizontal Openings: Close openings in floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
  4. Install tarpaulins securely using fire-retardant-treated wood framing and other materials.
  5. Where temporary wood or plywood enclosure exceeds 100 sq. ft. in area, use fire-retardant-treated material for framing and main sheathing.
- F. Temporary Partitions: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.
1. Construct dustproof, floor-to-ceiling partitions of not less than nominal 4-inch studs, ½ inch gypsum board, inside and outside temporary enclosure.
  2. Insulate partitions to provide noise protection to occupied areas.
  3. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
  4. Protect air-handling equipment.
  5. Weatherstrip openings.
- G. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
1. Provide fire extinguishers, installed on walls on mounting brackets, visible and accessible from space being served, with sign mounted above.
    - a. Field Offices: Class A stored-pressure water-type extinguishers.
    - b. Other Locations: Class ABC dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for exposures.
    - c. Locate fire extinguishers where convenient and effective for their intended purpose; provide not less than one extinguisher on each floor at or near each usable stairwell.
  2. Store combustible materials in containers in fire-safe locations.
  3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for firefighting. Prohibit smoking in hazardous fire-exposure areas.
  4. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
  5. Permanent Fire Protection: At earliest feasible date in each area of Project, complete installation of permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
  6. Develop and supervise an overall fire-prevention and first-aid fire-protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

7. Provide hoses for fire protection of sufficient length to reach construction areas. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles. Provide temporary standpipes where required.

### **3.6 OPERATION, TERMINATION, AND REMOVAL**

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance:
  1. Maintain facilities in good operating condition until removal.
  2. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
  1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
  2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
  3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures".

**END OF SECTION 01 50 00**

**SECTION 01 60 00 - PRODUCT REQUIREMENTS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. Related Sections include the following:
  - 1. Division 01 Section "References" for applicable industry standards for products specified.
  - 2. Division 01 Section "Closeout Procedures" for submitting warranties for Contract closeout.
  - 3. Divisions 02 through 49 Sections for specific requirements for warranties on products and installations specified to be warranted.

**1.3 DEFINITIONS**

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment", "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design", including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

**1.4 SUBMITTALS**

- A. Product List: Submit a list, in tabular form, showing specified products which will be incorporated in the Work. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
  - 1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
  - 2. Form: Tabulate information for each product under the following column headings:
    - a. Specification Section number and title.

## Product Requirements

- b. Generic name used in the Contract Documents.
  - c. Proprietary name, model number, and similar designations.
  - d. Manufacturer's name and address.
  - e. Supplier's name and address.
  - f. Installer's name and address.
  - g. Projected delivery date or time span of delivery period.
  - h. Identification of items that require early submittal approval for scheduled delivery date.
3. Initial Submittal: Within 30 (thirty) days after date of notice to proceed of initial product list. At Contractor's option, initial submittal may be limited to product selections and designations that must be established early (first 60 days) in Contract period.
  4. Completed List: Within 60 (sixty) days after date of notice to proceed, submit completed product list. Include a written explanation for omissions of data. Do not include products which do not comply with the Contract requirements unless previously approved by the Architect as a Substitution or Comparable Product.
  5. Architect's Action: Architect may respond in writing to Contractor within 15 (fifteen) days of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.
- B. Substitution Request: Submit 3 (three) copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles. Architect will return 2 (two) copy. Retain one returned copy as a Project Record.
1. Substitution Request Form: Use copy of form provided at end of Section. Substitutions will only be considered if condition under Part2 of this Specification Section are met
  2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified material or product cannot be provided.
    - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
    - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
    - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
    - e. Samples, where applicable or requested.
    - f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
    - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
    - i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified



## Product Requirements

- product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
- j. Cost information, including a proposal of change, if any, in the Contract Sum.
  - k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
  - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 (seven) days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 (fifteen) days of receipt of request, or 7 (seven) days of receipt of additional information or documentation, whichever is later.
- a. Form of Acceptance: Architect's Supplemental Instruction or Change Order.
  - b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.
- C. Comparable Product Request: Submit 3 (three) copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles. Architect will return 2 (two) copy. Retain one returned copy as a Project Record.
1. Comparable Request Form: Use copy of substitution request form provided at end of Section.
  2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
    - b. Detailed comparison of significant qualities of proposed product with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
    - c. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
    - d. Samples, where applicable or requested.
    - e. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
    - f. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    - g. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
    - h. Contractor's certification that proposed product complies with requirements in the Contract Documents and is appropriate for applications indicated.
    - i. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed product to produce indicated results.
  3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 (fifteen) days of receipt of request, or 7 (seven) days of receipt of additional information or documentation, whichever is later.

## Product Requirements

- a. Form of Acceptance: Architect's Supplemental Instruction.
- b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.

**1.5 QUALITY ASSURANCE**

Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

**1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
  1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- C. Storage:
  1. Store products to allow for inspection and measurement of quantity or counting of units.
  2. Store materials in a manner that will not endanger Project structure.
  3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
  4. Store cementitious products and materials on elevated platforms.
  5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
  6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
  7. Protect stored products from damage and liquids from freezing.

**1.7 PRODUCT WARRANTIES**

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
  1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
  2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.

## Product Requirements

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
  2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
  3. Refer to Divisions 02 through 49 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures".

**1.8 PRODUCT CERTIFICATES AND TEST REPORTS**

- A. Product (Material or Mill) Test Reports: If required by other Sections, provide a report from the manufacturer indicating the chemical, physical, and mechanical properties and performance of the material being provided. Comply with specific requirements included in the section requiring test.
- B. Research/Evaluation Report:
1. If required by other Sections, provide information demonstrating that the product (material) complies with the project requirements. Comply with specific requirements included in the section requiring the Research/Evaluation Report.
  2. Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
    - a. Name of evaluation organization.
    - b. Date of evaluation.
    - c. Time period when report is in effect.
    - d. Product and manufacturers' names.
    - e. Description of product.
    - f. Test procedures and results.
    - g. Limitations of use.
- C. Compatibility Test Report:
1. If required by other Sections, provide information demonstrating that the product (material) is compatible with other products (materials) that are being used on the project. Comply with specific requirements included in the section requiring the Compatibility Test Report.
  2. Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion
- D. Field Test Report:
1. If required by other Sections, provide information demonstrating that the installed product (material) complies with the project requirements. Comply with specific requirements included in the section requiring the Field Test Report.
  2. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

**1.9 MANUFACTURER'S INSTRUCTIONS**

Manufacturer's written instructions and recommendations for delivery, storage, handling, installation, protection and maintenance of each product (material).

## Product Requirements

**PART 2 - PRODUCTS****2.1 PRODUCT SELECTION PROCEDURES**

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  4. Where products are accompanied by the term "as selected," Architect will make selection.
  5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
  6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
  7. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
  2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
  3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
  4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
  5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
  6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
  7. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.

**2.2 PRODUCT SUBSTITUTIONS**

- A. Timing: Architect will consider requests for substitution if received within 60 (sixty) days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.

## Product Requirements

- B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
  2. Requested substitution does not require extensive revisions to the Contract Documents.
  3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  4. Substitution request is fully documented and properly submitted.
  5. Requested substitution will not adversely affect Contractor's Construction Schedule.
  6. Requested substitution has received necessary approvals of authorities having jurisdiction.
  7. Requested substitution is compatible with other portions of the Work.
  8. Requested substitution has been coordinated with other portions of the Work.
  9. Requested substitution provides specified warranty.

**2.3 COMPARABLE PRODUCTS**

- A. Conditions: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  3. Evidence that proposed product provides specified warranty.
  4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
  5. Samples, if requested.

**PART 3 - EXECUTION (Not Used)****END OF SECTION 01 60 00**

**SUBSTITUTION REQUEST FORM**

**PROJECT DATA**

PROJECT: Anderson County Courthouse, County Clerk & Archives Renovation  
PROJECT NO. 20-15

OWNER: Anderson County  
100 N. Main Street  
Clinton, Tennessee 37716

ARCHITECT: Blankenship & Partners, LLC.  
1112 E. Weisgarber Rd, 2<sup>nd</sup> Floor  
Knoxville, Tennessee 37909

**CONTRACTOR'S REQUEST, WITH SUPPORTING DATA**

1. Reason for Substitution Request:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Comparison of Proposed Substitution with Specified Item:

a. Section of the Specifications to which this request applies: \_\_\_\_\_

b. Data Relative to Specified Item:

1) Name, Brand: \_\_\_\_\_

2) Catalog No.: \_\_\_\_\_

3) Manufacturer: \_\_\_\_\_

c. Data Relative to Proposed Substitution

1) Name, Brand: \_\_\_\_\_

2) Catalog No.: \_\_\_\_\_

3) Manufacturer: \_\_\_\_\_

d. Significant variations, including elements such as size, weight, durability, performance, and visual effect:

\_\_\_\_\_

---

---

---

3. Comparison of Product Description:

- Product data for specified item is attached.
- Product data for proposed substitution is attached.
- Drawings and descriptions for specified item are attached.
- Drawings and descriptions for proposed substitution are attached.
- Sample for specified item is attached .
- Sample for proposed substitution is attached .
- List of similar installation for proposed substitution is attached.
- Material Test Report for specified item is attached.
- Material Test Report for proposed substitution is attached.
- Research/evaluation Report is attached.

4. Change in Contract Sum:

Credit to Owner                                   \$ \_\_\_\_\_

Additional Cost to Owner                       \$ \_\_\_\_\_

5. Change in Contract Time:

Contract Time \_\_\_\_\_

Copy of Revised Contractor's Construction Schedule is attached.

6. Effect of the proposed substitution on the Work:

Changes or Modifications required to Other Parts of the Work: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Changes or Modifications required to Other Contracts: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**CONTRACTOR'S STATEMENT OF CONFORMANCE**

I/we have investigated the proposed substitution. I/we:

Product Requirements

1. believe and certify that it is equal or superior in all respects to the originally specified product, except as stated in 2 above;
2. certify that it will perform adequately in the application indicated;
3. will provide the same warranty or guaranty as required in the Contract Documents;
4. have included all cost data and cost implications of the proposed substitution, including, if required, costs to other contractors, and redesign and special inspection costs caused by the use of this product;
5. will coordinate the incorporation of the proposed substitution in the Work;
6. will modify other parts of the Work as may be needed to make all parts of the Work complete and functioning;
7. have verified that use of this substitution conforms to all applicable codes;

Contractor: \_\_\_\_\_ Date \_\_\_\_\_

**CONTRACTOR'S WAIVER OF RIGHTS**

I/we waive future claims for added cost or time to Owner caused by the proposed substitution.

Contractor: \_\_\_\_\_ Date \_\_\_\_\_

**ARCHITECT'S REVIEW AND ACTION**

\_\_\_ Provide more information in the following categories and resubmit:

---



---

\_\_\_ Sign Contractor's Statement of Conformance and resubmit.

\_\_\_ The proposed substitution is approved.

\_\_\_ The proposed substitution is approved, with the following conditions:

---



---

\_\_\_ The proposed substitution is rejected.

The following changes will be made by Change Order:

Addition to/Deduction from the Contract Sum: \$ \_\_\_\_\_

Addition to/Deduction from the Contract Time \_\_\_\_\_ days

\_\_\_\_\_  
Blankenship & Partners, LLC

\_\_\_\_\_  
Date



**SECTION 01 73 00 – EXECUTION****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
1. Construction layout.
  2. Field engineering and surveying.
  3. General installation of products.
  4. Coordination of Owner-installed products.
  5. Progress cleaning.
  6. Starting and adjusting.
  7. Protection of installed construction.
  8. Correction of the Work.
- B. Related Sections include the following:
1. Division 01 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
  2. Division 01 Section "Submittal" for submitting surveys.
  3. Division 01 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
  4. Division 01 Section "Contract Closeout" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

**1.3 SUBMITTALS**

- A. Qualification Data: For land surveyor.
- B. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- C. Landfill Receipts: If required, submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- D. Final Property Survey: Submit 10 (ten) copies showing the Work performed and record survey data.

**1.4 QUALITY ASSURANCE**

Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION****3.1 EXAMINATION****A. Existing Conditions:**

1. The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work. Before construction, verify the location and points of connection of utility services.
2. Submit, with "Initial Application for Payment", a written statement accepting the existing conditions as in compliance with the Contract Documents or listing conditions that are not in compliance with the Contract Documents that will be detrimental to the Work.

**B. Existing Utilities:**

1. The existence and location of underground and other utilities and construction indicated as existing are not guaranteed.
2. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
3. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
4. Verify the characteristics and capacity of existing utilities, which are being connected to, comply with the project requirements.
5. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

**C. Acceptance of Conditions:** Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
  - a. Description of the Work.
  - b. List of detrimental conditions, including substrates.
  - c. List of unacceptable installation tolerances.
  - d. Recommended corrections.
2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

**3.2 PREPARATION**

- A. Existing Utility Information: If required furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

### 3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
  - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
  - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
  - 3. Inform installers of lines and levels to which they must comply.
  - 4. Check the location, level and plumb, of every major element as the Work progresses.
  - 5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
  - 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

### 3.4 FIELD ENGINEERING

- A. Identification: Owner will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
  - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
  - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of 2 (two) permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
  2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
  3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- D. Final Property Survey: Prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
  2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey".

### **3.5 INSTALLATION**

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
  2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
  4. Maintain minimum headroom clearance of 8 feet in spaces without a suspended ceiling.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  2. Allow for building movement, including thermal expansion and contraction.
  3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

### **3.6 PROGRESS CLEANING**

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
  - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

### **3.7 STARTING AND ADJUSTING**

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 01 Section "Quality Requirements."

### **3.8 PROTECTION OF INSTALLED CONSTRUCTION**

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

- B. Comply with manufacturer's written instructions for temperature and relative humidity.

**3.9 CORRECTION OF THE WORK**

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching". Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

**END OF SECTION 01 73 00**

**SECTION 01 73 29 - CUTTING AND PATCHING****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes procedural requirements for cutting and patching of existing construction required by testing of in-place construction or correction of work. This includes cutting and patching existing construction, lawns and planting areas adjacent to the project site for the connections to existing utilities, if required.
- B. Related Sections include the following:
  - 1. Divisions 2 through 32 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
  - 2. Division 07 Section "Penetration Firestopping" for patching fire-rated construction.

**1.3 DEFINITIONS**

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

**1.4 QUALITY ASSURANCE**

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include the following:
  - 1. Primary operational systems and equipment.
  - 2. Air or smoke barriers.
  - 3. Fire-suppression systems.
  - 4. Mechanical systems piping and ducts.
  - 5. Control systems.
  - 6. Communication systems.
  - 7. Conveying systems.
  - 8. Electrical wiring systems.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:
  - 1. Water, moisture, or vapor barriers.
  - 2. Membranes and flashings.
  - 3. Exterior curtain-wall construction.

4. Equipment supports.
  5. Piping, ductwork, vessels, and equipment.
  6. Noise- and vibration-control elements and systems.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

## **1.5 WARRANTY**

Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

## **PART 2 – PRODUCTS**

### **2.1 MATERIALS**

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

## **PART 3 – EXECUTION**

### **3.1 EXAMINATION**

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
  1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
  2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

### **3.2 PREPARATION**

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

### **3.3 PERFORMANCE**

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
- B. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.



- C. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  3. Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
  5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  6. Proceed with patching after construction operations requiring cutting are complete.
- D. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.
  3. Floors and Walls:
    - a. Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - b. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- E. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

**END OF SECTION 01 73 29**

**SECTION 01 77 00 - CLOSEOUT PROCEDURES****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
1. Inspection procedures.
  2. Warranties.
  3. Final cleaning.
- B. Related Sections include the following:
1. Division 01 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
  2. Division 01 Section "Execution" for progress cleaning of Project site.
  3. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
  4. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
  5. Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.
  6. Divisions 02 through 49 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

**1.3 SUBMITTALS**

- A. Request for Substantial Completion Inspection.
- B. Certified copy of Architect's Substantial Completion inspection list.
- C. Evidence of final, continuing insurance coverage complying with insurance requirements.
- D. Pest-control final inspection report and warranty.
- E. List of incomplete items (punch list).

**1.4 SUBSTANTIAL COMPLETION**

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
  2. Advise Owner of pending insurance changeover requirements.
  3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
  6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
  7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
  8. Complete startup testing of systems.
  9. Submit test/adjust/balance records.
  10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  11. Advise Owner of changeover in heat and other utilities.
  12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
  13. Complete final cleaning requirements, including touchup painting.
  14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
  2. Results of completed inspection will form the basis of requirements for Final Completion.

## 1.5 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures".
  2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  4. Submit pest-control final inspection report and warranty.
  5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection:
1. Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
  2. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

**1.6 LIST OF INCOMPLETE ITEMS (PUNCH LIST)**

- A. Preparation: Submit 2 (two) copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
  2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  3. Include the following information at the top of each page:
    - a. Project name.
    - b. Date.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Page number.

**1.7 WARRANTIES**

- A. Submittal Time:
1. Unless otherwise indicated, submit written warranties with the Final Application for Payment.
  2. Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within 15 (fifteen) days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
  2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

**PART 2 - PRODUCTS****2.1 MATERIALS**

Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

**PART 3 - EXECUTION****3.1 FINAL CLEANING**

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
    - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - e. Remove snow and ice to provide safe access to building.
    - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    - h. Sweep concrete floors broom clean in unoccupied spaces.
    - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
    - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
    - k. Remove labels that are not permanent.
    - l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    - m. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
    - n. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
    - o. Replace parts subject to unusual operating conditions.
    - p. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
    - q. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
    - r. Clean ducts, blowers, and coils if units were operated without filters during construction.
    - s. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
    - t. Leave Project clean and ready for occupancy.
- C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.

- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

**END OF SECTION 01 77 00**

**SECTION 01 78 39 - PROJECT RECORD DOCUMENTS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.
  - 4. Miscellaneous Record Submittals.
- B. Related Sections include the following:
  - 1. Division 01 Section "Contract Closeout" for general closeout procedures.
  - 2. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
  - 3. Divisions 02 through 32 Sections for specific requirements for Project Record Documents of the Work in those Sections.

**1.3 SUBMITTALS**

- A. Record Drawings: Submit 1 (one) set of marked-up Record Prints.
- B. Record Specifications: Submit 1 (one) copy of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data:
  - 1. Submit 1 (one) copy of each Product Data submittal.
  - 2. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.
- D. Record Miscellaneous Record Submittals: Submit 1 (one) set of Miscellaneous Record Submittals.

**PART 2 - PRODUCTS****2.1 RECORD DRAWINGS**

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
  - 1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an understandable drawing technique.

- c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
  2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.
    - b. Revisions to details shown on Drawings.
    - c. Depths of foundations below first floor.
    - d. Locations and depths of underground utilities.
    - e. Revisions to routing of piping and conduits.
    - f. Revisions to electrical circuitry.
    - g. Actual equipment locations.
    - h. Duct size and routing.
    - i. Locations of concealed internal utilities.
    - j. Changes made by Change Order or Construction Change Directive.
    - k. Changes made following Architect's written orders.
    - l. Details not on the original Contract Drawings.
    - m. Field records for variable and concealed conditions.
    - n. Record information on the Work that is shown only schematically.
  3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
  4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  5. Mark important additional information that was either shown schematically or omitted from original Drawings.
  6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
  1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  2. Identification: As follows:
    - a. Project name.
    - b. Date.
    - c. Designation "PROJECT RECORD DRAWINGS".
    - d. Name of Architect.
    - e. Name of Contractor.



**2.2 RECORD SPECIFICATIONS**

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
  5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

**2.3 RECORD PRODUCT DATA**

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
  3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

**2.4 MISCELLANEOUS RECORD SUBMITTALS**

- A. Miscellaneous Record Submittals: Maintain and submit as part of final completion submittals, 1 (one) copy of each miscellaneous submittal required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work.
- B. Miscellaneous Record Submittals include, but are not limited to, certificates and informational submittals retained that do not relate to a specific product.
- C. Assemble Record Submittals retained for Project Record Documents by specification sections. Bind or file record submittals and identify each, ready for continued use and reference.
1. Do not include product data submittals that are part of Record Product Data.
  2. Note related Change Orders, Record Drawings, and Record Specifications where applicable.
- D. Miscellaneous Record Submittals Binder:
1. Organize submittals into an orderly sequence based on the table of contents of the Project Manual.
  2. Bind submittals in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
  3. Provide heavy paper dividers with plastic-covered tabs for each product. Mark tab to identify the submittal. Provide a typed description of the submittal, including the name of the product and the name, address, and telephone number of Installer.
  4. Identify each binder on the front and spine with the typed or printed title "SUBMITTALS", Project name, and name of Contractor.

**PART 3 - EXECUTION**

**3.1 RECORDING AND MAINTENANCE**

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

**END OF SECTION 01 78 39**

**SECTION 03 62 00 - NON-SHRINK GROUT****PART 1 - GENERAL****1.1 SECTION INCLUDES**

- A. Section includes non-shrink grout under base plates, bearing plates, or as otherwise required by the structural engineer-of-record.

**1.2 RELATED SECTIONS**

- A. Section 01 33 24 - Structural Submittals.
- B. Section 01 45 24 - Structural Testing/Inspection Agency Services.

**1.3 REFERENCES**

- A. ASTM C109 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens).
- B. ASTM C1107 - Standard Specification For Packaged Dry, Hydraulic-Cement Grout (Non-Shrink).

**1.4 QUALITY ASSURANCE**

- A. Structural Testing/Inspection Agency shall perform the following quality related items:
  - 1. Perform compressive strength tests in accordance with ASTM C109 with 2-inch x 2-inch cubes. Test one cube at three days, two cubes at seven days and three cubes at 28 days. Perform one compressive strength test for each ten bags of grout used and/or perform one test minimum for each day of grouting, whichever is more frequent.

**1.5 SUBMITTALS**

- A. Submit product data sheets for review.

**PART 2 - PRODUCTS****2.1 GROUT**

- A. Provide a non-shrink, non-metallic grout that complies with ASTM C1107.
- B. Grout shall have a minimum compressive strength of 6000 psi at 28 days.
- C. Grout placed in exterior exposed conditions or areas subject to moisture shall be free of gypsum.

**2.2 WATER**

- A. Provide clean, potable water.

**PART 3 - EXECUTION****3.1 HANDLING**

- A. Store and protect non-shrink grout from moisture and contamination.

**3.2 PREPARATION**

- A. Remove mud, dirt and other foreign materials from areas to be grouted.
- B. Apply grout to rough concrete surface; roughen concrete as necessary prior to placing grout.

**3.3 MIXING**

- A. Mix grout to its fluid, self-leveling consistency in accordance with manufacturer's recommendations. Do not retemper grout. Do not exceed manufacturer's maximum limit on water content or use at a consistency which produces free bleeding. Mix grout in a paddle-type mortar mixer. Do not mix by hand.

**3.4 PLACEMENT**

- A. Consolidate grout to provide uniformity. Do not vibrate grout.
- B. Use forms to contain grout.

**3.5 PROTECTION**

- A. Protect grout and areas to be grouted from excessive heat and cold in accordance with manufacturer's specifications. Protect grout from excessive drying shrinkage resulting from wind or direct sunlight. Protect areas grouted from excessive vibrations for three days.

**END OF SECTION 03 62 00**

**SECTION 05 12 00 - STRUCTURAL STEEL****PART 1 – GENERAL****1.1 RELATED SECTIONS**

- A. Grouting under base and bearing plates: Section 033000 – Cast-in-Place Concrete.
- B. Section 05 21 00 – Steel Joists.
- C. Section 05 30 00 – Steel Decking.

**1.2 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION**

- A. Anchor bolts and setting templates:
  - 1. Section 03 30 00 – Cast-in-Place Concrete.
  - 2. Section 03 10 00 – Concrete Formwork.

**1.3 SCOPE**

This is a Performance specification. Work under this section includes, but is not limited to, a complete resolution of the geometry of the Structural Steel members and their joints, producing shop drawings which accurately reflect the geometry of the members and joints fabricating and erecting of the structural steel to achieve a finished structural frame. The fabricator and erector shall include in their bid the expense of making any field corrections required to achieve a workable structure.

**1.4 SUBMITTALS**

- A. Steel fabricator and erector to supply a list of five previous projects similar in size and complexity to this project to establish that they are capable to perform the work for this project. List shall include the name and location of each project with the name and phone number of the Contractor and Architect for which the previous projects were performed. Architect may reject any steel fabricator or erector that, in his opinion, fails to appear capable of performing the required work. Steel fabricator shall be approved by the Architect prior to the production of shop drawings.
- B. Shop drawings prepared by the fabricator. Submit electronic PDF's of shop drawings for review and mark-up. Connections not detailed on the design drawings shall be designed by the fabricator. Structural design drawings are for design intent only. It is the responsibility of the fabricator to ensure that the shop drawings reflect all necessary information required for fabrication and erection. Reproduction of structural design drawings for the shop drawing submittal will not be permitted nor will they be reviewed.
- C. Submit mill certification that steel supplied meets requirements of specifications.
- D. Submit electrode manufacturer's certification that the electrode and flux combination the requirements of the particular classification or grade of electrodes.
- E. Submit a minimum of three copies of each report from the Testing Laboratory to the Architect. See Field Quality Control section this specification for inspections and test required of the Testing Laboratory.
- F. Submittals shall include the following note completed and signed by the Contractor: The data submitted does not contain material deviation from requirements of contract documents except as follows:

**1.5 QUALITY ASSURANCE**

- A. Structural steel: Meet requirements of Manual of Steel Construction, Ninth Edition, Allowable Stress Design and Plastic Design for types of steel specified.
- B. Fabrication and erection: Meet requirements of Specification for the Design Fabrication and Erection of Structural Steel for Buildings, June 1, 1989, and all subsequent modifications or addendums (referred to below as Structural Steel for Buildings) as indicated.
- C. Welding: In accordance with requirements of American Welding Society "Structural Welding Code," AWS D1.1-85.
- D. Testing Agency – Personnel performing tests and inspection will be certified by American Society for Non-Destructive Testing, for Level II.
- E. Included in the responsibilities for structural steel testing and inspection are the following:
  - 1. Observe the AWS qualifications of all welders.
  - 2. Inspect and test a representative sampling of a minimum of 10% of the high strength bolts for proper installation and tensioning.
  - 3. Verify that electrodes are compatible with the base metals joined.
  - 4. Ultrasonically test complete penetration welds and visually inspect all fillet welds.

**1.6 QUALIFICATIONS**

- A. Steel Fabricator: Fabricator shall be approved by the Architect. See Submittal section this specification for requirements.
- B. Welders, tackers, and welding operators: Qualified in accordance with Code for Welding in Building Construction, AWS D1.1-96 to perform the type of work required.

**1.7 PRODUCT HANDLING**

- A. Deliver materials, such as anchor bolts and other anchor devices to be embedded in concrete and masonry construction, to project site in time to be installed in proper sequence with concrete and masonry work. Provide setting drawings, templates and directions for installation of anchor bolts and other devices.
- B. Deliver steel to project site and stack in designated area.
- C. Stack and store steel above ground on platforms, studs or other supports. Protect steel from corrosion and damage. Keep materials clean.
- D. Store other materials in a weathertight, dry place until ready for use.
- E. Store packaged materials in their original, unbroken package or container.

**PART 2 – PRODUCTS****2.1 STRUCTURAL STEEL**

- A. Channels, Angles: ASTM A 36/A 36M
- B. W-Shapes: ASTM A992/A992M
- C. Plate and Bar: ASTM A 36/A 36M

- D. Steel Castings: ASTM A 216/A 216M, Grade WCB with supplementary requirement S11.
- E. Steel Forgings: ASTM A 668/A 668M.
- F. Welding Electrodes: Comply with AWS requirements W/ 70 ksi electrodes.

## 2.2 STEEL PIPE

- A. ASTM A53-96, Grade B, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.

## 2.3 STEEL TUBING

- A. ASTM A500-93, Grade B, Standard Specification for Cold-Formed Welded and Seamless Carbon Structural Tubing.

## 2.5 WELDING ELECTRODES

- A. Electrodes having low hydrogen covering shall be purchased in hermetically-sealed containers.
- B. For fabricating plant use: E70 electrodes, AWS A5.1-91, A5.5-96, A5.17-89 or A5.20-95.

## 2.6 BOLTS

- A. High strength bolts, nuts and washer: Type 1 or 2, ASTM A325-96, Standard Specification for High-Strength Bolts for Structural Joints, Including Suitable Nuts and Plain Hardened Washers. Provide 3/4" diameter bolts unless noted otherwise.
- B. High strength bolts shall be load-indicator bolts. Provide load-indicator bolts as manufactured by Bethlehem, Le Juene, or approved substitute. Load-indicator bolts shall be installed using equipment specifically manufactured for this use. Load-indicator bolts in tension shall have rounded heads that cannot accept the application of a wrench.
- C. Unfinished bolts: ASTM A307-94, Standard Specification for Carbon Steel and Externally Threaded Standard Fasteners
- D. Expansion (wedge) anchors: See Structural Drawings
- E. Adhesive anchors: See Structural Drawings

## 2.7 SHOP COATING

- A. A high grade rust-inhibiting primer.
- B. Paint shall be VOC compliant, lead and chromate free and shall be compatible with products specified in Division 9 specifications.

## 2.8 GROUT

- A. Metallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, metallic aggregate grout, mixed with water to consistency suitable for application and a 30-minute working time. (Minimum Compressive Strength = 5,000 psi.)
- B. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time. (Minimum Compressive Strength = 5,000 psi.)

**PART 3 – EXECUTION****3.1 FABRICATING**

- A. Fabricate in accordance with applicable requirements of M2 of “Specification For Structural Steel Building” by AISC.
- B. Design all connections, except for those fully detailed on the Structural Drawings.

**3.2 SHOP COATING**

- A. Before steel leaves fabricator’s shop, remove loose mill scale, rust, weld slag and flux deposit, dirt, foreign matter and oil and grease. Prepare surface as recommended by paint manufacturer for the intended exposure. Do not sandblast, flame clean, or pickle material.
- B. Thoroughly and evenly apply one coat of shop paint to cleaned surfaces. Thickness of shop paint coat shall be applied to a minimum dry film thickness of 1 mil or as required by surface preparation.
- C. Do not paint steel to be encased in concrete, plaster and sprayed-on-fireproofing.

**3.3 ERECTING**

- A. Before commencing erecting work, notify Architect in writing at 48 hours in advance.
- B. Erect steel in accordance with requirements of Section M4 of “Specification For Structural Steel Buildings” by AISC, except paragraph M4.6 is hereby modified to make field painting a part of the work on this section.
- C. Use specified high-strength bolts for bolted connections, except where unfinished bolts and welded connections are allowed below. Use a minimum of 2 bolts at each bolted connection. Use hardened washers under bolt or nut, whichever is the element turned in tightening. Prior to tightening the bolts of a connection to final tension, there shall first be enough bolts brought to a “snug tight” condition to insure that the parts of the joint are brought into good contact with each other.
- D. Bolts in bearing type conditions which are not subject to fatigue or load fluctuations need only to be tightened to a snug-tight condition. Bolts in tension shall be tightened to full tension values. Refer to Drawings for location of bolts required to be fully tightened.
- E. Use unfinished bolts in places indicated.
- F. Install expansion anchors per manufacturer’s instructions.
- G. Weld connections where indicated. Do not peen welds unless authorized in writing by Architect. Any shop paint on surfaces adjacent to joints to be field welded shall be wire brushed to reduce the paint film to a minimum.
- H. Field Painting: For shop coated steel, touch up welds and scarred and damaged shop coat.
- I. Protect all structural steel below grade by encasing in concrete or painting with bitumastic paint.
- J. Do not field cut or alter structural members without approval of Architect/Engineer.



**3.4 FIELD CONNECTIONS**

- A. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 Bolts" for type of bolt and type of joint specified.
  - 1. Joint Type: Snug tightened
- B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
  - 1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
  - 2. Remove backing bars or runoff tabs[ where indicated], back gouge, and grind steel smooth.
  - 3. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances in AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.

**3.5 FIELD QUALITY CONTROL**

- A. Shop and field welding will be tested and inspected in accordance with AWS Structural Welding Code. Welds will be visually or ultrasonically tested, depending on types of welded joints. All penetration welds shall be ultrasonically tested and inspected. A minimum representative sampling of 10 percent of all other welds shall be inspected by the Testing Laboratory for compliance with the design drawings and shop drawings. Additional inspections and testing shall be directed by the Architect. Additional testing as a result of non-conformances will be at the expense of the Contractor.
- B. The Testing Laboratory shall inspect and test a minimum representative sampling of 10 percent of all bolted connections. Additional inspections and testing of bolted connections shall be performed by the Testing Laboratory as directed by the Architect. Additional testing as a result of non-conformances will be at the expense of the Contractor.
- C. The steel fabricator shall be fully responsible for insuring that all steel fabrication and erection is in accordance with the Contract Documents. Failure of Architect or Testing Laboratory to detect defective work, workmanship, materials, or erection shall in no way prevent rejection of the work and the steel fabricator taking approved corrective action when such defects are discovered. The Architect or the Testing Laboratory shall not, thereby, be obligated to make a final acceptance.

**3.6 REPAIRS AND PROTECTION**

- A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A 780.
- B. Touchup Painting: Immediately after erection, clean exposed areas where primer is damaged or missing and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
  - 1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.
  - 2. Apply a compatible primer of same type as shop primer used on adjacent surfaces.
- C. Touchup Painting: Cleaning and touchup painting are specified in Division 09 painting Sections

**END OF SECTION 05 12 00**

**SECTION 05 50 00 - METAL FABRICATIONS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

A. This Section includes the following:

1. Steel framing and supports for countertops.
2. Steel framing and supports for applications where framing and supports are not specified in other Sections.
3. Aluminum roof access ladders.

B. Related Sections include the following:

1. Division 03 Section "Cast-in-Place Concrete" for installing anchor bolts, steel pipe sleeves, wedge-type inserts and other items indicated to be cast into concrete.
2. Division 05 Section "Structural Steel".

**1.3 PERFORMANCE REQUIREMENTS**

A. Thermal Movements:

1. Provide exterior metal fabrications that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
2. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

**1.4 SUBMITTALS**

A. Product Data: For the following:

1. Nonslip aggregates and nonslip-aggregate surface finishes.
2. Paint products.
3. Grout.

B. Shop Drawings: Show fabrication and installation details for metal fabrications.

1. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.
2. Provide templates for anchors and bolts specified for installation under other Sections.

C. Welding certificates.

**1.5 QUALITY ASSURANCE**

A. Welding: Qualify procedures and personnel according to the following:

1. AWS D1.1, "Structural Welding Code--Steel".
2. AWS D1.3, "Structural Welding Code--Sheet Steel".

**1.6 PROJECT CONDITIONS**

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication and indicate measurements on Shop Drawings.
- B. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating metal fabrications without field measurements. Coordinate wall and other contiguous construction to ensure that actual dimensions correspond to established dimensions.
- C. Provide allowance for trimming and fitting at site.

**1.7 COORDINATION**

Coordinate installation of anchorages for metal fabrications. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

**PART 2 - PRODUCTS****2.1 METALS, GENERAL**

Metal Surfaces, General: Provide materials with smooth, flat surfaces, unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

**2.2 FERROUS METALS**

- A. Steel Plates, Shapes, and Bars: ASTM A 36.
- B. Steel Tubing: ASTM A 500, cold-formed steel tubing.
- C. Steel Pipe: ASTM A 53, standard weight (Schedule 40), unless another weight is indicated or required by structural loads.
- D. Cast Iron: ASTM A 48, Class 30, unless another class is indicated or required by structural loads.

**2.3 FASTENERS**

General: Select fasteners for type, grade, and class required.

**2.4 MISCELLANEOUS MATERIALS**

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79. Use primer with a VOC content of 420 g/L (3.5 lb/gal.) or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- C. Galvanizing Repair Paint: High-zinc-dust-content paint for reglazing welds in steel, complying with SSPC-Paint 20.
- D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.
- E. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- F. Concrete Materials and Properties: Comply with requirements in Division 03 Section "Cast-in-Place Concrete" for normal-weight, air-entrained, ready-mix concrete with a minimum 28-day compressive strength of 3000 psi, unless otherwise indicated.
- G. Aluminum shapes (6005-T5)

**2.5 FABRICATION, GENERAL**

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Form exposed work true to line and level with accurate angles and surfaces and straight edges.
- E. Weld corners and seams continuously to comply with the following:
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 2. Obtain fusion without undercut or overlap.
  - 3. Remove welding flux immediately.
  - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) screws or bolts, unless otherwise indicated. Locate joints where least conspicuous.
- G. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches, with a minimum 6-inch embedment and 2-inch hook, not less than 8 inches from ends and corners of units and 24 inches o.c., unless otherwise indicated.

**2.6 MISCELLANEOUS FRAMING AND SUPPORTS**

- A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.
- B. Fabricate units from steel shapes, plates, and bars of welded construction, unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction retained by framing and supports. Cut, drill, and tap units to receive hardware, hangers, and similar items. Furnish inserts if units are installed after concrete is placed.
- C. Galvanize miscellaneous framing and supports where indicated.

**2.7 FINISHES, GENERAL**

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish metal fabrications after assembly.

**2.8 STEEL AND IRON FINISHES**

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with applicable standard listed below:
  - 1. ASTM A 123/A 123M, for galvanizing steel and iron products.
  - 2. ASTM A 153/A 153M, for galvanizing steel and iron hardware.
- B. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:
  - 1. Exteriors (SSPC Zone 1B): SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning".
  - 2. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning".
- C. Shop Priming: Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes and those to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting. Stripe paint corners, crevices, bolts, welds, and sharp edges.

**2.9 ROOF HATCH**

- A. Provide and install 30" x 36" aluminum roof hatch.
  - 1. Loads: Minimum 40-lbf/sq.ft external live load with a maximum deflection of 1/150 of the span and 20-lbf/sq.ft internal uplift load.
  - 2. Operation of the cover shall be smooth and easy with controlled operation throughout the entire arc of opening and closing.
  - 3. Operation of the cover shall not be affected by temperature.
  - 4. Entire hatch shall be weather tight with fully welded corner joints on cover and curb.
- B. Manufacturers: Type S Roof Hatch by The Bilco Company, Personnel II Roof Hatch by Babcock-Davis, or equal.

**2.10 ALUMINUM ROOF ACCESS LADDER**

- A. Provide and install aluminum fixed vertical ladder - Aluminum Mill Finish. FL series as manufactured by Precision Ladders, LLC in Morristown, Tennessee, or equal.
  - 1. Capacity: Unit shall support a 1500 lb (680 kg) loading without failure, and individual treads shall withstand a 3,000 lb (1361 kg) loading without failure.
  - 2. Performance Standard: Units designed and manufactured to meet or exceed ANSI A14.3 and OSHA 1910.27.

**PART 3 - EXECUTION****3.1 INSTALLATION, GENERAL**

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- C. Field Welding: Comply with the following requirements:
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

2. Obtain fusion without undercut or overlap.
  3. Remove welding flux immediately.
  4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws, and other connectors.
- E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- F. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

### **3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS**

General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

### **3.3 ADJUSTING AND CLEANING**

- A. Touchup Painting:
1. Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
  2. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.
- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

**END OF SECTION 05 50 00**

**SECTION 06 10 00 - ROUGH CARPENTRY****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

A. This Section includes the following:

1. Wood blocking and nailers.
2. Plywood backing panels.

B. Related Sections include the following:

1. Division 06 Section "Interior Architectural Woodwork" for nonstructural carpentry items exposed to view and not specified in another Section.

**1.3 DEFINITIONS**

A. Rough Carpentry: Carpentry work not specified in other Sections and not exposed, unless otherwise indicated.

B. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. NELMA - Northeastern Lumber Manufacturers Association.
2. NLGA - National Lumber Grades Authority.
3. SPIB - Southern Pine Inspection Bureau.
4. WCLIB - West Coast Lumber Inspection Bureau.
5. WWPA - Western Wood Products Association.

**1.4 SUBMITTALS**

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials, both before and after exposure to elevated temperatures when tested according to ASTM D 5516 and ASTM D 5664.
3. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
4. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

B. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the American Lumber Standards Committee Board of Review.

- C. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:
1. Preservative-treated wood.
  2. Fire-retardant-treated wood.
  3. Power-driven fasteners.
  4. Powder-actuated fasteners.
  5. Expansion anchors.

### 1.5 QUALITY ASSURANCE

Source Limitations for Fire-Retardant-Treated Wood: Obtain each type of fire-retardant-treated wood product through one source from a single producer.

### 1.6 DELIVERY, STORAGE, AND HANDLING

Stack lumber, plywood, and other panels; place spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

## PART 2 - PRODUCTS

### 2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.
1. Factory mark each piece of lumber with grade stamp of grading agency.
  2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by grading agency.
  3. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
  4. Provide dressed lumber, S4S, unless otherwise indicated.
  5. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.
- B. Plywood Backing Panels: DOC PS 1, Exposure 1, C-D Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 1/2 inches thick.

### 2.2 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, provide materials that comply with performance requirements in AWPA C20 (lumber) and AWPA C27 (plywood). Identify fire-retardant-treated wood with appropriate classification marking of UL, U.S. Testing, Timber Products Inspection, or another testing and inspecting agency acceptable to authorities having jurisdiction.
1. Use treatment for which chemical manufacturer publishes physical properties of treated wood after exposure to elevated temperatures, when tested by a qualified independent testing agency according to ASTM D 5664, for lumber and ASTM D 5516, for plywood.
  2. Use treatment that does not promote corrosion of metal fasteners.
  3. Use Interior Type A High Temperature (HT), unless otherwise indicated. Use Exterior type for exterior locations and where indicated.
- B. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes.
- C. Application: Treat all rough carpentry, including the following, unless otherwise indicated:



1. Concealed blocking.
2. Plywood backing panels.

### **2.3 WOOD-PRESERVATIVE-TREATED MATERIALS**

- A. Preservative Treatment by Pressure Process: AWPA C2 (lumber) and AWPA C9 (plywood), except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX).
1. Preservative Chemicals: Acceptable to authorities having jurisdiction, containing no arsenic or chromium, and one of the following:
    - a. Ammoniacal, or amine, copper quat (ACQ).
    - b. Copper bis (dimethyldithiocarbamate) (CDDC).
    - c. Ammoniacal copper citrate (CC).
    - d. Copper azole, Type A (CBA-A).
    - e. Oxine copper (copper-8-quinolinolate) in a light petroleum solvent.
  2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
- B. Kiln-dry material after treatment to maximum moisture content of 19 percent for lumber and 15 percent for plywood. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark each treated item with the treatment quality mark of an inspection agency approved by the American Lumber Standards Committee Board of Review.
- D. Application: Treat items indicated on Drawings, and wood cants, nailers, blocking, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.

### **2.4 MISCELLANEOUS LUMBER**

- A. General: Provide lumber for support or attachment of other construction, including the following:
1. Blocking.
  2. Cants.
  3. Nailers.
- B. For items of dimension lumber size, provide Construction, Stud, or No. 2 grade lumber with 19 percent maximum moisture content and any of the following species:
1. Mixed southern pine; SPIB.
  2. Hem-fir or Hem-fir (north); NLGA, WCLIB, or WWPA.
  3. Spruce-pine-fir (south) or Spruce-pine-fir; NELMA, NLGA, WCLIB, or WWPA.
- C. For concealed boards, provide lumber with 19 percent maximum moisture content and any of the following species and grades:
1. Mixed southern pine, No. 2 grade; SPIB.
  2. Hem-fir or Hem-fir (north), Construction or 2 Common grade; NLGA, WCLIB, or WWPA.
  3. Spruce-pine-fir (south) or Spruce-pine-fir, Construction or 2 Common grade; NELMA, NLGA, WCLIB, or WWPA.

**2.5 PLYWOOD BACKING PANELS**

Telephone and Electrical Equipment Backing Panels: DOC PS 1, Exposure 1, C-D Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 1/2 inches thick.

**2.6 FASTENERS**

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: NES NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.
- F. Lag Bolts: ASME B18.2.1.
- G. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.
- H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

**PART 3 - EXECUTION****3.1 INSTALLATION, GENERAL**

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Do not use materials with defects that impair quality of rough carpentry or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- C. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood.
- D. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. NES NER-272 for power-driven fasteners.
  - 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
- E. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; predrill as required.

**3.2 WOOD BLOCKING AND NAILER INSTALLATION**

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build anchor bolts into masonry during installation of masonry work. Where possible, secure anchor bolts to formwork before concrete placement.

**3.3 PLYWOOD BACKING PANELS**

Fastening Methods: Screw to cold-formed metal framing or concrete masonry unit walls.

**3.4 PROTECTION**

Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

**END OF SECTION 06 10 00**

**SECTION 06 40 23 - INTERIOR ARCHITECTURAL WOODWORK****PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section includes the following:
  - 1. Plastic-laminate or wood cabinets and countertops.
  - 2. Solid-surfacing-material countertops and integral sink bowls and window sills.
  - 3. Shop finishing woodwork.
  - 4. Closet and Utility Shelving.
  - 5. Base boards.
  - 6. Wood wall paneling.
- B. Interior architectural woodwork includes wood furring, blocking, shims, and hanging strips unless concealed within other construction before woodwork installation.

**1.2 SUBMITTALS**

- A. Product Data: For solid-surfacing material, cabinet hardware and accessories, handrail brackets and finishing materials and processes.
- B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
- C. Samples:
  - 1. Lumber and panel products for transparent finish, for each species and cut, finished on one side and one edge.
  - 2. Lumber and panel products with shop-applied opaque finish, for each finish system and color, with exposed surface finished.
  - 3. Plastic-laminates, for each type, color, pattern, and surface finish.
  - 4. Thermoset decorative panels, for each type, color, pattern, and surface finish.
  - 5. Solid-surfacing materials.
- D. Woodwork Quality Standard Compliance Certificates: WI-certified compliance certificates.

**1.3 QUALITY ASSURANCE**

- A. Fabricator Qualifications: Shop the employed skilled worker who custom fabricate products similar to those required for this Project and whose products have a record of successful in –service performance
- B. Installer Qualifications: Fabricator of woodwork.
- C. Source limitations: Engage a qualified woodworking firm to assume undivided responsibility for production of interior architectural woodwork.
- D. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards.", WI's "Manual of Millwork."

- E. Fire-Test Response Characteristics: Where Fire Retardant materials or products are indicated, provide materials and products with specified fire-test-response characteristics as determined by testing identical products per test method indicated by UL, ITS, or other testing and inspecting agency acceptable to authorities having jurisdiction. Identify appropriate markings of applicable testing and inspecting agency in the form of separate paper label or, where required by authorities having jurisdiction, imprint on surfaces of materials that will be concealed from view after installation.
- F. Mock-ups: build mock-ups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
  - 1. Approved mockups may become part of the completed work if undisturbed.
- G. Preinstallation Conference: conduct conference at Project site to comply with requirements in Section 01 31 00 Project Meetings.

#### **1.4 PROJECT CONDITIONS**

- A. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

### **PART 2 - PRODUCTS**

#### **2.1 WOODWORK FABRICATORS**

- A. Fabricators: Subject to compliance with requirements, provide interior architectural woodwork by one of the following:

#### **2.2 MATERIALS**

- A. Wood Species for Opaque Finish: Any closed-grain hardwood
- B. Wood Products:
  - 1. Medium-Density Fiberboard: ANSI A208.2, Grade MD, made with binder containing no urea formaldehyde.
  - 2. Particleboard: ANSI A208.1, Grade M-2
  - 3. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1, made with adhesive containing no urea formaldehyde.
- C. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or, if not indicated, as required by woodwork quality standard.
  - 1. Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Formica Corporation.

## Interior Architectural Woodwork

- b. Nevamar Company, LLC; Decorative Products Div.
  - c. Wilsonart International; Div. of Premark International, Inc.
- D. Solid Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with ISSFA-2.
- 1. Manufacturer: Subject to compliance with requirements, provide products by one of the following:
    - a. ABA Industries.
    - b. Avonite, Inc.
    - c. E.I. du Pont de Nemours and Company.
    - d. Formica Corporation.
    - e. LG Chemical, Ltd.
    - f. Meganite Inc.; a division of the Pyrochem Group.

**2.3 FIRE-RETARDANT-TREATED MATERIALS**

- A. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Comply with performance requirements of AWPA C20 (lumber) and AWPA C27 (plywood). Use Exterior Type or Interior Type A. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Kiln-dry material after treatment.
- B. Fire-Retardant Particleboard: Panels made from softwood particles and fire-retardant chemicals mixed together at time of panel manufacture with flame-spread index of 25 or less and smoke-developed index of 25 or less per ASTM E 84.
- C. Fire-Retardant Fiberboard: ANSI A208.2 medium-density fiberboard panels made from softwood fibers, synthetic resins, and fire-retardant chemicals mixed together at time of panel manufacture with flame-spread index of 25 or less and smoke-developed index of 200 or less per ASTM E 84.

**2.4 CABINET HARDWARE AND ACCESSORIES**

- A. General: Provide cabinet hardware and accessory materials associated with architectural woodwork, except for items specified in Division 08 Section "Door Hardware (Scheduled by Describing Products)."
- B. Butt Hinges: 2-3/4-inch 5-knuckle steel hinges made from 0.095-inch- thick metal, and as follows:
  - 1. Semiconcealed Hinges for Flush Doors: BHMA A156.9, B01361.
  - 2. Semiconcealed Hinges for Overlay Doors: BHMA A156.9, B01521.
- C. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, **135** degrees of opening, **self-closing**.
- D. Back-Mounted Pulls: BHMA A156.9, B02011.
- E. Wire Pulls: Back mounted, solid metal 5 inches (127 mm) long, 2-1/2 inches (63.5 mm) deep, and 5/16 inch (8 mm) in diameter.
- F. Catches: Magnetic catches, BHMA A156.9, B03141
- G. Drawer Slides: BHMA A156.9, B05091.

## Interior Architectural Woodwork

1. Standard Duty (Grade 1, Grade 2, and Grade 3): Side mounted and extending under bottom edge of drawer; full-extension partial-extension type; zinc-plated steel with polymer rollers.
  2. Heavy Duty (Grade 1HD-100 and Grade 1HD-200): Side mounted; full-extension type; zinc-plated steel ball-bearing slides.
  3. Box Drawer Slides: Grade 1HD-100; for drawers not more than 6 inches high and 24 inches wide.
  4. File Drawer Slides: Grade 1HD-200; for drawers more than 6 inches high or 24 inches wide.
  5. Pencil Drawer Slides: Grade 2; for drawers not more than 3 inches (75 mm) high and 24 inches wide.
- H. Aluminum Slides for Sliding Glass Doors: BHMA A156.9, B07063.
- I. Door Locks: BHMA A156.11, E07121.
- J. Drawer Locks: BHMA A156.11, E07041.
- K. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
1. Satin Stainless Steel: BHMA 630.

**2.5 MISCELLANEOUS MATERIALS**

- A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, fire-retardant-treated, kiln-dried to less than 15 percent moisture content.
- B. Adhesives, General: Do not use adhesives that contain urea formaldehyde.

**2.6 FABRICATION**

- A. General: Complete fabrication to maximum extent possible before shipment to Project site. Where necessary for fitting at site, provide allowance for scribing, trimming, and fitting.
- B. Plastic-Laminate Cabinets:
1. AWI Type of Cabinet Construction: Flush overlay
  2. Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate as follows:
    - a. Horizontal Surfaces Other Than Tops: Grade HGS.
    - b. Postformed Surfaces: Grade HGP.
    - c. Vertical Surfaces: Grade HGS.
    - d. Edges: PVC edge banding, 0.12 inch (3 mm) thick, matching laminate in color, pattern, and finish.
  3. Materials for Semiexposed Surfaces Other Than Drawer Bodies: Thermoset decorative panels.
  4. Drawer Sides and Backs: Thermoset decorative panels.
  5. Drawer Bottoms: Thermoset decorative panels.
  6. Colors, Patterns, and Finishes: Match sample
  7. Colors, Patterns, and Finishes: As selected by Architect from laminate manufacturer's full range of solid colors, wood grains, patterns, gloss matte finish.
  8. Provide dust panels of 1/4-inch (6.4-mm) plywood or tempered hardboard above compartments and drawers, unless located directly under tops.
- C. Plastic-Laminate Countertops:

## Interior Architectural Woodwork

1. High-Pressure Decorative Laminate Grade: HGS or HGP.
2. Edge Treatment: Same as laminate cladding on horizontal surfaces
3. Core Material at Sinks: exterior-grade plywood

## D. Solid-Surfacing-Material Countertops:

1. Fabricate tops in one piece with shop-applied backsplashes. Comply with solid-surfacing-material manufacturer's written recommendations for adhesives, sealers, fabrication, and finishing.
2. Install integral sink bowls in countertops in shop.

**2.7 SHOP FINISHING**

- A. Finish architectural woodwork at fabrication shop. Defer only final touchup, cleaning, and polishing until after installation.
- B. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of woodwork. Apply two coats to back of paneling.
- C. Transparent Finish:
  1. Grade: Premium
  2. AWI Finish System: Catalyzed polyurethane
  3. Staining: Match sample
  4. Wash Coat for Stained Finish: Apply a wash-coat sealer to woodwork made from closed-grain wood before staining and finishing.
  5. Sheen: Satin, 31-45 gloss units measured on 60-degree gloss meter per ASTM D 523.

**2.8 SHELVING AND CLOTHES ROD INSTALLATION**

- A. Cut shelf cleats at ends of shelves about 1/2 inch (13 mm) less than width of shelves and sand exposed ends smooth.
- B. Install shelf cleats by fastening to framing or backing with finish nails or trim screws, set below face and filled. Space fasteners not more than 16 inches (400 mm) o.c.
- C. Install shelf brackets according to manufacturer's written instructions, spaced not more than 36 inches (900 mm) o.c. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors.
- D. Cut shelves to neatly fit openings with only enough gap to allow shelves to be removed and reinstalled. Install shelves, fully seated on cleats, brackets, and supports.



**PART 3 - EXECUTION****3.1 INSTALLATION**

- A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas. Examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.
- B. Grade: Install woodwork to comply with requirements for the same grade specified in Part 2 for fabrication of type of woodwork involved.
- C. Install woodwork level, plumb, true, and straight to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm). Shim as required with concealed shims.
- D. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.
- F. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation.
  - 1. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches (400 mm) o.c. with No. 10 wafer-head sheet metal screws through metal backing or metal framing behind wall finish
- G. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop. Calk space between backsplash and wall with sealant specified in Division 07 Section "Joint Sealants."

**3.2 CLEANING AND PROTECTION**

- A. Repair or remove and replace defective work as directed upon completion of installation.
- B. Clean shop-finished woodwork, touch-up finish as required, and remove and refinish damaged or soiled areas of finish.
- C. Protection: Advise Contractor of procedures and precautions for protection of materials and installed woodwork from damage by the work of other trades until acceptance of the work by the Owner. Advise Contractor of the required temperature/humidity conditions which must be maintained during the remainder of the construction period in areas of architectural woodwork installations.

**END OF SECTION 06 40 23**

**SECTION 07 21 00 – THERMAL INSULATION****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

A. This Section includes the following:

1. Sound attenuation insulation.
2. Concealed building insulation.

B. Related Sections include the following:

1. Division 07 Section "Fire-Resistive Joint Systems" for insulation installed as part of a perimeter fire-resistive joint system.
2. Division 21 Section "Fire-Suppression Systems Insulation."
3. Division 22 Section "Plumbing Insulation."
4. Division 23 Section "HVAC Insulation."

**1.3 DEFINITIONS**

Mineral-Fiber Insulation: Insulation composed of rock-wool fibers, slag-wool fibers, or glass fibers; produced in boards and blanket with latter formed into batts (flat-cut lengths) or rolls.

**1.4 SUBMITTALS**

- A. Product Data: For each type of product indicated.
- B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for insulation products.
- C. Research/Evaluation Reports: For foam-plastic insulation.

**1.5 QUALITY ASSURANCE**

- A. Source Limitations: Obtain each type of building insulation through one source.
- B. Fire-Test-Response Characteristics: Provide insulation and related materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
1. Surface-Burning Characteristics: ASTM E 84.
  2. Fire-Resistance Ratings: ASTM E 119.
  3. Combustion Characteristics: ASTM E 136.

**1.6 DELIVERY, STORAGE, AND HANDLING**

- A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
- B. Protect plastic insulation as follows:
1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.

2. Protect against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.
3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  1. Glass-Fiber Insulation:
    - a. CertainTeed Corporation.
    - b. Johns Manville Corporation.
    - c. Knauf Fiber Glass.
    - d. Owens Corning.

### **2.2 INSULATING MATERIALS**

- A. General: Provide insulating materials that comply with requirements and with referenced standards. Preformed Units: Sizes to fit applications indicated; selected from manufacturer's standard thicknesses, widths, and lengths.
- B. Extruded-Polystyrene Board Insulation: ASTM C 578, Type IV, 1.60 lb/cu. ft., with maximum flame-spread and smoke-developed indices of 75 and 450, respectively:
- C. Sound Attenuation Insulation (Unfaced Mineral-Fiber Blanket Insulation): ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from glass; with maximum flame-spread and smoke-developed indices of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.
- D. Concealed Building Insulation (Foil-Faced Mineral-Fiber Blanket Insulation): ASTM C 665, Type III (blankets with reflective membrane facing), Class A (membrane-faced surface with a flame spread of 25 or less); Category 1 (membrane is a vapor barrier), faced with foil-scrim-kraft, foil-scrim, or foil-scrim-polyethylene vapor-retarder membrane on one face; consisting of fibers manufactured from glass.

### **2.3 AUXILIARY INSULATING MATERIALS**

Adhesive for Bonding Insulation: Product with demonstrated capability to bond insulation securely to substrates indicated without damaging insulation and substrates.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for Sections in which substrates and related work are specified and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.2 PREPARATION**

Clean substrates of substances harmful to insulations or vapor retarders, including removing projections capable of puncturing vapor retarders or of interfering with insulation attachment.

### **3.3 INSTALLATION, GENERAL**

- A. Comply with insulation manufacturer's written instructions applicable to products and application indicated.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed at any time to ice and snow.

- C. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Water-Piping Coordination: If water piping is located on inside of insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation and insulation encapsulates piping.
- E. For preformed insulating units, provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation to produce thickness indicated, unless multiple layers are otherwise shown or required to make up total thickness.

### **3.4 INSTALLATION OF EXTRUDED-POLYSTYRENE BOARD INSULATION**

- A. On vertical surfaces, set units in adhesive applied according to manufacturer's written instructions. Use adhesive recommended by insulation manufacturer. Extend insulation a minimum of 24 inches below exterior grade line, unless otherwise indicated.
- B. On horizontal surfaces, loosely lay insulation units according to manufacturer's written instructions. Stagger end joints and tightly abut insulation units.

### **3.5 INSTALLATION OF GENERAL BUILDING INSULATION**

- A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.
- B. Seal joints between foam-plastic insulation units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer.
- C. Set vapor-retarder-faced units with vapor retarder to warm side of construction, unless otherwise indicated. Do not obstruct ventilation spaces, except for firestopping. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure airtight installation.
- D. Install mineral-fiber blankets in cavities formed by framing members according to the following requirements:
  - 1. Use blanket widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.
  - 2. Place blankets in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
  - 3. For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping stapling flanges to flanges of metal studs.

### **3.6 PROTECTION**

Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

**END OF SECTION 07 21 00**

**SECTION 07 27 00 – AIR/VAPOR BARRIER MEMBRANE****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of contract, including all sections of Division 1 of the specification, apply to work of this section.

**1.2 SUMMARY**

- A. This Section includes air/vapor barrier membrane used at exterior wall locations where indicated on drawings.
- B. Related Sections include the following:
  - 1. Division 6 Section "Sheathing" for substrate materials.
  - 2. Division 7 Section "Bituminous Dampproofing" for dampproofing applied to the exterior face of inner wythe of exterior masonry cavity walls.
  - 3. Division 7 Section "Building Insulation" for insulation materials.

**1.3 SUBMITTALS**

- A. Product Data: For each type of product. Indicate material information and construction and application details.
- B. Research/Evaluation Reports: Showing compliance with building code in effect for Project.

**1.4 DELIVERY, STORAGE, AND HANDLING**

Protect membrane materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

**PART 2 - PRODUCTS****2.1 AIR/VAPOR RETARDER MEMBRANE**

- A. Building Wrap: ASTM E 1677, Type I air retarder; with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, when tested according to ASTM E 84; UV stabilized; and acceptable to authorities having jurisdiction.
  - 1. Basis-of-Design: The design for building wrap is based on "Tyvek Commercial Wrap" manufactured by DuPont (E. I. du Pont de Nemours and Company). Subject to compliance with requirements, provide either the named product or a comparable product by one of the following manufacturers.
    - a. Dow Chemical Company (The);
    - b. Ludlow Coated Products;
  - 2. Thickness: Not less than 3 mils.
  - 3. Allowable Exposure Time: Not less than three months.
  - 4. Water-Vapor Permeance: Not less than 200 g through 1 sq. m of surface in 24 hours per ASTM E 96, Desiccant Method (Procedure A).
  - 5. Allowable UV Exposure Time: Not less than three months.

**2.2 TAPE**

Building-Wrap Tape: Pressure-sensitive plastic tape recommended by building-wrap manufacturer for sealing joints and penetrations in building wrap.

**PART 3 - EXECUTION**

**3.1 AIR/VAPOR BARRIER MEMBRANE INSTALLATION**

- A. Cover wall sheathing with air/vapor barrier membrane as indicated.
- B. Comply with manufacturer's written instructions.
- C. Cover upstanding flashing with 4-inch overlap.
- D. Seal seams, edges, and penetrations with tape.
- E. Extend into jambs of openings and seal corners with tape.

**END OF SECTION 07 27 00**

**SECTION 07 84 13 – THROUGH-PENETRATION FIRESTOP SYSTEMS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes through-penetration firestop systems for penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items.
- B. Related Sections include Division 7 Section "Fire-Resistive Joint Systems".

**1.3 PERFORMANCE REQUIREMENTS**

- A. General: For penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items, provide through-penetration firestop systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated.
- B. Rated Systems: Provide through-penetration firestop systems with the following ratings determined per ASTM E 814:
  - 1. F-Rated Systems: Provide through-penetration firestop systems with F-ratings indicated, but not less than that equaling or exceeding fire-resistance rating of constructions penetrated.
  - 2. T-Rated Systems: For the following conditions, provide through-penetration firestop systems with T-ratings indicated, as well as F-ratings, where systems protect penetrating items exposed to potential contact with adjacent materials in occupiable floor areas:
    - a. Penetrations located outside wall cavities.
    - b. Penetrations located outside fire-resistance-rated shaft enclosures.
- C. For through-penetration firestop systems exposed to view, traffic, moisture, and physical damage, provide products that, after curing, do not deteriorate when exposed to these conditions both during and after construction.
  - 1. For piping penetrations for plumbing and wet-pipe sprinkler systems, provide moisture-resistant through-penetration firestop systems.
  - 2. For floor penetrations with annular spaces exceeding 4 inches in width and exposed to possible loading and traffic, provide firestop systems capable of supporting floor loads involved, either by installing floor plates or by other means.
  - 3. For penetrations involving insulated piping, provide through-penetration firestop systems not requiring removal of insulation.
- D. For through-penetration firestop systems exposed to view, provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.

**1.4 SUBMITTALS**

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each through-penetration firestop system, show each type of construction condition penetrated, relationships to adjoining construction, and type of penetrating item. Include firestop design designation of qualified testing and inspecting agency that evidences compliance with requirements for each condition indicated. Submit documentation, including illustrations, from a qualified testing and

## Through Penetration Firestop Systems

inspecting agency that is applicable to each through-penetration firestop system configuration for construction and penetrating items.

- C. Through-Penetration Firestop System Schedule: Indicate locations of each through-penetration firestop system, along with the following information:
  - 1. Types of penetrating items.
  - 2. Types of constructions penetrated, including fire-resistance ratings and, where applicable, thicknesses of construction penetrated.
  - 3. Through-penetration firestop systems for each location identified by firestop design designation of qualified testing and inspecting agency.
- D. Qualification Data: For Installer.
- E. Product Test Reports: From a qualified testing agency indicating through-penetration firestop system complies with requirements, based on comprehensive testing of current products.
- F. Meeting Records: Minutes of pre-installation conference.
- G. Building Department Submittal: Contractor shall submit to the building department product information for all fireproofing and fire stopping for review and approval. No installation shall proceed until the building department has approved these products.

**1.5 QUALITY ASSURANCE**

- A. Installer Qualifications: A firm that has been approved by FMG according to FMG 4991, "Approval of Firestop Contractors".
- B. Source Limitations: Obtain through-penetration firestop systems, for each kind of penetration and construction condition indicated, through one source from a single manufacturer.
- C. Fire-Test-Response Characteristics: Provide through-penetration firestop systems that comply with the following requirements and those specified in Part 1 "Performance Requirements" Article:
  - 1. Firestopping tests are performed by a qualified testing and inspecting agency. A qualified testing and inspecting agency is UL or another agency performing testing and follow-up inspection services for firestop systems acceptable to authorities having jurisdiction.
  - 2. Through-penetration firestop systems are identical to those tested per testing standard referenced in "Part 1 Performance Requirements" Article. Provide rated systems complying with the following requirements:
    - a. Through-penetration firestop system products bear classification marking of qualified testing and inspecting agency.
    - b. Through-penetration firestop systems correspond to those indicated by reference to through-penetration firestop system designations listed by UL in its "Fire Resistance Directory".
- D. Pre-Installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination".

**1.6 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver through-penetration firestop system products to Project site in original, unopened containers or packages with intact and legible manufacturers' labels identifying product and manufacturer, date of manufacture, lot number, shelf life if applicable, qualified testing and inspecting agency's classification marking applicable to Project, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials for through-penetration firestop systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.



**1.7 PROJECT CONDITIONS**

- A. Environmental Limitations: Do not install through-penetration firestop systems when ambient or substrate temperatures are outside limits permitted by through-penetration firestop system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Ventilate through-penetration firestop systems per manufacturer's written instructions by natural means or, where this is inadequate, forced-air circulation.

**1.8 COORDINATION**

- A. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements.
- B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration firestop systems.
- C. Notify inspecting agency at least seven days in advance of through-penetration firestop system installations; confirm dates and times on days preceding each series of installations.
- D. Do not cover up through-penetration firestop system installations that will become concealed behind other construction until each installation has been examined by inspecting agency and building inspector, if required by authorities having jurisdiction.

**PART 2 - PRODUCTS****2.1 MANUFACTURERS**

Available Products: Subject to compliance with requirements, through-penetration firestop systems that may be incorporated into the Work include, but are not limited to, those systems indicated on Drawings.

**2.2 FIRESTOPPING, GENERAL**

- A. Compatibility: Provide through-penetration firestop systems that are compatible with one another; with the substrates forming openings; and with the items, if any, penetrating through-penetration firestop systems, under conditions of service and application, as demonstrated by through-penetration firestop system manufacturer based on testing and field experience.
- B. Accessories: Provide components for each through-penetration firestop system that are needed to install fill materials and to comply with Part 1 "Performance Requirements" Article. Use only components specified by through-penetration firestop system manufacturer and approved by qualified testing and inspecting agency for firestop systems indicated. Accessories include, but are not limited to, the following items:
  - 1. Permanent forming/damming/backing materials, including the following:
    - a. Slag-/rock-wool-fiber insulation.
    - b. Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.
    - c. Fire-rated form board.
    - d. Fillers for sealants.
  - 2. Temporary forming materials.
  - 3. Substrate primers.
  - 4. Collars.
  - 5. Steel sleeves.

## 2.3 FILL MATERIALS

- A. General: Provide through-penetration firestop systems containing the types of fill materials indicated on drawings by referencing the types of materials described in this Article. Fill materials are those referred to in directories of referenced testing and inspecting agencies as "fill," "void," or "cavity" materials.
- B. Cast-in-Place Firestop Devices: Factory-assembled devices for use in cast-in-place concrete floors and consisting of an outer metallic sleeve lined with an intumescent strip, a radial extended flange attached to one end of the sleeve for fastening to concrete formwork, and a neoprene gasket.
- C. Latex Sealants: Single-component latex formulations that after cure do not re-emulsify during exposure to moisture.
- D. Firestop Devices: Factory-assembled collars formed from galvanized steel and lined with intumescent material sized to fit specific diameter of penetrant.
- E. Intumescent Composite Sheets: Rigid panels consisting of aluminum-foil-faced elastomeric sheet bonded to galvanized steel sheet.
- F. Intumescent Putties: Nonhardening dielectric, water-resistant putties containing no solvents, inorganic fibers, or silicone compounds.
- G. Intumescent Wrap Strips: Single-component intumescent elastomeric sheets with aluminum foil on one side.
- H. Mortars: Prepackaged dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogeneous mortar.
- I. Pillows/Bags: Reusable heat-expanding pillows/bags consisting of glass-fiber cloth cases filled with a combination of mineral-fiber, water-insoluble expansion agents, and fire-retardant additives.
- J. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.
- K. Silicone Sealants:
  - 1. Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below:
  - 2. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces, and nonsag formulation for openings in vertical and other surfaces requiring a nonslumping, gunnable sealant, unless indicated firestop system limits use to nonsag grade for both opening conditions.

## 2.4 MIXING

For those products requiring mixing before application, comply with through-penetration firestop system manufacturer's written instructions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other items or procedures needed to produce products of uniform quality with optimum performance characteristics for application indicated.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of work. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Surface Cleaning: Clean out openings immediately before installing through-penetration firestop systems to comply with firestop system manufacturer's written instructions and with the following requirements:
  - 1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of through-penetration firestop systems.

## Through Penetration Firestop Systems

2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with through-penetration firestop systems. Remove loose particles remaining from cleaning operation.
  3. Remove laitance and form-release agents from concrete.
- B. Priming: Prime substrates where recommended in writing by through-penetration firestop system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.
- C. Masking Tape: Use masking tape to prevent through-penetration firestop systems from contacting adjoining surfaces that will remain exposed on completion of Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from firestop system materials. Remove tape as soon as possible without disturbing firestop system's seal with substrates.

**3.3 THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATION**

- A. General: Install through-penetration firestop systems to comply with Part 1 "Performance Requirements" Article and with firestop system manufacturer's written installation instructions and published drawings for products and applications indicated.
- B. Install forming/damming/backing materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of firestop systems.
- C. Install fill materials for firestop systems by proven techniques to produce the following results:
1. Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.
  2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
  3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

**3.4 IDENTIFICATION**

- A. Identify through-penetration firestop systems with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches of edge of the firestop systems so that labels will be visible to anyone seeking to remove penetrating items or firestop systems. Use mechanical fasteners for metal labels. For plastic labels, use self-adhering type with adhesives capable of permanently bonding labels to surfaces on which labels are placed and, in combination with label material, will result in partial destruction of label if removal is attempted. Include the following information on labels:
1. The words "Warning - Through-Penetration Firestop System - Do Not Disturb. Notify Building Management of Any Damage."
  2. Contractor's name, address, and phone number.
  3. Through-penetration firestop system designation of applicable testing and inspecting agency.
  4. Date of installation.
  5. Through-penetration firestop system manufacturer's name.
  6. Installer's name.

**3.5 FIELD QUALITY CONTROL**

## Through Penetration Firestop Systems

- A. Inspecting Agency: Engage a qualified, independent inspecting agency to inspect through-penetration firestops. Independent inspecting agency shall comply with ASTM E 2174 requirements including those related to qualifications, conducting inspections, and preparing test reports.
- B. Where deficiencies are found, repair or replace through-penetration firestop systems so they comply with requirements.
- C. Proceed with enclosing through-penetration firestop systems with other construction only after inspection reports are issued and firestop installations comply with requirements.

**3.6 CLEANING AND PROTECTING**

- A. Clean off excess fill materials adjacent to openings as Work progresses by methods and with cleaning materials that are approved in writing by through-penetration firestop system manufacturers and that do not damage materials in which openings occur.
- B. Provide final protection and maintain conditions during and after installation that ensure that through-penetration firestop systems are without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated through-penetration firestop systems immediately and install new materials to produce systems complying with specified requirements.

**END OF SECTION 07 84 13**

**SECTION 07 84 46 – FIRE-RESISTIVE JOINT SYSTEMS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes fire-resistive joint systems as indicated on the drawings and may include the following:
1. Floor-to-floor joints.
  2. Floor-to-wall joints.
  3. Head-of-wall joints.
  4. Wall-to-wall joints.
  5. Perimeter fire-resistive joint systems consisting of floor-to-wall joints between perimeter edge of fire-resistance-rated floor assemblies and exterior curtain walls.
- B. Related Sections include the following:
1. Division 7 Section "Through-Penetration Firestop Systems" for systems installed in openings in walls and floors with and without penetrating items.
  2. Division 7 Section "Joint Sealants" for non-fire-resistive joint sealants.

**1.3 PERFORMANCE REQUIREMENTS**

- A. General: Provide fire-resistive joint systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of assembly in which fire-resistive joint systems are installed.
- B. Joint Systems in and between Fire-Resistance-Rated Constructions: Provide systems with assembly ratings equaling or exceeding the fire-resistance ratings of construction that they join.
- C. Perimeter Fire-Resistive Joint Systems: For joints between edges of fire-resistance-rated floor assemblies and exterior curtain walls, provide systems of type and with ratings indicated, as determined by NFPA 285 and UL 2079.
1. UL-Listed, Perimeter Fire-Containment Systems: Integrity ratings equaling or exceeding fire-resistance ratings of floor or floor/ceiling assembly forming one side of joint.
- D. For fire-resistive systems exposed to view, provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.

**1.4 SUBMITTALS**

- A. Product Data: For each type of product indicated.
- B. Shop Drawings:
1. For each fire-resistive joint system, show each kind of construction condition in which joints are installed; also show relationships to adjoining construction. Include fire-resistive joint system design designation of testing and inspecting agency acceptable to authorities having jurisdiction that demonstrates compliance with requirements for each condition indicated.
  2. Submit documentation, including illustrations, from a qualified testing and inspecting agency that is applicable to each fire-resistive joint system configuration for construction and penetrating items.

## Fire Resistive Joint Systems

- C. Product Certificates: For each type of fire-resistive joint system, signed by product manufacturer.
- D. Qualification Data: For Installer.
- E. Research/Evaluation Reports: For each type of fire-resistive joint system.
- F. Meeting Records: Minutes of pre-installation conference.

**1.5 QUALITY ASSURANCE**

- A. Installer Qualifications: A firm that has been approved by FMG according to FMG 4991, "Approval of Firestop Contractors".
- B. Source Limitations: Obtain fire-resistive joint systems, for each kind of joint and construction condition indicated, through one source from a single manufacturer.
- C. Fire-Test-Response Characteristics: Provide fire-resistive joint systems that comply with the following requirements and those specified in Part 1 "Performance Requirements" Article:
  - 1. Fire-resistance tests are performed by a qualified testing and inspecting agency. A qualified testing and inspecting agency is UL or another agency performing testing and follow-up inspection services for fire-resistive joint systems acceptable to authorities having jurisdiction.
  - 2. Fire-resistive joint systems are identical to those tested per methods indicated in Part 1 "Performance Requirements" Article and comply with the following:
    - a. Fire-resistive joint system products bear classification marking of qualified testing and inspecting agency.
    - b. Fire-resistive joint systems correspond to those indicated by referencing system designations of the qualified testing and inspecting agency.
- D. Pre-Installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination".

**1.6 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver fire-resistive joint system products to Project site in original, unopened containers or packages with qualified testing and inspecting agency's classification marking applicable to Project and with intact and legible manufacturers' labels identifying product and manufacturer, date of manufacture, lot number, shelf life, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials for fire-resistive joint systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

**1.7 PROJECT CONDITIONS**

- A. Environmental Limitations: Do not install fire-resistive joint systems when ambient or substrate temperatures are outside limits permitted by fire-resistive joint system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Ventilate fire-resistive joint systems per manufacturer's written instructions by natural means or, if this is inadequate, forced-air circulation.

**1.8 COORDINATION**

- A. Coordinate construction of joints to ensure that fire-resistive joint systems are installed according to specified requirements.
- B. Coordinate sizing of joints to accommodate fire-resistive joint systems.
- C. Notify inspecting agency at least seven days in advance of fire-resistive joint system installations; confirm dates and times on days preceding each series of installations.

## Fire Resistive Joint Systems

- D. Do not cover up fire-resistive joint system installations that will become concealed behind other construction until inspecting agency and building inspector of authorities having jurisdiction have examined each installation.

**PART 2 - PRODUCTS****2.1 MANUFACTURERS**

- A. Available Products: Subject to compliance with requirements, through-penetration firestop systems that may be incorporated into the Work include, but are not limited to, those systems indicated that are produced by one of the following manufacturers:
1. Grace, W. R. & Co. - Conn.
  2. Hilti, Inc.
  3. 3M; Fire Protection Products Division.
  4. Tremco; Sealant/Weatherproofing Division.
  5. USG Corporation.

**2.2 FIRE-RESISTIVE JOINT SYSTEMS**

- A. Compatibility: Provide fire-resistive joint systems that are compatible with joint substrates, under conditions of service and application, as demonstrated by fire-resistive joint system manufacturer based on testing and field experience.
- B. Accessories: Provide components of fire-resistive joint systems, including primers and forming materials, that are needed to install fill materials and to comply with Part 1 "Performance Requirements" Article. Use only components specified by fire-resistive joint system manufacturer and approved by the qualified testing and inspecting agency for systems indicated.

**PART 3 - EXECUTION****3.1 EXAMINATION**

Examine substrates and conditions, with Installer present, for compliance with requirements for joint configurations, substrates, and other conditions affecting performance of work. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.2 PREPARATION**

- A. Surface Cleaning: Clean joints immediately before installing fire-resistive joint systems to comply with fire-resistive joint system manufacturer's written instructions and the following requirements:
1. Remove from surfaces of joint substrates foreign materials that could interfere with adhesion of fill materials.
  2. Clean joint substrates to produce clean, sound surfaces capable of developing optimum bond with fill materials. Remove loose particles remaining from cleaning operation.
  3. Remove laitance and form-release agents from concrete.
- B. Priming: Prime substrates where recommended in writing by fire-resistive joint system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.
- C. Masking Tape: Use masking tape to prevent fill materials of fire-resistive joint system from contacting adjoining surfaces that will remain exposed on completion of Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from fire-resistive joint system materials. Remove tape as soon as possible without disturbing fire-resistive joint system's seal with substrates or damaging adjoining surfaces.

## Fire Resistive Joint Systems

**3.3 INSTALLATION**

- A. General: Install fire-resistive joint systems to comply with Part 1 "Performance Requirements" Article and fire-resistive joint system manufacturer's written installation instructions for products and applications indicated.
- B. Install forming/packing/backing materials and other accessories of types required to support fill materials during their application and in position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
- C. Install fill materials for fire-resistive joint systems by proven techniques to produce the following results:
  - 1. Fill voids and cavities formed by openings and forming/packing/backing materials as required to achieve fire-resistance ratings indicated.
  - 2. Apply fill materials so they contact and adhere to substrates formed by joints.
  - 3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

**3.4 FIELD QUALITY CONTROL**

- A. Inspecting Agency: Engage a qualified independent inspecting agency to inspect fire-resistive joint systems and prepare inspection reports.
- B. Testing Services: Inspecting of completed installations of fire-resistive joint systems shall take place in successive stages as installation of fire-resistive joint systems proceeds. Do not proceed with installation of joint systems for the next area until inspecting agency determines completed work shows compliance with requirements. Inspecting agency shall state in each report whether inspected fire-resistive joint systems comply with or deviate from requirements.
- C. Remove and replace fire-resistive joint systems where inspections indicate that they do not comply with specified requirements.
- D. Additional inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- E. Proceed with enclosing fire-resistive joint systems with other construction only after inspection reports are issued and fire-resistive joint systems comply with requirements.

**3.5 CLEANING AND PROTECTING**

- A. Clean off excess fill materials adjacent to joints as Work progresses by methods and with cleaning materials that are approved in writing by fire-resistive joint system manufacturers and that do not damage materials in which openings occur.
- B. Provide final protection and maintain conditions during and after installation that ensure fire-resistive joint systems are without damage or deterioration at time of Substantial Completion. If damage or deterioration occurs despite such protection, cut out and remove damaged or deteriorated fire-resistive joint systems immediately and install new materials to produce fire-resistive joint systems complying with specified requirements.

**END OF SECTION 07 84 46**



**SECTION 07 92 00 – JOINT SEALANT****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes joint sealants for the following applications, including those specified by reference to this Section:
1. Exterior joints in the following vertical surfaces and horizontal nontraffic surfaces:
    - a. Construction joints in cast-in-place concrete.
    - b. Joints between different materials listed above.
    - c. Perimeter joints between materials listed above and frames of doors, windows and louvers.
    - d. Control and expansion joints in ceilings and other overhead surfaces.
    - e. Other joints as indicated.
  2. Exterior joints in the following horizontal traffic surfaces:
    - a. Isolation and contraction joints in cast-in-place concrete slabs.
    - b. Other joints as indicated.
  3. Interior joints in the following vertical surfaces and horizontal nontraffic surfaces:
    - a. Control and expansion joints on exposed interior surfaces of exterior walls.
    - b. Perimeter joints of exterior openings where indicated.
    - c. Tile control and expansion joints.
    - d. Perimeter joints between interior wall surfaces and frames of doors, windows, and elevator entrances.
    - e. Joints between plumbing fixtures and adjoining walls, floors, and counters.
    - f. Other joints as indicated.
  4. Interior joints in the following horizontal traffic surfaces:
    - a. Isolation joints in cast-in-place concrete slabs.
    - b. Control and expansion joints in tile flooring.
    - c. Other joints as indicated.
- B. Related Sections include the following:
1. Division 7 Section "Fire-Resistive Joint Systems" for sealing joints in fire-resistance-rated construction.
  2. Division 8 Section "Glazing" for glazing sealants.
  3. Division 9 Section "Tiling" for sealing tile joints.
  4. Division 9 Section "Acoustical Tile Ceilings" for sealing edge moldings at perimeters of acoustical ceilings.

**1.3 PERFORMANCE REQUIREMENTS**

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

**1.4 SUBMITTALS**

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- D. Product Certificates: For each type of joint sealant and accessory, signed by product manufacturer.
- E. Qualification Data: For Installer.
- F. Preconstruction Field Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on preconstruction testing specified in "Quality Assurance" Article.
- G. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
  - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
  - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- H. Field Test Report Log: For each elastomeric sealant application.
- I. Product Test Reports: Based on comprehensive testing of product formulations performed by a qualified testing agency, indicating that sealants comply with requirements.
- J. Warranties: Special warranties specified in this Section.
- K. Meeting Records: Minutes from Pre-Installation Conference.

**1.5 QUALITY ASSURANCE**

- A. Installer Qualifications: Manufacturer's authorized Installer who is approved or licensed for installation of elastomeric sealants required for this Project.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
- C. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
  - 1. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
  - 2. Submit not fewer than eight pieces of each type of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
  - 3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
  - 4. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.
- D. Product Testing: Obtain test results for "Product Test Reports" Paragraph in "Submittals" Article from a qualified testing agency or manufacturer based on testing current sealant formulations within a 36-month period preceding the Notice to Proceed with the Work.

1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated, as documented according to ASTM E 548.
  2. Test elastomeric joint sealants for compliance with requirements specified by reference to ASTM C 920, and where applicable, to other standard test methods.
  3. Test other joint sealants for compliance with requirements indicated by referencing standard specifications and test methods.
- E. Pre-Construction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates as follows:
1. Locate test joints where indicated on Project or, if not indicated, as directed by Architect.
  2. Conduct field tests for each application indicated below:
    - a. Each type of elastomeric sealant and joint substrate indicated.
    - b. Each type of nonelastomeric sealant and joint substrate indicated.
  3. Notify Architect seven days in advance of dates and times when test joints will be erected.
  4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.
    - a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193.
    - b. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
  5. Report whether sealant in joint connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
  6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.
- F. Pre-Installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

## 1.6 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
  2. When joint substrates are wet.
  3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
  4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

## 1.7 WARRANTY

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within warranty period of 2 (two) years from date of Substantial Completion.
- C. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with

performance and other requirements specified in this Section within warranty period of 10 (ten) years from date of Substantial Completion.

- D. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
  2. Disintegration of joint substrates from natural causes exceeding design specifications.
  3. Mechanical damage caused by individuals, tools, or other outside agents.
  4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS, GENERAL**

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.
- B. VOC Content of Interior Sealants: Provide interior sealants and sealant primers that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
1. Sealants: 250 g/L.
  2. Sealant Primers for Nonporous Substrates: 250 g/L.
  3. Sealant Primers for Porous Substrates: 775 g/L.
- C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

### **2.2 ELASTOMERIC JOINT SEALANTS**

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Single-Component Neutral- and Basic-Curing Silicone Sealant:
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Dow Corning Corporation; 790.
    - b. GE Silicones; SilPruf LM SCS2700.
    - c. Pecora; 89ONST.
    - d. Tremco; Spectrem 1 (Basic).
  2. Type and Grade: S (single component) and NS (nonsag).
  3. Class: 100/50.
  4. Use Related to Exposure: NT (nontraffic).
  5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
  6. Stain-Test-Response Characteristics: Nonstaining to porous substrates per ASTM C 1248.
  7. Applications: Exterior non-traffic and interior wet areas.
- C. Multicomponent Pourable Urethane Sealant:
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

- a. Meadows, W. R., Inc.; POURTHANE.
  - b. Pecora Corporation; Urexpan NR-200.
  - c. Tremco; THC-900.
2. Type and Grade: M (multicomponent) and P (pourable).
  3. Class: 25.
  4. Use Related to Exposure: T (traffic).
  5. Uses Related to Joint Substrates: M, A, and, as applicable to joint substrates indicated, O.
  6. Applications: Exterior and interior traffic areas.

### **2.3 LATEX JOINT SEALANTS**

- A. Latex Sealant: Comply with ASTM C 834, Type P, Grade NF.
- B. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
  1. Bostik Findley; Chem-Calk 600.
  2. Pecora Corporation; AC-20+.
  3. Sonneborn, Division of ChemRex Inc.; Sonolac.
  4. Tremco; Tremflex 834.
- C. Application: Interior joints, except at wet areas, traffic joints, and locations where acoustical or fire-rated joint sealants are required.

### **2.4 ACOUSTICAL JOINT SEALANTS**

- A. Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 and the following:
  1. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
  2. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Pecora Corporation; AC-20 FTR Acoustical and Insulation Sealant.
    - b. United States Gypsum Co.; SHEETROCK Acoustical Sealant.
  3. Application: All interior locations indicated on drawing and at all location where penetrations occur in partitions or other construction containing sound attenuation insulation.

### **2.5 PREFORMED JOINT SEALANTS**

- A. Preformed Foam Sealant: Manufacturer's standard preformed, precompressed, open-cell foam sealant that is manufactured from high-density urethane foam impregnated with a nondrying, water-repellent agent; is factory produced in precompressed sizes in roll or stick form to fit joint widths indicated; is coated on one side with a pressure-sensitive adhesive and covered with protective wrapping; develops a watertight and airtight seal when compressed to the degree specified by manufacturer.
- B. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
  1. EMSEAL Joint Systems, Ltd.; Emseal 25V.
  2. Illbruck Sealant Systems, Inc.; Wilseal 600.
- C. Properties: Permanently elastic, mildew resistant, nonmigratory, nonstaining, and compatible with joint substrates and other joint sealants. Density: Manufacturer's standard.

D. Application: As indicated on Drawings.

## **2.6 JOINT-SEALANT BACKING**

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

## **2.7 MISCELLANEOUS MATERIALS**

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.2 PREPARATION**

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
  - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  - 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include, but are not necessarily limited to, the following:
    - a. Concrete.
    - b. Unglazed surfaces of ceramic tile.
  - 3. Remove laitance and form-release agents from concrete.
  - 4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include, but are not necessarily limited to, the following:
    - a. Metal.

- b. Glass.
  - c. Vitreous china.
  - d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

### 3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Acoustical Sealant Application Standard: Comply with recommendations in ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.
- D. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
- 1. Do not leave gaps between ends of sealant backings.
  - 2. Do not stretch, twist, puncture, or tear sealant backings.
  - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- E. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- F. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
- 1. Place sealants so they directly contact and fully wet joint substrates.
  - 2. Completely fill recesses in each joint configuration.
  - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- G. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
- 1. Remove excess sealant from surfaces adjacent to joints.
  - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  - 3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
  - 4. Provide flush joint configuration where indicated per Figure 5B in ASTM C 1193.
  - 5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 5C in ASTM C 1193. Use masking tape to protect surfaces adjacent to recessed tooled joints.

- H. Installation of Preformed Foam Sealants: Install each length of sealant immediately after removing protective wrapping, taking care not to pull or stretch material, producing seal continuity at ends, turns, and intersections of joints. For applications at low ambient temperatures where expansion of sealant requires acceleration to produce seal, apply heat to sealant in compliance with sealant manufacturer's written instructions.

### 3.4 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
1. Extent of Testing: Test completed elastomeric sealant joints as follows:
    - a. Perform 10 tests for the first 1000 feet of joint length for each type of elastomeric sealant and joint substrate.
    - b. Perform 1 test for each 1000 feet of joint length thereafter or 1 test per each floor per elevation.
  2. Test Method:
    - a. Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab in Appendix X1 in ASTM C 1193, as appropriate for type of joint-sealant application indicated.
    - b. For joints with dissimilar substrates, verify adhesion to each substrate separately; do this by extending cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
  3. Inspect joints for complete fill, for absence of voids, and for joint configuration complying with specified requirements. Record results in a field-adhesion-test log.
    - a. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.
    - b. Whether sealants filled joint cavities and are free of voids.
    - c. Whether sealant dimensions and configurations comply with specified requirements.
  4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
  5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.
- B. Manufacturer's Field-Adhesion Testing: Perform other field-adhesion testing as required by manufacturer for warranty execution.
- C. Evaluation of Field Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

### 3.5 CLEANING

Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

### 3.6 PROTECTION

Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and



B&P 20-15

ANDERSON COUNTY COURTHOUSE  
COUNTY CLERK & ARCHIVE RENOVATION

07 92 00-9  
Joint Sealants

remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

**END OF SECTION 07 92 00**

**SECTION 08 11 13 - HOLLOW METAL DOORS AND FRAMES****PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes:
  - 1. Standard hollow metal doors and frames.

**1.2 SUBMITTALS**

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Include elevations, door edge details, frame profiles, metal thicknesses, preparations for hardware, and other details.
- C. Samples for Initial Selection: For units with factory-applied color finishes.
- D. Samples for Verification: For each type of exposed finish required.
- E. Schedule: Prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings.

**1.3 QUALITY ASSURANCE**

- A. Fire-Rated Door Assemblies: Assemblies complying with applicable local codes that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, according to UL 10B or UL 10C.
  - 1. Temperature-Rise Limit: Where indicated, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
- B. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to UL 9. Label each individual glazed lite.
- C. Smoke-Control Door Assemblies: Comply with UL 1784.

**PART 2 - PRODUCTS****2.1 MANUFACTURERS**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Amweld Building Products, LLC.
  - 2. Ceco Door Products; an Assa Abloy Group company.

## Hollow Metal Doors and Frames

3. Curries Company; an Assa Abloy Group company.
4. Kewanee Corporation (The).
5. Mesker Door Inc.
6. Steelcraft; an Ingersoll-Rand company.
7. Windsor Republic Doors.

**2.2 MATERIALS**

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, CS, Type B; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, CS, Type B.
- C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum A40 (ZF120) metallic coating.
- D. Frame Anchors: ASTM A 591/A 591M, Commercial Steel (CS), 40Z (12G) coating designation; mill phosphatized.
  1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
- F. Grout: ASTM C 476, except with a maximum slump of 4 inches (102 mm), as measured according to ASTM C 143/C 143M.
- G. Mineral-Fiber Insulation: ASTM C 665, Type I.
- H. Glazing: Division 08 Section "Glazing."
- I. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil (0.4-mm) dry film thickness per coat.

**2.3 STANDARD HOLLOW METAL DOORS**

- A. General: Comply with ANSI/SDI A250.8.
  1. Design: Flush panel as indicated.
  2. Core Construction: Manufacturer's standard kraft-paper honeycomb, polystyrene, polyurethane, polyisocyanurate, mineral-board, or vertical steel-stiffener core.
    - a. Fire Door Core: As required to provide fire-protection and temperature-rise ratings indicated.
    - b. Thermal-Rated (Insulated) Doors: R-value of not less than 12.3 deg F x h x sq. ft./Btu (2.166 K x sq. m/W).
  3. Vertical Edges for Single-Acting Doors: Manufacturer's standard.
  4. Top and Bottom Edges: Closed with flush or inverted 0.042-inch- (1.0-mm-) thick, end closures or channels of same material as face sheets.
  5. Tolerances: SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames."

