

ADDENDUM NO. 2
EAST MILLSBORO ELEMENTARY SCHOOL
Millsboro, Delaware 19966

April 24, 2014

NOTICE: Attach this addendum to the project manual for this project. It modifies and becomes a part of the contract documents. Work or materials not specifically mentioned herein are to be described in the main body of the specifications and as shown on the drawings. Bidders shall acknowledge receipt of this addendum on the space provided on the Bid Form. Failure to do so may subject the bidder to disqualification.

The time and location for the bid opening remains April 29, 2014 at 4:00 PM local time at the Indian River School District, District Office, 31 Hosier Street Selbyville, Delaware 19975.

Whenever this Addendum modifies a portion of the Project Manual added information is shown in **Bold/Italicized** and deleted information is shown as ~~striketrough~~.

The contract documents for the above referenced project are amended as follows:

CLARIFICATIONS

1. Expansion joint starts at top of slab, and continues through roof. There is not a floor-floor expansion joint in the slab on grade.
2. Awning window in storefront shall be manufacturer's standard model (basis-of-design Kawneer GLASSVent w/ standard hardware).
3. All deliveries shall correspond to the construction schedule. No deliveries can be made prior to 9:00 AM, unless trucks can be unloaded and off site prior to 8:00 AM, due to student and staff arrivals. No deliveries can be made after 2:30 PM due to student and staff departures.
4. Sheets C601 and C602, revised in Addendum No. 1, were left off of our ftp site by accident. These sheets are now located on our ftp site in the Addendum No. 1 folder.
5. Contract EME-01 Sitework shall include in his base bid removal of the modular buildings shown on sheet C101.
6. Contract EME-01 Sitework shall furnish, install and remove 1,000 linear feet of temporary orange construction fencing as required by the Construction Manager.
7. Contract EME-03 Masonry shall include all labor, material and equipment for the perlite fill at the ungrouted CMU cores surrounding the glass block.
8. Contract EME-04 Carpentry and General Work shall include in his base bid temporary wood frames with reinforced poly for weather protection, in all the window and door openings on the exterior elevations, until the windows and doors are ready to be installed. Remove and dispose of the temporary frames immediately prior to window and door installation. Provide temporary wood doors at the exterior doors, to include self-closing hardware and pad locks.
9. Contract EME-04 Carpentry and General Work shall include in his base bid a temporary demising partition, nine feet in length, from the floor to the bottom chord of the roof truss. The partition shall be sound attenuated with insulation and sealed to ensure no migration of sound, dust or odors. Provide ½" drywall on both sides. Occupant side shall receive a level 4 finish. Remove and dispose of the temporary partition when directed by the Construction Manager.
10. Contract EME-04 Carpentry and General Work shall include in his base bid an allowance of \$5,000 for stucco repairs to be used as directed by the Construction Manager.
11. Contract EME-06 Glass and Glazing shall include in his base bid performance of the water spray test, along

- with the submission of inspection reports required by the Specifications.
12. Contract EME-06 Glass and Glazing shall include all labor, materials and equipment for the aluminum door hardware.
 13. Contract EME-07 Acoustical Ceilings shall include in his base bid 40 man hours for acoustical ceiling work to be used as directed by the Construction Manager.
 14. Contract EME-08 Flooring shall include all labor, materials and equipment for carpet tiles.
 15. Contract EME-09 Painting shall include in his base bid painting of the occupant side of the temporary demising wall, color TBD.
 16. Contract EME-12 Electrical shall include all labor, materials and equipment for temporary electric service to the Construction Manager's field office.

CHANGES TO PROJECT MANUAL

1. Section 004100 Bid Forms
 - a. REPLACE this section with pages 004100-1 thru 004100-19
2. Section 012300 Alternates
 - a. ADD paragraph 3.1.F as follows:
 - F. Alternate No. 6: HVAC Equipment Manufacturer (Mechanical).
 1. Base Bid: Include any listed manufacturer.
 2. Alternate: State in the Bid Proposal Form the amount to be added (if any) to the Base Bid amount for providing the VRV system, as manufactured by LG.
3. Section 042200 Concrete Unit Masonry
 - a. REMOVE paragraph 3.12.
4. Section 081113 Hollow Metal Doors and Frames
 - a. REPLACE section with attached.
5. Section 081416 Flush Wood Doors
 - a. REPLACE section with attached.
6. Section 087100 Door Hardware
 - a. REPLACE section with attached.
7. Section 096723 Resinous Flooring
 - a. REVISE paragraph 2.2 to read "URETHANE FLOORING (EPX).
 - b. REMOVE paragraph 2.3.
8. Section 096813 Carpet Tile
 - a. ADD section.
9. Section 238126 Split-System Air-Conditioning Units
 - a. ADD subparagraph 2.1.A.5 and 2.1.A.6 as follows:
 5. LG HVAC.

6. Trane / Ingersoll Rand.

10. Section 262726 Wiring Devices

- a. REPLACE section with attached (tamper-resistant devices).

CHANGES TO DRAWINGS

1. C-201 OVERALL PLAN (East Millsboro Elementary)

- a. REMOVAL OF 235 lf of roof drain collection pipe.
- b. ADD 55 lf of PVC pipe to connect to underdrain.
- c. ADD fence at mechanical yard.

2. A103 FINISH PLAN AND FINISH SCHEDULE

- a. Finish Schedule Legend: REVISE spec reference for CPT-1 from 096816 to 096813.

3. A201 EXTERIOR ELEVATIONS AND SECTIONS

- a. Detail 8: ADD note as follows:

“PROVIDE PERLITE FILL AT UNGROUTED CMU CORES AROUND ALL SIDES GLASS BLOCK, TO 16” FROM OPENING”.

4. A601 DOOR SCHEDULE

- a. REPLACE door schedule with attached, per SKA-03.
- b. REVISE window SF-1, per SKA-03.

5. E100 LIGHTING FLOOR PLAN

- a. ADD light type “B” and drawing note #9, per SKE-1.

6. E102 FIRE ALARM FLOOR PLAN

- a. ADD magnetic door hold opens, per SKE-2.

QUESTIONS AND ANSWERS

Q: Drawing E100, E101 General Note 1 refers the Electrical Contractor to Division 27 of the specifications and to the Delaware Technology IT person. Per scope of work EME-12 Electrical, we are rough-in only. Please confirm this is correct.

A: The Electrical Contractor shall provide back boxes, conduits, and pull strings for special systems. Also, the Electrical Contractor shall provide the cable tray in the IDF room. All structured cabling shall be provided by the Communications Contractor.

Q: Drawing E101A Note 1 calls for layout to match the new classrooms. Is this for data locations only or do we need to add power receptacles? Is installation to be in Wiremold or is someone cutting and patching the existing block?

A: The telecom add alternate on Drawing E101A is just data locations and not power receptacles. The final locations of the data outlets shall be verified with the school district's IT department prior to rough-in. Data outlets shall be mounted in close proximity of existing power receptacles and most likely will need to be surface mounted

as single drops with the data cable run in metallic surface raceway.

Q: Has Drawing been submitted to Del Dot to see if a permit is required? Can there be an allowance for this cost?

A: The Drawings have been submitted to DelDOT and a permit will be required. The Sitework Contractor shall include a \$10,000 allowance in their Alternate No. 5 bid for the entrance permit cost.

Q: Should the multi-use path and new fence along Iron Branch Rd. be part of Alternate No. 5?

A: Yes.

Q: Will Contract EME-05 Roofing wrap the plywood fascia per Detail 2 on Drawing A502?

A: Yes.

Q: Drawing A502, detail 2. The plywood attached to B deck (15/32"). The roofing nails are an 1 1/4". Should'nt this be a nail board condition?

A: Please refer to an upcoming addendum for the answer to this question.

ATTACHMENTS

Section 004100

Section 011100

Section 081113

Section 081416

Section 087100

Section 096813

Section 262726

SKA-03, dated 4/23/14

SKE-1, SKE-2, dated 4/22/14

C201, dated 10/21/13

END OF ADDENDUM NO. 2

Indian River School District
Referendum 2013
East Millsboro Elementary School

Contract # & Description:

BID FORM

For Bids Due: _____ To: Indian River School District
31 Hosier Street
Selbyville, De 19975

Name of Bidder: _____

Bidder Address: _____

Contact Name: _____ E-Mail Address: _____

Delaware Business License No.: _____ Taxpayer ID No.: _____

(Other License Nos.): _____

Phone No.: () _____ - _____ Fax No.: () _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

\$ _____ (\$ _____)

ALTERNATES

Alternate No. 1: Resilient Quartz Tile Flooring.

1. Base Bid: Provide VCT as specified in Section 096519 "Resilient Tile Flooring."
2. Alternate: In lieu of base bid, provide Resilient Quartz Tile flooring (RQT) as specified below.
 - a. Products: Provide resilient quartz tile flooring by one of the following.
 - 1) Altro.
 - 2) Rikett.
 - 3) Upofloor.
 - b. Size: 12"x12"
 - c. Color: As selected from manufacturer's full range of solid and patterned colors.

Add/Deduct _____ (\$ _____)

**Indian River School District
Referendum 2013
East Millsboro Elementary School**

Alternate No. 2: Replace ACT Ceilings.

1. Base Bid: Remove, protect, store, and reinstall existing ACT tile and grid, as required to install tie-in and extension of building services.
2. Alternate: In lieu of base bid, remove and replace existing ACT tile and grid, as required to install tie-in and extension of building services. Provide temporary supports of ceiling-mounted equipment, as required until new ceilings are installed, and remove and reinstall items where temporary supports are not feasible.

Add/Deduct _____ (\$ _____)

Alternate No. 3: Telecommunications.

1. Base Bid: No additional telecom outlets in existing classrooms 038 through 050.
2. Alternate: In lieu of base bid, provide additional telecom outlets in classrooms 038 through 050, as indicated on Sheet E101A.

Add/Deduct _____ (\$ _____)

Alternate No. 4: LED Lighting.

1. Base Bid: Provide fluorescent lighting fixtures for types A, B, C, and D, as indicated on Sheet E001..
2. Alternate: In lieu of base bid, provide LED lighting fixtures for above-mentioned types, as indicated on Sheet E001.

Add/Deduct _____ (\$ _____)

Alternate No. 5: DelDOT Work.

1. Base Bid: Do not provide work associated with the Iron Branch Road improvements as shown on Sheets C601, C602 and C603.
2. Alternate: State in the Bid Proposal Form the amount to be added to the Base Bid amount to provide work associated with the Iron Branch Road improvements as shown on Sheets C601, C602 and C603.

Add/Deduct _____ (\$ _____)

Alternate No. 6: HVAC Equipment Manufacturer (Mechanical).

1. Base Bid: Include any listed manufacturer.
2. Alternate: State in the Bid Proposal Form the amount to be added (if any) to the Base Bid amount for providing the VRV system as manufactured by LG.

Add/Deduct _____ (\$ _____)

Indian River School District
Referendum 2013
East Millsboro Elementary School

UNIT PRICES

N/A

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

(State of Corporation)

Business Address: _____

Witness: _____ By: _____
(SEAL) (Authorized Signature)

(Title)
Date: _____

ATTACHMENTS

**Indian River School District
Referendum 2013
East Millsboro Elementary School**

Sub-Contractor List
Non-Collusion Statement
Bid Bond
Consent of Surety

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date

All the terms and conditions of Contract _____ have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE
(TYPED): _____

AUTHORIZED REPRESENTATIVE
(SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____ of
_____ in the County of _____ and State of _____ as
Principal, and _____ of _____ in the County of _____
_____ and State of _____ as Surety, legally authorized to do business in the State of Delaware
("State"), are held and firmly unto the **Indian River School District** in the sum of _____
Dollars (\$ _____), or percent not to exceed _____
_____ Dollars (\$ _____) of amount of bid on Contract No. _____ to be paid to the
Indian River School District for the use and benefit of the **Indian River School District** for which payment well and truly
to be made, we do bind ourselves, our and each of our heirs, executors, administrators. and successors, jointly and
severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden Principal who has submitted to the
Indian River School District a certain proposal to enter into this contract for the furnishing of certain material and/or
services within the State, shall be awarded this Contract, and if said Principal shall well and truly enter into and execute
this Contract as may be required by the terms of this Contract and approved by the **Indian River School District** this
Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the
terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____ seal and dated this _____ day of _____ in the year of our Lord two thousand
and _____ (20__).

