ADDENDUM 2

PENDER COUNTY SCHOOLS
K-8 SCHOOL
PENDER COUNTY, NC
ARCHITECT'S PROJECT NO.: 631310

MOSELEYARCHITECTS

ARCHITECT/ENGINEER — RALEIGH, NORTH CAROLINA

WITHERS-RAVENEL

CIVIL/ LANDSCAPE ARCHITECTURE CONSULTANT — RALEIGH, NORTH CAROLINA

FOODESIGN ASSOCIATES

FOOD SERVICE CONSULTANT — CHARLOTTE, NORTH CAROLINA

August 23, 2024

GENERAL:

Planholders are requested to insert this Addendum in the front of their Project Manual. Inform all concerned that the Bidding Documents are modified by this Addendum.

The following modifications and clarifications are hereby made a part of the Bidding Documents and supersede or otherwise modify the provisions of the published *Project Manual* and *Drawings*, dated August 2, 2024.

Refer to the Drawings, Specification Sections, or other Documents, if any, attached to this Addendum, which are hereby made a part of this Addendum.

MODIFICATIONS TO THE PROJECT MANUAL AND DRAWINGS:

ADD new Documents in their entirety, noted as Addendum No. 2, dated August 23, 2024.

DRAWING S4.1.8 – FRAMING SECTIONS

DRAWING S4.1.9 – FRAMING SECTIONS

DELETE the previously issued Documents indicated below in their entirety and SUBSTITUTE the revised Documents in their entirety, noted as Addendum No. 2, dated August 23, 2024.

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SECTION 042000 – UNIT MASONRY

SECTION 072736 – SPRAY FOAM (SPF) AIR BARRIER

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SECTION 095100 – ACOUSTICAL CEILINGS

SECTION 113013 – RESIDENTIAL APPLIANCES

SECTION 115213 – PROJECTION SCREENS

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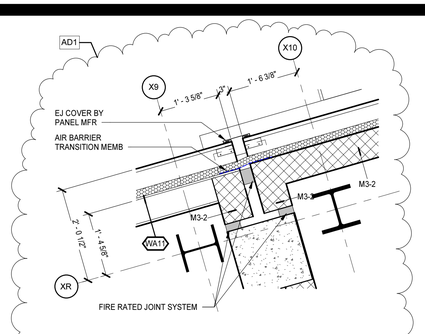
REFER TO SPECIFICATION SECTIONSS ATTACHED TO THE END OF THIS ADDENDUM

END OF ADDENDUM NO 2



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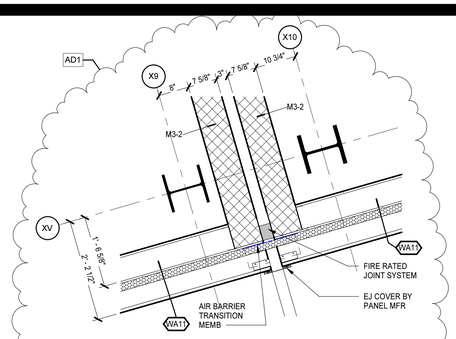

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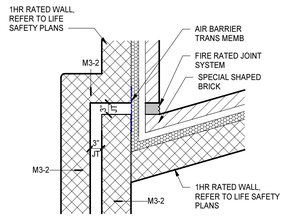

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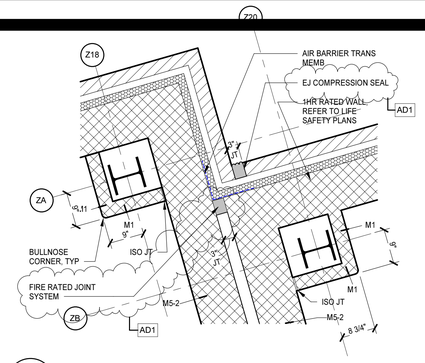

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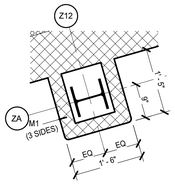

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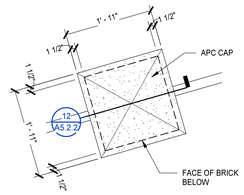

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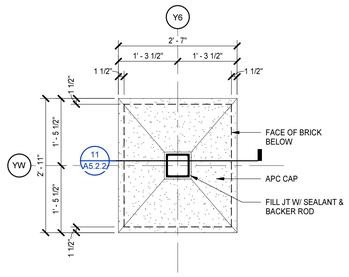

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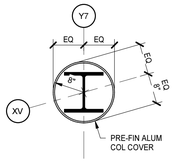

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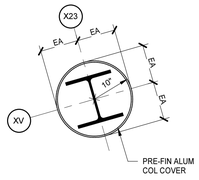

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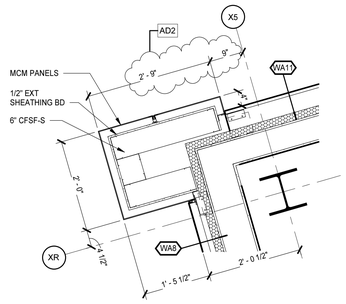

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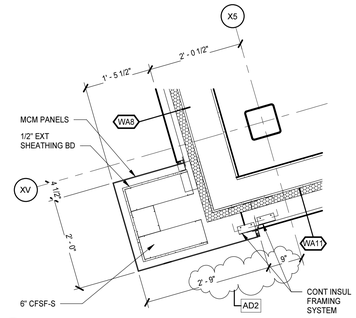

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53 A2.1.18 A2.2.4 **COLUMN DETAIL**
3/4" = 1'-0"

52 A2.1.18 A2.2.4 **COLUMN DETAIL**
3/4" = 1'-0"

51 A2.1.18 A2.2.4 **COLUMN DETAIL**
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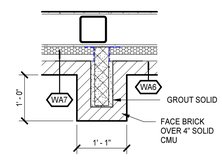

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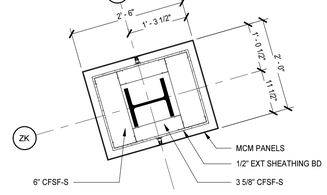

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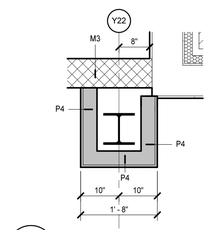

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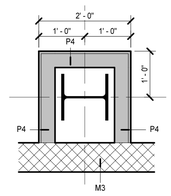

47 A2.2.1 A2.2.4 **COLUMN DETAIL**
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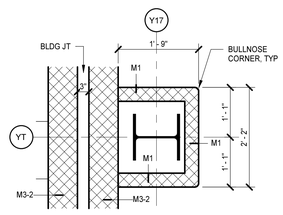

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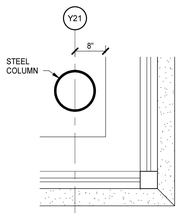

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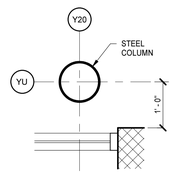

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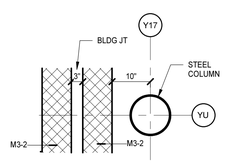

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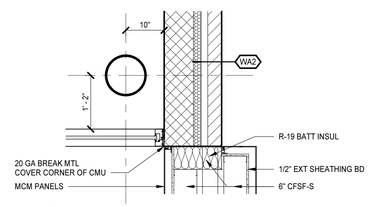

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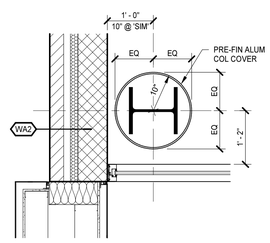

41 A2.2.1 A2.2.4 **COLUMN DETAIL**
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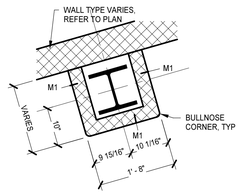

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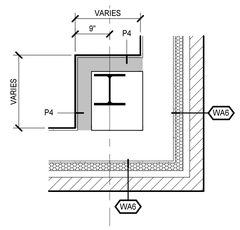

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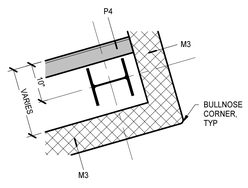

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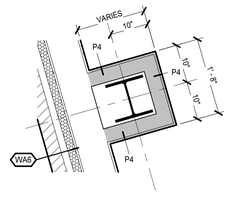

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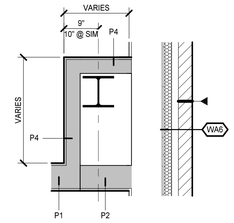

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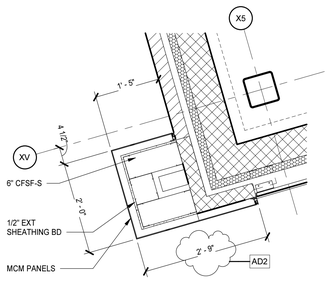

35 A2.2.1 A2.2.4 **COLUMN DETAIL**
3/4" = 1'-0"

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PHONE (919) 840-0091
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ASHLEY P. DENNIS
REGISTERED ARCHITECT
11711
8/2/24
NORTH CAROLINA
RALEIGH, NC

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/16/24	AD1
8/23/24	AD2

COLUMN DETAILS

A2.2.4

8/23/2024 4:25:20 PM

FINISH SCHEDULE

NUMBER	NAME	FLOOR	BASE	WALLS				CEILING	NOTES
				NORTH	EAST	SOUTH	WEST		
A101	LOBBY/ COMMONS	TERR-E1,E2,E3,E4	TERR-E1	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	
A102	CONCESSIONS	TERR-E2	TERR-E1	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
A103	LOBBY	C-TILE-B/TERR-E1,E2,E3	TERR-E1	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	3
A104	WAITING/ RECEPTION	C-TILE-A1	RB	A-PT	PT	PT	PT	ACP-1/ GB PT	
A105	CONFERENCE	C-TILE-A1	RB	PT	PT	PT	PT	ACP-1	
A106	CLINIC	RES-B	RES-B	EPX PT	EPX PT	EPX PT	EPX PT	ACP-1	7
A107	TOILET	RES-B	RES-B	EPX A-PT	EPX PT	EPX PT	EPX PT	ACP-1	7
A108	SECRETARY	C-TILE-A1	RB	PT	PT	PT	PT	ACP-1	
A109	PRINCIPAL	C-TILE-A1	RB	PT	PT	PT	PT	ACP-1	
A110	TOILET	P-TILE-1	P-TILE-1	EPX PT	GWT-1	EPX PT	EPX PT	ACP-1	8
A111	TOILET	P-TILE-1	P-TILE-1	EPX PT	EPX PT	EPX PT	GWT-1	ACP-1	8
A112	STORAGE	EVCT-1	RB	PT	PT	PT	PT	ACP-1	
A113	CORRIDOR	C-TILE-A1	RB	PT	PT	PT	PT	ACP-1	
A117	SRO	C-TILE-A1	RB	PT	PT	PT	PT	ACP-1	
A118	CORR.	TERR-E1,E2,E3	TERR-E1	EPX A-PT/EPX PT	EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	ACP-2/ GB PT	
A119	RECORDS	EVCT-1	RB	PT	PT	PT	PT	ACP-1	
A120	BOOKKEEPER	C-TILE-A1	RB	PT	PT	PT	PT	ACP-1	
A121	CORR	C-TILE-A1	RB	PT	PT	PT	PT	ACP-1/ GB PT	
A122	BREAK AREA	EVCT-1	RB	PT	PT	PT	PT	ACP-1	
A123	A.P.	C-TILE-A1	RB	PT	PT	PT	PT	ACP-1	
A124	WORKROOM	C-TILE-A1	RB	PT	PT	PT	PT	ACP-1	
A125	BOOK STORAGE	EVCT-1	RB	PT	PT	PT	PT	ACP-1	
A126	GUIDANCE	C-TILE-A1	RB	PT	PT	PT	PT	ACP-1	
A127	G. STOR	EVCT-1	RB	PT	PT	PT	PT	ACP-1	
A128	GUID OFF	C-TILE-A1	RB	PT	PT	PT	PT	ACP-1	
A129	GUID OFF	C-TILE-A1	RB	PT	PT	PT	PT	ACP-1	
A130	GUID CONF	C-TILE-A1	RB	PT	PT	PT	PT	ACP-1	
A131	GUID OFF	C-TILE-A1	RB	PT	PT	PT	PT	ACP-1	
A132	EQUIP	CONC-SLR	RB	PT	PT	PT	PT	GB PT	
A133	STAIR	RST/RSR/RSF	RB	EPX A-PT	EPX PT	EPX PT	EPX PT/IRWC	EXPC PT	
A134	CORRIDOR	TERR-E1,E2,E3	TERR-E1	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	ACP-2	
A135	DATA	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
A136	ELEC	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
A137	BOYS	RES-B	RES-B	EPX A-PT/EPX PT	EPX A-PT	EPX A-PT/EPX PT	EPX PT	ACP-2	7
A138	GIRLS	RES-B	RES-B	EPX A-PT/EPX PT	EPX PT	EPX A-PT/EPX PT	EPX A-PT	ACP-2	7
A139	JANITOR	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
A140	PLATFORM	EVCT-1	RB	PT	PT	PT	PT	EXPC PT	
A140	RAMP	RSF	RB	PT	PT	PT	PT	EXPC PT	
A141	RAMP	RSF	RB	PT	PT	PT	PT	EXPC PT	
A142	MS GYMNASIUM	WSF-1	RB	EPX PT/AWP-G,H,J	EPX PT/AWP-G,H,J	EPX PT/AWP-G,H,J	EPX PT/AWP-G,H,J	EXPC PT/ GB PT	
A143	TOILET	RES-B	RES-B	EPX PT	EPX A-PT	EPX PT	EPX PT	ACP-3	7
A144	GIRLS LOCKER ROOM	RES-B	RES-B	EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	7
A145	OFFICE	RES-B	RES-B	EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	7
A146	LAUNDRY	CONC-SLR	RB	PT	PT	PT	PT	ACP-3	
A147	OFFICE	RES-B	RES-B	EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	7
A148A	BOYS LOCKER ROOM	RES-B	RES-B	EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	7
A149	TOILET	RES-B	RES-B	EPX PT	EPX A-PT	EPX PT	EPX PT	ACP-3	7
A150	GYM STORAGE	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
A151	STAIR	RST/RSR/RSF	RB	EPX PT	EPX PT	EPX PT	EPX PT	EXPC PT	
A152	GIRLS	RES-B	RES-B	EPX PT	EPX PT	EPX A-PT	EPX A-PT/EPX PT	ACP-2	7
A153	BOYS	RES-B	RES-B	EPX A-PT	EPX PT	EPX PT	EPX A-PT/EPX PT	ACP-2	7
A154	GUIDANCE	C-TILE-A2	RB	PT	PT	PT	PT	ACP-1	
A155	G. STOR	EVCT-1	RB	PT	PT	PT	PT	ACP-1	
A156	STUDENT SERVICES	C-TILE-A2	RB	PT	PT	PT	PT	ACP-1	
A157	GUID CONF	C-TILE-A2	RB	PT	PT	PT	PT	ACP-1	
A158	G. OFFICE	C-TILE-A2	RB	PT	PT	PT	PT	ACP-1	
A159	A.P.	C-TILE-A2	RB	PT	PT	PT	PT	ACP-1	
A160	G. OFFICE	C-TILE-A2	RB	PT	PT	PT	PT	ACP-1	
A161	G. OFFICE	C-TILE-A2	RB	PT	PT	PT	PT	ACP-1	
A162	WORK/ BREAK ROOM	EVCT-1	RB	PT	PT	PT	PT	ACP-1	
A163	RECORDS	EVCT-1	RB	PT	PT	PT	PT	ACP-1	
A164	A.P.	C-TILE-A2	RB	PT	PT	PT	PT	ACP-1	
A165	BOOKKEEPER	C-TILE-A2	RB	PT	PT	PT	PT	ACP-1	
A166	CORRIDOR	C-TILE-A2	RB	PT	PT	PT	PT	ACP-1	
A167	STORAGE	EVCT-1	RB	PT	PT	PT	PT	ACP-1	
A168	TOILET	P-TILE-1	P-TILE-1	EPX PT	GWT-1	EPX PT	EPX PT	ACP-1	
A169	TOILET	P-TILE-1	P-TILE-1	EPX PT	EPX PT	EPX PT	GWT-1	ACP-1	
A170	PRINCIPAL	C-TILE-A2	RB	PT	PT	PT	PT	ACP-1	
A171	SECRETARY	C-TILE-A2	RB	PT	PT	PT	PT	ACP-1	
A172	CONFERENCE	C-TILE-A2	RB	PT	PT	PT	PT	ACP-1	
A173	TOILET	RES-B	RES-B	EPX A-PT	EPX PT	EPX PT	EPX PT	ACP-1	7
A174	CLINIC	RES-B	RES-B	EPX PT	EPX PT	EPX PT	EPX PT	ACP-1	7
A175	WAITING/ RECEPTION	C-TILE-A2	RB	A-PT	PT	PT	PT	ACP-1	
A176	CORRIDOR	TERR-E1,E2,E4	TERR-E1	EPX A-PT/EPX PT	EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	ACP-2/ GB PT	
A179	LOBBY	C-TILE-B/TERR-E1,E2,E4	TERR-E1	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	3
A180	STAIR	RST/RSR/RSF	RB	EPX PT	EPX PT	EPX PT	EPX PT	EXPC PT	
A181	DINING STORAGE	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
B101	MS DINING	EVCT-1,4,5,6,7	RB	EPX PT/AWP-C,I,J,K	EPX PT/AWP-C,I,J,K	EPX PT	EPX PT/AWP-C,I,J,K	EXPC PT	
B102	MS SERVING LINES	RES-A	RES-A	EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	
B103	DISH ROOM	RES-A	RES-A	EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	
B104	KITCHEN	RES-A	RES-A	EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	
B105	ES SERVING LINES	RES-A	RES-A	EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	
B106	DISH ROOM	RES-A	RES-A	EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	
B107	JANITOR	CONC-SLR	RB	PT	PT	PT	PT	ACP-3	
B108	DRY STORAGE	RES-A	RES-A	EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	
B109	TOILET	RES-B	RES-B	EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	7
B110	LOCKER	RES-A	RES-A	EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	
B111	OFFICE	RES-A	RES-A	EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	
B112	ELECTRICAL	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
B113	EM ELEC	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
B114	CORR	RES-A	RES-A	EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	
B115	RECEIVING	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
B116	CORRIDOR	CONC-SLR	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-1	
B117	ES DINING	EVCT-1,4,5,6,7	RB	EPX PT/AWP-C,I,J,K	EPX PT/AWP-C,I,J,K	EPX PT	EPX PT	EXPC PT	
B118	CORRIDOR	TERR-E1,E2,E4	TERR-E1	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
B119	MECHANICAL/ ELECTRICAL	CONC-SLR	RB	PT	PT	PT	PT	EXPC PT	
B120	CORRIDOR	TERR-E1,E2,E4	TERR-E1	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	ACP-2/ GB PT	
B121	STAIR	RST/RSR/RSF	RB	EPX PT	EPX PT	EPX PT	EPX PT	EXPC PT	
B122	ES ART	RES-B	RB	A-PT	PT	PT	PT	ACP-1	
B123	KILN	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
B124	CORRIDOR	TERR-E1,E2,E4	TERR-E1	EPX A-PT/EPX PT	EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	ACP-2	
C101	STAIR	RST/RSR/RSF	RB	EPX A-PT/EPX PT	EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EXPC PT	
C102	CLASSROOM	EVCT-1,4,6,7	RB	A-PT	PT	PT	PT	ACP-1	9
C103	CORRIDOR	EVCT-1,7	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
C104	RESOURCE	EVCT-1,4	RB	PT	PT	A-PT	PT	ACP-1	
C105	BOOK STORAGE	EVCT-1	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-1	
C106	CORRIDOR	EVCT-1,7	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
C107	CLASSROOM	EVCT-1,4,6,7	RB	A-PT	PT	PT	PT	ACP-1	9
C108	MS MUSIC	EVCT-1,4	RB	PT/AWP-F	A-PT	PT	PT/AWP-F	ACP-1/ACP-4	5
C109	STORAGE	EVCT-1	RB	PT	PT	PT	PT	ACP-1	
C110	EXCEPTIONAL S/C	EVCT-1,4,6,7	RB	A-PT/PT	PT	PT	PT	ACP-1	
C110A	CALM	C-TILE-J	RB	PT	A-PT	PT	PT	ACP-1	
C112	BREAK	EVCT-1	RB	A-PT	PT	PT	PT	ACP-1	
C113	CHANGING	RES-B	RES-B	PT	PT	PT	PT	ACP-3	7
C114	TOILET	RES-B	RES-B	EPX A-PT/EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	7
C115	EXCEPTIONAL S/C	EVCT-1,3,6,7	RB	A-PT/PT	PT	PT	PT	ACP-1	
C115A	CALM	C-TILE-J	RB	PT	PT	PT	A-PT	ACP-1	
C116	BOYS	RES-B	RES-B	EPX A-PT	EPX A-PT/EPX PT	EPX PT	EPX A-PT/EPX PT	ACP-2	7
C117	GIRLS	RES-B	RES-B	EPX A-PT	EPX A-PT/EPX PT	EPX PT	EPX A-PT/EPX PT	ACP-2	7
C118	CORRIDOR	TERR-E1,E2,E3	TERR-E1	EPX A-PT/EPX PT/IRWC	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	ACP-2/ GB PT	
C119	MECHANICAL	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
C120	HEALTH CLASSROOM	EVCT-1,3,6,7	RB	PT	PT	PT	A-PT	ACP-1	9
C121	CLASSROOM	EVCT-1,3,6,7	RB	A-PT	PT	PT	PT	ACP-1	9
C122	CORR.	EVCT-1,3	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
C123	BOOK STORAGE	EVCT-1	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-1	
C124	RESOURCE	EVCT-1,7	RB	PT	PT	A-PT	PT	ACP-1	
C125	CORR	EVCT-1,3	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
C126	CORRIDOR	TERR-E1,E2,E3	TERR-E1	EPX A-PT/EPX PT/IRWC	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	ACP-2/ GB PT	
C127	TOILET	P-TILE-1	P-TILE-1	EPX PT	EPX PT	GWT-1	EPX PT	ACP-2	8
C128	TOILET	P-TILE	P-TILE	EPX PT	EPX PT	GWT-1	EPX PT	ACP-2	8
D101	CLASSROOM	EVCT-1,4,6,7	RB	A-PT	PT	PT	PT	ACP-1	9
D102	CLASSROOM	EVCT-1,4,6,7	RB	PT	PT	A-PT	PT	ACP-1	9
D103	EXTENDED LEARNING AREA	C-TILE-I1,I2,J/EVCT-1	RB	EPX PT	EPX PT	EPX A-PT/AWP-A	EPX PT	ACP-2/ GB PT	9
D104	JAN	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
D105	BOYS	RES-B	RES-B	EPX A-PT/EPX PT	EPX PT	EPX A-PT/EPX PT	EPX A-PT	ACP-2	7
D106	GIRLS	RES-B	RES-B	EPX A-PT/EPX PT	EPX A-PT	EPX A-PT/EPX PT	EPX PT	ACP-2	7
D107	SCIENCE LAB	EVCT-1,4	RB	A-PT	PT	PT	PT	ACP-1	9
D108	CORRIDOR	EVCT-1,6,7	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
D109	SCIENCE LAB	EVCT-1,4	RB	PT	PT	A-PT	PT	ACP-1	9
D110	PREP ROOM	EVCT	RB	PT	PT	PT	PT	ACP-1	
D111	ELEC	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
D112	DATA	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
D113	CLASSROOM	EVCT-1,4,6,7	RB	A-PT	PT	PT	PT	ACP-1	9
D114	RESOURCE	EVCT-1,4	RB	A-PT	PT	PT	PT	ACP-1	
D115	CLASSROOM	EVCT-1,4,6,7	RB	PT	PT	A-PT	PT	ACP-1	9
D116	STAIR	RST/RSR/RSF	RB	EPX PT	EPX PT	EPX PT	EPX PT	EXPC PT	
D117	EXTENDED LEARNING AREA	C-TILE-I1,I2,J/EVCT-1	RB	EPX PT	EPX PT	EPX A-PT/AWP-A	EPX PT	ACP-2/ GB PT	9
D118	CLASSROOM	EVCT-1,4,6,7	RB	PT	PT	A-PT	PT	ACP-1	9
D119	CLASSROOM	EVCT-1,4,6,7	RB	A-PT	PT	PT	PT	ACP-1	9

FINISH SCHEDULE

NUMBER	NAME	FLOOR	BASE	WALLS				CEILING	NOTES
				NORTH	EAST	SOUTH	WEST		
D120	MECHANICAL	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
D121	SCIENCE LAB	EVCT-1,4	RB	PT	PT	A-PT	PT	ACP-1	9
D122	SCIENCE LAB	EVCT-1,4	RB	A-PT	PT	PT	PT	ACP-1	9
D123	CORRIDOR	EVCT-1,6,7	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
D124	CLASSROOM	EVCT-1,4,6,7	RB	PT	PT	A-PT	PT	ACP-1	9
D125	CLASSROOM	EVCT-1,4,6,7	RB	A-PT	PT	PT	PT	ACP-1	9
D126	TEACHER WORKROOM/ LOUNGE	C-TILE-A1/EVCT-1	RB	PT	PT	PT	A-PT	ACP-1	
E101	CLASSROOM	EVCT-1,3,6,7	RB	A-PT	PT	PT	PT	ACP-1	9
E102	CLASSROOM	EVCT-1,3,6,7	RB	PT	PT	A-PT	PT	ACP-1	9
E103	EXTENDED LEARNING AREA	C-TILE-I2,I4,J/EVCT-1	RB	EPX PT	EPX PT	EPX A-PT/AWP-A	EPX PT	ACP-2/ GB PT	9
E104	JAN	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
E105	BOYS	RES-B	RES-B	EPX A-PT/EPX PT	EPX PT	EPX A-PT/EPX PT	EPX A-PT	ACP-2	7
E106	GIRLS	RES-B	RES-B	EPX A-PT/EPX PT	EPX A-PT	EPX A-PT/EPX PT	EPX PT	ACP-2	7
E107	SCIENCE LAB	EVCT-1,7	RB	A-PT	PT	PT	PT	ACP-1	9
E108	PREP ROOM	EVCT-1	RB	PT	PT	PT	PT	ACP-1	
E109	SCIENCE LAB	EVCT-1,7	RB	PT	PT	A-PT	PT	ACP-1	9
E110	CORR.	EVCT-1,3,6	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
E111	CLASSROOM	EVCT-1,3,6,7	RB	A-PT	PT	PT	PT	ACP-1	9
E112	CLASSROOM	EVCT-1,3,6,7	RB	PT	PT	A-PT	PT	ACP-1	9
E113	CLASSROOM	EVCT-1,3,6,7	RB	PT	PT	A-PT	PT	ACP-1	9
E114	STAIR	RST/RSR/RSF	RB	EPX PT	EPX PT	EPX PT	EPX PT	EXPC PT	
E115	EXTENDED LEARNING AREA	C-TILE-I2,I4,J/EVCT-1	RB	EPX PT	EPX PT	EPX A-PT/AWP-A	EPX PT	ACP-2/ GB PT	9
E116	CLASSROOM	EVCT-1,3,6,7	RB	PT	PT	A-PT	PT	ACP-1	9
E117	CLASSROOM	EVCT-1,3,6,7	RB	PT	PT	A-PT	PT	ACP-1	9
E118	CLASSROOM	EVCT-1,3,6,7	RB	A-PT	PT	PT	PT	ACP-1	9
E119	RESOURCE	EVCT-1,7	RB	A-PT	PT	PT	PT	ACP-1	
E120	ELEC	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
E121	DATA	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
E122	SCIENCE LAB	EVCT-1,7	RB	PT	PT	A-PT	PT	ACP-1	9
E123	SCIENCE LAB	EVCT-1,7	RB	A-PT	PT	PT	PT	ACP-1	9
E124	CORR.	EVCT-1,3,6	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
E125	MECHANICAL	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
E126	CLASSROOM	EVCT-1,3,6,7	RB	PT	PT	A-PT	PT	ACP-1	9
E127	CLASSROOM	EVCT-1,3,6,7	RB	A-PT	PT	PT	PT	ACP-1	9
E128	TEACHER WORKROOM/ LOUNGE	C-TILE-A1/EVCT-1	RB	PT	PT	PT	A-PT	ACP-1	
E129	CLASSROOM	EVCT-1,3,6,7	RB	A-PT	PT	PT	PT	ACP-1	9
F101	STAIR	RST/RSR/RSF/C-TILE-B	RB	EPX PT	ARC	ARC	ARC	EXPC PT	
F102	ES GYMNASIUM	RAF	RB	EPX PT/AWP-G,H,J	EPX PT/AWP-G,H,J	EPX PT/AWP-G,H,J	EPX PT/AWP-G,H,J	EXPC PT	
F103	GYM STORAGE	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
F104	RESOURCE	EVCT-1,6	RB	PT	PT	PT	A-PT	ACP-1	
F105	ES MUSIC	EVCT-1,4	RB	PT	PT	A-PT	PT	ACP-2/ ACP-4	5
F106	ES DANCE/ DRAMA	WSF-2	RB	PT	PT	PT	PT	ACP-2	4
F107	CORRDIOR	EVCT	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
F108	CORRIDOR	TERR-E1,E2,E4	TERR-E1	EPX A-PT/EPX PT	EPX A-PT/EPX PT/IRWC	EPX A-PT/EPX PT/IRWC	EPX A-PT/EPX PT/IRWC	ACP-2/ GB PT	
F109	BOOK STORAGE	EVCT-1	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-1	
F110	JANITOR	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
F111	EQUIP	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
F112	ES MEDIA CENTER	C-TILE-C,D,E,F,G,H	RB	PT	A-PT/PT/ACP-E	A-PT/PT/ACP-E	PT/IRWC/AWP-B/AWP-D	EXPC PT	
F113	ES MEDIA CENTER SUPPORT	C-TILE-G	RB	PT	PT	PT	A-PT/PT	ACP-2	
F114	OFFICE	C-TILE-B	RB	PT	PT	PT	PT	ACP-2	
F115	A/V STOR	EVCT-1	RB	PT	PT	PT	PT	ACP-2	
F116	MAKER'S SPACE/ STEM	EVCT-1,3	RB	PT	PT	PT	A-PT	ACP-1	
F117	STAFF TOILET	P-TILE	P-TILE	EPX PT	EPX PT	EPX PT	GWT-1	ACP-2	8
F118	STAFF TOILET	P-TILE-1	P-TILE-1	EPX PT	GWT-1	EPX PT	EPX PT	ACP-2	8
F119	STORAGE	EVCT-1	RB	PT	PT	PT	PT	ACP-1	
G101	EXTENDED LEARNING AREA	C-TILE-I4,I5,J/EVCT-1	RB	EPX A-PT/AWP-A	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	9
G102	STAIR	RST/RSR/RSF	RB	EPX PT	EPX PT	EPX PT	EPX PT	EXPC PT	
G103	KINDERGARTEN	EVCT-1,2,3,6	RB	PT	PT	A-PT	PT	ACP-1	
G104	TOILET	P-TILE	P-TILE	EPX A-PT	EPX PT	EPX PT	EPX PT	ACP-1	8
G105	RESOURCE	EVCT-1,6	RB	PT	PT	A-PT	PT	ACP-1	
G106	TOILET	P-TILE	P-TILE	EPX PT	EPX PT	EPX PT	EPX PT	ACP-1	8
G107	KINDERGARTEN	EVCT-1,2,3,6	RB	A-PT	PT	PT	PT	ACP-1	
G108	ELEC	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
G109	TOILET	P-TILE	P-TILE	EPX PT	EPX PT	EPX PT	EPX PT	ACP-1	8
G110	KINDERGARTEN	EVCT-1,2,3,6	RB	A-PT	PT	PT	PT	ACP-1	
G111	CORRIDOR	EVCT-1,3	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	
G112	CORRIDOR	EVCT-1,3	RB	EPX PT	EPX PT	EPX A-PT	EPX PT	ACP-2/ GB PT	
G113	KINDERGARTEN	EVCT-1,2,3,6	RB	PT	PT	A-PT	PT	ACP-1	
G114	TOILET	P-TILE	P-TILE	EPX A-PT	EPX PT	EPX PT	EPX PT	ACP-1	8
G115	TOILET	P-TILE	P-TILE	EPX A-PT	EPX PT	EPX PT	EPX PT	ACP-1	8
G116	KINDERGARTEN	EVCT-1,2,3,6	RB	PT	PT	A-PT	PT	ACP-1	
G117	EXCEPTIONAL S/C	EVCT-1,2,3,6	RB	A-PT	PT	PT	PT	ACP-1	
G118	CHANGING AREA	RES-B	RES-B	EPX PT	EPX PT	EPX PT	EPX PT	ACP-3	7
G119	TOILET	RES-B	RES-B	EPX A-PT	EPX PT	EPX PT	EPX PT	ACP-3	7
G120	EXCEPTIONAL S/C	EVCT-1,2,3,6	RB	PT	PT	A-PT	PT	ACP-1	
G121	TOILET	P-TILE	P-TILE	EPX A-PT	EPX PT	EPX PT	EPX PT	ACP-1	8
G122	KINDERGARTEN	EVCT-1,2,3,6	RB	PT	PT	A-PT	PT	ACP-1	
G123	RESOURCE	EVCT-1,6	RB	PT	A-PT	A-PT	PT	ACP-1	
G124	DATA	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
G125	MECHANICAL	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
G126	CORRIDOR	EVCT-1,3	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	
G127	KINDERGARTEN	EVCT-1,2,3,6	RB	A-PT	PT	PT	PT	ACP-1	
G128	TOILET	P-TILE	P-TILE	EPX PT	EPX PT	EPX PT	EPX PT	ACP-1	8
G129	TOILET	P-TILE	P-TILE	EPX A-PT	EPX PT	EPX PT	EPX PT	ACP-1	8
G130	KINDERGARTEN	EVCT-1,2,3,6	RB	PT	PT	A-PT	PT	ACP-1	
H101	EXTENDED LEARNING AREA	C-TILE-I5,I6,J/EVCT-1	RB	EPX A-PT/AWP-A	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	9
H102	STAIR	RST/RSR/RSF	RB	EPX PT	EPX PT	EPX PT	EPX PT	EXPC PT	
H103	RESOURCE	EVCT-1,3	RB	PT	PT	A-PT	PT	ACP-1	
H104	SECOND GRADE	EVCT-1,2,3,4	RB	A-PT	PT	PT	PT	ACP-1	
H105	BOYS	RES-B	RES-B	EPX A-PT	EPX A-PT/EPX PT	EPX PT	EPX A-PT/EPX PT	ACP-2	7
H106	CORRIDOR	RES-B	RES-B	EPX A-PT	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	7
H107	GIRLS	RES-B	RES-B	EPX PT	EPX A-PT/EPX PT	EPX A-PT	EPX A-PT/EPX PT	ACP-2	7
H108	ELEC	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
H109	FIRST GRADE	EVCT-1,2,3,4	RB	PT	PT	A-PT	PT	ACP-1	
H110	TOILET	P-TILE	P-TILE	EPX A-PT	EPX PT	EPX PT	EPX PT	ACP-1	8
H111	TOILET	P-TILE	P-TILE	EPX PT	EPX PT	EPX A-PT	EPX PT	ACP-1	8
H112	FIRST GRADE	EVCT-1,2,3,4	RB	A-PT	PT	PT	PT	ACP-1	
H113	CORRIDOR	EVCT-1,2	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	
H114	FIRST GRADE	EVCT-1,2,3,4	RB	PT	PT	A-PT	PT	ACP-1	
H115	TOILET	P-TILE	P-TILE	EPX A-PT	EPX PT	EPX PT	EPX PT	ACP-1	8
H116	TOILET	P-TILE	P-TILE	EPX A-PT	EPX PT	EPX PT	EPX PT	ACP-1	8
H117	FIRST GRADE	EVCT-1,2,3,4	RB	PT	PT	A-PT	PT	ACP-1	
H118	FIRST GRADE	EVCT-1,2,3,4	RB	PT	PT	A-PT	PT	ACP-1	
H119	TOILET	P-TILE	P-TILE	EPX A-PT	EPX PT	EPX PT	EPX PT	ACP-1	8
H120	TOILET	P-TILE	P-TILE	EPX A-PT	EPX PT	EPX PT	EPX PT	ACP-1	8
H121	FIRST GRADE	EVCT-1,2,3,4	RB	PT	PT	A-PT	PT	ACP-1	
H122	CORRIDOR	EVCT-1,2	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	
H123	FIRST GRADE	EVCT-1,2,3,4	RB	A-PT	PT	PT	PT	ACP-1	
H124	TOILET	P-TILE	P-TILE	EPX PT	EPX PT	EPX A-PT	EPX PT	ACP-1	8
H125	TEACHER WORKROOM/ LOUNGE	C-TILE-A2/EVCT-1	RB	PT	PT	PT	A-PT	ACP-1	
H125A	TOILET	P-TILE	P-TILE	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	8
H126	MECHANICAL	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
H127	TOILET	P-TILE	P-TILE	EPX A-PT	EPX PT	EPX PT	EPX PT	ACP-1	8
H128	FIRST GRADE	EVCT-1,2,3,4	RB	PT	PT	A-PT	PT	ACP-1	
H129	DATA	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
H130	SECOND GRADE	EVCT-1,2,3,4	RB	A-PT	PT	PT	PT	ACP-1	
H131	CORRIDOR	EVCT-1,2	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	
H132	SECOND GRADE	EVCT-1,2,3,4	RB	A-PT	PT	PT	PT	ACP-1	
A201	MS MEDIA CENTER	C-TILE-C,D,E,F,G,H	RB	A-PT/PT/AWP-B/AWP-D	A-PT/PT/AWP-B/AWP-D	A-PT/PT	A-PT/PT	ACP-2/ GB PT	
A202	WORKRM	C-TILE-F	RB	PT	A-PT	PT	PT	ACP-2	
A203	STOR.	EVCT-1	RB	PT	PT	PT	PT	ACP-2	
A204	CONFERENCE	C-TILE-B	RB	PT	PT	PT	PT	ACP-2	
A205	MAKERS SPACE	EVCT-1,4	RB	PT	PT	A-PT	PT	ACP-2	
A206	GREEN ROOM	C-TILE-G	RB	PT-B	PT	PT	PT	ACP-2	
A207	TV PROD	C-TILE-G	RB	PT	PT	PT	PT	ACP-2	
A208	CORRIDOR	TERR-E1,E2,E5	TERR-E1	EPX A-PT/EPX PT/IRWC	EPX A-PT/EPX PT	EPX PT/EPX A-PT	EPX A-PT/EPX PT	ACP-2/ GB PT	
A209	CORRIDOR	TERR-E1,E2,E5	TERR-E1	EPX A-PT/EPX PT	EPX PT	EPX PT	EPX A-PT/EPX PT	ACP-2	
A210	MECH EQUIP PLATFORM	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
A211	MECH EQUIP PLATFORM	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
A212	STAIR	RST/RSR/RSF	RB	EPX PT	EPX PT	EPX PT	EPX PT	EXPC PT	
C201	STAIR	RST/RSR/RSF	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-1	
C202	MS DANCE/ DRAMA	WSF-2	RB	PT	A-PT	PT	PT	ACP-2	4
C203	MS ART	CONC-SLR	RB	PT	PT	PT	A-PT	ACP-1	
C204	MS STEM LAB	CONC-SLR	RB	PT	A-PT	PT	PT	ACP-1	9
C205	GIRLS	RES-B	RES-B	EPX A-PT	EPX A-PT/EPX PT	EPX PT	EPX A-PT/EPX PT	ACP-2	7
C206	BOYS	RES-B	RES-B	EPX A-PT	EPX A-PT/EPX PT	EPX PT	EPX A-PT/EPX PT	ACP-2	7
C207	STAFF TOILET	P-TILE	P-TILE	EPX PT	EPX PT	GWT-1	EPX PT	ACP-2	8
C208	CORRIDOR	TERR-E1,E2,E5	TERR-E1	EPX PT/EPX A-PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	ACP-2/ GB PT	
C209	STOR.	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
C210	A.P.	C-TILE-A1	RB	PT	PT	PT	PT	ACP-1	
C211	CORR	TERR-E1	TERR-E1	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
C212	RESOURCE	EVCT-1,2	RB	PT	A-PT	PT	PT	ACP-1	

FINISH SCHEDULE GENERAL NOTES

A. FINISH SCHEDULE DESCRIBES ONLY THE BASIC OR PREDOMINANT SURFACE FINISH.

B. PROVIDE SAME FINISHES AS THE ADJACENT SPACE IN ALCOVES AND CONTINUOUS SPACES WITHOUT DESIGNATED SPACE NUMBERS.

C. CASEWORK FINISHES ARE NOT NOTED IN THE FINISH SCHEDULE. REFER TO CASEWORK ELEVATIONS AND SPECIFICATIONS FOR MATERIALS AND FINISHES.