## Hollow Metal Doors and Frames

- B. Interior Doors: Face sheets fabricated from cold-rolled steel sheet. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
  - 1. Width: 1-3/4 inches (44.5 mm), 1-3/8 inches (34.9 mm) or as indicated on Drawings.
  - 2. Level 2 and Physical Performance Level B (Heavy Duty), Model 2 (Seamless).
- C. Hardware Reinforcement: ANSI/SDI A250.6.

**2.4 STANDARD HOLLOW METAL FRAMES**

- A. General: Comply with ANSI/SDI A250.8.
- B. Interior Frames: Fabricated from cold-rolled steel sheet.
  - 1. Fabricate frames with mitered or coped corners.
  - 2. Fabricate frames as full profile welded unless otherwise indicated.
  - 3. Fabricate knocked-down, drywall slip-on frames for in-place gypsum board partitions.
  - 4. Frames for Level 2 Steel Doors: 0.053-inch- (1.3-mm-) thick steel sheet.
  - 5. Frames for Wood Doors.
- C. Hardware Reinforcement: ANSI/SDI A250.6.

**2.5 FRAME ANCHORS**

- A. Jamb Anchors:
  - 1. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch (1.0 mm) thick.
  - 2. Compression Type for Drywall Slip-on Frames: Adjustable compression anchors.
  - 3. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch- (9.5-mm-) diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.
- B. Floor Anchors: Formed from same material as frames, not less than 0.042 inch (1.0 mm) thick, and as follows:
  - 1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.
  - 2. Separate Topping Concrete Slabs: Adjustable-type anchors with extension clips, allowing not less than 2-inch (50-mm) height adjustment. Terminate bottom of frames at finish floor surface.

**2.6 HOLLOW METAL PANELS**

- A. Provide hollow metal panels of same materials, construction, and finish as specified for adjoining hollow metal work.

**2.7 STOPS AND MOLDINGS**

- A. Moldings for Glazed Lites in Doors: Minimum 0.032 inch (0.8 mm) thick, same material as door face sheet.

## Hollow Metal Doors and Frames

- B. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch (16 mm) high unless otherwise indicated.
- C. Loose Stops for Glazed Lites in Frames: Minimum 0.032 inch (0.8 mm) thick, same material as frames.
- D. Terminated Stops: Where indicated, terminate stops 6 inches (152 mm) above finish floor with a 45-degree angle cut, and close open end of stop with steel sheet closure. Cover opening in extension of frame with welded-steel filler plate, with welds ground smooth and flush with frame.

**2.8 ACCESSORIES**

- A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.
- B. Ceiling Struts: Minimum 1/4-inch-thick by 1-inch- (6.4-mm-thick by 25.4-mm-) wide steel.
- C. Grout Guards: Formed from same material as frames, not less than 0.016 inch (0.4 mm) thick.

**2.9 FABRICATION**

- A. Tolerances: Fabricate hollow metal work to tolerances indicated in SDI 117.
- B. Hollow Metal Doors:
  - 1. Exterior Doors: Provide weep-hole openings in bottom of exterior doors. Seal joints in top edges of doors against water penetration.
  - 2. Glazed Lites: Factory cut openings in doors.
  - 3. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated.
- C. Hollow Metal Frames: Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
  - 1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
  - 2. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
  - 3. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
  - 4. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
  - 5. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
  - 6. Jamb Anchors: Provide number and spacing of anchors as follows:
    - a. Stud-Wall Type: Locate anchors not more than 18 inches (457 mm) from top and bottom of frame. Space anchors not more than 32 inches (813 mm) o.c. and as follows:
      - 1) Three anchors per jamb up to 60 inches (1524 mm) high.
      - 2) Four anchors per jamb from 60 to 90 inches (1524 to 2286 mm) high.
      - 3) Five anchors per jamb from 90 to 96 inches (2286 to 2438 mm) high.
      - 4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches (610 mm) or fraction thereof above 96 inches (2438 mm) high.

## Hollow Metal Doors and Frames

- 5) Two anchors per head for frames more than 42 inches (1066 mm) wide and mounted in metal-stud partitions.
  - b. Compression Type: Not less than two anchors in each jamb.
  - c. Postinstalled Expansion Type: Locate anchors not more than 6 inches (152 mm) from top and bottom of frame. Space anchors not more than 26 inches (660 mm) o.c.
7. Door Silencers: Except on weather-stripped doors, drill stops to receive door silencers.
  - a. Single-Door Frames: Three door silencers.
  - b. Double-Door Frames: Two door silencers.
- D. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."
  1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
  2. Reinforce doors and frames to receive nontemplated, mortised and surface-mounted door hardware.
  3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
  4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 electrical Sections.
- E. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints.
  1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow metal work.
  2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
  3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
  4. Provide loose stops and moldings on inside of hollow metal work.
  5. Coordinate rabbet width between fixed and removable stops with type of glazing and type of installation indicated.

**2.10 STEEL FINISHES**

- A. Prime Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating.
  1. Shop Primer: ANSI/SDI A250.10.
- B. Factory-Applied Paint Finish: ANSI/SDI A250.3.
  1. Color and Gloss: Match Architect's selection and approved sample.

**PART 3 - EXECUTION****3.1 INSTALLATION**

- A. Hollow Metal Frames: Comply with ANSI/SDI A250.11.

## Hollow Metal Doors and Frames

1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
    - a. At fire-protection-rated openings, install frames according to NFPA 80.
    - b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
    - c. Install frames with removable glazing stops located on secure side of opening.
    - d. Install door silencers in frames before grouting.
    - e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
    - f. Check plumbness, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
    - g. Field apply bituminous coating to backs of frames that are filled with grout containing antifreezing agents.
  2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
    - a. Floor anchors may be set with powder-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
  3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation behind frames.
  4. In-Place Gypsum Board Partitions: Secure frames in place with postinstalled expansion anchors through floor anchors at each jamb. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
  5. Ceiling Struts: Extend struts vertically from top of frame at each jamb to overhead structural supports or substrates above frame unless frame is anchored to masonry or to other structural support at each jamb. Bend top of struts to provide flush contact for securing to supporting construction. Provide adjustable wedged or bolted anchorage to frame jamb members.
  6. Installation Tolerances: Adjust hollow metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
    - a. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
    - b. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
    - c. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
    - d. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.
- B. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.
1. Non-Fire-Rated Standard Steel Doors:
    - a. Jambs and Head: 1/8 inch (3 mm) plus or minus 1/16 inch (1.6 mm).
    - b. Between Edges of Pairs of Doors: 1/8 inch (3 mm) plus or minus 1/16 inch (1.6 mm).
    - c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch (9.5 mm).
    - d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch (19 mm).
  2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.

## Hollow Metal Doors and Frames

3. Smoke-Control Doors: Install doors according to applicable building code requirements..
- C. Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with hollow metal manufacturer's written instructions.
  1. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches (230 mm) o.c. and not more than 2 inches (50 mm) o.c. from each corner.

**3.2 ADJUSTING AND CLEANING**

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.
- B. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- C. Metallic-Coated Surfaces: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

**END OF SECTION 08 11 13**



**SECTION 08 14 16 - FLUSH WOOD DOORS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY****A. Section Includes:**

1. Solid-core doors with wood-veneer faces.
2. Shop priming and factory finishing flush wood doors.
3. Factory fitting flush wood doors to frames and factory machining for hardware.

**B. Related Sections:**

1. Division 08 Section "Door Hardware" for door hardware for flush wood doors.
2. Division 08 Section "Glazing" for glass view panels in flush wood doors.
3. Division 09 Sections "Painting" for field finishing doors.

**1.3 SUBMITTALS**

**A. Product Data:** For each type of door indicated. Include details of core and edge construction and trim for openings. Include factory-finishing specifications.

**B. Shop Drawings:** Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; location and extent of hardware blocking; and other pertinent data.

1. Indicate dimensions and locations of mortises and holes for hardware.
2. Indicate dimensions and locations of cutouts.
3. Indicate requirements for veneer matching.
4. Indicate doors to be factory finished and finish requirements.

**C. Samples for Initial Selection:** Color charts consisting of actual materials in small sections for the faces of factory-finished doors. Show the full range of colors available for stained finishes.

**D. Samples for Verification:**

1. Factory finishes applied to actual door face materials, approximately 8 by 10 inches, for each material and finish. For each wood species and transparent finish, provide set of three samples showing typical range of color and grain to be expected in the finished work.
2. Corner sections of doors, approximately 8 by 10 inches, with door faces and edgings representing typical range of color and grain for each species of veneer and solid lumber required. Finish sample with same materials proposed for factory-finished doors.
3. Frames for light openings, 6 inches long, for each material, type, and finish required.

**E. Warranty:** Sample of special warranty.

**F. Meeting Records:** Minutes of pre-installation conference.

**1.4 QUALITY ASSURANCE**

**A. Source Limitations:** Obtain flush wood doors and wood paneling from single manufacturer.

- B. Quality Standard: In addition to requirements specified, comply with AWI's "Architectural Woodwork Quality Standards Illustrated".
- C. Fire-Rated Wood Doors:
  - 1. Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at as close to neutral pressure as possible according to NFPA 252.
  - 2. Temperature-Rise Limit: At vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F above ambient after 30 minutes of standard fire-test exposure.
- D. Preinstallation Conference: Conduct conference at Project site.

### **1.5 DELIVERY, STORAGE, AND HANDLING**

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package doors individually in cardboard cartons and wrap bundles of doors in plastic sheeting.
- C. Mark each door on top and bottom rail with opening number used on Shop Drawings.

### **1.6 PROJECT CONDITIONS**

Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

### **1.7 WARRANTY**

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
    - b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.
  - 2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
  - 3. Warranty Period for Solid-Core Interior Doors: Life of installation.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering flush wood door products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Algoma Hardwoods Inc.
  - 2. Eggers Industries; Architectural Door Division.
  - 3. Marshfield Door Systems
  - 4. VT Industries

**2.2 DOOR CONSTRUCTION, GENERAL**

- A. Low-Emitting Materials: Provide doors made with adhesives and composite wood products that do not contain urea formaldehyde.
- B. Particleboard-Core Doors:
  - 1. Particleboard: ANSI A208.1, Grade LD-2.
  - 2. Blocking: Provide wood blocking in particleboard-core doors as needed to eliminate through-bolting hardware.
  - 3. Provide doors with glued-wood-stave cores instead of particleboard cores for doors indicated to receive exit devices.
- C. Fire-Protection-Rated Doors: Provide core specified or mineral core as needed to provide fire-protection rating indicated.

**2.3 VENEERED-FACED DOORS FOR TRANSPARENT FINISH**

- A. Interior Solid-Core Doors (as indicated):
  - 1. Grade: Premium, with Grade A faces.
  - 2. Species: Match species and finish of existing.
  - 3. Cut: Rotary cut.
  - 4. Match between Veneer Leaves: Book match.
  - 5. Assembly of Veneer Leaves on Door Faces: Balance match.
  - 6. Pair and Set Match: Provide for doors hung in same opening.
  - 7. Exposed Vertical Edges: Same species as faces.
  - 8. Core: Particleboard.
  - 9. Construction: Five piles with hot press. Stiles and rails are bonded to core, then entire unit abrasive planed before veneering.

**2.4 FABRICATION**

- A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated. Comply with requirements in NFPA 80 for fire-rated doors.
- B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, DHI A115-W series standards, and hardware templates. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.

**2.5 FACTORY FINISHING**

- A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
- B. Finish doors at factory that are indicated to receive transparent finish. Field finish doors indicated to receive opaque finish.
- C. Transparent Finish:
  - 1. Grade: Premium.
  - 2. Finish: AWI System TR-4 Conversion Varnish.
  - 3. Staining: None required.
  - 4. Effect: Open-grain finish.

5. Sheen: Satin (30-50).
6. Coordination: Finish of transparent-finished wood doors, wood paneling, and wood cabinets (millwork) shall be coordinated to provide matching appearance.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Examine doors and installed door frames before hanging doors.
  1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
  2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### **3.2 INSTALLATION**

- A. Hardware: For installation, see Division 08 Section "Door Hardware".
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and the referenced quality standard, and as indicated.
- C. Install fire-rated doors in corresponding fire-rated frames according to NFPA 80.
- D. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.
- E. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

#### **3.3 ADJUSTING**

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

**END OF SECTION 08 14 16**

**SECTION 08 32 23 – COUNTER SHUTTERS****PART 1 - GENERAL****1.01 SUMMARY**

- A. This Section includes the following types of electric-motor-operated overhead coiling doors:
  - 1. Fire-rated counter doors.
  - 2. Service doors.

**1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Related Sections include the following:
  - 1. Section 05 50 00 - Metal Fabrications: Miscellaneous steel supports.
  - 2. Section 08 71 00 - Finish Hardware: Lock cylinders and keying.

**1.03 DEFINITIONS**

- A. Operation Cycle: One cycle of a door is complete when it is moved from the closed position to the fully open position and returned to the closed position.

**1.04 PERFORMANCE REQUIREMENTS**

- A. Operation-Cycle Requirements: Provide overhead coiling door components and operators capable of operating for not less than 50,000 cycles and for 10 cycles per day.
  - 1. Include tamperproof cycle counter.

**1.05 SUBMITTALS**

- A. Product Data: For each type and size of overhead coiling door and accessory. Include the following:
  - 1. Summary of forces and loads on walls and jambs.
  - 2. Fire-Rated Doors: Include description of fire-release system including testing and resetting instructions.
- B. Shop Drawings: For special components and installations not dimensioned or detailed in manufacturer's product data.
- C. Samples for Initial Selection: Manufacturer's color charts showing full range of colors available for units with factory-applied finishes.
- D. Samples for Verification: Of each type of exposed finish required, prepared on Samples of size indicated below.
  - 1. Laminate-Clad Counter Panel Product: 6 inches square; for each type, color, pattern, and surface finish; laminated to core.
- E. Oversize Construction Certification: For door assemblies required to be fire-rated and that exceed size limitations of labeled assemblies.

**1.06 QUALITY ASSURANCE**

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for both installation and maintenance of units required for this Project.

- B. Source Limitations: Obtain overhead coiling doors through one source from a single manufacturer.
  - 1. Obtain operators and controls from overhead coiling door manufacturer.
- C. labeled for fire ratings indicated by UL, FMG, ITS, or another testing and inspecting agency acceptable to authorities having jurisdiction.

## **PART 2 - PRODUCTS**

### **2.01 ACCEPTABLE MANUFACTURERS**

- A. Manufacturer: Subject to compliance with requirements, provide products by one of the following:
  - 1. Atlas Door; Div. of Clopay Building Products Company, Inc.
  - 2. Cookson Company.
  - 3. Overhead Door Corp.
  - 4. Wayne-Dalton Corp.
- B. Substitutions: No substitutions, except under provisions of Section 01600.

### **2.02 OVERHEAD COILING STEEL COUNTER DOORS**

- A. Basis of design: Overhead Door Corporation 641 Fire Rated Series.
  - 1. Wall Mounting Condition: Between jambs mounting.
  - 2. Curtain: Interlocking slats, Type F-158 fabricated of stainless steel. Endlocks attached to alternate slats to maintain curtain alignment and prevent lateral slat movement.
  - 3. Provide locking mechanisms.
  - 4. Manual operation.
- B. Finish:
  - 1. Slats and hood clear stainless steel.
  - 2. Non-galvanized exposed ferrous surfaces shall receive Powder coat
  - 3. Bottom Bar: Extruded aluminum tubular shape with astragal.
  - 4. Guides: Extruded aluminum.

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION**

- A. General: Install coiling doors and operating equipment complete with necessary hardware, jamb and head molding strips, anchors, inserts, hangers, and equipment supports.

### **3.02 ADJUSTING**

- A. Lubricate bearings and sliding parts; adjust doors to operate easily, free of warp, twist, or distortion and with tight fit around entire perimeter.

### **3.03 STARTUP SERVICES**

- A. Engage a factory-authorized service representative to perform startup service.
  - 1. Complete installation and startup checks according to manufacturer's written instructions.
  - 2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
    - a. Test door closing when activated by detector or alarm-connected fire-release system. Reset door-closing mechanism after successful test.
    - b.

**3.04 DEMONSTRATION**

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain overhead coiling doors. Refer to Section 01 77 00 - Project Closeout.

**END OF SECTION 08 32 23**

**SECTION 08 41 13 – ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

A. Section Includes: Requirements including but not limited to.

1. Aluminum trim, flashings, and similar items in conjunction with aluminum entrance and storefronts.
2. Accessories necessary for a complete installation.

**1.3 PERFORMANCE REQUIREMENTS**

A. Coordinate with Section 08 44 13 for performance requirements, fabrication and erection standards; in addition provide the following:

1. Design and fabricate aluminum window to withstand the operating loads which result from heavy traffic conditions using the specified hardware, without measurable permanent deflection. Limit elastic deflections so as to provide the normal degree of rigidity required to avoid glass breakage, air leaks and other objectionable results of excessive flexibility. Provide weatherstripping at stiles, sill and head rails of door leaves, to minimize air, water and sound leaks.

B. Provide aluminum entrance and storefront systems meeting or exceeding the following performance requirements:

1. Structural Properties:

- a. Wind Loads: The aluminum entrance and storefront work, including glass, shall be designed, fabricated and installed to withstand the maximum inward and outward wind pressures as required by applicable local building code requirements and as indicated on Drawings.

- 1) Basic Wind Speed: Indicated on structural Drawings.
- 2) Exposure Category: Indicated on structural Drawings.
- 3) Importance Factor: Indicated on structural Drawings.

- b. Seismic Loads: As required by applicable local building code requirements and indicated on structural Drawings.

c. Deflection Limitations:

- a) Deflections: Base calculations for the following deflections upon the combination of maximum direct wind loads, building deflections, thermal stresses, and erection tolerances. The deflection of any framing member in a direction normal to the plane of the wall when subjected to the full code required wind loads specified above shall not exceed L/175 of its clear span.
- b) Glass, sealants and interior finishes shall not be included to contribute to framing member strength, stiffness or lateral stability.



## Aluminum Framed Entrances and Storefronts

- 2) Do not permit any permanent deformation (set) in the metal framing work. Permanent deformation, fastener, weld, or gasket failure, component breakage or disengagement shall not occur under wind loading equal to 1.5 times the wind loads (positive or negative). Permanent deformation shall be taken as deflection without recovery exceeding 1/1000 times span.
- d. Dead Loads:
- 1) Maximum full deadload deflections, parallel (in-plane) to wall plane, of framing members shall not reduce glass bite or glass coverage, to less than 75% of the design dimension, and shall not reduce edge clearance to less than 25% of design dimension or 1/8 inch (3 mm) whichever is greater.
  - 2) Limit deflections of metal members spanning door openings to 1/300. The clearance between the member and an operable door shall be no less than 1/16 inch (1.5 mm).
  - 3) Twisting (rotation) of the horizontals due to the weight of the glass shall not exceed 1 degree, measured between ends and center of each span.
- e. Uniform Structural Loads: Satisfactory uniform wind loading tests of each aluminum entrance and storefront assembly (each swinging and sliding door) shall have been conducted in accordance with the requirements of ASTM E330.
- 1) Subject each assembly to inward and outward acting uniform loads equal to 1.5 times the inward and outward acting design wind loads specified above under paragraph 'wind loads'.
  - 2) Satisfactory performance at these loads shall mean no glass or other component breakage, component disengagement, and no permanent deformation of main framing members in excess of the permanent deformation criteria specified above.
- f. Operational (Traffic) Loads: Design and fabricate aluminum entrances to withstand the operating loads which result from heavy traffic conditions using the specified hardware, without measurable permanent deflection.
- 1) Limit elastic deflections so as to provide the normal degree of rigidity required to avoid glass breakage, air leaks and other objectionable results of excessive flexibility. Provide weatherstripping at stiles, sill and head rails of door leaves, to minimize air, water and sound leaks.
- C. Air Leakage: Air leakage through each aluminum entrance and storefront assembly shall not have exceeded 0.06 cfm/sq. ft. (0.03 L/s per sq. m) of fixed wall area when tested in accordance with ASTM E 283 at a static air pressure difference of 6.24 lbf/sq. ft. (300 Pa).
- D. Water Penetration:
1. Water penetration in this specification is defined as the appearance of uncontrolled water, other than condensation, on any indoor face of any part of the wall.
  2. Provision shall be made to drain to the exterior face of the wall any water entering the system.
  3. No uncontrolled water penetration shall have occurred when each entrance and storefront assembly (each entrance and storefront wall) was tested in accordance with the ASTM E331 for one 15 minute cycle at a static pressure difference of 12 lbf/sq. ft. (600 Pa) minimum.
- E. Thermal Movements: Fabricate the entrance and storefront work to accommodate for such expansion and contraction of component materials, and supporting elements, as will be caused by surface temperatures ranging from -5 degrees F to +180 degrees F (-20.5 degrees C to +82 degrees C), without causing buckling, glass breakage, failure of joint sealants, undue stress on metal members and fasteners, failure of doors or other operating units to function properly, reduction of performance, and other detrimental effects.

## Aluminum Framed Entrances and Storefronts

1. Dimensions shown on Drawings are based on an assumed design temperature of +70 degrees F ( +21 degrees C). Fabrication and erection procedures include for ambient temperature range at the time of the respective operations.
- F. Building Frame Movement: Design, fabricate and install aluminum entrances and storefronts to withstand building movements including thermal movements, loading deflections, shrinkage, creep and similar movements. Thermal movements shall be as specified. Building frame deflections, shrinkage, creep and other movements are available from the structural engineer.
- G. Condensation Resistance: Provide storefront systems with condensation resistance factor (CRF) of not less than 45 when tested according to AAMA 1503.1.
- H. Average Thermal Conductance: Provide storefront systems with average U-values of not more than 0.63 Btu/sq. ft. x h x deg F (3.57 W/sq. m x K) when tested according to AAMA 1503.1.
- I. Glass Statistical Factor: Glass thicknesses when shown on the drawings, or specified, are for convenience of detailing only and are to be confirmed by the Contractor and/or glass manufacturer. Glass for the size openings shown will be provided in thickness so probability of breakage at the design Wind Load will not exceed 8 lites per 1000 lites (S.F. 2.5) based on a 60 second uniform wind load duration, and reflectance and shading indicated.
  1. The glass manufacturer shall provide, on request, substantiating glass breakage data if such data is not otherwise available as manufacturer's published data.
- J. Design Modifications:
  1. Submit design modifications necessary to meet the performance requirements and field coordination.
  2. Variations in details or materials shall not adversely affect the appearance, durability or strength of components.
  3. Maintain the general design concept without altering size of members, profiles and alignment.

**1.4 SUBMITTALS**

- A. Shop Drawings: Submit shop drawings showing scaled elevations, plans, and sections of the aluminum entrance and storefront work.
  1. Prepare full scale sections and submit for details of the assemblies that cannot be shown in the elevations or sections. Include with shop drawings metal thickness of metal components, glass thickness, metal finishes, and pertinent information as necessary or requested by the Architect to indicate compliance.
  2. Indicate details of field connections, anchorage, and relationship to work of others for coordination of work by other building trades.
  3. Show details of fastening and sealing methods and product joinery to ensure proper performance of the field installation.
  4. Do not fabricate work until shop drawings are approved by Architect for fabrication.
  5. All shop drawings to be developed by Kawneer Company.
- B. Samples: Submit samples of the following before any work is fabricated:
  1. Submit 3 paired sets of samples for each exposed metal finish required. Where finishes involve color and texture variations, include sample sets showing the full range of variations expected. Furnish samples in either 12 inch (300 mm) lengths of patch fittings, rails, or 12 inch (300 mm) squares of sheet.

## Aluminum Framed Entrances and Storefronts

- C. Structural Calculations: Submit sealed copies of structural calculations indicating complete compliance with the specified performance requirements. Submit calculations prepared, signed, and sealed by a Professional Engineer registered in the state where the project is located.
- D. Product Test Reports: Submit certified product test reports based on tests performed by an AAMA Accredited Laboratory clearly describing in written form, and in shop drawing form, compliance of each aluminum entrance and storefront assembly (each swinging and sliding door) with requirements indicated based on comprehensive testing.
- E. Maintenance Instructions: Submit copies of manufacturer's written instructions for adjustment, operation and maintenance of doors.
- F. Preconstruction Sealant Compatibility and Adhesion Testing: Submit test results.

**1.5 QUALITY ASSURANCE**

- A. Regulatory Requirements:
  - 1. Building Code: Applicable requirements of the local building authority for exterior cladding.
  - 2. American Architectural Manufacturers Association (AAMA):
    - a. *AAMA Aluminum Curtain Wall Design Guide Manual Volumes 1-9.*
    - b. *AAMA Aluminum Store Front and Entrance Design Guide Manual.*
    - c. *AAMA 2603 Voluntary Performance Requirements and Test Procedures for Pigmented Organic Coatings on Extruded Aluminum.*
    - d. *AAMA 2605 Specification for Superior Performing Organic Coatings on Architectural Extrusions and Panels.*
  - 3. American Institute of Steel Construction (AISC) *Steel Construction Manual.*
  - 4. Steel Structures Painting Council (SSPC): *Steel Structures Painting Manual, Vol. 2, Systems and Specifications.*
  - 5. Federal Standard 16 CFR 1201, Consumer Product Safety Commission (CPSC): *Safety Standard for Architectural Glazing Materials*, published in Code of Federal Regulations (CFR).
    - a. Comply with applicable requirements of authorities having jurisdiction, wherever requirements conflict the more stringent shall be required. Obtain approvals from authorities.
    - b. As a minimum provide safety glazing complying with ANSI Z97.1 and testing requirements of 16 CFR Part 1201 for Category II materials.
  - 6. Welding Standards: Welding shall be performed by skilled and qualified mechanics. Welding shall be performed in accordance with the applicable provisions of AWS D1.1 *Structural Welding Code - Steel* and AWS D1.2 *Structural Welding Code--Aluminum.*
- B. Manufacturer Qualifications: All framing components, drawings and specifications are based on Kawneer Systems and Kawneer Narrow, Medium and Wide Style doors.
- C. Installer Qualifications: Refer to Section 084413.
- D. Sole Source Responsibility: Manufacturer/fabricator of aluminum curtainwall and aluminum storefront and entrances [and aluminum (interior) partition framing and door system] shall be the same.
- E. Testing laboratories shall be specifically qualified to conduct laboratory and field performance tests required by these specifications and acceptable to the Architect.
- F. Preconstruction Sealant Compatibility and Adhesion Testing: Test results confirming compatibility and adhesion are mandatory for all concealed and exposed sealant materials in contact with exterior glazing,

## Aluminum Framed Entrances and Storefronts

stone, precast, masonry, wood, metals, other sealants, flashings, metal framing, and shims prior to full size sample installation construction. Refer to Section 07 92 00.

- G. Preinstallation Conference: Conduct conference at Project site to comply with requirements. Prior to the start of the aluminum entrance and storefront work, and at the Contractor's direction, meet at site and review the installation procedures and coordination with work.
- H. Meeting shall include Contractor, Owner, aluminum entrance and storefront installer, sealant installer, as well as any other subcontractors or material technical service representatives whose work, or products, must be coordinated with the aluminum entrance and storefront work.

**1.6 IDENTIFICATION, DELIVERY, STORAGE, AND HANDLING**

- A. Comply with the applicable provisions of AAMA *Curtain Wall Manual #10* for the care and handling of aluminum entrance and storefront work from shop to site.
- B. Identify components of aluminum entrance and storefront work after fabrication by marks clearly indicating their location in the building. Package components to protect the components from damage during shipping and handling.
- C. Storage on Site:
  - 1. Store aluminum entrance and storefront components in a location and in a manner to avoid damage to the components. Stacking shall be done in a way which will prevent bending, excessive pressure, abrasion or permanent damage of the component and its finished surfaces.  
Store aluminum entrance and storefront components and materials in a clean, dry location, away from uncured concrete, masonry work, sprayed on fireproofing work, and other construction activities. Cover with non-staining waterproof paper, tarpaulin, or polyethylene sheeting to permit circulation of air inside the covering.
- D. Keep handling on site to a minimum. Exercise particular care to avoid damage to finishes of metals.

**1.7 PROJECT CONDITIONS**

- A. Field Measurements: Verify dimensions of supporting structure by field measurements before fabrication so that the entrance and storefront work will be accurately designed, fabricated, and fitted to the structure. Indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the work. Use Contractor's lines and benchmarks as a basis for measurements.
  - 1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating entrance and storefront work without field measurements. Coordinate supporting structure construction to ensure actual dimensions correspond to established dimensions.

**1.8 WARRANTY**

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of aluminum-framed systems that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Structural failures including, but not limited to, excessive deflection.
    - b. Noise or vibration caused by thermal movements.
    - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
    - d. Adhesive or cohesive sealant failures.
    - e. Water leakage through fixed glazing and framing areas.
    - f. Failure of operating components.

## Aluminum Framed Entrances and Storefronts

2. Warranty Period: Two years from date of Substantial Completion.

**PART 2 - PRODUCTS****2.1 MATERIALS**

- A. Recycled Content of Steel and Aluminum Products: To the extent practical, provide products with an average recycled content of steel and aluminum products so postconsumer recycled content plus one-half of preconsumer recycled content is not less than 25 percent.
- B. MATERIALS:
  1. Manufacturer:
    - Kawneer 250 Series Standard Entrance Style Doors
    - Kawneer Trifab 451T, front glazed
    - Kawneer Trifab 450, center glazed
    - (AW-PG80-FW) Fixed Windows
  2. Installer: To be approved by Entrance Manufacturer and General Contractor.
- C. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
  1. Sheet and Plate: ASTM B 209.
  2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
  3. Extruded Structural Pipe and Tubes: ASTM B 429.
  4. Structural Profiles: ASTM B 308/B 308M.
  5. Welding Rods and Bare Electrodes: AWS A5.10/A5.10M.
- D. Carbon Steel: For carbon steel components required to join, reinforce or support the assembly of aluminum components provide carbon steel conforming to ASTM A 36/A 36M for structural shapes, plates, and bars; ASTM A 1008/A 1008M for cold rolled sheet and strip; or ASTM A 1011/A 1011M for hot-rolled sheet and strip.
- E. Glass and Glazing Materials: Section 08 80 00.
- F. Anchors and Fasteners:
  1. Material: Stainless steel.
  2. Anchor and Fastener Metal Alloy Types, Designations and Standards: Alloys as selected by fabricator to prevent corrosion resistance with the components fastened. Do not use self drilling, self tapping type fasteners.
  3. Do not use exposed anchors and fasteners, except for hardware application. For hardware application, use countersunk Phillips flat-head machine screws finished to match framing members or hardware being fastened, unless otherwise indicated.
  4. Where fasteners are subject to loosening or turn out from thermal and structural movements, wind loads, or vibration, use self-locking devices.
  5. Recycled Content: Fabricated from remelted steel.
- G. Concealed Flashing: Dead-soft, 0.018-inch- (0.457-mm-) thick stainless steel, complying with ASTM A 666, Type 304.
- H. Weather Stripping: Manufacturer's standard replaceable weather stripping as follows:
  1. Compression Weather Stripping: Molded neoprene complying with ASTM D 2000 requirements or molded PVC complying with ASTM D 2287 requirements.

## Aluminum Framed Entrances and Storefronts

2. Sliding Weather Stripping: Wool, polypropylene, or nylon woven pile with nylon-fabric or aluminum-strip backing complying with AAMA 701 requirements.

**2.2 GLAZING SYSTEMS**

- A. Glazing: Refer to Section 088000.
- B. Glazing Gaskets: Compression types, replaceable, molded or extruded, that maintain uniform pressure and watertight seal.
- C. Spacers and Setting Blocks: Elastomeric types.
- D. Bond Breaker Tape: TFE fluorocarbon or polyethylene material to which sealants will not develop adhesion.
- E. Glazing Sealants: For structural-sealant-glazed systems, recommended by manufacturer for joint type and as follows:
  1. Structural Sealant: ASTM C 1184, neutral curing silicone formulation compatible with system components with which it comes in contact, specifically formulated and tested for use as structural sealant, and approved by structural sealant manufacturer for use in aluminum-framed systems indicated.
    - a. Color: Selected by Architect.
  2. Weatherseal Sealant: ASTM C 920 for Type S, Grade NS, Class 25, Uses NT, G, A, and O; neutral curing silicone formulation compatible with structural sealant and system components with which it comes in contact; and recommended by structural and weatherseal sealant and aluminum framed system manufacturers for this use.
    - a. Color: Matching structural sealant.
  3. Toxicity/IEQ: Low VOC products.

**2.3 SEALING MATERIALS**

- A. Concealed Sealing Materials: Provide silicone sealant for concealed applications within entrances and storefronts, compatible with and adherent to each material it will be in contact with, recommended by the manufacturer to fulfill performance requirements.
- B. Exposed Sealing Materials: Equal to DOW Corning 791, one-component, medium modulus, neutral curing silicone sealant.

**2.4 FABRICATION**

- A. Fabricate entrances and storefronts to the designs, shapes, and sizes shown using materials specified and shown to produce assemblies which meet or exceed the performance requirements. To the greatest extent possible complete fabrication, assembly, finishing, hardware applications and work before shipment to site.
  1. Metal Wall Thickness: Provide shapes as shown and as required to suit the performance requirements but with wall thickness of not less than 1/8 inch (3 mm).
- B. Joints in Metal Work: All exposed work shall be carefully fitted and matched to produce continuity of line and design, with all joints, being accurately fitted for hairline contact and rigidly secured. Where

## Aluminum Framed Entrances and Storefronts

additional rigidity or strength is required to satisfy the performance requirements reinforce entrance components with aluminum or carbon steel shapes, bars, and plates.

- C. Shop Assembly: As far as practicable, all fitting and assembly work shall be done in a fabrication shop.
  - 1. For exterior entrances, provide weepholes and internal water passages in the glazing framing recesses as recommended by the respective glass and framing manufacturers to conduct infiltrating water to the exterior. Provide weep baffles secured to inside of frame behind weepholes.
- D. Exposed Fasteners: Not permitted.
- E. Protection of Metals: Wherever dissimilar metals are in contact, except in the case of aluminum in contact with galvanized steel, zinc, or separate such surfaces with a coating of zinc rich primer, bituminous paint, or separation gaskets as the condition requires. Wherever aluminum comes in contact with concrete surfaces separate such surfaces with a coating of zinc rich primer, bituminous paint, or separation gaskets as the condition requires.

## 2.5 FINISHES

- A. Comply with NAAMM *Metal Finishes Manual for Architectural and Metal Products* for recommendations relative to applying and designating finishes.
- B. Appearance of Finished Work: During production, maintain large size color range samples for use in comparing against production material. Variations in appearance of abutting or adjacent pieces are acceptable if they are within the range of approved samples. Noticeable variations in the same piece are not acceptable.
- C. Clear Anodized with a 5 year finish warranty.
- D. Concealed Metal Surface Coating: Apply protective coatings to surfaces of metals concealed in the construction:
  - 1. Coating for Carbon Steel: Hot dip galvanized, complying with ASTM A123.
  - 2. Coating for Aluminum, Carbon Steel, and Bronze: Where aluminum or carbon steel surfaces are to be in contact with each other or in contact with dissimilar materials such as masonry or concrete, and where hot dip galvanizing of carbon steel is incompatible with component parts because of galvanic action or component fabrication tolerances provide one of the following:
    - a. Bituminous Paint: Cold-applied, non-sagging, asphalt-mastic paint complying with SSPC-Paint 12 requirements, except containing no asbestos. Apply in two coats for an overall minimum dry film thickness of 25 mils.
    - b. Zinc Rich Primer: Organic zinc-rich primer, complying with SSPC-Paint 20.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Coordinate entrance and storefront materials with the project schedule and provide items to be placed during the installation of work at the proper time to avoid delays.
- B. Templates and Diagrams: Furnish templates, diagrams, and other data to fabricators and installers of related work, as necessary for coordinating entrance and storefront installation.

## Aluminum Framed Entrances and Storefronts

- C. Place such items, including concealed overhead framing, accurately in relation to the final location of entrance and storefront components.

**3.2 EXAMINATION**

- A. Examine substrates, adjoining construction, and conditions under which the work is to be installed. Proceed with installation after unsatisfactory conditions have been corrected.
  - 1. Before beginning installation of the entrance and storefront work examine building structural frame and building cladding indicated to support the entrance and storefront work.
  - 2. Notify Contractor in writing, of any dimensions, or conditions, found which prevent proper execution of the entrance and storefront work, including specified tolerances. Use Contractor's offset lines and bench marks as basis of measurements.

**3.3 INSTALLATION**

- A. Comply with manufacturer's written instructions for protecting, handling, and installing entrance and storefront systems. Do not install damaged components. Fit frame joints to produce hairline joints free of burrs and distortion. Rigidly secure nonmovement joints. Seal joints watertight. Clean excess joint sealants from finished surfaces.
  - 1. Cut and trim component parts of the entrance and storefront work during erection only with the approval of the manufacturer or fabricator, and in accordance with his recommendations. Restore finish completely to protect material and remove all evidence of cutting and trimming. Remove and replace members where cutting and trimming has impaired strength or appearance, as directed by Architect.
  - 2. Set components within the erection tolerances with uniform joints. Place components on shims and fasten to supporting substrates using bolts and similar fasteners. Use stainless steel shims at structural connections only. U shaped shims at structural connections are not permitted. Use aluminum, stainless steel or high impact polystyrene shims at other connections.
  - 3. Do not erect components which are warped, deformed, bowed, dented, defaced, or damaged as to impair its strength or appearance. Remove and replace members damaged in the process of erection.
  - 4. Coat concealed surfaces of dissimilar materials, and any ferrous metal components, with a heavy coating of bituminous paint, zinc rich primer or other separation in accordance with manufacturer's recommendations. Where aluminum components will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.
  - 5. No holes or slots shall be burned, cut into, or field drilled in any building framing member without the written acceptance of the structural engineer.
- B. Entrance and Storefront Framing: Install framing components plumb and true in alignment with established lines and grades without warp or rack of framing members.
- C. Install glazing to comply with requirements of Section 08 80 00 unless otherwise indicated.
- D. Install perimeter sealant to comply with requirements of Section 07 92 00, unless otherwise indicated.
- E. Concealed Sealing Components: Apply sealant and gasket components which are integral to the entrance and storefront systems in strict accordance with the each component manufacturers printed instructions.
  - 1. Before applying components remove all mortar, dust, dirt, moisture, and foreign matter which will be deleterious to the intended performance of the component. Mask adjoining exposed surfaces to avoid spilling, dripping, dropping or other unintended contact of the sealing components onto adjacent exposed surfaces.



## Aluminum Framed Entrances and Storefronts

- F. Anchorage: For entrance and storefront work to the structure and surrounding cladding, install in accordance with the accepted shop drawings.
- G. Welding: Weld with electrodes and by methods recommended by manufacturer of material being welded, and in accordance with AWS D1.1 for concealed steel members.
  - 1. Welds and adjacent metal areas shall be thoroughly cleaned and coated with a single coat of bituminous paint.

**3.4 ERECTION TOLERANCES**

- A. The entrance and storefront systems shall be fabricated and erected to accommodate the dimensional tolerances of the structural frame and surrounding cladding while providing the following as installed tolerances.
  - 1. Variation from theoretical calculated position as located in plan or elevation in relation to established floors lines, column lines and fixed elements of the structure, including variations from plumb, level, straight and member size: +/- 1/4 inch max in any 20'0" (+/- 6 mm in any 6 m) run, column to column bay, or floor to floor height.
  - 2. Alignment: Where surfaces abut in line, and where they meet at corners, limit offset from true alignment to 1/32 inch (.75 mm).
  - 3. Variation from angle, or plumb, shown: +/- 1/8 inch max in any 10'0" (+/- 3 mm in any 3 m) run or story height, non-cumulative.
  - 4. Variation from slope, or level, shown: +/- 1/8 inch max in any 20'0" (+/- 3 mm in any 6 m) run or column-to-column bay, non-cumulative.

**3.5 REMOVAL OF DEBRIS**

- A. Debris caused by, or incidental to, the erection of the entrance and storefront work shall be removed from the site and legally disposed or recycled.

**3.6 CLEANING**

- A. Clean metal surfaces promptly after installation, exercising care to avoid damage to factory finished exposed surfaces.
- B. Wash glass on both faces not more than 4 days prior to date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer. Remove excess glazing and sealant compounds, dirt, and other substances.
- C. Immediately remove any deleterious material from surfaces of aluminum.

**3.7 PROTECTION**

- A. Institute protective measures required throughout the remainder of the construction period to ensure that entrance and storefront work will be without damage or deterioration, other than normal weathering, at time of acceptance.

**SECTION 08 71 00 - DOOR HARDWARE****PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section includes the following:
  - 1. Commercial door hardware.
  - 2. Cylinders for doors specified in other Sections.
  - 3. Hardware for aluminum doors.
- B. See Division 08 door sections for astragals and door silencers.

**1.2 SUBMITTALS**

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Details of electrified door hardware, including wiring diagrams.
- C. Samples: For each exposed finish.
- D. Product certificates or test reports.
- E. Other Action Submittals:
  - 1. Door Hardware Sets: Prepared by or under the supervision of Architectural Hardware Consultant, detailing fabrication and assembly of door hardware, as well as procedures and diagrams.
    - a. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents.
    - b. Content: Include the following information:
      - 1) Identification number, location, hand, fire rating, and material of each door and frame.
      - 2) Type, style, function, size, quantity, and finish of each door hardware item. Include description and function of each lockset and exit device.
      - 3) Complete designations of every item required for each door or opening including name and manufacturer.
  - 2. Keying Schedule: Prepared by or under the supervision of Architectural Hardware Consultant, detailing Owner's final keying instructions for locks.

**1.3 QUALITY ASSURANCE**

- A. Installer Qualifications: An employer of workers trained and approved by lock manufacturer.
  - 1. Installer's responsibilities include supplying and installing door hardware and providing a qualified Architectural Hardware Consultant available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying. Security software must be compatible with existing software.
- B. Architectural Hardware Consultant Qualifications: A person who is currently certified by DHI as an Architectural Hardware Consultant and who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project.

- C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252
  - 1. Test Pressure: Positive Pressure UL10C
- D. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system.
- E. Pre-installation Conference: Conduct conference at Project site.

#### **1.4 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver keys to Owner by registered mail or overnight package service.
  - 1. Blankenship & Partners, LLC  
Address: 1112 E Weisgarber Road, 2<sup>nd</sup> Floor, Knoxville, TN 37909

#### **1.5 COORDINATION**

- A. Templates: Distribute door hardware templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

#### **1.6 WARRANTY**

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: One years from date of Substantial Completion, except as follows:
    - a. Exit Devices: Two years from date of Substantial Completion.
    - b. Manual Closers: 10 years from date of Substantial Completion.

### **PART 2 - PRODUCTS**

#### **2.1 SCHEDULED DOOR HARDWARE**

- A. General: Provide door hardware for each door to comply with requirements in this Section and door hardware sets indicated in Part 3 "Door Hardware Sets" Article
  - 1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and named manufacturers' products.
- B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Sets" Article. Products are identified by using door hardware designations, as follows:
  - 1. Named Manufacturers' Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in Part 3 "Door Hardware Sets" Article.

**2.2 HINGES, GENERAL**

- A. Template Requirements: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.
- B. Hinge Base Metal: Unless otherwise indicated, provide the following:
  - 1. Exterior Hinges: Brass Base
  - 2. Interior Hinges: Steel
  - 3. Hinges for Fire-Rated Assemblies: Steel
- C. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for outswinging exterior doors
- D. Fasteners: Comply with the following:
  - 1. Machine Screws: For metal doors and frames. Install into drilled and tapped holes.
  - 2. Wood Screws: For wood doors and frames.
  - 3. Threaded-to-the-Head Wood Screws: For fire-rated wood doors.
  - 4. Screws: Phillips flat-head; Finish screw heads to match surface of hinges.

**2.3 HINGES**

- A. Butts and Hinges: BHMA A156.1.
- B. Template Hinge Dimensions: BHMA A156.7.
- C. Manufacturers:
  - 1. Bommer Industries, Inc. (BI).
  - 2. Hager Companies (HAG).
  - 3. McKinney Products Company; an ASSA ABLOY Group company (MCK).
  - 4. Stanley Commercial Hardware; Div. of The Stanley Works (STH).
  - 5. Ives Hardware

**2.4 CONTINUOUS HINGES**

- A. Standard: Geared Aluminum Hinge
- B. General: Minimum 0.120-inch- (3.0-mm-) thick, hinge leaves with minimum overall width of 4 inches (102 mm); fabricated to full height of door and frame and to template screw locations; with components finished after milling and drilling are complete.
- C. Continuous, Gear-Type Hinges: Extruded-aluminum, pinless, geared hinge leaves; joined by a continuous extruded-aluminum channel cap; with concealed, self-lubricating thrust bearings.
  - 1. Manufacturers:
    - a. Hager Companies (HAG).
    - b. McKinney Products Company; an ASSA ABLOY Group company (MCK).
    - c. Pemko Manufacturing Co. (PEM).
    - d. Select Products Limited (SPL).

**2.5 LOCKS AND LATCHES, GENERAL**

- A. Accessibility Requirements: Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22 N).
- B. Latches and Locks for Means of Egress Doors: Comply with NFPA 101. Latches shall not require more than 15 lbf (67 N) to release the latch. Locks shall not require use of a key, tool, or special knowledge for operation.
- C. Lock Trim:
  - 1. Levers: Sparta
  - 2. Dummy Trim: Match lever lock trim and escutcheons.
- D. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors.
- E. Backset: 2-3/4 inches (70 mm), unless otherwise indicated.
- F. Strikes: Manufacturer's standard strike with strike box for each latchbolt or lock bolt, with curved lip extended to protect frame, finished to match door hardware set.

**2.6 MECHANICAL LOCKS AND LATCHES**

- A. Lock Functions: Function numbers and descriptions indicated in door hardware sets comply with the following:
  - 1. Bored Locks: BHMA A156.2.
- B. Bored Locks: BHMA A156.2 Grade 1, Series 4000.
  - 1. Manufacturers:
    - a. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company (CR). CL3300 Series
    - b. Schlage Commercial Lock Division; an Ingersoll-Rand Company (SCH). ND Series
    - c. Yale Commercial Locks and Hardware; an ASSA ABLOY Group company (YAL). 5400 Series
    - d. Dorma C800 Series
- C. Mortise Locks: Stamped steel case with steel or brass parts; BHMA A156.13G Grade 1, Series 1000.
  - 1. Manufacturers:
    - a. Arrow USA; an ASSA ABLOY Group company (ARW).
    - b. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company (CR).
    - c. Schlage Commercial Lock Division; an Ingersoll-Rand Company (SCH).
    - d. Security Door Controls (SDC).
    - e. Yale Commercial Locks and Hardware; an ASSA ABLOY Group company (YAL).

**2.7 EXIT DEVICES**

- A. Exit Devices: BHMA A156.3 Grade 1
- B. Accessibility Requirements: Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22 N).

- C. Exit Devices for Means of Egress Doors: Comply with NFPA 101. Exit devices shall not require more than 15 lbf (67 N) to release the latch. Locks shall not require use of a key, tool, or special knowledge for operation.
- D. Panic Exit Devices: Listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for panic protection, based on testing according to UL 305.
- E. Fire Exit Devices: Devices complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire and panic protection, based on testing according to UL 305 and NFPA 252.
- F. Removable Mullions: BHMA A156.3.
- G. Fire-Exit Removable Mullions: Provide removable mullions for use with fire exit devices complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire and panic protection, based on testing according to UL 305 and NFPA 252. Mullions shall be used only with exit devices for which they have been tested.
- H. Outside Trim: Lever, material and finish to match locksets, unless otherwise indicated.
  - 1. Match design for locksets and latchsets, unless otherwise indicated.
- I. Manufacturers:
  - 1. Yale Commercial Locks and Hardware; an ASSA ABLOY Group company (CR). ED7000
  - 2. Falcon; an Ingersoll-Rand Company – 25 Series
  - 3. Von Duprin; an Ingersoll-Rand Company (VD). 99 Series
  - 4. Dorma- 9000 Series

## 2.8 LOCK CYLINDERS

- A. Standard Lock Cylinders: BHMA A156.5 Grade 1
- B. Cylinders: Manufacturer's standard tumbler type, constructed from brass or bronze, stainless steel, or nickel silver, and complying with the following:
  - 1. Number of Pins: six
- C. Construction Keying: Comply with the following:
  - 1. Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without cylinder removal. Provide 10 construction master keys.
  - 2. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.
    - a. Furnish permanent cores to Owner for installation.
- D. Manufacturer: Same manufacturer as for locks and latches.
- E. Manufacturers:
  - 1. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company (CR).
  - 2. Schlage Commercial Lock Division; an Ingersoll-Rand Company (SCH).
  - 3. Yale Commercial Locks and Hardware; an ASSA ABLOY Group company (YAL).

## 2.9 KEYING

- A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A. Incorporate decisions made in keying conference into master key system. Tie into existing Yale key system.

- B. Keys: Nickel silver
  - 1. Quantity: In addition to one extra key blank for each lock, provide three cylinder change keys and five master keys.

## 2.10 CLOSERS

- A. Accessibility Requirements: Comply with the following maximum opening-force requirements:
  - 1. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
  - 2. Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.
  - 3. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
- B. Door Closers for Means of Egress Doors: Comply with NFPA 101. Door closers shall not require more than 30 lbf (133 N) to set door in motion and not more than 15 lbf (67 N) to open door to minimum required width.
- C. Hold-Open Closers/Detectors: Coordinate and interface integral smoke detector and closer device with fire alarm system.
- D. Size of Units: Unless otherwise indicated, comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.
- E. Surface Closers: BHMA A156.4 Grade 1, Provide type of arm required for closer to be located on non-public side of door, unless otherwise indicated. Closer Body must be cast-iron
  - 1. Manufacturers:
    - a. Yale Commercial Locks and Hardware; an ASSA ABLOY Group company (CR). 4000, 3000
    - b. LCN Closers; an Ingersoll-Rand Company (LCN). 1461
    - c. Dorma 8600 Series

## 2.11 PROTECTIVE TRIM UNITS

- A. Size: 1-1/2 inches (38 mm) less than door width on push side and 1/2 inch (13 mm) less than door width on pull side, by height specified in door hardware sets.
- B. Metal Protective Trim Units: BHMA A156.6; beveled top and 2 sides;
  - 1. Material: 0.050-inch- (1.3-mm-) thick aluminum
  - 2. Manufacturers:
    - a. Hager Companies (HAG).
    - b. IVES Hardware; an Ingersoll-Rand Company (IVS).
    - c. Rockwood Manufacturing Company (RM).
    - d. Trimco (TBM).

## 2.12 STOPS AND HOLDERS

- A. Stops and Bumpers: BHMA A156.16 Grade 1
  - 1. Provide floor stops for doors unless wall or other type stops are scheduled or indicated. Do not mount floor stops where they will impede traffic. Where floor or wall stops are not appropriate, provide overhead holders.

- B. Manufacturers:
1. Glynn-Johnson; an Ingersoll-Rand Company (GJ).
  2. Hager Companies (HAG).
  3. IVES Hardware; an Ingersoll-Rand Company (IVS).
  4. Rockwood Manufacturing Company (RM).

### 2.13 DOOR GASKETING

- A. Standard: BHMA A156.22.
- B. General: Provide continuous weather-strip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated or scheduled. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.
1. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
  2. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
  3. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.
- C. Smoke-Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke-control ratings indicated, based on testing according to UL 1784.
1. Provide smoke-labeled gasketing on 20-minute-rated doors and on smoke-labeled doors.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated, based on testing according to ASTM E 1408.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Gasketing Materials: ASTM D 2000 and AAMA 701/702.
- G. Manufacturers:
1. National Guard Products (NGP).
  2. Pemko Manufacturing Co. (PEM).

### 2.14 THRESHOLDS

- A. Standard: BHMA A156.21.
- B. Accessibility Requirements: Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high
- C. Thresholds for Means of Egress Doors: Comply with NFPA 101. Maximum 1/2 inch (13 mm) high.
- D. Manufacturers:
1. National Guard Products (NGP).
  2. Pemko Manufacturing Co. (PEM).

### 2.15 FABRICATION

- A. Base Metals: Produce door hardware units of base metal, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal



to or greater than that of specified door hardware units and BHMA A156.18. Do not furnish manufacturer's standard materials or forming methods if different from specified standard.

- B. Fasteners: Provide screws according to commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.
  - 1. Comply with NFPA 80 for fasteners of door hardware in fire-rated applications.
- C. Finishes: BHMA A156.18, as indicated in door hardware sets.

### **PART 3 - EXECUTION**

#### **3.1 INSTALLATION**

- A. Steel Doors and Frames: Comply with DHI A115 Series. Drill and tap doors and frames for surface-applied door hardware according to ANSI A250.6.
- B. Wood Doors: Comply with DHI A115-W Series.
- C. Mounting Heights: Mount door hardware units at heights indicated as follows unless otherwise indicated or required to comply with governing regulations.
  - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
  - 2. Custom Steel Doors and Frames: DHI's "Recommended Locations for Builders' Hardware for Custom Steel Doors and Frames."
  - 3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- D. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 09 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- E. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
- F. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
- G. Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
  - 1. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 30 degrees.
  - 2. Door Closers: Unless otherwise required by authorities having jurisdiction, adjust sweep period so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches (75 mm) from the latch, measured to the leading edge of the door.

**3.2 FIELD QUALITY CONTROL**

- A. Independent Architectural Hardware Consultant: Owner will engage a qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.

**3.3 DOOR HARDWARE SETS****Hardware Set 1.00****Doors: 103, 105, 106, 110**

ITEM	SERIES/FUNCTION	FINISH	MFGR
1 Lever Lockset	ND53PD F109	US26D	Schlage
3 Hinges	BB1191	US26D	Hager

**Hardware Set 2.00****Doors: 107**

ITEM	SERIES/FUNCTION	FINISH	MFGR
1 Lever Lockset	ND80PD F86	US26D	Schlage
3 Hinges	BB1191	US26D	Hager
1 Closer	4040XP	US26D	LCN
1 Electric Strike	6200 Series	US26D	VON
1 Power Supply	PS914		VON
1 Card Reader (compatible with the new and/or existing access control system)			

**Hardware Set 3.00****Doors: 300**

ITEM	SERIES/FUNCTION	FINISH	MFGR
1 Lever Lockset	ND80PD F86	US26D	Schlage
3 Hinges	BB1191	US26D	Hager
1 Closer	4040XP	US26D	LCN
1 Electric Strike	6200 Series	US26D	VON
1 Power Supply	PS914		VON
1 Card Reader (compatible with the new and/or existing access control system)			
1 Fire Gasket	160VA	Anod Al	NGP

**Hardware Set 4.00****Doors: 301, 302, 304, 305**

ITEM	SERIES/FUNCTION	FINISH	MFGR
1 Lever Lockset	ND10S F75	US26D	Schlage
3 Hinges	BB1191	US26D	Hager
1 Closer	4040XP	US26D	LCN
1 Fire Gasket	160VA	Anod Al	NGP

**END OF SECTION 08 71 00**

**SECTION 08 80 00 - GLAZING****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:
1. Glazed curtain walls.
  2. Glazed entrances.
  3. Interior borrowed lites.
  4. Storefront framing.

**1.3 DEFINITIONS**

- A. Manufacturers of Glass Products: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.
- B. Glass Thicknesses: Indicated by thickness designations in millimeters according to ASTM C 1036.
- C. Interspace: Space between lites of an insulating-glass unit that contains dehydrated air or a specified gas.
- D. Deterioration of Coated Glass: Defects developed from normal use that are attributed to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in metallic coating.
- E. Deterioration of Insulating Glass: Failure of hermetic seal under normal use that is attributed to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

**1.4 PERFORMANCE REQUIREMENTS**

- A. General: Provide glazing systems capable of withstanding normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.
- B. Glass Design: Glass thickness designations indicated are minimums and are for detailing only. Confirm glass thicknesses by analyzing Project loads and in-service conditions. Provide glass lites in the thickness designations indicated for various size openings, but not less than thicknesses and in strengths (annealed or heat treated) required to meet or exceed the following criteria:
1. Glass Thicknesses: Select minimum glass thicknesses to comply with ASTM E 1300, according to the following requirements:
    - a. Specified Design Wind Loads: As indicated on Structural Drawings.
    - b. Probability of Breakage for Vertical Glazing: 8 lites per 1000 for lites set vertically or not more than 15 degrees off vertical and under wind action.
      - 1) Load Duration: 60 seconds or less.
    - c. Maximum Lateral Deflection: For the following types of glass supported on all 4 edges, provide thickness required that limits center deflection at design wind pressure to 1/50 times the short side length or 1 inch, whichever is less.
      - 1) For monolithic-glass lites heat treated to resist wind loads.

- 2) For insulating glass.
  - 3) For laminated-glass lites.
- C. Thermal Movements:
1. Provide glazing that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures acting on glass framing members and glazing components. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
  2. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.
- D. Thermal and Optical Performance Properties: Provide glass with performance properties specified based on manufacturer's published test data, as determined according to procedures indicated below:
1. For monolithic-glass lites, properties are based on units with lites 6.0 mm thick.
  2. For insulating-glass units, properties are based on units of thickness indicated for overall unit and for each lite.
  3. Center-of-Glass Values: Based on using LBL-44789 WINDOW 5.0 computer program for the following methodologies:
    - a. U-Factors: NFRC 100 expressed as Btu/ sq. ft. x h x deg F.
    - b. Solar Heat Gain Coefficient: NFRC 200.
    - c. Solar Optical Properties: NFRC 300.

## 1.5 SUBMITTALS

- A. Product Data: For each glass product and glazing material indicated.
- B. Samples: For the following products, in the form of 12-inch- square Samples for glass and of 12-inch-long Samples for sealants. Install sealant Samples between two strips of material representative in color of the adjoining framing system.
1. Each color of tinted float glass.
  2. Ceramic-coated spandrel glass.
  3. Insulating glass for each designation indicated.
  4. For each color (except black) of exposed glazing sealant indicated.
- C. Product Certificates: Signed by manufacturers of glass and glazing products certifying that products furnished comply with requirements.
1. For solar-control low-e-coated glass, provide documentation demonstrating that manufacturer of coated glass is certified by coating manufacturer.
- D. Qualification Data: For installers.
- E. Preconstruction Adhesion and Compatibility Test Report: From glazing sealant manufacturer indicating glazing sealants were tested for adhesion to glass and glazing channel substrates and for compatibility with glass and other glazing materials.
- F. Product Test Reports: For each of the following types of glazing products:
1. Tinted float glass.
  2. Coated float glass.
  3. Insulating glass.
  4. Glazing sealants.
  5. Glazing gaskets.
- G. Warranties: Special warranties specified in this Section.
- H. Meeting Records: Minutes of pre-installation conference.

## 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for this Project; whose work has resulted in glass installations with a record of

successful in-service performance; and who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program.

- B. Source Limitations for Glass: Obtain the following through one source from a single manufacturer for each glass type: Clear float glass, coated float glass, laminated glass and insulating glass.
- C. Source Limitations for Glazing Accessories: Obtain glazing accessories through one source from a single manufacturer for each product and installation method indicated.
- D. Glass Product Testing: Obtain glass test results for product test reports in "Submittals" Article from a qualified testing agency based on testing glass products.
  - 1. Glass Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.
- E. Elastomeric Glazing Sealant Product Testing: Obtain sealant test results for product test reports in "Submittals" Article from a qualified testing agency based on testing current sealant formulations within a 36-month period.
  - 1. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated, as documented according to ASTM E 548.
  - 2. Test elastomeric glazing sealants for compliance with requirements specified by reference to ASTM C 920, and where applicable, to other standard test methods.
- F. Preconstruction Adhesion and Compatibility Testing: Submit to elastomeric glazing sealant manufacturers, for testing indicated below, samples of each glazing material type, tape sealant, gasket, glazing accessory, and glass-framing member that will contact or affect elastomeric glazing sealants:
  - 1. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of glazing sealants to glass, tape sealants, gaskets, and glazing channel substrates.
  - 2. Submit not fewer than eight pieces of each type of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
  - 3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
  - 4. For materials failing tests, obtain sealant manufacturer's written instructions for corrective measures, including the use of specially formulated primers.
  - 5. Testing will not be required if elastomeric glazing sealant manufacturers submit data based on previous testing of current sealant products for adhesion to, and compatibility with, glazing materials matching those submitted.
- G. Safety Glazing Products: Comply with testing requirements in 16 CFR 1201.
  - 1. Subject to compliance with requirements, obtain safety glazing products permanently marked with certification label of the Safety Glazing Certification Council or another certification agency or manufacturer acceptable to authorities having jurisdiction.
  - 2. Where glazing units, including Kind FT and laminated glass, are specified in Part 2 articles for glazing lites more than 9 sq. ft. in exposed surface area of one side, provide glazing products that comply with Category II materials, for lites 9 sq. ft. or less in exposed surface area of one side, provide glazing products that comply with Category I or II materials, except for hazardous locations where Category II materials are required by 16 CFR 1201 and regulations of authorities having jurisdiction.
- H. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.
  - 1. GANA Publications: GANA Laminated Division's "Laminated Glass Design Guide" and GANA's "Glazing Manual."
  - 2. IGMA Publication for Insulating Glass: SIGMA TM-3000, "Glazing Guidelines for Sealed Insulating Glass Units."
- I. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of the following testing and inspecting agency:
  - 1. Insulating Glass Certification Council.

- J. Pre-Installation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination".

### **1.7 DELIVERY, STORAGE, AND HANDLING**

- A. Protect glazing materials according to manufacturer's written instructions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.
- B. For insulating-glass units that will be exposed to substantial altitude changes, comply with insulating-glass manufacturer's written recommendations for venting and sealing to avoid hermetic seal ruptures.

### **1.8 PROJECT CONDITIONS**

- A. Environmental Limitations:
1. Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.
  2. Do not install liquid glazing sealants when ambient and substrate temperature conditions are outside limits permitted by glazing sealant manufacturer or below 40 deg F.

### **1.9 WARRANTY**

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer's standard form, made out to Owner and signed by coated-glass manufacturer agreeing to replace coated-glass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.
1. Warranty Period: 10 years from date of Substantial Completion.
- C. Manufacturer's Special Warranty on Insulating Glass:
1. Manufacturer's standard form, made out to Owner and signed by insulating-glass manufacturer agreeing to replace insulating-glass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.
  2. Warranty Period: 10 years from date of Substantial Completion.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURERS**

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
  2. Basis-of-Design Product: The design for each glazing product is based on the product named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.

### **2.2 GLASS PRODUCTS**

- A. Annealed Float Glass: ASTM C 1036, Type I (transparent flat glass), Quality-Q3; of class indicated.
- B. Heat-Treated Float Glass: ASTM C 1048; Type I (transparent flat glass); Quality-Q3; of class, kind, and condition indicated.
1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed, unless otherwise indicated.
  2. Provide Kind HS (heat-strengthened) float glass in place of annealed float glass where needed to resist thermal stresses induced by differential shading of individual glass lites and to comply with glass design requirements specified in Part 1 "Performance Requirements" Article.

3. For uncoated glass, comply with requirements for Condition A.
  4. For coated vision glass, comply with requirements for Condition C (other uncoated glass).
  5. Provide Kind FT (fully tempered) float glass in place of annealed or Kind HS (heat-strengthened) float glass where safety glass is indicated.
- C. Insulating-Glass Units, General: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, and complying with ASTM E 774 for Class CBA units and with requirements specified in this Article and in Part 2 "Insulating-Glass Units" Article.
1. Provide Kind HS (heat-strengthened) float glass in place of annealed glass where needed to resist thermal stresses induced by differential shading of individual glass lites and to comply with glass design requirements specified in Part 1 "Performance Requirements" Article.
  2. Provide Kind FT (fully tempered) glass lites where safety glass is indicated.
  3. Overall Unit Thickness and Thickness of Each Lite: Dimensions indicated for insulating-glass units are nominal and the overall thicknesses of units are measured perpendicularly from outer surfaces of glass lites at unit's edge.
  4. Sealing System:
    - a. Dual seal, with primary and secondary sealants as follows:
    - b. Manufacturer's standard sealants.
  5. Spacer Specifications: Manufacturer's standard spacer material and construction.

### 2.3 GLAZING GASKETS

- A. Dense Compression Gaskets: Molded or extruded gaskets of material indicated below, complying with standards referenced with name of elastomer indicated below, and of profile and hardness required to maintain watertight seal:
1. EPDM, ASTM C 864.
  2. Silicone, ASTM C 1115.
  3. Thermoplastic polyolefin rubber, ASTM C 1115.
  4. Any material indicated above.
- B. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned gaskets of material indicated below; complying with ASTM C 509, Type II, black; and of profile and hardness required to maintain watertight seal:
1. EPDM.
  2. Silicone.
  3. Thermoplastic polyolefin rubber.
  4. Any material indicated above.
- C. Lock-Strip Gaskets: Neoprene extrusions in size and shape indicated, fabricated into frames with molded corner units and zipper lock-strips, complying with ASTM C 542, black.

### 2.4 GLAZING SEALANTS

- A. General: Provide products of type indicated, complying with the following requirements:
1. Compatibility: Select glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
  2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
  3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.

- B. Elastomeric Glazing Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
1. Neutral-Curing Silicone Glazing Sealants:
    - a. Available Products:
      - 1) Dow Corning Corporation; 791.
      - 2) Dow Corning Corporation; 795.
      - 3) GE Silicones; SilPruf NB SCS9000.
      - 4) GE Silicones; UltraPruf II SCS2900.
      - 5) Pecora Corporation; 865.
      - 6) Pecora Corporation; 895.
      - 7) Pecora Corporation; 898.
    - b. Type and Grade: S (single component) and NS (nonsag).
    - c. Class: 50.
    - d. Use Related to Exposure: NT (nontraffic).
    - e. Uses Related to Glazing Substrates: M, G, A, and, as applicable to glazing substrates indicated, O.
      - 1) Use O Glazing Substrates: Coated glass, aluminum coated with a high-performance coating, and wood.
    - f. Applications: Structural and non-structural glazing of glass and metal.
  2. Class 25 Neutral-Curing Silicone Glazing Sealant:
    - a. Available Products:
      - 1) Dow Corning Corporation; 799.
      - 2) GE Silicones; UltraGlaze SSG4000.
      - 3) GE Silicones; UltraGlaze SSG4000AC.
      - 4) Tremco; Proglaze SG.
      - 5) Tremco; Spectrem 2.
      - 6) Tremco; Tremsil 600.
    - b. Type and Grade: S (single component) and NS (nonsag).
    - c. Class: 25.
    - d. Use Related to Exposure: NT (nontraffic).
    - e. Uses Related to Glazing Substrates:
      - 1) G, A, and, as applicable to glazing substrates indicated, O.
      - 2) Use O Glazing Substrates: Coated glass, aluminum coated with a high-performance coating, and wood.
    - f. Applications: Structural and non-structural glazing of glass and metal.

## 2.5 GLAZING TAPES

- A. Back-Bedding Mastic Glazing Tapes:
1. Preformed, butyl-based elastomeric tape with a solids content of 100 percent; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in



writing by tape and glass manufacturers for application indicated; packaged on rolls with a release paper backing; and complying with ASTM C 1281 and AAMA 800 for products indicated below:

2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
- B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; packaged on rolls with release liner protecting adhesive; and complying with AAMA 800 for the following types:
1. Type 1, for glazing applications in which tape acts as the primary sealant.
  2. Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

## **2.6 MISCELLANEOUS GLAZING MATERIALS**

- A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- C. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.
- D. Spacers: Elastomeric blocks or continuous extrusions with a Shore, Type A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
- E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).
- F. Film: Provide anti-shatter film where indicated.

## **2.7 FABRICATION OF GLAZING UNITS**

Fabricate glazing units in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.

## **2.8 MONOLITHIC FLOAT-GLASS UNITS**

- A. Uncoated Clear Float-Glass Units:
1. Class 1 (clear) Kind FT (fully tempered) float glass (as manufactured by PPG)..
  2. Thickness: 6.0 mm, unless otherwise indicated.

## **2.9 INSULATING-GLASS UNITS**

- A. Clear Insulating Glass Units:
1. 1" Overall SolarBan 60 Insulating Glass Unit (as manufactured by PPG)
    - a. 1/4" Clear with VE1-2M ( low-e) coating on the #2 surface HS
    - b. 1/2" Mill Finished Airspace, Black Silicone
    - c. 1/4" Clear HS

## **2.10 SPANDREL GLASS**

- A. Spandrel Glass: 1" insulated glass unit to match PPG Solarban 60 on the exterior glass and 1/4" thick heat strengthened float glass with colored Opaci-Coat 3000 coating the back of the interior glass.
1. Color: As selected by Architect to match sample on file.
  2. Provide Low-E coating on the #2 Surface.
  3. Provide spandrel coating on the #3 Surface.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine framing glazing, with Installer present, for compliance with the following:

1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
2. Presence and functioning of weep system.
3. Minimum required face or edge clearances.
4. Effective sealing between joints of glass-framing members.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.2 PREPARATION**

Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

### **3.3 GLAZING, GENERAL**

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
- B. Glazing channel dimensions, as indicated on Drawings, provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.
- C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.
- D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction sealant-substrate testing.
- E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- G. Provide spacers for glass lites where length plus width is larger than 50 inches as follows:
  1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
  2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.
- H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.
- I. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.
- J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.
- K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

### **3.4 TAPE GLAZING**

- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.
- B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.

- C. Cover vertical framing joints by applying tapes to heads and sills first and then to jambs. Cover horizontal framing joints by applying tapes to jambs and then to heads and sills.
- D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
- E. Do not remove release paper from tape until just before each glazing unit is installed.
- F. Apply heel bead of elastomeric sealant.
- G. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
- H. Apply cap bead of elastomeric sealant over exposed edge of tape.

### **3.5 GASKET GLAZING (DRY)**

- A. Fabricate compression gaskets in lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
- B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.
- C. Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- D. Install gaskets so they protrude past face of glazing stops.

### **3.6 SEALANT GLAZING (WET)**

- A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.
- B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.
- C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

### **3.7 LOCK-STRIP GASKET GLAZING**

Comply with ASTM C 716 and gasket manufacturer's written instructions. Provide supplementary wet seal and weep system, unless otherwise indicated.

### **3.8 CLEANING AND PROTECTION**

- A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended by glass manufacturer.
- C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains; remove as recommended in writing by glass manufacturer.

- D. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.
- E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

**END OF SECTION 08 80 00**

**SECTION 09 20 99 – RESTORATION OF DECORATIVE PLASTER CEILING AND WALL SURFACES****PART 1 - GENERAL****1.1 DESCRIPTION**

This section describes the requirements for restoration of decorative plaster ceiling and wall surfaces.

**1.2 SUBMITTALS**

- A. Product Data: Manufacturer's technical data for each product to be used, including recommendations for application and use.
- B. Furnish for verification purposes prior to erection: Patching material for repairing damaged plaster.

**1.3 QUALITY ASSURANCE**

- A. Restoration Specialist: Firm having minimum 5-years' experience in comparable historic restoration Projects, employing personnel skilled in the restoration and operations specified.

**1.4 DELIVERY, STORAGE AND HANDLING**

- A. Deliver materials in manufacturer's original and unopened containers and packaging, bearing labels indicating type and names of products and manufacturers.
- B. Protect materials during storage and construction from wetting by rain or ground water, and from staining or intermixture with earth or other types of materials.
- C. Protect materials from deterioration by moisture and temperature.
  - 1. Store in a dry location or in waterproof containers.
  - 2. Keep containers tightly closed and away from open flames.
  - 3. Comply with manufacturer's recommendations for storage temperature requirements.

**1.5 PROJECT CONDITIONS**

- A. Prevent plaster materials from staining face of surrounding surfaces. Remove immediately from exposed surfaces.

**PART 2 - PRODUCTS****2.1 PLASTER MATERIALS**

- A. Provide plaster materials as required to match the appearance, including texture, of existing decorative plaster.

**PART 3 - EXECUTION****3.1 REPAIRING PLASTER WALLS AND CEILINGS**

- A. Filling cracks:
  - 1. For cracks that reopen with temperature and humidity changes, the crack shall be widened with a sharp pointed tool and then filled.
  - 2. For persistent cracks, bridge the crack with fiberglass mesh tape pressed into the patching material. After the first application of a quick setting joint compound dries, a second coat shall cover the tape, feathering at the edges. Apply a third coat to even out the surface and follow by a light sanding.
  - 3. Large cracks due to structural movement shall be repaired after repairs to the structural system have been made. The plaster on each side of the crack shall be removed to a width of approximately 6-inches down to the lath. Clean out debris and apply metal lath to the cleaned area leaving the existing wood lath in place. Patch the crack with an appropriate plaster in three layers.

## Restoration of Decorative Plaster Ceiling and Wall Surfaces

- B. Replacing delaminated areas of the Finish Coat: Paint a liquid plaster bonding agent on the areas of basecoat plaster that will be re-plastered with a new lime finish coat.
- C. Patching Holes in Walls:
  - 1. Repair small holes less than 4-inches in diameter in two applications. Trowel-apply a layer of base coat plaster and scrape back below the level of the existing plaster. When the base coat has set but before it dries, apply more plaster to create a smooth, level surface.
  - 2. For larger holes where three coats of plaster are damaged or missing down to the lath, remove the old plaster and re-attach any loose lath. Apply plaster in 3 layers lapping each new layer over the old plaster so that old and new are evenly joined.
  - 3. If a patch is made in a plaster wall that is slightly wave, the contour of the patch shall conform to the irregularities of the existing work.
- D. Patching Holes in Ceilings: Examine the plaster around the loose plaster. If the surrounding areas are in reasonably good condition, the loose plaster can be re-attached to the lath using flathead wood screw and plaster washers. To patch a hole in the ceiling plaster, fasten metal lath over the wood lath and fill the hole with successive layers of plaster.
- E. Establishing New Plaster Keys:
  - 1. If the back of the ceiling lath is accessible, small areas of bowed out plaster can be pushed back against the lath.
  - 2. After dampening the old lath, and coating the damaged area with a bonding agent, a liquid plaster mix with glue size retardant added shall be applied to the backs of the lath and worked into the voids between the faces of the lath and the back of the plaster. While the first layer is still damp, plaster-soaked strips of jute scrim shall be laid across the backs of the lath and pressed firmly into the first layer as reinforcement.
  - 3. Loose, damaged plaster can also be re-keyed when the goal is to conserve decorative surfaces or wallpaper.
- F. Plaster Patching Materials: Plaster shall be determined by the plasterer.

**END OF SECTION 09 20 99**

**SECTION 09 22 16 – NON-STRUCTURAL METAL FRAMING****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes non-load-bearing steel framing members for the following applications:
  - 1. Interior framing systems (e.g., supports for partition walls, framed soffits, furring, etc.).
  - 2. Interior suspension systems (e.g., supports for ceilings, suspended soffits, etc.).
- B. Related Sections include the following:
  - 1. Division 05 Section "Cold-Formed Metal Framing" for exterior non-load-bearing wall studs.
  - 2. Division 07 Section "Fire-Resistive Joint Systems" for head-of-wall joint systems installed with non-load-bearing steel framing.

**1.3 SUBMITTALS**

- A. Product Data: For each type of product indicated.
- B. Shop Drawings:
  - 1. Show layout, spacings, sizes, thicknesses, and types of steel framing; fabrication; and fastening and anchorage details, including mechanical fasteners.
  - 2. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining Work.

**1.4 QUALITY ASSURANCE**

- A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- B. 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.

**PART 2 - PRODUCTS****2.1 NON-LOAD-BEARING STEEL FRAMING, GENERAL**

- A. 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, G40, hot-dip galvanized, unless otherwise indicated.

**2.2 SUSPENSION SYSTEM COMPONENTS**

- A. Tie Wire: ASTM A 641, Class 1 zinc coating, soft temper, 0.0625-inch- diameter wire, or double strand of 0.0475-inch- diameter wire.

## Non-Structural Metal Framing

## 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. Type shall be cast-in-place anchor, designed for attachment to concrete forms, or postinstalled expansion anchor.

## C. Wire Hangers: ASTM A 641, Class 1 zinc coating, soft temper, 0.162-inch diameter.

## D. Carrying Channels:

1. Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.0538 inch and minimum 1/2-inch- wide flanges.
2. Depth: 2-1/2 inches, unless otherwise indicated.

## E. Furring Channels (Furring Members):

1. Cold-Rolled Channels: 0.0538-inch bare-steel thickness, with minimum 1/2-inch- wide flanges, 3/4 inch deep.
2. Steel Studs: ASTM C 645.
  - a. Minimum Base-Metal Thickness: 0.0179 inch, unless otherwise indicated.
  - b. Depth: 2-1/2 inches, unless otherwise indicated.
3. Hat-Shaped, Rigid Furring Channels:
  - a. ASTM C 645, 7/8 inch deep.
  - b. Minimum Base Metal Thickness: 0.0179 inch, unless otherwise indicated.
4. Resilient Furring Channels:
  - a. 1/2-inch-deep members designed to reduce sound transmission.
  - b. Configuration: Hat shaped.

**2.3 STEEL FRAMING FOR FRAMED ASSEMBLIES**

## A. Steel Studs and Runners: ASTM C 645.

1. Minimum Base-Metal Thickness: 0.0179 inch, unless otherwise indicated.
2. Depth: As indicated on Drawings.

## B. Slip-Type Head Joints: Where indicated, provide the following:

1. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.

## C. Hat-Shaped, Rigid Furring Channels: ASTM C 645.

1. Minimum Base Metal Thickness: 0.0179 inch, unless otherwise indicated.
2. Depth: As indicated on Drawings.

## D. Resilient Furring Channels:

1. 1/2-inch-deep, steel sheet members designed to reduce sound transmission.
2. Configuration: Asymmetrical.

## E. Cold-Rolled Furring Channels: 0.0538-inch bare-steel thickness, with minimum 1/2-inch- wide flanges.



## Non-Structural Metal Framing

1. Depth: 3/4 inch.
2. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with minimum bare-steel thickness of 0.0312 inch.
3. 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.

**2.4 AUXILIARY MATERIALS**

- A. General: Provide auxiliary materials that comply with referenced installation standards.
- B. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- C. 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.

**PART 3 - EXECUTION****3.1 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. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.2 PREPARATION**

- A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.
- B. Coordination with Sprayed Insulation Materials:
  1. Before sprayed insulation materials are applied, attach offset anchor plates or ceiling runners (tracks) to surfaces indicated to receive sprayed materials. Where offset anchor plates are required, provide continuous plates fastened to building structure not more than 24 inches o.c.
  2. After sprayed materials are applied, remove them only to extent necessary for installation of non-load-bearing steel framing. Do not reduce thickness of insulation materials below that required for insulation ratings indicated. Protect adjacent materials from damage.

**3.3 INSTALLATION, GENERAL**

- A. Installation Standard:
  1. ASTM C 754, except comply with framing sizes and spacing indicated.
  2. 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.

### 3.4 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.
  - 2. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
  - 3. 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.
  - 4. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.
  - 5. 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.
  - 6. Do not attach hangers to steel roof deck.
  - 7. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
  - 8. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
  - 9. Do not connect or suspend steel framing from ducts, pipes, or conduit.
- D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.
- E. 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.

### 3.5 INSTALLING FRAMED ASSEMBLIES

- 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 as follows:
    - a. Single-Layer Application: 16 inches o.c., unless otherwise indicated.
    - b. Multilayer Application: 16 inches o.c., unless otherwise indicated.
    - c. Tile backing panels: 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.

## Non-Structural Metal Framing

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.
  5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
  6. Direct Furring: Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.
- D. 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.

**END OF SECTION 09 22 16**

**SECTION 09 29 00 – GYPSUM BOARD****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

A. This Section includes the following:

1. Interior gypsum board.
2. Tile backing panels.

B. Related Sections include the following:

1. Division 05 Section "Cold-Formed Metal Framing" for exterior non-load-bearing wall studs that support gypsum board.
2. Division 06 Section "Sheathing" for gypsum sheathing.
3. Division 07 Section "Building Insulation" for insulation installed in assemblies that incorporate gypsum board.
4. Division 07 Section "Fire-Resistive Joint Systems" for head-of-wall assemblies that incorporate gypsum board.
5. Division 09 Section "Non-Structural Metal Framing" for non-structural framing and suspension systems that support gypsum board.

**1.3 SUBMITTALS**

A. Product Data: For each type of product indicated.

B. Samples: For trim accessories; Full-size Sample in 12-inch-long length for each trim accessory indicated.

**1.4 QUALITY ASSURANCE**

A. 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.

B. 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.

**1.5 STORAGE AND HANDLING**

A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.

B. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent sagging.

**1.6 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 splotchy surface contamination and discoloration.

## **PART 2 - PRODUCTS**

### **2.1 PANELS, GENERAL**

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

### **2.2 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. Available Manufacturers: Subject to compliance with requirements, manufacturers offering gypsum board and related products that may be incorporated into the Work include, but are not limited to, the following:
    - a. American Gypsum Co.
    - b. G-P Gypsum.
    - c. National Gypsum Company.
    - d. USG Corporation.
- B. Regular Type:
  1. Thickness: 5/8 inch, unless otherwise indicated.
  2. Long Edges: Tapered and featured (rounded or beveled) for prefilling.
  3. Location: Vertical surfaces, unless otherwise indicated.
- C. Type X:
  1. Thickness: 5/8 inch.
  2. Long Edges: Tapered and featured (rounded or beveled) for prefilling.
  3. Location: Where required for fire-resistance-rated assembly.
- D. Type C:
  1. Thickness: 5/8 inch, unless otherwise indicated.
  2. Long Edges: Tapered and featured (rounded or beveled) for prefilling.
  3. Location: As indicated and where required for specific fire-resistance-rated assembly indicated.
- E. Sag-Resistant Gypsum Wallboard: ASTM C 36, manufactured to have more sag resistance than regular-type gypsum board.
  1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
    - a. American Gypsum Co.; Interior Ceiling Board.
    - b. National Gypsum Company; ½" High Strength Ceiling Board.
    - c. United States Gypsum Co.; SHEETROCK Brand Sag-Resistant Interior Gypsum Ceiling Board.
  2. Thickness: 1/2 inch, unless otherwise indicated.
  3. Long Edges: Tapered and featured (rounded or beveled) for prefilling.
  4. Location: Ceiling surfaces, unless otherwise indicated.

- F. Moisture-Resistant Type: With moisture-resistant core and surfaces.
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
    - a. American Gypsum Co.; Aquabloc.
    - b. National Gypsum Company; Gold Bond Moisture Resistant Board.
    - c. United States Gypsum Co.; SHEETROCK Brand Water-Resistant Board.
  2. Thickness: 5/8 inch, Type X where required.
  3. Long Edges: Tapered and featured (rounded or beveled) for prefilling.
  4. Location: Toilet room wall not receiving tile, unless otherwise indicated.
- G. Moisture- and Mold-Resistant Type: With moisture- and mold-resistant core and surfaces.
1. Available Product: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, "SHEETROCK Brand Humitek Gypsum Panels" manufactured by United States Gypsum Co.
  2. Thickness: 5/8 inch, Type X where required.
  3. Long Edges: Tapered and featured (rounded or beveled) for prefilling.
  4. Location: Inside face of exterior walls, unless otherwise indicated.

### **2.3 TILE BACKING PANELS**

- A. Panel Size: Provide in maximum lengths and widths available that will minimize joints in each area and correspond with support system indicated.
- B. Glass-Mat, Water-Resistant Backing Board: ASTM C 1178.
1. Available Product: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, "Dens-Shield Tile Backer" manufactured by G-P Gypsum Corp.
  2. Thickness: 1/2 inch, Type X where required.
  3. Location: Walls receiving tile finish.

### **2.4 POURED IN PLACE TERRAZZO BASE BACKING PANELS**

- A. Cementitious Backer Units: ANSI A118.9.
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, "DUROCK Cement Board" manufactured by United States Gypsum Co.
  2. Thickness: 1/2 inch.

### **2.5 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. Expansion (control) joint.
    - c. Curved-Edge Cornerbead: With notched or flexible flanges.
- B. Aluminum Trim: Extruded accessories of profiles and dimensions indicated.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, 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.

## **2.6 JOINT TREATMENT MATERIALS**

- A. General: Comply with ASTM C 475/C 475M.
- B. Joint Tape:
  1. Interior Gypsum Wallboard: Paper.
  2. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
  3. Tile Backing Panels: As recommended by panel manufacturer.
- 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, rounded or beveled panel edges, 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.
  3. Fill Coat: For second coat, use setting-type, sandable topping compound.
  4. Finish Coat: For third coat, use drying-type, all-purpose compound.
- D. Joint Compound for: Glass-Mat, Tile Backing, Water-Resistant Backing Panel: As recommended by backing panel manufacturer.

## **2.7 AUXILIARY MATERIALS**

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- 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.
  2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames and 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.

### **3.2 APPLYING AND FINISHING PANELS, GENERAL**

- A. Gypsum Board Application and Finishing Standards: ASTM C 840 and GA-216.

- B. Install sound attenuation blankets and building insulation before installing gypsum panels, unless blankets are readily installed after panels have been installed on one side.
- C. 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.
- D. 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.
- E. 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.
- F. Form control and expansion joints with space between edges of adjoining gypsum panels.
- G. 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.
- H. 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.
- I. Attachment to Steel Framing:
  - 1. Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
  - 2. Attach gypsum panels to framing provided at openings and cutouts.
- J. 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.
- K. Space fasteners in gypsum panels according to referenced gypsum board application and finishing standard and manufacturer's written recommendations.
- L. Space fasteners in panels that are tile substrates a maximum of 8 inches o.c.

### 3.3 APPLYING INTERIOR GYPSUM BOARD

- A. 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 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 cold-formed metal framing with steel drill screws.
- B. Multilayer Application:
1. On ceilings, apply gypsum board indicated for base layers before applying base 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 cold-formed metal framing with screws.
- C. 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. Fastening Methods: Fasten base layers and face layers separately to cold-formed metal framing with screws.

### **3.4 APPLYING TILE BACKING PANELS**

- A. Glass-Mat, Water-Resistant Backing Panel: Comply with manufacturer's written installation instructions and install at locations indicated to receive tile. Install with 1/4-inch gap where panels abut other construction or penetrations.
- B. Areas Not Subject to Wetting: Install regular-type gypsum wallboard panels to produce a flat surface except at showers, tubs, and other locations indicated to receive water-resistant panels.
- C. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.
- D. Fastening Methods: Fasten base layers and face layers separately to cold-formed metal framing with screws.

### **3.5 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 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, unless otherwise indicated.
  2. Curved-Edge Cornerbead: Use at curved openings.

### **3.6 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, rounded or beveled edges, 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 5: At panel surfaces that will be exposed to view, unless otherwise indicated.  
Level 5 quality is defined by the industry as having "no marks and no ridges". All finished gypsum board surfaces will be reviewed with a variable direction light source to locate all imperfections, corrected and completed to painting.
- E. Glass-Mat, Water-Resistant Backing Panels: Finish according to manufacturer's written instructions.

### **3.7 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 09 29 00**

**SECTION 09 51 23 - ACOUSTICAL TILE CEILINGS****PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section includes acoustical tiles and concealed suspension systems for ceilings.

**1.2 SUBMITTALS**

- A. Product Data: For each type of product indicated.
- B. Coordination Drawings: Drawn to scale and coordinating acoustical tile ceiling installation with hanger attachment to building structure and ceiling mounted items. Show size and location of initial access modules.
- C. Samples: For each exposed finish.
- D. Product test reports.
- E. Research/evaluation reports.
- F. Maintenance data.

**1.3 QUALITY ASSURANCE**

- A. Acoustical Testing Agency Qualifications: An independent testing laboratory, or an NVLAP-accredited laboratory.
- B. Installer Qualifications: Firm with not less than 3 years of successful experience in installation of acoustical ceilings similar to this project.
- C. Fire-Test-Response Characteristics:
  - 1. Fire-Resistance Characteristics: Where indicated, provide acoustical tile ceilings identical to those of assemblies tested for fire resistance per ASTM E 119 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
    - a. Identify materials with appropriate markings of applicable testing and inspecting agency.
    - b. Fire Resistance Ratings: Indicated by design designations from UL's "fire Resistance directory" or from listings of another testing and inspecting agency.
  - 2. Surface-Burning Characteristics: Acoustical tiles complying with ASTM E 1264 for Class [A] materials, when tested per ASTM E 84.
    - a. Smoke-Developed Index: 450 or less.
- D. Seismic Standard: Comply with the following:

1. ASCE 7, "Minimum Design Loads for Buildings and Other Structures": Section 9, "Earthquake Loads."
- E. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- F. Preinstallation Conference: Conduct conference at Project site
- G. Single-Source Responsibility for Ceiling Units: Obtain each type of acoustical ceiling unit from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.
- H. Single-Source Responsibility for Suspension System: Obtain each type of suspension system from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.
- I. Coordination of Work: Coordinate layout and installation of acoustical ceiling units and suspension system components with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system components, and partition system.

#### **1.4 EXTRA MATERIALS**

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Acoustical Ceiling Units: Full-size tiles equal to 2% percent of quantity installed.
  2. Suspension System Components: Quantity of each concealed grid and exposed component equal to 2% percent of quantity installed.

### **PART 2 - PRODUCTS**

#### **2.1 ACOUSTICAL TILE CEILINGS, GENERAL**

- A. Acoustical Tile Standard: Comply with ASTM E 1264.
- B. Metal Suspension System Standard: Comply with ASTM C 635.
- C. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.
- D. Wire Hangers, Braces, and Ties: Zinc-coated carbon-steel wire; ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
1. Size: Select wire diameter so its stress at 3times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch- (2.69-mm-) diameter wire.
- E. Seismic struts and seismic clips.

- F. Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension system runners.

**2.2 ACOUSTICAL TILES FOR ACOUSTICAL TILE CEILING** Refer to Reflected Ceiling plans for location

- A. Basis-of-Design Product: Armstrong, Ultima Scored 24" x 48" Beveled Tegular - As shown in the finish schedule or a comparable product by one of the following:

1. BPB USA
2. Armstrong World Industries;

Do not assume that every combination of fire-resistance rating, classification, color, light reflectance, acoustical rating, edge detail, thickness, and size listed under each product description is available. Before selecting options below to insert salient characteristics, verify availability with manufacturers' product data.

- B. Classification: Provide panels tiles complying with ASTM E 1264 for type and form as follows:

1. Type and Form: Type III, mineral base with painted finish; Form 2, Pattern CE, Fire Class A.

- C. Color: White

- D. LR: Not less than 0.83

- E. NRC: Not less than .50 Type E-400 mounting per ASTM E 795.

- F. CAC: Not less than 33

- G. Edge/Joint Detail: Beveled Tegular

- H. Thickness: 5/8"

**2.3 ACOUSTICAL TILES FOR ACOUSTICAL TILE CEILING – ACT 2**

- A. Basis-of-Design Product: Armstrong, Dune 24" x 24" Ceramaguard Fine Fissured - As shown in the finish schedule or a comparable product by one of the following:

1. BPB USA
2. Armstrong World Industries;

Do not assume that every combination of fire-resistance rating, classification, color, light reflectance, acoustical rating, edge detail, thickness, and size listed under each product description is available. Before selecting options below to insert salient characteristics, verify availability with manufacturers' product data.

- B. Classification: Provide panels tiles complying with ASTM E 1264 for type and form as follows:

1. Type and Form: Type XX, other types: described as high-density, ceramic- and mineral-base panels with scrubbable finish, resistant to heat, moisture, and corrosive fumes. Pattern CE, Fire Class A.