SEALED, AND DELIVERED IN THE PRESENCE OF

Name of Bidder (Organization)

Corporate Seal	By: _____ Authorized Signature
Attest _____	_____
	Title

	Name of Surety
Witness _____	_____

	Title

CONSENT OF SURETY

DATE _____

To: *Indian River School District*
31 Hosier Street
Selbyville, De 19975

Gentlemen:

We, the _____

(Surety Company's Address)

a Surety Company authorized to do business in the State of Delaware hereby agrees that if

(Contractor)

(Address)

is awarded the Contract No. _____

We will write the required Performance and/or Labor and Material Bond required by Paragraph 9 of the Instructions to Bidders.

(Surety Company)

By _____
(Attorney-in-Fact)

SUBCONTRACTOR LIST FOR CONTRACT EME-01 SITEWORK

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>
1. Sitework	_____	_____

SUBCONTRACTOR LIST FOR CONTRACT EME-02 CONCRETE

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>
1. Concrete	_____	_____

SUBCONTRACTOR LIST FOR CONTRACT EME-03 MASONRY

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>
1. Masonry	_____	_____

SUBCONTRACTOR LIST FOR CONTRACT EME-04 CARPENTRY & GENERAL WORK

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>
1. Carpentry & General Work	_____	_____
2. Metal Stud & Drywall	_____	_____

SUBCONTRACTOR LIST FOR CONTRACT EME-05 ROOFING

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>
1. Roofing	_____	_____

SUBCONTRACTOR LIST FOR CONTRACT EME-06 GLASS & GLAZING

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>
1. Glass & Glazing	_____	_____

SUBCONTRACTOR LIST FOR CONTRACT EME-07 ACOUSTICAL CEILINGS

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>
1. Acoustical Ceilings	_____	_____

SUBCONTRACTOR LIST FOR CONTRACT EME-08 FLOORING

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>
1. Flooring	_____	_____

SUBCONTRACTOR LIST FOR CONTRACT EME-09 PAINTING

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>
1. Painting	_____	_____

SUBCONTRACTOR LIST FOR CONTRACT EME-11 MECHANICAL

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>
1. Mechanical	_____	_____

SUBCONTRACTOR LIST FOR CONTRACT EME-12 ELECTRICAL

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>
1. Electrical	_____	_____

SUBCONTRACTOR LIST FOR CONTRACT EME-13 COMMUNICATIONS

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>
1. Communications	_____	_____



ARCHITECTURE
ENGINEERING

April 23, 2014

Re: **EAST MILLSBORO ELEMENTARY CLASSROOM ADDITIONS**

Millsboro, Delaware
2013157.02

ADDENDUM TWO

The documents for the above referenced project, Project Manual, dated March 7, 2014 and Drawings, dated March 14, 2014, are amended as follows:

CLARIFICATION

1. Expansion joint starts at top of slab, and continues through roof. There is not a floor-floor expansion joint in the slab on grade.
2. Casement window in storefront shall be manufacturer's standard model (basis-of-design Kawneer GLASSvent w/ standard hardware).

PROJECT MANUAL

1. Section 012300 Alternates
 - a. ADD paragraph 3.1.F as follows:
 - F. Alternate No. 6: HVAC Equipment Manufacturer (Mechanical).
 1. Base Bid: Include any listed manufacturer.
 2. Alternate: State in the Bid Proposal Form the amount to be added (if any) to the Base Bid amount for providing the VRV system, as manufactured by LG.
2. Section 042200 Concrete Unit Masonry
 - a. REMOVE paragraph 3.12.
3. Section 081113 Hollow Metal Doors and Frames
 - a. REPLACE section with attached.
4. Section 081416 Flush Wood Doors
 - a. REPLACE section with attached.
5. Section 087100 Door Hardware
 - a. REPLACE section with attached.
6. Section 096723 Resinous Flooring
 - a. REVISE paragraph 2.2 to read "URETHANE FLOORING (EPX).
 - b. REMOVE paragraph 2.3.
7. Section 096813 Carpet Tile
 - a. ADD section.



ARCHITECTURE
ENGINEERING

8. Section 238126 Split-System Air-Conditioning Units
 - a. ADD subparagraph 2.1.A.5 and 2.1.A.6 as follows:
 5. LG HVAC.
 6. Trane / Ingersoll Rand.
9. Section 262726 Wiring Devices
 - a. REPLACE section with attached (tamper-resistant devices).

DRAWINGS

1. C-201 OVERALL PLAN (East Millsboro Elementary)
 - a. REMOVAL OF 235 lf of roof drain collection pipe.
 - b. ADD 55 lf of PVC pipe to connect to underdrain.
 - c. ADD fence at mechanical yard.
2. A103 FINISH PLAN AND FINISH SCHEDULE
 - a. Finish Schedule Legend: REVISE spec reference for CPT-1 from 096816 to 096813.
3. A201 EXTERIOR ELEVATIONS AND SECTIONS
 - a. Detail 8: ADD note as follows:
"PROVIDE PERLITE FILL AT UNGROUTED CMU CORES AROUND ALL SIDES GLASS BLOCK, TO 16" FROM OPENING".
4. A601 DOOR SCHEDULE
 - a. REPLACE door schedule with attached, per SKA-03.
 - b. REVISE window SF-1, per SKA-03.
5. E100 LIGHTING FLOOR PLAN
 - a. ADD light type "B" and drawing note #9, per SKE-1.
6. E102 FIRE ALARM FLOOR PLAN
 - a. ADD magnetic door hold opens, per SKE-2.

ATTACHMENTS

Section 081113
Section 081416
Section 087100
Section 096813
Section 262726
SKA-03, dated 4/23/14
SKE-1, SKE-2, dated 4/22/14
C201, dated 10/21/13

END OF ADDENDUM NO. TWO

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Standard and custom hollow metal doors and frames.
2. Steel sidelight, borrowed lite and transom frames.
3. Light frames and glazing installed in hollow metal doors.

B. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI/SDI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
2. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frames Anchors and Hardware Reinforcing.
3. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
4. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
5. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames.
6. ASTM A1008 - Standard Specification for Steel Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
7. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
8. ANSI/BHMA A156.115 - Hardware Preparation in Steel Doors and Frames.
9. ANSI/SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
10. ANSI/NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association.
11. ANSI/NFPA 105: Standard for the Installation of Smoke Door Assemblies.
12. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.
13. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
14. UL 1784 - Standard for Air Leakage Tests of Door Assemblies.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, hardware reinforcements, profiles, anchors, fire-resistance rating, and finishes.

B. Door hardware supplier is to furnish templates, template reference number and/or physical hardware to the steel door and frame supplier in order to prepare the doors and frames to receive the finish hardware items.

C. Shop Drawings: Include the following:

1. Elevations of each door design.
2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of anchorages, joints, field splices, and connections.
6. Details of accessories.

7. Details of moldings, removable stops, and glazing.
8. Details of conduit and preparations for power, signal, and control systems.

D. Samples for Verification:

1. Samples are only required by request of the architect and for manufacturers that are not current members of the Steel Door Institute.

1.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain hollow metal doors and frames through one source from a single manufacturer wherever possible.
- B. Quality Standard: In addition to requirements specified, comply with ANSI/SDI A250.8, latest edition, "Recommended Specifications for Standard Steel Doors and Frames".
- C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 (neutral pressure at 40" above sill) or UL 10C.
 1. Oversize Fire-Rated Door Assemblies Construction: For units exceeding sizes of tested assemblies, attach construction label certifying doors are built to standard construction requirements for tested and labeled fire rated door assemblies except for size.
 2. Temperature-Rise Limit: Where indicated and at vertical exit enclosures (stairwell openings) and exit passageways, 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.
 3. Smoke Control Door Assemblies: Comply with NFPA 105.
 - a. Smoke "S" Label: Doors to bear "S" label, and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.
- D. 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 NFPA 257. Provide labeled glazing material.
- E. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for installing hollow metal doors and frames and to verify installation of electrical knockout boxes and conduit at frames with electrified or access control hardware.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project site storage. Do not use non-vented plastic.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch high wood blocking. Do not store in a manner that traps excess humidity.

1. Provide minimum 1/4-inch space between each stacked door to permit air circulation. Door and frames to be stacked in a vertical upright position.

1.5 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.6 COORDINATION

- A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.7 WARRANTY

- A. 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.
- B. Warranty includes installation and finishing that may be required due to repair or replacement of defective doors.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. CECO Door Products.
 2. Curries Company.
 3. Steelcraft.

2.2 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.
- C. Frame Anchors: ASTM A 653/A 653M, Commercial Steel (CS), Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

2.3 STANDARD HOLLOW METAL DOORS

- A. General: Provide 1-3/4 inch doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8.

- B. Interior Doors: Face sheets fabricated of commercial quality cold rolled steel that complies with ASTM A 1008/A 1008M. 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. Design: Flush panel.
 2. Core Construction: Manufacturer's standard kraft-paper honeycomb, or one-piece polystyrene core, securely bonded to both faces.
 - a. Fire Door Core: As required to provide fire-protection and temperature-rise ratings indicated.
 3. Level/Model: Level 2 and Physical Performance Level B (Heavy Duty), Minimum 18 gauge (0.042-inch - 1.0-mm) thick steel, Model 2.
 4. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet.
 5. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
 6. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.
- C. Basis of Design:
1. Curries Company 707 Series.

2.4 STANDARD HOLLOW METAL FRAMES

- A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.
- B. Interior Frames: Fabricated from cold-rolled steel sheet that complies with ASTM A 1008/A 1008M.
1. Fabricate frames with mitered or coped corners.
 2. Fabricate frames, with the exception of slip-on drywall types, with "closed and tight" miter seams continuously welded on face, finished smooth with no visible seam unless otherwise indicated.
 3. Frames for Steel Doors: Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.
 4. Frames for Wood Doors: Minimum 16 gauge (0.053-inch-1.3-mm-) thick steel sheet.
 5. Frames for Borrowed Lights: Minimum 16 gauge (0.053-inch-1.3-mm-) thick steel sheet.
 6. Basis of Design:
 - a. Curries Company M/CM Series.
- C. Fire rated frames: Fabricate frames in accordance with NFPA 80, listed and labeled by a qualified testing agency, for fire-protection ratings indicated.
- D. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 Table 4 with reinforcement plates from same material as frames.

2.5 FRAME ANCHORS

- A. Jamb Anchors:
1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, formed from A60 metallic coated material, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
 2. Stud Wall Type: Designed to engage stud and not less than 0.042 inch thick.

- B. Floor Anchors: Floor anchors to be provided at each jamb, formed from A60 metallic coated material, not less than 0.042 inches thick.
- C. Mortar Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.6 LIGHT OPENINGS AND GLAZING

- A. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints at fabricator's shop. Fixed and removable stops to allow multiple glazed lites each to be removed independently. Coordinate frame rabbet widths between fixed and removable stops with the type of glazing and installation indicated.
- B. Moldings for Glazed Lites in Doors and Loose Stops for Glazed Lites in Frames: Minimum 20 gauge thick, fabricated from same material as door face sheet in which they are installed.
- C. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch (16 mm) high unless otherwise indicated. Provide fixed frame moldings and stops on outside of exterior and on secure side of interior doors and frames
- D. Preformed Metal Frames for Light Openings: Manufacturer's standard frame formed of 0.048-inch-thick, cold rolled steel sheet; with baked enamel or powder coated finish; and approved for use in doors of fire protection rating indicated. Match pre-finished door paint color where applicable.
- E. Glazing: Comply with requirements in Division 08 Section "Glazing" and with the hollow metal door manufacturer's written instructions.
 - 1. Factory Glazing: Factory install glazing in doors as indicated. Doors with factory installed glass to include all of the required glazing material.