D. DIRECTIONAL WALL FINISH INDICATORS (NORTH, EAST, SOUTH, WEST) REFER TO THE "PLAN" NORTH ORIENTATION.

E. BULKHEADS AND SOFFITS MAY NOT BE INDICATED IN FINISH SCHEDULES. REFER TO RCP DETAILS, AND OTHER DOCUMENTS FOR EXTENT.

F. PROVIDE CONTINUOUS SEALANT BETWEEN INTERIOR SLAB-ON-GRADE AND VERTICAL ELEMENT WHERE JOINT IS NOT CONCEALED BY FINISH BASE OR OTHER CONSTRUCTION

G. REFER TO SPECIFICATIONS FOR INFORMATION ON FINISH FIRE CLASSIFICATION RATING.

H. REFER TO FLOOR PATTERNS PLANS FOR FLOOR PATTERNS AND ACCENT WALL PAINTS AND TREATMENT.

I. REFER TO ELEVATIONS FOR ELEVATIONS FOR WALL TREATMENTS.

J. INSTALL RB ON COLUMNS.

K. APPLY TERRAZZO TO ELEVATOR CAB.

L. APPLY PAINT TO ALL DOOR FRAMES.

M. APPLY PAINT TO ALL RAILINGS REFER TO SCHEDULE FOR COLOR.

N. PAINT ALL EXPOSED ELEMENTS (SUCH AS PIPING AND CONDUITS) TO MATCH ADJACENT WALL COLOR (HIDE & BLEND).

O. USE TILE BACKING PANELS AT ALL GWT LOCATIONS INSTEAD IN LIEU OF CEMENT BACKER BOARD.

P. PT-1 IS THE OVERALL FIELD PAINT COLOR.

Q. ACCENT PAINT (A-PT) AS NOTED ON FINISH SCHEDULE IS ENTIRE WALL UNO.

R. STAIRS WILL BE PAINTED (PT-C) A DIFFERENT COLOR IN EACH WING; COLOR TO BE DETERMINED WITH CLIENT.

NOTE:

1. REFER TO SPECIFICATION FOR FLOOR PATTERNS.
2. REFER TO SPECIFICATION FOR WALL PATTERNS.
3. PROVIDE 10'-0" DEPTH OF WALK OFF CARPET BEGINNING AT ENTRY DOORS.
4. PROVIDE FULL-HEIGHT MIRRORS AND WALL-MOUNTED BALLET BARRES ON LONG WALLS.
5. COORDINATE FINAL ACP-4 LAYOUT WITH SCHOOL.
6. REFER TO CIVIL DRAWINGS FOR FINISHES
7. 6"H INTEGRAL RES BASE.
8. GLAZED WALL TILE ON WET WALL FULL HEIGHT, INSTALLATION: VETICAL STACK
9. REFER TO A2.0.20 FOR FINISH DIMENSIONS

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ASHLEY P. DENNIS
11711
8/2/24

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

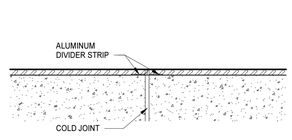
PROJECT NO: 631310
DATE: AUGUST 2, 2024

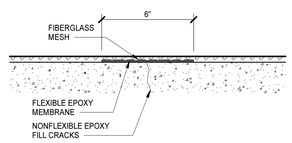
REVISIONS

DATE	DESCRIPTION
8/16/24	AD1
8/23/24	AD2

FINISH SCHEDULE

A3.0.1





FINISH SCHEDULE

NUMBER	NAME	FLOOR	BASE	WALLS NORTH	WALLS EAST	WALLS SOUTH	WALLS WEST	CEILING	NOTES
C213	BOOK STORAGE	EVCT-1	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-1	
C214	CORRIDOR	EVCT-1,5	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
C215	CLASSROOM	EVCT-1,2,4,5	RB	A-PT	PT	PT	PT	ACP-1	9
C216	MECHANICAL	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
C217	CLASSROOM	EVCT-1,2,3,5	RB	A-PT	PT	PT	PT	ACP-1	9
C218	CORRIDOR	EVCT-1,2	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
C219	BOOK STORAGE	EVCT-1	RB	PT	PT	PT	PT	ACP-1	
C220	RESOURCE	EVCT-1,5	RB	PT	PT	A-PT	PT	ACP-1	
C221	CORRIDOR	EVCT-1,2	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
C222	CLASSROOM	EVCT-1,2,3,5	RB	A-PT	PT	PT	PT	ACP-1	9
C223	CORRIDOR	TERR-E1,E2,E5	TERR-E1	EPX A-PT/EPX PT/IRWC	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	ACP-2/ GB PT	
C224	TOILET	P-TILE	P-TILE	EPX PT	EPX PT	GWT-1	EPX PT	ACP-2	8
C225	TOILET	P-TILE	P-TILE	EPX PT	EPX PT	GWT-1	EPX PT	ACP-2	8
C226	STAIR	RST/RSR/RSF	RB	EPX PT	EPX PT	EPX PT	EPX PT	EXPC PT	
D201	CLASSROOM	EVCT-1,2,3,5	RB	A-PT	PT	PT	PT	ACP-1	9
D202	CLASSROOM	EVCT-1,2,3,5	RB	PT	PT	A-PT	PT	ACP-1	9
D203	EXTENDED LEARNING AREA	C-TILE-I4,I6,J/EVCT-1	RB	EPX PT	EPX PT	EPX A-PT/AWP-A	EPX PT	ACP-2/ GB PT	9
D204	JAN	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
D205	BOYS	RES-B	RES-B	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT	ACP-2	7
D206	GIRLS	RES-B	RES-B	EPX A-PT/EPX PT	EPX A-PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	ACP-2	7
D207	SCIENCE LAB	EVCT-1,5	RB	A-PT	PT	PT	PT	ACP-1	9
D208	CORRIDOR	EVCT-1,2,3	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
D209	CLASSROOM	EVCT-1,5	RB	PT	PT	A-PT	PT	ACP-1	9
D210	PREP ROOM	EVCT-1	RB	PT	PT	PT	PT	ACP-1	
D211	ELEC	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
D212	CLASSROOM	EVCT-1,2,3,5	RB	A-PT	PT	PT	PT	ACP-1	9
D213	RESOURCE	EVCT-1,5	RB	A-PT	PT	PT	PT	ACP-1	
D214	CLASSROOM	EVCT-1,2,3,5	RB	PT	PT	A-PT	PT	ACP-1	9
D215	STAIR	RST/RSR/RSF	RB	EPX PT	EPX PT	EPX PT	EPX PT	EXPC PT	
D216	EXTENDED LEARNING AREA	C-TILE-I4,I6,J/EVCT-1	RB	EPX PT	EPX PT	EPX A-PT/AWP-A	EPX PT	ACP-2/ GB PT	9
D217	CLASSROOM	EVCT-1,2,3,5	RB	PT	PT	A-PT	PT	ACP-1	9
D218	CLASSROOM	EVCT-1,2,3,5	RB	A-PT	PT	PT	PT	ACP-1	9
D219	DATA	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
D220	MECHANICAL	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
D221	CORRIDOR	EVCT-1,2,3	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
D222	SCIENCE LAB	EVCT-1,5	RB	PT	PT	A-PT	PT	ACP-1	9
D223	SCIENCE LAB	EVCT-1,5	RB	A-PT	PT	PT	PT	ACP-1	9
D224	CLASSROOM	EVCT-1,2,3,5	RB	PT	PT	A-PT	PT	ACP-1	9
D225	CLASSROOM	EVCT-1,2,3,5	RB	A-PT	PT	PT	PT	ACP-1	9
D226	TEACHER WORKROOM/ LOUNGE	C-TILE-A1/EVCT-1	RB	PT	PT	PT	A-PT	ACP-1	
E201	CLASSROOM	EVCT-1,2,4,5	RB	A-PT	PT	PT	PT	ACP-1	9
E202	CLASSROOM	EVCT-1,2,4,5	RB	PT	PT	A-PT	PT	ACP-1	9
E203	EXTENDED LEARNING AREA	C-TILE-I2,I3,J/EVCT-1	RB	EPX PT	EPX PT	EPX A-PT/AWP-A	EPX PT	ACP-2/ GB PT	9
E204	JAN	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
E205	BOYS	RES-B	RES-B	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT	ACP-2	7
E206	GIRLS	RES-B	RES-B	EPX A-PT/EPX PT	EPX A-PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	ACP-2	7
E207	SCIENCE LAB	EVCT-1,2	RB	A-PT	PT	PT	PT	ACP-1	9
E208	PREP ROOM	EVCT-1	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-1	
E209	SCIENCE LAB	EVCT-1,2	RB	PT	PT	A-PT	PT	ACP-1	9
E210	CORRIDOR	EVCT-4,5	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
E211	CLASSROOM	EVCT-1,2,4,5	RB	A-PT	PT	PT	PT	ACP-1	9
E212	CLASSROOM	EVCT-1,2,4,5	RB	PT	PT	A-PT	PT	ACP-1	9
E213	CLASSROOM	EVCT-1,2,4,5	RB	PT	PT	A-PT	PT	ACP-1	9
E214	STAIR	RST/RSR/RSF	RB	EPX PT	EPX PT	EPX PT	EPX PT	EXPC PT	
E215	EXTENDED LEARNING AREA	C-TILE-I2,I3,J/EVCT-1	RB	EPX PT	EPX PT	EPX A-PT/AWP-A	EPX PT	ACP-2/ GB PT	9
E216	RESOURCE	EVCT-1,2	RB	A-PT	PT	PT	PT	ACP-1	
E217	CLASSROOM	EVCT-1,2,4,5	RB	PT	PT	A-PT	PT	ACP-1	9
E218	CLASSROOM	EVCT-1,2,4,5	RB	PT	PT	A-PT	PT	ACP-1	9
E219	CLASSROOM	EVCT-1,2,4,5	RB	A-PT	PT	PT	PT	ACP-1	9
E220	ELEC	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
E221	DATA	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
E222	CORRIDOR	EVCT-4,5	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
E223	SCIENCE LAB	EVCT-1,2	RB	PT	PT	A-PT	PT	ACP-1	9
E224	SCIENCE LAB	EVCT-1,2	RB	A-PT	PT	PT	PT	ACP-1	9
E225	CLASSROOM	EVCT-1,2,4,5	RB	PT	PT	A-PT	PT	ACP-1	9
E226	CLASSROOM	EVCT-1,2,4,5	RB	A-PT	PT	PT	PT	ACP-1	9
E227	TEACHER WORKROOM/ LOUNGE	C-TILE-A1/EVCT-1	RB	PT	PT	PT	A-PT	ACP-1	
E228	CLASSROOM	EVCT-1,2,4,5	RB	A-PT	PT	PT	PT	ACP-1	9
E229	MECHANICAL	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
E230	CORRIDOR	EVCT-1,5	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	
F201	STAIR	RST/RSR/RSF	RB	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EXPC PT	
F202	BOYS	RES-B	RES-B	EPX PT	EPX PT	EPX A-PT	EPX A-PT/EPX PT	ACP-2	7
F203	JANITOR	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
F204	CORRIDOR	TERR-E1,E2,E6	TERR-E	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	EPX A-PT/EPX PT	ACP-2/ GB PT	
F205	MECHANICAL	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
F206	RESOURCE	EVCT-1,7	RB	PT	PT	PT	A-PT	ACP-1	
F207	BOOK STORAGE	EVCT-1	RB	PT	PT	PT	PT	ACP-1	
F208	STAIR	RST/RSR/RSF	RB	EPX PT	EPX PT	EPX PT	EPX PT	EXPC PT	
G201	SECOND GRADE	EVCT-1,3,4,6	RB	PT	PT	A-PT	PT	ACP-1	
G202	SECOND GRADE	EVCT-1,3,4,6	RB	PT	PT	A-PT	PT	ACP-1	
G203	RESOURCE	EVCT-1,6	RB	PT	PT	A-PT	PT	ACP-1	
G204	SECOND GRADE	EVCT-1,3,4,6	RB	PT	A-PT	PT	PT	ACP-1	
G205	SECOND GRADE	EVCT-1,3,4,6	RB	A-PT	PT	PT	PT	ACP-1	
G206	ELEC	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
G207	SECOND GRADE	EVCT-1,3,4,6	RB	PT	PT	A-PT	PT	ACP-1	
G208	CORRIDOR	EVCT-1,4	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	
G209	THIRD GRADE	EVCT-1,3,4,6	RB	A-PT	PT	PT	PT	ACP-1	
G210	STAIR	RST/RSR/RSF	RB	EPX PT	EPX PT	EPX PT	EPX PT	EXPC PT	
G211	EXTENDED LEARNING AREA	C-TILE-I3,I5,J/EVCT-1	RB	EPX A-PT/AWP-A	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	9
G212	RESOURCE	EVCT-1,6	RB	PT	PT	A-PT	PT	ACP-1	
G213	THIRD GRADE	EVCT-1,3,4,6	RB	PT	PT	A-PT	PT	ACP-1	
G214	THIRD GRADE	EVCT-1,3,4,6	RB	A-PT	PT	PT	PT	ACP-1	
G215	THIRD GRADE	EVCT-1,3,4,6	RB	PT	PT	A-PT	PT	ACP-1	
G216	CORRIDOR	EVCT-1,4	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	
G217	MECHANICAL	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
G218	DATA	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
G219	TEACHER WORKROOM/ LOUNGE	C-TILE-A2/EVCT-1	RB	PT	A-PT	PT	PT	ACP-1	
G219A	TOILET	P-TILE	P-TILE	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	GLAZED WALL TILE ON WET WALL, FULL HEIGHT
G220	THIRD GRADE	EVCT-1,3,4,6	RB	A-PT	PT	PT	PT	ACP-1	
G221	THIRD GRADE	EVCT-1,3,4,6	RB	A-PT	PT	PT	PT	ACP-1	
G222	GIRLS	RES-B	RES-B	EPX A-PT	EPX PT	EPX PT	EPX A-PT/EPX PT	ACP-2	7
G223	CORRIDOR	EVCT-1,4	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	
H201	THIRD GRADE	EVCT-1,2,6,7	RB	PT	PT	A-PT	PT	ACP-1	
H202	CLASSROOM 4-5	EVCT-1,2,6,7	RB	A-PT	PT	PT	PT	ACP-1	
H203	CLASSROOM 4-5	EVCT-1,2,6,7	RB	PT	PT	A-PT	PT	ACP-1	
H204	TEACHER WORKROOM/ LOUNGE	C-TILE-A2/EVCT-1	RB	PT	PT	PT	A-PT	ACP-1	
H204A	TOILET	P-TILE	P-TILE	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	GLAZED WALL TILE ON WET WALL, FULL HEIGHT
H205	CLASSROOM 4-5	EVCT-1,2,6,7	RB	A-PT	PT	PT	PT	ACP-1	
H206	CLASSROOM 4-5	EVCT-1,2,6,7	RB	PT	PT	A-PT	PT	ACP-1	
H208	CLASSROOM 4-5	EVCT-1,2,6,7	RB	PT	PT	A-PT	PT	ACP-1	
H209	STAIR	RST/RSR/RSF	RB	EPX PT	EPX PT	EPX PT	EPX PT	EXPC PT	
H210	CORRIDOR	EVCT-1,6	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	
H211	EXTENDED LEARNING AREA	C-TILE-I1,I5,J/EVCT-1	RB	EPX A-PT/AWP-A	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	9
H212	BOYS	RES-B	RES-B	EPX A-PT	EPX A-PT/EPX PT	EPX PT	EPX A-PT/EPX PT	ACP-2	7
H213	CORRIDOR	RES-B	RES-B	EPX A-PT/EPX PT	EPX PT	EPX PT	EPX PT	ACP-2	7
H214	GIRLS	RES-B	RES-B	EPX PT	EPX A-PT/EPX PT	EPX A-PT	EPX A-PT/EPX PT	ACP-2	7
H215	ELEC	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
H216	DATA	CONC-SLR	RB	PT	PT	PT	PT	ACP-1	
H217	MECHANICAL	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
H218	CLASSROOM 4-5	EVCT-1,2,6,7	RB	A-PT	PT	PT	PT	ACP-1	
H219	CLASSROOM 4-5	EVCT-1,2,6,7	RB	A-PT	PT	PT	PT	ACP-1	
H220	CLASSROOM 4-5	EVCT-1,2,6,7	RB	A-PT	PT	PT	PT	ACP-1	
H221	CORRIDOR	EVCT-1,6	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	
H222	CLASSROOM 4-5	EVCT-1,2,6,7	RB	A-PT	PT	PT	PT	ACP-1	
H222	CORRIDOR	EVCT-1,6	RB	EPX PT	EPX PT	EPX PT	EPX PT	ACP-2/ GB PT	
H223	RESOURCE	EVCT-1,2	RB	PT	PT	A-PT	PT	ACP-1	
H224	CLASSROOM 4-5	EVCT-1,2,6,7	RB	A-PT	PT	PT	PT	ACP-1	
H225	THIRD GRADE	EVCT-1,2,6,7	RB	PT	PT	A-PT	PT	ACP-1	
MP01	MECHANICAL PLATFORM	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
MP02	MECHANICAL PLATFORM	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
MP03	MECHANCIAL PLATFORM	CONC-SLR	RB	PT	PT	PT	PT	EXPC	
MP04	MECHANICAL PLATFORM	CONC-SLR	RB	PT	PT	PT	PT	EXPC	

FIELDHOUSE

NUMBER	NAME	FLOOR	BASE	WALLS NORTH	WALLS EAST	WALLS SOUTH	WALLS WEST	WAINSCOT	CEILING	NOTES
FH01	CONCESSIONS	CONC-SLR	RB	ARC	ARC	ARC	ARC		GB PT	
FH02	GIRLS	RES-B	RES-B	EPX PT	EPX PT	EPX PT	EPX PT		GB PT	
FH03	BOYS	RES-B	RES-B	EPX PT	EPX PT	EPX PT	EPX PT		GB PT	
FH04	LOCKER ROOM	RES-B	RES-B	EPX PT	EPX PT	EPX PT	EPX PT		GB PT	
FH05	LOCKER ROOM	RES-B	RES-B	EPX PT	EPX PT	EPX PT	EPX PT		GB PT	
FH06	STORAGE	CONC-SLR	RB	EPX PT	EPX PT	EPX PT	EPX PT		EXPC	

INTERIOR FINISH LEGEND - BASIS OF DESIGN

SPECIFICATION	DESCRIPTION	MATERIAL	MANUFACTURER	PRODUCT - COLOR
	M1	FABRIC	ARCCOM	WRITEOUT INK RESISTANT FABRIC; PATTERN & COLOR TBD
064100 ARCHITECTURAL WOODWORK AND CASEWORK				
	PLAM-1	PLASTIC LAMINATE	FORMICA	COLOR TBD
	PLAM-2	PLASTIC LAMINATE	FORMICA	COLOR TBD
	SSM-1	SOLID SURFACE MATERIAL	WILSONART	COLOR TBD - GROUP 3
088733 DECORATIVE WINDOW FILM				
	M2	CUSTOM DIGITALLY PRINTED WINDOW FILM	3M	IMAGE STILL PROVIDES VISION THROUGH TO THE OTHER SIDE
093000 TILING				
	GRT-1	GROUT	MAPEI	EPOXY GROUT
	GRT-2	GROUT	MAPEI	EPOXY GROUT
	GWT-1	GLAZED WALL TILE	MOSAIC TILE - MANISCALCO STONE	KALEIDOSCOPE - COLOR TBD
	P-TILE-1	PORCELAIN TILE	DALTILE - MARAZZI	SAVOIR - SV13 BLEU
095100 CEILINGS				
	ACP-1	ACOUSTICAL CEILING PANEL	ARMSTRONG	SCHOOL ZONE FINE FISSURE - THROUGHOUT U.O.N
	ACP-2	ACOUSTICAL CEILING PANEL	ARMSTRONG	OPTIMA - BAND, DINING & PUBLIC CORRIDOR
	ACP-3	ACOUSTICAL CEILING PANEL	ARMSTRONG	ULTIMA HEALTH ZONE - KITCHEN & SERVING LINE
	ACP-4	ACOUSTIC CEILING PANEL	WENGER	DIFFUSER PANELS; COORDINATE WITH SCHOOL PANEL SHAPE AND LAYOUT
096453 STAGE FLOORING ASSEMBLY				
	WSF-3	STAGE FLOORING ASSEMBLY	REFER TO SPECS	
096466 WOOD ATHLETIC FLOORING				
	WSF-1	WOOD SPORTS FLOORING	INFINITY WOOD FLOORS	POWERPLAY PANEL, 25/32" X 2-1/4" MAPLE 2ND & BETTER, 3/4" 8.0 PCF REBNDED OC FOAM
096467 DANCE FLOORING ASSMEBLY				
	WSF-2	WOOD DANCE FLOORING	AMERICAN HARLQUIN CORPORATION	DRAMA/DANCE FLOOR
096513 RESILIENT BASE & ACCESSORIES				
	RB-1	RUBBER BASE	JOHNSONITE	4" COVE
	RSF-1	RUBBER SHEET FLOORING	JOHNSONITE	STAIR LANDINGS - BAMBOO PATTERN
	RST-1/RSR-1	RUBBER STAIR RISER/THREAD	JOHNSONITE	BAMBOO PATTERN, ON TREADS PROVIDE CONTRASTING RUBBER INSERTS AT NOSE
096519 RESILIENT TILE FLOORING				
	EVCT-1	ENHANCED VINYL COMPOSITE FLOORING	KAHRS	QUARTZ MOSAIC 8303 GABBRO GREY
	EVCT-2	ENHANCED VINYL COMPOSITE FLOORING	KAHRS	QUARTZ MOSAIC 8339 SUNSTONE ORANGE
	EVCT-3	ENHANCED VINYL COMPOSITE FLOORING	KAHRS	QUARTZ MOSAIC 8329 AMBER YELLOW
	EVCT-4	ENHANCED VINYL COMPOSITE FLOORING	KAHRS	QUARTZ MOSAIC 8365 PROSPEROUS PERIDOT
	EVCT-5	ENHANCED VINYL COMPOSITE FLOORING	KAHRS	QUARTZ MOSAIC 8369 MOSS AGATE
	EVCT-6	ENHANCED VINYL COMPOSITE FLOORING	KAHRS	QUARTZ MOSAIC 8353 BLUE CHALCEDONY
	EVCT-7	ENHANCED VINYL COMPOSITE FLOORING	KAHRS	QUARTZ MOSAIC 8357 QUARTZ BLUE
096566 RESILIENT ATHLETIC FLOORING				
	RAF	RESILIENT ATHLETIC FLOORING	GERFLOR	TARAFLEX SPORT M PLUS W/ DRYTEX
096623 TERRAZZO FLOORING				
	TERR-E1	TERRAZZO		COORDINATE COLOR WITH EVCT-1
	TERR-E2	TERRAZZO		COORDINATE COLOR WITH EVCT-4
	TERR-E3	TERRAZZO - ACCENT		COORDINATE COLOR WITH EVCT-3
	TERR-E4	TERRAZZO - ACCENT		COORDINATE COLOR WITH EVCT-2
	TERR-E5	TERRAZZO - ACCENT		COORDINATE COLOR WITH EVCT-5
	TERR-E6	TERRAZZO - ACCENT		COORDINATE COLOR WITH EVCT-7
096700 FLUID-APPLIED FLOORING				
	RES-A	RESINOUS FLOORING	DUR-A-FLEX	POLYCRETE SLB/TF
	RES-B	RESINOUS FLOORING	DUR-A-FLEX	HYBRI-FLEX, MICRO-CHIP BLEND
096813 TILE CARPETING				
	C-TILE-A1	CARPET TILE	INTERFACE	OPEN AIR STRIA - CUSTOM COLOR: 274027-001
	C-TILE-A2	CARPET TILE	INTERFACE	OPEN AIR STRIA - CUSTOM COLOR: 274027-003
	C-TILE-B	WALK-OFF CARPET TILE	INTERFACE	STEP REPEAT SR799 - 104935 GRANITE
	C-TILE-C	CARPET TILE	INTERFACE	B601 - PACIFIC 102906
	C-TILE-D	CARPET TILE	INTERFACE	B602 - PACIFIC 102914
	C-TILE-E	CARPET TILE	INTERFACE	B603 - PACIFIC 102922
	C-TILE-F	CARPET TLE	INTERFACE	MOSS - GRANITE/MOSS 105560
	C-TILE-G	CARPET TILE	INTERFACE	KERBSTONE - GRANITE 105572
	C-TILE-H	CARPET TILE	INTERFACE	MOSS IN STONE - GRANITE EDGE 105564
	C-TILE-I1	CARPET TILE	INTERFACE	PANOLA MOUNTAIN - BLUE LICHEN 107304
	C-TILE-I2	CARPET TILE	INTERFACE	PANOLA MOUNTAIN - SAGE LICHEN 107305
	C-TILE-I3	CARPET TILE	INTERFACE	PANOLA MOUNTAIN - GREEN LICHEN 107302
	C-TILE-I4	CARPET TILE	INTERFACE	PANOLA MOUNTAIN - YELLOW LICHEN 107301
	C-TILE-I5	CARPET TILE	INTERFACE	PANOLA MOUNTAIN - MEADOW LICHEN 107303
	C-TILE-I6	CARPET TILE	INTERFACE	PANOLA MOUNTAIN - BROWN LICHEN 107300
	C-TILE-J	CARPET TILE	INTERFACE	MANTLE ROCK 107282
098430 SOUND-ABSORBING WALL & CEILING UNITS				
	AWP-A4	ACOUSTICAL WALL PANEL	UNIKA VAEV	ECOUSTIC PANEL COLLECTION - ORANGE
	AWP-A5	ACOUSTICAL WALL PANEL	UNIKA VAEV	ECOUSTIC PANEL COLLECTION - YELLOW
	AWP-A7	ACOUSTICAL WALL PANEL	UNIKA VAEV	ECOUSTIC PANEL COLLECTION - GREEN
	AWP-A8	ACOUSTICAL WALL PANEL	UNIKA VAEV	ECOUSTIC PANEL COLLECTION - CUSTOM COLOR TO MATCH EVCT-6
	AWP-A9	ACOUSTICAL WALL PANEL	UNIKA VAEV	ECOUSTIC PANEL COLLECTION - BALTIC
	AWP-B	ACOUSTICAL WALL PANEL	UNIKA VAEV	VISUAL ACOUSTIQ - DIGITALLY PRINTED CUSTOM GRAPHIC
	AWP-C	ACOUSTICAL WALL PANEL	ARMSTRONG	TECTUM - PAINT TO MATCH WALL; COLOR TBD, REFER TO INTERIOR ELEV. FOR SIZE
	AWP-D	ACOUSTICAL WALL PANEL - ROLLED FELT	UNIKA VAEV	COLORS TO COORDINATE WITH GRAPHIC IMAGES IN MEDIA CENTER READING NOOKS
	AWP-E1	ACOUSTICAL WALL PANEL	UNIKA VAEV	ECOUSTIC PANEL .93" NRC .8, COLOR TO MATCH WALL TBD
	AWP-E2	ACOUSTICAL WALL PANEL	UNIKA VAEV	ECOUSTIC PANEL .93" NRC .8, COLOR TO MATCH WALL TBD
	AWP-F	ACOUSTICAL WALL PANEL	WENGER	DIFFUSER PANELS; COORDINATE WITH SCHOOL PANEL SHAPE AND LAYOUT
	AWP-G	ACOUSTICAL WALL PANEL	ARMSTRONG	DESIGNART LINES - CONTOURS - PAINT PT-5
	AWP-H	ACOUSTICAL WALL PANEL	ARMSTRONG	DESIGNART LINES - CURRENTS B - PAINT PT-6
	AWP-I6	ACOUSTICAL WALL PANEL	ARMSTRONG	DESIGNART LINES - BANDS - PAINT PT-6
	AWP-I7	ACOUSTICAL WALL PANEL	ARMSTRONG	DESIGNART LINES - BANDS - PAINT PT-7
	AWP-I9	ACOUSTICAL WALL PANEL	ARMSTRONG	DESIGNART LINES - BANDS - PAINT PT-9
	AWP-J6	ACOUSTICAL WALL PANEL	ARMSTRONG	DESIGNART LINES - RINGS - PAINT PT-6
	AWP-J7	ACOUSTICAL WALL PANEL	ARMSTRONG	DESIGNART LINES - RINGS - PAINT PT-7
	AWP-J8	ACOUSTICAL WALL PANEL	ARMSTRONG	DESIGNART LINES - RINGS - PAINT PT-8
	AWP-J9	ACOUSTICAL WALL PANEL	ARMSTRONG	DESIGNART LINES - RINGS - PAINT PT-9
	AWP-K6	ACOUSTICAL WALL PANEL	ARMSTRONG	DESIGNART LINES - ARCS - PAINT PT-6
	AWP-K7	ACOUSTICAL WALL PANEL	ARMSTRONG	DESIGNART LINES - ARCS - PAINT PT-7
	AWP-K8	ACOUSTICAL WALL PANEL	ARMSTRONG	DESIGNART LINES - ARCS - PAINT PT-8
	AWP-K9	ACOUSTICAL WALL PANEL	ARMSTRONG	DESIGNART LINES - ARCS - PAINT PT-9
099100 PAINTING				
	PT-1	PAINT	SHERWIN WILLIAMS	LOW VOC - FIELD PAINT TBD
	PT-2	PAINT	SHERWIN WILLIAMS	LOW VOC - TRIM PAINT TBD
	PT-3	PAINT	SHERWIN WILLIAMS	LOW VOC - OFF WHITE TBD
	PT-4	PAINT	SHERWIN WILLIAMS	LOW VOC - ORANGE TBD
	PT-5	PAINT	SHERWIN WILLIAMS	LOW VOC - YELLOW TBD
	PT-6	PAINT	SHERWIN WILLIAMS	LOW VOC - LIGHT GREEN TBD
	PT-7	PAINT	SHERWIN WILLIAMS	LOW VOC - MEDIUM GREEN TBD
	PT-8	PAINT	SHERWIN WILLIAMS	LOW VOC - LIGHT BLUE TBD
	PT-9	PAINT	SHERWIN WILLIAMS	LOW VOC - MEDIUM BLUE TBD
	PT-10	PAINT	SHERWIN WILLIAMS	LOW VOC - CEILING TBD
	PT-B	GREEN SCREEN PAINT	ROSCO	VIDEO PAINT: REFER TO SPECS; WALL TO RECEIVE LEVEL 5 FINISH
	PT-C	PAINT	SHERWIN WILLIAMS	LOW VOC - EXPOSED SURFACES OF STAIRS AND RAILINGS
102113.19 PLASTIC TOILET PARTITIONS				
	M3	TOILET PARTITIONS	ASI	ACCURATE PARTITIONS
102123 CUBICLE AND TRACK				
	M4	PRIVACY CURTAIN	MAHARAM	PATTERN: CANTO
102600 WALL AND DOOR PROTECTION				
	IRWC	IMPACT RESISTANT WALLCOVERING	CONSTRUCTION SPECIALTIES	ACROVYN BYDESIGN - DIGITALLY PRINTED CUSTOM GRAPHIC
116143 STAGE CURTAINS				
	SE-A & SE-B	STAGE CURTAIN & VALENCE	KM FABRICS	IFR PRESTIGE
116623 GYMNASIUM EQUIPMENT				
	M5	GYM WALL PADS	PORTER	FIRESAFE WALL PADS
122400 WINDOW SHADES				
	M7	WINDOW SHADES	REFER TO SPECS	ALL EXTERIOR WINDOWS IN ADMINISTRATIVE AREA, CLASSROOMS & MS MEDIA CENTER TO BE MANUAL; SHADES IN THE ES MEDIA CENTER TO BE MOTORIZED
123583 MUSIC EQUIPMENT STORAGE CASEWORK & ACCESSORIES				
	M6	MUSIC EPUIPMENT STORAGE	WENGER	REFER TO SPECIFICATIONS
SOUND				
	82			

4 TERRAZZO DETAIL 4

A3.0.2 3" = 1'-0"

3 TERRAZZO DETAIL 3

A3.0.2 3" = 1'-0"

2 TERRAZZO DETAIL 2

A3.0.2 3" = 1'-0"

1 TERRAZZO DETAIL 1

A3.0.2 3" = 1'-0"

FINISH SCHEDULE GENERAL NOTES

A. FINISH SCHEDULE DESCRIBES ONLY THE BASIC OR PREDOMINANT SURFACE FINISH.

B. PROVIDE SAME FINISHES AS THE ADJACENT SPACE IN ALCOVES AND CONTINUOUS SPACES WITHOUT DESIGNATED SPACE NUMBERS.

C. CASEWORK FINISHES ARE NOT NOTED IN THE FINISH SCHEDULE. REFER TO CASEWORK ELEVATIONS AND SPECIFICATIONS FOR MATERIALS AND FINISHES.

D. DIRECTIONAL WALL FINISH INDICATORS (NORTH, EAST, SOUTH, WEST) REFER TO THE "PLAN" NORTH ORIENTATION.

E. BULKHEADS AND SOFFITS MAY NOT BE INDICATED IN FINISH SCHEDULES. REFER TO RCP DETAILS, AND OTHER DOCUMENTS FOR EXTENT.

F. PROVIDE CONTINUOUS SEALANT BETWEEN INTERIOR SLAB-ON-GRADE AND VERTICAL ELEMENT WHERE JOINT IS NOT CONCEALED BY FINISH BASE OR OTHER CONSTRUCTION

G. REFER TO SPECIFICATIONS FOR INFORMATION ON FINISH FIRE CLASSIFICATION RATING.

H. REFER TO FLOOR PATTERNS PLANS FOR FLOOR PATTERNS AND ACCENT WALL PAINTS AND TREATMENT.

I. REFER TO ELEVATIONS FOR ELEVATIONS FOR WALL TREATMENTS.

J. INSTALL RB ON COLUMNS.

K. APPLY TERRAZZO TO ELEVATOR CAB.

L. APPLY PAINT TO ALL DOOR FRAMES.

M. APPLY PAINT TO ALL RAILINGS REFER TO SCHEDULE FOR COLOR.

N. PAINT ALL EXPOSED ELEMENTS (SUCH AS PIPING AND CONDUITS) TO MATCH ADJACENT WALL COLOR (HIDE & BLEND).

O. USE TILE BACKING PANELS AT ALL GWT LOCATIONS INSTEAD IN LIEU OF CEMENT BACKER BOARD.

P. PT-1 IS THE OVERALL FIELD PAINT COLOR.

Q. ACCENT PAINT (A-PT) AS NOTED ON FINISH SCHEDULE IS ENTIRE WALL UNO.

R. STAIRS WILL BE PAINTED (PT-C) A DIFFERENT COLOR IN EACH WING; COLOR TO BE DETERMINED WITH CLIENT.

NOTE:

1. REFER TO SPECIFICATION FOR FLOOR PATTERNS.
2. REFER TO SPECIFICATION FOR WALL PATTERNS.
3. PROVIDE 10'-0" DEPTH OF WALK OFF CARPET BEGINNING AT ENTRY DOORS.
4. PROVIDE FULL-HEIGHT MIRRORS AND WALL-MOUNTED BALLET BARRES ON LONG WALLS.
5. COORDINATE FINAL ACP-4 LAYOUT WITH SCHOOL.
6. REFER TO CIVIL DRAWINGS FOR FINISHES
7. 6"H INTEGRAL RES BASE.
8. GLAZED WALL TILE ON WET WALL FULL HEIGHT, INSTALLATION: VETICAL STACK
9. REFER TO A2.0.20 FOR FINISH DIMENSIONS

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ASHLEY P. DENNIS
11711
8/2/24

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/16/24	AD1
8/23/24	AD2

FINISH SCHEDULE

A3.0.2

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FLOOR PATTERN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

1	CUSTOM GRAPHIC PRINTED ON IRWC - 4'-0"AFF, ALIGN TO TOP OF DOOR FRAME.
2	ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING
3	ACOUSTIC WALL PANEL (8'WX4'H) - ALIGN TOP OF AWP WITH TOP OF DOOR FRAME, CENTER ON WALL
4	PAINT EXPOSED SURFACES OF STAIR AND RAILING
5	ALIGN EDGE OF FLOORING WITH EDGE OF WALL

FINISH PLAN LEGEND

	EVCT-1		C-TILE-I1	CG / A-PT	CORNER GUARD / WALL FINISH EXTENTS
	EVCT-2		C-TILE-I2		TERR-E1
	EVCT-3		C-TILE-I3		TERR-E2
	EVCT-4		C-TILE-I4		TERR-E3
	EVCT-5		C-TILE-I5		TERR-E4
	EVCT-6		C-TILE-I6		TERR-E5
	EVCT-7		C-TILE-J		TERR-E6

*UNO, HATCHES DO NOT INDICATE FLOOR INSTALLATION PATTERN, METHOD OR DIRECTION. HATCHES INDICATE START AND STOP OF FINISHES ONLY.