- C. Color: White

- D. LR: Not less than 0.82
- E. NRC: Not less than .55 Type E-400 mounting per ASTM E 795.
- F. CAC: Not less than 38
- G. Edge/Joint Detail: Square
- H. Thickness: 5/8"

#### **2.4 ACOUSTICAL TILES FOR EXTERIOR PANEL CEILING**

- A. Basis-of-Design Product: Subject to compliance with requirements, provide MetalWorks Vector Exterior with Premium Perforation pattern #107 (round-straight holes .157" and 26.9% area) by Armstrong World Industries or a comparable product by one of the following:
  - 1. BPB USA
  - 2. CertainTeed
  - 3. USG Interiors, Inc.; Subsidiary of USG Corporation
- B. Classification: Provide panels tiles complying with ASTM E 1264 for type and form as follows:
  - 1. Type and Form: Type XX, Pattern C, Fire Class A.
- C. Color: Silver Grey
- D. LR: Not less than 0.61
- E. NRC: Not less than .65 Type E-400 mounting per ASTM E 795.
- F. CAC: Not less than 31
- G. Edge/Joint Detail: Reveal sized to fit flange of exposed suspension system members.
- H. Thickness: .21 inches
- I. Modular Size: 24 by 24 inches
- J. Performance Requirements: UL 580 and Class 30 Wind Uplift Requirements.

#### **2.4 METAL SUSPENSION SYSTEM FOR ACOUSTICAL TILE CEILING**

- A. Basis-of-Design Product: Subject to compliance with requirements, provide 15/16" White Exposed Tee System by USG or a comparable product by one of the following:
  - 1. BPB USA
  - 2. Armstrong World Industries
- B. Direct-Hung, Suspension System: Intermediate duty structural classification.

- C. Access: Upward, with each access unit identified by manufacturer's standard unobtrusive markers.

## 2.5 METAL SUSPENSION SYSTEM FOR EXTERIOR PANEL CEILING

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Prelude XL 15/16" for Exterior Applications by Armstrong World Industries or a comparable product by one of the following:
1. CertainTeed Corp.
  2. Chicago Metallic Corporation.
  3. USG Interiors, Inc.; Subsidiary of USG Corporation.
- B. Components: All main beams and cross tees shall be commercial quality hot-dipped galvanized (galvanized steel, aluminum, or stainless steel) as per ASTM A653. Main beams and cross tees are double-web steel construction with type exposed flange design. Exposed surfaces chemically cleansed, capping pre-finished galvanized steel (aluminum or stainless steel) in baked polyester paint. Main beams and cross tees shall have rotary stitching (exception: extruded aluminum or stainless steel).
1. Structural Classification: ASTM C635 HD.
  2. Color: Silver Grey.
- C. Attachment Devices: Size for five times design load indicated in ASTM C635, Table 1, Direct Hung unless otherwise indicated.
- D. Wire for Hangers and Ties: ASTM A641, Class 1 zinc coating, soft temper, pre-stretched, with a yield stress load of at least three times design load, but not less than 12 gauge.
- E. Edge Moldings and Trim: Metal or extruded aluminum of types and profiles indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations, including light fixtures, that fit type of edge detail and suspension system indicated. Provide moldings with exposed flange of the same width as exposed runner.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Comply with ASTM C 636 and seismic design requirements indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- B. Measure each ceiling area and establish layout of acoustical tiles to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width tiles at borders.
- C. Suspend ceiling hangers from building's structural members, plumb and free from contact with insulation or other objects within ceiling plenum. Splay hangers only where required and, if permitted with fire-resistance-rated ceilings, to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers, use trapezes or equivalent devices. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.

1. Do not support ceilings directly from permanent metal forms or floor deck; anchor into concrete slabs.
  2. Do not attach hangers to steel deck tabs or to steel roof deck.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical tile ceiling area and where necessary to conceal edges of acoustical tiles. Screw attach moldings to substrate at intervals not more than 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3.2 mm in 3.6 m). Miter corners accurately and connect securely.
- E. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- F. Install acoustical tiles in coordination with suspension system and exposed moldings and trim. Place splines or suspension system flanges into kerfed edges so tile-to-tile joints are closed by double lap of material.

**END OF SECTION 09 51 23**



**SECTION 09 65 13 - RESILIENT BASE AND ACCESSORIES****PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes:
  - 1. Resilient base.

**1.2 SUBMITTALS**

- A. Product Data: For each type of product indicated.
- B. Samples: For each type of product indicated, in manufacturer's standard-size Samples but not less than 12 inches (300 mm) long, of each resilient product color, texture, and pattern required.

**1.3 QUALITY ASSURANCE**

- A. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
  - 1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

**1.4 PROJECT CONDITIONS**

- A. Maintain ambient temperatures within range recommended by manufacturer in spaces to receive resilient products.
- B. Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer.
- C. Install resilient products after other finishing operations, including painting, have been completed.

**PART 2 - PRODUCTS****2.1 RESILIENT BASE**

- A. Resilient Base:
  - 1. Manufacturers: Subject to compliance with requirements, provide the following:
    - a. As shown in the finish schedule and finish material legend on the Drawings.

## Resilient Base and Accessories

- B. Resilient Base Standard: ASTM F 1861.
  - 1. Material Requirement: Type TP (rubber, thermoplastic)
  - 2. Manufacturing Method: Group I (solid, homogeneous)
  - 3. Style: Cove (base with toe)]
- C. Minimum Thickness: 0.125 inch
- D. Height: 4 inches (102 mm)
- E. Lengths: Cut lengths 48 inches long or coils in manufacturer's standard length
- F. Outside Corners: Preformed
- G. Inside Corners: Job formed
- H. Finish: As selected by Architect from manufacturer's full range
- I. Colors and Patterns: As selected from manufacturer's full range.

**2.2 INSTALLATION MATERIALS**

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.
  - 1. Use adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
    - a. Cove Base Adhesives: Not more than 50 g/L.
    - b. Rubber Floor Adhesives: Not more than 60 g/L.
- C. Metal Edge Strips: Extruded aluminum with mill finish of width shown, of height required to protect exposed edges of tiles, and in maximum available lengths to minimize running joints.
- D. Floor Polish: Provide protective liquid floor polish products as recommended by resilient stair tread manufacturer.

**PART 3 - EXECUTION****3.1 PREPARATION**

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
- B. Concrete Substrates: Prepare according to ASTM F 710.
  - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

## Resilient Base and Accessories

2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer.
4. Moisture Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
  - a. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
  - b. Perform relative humidity test using in situ probes, ASTM F 2170. Proceed with installation only after substrates have maximum 75 percent relative humidity level measurement.
- C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.
- D. Do not install resilient products until they are same temperature as the space where they are to be installed.
  1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.
- E. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

**3.2 RESILIENT BASE INSTALLATION**

- A. Comply with manufacturer's written instructions for installing resilient base.
- B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
- C. Install resilient base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.
- D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- E. Do not stretch resilient base during installation.

**3.3 RESILIENT ACCESSORY INSTALLATION**

- A. Comply with manufacturer's written instructions for installing resilient accessories.
- B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of [carpet] [resilient floor covering] that would otherwise be exposed.

**3.4 CLEANING AND PROTECTION**

- A. Comply with manufacturer's written instructions for cleaning and protection of resilient products.

- B. Floor Polish: Remove soil, visible adhesive, and surface blemishes from resilient stair treads before applying liquid floor polish.
  - 1. Apply two coat(s).
- C. Cover resilient products until Substantial Completion.

**END OF SECTION 09 65 13**

**SECTION 09 65 19 - RESILIENT TILE FLOORING****PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes:
  - 1. Solid vinyl floor tile.
  - 2. Vinyl composition floor tile.
  - 3. Luxury vinyl floor tile.

**1.2 SUBMITTALS**

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each type of floor tile. Include floor tile layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
- C. Samples: Full-size units of each color and pattern of floor tile required.
- D. Maintenance data.

**1.3 QUALITY ASSURANCE**

- A. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
  - 1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

**1.4 PROJECT CONDITIONS**

- A. Maintain ambient temperatures within range recommended by manufacturer in spaces to receive floor tile.
- B. Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer.
- C. Close spaces to traffic during floor tile installation.
- D. Close spaces to traffic for 48 hours after floor tile installation.
- E. Install floor tile after other finishing operations, including painting, have been completed.

**PART 2 - PRODUCTS****2.1 VINYL COMPOSITION FLOOR TILE**

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product named on the Drawings or a comparable product by one of the following:
  - 1. Azrock
  - 2. Mannington
  - 3. Tarkett
  - 4. Armstrong
- B. Tile Standard: ASTM F 1066, Class 2, through-pattern tile.
- C. Wearing Surface: Smooth.
- D. Thickness: 0.125 inch.
- E. Size: 12 by 12 inches.
- F. Color and Patterns: As selected by Architect from full range of industry colors.
- G. Location: Refer to Flooring Schedule and Floor Finish Plan on the Drawings.

**2.2 LUXURY VINYL TILE**

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product named on the Drawings or a comparable product by one of the following:
  - 1. Mohawk
  - 2. Azrock
  - 3. Mannington
  - 4. Tarkett
  - 5. Armstrong
- B. Tile Classification: ASTM F1700-Class III, loose lay resilient tile.
- C. Wearing Surface: Embossed
- D. Thickness: .20"
- E. Sizes: as shown on the drawings.
- F. As selected by Architect from full range of industry colors.
- G. Location: Refer to flooring schedule and finish floor plan on the drawings.

**2.3 EXTRA MATERIALS**

- A. Furnish extra materials described below, before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Carpet Tile: Full-size units equal to 10 percent of amount installed for each type indicated, but not less than 10 sq. yd.

**2.4 INSTALLATION MATERIALS**

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by manufacturer to suit floor tile and substrate conditions indicated.
  - 1. Use adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
    - a. Vinyl Composition Floor Tile Adhesives: Not more than 50 g/L.
    - b. Rubber Floor Tile Adhesives: Not more than 60 g/L.
- C. Floor Polish: Provide protective liquid floor polish products as recommended by manufacturer.

**PART 3 - EXECUTION****3.1 PREPARATION**

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
- B. Concrete Substrates: Prepare according to ASTM F 710.
  - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
  - 2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
  - 3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
  - 4. Moisture Testing: Perform tests recommended by floor covering manufacturer and as follows. Proceed with installation only after substrates pass testing.
    - a. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m in 24 hours.
    - b. Perform relative humidity test using in situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 75% relative humidity level measurement.
- C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.
- D. Do not install floor tiles until they are same temperature as space where they are to be installed.
  - 1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.
- E. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

**3.2 FLOOR TILE INSTALLATION**

- A. Comply with manufacturer's written instructions for installing floor tile.
- B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
  - 1. Lay tiles as pattern indicates on floor pattern drawing.
- C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
  - 1. Lay tiles as pattern indicates on floor pattern drawing.
- D. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.
- E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.
- F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent, nonstaining marking device.
- G. Adhere floor tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

### **3.3 CLEANING AND PROTECTION**

- A. Comply with manufacturer's written instructions for cleaning and protection of floor tile.
- B. Floor Polish: Remove soil, visible adhesive, and surface blemishes from floor tile surfaces before applying liquid floor polish.
  - 1. Apply two coat(s).
- C. Cover floor tile until Substantial Completion.

**END OF SECTION 09 65 19**



**SECTION 09 66 00 - TERRAZZO FLOORING****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
1. Provide and install terrazzo flooring.
  2. Provide and install metal base beads.

**1.2 SUBMITTALS**

- A. First four paragraphs below are defined in Division 01 Section "Submittal Procedures" as "Action Submittals."
1. Product Data: For each type of product indicated.
    - a. Shop Drawings: For each type of floor tile. Include floor tile layouts, edges, doorways, and cutouts.
    - b. First paragraph below assumes manufacturer's standard-size Samples are acceptable. Revise to suit Project.
    - c. Samples: Full-size units 6"x6", 3 color and pattern samples to select for best match to existing terrazzo.
    - d. Remaining paragraph is defined in Division 01 Section "Submittal Procedures" as an "Informational Submittal."
    - e. Maintenance data.

**1.2 PROJECT CONDITIONS**

1. Maintain ambient temperatures within range recommended by manufacturer in spaces to receive flooring.
2. Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer.
3. Close spaces to traffic during flooring installation.
4. Close spaces to traffic for 48 hours after floor tile installation.
5. Install flooring after other finishing operations, including painting, have been completed.

**PART 2 PRODUCTS****2.1 MATERIALS**

- A. Thin-Set Epoxy Terrazzo:
1. Manufacturers: Key.
  2. Aggregate: Sound crushed marble chips.
  3. Finishing Grout: Resin-based pigmented grout.
  4. Matrix: Epoxy resin terrazzo mix.
  5. Terrazzo Base: Coved profile, integral.
  6. Auxiliary Materials:
    - a. Primer
    - b. Crack suppression membrane.
    - c. Control joint strips.
    - d. Terrazzo sealer.

**PART 3 – EXECUTION****3.1 INSPECTION**

- A. Examine areas to receive terrazzo for:
  - 1. Cracks in existing concrete floor slab to need repair.
  - 2. Preparation and cleaning of slab prior to installation of epoxy terrazzo.
- B. Start work only after all defects have been corrected by others.

**3.2 INSTALLATION**

- A. Subfloor
  - 1. Prepare substrate to receive epoxy terrazzo in accordance with manufacturer's recommendations.
  - 2. Install control joints and divider strips as indicated on drawings.
- B. Placing terrazzo:
  - 1. Prime substrate in accordance with manufacturer's recommendations.
  - 2. Place terrazzo mixture in panels formed by divider strips. Trowel mixture to top of strips.
- C. Finishing:
  - 1. Rough grinding:
    - a. Grind with 24 or finer grit stones or with comparable diamond plates.
    - b. Follow initial grind with 80 or finer grit stones.
  - 2. Grouting:
    - a. Cleanse terrazzo with clean water and rinse.
    - b. Remove excess rinse water and hand apply grout using identical color as used in topping, taking care to fill voids.
  - 3. Cure grout.
  - 4. Fine grinding:
    - a. Grind with 80 or finer grit stones until all grout is removed from surface.
    - b. Upon completion, terrazzo shall show a minimum of 70% marble chips.
- D. Cleaning and sealing:
  - 1. Wash all surfaces with a neutral cleaner.
  - 2. Rinse with clean water and allow surface to dry.
  - 3. Apply sealer in accordance with manufacturer's directions.
- E. Protection:
  - 1. Upon completion, the work shall be ready for final inspection and acceptance by the Owner or his Agent.
  - 2. The General Contractor shall protect the finished work from the time that the terrazzo contractor completes the work.

**END OF SECTION 09 66 00**

**SECTION 09 68 13 - TILE CARPETING****PART 1 - GENERAL****1.01 SUMMARY**

- A. This Section includes carpet tile and installation.

**1.02 SUBMITTALS**

- A. Product Data: For each type of product indicated. Include manufacturer's written data on physical characteristics, durability, and fade resistance. Include installation methods.
- B. Samples: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.
1. Carpet Tile: Full-size Sample.
  2. Exposed Edge Stripping and Accessory: 12-inch-long Samples.
- C. Product Schedule: Use same room and product designations indicated on Drawings and in schedules.
- D. Maintenance Data: For carpet tile to include in maintenance manuals specified in Division 1. Include the following:
1. Methods for maintaining carpet tile, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule.
  2. Precautions for cleaning materials and methods that could be detrimental to carpet tile.

**1.03 QUALITY ASSURANCE**

- A. Installer Qualifications: An experienced installer who is certified by the Floor Covering Installation Board or who can demonstrate compliance with its certification program requirements.
- B. Fire-Test-Response Characteristics: Provide products with the critical radiant flux classification indicated in Part 2, as determined by testing identical products per ASTM E 648 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
- C. Product Options: Products and manufacturers named in Part 2 establish requirements for product quality in terms of appearance, construction, and performance. Other manufacturers' products comparable in quality to named products and complying with requirements may be considered. Refer to Division 1 Section "Substitutions."

**1.04 DELIVERY, STORAGE, AND HANDLING**

- A. General: Comply with CRI 104, Section 5, "Storage and Handling."

**1.05 PROJECT CONDITIONS**

- A. General: Comply with CRI 104, Section 6.1, "Site Conditions; Temperature and Humidity."
- B. Environmental Limitations: Do not install carpet tile until wet work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
- C. Do not install carpet tile over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive and concrete slabs have pH range recommended by carpet tile manufacturer.

- D. Where demountable partitions or other items are indicated for installation on top of carpet tile, install carpet tile before installing these items.

#### **1.06 WARRANTY**

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Special Carpet Tile Warranty: Written warranty, signed by carpet tile manufacturer agreeing to replace carpet tile that does not comply with requirements or that fails within specified warranty period. Warranty does not include deterioration or failure of carpet tile due to unusual traffic, failure of substrate, vandalism, or abuse. Failures include, but are not limited to, more than 10 percent loss of face fiber, edge raveling, snags, runs, and delamination.
1. Warranty Period: 10 years from date of Substantial Completion.

#### **1.07 EXTRA MATERIALS**

- A. Furnish extra materials described below, before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Carpet Tile: Full-size units equal to 10 percent of amount installed for each type indicated, but not less than 10 sq. yd.

### **PART 2 - PRODUCTS**

#### **2.01 CARPET TILE**

- A. Product: As shown on the Floor Finish Plan Drawings.

#### **2.02 INSTALLATION ACCESSORIES**

- A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided by or recommended by carpet tile manufacturer.
- B. Adhesives: Water-resistant, mildew-resistant, nonstaining type to suit products and subfloor conditions indicated, that complies with flammability requirements for installed carpet tile and that is recommended by carpet tile manufacturer.

### **PART 3 - EXECUTION**

#### **3.01 EXAMINATION**

- A. Examine substrates, areas, and conditions for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet tile performance. Verify that substrates and conditions are satisfactory for carpet tile installation and comply with requirements specified.
- B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:
1. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by carpet tile manufacturer.
  2. Subfloor finishes comply with requirements specified in Section 03300 - Cast-in-Place Concrete for slabs receiving carpet tile.

3. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.02 PREPARATION**

- A. General: Comply with CRI 104, Section 6.2, "Site Conditions; Floor Preparation," and carpet tile manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile installation.
- B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.
- C. Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by carpet tile manufacturer.
- D. Broom and vacuum clean substrates to be covered immediately before installing carpet tile. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.03 INSTALLATION**

- A. General: Comply with CRI 104, Section 13, "Carpet Modules (Tiles)."
- B. Installation Method: As recommended in writing by carpet tile manufacturer for glue-down; install every tile with releasable adhesive.
- C. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.
- D. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- E. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use nonpermanent, nonstaining marking device.
- F. Install pattern parallel to walls and borders.

### **3.04 CLEANING AND PROTECTION**

- A. Perform the following operations immediately after installing carpet tile:
1. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet tile manufacturer.
  2. Remove yarns that protrude from carpet tile surface.
  3. Vacuum carpet tile using commercial machine with face-beater element.
- B. Protect installed carpet tile to comply with CRI 104, Section 15, "Protection of Indoor Installations."
- C. Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.

**SECTION 09 84 13 – ACOUSTICAL WALL TREATMENTS****PART 1 GENERAL****1.1 GENERAL REQUIREMENTS**

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

**1.2 WORK INCLUDED**

- A. Work of the Section includes all labor, materials, equipment, and services necessary to complete the furnishing and installation of sound absorptive wall treatments as shown on the drawings and specified herein, including but is not necessarily limited to the following:
  - 1. Fiberglass panels with resin-hardened edges wrapped in selected fabric for walls and ceilings.

**1.3 RELATED WORK**

- A. Consult all other Sections to determine the extent of work specified elsewhere but related to this Section. This work shall be properly coordinated to product an installation satisfactory to the Owner.

**1.4 SUBMITTALS**

- A. Submit samples, mock-up of all materials specified, and acoustical data to Architect for approval. No substitutions are to be made without approval. Any non-approved materials that have been installed shall be removed and replaced with approved materials at no expense to the Owner.
- B. Shop drawings: Submit complete fabrication and installation drawings for all assemblies. Provide full size details of all major components. Submittals of panel layouts for final approval shall show field verified dimensions.
- C. Submit sound absorption test data measured in an independent accredited acoustical test laboratory demonstrating compliance with acoustical performance specification. Laboratory test samples shall be equal to the specified products with respect to core material, thickness, finish, and mounting.

**1.5 PRODUCT HANDLING**

- A. Shipping: Package, handle, transport, and store materials at the jobsite in a manner that will avoid damage. Materials shall be delivered in manufacturer's original labeled, unopened cartons.
- B. Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the installed work and materials of all other trades.
- C. Replacements: In the event of damage, immediately make all repairs and replacements necessary.

**1.6 QUALITY ASSURANCE**

- A. Wall panel fabricator shall be qualified for the work of this Section and shall have minimum 5 years' experience with installations of similar construction.

## Acoustical Wall Treatments

- B. No substitutions are to be made without approval. Any non-approved materials that have been installed shall be removed and replaced with approved materials at no expense to the Owner.
- C. Specified Products are specified to establish standards of quality, performance and design concept. The products of other manufacturers are acceptable by prior approval only.
- D. The following manufacturers are approved to provide Acoustical Wall and Ceiling treatments provided systems are in compliance with the requirements of the Contract Documents:

Kinetic Noise Control	Dublin, OH	877.457.2695
Corporate Acoustics	Poughkeepsie, NY	800.243.3144
Decoustics	Getzville, NY	800.387.3809
MBI	Cleveland, OH	216.431.6400
Whisper Walls	Aurora, CO	800.527.7817

**1.7 COORDINATION**

- A. Coordinate acoustical wall and ceiling panel work with all existing conditions.

**PART 2 PRODUCTS****2.1 GENERAL**

- A. Fabricate treatments to details and configurations shown on the Drawings in accordance with approved Shop Drawings and Mock-ups.
- B. All components of wall sound absorptive systems shall be manufactured by a single established manufacturer.

**2.2 ACOUSTICAL WALL PANELS**

- A. Acoustical Wall Panel shall be fabricated from 1" thick rigid fiberglass board, with a density of 6 lbs per cu. Ft. Panel edges shall be as shown on the Drawings, and shall be hardened with resin. Panels are to be wrapped with a selected sound-transparent fabric, neatly wrapped around the edges and at least 3" onto back of panel. NRC 1.00 or greater per ASTM C423.

**PART 3 EXECUTION****3.1 PROTECTION**

- A. Protect treatments from damage and soiling during shipping and installation until Owner's acceptance.

**3.2 WALL PANEL INSTALLATION**

- A. Mounting Systems:
  1. Option 1: Manufacturer shall provide a mechanical system using concealed continuous panel Z-clips of galvanized steel permanently bonded to the rear of the panels, and a

## Acoustical Wall Treatments

- matching Z-track leveled and attached to wall or ceiling per manufacturer's standard recommendations.
2. Option 2: Wall panels shall be supported at bottom with continuous aluminum angles screw-fastened to wall. Angle sizes shall be as follows: 1" thick panels –  $\frac{3}{4}$ " x  $\frac{3}{4}$ " angles, - 1.5" x 1.5"
  - B. Install and adjust panels to lines and levels to provide accurate alignment and reveal widths as detailed.
  - C. Clean, repair, or replace any panels which become soiled or damaged.

**END OF SECTION 09 84 13**



**SECTION 09 91 00 - PAINTING****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

- A. General provisions of the Contract, General and Supplementary Conditions, and Division 1 specification sections, General Requirements, apply to this section.

**1.02 DESCRIPTION OF WORK**

- A. Labor, material, equipment and services necessary to provide the painting.
- B. The work includes the painting and finishing of all interior and exterior exposed items and surfaces throughout the project, except as otherwise specified. Surface preparation, priming and coats of paint specified are in addition to shop priming and surface treatment specified under other sections.
- C. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate, or finish coat.
- D. Paint all exposed surfaces whether or not colors are designated in a "schedule", except where the natural finish of the material is obviously intended and specifically noted as a surface not to be painted. Where items or surfaces are not specifically mentioned, paint these the same as adjacent similar materials or areas. If color or finish is not designated the Architect will select these from standard colors available for the materials systems as specified.
- E. Painting of mechanical work is limited to items exposed to view in equipment rooms, finished or occupied spaces and exposed to view or the weather on the exterior of the building. Mechanical items to be painted include, but are not limited to, the following:
  - 1. Piping, pipe hangers and supports.
  - 2. Fabricated equipment stands or supports.
  - 3. Heat exchangers.
  - 4. Tanks.
  - 5. Ductwork and supports exposed to view in finished or occupied spaces or exposed to view or the weather on the exterior. Ductwork in mechanical equipment rooms is not to be painted.
  - 6. Insulated piping exposed to view in finished or occupied spaces. Insulated piping in mechanical rooms is not to be painted except as noted below.
  - 7. Mechanical equipment exposed to view on the roof or outside the building such as exhaust fans, supply fans, relief or intake bonnets.
  - 8. Boiler stack and gas flues above the roof.
  - 9. Fire protection risers and appurtenances in stairwells and other finished or occupied spaces.
  - 10. Mechanical equipment, such as chillers and pumps, insulated with flexible elastomeric insulation.
  - 11. Piping insulated with flexible elastomeric insulation.
  - 12. Piping, pipe hangers and supports on the roof or outside the building.
- F. If products description does not match the existing products, verify requirements with the Architects.

**1.03 PAINTING NOT INCLUDED**

- A. The following categories of work are not included as part of the painter-applied finish work, or are included in other sections of these specifications, unless otherwise shown or specified.

- B. Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under the various sections for structural steel, miscellaneous metal items, hollow metal work, and similar items. Also, for such fabricated components as architectural woodwork, wood casework, and shop-fabricated or factory-built mechanical and electrical equipment or accessories.
- C. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as (but not limited to) metal toilet enclosures, prefinished partition systems, acoustic materials, architectural woodwork and casework, finished mechanical and electrical equipment including light fixtures, switchgear, and distribution cabinets, doors and equipment, except paint covers of electrical panels in rooms other than equipment rooms.
- D. Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceiling in concealed areas and generally in inaccessible areas, foundation spaces, furred areas, utility tunnels, pipe spaces, and duct.
- E. Finished Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze, and similar finished materials will not require finish painting, except as otherwise specified.
- F. Operating Parts and Labels: Moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, operable louver or damper blades, sensing devices, motor and fan shafts, will not require finish painting, unless otherwise indicated. Do not paint over code-required labels, such as Underwriters' Laboratories and Factory Mutual, or equipment identification, performance rating, name, or nomenclature plates.

#### **1.04 SUBMITTALS**

- A. Manufacturer's Data: Submit copies of manufacturer's technical information including paint label analysis and application instructions for each material proposed for use.
- B. Samples for Verification:
  - 1. Submit paint samples on 12" x 12" hardboard for Architect's review of color and texture only. Provide a listing of the material and application for each coat of each finish sample.
  - 2. Submit stain samples on actual wood specified.

#### **1.05 DELIVERY AND STORAGE**

- A. Deliver all materials to the job site in original, new, and unopened packages and containers bearing manufacturer's name and label, and application instructions thereon.

#### **1.06 JOB CONDITIONS**

- A. Apply water-base paints only when the temperature of surfaces to be painted and the surrounding air temperatures are between 50° F. and 90° F. unless otherwise permitted by the paint manufacturer's printed instructions.
- B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and the surrounding air temperatures are between 45° F and 95° F unless otherwise permitted by the paint manufacturer's printed instructions.
- C. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85%; or to damp or wet surfaces; unless otherwise permitted by the paint manufacturer's printed instructions. Painting may be continued during inclement weather only if the areas and surfaces to be painted are enclosed and heated within the temperature limits specified by the paint manufacturer during application and drying periods.

**PART 2 - PRODUCT****2.01 COLORS AND FINISHES**

Colors: As selected by Architect from manufacturer's full range, or as indicated on Paint Schedule on the Drawings.

- B. Color Pigments: Pure, non-fading, applicable types to suit the substrates and service indicated.
- C. Paint Coordination: Provide finish coats which are compatible with prime paints used. Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information on characteristics of finish materials proposed for use, to ensure compatible prime coats are used. Provide barrier coats over incompatible primers or remove and reprime as required. Notify the Architect in writing of any anticipated problems using specified coating systems with substrates primed by others.

**2.02 MATERIAL QUALITY**

- A. Provide the best quality grade of the various types of coatings as regularly manufactured by approved paint materials manufacturers. Materials not displaying the manufacturer's identification as a standard, best-grade product will not be acceptable.
- B. Provide undercoat paint produced by the same manufacturer as the finish coats. Use only thinners approved by the paint manufacturer, and use only to recommended limits.

**2.03 PAINTING SCHEDULE**

- A. Selections listed are intended to indicate the standard quality and the type of finish required. Product names listed herein are from the manufacturers listed below, unless otherwise noted. Equivalent items of other manufacturers will be acceptable provided the product meets or exceeds the requirements of these specifications.
- B. Manufacturers offering products complying with requirements include the following:

Pittsburgh Paints  
ICI / Devoe Paints  
Sherwin Williams

- C. Exterior

- 1) Ferrous Metal and Galvanized Steel

Pittsburgh Paints:

First Coat: PPG Pitt-Tech Primer/Finish Industrial Enamel, 90-712 or 90-709, Gray.

Second and Third Coats: PPG Pitt-Tech DTM Industrial Enamel, 90-374 Gloss or 90-474, Satin.

- 2) Wood (Opaque Latex Stain Finish)

Pittsburgh Paints:

First and Second Coats: Rez solid color stain, 77-445/446/447 Series.

- 3) Wood (Transparent Latex Stain Finish)

Pittsburgh Paints:

First and Second Coats: Rez semi-transparent stain, 77-460 Series.

## 4) Brick and Masonry:

First Coat: PPG Speedhide Latex Masonry Block Filler, 6-7.  
Second and Third Coats: PPG Speedhide Acrylic Latex House Paint, Flat #6-610 and PPG Speedhide Exterior Semi-Gloss Latex House and Trim Paint, Semi-Gloss #6-900.

## 5) Exterior Galvanized Metal

First Coat: PPG Galvanized Steel Primer, 6-209.  
Second and Third Coats: PPG Speedhide Gloss Oil Interior/Exterior Enamel 6-252 Series.

## 6) Exterior Concrete Block

First Coat: PPG Speedhide Latex Masonry Block Filler, 6-7.  
Second and Third Coats: PPG Speedhide Acrylic Latex House Paint, Flat #6-610 and PPG Speedhide Exterior Semi-Gloss Latex House and Trim Paint, Semi-Gloss #6-900.

## 7) Concrete

First Coat: PPG Pitt-Glaze High Performance Acrylic Latex Block Filler, #16-90.  
Second and Third Coats: PPG Pitt-Flex Exterior Masonry Coating, 100% Acrylic-Elastomeric, #4-110.

## D. Interior

## 1) Gypsum Wallboard

Pittsburgh Paints:  
First Coat: PPG Latex Sealer, 6-2.  
Second and Third Coats: PPG Speedhide Acrylic Latex Interior Latex Eggshell Enamel, 6-411 Series.

## 2) Gypsum Wallboard (Ceilings and where flat paint is desired)

Pittsburgh Paints:  
First Coat: PPG Latex Sealer, 6-2.  
Second and Third Coats: PPG Speedhide Acrylic Latex Interior Latex Flat Wall Paint, 6-70 Series.

## 3) Metal

Pittsburgh Paints:  
First Coat: Speedhide water base inhibitive metal primer, 90-712.  
Second and Third Coats: Speedhide semi-gloss latex enamel, 6-510 Series.

## 4) Galvanized Beams, Joist and Deck

First Coat: PPG Interior Flat Dry Fog Galvanized Steel Primer/Finish #G9514.  
Second and Third Coats: PPG Speedhide Interior Solvent Base Dry Fog #6-160, Flat; 6-114, Semi-Gloss; 6-116, Gloss.

## 5) Galvanized Metal

First Coat: PPG Speedhide 6-209 Galvanized Steel Primer.  
Second and Third Coats: PPG Speedhide Gloss-Oil Interior/Exterior Enamels, #6-252 Series.

## 6) Concrete and Masonry (Latex Finish)

First Coat: PPG Latex Masonry Block Filler, 6-7.  
Second and Third Coats: PPG Speedhide Interior Eggshell Latex Enamel, 6-411 Series.

## 7) Concrete and Masonry (EPOXY Finish)

First Coat: PPG Pitt Glaze High Performance Acrylic Latex Block Filler, 16-90 Series.  
Second and Third Coats: PPG Aquapon Polyamide-Epoxy, 97-Series.

## 8) Woodwork (Opaque Finish)

Pittsburg Paints:  
First Coat: Speedhide water base undercoater, 6-855.  
Second and Third Coats: Speedhide semi-gloss latex enamel, 6-510 Series.

## 9) Woodwork (Transparent Finish)

Pittsburgh Paints:  
First Coat: Paste Wood Filler (Stearate Free)  
Second Coat: Rez Interior Stain, 77-560, alkyd.  
Third Coat: Rez Polyurethane Clear, 77-9.  
Fourth Coat: Rez Polyurethane Clear, 77-9.

## 10) Equipment and Other Metal Surfaces

First coat: PPG Speedhide Rust Inhibitive Steel Primer, #6-208 Series.  
Second and Third Coats: PPG Speedhide Gloss-Oil Interior/Exterior Enamels, #6-252 Series.

## 11) PVC Pipe and Insulated Pipe Covering

First and Second Coats: PPG Pitt-Tech One Pack Interior/Exterior High Performance, High Gloss, DTM Industrial Waterborne Acrylic Enamel, 90 Series.

**PART 3 - EXECUTION****3.01 EXAMINATION**

- A. Applicator must examine the areas and conditions under which painting work is to be applied and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Applicator.
- B. Starting of painting work will be construed as the applicator's acceptance of the surfaces within any particular area.
- C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to the formation of a durable paint film.

**3.02 SURFACE PREPARATION**

## A. General

- 1) Perform all preparation and cleaning procedures in strict accordance with the paint manufacturer's instructions and as herein specified, for each particular substrate condition.
- 2) Remove all hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish painted, or provide surface-applied protection, prior to surface preparation and painting operations. Remove, if necessary, for the complete painting of the items and adjacent surfaces. Following completion of painting of each space or area, reinstall the removed items by workmen skilled in the trades involved.
- 3) Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program the cleaning and painting so that dust and other contaminants from the cleaning process will not fall in wet, newly painted surfaces.

## B. Cementitious Materials

- 1) Prepare cementitious surfaces to be painted by removing all efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze.
- 2) Determine the alkalinity and moisture content of the surfaces to be painted by performing appropriate tests. If the surfaces are found to be sufficiently alkaline to cause blistering and burning of the finish paint, correct this condition before application of paint. Do not paint over surfaces where the moisture content exceeds that permitted in the manufacturer's printed directions.

## C. Wood

- 1) Clean wood surfaces to be painted of all dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other approved sealer, before application of the priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plaster wood-filler. Sandpaper smooth when dried.
- 2) Prime, stain, or seal wood required to be job painted immediately upon delivery to job. Prime edges, ends, face, undersides, and backsides of such wood, including cabinets, counters, cases, paneling, etc. When transparent finish is required, use spar varnish for backpriming.

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

E. Galvanized Surfaces: Clean free of oil and surface contaminants with an acceptable non-petroleum based solvent.

**3.03 MATERIALS PREPARATION**

- A. Mix and prepare painting materials in accordance with manufacturer's directions.
- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing, and application of paint in a clean condition, free of foreign materials and residue.
- C. Stir materials before application to produce a mixture of uniform density, and stir as required during the application of the materials. Do not stir surface film into the material. Remove the film and if necessary, strain the material before using.

**3.04 APPLICATION**

## A. General

- 1) Apply paint in accordance with the manufacturer's directions. Use applicators and techniques best suited for the substrate and type of material being applied. Spraying of interior finishes not acceptable.
- 2) Apply additional coats when undercoats, stains or other conditions show through the final coat of paint, until the paint film is of uniform finish, color and appearance. Give special attention to insure that all surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
- 3) Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Paint surfaces behind permanently-fixed equipment or furniture with prime coat only before final installation of equipment.
- 4) Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
- 5) Paint the back sides of access panels, and removable or hinged covers to match the exposed surfaces.
- 6) Sand lightly between each succeeding enamel or varnish coat.
- 7) Omit the first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.

## B. Scheduling Painting

- 1) Apply the first-coat material to surfaces that have been cleaned, pre-treated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
- 2) Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

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

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

## E. Transparent (Clear) Finishes

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

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

**3.05 CLEAN-UP AND PROTECTION**

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

**END OF SECTION 09 91 00**



**SECTION 10 44 13 - FIRE EXTINGUISHER CABINETS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This section includes fire protection cabinets for portable fire extinguishers.
- B. This section includes key lock boxes for emergency building access.
- C. Related sections include Division 10 Section "Fire Extinguishers".

**1.3 SUBMITTALS**

- A. Product Data: For each type of product indicated.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for fire protection cabinets.
  - 2. Include roughing-in dimensions, details showing mounting methods, relationships of box and trim to surrounding construction, door hardware, cabinet type, trim style, and panel style.
- B. Shop Drawings: For fire protection cabinets. Include plans, elevations, sections, details, and attachments to other work.
- C. Samples for Verification: For each type of exposed finish required, prepared on Samples of size 6 by 6 inches square.
- D. Maintenance Data: For fire protection cabinets to include in maintenance manuals.
- E. Meeting Records: Minutes of pre-installation conference.

**1.4 QUALITY ASSURANCE**

Preinstallation Conference: Conduct conference at Project site. Review methods and procedures related to fire protection cabinets including, but not limited to, schedules and coordination requirements.

**1.5 COORDINATION**

- A. Coordinate size of fire protection cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.
- B. Coordinate sizes and locations of fire protection cabinets with wall depths.

**PART 2 - PRODUCTS****2.1 MATERIALS**

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B.
- B. Stainless-Steel Sheet: ASTM A 666, Type 304.
- C. Tempered Float Glass: ASTM C 1048, Kind FT, Condition A, Type I, Quality q3, 3 mm thick, Class 1 (clear).

## Fire Extinguisher Cabinets

**2.2 FIRE PROTECTION CABINET**

- A. Basis-of-Design Product: The design for fire protection cabinets is based on "Architectural Series" by Larsen's Manufacturing Company. Subject to compliance with requirements, provide either the named product or a comparable product by one of the following:
1. JL Industries, Inc.
  2. Potter Roemer; Div. of Smith Industries, Inc.
- B. Cabinet Type: FE-1: Larsen's Model No. 2409-R3  
FE-2: Larsen's Model No. 2720-RL
- C. Cabinet Construction: Nonrated.
- D. Cabinet Material: Enameled-steel sheet.
- E. Recessed Cabinet:
1. Cabinet box semi-recessed in walls of sufficient depth to suit style of trim indicated.
  2. Exposed Flat Trim: One-piece combination trim and perimeter door frame overlapping surrounding wall surface with exposed trim face and wall return at outer edge (backbend) of 1/4 to 5/16 inch.
- F. Cabinet Trim Material: Stainless-steel sheet.
- G. Door Material: Stainless-steel sheet.
- H. Door Style: Vertical duo panel with frame.
- I. Door Glazing: Tempered float glass (clear).
- J. Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated.
1. Provide projecting lever handle with cam-action latch.
  2. Provide continuous hinge, of same material and finish as trim, permitting door to open 180 degrees.
- K. Accessories:
1. Mounting Bracket: Manufacturer's standard steel, designed to secure fire extinguisher to fire-protection cabinet, of sizes required for types and capacities of fire extinguishers indicated, with plated or baked-enamel finish.
  2. Door Lock: Cam lock that allows door to be opened during emergency by pulling sharply on door handle.
- L. Finishes:
1. Steel: brushed stainless steel.

**2.3 FABRICATION**

- A. Fire Protection Cabinets: Provide manufacturer's standard box (tub) with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated.
1. Weld joints and grind smooth.
  2. Provide factory-drilled mounting holes.
  3. Prepare doors and frames to receive locks.
  4. Install door locks at factory.

## Fire Extinguisher Cabinets

- B. Cabinet Doors: Fabricate doors according to manufacturer's standards, from materials indicated and coordinated with cabinet types and trim styles selected.
  - 1. Fabricate door frames with tubular stiles and rails and hollow-metal design, minimum 1/2 inch thick.
  - 2. Miter and weld perimeter door frames.
- C. Cabinet Trim: Fabricate cabinet trim in one piece with corners mitered, welded, and ground smooth.

**2.4 KEY LOCK BOXES**

- A. Provide and install recessed key lock box for emergency building access at location to be determined by the architect.
  - 1. Exterior Dimensions: Recessed Mount Flange – 9 ½” H x 9 ½” W.
  - 2. Lock: UL Listed. Double-action rotating tumblers and hardened steel pins accessed by a biased cut key.
  - 3. Finish: Knox-Coat proprietary finishing process.
  - 4. Product: KnoxVault 4400 by Knox Company.

**2.5 GENERAL FINISH REQUIREMENTS**

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces of fire protection cabinets from damage by applying a strippable, temporary protective covering before shipping.
- C. Finish fire protection cabinets after assembly.
- D. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

**2.6 STEEL FINISHES**

- A. Surface Preparation: Clean surfaces of dirt, oil, grease, mill scale, rust, and other contaminants that could impair paint bond using manufacturer's standard methods.
- B. Baked-Enamel Finish: Immediately after cleaning and pretreating, apply manufacturer's standard two-coat, baked-enamel finish consisting of prime coat and thermosetting topcoat. Comply with paint manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of 2 mils.

**PART 3 - EXECUTION****3.1 EXAMINATION**

- A. Examine walls and partitions for suitable framing depth and blocking where recessed cabinets will be installed.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.2 PREPARATION**

Prepare recesses for recessed fire protection cabinets as required by type and size of cabinet and trim style.

**3.3 INSTALLATION**

- A. General:
  - 1. Install fire protection cabinets in locations and at mounting heights indicated or, if not indicated, at heights acceptable to authorities having jurisdiction.

## Fire Extinguisher Cabinets

2. Fire Protection Cabinets: 54 inches above finished floor to top of cabinet.
- B. Fire Protection Cabinets: Fasten cabinets to structure, square and plumb.
1. Unless otherwise indicated, provide recessed fire protection cabinets. If wall thickness is not adequate for recessed cabinets, provide semi-recessed fire protection cabinets.
  2. Fasten mounting brackets to inside surface of fire protection cabinets, square and plumb.
- C. Identification: Apply vinyl lettering at locations indicated.

**3.4 ADJUSTING AND CLEANING**

- A. Remove temporary protective coverings and strippable films, if any, as fire protection cabinets are installed unless otherwise indicated in manufacturer's written installation instructions.
- B. Adjust fire protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.
- C. On completion of fire protection cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.
- D. Touch up marred finishes, or replace fire protection cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by fire protection cabinet and mounting bracket manufacturers.
- E. Replace fire protection cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

**END OF SECTION 10 44 13**

**SECTION 10 44 16 - FIRE EXTINGUISHERS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Section includes portable, hand-carried fire extinguishers and mounting brackets for fire extinguishers.
- B. Related Sections: Division 10 Section "Fire Extinguisher Cabinets".

**1.3 SUBMITTALS**

- A. Product Data: For each type of product indicated. Include rating and classification, material descriptions, dimensions of individual components and profiles, and finishes for fire extinguisher and mounting brackets.
- B. Operation and Maintenance Data: For fire extinguishers to include in maintenance manuals.
- C. Warranty: Sample of special warranty.

**1.4 QUALITY ASSURANCE**

- A. Code Compliance: Fabricate and label fire extinguishers to comply with IBCCI and NFPA 10, "Portable Fire Extinguishers."
- B. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.

**1.5 COORDINATION**

Coordinate type and capacity of fire extinguishers with fire protection cabinets to ensure fit and function.

**1.6 WARRANTY**

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace fire extinguishers that fails in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Failure of hydrostatic test according to NFPA 10.
    - b. Faulty operation of valves or release levers.
  - 2. Warranty Period: Six years from date of Substantial Completion.

**PART 2 - PRODUCTS****2.1 PORTABLE, HAND-CARRIED FIRE EXTINGUISHERS**

- A. Fire Extinguishers: Type, size, and capacity for each fire protection cabinet and mounting bracket indicated.
  - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. J. L. Industries, Inc.; a division of Activar Construction Products Group.

- b. Larsen's Manufacturing Company.
  - c. Potter Roemer LLC.
2. Handles and Levers: Manufacturer's standard.
  3. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B.
- B. Multipurpose Dry-Chemical Type in Steel Container: UL-rated 2-A:10-B:C, 5-lb nominal capacity, with monoammonium phosphate-based dry chemical in enameled-steel container.

## **2.2 MOUNTING BRACKETS**

- A. Mounting Brackets: Manufacturer's standard steel, designed to secure fire extinguisher to wall or structure, of sizes required for types and capacities of fire extinguishers indicated, with plated or red baked-enamel finish.
- B. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as indicated by Architect.
1. Identify bracket-mounted fire extinguishers with the words "FIRE EXTINGUISHER" in red letter decals applied to mounting surface.
  2. Orientation: Vertical.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine fire extinguishers for proper charging and tagging.
- B. Remove and replace damaged, defective, or undercharged fire extinguishers.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.2 INSTALLATION**

- A. General:
1. Install fire extinguishers and mounting brackets in locations indicated and in compliance with requirements of authorities having jurisdiction.
  2. Mounting Brackets: 54 inches above finished floor to top of fire extinguisher.
- B. Mounting Brackets: Fasten mounting brackets to surfaces, square and plumb, at locations indicated.

**END OF SECTION 10 44 16**

**SECTION 26 00 00 – GENERAL ELECTRICAL****PART 1 - GENERAL****1.1 SUMMARY**

Scope of Work: The contractor shall furnish all plant, labor, materials, equipment, and services necessary for and reasonably incidental to the complete installation of all electrical work as shown on the drawings and specified herein.

**1.2 REFERENCES**

General Provisions of the Contract, General and Supplementary Conditions, and Division 1 Specification Sections, General Requirements, apply to this section.

**1.3 GENERAL**

- A. The drawings indicate the extent and general arrangement of the electrical system. Details of proposed departures due to unforeseen conditions or other causes shall be submitted to the Architect for approval before proceeding.
- B. Equipment and materials to be furnished under this specification shall be the standard products of manufacturer's latest standard, shall be new and unused, and bear the Underwriter's Seal of Approval.
- C. All work of the installation to be done by skilled workmen in a workmanlike manner, following the best modern practices. The work shall present a neat and workmanlike appearance when completed.
- D. Manufacturers, catalog numbers, etc., used in these specifications or shown on the drawings are to denote design, workmanship and quality desired.

**1.4 APPLICABLE STANDARDS AND CODES**

Be governed by these specifications and by the current rules and regulations as listed in Division 1 General Conditions, Section 1A, Item No. 4, Applicable Codes.

**1.5 PRINCIPAL FEATURES**

- A. A complete system of conduit and conductors to supply electrical energy to and throughout the building.
- B. Distribution panels, branch circuit panels, wiring devices.
- C. Lighting fixtures and lamps.
- D. Wiring in connection with mechanical equipment.
- E. Fire alarm system.

**1.6 SHOP DRAWINGS**

- A. Shop drawings shall be furnished for approval of the following. See Division 1 for the number of copies.
  - 1. Lighting fixtures and exit signs.
  - 2. Fire alarm.
- B. Refer to Specification Section 01 33 00 for additional requirements.

**1.7 MATERIAL AND EQUIPMENT SUBMITTAL**

Furnish catalog data including cuts, properly assembled in a binder and labeled for the following items including all of the items for which catalog data exists from the manufacturer; see Specification Section 01 33 00 for number of sets.

Lighting fixtures and exit signs.

Wiring devices (switches, plug receptacles, outlets, wall switches, occupancy sensors, etc.)

Fire Alarm.

**1.8 MAINTENANCE MANUALS**

Provide a separate white plastic 3-ring binder with stiff back with suitable identifying name lettered across the side and the end, in three copies of the following, which shall include catalog pages of each item of equipment, wiring diagrams showing the internal and the external elements and their connection, manufacturer's maintenance manual separated into loose leaf form with fabric reinforcements on the ring holes, bill of material showing necessary data of ordering parts with bill of material to include parts lists, and other incidental material as suggested by the manufacturer, Owner, or Architect.

Lighting fixtures.

Fire alarm.

**1.9 TEMPORARY WIRING**

Install temporary wiring and lighting throughout the building area of renovation. Temporary wire shall consist of plastic type non-metallic sheathed cable having a ground wire to which all the receptacle ground poles shall be constructed. Refer to Specification Section 015000 for additional temporary lighting and power requirements.

**1.10 WORK IN CONNECTION WITH MOTORS**

Check rotation and connect for proper rotation. Check overload heater element furnished with starters against nameplate rating of motor and code, call attention to improper sizes to mechanical contractor and Architect. Connect all motors with short length of flexible conduit as manufactured by American Brass Company. Use proper type connector with this type conduit. Connect all motor and controls completely, neatly, orderly, and properly tagged for proper operation of system involved.

**1.11 WORK IN CONNECTION WITH THE MECHANICAL EQUIPMENT**

- A. Furnish and install all conduit and wiring necessary for the line voltage power supply for the plumbing, heating, ventilating, air condition facilities. Control wiring including conduit for same shall be a part of Division 26 work. Refer to mechanical drawings for additional information.
- B. Motor starters, variable frequency speed controllers, will be furnished and physically installed in Division 23 work with the equipment with which it will be used. Electrical connection for power shall be a part of the Electrical work.
- C. All smoke detectors shall be furnished and connected as a part of the electrical work including those mounted in air ducts and air handling walk-in units. Physical mounting of detectors shall be a part of Division 23 work.
- D. Furnish and install all disconnect switches required by the National Electrical Code and/or as called for on the drawings.



- E. Stencil the name of the equipment being controlled on the cover of all starters and disconnect switches when located out of sight of motors. Stencils to be 3/4" high in black letters on white background to match those set forth in mechanical specifications.

#### **1.12 SERVICE TO EQUIPMENT**

Check service required by equipment prior to making final connection. Call differences to attention of Architect. Check equipment for proper protective devices and safety devices to allow proper operation of equipment and prevent burnout. Assist Owners in initial operation of equipment and make necessary adjustment for proper operation.

#### **1.13 ARCHITECTURAL DRAWINGS**

Refer to architectural drawings for details such as finishes, dimensions, materials, etc. Refer to drawings for door locations, door swings, ceiling material type, partitions location, cabinet and counters, making proper allowances therefore. Refer to equipment plans for exact location of electrical connections.

#### **1.14 INITIAL OPERATION OF EQUIPMENT**

Give all equipment furnished in the contract an operational test prior to final acceptance. Assist the owner in the initial operation when the owner operates the building and equipment. Instruct the owner's personnel in the proper operation and maintenance of all the equipment furnished under this section of the specifications.

#### **1.15 GUARANTEE**

Guarantee all work to be free from defects of material and workmanship. Repair and/or replace all defective material or equipment and any work damaged thereby and make any other adjustments necessary without additional cost to the Owner.

#### **1.16 PROTECTION OF ROOF**

- A. Coordinate electrical work with roofing work in regard to any electrical items which may pierce or otherwise affect the roof. Hold consultation well in advance of the installation of the final roofing and allow sufficient time for the roofing work to be prepared for the electrical work.
- B. Arrange for any cutting or repairing to roofing which might already be installed when an electrical installation is made. See roofing specification for roofing with relation to work of other trades piercing the roof. If necessary consultation is not held, any roof repairs necessitated by the electrical installation shall come under the scope of the work under this section.

#### **1.17 CONNECTIONS TO EQUIPMENT**

Wiring to and connection to all equipment (except controls) shall be included in the electrical contract work. Equipment shall be properly prepared to receive a single connection with all wiring internal to the equipment installed by the equipment supplier. An exception is the lighting required in the walk-in air handling units. Verify all connections and rough-in location with the equipment supplier prior to start of work.

#### **1.18 RECORD DRAWINGS**

- A. Furnish record drawings showing the changes and modifications that occurred during the construction period. These drawings shall be on tracing paper to allow reproducing.
- B. The job supervisor shall maintain a set of prints of the job office to be used to illustrate and note the job changes as they occur. This set of prints shall then be used as a reference to prepare the reproducible drawings record drawings. At the contractor's option, a "sepia" or translucent print may be made from

the contract drawings at the contractor's expense and the modifications made thereon. Secure approval of the type of translucent print used prior to having them made.

#### **1.19 WORK IN CONNECTION WITH OTHER TRADES**

Coordinate and review all ceiling systems, grid systems by other sections so that lighting fixtures and other ceiling mounted equipment and their trims are compatible with the ceiling system used prior to submittal of shop drawings and brochures. Coordinate with mechanical trades.

#### **1.20 TYPICAL MOUNTING HEIGHTS**

For all exposed elements of electrical work such as lighting fixtures, panelboards, wiring devices, switches, fire alarm, sound equipment, etc., mounted in walls and finished spaces will have the mounting heights may be supplied in detail by the architect. When provided, these heights are to be used in all cases except where mounting heights are noted for a specific device, fixture or panel on the electrical drawings. Schedule will be prepared when shop drawings and brochures have been submitted so that the dimensions of particular pieces of equipment can be evaluated in relation to ceiling height and other clearances.

#### **1.21 METHODS OF ATTACHMENT TO BUILDING**

Attachment to the building structure, or walls, floors, or other elements, shall be made by suitable clamps, expansion bolts, and similar elements.

#### **1.22 FIRE-RATED WALL PENETRATIONS**

Where conduit penetrates fire-rated walls, the space between the penetration item and the fire barrier wall shall be properly protected. The space adjoining the conduit penetration shall be filled with a material capable of maintaining the fire rating of the fire barrier, or it shall be protected by an approved device designed for this specific purpose. Where penetrating sleeves are used, the sleeves between the conduit and the sleeve shall be filled with a material capable of maintaining the fire resistance of the fire rated wall. Refer to drawings for details. Contractor shall be responsible for determination of fire rated partitions from Architectural plans. Refer to specific details on plans.

### **PART 2- PRODUCTS**

NOT USED.

### **PART 3 - EXECUTION**

NOT USED

**END OF SECTION 26 00 00**

**SECTION 26 05 19 – LOW VOLTAGE, 600 VOLT CONDUCTORS****PART 1 - GENERAL****1.1 SUMMARY**

Furnish and install conductors throughout the raceway system and distribution of electrical energy for the lighting, and power, and control needs.

**PART 2 - PRODUCTS****2.1 MATERIALS**

- A. Use stranded conductors with spade type terminal ends. Minimum size shall be No.12 AWG. Insulate conductors with Type "THHN/THWN" insulation unless specifically indicated otherwise on the drawings. Rating shall be 600-volts, AC.
- B. Connectors for conductors size No. 10 and 12 shall be approved type insulated twist-on wire nuts. Use hydraulic compression type connectors for conductors No. 8 and larger.
- C. All conductors are to be copper.

**PART 3 - EXECUTION****3.1 INSTALLATION**

- A. Conform to manufacturer's recommendations and latest standard practice of industry. Color code all conductor for phase, neutral, and ground reference, as follows:

PHASE	208/120v.	480/277v.
A	Black	Brown
B	Red	Orange
C	Blue	Yellow
Neutral	White*	Natural Gray*
Ground	Green	Green

\*Insulation of neutral conductor to have a stripe of color matching corresponding phase conductor.

- B. Contractor shall use minimum conductor size of No. 12 AWG. Where runs exceed 125' for 120-volts, increase conductor size to No. 10 AWG. If run exceeds 250', increase size to No. 8.
- C. A separate neutral shall be used to each branch circuit.

**END OF SECTION 26 05 19**

**SECTION 26 05 33 – RACEWAYS AND BOXES****PART 1 - GENERAL****1.1 SUMMARY**

- A. Furnish and install a system of raceways and boxes for installation of conductors for distribution of power and controls throughout building. All wiring shall be in metallic conduit. Conduit shall be concealed except where specifically called for to be exposed, such as in mechanical/electrical equipment rooms.
- B. Furnish outlet boxes for lighting fixtures, wall receptacles, switches, and other boxes as required. Also, pull boxes and junction boxes shall be furnished as required.

**PART 2 - PRODUCTS****2.1 RACEWAYS**

- A. All conduit lines utilized in the building for power wiring (branch circuits) shall be in metallic raceway, unless specifically noted on drawing. Feeder conduit run outdoors/below grade shall be Schedule 40 PVC. Type "MC" metal clad cable shall be allowed within existing walls.
- B. Minimum size conduit on project shall be 3/4".

**2.02 BUSHINGS**

Bushings for conduit 2" in size and smaller shall be plastic. Conduit size 2-1/2" and larger shall be OZ Company type "B" Appleton Co. Efcor Series NO. 55 or approved equal with metal ring and insulator as an integral part of bushing.

**2.3 CONDUIT COUPLINGS**

Conduit couplings (EMT) shall be set screw type.

**2.4 FLEXIBLE CONDUIT**

Flexible metal conduit shall be used for final connections for all motors, transformers, unit heaters, lighting fixtures, and other permanently connected equipment. Maximum length of flexible conduit shall be 24" except for connection of light fixtures, which may have a length of up to 72". The flexible conduit shall be constructed of hot-dipped galvanized, interlocked spirally wound steel strip. All connectors shall be galvanized and shall be listed for connection to the conduit and boxes. Provide a ground conductor in each length of flexible conduit. Flexible conduit used in mechanical rooms, kitchen areas, and damp or wet locations shall be liquid tight. Other than the uses listed above, the use of flexible conduit will not be permitted.

**2.5 MANUFACTURER**

Conduit shall be as manufactured by Pittsburgh, National, Republic Steel Companies, General Electric Company, or approved equal.

**2.6 CEILING BOXES**

- A. Ceiling outlet boxes shall be 4-inch octagon and 2-1/8 inch deep. Provide extension rings where additional volume is required. All ceiling outlet boxes shall have fixture stud of no-bolt, self-locking type installed if required to hang fixture specified at that outlet.

- B. Where ceiling outlets occur in reinforced concrete, provide rings with removable back plate and fixture stud specifically designed for this purpose.

## 2.7 WALL BOXES

- A. Light wall switch boxes shall be a minimum size of 4" high by 2-1/8" wide by 2-1/8" deep. Where more than one gang occurs, 4" square boxes or additional larger boxes shall be used with device ring attached. Boxes in masonry shall be 4" high and 2-1/2" deep with the number of gangs necessary. An example of the masonry box shall be Raco Co. No. 692 for 3-gang, No. 693 for 4-gang, etc. Use shallow box 1-1/2" on interior existing walls.
- B. Plug receptacle boxes shall be 4" square by 2-1/8" deep with a 4" square device cover, either one or two-gang as required. Covers shall be square cut, with a depth to accommodate the wall finish material with a minimum raised cut of 1/2".
- C. Provide special sized boxes where called for on the drawings.

## 2.8 MANUFACTURER

Boxes and fittings shall be Appleton, Steel City, Raco, Efcor, Crouse-Hinds, or equal.

## 2.9 FABRICATION

Pull and junction boxes shall be galvanized or sheradized sheet metal or code thickness with lapped and welded joints and with 3/4" flange. They shall be rigidly supported on ceiling or wall. Conduit runs entering a box shall not be considered as adequate support.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Protect threads on rigid conduit during storage. To prevent entry of moisture and foreign matter in conduit during construction, install factory made conduit caps on conduit stubs. Swab conduit runs clean and dry prior to pulling wire.
- B. Cut conduit square, ream smooth, and thread properly and fully. Paint job cut male threads with conductive lead paint prior to making up a threaded conduit joint.
- C. Conduit shall be continuous from outlet to outlet and from outlet to panel or pull box. Connect conduit in building construction except as indicated. Secure conduit to all boxes and bushings with double locknuts so that system will be electrically continuous.
- D. In concrete slabs, block up conduit from forms and securely fasten in place. All conduits in slabs shall have a minimum of 2 inch concrete coverage above and below.
- E. Where conduit is installed in poured concrete slabs and it crosses an expansion joint, an expansion fitting equal to OZ type "AX" with a bonding jumper type "AL" shall be installed. Use Crouse-Hinds, Appleton, or approved equal.
- F. Install all conduit in a workmanlike manner with bends made using tools specifically designed for purpose to prevent kinks and flattened areas. Where electric metallic tubing is connected to an outlet box or panel, terminate tubing in an approved type connector and couple together with approved type connectors in order to insure adequate bonding.

- G. Where conduit is installed above ceilings, secure it in place by attachment to building structural framing system with appropriate clamps manufactured for purpose of making conduit attachment.
- H. Where conduit pierces a rated wall, provide a suitable seal to close openings. Refer to drawings for details.
- I. Provide junction or pull boxes in conduit lines which have greater than 360-degrees in total bends.
- J. Install pull and/or junction boxes in conduit lines wherever necessary to avoid excessive length of runs or number of bends in run. No run shall exceed 100 feet without a pull box.
- K. Pull and junction boxes shall be accessible and sized in accordance with provisions of Article No. 370-18 of latest edition of National Electrical Code.
- L. Pull and junction boxes shall be installed so that cover shall be accessible at all times.
- M. Although plans are diagrammatic, wiring shall generally be installed as indicated. For example, where overhead wiring is illustrated, contractor may not install under the floor. Further, contractor may not combine homeruns which will place more than three circuits in a single conduit.

**END OF SECTION 26 05 33**

**SECTION 26 05 53 - EQUIPMENT IDENTIFICATION AND LABELING****PART 1 - GENERAL****1.1 SUMMARY**

Furnish and installed engraved, laminated phenelic nameplates for all safety switches, panelboards, transformers, switchboards, and all other electrical equipment supplied for the project for identification of equipment controlled or served. Labels shall include the device name, voltage, phase, and source from which device is served.

**PART 2 - PRODUCTS****2.1 MATERIALS**

A. Nameplate material colors shall be:

1. Normal power devices shall have labels with black letters on a white background.
2. Emergency power devices shall have labels with white letters on a red background.
3. All empty conduit runs and conduit with conductors for future use shall be identified and shall indicate where they terminate. Identification shall be with engraved tags with wire attached to conduit or outlet.
4. All outlet boxes, junction boxes, and pullboxes shall have their cover and exterior visible surfaces painted with colors to match hospital color scheme.
5. All feeder conduits shall be spray painted every 100' to match color scheme listed in this section. All communication and fire alarm risers shall also be labeled in similar manner.

**PART 3 - EXECUTION****3.1 INSTALLATION**

Nameplates shall be securely attached to equipment with self-tapping stainless screws and shall identify equipment controlled, attached, etc. Letters shall be a minimum of 1/2" high.

**END OF SECTION 26 05 53**

**SECTION 26 24 16 - PANELBOARDS****PART 1 - GENERAL****1.1 SUMMARY**

- A. Furnish and install panelboards with circuit breaker equipment as indicated on drawings and specified hereinafter.

**1.2 SHOP DRAWINGS**

- A. Shop drawings shall be submitted for approval. Shop drawings shall be specific indicating busing, breaker dimensions, gutter dimension, number size, trip, and interrupting capacity of all circuits. Refer to Specification Section 013300.

**PART 2 - PRODUCTS****2.1 MATERIALS**

- A. Equipment shall be product of Cutler-Hammer or Square D. Branch circuit panelboards shall be of the circuit breaker, dead-front safety type with contents as indicated on panel scheduled, shall bear approved device label of UL, and shall meet all applicable requirements of National Electrical Manufacturers Association. Use bolt-on circuit breakers.
- B. Number of branch circuits, their rating, number of poles arrangements, etc., are indicated on drawings.
- C. Panelboards shall have lugs (both main lugs and branch circuit lugs) suitable and UL approved for both aluminum and copper conductors. Such panelboards shall have their breakers labeled and approved by UL.
- D. Provide neutral bars for all 4-wire system feeders. Isolate such neutral bars from the panel box.
- E. Panels shall have a separate "ground bar" installed with lugs or connectors on bar. Such bar shall be grounded to panel box.
- F. Bus bars shall be of sequence-phase type arranged for 120/208-volts, 3-phase, 4-wire mains and 277/480-volts, 3-phase, 4-wire mains. All circuits shown as common neutral shall be installed in accordance with National Electrical Code. All bus bars shall be copper (including ground bus).
- G. Multiple breakers shall have common trip. Trip indication shall be as indicated by breaker handle moving to a position other than ON or OFF. Equip doors on panels with chrome-plated lock and a catch with two keys supplied for each lock concealed hinges and attachment means. Panelboards shall be flush or surface mounted as required.
- H. Furnish six handle "lock-on" devices for each panel for installation on circuits as directed by Owner to prevent unauthorized personnel from turning off circuits to controls, unit heaters, clocks, night lights, etc. Any spare lock-ons remaining shall be turned over to Owner for his use.
- I. Provide typed or printed directory cards under plastic on doors. Submit detailed drawings for approval showing size of cabinets, trim, detail for busing, locks, method of numbering, voltage, phase, etc., and obtain approval from Architect before manufacture is commenced.



- J. Distribution or power panels shall be Cutler-Hammer Type CDP circuit breaker distribution panelboard. This shall include all panels rated greater than 225-amperes.
- K. Circuit breakers shall be fully rated and temperature rated for a 40 degrees C. ambient. All panelboards shall have lugs (both main lugs and branch circuit lugs) suitable and UL approved for aluminum and copper conductors. Such panelboards shall have their breakers labeled and approved by UL.
- L. Breakers shall be of thermal magnetic type, sized and numbered as indicated on schedule on drawings, and shall be quick-make, with trip indication shown by a handle position other than ON or OFF with trip on all multipole breakers.
- M. Minimum short circuit interrupting capacity shall be as indicated on panel schedule.
- N. Panelboard fronts shall have concealed hinges and attachment bolts, be complete with door cylinder lock and catch, all keyed alike. Fronts shall have adjusting indicating trim clamps and Bakelite nameplates engraved to indicate device, panel, or motor being served. Spare breakers and spaces only shall have nameplates with no engraving. Secure all nameplates to panelboard trim with two round head sheet metal screws.
- O. Panelboards shall be UL approved. Panelboard main sizes, branch circuit rating, and mounting shall be as indicated on plans. Shop drawings shall be submitted for approval. Shop drawings shall be specific showing busing, breaker dimensions, gutter dimensions, spare space dimensions, number, size, trip, and interrupting capacity on all circuits. Standard factory work sheets will not be acceptable as shop drawings.
- P. Circuit breakers shall not be restricted to any mounting location due to their physical size. All branch circuit breakers rated 15 through 100 amperes shall be capable of mounting in any and all interior positions without space penalty, except it is allowable to limit any connection point to 100-amperes. All branch circuit breaker connections shall be copper to copper, with all terminations being fully rated at 100-amperes.

### **PART 3 - EXECUTION**

#### **3.1 INSTALLATION**

- A. Secure surface mounted panelboards to wall using 1/4" toggle bolts, bolted to masonry wall. Where hollow block walls do not occur, suitable expansion shields and anchor bolts shall be utilized. Unless directed otherwise, panelboards shall be mounted to have the top 6 feet clear above finished floor.
- B. The directories within each panelboard shall be properly filled out, so as to have a comprehensive understanding of the loads to which each circuit breaker is connected. They shall be filled out by use of a typewriter. This shall include room number served.
- C. Panelboards shall be painted to match adjacent walls and labeled inside with a suitable engraved, laminated plastic plate to identify the panelboard designation and its voltage.
- D. Balance all circuits in a panel to achieve not more than 10 percent unbalanced neutral current in panel feeder. Panel circuit numbering shall be revised as necessary and arranged to facilitate above.

**END OF SECTION 26 24 16**

**SECTION 26 27 26 - WIRING DEVICES****PART 1 - GENERAL****1.1 SUMMARY**

Furnish and install wall switches, plug receptacles, etc. as specified hereafter and shown on the drawings. Devices offered as a substitute to those specified will be carefully checked to see that quality such as grounding continuity, retention force for insertion devices, are equal to those specified.

**PART 2 - PRODUCTS****2.1 MATERIALS**

- A. The plug receptacles shall have a minimum rating of 20 amperes for the voltage service applied. Devices shall be specification grade.
- B. Wall switches shall be 20-ampere, minimum capacity and single pole, 3-way or 4-way as required. Other variations of the devices shall be as called for on the drawings. Where pilot lights are required, they shall be separately ganged.
- C. Special colors may be required by the Architect and request for color variation must be made well in advance of product procurement. Devices connected to emergency power shall be "red".
- D. Coverplates: Stainless steel coverplates shall be used except where specifically requested by the architect to be nylon.
- E. The 208-volt plug receptacles shall be Hubbell Co. No. 5462 rated 20-amperes and a maximum of 240-volts AC.
- F. The manufacturer shall be Hubbell, General Electric, Bryant, P & S, Leviton, or approved equal.

**PART 3 - EXECUTION****3.1 INSTALLATION**

Installation of devices shall be in accord with the manufacturer's recommendations. Grounding devices such as jumper straps between the device grounding pole and the junction box, or the connection of a grounding conductor will be required at each plug receptacle. Where metal conduit serves the outlet box, a device using a "UL" approved grounding arrangement making use of the contact between the yoke and the device box is approved for use.

**END OF SECTION 26 27 26**

**SECTION 26 51 19 - LED INTERIOR LIGHTING****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
1. Arrange in order of luminaire designation.
  2. Include data on features, accessories and finishes.
  3. Include physical description and dimensions of luminaires.
  4. Include life, output (lumens, CCT, and CRI), and energy efficiency data.
  5. Photometric data and adjustment factors based on laboratory tests IES LM-79 and IES LM-80.
    - a. Manufacturer's Certified Data: Photometric data certified by manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.
- B. Shop Drawings: For nonstandard or custom luminaires.
1. Include plans, elevations, sections, and mounting and attachment details.
  2. Include details of luminaire assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components and location and size of each field connection.
  3. Include diagrams for power, signal, and control wiring.
- C. Product Schedule: For luminaires and lamps, use same designations indicated on Drawings.

**1.3 CLOSEOUT SUBMITTALS**

Operation and Maintenance Data: For luminaires and lighting systems to include in operation and maintenance manuals. Provide a list of all lamp types used on Project; use ANSI and manufacturer's codes.

**1.4 QUALITY ASSURANCE**

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Luminaire manufacturer's laboratory that is accredited under the NVLAP for Energy Efficient Lighting Products.
- B. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910.7, accredited under the NVLAP for Energy Efficient Lighting Products, and complying with the applicable IES testing standards.
- C. Provide luminaires from a single manufacturer for each luminaire type.

**1.5 DELIVERY, STORAGE, AND HANDLING**

Protect finishes of exposed surfaces by applying a strippable, temporary protective covering before shipping.

**1.6 WARRANTY**

- A. Warranty: Manufacturer and Installer agree to repair or replace components of luminaires that fail in materials or workmanship within specified warranty period.
- B. Warranty Period: One year(s) from date of Substantial Completion.

**PART 2 - PRODUCTS****2.1 PERFORMANCE REQUIREMENTS**

Seismic Performance: Luminaires shall withstand the effects of earthquake motions determined according to ASCE/SEI 7. The term "withstand" means "the luminaire will remain in place without separation of any parts when subjected to the seismic forces specified."

**2.2 LUMINAIRE REQUIREMENTS**

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. NRTL Compliance: Luminaires for hazardous locations shall be listed and labeled for indicated class and division of hazard by an NRTL.
- C. Recessed fixtures: Comply with NEMA LE 4.
- D. CRI of 80 CCT of 3500 K.
- E. Rated lamp life of 50,000 hours or more.
- F. Where dimming is indicated, lamps dimmable from 100 percent to 0 percent of maximum light output.
- G. Internal driver.
- H. Nominal Operating Voltage: As indicated.
- I. Lens Thickness: At least 0.125 inch minimum unless otherwise indicated.
- J. Housings:
  - 1. Extruded-aluminum housing and heat sink.
  - 2. Finish as indicated.

**2.3 MATERIALS**

- A. Metal Parts:
  - 1. Free of burrs and sharp corners and edges.
  - 2. Sheet metal components shall be steel unless otherwise indicated.
  - 3. Form and support to prevent warping and sagging.
- B. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating positions.
- C. Diffusers and Globes:
  - 1. Prismatic acrylic clear, UV-stabilized acrylic.
  - 2. Acrylic Diffusers: One hundred percent virgin acrylic plastic with high resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
  - 3. Lens Thickness: At least 0.125 inch minimum unless otherwise indicated.
- D. Housings: Extruded-aluminum housing and heat sink. Finish as indicated.

- E. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps. Locate labels where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place. Label shall include the following lamp characteristics:
1. "USE ONLY" and include specific lamp type.
  2. Lamp diameter, shape, size, wattage, and coating.
  3. CCT and CRI for all luminaires.

## 2.4 METAL FINISHES

Variations in finishes are unacceptable in the same piece. Variations in finishes of adjoining components are acceptable if they are within the range of approved Samples and if they can be and are assembled or installed to minimize contrast.

## 2.5 LUMINAIRE FIXTURE SUPPORT COMPONENTS

- A. Wires: ASTM A 641/A 641 M, Class 3, soft temper, zinc coated steel, 12 gage.
- B. Rod Hangers: 3/16-inch minimum diameter, cadmium-plated, threaded steel rod.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for luminaire to verify actual locations of luminaire and electrical connections before fixture installation. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Comply with NECA 1.
- B. Install luminaires level, plumb, and square with ceilings and walls unless otherwise indicated.
- C. Install lamps in each luminaire.
- D. Supports:
1. Sized and rated for luminaire weight.
  2. Able to maintain luminaire positions after cleaning and relamping.
  3. Provide support for luminaire without causing deflection of ceiling or wall.
  4. Luminaire mounting devices shall be capable of supporting a horizontal force of 100 percent of luminaire weight and vertical force of 400 percent of luminaire weight.
- E. Flush-Mounted Luminaire Support:
1. Secured to outlet box.
  2. Attached to ceiling structural members at four points equally spaced around circumference of luminaire.
  3. Trim ring flush with finished surface.

- F. Wall-Mounted Luminaire Support:
  - 1. Attached to structural members in walls.
  - 2. Do not attach luminaires directly to gypsum board.
  
- G. Ceiling-Mounted Luminaire Support:
  - 1. Ceiling mount with two 5/32-inch diameter aircraft cable supports adjustable to 120 inches in length.
  - 2. Ceiling mount with two-point pendant mount with 5/32-inch diameter aircraft cable supports adjustable to 120 inches in length.
  
- H. Suspended Luminaire Support
  - 1. Pendants and Rods: Where longer than 48 inches, brace to limit swinging. Stem-Mounted, Single-Unit Luminaires: Suspend with twin-stem hangers. Support with approved outlet box and accessories that hold stem and provide damping of luminaire oscillations. Support outlet box vertically to building structure using approved devices.
  - 2. Continuous Rows of Luminaires: Use tubing or stem for wiring at one point (unless indicated otherwise) and wire support for suspension for each unit length of luminaire classis, including one at each end.
  - 3. Do not use ceiling grid as support for pendent luminaires. Connect support wires or rods to building structure.
  
- I. Ceiling-Grid-Mounted Luminaires:
  - 1. Secure to any required outlet box.
  - 2. Secure luminaire to the luminaire opening using approved fasteners in a minimum of four locations, spaced near corners of luminaire.
  - 3. Use approved devices and support components to connect luminaire to ceiling grid and building structure in a minimum of four locations, spaced near corners of luminaire.
  
- J. Comply with requirements in Section 260519 “Low-Voltage Electrical Power Conductors and Cables” for wiring connections.

### **3.3 FIELD QUALITY CONTROL**

- A. Perform the following tests and inspections:
  - 1. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.
  - 2. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to emergency power and retransfer to normal.
  
- B. Luminaire will be considered defective if it does not pass operation tests and inspections.
  
- C. Prepare test and inspection reports.

**END OF SECTION 26 51 19**

**SECTION 26 53 00 - EXIT SIGNS****PART 1 - GENERAL****1.1 SUMMARY**

Furnish and install exit signs where illustrated on the drawings. Mounting shall be as set forth on the drawings and specified hereinafter. All exit signs shall have green letters and have light emitting bottom panels. They shall conform to the requirements of the National Fire Protection Association Codes. Units shall contain battery backup.

**1.2 REFERENCES:**

General Provisions of the Contract, General and Supplementary Conditions, and division 1 Specification Sections, General Requirements apply to this section.

**1.3 SUBMITTALS**

- A. Submit the manufacturer's complete specifications and installation instructions for equipment furnished under this section.
- B. Submittals shall conform to Section 013300, Submittals-Procedures.

**PART 2 - PRODUCTS****2.1 MATERIALS**

- A. Exit signs shall be die cast aluminum. Lamps shall be light emitting diodes.
- B. The unit mounted on a lay-in type ceiling shall be supported by use of a Caddy Company acoustical "Tee Bar" box hanger, catalog No. 512 or similar product.

**PART 3 - EXECUTION****3.1 INSTALLATION**

- A. The unit shall be arranged for the mounting called for on the drawings, either single face or double face or either ceiling mounting or wall mounting. Directional arrows shall be provided as indicated. Where ceilings above 9 feet are involved, the ceiling mounted units are to be pendant mounted to where the bottom of the sign is approximately 8'6" above floor.
- B. Conform to the manufacturer's recommendations.

**END OF SECTION 26 53 00**

**SECTION 27 05 10 – MISCELLANEOUS COMMUNICATIONS WIRING****PART 1 - GENERAL****1.1 SUMMARY**

Provide empty raceway and boxes for installation of facilities to be provided by others. These include, but are not limited to, data wiring, security system, cameras, keypad, door access system, and other systems.

**PART 2 - GENERAL****2.1 MATERIALS**

Minimum conduit size for these systems shall be 1". Boxes will generally two-gang.

**PART 3 - EXECUTION****3.1 INSTALLATION**

- A. Coordinate work with owner's providers and with owner's I.T. Department. Verify rough-in locations of various devices with owner and owner's sub-contractors.
- B. Provide miscellaneous 120-volt power supplies for central communication equipment, such as camera power supplies, security system power supplies, etc.

**END OF SECTION 27 05 10**



# ANDERSON COUNTY COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION

100 N Main Street, CLINTON, TENNESSEE 37716-3617

ANDERSON COUNTY..... OWNER

DESIGN DEVELOPMENT DRAWINGS NOT FOR CONSTRUCTION



**BLANKENSHIP & PARTNERS, LLC**  
ARCHITECTS & PLANNERS

BCE - BEDINGER CONSULTING ENGINEERS..... MECHANICAL ENGINEERS

VREELAND ENGINEERS, INC..... ELECTRICAL ENGINEERS

## DRAWING INDEX

COVER SHEET	
<b>ARCHITECTURAL</b>	
G-1	LIFE SAFETY PLAN-FIRST FLOOR
G-2	LIFE SAFETY PLAN-THIRD FLOOR
G-3	UL DETAILS
A0.1	DEMOLITION PLAN-FIRST FLOOR
A0.2	DEMOLITION PLAN-THIRD FLOOR
A2.0	FIRST FLOOR PLAN
A2.1	THIRD FLOOR PLAN
A2.2	ENLARGED FLOOR PLAN
A3.0	REFLECTED CEILING PLAN-FIRST FLOOR
A3.1	REFLECTED CEILING PLAN-THIRD FLOOR
A3.2	GRID CEILING PLAN & DETAILS
A5.0	WALL SECTIONS & DETAILS
A5.1	WALL SECTIONS & DETAILS
A6.0	INTERIOR ELEVATIONS & MILLWORK
A6.1	MILLWORK DETAILS
A8.0	DOOR & WINDOW DETAILS
A9.0	FINISH PLANS & SCHEDULE
<b>MECHANICAL</b>	
M-1	FIRST FLOOR PLAN HVAC
M-2	THIRD FLOOR PLAN HVAC
<b>ELECTRICAL</b>	
E0.1	DEMOLITION PLAN - FIRST FLOOR
E0.2	DEMOLITION PLAN - THIRD FLOOR
E1.1	FIRST FLOOR PLAN - LIGHTING
E1.2	FIRST FLOOR PLAN - POWER & COMMUNICATION
E2.1	THIRD FLOOR PLAN - LIGHTING
E2.2	THIRD FLOOR PLAN - POWER & COMMUNICATION
E3.1	LEGENDS AND SCHEDULES
E3.2	DETAILS
E3.3	SCHEDULES AND DETAILS
E3.4	PANELBOARD SCHEDULES AND FEEDER DIAGRAM

## ABBREVIATIONS

ADJ	ADJUSTABLE	L	LENGTH	TYP	TYPICAL
ALUM	ALUMINUM	LLH	LONG LEG HORIZONTAL	UNO	UNLESS NOTED OTHERWISE
ARCH	ARCHITECT(URAL)	LLV	LONG LEG VERTICAL	VB	VAPOR BARRIER
ASPH	ASPHALT	LP	LOW POINT	VERT	VERTICAL
A.F.F.	AT FINISHED FLOOR	MAS	MASONRY	W	WIDE OR WIDTH
B.O.C	BOTTOM OF CURB	MATL	MATERIAL	W/	WITH
BD	BOARD	MAX	MAXIMUM	W/O	WITHOUT
BLDG	BUILDING	MECH	MECHANIC(AL)	WD	WOOD
BLKG	BLOCKING	MFR	MANUFACTURE(R)	WR	WATER RESISTANT
BM	BENCHMARK	MH	MANHOLE	WR	WELDED WIRE MESH
BRG	BEARING	MIN	MINIMUM	WWM	W/ WIRE MESH
B.O.W	BOTTOM OF WALL	MISC	MISCELLANEOUS	YD	YARD
CB	CATCH BASIN	MTL	METAL	ANG	ANGLE
CEM	CEMENT	NEO	NEOPRENE	AT	AT CENTERLINE
CJ	CONTROL JOINT	NIC	NOT IN CONTRACT	CH	CHANNEL
CLR	CLEAR(ANCE)	NO	NUMBER	Ø	DIAMETER
COL	COLUMN	NTS	NOT TO SCALE	±	PLUS OR MINUS
CONC	CONCRETE	OC	ON CENTER	d	PENNY
CONST	CONSTRUCTION	OD	OUTSIDE DIAMETER	PL	PLATE
CONT	CONTINUOUS OR CONTINUE	OH	OPPOSITE HAND		
COORD	COORDINATE	OPNG	OPENING		
CORR	CORRUGATED OR CORRIDOR	OPP	OPPOSITE		
CRS	COURSE(S)	P LAM	PLASTIC LAMINATE		
CTSK	COUNTERSUNK	PREFAB	PREFABRICATED		
CU	CUBIC	P.T.	PRESSURE TREATED		
CU FT	CUBIC FEET	PT	POINT		
CU YD	CUBIC YARD	PTD	PAINTED		
DTL	DETAIL	PVC	POLYVINYL CHLORIDE		
DIM	DIMENSION	R	RADIUS		
DWG	DRAWING	RCP	REINFORCED CONCRETE PIPE		
EF	EACH FACE	REINF	REINFORCED		
EJ	EXPANSION JOINT	RET	RETAINING		
ELEC	ELECTRIC(AL)	RO	ROUGH OPENING		
EQ	EQUAL	ROW	RIGHT-OF-WAY		
EQUIP	EQUIPMENT	RS	ROUGH SAWN		
EW	EACH WAY	RVL	REVEAL		
EXIST	EXISTING	SAN	SANITARY		
EXP	EXPANSION / EXPOSED	SCH	SCHEDULE		
FT	FEET / FOOT	SEC	SECURE		
FIG	FOOTING	SECT	SECTION		
FRT	FIRE RETARDANT TREATED	SHT	SHEET		
FSTN	FASTEN(ED)	SIM	SIMILAR		
GA	GAUGE, GAGE	SPEC	SPECIFICATION(S)		
GALV	GALVANIZED	SG	SQUARE		
GL	GLASS	SG FT	SQUARE FOOT / FEET		
GB	HOSE BIBB	SG IN	SQUARE INCH(ES)		
HDW	HARDWARE	SG YD	SQUARE YARD		
HORIZ	HORIZONTAL	SST	STAINLESS STEEL		
HP	HIGH POINT	STD	STANDARD		
HT	HEIGHT	STL	STEEL		
ID	INSIDE DIAMETER	STOR	STORAGE		
IN	INCH	STRUCT	STRUCTURAL		
INSUL	INSULATE(D),(ING)	T.O.C	TOP OF CURB		
INV	INVERT	THK	THICK(NESS)		
IPS	IRON PIPE SIZE	THR	THREADS		
JT	JOINT	TRTD	TREATED		
		TW	TOP OF WALL		

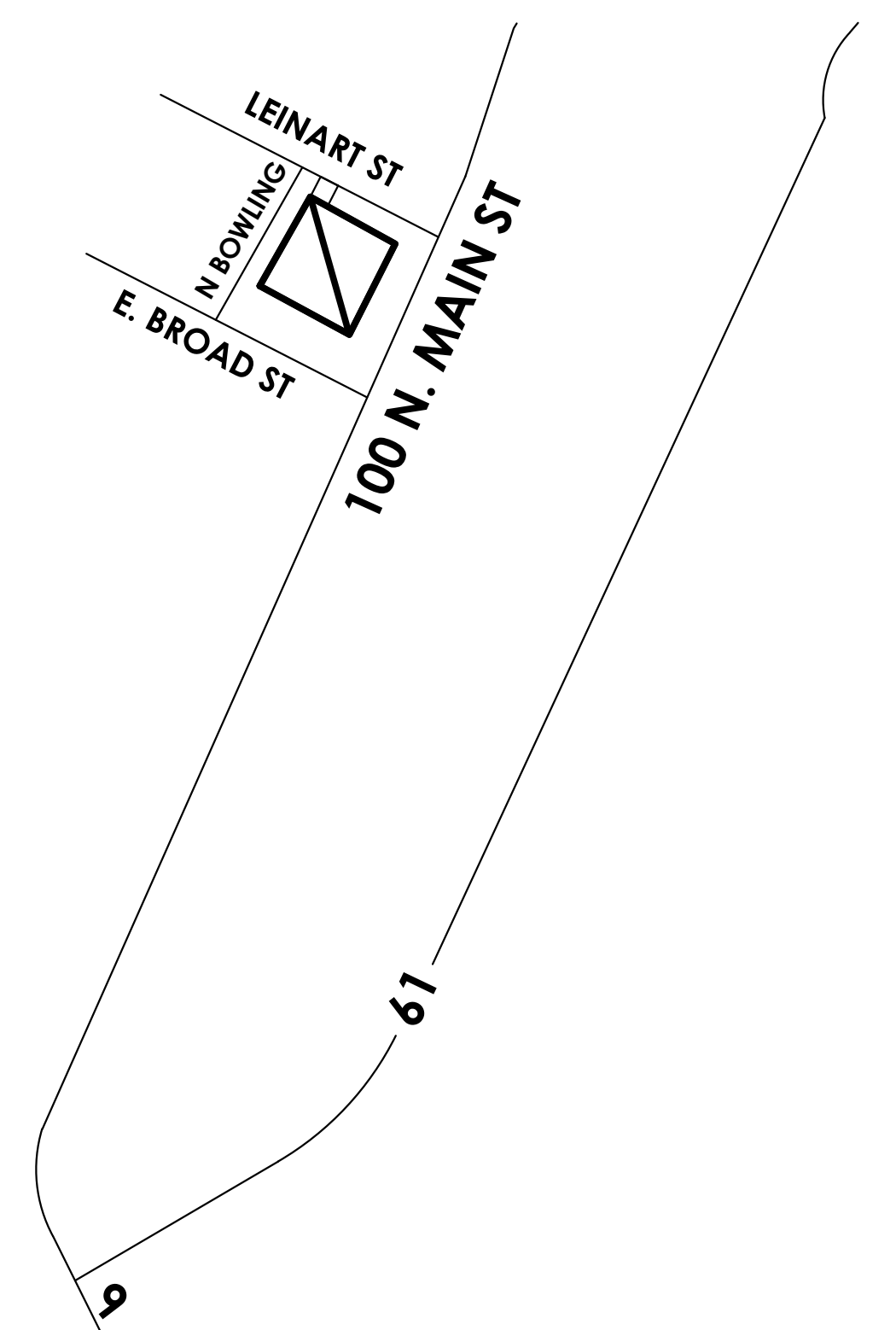
## GRAPHIC SYMBOLS LEGEND

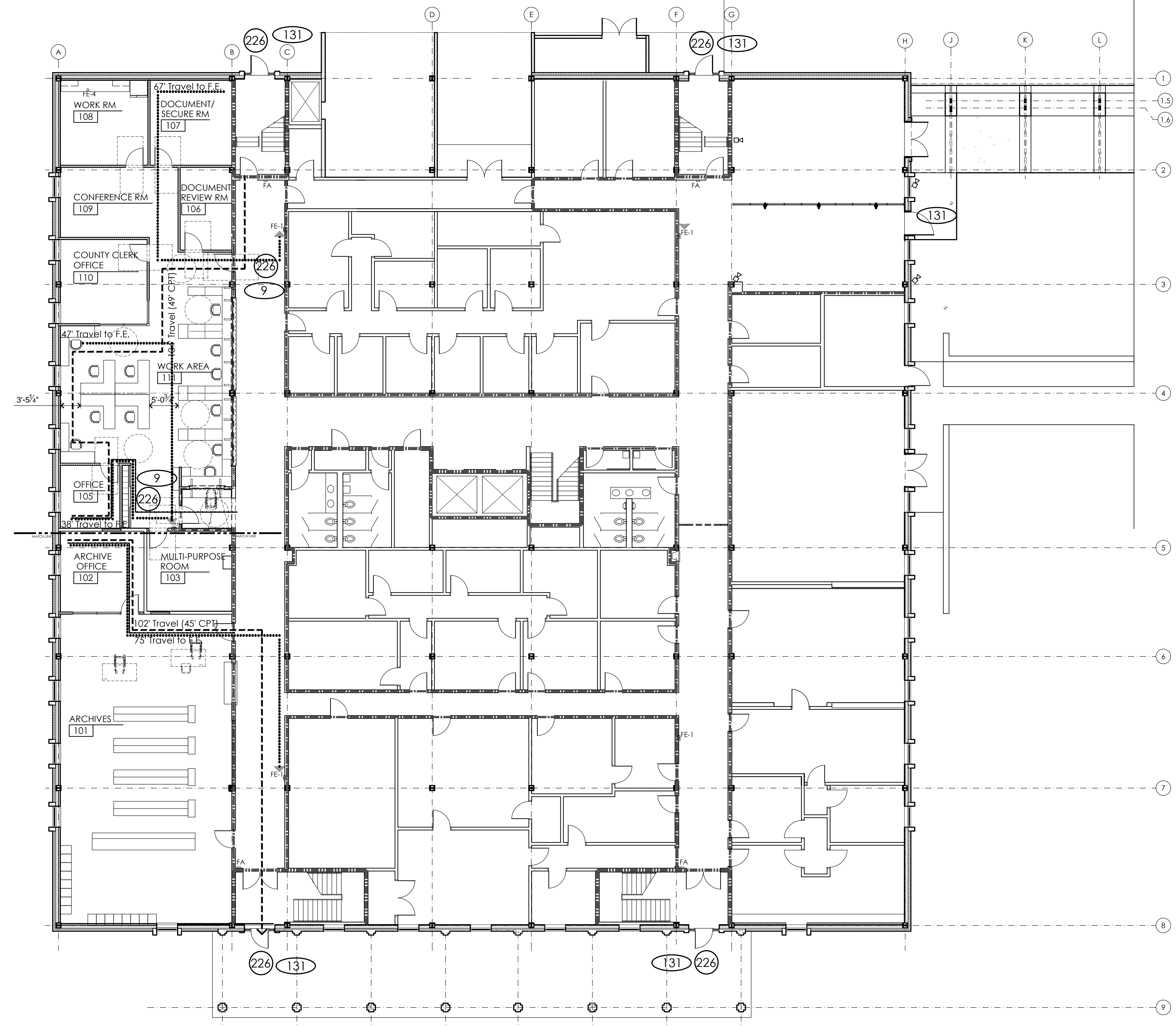
	(DETAIL) (SHEET)	SECTION KEY
	(DETAIL) (SHEET)	DETAIL KEYS
		COLUMN REFERENCE GRID
		ROOM/SPACE NAME & NUMBER
	(DETAIL) (SHEET)	EXTERIOR & INTERIOR ELEVATION
		DOOR NUMBER
		REVISION
		PROJECT NORTH
		BENCHMARK OR WORK POINT
		WINDOW TYPE

## CODE INFORMATION

<b>DESCRIPTION</b>	THIS PROJECT CONSIST OF THE RENOVATING THE COUNTY CLERK OFFICES ON THE FIRST FLOOR AND MOVING THE ARCHIVE AREA FROM THE THIRD FLOOR TO THE FIRST FLOOR. THE RENOVATION WILL AFFECT APPROXIMATELY 6,820 SF OF THE 64,983 SF COUNTY HOUSE.
<b>APPLICABLE CODES:</b>	2018 INTERNATIONAL BUILDING CODE 2018 INTERNATIONAL ENERGY CONSERVATION CODE 2012 NFPA70 NATIONAL ELECTRICAL CODE 2018 INTERNATIONAL FUEL GAS CODE 2018 INTERNATIONAL MECHANICAL CODE 2018 INTERNATIONAL PLUMBING CODE 2018 INTERNATIONAL FIRE CODE 2018 INTERNATIONAL PROPERTY MAINTENANCE CODE 2012 NFPA 101 LIFE SAFETY CODE NFPA 72 NATIONAL FIRE ALARM CODE
<b>ZONING INFORMATION</b>	ZONING DESIGNATION: ..... C-1 GENERAL COMMERCIAL DISTRICT AND USE DESCRIPTION: ..... REQUIRED SETBACKS: ..... N/A ALLOWABLE LOT COVERAGE: ..... N/A OFF-STREET PARKING REQUIREMENTS: ..... N/A OFF-STREET PARKING PROVIDED: ..... N/A
<b>BUILDING DESCRIPTION</b>	TYPE OF STRUCTURE (NEW, EXISTING, OR TENANT SPACE): ..... EXISTING TENANT SPACE OCCUPANCY CLASS (IBC CHAPTER 3): ..... B- BUSINESS - CIVIC ADMINISTRATION MIN CONSTRUCTION TYPE, PER OCCUPANCY AND AREA: ..... TYPE IB ALLOWABLE HEIGHT: ..... 50 FT. (ZONING ORDINANCE) UL IBC ACTUAL HEIGHT: ..... 3 STORY (42 FEET) ALLOWABLE AREA PER PERSON: ..... 100 SF = 450 PERSONS PLUMBING FIXTURES[ WC/ URINALS ]: ..... 14 NEEDED - 27 ACTUAL PLUMBING LAVATORIES: ..... 10 NEEDED - 15 ACTUAL RENOVATED AREA: ..... 6,820 SF TOTAL TENANT AREA: ..... 64,983 SF CONSTRUCTION CLASS: ..... TYPE IB EXIT CORRIDORS: ..... 1 HOUR

## VICINITY MAP





1 LIFE SAFETY PLAN-FIRST FLOOR  
 G-1 Scale: 3/32" = 1'-0"

**NOTE: EXISTING FLOOR PLAN IS SHOWN FOR LOCATION PURPOSES. ONLY AREAS IN ENLARGED PLANS ARE TO BE CHANGED.**

**PARTITION LEGEND**

- EXISTING STUD PARTITION
- NEW STUD PARTITION
- NEW WINDOW PARTITION
- NEW 1-HOUR RATED STUD PARTITION
- EXIST 1-HOUR RATED PARTITION
- EXIST 2-HOUR RATED PARTITION

**EGRESS LEGEND**

- Business Occupancy @ 150 SF/PERSON;
- DOOR NUMBER
  - TOTAL PERSONS EXITING AT DOOR
  - DOOR EGRESS CAPACITY (@.15 in./occ.)
  - DIRECTION OF PERSONS EXITING
  - MAX. TRAVEL DISTANCE: 200 FT (without sprinkler system)
  - COMMON PATH OF TRAVEL (CPT)
  - MAX. COMMON PATH OF TRAVEL: 75' (without sprinkler system)
  - PATH OF TRAVEL TO FIRE EXTINGUISHER
  - MAX. TRAVEL DISTANCE: 75'

**FIRE EXTINGUISHER LEGEND**

- FE-1 EXIST TYPE 2-A (CLASS ABC) MULTI-PURPOSE DRY CHEMICAL IN SEMI-RECESSED CABINET - MAX. TRAVEL 75 FT
- FE-2 EXIST TYPE 2-A (CLASS ABC) MULTI-PURPOSE DRY CHEMICAL WITH WALL MOUNTED BRACKET - MAX. TRAVEL 75 FT
- FE-3 NEW TYPE 2-A (CLASS ABC) MULTI-PURPOSE DRY CHEMICAL IN SEMI-RECESSED CABINET - MAX. TRAVEL 75 FT
- FE-4 NEW TYPE 2-A (CLASS ABC) MULTI-PURPOSE DRY CHEMICAL WITH WALL MOUNTED BRACKET - MOUNT IN CABINET UNDER SINK IN BREAK ROOM

**ADA LEGEND**

- INDICATES AREA NEEDED AROUND DOOR
- 5' Ø CIRCLE INDICATES AREA NEEDED FOR WHEELCHAIR TO TURN AROUND



**Blankenship & Partners, LLC**  
 Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37901  
 Office: 865.251.2585 Fax: 865.531.9499

Contact Name: William R. Blankenship  
 Owner: Anderson County

100 N Main Street  
 Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

**Project Name:**

**ANDERSON CO. COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION**

**Consultants:**

**Mechanical**

Bedinger Consulting Engineers  
 5641 Merchants Center Blvd. STE A104  
 Knoxville, TN 37912  
 (865) 299-5973

Contact Name: David Blakney, P.E.