2.7 ACCESSORIES

- A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.
- B. Grout Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.8 FABRICATION

- A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. When shipping limitations so dictate, frames for large openings are to be fabricated in sections for splicing or splining in the field by others.
- B. Tolerances: Fabricate hollow metal work to tolerances indicated in ANSI/SDI A250.8.
- C. Hollow Metal Doors:
 - 1. Exterior Doors: Provide optional weep-hole openings in bottom of exterior doors to permit moisture to escape where specified.
 - 2. Glazed Lites: Factory cut openings in doors with applied trim or kits to fit. Factory install glazing where indicated.
 - 3. Astragals: Provide overlapping astragals as noted in door hardware sets in Division 08 Section "Door Hardware" on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted.

4. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge strap for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".

D. Hollow Metal Frames:

1. Shipping Limitations: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
2. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
 - a. Welded frames are to be provided with two steel spreaders temporarily attached to the bottom of both jambs to serve as a brace during shipping and handling. Spreader bars are for bracing only and are not to be used to size the frame opening.
3. 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.
4. High Frequency Hinge Reinforcement: Provide high frequency hinge reinforcements at door openings 48-inches and wider with mortise butt type hinges at top hinge locations.
5. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge straps for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".
6. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated for removable stops, provide security screws at exterior locations.
7. Mortar Guards: Provide guard boxes at back of hardware mortises in frames at all hinges and strike preps regardless of grouting requirements.
8. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
9. Jamb Anchors: Provide number and spacing of anchors as follows:
 - a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
 - 1) Two anchors per jamb up to 60 inches high.
 - 2) Three anchors per jamb from 60 to 90 inches high.
 - 3) Four anchors per jamb from 90 to 120 inches high.
 - 4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.
 - b. Stud Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
 - 1) Three anchors per jamb up to 60 inches high.
 - 2) Four anchors per jamb from 60 to 90 inches high.
 - 3) Five anchors per jamb from 90 to 96 inches high.
 - 4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
 - 5) Two anchors per head for frames above 42 inches wide and mounted in metal stud partitions.
10. Door Silencers: Except on weatherstripped or gasketed doors, drill stops to receive door silencers. Silencers to be supplied by frame manufacturer regardless if specified in Division 08 Section "Door Hardware".

- E. Hardware Preparation: Factory prepare hollow metal work to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping 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 non-template, 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 Sections.

2.9 STEEL FINISHES

- A. Prime Finishes: Doors and frames to be cleaned, and chemically treated to insure maximum finish paint adhesion. Surfaces of the door and frame exposed to view to receive a factory applied coat of rust inhibiting shop primer.
1. Shop Primer: Manufacturer's standard, fast-curing, lead and chromate free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; and compatible with substrate and field-applied coatings.

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. General Contractor to verify the accuracy of dimensions given to the steel door and frame manufacturer for existing openings or existing frames (strike height, hinge spacing, hinge back set, etc.).
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove welded in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Prior to installation, adjust and securely brace welded hollow metal frames for squareness, alignment, twist, and plumbness.
- C. Tolerances shall comply with SDI-117 "Manufacturing Tolerances Standard Steel Doors and Frames."
- D. Drill and tap doors and frames to receive non-template, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

- A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.

- B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11 and NFPA 80 at fire rated openings.
1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete and frames properly set and secured, remove temporary braces, leaving surfaces smooth and undamaged. Shim as necessary to comply with installation tolerances.
 2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.
 3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with mortar.
 4. Grout Requirements: Do not grout head of frames unless reinforcing has been installed in head of frame. Do not grout vertical or horizontal closed mullion members.
- C. 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. Jamb and Head: 1/8 inch plus or minus 1/16 inch.
 - b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
 - c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
 - d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.
 2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
- D. Field Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with hollow metal manufacturer's written instructions.

3.4 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. Remove grout and other bonding material from hollow metal work immediately after installation.
- C. Prime-Coat and Painted Finish Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat, or painted finishes, and apply touchup of compatible air drying, rust-inhibitive primer, zinc rich primer (exterior and galvanized openings) or finish paint.

END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Solid core doors with wood veneer, hardboard or MDF faces.
2. Factory finishing wood doors.
3. Factory fitting wood doors to frames and factory machining for hardware.
4. Light frames and glazing installed in wood doors.

B. Standards and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A208.1 – Wood Particleboard.
2. Intertek Testing Service (ITS Warnock Hersey) - Certification Listings for Fire Doors.
3. NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association.
4. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.
5. UL 10C - Positive Pressure Fire Tests of Door Assemblies; UL 1784 - Standard for Air Leakage Tests of Door Assemblies.
6. Window and Door Manufacturers Association - WDMA I.S.1-A Architectural Wood Flush Doors.

1.2 SUBMITTALS

A. Product Data: For each type of door indicated. Include details of core and edge construction, louvers, trim for openings, and WDMA I.S.1-A or AWS classifications. Include factory finishing specifications.

B. Door hardware supplier is to furnish templates, template reference number and/or physical hardware to the wood door supplier in order to prepare the doors and frames to receive the finish hardware items.

C. 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.
5. Indicate fire protection ratings for fire rated doors.

D. Samples for Initial Selection: For factory finished doors.

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. Frames for light openings, 6 inches long, for each material, type, and finish required.

E. Warranty: Sample of special warranties.

1.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain flush wood doors through one source from a single manufacturer wherever possible.
- B. Quality Standard: In addition to requirements specified, comply with WDMA I.S.1-A, latest edition, "Industry Standard for Architectural Wood Flush Doors".
- C. Fire Rated Wood Doors: Doors 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 at positive pressure according to NFPA 252 (neutral pressure at 40" above sill) or UL 10C (neutral pressure testing according to UL 10B where specified).
 - 1. Oversize Fire Rated Door Assemblies: For units exceeding sizes of tested assemblies provide manufacturer's construction label, indicating compliance to independent 3rd party certification agency's procedure, except for size.
 - 2. Temperature Rise Limit: Where indicated and at vertical exit enclosures (stairwell openings) and exit passageways, 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.
 - 3. Smoke Control Door Assemblies: Comply with NFPA 105.
 - 1) Smoke "S" Label: Doors to bear "S" label, and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.
 - 4. Blocking: Indicate size and location of blocking in 45, 60 and 90 minute mineral core doors.
- D. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for receiving, handling, and installing flush wood doors.

1.4 DELIVERY, STORAGE, AND HANDLING

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

1.5 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weather tight, 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.

1.6 WARRANTY

- A. 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 wood face veneers exceeding 0.01 inch in a 3-inch span.
 - c. Telegraphing of core construction and delaminating of face in decorative laminate-faced doors.
2. Warranty includes 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 according to manufacturer's written warranty.

PART 2 - PRODUCTS

2.1 DOOR CONSTRUCTION – GENERAL

- A. WDMA I.S.1-A Performance Grade: Extra Heavy Duty; Aesthetic Grade: Premium.
- B. Fire Rated Doors: Provide construction and core as needed to provide fire ratings indicated.
 1. Category A Edge Construction: Provide fire rated door edge construction with intumescent seals concealed by outer stile (Category A) at 45, 60, and 90 minute rated doors. Comply with specified requirements for exposed edges.
 2. Pairs: Provide fire retardant stiles that are listed and labeled for applications indicated without formed steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.
 - a. Where required or specified, provide formed steel edges and astragals with intumescent seals. Finish steel edges and astragals with baked enamel.

2.2 CORE CONSTRUCTION

- A. Particleboard Core Doors:
 1. Particleboard: Wood fiber based materials complying with ANSI A208.1 Particleboard standard. Grade LD-2.
 2. Adhesive: Fully bonded construction using Polyurethane (PUR) glue.
 3. Blocking: When through-bolted hardware is not used, provide wood blocking in particleboard core doors as follows:
 - a. 5-inch (125-mm) top-rail blocking, in doors indicated to have closers.
 - b. 5-inch (125-mm) mid-rail blocking, in doors indicated to have exit devices.
 - 1) Optional Cores for Blocking: Provide doors with either glued-wood-stave or structural-composite-lumber core instead of particleboard core for doors indicated to receive closers and exit devices.

4. Basis of Design:

- a. Graham: PC, PC5

B. Mineral Core Doors:

1. Core: Non-combustible mineral product complying with requirements of referenced quality standard and testing and inspecting agency for fire protection rating indicated.
2. Blocking: Provide composite blocking with improved screw holding capability approved for use in doors of fire protection ratings indicated as needed to eliminate through-bolting hardware.
3. Edge Construction: At hinge stiles, provide laminated edge construction with improved screw holding capability and split resistance. Comply with specified requirements for exposed edges.
4. Basis of Design: Graham FD.

2.3 VENEERED DOORS FOR TRANSPARENT FINISH

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eggers Industries: Premium
2. Graham: GPD
3. Marshfield: Signature
4. VT Industries: Artistry

B. Interior Solid Core Doors:

1. Grade: Premium
2. Faces: Veneer grades as noted below; veneer minimum 1/50-inch (0.5mm) thickness at moisture content of 12% or less.
 - a. Plain Sliced Red Oak, A grade faces, to match existing.
3. Match between Veneer Leaves: Book match.
4. Assembly of Veneer Leaves on Door Faces: Running Match.
5. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.
6. Vertical Edges: Matching same species as faces. Wood or composite material, one piece, laminated, or veneered. Minimum requirements per WDMA section P-1, Performance Standards for Architectural Wood Flush Doors.
7. Horizontal Edges: Solid wood or structural composite material meeting the minimum requirements per WDMA section P-1, Performance Standards for Architectural Wood Flush Doors
8. Construction: Five plies. Stiles and rails are bonded to core, then entire unit sanded before applying face veneers.
9. At doors over 40% of the face cut-out for lights and or louvers, furnish engineered composite lumber core.

2.4 LIGHT FRAMES AND GLAZING

A. Wood Beads for Light Openings in Wood Doors up to and including 20-minute rating:

1. Wood Species: Same species as door faces.
 2. Profile: Manufacturer's standard lipped profile. At wood core doors with 20-minute fire protection ratings, provide wood beads and metal glazing clips approved for such use.
- B. Metal Frames for Light Openings in Fire Rated Doors over 20-minute rating: Manufacturer's standard frame formed of 0.048-inch-thick, cold rolled steel sheet; with baked enamel or powder coated finish; and approved for use in doors of fire protection rating indicated.
- C. Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with the flush wood door manufacturer's written instructions.

2.5 FABRICATION

- A. Factory fit doors to suit frame opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
1. Comply with requirements in NFPA 80 for fire rated doors.
- B. Factory machine doors for hardware that is not surface applied. Comply with final hardware schedules, door frame Shop Drawings, DHI A115-W series standards, and hardware templates.
1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.
 2. Metal Astragals: Factory machine astragals and formed steel edges for hardware for pairs of fire rated doors.
- C. Openings: Cut and trim openings through doors in factory.
1. Light Openings: Trim openings with moldings of material and profile indicated.
 2. Glazing: Comply with applicable requirements in Division 08 Section "Glazing."
 3. Louvers: Factory install louvers in prepared openings.
- D. Electrical Raceways: Provide flush wood doors receiving electrified hardware with concealed wiring harness and standardized Molex™ plug connectors on both ends to accommodate up to twelve wires. Coordinate connectors on end of the wiring harness to plug directly into the electrified hardware and the through wire transfer hardware or wiring harness specified in hardware sets in Division 08 "Door Hardware". Wire nut connections are not acceptable.

2.6 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.
1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.
- B. Transparent Finish: Provide a clear protective coating over the wood veneer allowing the natural color and grain of the selected wood species to provide the appearance specified. Stain is applied to the wood surface underneath the transparent finish to add color and design flexibility.
1. Grade: Premium.

2. Finish: Meet or exceed WDMA I.S. 1A TR6 Catalyzed Polyurethane finish performance requirements.
3. Staining: To match existing.
4. Sheen: Satin.