FLOOR PATTERN GENERAL NOTES

A. DRAWING INDICATES PATTERNED AREAS ONLY. REFER TO ROOM FINISH SCHEDULES ON DRAWINGS A3.0.1-A3.0.2 FOR A COMPLETE LIST OF FINISHES AND LOCATIONS.

B. DIVIDER STRIP CONTROL JOINT TOP SECTION WIDTHS SHALL BE 1/16".

C. PROVIDE EPOXY TERRAZZO JOINT DETAIL 1/A3.0.2 AT CRACKS GREATER THAN 1/16".

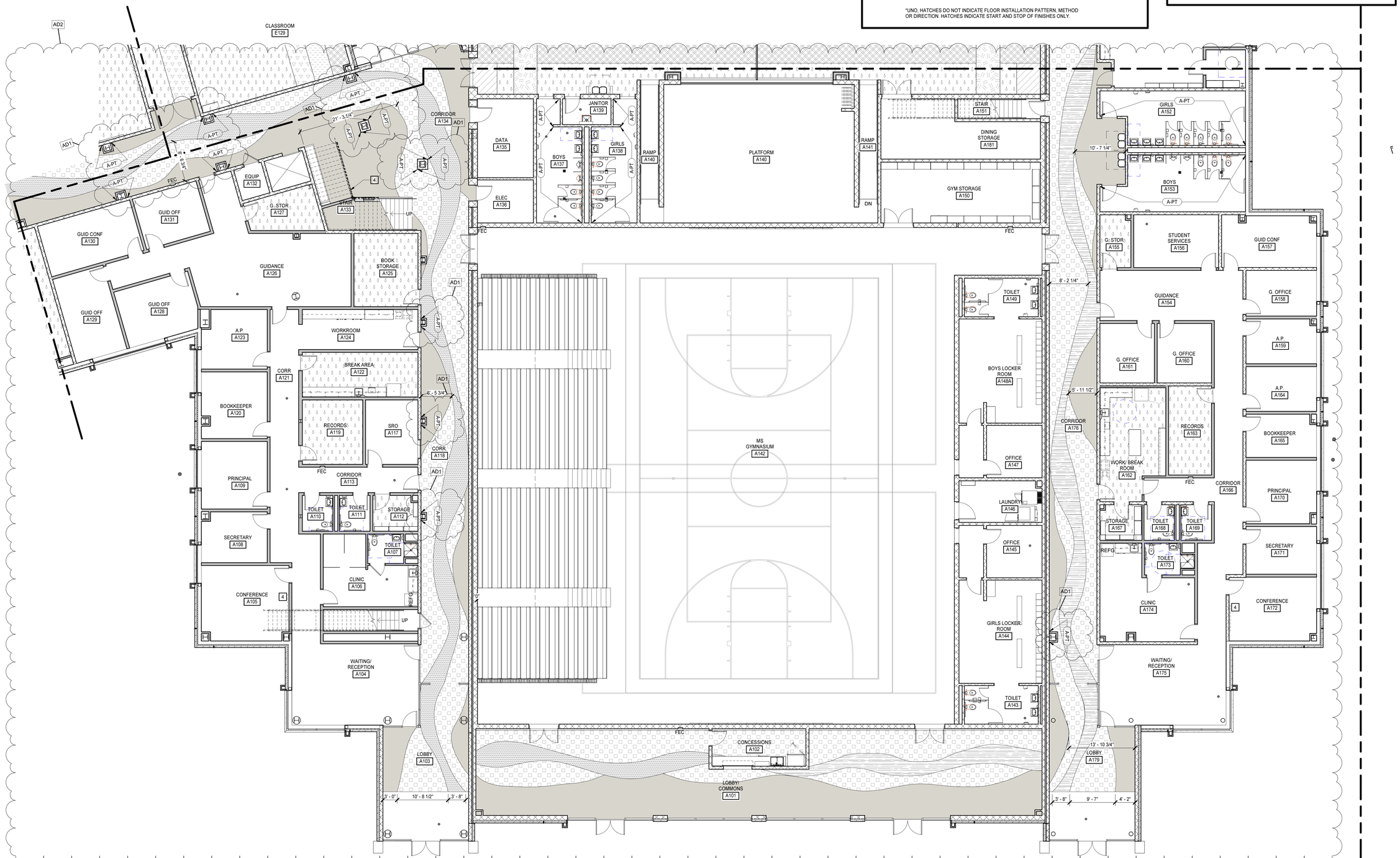
D. PROVIDE EPOXY TERRAZZO JOINT DETAIL 3/A3.0.2 AT CRACKS GREATER THAN 1/16".

E. WHERE ONE FINISH IS LISTED ON ALL WALLS OF THE ROOM, THE FINISH PLANS DO NOT SHOW EXTENT OF FINISH. FINISH PLANS AND ELEVATIONS SHOW EXTENT OF MATERIALS WHERE FINISH SCHEDULE LISTS MULTIPLE FINISHES IN ONE ROOM.

F. DIRECTIONAL WALL FINISH INDICATORS (NORTH, SOUTH, EAST, WEST) REFER TO THE 'PLAN' NORTH ORIENTATION.

G. FINISH FLOOR PATTERNS INDICATE FLOOR TYPE, PATTERN AND COLOR OF MATERIAL ONLY. INSTALLED FLOOR TILES SHALL NOT BE LESS THAN 6" IN WIDTH, PROVIDE ARCHITECT GRID LAYOUT FOR APPROVAL.

H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINNGS



N

FIRST FLOOR FINISH PATTERN PLAN - PART A

1/8" = 1'-0"

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ASHLEY P. DENNIS — REGISTERED ARCHITECT — 11711 — 8/2/24 — NORTH CAROLINA — RALEIGH, NC

D E B F C A G H

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/16/24	AD1
8/23/24	AD2

FIRST FLOOR FINISH PLAN - PART A

A3.0.3

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FLOOR PATTERN KEYNOTES

REPRESENTED BY ⟨n⟩

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

1	CUSTOM GRAPHIC PRINTED ON IRWC - 4'-0"AFF, ALIGN TO TOP OF DOOR FRAME.
2	ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING
3	ACOUSTIC WALL PANEL (8'WX4'H) - ALIGN TOP OF AWP WITH TOP OF DOOR FRAME, CENTER ON WALL
4	PAINT EXPOSED SURFACES OF STAIR AND RAILING
5	ALIGN EDGE OF FLOORING WITH EDGE OF WALL

FINISH PLAN LEGEND

EVCT-1	C-TILE-I1	CG / A-PT	CORNER GUARD / WALL FINISH EXTENTS
EVCT-2	C-TILE-I2	TERR-E1	
EVCT-3	C-TILE-I3	TERR-E2	
EVCT-4	C-TILE-I4	TERR-E3	
EVCT-5	C-TILE-I5	TERR-E4	
EVCT-6	C-TILE-I6	TERR-E5	
EVCT-7	C-TILE-J	TERR-E6	

*UNO, HATCHES DO NOT INDICATE FLOOR INSTALLATION PATTERN, METHOD OR DIRECTION. HATCHES INDICATE START AND STOP OF FINISHES ONLY.

FLOOR PATTERN GENERAL NOTES

A. DRAWING INDICATES PATTERNED AREAS ONLY. REFER TO ROOM FINISH SCHEDULES ON DRAWINGS A3.0.1-A3.0.2 FOR A COMPLETE LIST OF FINISHES AND LOCATIONS.

B. DIVIDER STRIP CONTROL JOINT TOP SECTION WIDTHS SHALL BE 1/16".

C. PROVIDE EPOXY TERRAZZO JOINT DETAIL 1/A3.0.2 AT CRACKS GREATER THAN 1/16".

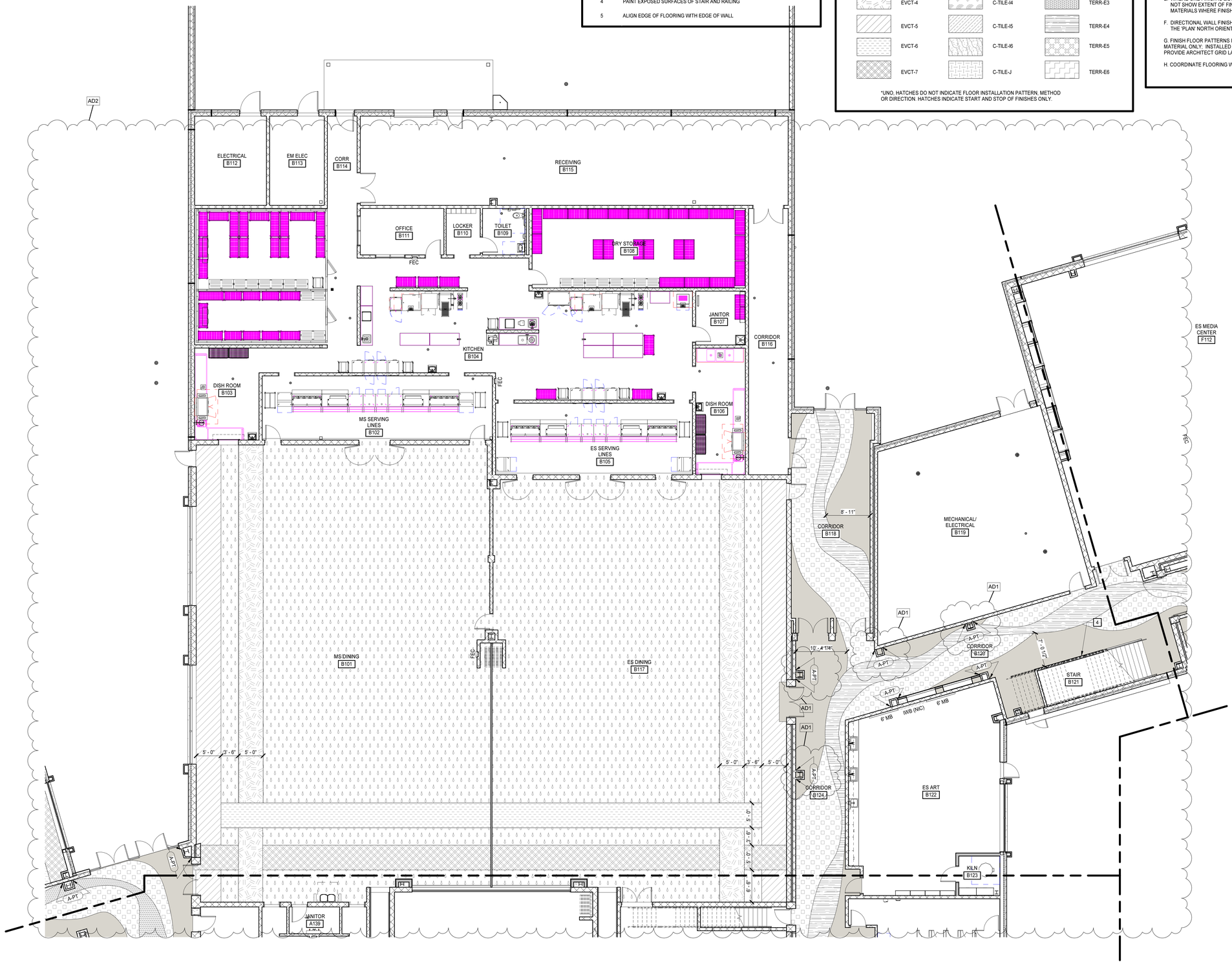
D. PROVIDE EPOXY TERRAZZO JOINT DETAIL 3/A3.0.2 AT CRACKS GREATER THAN 1/16".

E. WHERE ONE FINISH IS LISTED ON ALL WALLS OF THE ROOM, THE FINISH PLANS DO NOT SHOW EXTENT OF FINISH. FINISH PLANS AND ELEVATIONS SHOW EXTENT OF MATERIALS WHERE FINISH SCHEDULE LISTS MULTIPLE FINISHES IN ONE ROOM.

F. DIRECTIONAL WALL FINISH INDICATORS (NORTH, SOUTH, EAST, WEST) REFER TO THE 'PLAN' NORTH ORIENTATION.

G. FINISH FLOOR PATTERNS INDICATE FLOOR TYPE, PATTERN AND COLOR OF MATERIAL ONLY; INSTALLED FLOOR TILES SHALL NOT BE LESS THAN 6" IN WIDTH, PROVIDE ARCHITECT GRID LAYOUT FOR APPROVAL.

H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINGS



N

FIRST FLOOR FINISH PATTERN PLAN - PART B

1/8" = 1'-0"

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911 N. WEST STREET, SUITE 205 RALEIGH, NORTH CAROLINA 27603
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D E B F C A G H

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/16/24	AD1
8/23/24	AD2

FIRST FLOOR FINISH PLAN - PART B

A3.0.4

8/23/2024 4:25:50 PM

FLOOR PATTERN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

1	CUSTOM GRAPHIC PRINTED ON IRWC - 4'-0"AFF, ALIGN TO TOP OF DOOR FRAME.
2	ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING
3	ACOUSTIC WALL PANEL (8'WX4'H) - ALIGN TOP OF AWP WITH TOP OF DOOR FRAME, CENTER ON WALL
4	PAINT EXPOSED SURFACES OF STAIR AND RAILING
5	ALIGN EDGE OF FLOORING WITH EDGE OF WALL

FINISH PLAN LEGEND

EVCT-1	C-TILE-I1	TERR-E1
EVCT-2	C-TILE-I2	TERR-E2
EVCT-3	C-TILE-I3	TERR-E3
EVCT-4	C-TILE-I4	TERR-E4
EVCT-5	C-TILE-I5	TERR-E5
EVCT-6	C-TILE-I6	TERR-E6
EVCT-7	C-TILE-J	

CG — CORNER GUARD

A-PT — WALL FINISH EXTENTS

*UNO, HATCHES DO NOT INDICATE FLOOR INSTALLATION PATTERN. METHOD OR DIRECTION. HATCHES INDICATE START AND STOP OF FINISHES ONLY.

FLOOR PATTERN GENERAL NOTES

A. DRAWING INDICATES PATTERNED AREAS ONLY. REFER TO ROOM FINISH SCHEDULES ON DRAWINGS A3.0.1-A3.0.2 FOR A COMPLETE LIST OF FINISHES AND LOCATIONS.

B. DIVIDER STRIP CONTROL JOINT TOP SECTION WIDTHS SHALL BE 1/16".

C. PROVIDE EPOXY TERRAZZO JOINT DETAIL 1/A3.0.2 AT CRACKS GREATER THAN 1/16".

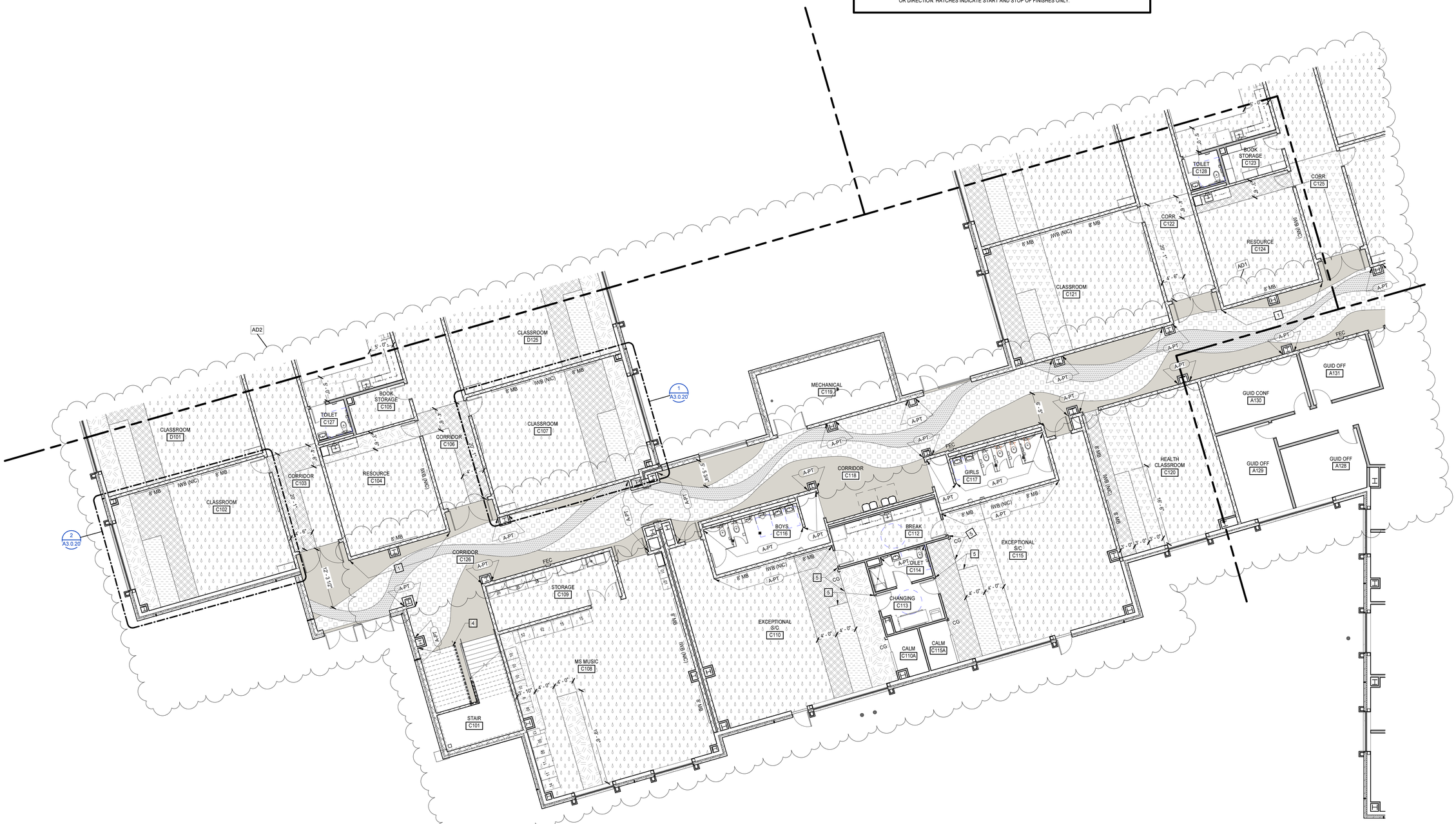
D. PROVIDE EPOXY TERRAZZO JOINT DETAIL 3/A3.0.2 AT CRACKS GREATER THAN 1/16".

E. WHERE ONE FINISH IS LISTED ON ALL WALLS OF THE ROOM, THE FINISH PLANS DO NOT SHOW EXTENT OF FINISH. FINISH PLANS AND ELEVATIONS SHOW EXTENT OF MATERIALS WHERE FINISH SCHEDULE LISTS MULTIPLE FINISHES IN ONE ROOM.

F. DIRECTIONAL WALL FINISH INDICATORS (NORTH, SOUTH, EAST, WEST) REFER TO THE 'PLAN' NORTH ORIENTATION.

G. FINISH FLOOR PATTERNS INDICATE FLOOR TYPE, PATTERN AND COLOR OF MATERIAL ONLY. INSTALLED FLOOR TILES SHALL NOT BE LESS THAN 6" IN WIDTH, PROVIDE ARCHITECT GRID LAYOUT FOR APPROVAL.

H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINGS



N

FIRST FLOOR FINISH PATTERN PLAN - PART C

1/8" = 1'-0"

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KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/16/24	AD1
8/23/24	AD2

FIRST FLOOR FINISH PLAN - PART C

A3.0.5

8/23/2024 4:25:57 PM

FLOOR PATTERN GENERAL NOTES

A. DRAWING INDICATES PATTERNED AREAS ONLY. REFER TO ROOM FINISH SCHEDULES ON DRAWINGS A3.0.1-A3.0.2 FOR A COMPLETE LIST OF FINISHES AND LOCATIONS.

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H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINGS

FINISH PLAN LEGEND

EVCT-1	C-TILE-I1	CG	CORNER GUARD
EVCT-2	C-TILE-I2	A-PT	WALL FINISH EXTENTS
EVCT-3	C-TILE-I3		TERR-E1
EVCT-4	C-TILE-I4		TERR-E2
EVCT-5	C-TILE-I5		TERR-E3
EVCT-6	C-TILE-I6		TERR-E4
EVCT-7	C-TILE-J		TERR-E5
			TERR-E6

*UNO, HATCHES DO NOT INDICATE FLOOR INSTALLATION PATTERN, METHOD OR DIRECTION. HATCHES INDICATE START AND STOP OF FINISHES ONLY.

FLOOR PATTERN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

1 CUSTOM GRAPHIC PRINTED ON IRWC - 4'-0"AFF, ALIGN TO TOP OF DOOR FRAME.

2 ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING

3 ACOUSTIC WALL PANEL (8'WX4'H) - ALIGN TOP OF AWP WITH TOP OF DOOR FRAME, CENTER ON WALL

4 PAINT EXPOSED SURFACES OF STAIR AND RAILING

5 ALIGN EDGE OF FLOORING WITH EDGE OF WALL

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KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/23/24	AD2

FIRST FLOOR FINISH PLAN - PART D

A3.0.6

FIRST FLOOR FINISH PATTERN PLAN - PART D

1/8" = 1'-0"

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N

FIRST FLOOR FINISH PATTERN PLAN - PART E

1/8" = 1'-0"

FLOOR PATTERN GENERAL NOTES

A. DRAWING INDICATES PATTERNED AREAS ONLY. REFER TO ROOM FINISH SCHEDULES ON DRAWINGS A3.0.1-A3.0.2 FOR A COMPLETE LIST OF FINISHES AND LOCATIONS.

B. DIVIDER STRIP CONTROL JOINT TOP SECTION WIDTHS SHALL BE 1/16".

C. PROVIDE EPOXY TERRAZZO JOINT DETAIL 1/A3.0.2 AT CRACKS GREATER THAN 1/16".

D. PROVIDE EPOXY TERRAZZO JOINT DETAIL 3/A3.0.2 AT CRACKS GREATER THAN 1/16".

E. WHERE ONE FINISH IS LISTED ON ALL WALLS OF THE ROOM, THE FINISH PLANS DO NOT SHOW EXTENT OF FINISH. FINISH PLANS AND ELEVATIONS SHOW EXTENT OF MATERIALS WHERE FINISH SCHEDULE LISTS MULTIPLE FINISHES IN ONE ROOM.

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H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINGS

FINISH PLAN LEGEND

EVCT-1	C-TILE-I1	CG / A-PT	CORNER GUARD / WALL FINISH EXTENTS
EVCT-2	C-TILE-I2		TERR-E1
EVCT-3	C-TILE-I3		TERR-E2
EVCT-4	C-TILE-I4		TERR-E3
EVCT-5	C-TILE-I5		TERR-E4
EVCT-6	C-TILE-I6		TERR-E5
EVCT-7	C-TILE-J		TERR-E6

*UNO, HATCHES DO NOT INDICATE FLOOR INSTALLATION PATTERN, METHOD OR DIRECTION. HATCHES INDICATE START AND STOP OF FINISHES ONLY.

FLOOR PATTERN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

1 CUSTOM GRAPHIC PRINTED ON IRWC - 4'-0"AFF, ALIGN TO TOP OF DOOR FRAME.

2 ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING

3 ACOUSTIC WALL PANEL (8'WX4'H) - ALIGN TOP OF AWP WITH TOP OF DOOR FRAME, CENTER ON WALL

4 PAINT EXPOSED SURFACES OF STAIR AND RAILING

5 ALIGN EDGE OF FLOORING WITH EDGE OF WALL

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8/2/24
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RALEIGH, NC

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KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 831310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/23/24	AD2

FIRST FLOOR FINISH PLAN - PART E

A3.0.7

8/23/2024 4:26:10 PM

FLOOR PATTERN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

1	CUSTOM GRAPHIC PRINTED ON IRWC - 4'-0"AFF. ALIGN TO TOP OF DOOR FRAME.
2	ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING
3	ACOUSTIC WALL PANEL (8'WX4'H) - ALIGN TOP OF AWP WITH TOP OF DOOR FRAME, CENTER ON WALL
4	PAINT EXPOSED SURFACES OF STAIR AND RAILING
5	ALIGN EDGE OF FLOORING WITH EDGE OF WALL

FINISH PLAN LEGEND

EVCT-1	C-TILE-I1	CG / A-PT	CORNER GUARD / WALL FINISH EXTENTS
EVCT-2	C-TILE-I2		TERR-E1
EVCT-3	C-TILE-I3		TERR-E2
EVCT-4	C-TILE-I4		TERR-E3
EVCT-5	C-TILE-I5		TERR-E4
EVCT-6	C-TILE-I6		TERR-E5
EVCT-7	C-TILE-J		TERR-E6

*UNO, HATCHES DO NOT INDICATE FLOOR INSTALLATION PATTERN, METHOD OR DIRECTION. HATCHES INDICATE START AND STOP OF FINISHES ONLY.

FLOOR PATTERN GENERAL NOTES

A. DRAWING INDICATES PATTERNED AREAS ONLY. REFER TO ROOM FINISH SCHEDULES ON DRAWINGS A3.0.1-A3.0.2 FOR A COMPLETE LIST OF FINISHES AND LOCATIONS.

B. DIVIDER STRIP CONTROL JOINT TOP SECTION WIDTHS SHALL BE 1/16".

C. PROVIDE EPOXY TERRAZZO JOINT DETAIL 1/A3.0.2 AT CRACKS GREATER THAN 1/16".

D. PROVIDE EPOXY TERRAZZO JOINT DETAIL 3/A3.0.2 AT CRACKS GREATER THAN 1/16".

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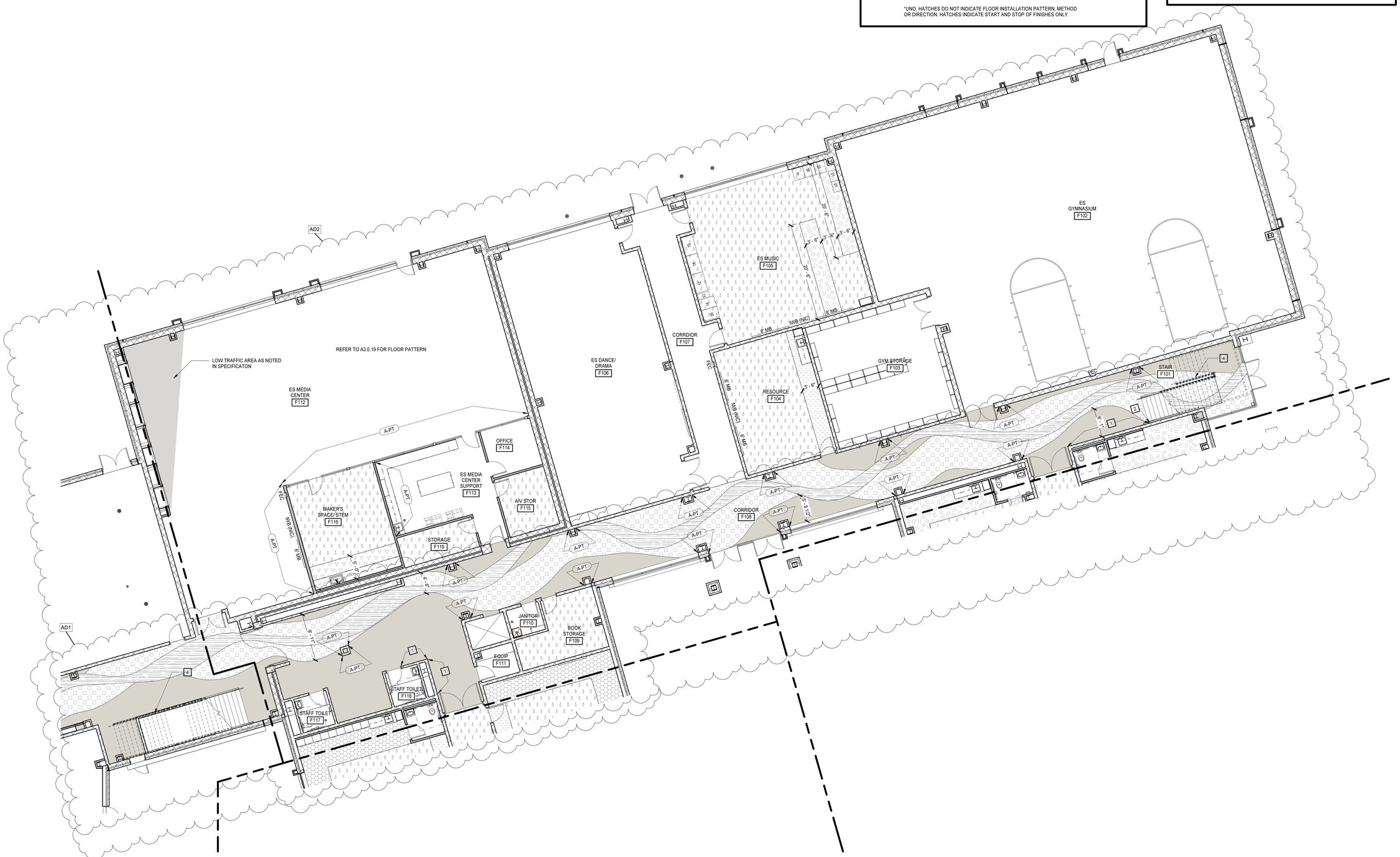
H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINGS



N

FIRST FLOOR FINISH PATTERN PLAN - PART F

1/8" = 1'-0"

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911 N. WEST STREET, SUITE 205 RALEIGH, NORTH CAROLINA 27603
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RALEIGH, NC

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KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/16/24	AD1
8/23/24	AD2

FIRST FLOOR FINISH PLAN - PART F

A3.0.8

8/23/2024 4:26:20 PM

FLOOR PATTERN GENERAL NOTES

A. DRAWING INDICATES PATTERNED AREAS ONLY. REFER TO ROOM FINISH SCHEDULES ON DRAWINGS A3.0.1-A3.0.2 FOR A COMPLETE LIST OF FINISHES AND LOCATIONS.

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D. PROVIDE EPOXY TERRAZZO JOINT DETAIL 3/A3.0.2 AT CRACKS GREATER THAN 1/16".

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H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINNGS

FINISH PLAN LEGEND

	EVCT-1		C-TILE-I1	CG / A-PT	CORNER GUARD / WALL FINISH EXTENTS
	EVCT-2		C-TILE-I2		TERR-E1
	EVCT-3		C-TILE-I3		TERR-E2
	EVCT-4		C-TILE-I4		TERR-E3
	EVCT-5		C-TILE-I5		TERR-E4
	EVCT-6		C-TILE-I6		TERR-E5
	EVCT-7		C-TILE-J		TERR-E6

*UNO, HATCHES DO NOT INDICATE FLOOR INSTALLATION PATTERN, METHOD OR DIRECTION. HATCHES INDICATE START AND STOP OF FINISHES ONLY.

FLOOR PATTERN KEYNOTES

REPRESENTED BY [n]

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

1 CUSTOM GRAPHIC PRINTED ON IRWC - 4'-0"AFF, ALIGN TO TOP OF DOOR FRAME.

2 ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING

3 ACOUSTIC WALL PANEL (8'WX4'H) - ALIGN TOP OF AWP WITH TOP OF DOOR FRAME, CENTER ON WALL

4 PAINT EXPOSED SURFACES OF STAIR AND RAILING

5 ALIGN EDGE OF FLOORING WITH EDGE OF WALL

N

FIRST FLOOR FINISH PATTERN PLAN - PART G

1/8" = 1'-0"

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911 N. WEST STREET, SUITE 205 RALEIGH, NORTH CAROLINA 27603
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D E B F C A G H

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/23/24	AD2

FIRST FLOOR FINISH PLAN - PART G

A3.0.9

8/23/2024 4:26:26 PM

FLOOR PATTERN GENERAL NOTES

A. DRAWING INDICATES PATTERNED AREAS ONLY. REFER TO ROOM FINISH SCHEDULES ON DRAWINGS A3.0.1-A3.0.2 FOR A COMPLETE LIST OF FINISHES AND LOCATIONS.

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H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINNGS

FINISH PLAN LEGEND

EVCT-1	C-TILE-I1	CG	CORNER GUARD
EVCT-2	C-TILE-I2	A-PT	WALL FINISH EXTENTS
EVCT-3	C-TILE-I3	TERR-E1	
EVCT-4	C-TILE-I4	TERR-E2	
EVCT-5	C-TILE-I5	TERR-E3	
EVCT-6	C-TILE-I6	TERR-E4	
EVCT-7	C-TILE-J	TERR-E5	
		TERR-E6	

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FLOOR PATTERN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

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2	ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING
3	ACOUSTIC WALL PANEL (8'WX4'H) - ALIGN TOP OF AWP WITH TOP OF DOOR FRAME, CENTER ON WALL
4	PAINT EXPOSED SURFACES OF STAIR AND RAILING
5	ALIGN EDGE OF FLOORING WITH EDGE OF WALL

N

FIRST FLOOR FINISH PATTERN PLAN - PART H

1/8" = 1'-0"

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8/2/24
NORTH CAROLINA
RALEIGH, NC

D E B F C A G H

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/23/24	AD2

FIRST FLOOR FINISH PLAN - PART H

A3.0.10

8/23/2024 4:26:33 PM

FLOOR PATTERN KEYNOTES

REPRESENTED BY [n]

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

1	CUSTOM GRAPHIC PRINTED ON IRWC - 4'-0"AFF, ALIGN TO TOP OF DOOR FRAME.
2	ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING
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4	PAINT EXPOSED SURFACES OF STAIR AND RAILING
5	ALIGN EDGE OF FLOORING WITH EDGE OF WALL

FINISH PLAN LEGEND

EVCT-1	C-TILE-I1	CG CORNER GUARD
EVCT-2	C-TILE-I2	A-PT WALL FINISH EXTENTS
EVCT-3	C-TILE-I3	TERR-E1
EVCT-4	C-TILE-I4	TERR-E2
EVCT-5	C-TILE-I5	TERR-E3
EVCT-6	C-TILE-I6	TERR-E4
EVCT-7	C-TILE-J	TERR-E5
		TERR-E6

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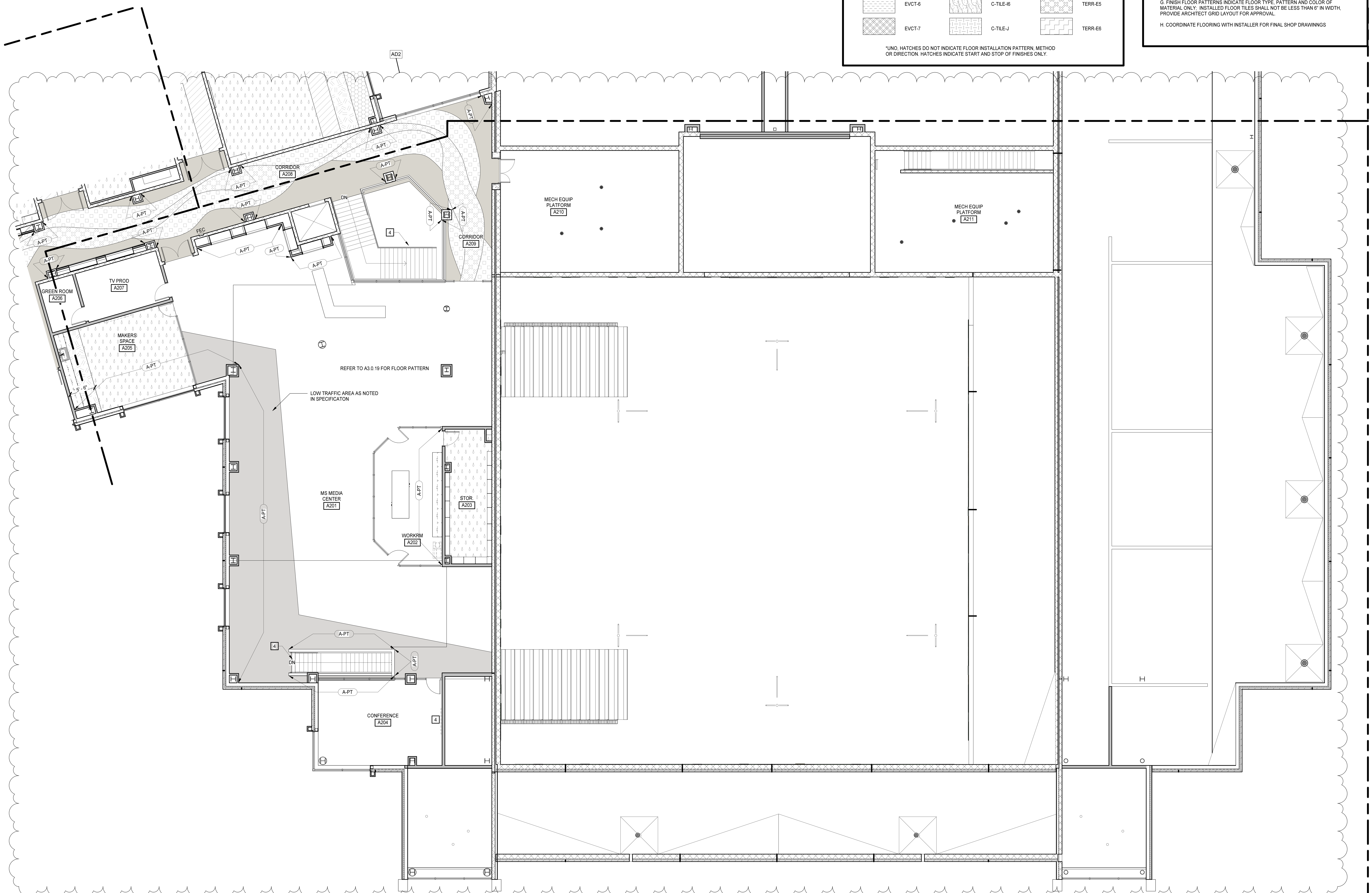
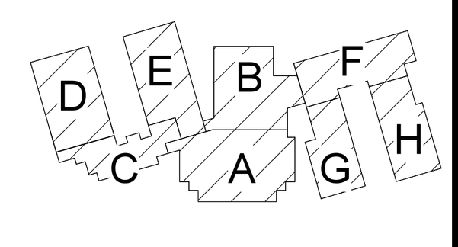
H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINNGS



SECOND FLOOR FINISH PATTERN PLAN - PART A

1/8" = 1'-0"



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PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools

Highway 210, Hampstead, NC 28443

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SECOND FLOOR FINISH PLAN - PART A

A3.0.11

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FLOOR PATTERN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

1	CUSTOM GRAPHIC PRINTED ON IRWC - 4'-0"AFF, ALIGN TO TOP OF DOOR FRAME.
2	ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING
3	ACOUSTIC WALL PANEL (8'WX4'H) - ALIGN TOP OF AWP WITH TOP OF DOOR FRAME, CENTER ON WALL
4	PAINT EXPOSED SURFACES OF STAIR AND RAILING
5	ALIGN EDGE OF FLOORING WITH EDGE OF WALL

FINISH PLAN LEGEND

EVCT-1	C-TILE-I1	CG	CORNER GUARD
EVCT-2	C-TILE-I2	A-PT	WALL FINISH EXTENTS
EVCT-3	C-TILE-I3		TERR-E1
EVCT-4	C-TILE-I4		TERR-E2
EVCT-5	C-TILE-I5		TERR-E3
EVCT-6	C-TILE-I6		TERR-E4
EVCT-7	C-TILE-J		TERR-E5
			TERR-E6

*UNO, HATCHES DO NOT INDICATE FLOOR INSTALLATION PATTERN, METHOD OR DIRECTION. HATCHES INDICATE START AND STOP OF FINISHES ONLY.