**Electrical**

Vreeland Engineers, Inc.  
 P.O. Box 10645  
 Knoxville, TN 37939  
 T (865) 745-4401

Contact Name: Chris Lay, P.E.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



Date: 12-2-21

Drawn By: SN & BS

Checked By: BB

Project Number: 20-15

**Revisions**

No. \_\_\_\_\_ Date: \_\_\_\_\_

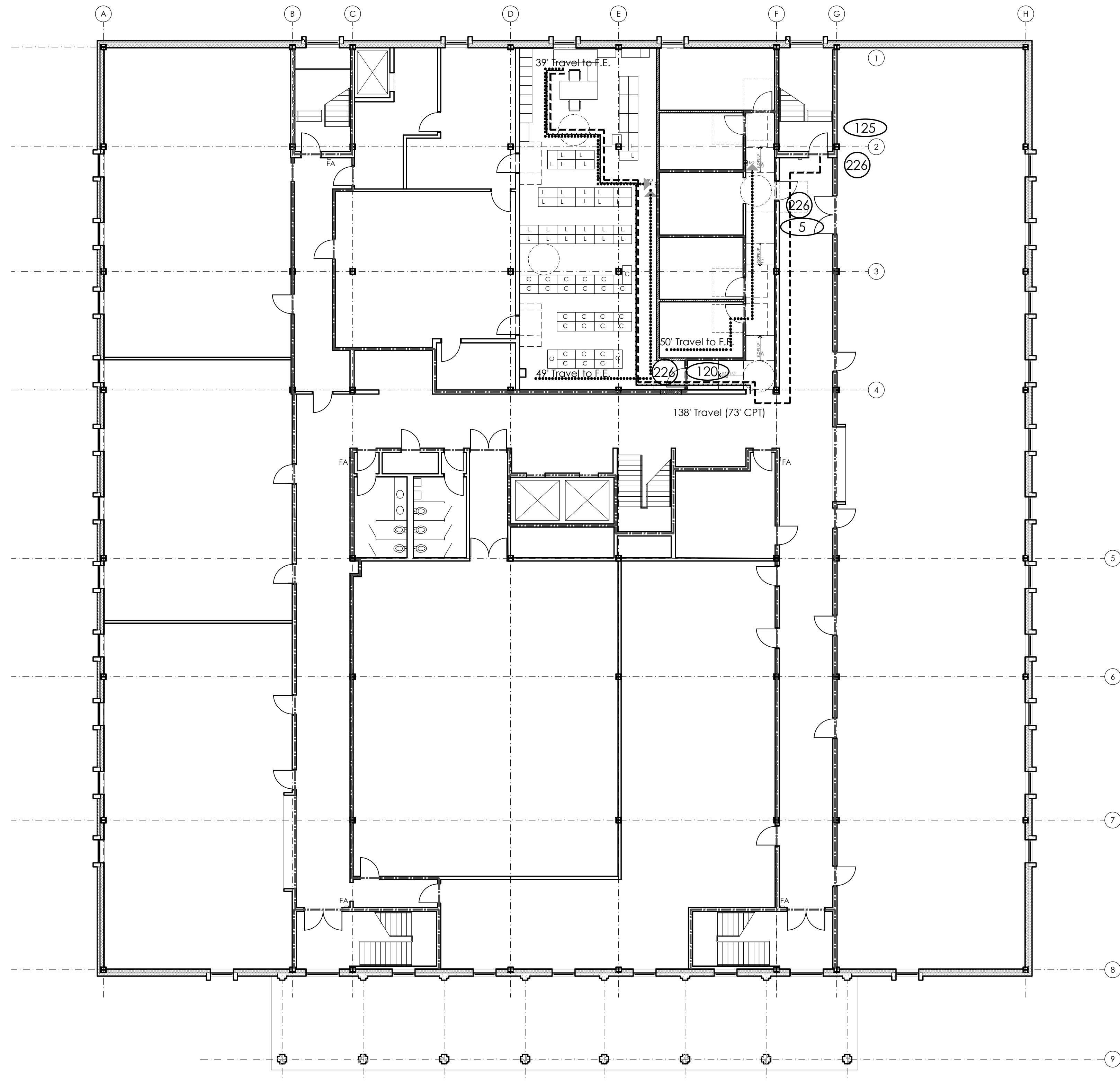
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**NOTE: EXISTING FLOOR PLAN IS SHOWN FOR LOCATION PURPOSES. ONLY AREAS IN ENLARGED PLANS ARE TO BE CHANGED.**

**PARTITION LEGEND**

- EXISTING STUD PARTITION
- NEW STUD PARTITION
- NEW WINDOW PARTITION
- NEW 1-HOUR RATED STUD PARTITION
- EXIST 1-HOUR RATED PARTITION
- EXIST 2-HOUR RATED PARTITION

**EGRESS LEGEND**

Business Occupancy @ 150 SF/PERSON;

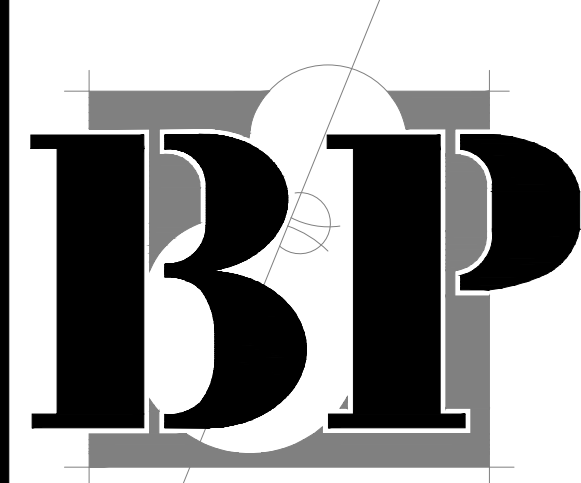
- DOOR NUMBER
- TOTAL PERSONS EXITING AT DOOR
- DOOR EGRESS CAPACITY (@.15 in./occ.)
- DIRECTION OF PERSONS EXITING
- MAX. TRAVEL DISTANCE:  
200 FT (without sprinkler system)
- COMMON PATH OF TRAVEL (CPT)  
MAX. COMMON PATH OF TRAVEL:  
75' (without sprinkler system)
- PATH OF TRAVEL TO FIRE EXTINGUISHER  
MAX. TRAVEL DISTANCE: 75'

**FIRE EXTINGUISHER LEGEND**

- FE-1 EXIST TYPE 2-A (CLASS ABC) MULTI-PURPOSE DRY CHEMICAL IN SEMI-RECESSED CABINET - MAX. TRAVEL 75 FT
- FE-2 EXIST TYPE 2-A (CLASS ABC) MULTI-PURPOSE DRY CHEMICAL WITH WALL MOUNTED BRACKET - MAX. TRAVEL 75 FT
- FE-3 NEW TYPE 2-A (CLASS ABC) MULTI-PURPOSE DRY CHEMICAL IN SEMI-RECESSED CABINET - MAX. TRAVEL 75 FT
- FE-4 NEW TYPE 2-A (CLASS ABC) MULTI-PURPOSE DRY CHEMICAL WITH WALL MOUNTED BRACKET - MOUNT IN CABINET UNDER SINK IN BREAK ROOM

**ADA LEGEND**

- INDICATES AREA NEEDED AROUND DOOR
- 5' Ø CIRCLE INDICATES AREA NEEDED FOR WHEELCHAIR TO TURN AROUND



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37902  
Office: 865.251.2585 Fax: 865.531.9499  
Contact Name: William R. Blankenship

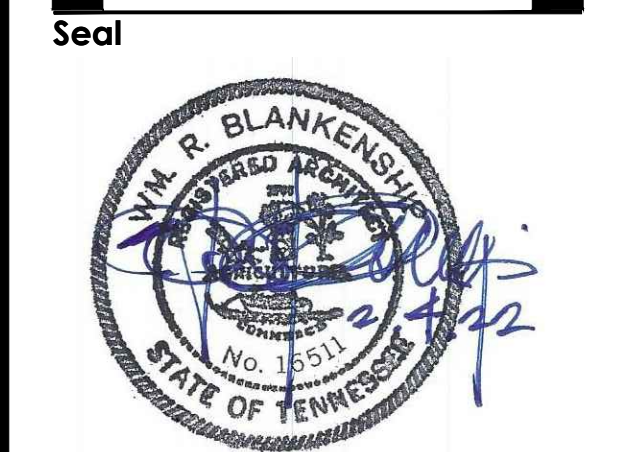
**Owner:**  
Anderson County  
100 N Main Street  
Clinton, TN 37716-3617  
Contact Name: Mayor Terry Frank

**Project Name:**  
**ANDERSON CO. COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION**

**Consultants:**  
**Mechanical**  
Bedinger Consulting Engineers  
5641 Merchants Center Blvd, STE A104  
Knoxville, TN 37912  
(865) 299-5973  
Contact Name: David Blakney, P.E.

**Electrical**  
Vreeland Engineers, Inc.  
P.O. Box 10645  
Knoxville, TN 37939  
T (865) 745-4401  
Contact Name: Chris Lay, P.E.

© COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC, and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.



Date: 12-2-21  
Drawn By: SN & BS  
Checked By: BB  
Project Number: 20-15  
**Revisions**  
No. Date:

**Drawing Title:**  
Life Safety Plan-Third Floor

**Drawing No.:**

**G2**

LIFE SAFETY PLAN- THIRD FLOOR  
Scale: 3/32" = 1'-0"



**Design No. U419  
BXUV.U419  
Fire Resistance Ratings - ANSI/UL 263**

Page Bottom

**Design/System/Construction/Assembly Usage Disclaimer**

- Authorized Having jurisdiction should be consulted for all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorized Having jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service provided by the product manufacturer noted for the design. Users of the resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specific concerning alternate materials and alternative methods of construction.
- Only products which bear the UL Mark are considered Certified.

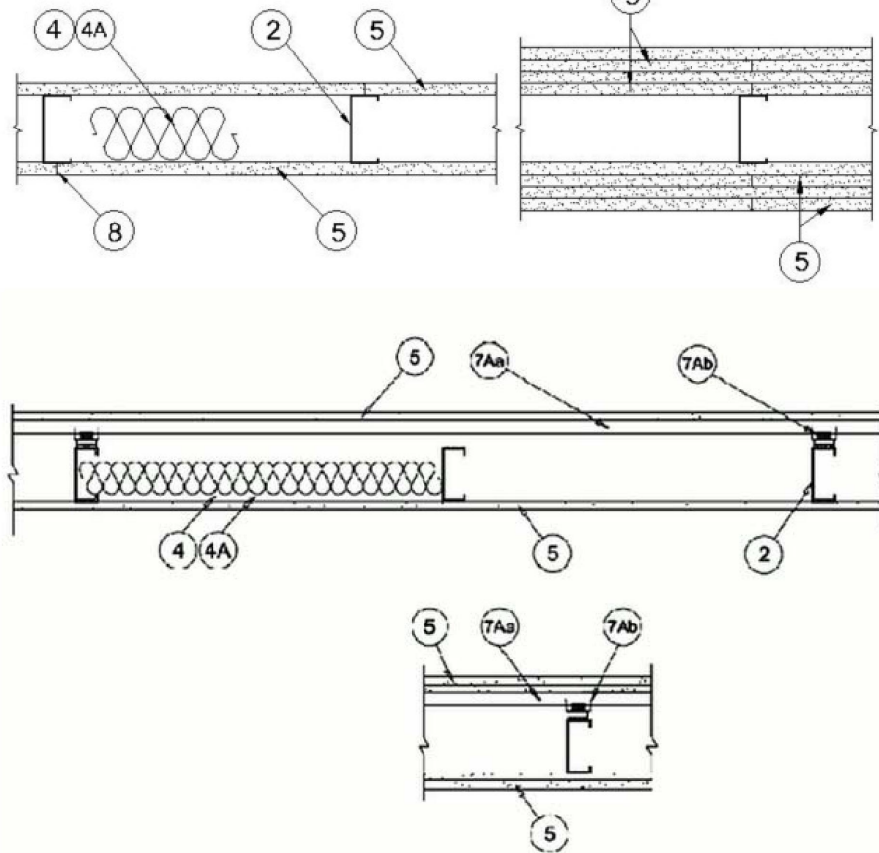
**Fire-resistance Ratings - ANSI/UL 263**

See General Information for Fire-resistance Ratings - ANSI/UL 263

**Design No. U419**

Mar 14, 2014

Nonbearing Wall Ratings — 1, 2, 3 or 4 Hr (See Items 4 & 5)



1. Floor and Ceiling Runners — (Not shown) — For use with Item 2. Channel shaped, fabricated from min 25 HSG corrosion-protected steel, min depth to accommodate stud size, with min 1.14 in. long legs, attached to floor and ceiling with fasteners 24 in. OC, max.

1A. Framing Members\* — Floor and Ceiling Runner — (Not shown) — In lieu of Item 1 — For use with Item 2B, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC, max.

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — Viper25™ Track

CRACO HFG INC — SmartTrack25™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™ Track

PHILLIPS HFG CO L L C — Viper25™ Track

1B. Framing Members\* — Floor and Ceiling Runner — (Not shown) — In lieu of Item 1 — For use with Item 2C, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.020 in. thick galv. steel, attached to floor and ceiling with fasteners spaced 24 in. OC, max.

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — Viper20™ Track

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track

PHILLIPS HFG CO L L C — Viper20™ Track

1C. Framing Members\* — Floor and Ceiling Runners — (Not shown) — In lieu of Item 1 — Channel shaped, attached to floor and ceiling with fasteners 24 in. OC, max.

ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME Framing System

**CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV** — Type SUPREME Framing System

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME Framing System

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME Framing System

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME Framing System

UNITED METAL PRODUCTS INC — Type SUPREME Framing System

1D. Floor and Ceiling Runners — (Not shown) — For use with Item 2A. Channel shaped, fabricated from min 25 HSG corrosion-protected steel or galv. steel, min depth to accommodate stud size, with min 1.14 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC.

1E. Framing Members\* — Floor and Ceiling Runners — (Not shown) — In lieu of Item 1 — For use with Item 2A, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.015 in. (min bare metal thickness) galv. steel, attached to floor and ceiling with fasteners 24 in. OC, max.

**CLARKDIERICH BUILDING SYSTEMS** — CD ProSTUD

DMFCWS L L C — ProSTRAK

MEA BUILDING SUPPLIES INC — ProSTRAK

RAM SALES L L C — Ram ProSTRAK

SOUTHEASTERN STUD & COMPONENTS INC — ProSTRAK

STEEL STRUCTURAL SYSTEMS L L C — ProSProSTRAK

1F. Framing Members\* — Floor and Ceiling Runner — (Not shown) — In lieu of Item 1 — For use with Item 2B, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.020 in. thick galv. steel, attached to floor and ceiling with fasteners spaced 24 in. OC, max.

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — The Edge

CRACO HFG INC — SmartTrack25™

1G. Framing Members\* — Floor and Ceiling Runner — (Not shown) — In lieu of Item 2 — For use with Item 2C, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.020 in. thick galv. steel, attached to floor and ceiling with fasteners 24 in. OC, max.

**STUCCO BUILDING SYSTEMS** — CROCSSTUD Track

1H. Floor and Ceiling Runners — (Not shown) — Channel shaped, fabricated from min 0.020 in. thick galv. steel, min depth to accommodate stud size, with min 1.14 in. long legs, for use with studs specified below and galvanized steel, attached to floor and ceiling with fasteners 24 in. OC, max.

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track V1100.

1I. Framing Members\* — Floor and Ceiling Runner — (Not shown) — In lieu of Item 1 — For use with Item 2C, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC, max.

**TELLING INDUSTRIES L L C** — TRUE-TRACK™

1J. Framing Members\* — Floor and Ceiling Runner — (Not shown) — In lieu of Item 1 — For use with Item 2J, Proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC, max.

**TELLING INDUSTRIES L L C** — Viper25™ Track

1K. Framing Members\* — Floor and Ceiling Runner — (Not shown) — In lieu of Item 1 — For use with Item 2B, Proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.020 in. thick galv. steel, attached to floor and ceiling with fasteners spaced 24 in. OC, max.

**TELLING INDUSTRIES L L C** — Viper20™ Track

2. Steel Studs — Channel shaped, fabricated from min 25 HSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

2A. Steel Studs — (As an alternate to Item 2, For use with Items 5B, 5E, 6I and 5J) Channel shaped, fabricated from min 25 HSG corrosion-protected galv. steel, 3-1/2 in. min depth, spaced a max of 16 in. OC. Studs fabricate into floor and ceiling runners. Studs to be cut 5/8 to 3/4 in. less than assembly height.

2B. Framing Members\* — Steel Studs — (As an alternate to Item 2, For use with Items 5C or 5L) Proprietary channel shaped studs, 3-5/8 in. deep spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than the assembly height and installed with a 1/8 in. gap between the end of the stud and track at the bottom of the wall. For direct attachment of gypsum board only.

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — Viper25™

CRACO HFG INC — SmartTrack25™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™

PHILLIPS HFG CO L L C — Viper25™

2C. Framing Members\* — Steel Studs — (As an alternate to Item 2 — proprietary channel shaped studs, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 0.020 in. thick galv. steel, Studs cut 3/8 to 3/4 in. less in lengths than assembly height.

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — Viper20™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™

PHILLIPS HFG CO L L C — Viper20™

2D. Framing Members\* — Steel Studs — In lieu of Item 2 — Channel shaped studs, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

**ALLSTEEL & GYPSUM PRODUCTS INC** — Type SUPREME Framing System

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME Framing System

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME Framing System

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME Framing System

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME Framing System

UNITED METAL PRODUCTS INC — Type SUPREME Framing System

2E. Framing Members\* — Steel Studs — (Not shown) — As an alternate to Item 2 — For use with Item 5F or 5F or 5I only, channel shaped studs, min depth as indicated under Item 5F, or 5I, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

**CLARKDIERICH BUILDING SYSTEMS** — CD ProSTUD

DMFCWS L L C — ProSTUD

MEA BUILDING SUPPLIES INC — ProSTUD

RAM SALES L L C — Ram ProSTUD

SOUTHEASTERN STUD & COMPONENTS INC — ProSTUD

STEEL STRUCTURAL SYSTEMS L L C — ProSProSTUD

2F. Framing Members\* — Steel Studs — (Not shown) — As an alternate to Item 2 — For use with Item 5F or 5F or 5I only, channel shaped studs, min depth as indicated under Item 5F, or 5I, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

**SUPER STUD BUILDING PRODUCTS** — The Edge

2G. Framing Members\* — Steel Studs — (Not shown) — In lieu of Item 2 — Proprietary channel shaped studs, minimum width indicated under Item 5, Studs to be cut 3/8 to 3/4 in. less than the assembly height.

**STUCCO BUILDING SYSTEMS** — CROCSSTUD

2H. Framing Members\* — Steel Studs — (Not shown) — As an alternate to Item 2 — Fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

**TELLING INDUSTRIES L L C** — TRUE-TRACK™

2I. Framing Members\* — Steel Studs — (Not shown) — In lieu of Item 2 — Proprietary channel shaped studs, minimum width indicated under Item 5, Studs to be cut 3/8 to 3/4 in. less than the assembly height.

**TELLING INDUSTRIES L L C** — Viper25™

2J. Framing Members\* — Steel Studs — (Not shown) — In lieu of Item 2 — Proprietary channel shaped studs, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 0.020 in. thick galv. steel, Studs cut 3/8 to 3/4 in. less in lengths than assembly height.

**TELLING INDUSTRIES L L C** — Viper20™

3. Wood Structural Panel Sheathing — (Optional, For use with Item 5 Only.) — (Not shown) — 4 R. wide, 72.0 in. thick oriented strand board (OSB) or 1/2 in. thick structural sheathing complying with DOC PS1 or PS2, or APA Standard PRP-108, manufactured with exterior glue, applied horizontally or vertically to the steel studs. Vertical joints staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints in adjacent bays (multi-bay systems) staggered a min of 12 in. The thickness and number of layers for the 1, 2, 3 or 4 hr ratings are as follows:

4. Batts and Blankets\* — (Required as indicated under Item 5) — Mineral wool batts, friction fitted between studs and runners. Min. room thickness as indicated under Item 5. See **Batts and Blankets (ENW or RZ2) Categories** for names of Classified companies.

4A. Batts and Blankets\* — (Optional — Retailed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See **Batts and Blankets (ENW or RZ2) Categories** for names of Classified companies.

5. Gypsum Board\* — Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent bays (multi-bay systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints in adjacent bays (multi-bay systems) staggered a min of 12 in. The thickness and number of layers for the 1, 2, 3 or 4 hr ratings are as follows:

6. Fasteners — (Not shown) — For use with Items 2 and 2F. \*Type G or S-12 steel screws used to attach panels to studs (Item 2) or framing channels (Item 7). **Single Layer systems:** 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 8 in. OC along vertical and bottom edges and 12 in. OC in the field when panels are applied vertically. **Two layer systems:** First layer: 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Second layer: 1-5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Screws offset min 6 in. from first layer. **Three-layer systems:** First layer: 1 in. long for 1/2 and 5/8 in. thick panels, spaced 16 in. OC. Second layer: 1-5/8 in. thick panels, spaced 16 in. OC. Third layer: 1-5/8 in. thick panels, spaced 16 in. OC. Screws offset min 6 in. from first layer. **Four-layer systems:** First layer: 1 in. long for 1/2 and 5/8 in. thick panels, spaced 16 in. OC. Second layer: 1-5/8 in. thick panels, spaced 16 in. OC. Third layer: 1-5/8 in. thick panels, spaced 16 in. OC. Fourth layer: 1-5/8 in. thick panels, spaced 16 in. OC. Screws offset min 6 in. from first layer.

7. Furring Channels — (Optional, Not shown, for single or double layer systems) — Resilient furring channels fabricated from min 25 HSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Panels secure attached to each intersecting stud with 1/2 in. long Type S-12 steel screws. Not for use with Item 5A and 5E.

7A. Framing Members\* — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 HSG galv. steel, 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 6. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A and 5E.

b. **Steel Framing Members** — Used to attach furring channels (Item 7A) to studs (Item 2). Clep spaced max 48 in. OC. RSC-V and RSC-V (2-7/8) used to attach studs with No. 6 x 9/16 in. minimum self-drilling, S-12 steel screws through the center flange. Furring channels are attached to studs with No. 6 x 9/16 in. minimum self-drilling, S-12 steel screws through the center flange. Furring channels are attached to studs with No. 6 x 9/16 in. minimum self-drilling, S-12 steel screws through the center flange. Furring channels are attached to studs with No. 6 x 9/16 in. minimum self-drilling, S-12 steel screws through the center flange. Furring channels are attached to studs with No. 6 x 9/16 in. minimum self-drilling, S-12 steel screws through the center flange. Furring channels are attached to studs with No. 6 x 9/16 in. minimum self-drilling, S-12 steel screws through the center flange.

**PAC INTERNATIONAL INC** — Types RSC-V, RSC-V (2-7/8), RSC-V (2-7/8), RSC-V (2-7/8), RSC-V (2-7/8)

7B. Framing Members\* — (Optional, Not shown) — As an alternate to Item 7, for single or double layer systems, furring channels and Steel Framing Members on only one side of studs as described below:

a. **Furring Channels** — Formed of No. 25 HSG galv. steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 6. Batts and blankets placed in stud cavity as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 5. Not for use with Item 5A and 5E.

b. **Steel Framing Members** — Used to attach furring channels (Item 7A) to studs (Item 2). Clep spaced max 48 in. OC. GRC-CLP-PS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screws through the center grommet. Furring channels are attached to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screws through the center hole at each end of the clip. Furring channels are friction fitted into studs.

**KINETICS NOISE CONTROL INC** — Type BomaX

7C. Framing Members\* — (Not shown) — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 HSG galv. steel, 2-3/8 in. wide by 7/8 in. deep, spaced max 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 6. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A and 5E.

b. **Steel Framing Members** — Used to attach furring channels (Item 7A) to studs (Item 2). Clep spaced max 48 in. OC. GRC-CLP-PS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screws through the center grommet. Furring channels are attached to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screws through the center hole at each end of the clip. Furring channels are friction fitted into studs.

**PLITEC INC** — Type GRC-CLP

7D. Steel Framing Members — (Optional, Not shown) — Furring channels and resilient sound isolation clip as described below:

a. **Furring Channels** — Formed of No. 25 HSG galv. steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 6. Ends of adjoining channels overlapped 6 in. and secured together with four self-tapping No. 8x1/2 Self-Drilling screws (2 per side, 1 in. and 4 in. from overlap edge). Gypsum board attached to furring channels as described in Item 6. One layer of gypsum board panels (1/2 in. or 5/8 in. thick) attached to opposite side of stud without furring channels as described in Item 6.

b. **Gypsum Board** — (As an alternate to Item 5) — 5/8 in. thick, 2 1/2 in. wide, applied horizontally on the outer layer to one side of the assembly. Secured as described in Item 6.

**CGC INC** — Type SXK

UNITED STATES GYPSUM CO — Type FRK-G, SXK.

USG MEXICO S A DE C V — Type SXK.

5B. Gypsum Board\* — (Not shown) — As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 or 3/4 in. thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3). Nom 5/8 or 3/4 in. may be used as alternate to all 5/8 or 3/4 in. shown in Item 5. Wallboard Protection on Each Side of Stud Size, Item 5/8 or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Gypsum board secured to 20 HSG steel studs Item 2A with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. To be used with Lead Batten Strips (see Item 11) or Lead Clips or Tabs (see Item 12).

5C. Gypsum Board\* — (For Use With Item 2B) Rating Limited to 1 Hour. 5/8 in. thick, 4 1/8 in. wide, gypsum panel with beveled, square or tapered edges, applied vertically or horizontally. (Vertical Application) — The gypsum board is to be installed on each side of the studs with 1 in. long Type 5 coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 4 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the edge of the board. Vertical joints are to be centered over studs and staggered one stud cavity on opposite sides of studs. (Horizontal Application) — The gypsum board is to be installed on each side of the studs with 1 in. long Type 5 coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 4 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. All horizontal joints are to be backed as outlined under section 07-10.4.1 in the Fire Resistant Directory.

RAY-BAR ENGINEERING CORP — Type RB-LDG

5D. Gypsum Board\* — (For Use With Item 2B) Rating Limited to 1 Hour. 5/8 in. thick, 4 1/8 in. wide, gypsum panel with beveled, square or tapered edges, applied vertically or horizontally. (Vertical Application) — The gypsum board is to be installed on each side of the studs with 1 in. long Type 5 coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 4 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the edge of the board. Vertical joints are to be centered over studs and staggered one stud cavity on opposite sides of studs. (Horizontal Application) — The gypsum board is to be installed on each side of the studs with 1 in. long Type 5 coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 4 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. All horizontal joints are to be backed as outlined under section 07-10.4.1 in the Fire Resistant Directory.

CGC INC — Type SXK.

UNITED STATES GYPSUM CO — Type SXK, SXK.

USG MEXICO S A DE C V — Type SXK.

5G. Gypsum Board\* — (As an alternate to Item 5) — 5/8 in. thick, 4 1/8 in. wide, applied vertically or horizontally. Secured as described in Item 6. For use with Items 1 and 2 only.

**UNITED STATES GYPSUM CO** — Type SXK.

5E. Gypsum Board\* — (Not shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 or 3/4 in. thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3). Nominal 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional retaining stud locations.

**NEW ENGLAND LEAD BURNING CO INC, DBA MELCO** — Neo

5F. Gypsum Board\* — (As an alternate to Item 5) — For use with Items 1E and 2E and tested to 1 Hour Rating only. Gypsum panels with beveled, square or tapered edges, applied vertically and fastened to steel studs with 1 in. long Type 5 coated steel screws spaced 8 in. OC along vertical and bottom edges and 12 in. OC in the field. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Steel stud depth shall be a minimum 3-5/8 in.

CGC INC — 1/2 in. thick Type C, IP-X2 or IPC-AR; 5/8 in. thick Type A6, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHK, or 3/4 in. thick Types IP-X3 or ULTRACORE

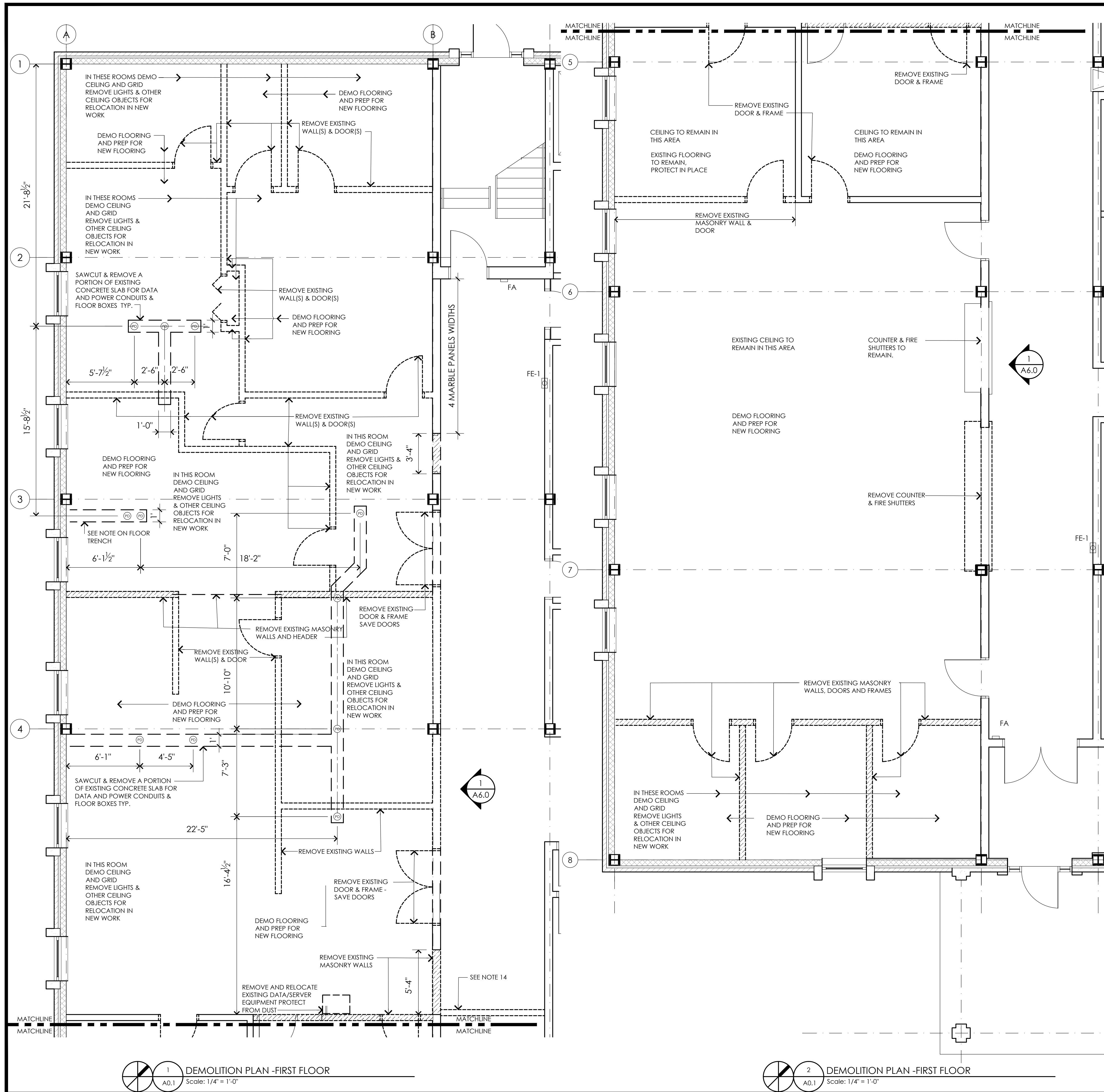
5C. Gypsum Board\* — (As an alternate to Item 5) — For use with Items 1E and 2E only. Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally, as specified in the table below and fastened to the steel studs as described in Item 6. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent bays (multi-bay systems) staggered one stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Lead batten strips required behind vertical joints in adjacent bays (multi-bay systems) staggered a min of 12 in. The thickness and number of layers for the 2, 3, 4 hr and 4 hr ratings are as follows:

5G. Gypsum Board\* — (As an alternate to Item 5) — For use with Items 1E and 2E and tested to 1 Hour Rating only. Gypsum panels with beveled, square or tapered edges, applied vertically and fastened to steel studs with 1 in. long Type 5 coated steel screws spaced 8 in. OC along vertical and bottom edges and 12 in. OC in the field. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Steel stud depth shall be a minimum 3-5/8 in.

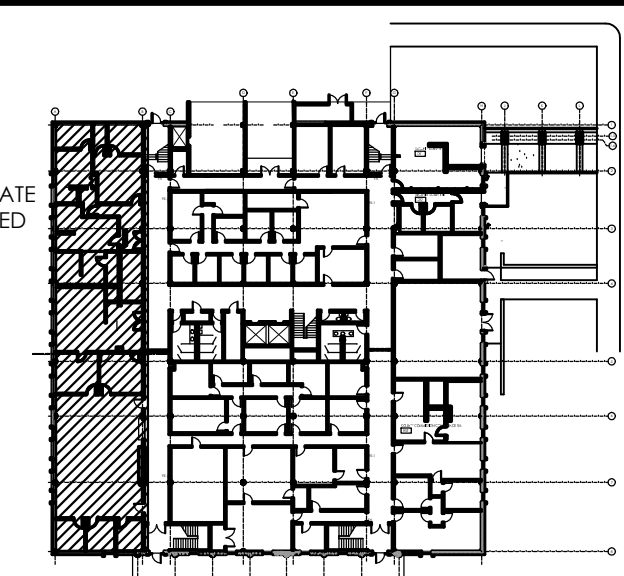
5C. Gypsum Board\* — (As an alternate to Item 5) — For use with Items 1E and 2E only. Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally, as specified in the table below and fastened to the steel studs as described in Item 6. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent bays (multi-bay systems) staggered one stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Lead batten strips required behind vertical joints in adjacent bays (multi-bay systems) staggered a min of 12 in. The thickness and number of layers for the 2, 3, 4 hr and 4 hr ratings are as follows:

5G. Gypsum Board\* — (As an alternate to Item 5) — For use with Items 1E and 2E and tested to 1 Hour Rating only. Gypsum panels with beveled, square or tapered edges, applied vertically and fastened to steel studs with 1 in. long Type 5 coated steel screws spaced 8 in. OC along vertical and bottom edges and 12 in. OC in the field. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Steel stud depth shall be a minimum 3-5/8 in.

5C. Gypsum Board\* — (As an alternate to Item 5) — For use with Items 1E and 2E only. Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally, as specified in the table below and fastened to the steel studs as described in Item 6. Vertical joints



HATCHED AREA INDICATE AREA TO BE RENOVATED



FIRST FLOOR LOCATION KEY  
N.T.S.

**DEMOLITION GENERAL NOTES**

1. THE CONTRACTOR SHALL FIELD VERIFY ALL DIM. SHOWN ON THE DWGS. ALL ERRORS OR INCONSISTENCY ARE TO BE REPORTED TO THE ARCHITECT FOR INSTRUCTIONS PRIOR TO START OF CONSTRUCTION.
2. ALL QUANTITIES OF DEMOLITION WORK SHALL BE DETERMINE BY PERSONAL OBSERVATION OF THE AREAS TO BE RENOVATED BY THE CONTRACTOR. THE CONTRACTOR IS TO COORDINATE NEW CONSTRUCTION DWGS WITH EXIST BUILDING PLUMBING, HVAC AND ELECTRICAL DWGS FOR EXACT SCOPE OF DEMOLITION WORK.
3. ALL AREAS NOT INVOLVED IN RENOVATION WORK SHALL BE PROTECTED FROM DAMAGE. ANY DAMAGE CAUSED BY DEMOLITION WORK IS TO BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
4. THE CONTRACTOR SHALL LIMIT THE SPREAD OF DUST AND DIRT THROUGH THE USE OF ENCLOSURES & OTHER SUITABLE METHODS. THESE BARRIERS OR METHODS SHOULD COMPLY WITH GOVERNING REGULATIONS FOR INDOOR AIR QUALITY AND ENVIRONMENTAL PROTECTION.
5. COORDINATE WITH THE ARCHITECT REMOVAL, REPLACEMENT AND/OR REUSE OF EXISTING MARBLE PANELS, DOORS, EQUIPMENT, MILLWORK AND LIGHT FIXTURES BEFORE DEMOLITION.
6. COORDINATE DEMOLITION SCHEDULE DAYS AND TIMES WITH THE OWNER 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
7. THE CONTRACTOR TO PROMPTLY REPAIR ANY DAMAGES CAUSED BY DEMOLITION WORK. SUCH REPAIRS ARE TO BE DONE ACCORDING TO THE SPECIFICATION FOR CUTTING & PATCHING & SHOULD MATCH ADJACENT FINISHES; AT NO ADDITIONAL COST TO OWNER.
8. THE CONTRACTOR SHALL OBSERVE EXISTING CONDITIONS & TAKE PRECAUTIONS AS NECESSARY WHEN REMOVING EXISTING WALLS. THIS COULD INCLUDE THE PLACEMENT OF TEMPORARY SHORING TO SUPPORT THE BUILDING STRUCTURE UNTIL NEW SUPPORTING CONSTRUCTION IS IN PLACE.
9. DO ALL DEMOLITION WORK REQUIRED IN ORDER TO INSTALL ALL NEW WORK.
10. THE CONTRACTOR SHALL REPAIR, LEVEL, SMOOTH AND CLEAN THE FLOOR, CEILING, AND ALL SURFACES AFFECTED BY THE DEMOLITION WORK TO RECEIVE NEW FINISHES.
11. REMOVE ALL RUBBISH, DEBRIS & OTHER SUBSTANCES CREATED BY THE DEMOLITION WORK. DISPOSE MATERIALS IN ACCORDANCE WITH CURRENT CODES AND ENVIRONMENTAL LAWS.
12. WHEN DEMOLISHING PARTITIONS IN THE AREA OF EXISTING EQUIPMENT OR PANELS, THE PART OF THE WALL THAT SUPPORTS THE EQUIPMENT OR PANEL SHALL REMAIN, BE PROTECTED FROM DEMOLITION & MAINTAIN ITS STRUCTURAL STABILITY.
13. THERE ARE EXISTING 1" TENNESSEE MARBLE PANELS IN THE PUBLIC CORRIDORS CAREFULLY REMOVE THE PANELS INDICATED FOR REUSE IN THE NEW WORK. COORDINATE WITH ARCHITECT FOR REUSE.
14. EXISTING ALUMINUM FRAME AND LOUVERS TO BE REMOVED. COORDINATE WITH ARCHITECT FOR REPAIRS TO CORRIDOR WALLS, CEILING & FLOOR
15. EXISTING COUNTY CLERK AREA TO REMAIN OPEN DURING CONSTRUCTION. PLAN DEMOLITION IN PHASES CORDINATED WITH ANDERSON COUNTY CLERK AND ARCHITECT.



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909

Office: 865.251.2585 Fax: 865.531.9499

Contact Name: William R. Blankenship

Owner: Anderson County

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

Project Name:

**ANDERSON CO. COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION**

**Consultants:**

**Mechanical**

Bedinger Consulting Engineers

5641 Merchants Center Blvd. STE A104

Knoxville, TN 37912

(865) 299-5973

Contact Name: David Blakney, P.E.

**Electrical**

Vreeland Engineers, Inc.

P.O. Box 10645

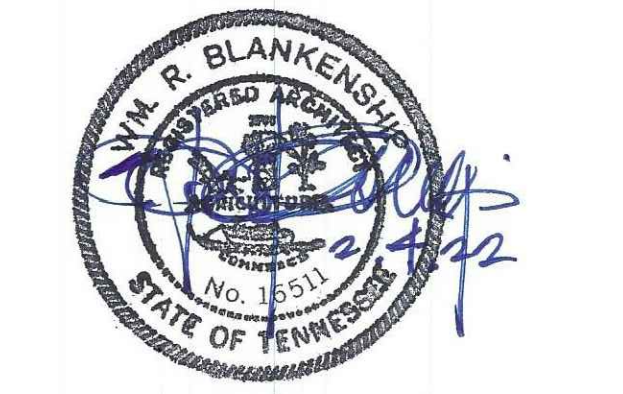
Knoxville, TN 37939

T (865) 745-4401

Contact Name: Chris Lay, P.E.

© COPYRIGHT Blankenship & Partners, LLC. This drawing is the property of Blankenship & Partners, LLC, and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.

**Seal**



Date: 12-2-21

Drawn By: SN & BS

Checked By: BB

Project Number: 20-15

**Revisions**

No. Date:

Drawing Title:  
Demolition Plan-First Floor

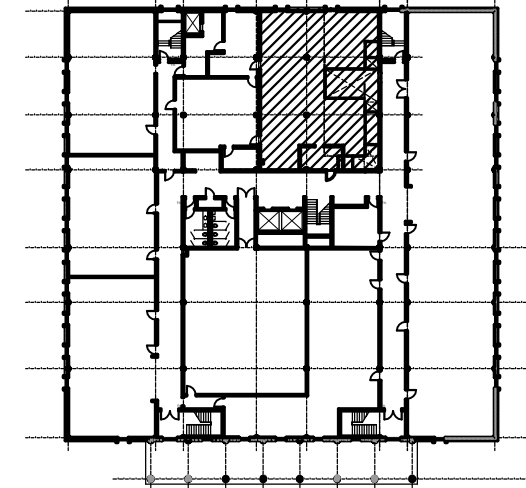
Drawing No.:

**A0.1**

1 DEMOLITION PLAN -FIRST FLOOR  
Scale: 1/4" = 1'-0"

2 DEMOLITION PLAN -FIRST FLOOR  
Scale: 1/4" = 1'-0"

HATCHED AREA INDICATE AREA TO BE RENOVATED



THIRD FLOOR LOCATION KEY  
N.T.S.



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909

Office: 865.251.2585 Fax: 865.531.9499

Contact Name: William R. Blankenship

Owner:

Anderson County

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

Project Name:

**ANDERSON CO. COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION**

**Consultants:**

**Mechanical**

Bedinger Consulting Engineers

5641 Merchants Center Blvd, STE A104

Knoxville, TN 37912

[865] 299-5973

Contact Name: David Blakney, P.E.

**Electrical**

Vreeland Engineers, Inc.

P.O. Box 10645

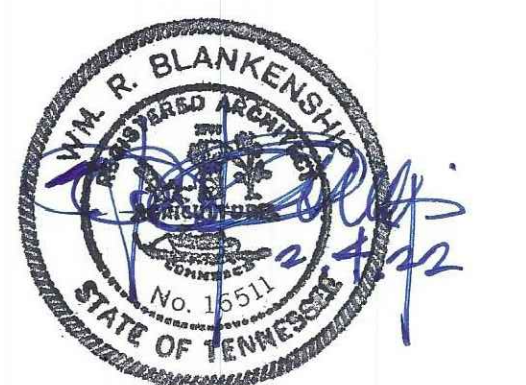
Knoxville, TN 37939

T [865] 745-4401

Contact Name: Chris Lay, P.E.

© COPYRIGHT Blankenship & Partners, LLC. This drawing is the property of Blankenship & Partners, LLC, and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.

**Seal**



Date: 12-2-21

Drawn By: SN & BS

Checked By: BB

Project Number: 20-15

**Revisions**

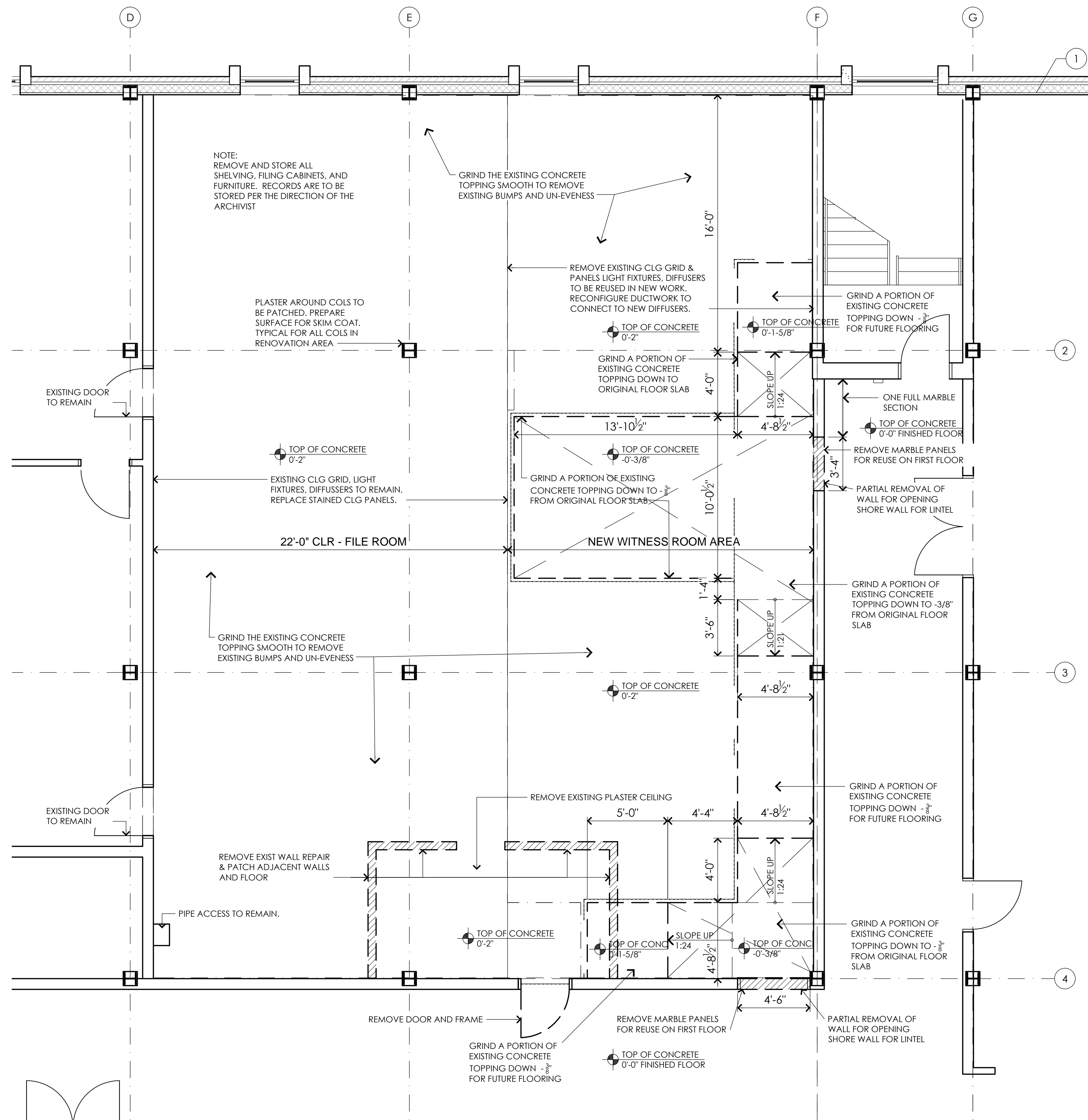
No. Date:

**Drawing Title:**

Demolition Plan-Third Floor

**Drawing No.:**

A0.2



**1** DEMOLITION PLAN THIRD FLOOR  
A0.2 Scale: 1/4" = 1'-0"

NOTE: SEE A0.1 FOR GENERAL DEMOLITION NOTES



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37902

Office: 865.251.2585 Fax: 865.531.9499

Contact Name: William R. Blankenship

**Owner:**

**Anderson County**

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

**Project Name:**

**ANDERSON CO. COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION**

**Consultants:**

**Mechanical**

Bedinger Consulting Engineers

5641 Merchants Center Blvd, STE A104

Knoxville, TN 37912

(865) 299-5973

Contact Name: David Blakney, P.E.

**Electrical**

Vreeland Engineers, Inc.

P.O. Box 10645

Knoxville, TN 37939

T (865) 745-4401

Contact Name: Chris Lay, P.E.

© COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC, and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.

**Seal**



Date: 12-2-21

Drawn By: SN & BS

Checked By: BB

Project Number: 20-15

**Revisions**

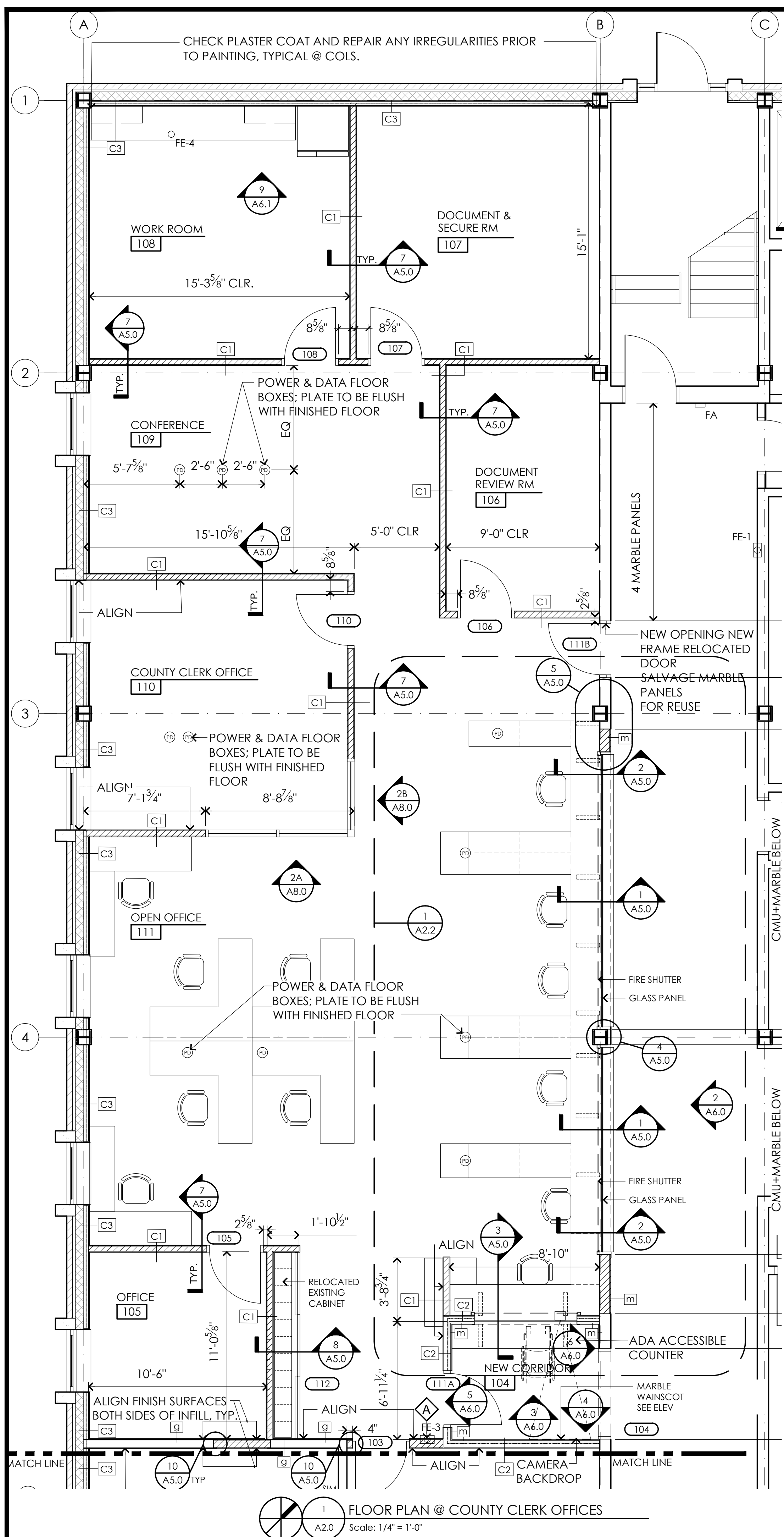
No. Date:

**Drawing Title:**

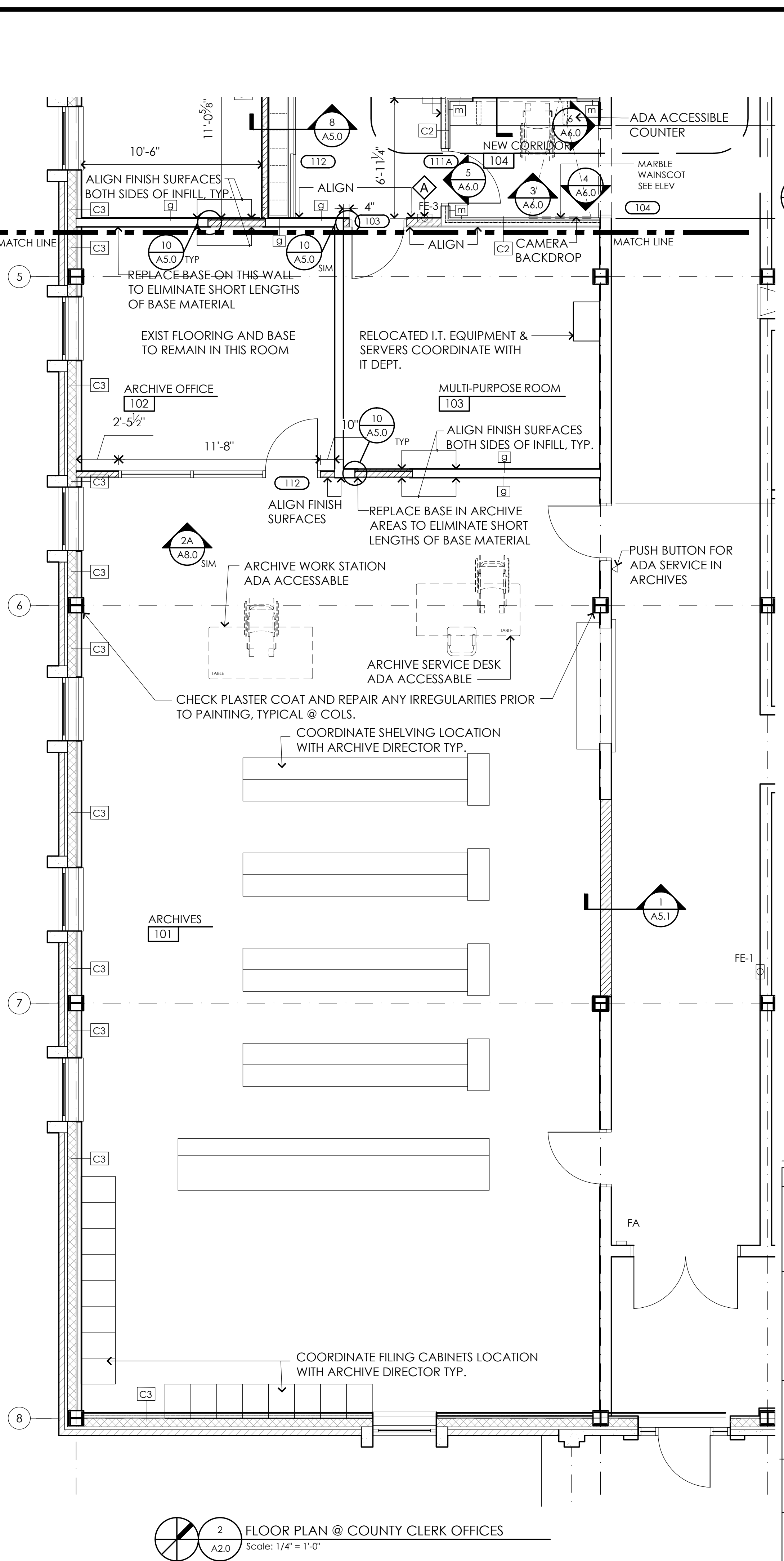
**First Floor Plan**

**Drawing No.:**

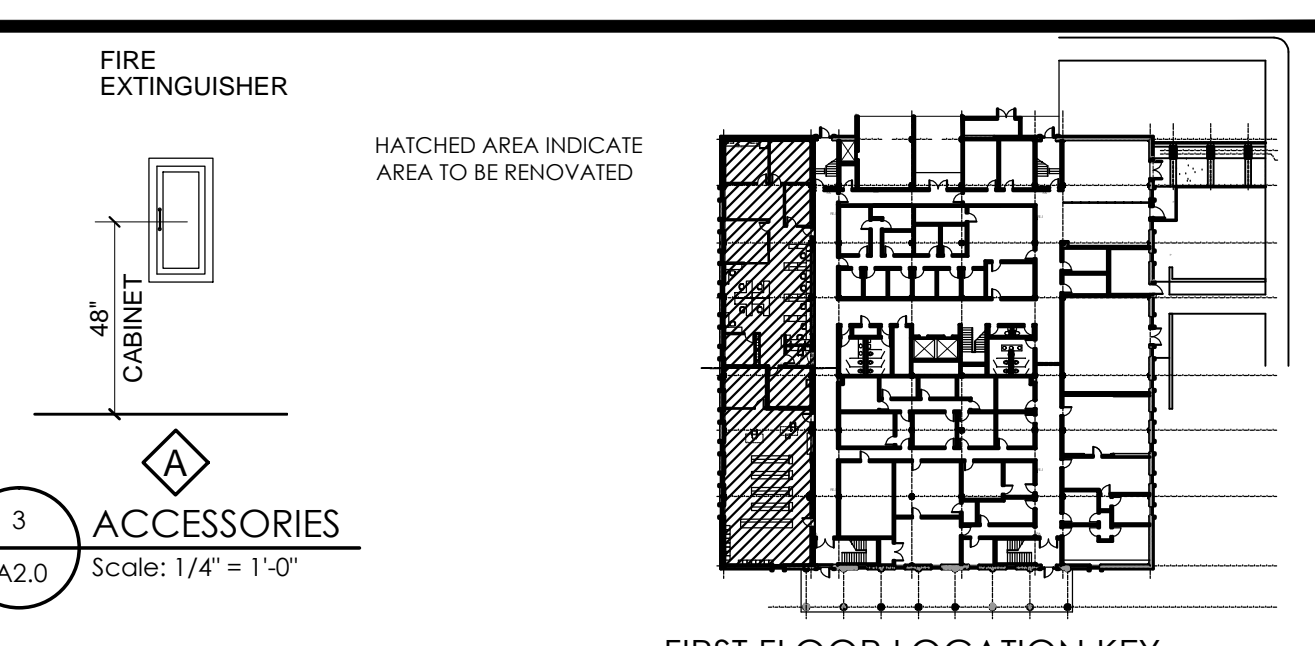
**A2.0**



1 FLOOR PLAN @ COUNTY CLERK OFFICES  
Scale: 1/4" = 1'-0"



2 FLOOR PLAN @ COUNTY CLERK OFFICES  
Scale: 1/4" = 1'-0"



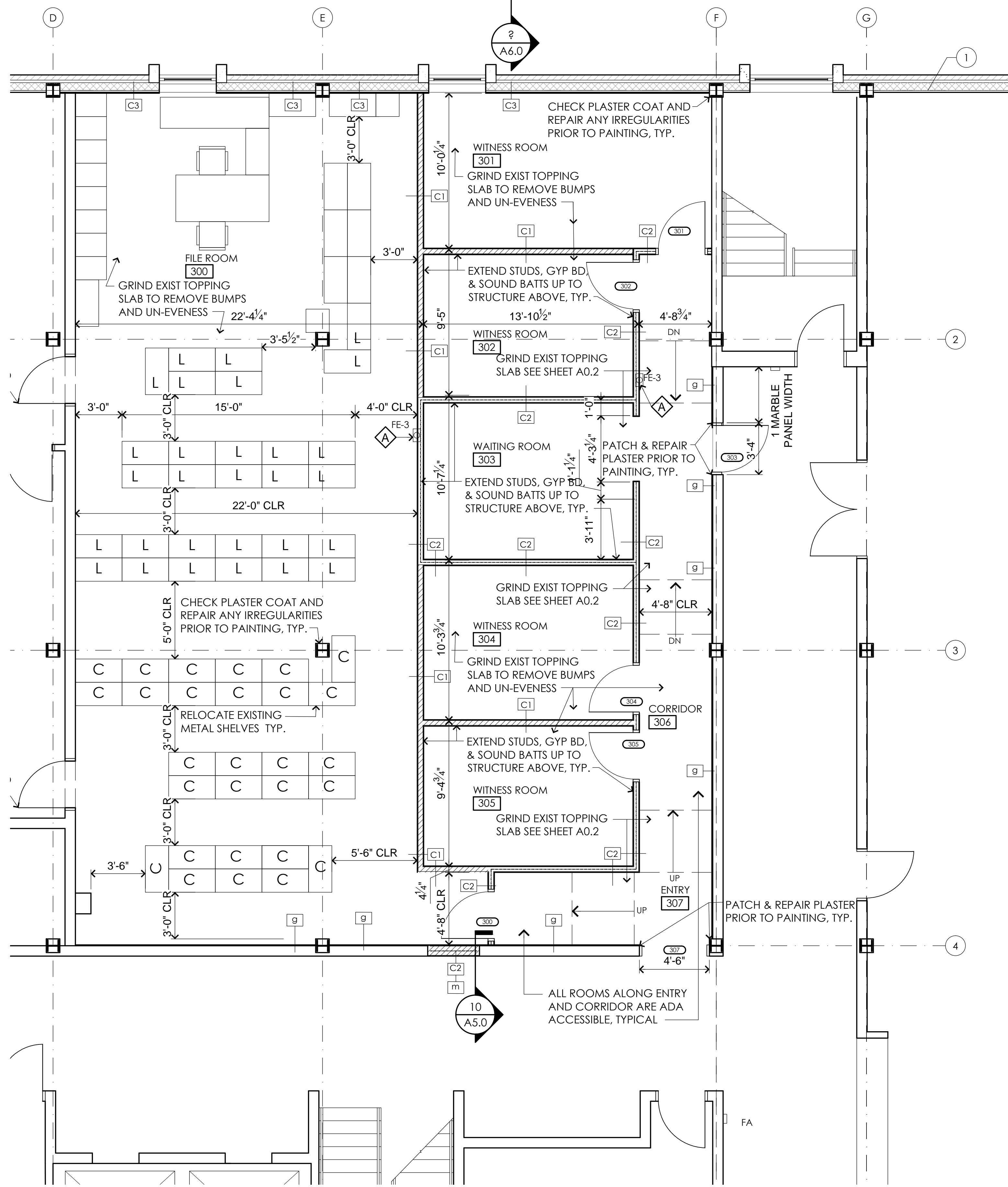
3 ACCESSORIES  
Scale: 1/4" = 1'-0"

**GENERAL NOTES**

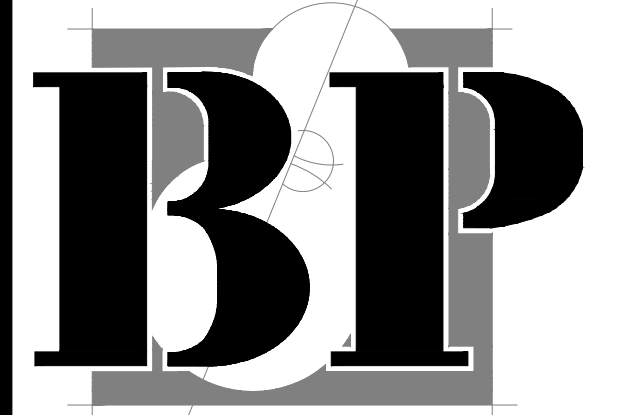
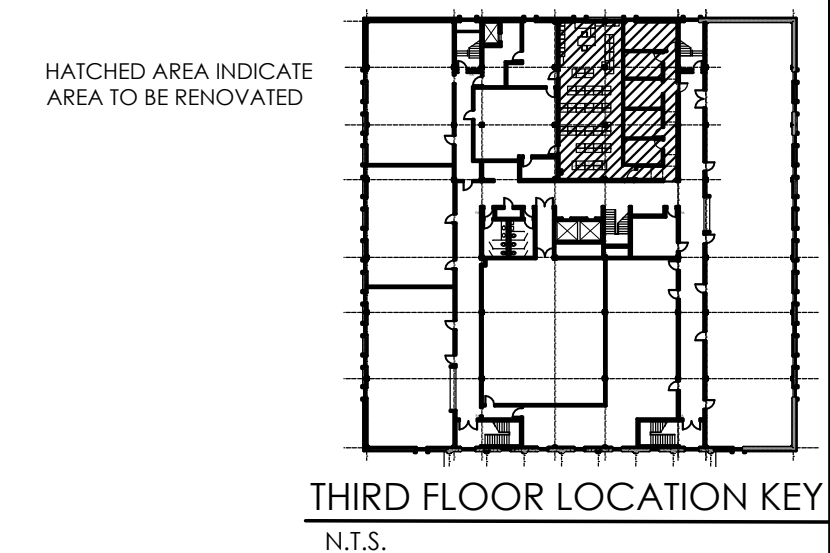
- CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS & ELEVATIONS OF EXISTING CONDITIONS AFFECTING THIS PROJECT, PRIOR TO FABRICATION OR INSTALLATION OF NEW WORK. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES FROM DIMENSIONS SHOWN, NOTED, OR REQUIRED. DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL OBTAIN CLARIFICATION, IN WRITING, FROM THE ARCHITECT BEFORE CONTINUING WITH CONSTRUCTION.
- DIMENSIONS ARE TO FACE OF STUD AND FACE OF CONCRETE OR MASONRY UNLESS OTHERWISE NOTED. DIMENSIONS NOTED AS CLEAR "CLR" ARE FINISH TO FINISH UNLESS NOTED OTHERWISE ON FLOOR PLANS, ENLARGED PLANS, OR WALL SECTIONS.
- WHERE A DETAIL IS SHOWN OR NOTE IS DESCRIBED FOR ONE CONDITION IT SHALL APPLY FOR ALL LIKE OR SIMILAR CONDITIONS EVEN THOUGH NOT SPECIFICALLY NOTED ON THE DRAWINGS.
- REFER TO PARTITION LEGEND FOR TYPICAL WALL TYPES AND FIRE RATINGS. ALL WALL TYPES SHALL CONFORM TO THE PARTITION LEGEND UNLESS INDICATED OTHERWISE ON FLOOR PLANS, ENLARGED PLANS OR WALL SECTIONS
- COORDINATE WITH SECURITY EQUIPMENT INSTALLATION TEAM AND ANDERSON CO. IT DEPARTMENT ON LOCATION OF SECURITY EQUIPMENT.
- FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF ANY MILLWORK OR COUNTERS.
- PROVIDE FIRE RETARDANT TREATED WOOD BLOCKING UNLESS NOTED OTHERWISE FOR ALL WALL MOUNTED MILLWORK, SHELVES, TV AND OTHER EQUIPMENT, ETC., AND GROUNDS FOR ALL ACCESSORIES, EQUIPMENT, AND DEVICES SPECIFIED UNDER THE CONTRACT AND AS INDICATED FOR INSTALLATION OF EQUIPMENT BY OTHERS OR TO BE PROVIDED BY OWNER.
- PROVIDE CONTINUOUS SEPARATION BETWEEN DISSIMILAR MATERIALS AS REQUIRED TO PREVENT GALVANIC CORROSION.
- ALL INTERIOR FINISHES ARE REQUIRED TO HAVE A MINIMUM CLASS C FLAME SPREAD AND SMOKE-DEVELOPED INDEX WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723.
- CONTRACTOR SHALL COMPLY WITH LOCAL, STATE, AND FEDERAL CODES AND ORDINANCES.
- REPRODUCTION OF ARCHITECTURAL DRAWINGS FOR SHOP DRAWINGS IS NOT PERMITTED.
- FIELD MEASUREMENTS: WHERE WORK IS INDICATED TO FIT TO OTHER CONSTRUCTION, VERIFY DIMENSIONS OF OTHER CONSTRUCTION BY FIELD MEASUREMENTS BEFORE FABRICATION, AND INDICATE MEASUREMENTS ON SHOP DRAWINGS. COORDINATE FABRICATION SCHEDULE WITH CONSTRUCTION PROGRESS TO AVOID DELAYING WORK. IF WORK PROCEEDS WITHOUT FIELD MEASUREMENTS, THE CONTRACTOR ASSUMES RESPONSIBILITY FOR ANY CORRECTIVE ACTION NECESSARY FOR COORDINATION OF ALL THE WORK.
- ALL GYPSUM BD. JOINTS TO BE STAGGERED, TAPED AND FILLED SMOOTH TO ACCEPT WALL FINISHES LEVEL 5
- ALL CRACKED PLASTER IN RENOVATED AREAS TO BE REPAIRED SO CRACK IS NOT DETECTABLE.
- REMOVE ALL SURFACE MOUNTED CONDUIT, WIRE MOLD, AND J-BOXES; PATCH HOLES.
- ALL MARBLE PANELS THAT WERE REMOVED DURING DEMOLITION ARE TO BE REUSED IN NEW WALL CONSTRUCTION.
- ALL NEW WALL CONSTRUCTION IN EXIST CORRIDOR, NEW CORRIDOR 104, NEW CORRIDOR 306, AND NEW ENTRY 307 TO BE ONE HOUR RATED U419.

**NEW PARTITION LEGEND**

GRAPHIC	DESCRIPTION	RATING
C1	3 5/8" STEEL STUDS AT 16" O.C. WITH ONE (1) LAYER OF 5/8" GYPSUM BOARD ON EACH SIDE. EXTEND TO BOTTOM OF DECK; W/CONTINUOUS SOUND ATTENUATION BATTING VERTICAL + HORIZONTAL	NOT RATED
C2	3 5/8" STEEL STUDS AT 16" O.C. WITH ONE (1) LAYER OF 5/8" TYPE X GYPSUM BOARD ON EACH SIDE. EXTEND TO BOTTOM OF DECK; W/CONTINUOUS SOUND ATTENUATION BATTING VERTICAL + HORIZONTAL. FIRE CAULK ALL JOINTS; UL DETAIL 419.	1 HOUR
C3	2 1/2" STEEL STUDS AT 16" O.C. WITH ONE (1) LAYER OF 5/8" PAPERLESS GYPSUM BOARD ON INTERIOR SIDE. EXTEND TO BOTTOM OF DECK ADD FOIL FACED BATT INSULATION. GYP BD REQUIRES LEVEL 5 FINISH	NOT RATED
g	ADD 1/2" GYP. BD TO EXIST WALL	NOT RATED
m	ADD RELOCATED MARBLE PANEL TO WALL	NOT RATED



1 THIRD FLOOR PLAN-WITNESS ROOMS  
 A2.1  
 Scale: 1/4" = 1'-0"  
 NOTE:  
 SEE A2.0 FOR GENERAL NOTES AND PARTITION SCHEDULE



Blankenship & Partners, LLC  
 Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909

Office: 865.251.2585 Fax: 865.531.9499

Contact Name: William R. Blankenship

**Owner:**

**Anderson County**

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

**Project Name:**

**ANDERSON CO. COURTHOUSE  
 COUNTY CLERK &  
 ARCHIVE RENOVATION**

**Consultants:**

**Mechanical**

Bedinger Consulting Engineers

5641 Merchants Center Blvd; STE A104

Knoxville, TN 37912

[865] 299-5973

Contact Name: David Blakney, P.E.

**Electrical**

Vreeland Engineers, Inc.

P.O. Box 10645

Knoxville, TN 37939

T [865] 745-4401

Contact Name: Chris Lay, P.E.

© COPYRIGHT Blankenship & Partners, LLC. This drawing is the property of Blankenship & Partners, LLC, and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.

**Seal**



Date: 12-2-21

Drawn By: SN & BS

Checked By: BB

Project Number: 20-15

**Revisions**

No. Date:

**Drawing Title:**

**Third Floor Plan**

**Drawing No.:**

**A2.1**

**NEW PARTITION LEGEND**

GRAPHIC	DESCRIPTION	RATING
	3 5/8" STEEL STUDS AT 16" O.C. WITH ONE (1) LAYER OF 5/8" GYPSUM BOARD ON EACH SIDE. EXTEND TO BOTTOM OF DECK; W/CONTINUOUS SOUND ATTENUATION BATTING VERTICAL + HORIZONTAL	NOT RATED
	3 5/8" STEEL STUDS AT 16" O.C. WITH ONE (1) LAYER OF 5/8" TYPE X GYPSUM BOARD ON EACH SIDE. EXTEND TO BOTTOM OF DECK; W/CONTINUOUS SOUND ATTENUATION BATTING VERTICAL + HORIZONTAL. FIRE CAULK ALL JOINTS; UL DETAIL 419.	1 HOUR
	2 1/2" STEEL STUDS AT 16" O.C. WITH ONE (1) LAYER OF 5/8" PAPERLESS GYPSUM BOARD ON INTERIOR SIDE. EXTEND TO BOTTOM OF DECK. ADD FOIL FACED BATT INSULATION. GYP BD REQUIRES LEVEL 5 FINISH	NOT RATED
	ADD 1/2" GYP. BD TO EXIST WALL	NOT RATED
	ADD RELOCATED MARBLE PANEL TO WALL	NOT RATED





Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37905

Office: 865.251.2585 Fax: 865.531.9499

Contact Name: William R. Blankenship

Owner:  
**Anderson County**

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

Project Name:  
**ANDERSON CO. COURTHOUSE  
COUNTY CLERK &  
ARCHIVE RENOVATION**

Consultants:

**Mechanical**

Bedinger Consulting Engineers

5641 Merchants Center Blvd; STE A104

Knoxville, TN 37912

(865) 299-5973

Contact Name: David Blakney, P.E.

**Electrical**

Vreeland Engineers, Inc.

P.O. Box 10645

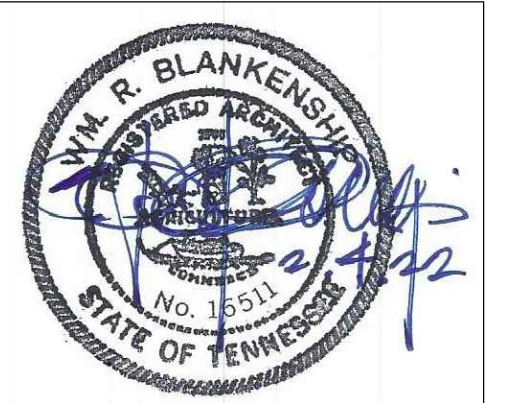
Knoxville, TN 37939

T (865) 745-4401

Contact Name: Chris Loy, P.E.

© COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC and shall not be reproduced in whole or in part, if that not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.