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

3.3 ADJUSTING

- A. Operation: Re-hang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors 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 081416

SECTION 087100 – DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes commercial door hardware for the following:
 - 1. Swinging doors.
 - 2. Other doors to the extent indicated.
- B. Door hardware includes, but is not necessarily limited to, the following:
 - 1. Mechanical door hardware.
- C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
 - 2. ICC/IBC - International Building Code.
 - 3. NFPA 70 - National Electrical Code.
 - 4. NFPA 80 - Fire Doors and Windows.
 - 5. NFPA 101 - Life Safety Code.
 - 6. NFPA 105 - Installation of Smoke Door Assemblies.
 - 7. State Building Codes, Local Amendments.
- D. Standards: All hardware specified herein shall comply with the following industry standards:
 - 1. ANSI/BHMA Certified Product Standards - A156 Series
 - 2. UL10C – Positive Pressure Fire Tests of Door Assemblies

1.2 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
 - 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door

hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.

3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Keying Schedule: Prepared under the supervision of the Owner, separate schedule detailing final keying instructions for locksets and cylinders in writing. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner to approve submitted keying schedule prior to the ordering of permanent cylinders.
- D. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals. The manual to include the name, address, and contact information of the manufacturers providing the hardware and their nearest service representatives. The final copies delivered after completion of the installation test to include "as built" modifications made during installation, checkout, and acceptance.
- E. Warranties and Maintenance: Special warranties and maintenance agreements specified in this Section.

1.3 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Installer Qualifications: Installers, trained by the primary product manufacturers, with a minimum 3 years documented experience installing both standard and electrified builders hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor in good standing by

the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

1. Scheduling Responsibility: Preparation of door hardware and keying schedules.
- D. Source Limitations: Obtain each type and variety of Door Hardware specified in this Section from a single source, qualified supplier unless otherwise indicated.
1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
 2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.
- E. Regulatory Requirements: Comply with NFPA 70, NFPA 80, NFPA 101 and ANSI A117.1 requirements and guidelines as directed in the model building code including, but not limited to, the following:
1. NFPA 70 "National Electrical Code", including electrical components, devices, and accessories listed and labeled as defined in Article 100 by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
 2. Where indicated to comply with accessibility requirements, comply with Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)," ANSI A117.1 as follows:
 - a. Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
 - b. Door Closers: Comply with the following maximum opening-force requirements indicated:
 - 1) Interior Hinged Doors: 5 lbf applied perpendicular to door.
 - 2) Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
 - c. Thresholds: Not more than 1/2 inch high. Bevel raised thresholds with a slope of not more than 1:2.
 3. NFPA 101: Comply with the following for means of egress doors:
 - a. Latches, Locks, and Exit Devices: Not more than 15 lbf to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.
 - b. Thresholds: Not more than 1/2 inch high.
 4. Fire-Rated Door Assemblies: Provide door hardware for 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 (neutral pressure at 40" above sill) or UL-10C.

- a. Test Pressure: Positive pressure labeling.
- F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
- G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
- 1. Function of building, purpose of each area and degree of security required.
 - 2. Plans for existing and future key system expansion.
 - 3. Requirements for key control storage and software.
 - 4. Installation of permanent keys, cylinder cores and software.
 - 5. Address and requirements for delivery of keys.
- H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
- 1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
 - 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
 - 3. Review sequence of operation narratives for each unique access controlled opening.
 - 4. Review and finalize construction schedule and verify availability of materials.
 - 5. Review the required inspecting, testing, commissioning, and demonstration procedures
- I. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.
- 1.4 DELIVERY, STORAGE, AND HANDLING
- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
 - B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
 - C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.5 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.
- C. Door and Frame Preparation: Related Division 08 Sections (Steel, Aluminum and Wood) doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.6 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties 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. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
 - 1. Structural failures including excessive deflection, cracking, or breakage.
 - 2. Faulty operation of the hardware.
 - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 4. Electrical component defects and failures within the systems operation.
- C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.
- D. Special Warranty Periods:
 - 1. Five years for exit hardware.
 - 2. Twenty five years for manual surface door closers.

1.7 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.
- B. Continuing Service: Beginning at Substantial Completion, and running concurrent with the specified warranty period, provide continuous (6) months full maintenance including repair and

replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door opening operation. Provide parts and supplies as used in the manufacture and installation of original products.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.
1. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
 - a. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
 - B. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

- A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles as specified in the Door Hardware Sets.
1. Quantity: Provide the following hinge quantity, unless otherwise indicated:
 - a. Two Hinges: For doors with heights up to 60 inches.
 - b. Three Hinges: For doors with heights 61 to 90 inches.
 - c. Four Hinges: For doors with heights 91 to 120 inches.
 - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
 2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
 - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
 3. Hinge Options: Comply with the following where indicated in the Hardware Sets or on Drawings:

- a. 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 the following applications:
 - 1) Out-swinging exterior doors.
 - 2) Out-swinging access controlled doors.
 - 3) Out-swinging lockable doors.
 4. Acceptable Manufacturers:
 - a. Bommer Industries (BO).
 - b. Hager Companies (HA).
 - c. McKinney Products (MK).
- B. Continuous Geared Hinges: ANSI/BHMA A156.26 certified continuous geared hinge with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Provide concealed flush mount (with or without inset), full surface, or half surface, in standard and heavy duty models, as specified in the Hardware Sets. Concealed continuous hinges to be U.L. listed for use on up to and including 90 minute rated door installations and U.L. listed for windstorm components where applicable. Factory cut hinges for door size and provide with removable service power transfer panel where indicated at electrified openings.
1. Acceptable Manufacturers:
 - a. Bommer Industries (BO).
 - b. McKinney Products (MK).
 - c. Pemko Manufacturing (PE).
- 2.3 DOOR OPERATING TRIM
- A. Flush Bolts and Surface Bolts: ANSI/BHMA A156.3 and A156.16, Grade 1, certified automatic, self-latching, and manual flush bolts and surface bolts. Manual flush bolts to be furnished with top rod of sufficient length to allow bolt location approximately six feet from the floor. Furnish dust proof strikes for bottom bolts. Surface bolts to be minimum 8” in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
1. Acceptable Manufacturers:
 - a. Burns Manufacturing (BU).
 - b. Rockwood Manufacturing (RO).
 - c. Trimco (TC).
- B. Door Push Plates and Pulls: ANS/BHMA A156.6 certified door pushes and pulls of type and design specified below or in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.

2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
4. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.
 - a. Acceptable Manufacturers:
 - 1) Burns Manufacturing (BU).
 - 2) Rockwood Manufacturing (RO).
 - 3) Trimco (TC).

2.4 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.
- C. Cylinders: Original manufacturer cylinders complying with the following:
 1. Mortise Type: Threaded cylinders with rings and straight- or clover-type cam.
 2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
 4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 5. Keyway: Match Facility Standard.
- D. Permanent Cores: Manufacturer's standard; finish face to match lockset; complying with the following:
 1. Removable Cores: Core insert, removable by use of a special key, and for use with only the core manufacturer's cylinder and door hardware. Provide removable core (small or large format) as specified in Hardware Sets.
- E. Security Cylinders: ANSI/BHMA A156.5, Grade 1, patented security cylinders and keys able to be used together under the same facility master or grandmaster key system. Cylinders are to be factory keyed.
 1. Acceptable Manufacturers:
 - a. Corbin Russwin (RU) - Pyramid PS Series (Interior).
 - b. Sargent Manufacturing (SA) - KESO Series (Exterior).
- F. Keying System: Each type of lock and cylinders to be factory keyed. Conduct specified "Keying Conference" to define and document keying system instructions and requirements. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner. Incorporate decisions made in keying conference, and as follows:

1. Existing System: Master key or grand master key locks to Owner's existing system.
- G. Key Quantity: Provide the following minimum number of keys:
1. Top Master Key: One (1)
 2. Change Keys per Cylinder: Two (2)
 3. Master Keys (per Master Key Group): Two (2)
 4. Grand Master Keys (per Grand Master Key Group): Two (2)
 5. Construction Keys (where required): Ten (10)
 6. Construction Control Keys (where required): Two (2)
 7. Permanent Control Keys (where required): Two (2)
- H. Construction Keying: Provide construction master keyed cylinders or temporary keyed construction cores where specified. Provide construction master keys in quantity as required by project Contractor. Replace construction cores with permanent cores. Furnish permanent cores for installation as directed under specified "Keying Conference".
- I. Key Registration List: Provide keying transcript list to Owner's representative in the proper format for importing into key control software.

2.5 MECHANICAL LOCKS AND LATCHING DEVICES

- A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 certified mortise locksets furnished in the functions as specified in the Hardware Sets. Locksets to be manufactured with a corrosion resistant, stamped 12 gauge minimum formed steel case and be field-reversible for handing without disassembly of the lock body. Lockset trim (including knobs, levers, escutcheons, roses) to be the product of a single manufacturer. Furnish with standard 2 3/4" backset, 3/4" throw anti-friction stainless steel latchbolt, and a full 1" throw stainless steel bolt for deadbolt functions.
1. Acceptable Manufacturers:
 - a. Corbin Russwin Hardware (RU) – ML2000 Series.
 - b. No Substitution – Facility Standard.
- B. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Grade 1 certified cylindrical (bored) locksets furnished in the functions as specified in the Hardware Sets. Lock chassis fabricated of heavy gauge steel, zinc dichromate plated, with through-bolted application. Furnish with solid cast levers, standard 2 3/4" backset, and 1/2" (3/4" at rated paired openings) throw brass or stainless steel latchbolt. Locks are to be non-handed and fully field reversible.
1. Acceptable Manufacturers:
 - a. Corbin Russwin Hardware (RU) – CL3300 Series.
 - b. No Substitution – Facility Standard.
- C. Lock Trim Design: As specified in Hardware Sets.

2.6 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
 3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
- B. Standards: Comply with the following:
1. Strikes for Mortise Locks and Latches: BHMA A156.13.
 2. Strikes for Bored Locks and Latches: BHMA A156.2.
 3. Strikes for Auxiliary Deadlocks: BHMA A156.5.
 4. Dustproof Strikes: BHMA A156.16.

2.7 CONVENTIONAL EXIT DEVICES

- A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:
1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
 2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
 - a. Fire Exit Removable Mullions: Provide keyed 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 to be used only with exit devices for which they have been tested.
 3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
 4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is not acceptable except in any case where the door light extends behind the device as in a full glass configuration.
 5. Flush End Caps: Provide heavy weight impact resistant flush end caps made of architectural metal in the same finish as the devices as in the Hardware Sets. Plastic end caps will not be acceptable.

6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty trim with cold forged escutcheons, beveled edges, and four threaded studs for thru-bolts.
 - a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets. Provided free-wheeling type trim where indicated.
 - b. Where function of exit device requires a cylinder, provide an interchangeable core type keyed cylinder (Rim or Mortise) as specified in Hardware Sets.
 7. Vertical Rod Exit Devices: Provide and install interior surface and concealed vertical rod exit devices as Less Bottom Rod (LBR) unless otherwise indicated.
 8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2” wide stiles.
 9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
 10. Rail Sizing: Provide exit device rails factory sized for proper door width application.
 11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.
- B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Mounting rails to be formed from smooth stainless steel, brass or bronze architectural materials no less than 0.072" thick, with push rails a minimum of 0.062" thickness. Painted or aluminum metal rails are not acceptable. Exit device latch to be investment cast stainless steel, pullman type, with deadlock feature.
1. Acceptable Manufacturers:
 - a. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
 - b. Von Duprin (VD) - 35A/98 XP Series.
 - c. Yale Locks and Hardware (YA) - 7000 Series.
- C. Tube Steel Removable Mullions: ANSI/BHMA A156.3 removable steel mullions with malleable-iron top and bottom retainers and a primed paint finish. Provide keyed removable feature, stabilizers, and mounting brackets as specified in the Hardware Sets. At openings designed for severe wind load conditions due to hurricanes or tornadoes, provide manufacturers approved mullion and accessories to meet applicable state and local windstorm codes.
1. Acceptable Manufacturers:
 - a. Corbin Russwin Hardware (RU) - 700/900 Series.
 - b. Von Duprin (VD) - 9954 Series.
 - c. Yale Locks and Hardware (YA) - M200 Series.