FLOOR PATTERN GENERAL NOTES

A. DRAWING INDICATES PATTERNED AREAS ONLY. REFER TO ROOM FINISH SCHEDULES ON DRAWINGS A3.0.1-A3.0.2 FOR A COMPLETE LIST OF FINISHES AND LOCATIONS.

B. DIVIDER STRIP CONTROL JOINT TOP SECTION WIDTHS SHALL BE 1/16".

C. PROVIDE EPOXY TERRAZZO JOINT DETAIL 1/A3.0.2 AT CRACKS GREATER THAN 1/16".

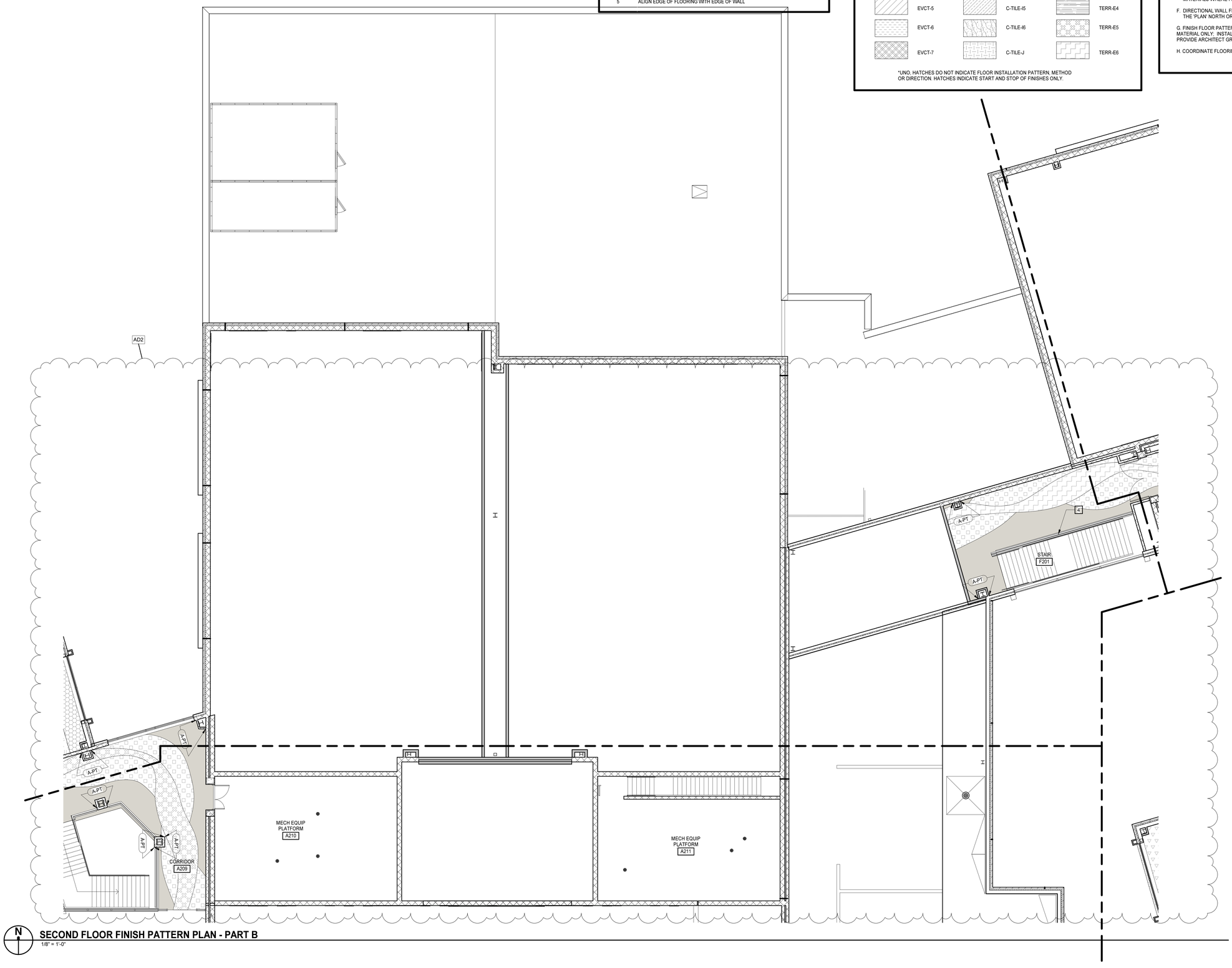
D. PROVIDE EPOXY TERRAZZO JOINT DETAIL 3/A3.0.2 AT CRACKS GREATER THAN 1/16".

E. WHERE ONE FINISH IS LISTED ON ALL WALLS OF THE ROOM, THE FINISH PLANS DO NOT SHOW EXTENT OF FINISH. FINISH PLANS AND ELEVATIONS SHOW EXTENT OF MATERIALS WHERE FINISH SCHEDULE LISTS MULTIPLE FINISHES IN ONE ROOM.

F. DIRECTIONAL WALL FINISH INDICATORS (NORTH, SOUTH, EAST, WEST) REFER TO THE 'PLAN' NORTH ORIENTATION.

G. FINISH FLOOR PATTERNS INDICATE FLOOR TYPE, PATTERN AND COLOR OF MATERIAL ONLY. INSTALLED FLOOR TILES SHALL NOT BE LESS THAN 6" IN WIDTH, PROVIDE ARCHITECT GRID LAYOUT FOR APPROVAL.

H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINNGS



SECOND FLOOR FINISH PATTERN PLAN - PART B

1/8" = 1'-0"

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KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
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SECOND FLOOR FINISH PLAN - PART B

A3.0.12

8/23/2024 4:26:47 PM

FLOOR PATTERN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

1	CUSTOM GRAPHIC PRINTED ON IRWC - 4'-0"AFF, ALIGN TO TOP OF DOOR FRAME.
2	ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING
3	ACOUSTIC WALL PANEL (8'WX4'H) - ALIGN TOP OF AWP WITH TOP OF DOOR FRAME, CENTER ON WALL
4	PAINT EXPOSED SURFACES OF STAIR AND RAILING
5	ALIGN EDGE OF FLOORING WITH EDGE OF WALL

FINISH PLAN LEGEND

EVCT-1	C-TILE-I1	CG / A-PT	CORNER GUARD / WALL FINISH EXTENTS
EVCT-2	C-TILE-I2		TERR-E1
EVCT-3	C-TILE-I3		TERR-E2
EVCT-4	C-TILE-I4		TERR-E3
EVCT-5	C-TILE-I5		TERR-E4
EVCT-6	C-TILE-I6		TERR-E5
EVCT-7	C-TILE-J		TERR-E6

*UNO, HATCHES DO NOT INDICATE FLOOR INSTALLATION PATTERN, METHOD OR DIRECTION. HATCHES INDICATE START AND STOP OF FINISHES ONLY.

FLOOR PATTERN GENERAL NOTES

A. DRAWING INDICATES PATTERNED AREAS ONLY. REFER TO ROOM FINISH SCHEDULES ON DRAWINGS A3.0.1-A3.0.2 FOR A COMPLETE LIST OF FINISHES AND LOCATIONS.

B. DIVIDER STRIP CONTROL JOINT TOP SECTION WIDTHS SHALL BE 1/16".

C. PROVIDE EPOXY TERRAZZO JOINT DETAIL 1/A3.0.2 AT CRACKS GREATER THAN 1/16".

D. PROVIDE EPOXY TERRAZZO JOINT DETAIL 3/A3.0.2 AT CRACKS GREATER THAN 1/16".

E. WHERE ONE FINISH IS LISTED ON ALL WALLS OF THE ROOM, THE FINISH PLANS DO NOT SHOW EXTENT OF FINISH. FINISH PLANS AND ELEVATIONS SHOW EXTENT OF MATERIALS WHERE FINISH SCHEDULE LISTS MULTIPLE FINISHES IN ONE ROOM.

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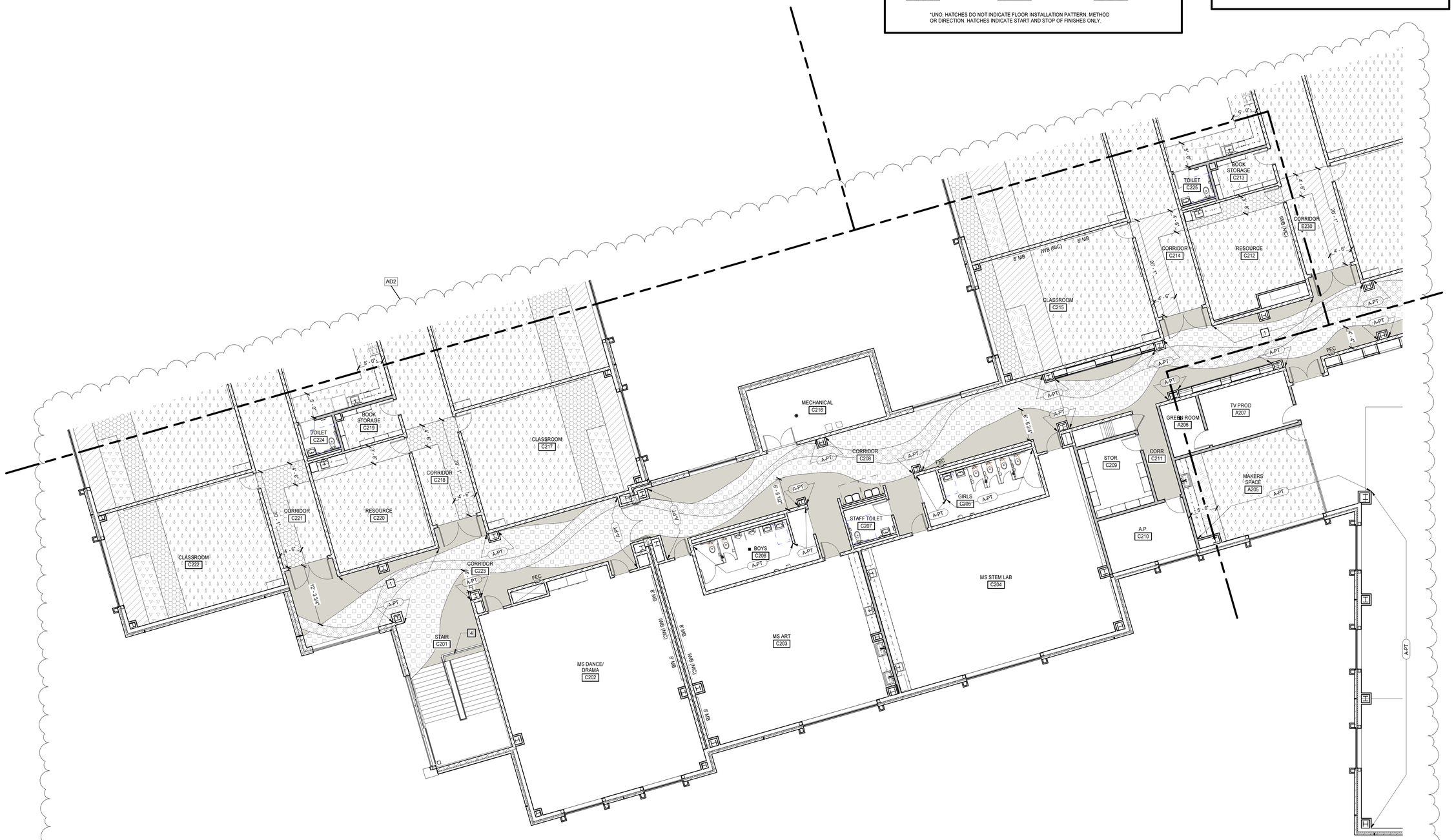
H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINGS



N

SECOND FLOOR FINISH PATTERN PLAN - PART C

1/8" = 1'-0"

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KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 831310
DATE: AUGUST 2, 2024

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DATE	DESCRIPTION
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SECOND FLOOR FINISH PLAN - PART C

A3.0.13

8/23/2024 4:26:56 PM

FLOOR PATTERN GENERAL NOTES

A. DRAWING INDICATES PATTERNED AREAS ONLY. REFER TO ROOM FINISH SCHEDULES ON DRAWINGS A3.0.1-A3.0.2 FOR A COMPLETE LIST OF FINISHES AND LOCATIONS.

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D. PROVIDE EPOXY TERRAZZO JOINT DETAIL 3/A3.0.2 AT CRACKS GREATER THAN 1/16".

E. WHERE ONE FINISH IS LISTED ON ALL WALLS OF THE ROOM, THE FINISH PLANS DO NOT SHOW EXTENT OF FINISH. FINISH PLANS AND ELEVATIONS SHOW EXTENT OF MATERIALS WHERE FINISH SCHEDULE LISTS MULTIPLE FINISHES IN ONE ROOM.

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H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINGS

FINISH PLAN LEGEND

EVCT-1	C-TILE-I1	CG / A-PT	CORNER GUARD / WALL FINISH EXTENTS
EVCT-2	C-TILE-I2		TERR-E1
EVCT-3	C-TILE-I3		TERR-E2
EVCT-4	C-TILE-I4		TERR-E3
EVCT-5	C-TILE-I5		TERR-E4
EVCT-6	C-TILE-I6		TERR-E5
EVCT-7	C-TILE-J		TERR-E6

*UNO, HATCHES DO NOT INDICATE FLOOR INSTALLATION PATTERN, METHOD OR DIRECTION. HATCHES INDICATE START AND STOP OF FINISHES ONLY.

FLOOR PATTERN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

1	CUSTOM GRAPHIC PRINTED ON IRWC - 4'-0"AFF, ALIGN TO TOP OF DOOR FRAME.
2	ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING
3	ACOUSTIC WALL PANEL (8'WX4'H) - ALIGN TOP OF AWP WITH TOP OF DOOR FRAME, CENTER ON WALL
4	PAINT EXPOSED SURFACES OF STAIR AND RAILING
5	ALIGN EDGE OF FLOORING WITH EDGE OF WALL

SECOND FLOOR FINISH PATTERN PLAN - PART D

1/8" = 1'-0"

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KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

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SECOND FLOOR FINISH PLAN - PART D

A3.0.14

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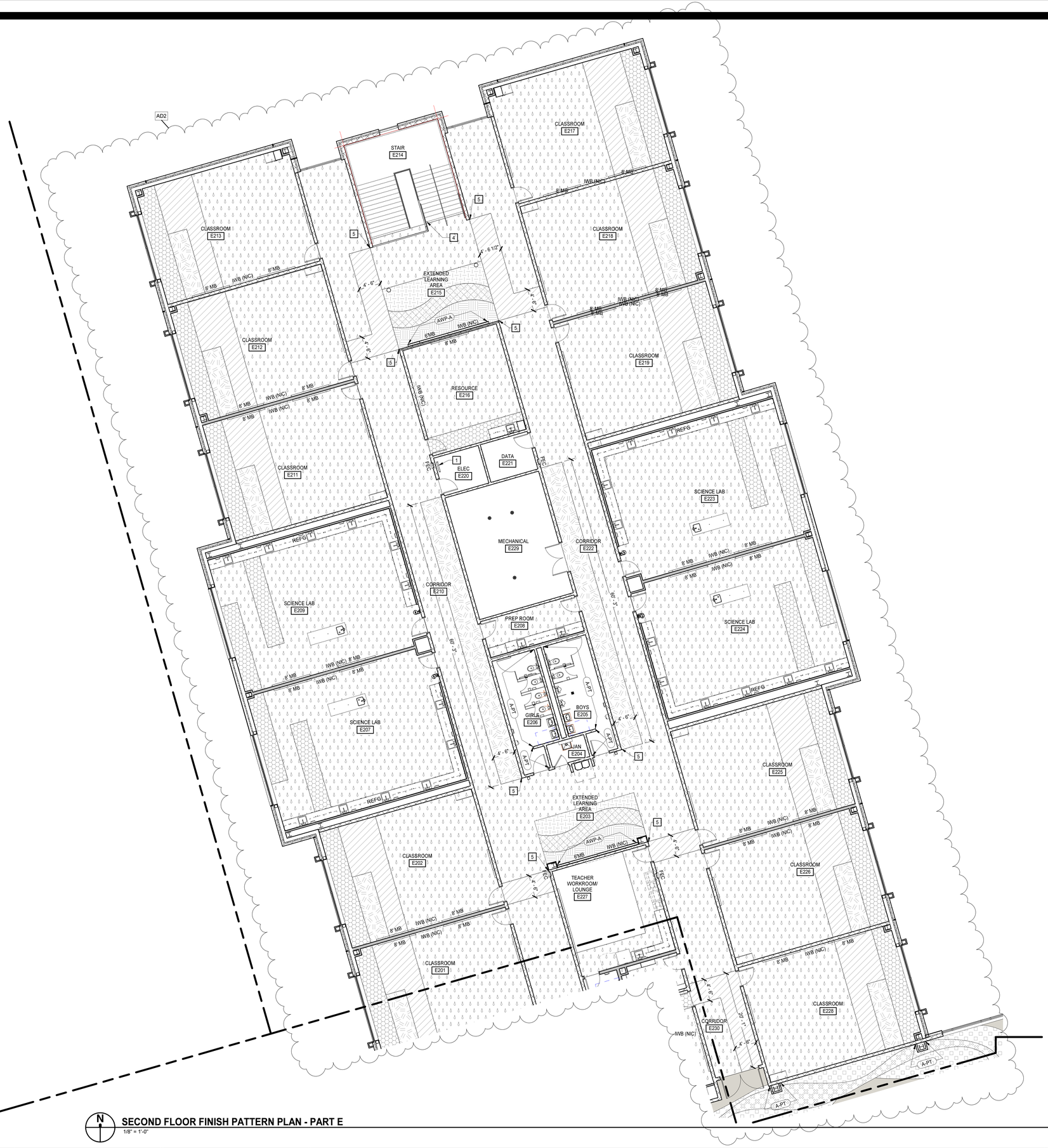

FLOOR PATTERN GENERAL NOTES

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C. PROVIDE EPOXY TERRAZZO JOINT DETAIL 1/A3.0.2 AT CRACKS GREATER THAN 1/16".

D. PROVIDE EPOXY TERRAZZO JOINT DETAIL 3/A3.0.2 AT CRACKS GREATER THAN 1/16".

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H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINGS

FINISH PLAN LEGEND

EVCT-1	C-TILE-I1	CG	CORNER GUARD
EVCT-2	C-TILE-I2	A-PT	WALL FINISH EXTENTS
EVCT-3	C-TILE-I3	TERR-E1	
EVCT-4	C-TILE-I4	TERR-E2	
EVCT-5	C-TILE-I5	TERR-E3	
EVCT-6	C-TILE-I6	TERR-E4	
EVCT-7	C-TILE-J	TERR-E5	
		TERR-E6	

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FLOOR PATTERN KEYNOTES

REPRESENTED BY [n]

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

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2 ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING

3 ACOUSTIC WALL PANEL (8'WX4'H) - ALIGN TOP OF AWP WITH TOP OF DOOR FRAME, CENTER ON WALL

4 PAINT EXPOSED SURFACES OF STAIR AND RAILING

5 ALIGN EDGE OF FLOORING WITH EDGE OF WALL

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RALEIGH, NC

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

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SECOND FLOOR FINISH PLAN - PART E

A3.0.15

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FLOOR PATTERN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

1	CUSTOM GRAPHIC PRINTED ON IRWC - 4'-0"AFF, ALIGN TO TOP OF DOOR FRAME.
2	ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING
3	ACOUSTIC WALL PANEL (8'WX4'H) - ALIGN TOP OF AWP WITH TOP OF DOOR FRAME, CENTER ON WALL
4	PAINT EXPOSED SURFACES OF STAIR AND RAILING
5	ALIGN EDGE OF FLOORING WITH EDGE OF WALL

FINISH PLAN LEGEND

EVCT-1	C-TILE-I1	CG / A-PT	CORNER GUARD / WALL FINISH EXTENTS
EVCT-2	C-TILE-I2	TERR-E1	
EVCT-3	C-TILE-I3	TERR-E2	
EVCT-4	C-TILE-I4	TERR-E3	
EVCT-5	C-TILE-I5	TERR-E4	
EVCT-6	C-TILE-I6	TERR-E5	
EVCT-7	C-TILE-J	TERR-E6	

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FLOOR PATTERN GENERAL NOTES

A. DRAWING INDICATES PATTERNED AREAS ONLY. REFER TO ROOM FINISH SCHEDULES ON DRAWINGS A3.0.1-A3.0.2 FOR A COMPLETE LIST OF FINISHES AND LOCATIONS.

B. DIVIDER STRIP CONTROL JOINT TOP SECTION WIDTHS SHALL BE 1/16".

C. PROVIDE EPOXY TERRAZZO JOINT DETAIL 1/A3.0.2 AT CRACKS GREATER THAN 1/16".

D. PROVIDE EPOXY TERRAZZO JOINT DETAIL 3/A3.0.2 AT CRACKS GREATER THAN 1/16".

E. WHERE ONE FINISH IS LISTED ON ALL WALLS OF THE ROOM, THE FINISH PLANS DO NOT SHOW EXTENT OF FINISH. FINISH PLANS AND ELEVATIONS SHOW EXTENT OF MATERIALS WHERE FINISH SCHEDULE LISTS MULTIPLE FINISHES IN ONE ROOM.

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H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINGS

AD2

MECHANICAL F205

RESOURCE F206

BOOK STORAGE F207

STAIR F208

CORRIDOR F204

JANITOR F203

BOYS F202

GIRLS G222

STAIR F201

A-PT

SECOND FLOOR FINISH PATTERN PLAN - PART F

1/8" = 1'-0"

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RALEIGH, NC

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

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DATE	DESCRIPTION
8/23/24	AD2

SECOND FLOOR FINISH PLAN - PART F

A3.0.16

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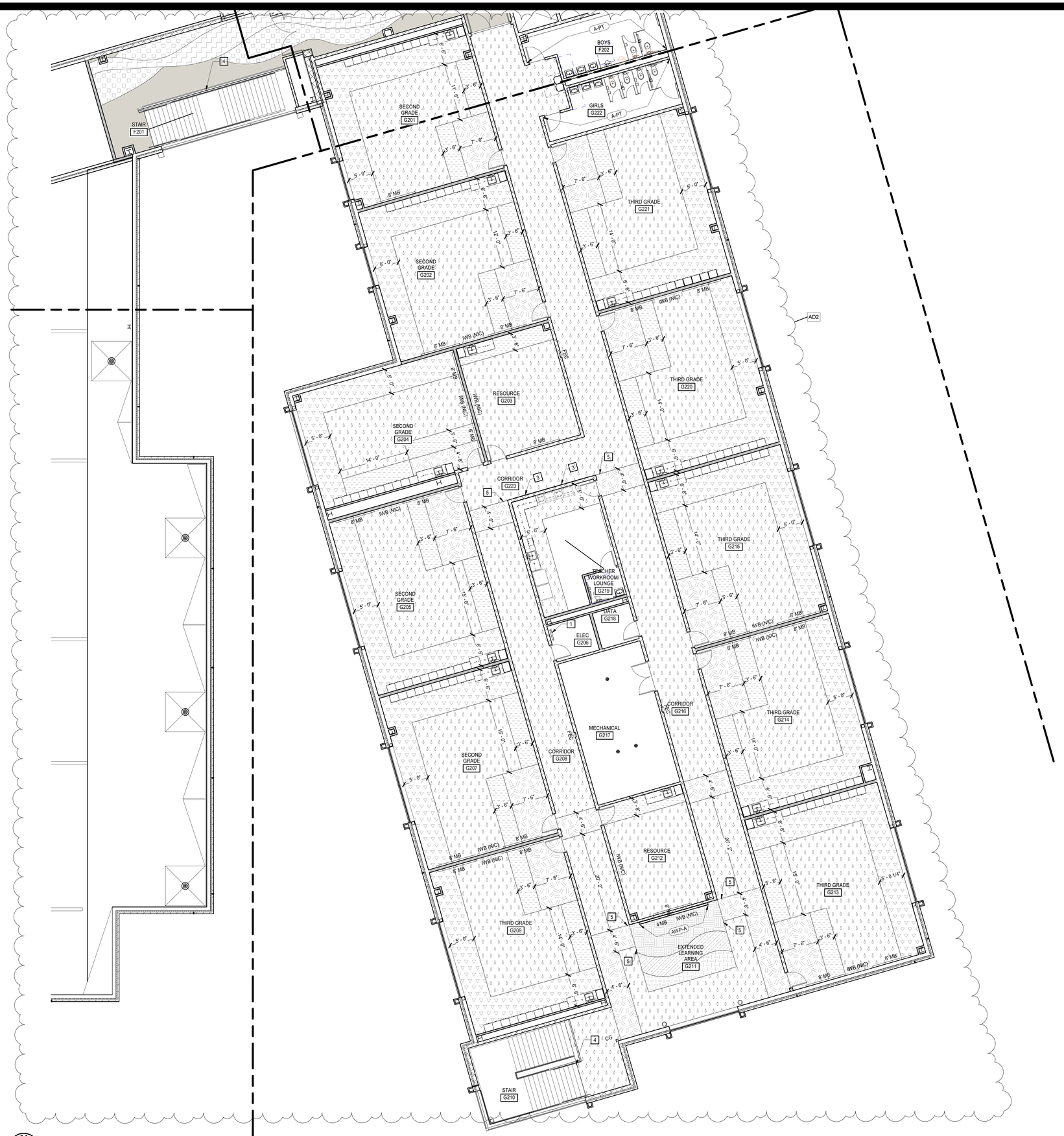

FLOOR PATTERN GENERAL NOTES

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D. PROVIDE EPOXY TERRAZZO JOINT DETAIL 3/A3.0.2 AT CRACKS GREATER THAN 1/16".

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H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINGS

FINISH PLAN LEGEND

EVCT-1	C-TILE-I1	CG — CORNER GUARD	
EVCT-2	C-TILE-I2	A-PT — WALL FINISH EXTENTS	TERR-E1
EVCT-3	C-TILE-I3		TERR-E2
EVCT-4	C-TILE-I4		TERR-E3
EVCT-5	C-TILE-I5		TERR-E4
EVCT-6	C-TILE-I6		TERR-E5
EVCT-7	C-TILE-J		TERR-E6

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FLOOR PATTERN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

1 CUSTOM GRAPHIC PRINTED ON IRWC - 4'-0"AFF, ALIGN TO TOP OF DOOR FRAME.

2 ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING

3 ACOUSTIC WALL PANEL (8'WX4'H) - ALIGN TOP OF AWP WITH TOP OF DOOR FRAME, CENTER ON WALL

4 PAINT EXPOSED SURFACES OF STAIR AND RAILING

5 ALIGN EDGE OF FLOORING WITH EDGE OF WALL

SECOND FLOOR FINISH PATTERN PLAN - PART G

1/8" = 1'-0"

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D E B F C A G H

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

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DATE	DESCRIPTION
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SECOND FLOOR FINISH PLAN - PART G

A3.0.17

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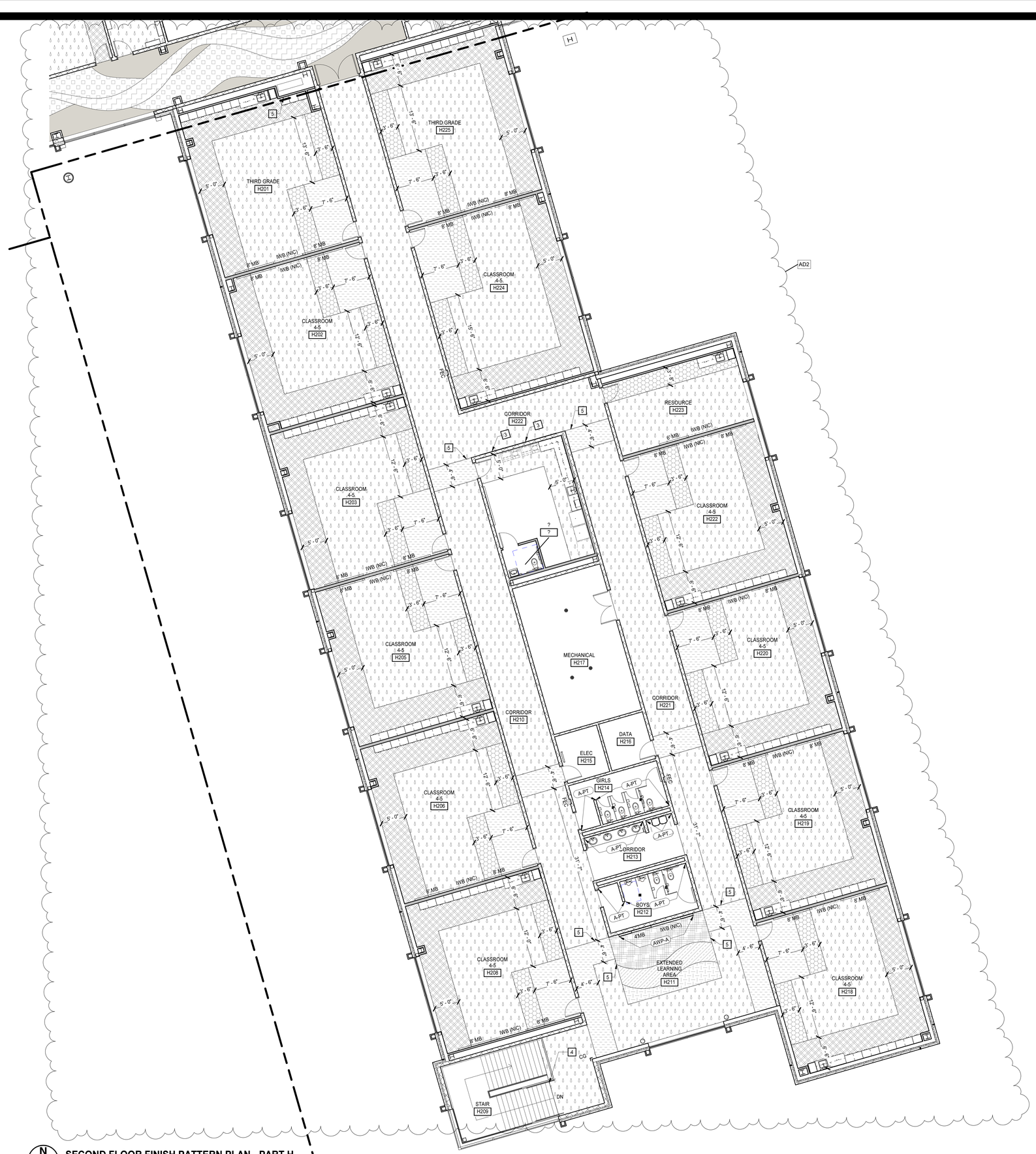

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SECOND FLOOR FINISH PATTERN PLAN - PART H

1/8" = 1'-0"

FLOOR PATTERN GENERAL NOTES

A. DRAWING INDICATES PATTERNED AREAS ONLY. REFER TO ROOM FINISH SCHEDULES ON DRAWINGS A3.0.1-A3.0.2 FOR A COMPLETE LIST OF FINISHES AND LOCATIONS.

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H. COORDINATE FLOORING WITH INSTALLER FOR FINAL SHOP DRAWINNGS

FINISH PLAN LEGEND

EVCT-1	C-TILE-I1	CG	CORNER GUARD
EVCT-2	C-TILE-I2	A-PT	WALL FINISH EXTENTS
EVCT-3	C-TILE-I3		TERR-E1
EVCT-4	C-TILE-I4		TERR-E2
EVCT-5	C-TILE-I5		TERR-E3
EVCT-6	C-TILE-I6		TERR-E4
EVCT-7	C-TILE-J		TERR-E5
			TERR-E6

*UNO, HATCHES DO NOT INDICATE FLOOR INSTALLATION PATTERN, METHOD OR DIRECTION. HATCHES INDICATE START AND STOP OF FINISHES ONLY.