Seal



Date: 12-2-21

Drawn By: SN & BS

Checked By: BB

Project Number: 20-15

Revisions

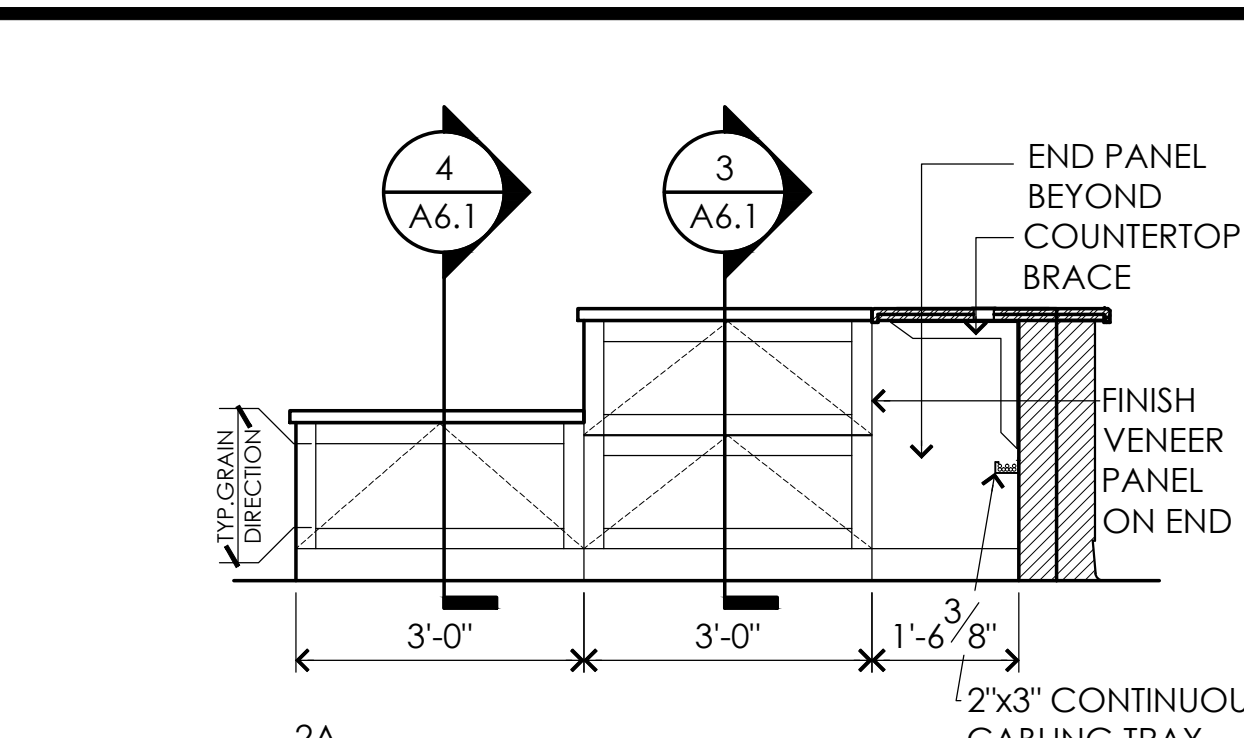
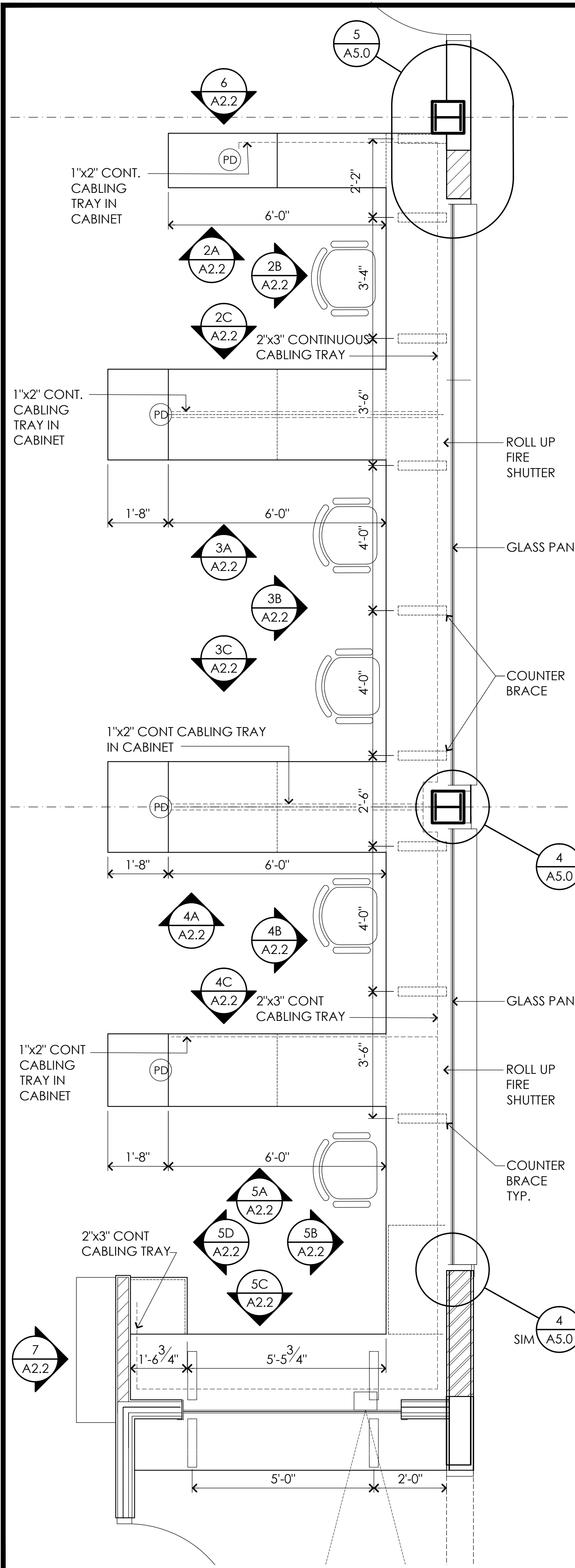
No. Date:

Drawing Title:

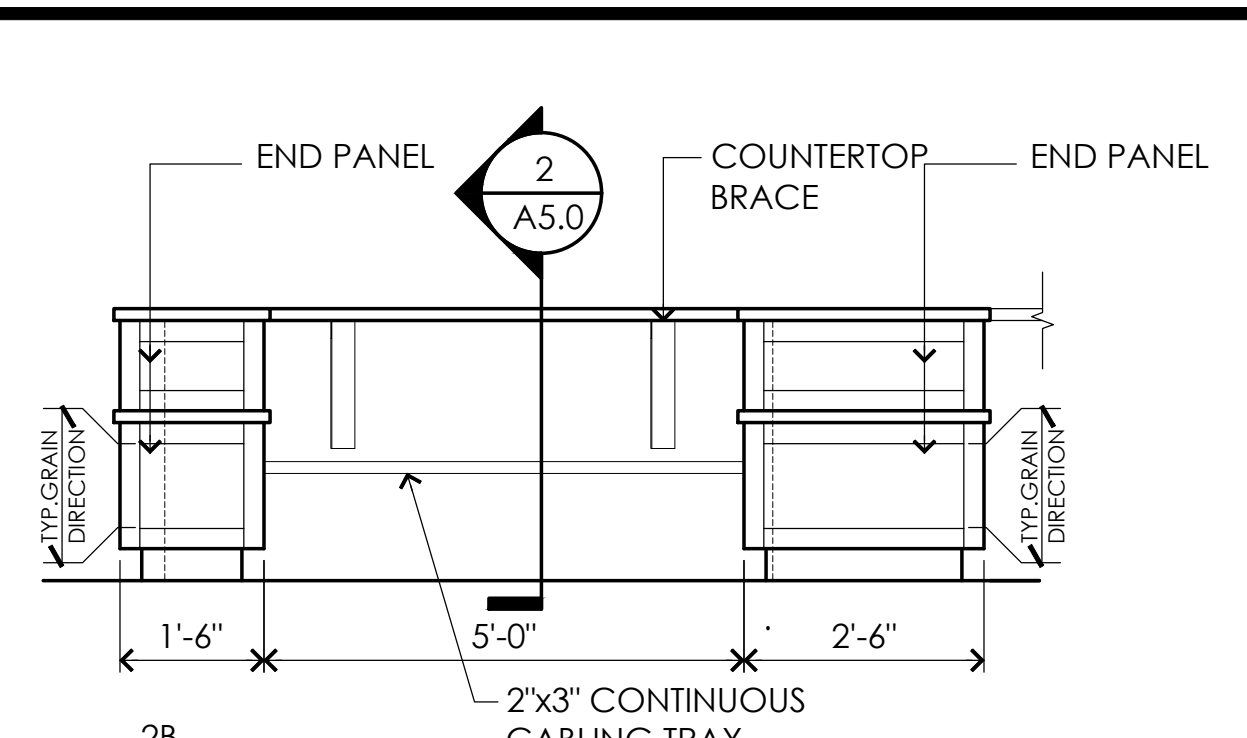
**ENLARGED FLOOR PLANS**

Drawing No.:

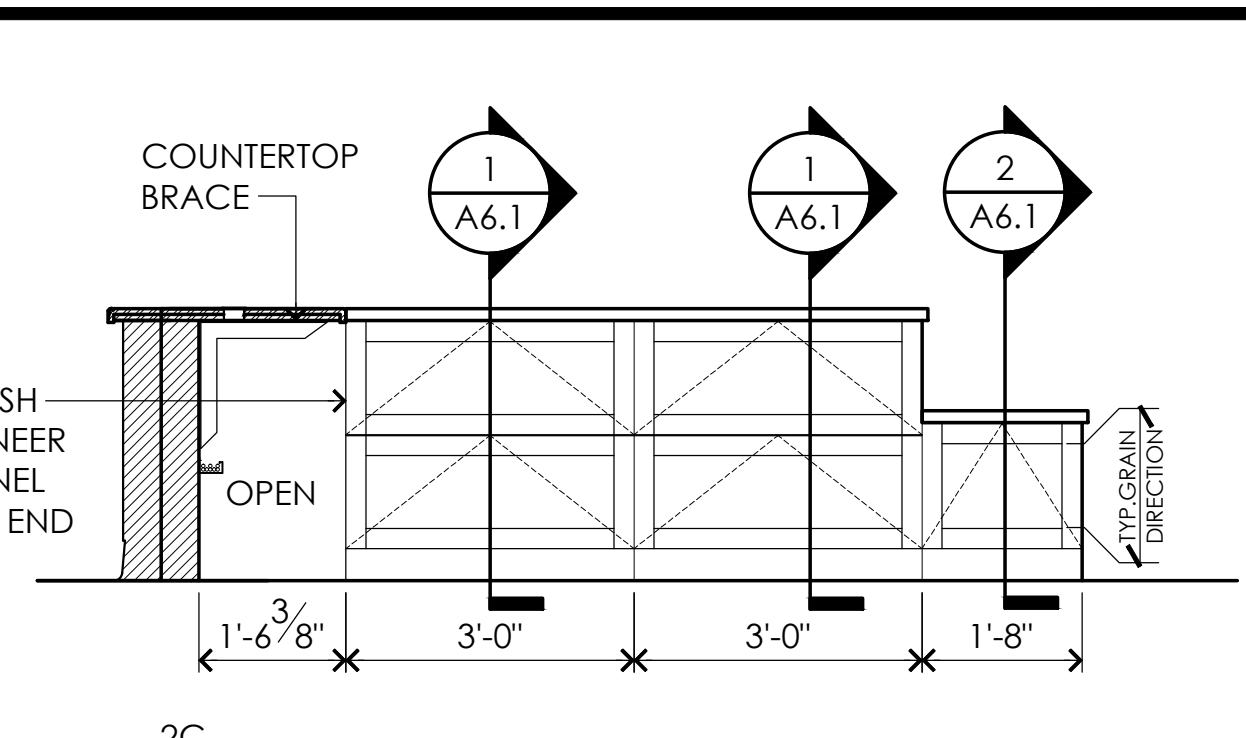
**A2.2**



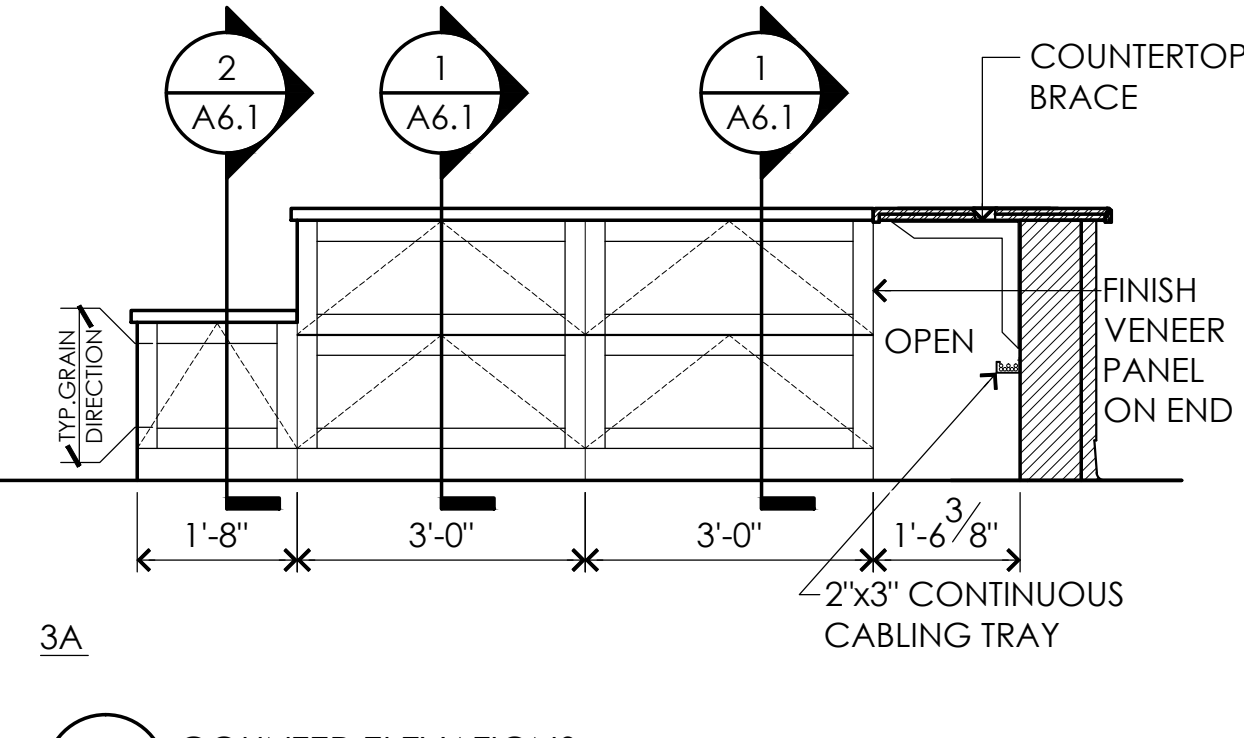
2A  
2  
A2.2  
COUNTER ELEVATIONS  
Scale: 1/2" = 1'-0"



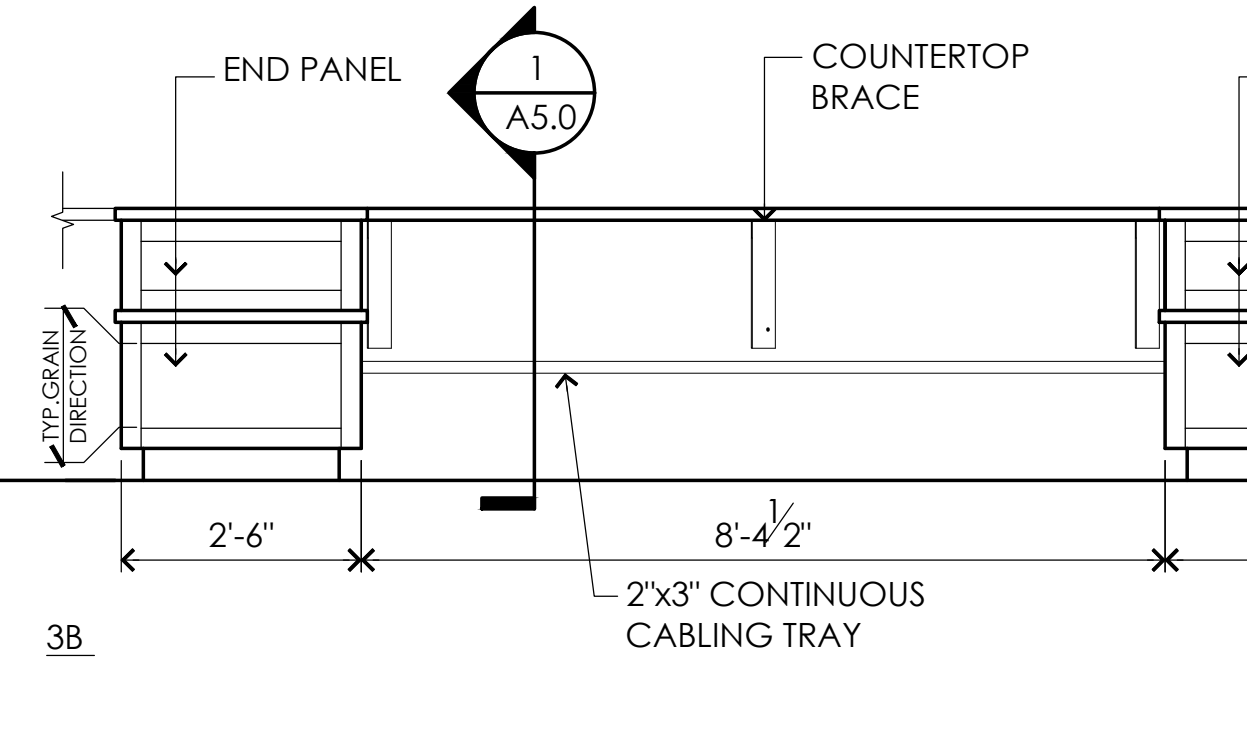
2B  
2  
A5.0  
COUNTER ELEVATIONS  
Scale: 1/2" = 1'-0"



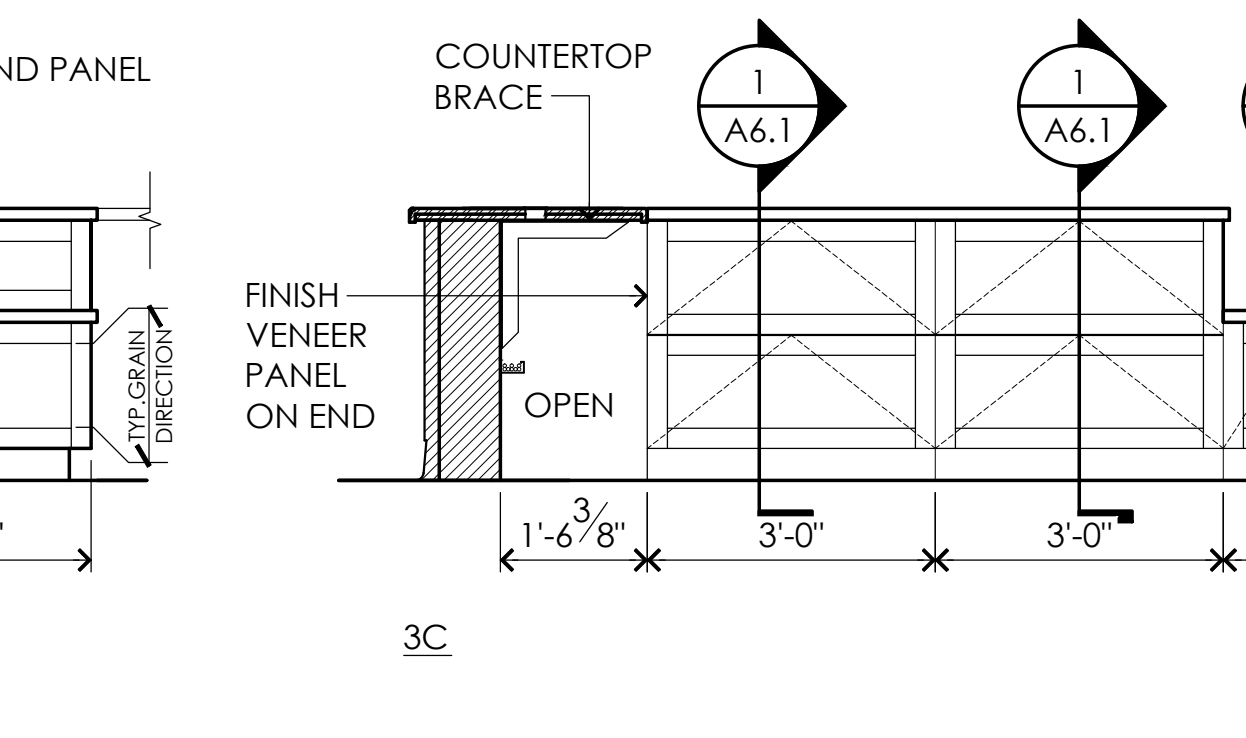
2C  
2  
A6.1  
COUNTER ELEVATIONS  
Scale: 1/2" = 1'-0"



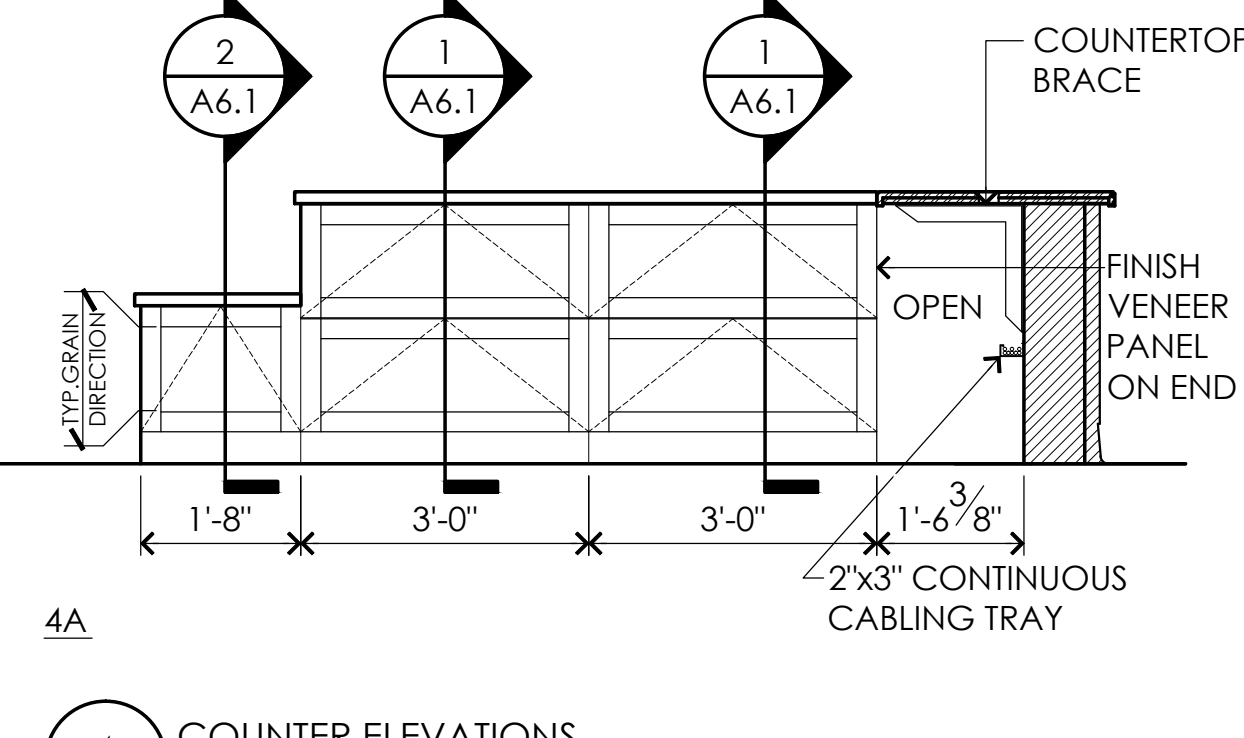
3A  
3  
A2.2  
COUNTER ELEVATIONS  
Scale: 1/2" = 1'-0"



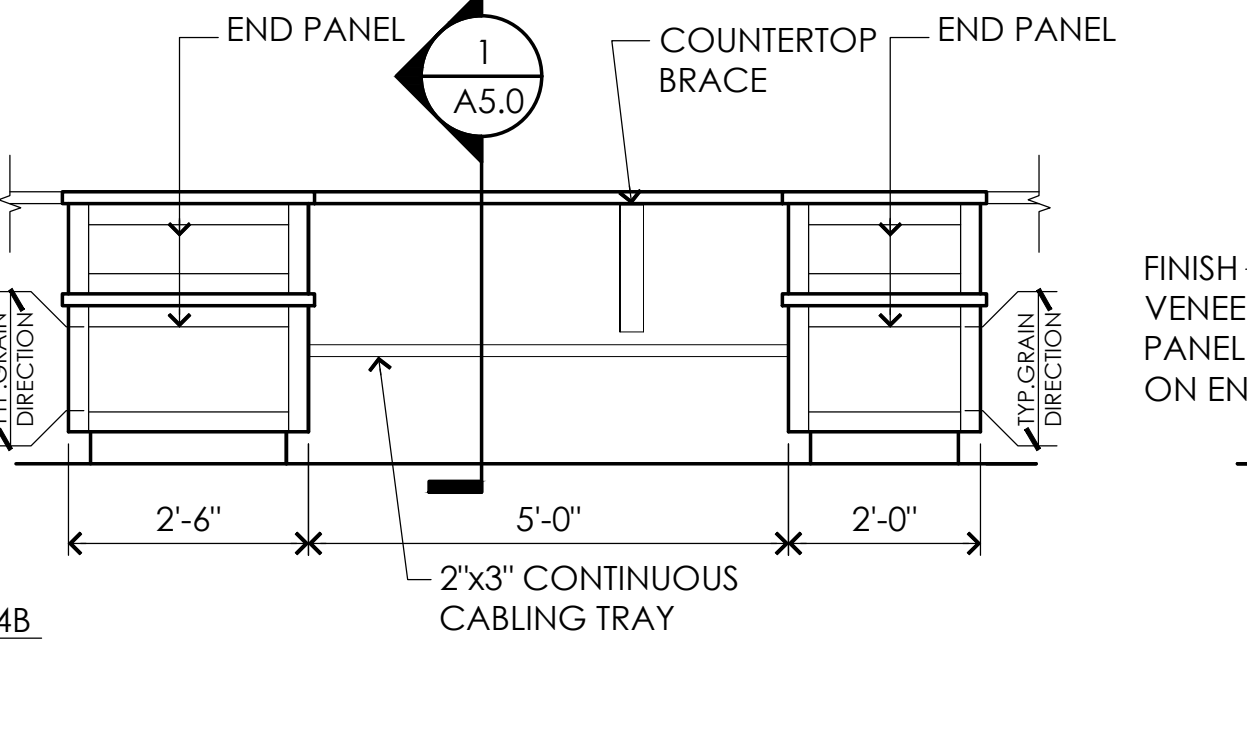
3B  
3  
A5.0  
COUNTER ELEVATIONS  
Scale: 1/2" = 1'-0"



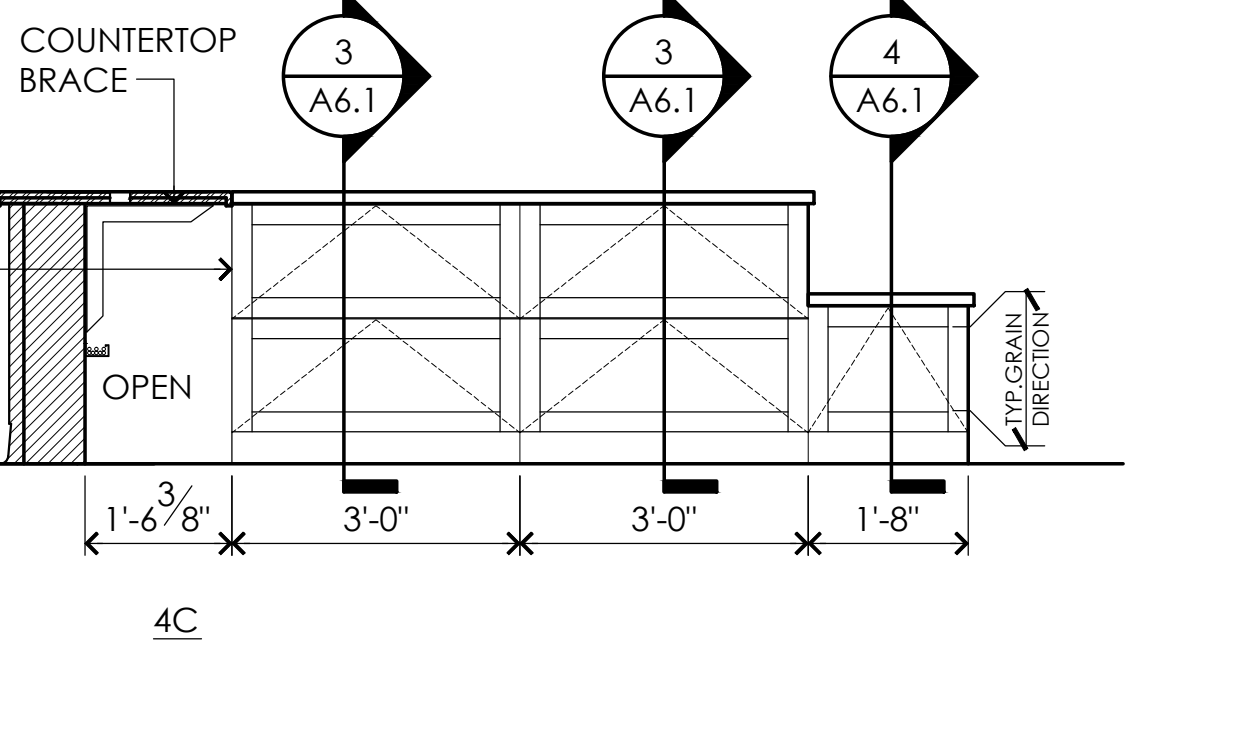
3C  
3  
A6.1  
COUNTER ELEVATIONS  
Scale: 1/2" = 1'-0"



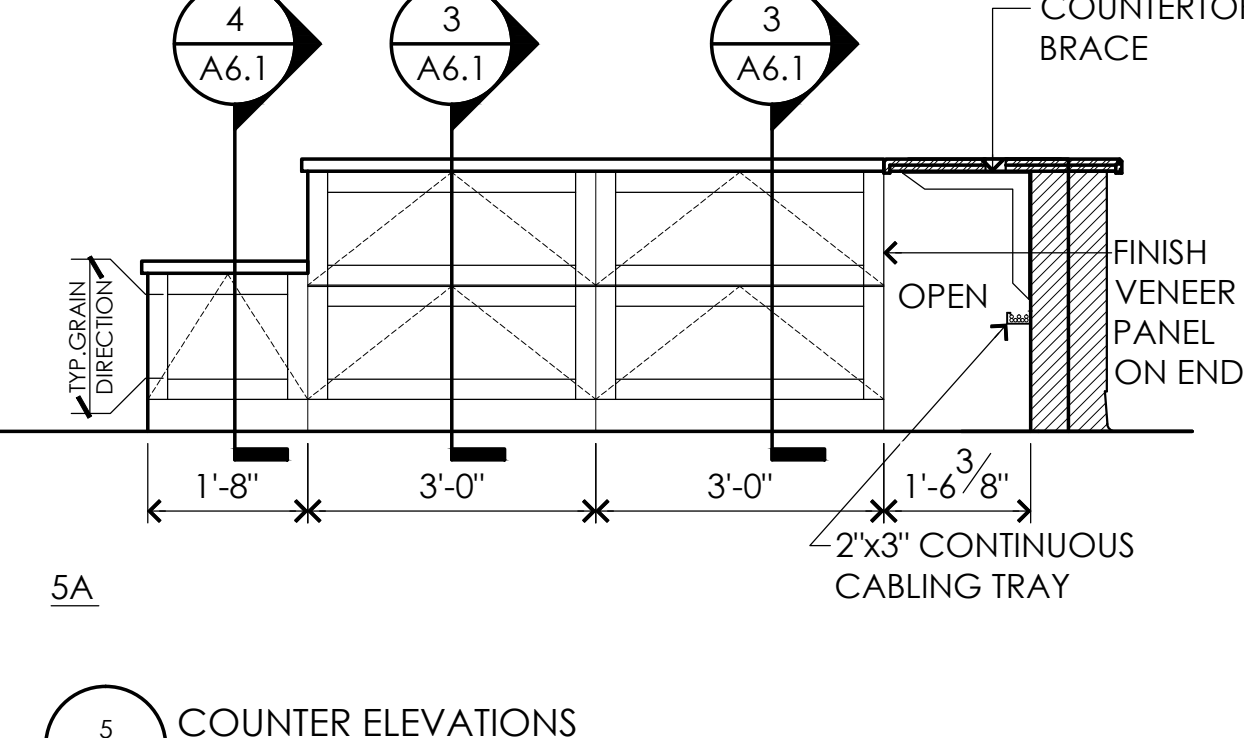
4A  
4  
A2.2  
COUNTER ELEVATIONS  
Scale: 1/2" = 1'-0"



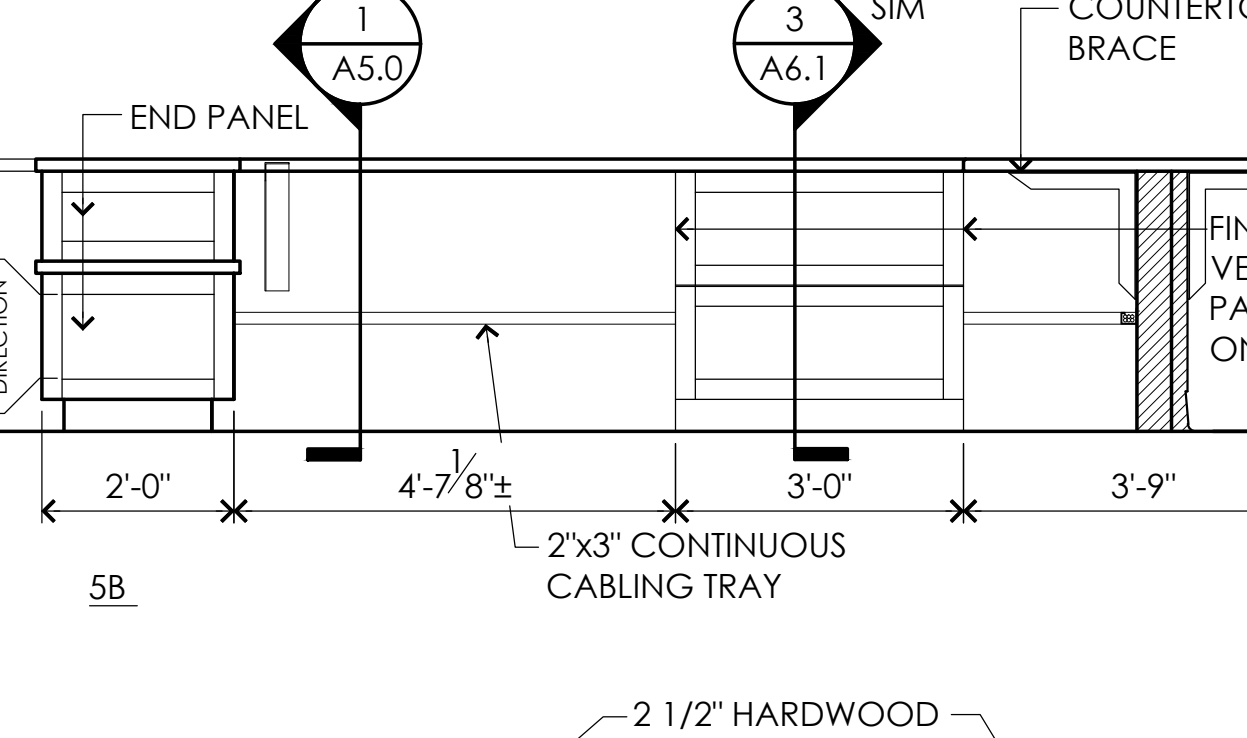
4B  
4  
A5.0  
COUNTER ELEVATIONS  
Scale: 1/2" = 1'-0"



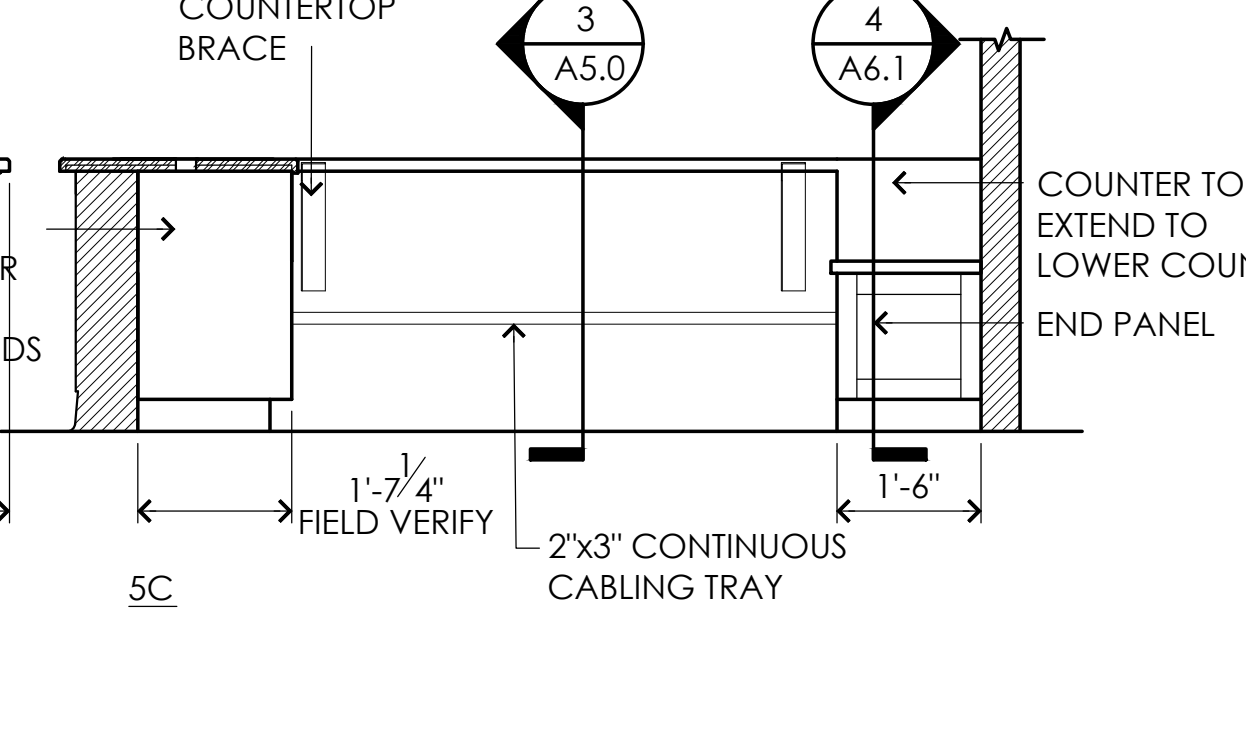
4C  
4  
A6.1  
COUNTER ELEVATIONS  
Scale: 1/2" = 1'-0"



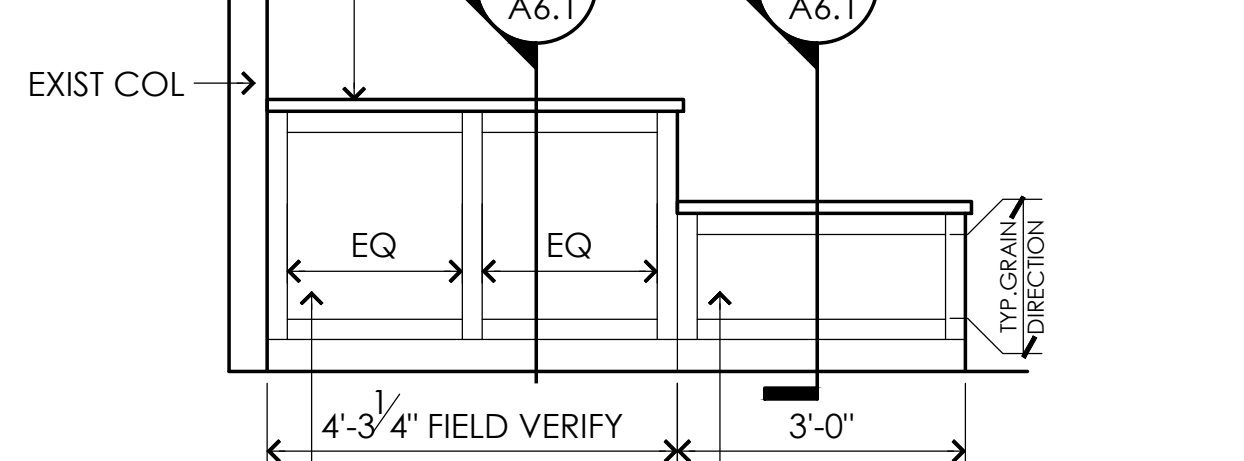
5A  
5  
A2.2  
COUNTER ELEVATIONS  
Scale: 1/2" = 1'-0"



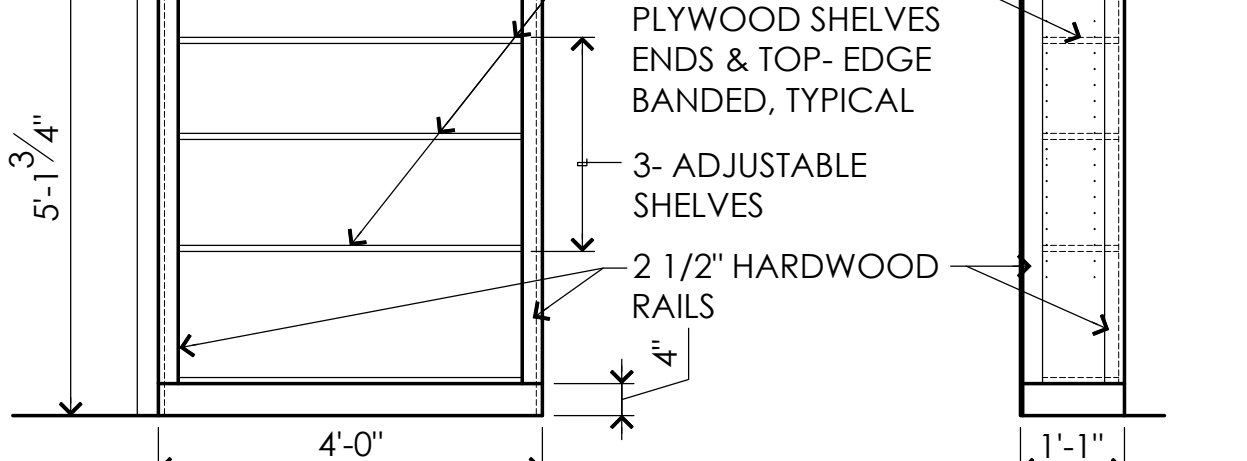
5B  
5  
A6.1  
COUNTER ELEVATIONS  
Scale: 1/2" = 1'-0"



5C  
5  
A5.0  
COUNTER ELEVATIONS  
Scale: 1/2" = 1'-0"



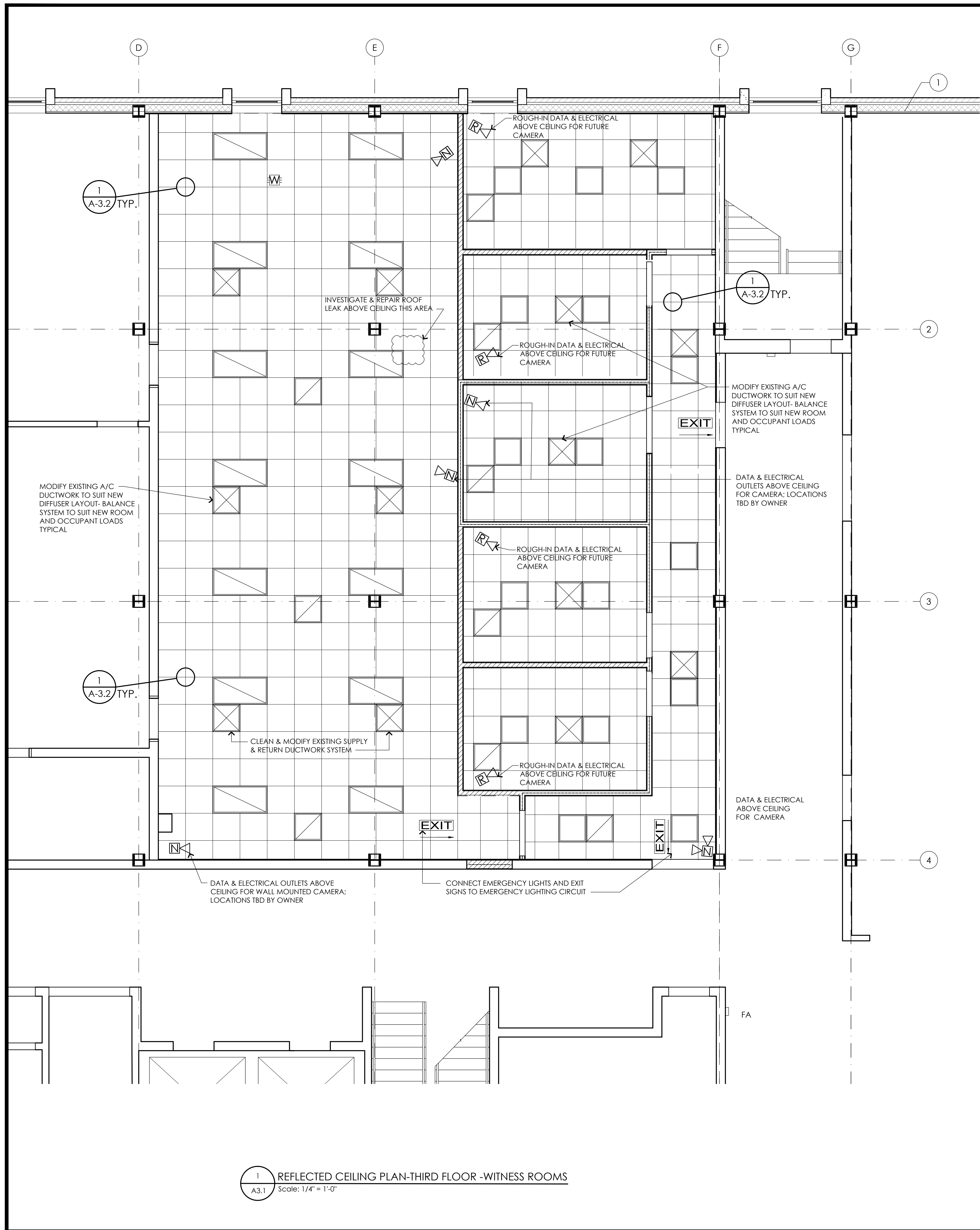
6  
A2.2  
SHELVING ELEVATION  
Scale: 1/2" = 1'-0"



7  
A2.2  
SHELVING ELEVATION  
Scale: 1/2" = 1'-0"

1  
A2.2  
ENLARGED PLAN @ COUNTERS  
Scale: 1/2" = 1'-0"



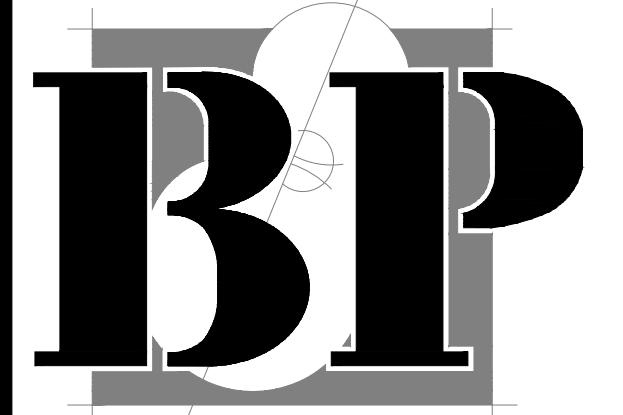
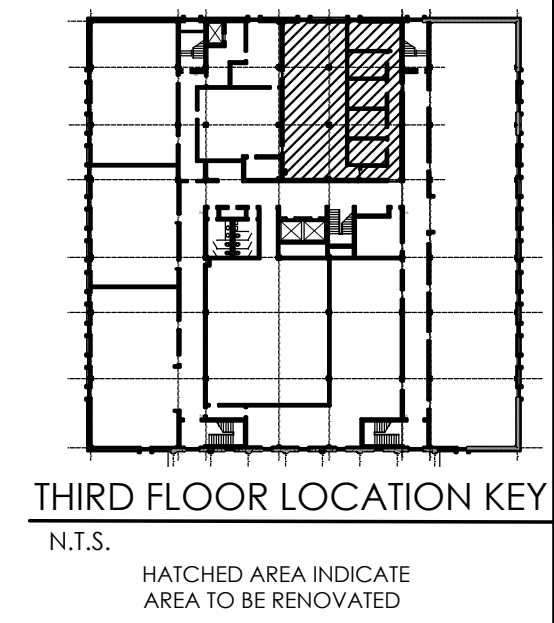


1 REFLECTED CEILING PLAN-THIRD FLOOR -WITNESS ROOMS  
A3.1 Scale: 1/4" = 1'-0"

- NOTES:
1. ALL CAN LIGHT LOCATIONS TO BE COORDINATED W/HVAC DUCTS TO ENSURE ADEQUATE SPACE.
  2. 1/2" CAULK JOINT WHEREVER GYPSUM BOARD MEETS STRUCTURE.
  3. ALL HVAC SUPPLIES, RETURNS, SPRINKLER HEADS, & LIGHT FIXTURES ADJACENT TO ONE ANOTHER SHALL BE 24" ON CENTER AND ALIGNED, UNLESS NOTED OTHERWISE.
  4. LIGHTS AND SWITCHES TO BE ON EXISTING AREA CIRCUITS. ELECTRICAL CONTRACTOR TO CHECK CIRCUIT LOADS FOR CODE COMPLIANCE.
  5. DATA LINES TO BE PROTECTED BY SPACE OR SHIELDING FROM ELECTRICAL WIRING.
  6. LIGHT FIXTURES, DIFFUSERS, & RETURNS TO BE REUSED ARE TO BE STORED IN LOCATION DIRECTED BY OWNER.
  7. CLEAN ALL REUSED LIGHT FIXTURES, DIFFUSERS, & RETURNS BEFORE REINSTALLING IN GRID.

LEGEND:

	ACT-1: ACOUSTICAL TILE CEILING SYSTEM
	GYPSUM BOARD CEILING
	EXISTING CEILING GRID, LIGHTING, AND HVAC GRILLES TO REMAIN
	2'x4' RECESSED LED LIGHT FIXTURE IN NEW GRID
	RELOCATED EXISTING LIGHT FIXTURE IN NEW GRID
	2'x2' RECESSED LED LIGHT FIXTURE IN NEW GRID
	DIMMABLE RECESSED LED LIGHT FIXTURE
	DIMMABLE RECESSED LED LIGHT STRIP
	EXIT LIGHT FIXTURE
	DIRECTIONAL EXIT LIGHT FIXTURE
	2'x2' AIR SUPPLY GRILL
	2'x2' AIR RETURN GRILL
	WALL-MOUNTED FIRE ALARM VISUAL STROBE UNIT
	SMOKE DETECTOR
	OCCUPANCY SENSOR
	CAMERA ROUGH-IN ONLY
	NEW CAMERA
	WI-FI



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909  
Office: 865.251.2585 Fax: 865.531.9499  
Contact Name: William R. Blankenship

**Owner:**  
Anderson County

100 N Main Street  
Clinton, TN 37716-3617  
Contact Name: Mayor Terry Frank

**Project Name:**

**ANDERSON CO. COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION**

**Consultants:**

**Mechanical**  
Bedinger Consulting Engineers  
5641 Merchants Center Blvd: STE A104  
Knoxville, TN 37912  
(865) 299-5973  
Contact Name: David Blakney, P.E.

**Electrical**  
Vreeland Engineers, Inc.  
P.O. Box 10645  
Knoxville, TN 37939  
T (865) 745-4401  
Contact Name: Chris Lay, P.E.

© COPYRIGHT Blankenship & Partners, LLC. This drawing is the property of Blankenship & Partners, LLC, and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.



Date: 12-2-21  
Drawn By: SN & BS  
Checked By: BB  
Project Number: 20-15

**Revisions**

No.	Date:

**Drawing Title:**  
Reflected Ceiling Plan-Third Floor

**Drawing No.:**  
**A3.1**



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909

Office: 865.251.2585 Fax: 865.531.9499

Contact Name: William R. Blankenship

**Owner:**

**Anderson County**

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

**Project Name:**

**ANDERSON CO. COURTHOUSE  
COUNTY CLERK &  
ARCHIVE RENOVATION**

**Consultants:**

**Mechanical**

Bedinger Consulting Engineers

5641 Merchants Center Blvd, STE A104

Knoxville, TN 37912

(865) 299-5973

Contact Name: David Blakey, P.E.

**Electrical**

Vreeland Engineers, Inc.

P.O. Box 10645

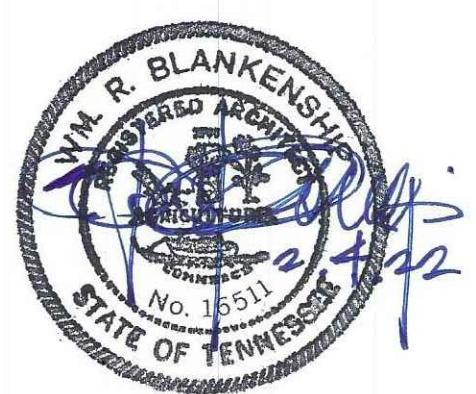
Knoxville, TN 37939

T (865) 745-4401

Contact Name: Chris Lay, P.E.

© COPYRIGHT Blankenship & Partners, LLC.  
This drawing is the property of Blankenship & Partners, LLC, and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.

**Seal**



Date: 12-2-21

Drawn By: SN & BS

Checked By: BB

Project Number: 20-15

**Revisions**

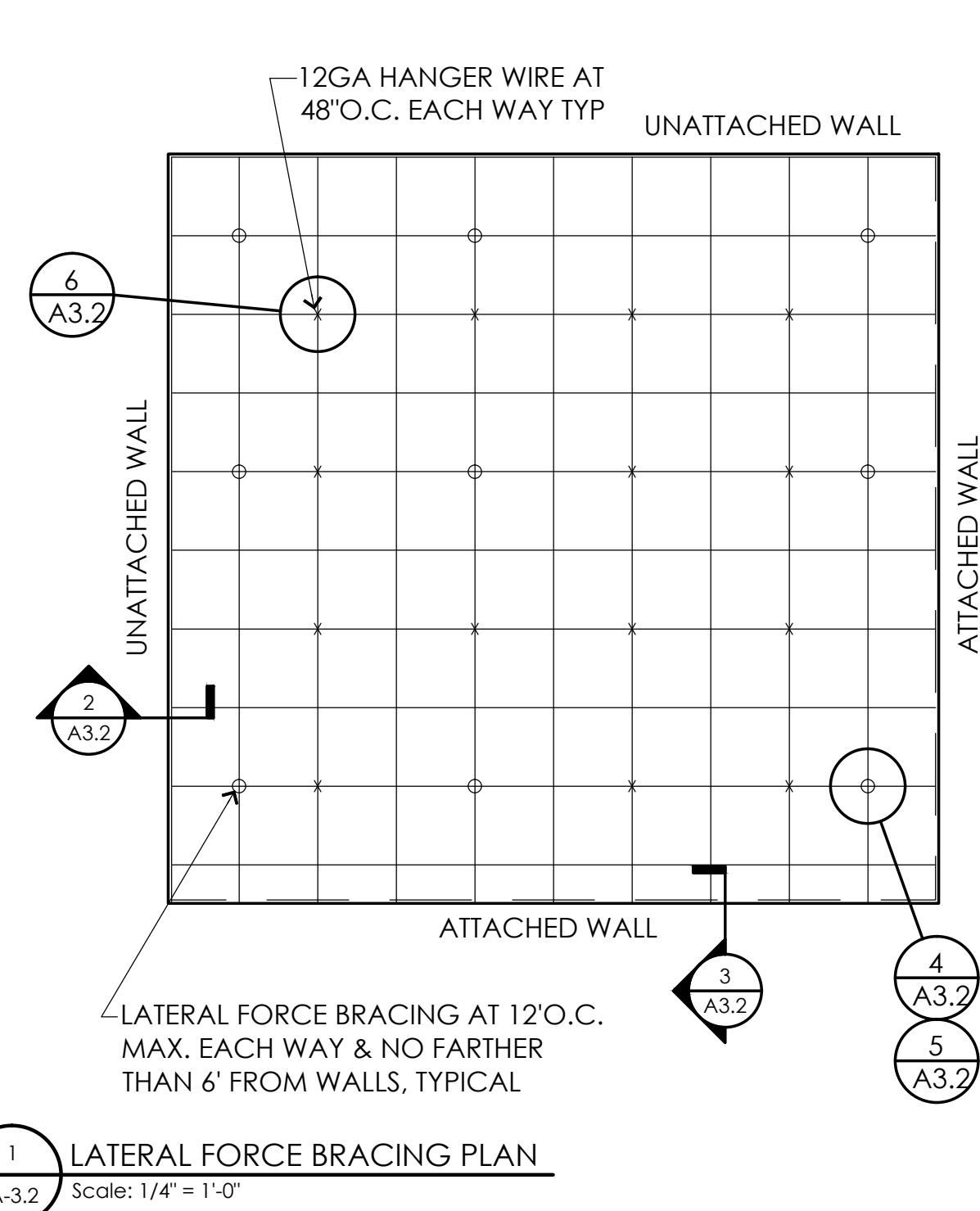
No. Date:

**Drawing Title:**

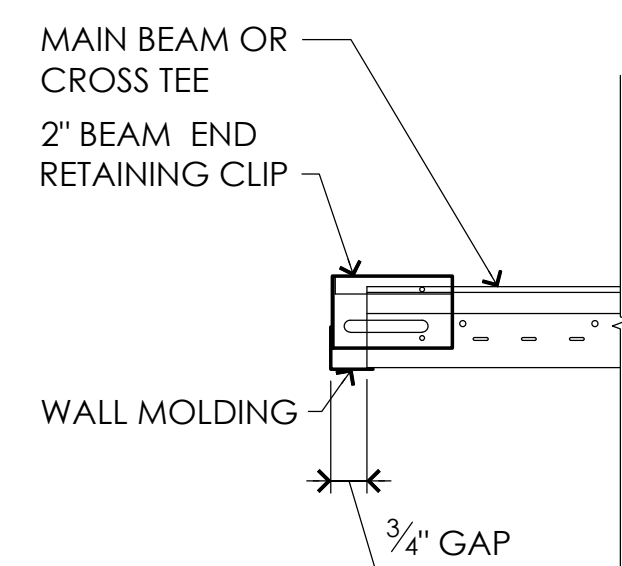
**Grid Ceiling Plan & Details**

**Drawing No.:**

**A3.2**

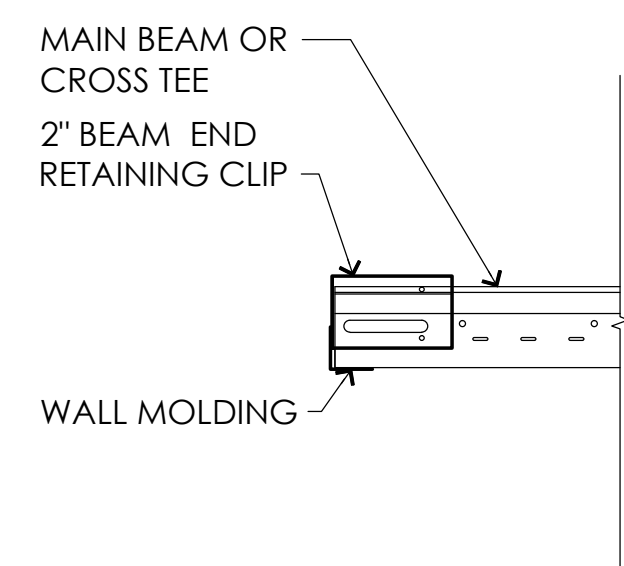


1 LATERAL FORCE BRACING PLAN  
A-3.2 Scale: 1/4" = 1'-0"



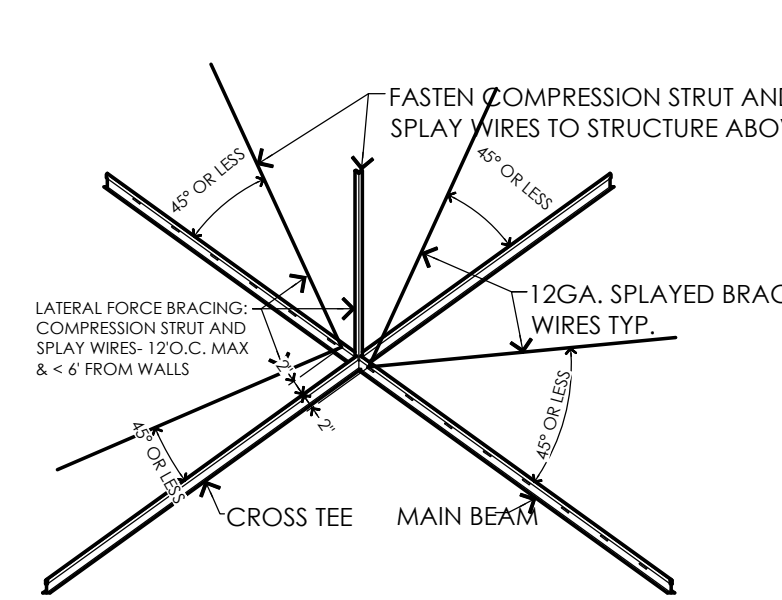
UNATTACHED WALL

2 GRID DETAIL  
A-3.2 Scale: 3" = 1'-0"

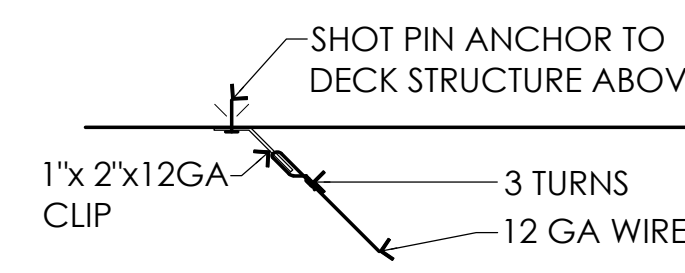


ATTACHED WALL

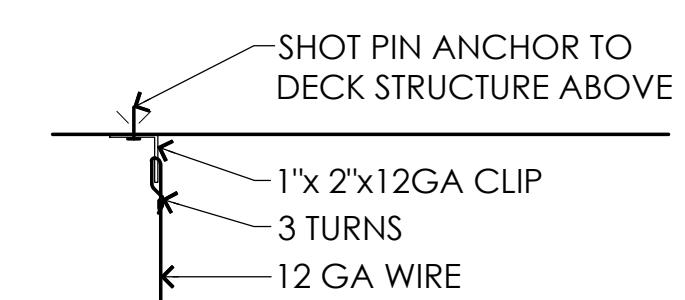
3 GRID DETAIL  
A-3.2 Scale: 3" = 1'-0"



4 LATERAL FORCE BRACING DETAIL  
A-3.2 Scale: 1/2" = 1'-0"



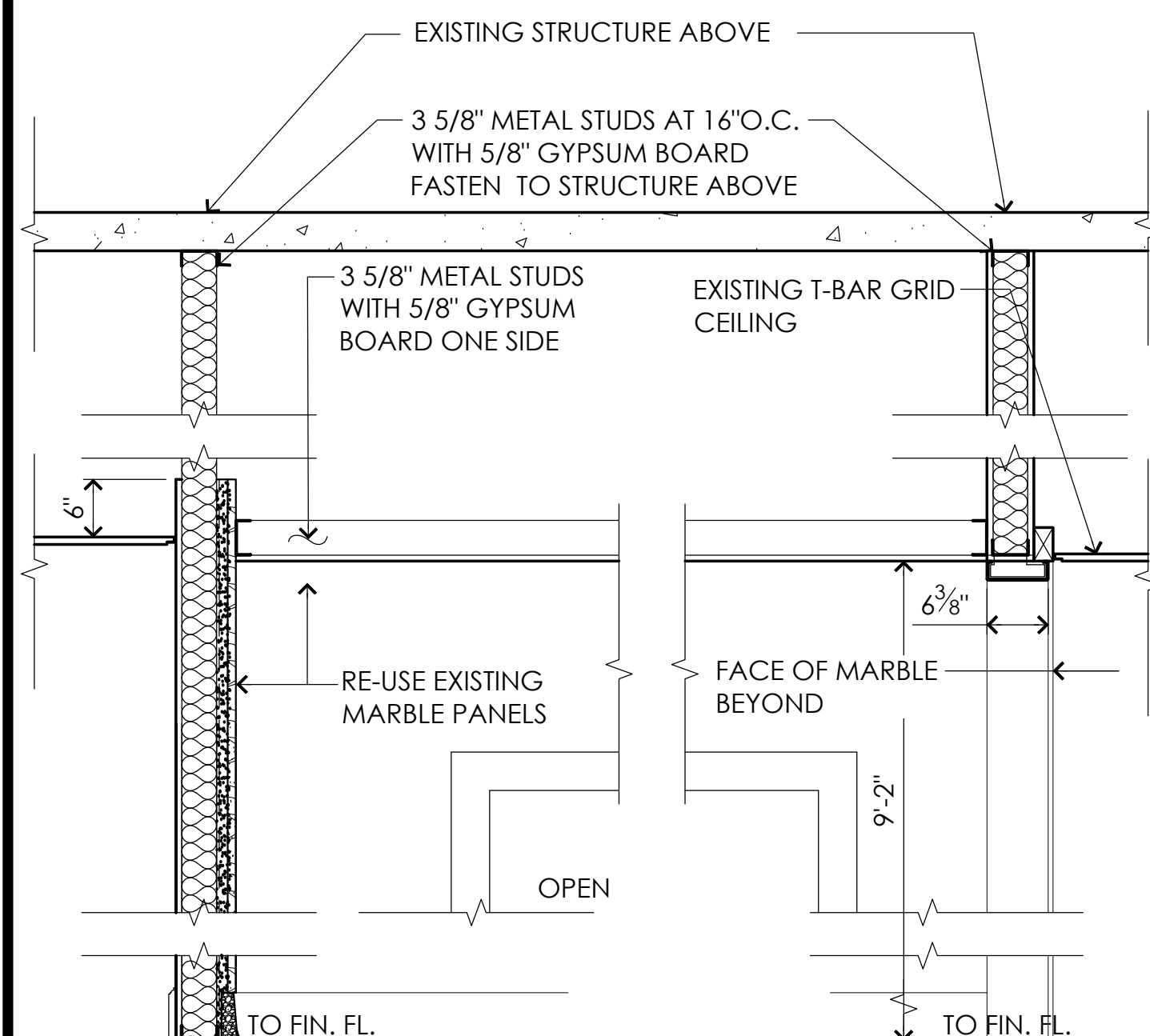
5 SPLAYED SEISMIC WIRE  
A-3.2 Scale: 1/2" = 1'-0"



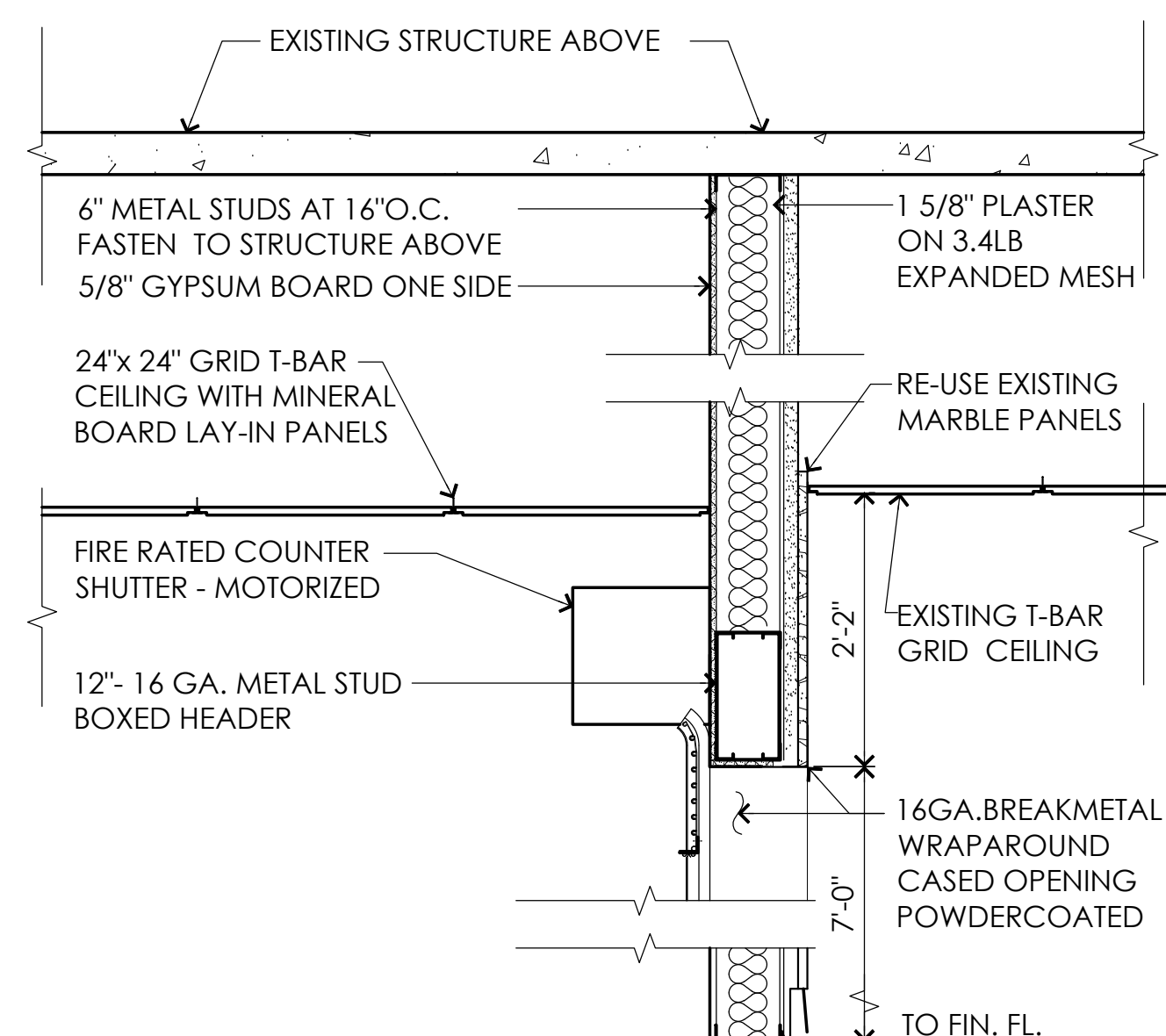
6 VERTICAL HANGER WIRE  
A-3.2 Scale: 1/2" = 1'-0"

**GENERAL NOTES**

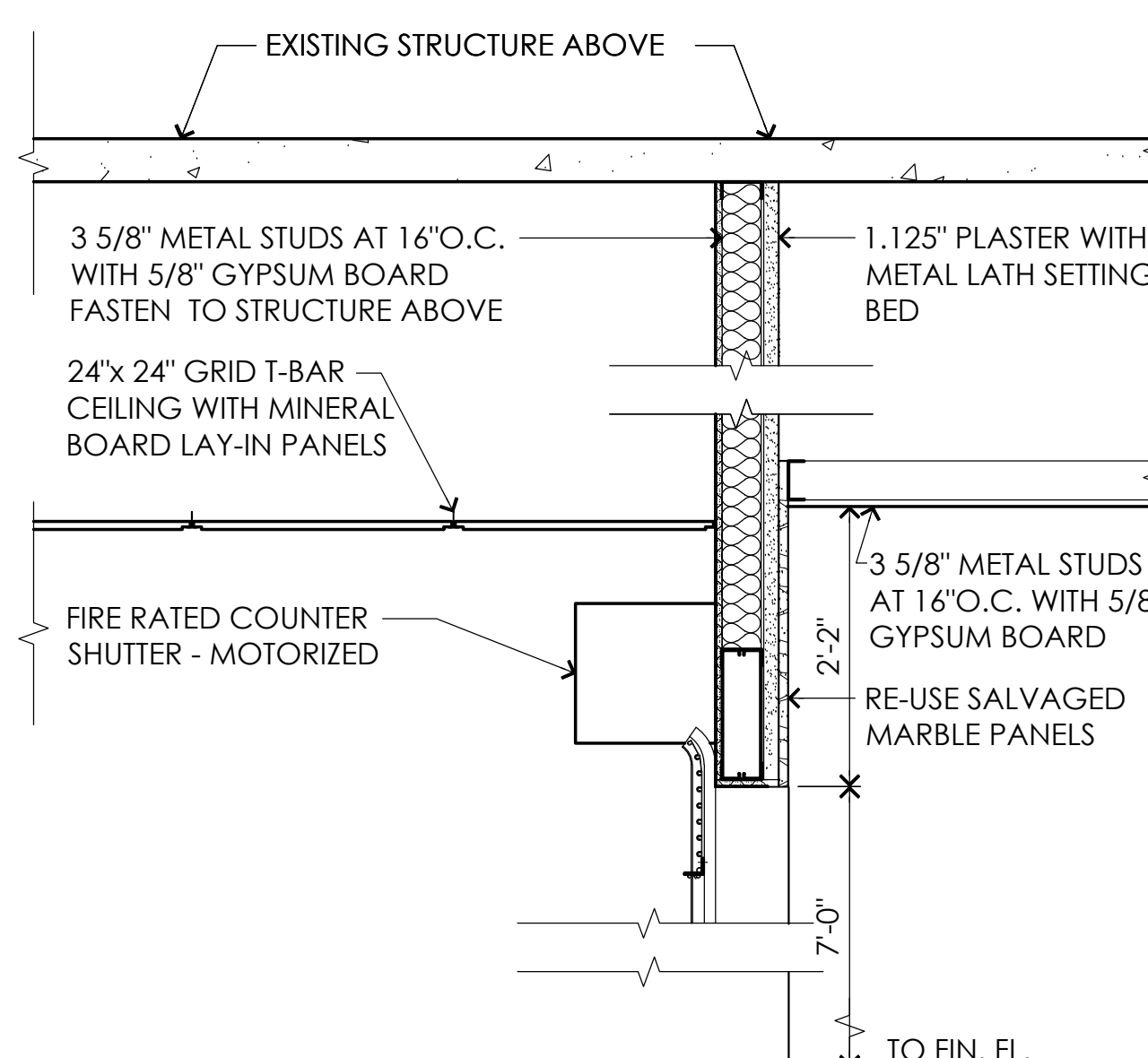
1. SUSPENDED CEILING GRID AND RELATED ITEMS SHALL COMPLY WITH IBC SEISMIC DESIGN CATEGORY D, E, AND F, AND WITH ASTM E580.
2. HANGER WIRES ARE FASTENED TO STRUCTURE ABOVE.
3. PROVIDE 2-12 GAUGE WIRES TO EACH LIGHT FIXTURE AND SECURE TO STRUCTURE ABOVE.
4. COMPRESSION STRUT MAY BE EMT CONDUIT, METAL STUDS, OR A PROPRIETARY COMPRESSION POST.



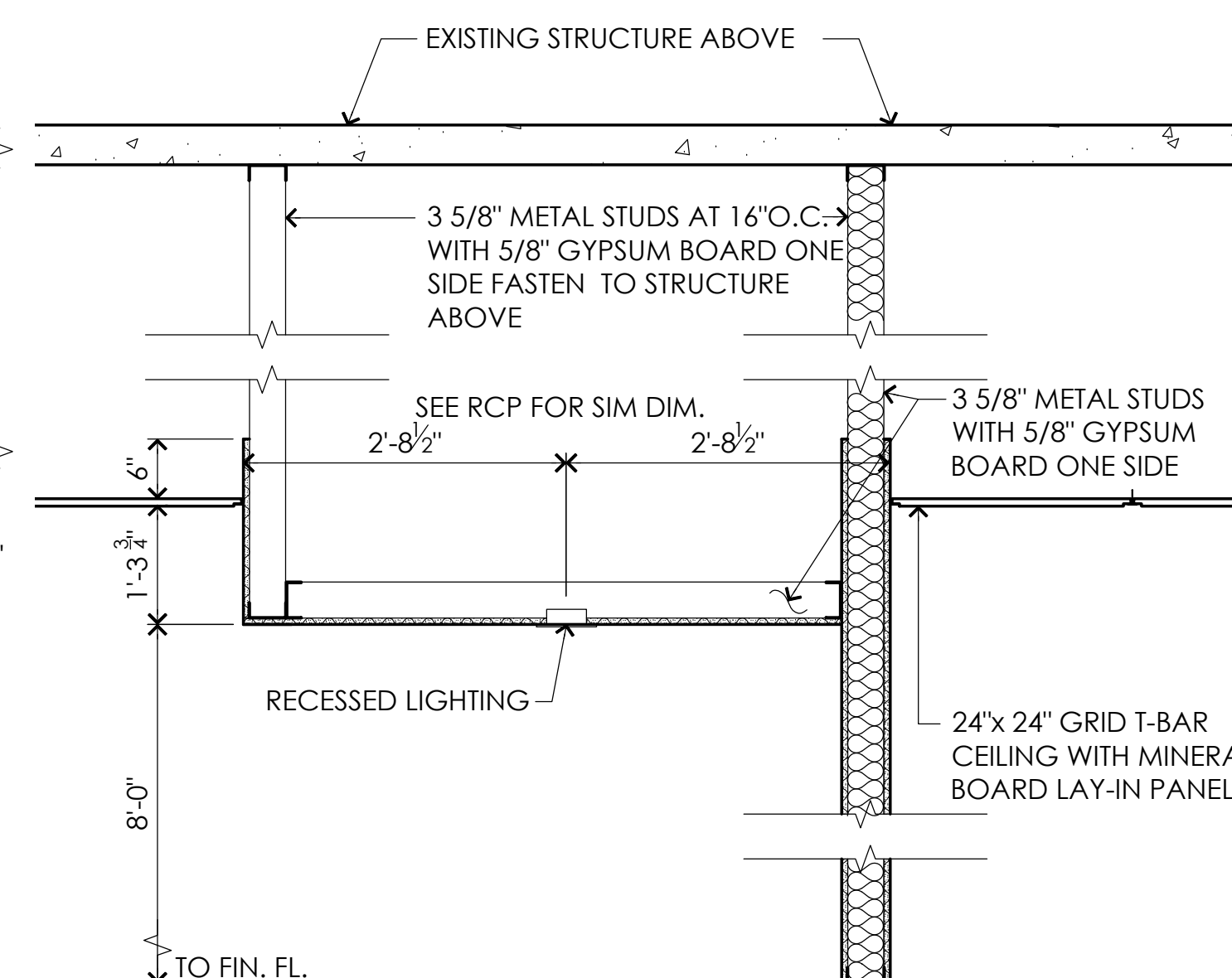
7 GYPSUM BOARD CEILING/SOFFIT  
A-3.2 Scale: 3/4" = 1'-0"



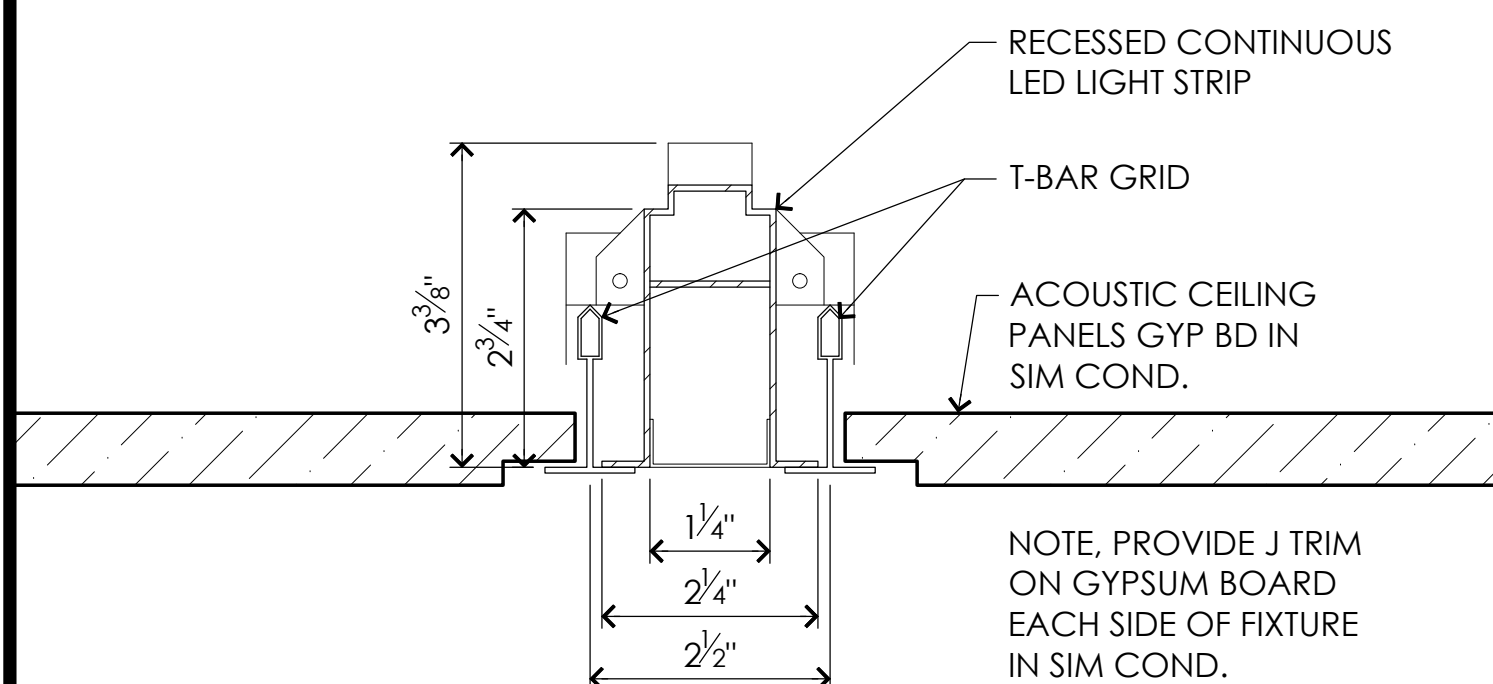
8 GYPSUM BOARD CEILING/SOFFIT  
A-3.2 Scale: 3/4" = 1'-0"



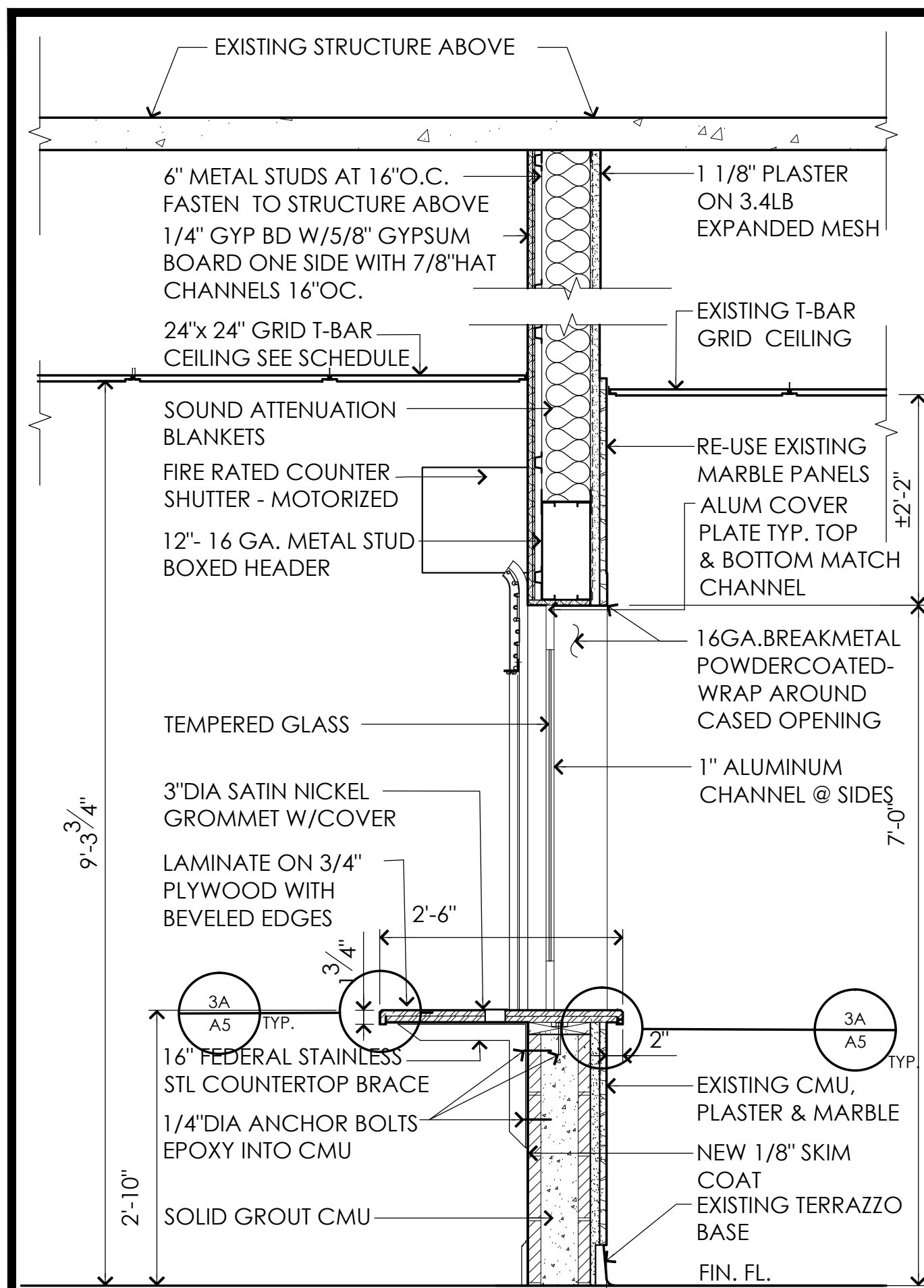
9 GYPSUM BOARD CEILING/SOFFIT  
A-3.2 Scale: 3/4" = 1'-0"



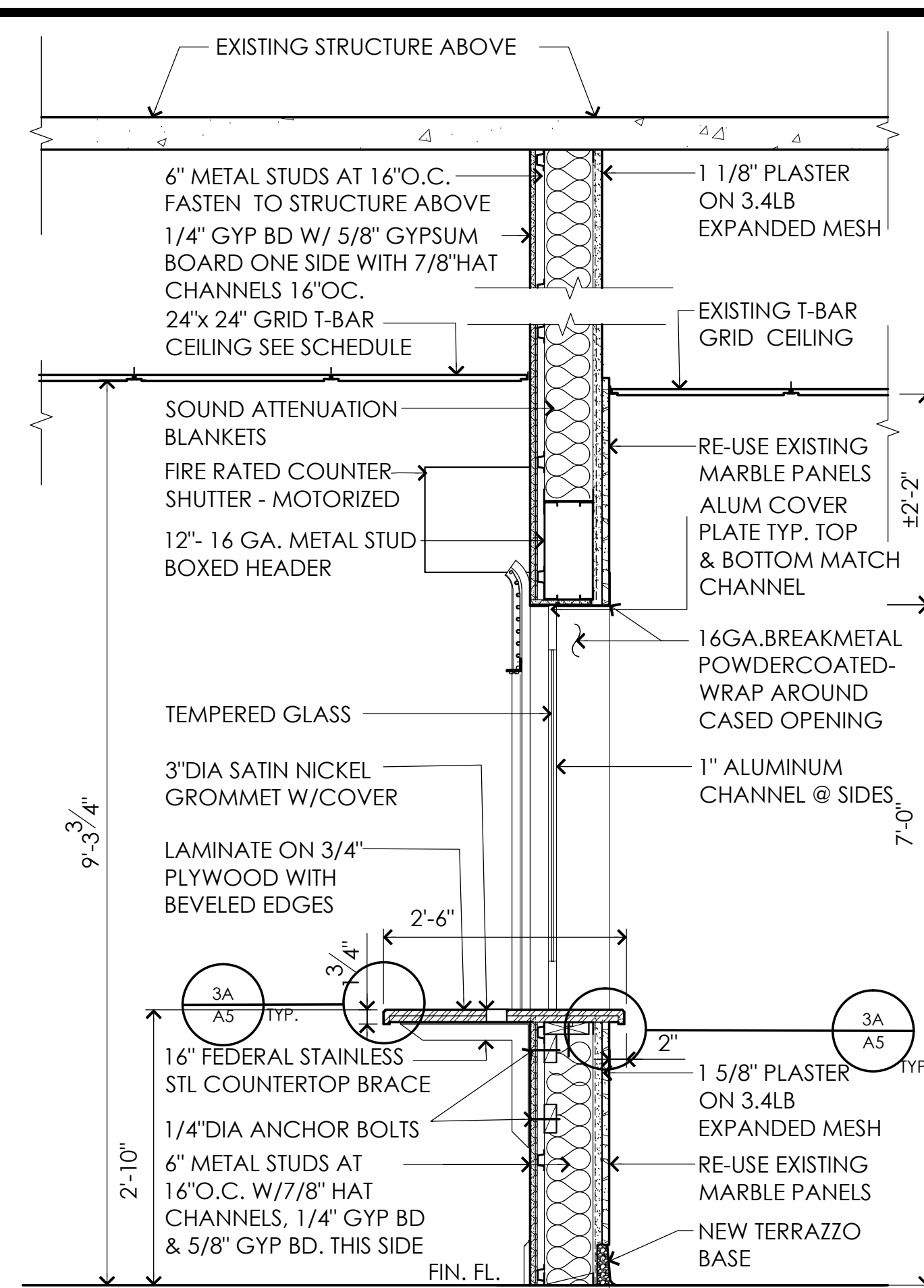
10 GYPSUM BOARD CEILING/SOFFIT  
A-3.2 Scale: 3/4" = 1'-0"



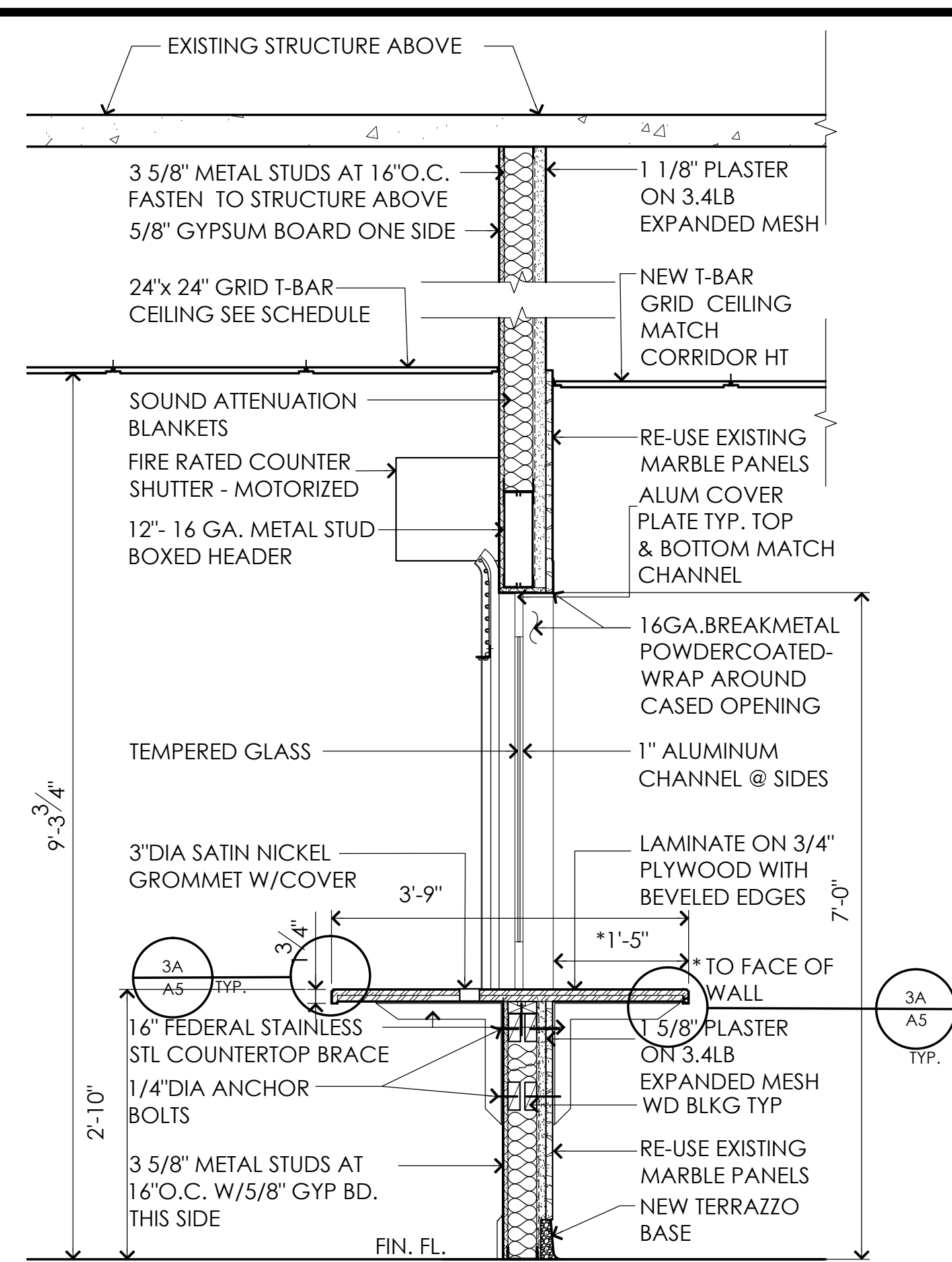
11 LIGHT STRIP  
A-3.2 Scale: 6" = 1'-0"



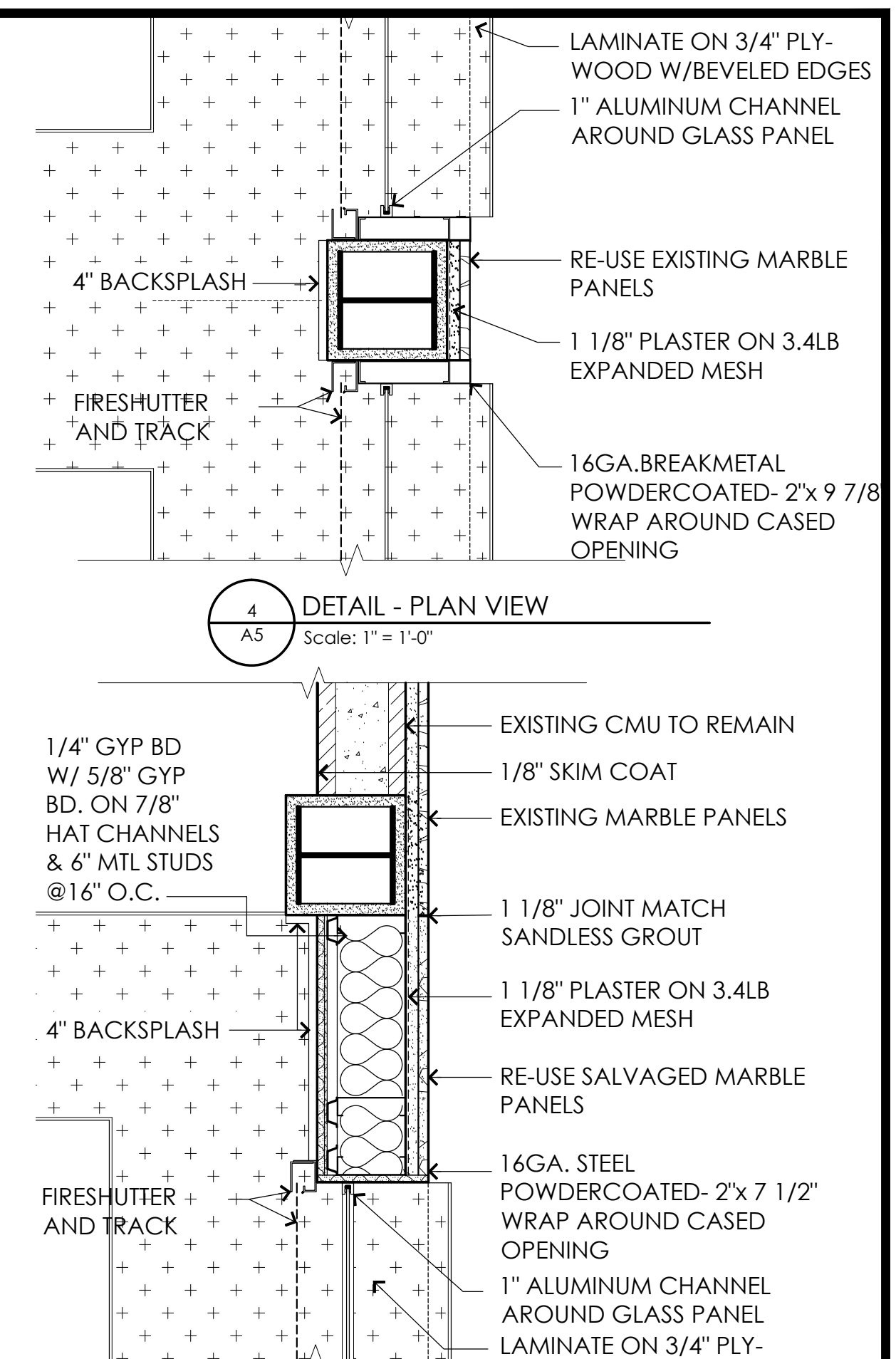
1 WALL SECTION  
Scale: 3/4" = 1'-0"



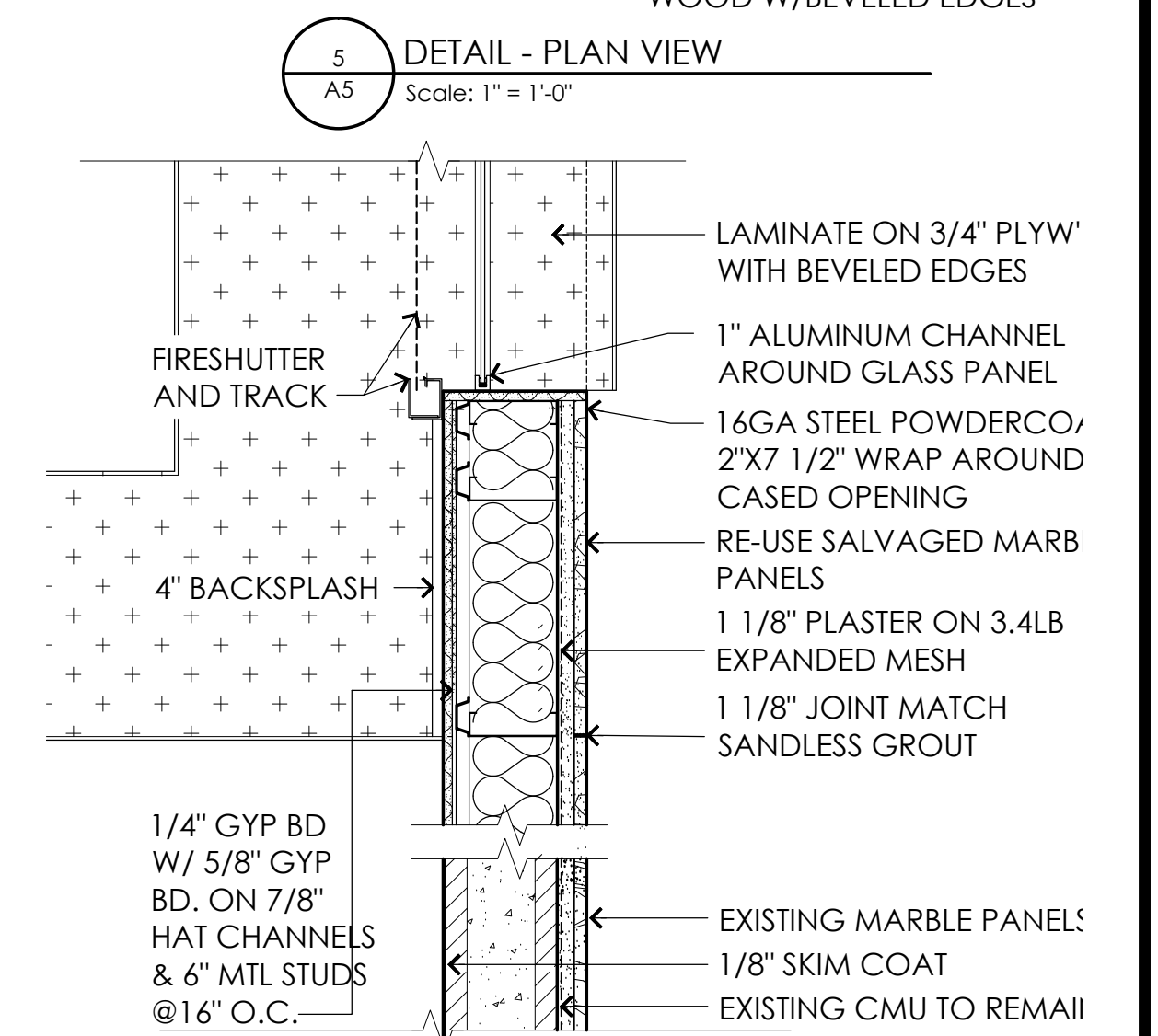
2 WALL SECTION  
Scale: 3/4" = 1'-0"



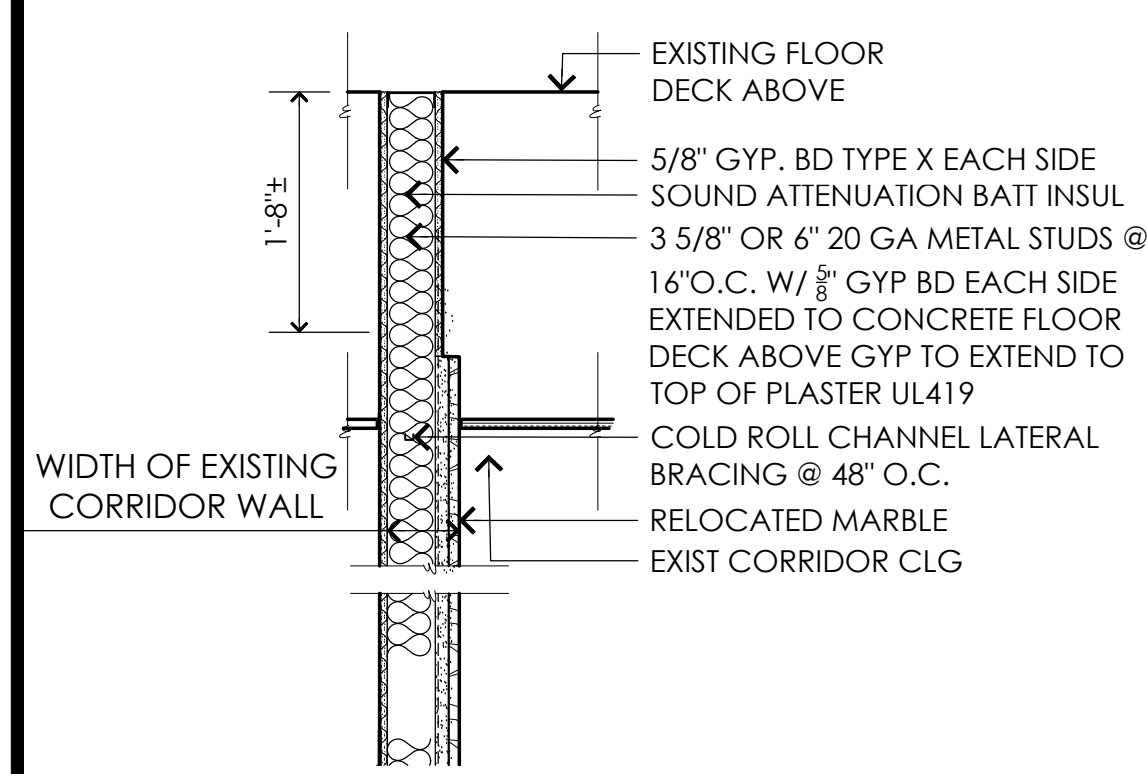
3 WALL SECTION  
Scale: 3/4" = 1'-0"



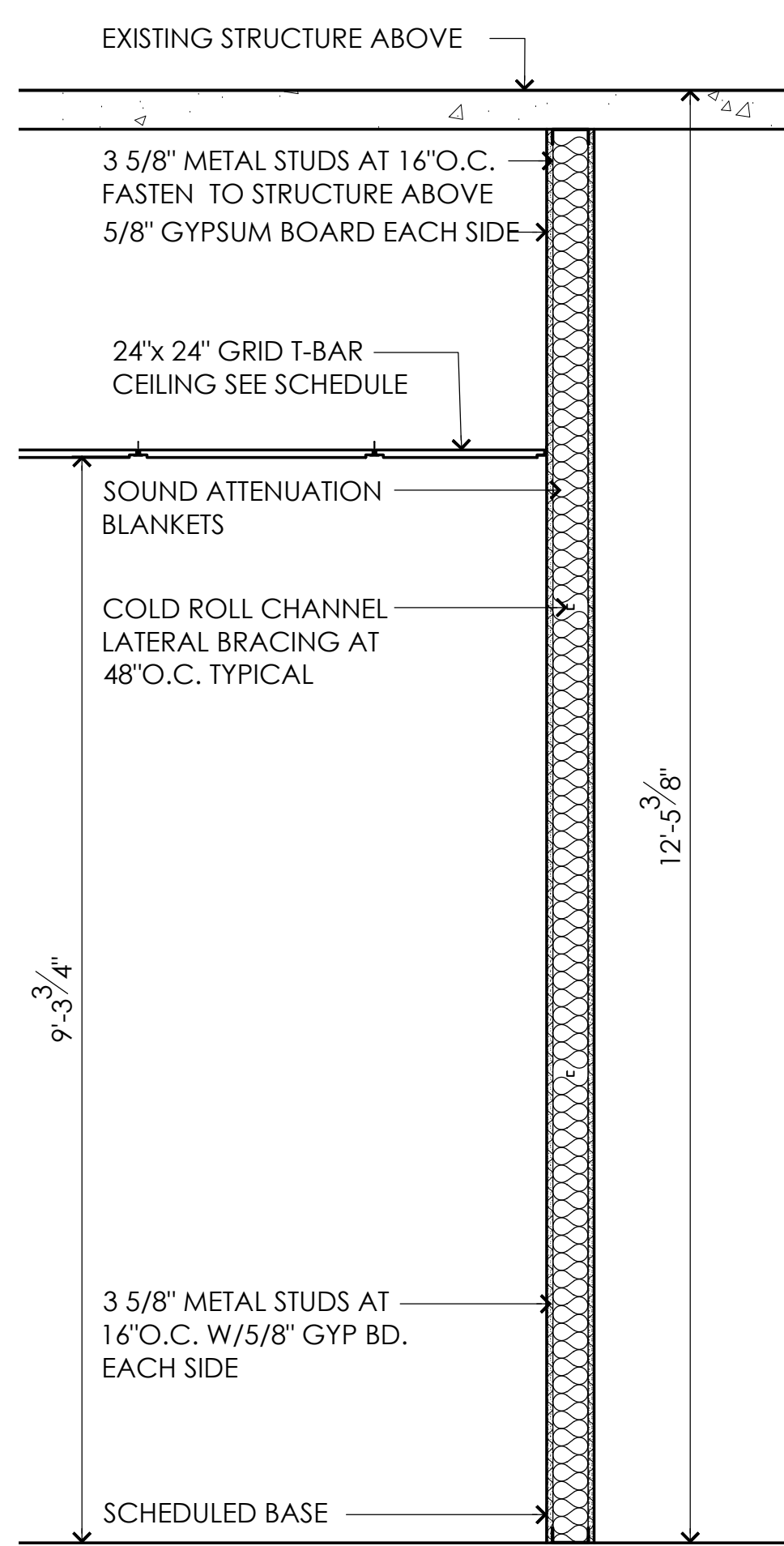
4 DETAIL - PLAN VIEW  
Scale: 1" = 1'-0"



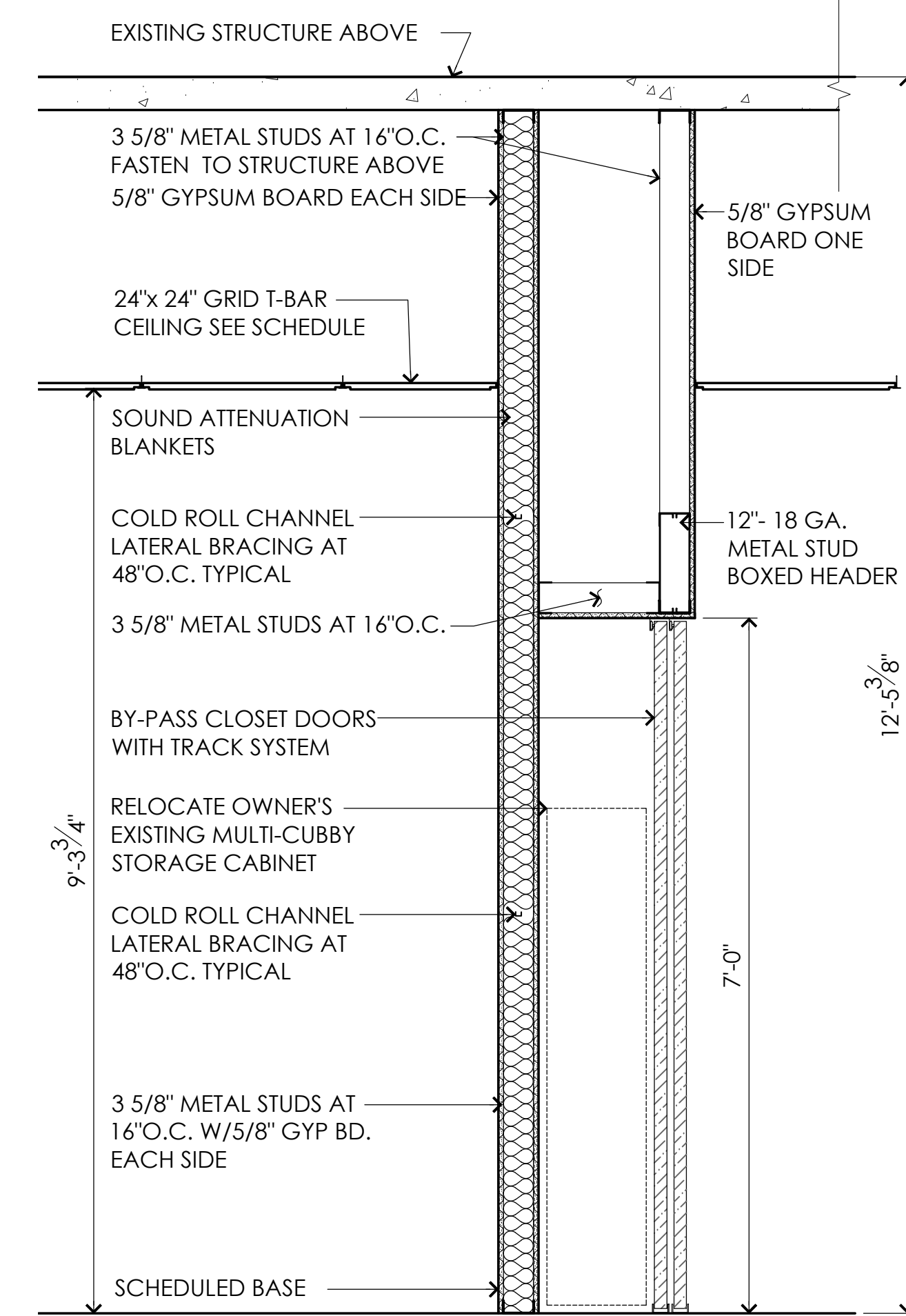
5 DETAIL - PLAN VIEW  
Scale: 1" = 1'-0"



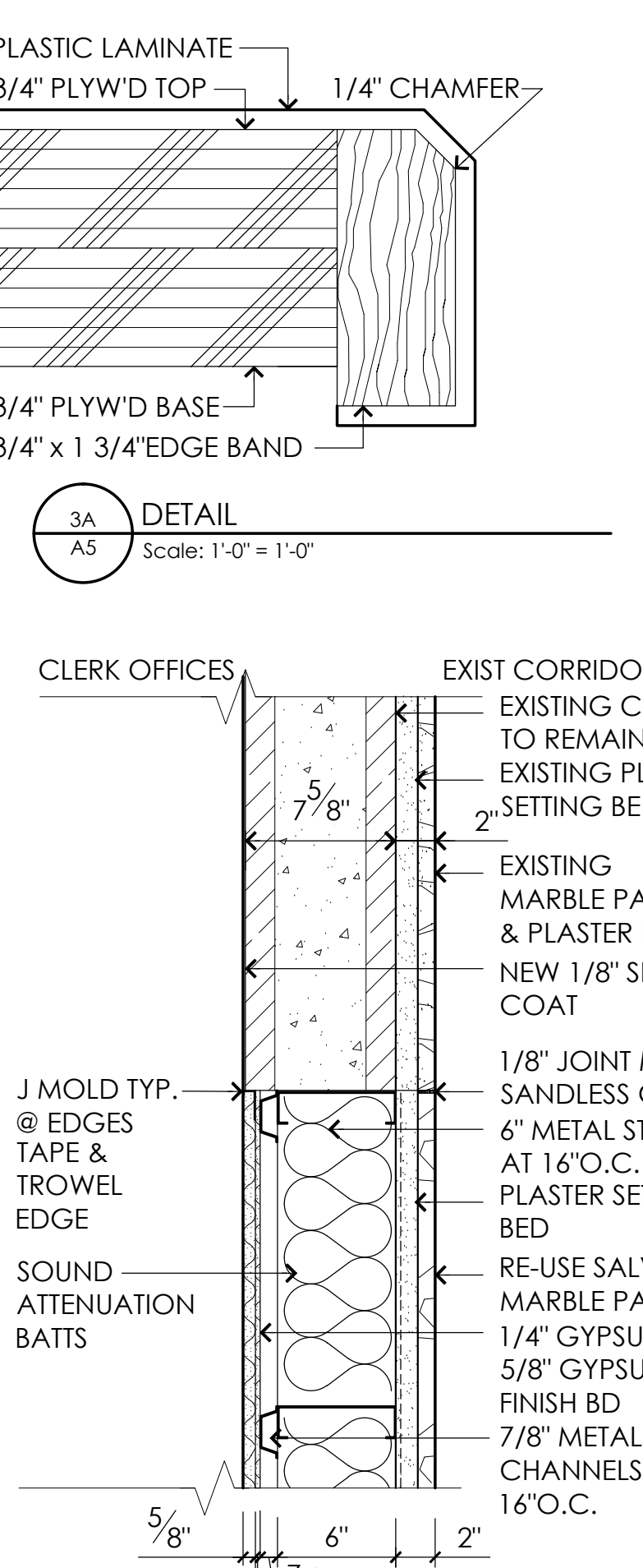
6 DETAIL  
Scale: 3/4" = 1'-0"



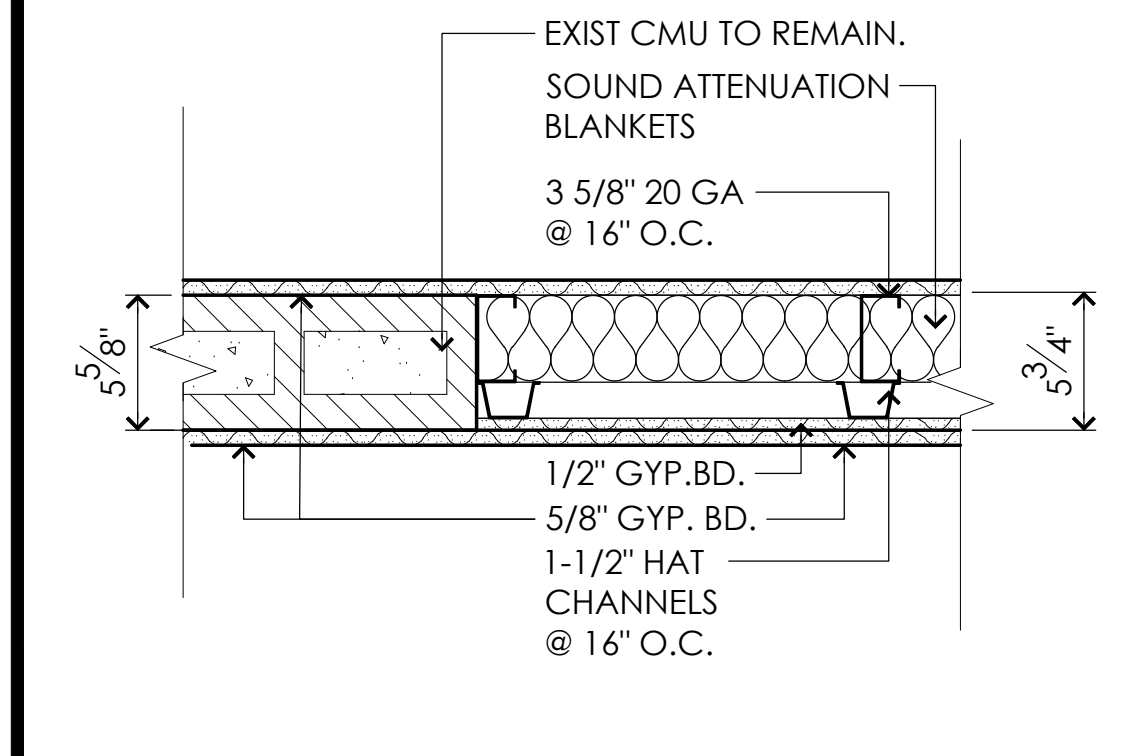
7 WALL SECTION  
Scale: 3/4" = 1'-0"



8 WALL SECTION  
Scale: 3/4" = 1'-0"



9 DETAIL - PLAN VIEW  
Scale: 1'-0" = 1'-0"



10 DETAIL - PLAN VIEW  
Scale: 1 1/2" = 1'-0"



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909

Office: 865.251.2585 Fax: 865.531.9499

Contact Name: William R. Blankenship

Owner:  
Anderson County

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

Project Name:

**ANDERSON CO. COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION**

**Consultants:**

**Mechanical**

Bedinger Consulting Engineers

5641 Merchants Center Blvd. STE A104

Knoxville, TN 37912

(865) 299-5973

Contact Name: David Blakney, P.E.