2.8 DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.
 2. Standards: Closers to comply with UL-10C and UBC 7-2 for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
 3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.
 4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
 - a. Where closers are indicated to have mechanical dead-stop, provide heavy duty arms and brackets with an integral positive stop.
 - b. Where closers are indicated to have mechanical hold open, provide heavy duty units with an additional built-in mechanical holder assembly designed to hold open against normal wind and traffic conditions. Holder to be manually selectable to on-off position.
 - c. Where closers are indicated to have a cushion-type stop, provide heavy duty arms and brackets with spring stop mechanism to cushion door when opened to maximum degree.
 - d. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics. Provide drop plates or other accessories as required for proper mounting.
 5. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates, and through-bolt or security type fasteners as specified in the door Hardware Sets.
- B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.
1. Acceptable Manufacturers:
 - a. Corbin Russwin Hardware (RU) - DC8000 Series.
 - b. LCN Closers (LC) - 4040XP Series.
 - c. Norton Door Controls (NO) - 7500 Series.

2.9 SURFACE MOUNTED CLOSER HOLDERS

- A. Electromagnetic Door Holders: Certified ANSI A156.15 electromagnetic door holder/releases with a minimum 20 to 40 pounds holding power and single coil construction able to

accommodate 12VDC, 24VAC, 24VDC and 120VAC. Coils to be independently wound, employing an integral fuse and armatures to include a positive release button.

1. Acceptable Manufacturers:
 - a. LCN Door Closers (LC) - SEM7800 Series.
 - b. Rixson (RF) - 980/990 Series.
 - c. Sargent Manufacturing (SA) - 1560 Series.

2.10 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
3. Metal Protection Plates: ANSI/BHMA A156.6 certified metal protection plates (kick, armor, or mop), beveled on four edges (B4E), fabricated from the following:
 - a. Stainless Steel: 300 series, 050-inch thick, with countersunk screw holes (CSK).
4. Fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets.
5. Acceptable Manufacturers:
 - a. Burns Manufacturing (BU).
 - b. Rockwood Manufacturing (RO).
 - c. Trimco (TC).

2.11 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
 1. Acceptable Manufacturers:
 - a. Burns Manufacturing (BU).

- b. Rockwood Manufacturing (RO).
 - c. Trimco (TC).
- C. Overhead Door Stops and Holders: ANSI/BHMA A156.6, Grade 1 certified overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.
- 1. Acceptable Manufacturers:
 - a. Rixson Door Controls (RF).
 - b. Rockwood Manufacturing (RO).
 - c. Sargent Manufacturing (SA).

2.12 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. 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 perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: 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 UL-10C.
- 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and UBC 7-2, Fire Tests of Door Assemblies.
- 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. Acceptable Manufacturers:
- 1. Pemko Manufacturing (PE).
 - 2. Reese Enterprises, Inc. (RS).
 - 3. Zero International (ZE).

2.13 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.14 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically 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. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and 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 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

3.5 ADJUSTING

- A. Initial 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.

3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish, and provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SCHEDULE

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
- B. Manufacturer’s Abbreviations:

1. MK - McKinney
2. RO - Rockwood
3. RU - Corbin Russwin
4. SA - Sargent
5. RF - Rixson
6. NO - Norton
7. PE - Pemko

Hardware Schedule

Set: 1.0 (NOT USED)

3 Hinge	TA2714	US26D	MK
1 Cylindrical Lock (storeroom)	CL3357 PZD CTP	626	RU
1 Cylinder Core (Pyramid)	8027		RU
1 Door Closer	R7500	689	NO
1 Kick Plate	K1050 8" 4BE	US32D	RO
1 Door Stop	403 (or) 441CU	US26D	RO
1 Gasketing	S88BL		PE

Set: 2.0

Doors: A147/1

3 Hinge	TA2714	US26D	MK
1 Cylindrical Lock (storeroom)	CL3357 PZD CTP	626	RU
1 Cylinder Core (Pyramid)	8027		RU

1 Door Closer	PR7500	689	NO
1 Kick Plate	K1050 8" 4BE	US32D	RO
1 Door Stop	403 (or) 441CU	US26D	RO
1 Gasketing	S88BL		PE

Set: 3.0 (NOT USED)

3 Hinge	TA2714	US26D	MK
1 Cylindrical Lock (privacy)	CL3320 PZD	626	RU
1 Door Closer	CLP7500	689	NO
1 Kick Plate	K1050 8" 4BE	US32D	RO
3 Silencer	608 (or) 609	GRY	RO

Set: 4.0

Doors: 0052/1, 0053/1, 0054/1, 0055/1, 0056/1, 0057/1, 0058/1, 0059/1

3 Hinge (heavy weight)	T4A3786	US26D	MK
1 Cylindrical Lock (classroom intruder)	CL3352 PZD CTPD	626	RU
1 Cylinder Core (Pyramid)	8027		RU
1 Door Closer	PR7500	689	NO
1 Kick Plate	K1050 8" 4BE	US32D	RO
1 Door Stop	403 (or) 441CU	US26D	RO
1 Gasketing	S773BL		PE

Set: 5.0

Doors: A144/1, A146/1

6 Hinge (heavy weight)	T4A3786	US26D	MK
2 Push/Pull Bar Set	BF15847 T1	US32D	RO
2 Door Closer	PR7500	689	NO
2 Door Stop	403 (or) 441CU	US26D	RO
1 Threshold	166A MSES10SS		PE
1 Gasketing	S773BL		PE
2 Sweep	315CN		PE
2 Astragal	297AS		PE

Set: 6.0

Doors: A144/2, A146/2

2 Continuous Hinge	MCK-12HD - DOOR HEIGHT	CL	MK
1 Removable Mullion	900BKM - DOOR HEIGHT		RU

1 Exit Device (rim, dummy trim)	ED4200 P1050 M52	630	RU
1 Exit Device (rim, nightlatch)	ED4200 P1057 M52	630	RU
3 Cylinder (KESO, mortise)	82-72	US26D	SA
1 Cylinder (KESO, rim)	82-64	US26D	SA
2 Door Closer	PR7500	689	NO
2 Door Stop - HD Floor	471	US26D	RO
1 Threshold	270A MSES25SS		PE
2 Sweep	3452CNB		PE

Notes: Perimeter/meeting stile seals by door/frame supplier.

Set: 7.0 (NOT USED)

6 Hinge	TA2314	US32D	MK
1 Dust Proof Strike	570	US26D	RO
2 Flush Bolt	555 (or) 557	US26D	RO
1 Mortise Lock (storeroom)	ML2057 PSA SS078 LC	626	RU
1 Cylinder (KESO, mortise)	82-72	US26D	SA
2 Surface Overhead Stop	10-X36	630	RF
1 Threshold	270A MSES25SS		PE
1 Rain Guard	346C		PE
1 Gasketing	S773BL		PE
2 Sweep	3452CNB		PE
1 Astragal	S771C		PE
1 Astragal	357SP		PE

Set: 8.0 (NOT USED)

3 Hinge	TA2714	US26D	MK
1 Cylindrical Lock (storeroom)	CL3357 PZD CTP	626	RU
1 Cylinder Core (Pyramid)	8027		RU
1 Door Closer	PR7500	689	NO
1 Kick Plate	K1050 8" 4BE	US32D	RO
1 Door Stop	403 (or) 441CU	US26D	RO
3 Silencer	608 (or) 609	GRY	RO

Set: 9.0

Doors: A143/1

3 Hinge	TA2714	US26D	MK
1 Cylindrical Lock (privacy)	CL3320 PZD	626	RU

1 Door Closer	PR7500	689	NO
1 Kick Plate	K1050 8" 4BE	US32D	RO
1 Door Stop	403 (or) 441CU	US26D	RO
3 Silencer	608 (or) 609	GRY	RO

Set: 10.0

Doors: A142/1

6 Hinge	TA2714	US26D	MK
1 Dust Proof Strike	570	US26D	RO
1 Flush Bolt (automatic)	2842 (or) 2942	US26D	RO
1 Cylindrical Lock (storeroom)	CL3357 PZD CTP	626	RU
1 Coordinator	1700	BLK	RO
2 Door Closer	PR7500	689	NO
2 Kick Plate	K1050 8" 4BE	US32D	RO
2 Door Stop	403 (or) 441CU	US26D	RO
1 Gasketing	S88BL		PE
2 Astragal	297AS		PE

Set: 11.0

Doors: A145A/1

3 Hinge	TA2714	US26D	MK
1 Cylindrical Lock (storeroom)	CL3357 PZD CTP	626	RU
1 Cylinder Core (Pyramid)	8027		RU
1 Door Closer	CLP7500	689	NO
1 Kick Plate	K1050 8" 4BE	US32D	RO
1 Gasketing	S88BL		PE

Set: 12.0

Doors: 0052/2, 0053/2, 0054/2, 0055/2, 0056/2, 0057/2, 0058/2, 0059/2

3 Hinge	TA2714	US26D	MK
1 Cylindrical Lock (classroom)	CL3355 PZD CTPD	626	RU
1 Cylinder Core (Pyramid)	8027		RU
1 Door Stop	403 (or) 441CU	US26D	RO
3 Silencer	608 (or) 609	GRY	RO

Set: 13.0

Doors: J/1, K/1

3 Hinge (heavy weight)	T4A3786	US26D	MK
1 Push Plate	70G (4 X 20)	630	RO
1 Door Pull	BF Y110	US32D	RO
1 Door Closer	R7500	689	NO
2 Kick Plate	K1050 8" 4BE	US32D	RO
1 Door Stop	403 (or) 441CU	US26D	RO
3 Silencer	608 (or) 609	GRY	RO

Set: 14.0

Doors: A141/2

6 Hinge (heavy weight)	T4A3386	US32D	MK
1 Removable Mullion	900BKM - DOOR HEIGHT		RU
2 Exit Device (rim, exit only)	ED5200	630	RU
1 Door Closer	CPS7500	689	NO
1 Threshold	270A MSES25SS		PE
1 Rain Guard	346C		PE
1 Gasketing	S773BL		PE
2 Sweep	3452CNB		PE

Notes: Perimeter/meeting stile seals by door/frame supplier.

Set: 15.0

Doors: A141/1

6 Hinge (heavy weight)	T4A3786	US26D	MK
2 Exit Device (SVR, passage)	ED5470B PR910 M55	630	RU
2 Door Closer	PR7500	689	NO
2 Kick Plate	K1050 8" 4BE	US32D	RO
2 Electromagnetic Holder	998	689	RF
1 Gasketing	S88BL		PE
2 Astragal	297AS		PE

Notes: Connect holder to fire alarm system.

END OF SECTION 087100

SECTION 096813 - TILE CARPETING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. 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 modular carpet tile.
- B. Related Requirements:
 - 1. Section 096513 "Resilient Base and Accessories" for resilient wall base and accessories installed with carpet tile.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include manufacturer's written data on physical characteristics, durability, and fade resistance.
 - 2. Include installation recommendations for each type of substrate.
- 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.

1.4 CLOSEOUT SUBMITTALS

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

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, 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 100 percent of amount installed for each type indicated.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who is certified by the International Certified Floorcovering Installers Association at the Commercial II or Master II certification level.
- B. Fire-Test-Response Ratings: Where indicated, provide carpet tile identical to those of assemblies tested for fire response according to NFPA 253 by a qualified testing agency.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Comply with CRI 104.

1.8 FIELD CONDITIONS

- A. Comply with CRI 104 for temperature, humidity, and ventilation limitations.
- B. Environmental Limitations: Do not deliver or install carpet tiles until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at occupancy levels during the remainder of the construction period.
- C. Do not install carpet tiles 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 tiles, install carpet tiles before installing these items.

1.9 WARRANTY

- A. Special Warranty for Carpet Tiles: Manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period.
 - 1. Warranty does not include deterioration or failure of carpet tile due to unusual traffic, failure of substrate, vandalism, or abuse.
 - 2. Failures include, but are not limited to, more than 10 percent edge raveling, snags, runs, dimensional stability, excess static discharge, loss of tuft bind strength, loss of face fiber, and delamination.
 - 3. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CARPET TILE (CPT-1)

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Tandus; Abrasive Action II or comparable product by one of the following:
 - 1. Mannington
 - 2. Shaw.
- B. Characteristics:

1. Color: As selected by Architect from manufacturer's full range.
2. Dye Method: 100 percent solution dyed.
3. Fiber Type: TDX Nylon.
4. Pile Characteristic: Accuweave patterned loop.
5. Tuft Density: 96 tufts per square inch.
6. Pile Height (average): .0187 inches.
7. Stitches: 8.0 per inch.
8. Gage: 1/12.
9. Backing System: Powerbond, or approved equivalent.
10. Size: 24 by 24 inches (610 by 610 mm).
11. Applied Soil-Resistance Treatment: Ensure.