FLOOR PATTERN KEYNOTES

REPRESENTED BY [n]

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

1 CUSTOM GRAPHIC PRINTED ON IRWC - 4'-0"AFF, ALIGN TO TOP OF DOOR FRAME.

2 ALIGN EDGE OF WALL GRAPHIC TO EDGE OF STAIR NOSING

3 ACOUSTIC WALL PANEL (8'WX4'H) - ALIGN TOP OF AWP WITH TOP OF DOOR FRAME, CENTER ON WALL

4 PAINT EXPOSED SURFACES OF STAIR AND RAILING

5 ALIGN EDGE OF FLOORING WITH EDGE OF WALL

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ASHLEY P. DENNIS REGISTERED ARCHITECT 11711 8/2024 NORTH CAROLINA RALEIGH, NC

D E B F C A G H

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

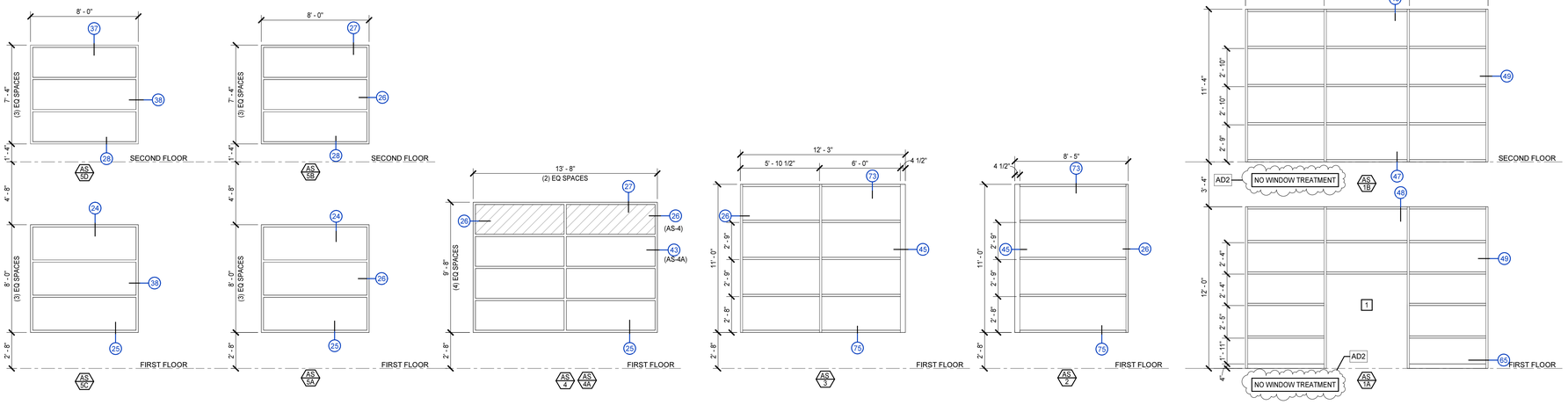
PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/23/24	AD2

SECOND FLOOR FINISH PLAN - PART H

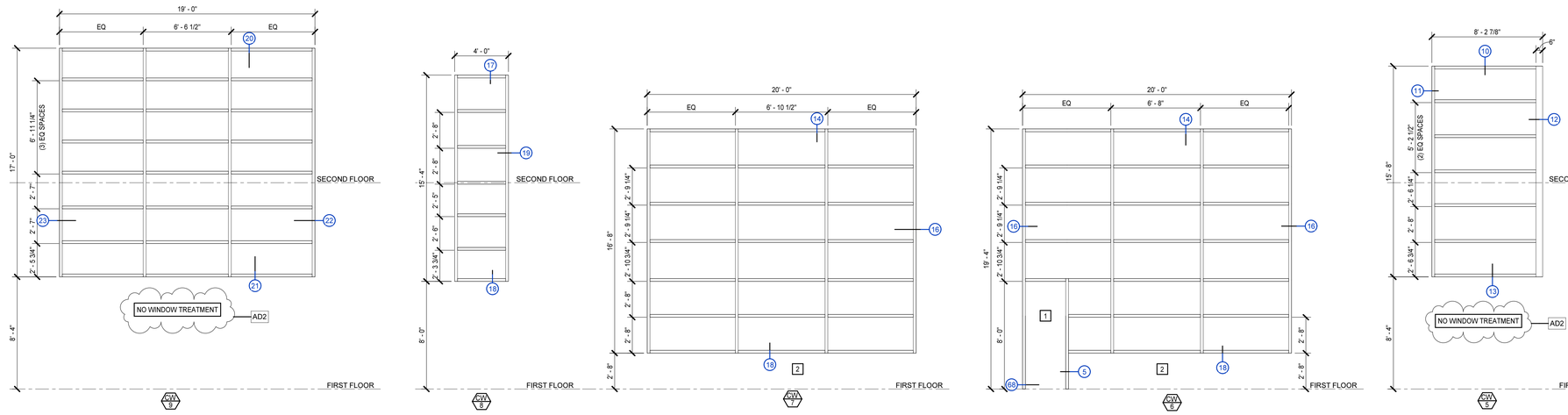
A3.0.18

8/23/2024 4:27:32 PM



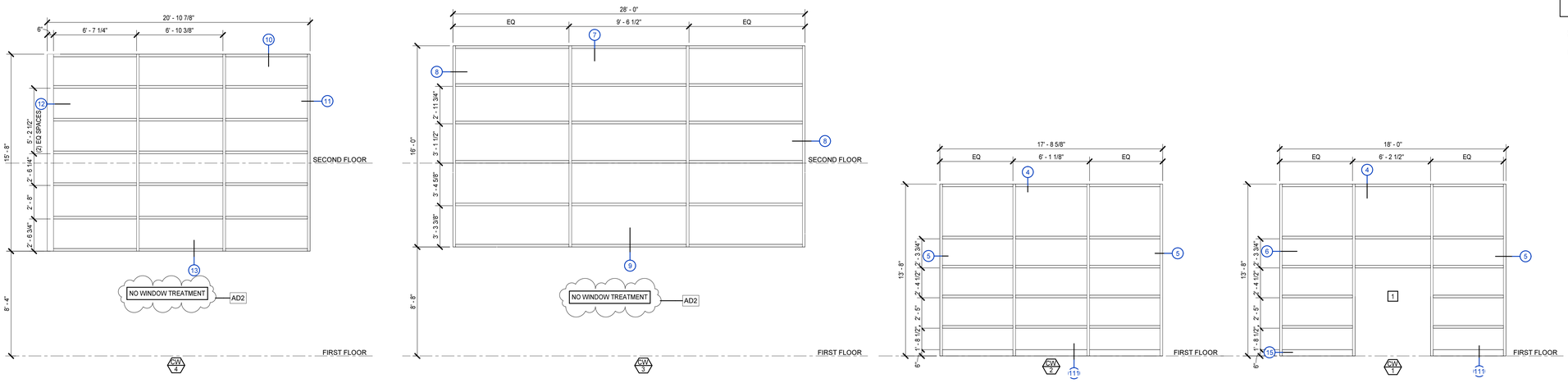
ALUMINUM STOREFRONT TYPES

1/4" = 1'-0"



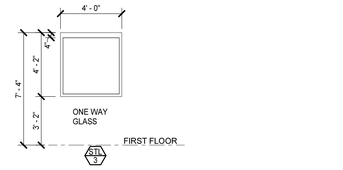
ALUMINUM CURTAINWALL TYPES

1/4" = 1'-0"



ALUMINUM CURTAINWALL TYPES

1/4" = 1'-0"

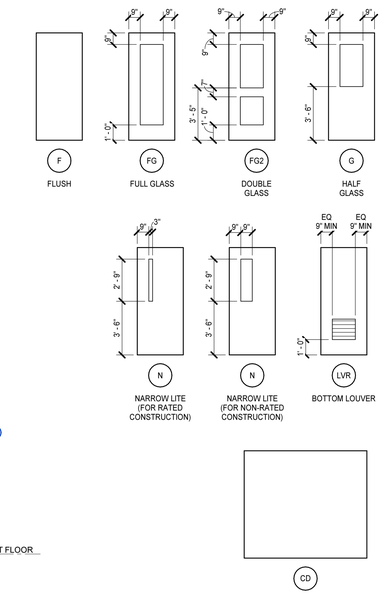


STEEL FRAME TYPES

1/4" = 1'-0"

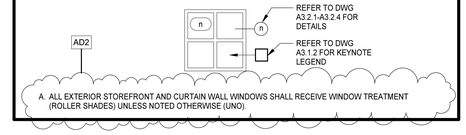
STEEL FRAME TYPES

1/4" = 1'-0"



DOOR TYPES

GENERAL NOTES



GLAZING TYPES

REPRESENTED BY n

1. 1/4" CLEAR
2. 1" TINTED INSULATING GLASS UNIT
3. 1" INSULATED ALUMINUM PANEL
4. 1/4" FIRE RESISTANT GLASS
5. 1/4" FROSTED GLASS

NOTES:
1. ALL GLAZING IN INTERIOR FRAMES & DOORS SHALL BE TYPE 1, UNO
2. ALL GLAZING IN EXTERIOR FRAMES & DOORS SHALL BE TYPE 2, UNO
3. GLAZE ALL OPENINGS IN FRAMES UNLESS SPECIFICALLY INDICATED OTHERWISE
4. ALL GLAZING SHALL BE SAFETY GLASS UNLESS INDICATED OTHERWISE

DOOR, FRAME AND GLAZING TYPE KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A3.1.2 - A3.1.4

1 SIZE AS REQUIRED TO ACCOMMODATE DOOR, HARDWARE AND FRAME COMPONENTS

2 MOTORIZED ROLLER SHADES — AD2

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PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
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REVISIONS

DATE	DESCRIPTION
8/23/24	AD2

DOOR, FRAME AND GLAZING TYPES

A3.1.2

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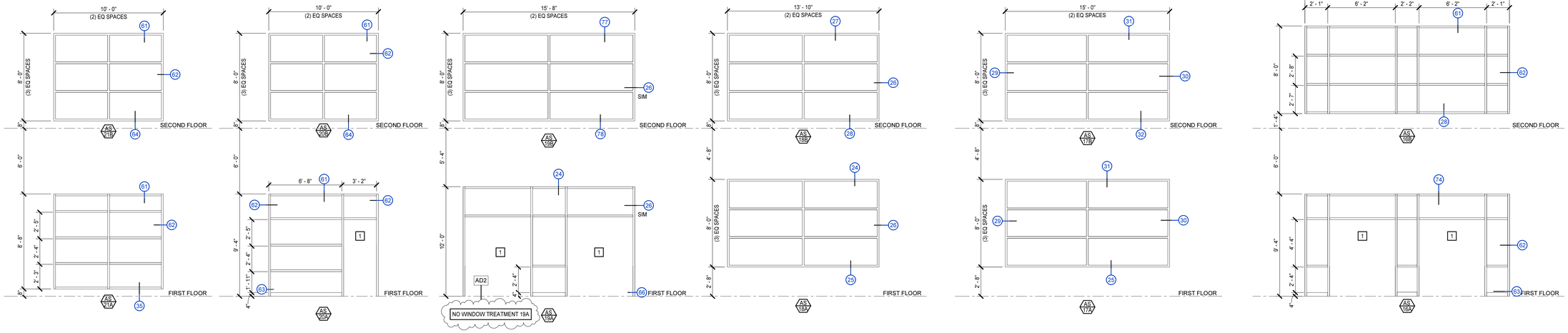
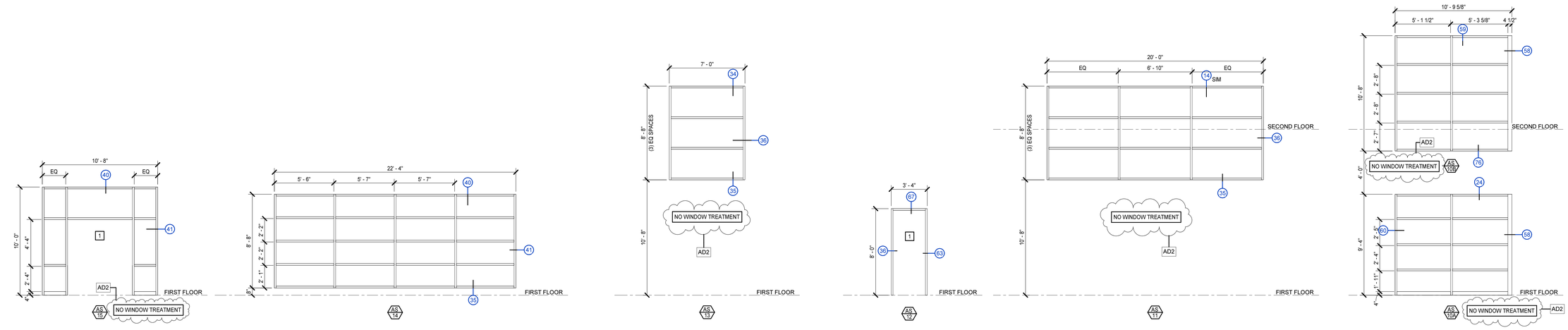


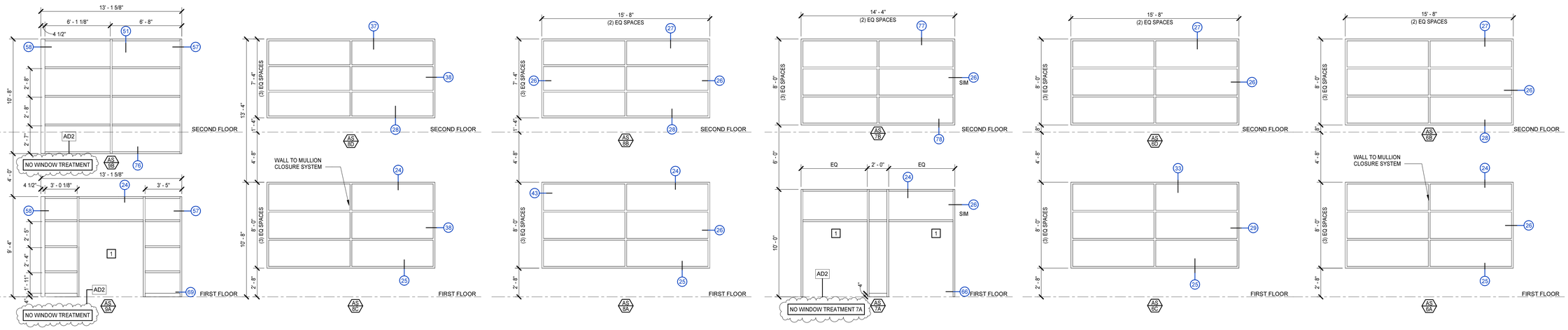
ALUMINUM STOREFRONT TYPES

1/4" = 1'-0"



ALUMINUM STOREFRONT TYPES

1/4" = 1'-0"



ALUMINUM STOREFRONT TYPES

1/4" = 1'-0"

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PENDER COUNTY SCHOOLS K-8 SCHOOL

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Highway 210, Hampstead, NC 28443

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DATE: AUGUST 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/23/24	AD2

FRAME TYPES

A3.1.3

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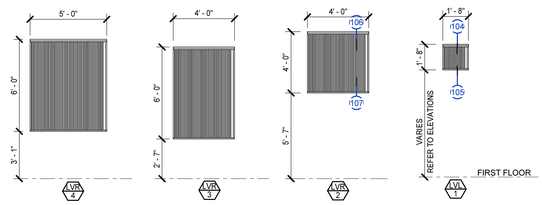
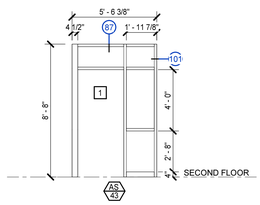
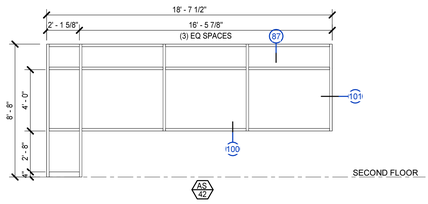
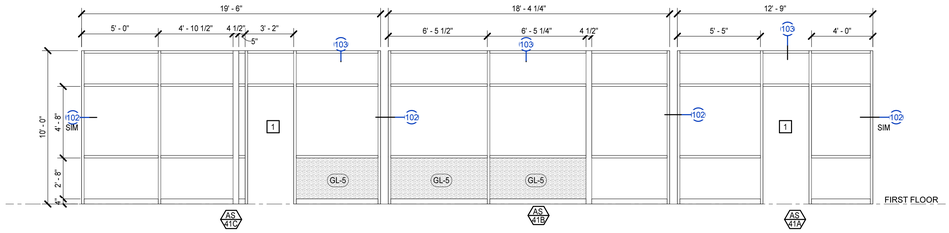


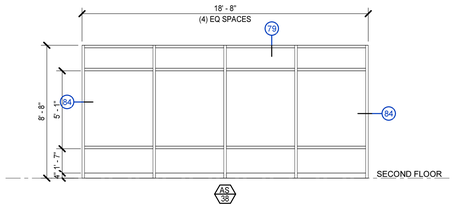


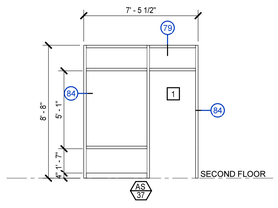


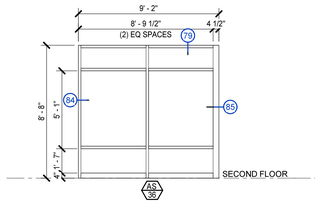


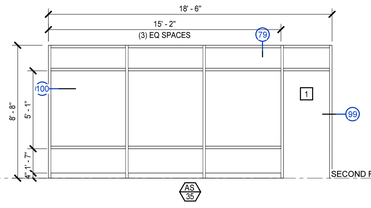
LOUVERS TYPES
1/4" = 1'-0"

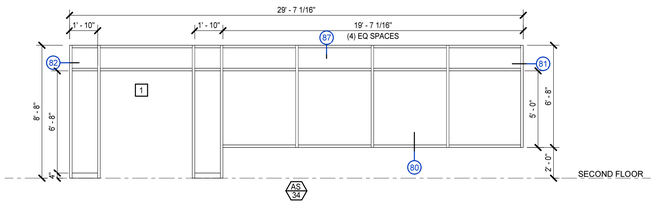
ALUMINUM STOREFRONT TYPES
1/4" = 1'-0"



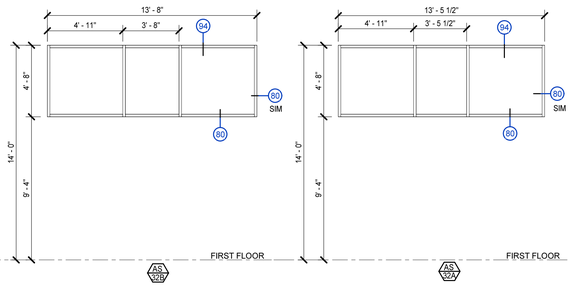


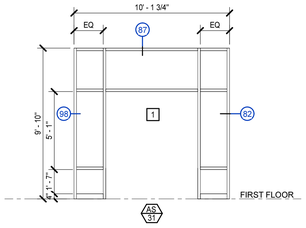


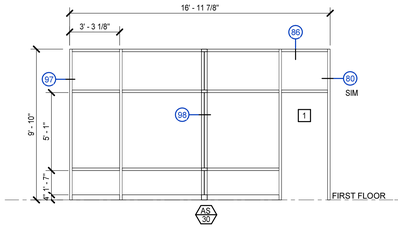


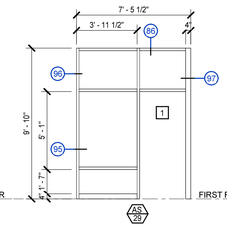


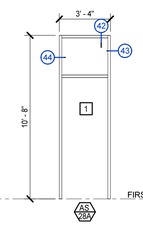
ALUMINUM STOREFRONT TYPES
1/4" = 1'-0"

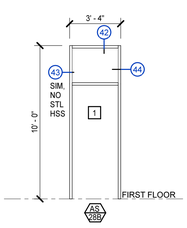




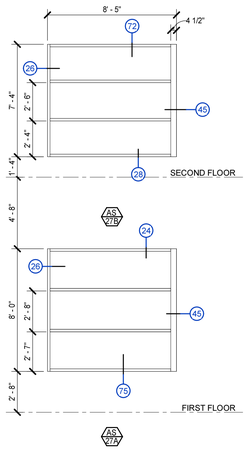


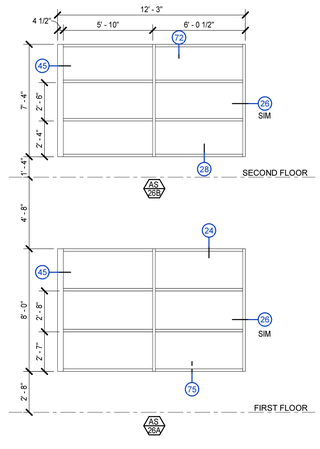


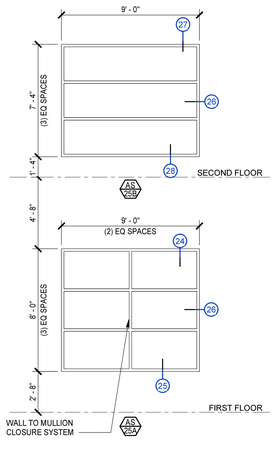


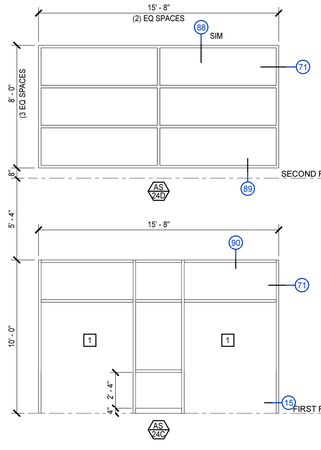


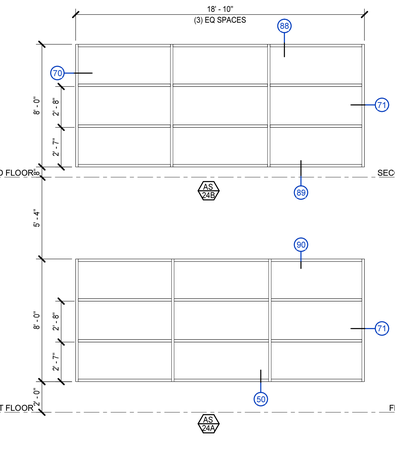
ALUMINUM STOREFRONT TYPES
1/4" = 1'-0"

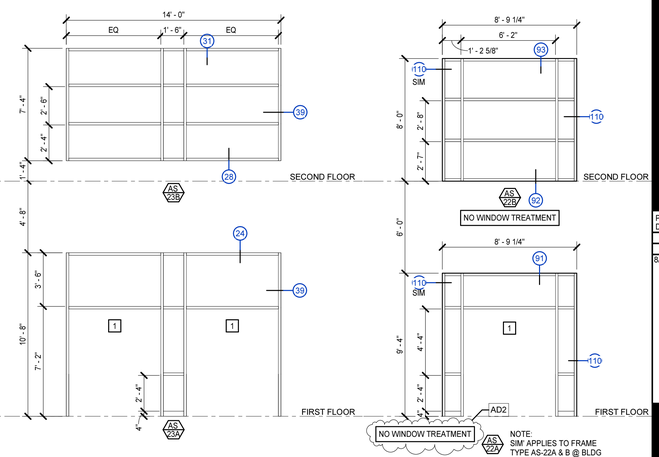












ALUMINUM STOREFRONT TYPES
1/4" = 1'-0"

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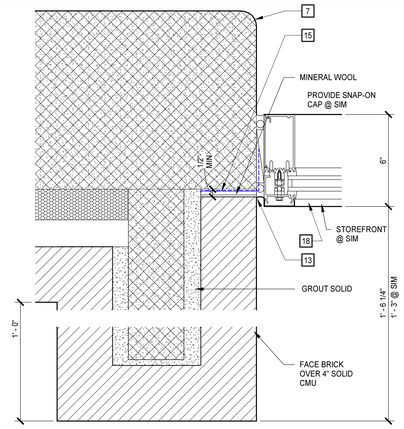
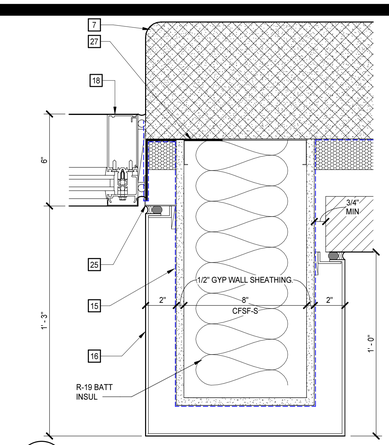
FRAME TYPES

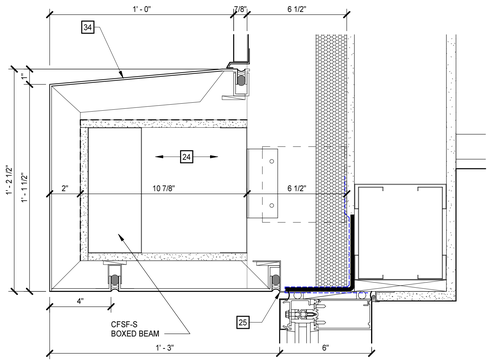
A3.1.4

8/23/2024 4:27:53 PM

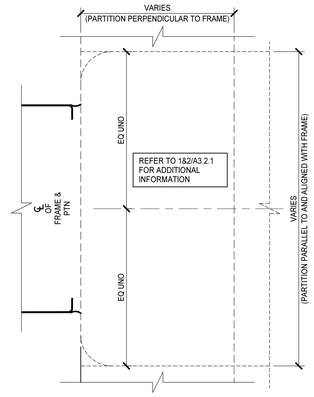




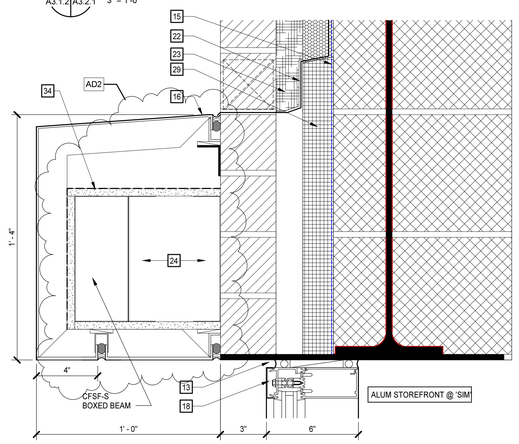
11 JAMB DETAIL
A3.1.2 A3.2.1 3" = 1'-0"



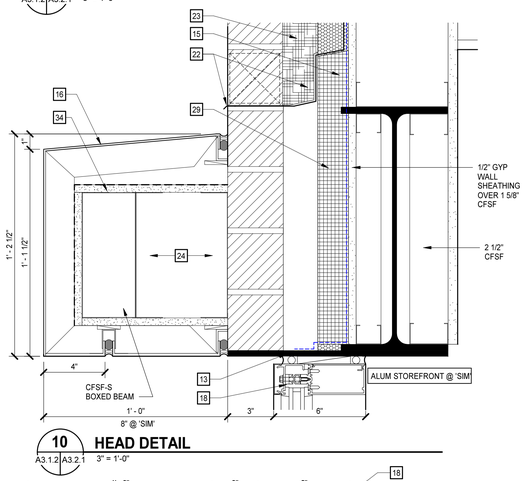
7 HEAD DETAIL
A3.1.2 A3.2.1 3" = 1'-0"



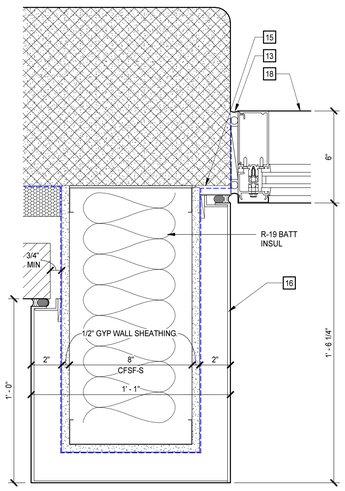
3 INTERIOR BETWEEN THE JAMB - BUTTED HEAD/JAMB/SILL
A3.2.1 6" = 1'-0"



15 JAMB DETAIL
A3.1.2 A3.2.1 3" = 1'-0"

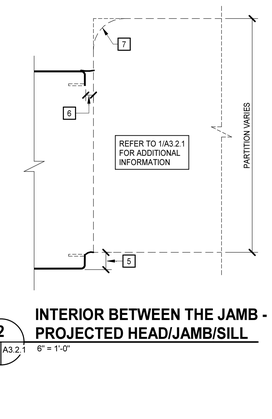


10 HEAD DETAIL
A3.1.2 A3.2.1 3" = 1'-0"



6 JAMB DETAIL
A3.1.2 A3.2.1 3" = 1'-0"

REFER TO DETAIL 11 THIS DWG FOR ADDITIONAL KEYNOTES



2 INTERIOR BETWEEN THE JAMB - PROJECTED HEAD/JAMB/SILL
A3.2.1 6" = 1'-0"

DOOR AND FRAME DETAIL KEYNOTES

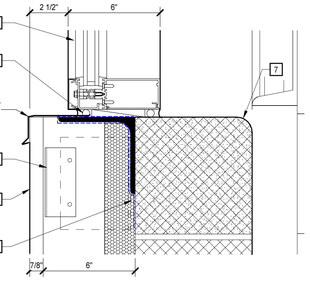
REPRESENTED BY n

APPLIES TO DRAWINGS A3.2.1 - A3.2.n

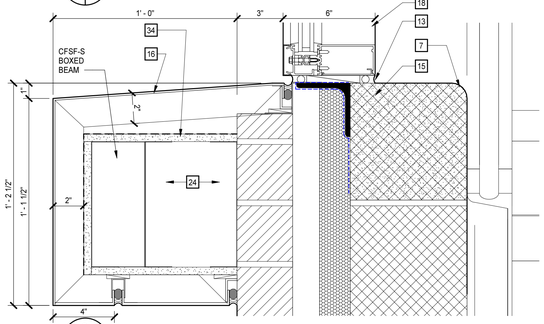
1	ANCHORAGES, REINFORCING, SPECIFIC PARTITION CONSTRUCTION AND/OR LINTELS ARE NOT SHOWN FOR CLARITY.
2	REFER TO FRAME SECTION IN DOOR SCHEDULE FOR TYPE.
3	SEALANT, ALL SIDES - TOOL TO 90°.
4	BACKBEND RETURN @ GB LOCATIONS ONLY.
5	9/16" @ MAS; 1/2" @ GB.
6	1/4" @ JAMBS, UNO; DIMENSION @ HEAD & SILL VARIES.
7	BULLNOSE @ CMU JAMBS & SILLS.
8	0" @ GB LOCATIONS; 1/16" @ MAS LOCATIONS.
9	SOLID SURFACE SILL
10	CONT WOOD BLOCKING
11	ALUM STOREFRONT SYSTEM
12	PREFINISHED ALUMINUM SHEET METAL SILL FLASHING WITH DRIP MATCH COLOR OF MCM
13	SHIM SPACE W/ BACKER ROD & SEALANT , ALL SIDES
14	CONT INSULATION FRAMING SYSTEM
15	AIR BARRIER TRANSITION MEMBRANE
16	MCM PANEL SYSTEM
17	14 GA 5" x 3 1/2" CFSF-NS ANGLE WITH 3/8" x 3" ANCHORS AT 16" OC
18	ALUM CURTAINWALL SYSTEM
19	FLEXIBLE FLASHING WITH METAL DRIP EDGE & BED JOINT WEEP SYSTEM
20	APC SILL
21	ALUMINUM SHEET FLASHING WITH DRIP MATCH COLOR OF MCM
22	FLEXIBLE FLASHING WITH WEEPS & METAL DRIP EDGE
23	CAVITY DRAINAGE MATERIAL
24	CFSF-S
25	PREFINISHED ALUM SHEET METAL, MATCH MCM PANELS
26	CONT BACKER ROD & SEALANT
27	14 GA 5" x 4" CFSF-NS ANGLE WITH 3/8" x 3" ACHORS AT 16" OC
28	METAL WALL PANEL SYSTEM
29	RIGID INSULATION
30	14 GA 5" x 4 1/2" CFSF-NS ANGLE WITH 3/8" x 3" ACHORS AT 16" OC
31	CFSF BOXED BEAM, REFER TO STRUCTURAL DWGS
32	METAL WALL PANEL SYSTEM CLOSURE TRIM
33	BOND BEAM, REFER TO STRUCTURAL DWGS
34	1/2" EXTERIOR SHEATHING W/ ICE & WATER SHIELD TOP AND FRONT

GENERAL NOTES

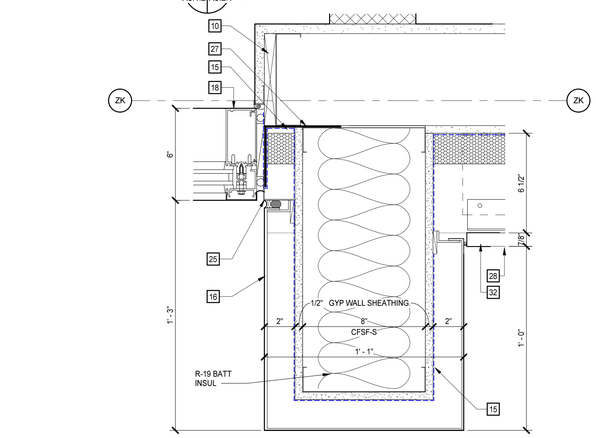
A. FRAME DETAILS MAY BE MIRRORED, OPP HAND, ROTATED, ETC., REFER TO PLANS FOR FRAME ORIENTATION



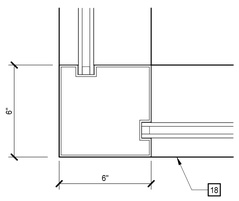
13 SILL DETAIL
A3.1.2 A3.2.1 3" = 1'-0"



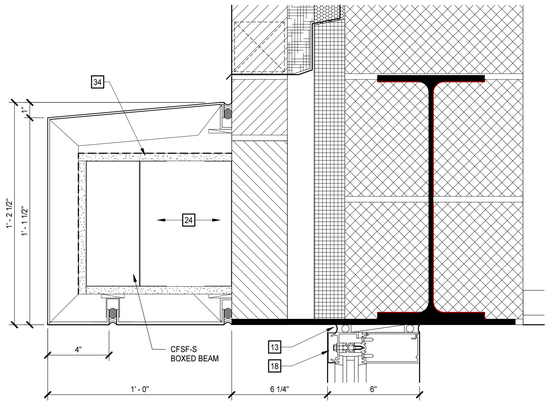
9 SILL DETAIL
A3.1.2 A3.2.1 3" = 1'-0"



8 JAMB DETAIL
A3.1.2 A3.2.1 3" = 1'-0"

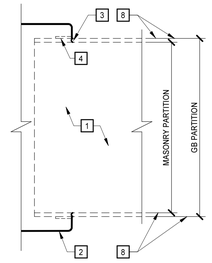


12 JAMB DETAIL
A3.1.2 A3.2.1 3" = 1'-0"

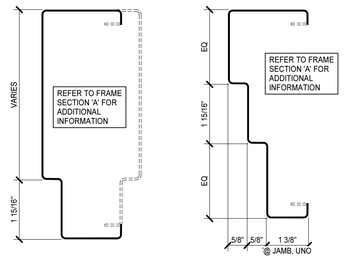


4 HEAD DETAIL
A3.1.2 A3.2.1 3" = 1'-0"

REFER TO DETAIL 10 THIS DWG FOR ADDITIONAL KEYNOTES



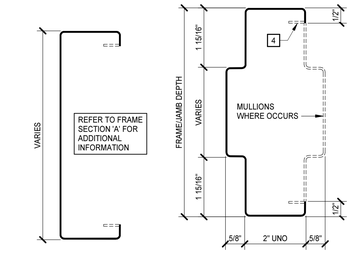
1 INTERIOR WRAP HEAD/JAMB/SILL
A3.2.1 6" = 1'-0"



SINGLE RABBET
D

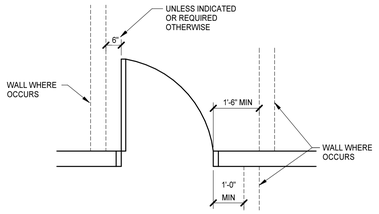
DBL EGRESS @ JAMB ONLY
B

HEAD SECTION SIMILAR



CASED OPENING
C

DBL RABBET
A



MANEUVERING CLEARANCE AT DOORS
NO SCALE

1. ALL FRAME/JAMB DEPTHS, OTHER THAN WRAP CONDITIONS, SHALL BE 6 3/4 , UNO.
2. ALL FRAME/JAMB DEPTHS AT WRAP CONDITIONS SHALL BE SIZED TO SUIT PARTITION.
3. DOORS, PANELS, GLAZING, STOPS, AND OTHER FRAME INFILLS ARE NOT SHOWN IN FRAME SECTIONS AS THEY VARY - PROVIDE SAME WHERE INDICATED.