**Electrical**

Vreeland Engineers, Inc.

P.O. Box 10645

Knoxville, TN 37939

(1865) 745-4401

Contact Name: Chris Lay, P.E.

© COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service, only and shall be returned to the Architect upon request.

**Seal**



Date: 12-2-21

Drawn By: SN & BS

Checked By: BB

Project Number: 20-15

**Revisions**

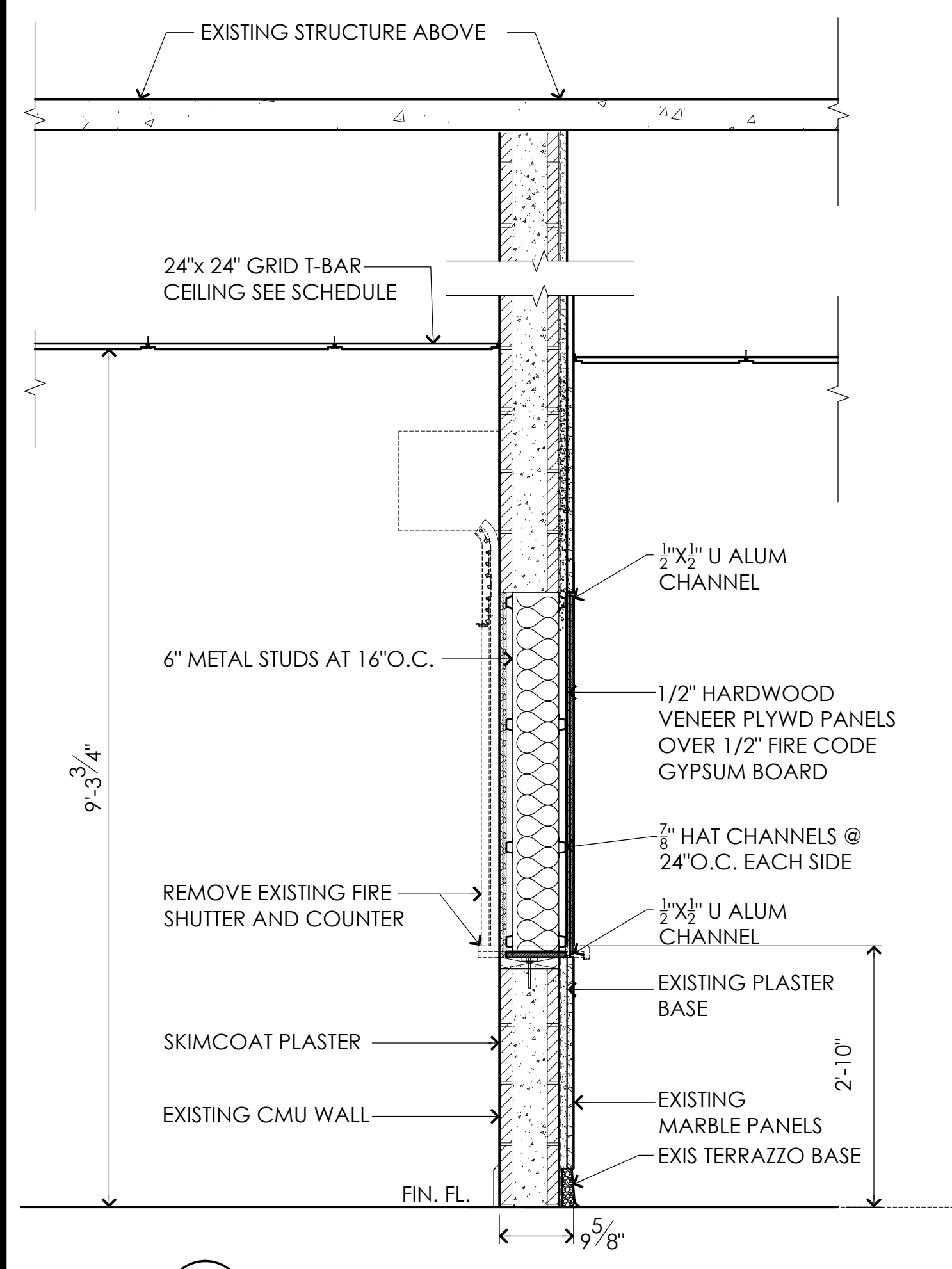
No. Date:

Drawing Title:

Wall Sections & Details

Drawing No.:

**A5.0**



1 WALL SECTION  
A5.1 Scale: 3/4" = 1'-0"



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909

Office: 865.251.2585 Fax: 865.531.9499

Contact Name: William R. Blankenship

Owner:  
Anderson County

100 N Main Street  
Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

Project Name:

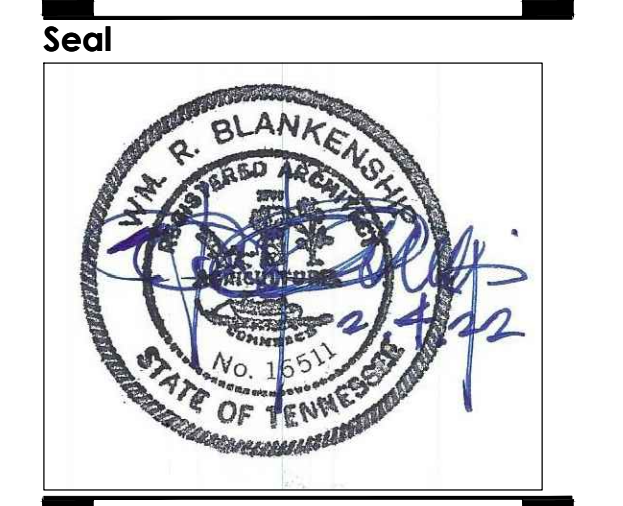
**ANDERSON CO. COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION**

**Consultants:**

**Mechanical**  
Bedinger Consulting Engineers  
5641 Merchants Center Blvd. STE A104  
Knoxville, TN 37912  
(865) 299-5973  
Contact Name: David Blakney, P.E.

**Electrical**  
Vreeland Engineers, Inc.  
P.O. Box 10645  
Knoxville, TN 37939  
(865) 745-4401  
Contact Name: Chris Lay, P.E.

© COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.



Date: 12-2-21  
Drawn By: SN & BS  
Checked By: BB  
Project Number: 20-15

**Revisions**

No. Date:

Drawing Title:  
Wall Sections & Details

Drawing No.:

**A5.1**



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37912

Office: 865.251.2585 Fax: 865.531.9495

Contact Name: William R. Blankenship

Owner: Anderson County

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

Project Name:

ANDERSON CO. COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION

Consultants:

Mechanical

Bedinger Consulting Engineers

5641 Merchants Center Blvd. STE A104

Knoxville, TN 37912

(865) 299-5973

Contact Name: David Blakney, P.E.

Electrical

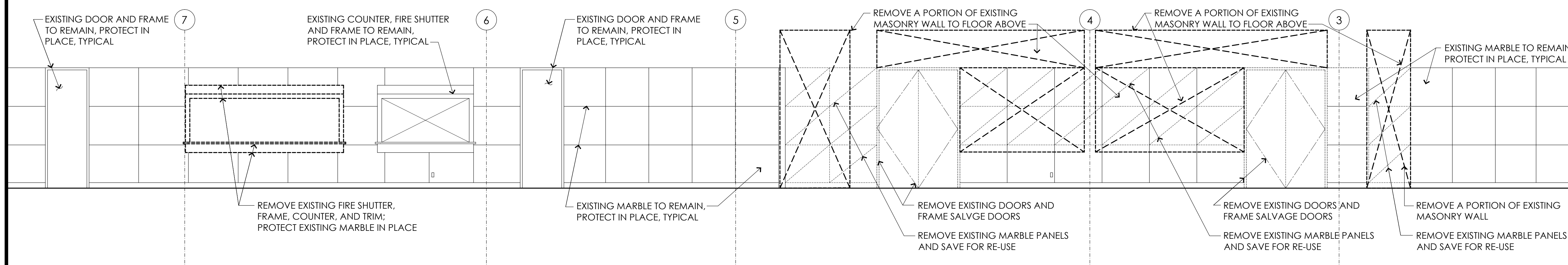
Vreeland Engineers, Inc.

P.O. Box 10645

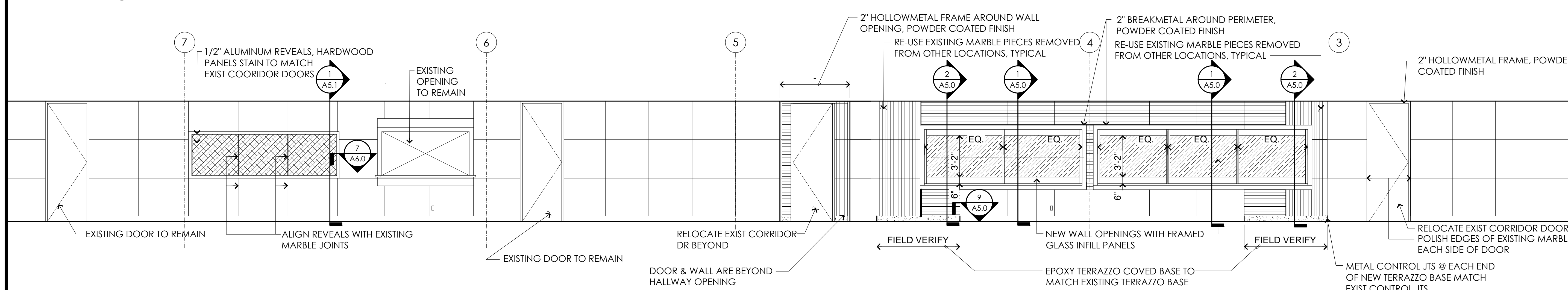
Knoxville, TN 37939

T (865) 745-4401

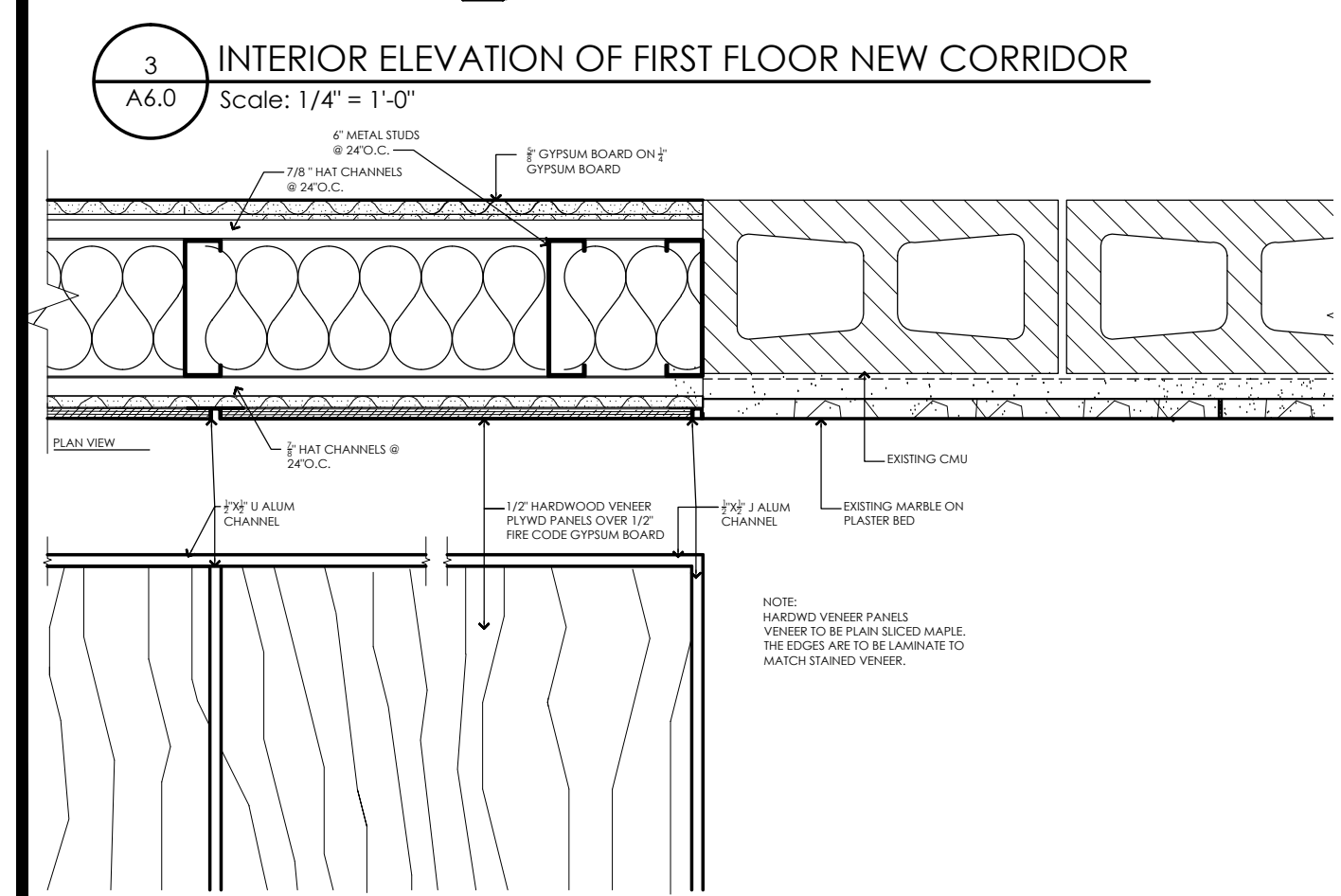
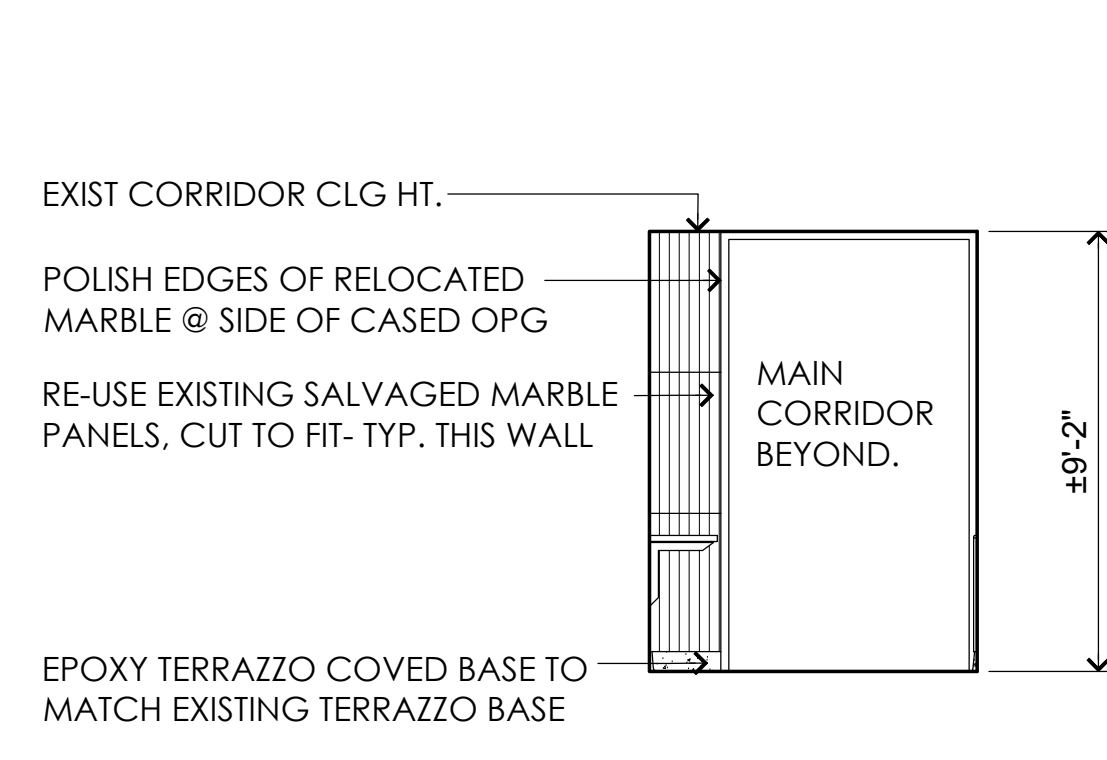
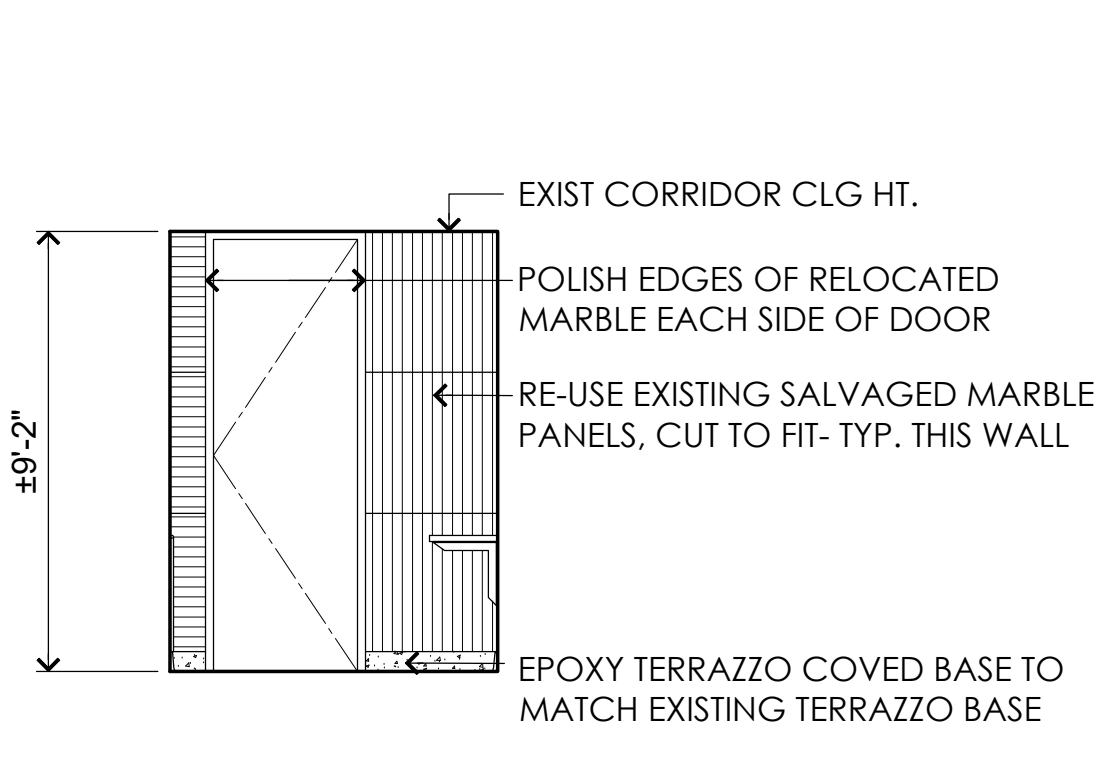
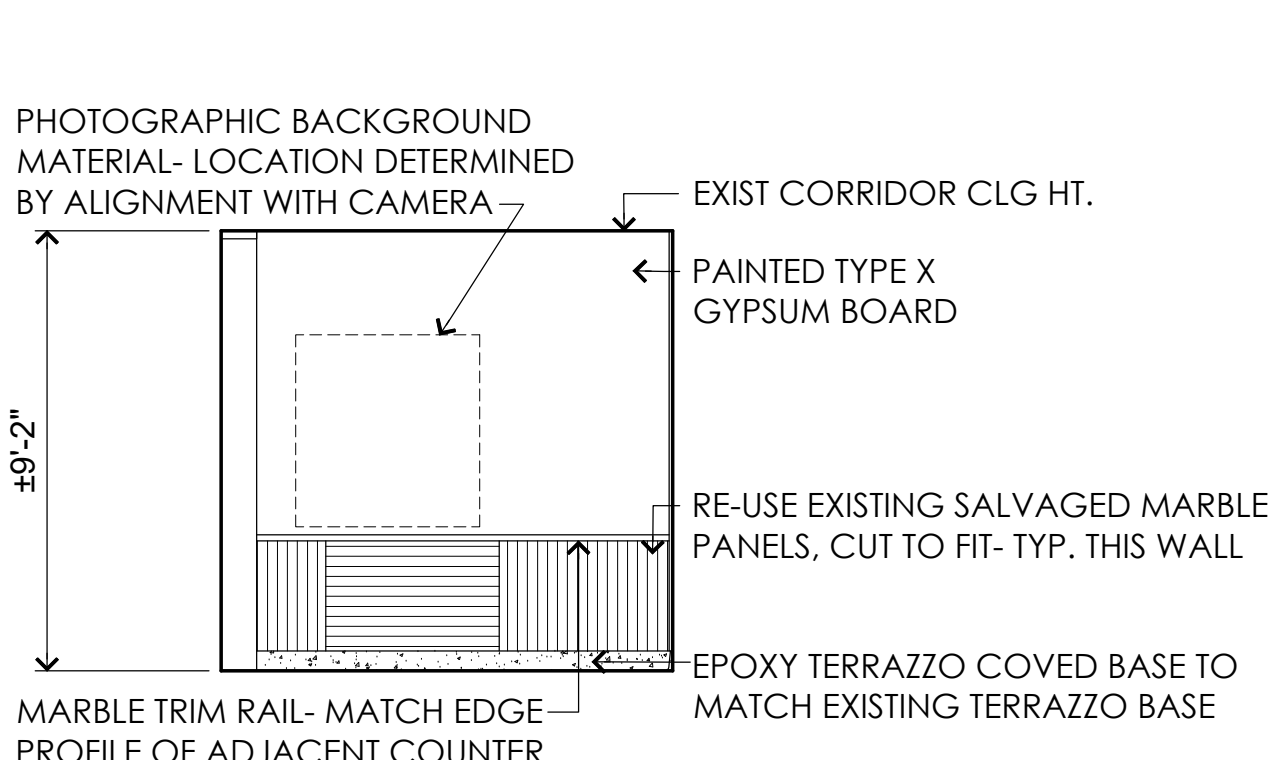
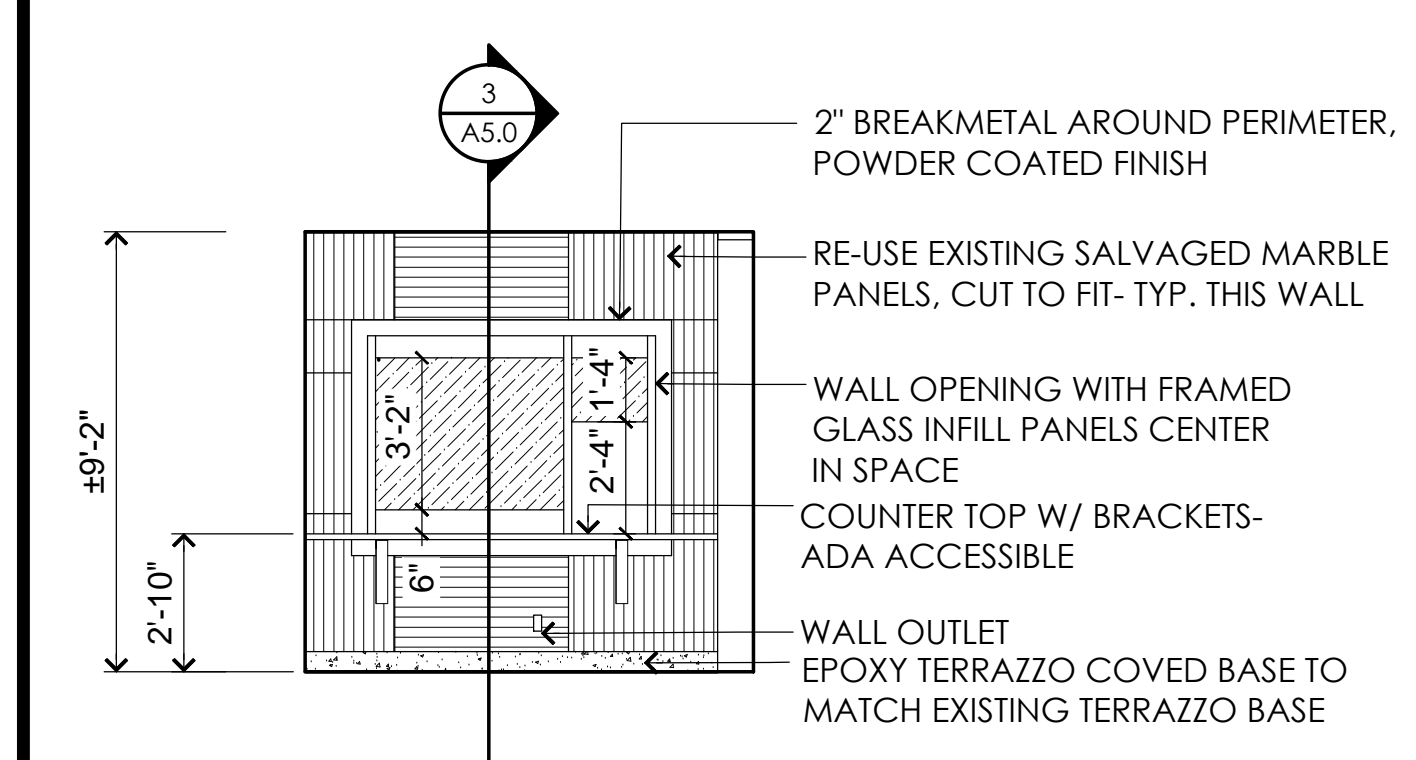
Contact Name: Chris Lay, P.E.



1 INTERIOR ELEVATION OF FIRST FLOOR MAIN CORRIDOR - DEMOLITION  
Scale: 1/4" = 1'-0"



2 INTERIOR ELEVATION OF FIRST FLOOR MAIN CORRIDOR  
Scale: 1/4" = 1'-0"



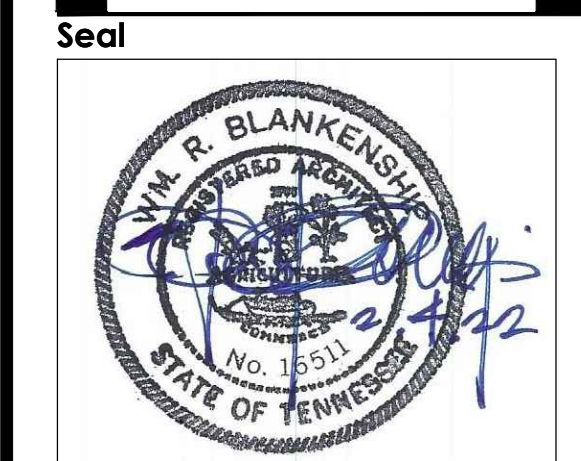
7 PANEL REVEAL  
Scale: 3" = 1'-0"

4 INTERIOR ELEVATION OF FIRST FLOOR NEW CORRIDOR  
Scale: 1/4" = 1'-0"

5 INTERIOR ELEVATION OF FIRST FLOOR NEW CORRIDOR  
Scale: 1/4" = 1'-0"

6 INTERIOR ELEVATION OF FIRST FLOOR NEW CORRIDOR  
Scale: 1/4" = 1'-0"

© COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC, and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.



Date: 12-2-21

Drawn By: SN & BS

Checked By: BB

Project Number: 20-15

Revisions

No. Date:

Drawing Title:  
Interior Elevations & Millwork

Drawing No.:

A6.0



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37979

Office: 865.251.2585 Fax: 865.531.9499

Contact Name: William R. Blankenship

**Owner:**

**Anderson County**

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

**Project Name:**

**ANDERSON CO. COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION**

**Consultants:**

**Mechanical**

Bedinger Consulting Engineers

5641 Merchants Center Blvd. STE A104

Knoxville, TN 37912

(865) 299-5973

Contact Name: David Blakney, P.E.

**Electrical**

Vreeland Engineers, Inc.

P.O. Box 10645

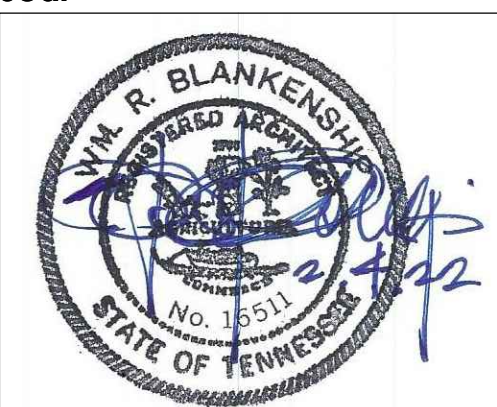
Knoxville, TN 37939

T (865) 745-4401

Contact Name: Chris Lay, P.E.

© COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.

**Seal**



Date: 12-2-21

Drawn By: SN & BS

Checked By: BB

Project Number: 20-15

**Revisions**

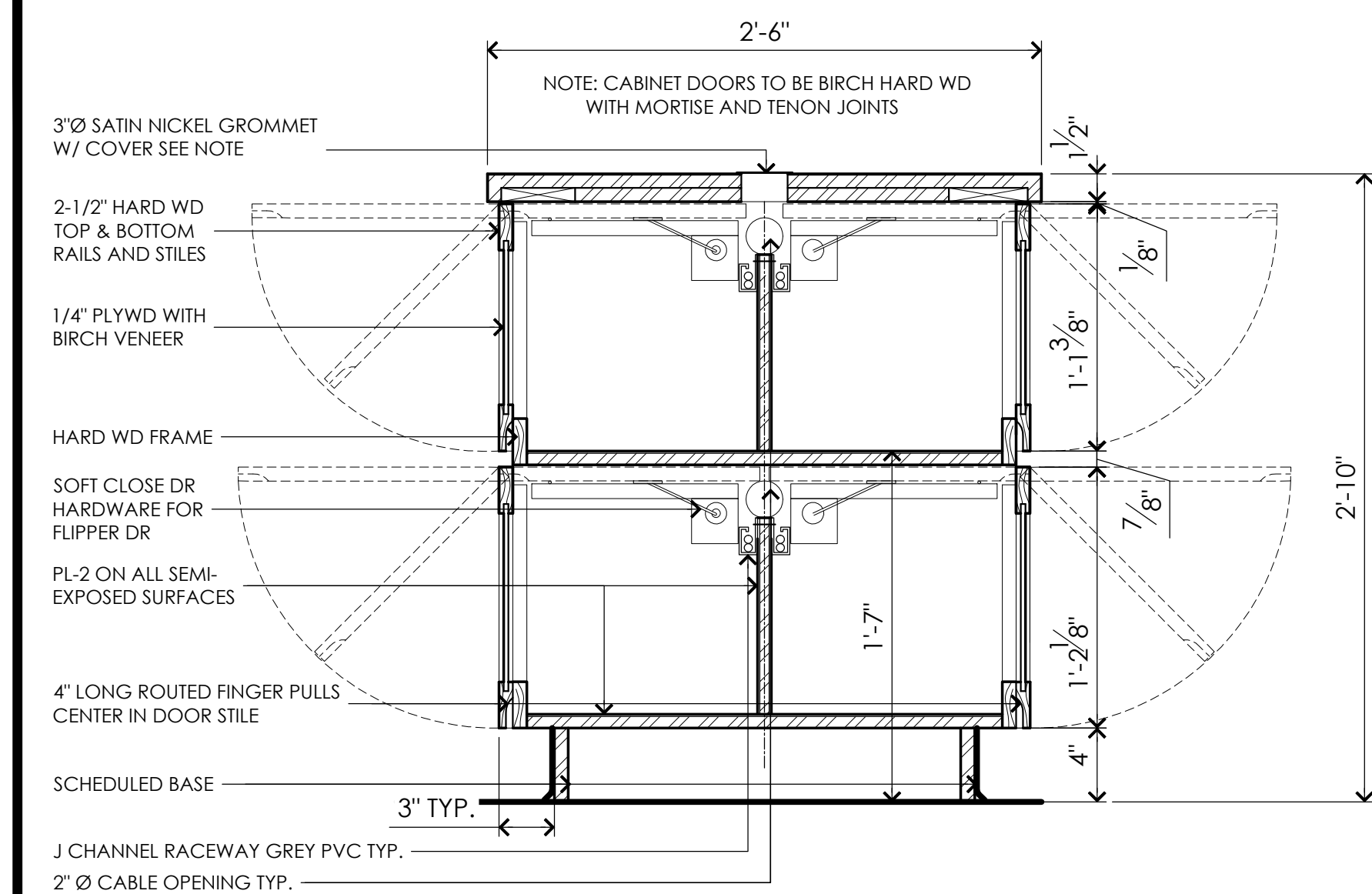
No. Date:

**Drawing Title:**

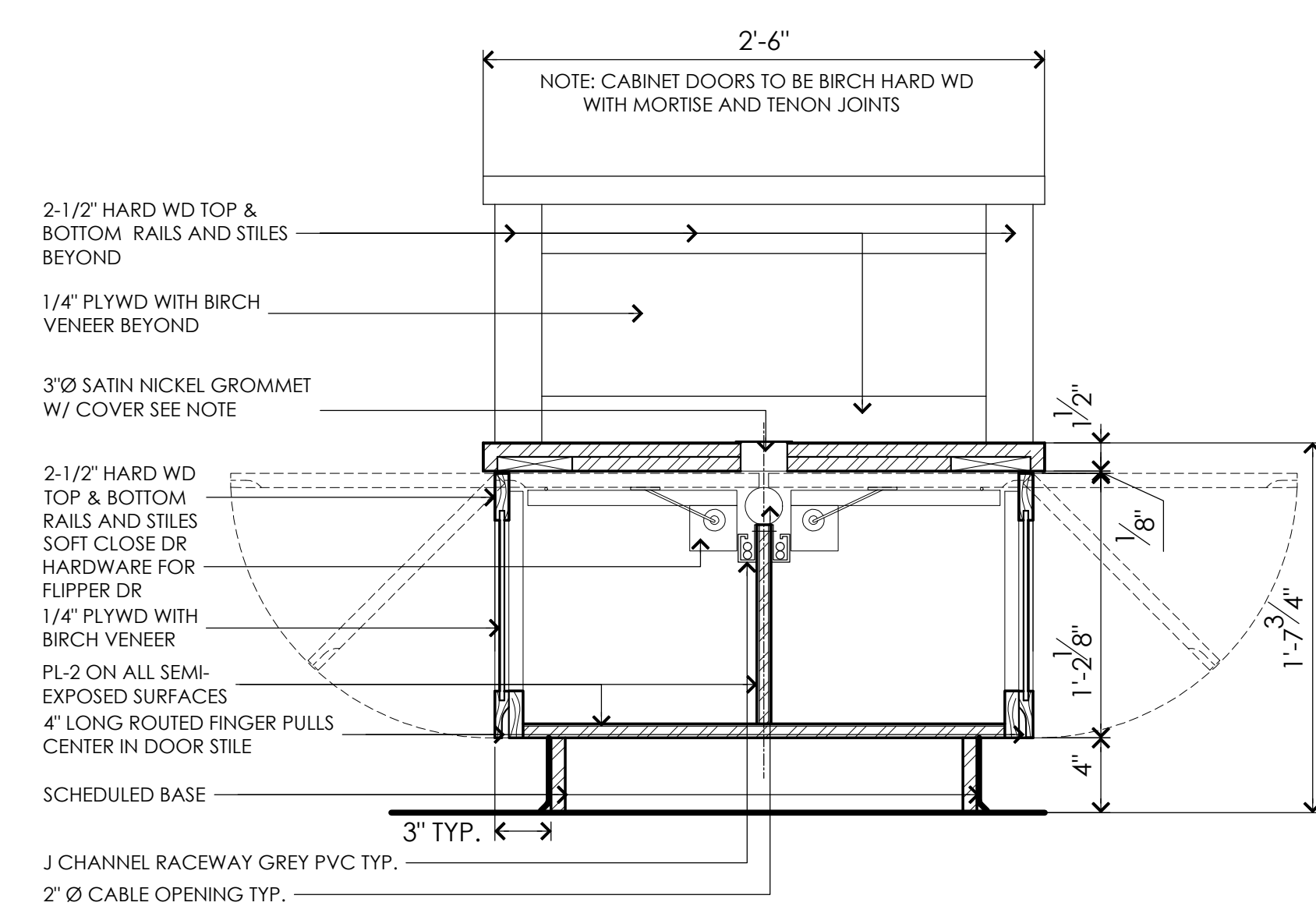
Millwork Details

**Drawing No.:**

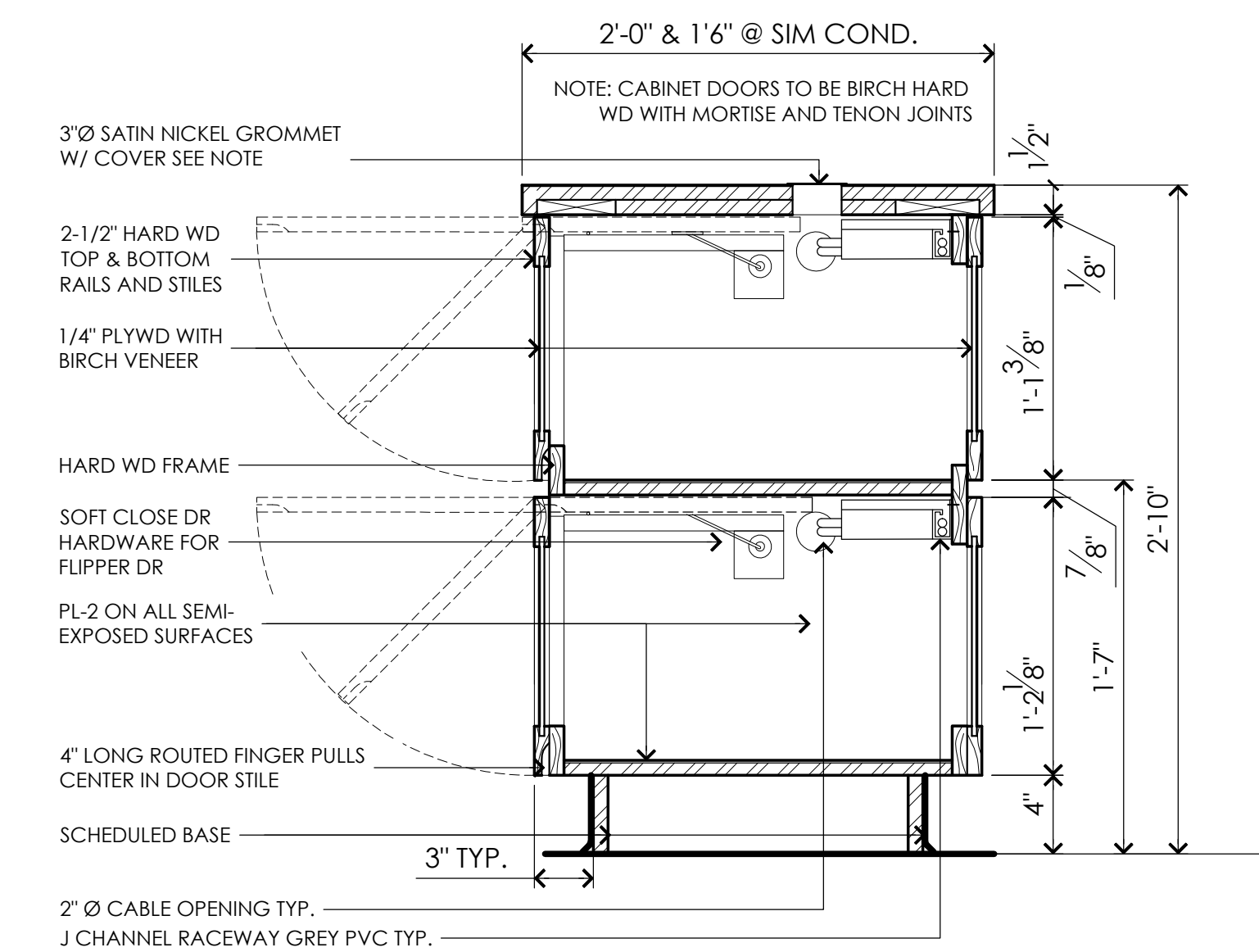
**A6.1**



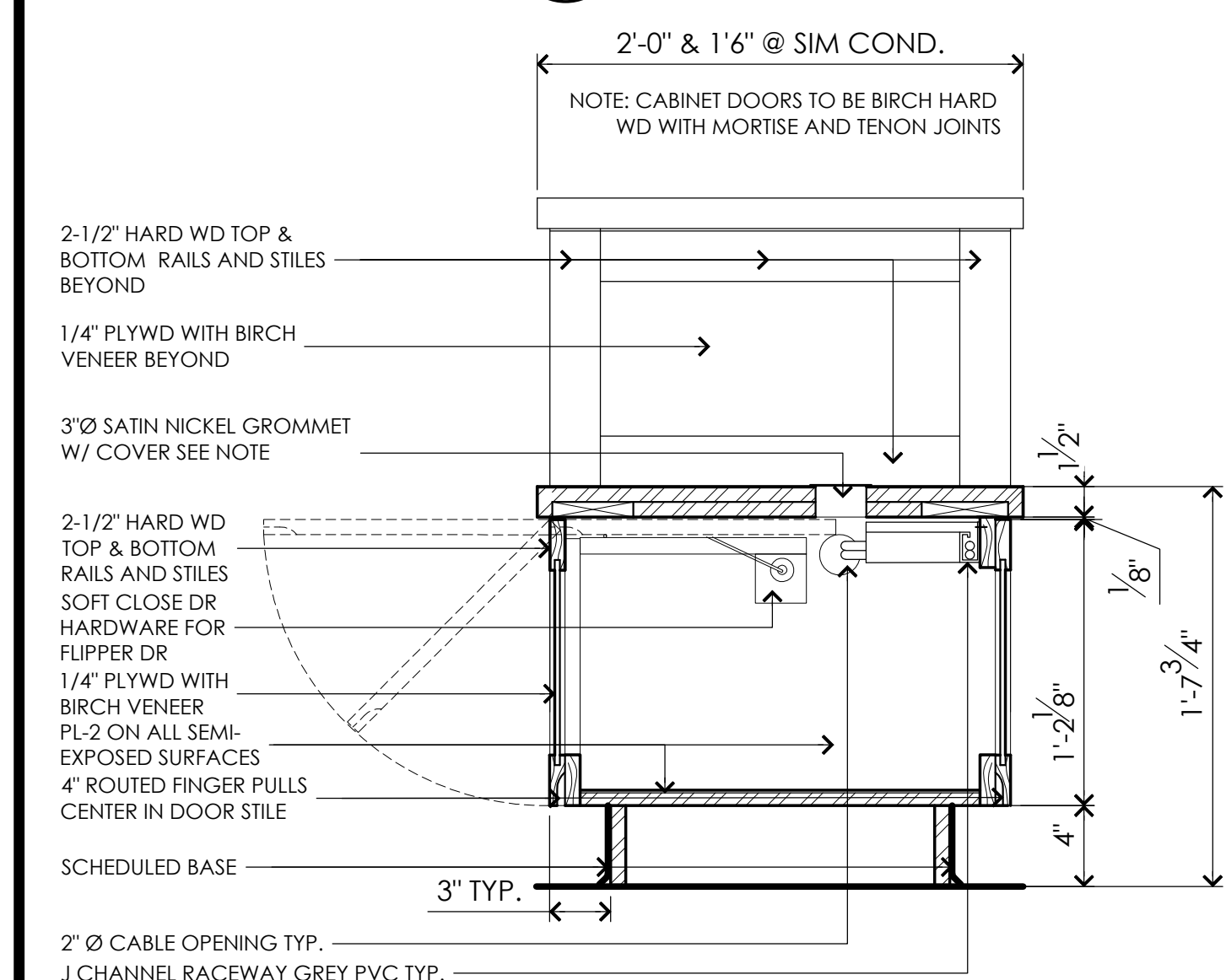
**1 CABINET SECTION**  
A6.1 Scale: 1-1/2" = 1'-0"



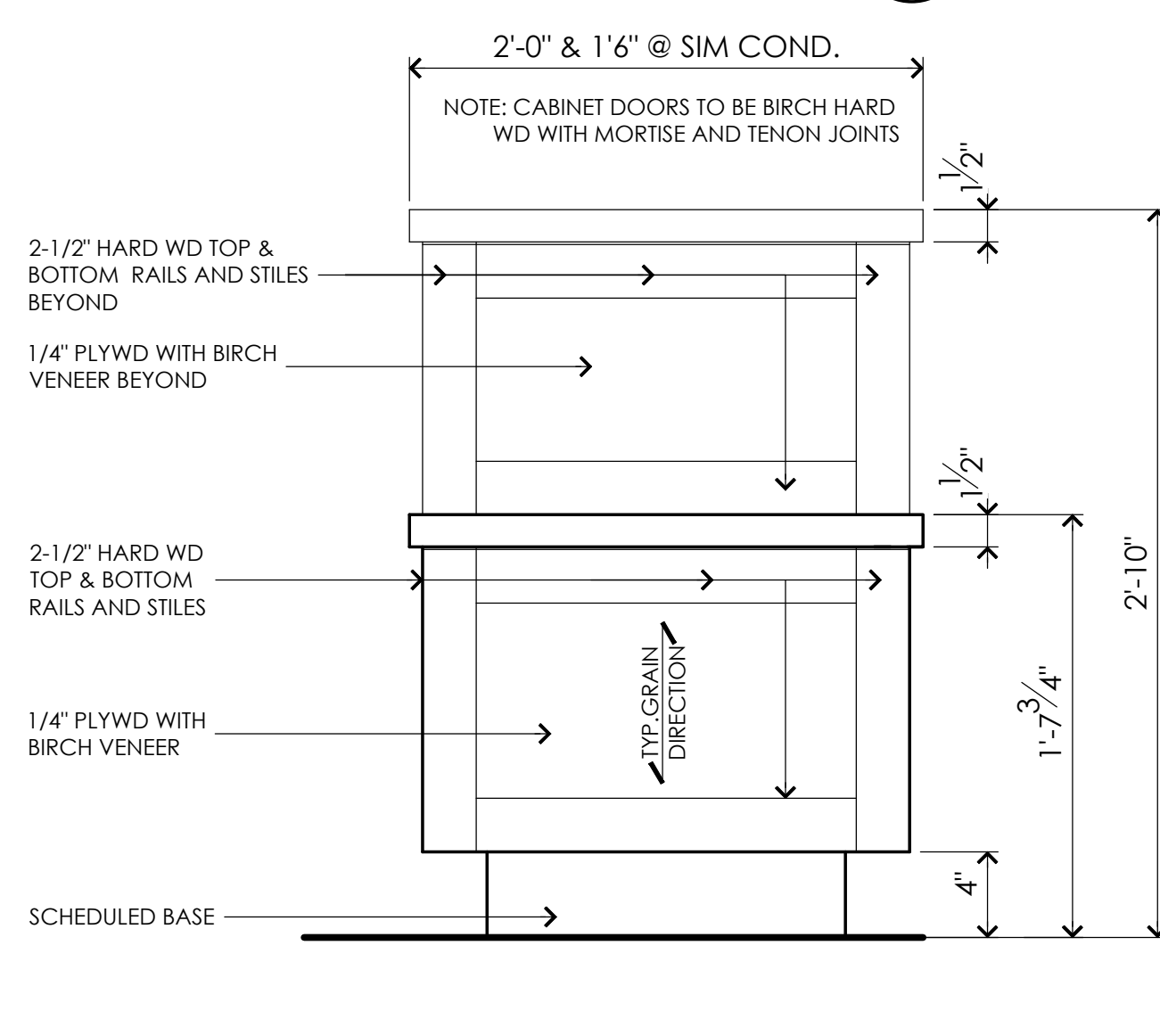
**2 CABINET SECTION**  
A6.1 Scale: 1-1/2" = 1'-0"



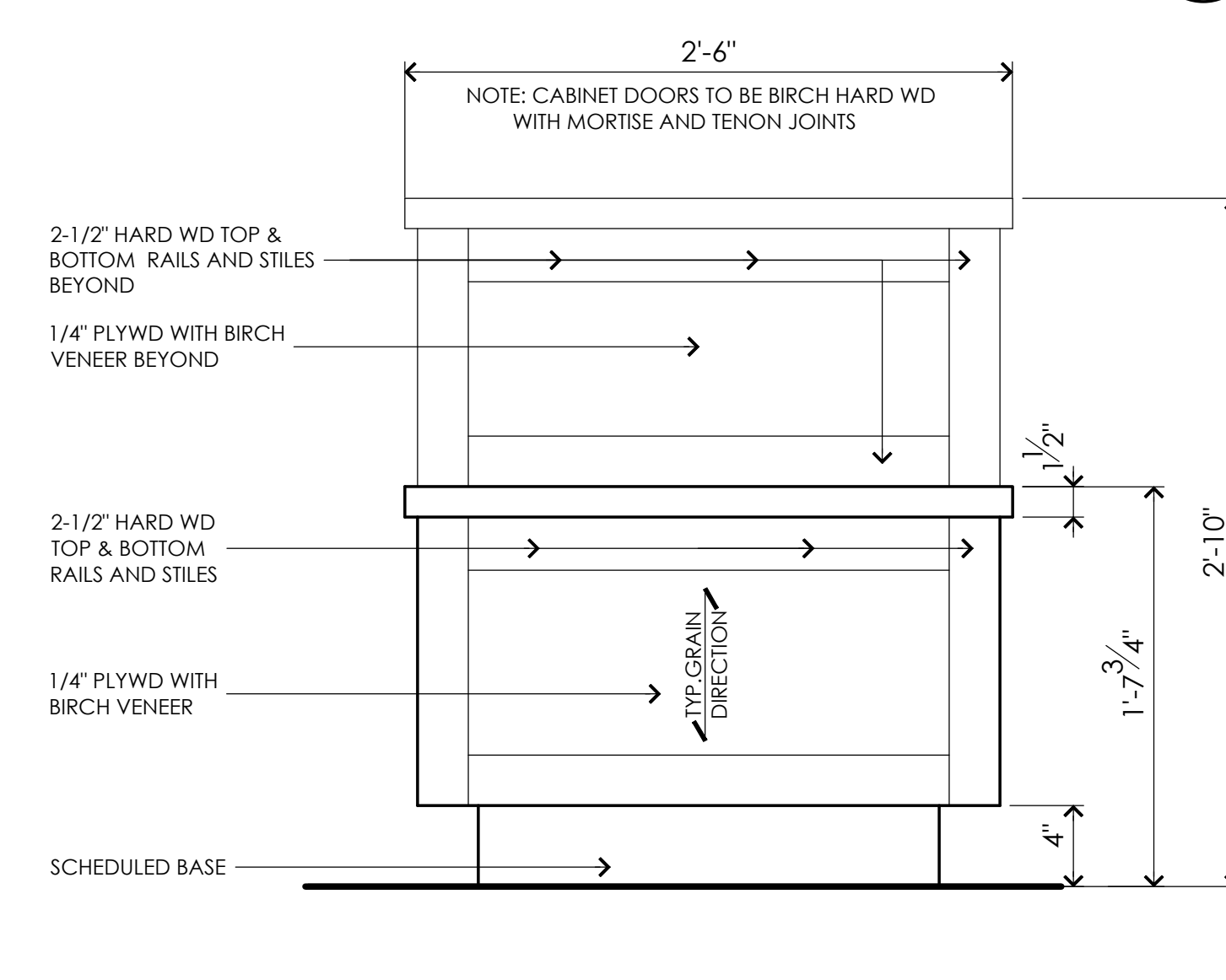
**3 CABINET SECTION**  
A6.1 Scale: 1-1/2" = 1'-0"



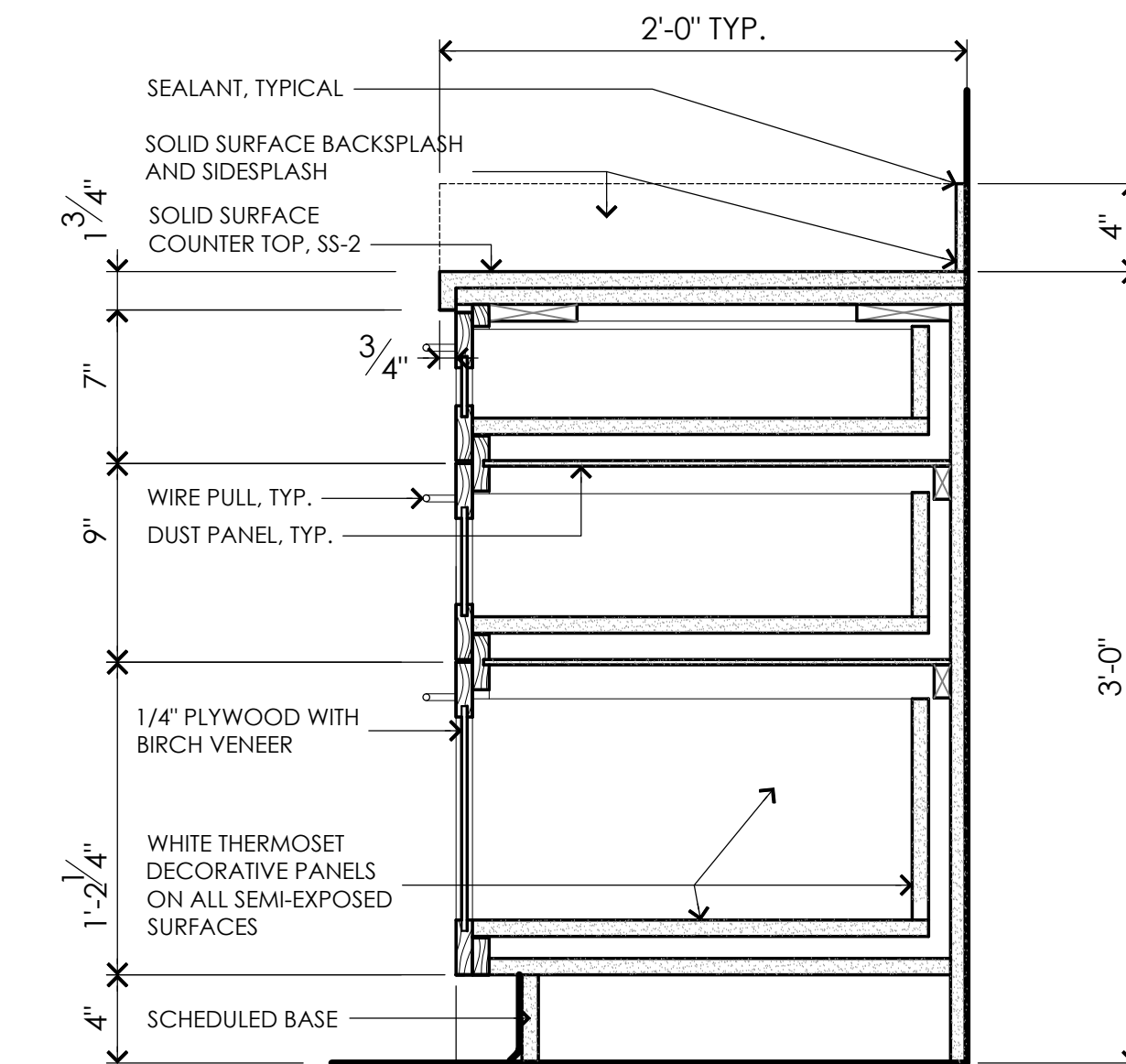
**4 CABINET SECTION**  
A6.1 Scale: 1-1/2" = 1'-0"



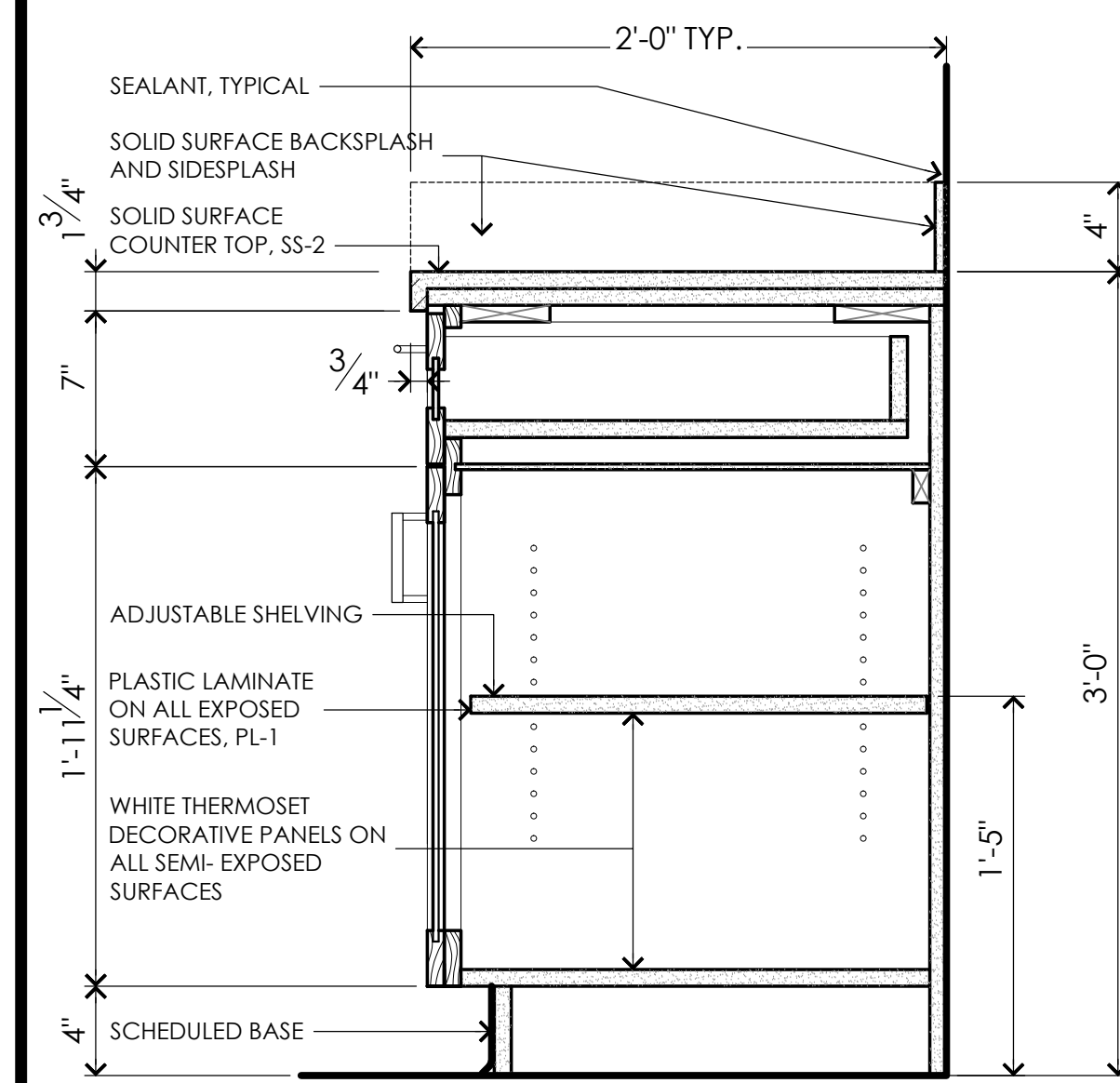
**5 CABINET END ELEVATION**  
A6.1 Scale: 1-1/2" = 1'-0"



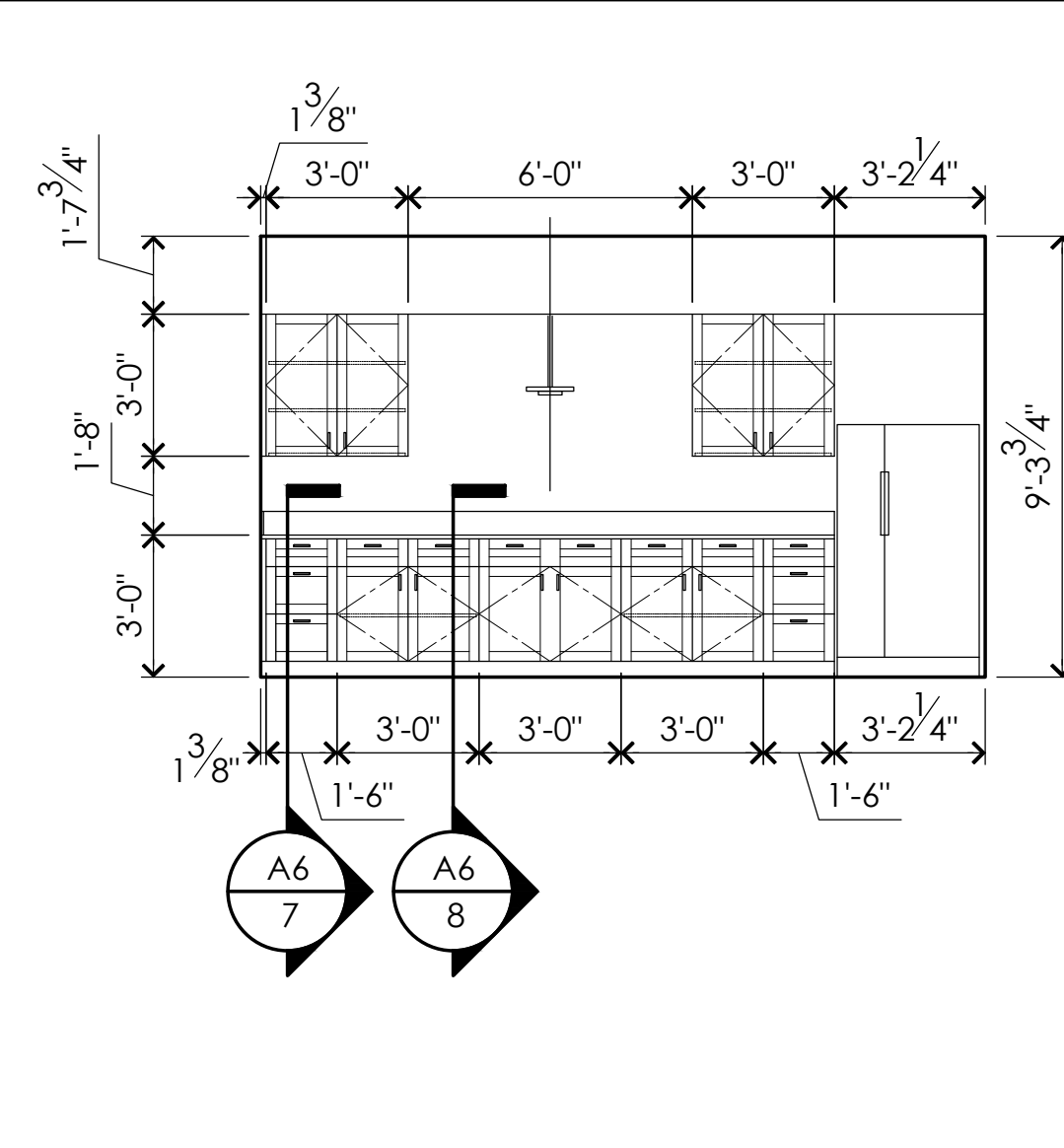
**6 CABINET END ELEVATION**  
A6.1 Scale: 1-1/2" = 1'-0"



**7 CABINET SECTION**  
A6.1 Scale: 1-1/2" = 1'-0"

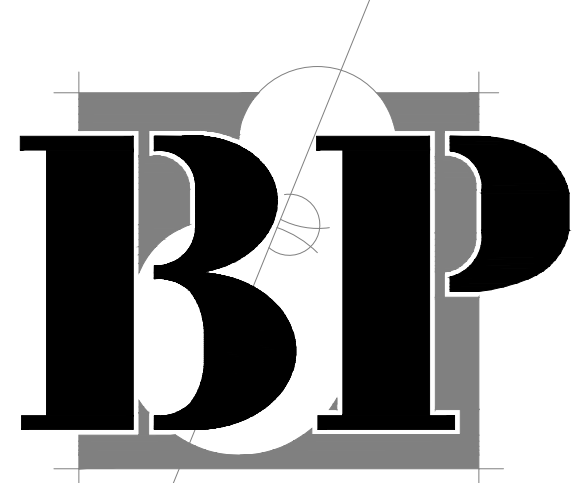


**8 CABINET SECTION**  
A6.1 Scale: 1-1/2" = 1'-0"



**9 CABINET ELEVATION**  
A6.1 Scale: 1/4" = 1'-0"





Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37903

Office: 865.251.2585 Fax: 865.531.9499

Contact Name: William R. Blankenship

Owner: Anderson County

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

Project Name:

ANDERSON CO. COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION

Consultants:

Mechanical

Bedinger Consulting Engineers

5641 Merchants Center Blvd, STE A104

Knoxville, TN 37912

[865] 299-5973

Contact Name: David Blakney, P.E.

Electrical

Vreeland Engineers, Inc.

P.O. Box 10645

Knoxville, TN 37939

T [865] 745-4401

Contact Name: Chris Loy, P.E.

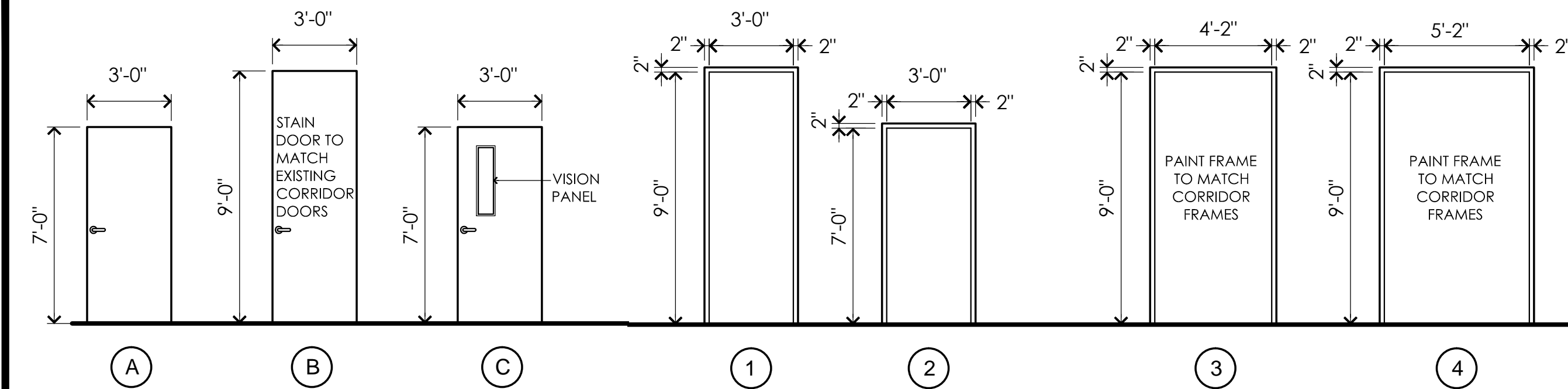
DOOR SCHEDULE

DOOR NO.	ROOM	DOOR				FRAME				HDW SET	FIRE RATING	REMARKS
		MATL	TYPE	SIZE	SIZE	MATL	FRAME ELEV.	HEAD	JAMB			
103	MULTI-PURPOSE ROOM	WD	A	3'-0" x 7'-0"	HM	2	3/A8.1 SIM	4/A8.1 SIM	5/A8.1	1	-	-
104	NEW CORRIDOR	-	-	-	HM	4	12/A8.0	11A+B/A8.0	-	-	-	CASED OPENING
105	OFFICE	WD	A	3'-0" x 7'-0"	HM	2	3/A8.1	4/A8.1	5/A8.1	1	-	-
106	DOCUMENT REVIEW RM	WD	A	3'-0" x 7'-0"	HM	2	3/A8.1	4/A8.1	5/A8.1	1	-	-
107	DOCUMENT & SECURE ROOM	WD	A	3'-0" x 7'-0"	HM	2	3/A8.1	4/A8.1	5/A8.1	2	-	**BADGE SWIPE SECURITY LOCKS TO WORK WITH CURRENT SYSTEM
108	WORK ROOM	WD	A	3'-0" x 7'-0"	HM	2	3/A8.1	4/A8.1	5/A8.1	-	-	-
110	COUNTY CLERK OFFICE	EXIST*	-	3'-0" x 9'-0"	HM	1	3/A8.1	4/A8.1	5/A8.1	1	-	-
111A	OPEN OFFICE	EXIST*	B	3'-0" x 9'-0"	HM	1	3/A8.1	4/A8.1	-	***	20 MIN	**BADGE SWIPE SECURITY LOCKS TO WORK WITH CURRENT SYSTEM
111B	OPEN OFFICE	EXIST*	B	3'-0" x 9'-0"	HM	1	3/A8.1	4/A8.1	-	***	20 MIN	**BADGE SWIPE SECURITY LOCKS TO WORK WITH CURRENT SYSTEM
112	ARCHIVIST OFFICE	AL/GLASS	-	3'-0" x 7'-0"	ALUM	-	6A/A8.1	6A/A8.1	-	5	-	TEMPERED GLASS
300	FILE ROOM	WD	A	3'-0" x 7'-0"	HM	2	3/A8.1	4/A8.1	-	3	20 MIN	**BADGE SWIPE SECURITY LOCKS TO WORK WITH CURRENT SYSTEM
301	WITNESS ROOM	WD	C	3'-0" x 7'-0"	HM	2	3/A8.1	4/A8.1	5/A8.1	4	20 MIN	SOUND SEALS AROUND DOOR PERIMETER
302	WITNESS ROOM	WD	C	3'-0" x 7'-0"	HM	2	3/A8.1	4/A8.1	5/A8.1	4	20 MIN	SOUND SEALS AROUND DOOR PERIMETER
303	WAITING ROOM	-	-	-	-	-	-	-	-	-	-	-
304	WITNESS ROOM	WD	C	3'-0" x 7'-0"	HM	2	3/A8.1	4/A8.1	5/A8.1	4	20 MIN	SOUND SEALS AROUND DOOR PERIMETER
305	WITNESS ROOM	WD	C	3'-0" x 7'-0"	HM	2	3/A8.1	4/A8.1	5/A8.1	4	20 MIN	SOUND SEALS AROUND DOOR PERIMETER
307	ENTRY	-	-	-	HM	3	12/A8.0	11A+B/A8.0 SIM	-	-	-	CASED OPENING

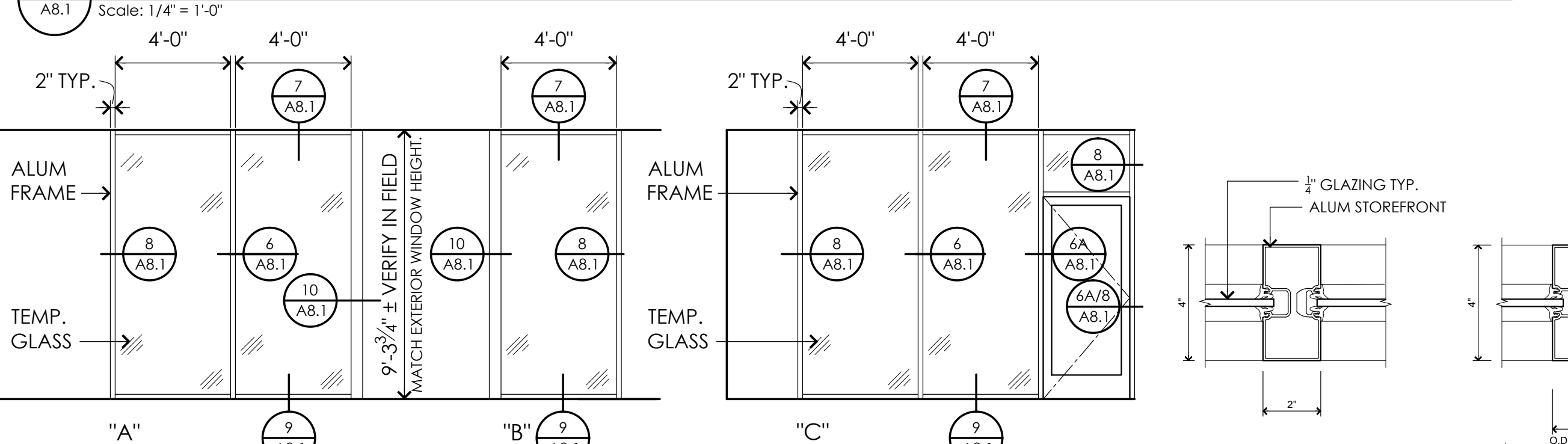
\* REUSE SALVAGED CORRIDOR DOOR LEAF  
\*\*VERIFY SOFTWARE IS COMPATIBLE WITH CURRENT SECURITY SOFTWARE  
\*\*\*NEW STAINLESS HARDWARE TO MATCH ADA COMPLIANT MAIN CORRIDOR HARDWARE. ALSO INCLUDES 3 NEW STAINLESS HINGLES. KEYED PER CURRENT DOOR.

DOOR & WINDOW GENERAL NOTES

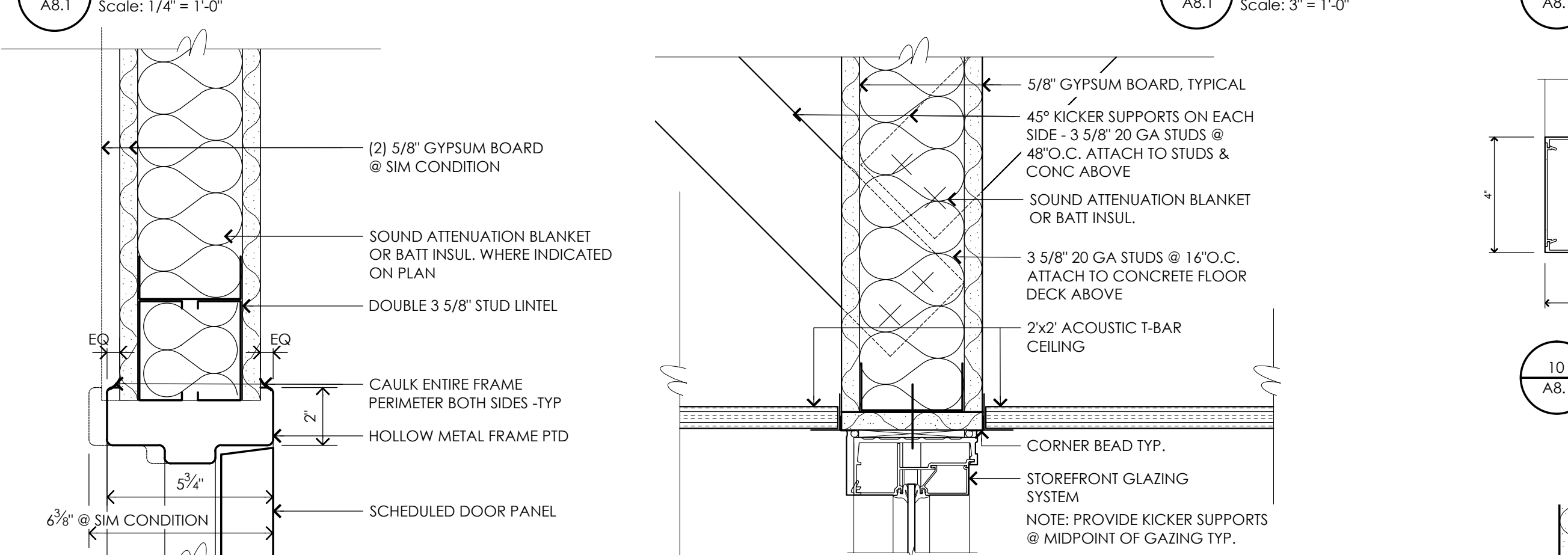
- CLOSERS AND POSITIVE LATCHING ARE REQUIRED ON FIRE RATED DOORS AND DOORS IN SMOKE TIGHT PARTITIONS.
- RATED DOORS MUST HAVE RATED FRAMES, HARDWARE, CLOSERS AND OTHER RATED ACCESSORIES.
- PROVIDE SMOKE SEALS ON FRAMES OF SMOKE TIGHT DOORS.
- ALL DOORS TO BE 1 3/4" THICK TYP.
- WOOD DOORS TO BE STAINED TO MATCH ADJACENT EXIST DOORS.
- ALL GLASS IN DOORS TO BE TEMPERED GLASS.
- ALL GLASS IN DOORS TO BI-PLANE #6 TO BE LEAD SHIELD TEMPERED GLASS.
- NOT USED
- REUSE EXISTING SALVAGED DOORS AND FRAMES FROM DEMOLITION IF DIRECTED BY OWNER. IF DIRECTED TO REUSE, REFINISH DOORS AND FRAMES TO NEW CONDITIONS.
- INTERIOR WOOD DOORS SHALL BE PLAIN SLICED WHITE OAK. STAIN ON SITE TO MATCH ADJACENT EXISTING DOORS.
- DOOR HARDWARE TO BE STAINLESS STEEL WITH BRUSHED FINISH STYLE OF HARDWARE TO MATCH EXISTING HARDWARE AND MEET ADA ACCESSIBILITY REQUIREMENTS.
- IN RENOVATED AREAS HOLLOW METAL DOOR FRAMES TO BE PAINTED PER FINISH SCHEDULE. IN CORRIDOR PAINT HOLLOW METAL DOOR TO MATCH EXISTING FRAMES IN CORRIDORS.
- CAULK DOOR FRAME TO SHEET FLOORING, VCT OR OTHER HARD FLOOR SURFACE. PROVIDE CONTINUOUS CAULK AT INTERIOR AND EXTERIOR PERIMETER OF FRAME TO WALL SURFACE.
- EXISTING EXTERIOR DOORS GLASS TO HAVE NEW SHATTER RESISTANT FILM. APPLY FILM PER MANUFACTURER RECOMMENDATION.