2.2 INSTALLATION ACCESSORIES

- A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or recommended by carpet tile manufacturer.
- B. Adhesives: Water-resistant, mildew-resistant, nonstaining, pressure-sensitive type to suit products and subfloor conditions indicated, that complies with flammability requirements for installed carpet tile and is recommended by carpet tile manufacturer for releasable installation.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet tile performance. Examine carpet tile for type, color, pattern, and potential defects.
- 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 033000 "Cast-in-Place Concrete" for slabs receiving carpet tile.
 3. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.

3.2 PREPARATION

- A. General: Comply with CRI 104, Section 6.2, "Site Conditions; Floor Preparation," and with 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, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch (3 mm) wide or wider and protrusions more than 1/32 inch (0.8 mm) unless more stringent requirements are required by manufacturer's written instructions.

- 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.

3.3 INSTALLATION

- A. General: Comply with CRI 104, Section 14, "Carpet Modules," and with carpet tile manufacturer's written installation instructions.
- B. Installation Method: As recommended in writing by carpet tile manufacturer.
- C. Maintain dye lot integrity. Do not mix dye lots in same area.
- D. 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.
- E. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- F. 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.
- G. Install pattern parallel to walls and borders.

3.4 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 16, "Protecting 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.

END OF SECTION 096813

SECTION 26 27 26

WIRING DEVICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Tamper-resistant receptacles, tamper-resistant receptacles with integral GFCI, and associated device plates.
2. Tamper-resistant and weather-resistant receptacles.
3. Snap switches and wall-box dimmers.
4. Wall-switch.

1.2 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Receptacles for Owner-Furnished Equipment: Match plug configurations.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.

1.4 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. 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:

1. Cooper Wiring Devices, Inc.
2. Hubbell.
3. Leviton Manufacturing Co., Inc.

4. Pass & Seymour/Legrand (Pass & Seymour).

- B. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

2.2 GENERAL WIRING-DEVICE REQUIREMENTS

- A. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.
- C. Devices that are manufactured for use with modular plug-in connectors may be substituted under the following conditions:
1. Connectors shall comply with UL 2459 and shall be made with stranding building wire.
 2. Devices shall comply with the requirements in this Section.
- D. All receptacles located in areas accessible by children shall be of the tamper-resistant type.

2.3 TAMPER-RESISTANT STRAIGHT-BLADE RECEPTACLES

- A. Tamper-Resistant Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498 Supplement sd, and FS W-C-596.
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. Cooper Wiring Devices, Inc.
 - b. Hubbell.
 - c. Leviton Manufacturing Co., Inc.
 - d. Pass & Seymour/Legrand (Pass & Seymour).

2.4 TAMPER-RESISTANT GFCI RECEPTACLES

- A. General Description:
1. Straight blade, non-feed-through type.
 2. Comply with NEMA WD 1, NEMA WD 6, UL 498, UL 943 Class A, and FS W-C-596.
 3. Include indicator light that shows when the GFCI has malfunctioned and no longer provides proper GFCI protection.
- B. Tamper-Resistant GFCI Convenience Receptacles, 125 V, 20 A:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Cooper Wiring Devices, Inc.; Division of Cooper Industries, Inc.
 - b. Hubbell Incorporated; Wiring Device-Kellems.
 - c. Leviton Manufacturing Co., Inc.
 - d. Pass & Seymour/Legrand (Pass & Seymour).

2.5 TOGGLE SWITCHES

- A. Comply with NEMA WD 1, UL 20, and FS W-S-896.
- B. Switches, 120/277 V, 20 A:
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Single Pole:
 - 1) Cooper; AH1221.
 - 2) Hubbell; HBL1221.
 - 3) Leviton; 1221-2.
 - 4) Pass & Seymour; CSB20AC1.
 - b. Two Pole:
 - 1) Cooper; AH1222.
 - 2) Hubbell; HBL1222.
 - 3) Leviton; 1222-2.
 - 4) Pass & Seymour; CSB20AC2.
 - c. Three Way:
 - 1) Cooper; AH1223.
 - 2) Hubbell; HBL1223.
 - 3) Leviton; 1223-2.
 - 4) Pass & Seymour; CSB20AC3.
 - d. Four Way:
 - 1) Cooper; AH1224.
 - 2) Hubbell; HBL1224.
 - 3) Leviton; 1224-2.
 - 4) Pass & Seymour; CSB20AC4.

2.6 WALL PLATES

- A. Single and combination types shall match corresponding wiring devices.
 - 1. Plate-Securing Screws: Metal with head color to match plate finish.
 - 2. Material for Finished Spaces: 0.035-inch- thick, satin-finished, Type 302 stainless steel.
 - 3. Material for Unfinished Spaces: Galvanized steel.
 - 4. Material for Damp Locations: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in wet and damp locations.
- B. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with Type 3R, weather-resistant, die-cast aluminum with lockable cover.

2.7 FINISHES

- A. Device Color:

1. Wiring Devices Connected to Normal Power System: As selected by owner unless otherwise indicated or required by NFPA 70 or device listing.
- B. Wall Plate Color: For plastic covers, match device color.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.
- B. Coordination with Other Trades:
 1. Protect installed devices and their boxes. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of boxes.
 2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
 3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
 4. Install wiring devices after all wall preparation, including painting, is complete.
- C. Conductors:
 1. Do not strip insulation from conductors until right before they are spliced or terminated on devices.
 2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
 3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.
 4. Existing Conductors:
 - a. Cut back and pigtail, or replace all damaged conductors.
 - b. Straighten conductors that remain and remove corrosion and foreign matter.
 - c. Pigtailling existing conductors is permitted, provided the outlet box is large enough.
- D. Device Installation:
 1. Replace devices that have been in temporary use during construction and that were installed before building finishing operations were complete.
 2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
 3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
 4. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.
 5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
 6. Use a torque screwdriver when a torque is recommended or required by manufacturer.
 7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
 8. Tighten unused terminal screws on the device.
 9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.

- E. Receptacle Orientation:
 - 1. Install ground pin of vertically mounted receptacles up, and on horizontally mounted receptacles to the left.
- F. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.
- G. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multi-gang wall plates.
- H. Adjust locations of service poles to suit arrangement of partitions and furnishings.

3.2 GFCI RECEPTACLES

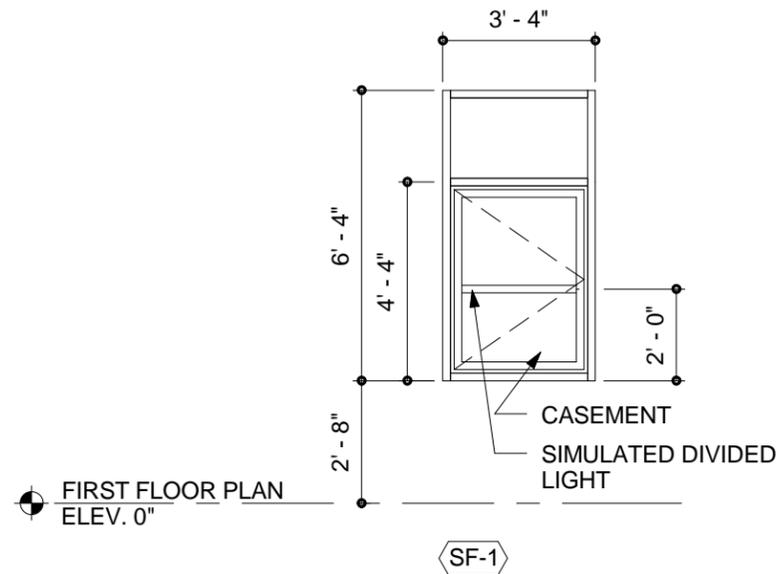
- A. Install non-feed-through-type GFCI receptacles where protection of downstream receptacles is not required.

3.3 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
 - 1. Test Instruments: Use instruments that comply with UL 1436.
 - 2. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated digital-display indicators of measurement.
- B. Tests for Convenience Receptacles:
 - 1. Line Voltage: Acceptable range is 105 to 132 V.
 - 2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is unacceptable.
 - 3. Ground Impedance: Values of up to 2 ohms are acceptable.
 - 4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
 - 5. Using the test plug, verify that the device and its outlet box are securely mounted.
 - 6. Tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.
- C. Test every receptacle for polarity grounding and GFI protection
- D. Wiring device will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.

END OF SECTION

DOOR SCHEDULE																	
MARK	DOOR							FRAME						FIRE RATING	HDWE SET	COMMENTS	
	SIZE			MATL	TYPE	FIN	GLAZ	UNDER CUT	MATL	TYPE	FIN	DETAIL					
	WIDTH	HT	THICK									HEAD	JAMB				SILL
0052/1	3' - 0"	7' - 2"	1 3/4"	SCWD	B	RWB	1/4" Tempered		HM	HM-1	PT	H1A	J1	-	45 minutes	4.0	
0052/2	3' - 0"	7' - 2"	1 3/4"	SCWD	A	RWB			HM	HM-1	PT	H1A	J1	-	None	12.0	
0053/1	3' - 0"	7' - 2"	1 3/4"	SCWD	B	RWB	1/4" Tempered		HM	HM-1	PT	H1A	J1	-	45 minutes	4.0	
0053/2	3' - 0"	7' - 2"	1 3/4"	SCWD	A	RWB			HM	HM-1	PT	H1A	J1	-	None	12.0	
0054/1	3' - 0"	7' - 2"	1 3/4"	SCWD	B	RWB	1/4" Tempered		HM	HM-1	PT	H1A	J1	-	45 minutes	4.0	
0054/2	3' - 0"	7' - 2"	1 3/4"	SCWD	A	RWB			HM	HM-1	PT	H1A	J1	-	None	12.0	
0055/1	3' - 0"	7' - 2"	1 3/4"	SCWD	B	RWB	1/4" Tempered		HM	HM-1	PT	H1A	J1	-	45 minutes	4.0	
0055/2	3' - 0"	7' - 2"	1 3/4"	SCWD	A	RWB			HM	HM-1	PT	H1A	J1	-	None	12.0	
0056/1	3' - 0"	7' - 2"	1 3/4"	SCWD	B	RWB	1/4" Tempered		HM	HM-1	PT	H1A	J1	-	45 minutes	4.0	
0056/2	3' - 0"	7' - 2"	1 3/4"	SCWD	A	RWB			HM	HM-1	PT	H1A	J1	-	None	12.0	
0057/1	3' - 0"	7' - 2"	1 3/4"	SCWD	B	RWB	1/4" Tempered		HM	HM-1	PT	H1A	J1	-	45 minutes	4.0	
0057/2	3' - 0"	7' - 2"	1 3/4"	SCWD	A	RWB			HM	HM-1	PT	H1A	J1	-	None	12.0	
0058/1	3' - 0"	7' - 2"	1 3/4"	SCWD	B	RWB	1/4" Tempered		HM	HM-1	PT	H1A	J1	-	45 minutes	4.0	
0058/2	3' - 0"	7' - 2"	1 3/4"	SCWD	A	RWB			HM	HM-1	PT	H1A	J1	-	None	12.0	
0059/1	3' - 0"	7' - 2"	1 3/4"	SCWD	B	RWB	1/4" Tempered		HM	HM-1	PT	H1A	J1	-	45 minutes	4.0	
0059/2	3' - 0"	7' - 2"	1 3/4"	SCWD	A	RWB			HM	HM-1	PT	H1A	J1	-	None	12.0	
A141/1	6' - 0"	7' - 2"	1 3/4"	HM	B	Painted	1/4" Tempered		HM	HM-1	PT	H1	J1	-	90 minutes	15.0	PAIR DOOR, EXIT DEVICE
A141/2	6' - 0"	7' - 2"	1 3/4"	ALUM	D	Anodized	1" Insulated		HM	HM-1A	-	6/A501	5/A501	S2	None	14.0	PAIR DOOR, EXIT DEVICE
A142/1	6' - 0"	7' - 2"	1 3/4"	SCWD	A	RWB		3/4"	HM	HM-1	PT	H1	J1	-	45 minutes	10.0	PAIR DOOR
A143/1	3' - 0"	7' - 2"	1 3/4"	SCWD	A	RWB		3/4"	HM	HM-1	PT	H1	J2	S1	None	9.0	
A144/1	6' - 0"	7' - 2"	1 3/4"	HM	D	Painted	1/4" Tempered		HM	HM-1	PT	H1	J1	-	None	5.0	PAIR DOOR, EXIT DEVICE
A144/2	6' - 0"	7' - 2"	1 3/4"	ALUM	D	Anodized	1" Insulated		ALUM	AL-1	-	H3	J3	S2	None	6.0	PAIR DOOR, EXIT DEVICE
A145A/1	3' - 0"	7' - 2"	1 3/4"	SCWD	A	RWB		3/4"	HM	HM-1	PT	H1	J1	-	45 minutes	11.0	
A146/1	6' - 0"	7' - 2"	1 3/4"	HM	D	Painted	1/4" Tempered		HM	HM-1	PT	H1	J1	-	None	5.0	PAIR DOOR, EXIT DEVICE
A146/2	6' - 0"	7' - 2"	1 3/4"	ALUM	D	Anodized	1" Insulated		ALUM	AL-1	-	H3	J3	S2	None	6.0	PAIR DOOR, EXIT DEVICE
A147/1	3' - 0"	7' - 2"	1 3/4"	SCWD	A	RWB		3/4"	HM	HM-1	PT	H1	J1	-	45 minutes	2.0	
J/1	3' - 0"	7' - 2"	1 3/4"	SCWD	A	RWB		3/4"	HM	HM-1	PT	H1	J2	S1	None	13.0	
K/1	3' - 0"	7' - 2"	1 3/4"	SCWD	A	RWB		3/4"	HM	HM-1	PT	H1	J2	S1	None	13.0	