STEEL FRAME SECTIONS
NO SCALE

MOSELEYARCHITECTS
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NORTH CAROLINA
RALEIGH, NC

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/23/24	AD2

DOOR AND FRAME DETAILS

A3.2.1

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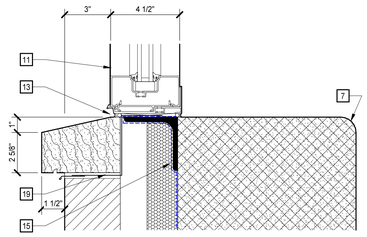
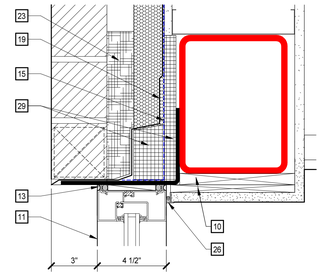
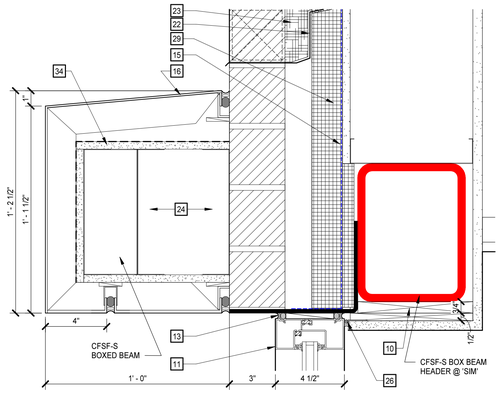


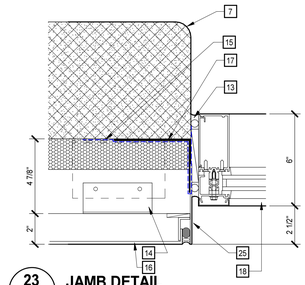
35 A3.1.3 A3.2.2 **SILL DETAIL** 3" = 1'-0"



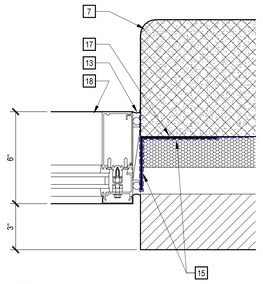
31 A3.1.3 A3.2.2 **HEAD DETAIL** 3" = 1'-0"



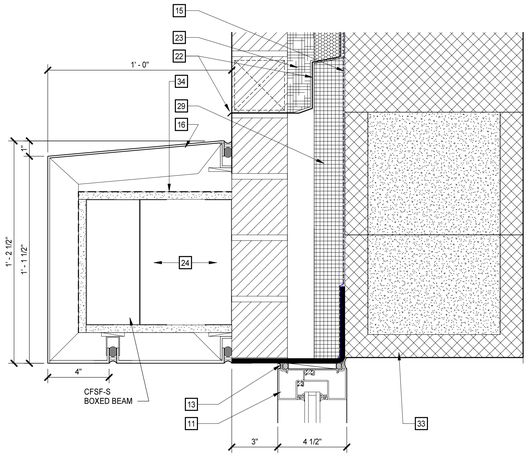
27 A3.1.2 A3.2.2 **HEAD DETAIL** 3" = 1'-0"



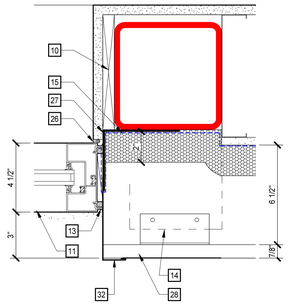
23 A3.1.2 A3.2.2 **JAMB DETAIL** 3" = 1'-0"



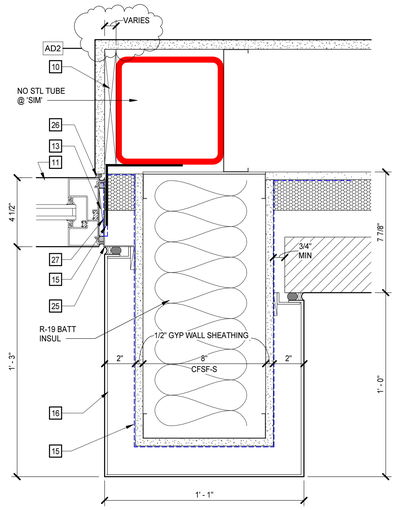
19 A3.1.2 A3.2.2 **JAMB DETAIL** 3" = 1'-0"



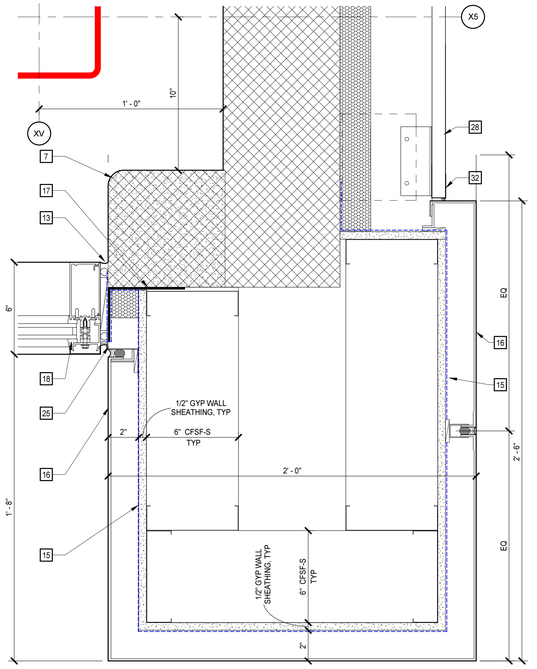
34 A3.1.3 A3.2.2 **HEAD DETAIL** 3" = 1'-0"



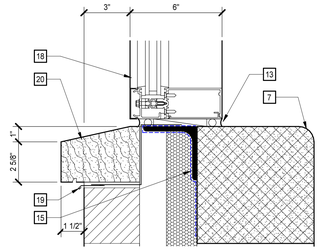
30 A3.1.3 A3.2.2 **JAMB DETAIL** 3" = 1'-0"



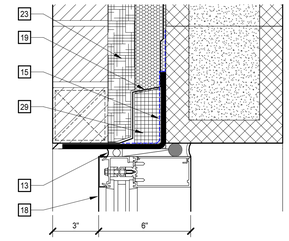
26 A2.2.1 A3.2.2 **JAMB DETAIL** 3" = 1'-0"



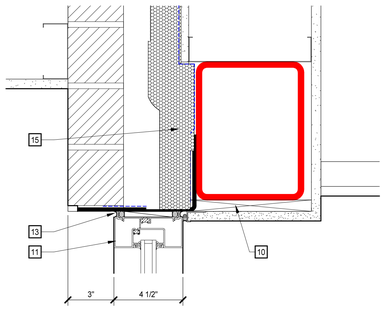
22 A2.2.2 A3.2.2 **JAMB DETAIL** 3" = 1'-0"



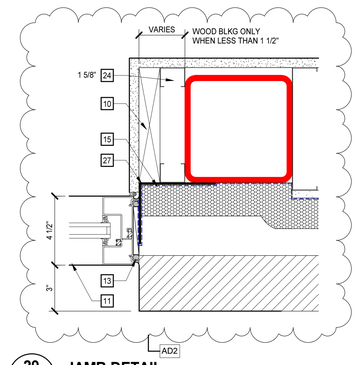
18 A3.1.2 A3.2.2 **SILL DETAIL** 3" = 1'-0"



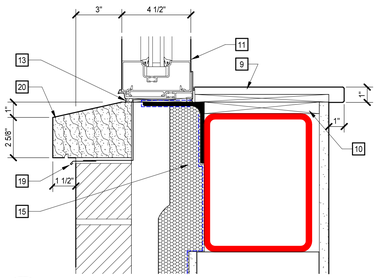
17 A3.1.2 A3.2.2 **HEAD DETAIL** 3" = 1'-0"



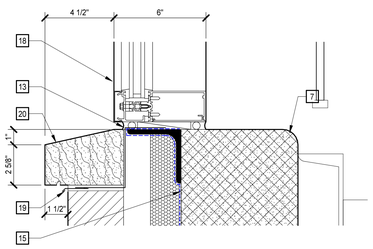
33 A3.1.3 A3.2.2 **HEAD DETAIL** 3" = 1'-0"



29 A3.1.3 A3.2.2 **JAMB DETAIL** 3" = 1'-0"



25 A3.1.2 A3.2.2 **SILL DETAIL** 3" = 1'-0"



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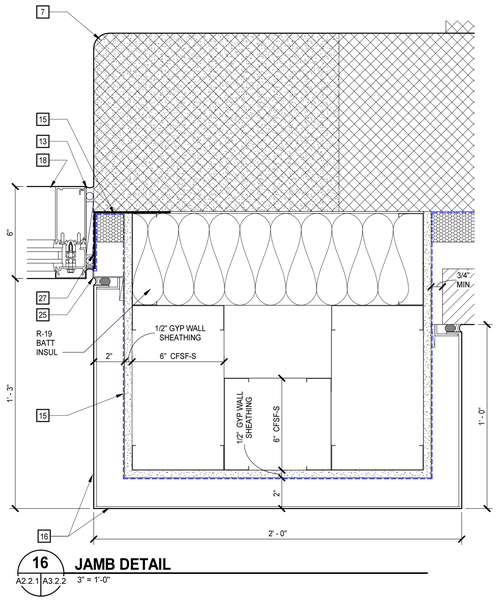
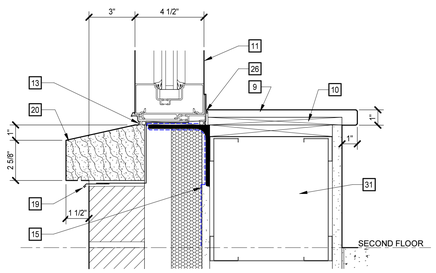
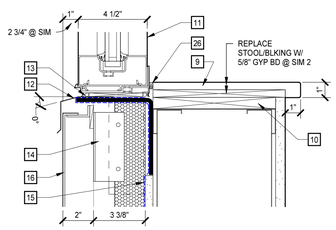


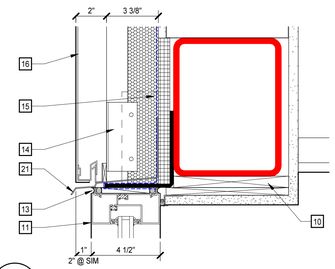
16 A2.2.1 A3.2.2 **JAMB DETAIL** 3" = 1'-0"



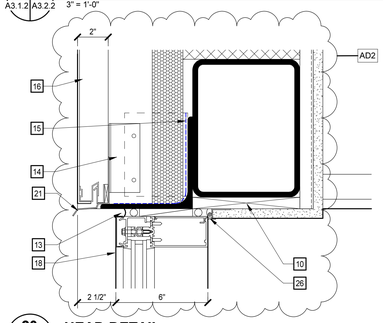
32 A3.1.3 A3.2.2 **SILL DETAIL** 3" = 1'-0"



28 A3.1.2 A3.2.2 **SILL DETAIL** 3" = 1'-0"



24 A3.1.2 A3.2.2 **HEAD DETAIL** 3" = 1'-0"



20 A3.1.2 A3.2.2 **HEAD DETAIL** 3" = 1'-0"

16 A2.2.1 A3.2.2 **JAMB DETAIL** 3" = 1'-0"

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RALEIGH, NC

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

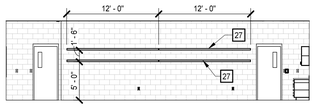
PROJECT NO: 831310
DATE: AUGUST 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/23/24	AD2

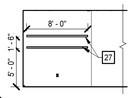
DOOR AND FRAME DETAILS

A3.2.2

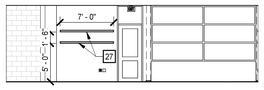
8/23/2024 4:28:08 PM



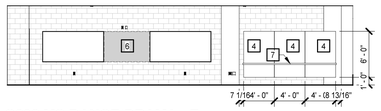
15 C203 MS ART
A2.1.11 A4.2.1 1/8" = 1'-0"



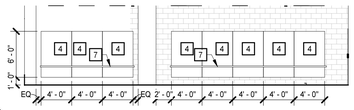
14 B122 ES ART - S
A2.1.2 A4.2.1 1/8" = 1'-0"



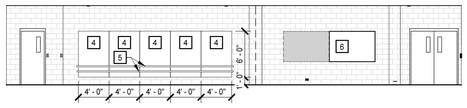
13 B122 ES ART - E
A2.1.1 A4.2.1 1/8" = 1'-0"



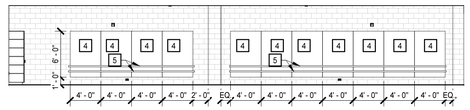
12 C202 MS DANCE/DRAMA - E
A2.1.11 A4.2.1 1/8" = 1'-0"



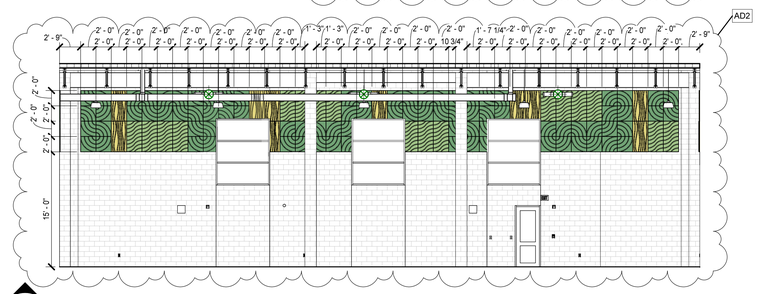
11 C202 MS DANCE/DRAMA - W
A2.1.11 A4.2.1 1/8" = 1'-0"



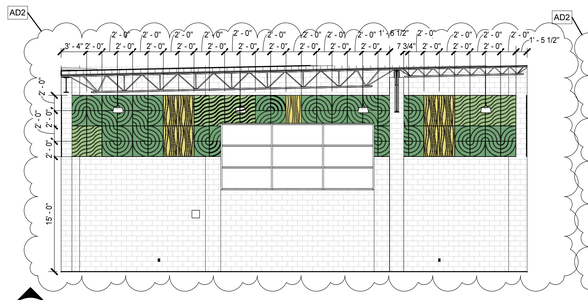
10 F106 ES DANCE/DRAMA - E
A2.1.6 A4.2.1 1/8" = 1'-0"



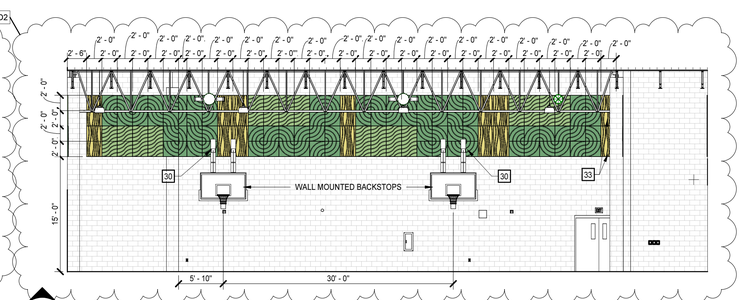
9 F106 ES DANCE/DRAMA - W
A2.1.6 A4.2.1 1/8" = 1'-0"



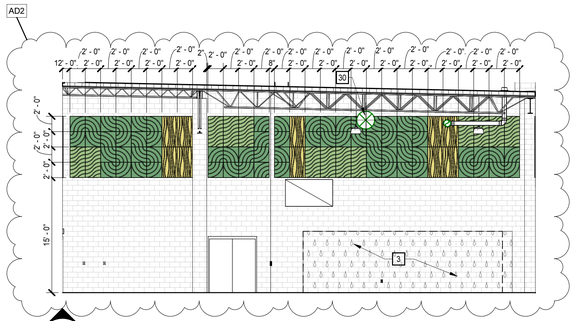
8 ES GYM NORTH ELEVATION
A2.1.6 A4.2.1 1/8" = 1'-0"



7 ES GYM EAST ELVATION
A2.1.6 A4.2.1 1/8" = 1'-0"



6 ES GYM SOUTH ELEVATION
A2.1.6 A4.2.1 1/8" = 1'-0"



5 ES GYM WEST ELEVATION
A2.1.6 A4.2.1 1/8" = 1'-0"

BUILDING ELEVATION KEYNOTES

REPRESENTED BY n

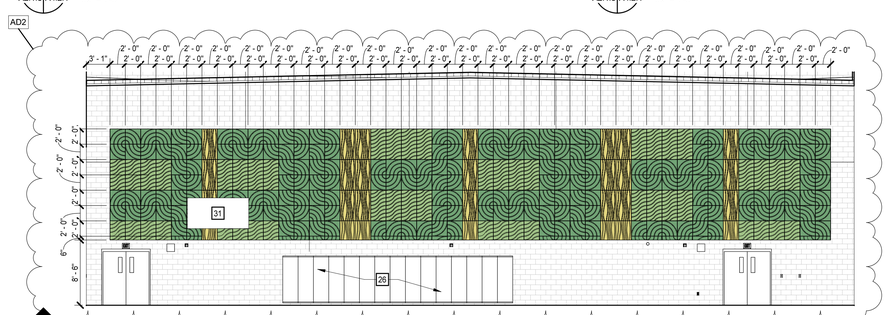
APPLIES TO DRAWINGS A4.2.1 - A4.2.4

1	DISPLAY CASE (6'W X 5'H)
2	PAINTED GYP WALL WITH 3/4" MTL REVEALS; REFER TO FINISH PLAN FOR COLOR
3	ROCK CLIMBING WALL (24'W X 8'H) - REFER TO SPECIFICATION
4	4'W X 6'H MIRROR, REFER TO SPECIFICATIONS FOR CRITERIA
5	DOUBLE BARRE, MOUNT LOWER BARRE AT 24"AFF AND UPPER BARRE AT 32"AFF, PROVIDE SUPPORTS EVERY 4'
6	TYPICAL TEACHING WALL, REFER TO A8.1.2
7	SINGLE BARRE, MOUNT AT 32"AFF, PROVIDE SUPPORTS EVERY 4'
8	DISPLAY CASE (3'W X 5'H)
9	ACCENT PAINT ON ALL EXPOSED EXTERIOR SURFACES
10	ATTACHED 2" UPHOLSTERED CUSHION (M1) WITH HIGH DENSITY FOAM, SECURE CUSHION TO BENCH WITH HEAVY DUTY SNAPS
11	WOOD BENCH: SPECIES AND FINISH TO MATCH DOORS ON ALL EXPOSED SURFACES
12	INSTALL CUSTOM PRINTED GRAPHIC ON IRWC PRIOR TO INSTALLING BENCH, REFER TO A134 CORRIDOR GRAPHIC
13	CUSTOM PRINTED GRAPHIC ON DECORATIVE WINDOW FILM, REFER TO A134 CORRIDOR GRAPHIC
14	24"D READING NOOK
15	CUSTOM PRINTED GRAPHIC ON IRWC, REFER TO ES MEDIA CENTER - READING WALL GRAPHIC
16	CUSTOM PRINTED GRAPHIC ON AWP-B, REFER TO ES MEDIA CENTER - READING WALL GRAPHIC
17	CUSTOM PRINTED GRAPHIC ON AWP-B, A GEOGRAPHIC IMAGE OF PENDER COUNTY PER NOOK
18	INSTALL FELT AWP-D ON ALL SIDES AND TOP OF READING NOOKS, BACKS TO BE AWP-B
19	POLYESTER RESIN CORNER MOULDING; SIZE 1-1/16"HX 1-1/16" PROJ; FLEXIBLE FOR THE ES MC SOUTHWATER INDUSTRIES OR EQUAL ; UNFINISHED; PAINT COLOR TBD
20	PAINT ANGLED WALL TO MATCH CMU WALL
21	12"D DISPLAY NICHE PAINTED IN AN ACCENT COLOR
22	SECURE READING NOOK WALL TO STRUCTURE ABOVE
23	ACOUSTICAL WALL PANEL AWP-A WITH 3/4" MTL REVEALS
24	6' IWB, PAINT WALL BEHIND TO MATCH AWP-A COLOR
25	4'W X 5'H WHITEBOARD
26	GYM WALL PADS
27	TACK STRIP
28	2'-8" x 3'-2" OPERABLE PARTITION WINDOW UNIT
29	LIGHT FIXTURES. REFER TO ELECTRICAL DRAWINGS
30	NOTCH TECTUM PANELS AROUND ALL MECHANICAL, ELECTRICAL AND PLUMBING, AS WELL AS GYM EQUIPMENT.
31	SCOREBOARD
32	COORDINATE CUT-OUT FOR WALL HUNG SCREEN AND SPEAKERS WITH A/V CONSULTANT
33	PROVIDE FULL WIDTH AWP (2'-0"); CONTINUES BEHIND COLUMN

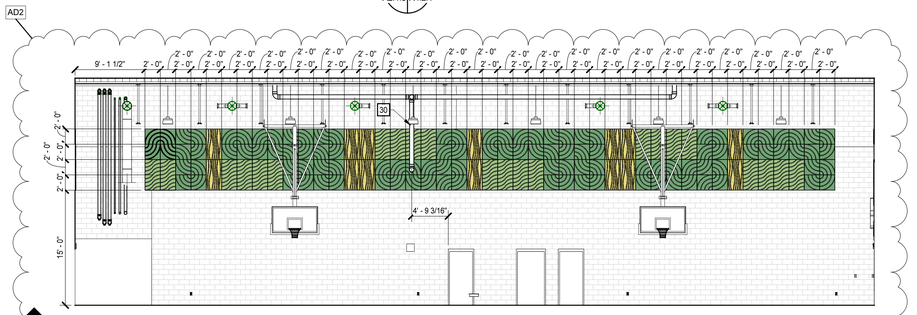
AD2

FINISH PLAN LEGEND

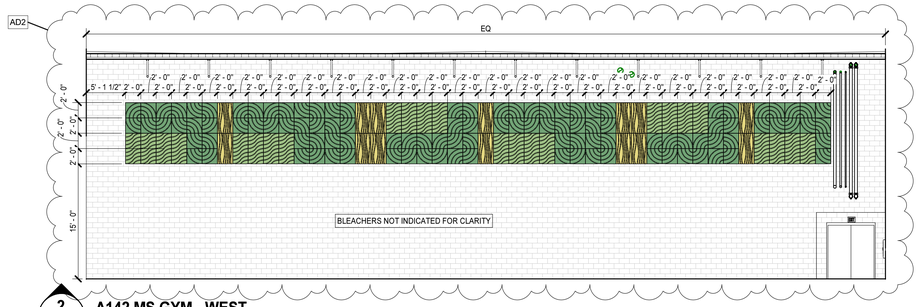
AWP-G	AWP-J6	AWP-K6
AWP-H	AWP-J7	AWP-K7
AWP-I6	AWP-J8	AWP-K8
AWP-I7	AWP-J9	AWP-K9
AWP-I9	AWP-C	



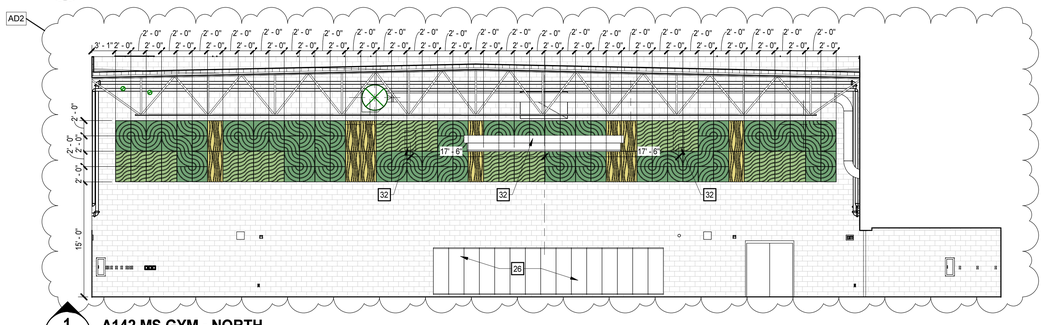
4 A142 MS GYM - SOUTH
A2.1.1 A4.2.1 1/8" = 1'-0"



3 A142 MS GYM - EAST
A2.1.1 A4.2.1 1/8" = 1'-0"



2 A142 MS GYM - WEST
A2.1.1 A4.2.1 1/8" = 1'-0"



1 A142 MS GYM - NORTH
A2.1.1 A4.2.1 1/8" = 1'-0"

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NORTH CAROLINA
RALEIGH, NC

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

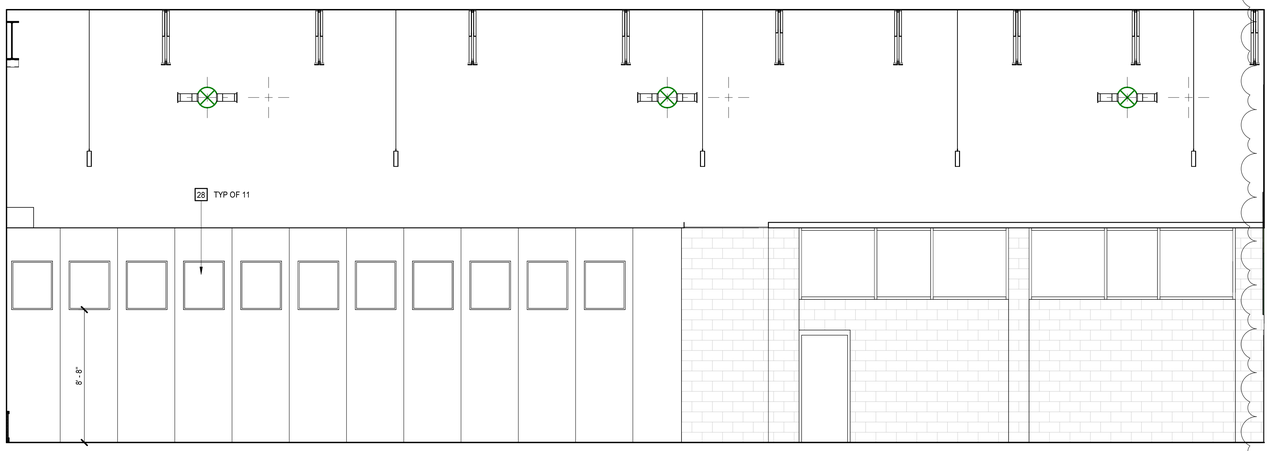
REVISIONS

DATE	DESCRIPTION
8/23/24	AD2

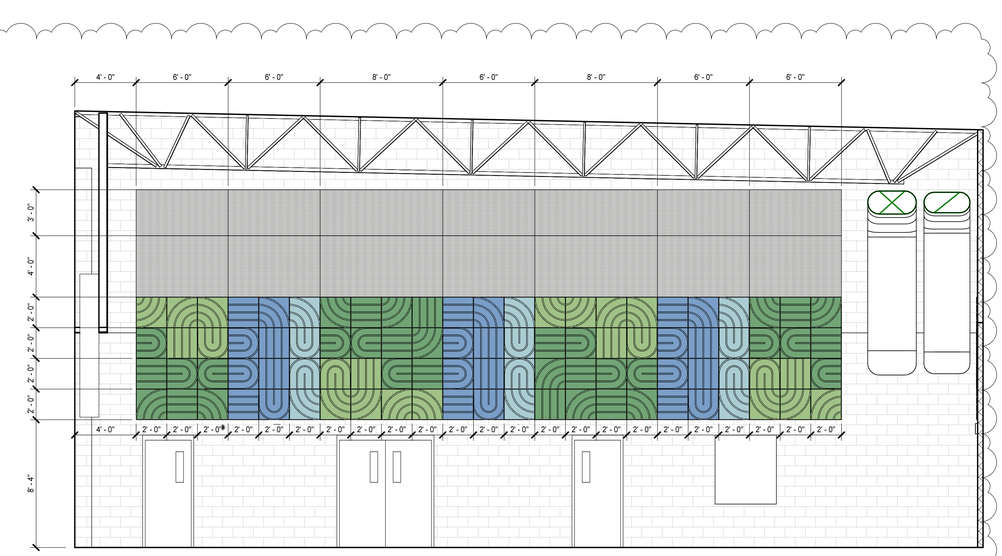
INTERIOR ELEVATIONS

A4.2.1

8/23/2024 4:28:30 PM



4 A2.1.1 A4.2.3 **ES DINING INTERIOR ELEVATION - W**
1/4" = 1'-0"



3 A2.1.2 A4.2.3 **ES DINING INTERIOR ELEVATION - N**
1/4" = 1'-0"

BUILDING ELEVATION KEYNOTES

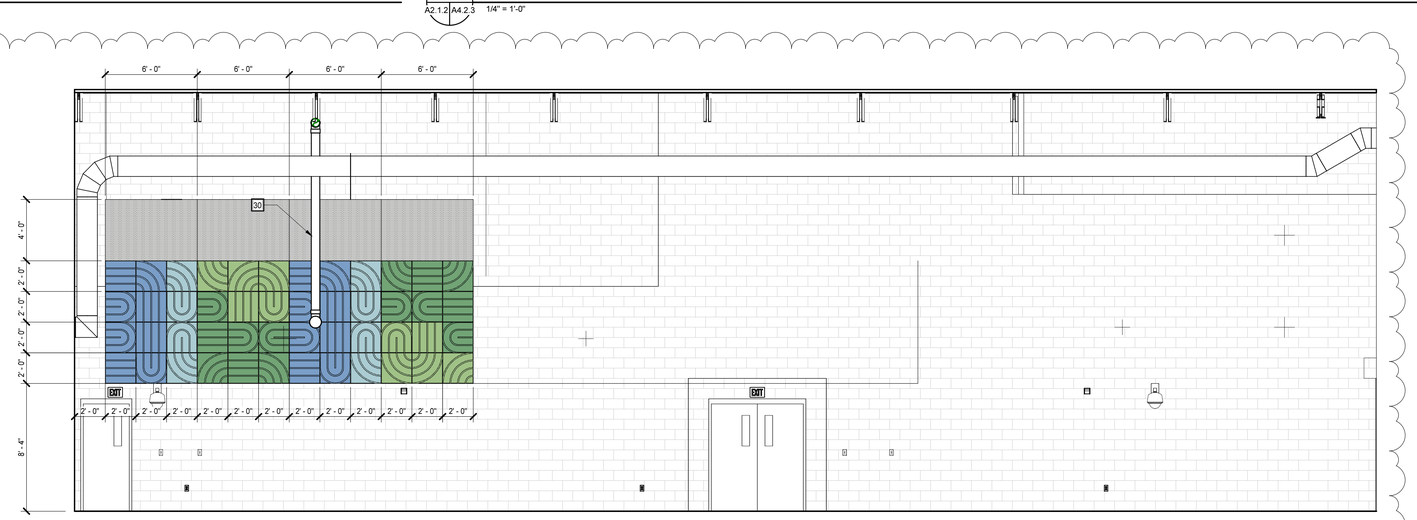
REPRESENTED BY n

APPLIES TO DRAWINGS A4.2.1 - A4.2.4

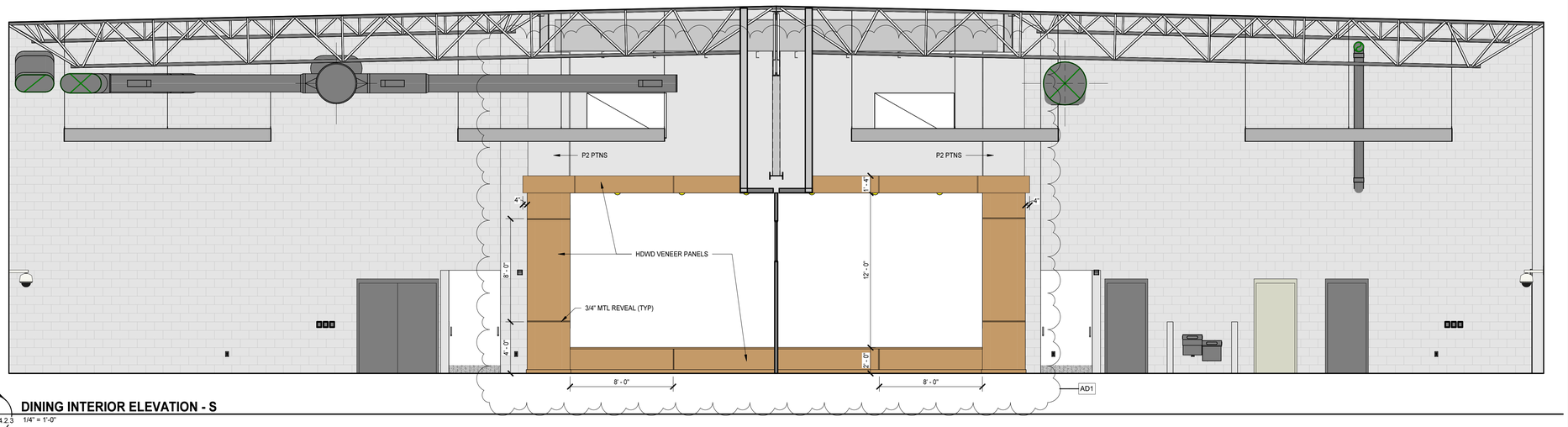
1 DISPLAY CASE (6'W X 5'H)
2 PAINTED GYP WALL WITH 3/4" MTL REVEALS; REFER TO FINISH PLAN FOR COLOR
3 ROCK CLIMBING WALL (24'W X 8'H) - REFER TO SPECIFICATION
4 4'W X 6'H MIRROR, REFER TO SPECIFICATIONS FOR CRITERIA
5 DOUBLE BARRE, MOUNT LOWER BARRE AT 24"AFF AND UPPER BARRE AT 32"AFF, PROVIDE SUPPORTS EVERY 4'
6 TYPICAL TEACHING WALL, REFER TO A5.1.2
7 SINGLE BARRE, MOUNT AT 32"AFF; PROVIDE SUPPORTS EVERY 4'
8 DISPLAY CASE (3'W X 5'H)
9 ACCENT PAINT ON ALL EXPOSED EXTERIOR SURFACES
10 ATTACHED 2" UPHOLSTERED CUSHION (M1) WITH HIGH DENSITY FOAM, SECURE CUSHION TO BENCH WITH HEAVY DUTY SNAPS
11 WOOD BENCH: SPECIES AND FINISH TO MATCH DOORS ON ALL EXPOSED SURFACES
12 INSTALL CUSTOM PRINTED GRAPHIC ON IRWC PRIOR TO INSTALLING BENCH, REFER TO A134 CORRIDOR GRAPHIC
13 CUSTOM PRINTED GRAPHIC ON DECORATIVE WINDOW FILM, REFER TO A134 CORRIDOR GRAPHIC
14 24"D READING NOOK
15 CUSTOM PRINTED GRAPHIC ON IRWC, REFER TO ES MEDIA CENTER - READING WALL GRAPHIC
16 CUSTOM PRINTED GRAPHIC ON AWP-B, REFER TO ES MEDIA CENTER - READING WALL GRAPHIC
17 CUSTOM PRINTED GRAPHIC ON AWP-B, A GEOGRAPHIC IMAGE OF PENDER COUNTY PER NOOK
18 INSTALL FELT AWP-D ON ALL SIDES AND TOP OF READING NOOKS, BACKS TO BE AWP-B
19 POLYESTER RESIN CORNER MOULDING; SIZE 1-1/16"HX 1-1/16" PROJ; FLEXIBLE FOR THE ES MC SOUTHWATER INDUSTRIES OR EQUAL ; UNFINISHED; PAINT COLOR TBD
20 PAINT ANGLED WALL TO MATCH CMU WALL
21 12"D DISPLAY NICHE PAINTED IN AN ACCENT COLOR
22 SECURE READING NOOK WALL TO STRUCTURE ABOVE
23 ACOUSTICAL WALL PANEL AWP-A WITH 3/4" MTL REVEALS
24 6' IWB, PAINT WALL BEHIND TO MATCH AWP-A COLOR
25 4'W X 5'H WHITEBOARD
26 GYM WALL PADS
27 TACK STRIP
28 2'-8" x 3'-2" OPERABLE PARTITION WINDOW UNIT
29 LIGHT FIXTURES. REFER TO ELECTRICAL DRAWINGS
30 NOTCH TECTUM PANELS AROUND ALL MECHANICAL, ELECTRICAL AND PLUMBING, AS WELL AS GYM EQUIPMENT.
31 SCOREBOARD
32 COORDINATE CUT-OUT FOR WALL HUNG SCREEN AND SPEAKERS WITH A/V CONSULTANT
33 PROVIDE FULL WIDTH AWP (2'-0"); CONTINUES BEHIND COLUMN

FINISH PLAN LEGEND

AWP-G	AWP-J6	AWP-K6
AWP-H	AWP-J7	AWP-K7
AWP-I6	AWP-J8	AWP-K8
AWP-I7	AWP-J9	AWP-K9
AWP-I9	AWP-C	



2 A2.1.1 A4.2.3 **ES DINING INTERIOR ELEVATION - E**
1/4" = 1'-0"



1 A2.1.2 A4.2.3 **DINING INTERIOR ELEVATION - S**
1/4" = 1'-0"

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RALEIGH, NC

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 831310
DATE: AUGUST 2, 2024

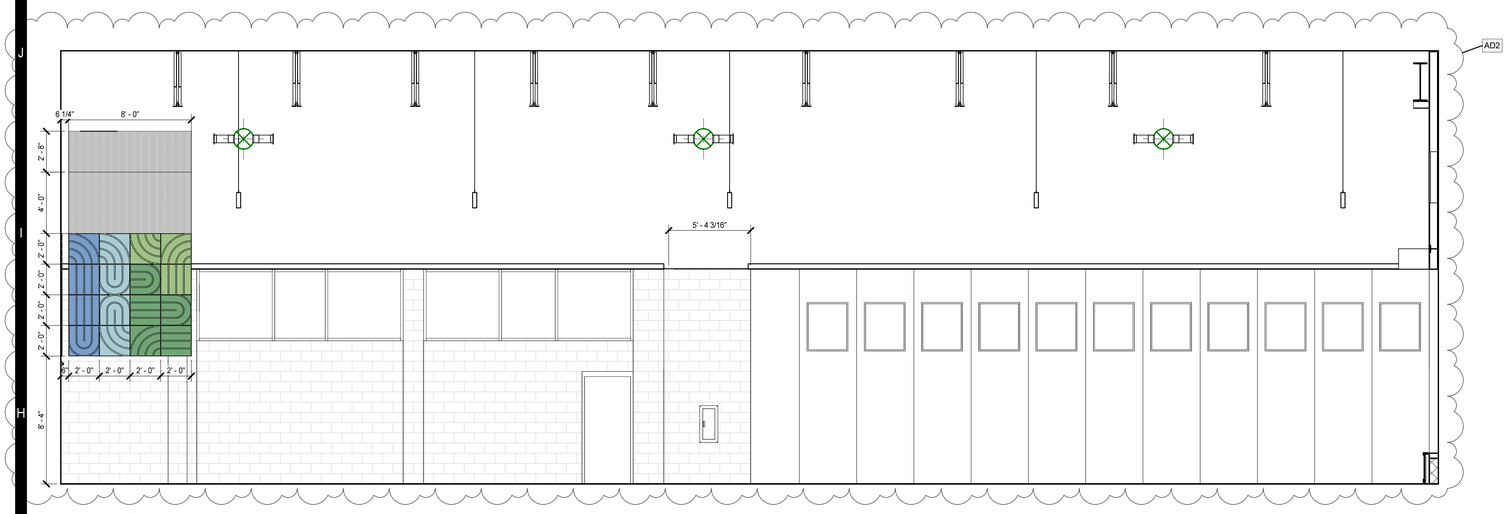
REVISIONS

DATE	DESCRIPTION
8/16/24	AD1
8/23/24	AD2

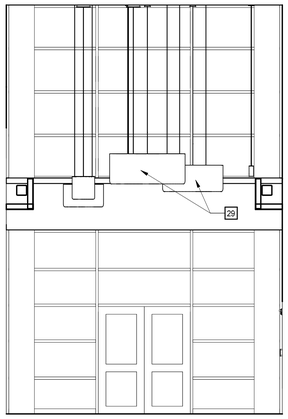
INTERIOR ELEVATIONS

A4.2.3

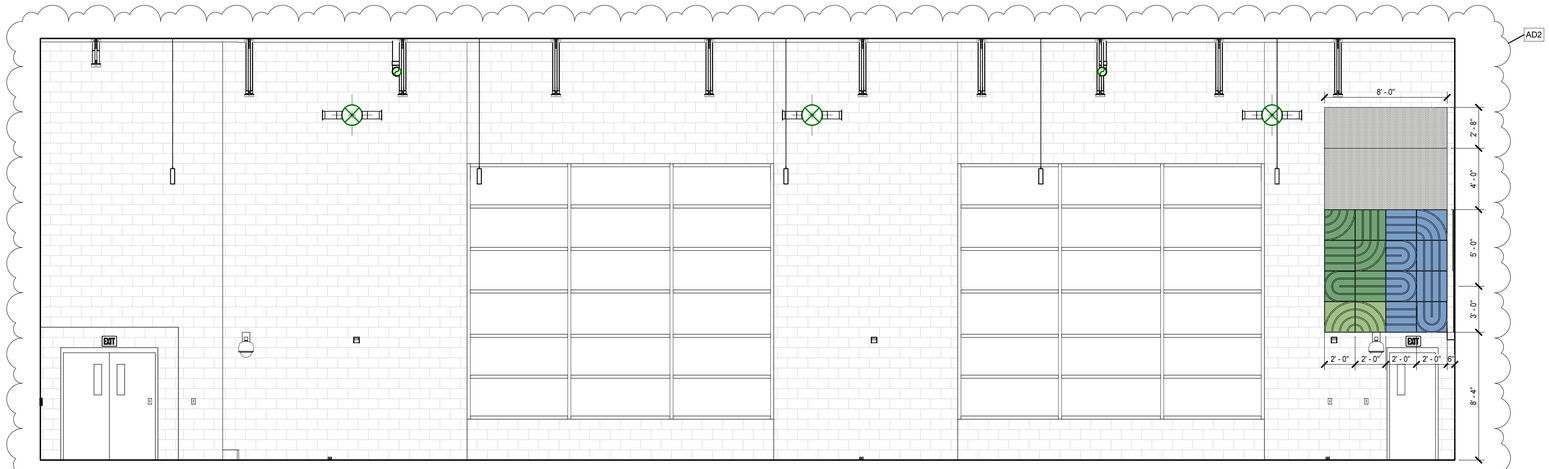
8/23/2024 4:28:37 PM



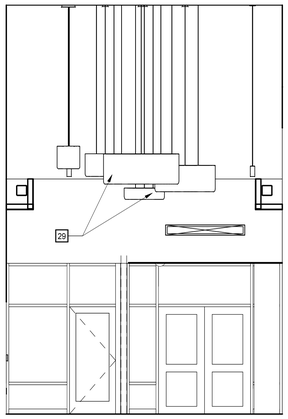
7 A2.1.1 A4.2.4 **MS DINING INTERIOR ELEVATION - E**
1/4" = 1'-0"