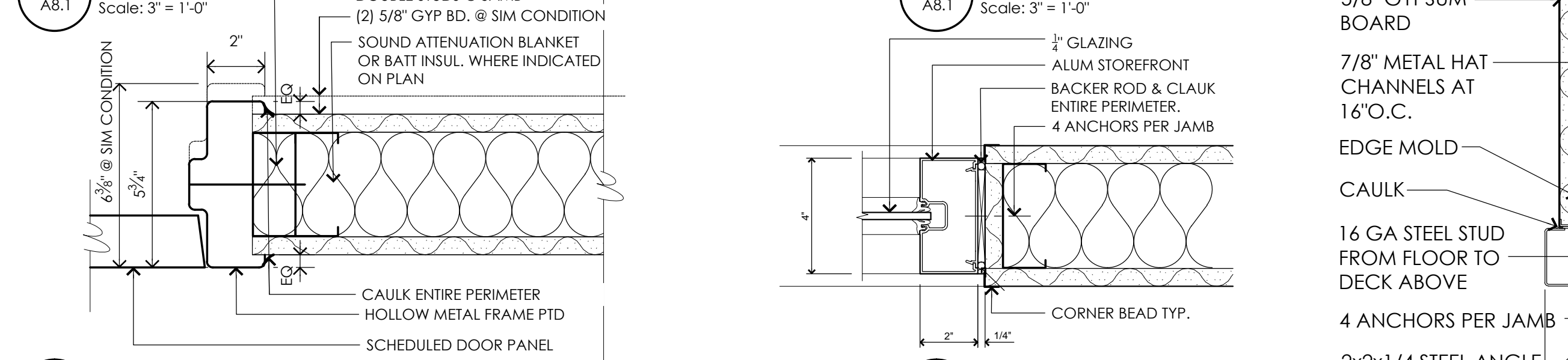
1 DOOR TYPES & FRAME TYPES



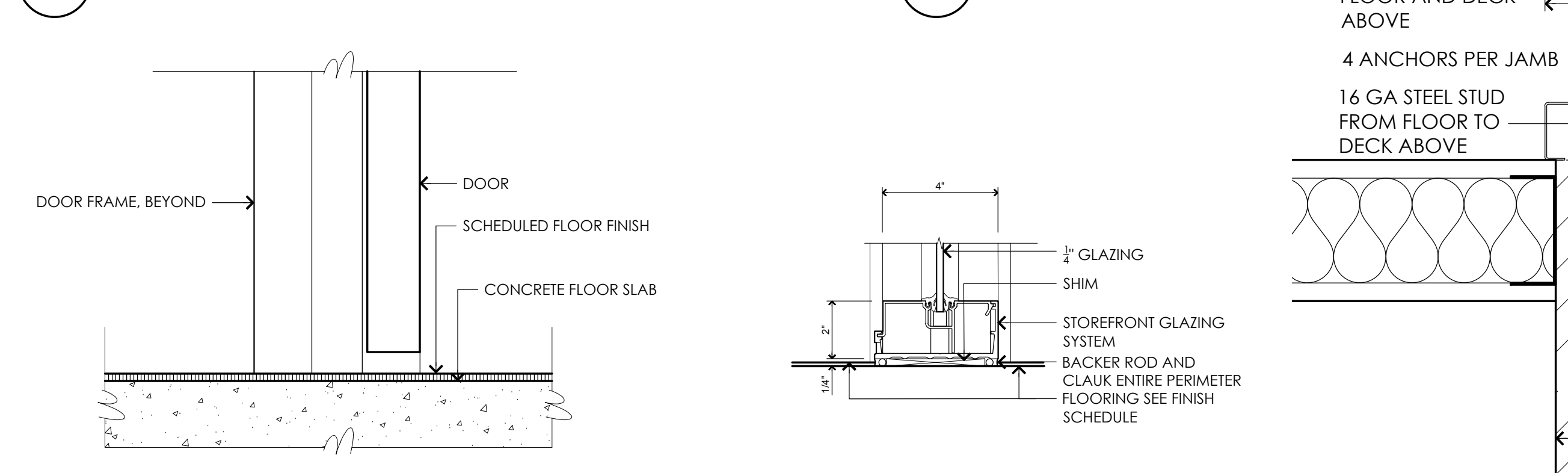
2 INTERIOR WINDOW PARTIAL ELEVATION



3 HEAD DETAIL



4 JAMB DETAIL



5 SILL- NO TRANSITION

9 SILL @ INTERIOR WINDOW

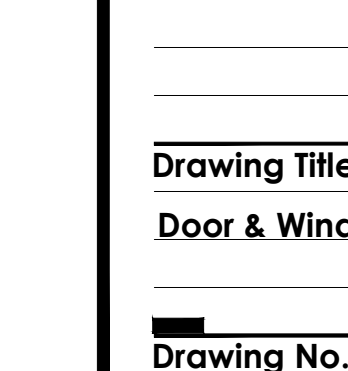
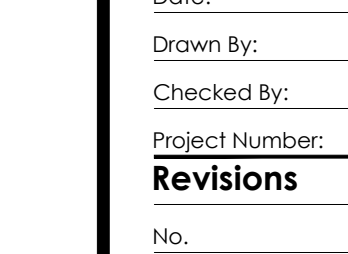
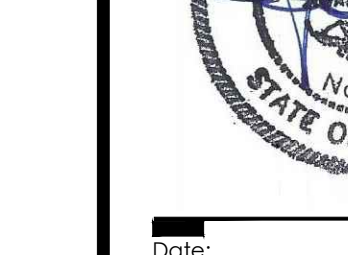
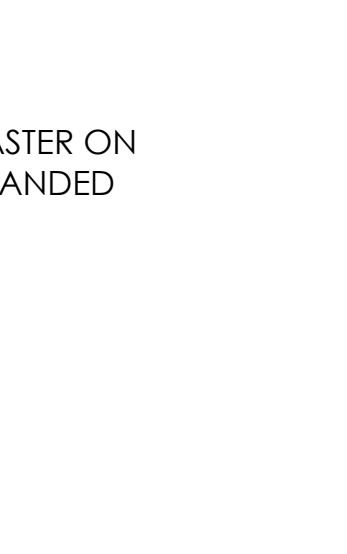
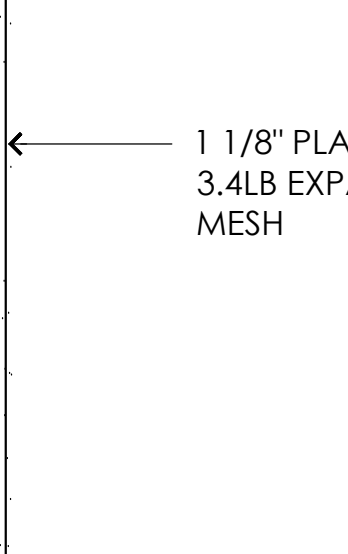
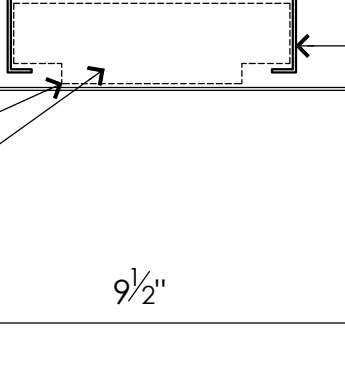
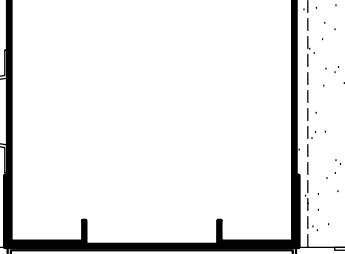
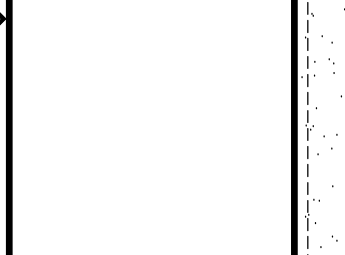
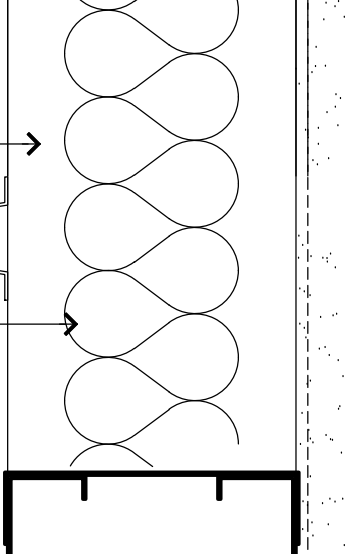
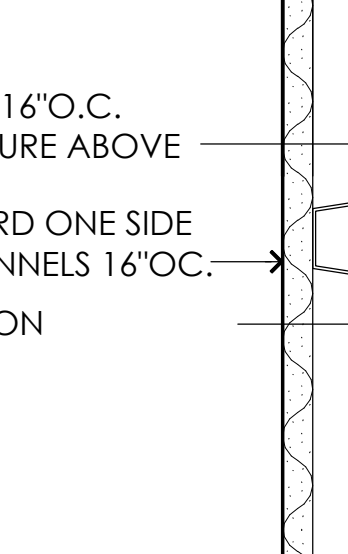
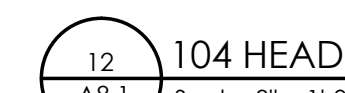
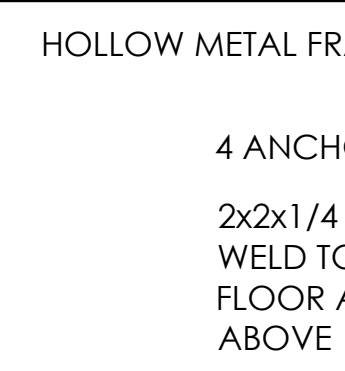
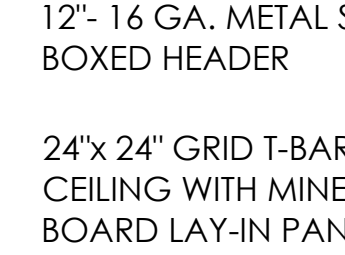
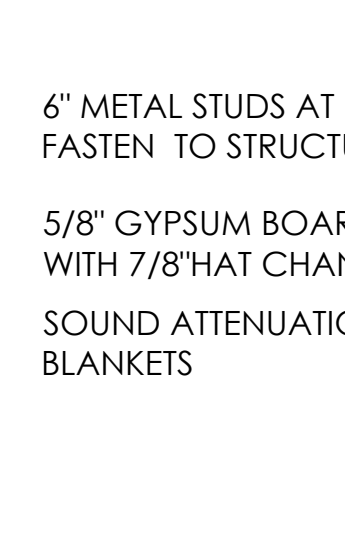
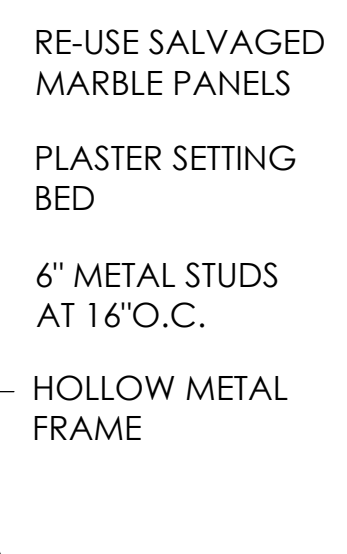
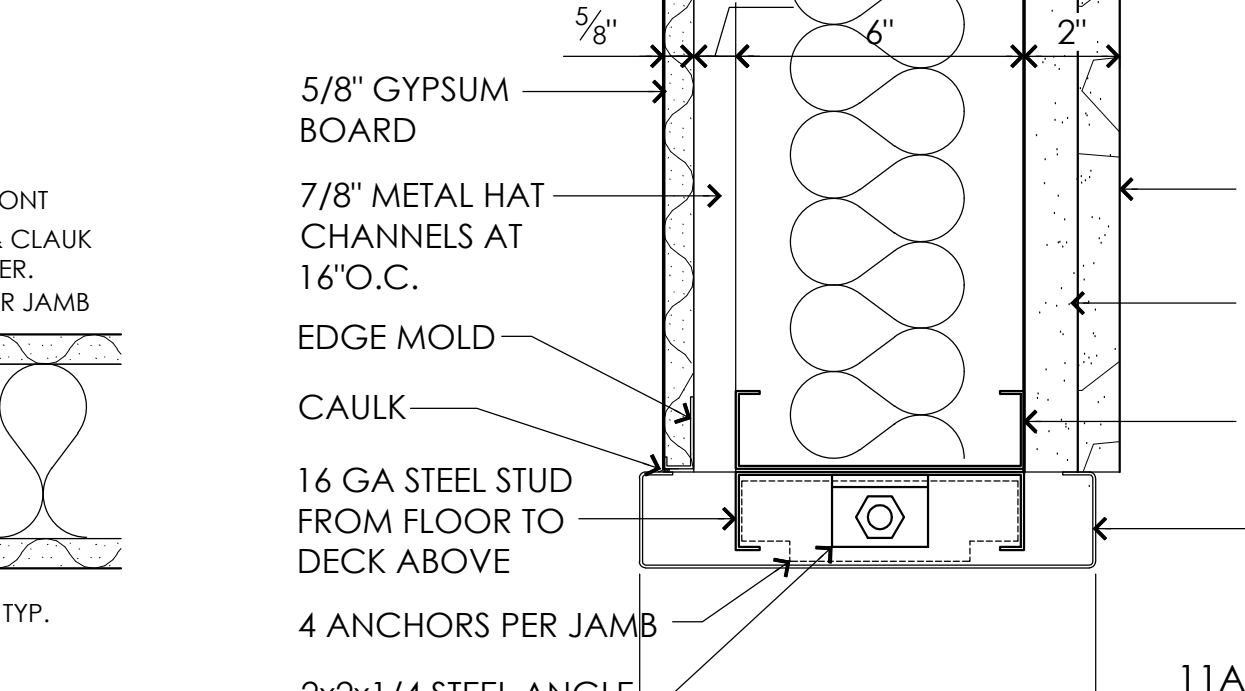
11 104 JAMB CONDITIONS

12 104 HEAD CONDITION

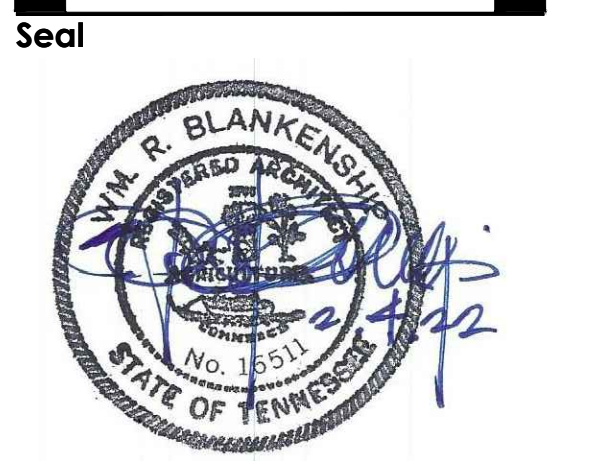
6 MULLION

6A MULLION

10 CORNER MULLION



© COPYRIGHT Blankenship & Partners, LLC. This drawing is the property of Blankenship & Partners, LLC and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.



Date: 12-2-21  
Drawn By: SN & BS  
Checked By: BB  
Project Number: 20-15

Revisions  
No. Date:

Drawing Title:  
Door & Window Details

Drawing No.:  
A8.0



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909

Office: 865.251.2585 Fax: 865.531.9499

Contact Name: William R. Blankenship

Owner: Anderson County

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

Project Name: Anderson Co. Courthouse County Clerk & Archive Renovation

Consultants:

Mechanical

Bedinger Consulting Engineers

5641 Merchants Center Blvd, STE A104

Knoxville, TN 37912

[865] 299-5973

Contact Name: David Blakney, P.E.

Electrical

Vreeland Engineers, Inc.

P.O. Box 10645

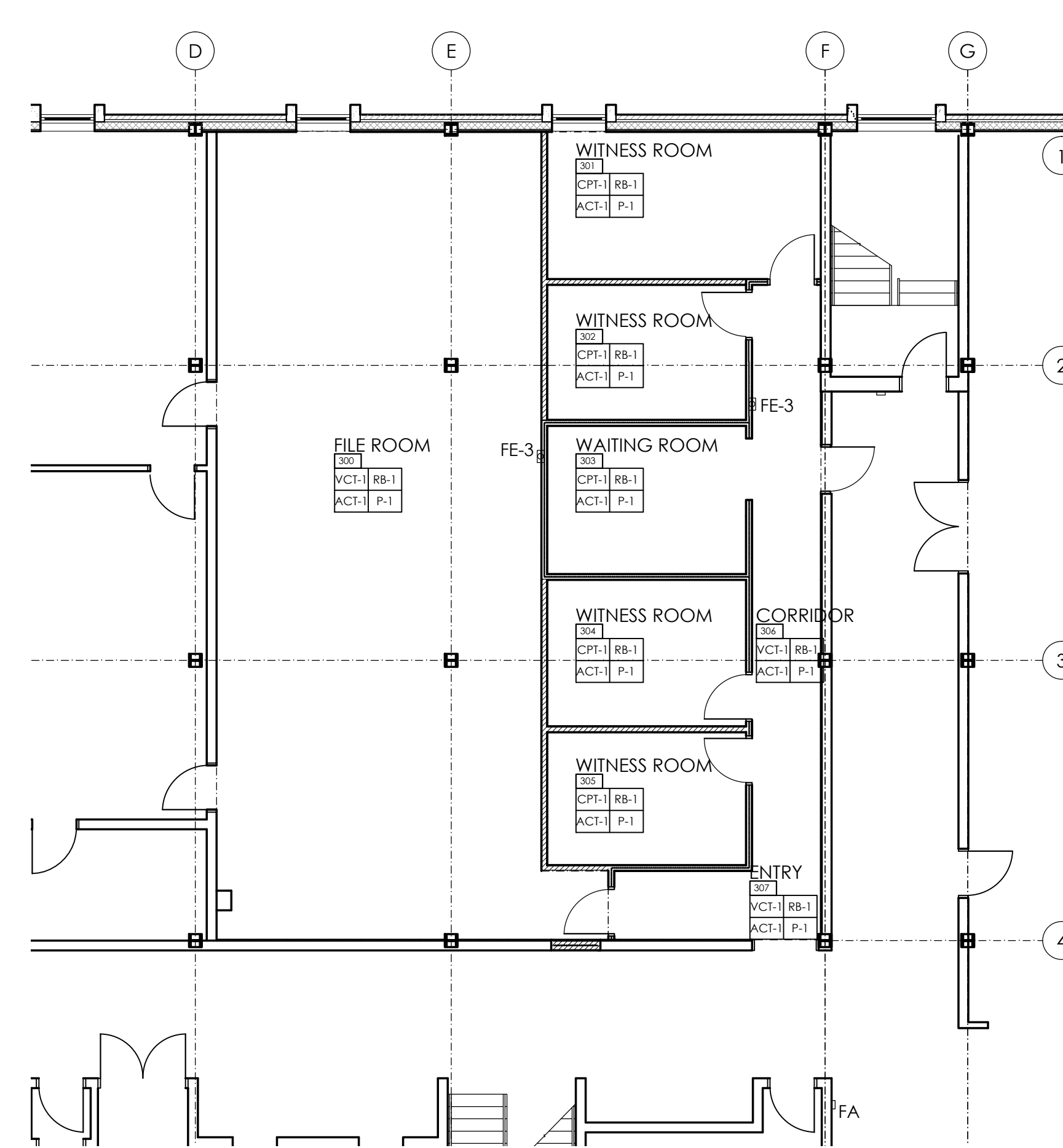
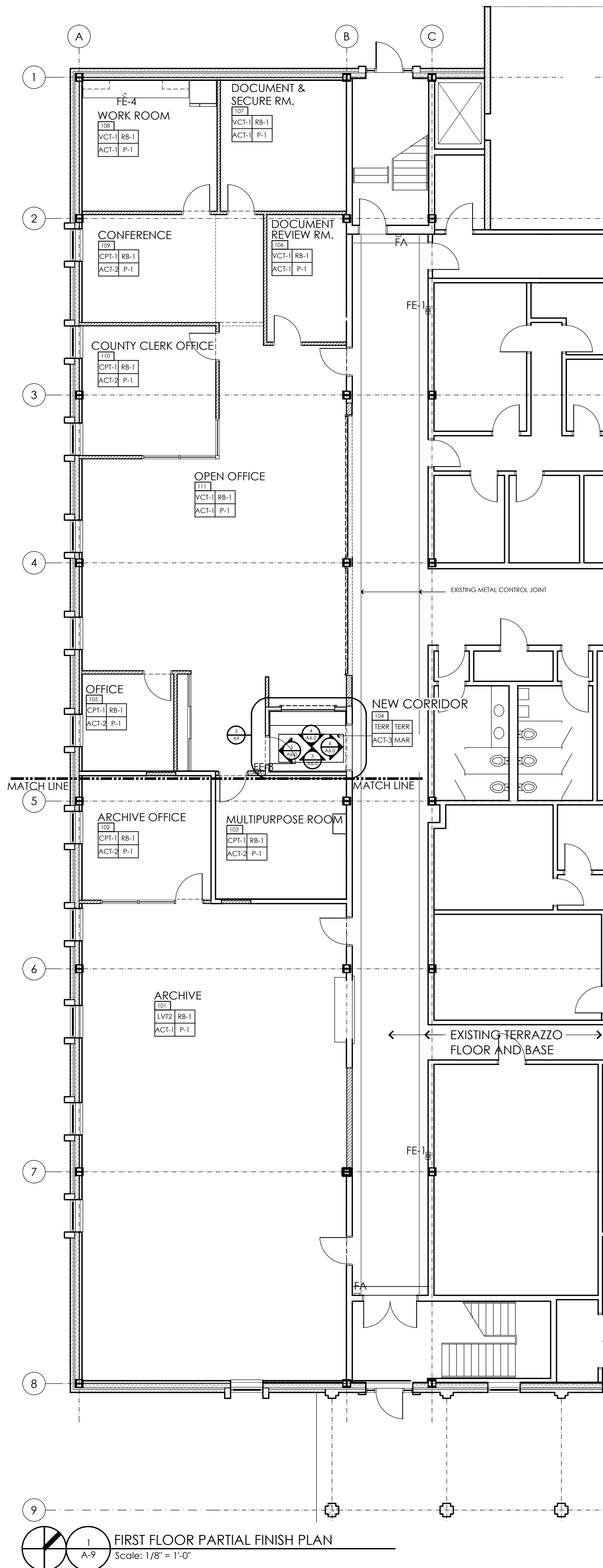
Knoxville, TN 37939

T [865] 745-4401

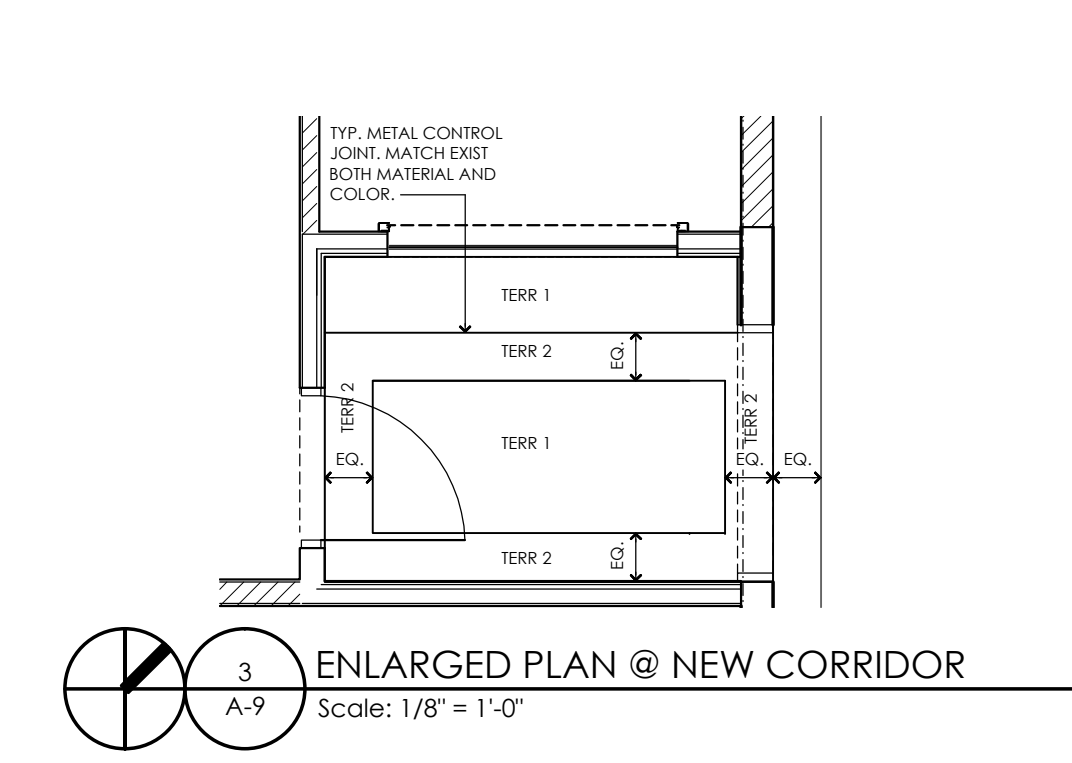
Contact Name: Chris Loy, P.E.

### INTERIOR GENERAL NOTES

1. ALL FLOOR DATA AND POWER OUTLETS BOXES & COVERS TO BE LEVEL WITH FINISH FLOORING.
2. ALL HOLLOW METAL PAINT SHALL BE SEMI-GLOSS. FRAMES IN CORRIDOR TO MATCH EXISTING CORRIDOR FRAMES.
3. ALL GYPSUM WALL BOARD TO BE LEVEL 5 FINISH AND PAINTED - EGG-SHELL FINISH.
4. PRIOR TO CONSTRUCTION, CONTRACTOR TO SUBMIT ALL SAMPLES TO ARCHITECT FOR REVIEW AND APPROVAL.



2 THIRD FLOOR PARTIAL FINISH PLAN  
Scale: 1/8" = 1'-0"



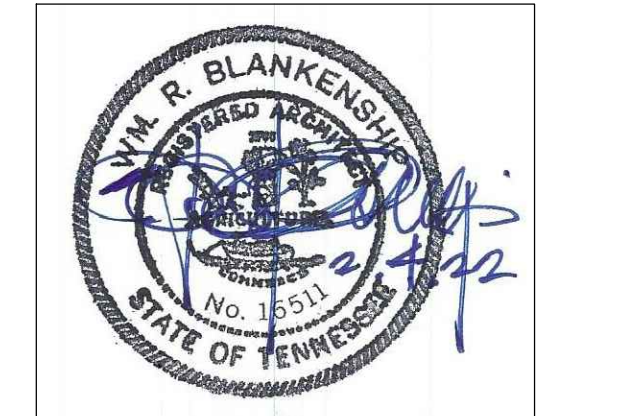
3 ENLARGED PLAN @ NEW CORRIDOR  
Scale: 1/8" = 1'-0"

### FINISH SCHEDULE

	CODE	ITEM	MANUFACTURER	DESCRIPTION
BASE	WB1	BASEBOARD	STAINED WOOD	PLAIN SLICED MAPLE HARDWOOD STAIN TBD BY ARCHITECT
	RB1	RUBBER BASE	JOHNSONITE/TARKETT	BASEWORKS THERMOSET RUBBER 4" HIGH TOELESS (TYPE TS) COLOR - TO BE DETERMINED
	TERR	TERRAZZO	-	EPOXY THINSET TERRAZZO MATCH EXISTING TERRAZZO BASE COLOR IN MAIN CORRIDOR
CEILING	ACT-1	CEILING TILES	ARMSTRONG	CALLA PRIVASSURE- TEGULAR COLOR: WHITE, FINE TEXTURE, SIZE 24"X24"X1/2" #8880 GRID; # PRELUDE
	ACT-2	CEILING TILES	ARMSTRONG	DUNE- BEVELED TEGULAR COLOR: WHITE, FINE TEXTURE, SIZE 24"X24" GRID; # PRELUDE
	ACT-3	CEILING TILES	ARMSTRONG	MATCH EXISTING CORRIDOR ACOUSTIC PANELS AND T-BAR GRID SYSTEM
FLOORING	VCT1	LUXURY VINYL TILE	ARMSTRONG	12"X24" NATURAL CREATIONS DIAMOND 10 DELANO SHELL; ITEM #NA340; W/STAINLESS STEEL TRANSITION STRIP FROM NEW VCT TO EXIST TERRAZZO FLOOR
	LVT2	LUXURY VINYL TILE	-	TO BE DETERMINED
	CPT1	CARPET TILE	INTERFACE	DETOURS STYLE 1466602500 COLOR 104719 PEWTER W/STAINLESS STEEL TRANSITION STRIP FROM NEW CARPET TILE TO EXISTING FLOOR AT EACH DOOR THRESHOLD
	TERR 1	TERRAZZO	-	EPOXY THINSET TERRAZZO MATCH EXISTING TERRAZZO FLOOR COLOR IN MAIN CORRIDOR
	TERR 2	TERRAZZO	-	EPOXY THINSET TERRAZZO COLOR TBD
WALLS	P-1	PAINT	PPG OR SHERWIN WILLIAMS	TO BE DETERMINED
	P-2	PAINT	PPG OR SHERWIN WILLIAMS	TO BE DETERMINED
	GP1	GLASS PANEL-WRITABLE SURFACE	CLARUS	WALL2WALL - 1/4" GLASS PANEL WRITING SURFACE, COLOR: TBD BY ARCHITECT, NON-STAINING, MAGNETIC
	PL1	PLYWOOD PANEL	PLAIN SLICED MAPLE	1/2" PLAIN SLICED HARDWOOD MAPLE VENEER PLYWOOD, STAIN TBD BY ARCHITECT EDGES LAMINATED TO MATCH STAIN
	MAR	MARBLE PANELS	-	RE-USE SALVAGED MARBLE PANELS, ALIGN HORIZONTAL JOINTS WITH MAIN CORRIDOR JOINTS
	SS	SOLID SURFACE	CORIAN	TBD
P-LAM	PLASTIC LAMINATE	WILSONART	TO BE DETERMINED	

© COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC, and shall not be reproduced in whole or in part, it shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.

Seal



Date: 12-2-21

Drawn By: SN & BS

Checked By: BB

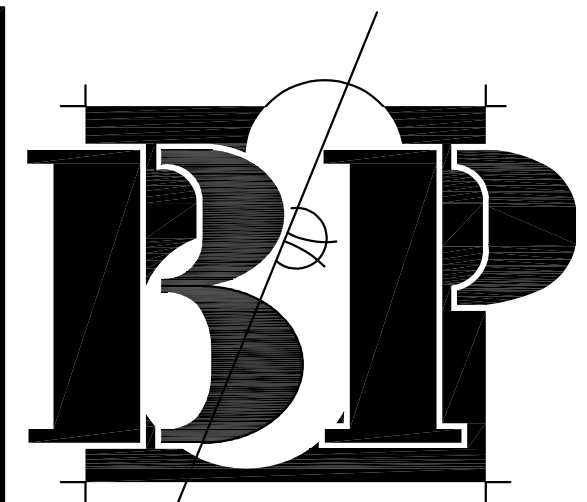
Project Number: 20-15

Revisions

No. Date:

Drawing Title:  
Finish Plans & Schedule

Drawing No.:  
**A9.0**



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909

Office: 865.251.2585 Fax: 865.531.9499

Contact Name: William R. Blankenship

**Owner:**

**Anderson County**

100 N. Main Street

Clinton, TN 37116-3617

Contact Name: Mayor Terry Frank

**Project Name:**

**ANDERSON CO. COURTHOUSE  
COUNTY CLERK &  
ARCHIVE RENOVATION**

**Consultants:**

**Mechanical**

Bedinger Consulting Engineers

5641 Merchants Center Blvd, STE A104

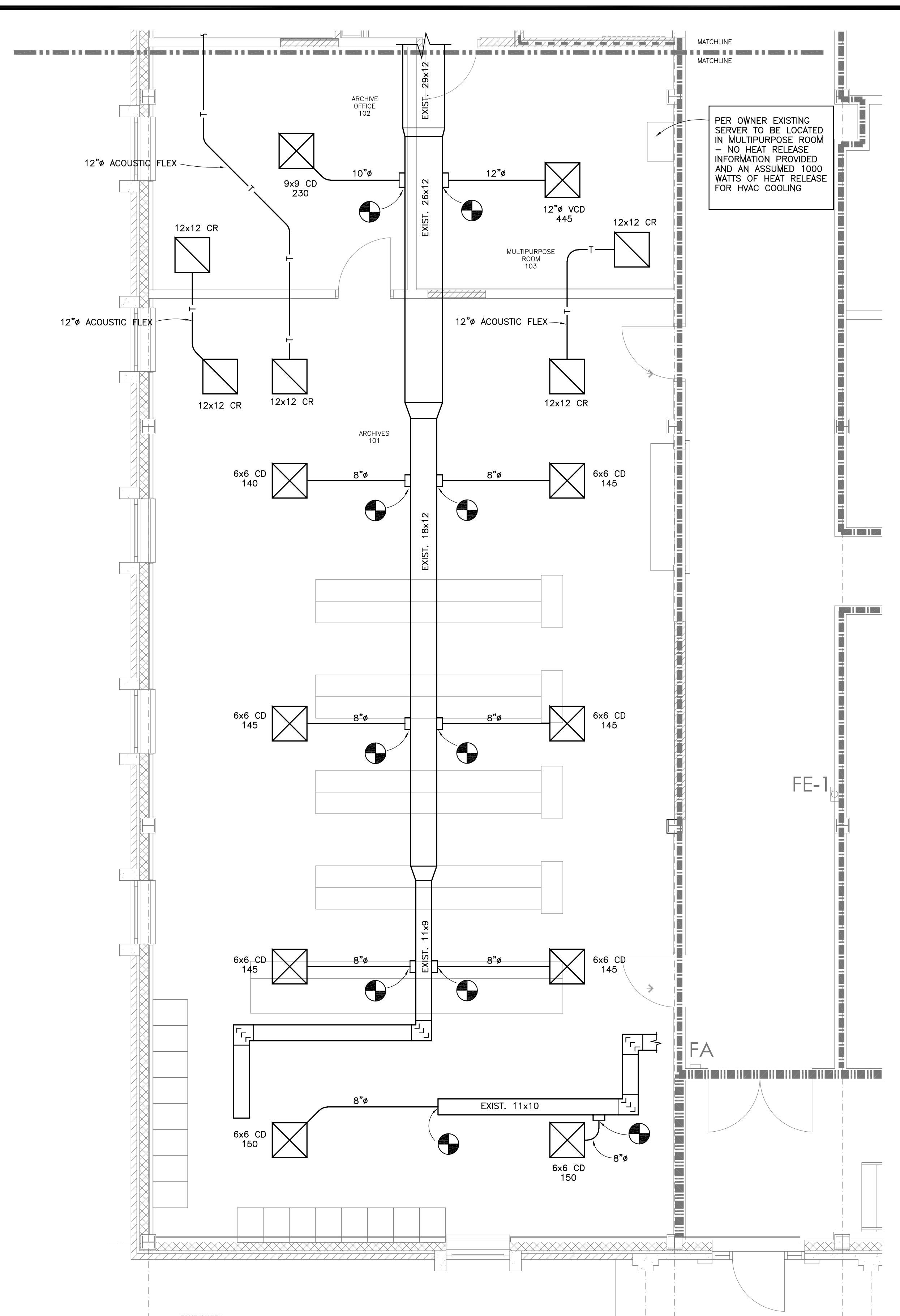
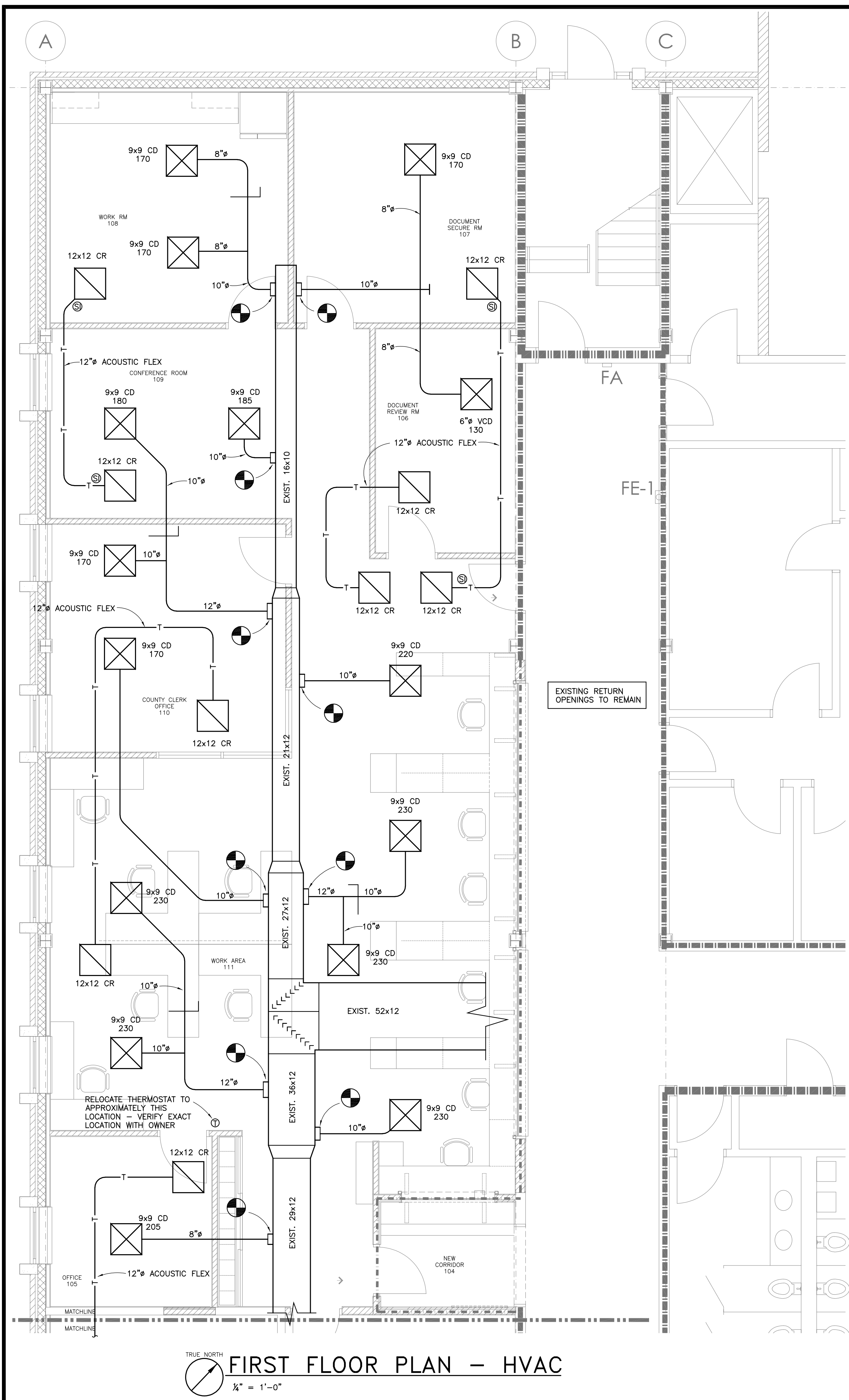
Knoxville, TN 37912

(865) 299-5973

Contact Name: David Blakney, P.E.

**Electrical**

Contact Name:



TRUE NORTH  
**FIRST FLOOR PLAN – HVAC**  
SCALE: 1/4" = 1'-0"

**GENERAL NOTES:**

1. INFORMATION ON EXISTING CONDITIONS TAKEN FROM DRAWINGS PREPARED BY MARTIN J LIDE ARCHITECT DATED 08-18-65. FIELD VERIFY EXISTING CONDITIONS BEFORE COMMENCING WORK
2. FIELD VERIFY AVAILABLE CEILING SPACE FOR ROUTING DUCTWORK, EXISTING DUCTWORK LOCATION AND SIZES BEFORE COMMENCING WORK – EXISTING DUCT SIZES AND LOCATION ARE APPROXIMATELY LOCATIONS TAKEN FROM EXISTING DRAWINGS – REROUTING MAYBE REQUIRED
3. REMOVE EXISTING DUCT AS REQUIRED TO INSTALL NEW AND PATCH / SEAL OPENINGS AIR TIGHT AS REQUIRED

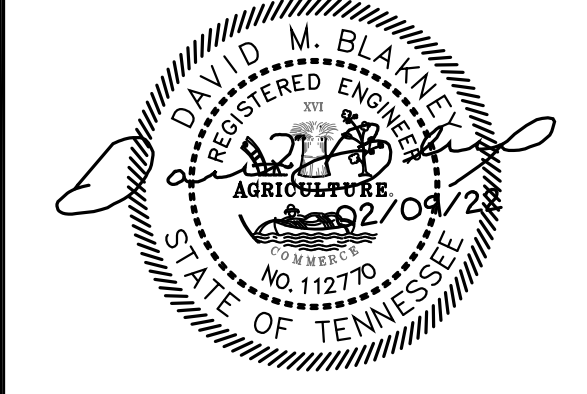
**NEW PARTITION LEGEND**

GRAPHIC	DESCRIPTION	RATING
	3 3/8" STEEL STUDS AT 16" O.C. WITH ONE (1) LAYER OF 5/8" TYPE X GYPSUM BOARD ON EACH SIDE. EXTEND TO BOTTOM OF DECK ABOVE AND SEAL WITH FIRE CAULK AT STRUCTURE. FIRE CAULK CONNECTION WITH EXISTING ONE HOUR PLASTER WALL. UL DETAIL 419 ADD SOUND ATTENUATION BATTING SEE GENERAL NOTE 18	1 HOUR



© COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.

**Seal**



Date:	02-07-22
Drawn By:	DB
Checked By:	BMC
Project Number:	20-15
<b>Revisions</b>	
No.	Date:

**Drawing Title:**

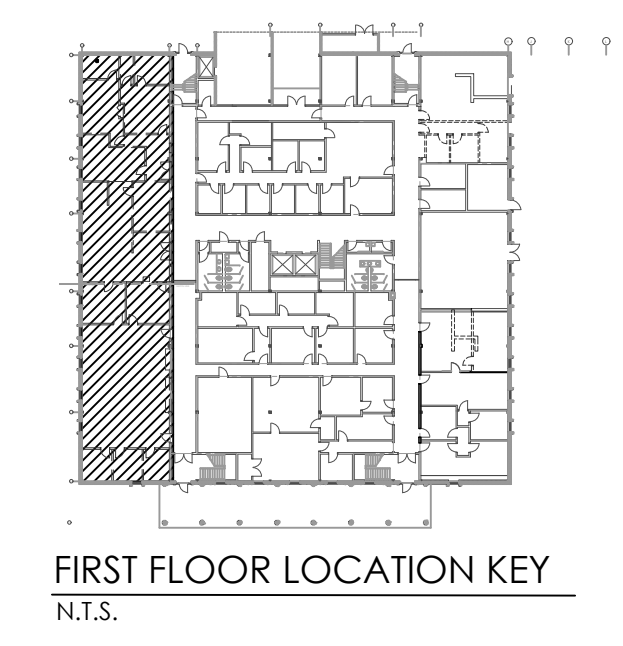
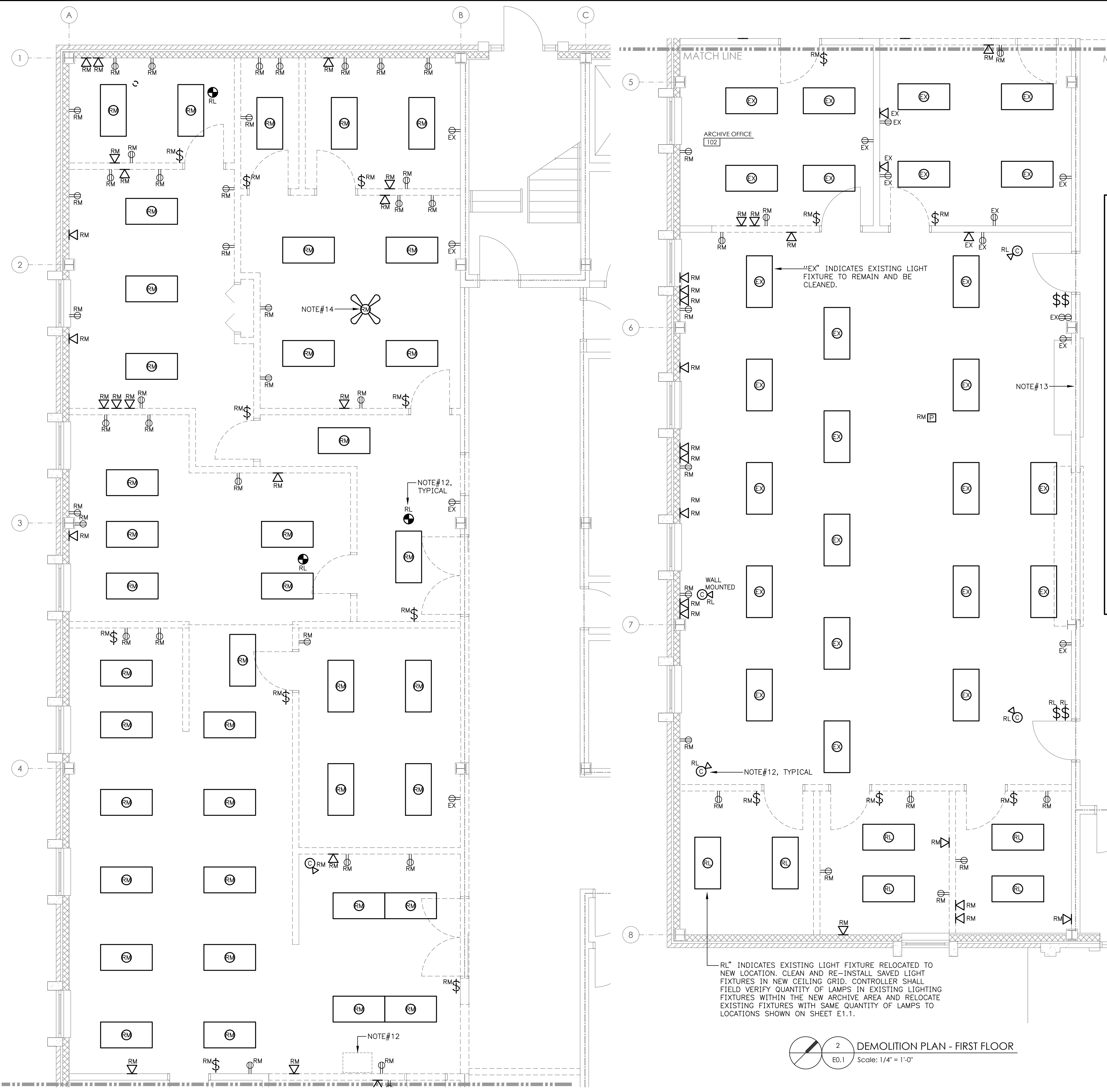
**First Floor Plan - HVAC**

**Drawing No.:**

**M1.1**




E0.1 Anderson Co. Courthouse Clerk & Archive Ren. - First Floor - Demolition.dwg  
 A.J.C. 02/17/22 8:45 AM CL21372(L0)

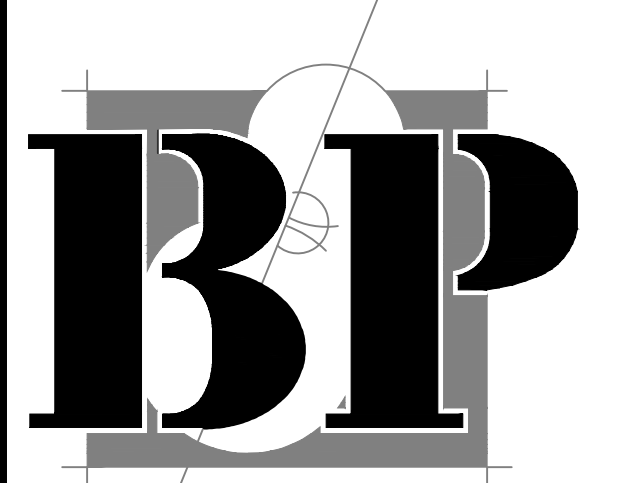


- DEMOLITION NOTES:**
- DEMOLITION PLAN IS APPROXIMATE IN NATURE AND MUST BE VERIFIED ON SITE. CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL DEMOLITION REQUIRED TO ACCOMMODATE NEW WORK. REFER TO ARCHITECTURAL, MECHANICAL, AND PLUMBING PLANS WHICH FURTHER INDICATE THE EXTENT OF DEMOLITION REQUIRED.
  - DASHED LINES INDICATE DOORS, WINDOWS, PARTITIONS, AND WALL SEGMENTS TO BE REMOVED. THE ELECTRICAL DEVICES IN THESE AREAS SHALL BE REMOVED. RECONNECT EXISTING DEVICES THAT ARE TO REMAIN AND ARE DOWNSTREAM FROM THOSE BEING REMOVED.
  - "EX" INDICATES EXISTING DEVICE TO REMAIN. RECONNECT AS REQUIRED DUE TO REMOVAL OF DEVICES "UPSTREAM".
  - "RM" INDICATES EXISTING DEVICE TO BE REMOVED. RECONNECT EXISTING DEVICES THAT ARE "DOWNSTREAM" AND ARE TO REMAIN.
  - "RL" INDICATES EXISTING LIGHT FIXTURE TO BE RELOCATED. CONTRACTOR SHALL SALVAGE EXISTING FIXTURES THAT ARE IN THE BEST WORKING ORDER AND REINSTALL AT LOCATIONS SHOWN ON SHEET E1.1. CONTRACTOR SHALL DISPOSE OF ANY EXISTING LIGHTING FIXTURES THAT ARE NOT REUSED.
  - CONDUITS FEEDING EQUIPMENT FROM SLAB SHALL BE CUT OFF BELOW SLAB AND ABANDONED. HOLE IN SLAB SHALL BE PATCHED.
  - CONDUITS FEEDING EQUIPMENT FROM OVERHEAD SHALL BE DISCONNECTED AND REMOVED BACK TO SOURCE. ALL CEILINGS DAMAGED DUE TO REMOVAL OF CONDUITS SHALL BE REPLACED OR REPAIRED TO MATCH EXISTING.
  - EXISTING CIRCUIT BREAKERS FEEDING EXISTING DEVICES WHICH ARE BEING REMOVED, SHALL BE REUSED TO SERVE NEW LOADS THIS PROJECT. CIRCUIT BREAKERS WHICH ARE NOT REUSED SHALL BE LABELED AS "SPARE" IN EXISTING PANELBOARD.
  - ALL EQUIPMENT (PAGING, FIRE ALARM, ETC.) NOT BEING REUSED SHALL BE TURNED OVER TO THE OWNER. CONTRACTOR SHALL DISPOSE OF ANY EQUIPMENT OWNER DOES NOT WISH TO KEEP.
  - DUE TO ABUNDANCE OF EXISTING FURNITURE, SHELVES, CABINETS, ETC. WITHIN THE AREAS OF RENOVATION LOCATION OF ALL EXISTING POWER, TELECOM, ETC. COULD NOT BE CONFIRMED. ALL DEVICES WITHIN EXISTING WALLS BEING REMOVED SHALL BE REMOVED WHETHER ILLUSTRATED OR NOT.
  - REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS WHERE EXISTING PERIMETER OR EXISTING INTERIOR WALLS ARE TO RECEIVE NEW STUDS AND DRYWALL. ALL EXISTING ELECTRICAL AND TELECOM DEVICES AT THESE LOCATIONS SHALL BE REMOVED. DUE TO ABUNDANCE OF EXISTING FURNITURE, SHELVES, CABINETS, ETC. WITHIN THE AREAS OF RENOVATION LOCATION OF ALL EXISTING POWER, TELECOM, ETC. ALONG THESE WALLS COULD NOT BE CONFIRMED. ALL DEVICES AT THESE LOCATIONS SHALL BE REMOVED WHETHER ILLUSTRATED OR NOT.
  - COORDINATE WITH ANDERSON COUNTY I.T. DEPARTMENT AND SECURITY SYSTEM EQUIPMENT PROVIDED FOR REMOVAL/RELOCATION OF ALL EXISTING PAGING EQUIPMENT, TELECOM EQUIPMENT, SECURITY EQUIPMENT, ETC.
  - MAINTAIN ALL EXISTING POWER, FIRE ALARM, AND CONTROL CONNECTION TO EXISTING FIRE SHUTTER.
  - REMOVE EXISTING CEILING FAN.

1 DEMOLITION PLAN - FIRST FLOOR  
 E0.1 Scale: 1/4" = 1'-0"

2 DEMOLITION PLAN - FIRST FLOOR  
 E0.1 Scale: 1/4" = 1'-0"

**Vreland Engineers Inc.**  
  
 3107 Sutherland Ave.  
 P.O. Box 10648  
 Knoxville, TN 37939  
 865-637-4451  
 1-800-362-9789  
 vrelandengineers.com



**Blankenship & Partners, LLC**  
 Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909

Office: 865.251.2385 Fax: 865.531.9499

Contact Name: William R. Blankenship

**Owner:**

**Anderson County**

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

**Project Name:**

**ANDERSON CO. COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION**

**Consultants:**

**Mechanical**

Bedinger Consulting Engineers

5641 Merchants Center Blvd, STE A104

Knoxville, TN 37912

(865) 299-5973

Contact Name: David Blakney, P.E.

**Electrical**

Vreland Engineers, Inc.

P.O. Box 10645

Knoxville, TN 37939

T (865) 745-4401

Contact Name: Chris Lay

© COPYRIGHT Blankenship & Partners, LLC  
 This drawing is the property of Blankenship & Partners, LLC and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.

**Seal**



Date: 02.10.2022

Drawn By: VBI

Checked By: CWL

Project Number: 20-15

**Revisions**

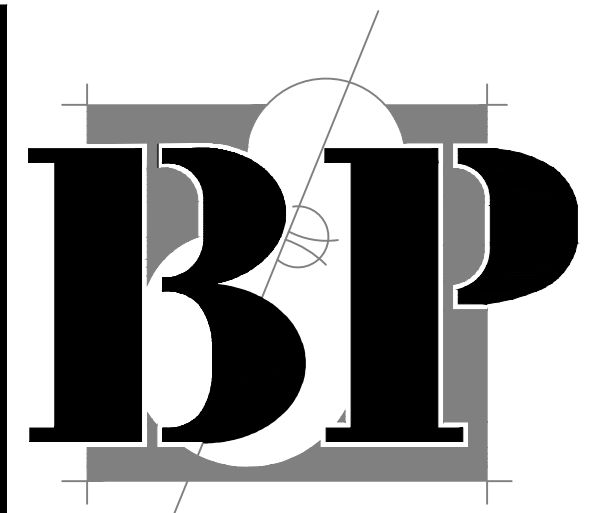
No. Date:

**Drawing Title:**

**Demolition Plan - First Floor**

**Drawing No.:**

**E0.1**



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909  
Office: 865.251.2385 Fax: 865.531.9499  
Contact Name: William R. Blankenship  
**Owner:**  
Anderson County  
100 N Main Street  
Clinton, TN 37716-3617  
Contact Name: Mayor Terry Frank  
**Project Name:**

**ANDERSON CO. COURTHOUSE  
COUNTY CLERK &  
ARCHIVE RENOVATION**

**Consultants:**  
**Mechanical**  
Bedinger Consulting Engineers  
5641 Merchants Center Blvd, STE A104  
Knoxville, TN 37912  
(865) 299-5973  
Contact Name: David Blakney, P.E.  
**Electrical**  
Vreeland Engineers, Inc.  
P.O. Box 10645  
Knoxville, TN 37939  
T (865) 745-4401  
Contact Name: Chris Lay

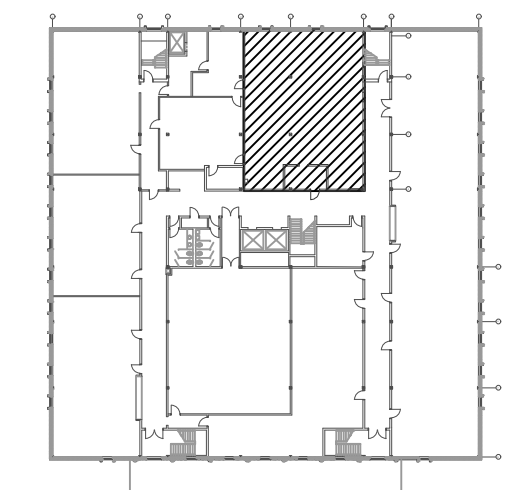
**Seal**  
COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.



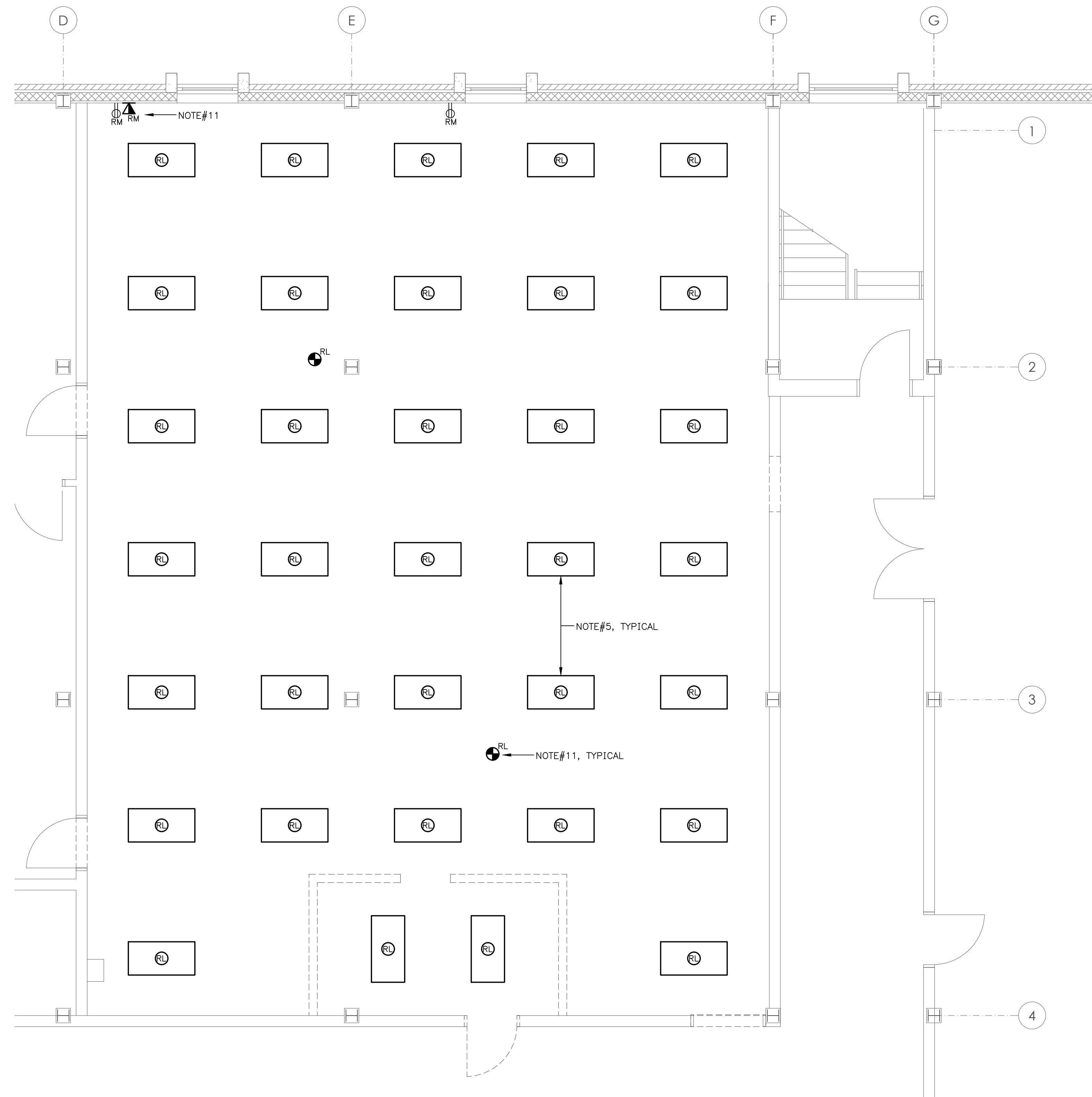
Date: 02.10.2022  
Drawn By: VEI  
Checked By: CWL  
Project Number: 20-15  
**Revisions**  
No. Date:

**Drawing Title:**  
Demolition Plan - Third Floor

**Drawing No.:**  
E0.2



THIRD FLOOR LOCATION KEY  
N.T.S.



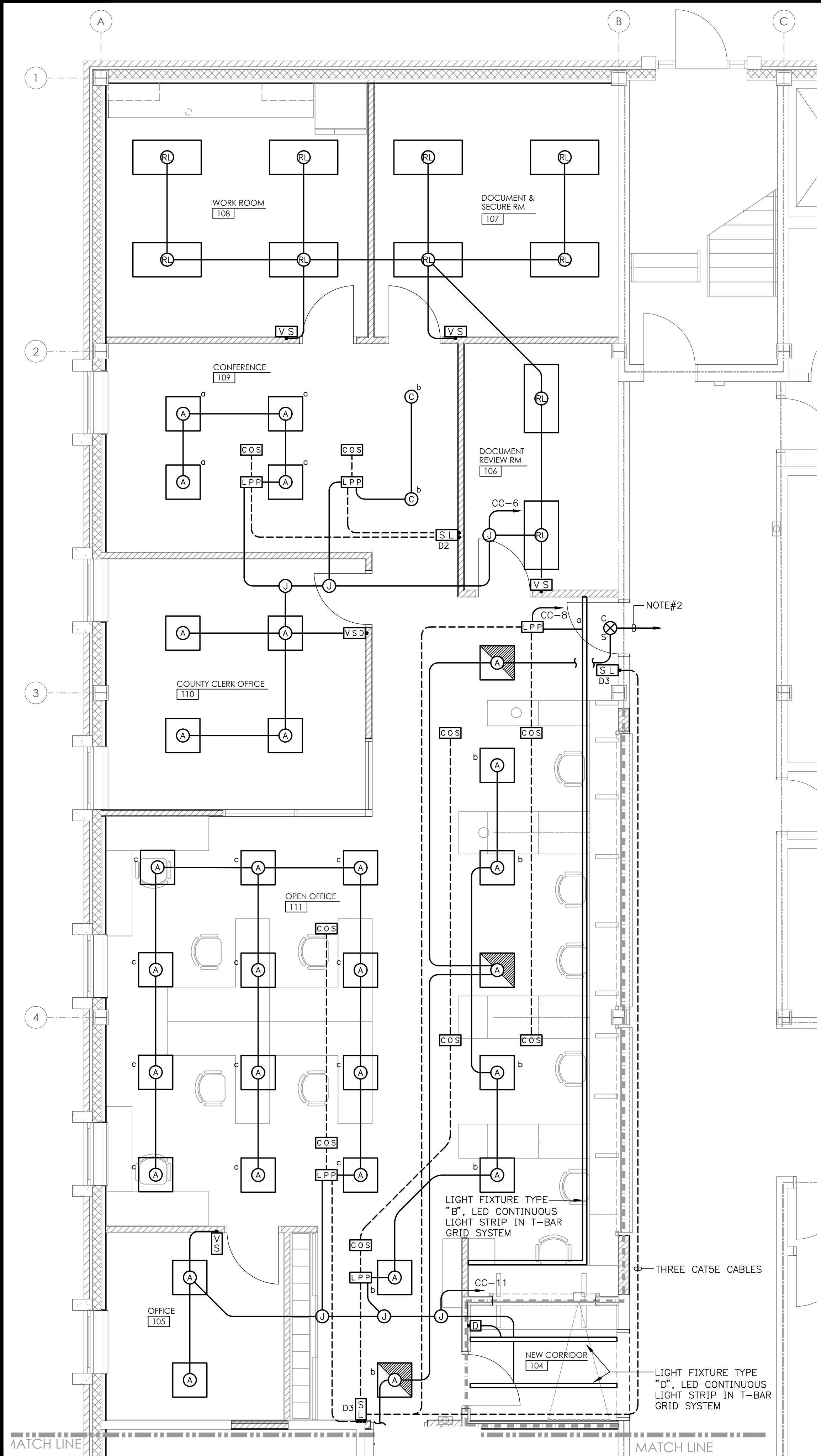
- DEMOLITION NOTES:**
- DEMOLITION PLAN IS APPROXIMATE IN NATURE AND MUST BE VERIFIED ON SITE. CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL DEMOLITION REQUIRED TO ACCOMMODATE NEW WORK. REFER TO ARCHITECTURAL, MECHANICAL, AND PLUMBING PLANS WHICH FURTHER INDICATE THE EXTENT OF DEMOLITION REQUIRED.
  - DASHED LINES INDICATE DOORS, WINDOWS, PARTITIONS, AND WALL SEGMENTS TO BE REMOVED. THE ELECTRICAL DEVICES IN THESE AREAS SHALL BE REMOVED. RECONNECT EXISTING DEVICES THAT ARE TO REMAIN AND ARE DOWNSTREAM FROM THOSE BEING REMOVED.
  - "EX" INDICATES EXISTING DEVICE TO REMAIN. RECONNECT AS REQUIRED DUE TO REMOVAL OF DEVICES "UPSTREAM".
  - "RM" INDICATES EXISTING DEVICE TO BE REMOVED. RECONNECT EXISTING DEVICES THAT ARE "DOWNSTREAM" AND ARE TO REMAIN.
  - "RL" INDICATES EXISTING LIGHT FIXTURE TO BE RELOCATED. CONTRACTOR SHALL SALVAGE EXISTING FIXTURES THAT ARE IN THE BEST WORKING ORDER AND REINSTALL AT LOCATIONS SHOWN ON SHEET E2.1. CONTRACTOR SHALL DISPOSE OF ANY EXISTING LIGHTING FIXTURES THAT ARE NOT REUSED.
  - CONDUITS FEEDING EQUIPMENT FROM SLAB SHALL BE CUT OFF BELOW SLAB AND ABANDONED. HOLE IN SLAB SHALL BE PATCHED.
  - CONDUITS FEEDING EQUIPMENT FROM OVERHEAD SHALL BE DISCONNECTED AND REMOVED BACK TO SOURCE. ALL CEILINGS DAMAGED DUE TO REMOVAL OF CONDUITS SHALL BE REPLACED OR REPAIRED TO MATCH EXISTING.
  - EXISTING CIRCUIT BREAKERS FEEDING EXISTING DEVICES WHICH ARE BEING REMOVED, SHALL BE REUSED TO SERVE NEW LOADS THIS PROJECT. CIRCUIT BREAKERS WHICH ARE NOT REUSED SHALL BE LABELED AS "SPARE" IN EXISTING PANELBOARD.
  - ALL EQUIPMENT (PAGING, FIRE ALARM, ETC.) NOT BEING REUSED SHALL BE TURNED OVER TO THE OWNER. CONTRACTOR SHALL DISPOSE OF ANY EQUIPMENT OWNER DOES NOT WISH TO KEEP.
  - DUE TO ABUNDANCE OF SHELVES, CABINETS, ETC. WITHIN THIS AREA OF RENOVATION LOCATION OF ALL EXISTING POWER, TELECOM, ETC. COULD NOT BE CONFIRMED.
  - COORDINATION WITH ANDERSON COUNTY I.T. DEPARTMENT FOR REMOVAL/RELOCATION OF ALL TELECOM AND PAGING EQUIPMENT.

1  
E0.2  
DEMOLITION PLAN - THIRD FLOOR  
Scale: 1/4" = 1'-0"

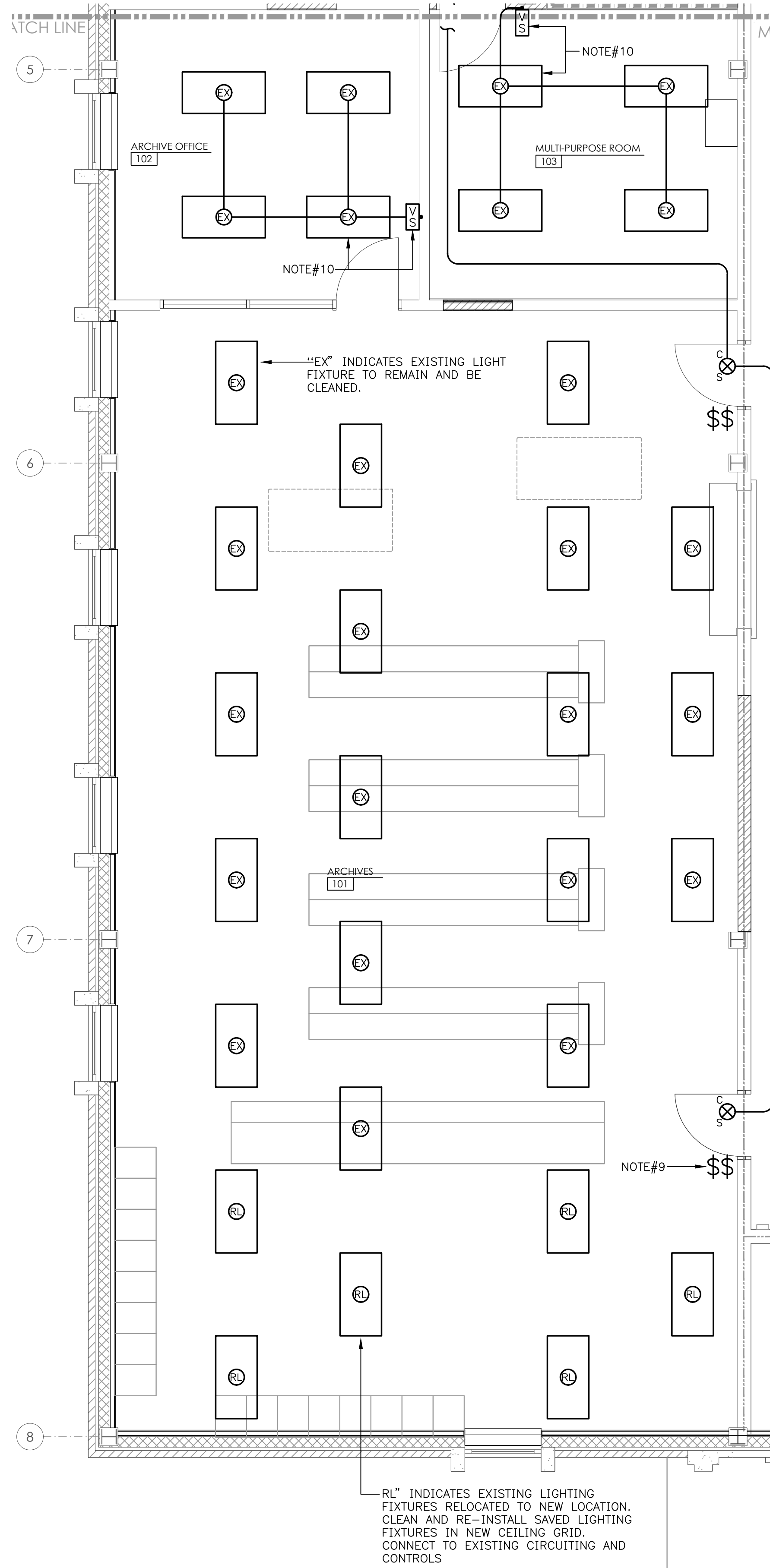
E0.2 Anderson Co. Courthouse County Clerk & Archive Ren. - Third Floor - Demolition.dwg  
C.W.L. 02/15/22 1:30 PM CL21372(La)

**Vreeland Engineers Inc.**  
  
3107 Sutherland Ave.  
P.O. Box 10648  
Knoxville, TN 37939  
865-637-4451  
1-800-362-9789  
vreelandengineers.com

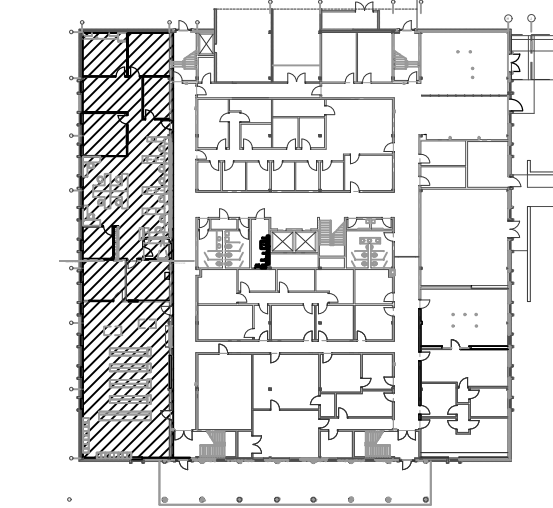
E1.1 Anderson Co. Courthouse County Clerk & Archive Ren. - First Floor - Lighting.dwg  
A.J.C. 02/17/22 8:47 AM CL21372(L0)



1 FIRST FLOOR PLAN - LIGHTING  
E1.1 Scale: 1/4" = 1'-0"



2 FIRST FLOOR PLAN - LIGHTING  
E1.1 Scale: 1/4" = 1'-0"



FIRST FLOOR LOCATION KEY  
N.T.S.

- LIGHTING NOTES:**
1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHT FIXTURES.
  2. EXTEND AND CONNECT TO EXISTING 20 AMP "EMERGENCY LIGHTING" CIRCUIT WHICH SERVES EXISTING NIGHT LIGHT AND EXISTING EXIT SIGNS THIS FLOOR.
  3. LIGHTING FIXTURES DESIGNATED "RL" ARE EXISTING TO BE RELOCATED TO NEW LOCATION SHOWN THIS PLAN.
  4. EACH LIGHTING FIXTURE SHALL BE STRUCTURALLY SUPPORTED; DO NOT USE CONDUIT FOR SUPPORT OF EITHER FIXTURES OR BOXES.
  5. USE FLEXIBLE METAL CONDUIT (GREENFIELD) OR MC CABLE IN INDIVIDUAL LENGTHS NOT EXCEEDING 6'-0" FOR FINAL CONNECTION OF LAY-IN FIXTURES.
  6. PROVIDE A CODE SIZED EQUIPMENT GROUNDING CONDUCTOR IN EACH NEW WIRING RUN.
  7. THROUGH WIRING OF LIGHTING FIXTURES SHALL NOT BE PERMITTED UNLESS NOTED OTHERWISE.
  8. EACH LIGHTING FIXTURE SHALL HAVE ITS OWN BOX UNLESS OTHERWISE ILLUSTRATED.
  9. RELOCATE EXISTING WALL SWITCHED TO NEW LOCATION AND RECONNECT TO CONTROL EXISTING LOADS.
  10. MAINTAIN EXISTING CIRCUITING TO EXISTING LIGHTING FIXTURES, INSTALL NEW VACANCY SENSORS TO CONTROL EXISTING LIGHTING FIXTURES.



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909

Office: 865.251.2385 Fax: 865.531.9499

Contact Name: William R. Blankenship

**Owner:**

Anderson County

100 N Main Street  
Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

**Project Name:**

**ANDERSON CO. COURTHOUSE  
COUNTY CLERK &  
ARCHIVE RENOVATION**

**Consultants:**

**Mechanical**

Bedinger Consulting Engineers

5641 Merchants Center Blvd, STE A104  
Knoxville, TN 37912

(865) 299-5973

Contact Name: David Blakney, P.E.

**Electrical**

Vreeland Engineers, Inc.

P.O. Box 10645  
Knoxville, TN 37939

T (865) 745-4401

Contact Name: Chris Lay

© COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.

**Seal**



Date: 02.10.2022

Drawn By: VBI

Checked By: CWL

Project Number: 20-15

**Revisions**

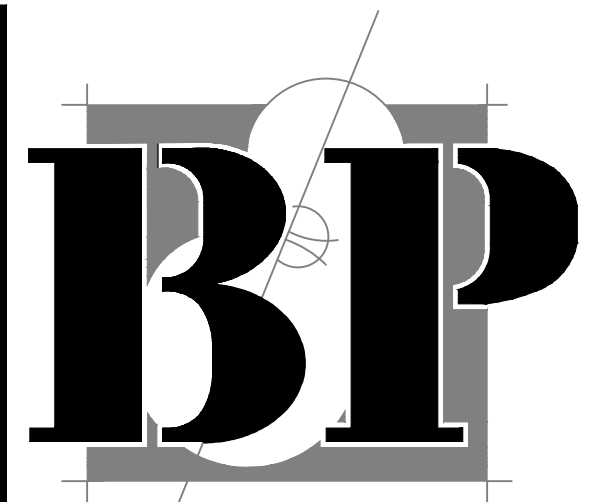
No. Date:

**Drawing Title:**  
First Floor Plan - Lighting

**Drawing No.:**

**E1.1**

**Vreeland Engineers Inc.**  
3107 Sutherland Ave.  
P.O. Box 10648  
Knoxville, TN 37939  
865-637-4451  
1-800-362-9789  
vreelandengineers.com



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909

Office: 865.251.2385 Fax: 865.531.9499

Contact Name: William R. Blankenship

Owner: Anderson County

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

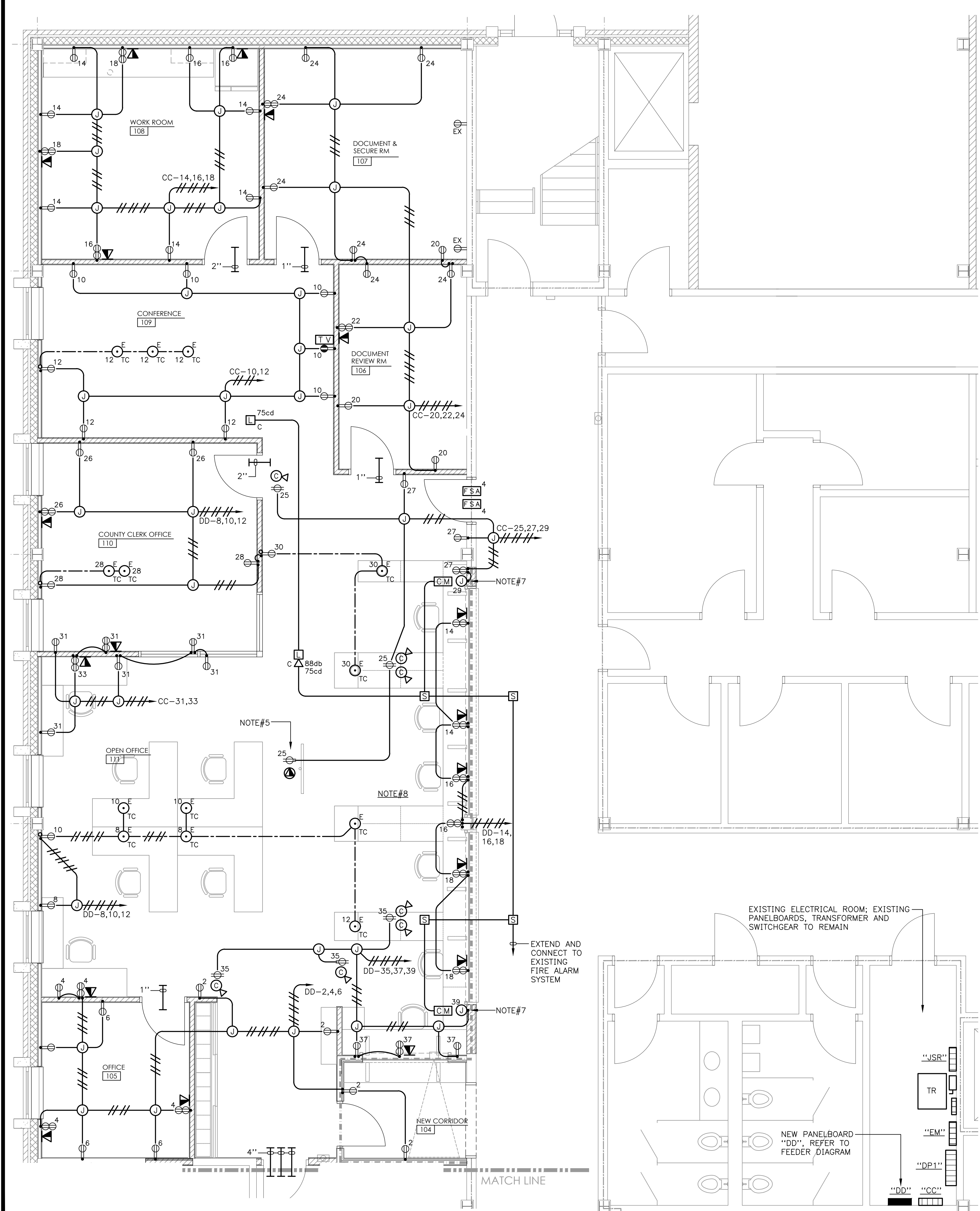
Project Name:

Project Name:

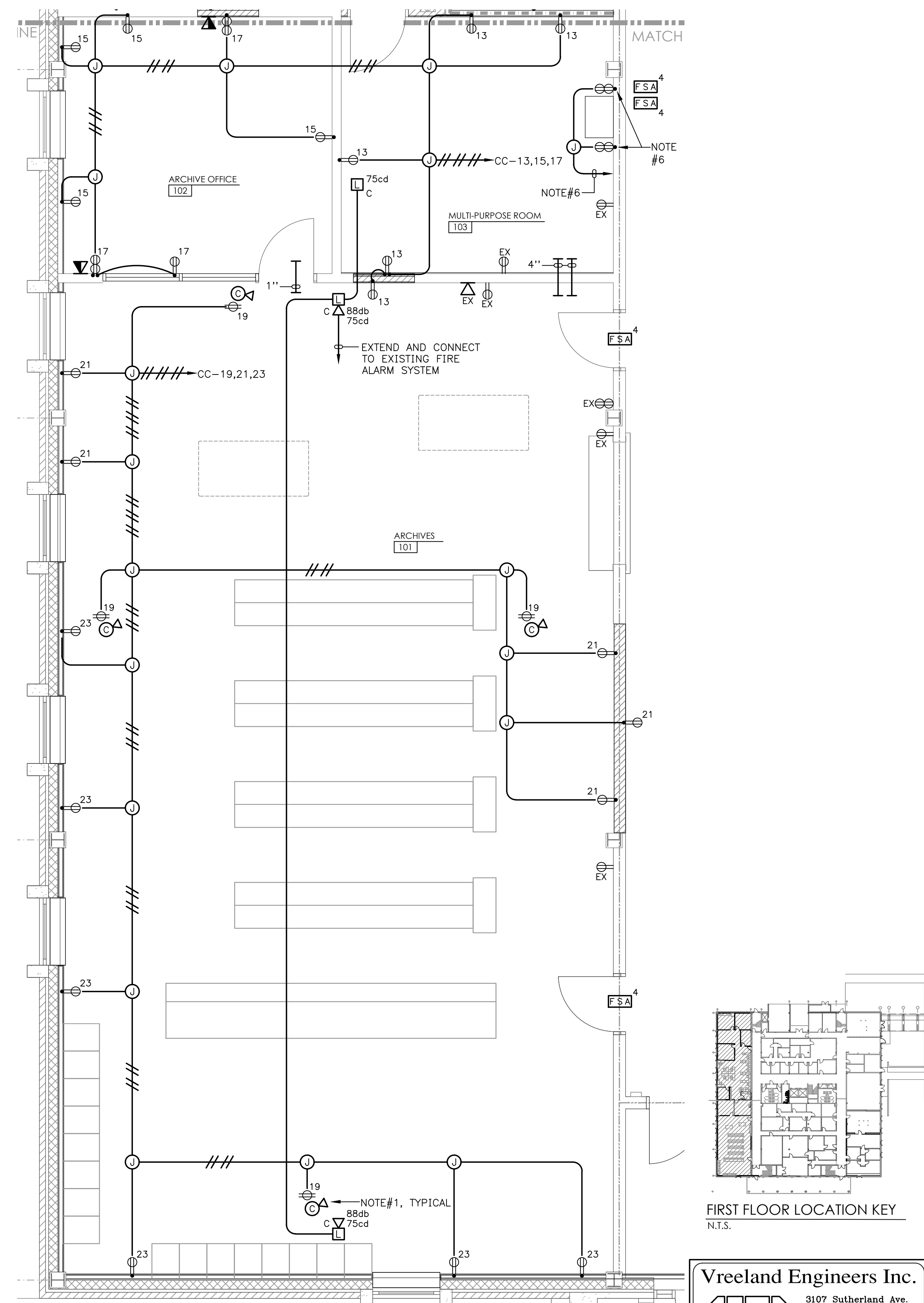
Project Name:

Project Name:

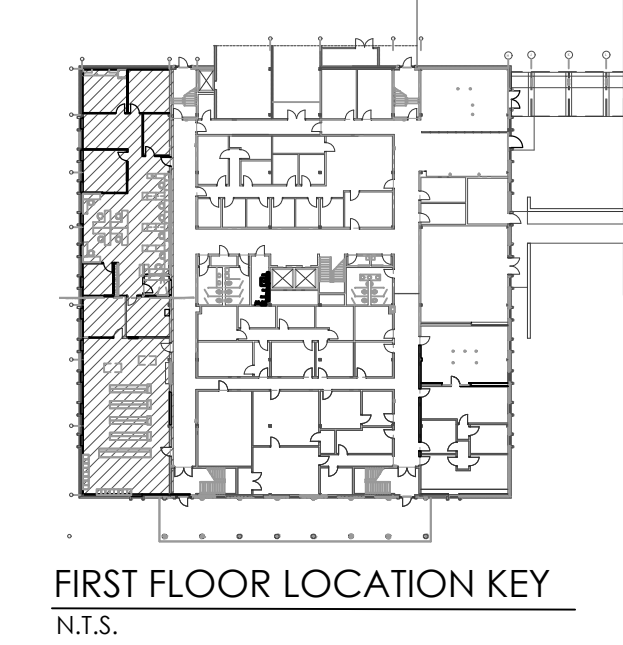
- POWER AND COMMUNICATIONS NOTES:**
1. FURNISH AND INSTALL DUPLEX PLUG RECEPTACLE ABOVE CEILING FOR CAMERAS AT EACH LOCATION AS DIRECTED BY OWNER.
  2. RECESSED OUTLET BOXES ON OPPOSITE SIDES OF FIRE RATED PARTITIONS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF AT LEAST 24 INCHES.
  3. VERIFY EXACT LOCATIONS OF ALL FLOOR BOXES WITH ARCHITECT PRIOR TO INSTALLATION. DO NOT SCALE FLOOR BOX LOCATIONS FROM ELECTRICAL DRAWINGS UNLESS PERMISSION IS GRANTED TO DO SO BY ARCHITECT.
  4. LOW VOLTAGE SUB-CONTRACTORS EACH SHALL PROVIDE LOW VOLTAGE CABLING SUPPORT SYSTEM (J-HOOKS) ABOVE LAY-IN CEILING FOR THEIR RESPECTIVE TELECOM, DATA, CATV, INTERCOM, ETC. WIRING. LOW VOLTAGE CABLING SUPPORT SYSTEM SHALL NOT BE USED FOR FIRE ALARM SYSTEM WIRING. A SEPARATE CONDUIT SYSTEM SHALL BE PROVIDED FOR FIRE ALARM SYSTEM.
  5. DATA AND ELECTRICAL OUTLETS ABOVE CEILING FOR SERVICE TO RELOCATED, CEILING MOUNTED, MONITOR. COORDINATE EXACT LOCATION WITH OWNER.
  6. NEW LOCATION OF EXITING I.T. EQUIPMENT AND SERVERS. COORDINATE WITH ANDERSON COUNTY I.T. DEPARTMENT. CONNECT NEW QUADRAPLEX/PLUG RECEPTACLES TO EXISTING CIRCUIT WHICH PREVIOUSLY SERVED I.T. EQUIPMENT
  7. COORDINATE WITH FIRE SHUTTER INSTALLER AND CONNECT FIRE SHUTTER POWER, CONTROLS AND FIRE ALARM. FIRE SHUTTER TO CLOSE UPON ACTIVATION OF FIRE ALARM SYSTEM.
  8. COORDINATE EXACT LOCATION OF ALL RECEPTACLES AT TELECOM OUTLETS AT MILLWORK WITH OWNER AND ARCHITECT IN FIELD PRIOR TO ROUGHING-IN.



1 FIRST FLOOR PLAN - POWER AND COMMUNICATION  
Scale: 1/4" = 1'-0"

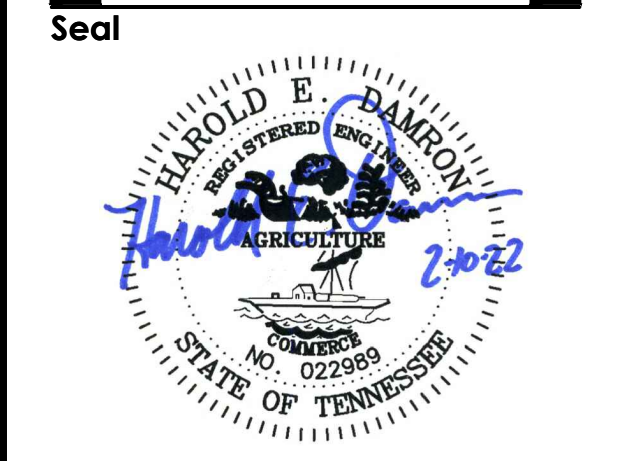


2 FIRST FLOOR PLAN - POWER AND COMMUNICATION  
Scale: 1/4" = 1'-0"



**Vreeland Engineers Inc.**  
3107 Sutherland Ave.  
P.O. Box 10648  
Knoxville, TN 37939  
865-637-4451  
1-800-362-9789  
vreelandengineers.com

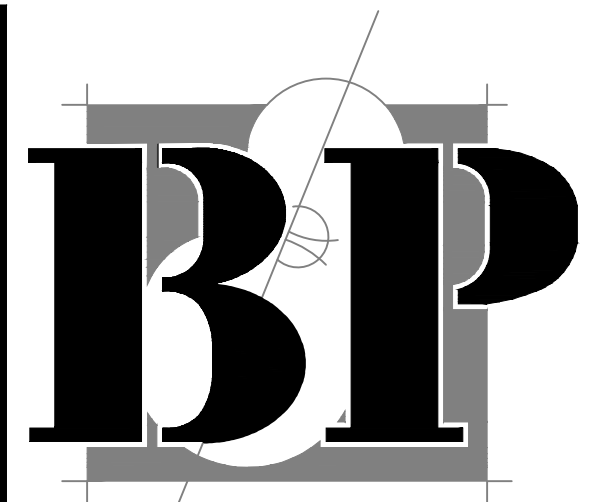
© COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.



Date:	02.10.2022
Drawn By:	VEI
Checked By:	CWL
Project Number:	20-15
<b>Revisions</b>	
No.	Date:
<b>Drawing Title:</b>	
<b>First Floor Plan - Power &amp; Comm.</b>	
<b>Drawing No.:</b>	
<b>E1.2</b>	

E1.2 Anderson Co. Courthouse County Clerk & Archive Ren. - First Floor - Power and Comm.dwg  
C.W.L. 02/16/22 5:10 PM CL21372(L0)





Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909

Office: 865.251.2385 Fax: 865.531.9499

Contact Name: William R. Blankenship

Owner: Anderson County

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

Project Name:

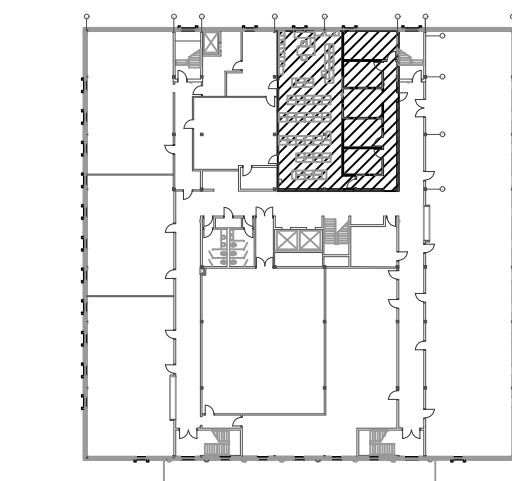
Project Name:

Project Name:

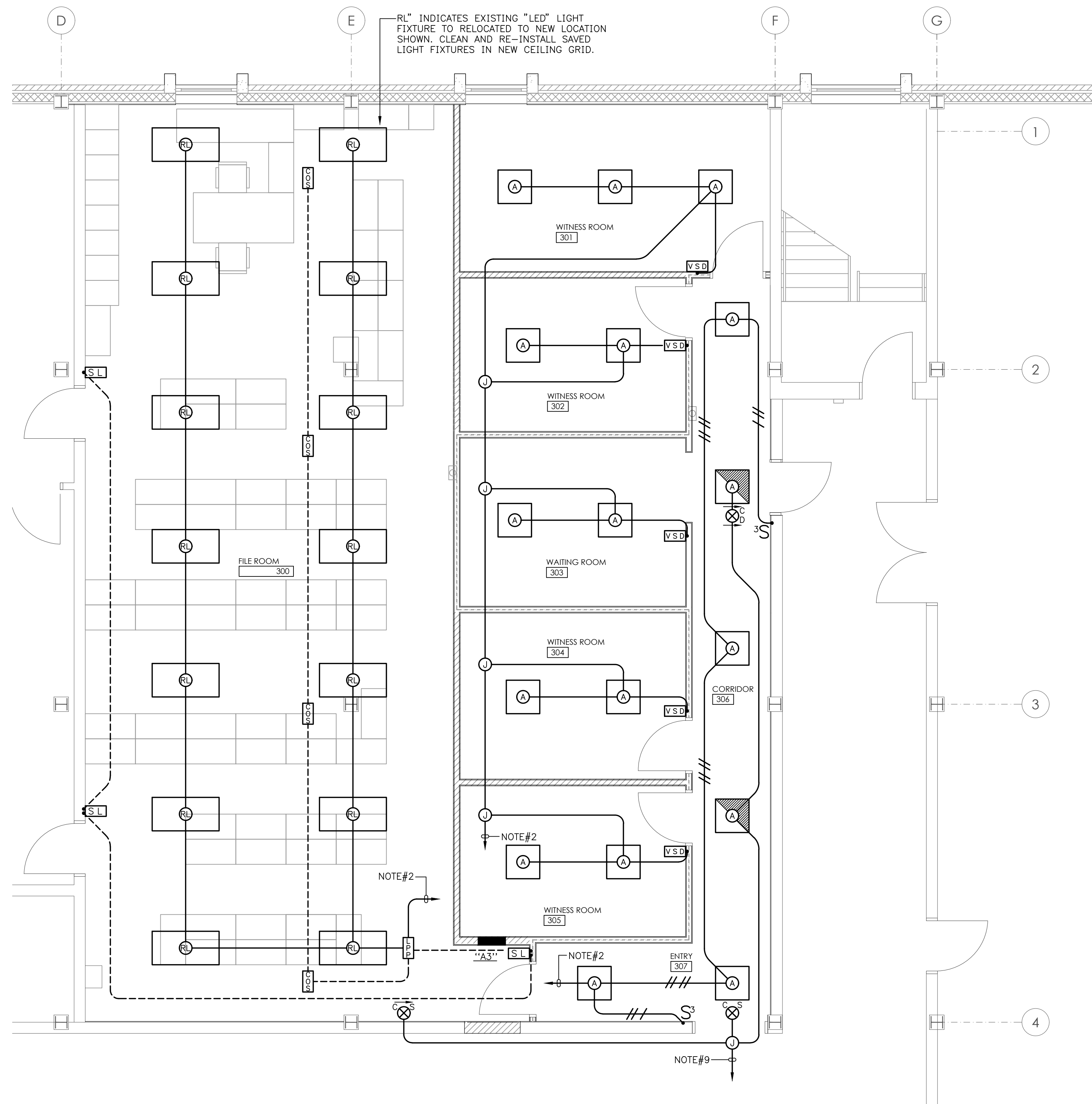
Project Name:

Project Name:

Project Name:



THIRD FLOOR LOCATION KEY  
N.T.S.