DOOR SCHEDULE & WINDOW TYPE
SF-1 - A601

PROJECT NO.: 2013157.02
DATE: APRIL 23, 2014
SCALE: 1/4" = 1'-0"
DRAWN BY: JML

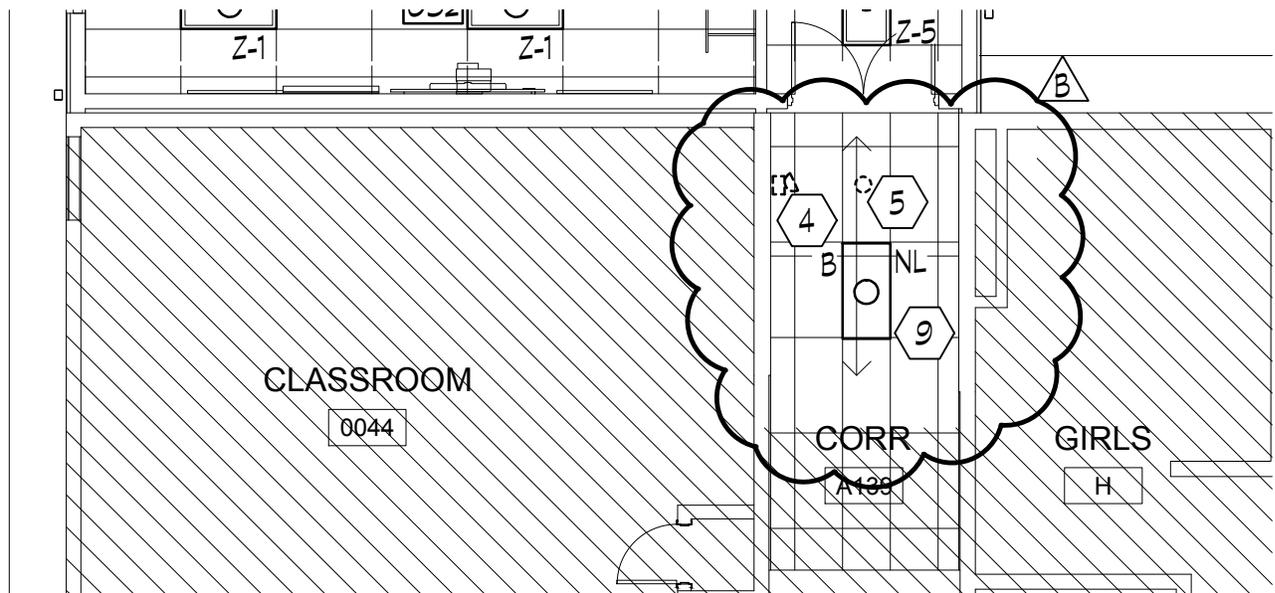
SKA-03

EAST MILLSBORO ELEMENTARY

29346 IRON BRANCH ROAD
MILLSBORO, DELAWARE 19966

Salisbury, MD
312 West Main Street
Suite 300
Salisbury, MD 21801
P: 410.546.9100
F: 410.546.9100
www.beckermorgan.com





DRAWING NOTES:

1. TYPICAL EMERGENCY LIGHT WIRED FROM UNSWITCHED SIDE OF LOCAL LIGHTING CIRCUIT.
2. TYPICAL "ER" FIXTURE. PROVIDE 3/4" CONDUIT WITH 3#12 FROM NEAREST "EM2" FIXTURE.
3. TYPICAL NIGHT LIGHT WIRED FROM UNSWITCHED SIDE OF LIGHTING CIRCUIT.
4. ELECTRICAL CONTRACTOR TO DEMOLISH EXISTING EMERGENCY REMOTE HEAD SHOWN DASHED AND REMAKE EXISTING CIRCUIT AS REQUIRED. REMOVE ABANDONED WIRING AND CONDUIT BACK TO CLOSEST FIXTURE OR DEVICE TO REMAIN.
5. ELECTRICAL CONTRACTOR TO DEMOLISH EXISTING EXTERIOR CAN LIGHT SHOWN DASHED AND REWORK, EXTEND, AND CONNECT EXISTING EXTERIOR LIGHTING CIRCUIT WITH WITH 2 #10 + #10G, 3/4" C TO NEW TYPE "F" AND TYPE "G" EXTERIOR FIXTURES. CONTRACTOR TO FIELD VERIFY THAT EXISTING EXTERIOR LIGHTING CIRCUIT HAS SUFFICIENT CAPACITY TO SUPPORT ADDED FIXTURES PRIOR TO ROUGH-IN. CONTRACTOR SHALL NOTIFY ENGINEER IF EXTERIOR LIGHTING CIRCUIT CAPACITY IS AT ITS MAXIMUM.
6. TYPICAL POWER PACK AND OCCUPANCY SENSORS TO PROVIDE AUTOMATIC ON/OFF CONTROL OF LIGHTS IN CLASSROOMS. SWITCHES TO BE WIRED TO LOAD SIDE OF POWER PACK TO PROVIDE MANUAL LIGHT LEVEL CHANGES.
7. TYPICAL SWITCHES FOR INBOARD/OUTBOARD SWITCHING OF LIGHTS IN CLASSROOMS. CONTRACTOR TO WIRE SWITCH CLOSEST TO LOCKSIDE OF DOOR TO OUTBOARD BALLAST AND WIRE REMAINING SWITCH TO INBOARD BALLAST.
8. TYPICAL POWER PACK AND OCCUPANCY SENSORS TO PROVIDE AUTOMATIC ON/OFF CONTROL OF LIGHTS IN CORRIDORS AND BATHROOMS, RESPECTIVELY.
9. CONNECT LIGHT FIXTURE TO EXISTING LIGHTING CIRCUIT SERVING EXISTING CORRIDOR LIGHT. FIXTURE SHALL BE NIGHT LIGHT AND BE UNSWITCHED.

SKETCH # SKE-1

PROJECT: EAST MILLSBORO ELEM.

PROJECT #: 1331070

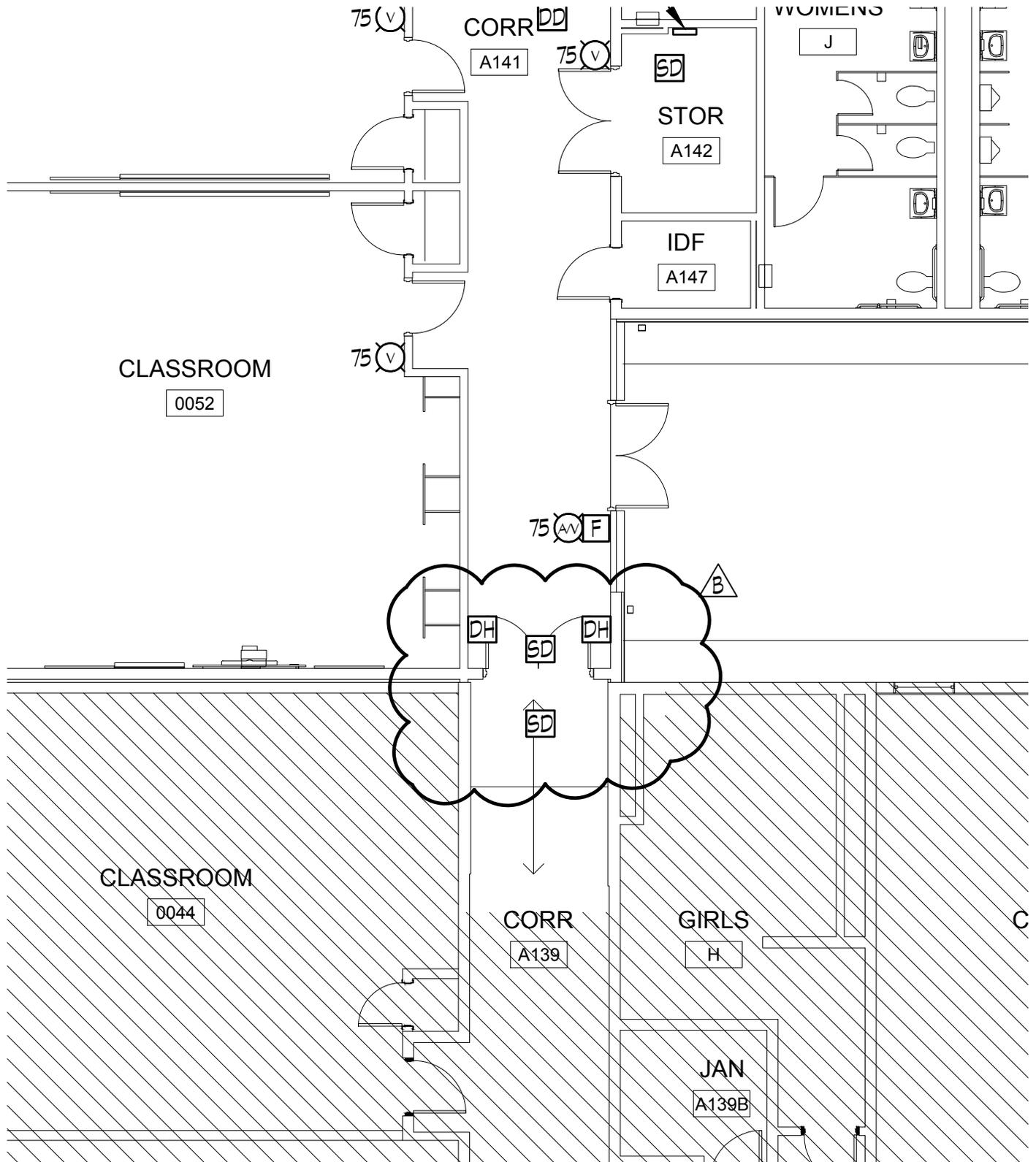
DATE: 04/22/14

DRAWING: E100

REVISION# B



Allen & Shariff Engineering, LLC
 205 East Market Street
 Salisbury, Maryland 21801
 Tel: 410.341.0200



SKETCH # SKE-2

PROJECT: EAST MILLSBORO ELEM.