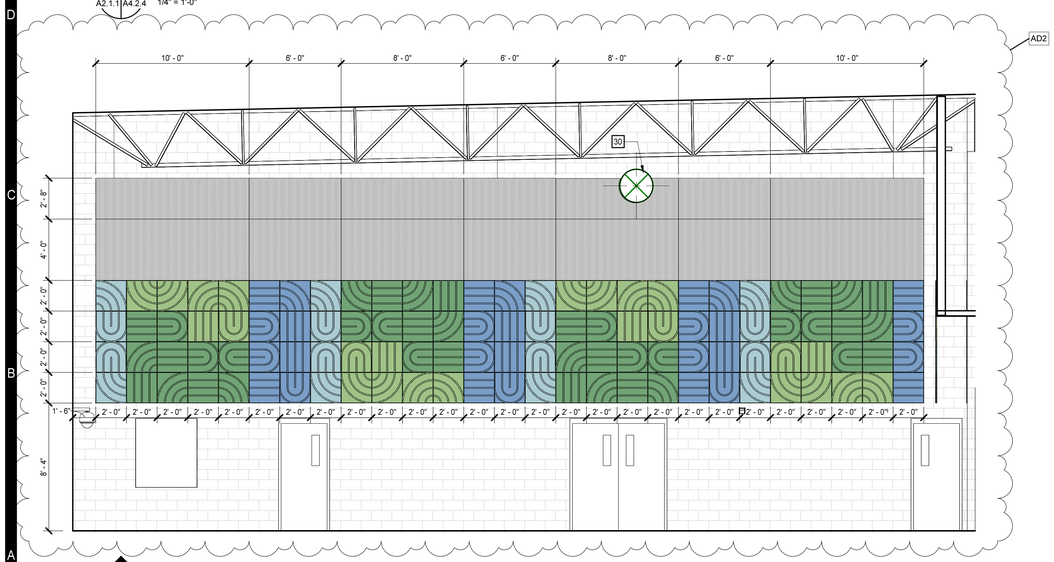
6 A2.1.1 A4.2.4 **LOBBY INTERIOR ELEVATION - S**
1/4" = 1'-0"



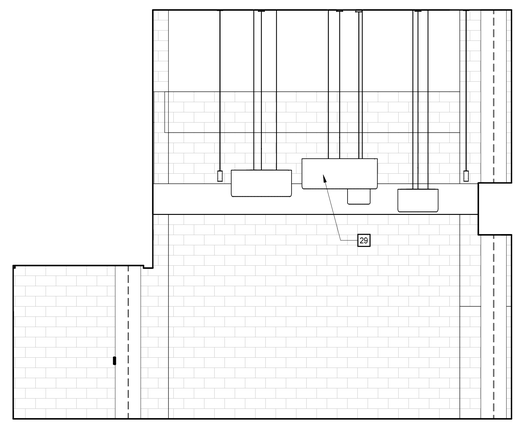
5 A2.1.1 A4.2.4 **MS DINING INTERIOR ELEVATION - W**
1/4" = 1'-0"



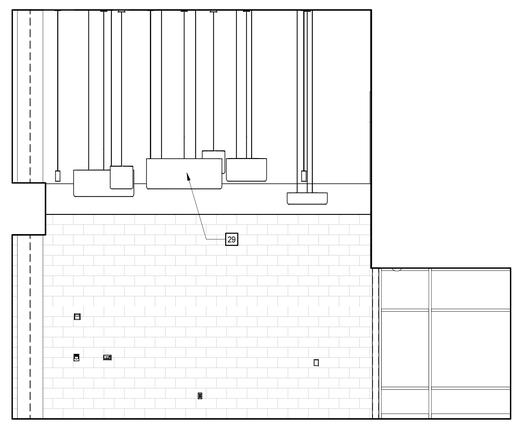
4 A2.1.1 A4.2.4 **LOBBY INTERIOR ELEVATION - N**
1/4" = 1'-0"



3 A2.1.2 A4.2.4 **MS DINING INTERIOR ELEVATION - N**
1/4" = 1'-0"



2 A2.1.1 A4.2.4 **LOBBY INTERIOR ELEVATION - E**
1/4" = 1'-0"



1 A2.1.1 A4.2.4 **LOBBY INTERIOR ELEVATION - W**
1/4" = 1'-0"

BUILDING ELEVATION KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A4.2.1 - A4.2.4

1	DISPLAY CASE (6'W X 5'H)
2	PAINTED GYP WALL WITH 3/4" MTL REVEALS; REFER TO FINISH PLAN FOR COLOR
3	ROCK CLIMBING WALL (24'W X 8'H) - REFER TO SPECIFICATION
4	4'W X 6'H MIRROR, REFER TO SPECIFICATIONS FOR CRITERIA
5	DOUBLE BARRE, MOUNT LOWER BARRE AT 24"AFF AND UPPER BARRE AT 32"AFF, PROVIDE SUPPORTS EVERY 4'
6	TYPICAL TEACHING WALL, REFER TO A8.1.2
7	SINGLE BARRE, MOUNT AT 32"AFF; PROVIDE SUPPORTS EVERY 4'
8	DISPLAY CASE (3'W X 5'H)
9	ACCENT PAINT ON ALL EXPOSED EXTERIOR SURFACES
10	ATTACHED 2" UPHOLSTERED CUSHION (M1) WITH HIGH DENSITY FOAM, SECURE CUSHION TO BENCH WITH HEAVY DUTY SNAPS
11	WOOD BENCH: SPECIES AND FINSH TO MATCH DOORS ON ALL EXPOSED SURFACES
12	INSTALL CUSTOM PRINTED GRAPHIC ON IRWC PRIOR TO INSTALLING BENCH, REFER TO A134 CORRIDOR GRAPHIC
13	CUSTOM PRINTED GRAPHIC ON DECORATIVE WINDOW FILM, REFER TO A134 CORRIDOR GRAPHIC
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21	12"D DISPLAY NICHE PAINTED IN AN ACCENT COLOR
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23	ACOUSTICAL WALL PANEL AWP-A WITH 3/4" MTL REVEALS
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26	GYM WALL PADS
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31	SCOREBOARD
32	COORDINATE CUT-OUT FOR WALL HUNG SCREEN AND SPEAKERS WITH A/V CONSULTANT
33	PROVIDE FULL WIDTH AWP (2'-0"); CONTINUES BEHIND COLUMN

AD2

FINISH PLAN LEGEND

AWP-G	AWP-J6	AWP-K6
AWP-H	AWP-J7	AWP-K7
AWP-I6	AWP-J8	AWP-K8
AWP-I7	AWP-J9	AWP-K9
AWP-I9	AWP-C	

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PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

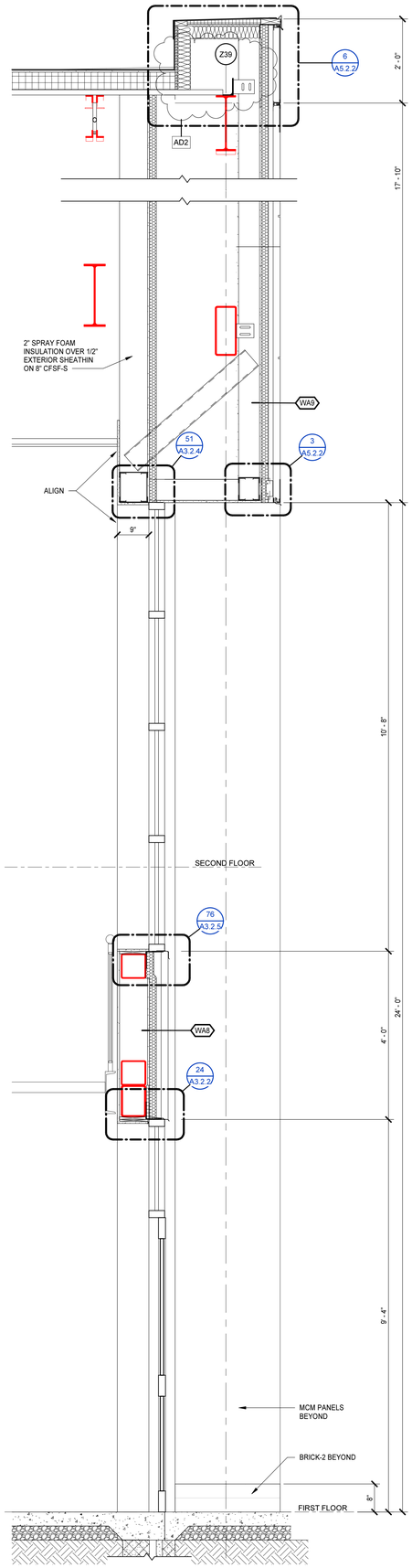
REVISIONS

DATE	DESCRIPTION
8/23/24	AD2

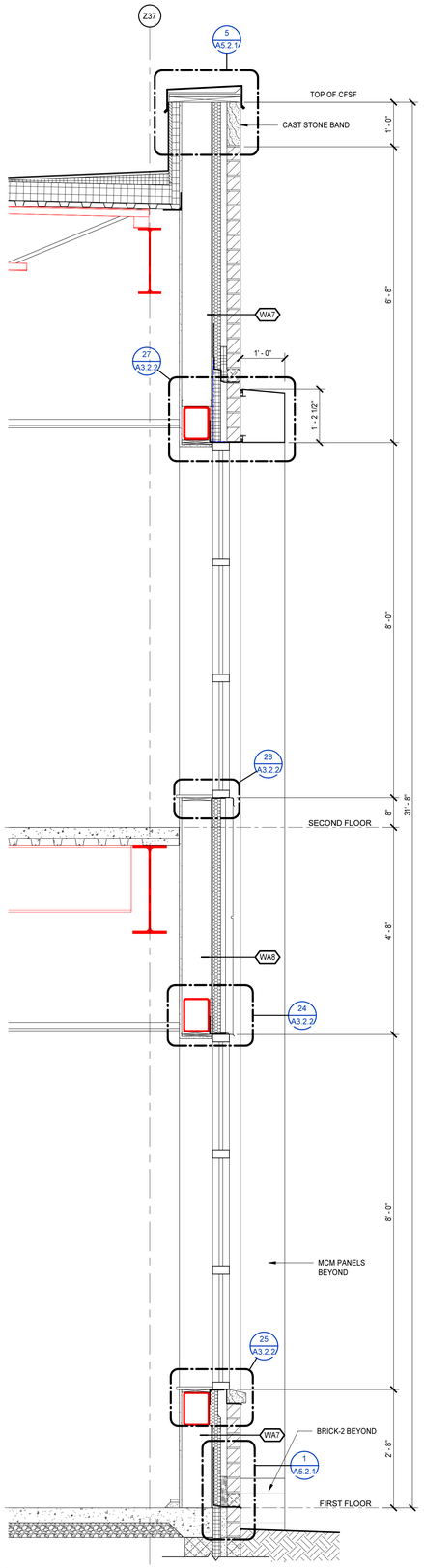
INTERIOR ELEVATIONS

A4.2.4

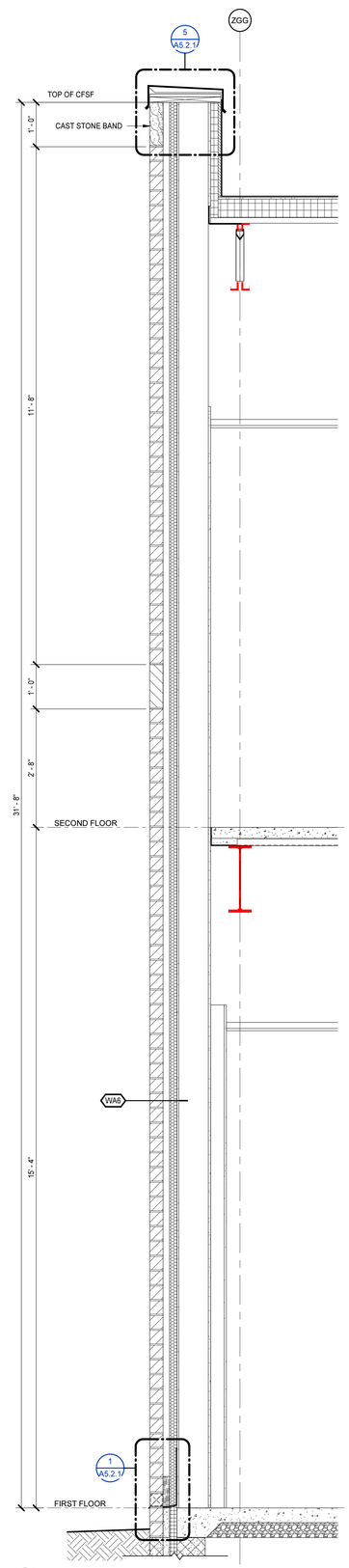
8/23/2024 4:28:45 PM



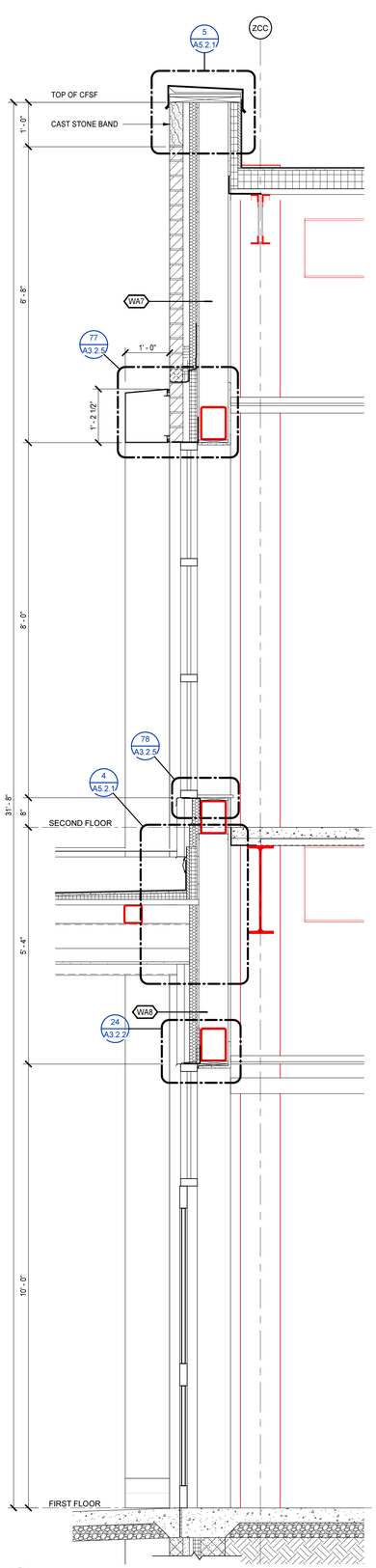
1 **WALL SECTION**
A2.1.6 A5.1.5 3/4" = 1'-0"



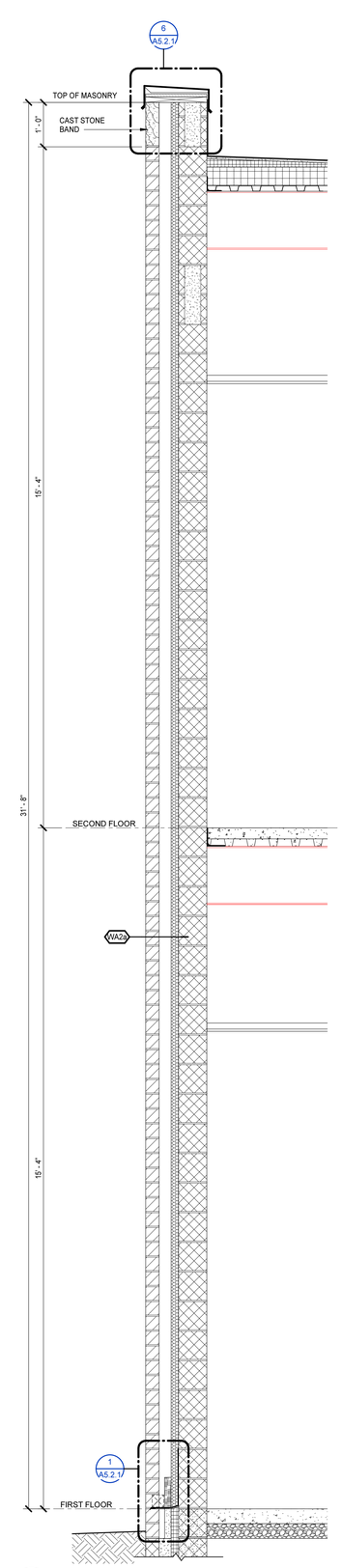
2 **WALL SECTION**
A2.1.8 A5.1.5 3/4" = 1'-0"



3 **WALL SECTION**
A2.1.8 A5.1.5 3/4" = 1'-0"



4 **WALL SECTION**
A2.1.8 A5.1.5 3/4" = 1'-0"



5 **WALL SECTION**
A2.1.3 A5.1.5 3/4" = 1'-0"

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PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 831310
DATE: AUGUST 2, 2024

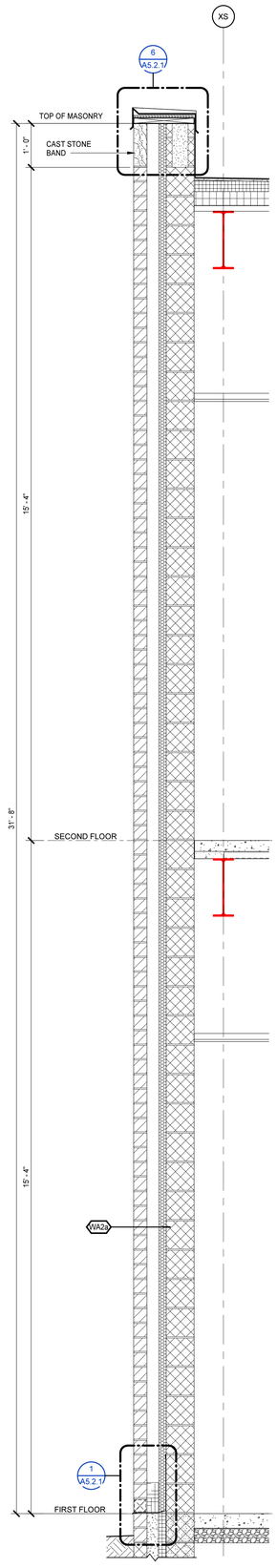
REVISIONS

DATE	DESCRIPTION
8/23/24	AD2

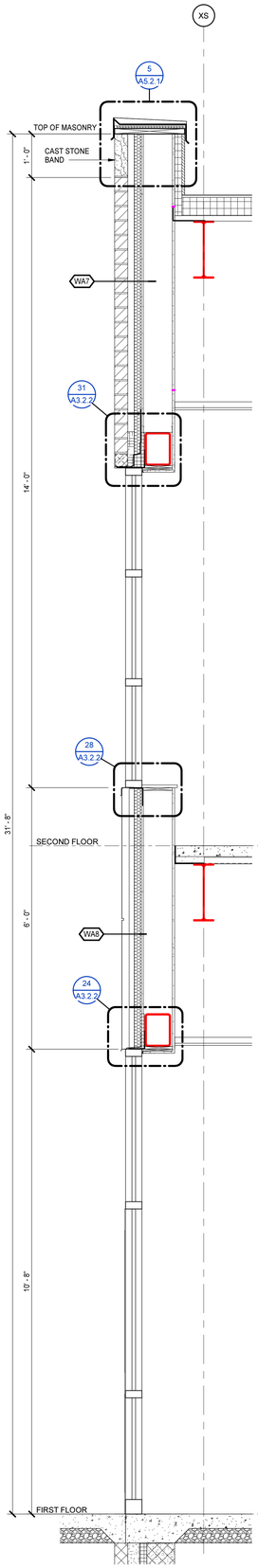
WALL SECTIONS

A5.1.5

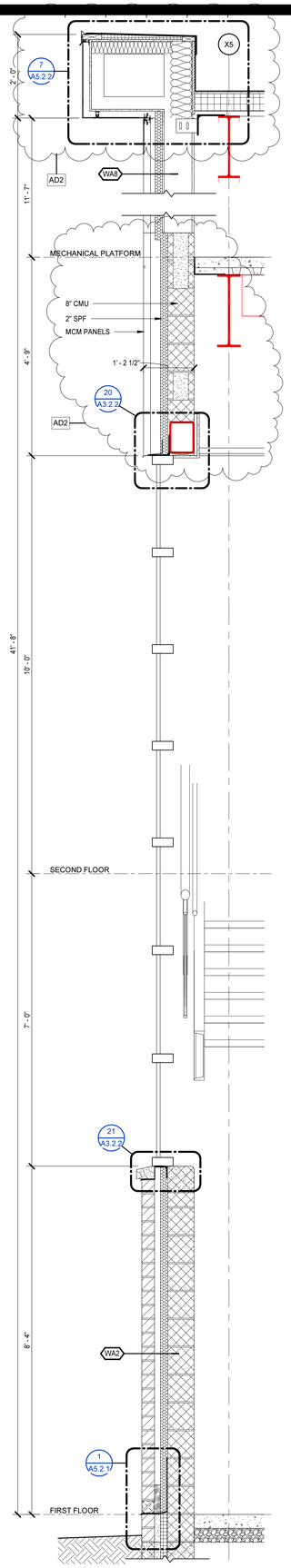
8/23/2024 4:28:48 PM



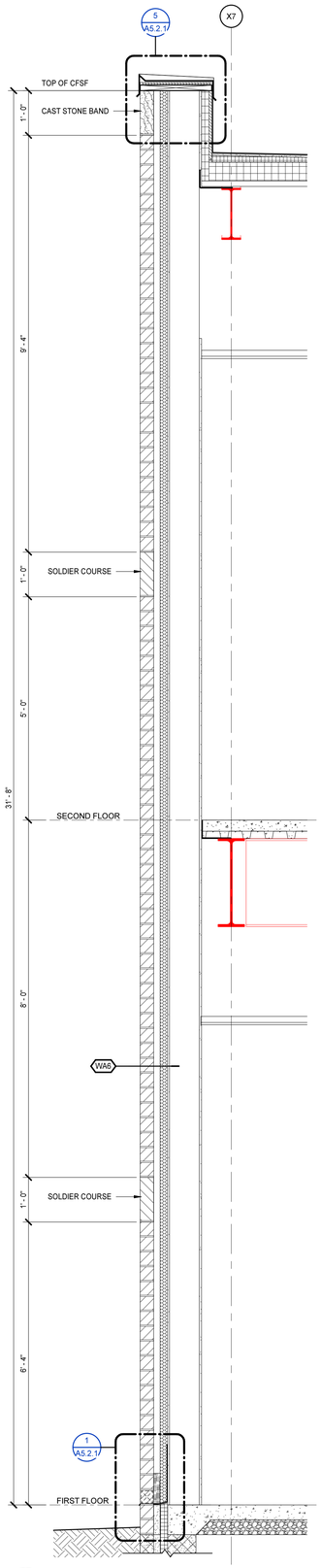
1 WALL SECTION
A2.1.3 A5.1.6 3/4" = 1'-0"



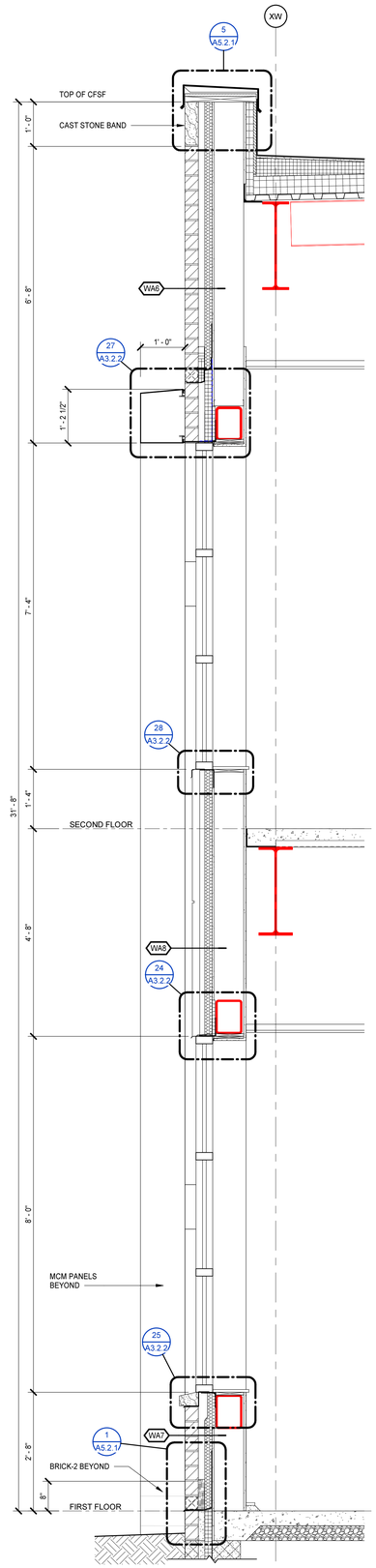
2 WALL SECTION
A2.1.3 A5.1.6 3/4" = 1'-0"



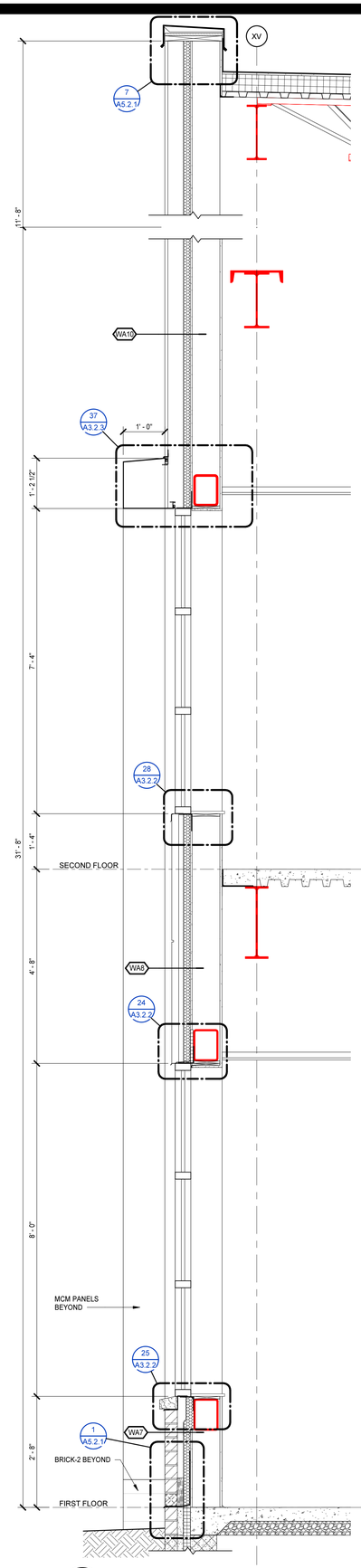
3 WALL SECTION
A2.1.3 A5.1.6 3/4" = 1'-0"



4 WALL SECTION
A2.1.3 A5.1.6 3/4" = 1'-0"



5 WALL SECTION
A2.1.3 A5.1.6 3/4" = 1'-0"



6 WALL SECTION
A2.1.3 A5.1.6 3/4" = 1'-0"

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PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

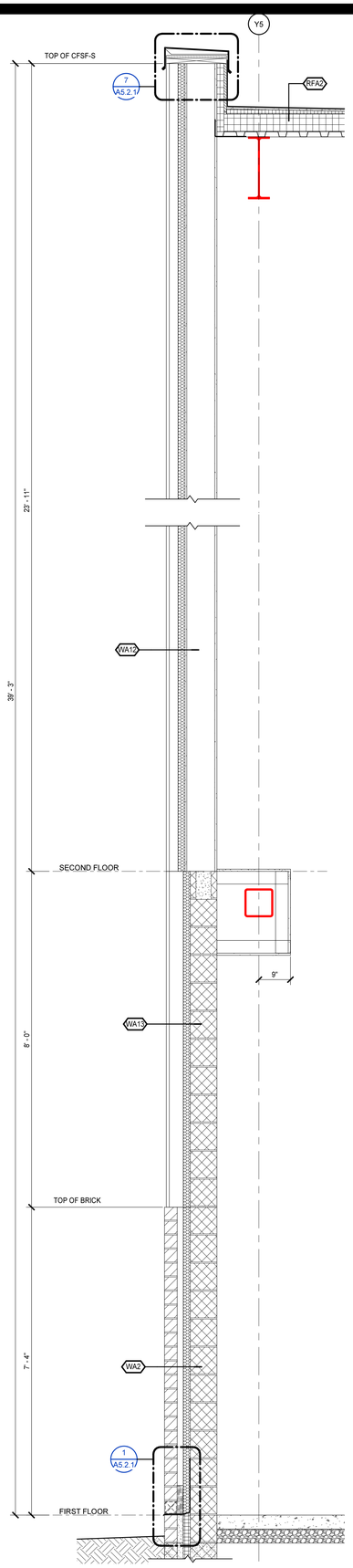
REVISIONS

DATE	DESCRIPTION
8/23/24	AD2

WALL SECTIONS

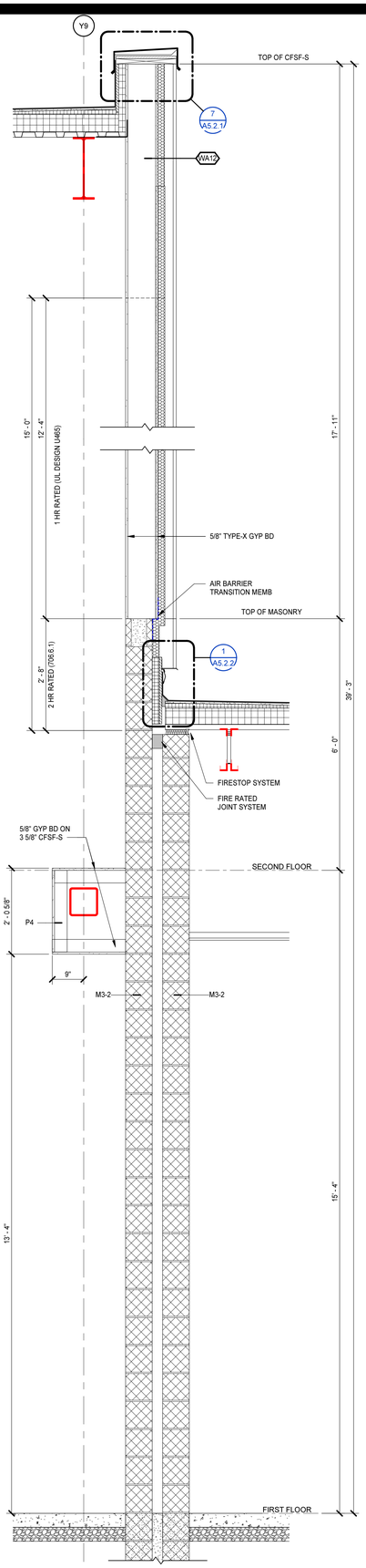
A5.1.6

8/23/2024 4:28:52 PM



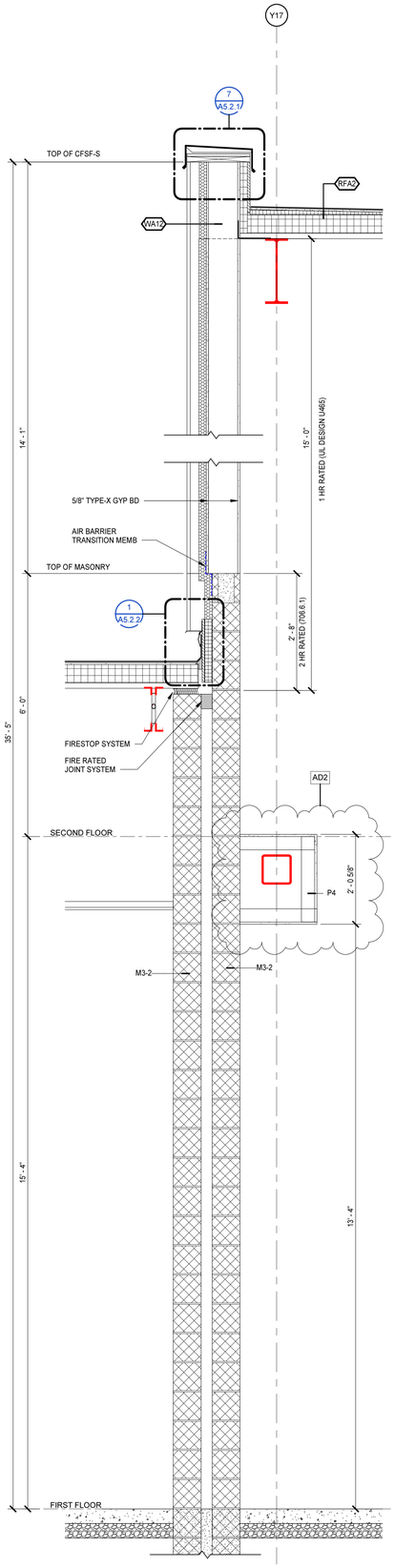
1 WALL SECTION

A2.1.1 A5.1.10 3/4" = 1'-0"



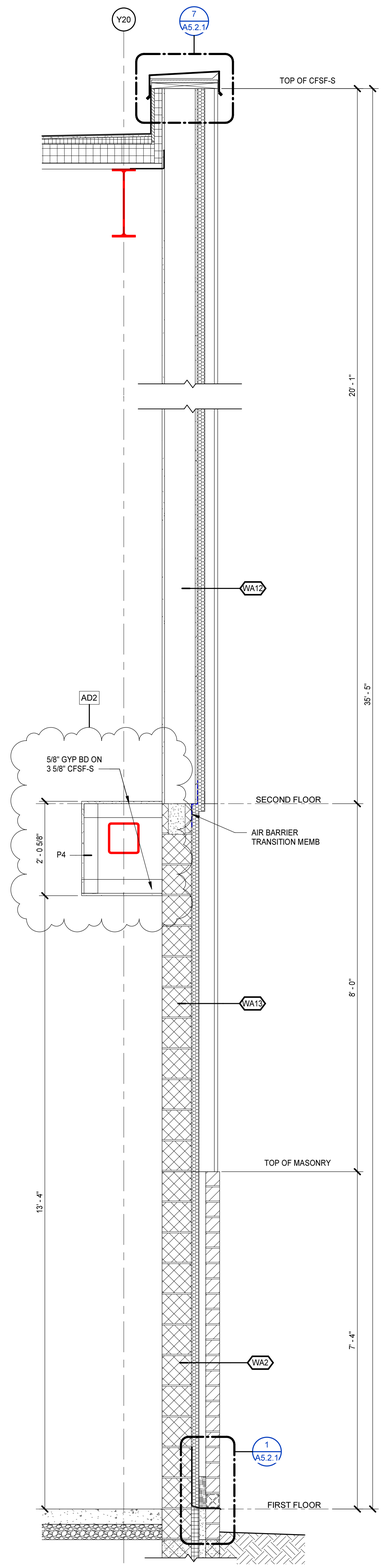
2 WALL SECTION

A2.1.1 A5.1.10 3/4" = 1'-0"



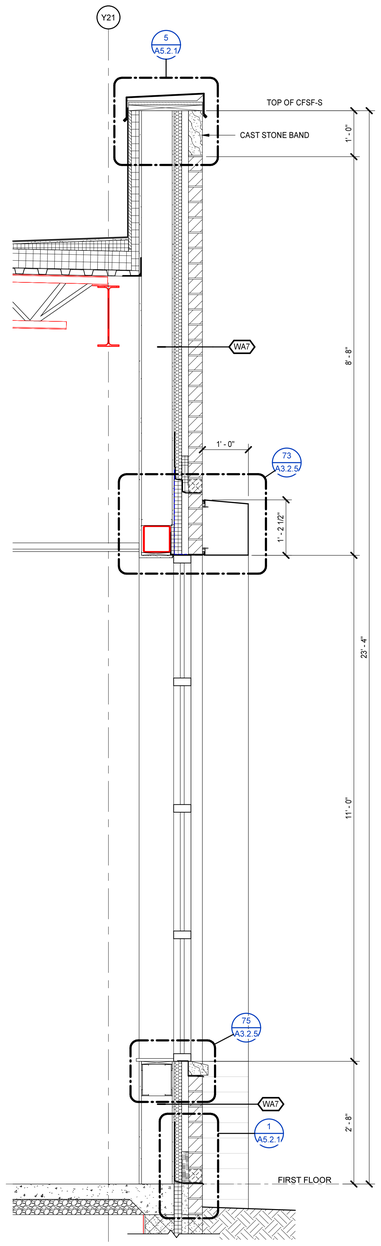
3 WALL SECTION

A2.1.1 A5.1.10 3/4" = 1'-0"



4 WALL SECTION

A2.1.1 A5.1.10 3/4" = 1'-0"



5 WALL SECTION

A2.1.1 A5.1.10 3/4" = 1'-0"

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Pender County Schools
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PROJECT NO: 631310
DATE: AUGUST 2, 2024