- LIGHTING NOTES:**
1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHT FIXTURES.
  2. EXTEND AND CONNECT TO EXISTING 20 AMP LIGHTING CIRCUIT WHICH PREVIOUSLY SERVED LIGHTING FIXTURES THIS AREA.
  3. LIGHTING FIXTURES DESIGNATED "RL" ARE EXISTING TO BE RELOCATED TO NEW LOCATION SHOWN THIS PLAN.
  4. EACH LIGHTING FIXTURE SHALL BE STRUCTURALLY SUPPORTED; DO NOT USE CONDUIT FOR SUPPORT OF EITHER FIXTURES OR BOXES.
  5. USE FLEXIBLE METAL CONDUIT (GREENFIELD) OR MC CABLE IN INDIVIDUAL LENGTHS NOT EXCEEDING 6'-0" FOR FINAL CONNECTION OF LAY-IN FIXTURES.
  6. PROVIDE A CODE SIZED EQUIPMENT GROUNDING CONDUCTOR IN EACH NEW WIRING RUN.
  7. THROUGH WIRING OF LIGHTING FIXTURES SHALL NOT BE PERMITTED UNLESS NOTED OTHERWISE.
  8. EACH LIGHTING FIXTURE SHALL HAVE ITS OWN BOX UNLESS OTHERWISE ILLUSTRATED.
  9. EXTEND AND CONNECT TO EXISTING 20 AMP, EMERGENCY POWER CIRCUIT THAT CURRENTLY SERVES EXISTING EGRESS LIGHTING FIXTURES AND EXIT SIGNS THIS FLOOR

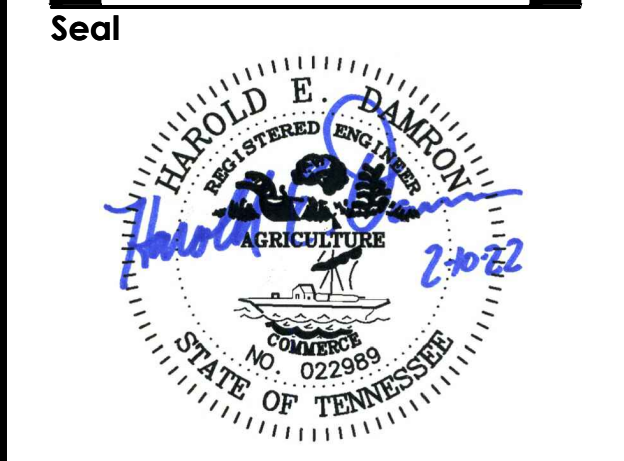
1 THIRD FLOOR PLAN - LIGHTING  
Scale: 1/4" = 1'-0"

E2.1 Anderson Co. Courthouse County Clerk & Archive Ren. - Third Floor - Lighting.dwg  
C.W.L. 02/16/22 5:20 PM CL21372(La)

**Vreeland Engineers Inc.**

3107 Sutherland Ave.  
P.O. Box 10648  
Knoxville, TN 37939  
865-637-4451  
1-800-362-9789  
vreelandengineers.com

© COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.



Date:	02.10.2022
Drawn By:	VEI
Checked By:	CWL
Project Number:	20-15
<b>Revisions</b>	
No.	Date:

Drawing Title:  
**Third Floor Plan - Lighting**

Drawing No.:  
**E2.1**



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909

Office: 865.251.2585 Fax: 865.531.9499

Contact Name: William R. Blankenship

Owner:

Anderson County

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

Project Name:

**ANDERSON CO. COURTHOUSE  
COUNTY CLERK &  
ARCHIVE RENOVATION**

**Consultants:**

**Mechanical**

Bedinger Consulting Engineers

5641 Merchants Center Blvd. STE A104

Knoxville, TN 37912

[865] 299-5973

Contact Name: David Blakney, P.E.

**Electrical**

Vreeland Engineers, Inc.

P.O. Box 10645

Knoxville, TN 37939

T [865] 745-4401

Contact Name: Chris Lay

COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.

**Seal**



Date: 02.10.2022

Drawn By: VEI

Checked By: CWL

Project Number: 20-15

**Revisions**

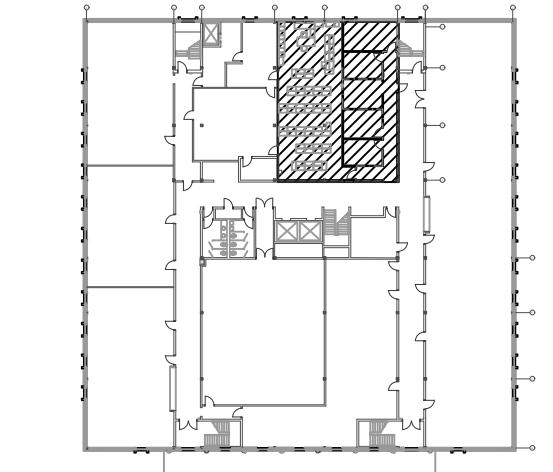
No. Date:

Drawing Title:

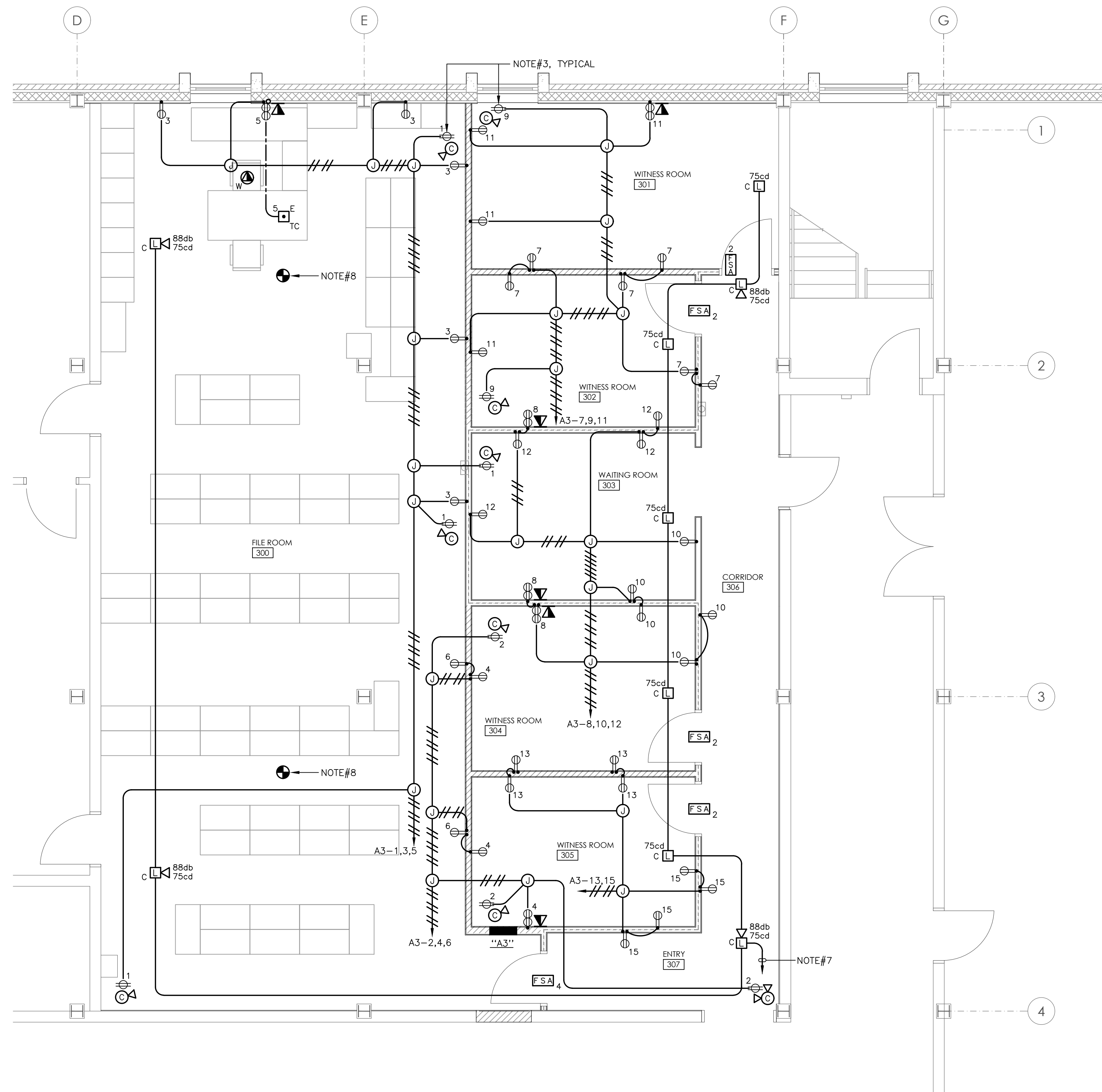
Third Floor Plan - Power & Comm

Drawing No.:

**E2.2**



THIRD FLOOR LOCATION KEY  
N.T.S.



- POWER AND COMMUNICATIONS NOTES:**
1. A "WHITE NOISE/SOUND MASKING" SYSTEM SHALL BE INSTALLED IN WITNESS ROOMS 301, 304 305, WAITING ROOM 303, CORRIDOR 306 AND ENTRY 307. SYSTEM COMPONENTS SHALL BE EQUAL TO LOWELL SM-805A SOUND MASKING SPEAKERS (70-WATT), LOWELL SMGA-25 SOUND MASKING GENERATOR, BOGEN GS-100D GOLD SERIES 100-WATT AMPLIFIER, VERICOM WALL-CABINET, VERICOM POWER STRIP, VOLUME CONTROLS, GENESIS 14/2 PLENUM CABLE, ETC. AS REQUIRED FOR A COMPLETE SOUND MASKING SYSTEM. ALL PRODUCTS SHALL BE FURNISHED AND INSTALLED BY C.E.S. CONTRACTOR TO CONTACT RALPH VEST OR KEVIN VEST AT C.E.S. TO COORDINATE INSTALLATION. ELECTRICAL CONTRACTOR SHALL CARRY ALL COSTS FOR "WHITE NOISE/SOUND MASKING" SYSTEM EQUIPMENT AND INSTALLATION.
  2. FURNISH AND INSTALL RECEPTACLE FOR CONNECTION OF "WHITE NOISE/SOUND MASKING" SOUND GENERATOR AND AMPLIFIER. COORDINATE EXACT LOCATION WITH C.E.S. PRIOR TO ROUGHING-IN.
  3. FURNISH AND INSTALL DUPLEX PLUG RECEPTACLE ABOVE CEILING FOR SERVICE TO CAMERAS AT EACH LOCATION AS DIRECTED BY OWNER.
  4. RECESSED OUTLET BOXES ON OPPOSITE SIDES OF FIRE RATED PARTITIONS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF AT LEAST 24 INCHES.
  5. VERIFY EXACT LOCATIONS OF ALL FLOOR BOXES WITH ARCHITECT PRIOR TO INSTALLATION. DO NOT SCALE FLOOR BOX LOCATIONS FROM ELECTRICAL DRAWINGS UNLESS PERMISSION IS GRANTED TO DO SO BY ARCHITECT.
  6. LOW VOLTAGE SUB-CONTRACTORS EACH SHALL PROVIDE LOW VOLTAGE CABLING SUPPORT SYSTEM (J-HOOKS) ABOVE LAY-IN CEILING FOR THEIR RESPECTIVE TELECOMM, DATA, CATV, INTERCOM, ETC. WIRING. LOW VOLTAGE CABLING SUPPORT SYSTEM SHALL NOT BE USED FOR FIRE ALARM SYSTEM WIRING. A SEPARATE CONDUIT SYSTEM SHALL BE PROVIDED FOR FIRE ALARM SYSTEM.
  7. EXTEND AND CONNECT TO EXISTING FIRE ALARM SYSTEM.
  8. INSTALL EXISTING SPEAKERS IN NEW CEILING AND RECONNECT, COORDINATE WITH ANDERSON COUNTY I.T. DEPARTMENT.

1 THIRD FLOOR PLAN - POWER AND COMMUNICATIONS  
E2.2 Scale: 1/4" = 1'-0"

E2.2 Anderson Co. Courthouse County Clerk & Archive Ren. - Third Floor - Power and Comm.dwg  
A.J.C. 02/17/22 8:48 AM CL21372(La)

**Vreeland Engineers Inc.**

3107 Sutherland Ave.  
P.O. Box 10648  
Knoxville, TN 37939  
865-637-4451  
1-800-362-9789  
vreelandengineers.com





# ELECTRICAL SPECIFICATIONS AND GENERAL NOTES

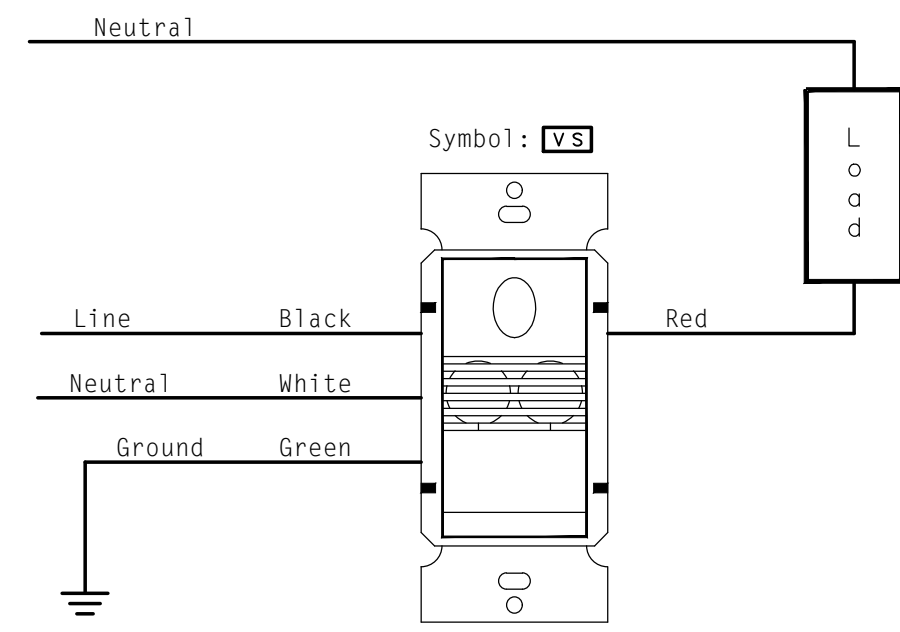
- SCOPE: FURNISH PLANT, LABOR, MATERIAL, SERVICES, AND EQUIPMENT NECESSARY FOR AND REASONABLY INCIDENTAL TO THE INSTALLATION OF ELECTRICAL FACILITIES SHOWN ON THE DRAWINGS AND CALLED FOR HEREINAFTER.
- CODES AND PERMITS: SECURE NECESSARY PERMITS, PAY NECESSARY FEES, CONFORM TO THE NATIONAL ELECTRICAL CODE AND ALL STATE/ LOCAL CODES.
- SERVICE: SERVICE SHALL BE TAKEN FROM EXISTING FACILITIES AT AT 277/480-VOLTS, 3-PHASE, 4-WIRE AND/OR 120/208-VOLTS, 3-PHASE, 4-WIRE AS NOTED ON DRAWINGS.
- CONDUITS AND WIRING: ALL AC VOLTAGE WIRING SHALL BE INSTALLED IN CONDUIT. ALL BRANCH CIRCUIT CONDUITS RUN ABOVE GRADE INSIDE THE BUILDING SHALL BE ELECTRIC-METALLIC TUBING (EMT). CONDUITS RUN IN OR BELOW CONCRETE SLAB SHALL BE SCHEDULE 40 PVC.  
ALL BRANCH CIRCUIT CONDUITS SHALL BE RUN ABOVE LAY-IN CEILINGS WHERE POSSIBLE. WHERE EXPOSED CONDUITS MUST BE RAN, CONDUITS RUNS SHALL BE GROUPED TOGETHER WHERE POSSIBLE. EXPOSED CONDUITS WIRING SHALL BE RAN PARALLEL OR PERPENDICULAR TO BUILDING STRUCTURE. NO DIAGONAL EXPOSED RUNS WILL BE PERMITTED. PROVIDE COLOR CODING OF CONDUCTORS IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.  
A. MINIMUM SIZE CONDUIT SHALL BE 3/4".  
B. ALL CONDUCTORS SHALL BE STRANDED COPPER. MINIMUM CONDUCTOR SIZE SHALL BE NO. 12 FOR ALL AC VOLTAGE CIRCUITS.  
C. INSULATION SHALL BE "THIN/THIN". EACH PHASE CONDUCTOR SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR. NEUTRALS SHALL NOT BE SHARED BETWEEN PHASES. INSULATION OF NEUTRAL CONDUCTOR SHALL HAVE A STRIPE OF SAME COLOR AS CORRESPONDING PHASE CONDUCTOR.  
D. SEAL ALL PENETRATIONS THROUGH RATED WALLS WITH A "UL" LISTED FIRESTOPPING SYSTEM.  
E. ALL FEEDER CONDUITS SHALL BE PROVIDED WITH GROUNDING BUSHINGS AT ALL POINTS WHERE CONDUITS CONNECT TO PANELBOARD ENCLOSURES, PULL BOXES, OR JUNCTION BOXES.
- LIGHTING FIXTURES: UNLESS NOTED OTHERWISE LIGHTING FIXTURES SHALL BE LIMITED TO THOSE SCHEDULED. WHERE EQUAL PRODUCTS TO THOSE SPECIFIED ARE ALLOWED, ALTERNATE MANUFACTURERS MAY BE REQUIRED TO SUBMIT SAMPLES OF PROPOSED SUBSTITUTES FOR OWNER, ARCHITECT AND ENGINEER FOR REVIEW. THE OWNER, ARCHITECT, AND ENGINEER SHALL PROVIDE JUDGMENT CONCERNING EQUIVALENCY OF PROPOSED SUBSTITUTES. CONTRACTOR SHALL NOT ORDER ANY LIGHT FIXTURES OR EXIT SIGNS UNTIL FINAL APPROVAL HAS BEEN GIVEN IN WRITING FROM OWNER, ARCHITECT, ENGINEER.
- WIRING DEVICES: ALL WIRING DEVICES SHALL BE SPECIFICATION GRADE, RATED 20-AMPERES, MINIMUM. COVERPLATES SHALL BE STAINLESS STEEL. COLOR OF NORMAL POWER DEVICES SHALL BE SELECTED BY THE ARCHITECT.
- WIRING FOR HVAC EQUIPMENT: FURNISH AND INSTALL ALL POWER WIRING FOR HVAC EQUIPMENT. AT EACH ITEM OF EQUIPMENT, FURNISH AND INSTALL A HEAVY-DUTY FUSIBLE DISCONNECT SWITCH. FINAL CONNECTION TO MECHANICAL EQUIPMENT SHALL BE MADE USING LIQUID-TIGHT FLEXIBLE CONDUIT.
- SAFETY SWITCHES: FURNISH AND INSTALL HEAVY-DUTY FUSIBLE TYPE SAFETY SWITCHES WHERE INDICATED ON DRAWINGS. SAFETY SWITCHES SHALL BE HEAVY-DUTY, HORSEPOWER RATED, QUICK-MAKE, QUICK-BREAK WITH ARC SHIELDS WITH ENCLOSED CONSTRUCTION. UNLESS NOTED OTHERWISE INSIDE THE BUILDING, SAFETY SWITCHES SHALL HAVE NEMA 1 ENCLOSURES. OUTSIDE THE BUILDING, SAFETY SWITCHES SHALL HAVE NEMA 3R ENCLOSURES. WHERE SAFETY SWITCHES ARE REQUIRED TO BE INSTALLED AWAY FROM WALLS, A SUITABLE SUPPORT WILL BE PROVIDED TO ALLOW THE SWITCH TO BE IN A POSITION OF APPROXIMATELY 4'-6" ABOVE FLOOR. WHERE NECESSARY, PROVIDE A STEEL FRAME ATTACHED TO FLOOR/GROUND. SWITCHES MAY BE MOUNTED ON EQUIPMENT WHERE SPECIFIC APPROVAL IS PROVIDED BY EQUIPMENT SUPPLIER. COORDINATE EXACT ROUGH-IN LOCATIONS OF SAFETY SWITCHES WITH HVAC/PLUMBING SUBCONTRACTOR PRIOR TO INSTALLATION. PROVIDE ENGRAVED NAMEPLATE ON EACH SAFETY SWITCH INDICATING EQUIPMENT IDENTIFICATION, AND SUPPLYING PANELBOARD INFORMATION.
- PANELBOARDS: FURNISH AND INSTALL NEW PANELBOARDS WHERE INDICATED ON DRAWINGS NEW PANELBOARDS RATED GREATER THAN 225-AMPERES SHALL BE EQUAL TO EATON "CDB" SERIES. PANELS 200-AMPERE AND SMALLER SHALL BE EQUAL TO EATON "POM-R-LINE" SERIES ALL PANELBOARDS SHALL HAVE COPPER BUSING. CIRCUIT BREAKERS SHALL BE "BOLT-ON" TYPE, SWITCHING DUTY.  
INSTALLATION:  
A. SECURE SURFACE MOUNTED PANELBOARDS TO WALL USING 1/4" TOGGLE BOLTS, BOLTED TO MASONRY WALL. WHERE HOLLOW BLOCK WALLS DO NOT OCCUR, SUITABLE EXPANSION SHIELDS AND ANCHOR BOLTS SHALL BE UTILIZED. UNLESS DIRECTED OTHERWISE, PANELBOARDS SHALL BE MOUNTED TO HAVE THE TOP 6 FEET CLEAR ABOVE FINISHED FLOOR.  
B. THE DIRECTORIES WITHIN EACH PANELBOARD SHALL BE PROPERLY FILLED OUT, SO AS TO HAVE A COMPREHENSIVE UNDERSTANDING OF THE LOADS TO WHICH EACH CIRCUIT BREAKER IS CONNECTED. THEY SHALL BE FILLED OUT BY USE OF A TYPEWRITER. THIS SHALL INCLUDE ROOM NUMBER SERVED.  
C. EXACT LOCATION OF PANELBOARD SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH BUILDING SYSTEMS / ELEMENTS AND MAINTAIN CODE REQUIRED CLEARANCES / WORKING SPACE.
- JUNCTION AND WALL BOXES: UNLESS NOTED DIFFERENTLY ON DRAWINGS, FURNISH OUTLET BOXES FOR LIGHTING FIXTURES, WALL RECEPTACLES, SWITCHES AND OTHER DEVICES AS REQUIRED. WALL BOXES SHALL BE MINIMUM OF 4" HIGH BY 2-5" DEEP BY 2-5" WIDE. CEILING BOXES SHALL BE 4-INCH OCTAGON AND 2-5" DEEP. PROVIDE EXTENSION AND DEVICE RINGS AS REQUIRED.
- GROUNDING: PROVIDE GROUNDING OF EQUIPMENT AND LOADS SERVED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE. PROVIDE A SEPARATE CODE-SIZED INSULATED GROUNDING CONDUCTOR IN ALL NEW FEEDER AND BRANCH CIRCUIT CONDUIT RUNS. SEPARATE GROUNDING CONDUCTOR IS GENERALLY NOT INDICATED ON DRAWINGS BUT SHALL BE REQUIRED.
- COMMUNICATION SYSTEM RACEWAY FACILITY: FURNISH AND INSTALL A SYSTEM OF EMPTY CONDUIT AND BOXES FOR TELECOMMUNICATIONS (DATA AND VOICE) SYSTEMS AND FIRE ALARM FOR USE IN THE BUILDING. DATA/VOICE EQUIPMENT AND CABLING SHALL BE FURNISHED AND INSTALLED BY OWNER'S VENDOR / SUB-CONTRACTOR. FIRE ALARM EQUIPMENT, CABLING, DEVICES, ETC., WILL BE FURNISHED AND INSTALLED AS PART OF THE ELECTRICAL SUBCONTRACT WORK AS SET FORTH ON DRAWINGS AND CALLED FOR ELSEWHERE IN THESE SPECIFICATIONS. PRIOR TO COMMENCING ROUGH-IN WORK FOR FIRE ALARM AND TELE-COMMUNICATIONS SYSTEMS, ELECTRICAL SUBCONTRACTOR SHALL CONDUCT MEETING WITH FIRE ALARM EQUIPMENT SUPPLIER AND OWNER'S TELE-COMMUNICATIONS SYSTEM VENDORS. ENTIRE INSTALLATION SHALL BE THOROUGHLY REVIEWED. ANY DISCREPANCIES BETWEEN CONTRACT ELECTRICAL DRAWINGS AND SYSTEMS REQUESTED BY OWNER'S TELE-COMMUNICATIONS VENDORS SHALL BE CALLED TO THE ATTENTION OF ARCHITECT PRIOR TO PROCEEDING WITH WORK.
- FIRE ALARM:  
GENERAL:  
FURNISH AND INSTALL NEW FIRE ALARM EQUIPMENT AS REQUIRED FOR THIS PROJECT. ALL NEW COMPONENTS SHALL BE OF MAKE AND MODEL COMPLETELY COMPATIBLE WITH THE EXISTING FIRE ALARM PANEL / EQUIPMENT. FURNISH AND INSTALL ALL WIRING, POWER SUPPLIES, CONTROL UNITS, BATTERY UNITS, ETC THAT MAY BE NECESSARY TO UPGRADE THE EXISTING SYSTEM TO ACCOMMODATE THE ADDITION OF THE NEW DEVICES AND PROGRAMMING.  
FIRE ALARM SYSTEM WITHIN THE BUILDING IS CENTRALLY MONITORED BY AND OFF-SITE SERVICE.  
AUDIBLE NOTIFICATION WILL BE ACCOMPLISHED VIA AUDIBLE DEVICES / SPEAKERS POWERED FROM THE BUILDING'S FIRE ALARM PANEL. VISUAL ALARM NOTIFICATION WILL BE PROVIDED VIA VISUAL STROBES IN ACCORDANCE WITH CODE REQUIREMENTS.  
THE BUILDING IS PROTECTED BY AN AUTOMATIC SPRINKLER SYSTEM. THE SPRINKLER SYSTEMS WILL BE MONITORED BY THE FIRE ALARM SYSTEM.  
AREA SMOKE DETECTORS WILL BE INSTALLED IN CORRIDORS, STORAGE ROOMS AND SIMILAR SPACES IN AS NOTED ON THE DRAWINGS.  
THE EXISTING FIRE ALARM PANEL PROVIDES PINPOINT LOCATION OF ALARM/TROUBLE CONDITION FOR EACH ADDRESSABLE ALARM INITIATION DEVICE IN THE SYSTEM. MULTIPLE NOTIFICATION EVACUATION SIGNAL ZONES SHALL BE PROVIDED IN THE BUILDING. EACH FLOOR NOTIFICATION EVACUATION SIGNAL ZONES SHALL BE PROVIDED IN THE BUILDING. EACH FLOOR OF THE BUILDING SHALL BE ON A SEPARATE EVACUATION SIGNAL ZONE.  
SCOPE:  
CONTRACTOR SHALL FURNISH PLANT, LABOR, MATERIAL, SERVICES, AND EQUIPMENT NECESSARY FOR AND REASONABLY INCIDENTAL TO THE EXPANSION OF THE EXISTING SMOKE DETECTION AND VISUAL / AUDIBLE NOTIFICATION SYSTEM AS INDICATED ON THE DRAWINGS AND CALLED FOR HEREINAFTER. THE INTENT OF THIS PROJECT IS TO INSTALL A COMPLETELY ADDRESSABLE SYSTEM THAT IS NETWORKED BUILDING WIDE.  
INSTALLATION AND EXECUTION:  
A. THE CONTRACTOR SHALL PROVIDE AND INSTALL THE SYSTEM IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS, ALL APPLICABLE NATIONAL AND LOCAL CODES, UL WIRING CRITERIA, AND THE MANUFACTURER'S RECOMMENDATIONS. ALL WIRING SHALL BE COLOR CODED, TAGGED, AND CHECKED RECOMMENDATIONS. ALL WIRING SHALL BE COLOR CODED, TAGGED, AND CHECKED TO ASSURE THAT IT IS FREE FROM SHORTS AND GROUNDS.  
B. RECESSED JUNCTION BOXES SHALL BE INSTALLED IN WALLS FOR INSTALLATION OF DEVICES.  
D. ALL COMPONENTS SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. CONDUIT RUNS SHALL BE PARALLEL OR PERPENDICULAR TO EXISTING BUILDING STRUCTURAL ELEMENTS. NO DIAGONAL RUNS WILL BE PERMITTED.  
E. ALL JUNCTION BOXES AND CONDUIT RAN ABOVE LAY-IN CEILING SHALL BE SPRAY PAINTED RED AND LABELED "FIRE ALARM".  
F. THE FIRE ALARM CONTRACTOR MUST BE CERTIFIED IN ACCORDANCE WITH THE TENNESSEE ALARM CONTRACTORS LICENSING ACT OF 1991,TCA TITLE 62, CHAPTER 32.  
G. THE COMPLETED SYSTEM SHALL BE FULLY TESTED BY THE CONTRACTOR AND THE MANUFACTURER'S NICET CERTIFIED TECHNICAL REPRESENTATIVE IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. UPON COMPLETION OF A SUCCESSFUL TEST, THE CONTRACTOR SHALL SO VERIFY IN WRITING TO THE OWNER, ARCHITECT, AND GENERAL CONTRACTOR.  
H. NEW EQUIPMENT AND WIRING SHALL BE WARRANTED TO BE FREE FROM ELECTRICAL AND MECHANICAL DEFECTS FOR A PERIOD OF ONE YEAR COMMENCING WITH OCCUPANCY OF SPACE BY TENANT. WARRANTY SHALL INCLUDE ALL LABOR/ TRAVEL TIME AND MATERIAL/ PARTS.  
I. EACH INITIATION DEVICE SHALL BE AFFIXED WITH A MASTIC LABEL INDICATING IT'S ASSIGNED ADDRESS.
- SHOP DRAWINGS AND SUBMITTALS: PROVIDE ELECTRONIC SUBMITTALS FOR REVIEW BY ARCHITECT AND ENGINEER. SUBMITTALS SHALL INCLUDE MANUFACTURER'S CUTSHEET WITH SPECIFIC MODEL NUMBERS IDENTIFIED AS THEY APPLY TO THIS PROJECT. SUBMITTALS SHALL INCLUDE LIGHTING FIXTURES, EXIT SIGN, LIGHTING CONTROLS, WIRING DEVICES, SWITCHGEAR, SAFETY SWITCHES, PANELBOARDS, AND FIRE ALARM COMPONENTS. ALONG WITH CUTSHEETS, THE FIRE ALARM SUBMITTAL SHALL INCLUDE CAD DRAWINGS OF THE PROPOSED SYSTEM INCLUDING CONDUIT FOR NEW FIRE ALARM SYSTEM IN ACCORDANCE WITH REQUIREMENTS OF NFPA 72. ALSO INCLUDED SHALL BE BATTERY CALCULATIONS FOR NEW FIRE ALARM SYSTEM IN ACCORDANCE WITH REQUIREMENTS OF NFPA 72.
- GUARANTY: GUARANTEE ALL WORK TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE YEAR AFTER DATE OF FINAL ACCEPTANCE.

# LIGHTING FIXTURE SCHEDULE

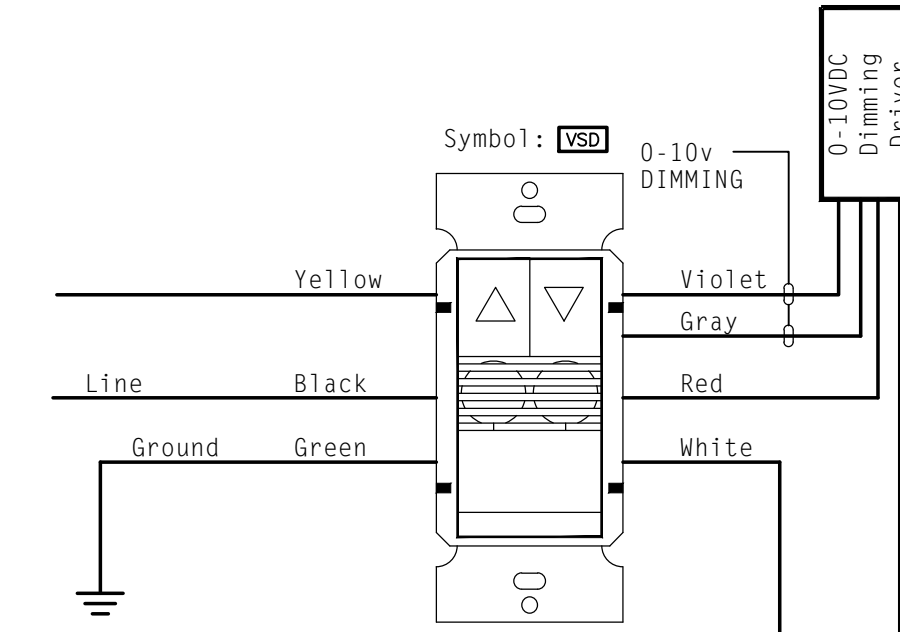
DESIGNATION	LAMPS				MOUNTING		DESCRIPTION: SHIELDING, TYPE MATERIALS, FINISH, MOUNTING	MANUFACTURER'S PRODUCT ITEM		EQUAL PRODUCT PERMITTED		REMARKS				
	INCANDESCENT	FLUORESCENT	METAL HALIDE	LIGHT EMITTING DIODE	QUANTITY	WATS		PENDANT STEM LENGTH	SURFACE RECESSED	CEILING	WALL		HEIGHT ABOVE FINISHED FLOOR OR GRADE	COMPANY	CATALOG NO.	YES
A						31.7						LITHONIA	2BLT2-33L-ADP-MVOLT-E21-LP835			REFER TO NOTE#5
B						6 PER FOOT						MARK LIGHTING	SL2L-LOP-XFT-RLP-TG-80CRI-35K-600LMF			EQUIPPED WITH FLANGE/TRIM FOR INSTALLATION IN ACOUSTICAL CEILING, REFER TO NOTE#4
C						19.7						GOTHAM	EV0635/20-6AR-MO-LD-TR-MVOLT-E21			
D						6 PER FOOT						MARK LIGHTING	SL2L-LOP-8FT-RLP-TG-80CRI-35K-600LMF			EQUIPPED WITH FLANGE/TRIM FOR INSTALLATION IN ACOUSTICAL CEILING, REFER TO NOTE#4
⊗						2						MULE	RMX-U-R-W-EM			

# LIGHTING FIXTURE NOTES

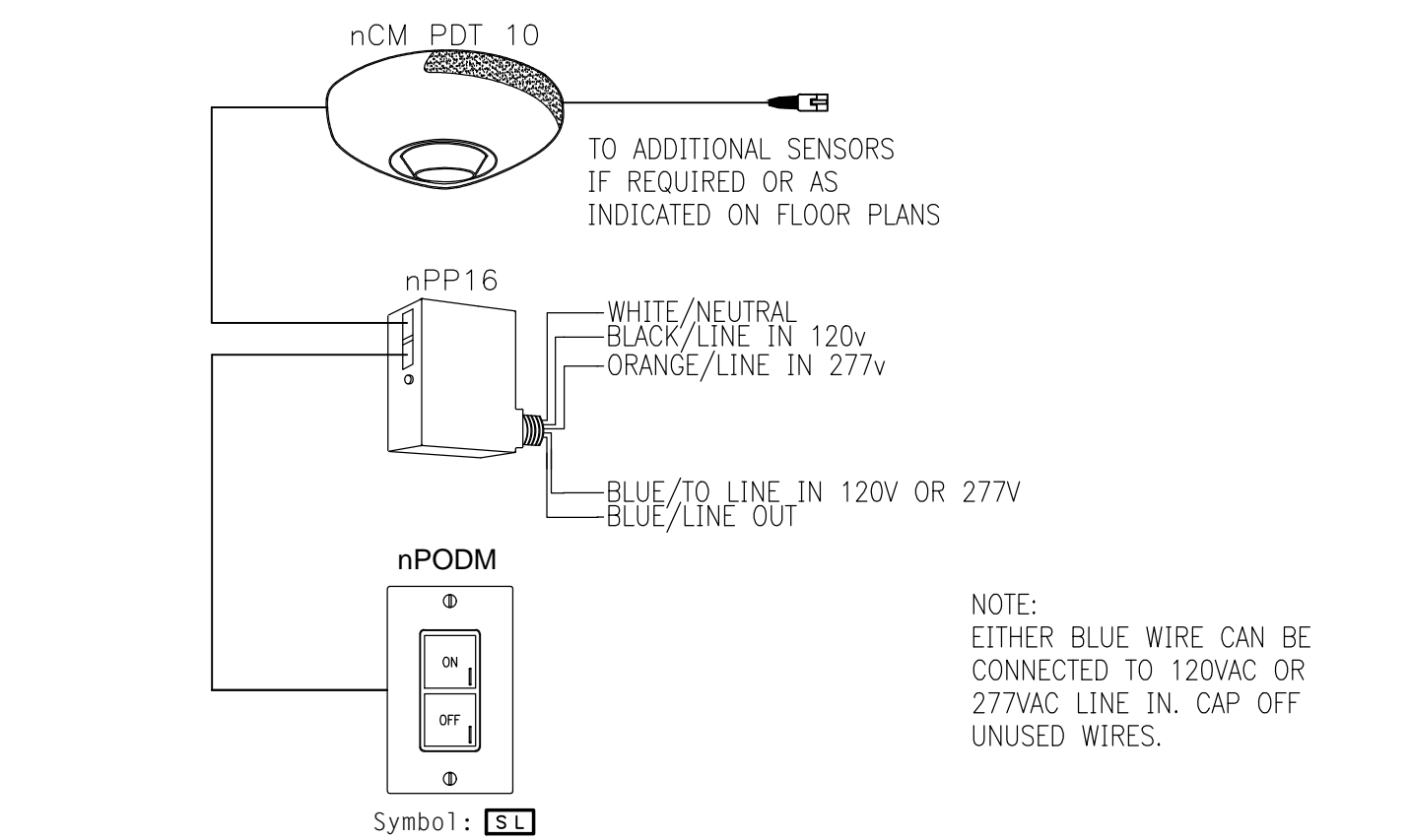
- SHOP DRAWINGS SHALL CLEARLY INDICATE SPECIFIC BALLAST, DRIVER AND LAMP OR THEY WILL BE REJECTED.
- WHERE EQUAL PRODUCTS TO THOSE SPECIFIED ARE PERMITTED, ALTERNATE MANUFACTURERS MAY BE REQUIRED TO SUBMIT SAMPLES OF PROPOSED SUBSTITUTES FOR THE OWNER, THE ARCHITECT AND THE ENGINEER FOR REVIEW. THE OWNER, ARCHITECT, AND ENGINEER SHALL PROVIDE JUDGMENT CONCERNING EQUIVALENCY OF PROPOSED SUBSTITUTES. CONTRACTOR SHALL NOT ORDER ANY LIGHT FIXTURES OR EXIT SIGNS UNTIL FINAL APPROVAL HAS BEEN GIVEN IN WRITING FROM THE OWNER, ARCHITECT, ENGINEER.
- WHERE FIXTURE WHIPS ARE USED FOR CONNECTION OF LAY-IN FIXTURES, CONDUCTORS WITHIN THE WHIPS SHALL BE A MINIMUM OF 16 GAUGE.
- FIXTURE IS TO RUN FROM WALL TO WALL. FIELD MEASURE EXACT LENGTH REQUIRED PRIOR TO ORDERING.
- WHERE INDICATED ON FLOOR PLANS, SPECIFIC LUMINAIRES ARE TO BE EQUIPPED WITH A BATTERY PACK UNIT SHALL PROVIDE EMERGENCY EGRESS LIGHTING IN THE EVENT OF LOSS OF UTILITY POWER. BATTERY UNIT TO PROVIDE POWER TO DELIVER 1400 LUMENS FOR 90-MINUTES AFTER THE LOSS OF UTILITY POWER.



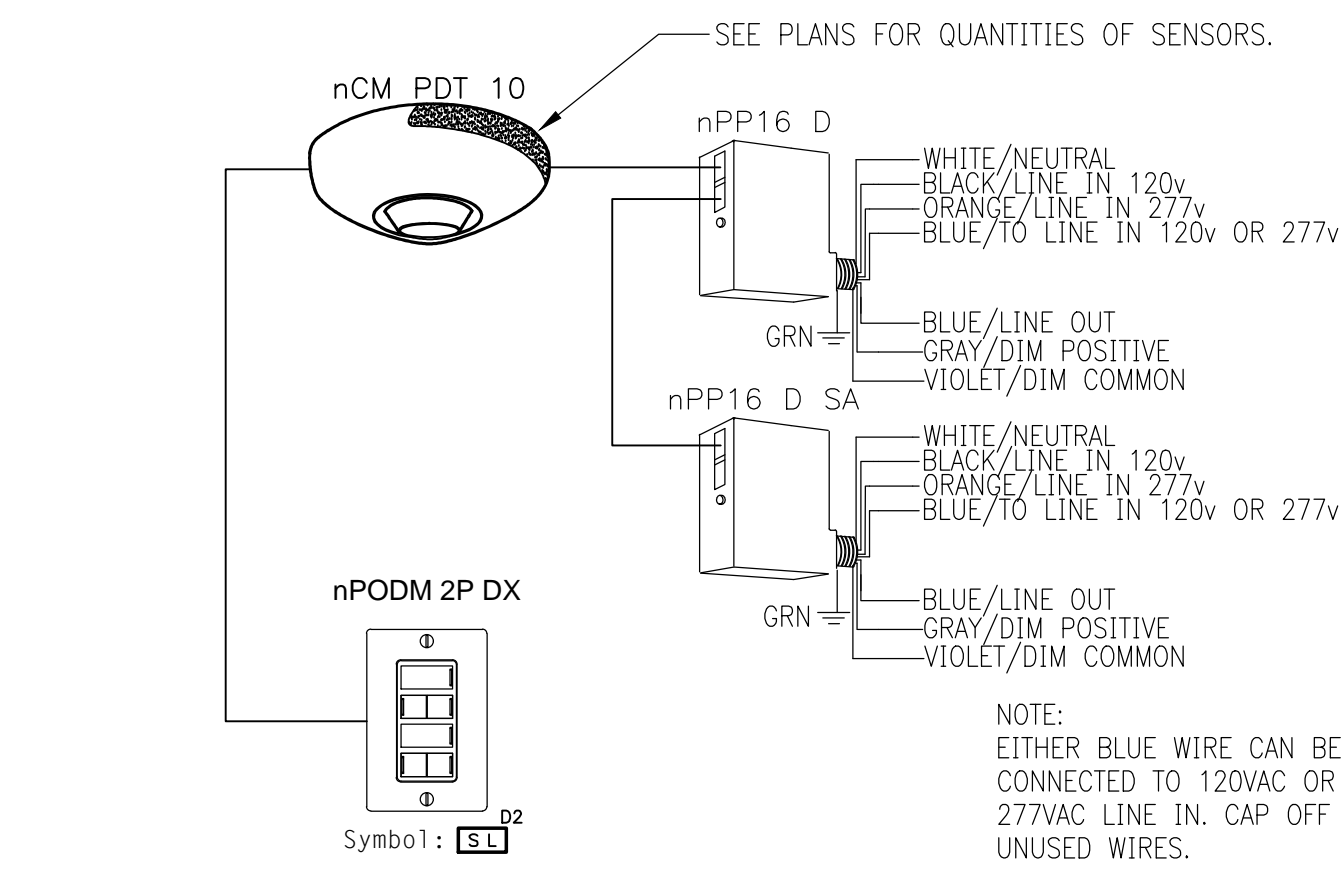
1  
E3.3  
NOT TO SCALE



2  
E3.3  
NOT TO SCALE

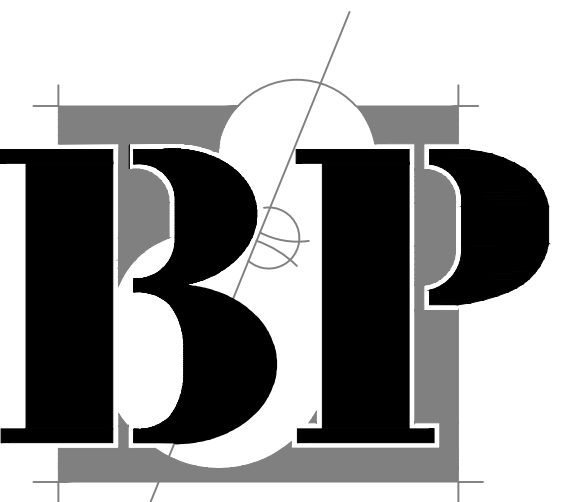


3  
E3.3  
NOT TO SCALE



4  
E3.3  
NOT TO SCALE  
DETAIL SIMILAR FOR THREE CHANNEL DIMMING WALL STATION

Vreeland Engineers Inc.  
3107 Sutherland Ave.  
P.O. Box 10848  
Knoxville, TN 37939  
865-637-4451  
1-800-362-9789  
vreelandengineers.com



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909

Office: 865.261.2585 Fax: 865.531.9499

Contact Name: William R. Blankenship

Owner:

Anderson County

100 N Main Street

Clinton, TN 37116-3617

Contact Name: Mayor Terry Frank

Project Name:

# ANDERSON CO. COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION

Consultants:

Mechanical

Bedinger Consulting Engineers

5641 Merchants Center Blvd. STE A104

Knoxville, TN 37912

(865) 299-5973

Contact Name: David Blakney, P.E.

Electrical

Vreeland Engineers, Inc.

P.O. Box 10848

Knoxville, TN 37939

T (865) 745-4401

Contact Name: Chris Lay

COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.

Seal



Date: 02.10.2022

Drawn By: VEI

Checked By: CWL

Project Number: 20-15

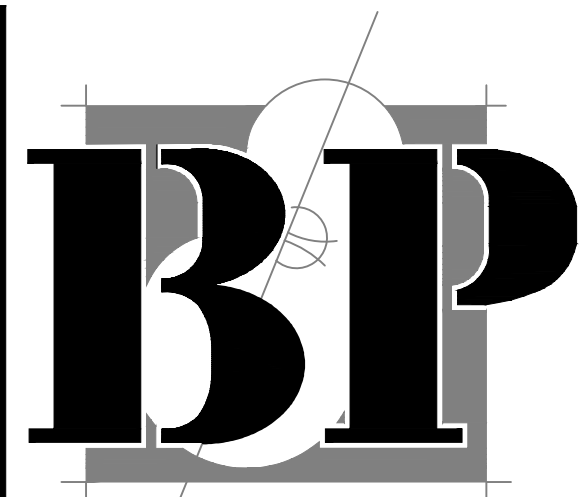
Revisions

No. Date:

Drawing Title:  
SCHEDULES AND DETAILS

Drawing No.:

E3.3



Blankenship & Partners, LLC  
Architects and Planners

1112 E. Weisgarber Rd., 2nd Floor, Knoxville, TN 37909

Office: 865.261.2385 Fax: 865.531.9499

Contact Name: William R. Blankenship

Owner: Anderson County

Contact Name: Mayor Terry Frank

100 N Main Street

Clinton, TN 37716-3617

Contact Name: Mayor Terry Frank

Project Name:

### ANDERSON CO. COURTHOUSE COUNTY CLERK & ARCHIVE RENOVATION

#### Consultants:

##### Mechanical

Bedinger Consulting Engineers

5641 Merchants Center Blvd, STE A104

Knoxville, TN 37912

(865) 299-5973

Contact Name: David Blakney, P.E.

##### Electrical

Vreeland Engineers, Inc.

P.O. Box 10645

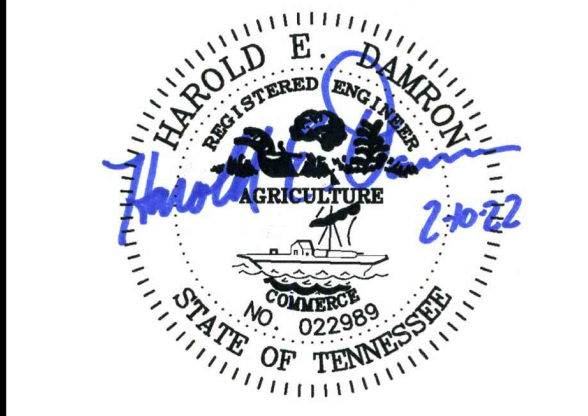
Knoxville, TN 37939

T (865) 745-4401

Contact Name: Chris Lay

COPYRIGHT Blankenship & Partners, LLC  
This drawing is the property of Blankenship & Partners, LLC and shall not be reproduced in whole or in part. It shall not be used for any other project. This drawing is an instrument of service only and shall be returned to the Architect upon request.

#### Seal



Date: 02.10.2022

Drawn By: VEI

Checked By: CWL

Project Number: 20-15

#### Revisions

No. Date:

Drawing Title:  
**PANELBOARD SCHEDULES  
AND FEEDER DIAGRAM**

Drawing No.:

# E3.4

**Vreeland Engineers Inc.**

3107 Sutherland Ave.  
P.O. Box 10648  
Knoxville, TN 37939  
865-637-4451  
1-800-362-9789  
vreelandengineers.com

PANEL A3 MAINS: 60A VOLTAGE/PHASE: 120/208V,3Ø,4W MOUNTING: FLUSH ENTRY: TOP BUS: COPPER												
Ckt. No.	SERVES	LOAD (kVA)			BREAKER			LOAD (kVA)			Ckt. No.	
		#A	#B	#C	TRIP POLE	TRIP POLE	#A	#B	#C			
1	FIRE ROOM/WAITING CAMERAS	0.7			20	1	1	20	0.4		2	WITNESS RM CAMERAS
3	FILE ROOM RECEPTACLES		0.9		20	1	1	20		0.7	4	WITNESS RM RECEPTACLES
5	FILE ROOM RECEPTACLES			0.5	20	1	1	20			6	FILE ROOM RECEPTACLES
7	WITNESS RM RECEPTACLES	1.0			20	1	1	20			8	SPARE
9	WITNESS RM CAMERAS		0.4		20	1	1	20			10	SPARE
11	WITNESS RM RECEPTACLES			1.0	20	1	1	20			12	SPARE
13	WITNESS RM RECEPTACLES	0.7			20	1	1	20			14	SPARE
15	WITNESS RM RECEPTACLES		0.7		20	1	1	20			16	SPARE
17	SPARE				20	1	1	20			18	SPARE
19	SPARE				20	1	1	20			20	SPARE
21	SPARE				20	1	1	20			22	SPARE
23	SPARE				20	1	1	20			24	SPARE
25	SPARE				20	1	1	20			26	SPARE
27	SPARE				20	1	1	20			28	SPARE
29	SPARE				20	1	1	20			30	SPARE
31	SPACE ONLY				1	1	1	1			32	SPACE ONLY
33	SPACE ONLY				1	1	1	1			34	SPACE ONLY
35	SPACE ONLY				1	1	1	1			36	SPACE ONLY
37	SPACE ONLY				1	1	1	1			38	SPACE ONLY
39	SPACE ONLY				1	1	1	1			40	SPACE ONLY
41	SPACE ONLY				1	1	1	1			42	SPACE ONLY
SUB TOTAL CONNECTED		2.4	2.0	1.5					0.4	0.7	0.4	SUB TOTAL CONNECTED
SUB TOTAL CONNECTED #A: 2.8		SUB TOTAL CONNECTED #B: 2.7			SUB TOTAL CONNECTED #C: 1.9			TOTAL CONNECTED: 7.4				

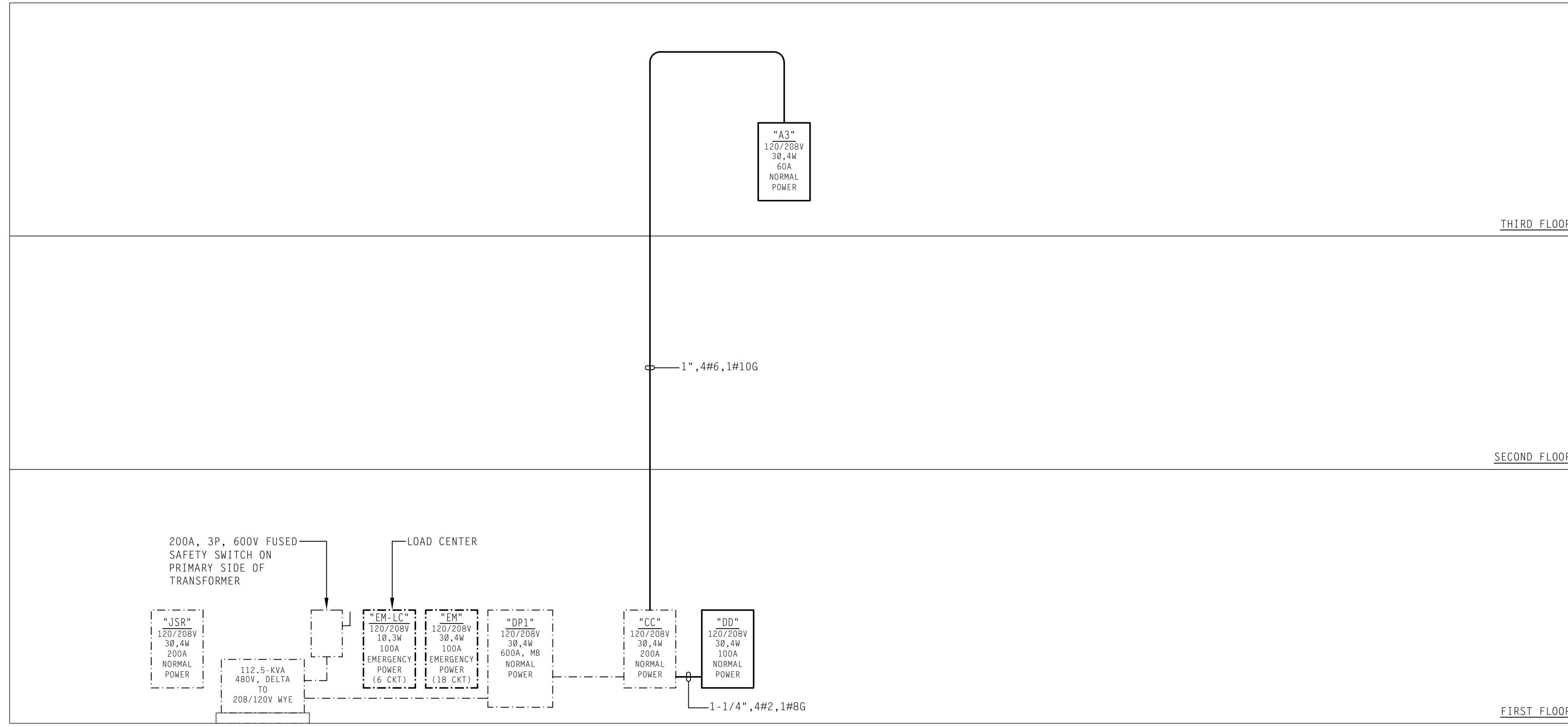
NOTES:  
--  
--

PANEL DD MAINS: 100A VOLTAGE/PHASE: 120/208V,3Ø,4W MOUNTING: SURFACE ENTRY: BOTTOM BUS: COPPER												
Ckt. No.	SERVES	LOAD (kVA)			BREAKER			LOAD (kVA)			Ckt. No.	
		#A	#B	#C	TRIP POLE	TRIP POLE	#A	#B	#C			
1	SPARE				20	1	1	20	0.7		2	COUNTY CLERK RECEPTACLES
3	SPARE				20	1	1	20		0.7	4	COUNTY CLERK RECEPTACLES
5	SPARE				20	1	1	20		0.9	6	COUNTY CLERK RECEPTACLES
7	SPARE				20	1	1	20	0.9		8	COUNTY CLERK FLOOR OUTLETS
9	SPARE				20	1	1	20		0.9	10	COUNTY CLERK FLOOR OUTLETS
11	SPARE				20	1	1	20		0.7	12	COUNTY CLERK FLOOR OUTLETS
13	SPARE				20	1	1	20		0.7	14	COUNTY CLERK RECEPTACLES
15	SPARE				20	1	1	20		0.7	16	COUNTY CLERK RECEPTACLES
17	SPARE				20	1	1	20		0.7	18	COUNTY CLERK RECEPTACLES
19	SPARE				20	1	1	20			20	SPARE
21	SPARE				20	1	1	20			22	SPARE
23	SPARE				20	1	1	20			24	SPARE
25	SPARE				20	1	1	20			26	SPARE
27	SPARE				20	1	1	20			28	SPARE
29	SPARE				20	1	1	20			30	SPARE
31	SPARE				20	1	1	20			32	SPARE
33	SPARE				20	1	1	20			34	SPARE
35	SPARE				20	1	1	20			36	SPARE
37	SPARE				20	1	1	20			38	SPARE
39	SPARE				20	1	1	20			40	SPARE
41	SPARE				20	1	1	20			42	SPARE
SUB TOTAL CONNECTED		0.0	0.0	0.0					2.3	2.3	2.3	SUB TOTAL CONNECTED
SUB TOTAL CONNECTED #A: 2.3		SUB TOTAL CONNECTED #B: 2.3			SUB TOTAL CONNECTED #C: 2.3			TOTAL CONNECTED: 6.9				

NOTES:  
--  
--

EXISTING PANEL CC MAINS: 225A VOLTAGE/PHASE: 120/208V,3Ø,4W MOUNTING: SURFACE ENTRY: BOTTOM BUS: COPPER												
Ckt. No.	SERVES	LOAD (kVA)			BREAKER			LOAD (kVA)			Ckt. No.	
		#A	#B	#C	TRIP POLE	TRIP POLE	#A	#B	#C			
1	EXISTING LOAD	1.0			20	1	1	20	1.0		2	EXISTING LOAD
3	EXISTING LOAD		1.0		20	1	1	20		1.0	4	EXISTING LOAD
5	EXISTING LOAD			1.0	20	1	1	20		0.7	6	COUNTY CLERK LIGHTING
7	EXISTING LOAD	1.0			20	1	1	20	0.4		8	COUNTY CLERK LIGHTING
9	EXISTING LOAD		1.0		20	1	1	20		0.9	10	COUNTY CLERK CONFERENCE
11	COUNTY CLERK LIGHTING			0.7	20	1	1	20		0.9	12	COUNTY CLERK CONFERENCE
13	MULTIPURPOSE ROOM	0.9			20	1	1	20	1.0		14	COUNTY CLERK WORKROOM
15	ARCHIVES OFFICE		0.9		20	1	1	20		0.9	16	COUNTY CLERK WORKROOM
17	ARCHIVES OFFICE			0.7	20	1	1	20		0.9	18	COUNTY CLERK WORKROOM
19	ARCHIVES CAMERAS	0.7			20	1	1	20	0.7		20	DOCUMENT REVIEW
21	ARCHIVES RECEPTACLES		0.9		20	1	1	20		0.9	22	SECURE DOCUMENTS
23	ARCHIVES RECEPTACLES			0.9	20	1	1	20		0.9	24	SECURE /DOCUMENT REVIEW
25	COUNTY CLERK CAMERAS	0.6			20	1	1	20	0.7		26	COUNTY CLERK OFFICE
27	COUNTY CLERK RECEPTACLES		0.7		20	1	1	20		0.5	28	COUNTY CLERK OFFICE
29	COUNTY CLERK FIRE SHUTTER		0.8		20	1	1	20		0.4	30	COUNTY CLERK OPEN OFFICE
31	COUNTY CLERK RECEPTACLES	0.7			20	1	3	60	2.8		32	PANEL "A3"
33	COUNTY CLERK RECEPTACLES		0.7		20	1	1	20		2.7	34	PANEL "A3"
35	COUNTY CLERK CAMERAS			0.6	20	1	1	20		1.9	36	PANEL "A3"
37	COUNTY CLERK RECEPTACLES	0.7			20	1	3	100	2.3		38	PANEL "DD"
39	COUNTY CLERK FIRE SHUTTER		0.8		20	1	1	20		2.3	40	PANEL "DD"
41	SPARE				20	1	1	20		2.3	42	SPARE
SUB TOTAL CONNECTED		5.6	6.0	4.7					8.9	9.5	8.0	SUB TOTAL CONNECTED
SUB TOTAL CONNECTED #A: 14.5		SUB TOTAL CONNECTED #B: 15.5			SUB TOTAL CONNECTED #C: 12.7			TOTAL CONNECTED: 42.7				

NOTES:  
1. PANELBOARD IS EXISTING TO REMAIN. CIRCUIT BREAKERS 1-5, 7 AND 9, ARE EXISTING TO REMAIN. CONTRACTOR SHALL FURNISH AND INSTALL ALL OTHER BREAKERS.



### 1 COUNTY CLERK AND ARCHIVES RENOVATION FEEDER DIAGRAM

E3.4 NOT TO SCALE

**FEEDER DIAGRAM LEGEND**

— NEW EQUIPMENT / FEEDER TO BE INSTALLED UNDER THIS PROJECT.

- - - - EXISTING PANEL / FEEDER TO REMAIN.

**VOLTAGE DROP CALCULATION NOTES:**

- REFER TO CONDUCTOR SIZE TABLE FOR WIRE SIZING REQUIREMENTS FOR 20 AMPERE BRANCH CIRCUITS.
- FOR ALL OTHER FEEDER AND BRANCH CIRCUIT WIRING SHOWN ON DRAWINGS, WIRE SIZING HAS BEEN SPECIFIED TO MEET VOLTAGE DROP REQUIREMENTS AS SET FORTH IN NFPA 70 (NEC) AND IECC C405.9.

CONDUCTOR SIZE	120V	208V/1Ø	208V/3Ø	277V	480V/3Ø
NO. 12	80'	140'	225'	180'	550'
NO. 10	125'	215'	425'	225'	-
NO. 8	195'	340'	665'	435'	-

TABLE IS BASED ON 3% VOLTAGE DROP ON 12.0 F.L.A., 0.85 POWER FACTOR. USE LARGER SIZES IF SPECIFICALLY NOTED ON PLANS.

E3.4 - Anderson Co. Courthouse County Clerk & Archives Ren - Panelboard Schedules.dwg  
C.W.L. 02/16/22 4:52 PM CL21372(La)

**Non-Collusion Affidavit**

- This Non-Collusion Affidavit is material to any contract awarded pursuant to this bid.
- This Non-Collusion Affidavit must be executed by the member, officer, or employee of the bidder who makes the final decision on prices and the amount quoted in the bid.
- Bid rigging and other efforts to restrain competition and the making of false sworn statements in connection with the submission of bids are unlawful and may be subject to criminal prosecution. The person who signs the affidavit should examine it carefully before signing and assure himself or herself that such statement is true and accurate, making diligent inquiry, as necessary, of all other persons employed by or associated with the bidder with responsibilities for the preparation, approval, or submission of the bid.
- In the case of a bid submitted by a joint venture, each party to the venture must be identified in the bid documents, and an affidavit must be submitted separately on behalf of each party.
- The term "complementary bid" as used in the affidavit has the meaning commonly associated with that term in the bidding process and includes the knowing submission of bids higher than the bid of another firm, an intentionally high or noncompetitive bid, and any other form of bid submitted for the purpose of giving a false appearance of competition.
- Failure to file an affidavit in compliance with these instructions may result in disqualification of the bid.

**Non-Collusion Affidavit**

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

I state that I am (Title) \_\_\_\_\_ of (Name of My Firm) \_\_\_\_\_ and that I am authorized to make this affidavit on behalf of my firm and its owners, directors, and officers. I am the person responsible in my firm to the price(s) and the amount of this bid.

**I STATE THAT:**

- The price(s) and amount of this bid have been arrived at independently and without consultation, communication, or agreement with any other contractor, bidder, or potential bidder.
- Neither the price(s) nor the amount of this bid and neither the approximate price(s) nor approximate amount of this bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed before bid opening.
- No attempt has been made or will be made to induce any firm or person to refrain from bidding on this contract, or to submit a bid higher than this bid, or to submit any intentionally high or noncompetitive bid or other form of complementary bid.
- The bid of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive bid.
- (Name of My Firm) \_\_\_\_\_, its affiliates, subsidiaries, officers, directors, and employees are not currently under investigation by any governmental agency and have not in the last three years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction involving conspiracy or collusion with respect to bidding on any public contract, except as follows:

\_\_\_\_\_  
\_\_\_\_\_

I state that (Name of My Firm) \_\_\_\_\_ understands and acknowledges that the above representation are material and important and will be relied on by Anderson County in awarding the contract(s) for which this bid is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from Anderson County of the true facts relating to submission of bids for this contract.

\_\_\_\_\_  
Representative's Signature

\_\_\_\_\_  
Title

Sworn to and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_



## DIVERSITY BUSINESS INFORMATION

### Definitions for Determining Minority, Women And Small-Owned Firms

The guidelines for determining minority, women and small-owned firms are defined as follows:

- "MINORITY"** means a person who is a citizen or lawful permanent resident of the United States and who is:
- o Black (a person having origins in any of the black racial groups of Africa);
  - o Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race);
  - o Asian American (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or
  - o American Indian and Alaskan Native (a person having origins in any of the original peoples of North America).

**"MINORITY BUSINESS ENTERPRISE"** shall mean a minority business:

A continuing, independent, for profit business which performs a commercially useful function, and is at least 51 percent owned and controlled by one or more minority individuals; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned and controlled by one or more minorities. Whose management and daily business operations are controlled by one or more of minority individuals. "Control" as used in the above clause, means exercising the power to make policy decision. "Operate," as used in the above clause, means being actively involved in the day-to-day management of the business.

**"WOMEN BUSINESS ENTERPRISE"** shall mean women business:

A continuing, independent, for profit business which performs a commercially useful function, and which is at least 51 percent owned and controlled by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned and controlled by one or more women. Whose management and daily business operations are controlled by one or more of such individuals. "Control" as used in the above clause, means exercising the power to make policy decision. "Operate," as used in the above clause, means being actively involved in the day-to-day management of the business.



**DIVERSITY BUSINESS INFORMATION  
ANDERSON COUNTY GOVERNMENT**

**NOTE:** This form is to be submitted only by those who qualify. Bidders do not have to be a minority business to be considered.

**IMPORTANT! NOTARY AND COPY OF CERTIFICATION REQUIRED**

**SECTION 6 – DIVERSITY INFORMATION**

**VENDOR/CONTRACTOR NAME:** \_\_\_\_\_

**Type of Company:** (Check One)

( ) Corporation    ( ) Partnership    ( ) Limited Liability    ( ) Sole Proprietor

Is your company 51% Owned or Operated by a Minority Group? Yes \_\_\_ No \_\_\_

If yes, check the ethnic category and indicate % of ownership:

- American Indian/Alaskan Native \_\_\_\_%
- African American \_\_\_\_%
- Hispanic \_\_\_\_%
- Asian/Pacific Islander \_\_\_\_%
- Other \_\_\_\_% \_\_\_\_\_ (please indicate)

Please name the entity of certification: \_\_\_\_\_

Please provide copy of certification letter or certificate

**I, HEREBY CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.**

**Signature:** \_\_\_\_\_ **OFFICER OF THE COMPANY**

**Name:** \_\_\_\_\_ **Title:** \_\_\_\_\_

**NOTARY ACKNOWLEDGEMENT:**

STATE OF \_\_\_\_\_ )

COUNTY OF \_\_\_\_\_ )

ON \_\_\_\_\_, 20\_\_\_\_, BEFORE ME, \_\_\_\_\_,

PERSONALLY APPEARED \_\_\_\_\_, PERSONALLY KNOWN TO ME (OR PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE) TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/ THEY EXECUTED THE SAME IN HIS/HER/ THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/ THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON (S) ACTED, EXECUTED THE INSTRUMENT.

WITNESS MY HAND AND OFFICIAL SEAL.

SIGNATURE OF NOTARY: \_\_\_\_\_

PRINTED FULL NAME OF NOTARY: \_\_\_\_\_

MY COMMISSION EXPIRES: \_\_\_\_\_

**Attachment 3  
Insurance Requirement Acknowledgment**

The bidder awarded this bid or contract will maintain, at their expense adequate insurance coverage to protect them from claims arising under the Worker's Compensation Act, any and all claims for bodily injury and property damage to the Bidder and to Anderson County Government while delivery and service are being done. A certificate of insurance must be on file in the Purchasing Department before work may begin and must be maintained until work is completed.

Only the items marked with an "X" are applicable to this bid and or contract.

1.  **Workers Compensation  
Employers Liability** Statutory limits  
100,000/100,000/500,000
  
2.  **Commercial General Liability** \$500,000 per occurrence  
\$1,000,000 aggregate
  - Occurrence Form Only
  - Include Premises Liability
  - Include Contractual
  - Include XCU
  - Include Products and Completed Operations
  - Include Personal Injury
  - Include Independent Contractors
  - Include Vendors Liability
  - Include Professional or E&O Liability
  
3.  **Business Auto**
  - Include Garage Liability
  - Include Garage Keepers Liability
  - Copy of Valid Driver's License
  - Copy of Current Motor Vehicle Record
  - Copy of Current Auto Liability Declarations Page
  
4.  **Crime Coverages**
  - Employee Dishonesty
  - Employee Dishonesty Bond
  
5.  **Property Coverages**
  - Builders Risk
  - Inland Marine
  - Transportation
  
6.  Performance Bond Required – A One Hundred Percent (100%) performance or an irrevocable letter of credit in favor of Anderson County Government at a federally insured financial institution. This MUST be submitted before purchase order issued.

**Certificate Holder Shall Be:** Anderson County Government, Clinton, Tennessee, and shall show the bid number and title. Anderson County Government shall be named as an additional insured on all policies except worker's compensation and auto. Insurance carrier ratings shall have a Best's rating of A-VII or better, or its equivalent. Cancellation clause on certificate should strike out "endeavor to" and include a 30-day notice of cancellation where applicable. Any deviations from the above requirements must be disclosed to the Anderson County Purchasing Agent. Any liability deductibles or exclusions must also be disclosed. Exceptions can be granted if applicable.

**Bidders Statement and Certification**

I understand the insurance requirements of these specifications and will comply in full within 21 (twenty-one) calendar days if awarded this bid and or contract. I agree to furnish the county with proof of insurance for the entire term of the bid and or contract.

\_\_\_\_\_  
Vendor Name

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Bid Representative Name (Please Print)

\_\_\_\_\_  
Date

Attachment 4

DRUG-FREE WORKPLACE AFFIDAVIT

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

The undersigned, principal officer of \_\_\_\_\_, an employer of five (5) or more employees contracting with \_\_\_\_\_ County Government to provide construction services, hereby states under oath as follows:

1. The undersigned is a principal officer of \_\_\_\_\_ (hereinafter referred to as the "Company"), and is duly authorized to execute this Affidavit on behalf of the Company.
2. The Company submits this Affidavit pursuant to T.C.A. 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state or any local government to provide construction services to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9 of the *Tennessee Code Annotated*.
3. The Company is compliance with T.C.A. 50-9-113

Further affiant saith not.

\_\_\_\_\_  
Principal Officer

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Before me personally appeared \_\_\_\_\_, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that such person executed the foregoing affidavit for the purpose therein contained.

Witness my hand and seal office this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_, 20\_\_\_\_\_.

**Attachment 5**  
**ANDERSON COUNTY GOVERNMENT**  
**PURCHASING DEPARTMENT**

**CONFLICT OF INTEREST AFFIDAVIT/STATEMENT**

**NOTE: PLEASE SIGN AND RETURN PAGE TWO IN YOUR BID PACKET.**

**T. C. A. 5-14-114. Conflicts of interest -- Illegal payments.**

**(a)** Neither the county purchasing agent, nor members of the county purchasing commission, nor members of the county legislative body, nor other officials of the county, shall be financially interested, or have any personal beneficial interest, either directly or indirectly, in any contract or purchase order for any supplies, materials, equipment or contractual services used by or furnished to any department or agency of the county government.

**(b)** Nor shall any such persons accept or receive, directly or indirectly, from any person, firm or corporation to which any contract or purchase order may be awarded, by rebate, gift or otherwise, any money or anything of value whatsoever, or any promise, obligation or contract for future reward or compensation.

**(c)** A violation of this section is a Class D felony.

**T. C. A. 12-4-101 Personal interest of officers prohibited.**

**(a) (1)** It is unlawful for any officer, committee member, director, or other person whose duty it is to vote for, let out, overlook, or in any manner to superintend any work or any contract in which any municipal corporation, county, state, development district, utility district, human resource agency, or other political subdivision created by statute shall or may be interested, to be directly interested in any such contract. "Directly interested" means any contract with the official personally or with any business in which the official is the sole proprietor, a partner, or the person having the controlling interest. "Controlling interest" includes the individual with the ownership or control of the largest number of outstanding shares owned by any single individual or corporation. This subdivision (a)(1) shall not be construed to prohibit any officer, committee person, director, or any person, other than a member of a local governing body of a county or municipality, from voting on the budget, appropriation resolution, or tax rate resolution, or amendments thereto, unless the vote is on a specific amendment to the budget or a specific appropriation or resolution in which such person is directly interested.

**(2) (A)** Subdivision (a)(1) shall also apply to a member of the board of directors of any not-for-profit corporation authorized by the laws of Tennessee to act for the benefit or on behalf of any one (1) or more counties, cities, towns and local governments pursuant to title 7, chapter 54 or 58.

**(B)** Subdivision (a)(2)(A) does not apply to any county with a metropolitan form of government and having a population of four hundred thousand (400,000) or more, according to the 1980 federal census or any subsequent federal census.

**(b)** It is unlawful for any officer, committee member, director, or other person whose duty it is to vote for, let out, overlook, or in any manner to superintend any work or any contract in which any municipal corporation, county, state, development district, utility district, human resource agency, or other political subdivision created by statute shall or may be interested, to be indirectly interested in any such contract unless the officer publicly acknowledges such officer's interest. "Indirectly interested" means any contract in which the officer is interested but not directly so, but includes contracts where the officer is directly interested but is the sole supplier of goods or services in a municipality or county.

**Attachment 5**  
**ANDERSON COUNTY GOVERNMENT**  
**PURCHASING DEPARTMENT**

**CONFLICT OF INTEREST AFFIDAVIT/STATEMENT**

**(c) (1)** Any member of a local governing body of a county or a municipality who is also an employee of such county or municipality and whose employment predates the member's initial election or appointment to the governing body of the county or municipality may vote on matters in which the member has a conflict of interest if the member informs the governing body immediately prior to the vote as follows: "Because I am an employee of (name of governmental unit), I have a conflict of interest in the proposal about to be voted. However, I declare that my argument and my vote answer only to my conscience and to my obligation to my constituents and the citizens this body represents." The vote of any such member having a conflict of interest who does not so inform the governing body of such conflict shall be void if challenged in a timely manner. As used in this subdivision (c)(1), "timely manner" means during the same meeting at which the vote was cast and prior to the transaction of any further business by the body.

**(2)** Any member of a local governing body of a county or a municipality who is also an employee of such county or municipality and whose employment began on or after the date on which the member was initially elected or appointed to serve on the governing body of the county or municipality shall not vote on matters in which the member has a conflict of interest.

**(3) (A)** In the event a member of a local governing body of a county or a municipality has a conflict of interest in a matter to be voted upon by the body, such member may abstain for cause by announcing such to the presiding officer.

**(B) (i)** Any member of a local governing body of a municipality who abstains from voting for cause on any issue coming to a vote before the body shall not be counted for the purpose of determining a majority vote.

**(ii)** This subdivision (c)(3)(B) shall in no way be construed to apply to any county having a metropolitan form of government and having a population in excess of five hundred thousand (500,000), according to the 1990 federal census or any subsequent federal census.

**(d)** This section shall apply to a member of the board of directors or officer of any nonprofit corporation required under § 8-44-102(b)(1)(E) to conduct all meetings of its governing body as open meetings.

I have read and understand both T.C. A. 5-14-114 and T. C. A. 12-4-101, and will comply.

**NOTE: PLEASE SIGN AND RETURN PAGE TWO IN YOUR BID PACKET.**

\_\_\_\_\_  
Contractor or Company Owner (signature)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Contractor or Company Name (print)

## General Terms and Conditions

### BID ENVELOPE SUBMISSION INSTRUCTIONS:

Bids are to be received in a sealed envelope/package with the bid number, company name and opening date clearly marked. Failure to comply may result in rejection of the entire bid. Anderson County will not be responsible for any lost or misdirected mail. Late bids, e-mailed bids and faxed bids will not be considered nor returned. It is the sole responsibility of the bidder to ensure their bid is delivered to the Purchasing Department.

Please note that Anderson County Government does not receive a guaranteed delivery time for express mail and/or packages. PLEASE MAIL ACCORDINGLY.

ANDERSON COUNTY FINANCE DEPARTMENT  
100 NORTH MAIN STREET, SUITES 214 AND 218  
CLINTON, TN 37716

Email: [purchasing@andersoncountyttn.gov](mailto:purchasing@andersoncountyttn.gov)

Website: <http://andersontn.org/purchasing>

(865) 457-6218 Phone

(865) 457-6252 Fax

---

**Bid documents must be completed in ink or typed, signed in ink,  
and free from alterations, erasures or mark-throughs.**

### **SECTION 1 - GENERAL TERMS AND CONDITIONS**

**1.1 ALTERATIONS OR AMENDMENTS:** Alterations, amendments, changes, modifications or additions to this solicitation shall not be binding on Anderson County without prior written approval.

**1.2 NO CONTACT POLICY:** After vendor receives a copy of this bid, any contact initiated by any vendor with any Anderson County representative, other than the Purchasing Department, concerning this invitation for bid is prohibited and agreements made thereto will not be considered binding on Anderson County. Any such unauthorized contact may cause the disqualification of the bidder from this procurement transaction.

**1.3 QUESTIONS:** Pursuant to TCA §12-4-113, questions regarding the specifications or bid procedures must be received by the Purchasing Agent and/or designer no less than ninety-six (96) hours before the bid opening date. No addenda within less than forty-eight (48) hours of the bid opening date shall be permitted. Any questions concerning the bid document must be submitted to [purchasing@andersontn.org](mailto:purchasing@andersontn.org) no less than ninety-six (96) hours before bid opening date.

**1.4 BID CLOCK:** The bid/time clock in the Anderson County Purchasing office will be the time of record.

**1.5 TAXES:** Anderson County is not liable for Federal excise or State sales tax. Tax exemption certificates will be provided upon request.

**1.6 CONFLICT OF INTEREST:** If requested by the Purchasing Agent, vendors must complete and submit a "Conflict of Interest Affidavit Statement" prior to contract award, see T.C.A. 5-14-114 and T. C. A. 12-4-101.

**1.7 NON-COLLUSION:** Vendors, by submitting a signed bid, certify that the accompanying bid is not the result of, or affected by, any unlawful act of collusion with any other person or company engaged in the same line of business or commerce, or any other fraudulent act punishable under Tennessee or United States law.

**1.8 NON-DISCRIMINATION:** Contracted vendors will not discriminate against any employee or applicant for employment because of race, religion, sex, national origin or disability except where religion, sex, national origin or disability is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor.

**1.9 SAME AS OR EQUIVALENT TO:** Vendors are to bid as specified herein or propose an approved equal. Determination of equality is solely Anderson County's responsibility. Any designated brands are for reference purpose only, not a statement of preference. When an alternate manufacturer, brand, model or make is bid, Anderson County will determine if the item bid meets or exceeds the items as specified. If the bidder does not indicate that an alternate manufacturer, brand, model or make is being bid, it is understood that the item(s) bid are the same manufacturer, brand, model or make as requested in the Invitation to Bid. Comparable products of other manufacturers will be considered if proof of comparability is contained in the bid submission. It shall be the responsibility of the vendors, including vendors whose product is referenced to furnish upon request catalog pages, brochures or other data to provide an adequate basis for determining the quality and functional capabilities of the product offered. Failure to provide this data may be considered valid justification for rejection of bid.

**1.10 MULTIPLE BIDS/AWARDS:** Anderson County may consider multiple bid awards.

**1.11 STATE OF TENNESSEE CONTRACTORS' LICENSE LAW (T.C.A. 62-6-119) b):** Bids for which the total cost of the project is twenty-five thousand dollars (\$25,000) or more, the outside of the sealed bid envelope/package containing the bid provides the following information: the Company Name, the Contractor's license number, license classification, the date of the license expiration and that part of each license classification applying to the bid. In addition, each heating ventilation or air conditioning, plumbing and electrical subcontractor's license number, date of the license expiration and that part of each classification applying to the bid if the value of the work is \$25,000 or greater, must be notated. If the value of either the contractor or the subcontractor's work is less than \$25,000, the bid envelope/package containing the bid is to be notated with the phrase "Contractor or Subcontractor's Bid is Less than \$25,000" after each appropriate heading. In the case of joint ventures, each party submitting the bid must provide this information. If no subcontractors are being used, the outside of the envelope/package containing the bid must state, "No Subcontractors are being used on this project."

**1.12 ACCEPTANCE:** Vendors shall hold their price firm and subject to acceptance by Anderson County for a minimum period of sixty (60) working days from the date of the bid opening, unless otherwise indicated in their bid. Any or all bids may be rejected for good cause.

**1.13 BID AWARDS:** Bids will be awarded to the lowest and best bidder, taking into consideration the qualities of the articles to be supplied, their conformity with specifications and their suitability to the requirements of Anderson County and the delivery terms. Anderson County also reserves the right to not award this bid.

**1.14 BIDDER'S MINIMUM QUALIFICATIONS:** Bidders must have the resources and capability to provide the materials and services as described in the solicitation. Anderson County reserves the right to request additional information and/or material not specified as a bid requirement from any bidder to confirm qualifications.

**1.15 DEBARMENT:** By submitting a response to this solicitation, bidders are certifying that bidder is not currently debarred from doing business with any local or state Government or the Federal Government. Bidders shall provide documentation relating to any and all debarments that occurred within the last ten

years. The County will search the "System for Award Management" for federally excluded vendors before awarding a bid.

**1.16 PROTEST:** Any vendor wishing to protest the bid award shall notify in writing the Anderson County Purchasing Agent and the County Law Director, 101 S. Main Street, Suite 310, Clinton, TN 37716. No protest will be accepted, except those protests made in writing and received within (10) ten calendar days of the bid award. Protests must be in writing and envelopes/package containing protest must be clearly marked with bid number and words "BID PROTEST". The Purchasing Agent, in conjunction with the Purchasing Committee, and with the advice and counsel of the County Law Director, shall review and make a final decision as to any bid protest. Appeals shall be filed in the Circuit or Chancery Courts of Anderson County within sixty (60) days of the final decision.

**VENDORS PLEASE NOTE: ANDERSON COUNTY WILL NOT STOP THE PURCHASE PROCESS. THE PURCHASE MAY BE COMPLETED OR THE PROJECT MAY BE RE-BID WHILE THE PROTEST PROCEDURE IS STILL IN OPERATION. IF A RE-BID IS MADE, THE PROTESTING VENDOR SHOULD SUBMIT A NEW BID. OTHERWISE, THEY WILL BE WITHOUT A BID ON THE RE-BID. FURTHER, THE RE-BIDDING WILL NOT END THE APPEALS PROCESS. IT WILL CONTINUE UNTIL A FINAL DECISION IS REACHED OR THE COMPLAINANT WITHDRAWS THE APPEAL.**

**1.17 DELIVERY:** Bid pricing is to include complete supply and delivery to Anderson County, Tennessee. Vendors are to state the delivery time in the bid. Anderson County requires that vendors deliver all products "free on board" to final destination unless indicated otherwise in the bid requirements.

**1.18 PROOF OF FINANCIAL AND BUSINESS CAPABILITY:** Bidders must, upon the request of Anderson County, provide satisfactory evidence of their ability to furnish products or services in accordance with the terms and conditions of these specifications. Anderson County will make the final determination as to the bidder's ability.

**1.19 VENDOR'S DEFAULT:** Anderson County reserves the right, in case of vendor default, to procure the articles or services from other sources and hold the defaulting vendor responsible for any excess costs occasioned thereby.

**1.20 DUPLICATE COPIES:** Vendors are to submit one original and at least one exact copy of their bids, including brochures; unless additional copies are requested in bid specifications.

**1.21 DRUG-FREE WORKPLACE:** Under the provisions of Tennessee Code Annotated §50-9-113 enacted by the General Assembly effective 2001, all employers with five (5) or more employees who contract with either the state or a local government to provide construction services are required to submit an affidavit stating that they have a drug free workplace program that complies with Title 50, Chapter 9, in effect at the time of submission of a bid at least to the extent required of governmental entities. The statute imposes other requirements on the contractor and contractors should consult private legal counsel if legal questions arise under this section or any other provision of this document. All contractors with five (5) or more employees that will be providing construction services are to return the provided written affidavit signed by the principal officer of a covered employer acknowledging that the contracting entity is in compliance with the Drug Free Workplace laws of State of Tennessee.

**1.22 COMPETITION INTENDED:** It is the responsibility of the bidder to review the entire Invitation to Bid document and to notify the Purchasing Department if the Invitation to Bid is formulated in a manner that would unnecessarily restrict competition or if it is ambiguous in what is being requested. The Purchasing Agent must receive questions regarding the specifications or bid procedures no less than ninety-six (96) hours prior to the time set for the bid opening.

**1.23 SCHOOL CAFETERIA BIDS:** If this bid is for Anderson County School's Cafeteria Food Service Department, bidders must be in compliance with Section 104(d) of the William F. Goodling Child Nutrition Reauthorization Act of 1998 which requires school and institutions participating in the National School Lunch Program (NSLP) and School Breakfast Program (SBP) to "Buy American" to the maximum extent practicable.



**1.24 TERMINATION:** Anderson County reserves the right to terminate contracts in whole or in part with thirty (30) days written notification to the contractor. In the event of termination, the County shall not be liable for any costs other than the cost of services performed and materials delivered and accepted prior to termination date.

**1.25 OSHA SAFETY:** The Vendor is responsible for training their employees in Safety and Health Regulations for the job, assuring compliance with Tennessee Occupational Safety and Health regulations and any other Regulatory Agency.

**1.26 PERFORMANCE BOND:** A standard surety or performance bond or an irrevocable letter of credit in favor of Anderson County Government at a federally insured financial institution will be required to be submitted with bid, if indicated in section four, item six insurance requirement checklist.

**1.27 BACKGROUND CHECKS:** Contractors shall comply with Public Chapter 587 of 2007, as codified in Tennessee Code Annotated Section 49-5-413, which requires all contractors to facilitate a criminal history records check conducted by the Tennessee Bureau of Investigation and the Federal Bureau of Investigation for each employee prior to permitting the employee to have contact with students or enter school grounds when students are present.

**1.28 AWARD RESULTS:** As soon as practicable after proposal or bid evaluations, Anderson County shall post the award decision to Vendor Registry at [www.vendorregistry.com](http://www.vendorregistry.com). Individual notices are normally not mailed or e-mailed except to the successful vendor.

**1.29 INDEMNIFICATION/HOLD HARMLESS:** Vendor shall indemnify, defend, save and hold harmless Anderson County and, its officers, agents and employees from all suits, claims, actions or damages of any nature brought because of, arising out of, or due to breach of the agreement by Vendor, its subcontractors, suppliers, agents, or employees or due to any negligent act or occurrence or any omission or commission of Vendor, its subcontractors, suppliers, agents or employees.

**1.30 DECLARATIVE STATEMENT:** Any statement or words (i.e.: must, shall, will, etc.) are declarative statements and the proposer must comply with the condition. Failure to comply with any such condition may result in their bid being non-responsive and disqualified.

**1.31 WAIVING OF INFORMALITIES:** Anderson County reserves the right to waive minor informalities or technicalities when it is in the best interest of Anderson County.

**1.32 APPROPRIATION:** Funding for multi-year contracts are subject to budget appropriations. In the event no funds are appropriated by Anderson County for the goods or services in any fiscal year or insufficient funds exist to purchase the goods or services of a contract, then that contract shall expire upon the expenditure of previously appropriated funds or the end of the current fiscal year, whichever occurs first, with no further obligations owed to or by either party.

**1.33 ASSIGNMENT:** Vendor shall not assign or sub-contract any agreement, its obligations or rights hereunder to any party, company, partnership, incorporation or person without the prior written specific consent of Anderson County.

**1.34 QUANTITIES:** Anderson County does not guarantee quantities to be purchased off this bid.

**1.35 UNIT PRICE:** In case of discrepancy between any unit price and an extended price, the unit price will be presumed to be correct, subject, however, to correction to the same extent and in the same manner as any other mistake.

**1.36 MODIFICATION OR WITHDRAWAL OF BIDS:** When it is certain that a mistake has been made in the preparation of the bid, a request will be made to the bidder to confirm the bid. Provisions must be made so that mistakes can be taken care of and the ambiguity resolved satisfactorily. Bids may be modified or withdrawn by written notice received in the Purchasing Department prior to the time and date set for the bid

opening. The changes or withdrawal of the bids shall be in writing and signed by an official of the company. The envelope containing the modification should clearly state "modification to bid." Either the entire bid or a particular item may be withdrawn or modified in this manner.

**1.37 PRE-BID CONFERENCES:** Attendance at Pre-bid Conferences is strongly encouraged. When deemed necessary a Mandatory Pre-bid Conference will be held. A company representative **MUST** be in attendance and sign the Pre-bid sign-in sheet in order to be considered for bid award.

**1.38 ADDENDUM:** § T.C.A. 12-14-113 Anderson County Government reserves the right to amend this solicitation by addendum. Addenda will be posted to the vendor registry up to 48 hours in advance of the bid/proposals due date and time. It is the bidder's responsibility to check the website for addendum. If in the County's opinion revisions are of such a magnitude, the deadline for this solicitation may be extended in an addendum. Addenda may change specifications, reply sheets, and times and dates for pre-bid meetings as well as due dates/deadlines for questions and bids/proposals.

**1.39 OWNERSHIP:** All bids, once received, become property of Anderson County Government and will not be returned.

**1.40 WEATHER AND COURTHOUSE CLOSINGS:** In the event of a situation severe enough to necessitate the closing of Anderson County Government offices during a planned bid opening, vendors will receive notification of the new date and time upon re-opening of county government offices. No bids will be opened until the rescheduled date for bid opening and all bidders/proposers whose submissions meet the extended deadline will be given equal consideration at that time. Anderson County shall not be liable for any commercial carrier's decision regarding deliveries during inclement weather.

**1.41 IRAN DIVESTMENT ACT OF 2014:** Pursuant to the Iran Divestment Act of 2014, Tenn. Code Ann. § 12-12-106 requires the State of Tennessee Chief Procurement Officer to publish, using creditable information freely available to the public, a list of persons it determines engage in investment activities in Iran, as described in § 12-12-105. Inclusion on this list makes a person ineligible to contract with Anderson County; if a person ceases its engagement in investment activities in Iran, it may be removed from the list. The State of Tennessee list is available here: <http://tennessee.gov/generalservices/article/Public-Information-library>.

**1.42 ANTI-BOYCOTT OF ISRAEL:** By responding to this bid the Bidder certifies that it is not currently engaged in and agrees for the duration of this Agreement not to engage in, the boycott of Israel.