PROJECT #: 1331070

DATE: 04/22/14

DRAWING: E102

REVISION# B



Allen & Shariff Engineering, LLC
 205 East Market Street
 Salisbury, Maryland 21801
 Tel: 410.341.0200



Know what's below.
Call before you dig.

SHOWN ON THESE CONSTRUCTION DRAWINGS ARE THOSE UTILITIES WHICH HAVE BEEN IDENTIFIED. IT IS THE RESPONSIBILITY OF THE LANDOWNERS OR OPERATORS AND CONTRACTORS TO ASSURE THEMSELVES NO HAZARD EXISTS OR DAMAGE WILL OCCUR TO UTILITIES.

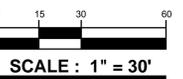
PROJECT TITLE

**EAST MILLSBORO
ELEMENTARY
SCHOOL**

29346 IRON BRANCH ROAD
MILLSBORO
SUSSEX COUNTY, DE

SHEET TITLE

SITE PLAN



ISSUE BLOCK	DATE	DESCRIPTION
7	3-14-14	REVISED PER DE STATE FIRE MARSHAL COMMENTS DATED 3-14-14
6	3-11-14	REVISED PER DELDOT COMMENTS DATED 2-21-14
5	3-14-14	ISSUED FOR BID
4	2-21-14	REVISED PER DNREC COMMENTS ISSUED 1-24-2014
3	2-21-14	REVISED PER DE STATE FIRE MARSHAL OFFICE DATED 2-10-2014
2	1-3-14	REVISED AND UPDATED PER DE AAB COMMENTS DATED 12-12-2013
1	12-17-13	REVISED PER DELDOT COMMENTS DATED 11-21-13

MARK DATE DESCRIPTION

PROJECT NO.: 2013157.02

DATE: 10/21/13

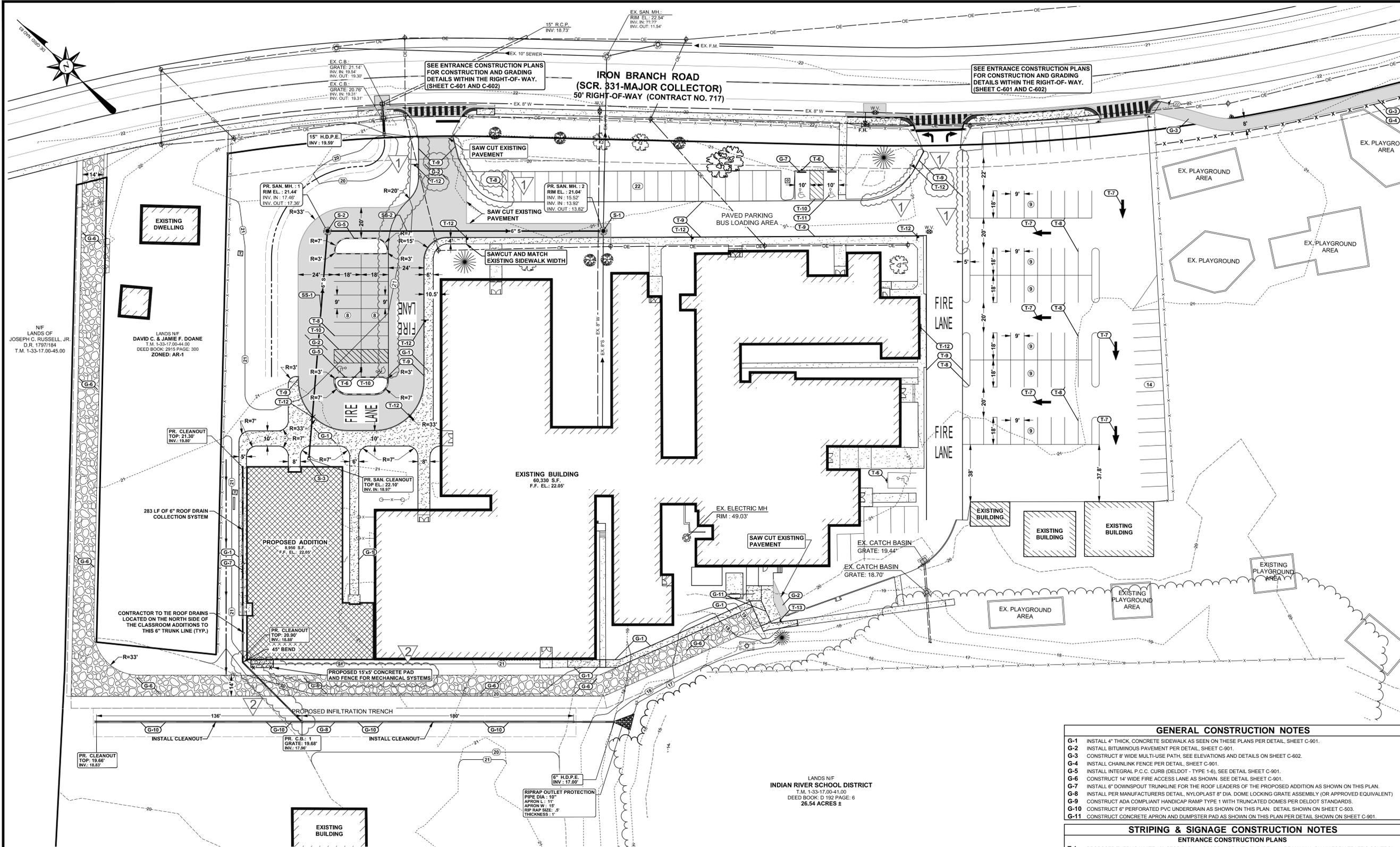
SCALE: 1" = 30'

DRAWN BY: J.N.S. / PROJ. MGR.: G.E.J.

SHEET

C-201

COPYRIGHT 2013



SEE ENTRANCE CONSTRUCTION PLANS FOR CONSTRUCTION AND GRADING DETAILS WITHIN THE RIGHT-OF-WAY. (SHEET C-601 AND C-602)

SEE ENTRANCE CONSTRUCTION PLANS FOR CONSTRUCTION AND GRADING DETAILS WITHIN THE RIGHT-OF-WAY. (SHEET C-601 AND C-602)

NF LANDS OF JOSEPH C. RUSSELL, JR. D.R. 1797/184 T.M. 1-33-17.00-45.00

LANDS N/F DAVID C. & JAMIE F. DOANE T.M. 1-33-17.00-44.00 DEED BOOK: 2915 PAGE: 300 ZONED: AR-1

LANDS N/F INDIAN RIVER SCHOOL DISTRICT T.M. 1-33-17.00-41.00 DEED BOOK: D 192 PAGE: 6 26.54 ACRES ±

LEGEND	
ITEM	PROPOSED
CONCRETE CURB & GUTTER	[Symbol]
CONCRETE SIDEWALK, SLAB / PAVING	[Symbol]
PERVIOUS SURFACED ROAD, DRIVE OR LOT	[Symbol]
INDIVIDUAL TREE OR BUSH	[Symbol]
WIRE FENCE	[Symbol]
CHAINLINK FENCE	[Symbol]
STOCKADE FENCE	[Symbol]
STRUCTURE (CONCRETE, WOOD, METAL, ETC.)	[Symbol]
DRAINAGE DITCH OR SWALE	[Symbol]
EMBANKMENT SLOPES (DOWN)	[Symbol]
CONTOUR	[Symbol]
ELEVATION SPOT SHOT	[Symbol]
BENCH MARK	[Symbol]
PROPERTY OR RIGHT-OF-WAY LINE	[Symbol]
CENTERLINE	[Symbol]
LIGHT POLE	[Symbol]
CONSTRUCTION NOTE	[Symbol]

- GENERAL CONSTRUCTION NOTES**
- G-1 INSTALL 4" THICK, CONCRETE SIDEWALK AS SEEN ON THESE PLANS PER DETAIL, SHEET C-901.
 - G-2 INSTALL BITUMINOUS PAVEMENT PER DETAIL, SHEET C-901.
 - G-3 CONSTRUCT 8' WIDE MULTI-USE PATH, SEE ELEVATIONS AND DETAILS ON SHEET C-602.
 - G-4 INSTALL CHAINLINK FENCE PER DETAIL, SHEET C-901.
 - G-5 INSTALL INTEGRAL P.C.C. CURB (DELDOT - TYPE 1-6), SEE DETAIL SHEET C-901.
 - G-6 CONSTRUCT 14" WIDE FIRE ACCESS LANE AS SHOWN. SEE DETAIL SHEET C-901.
 - G-7 INSTALL 6" DOWNSPOUT TRUNKLINE FOR THE ROOF LEADERS OF THE PROPOSED ADDITION AS SHOWN ON THIS PLAN.
 - G-8 INSTALS PER MANUFACTURERS DETAIL, NYLON LAST 6" DIA. DOME LOCKING GRATE ASSEMBLY (OR APPROVED EQUIVALENT)
 - G-9 CONSTRUCT ADA COMPLIANT HANDICAP RAMP TYPE 1 WITH TRUNCATED DOMES PER DELDOT STANDARDS.
 - G-10 CONSTRUCT 6" PERFORATED PVC UNDERDRAIN AS SHOWN ON THIS PLAN. DETAIL SHOWN ON SHEET C-503.
 - G-11 CONSTRUCT CONCRETE APRON AND DUMPSTER PAD AS SHOWN ON THIS PLAN PER DETAIL SHOWN ON SHEET C-901.

- STRIPING & SIGNAGE CONSTRUCTION NOTES**
- ENTRANCE CONSTRUCTION PLANS**
- T-1 PROPOSED THERMO WHITE 16" STOP BAR IN ACCORDANCE WITH THE "DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS" (ENTRANCE CONSTRUCTION PLANS)
 - T-2 PROPOSED THERMO "PIANO KEY" PEDESTRIAN CROSSWALK - 24" WIDE SOLID WHITE LINES WITH 24" SPACING. SEE DETAIL SHEET C-602 (ENTRANCE CONSTRUCTION PLANS).
 - T-3 INSTALL "STOP" SIGN SIZE 36" X 36" (R1-1) IN ACCORDANCE WITH THE "DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS" (ENTRANCE CONSTRUCTION PLANS).
 - T-4 INSTALL "STOP" SIGN SIZE 18" X 18" (R1-1) IN ACCORDANCE WITH THE "DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS" (ENTRANCE CONSTRUCTION PLANS).
 - T-5 INSTALL "DO NOT ENTER" SIGN (R5-1) IN ACCORDANCE WITH THE "DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS" (ENTRANCE CONSTRUCTION PLANS).
- SITE CONSTRUCTION PLANS**
- T-6 INSTALL HANDICAP PARKING SIGN IN PER DETAIL SHEET C-602
 - T-7 PAINTED WHITE TRAFFIC DIRECTIONAL ARROWS (TYP.) (8 REQUIRED).
 - T-8 PROPOSED PAINTED STRIPING - 4" SOLID WHITE LINE (TYP.)
 - T-9 PROPOSED PAINTED STRIPING - 4" WIDE SOLID YELLOW LINE (TYP.)
 - T-10 PROPOSED PAINTED STRIPING - 4" WIDE SOLID BLUE LINE (TYP.)
 - T-11 PROPOSED HANDICAP SYMBOL - 4" WIDE SOLID BLUE LINE (TYP.)
 - T-12 PROPOSED FIRE LANE SIGN (TYP.) (7 REQUIRED) SEE DETAIL SHEET C-901.
 - T-13 INSTALL "DO NOT ENTER" SIGN (R5-1) IN ACCORDANCE WITH THE "DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS" (ENTRANCE CONSTRUCTION PLANS).

- SANITARY SEWER CONSTRUCTION NOTES**
- S-1 INSTALL DOGHOUSE SANITARY SEWER MANHOLE WITH FRAME AND COVER AT THE INVERTS AND ELEVATIONS SHOWN HEREON.
 - S-2 INSTALL SANITARY SEWER MANHOLE WITH FRAME AND COVER AT THE INVERTS AND ELEVATIONS SHOWN HEREON (TYP.).
 - S-3 CONNECT PROPOSED 8" SANITARY SEWER TO CLEANOUT.