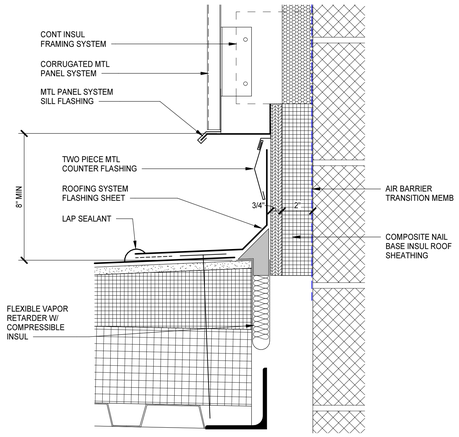
REVISIONS

DATE	DESCRIPTION
8/23/24	AD2

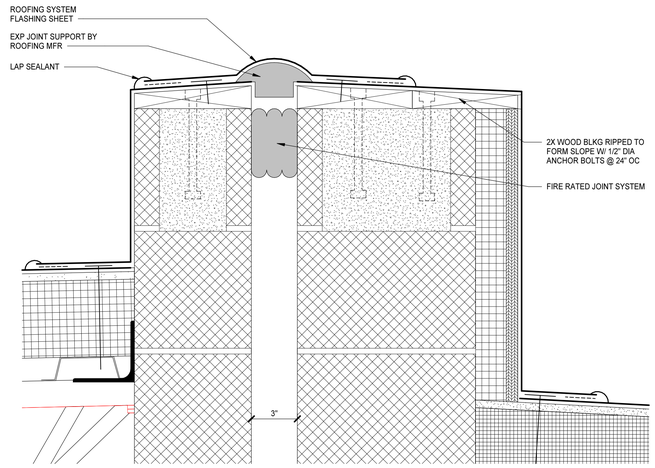
WALL SECTIONS

A5.1.10

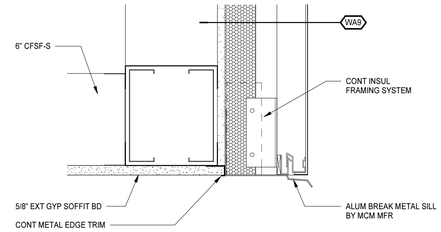
8/23/2024 4:28:56 PM



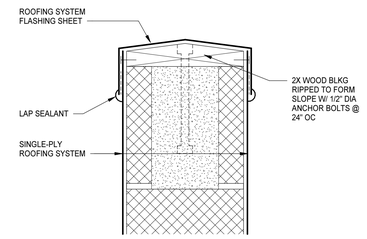
1 EXPANSION JOINT DETAIL
A5.1.10 | A5.2.2 — 3" = 1'-0"



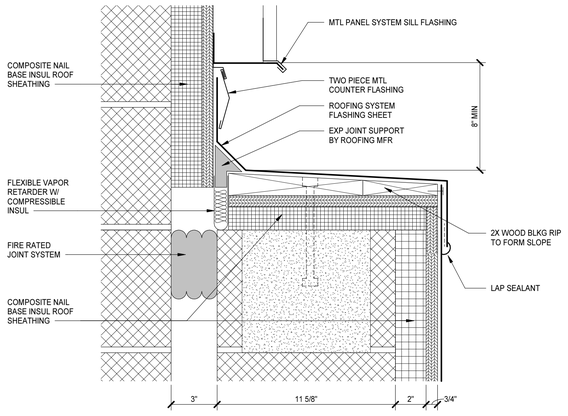
2 EXPANSION JOINT DETAIL
A5.1.8 | A5.2.2 — 3" = 1'-0"



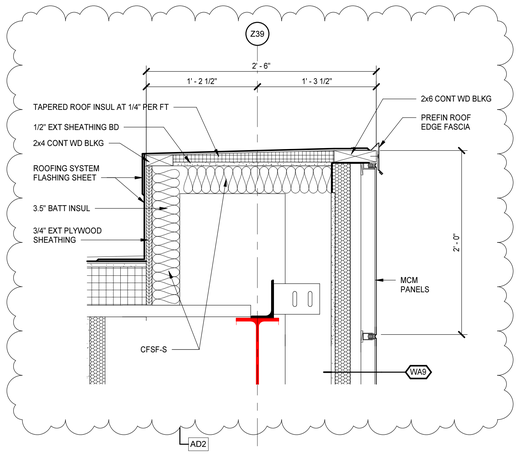
3 SECTION DETAIL
A5.1.5 | A5.2.2 — 3" = 1'-0"



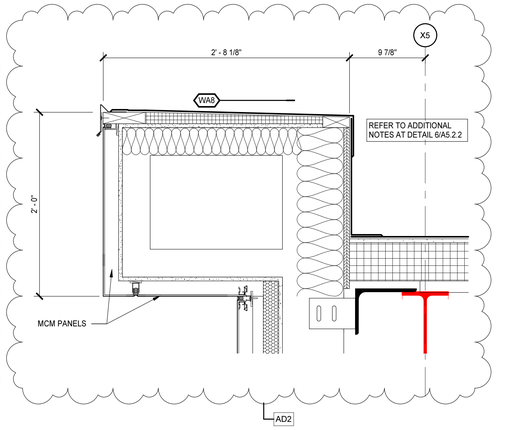
4 SECTION DETAIL
A5.1.3 | A5.2.2 — 3" = 1'-0"



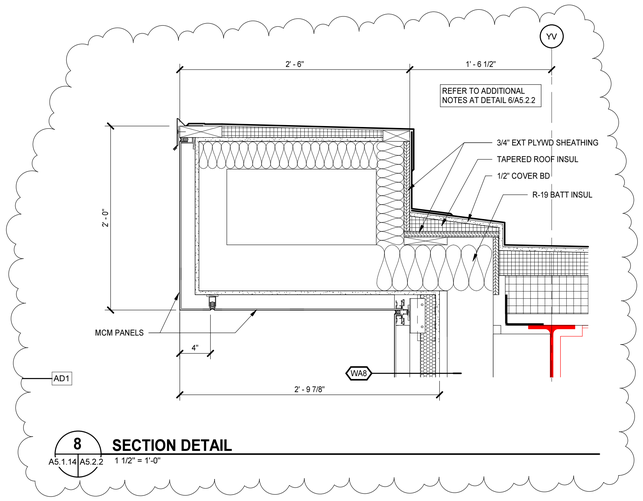
5 SECTION DETAIL
A5.1.9 | A5.2.2 — 3" = 1'-0"



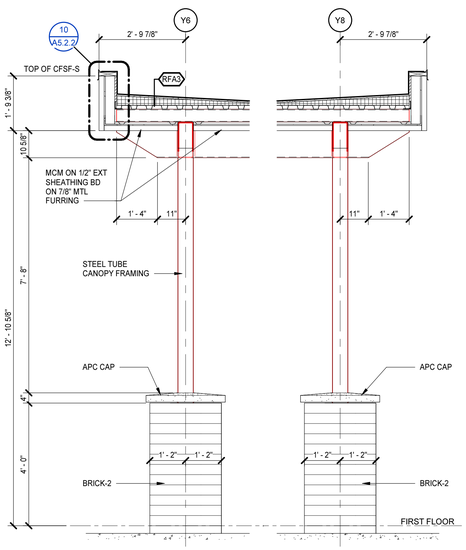
6 SECTION DETAIL
A5.1.5 | A5.2.2 — 1 1/2" = 1'-0"



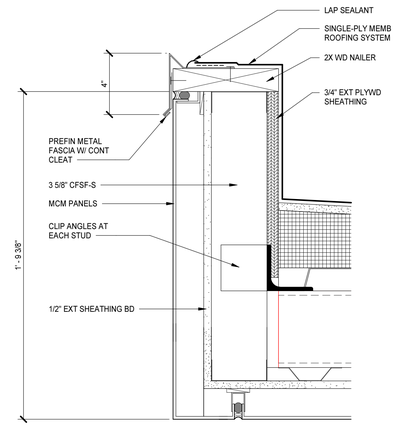
7 SECTION DETAIL
A5.1.6 | A5.2.2 — 1 1/2" = 1'-0"



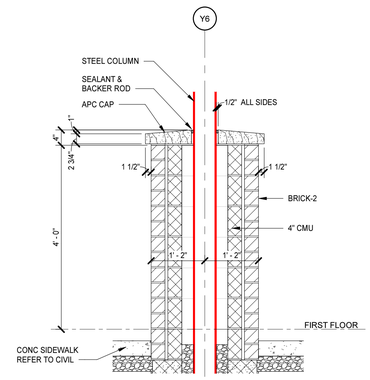
8 SECTION DETAIL
A5.1.14 | A5.2.2 — 1 1/2" = 1'-0"



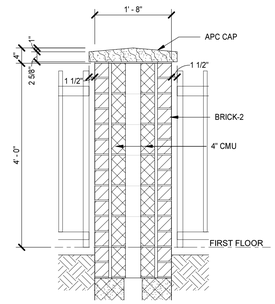
9 WALL SECTION
A2.1.1 | A5.2.2 — 1/2" = 1'-0"



10 SECTION DETAIL
A5.1.19 | A5.2.2 — 3" = 1'-0"



11 WALL SECTION
A2.1.1 | A5.2.2 — 3/4" = 1'-0"



12 WALL SECTION
A2.1.7 | A5.2.2 — 3/4" = 1'-0"

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11711
8/2/24
NORTH CAROLINA
RALEIGH, NC

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

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SECTION DETAILS

A5.2.2

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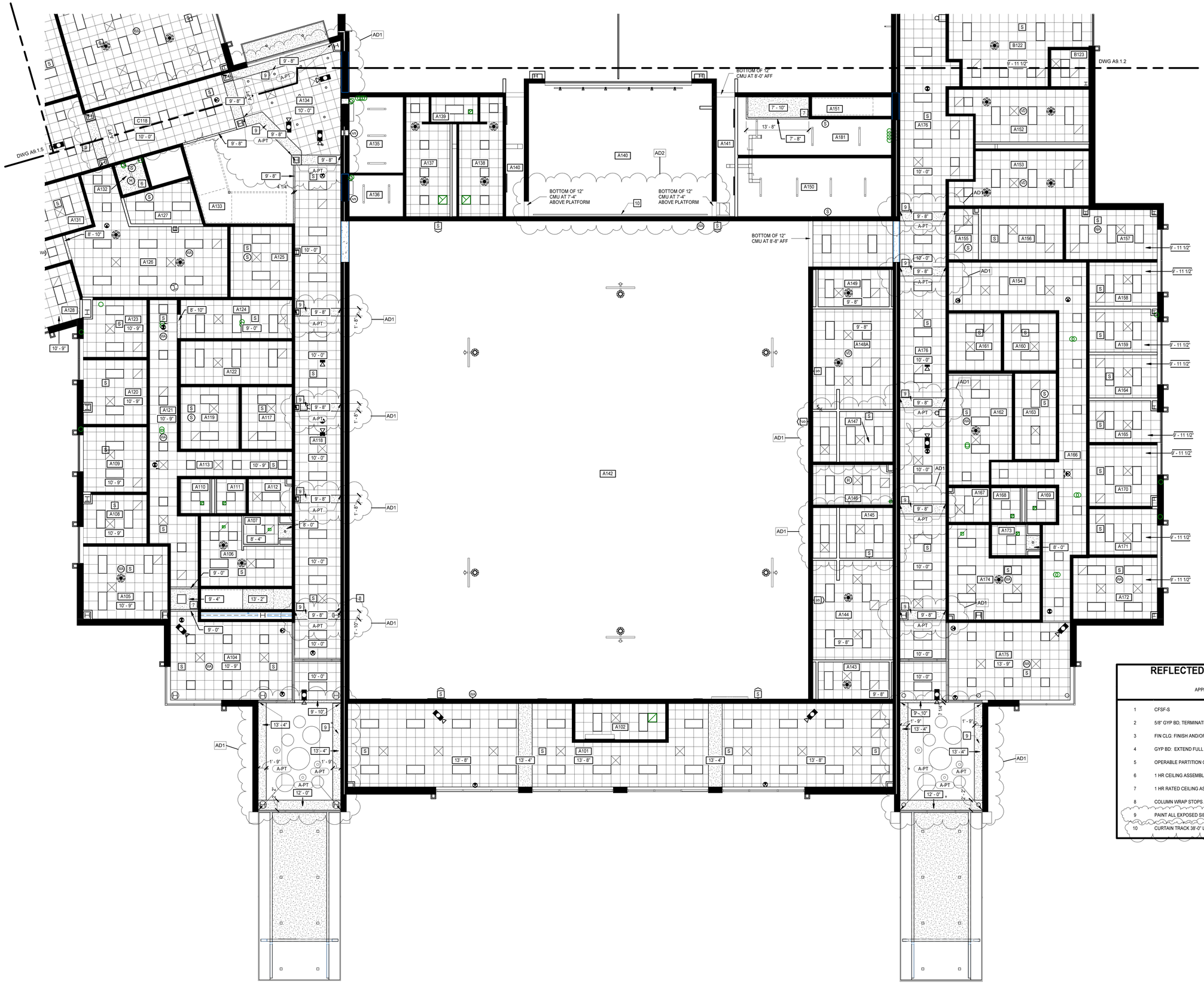

RCP FIRST FLOOR PART A

1/8" = 1'-0"

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1	CFSF-S
2	5/8" GYP BD, TERMINATE 4" ABV FIN CLG
3	FIN CLG: FINISH AND/OR HEIGHT AFF VARIES
4	GYP BD: EXTEND FULL HEIGHT, UNLESS INDICATED OTHERWISE
5	OPERABLE PARTITION CONT HINGED
6	1 HR CEILING ASSEMBLY - X1
7	1 HR RATED CEILING ASSEMBLY - (2) LAYERS OF 5/8" GYP BOARD (TYP X) OVER MTL STUD
8	COLUMN WRAP STOPS AT UNDERSIDE OF BULKHEAD
9	PAINT ALL EXPOSED SIDES OF BULKHEAD WHERE A-PT IS INDICATED AD1
10	CURTAIN TRACK 38'-0" LONG AT 10'-6" AFF AD2

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KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
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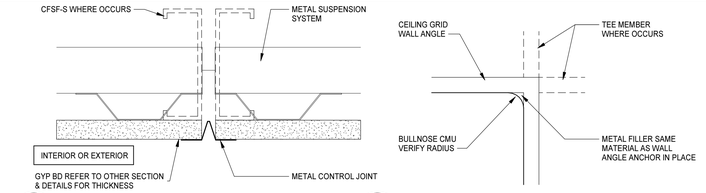
REFLECTED CEILING
PLAN FIRST FLOOR
PART A

A9.1.1

8/23/2024 4:29:06 PM

RCP FIRST FLOOR PART B

1/8" = 1'-0"



6 CEILING CONTROL JOINT DETAIL

A9.1.2 6" = 1'-0"

4 CEILING GRID BULLNOSE CORNER DETAIL

A9.1.2 3" = 1'-0"

5 OPERABLE PARTITION HEAD DETAIL

A9.1.10 A9.1.2 3" = 1'-0"

3 CEILING/SOFFIT TERMINATION DETAIL

A9.1.2 6" = 1'-0"

REFLECTED CEILING PLAN LEGEND

APPLIES TO DRAWINGS A9.1.1 - A9.1.15

REFER TO M, E & FP DRAWINGS FOR REFLECTED CEILING PLAN SYMBOLS NOT INDICATED BELOW

- A101 / nn'-nn" — SPACE NUMBER / CEILING HEIGHT, AFF UNO
- INTERIOR APPLICATIONS: GYPSUM BOARD CEILING
- EXTERIOR APPLICATIONS: GYPSUM SOFFIT BOARD OR GYPSUM SHEATHING
- 2'-0" x 2'-0" LAY-IN ACOUSTICAL CEILING PANELS IN SUSPENDED GRID
- AP — ACCESS PANEL
- WITH OPENING — EXTERIOR WALL
- WITH OPENING — INTERIOR WALL/PARTITION TO UNDERSIDE OF DECK
- WITH OPENING — INTERIOR WALL/PARTITION TO CAP ABOVE OR TERMINATES ADJACENT TO A RATED HORIZONTAL ASSEMBLY
- WITH OPENING — INTERIOR WALL/PARTITION 4" MIN ABOVE HIGHEST ADJACENT CEILING. IF NECESSARY TO ACHIEVE RESULTS DESIRED, EXTEND WALL HEIGHT SO WALL BRACING IS NOT EXPOSED TO VIEW IN FINISHED SPACES

REFLECTED CEILING PLAN/DETAIL GENERAL NOTES

A. ALL CEILING HEIGHTS SHALL BE 9'-0" AFF UNLESS INDICATED OTHERWISE.

B. DRAWINGS INDICATE GRID LAYOUT DIAGRAMMATICALLY. REFER TO SPECIFICATIONS FOR SPECIFIC GRID LAYOUT CRITERIA AT PERIMETER CONDITIONS THAT MAY DIFFER FROM GRID LAYOUT INDICATED ON DRAWINGS.

C. CENTER CEILING MOUNTED ITEMS WITHIN CEILING PANELS, UNLESS INDICATED OTHERWISE.

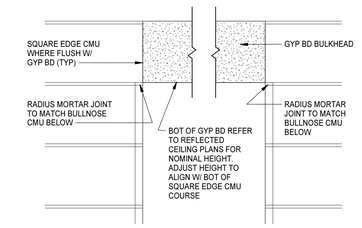
D. IF ADDITIONAL SPRINKLER HEADS ARE REQUIRED TO SATISFY CODE OR COVERAGE DENSITIES (OTHER THAN THOSE THAT MAY BE INDICATED), PROVIDE ADDITIONAL SPRINKLER HEADS AT NO ADDITIONAL COST AND OBTAIN APPROVAL OF ARCHITECT FOR LOCATION OF SUCH HEADS, IF ANY.

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

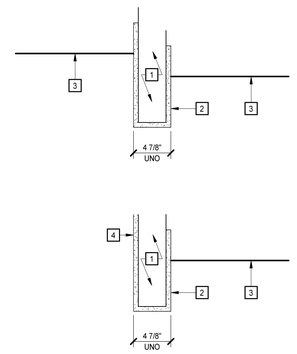
APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1 CFSF-S
2 5/8" GYP BD, TERMINATE 4" ABV FIN CLG
3 FIN CLG: FINISH AND/OR HEIGHT AFF VARIES
4 GYP BD: EXTEND FULL HEIGHT, UNLESS INDICATED OTHERWISE
5 OPERABLE PARTITION CONT HINGED
6 1 HR CEILING ASSEMBLY - X1
7 1 HR RATED CEILING ASSEMBLY - (2) LAYERS OF 5/8" GYP BOARD (TYP X) OVER MTL STUD
8 COLUMN WRAP STOPS AT UNDERSIDE OF BULKHEAD
9 PAINT ALL EXPOSED SIDES OF BULKHEAD WHERE A-PT IS INDICATED — AD1
10 CURTAIN TRACK 38'-0" LONG AT 10'-6" AFF



2 TYP BULKHEAD AT CMU WALL

A9.1.2 1 1/2" = 1'-0"



BULKHEAD DETAILS

NO SCALE

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KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

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REFLECTED CEILING PLAN FIRST FLOOR PART B

A9.1.2

8/23/2024 4:29:11 PM

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1	CFSF-S
2	5/8" GYP BD, TERMINATE 4" ABV FIN CLG
3	FIN CLG: FINISH AND/OR HEIGHT AFF VARIES
4	GYP BD: EXTEND FULL HEIGHT, UNLESS INDICATED OTHERWISE
5	OPERABLE PARTITION CONT HINGED
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7	1 HR RATED CEILING ASSEMBLY - (2) LAYERS OF 5/8" GYP BOARD (TYP X) OVER MTL STUD
8	COLUMN WRAP STOPS AT UNDERSIDE OF BULKHEAD
9	PAINT ALL EXPOSED SIDES OF BULKHEAD WHERE A-PT IS INDICATED — AD1
10	CURTAIN TRACK 38'-0" LONG AT 10'-6" AFF

N

RCP FIRST FLOOR PART C

1/8" = 1'-0"

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KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
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REFLECTED CEILING PLAN FIRST FLOOR PART C

A9.1.3

8/23/2024 4:29:18 PM

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1	CFSF-S
2	5/8" GYP BD, TERMINATE 4" ABV FIN CLG
3	FIN CLG: FINISH AND/OR HEIGHT AFF VARIES
4	GYP BD: EXTEND FULL HEIGHT, UNLESS INDICATED OTHERWISE
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8	COLUMN WRAP STOPS AT UNDERSIDE OF BULKHEAD
9	PAINT ALL EXPOSED SIDES OF BULKHEAD WHERE A-PT IS INDICATED — AD1
10	CURTAIN TRACK 38'-0" LONG AT 10'-6" AFF

RCP FIRST FLOOR PART D

1/8" = 1'-0"

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PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

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DATE	DESCRIPTION
8/16/24	AD1
8/23/24	AD2

REFLECTED CEILING PLAN FIRST PART D

A9.1.4

8/23/2024 4:29:25 PM

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1	CFSF-S
2	5/8" GYP BD, TERMINATE 4" ABV FIN CLG
3	FIN CLG: FINISH AND/OR HEIGHT AFF VARIES
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8	COLUMN WRAP STOPS AT UNDERSIDE OF BULKHEAD
9	PAINT ALL EXPOSED SIDES OF BULKHEAD WHERE A-PT IS INDICATED — AD1
10	CURTAIN TRACK 38'-0" LONG AT 10'-6" AFF

RCP FIRST FLOOR PART E

1/8" = 1'-0"

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REFLECTED CEILING PLAN FIRST FLOOR PART E

A9.1.5

8/23/2024 4:29:31 PM

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1	CFSF-S
2	5/8" GYP BD, TERMINATE 4" ABV FIN CLG
3	FIN CLG: FINISH AND/OR HEIGHT AFF VARIES
4	GYP BD: EXTEND FULL HEIGHT, UNLESS INDICATED OTHERWISE
5	OPERABLE PARTITION CONT HINGED
6	1 HR CEILING ASSEMBLY - X1
7	1 HR RATED CEILING ASSEMBLY - (2) LAYERS OF 5/8" GYP BOARD (TYP X) OVER MTL STUD
8	COLUMN WRAP STOPS AT UNDERSIDE OF BULKHEAD
9	PAINT ALL EXPOSED SIDES OF BULKHEAD WHERE A-PT IS INDICATED
10	CURTAIN TRACK 38'-0" LONG AT 10'-6" AFF

AD1

DWG A9.1.2

DWG A9.1.7

DWG A9.1.1

AD2

AD1

N

RCP FIRST FLOOR PART F

1/8" = 1'-0"

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PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools

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REFLECTED CEILING PLAN FIRST FLOOR PART F

A9.1.6

8/23/2024 4:29:40 PM

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1	CFSF-S
2	5/8" GYP BD, TERMINATE 4" ABV FIN CLG
3	FIN CLG: FINISH AND/OR HEIGHT AFF VARIES
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9	PAINT ALL EXPOSED SIDES OF BULKHEAD WHERE A-PT IS INDICATED — AD1
10	CURTAIN TRACK 38'-0" LONG AT 10'-6" AFF

RCP FIRST FLOOR PART G

1/8" = 1'-0"

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KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

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REFLECTED CEILING PLAN FIRST FLOOR PART G

A9.1.7

8/23/2024 4:29:46 PM

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1	CFSF-S
2	5/8" GYP BD, TERMINATE 4" ABV FIN CLG
3	FIN CLG: FINISH AND/OR HEIGHT AFF VARIES
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10	CURTAIN TRACK 38'-0" LONG AT 10'-6" AFF

N

RCP FIRST FLOOR PART H

1/8" = 1'-0"

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REFLECTED CEILING PLAN FIRST FLOOR PART H

A9.1.8

8/23/2024 4:29:52 PM

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1	CFSF-S
2	5/8" GYP BD, TERMINATE 4" ABV FIN CLG
3	FIN CLG: FINISH AND/OR HEIGHT AFF VARIES
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10	CURTAIN TRACK 38'-0" LONG AT 10'-6" AFF

DWG A9.1.13

DWG A9.1.10

N

RCP SECOND FLOOR PART A

1/8" = 1'-0"

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KEY PLAN

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REFLECTED CEILING PLAN SECOND FLOOR PART A

A9.1.9

8/23/2024 4:29:57 PM

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1	CFSF-S
2	5/8" GYP BD, TERMINATE 4" ABV FIN CLG
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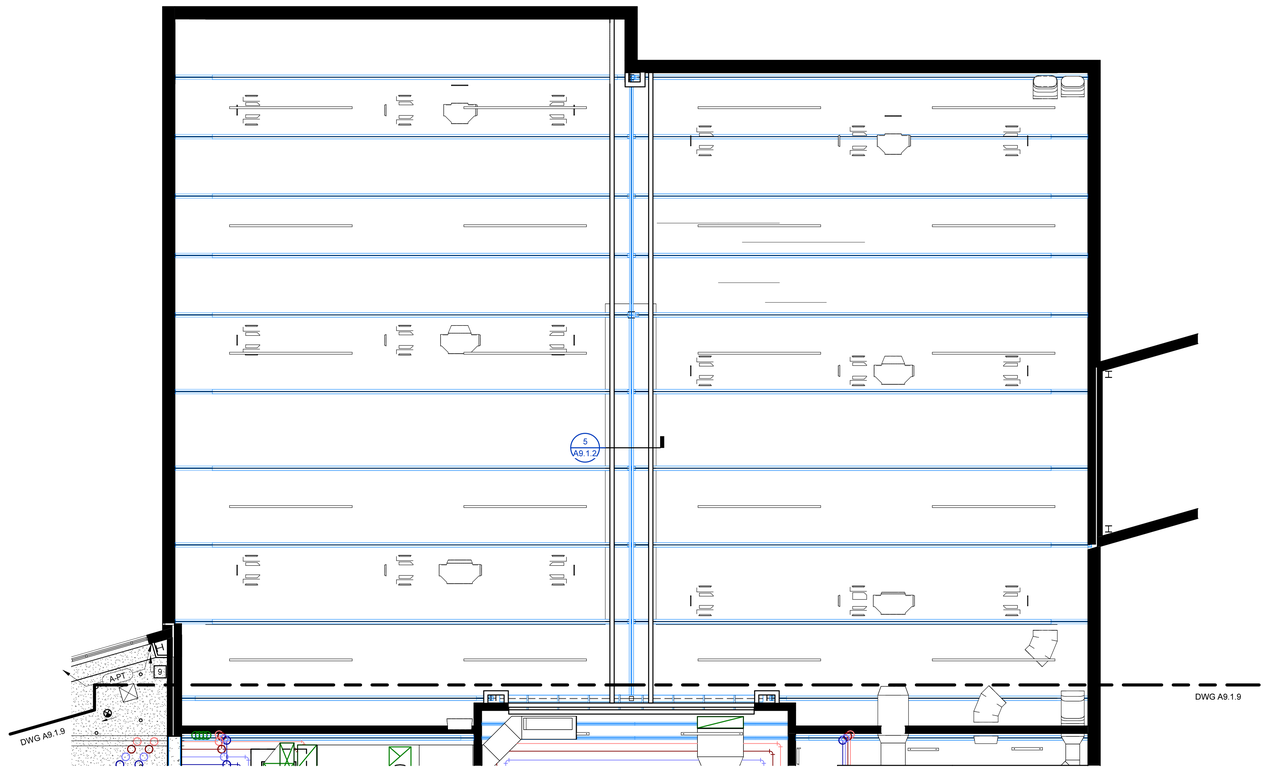

N

RCP SECOND FLOOR PART B

1/8" = 1'-0"

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B

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

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DATE	DESCRIPTION
8/16/24	AD1

REFLECTED CEILING PLAN SECOND FLOOR PART B

A9.1.10

8/23/2024 4:29:59 PM

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1	CFSF-S
2	5/8" GYP BD, TERMINATE 4" ABV FIN CLG
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8	COLUMN WRAP STOPS AT UNDERSIDE OF BULKHEAD
9	PAINT ALL EXPOSED SIDES OF BULKHEAD WHERE A-PT IS INDICATED — AD1
10	CURTAIN TRACK 38'-0" LONG AT 10'-6" AFF

N **RCP SECOND FLOOR PART C**

1/8" = 1'-0"

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REFLECTED CEILING PLAN SECOND FLOOR PART C

A9.1.11

8/23/2024 4:30:06 PM

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1	CFSF-S
2	5/8" GYP BD, TERMINATE 4" ABV FIN CLG
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10	CURTAIN TRACK 38'-0" LONG AT 10'-6" AFF

RCP SECOND FLOOR PART D

1/8" = 1'-0"

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11711
8/2/24
NORTH CAROLINA
RALEIGH, NC

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/16/24	AD1
8/23/24	AD2

REFLECTED CEILING PLAN SECOND FLOOR PART D

A9.1.12

8/23/2024 4:30:13 PM

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1	CFSF-S
2	5/8" GYP BD, TERMINATE 4" ABV FIN CLG
3	FIN CLG: FINISH AND/OR HEIGHT AFF VARIES
4	GYP BD: EXTEND FULL HEIGHT, UNLESS INDICATED OTHERWISE
5	OPERABLE PARTITION CONT HINGED
6	1 HR CEILING ASSEMBLY - X1
7	1 HR RATED CEILING ASSEMBLY - (2) LAYERS OF 5/8" GYP BOARD (TYP X) OVER MTL STUD
8	COLUMN WRAP STOPS AT UNDERSIDE OF BULKHEAD
9	PAINT ALL EXPOSED SIDES OF BULKHEAD WHERE A-PT IS INDICATED — AD1
10	CURTAIN TRACK 38'-0" LONG AT 10'-6" AFF

N

RCP SECOND FLOOR PART E

1/8" = 1'-0"

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RALEIGH, NC

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/16/24	AD1
8/23/24	AD2

REFLECTED CEILING PLAN SECOND FLOOR PART E

A9.1.13

8/23/2024 4:30:21 PM

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1	CFSF-S
2	5/8" GYP BD, TERMINATE 4" ABV FIN CLG
3	FIN CLG: FINISH AND/OR HEIGHT AFF VARIES
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8	COLUMN WRAP STOPS AT UNDERSIDE OF BULKHEAD
9	PAINT ALL EXPOSED SIDES OF BULKHEAD WHERE A-PT IS INDICATED — AD1
10	CURTAIN TRACK 38'-0" LONG AT 10'-6" AFF

N

RCP SECOND FLOOR PART F

1/8" = 1'-0"

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RALEIGH, NC

F

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/16/24	AD1
8/23/24	AD2

REFLECTED CEILING PLAN SECOND FLOOR PART F

A9.1.14

8/23/2024 4:30:28 PM

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1	CFSF-S
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3	FIN CLG: FINISH AND/OR HEIGHT AFF VARIES
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8	COLUMN WRAP STOPS AT UNDERSIDE OF BULKHEAD
9	PAINT ALL EXPOSED SIDES OF BULKHEAD WHERE A-PT IS INDICATED — AD1
10	CURTAIN TRACK 38'-0" LONG AT 10'-6" AFF

RCP SECOND FLOOR PART G
1/8" = 1'-0"

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RALEIGH, NC

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 831310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/16/24	AD1
8/23/24	AD2

REFLECTED CEILING PLAN SECOND FLOOR PART G

A9.1.15

8/23/2024 4:30:34 PM

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.16

1	CFSF-S
2	5/8" GYP BD, TERMINATE 4" ABV FIN CLG
3	FIN CLG: FINISH AND/OR HEIGHT AFF VARIES
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8	COLUMN WRAP STOPS AT UNDERSIDE OF BULKHEAD
9	PAINT ALL EXPOSED SIDES OF BULKHEAD WHERE A-PT IS INDICATED — AD1
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RCP SECOND FLOOR PART H

1/8" = 1'-0"

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RALEIGH, NC

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

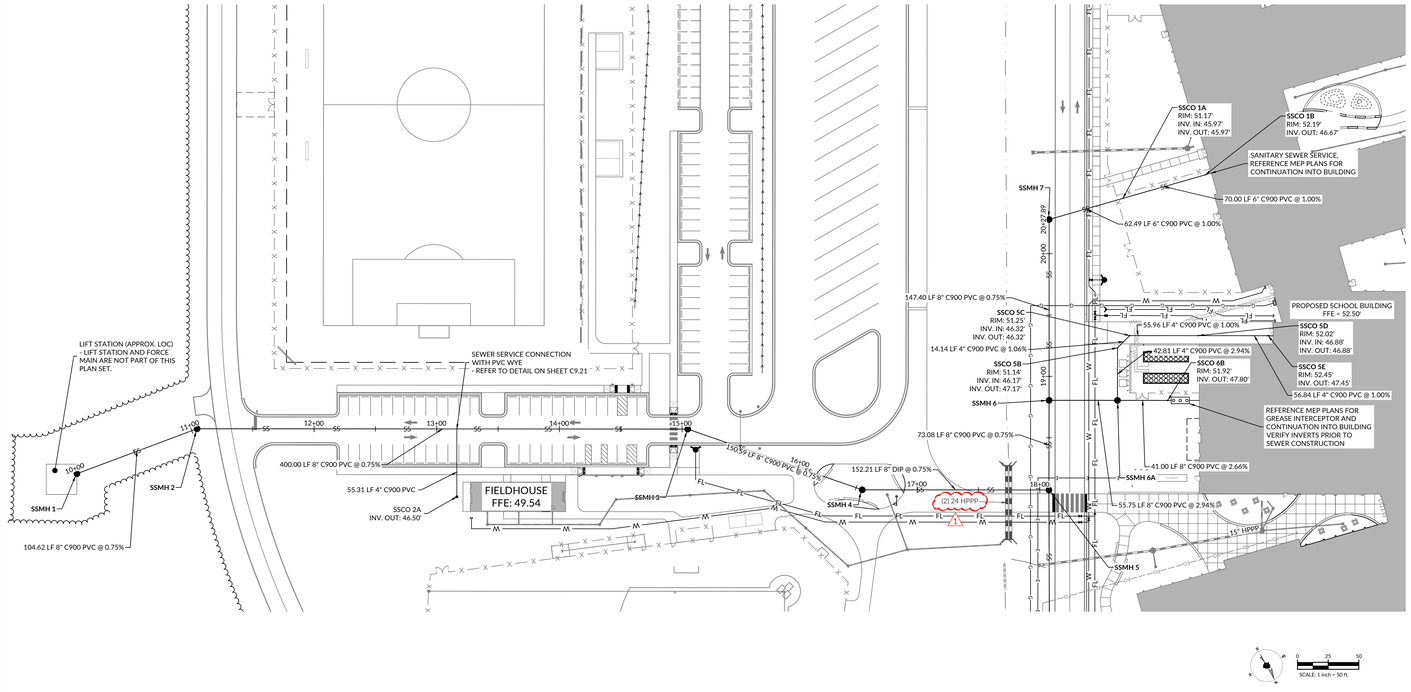
PROJECT NO: 631310	
DATE:	AUGUST 2, 2024
REVISIONS	
DATE	DESCRIPTION
8/16/24	AD1
8/23/24	AD2

REFLECTED CEILING PLAN SECOND FLOOR PART H

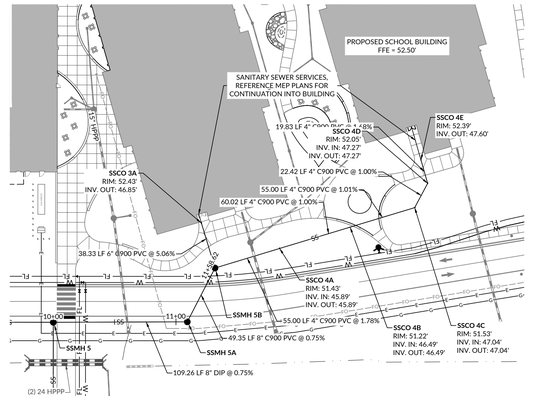
A9.1.16

8/23/2024 4:30:40 PM

SANITARY SEWER - SSMH 1 TO SSMH 7 PLAN



SANITARY SEWER - SSMH 5 TO SSMH 5B PLAN



UTILITIES LEGEND:

SYMBOL	DESCRIPTION
	PROPOSED WATER SERVICE METER
BFP	PROPOSED BACKFLOW PREVENTOR
	PROPOSED FIRE HYDRANT ASSEMBLY
	PROPOSED FDC
	PROPOSED PIV
	PROPOSED REDUCER
W	PROPOSED DOMESTIC WATER LINE
FL FL	PROPOSED FIRE LINE
SS	PROPOSED SANITARY SEWER LINE
FM	PROPOSED SANITARY FORCE MAIN LINE
	PROPOSED SANITARY CLEANOUT
	PROPOSED SANITARY SEWER MANHOLE

NOTE:

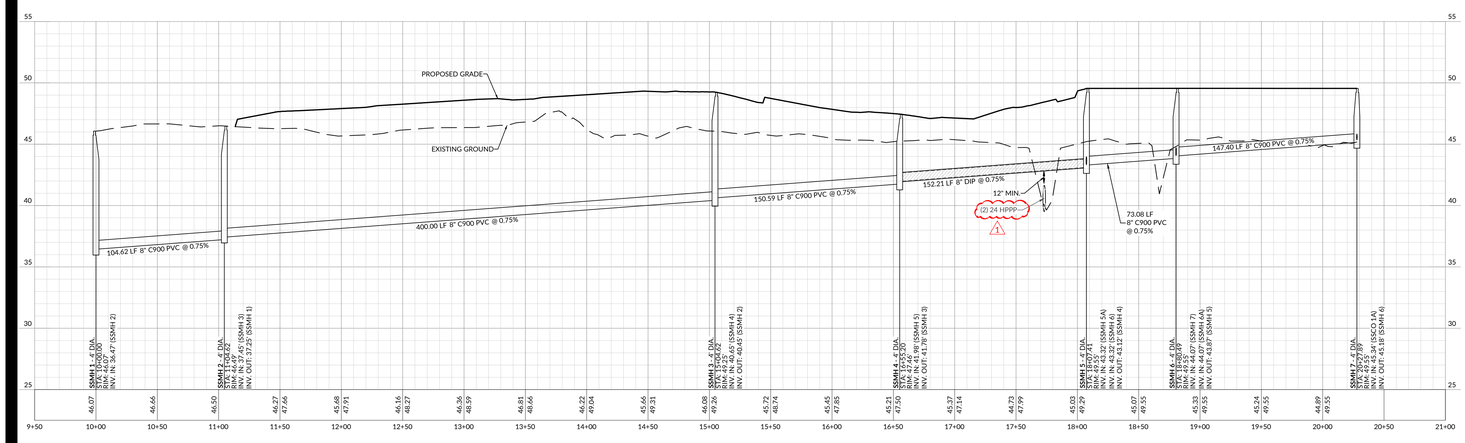
1. ALL PRIVATE FIRE HYDRANT ASSEMBLY BRANCHES ONSITE SHALL BE 6" PVC WITH THRUST BLOCKING PER PENDER COUNTY UTILITIES STANDARD FIRE HYDRANT ASSEMBLY DETAIL ON SHEET C9.20.

2. ALL SITE UTILITY SERVICE LINES TO INCLUDE DOMESTIC WATER LINES, FIRE LINES, FDC LINES, AND SANITARY SEWER SHALL TERMINATE IN THE LOCATION SHOWN ON THESE UTILITY PLANS (APPROXIMATELY 5 FEET FROM BUILDING) AND BE STUBBED UP TO GRADE. REFERENCE PLUMBING AND FIRE PROTECTION PLANS FOR CONTINUATION INTO BUILDING. FOR ALL UTILITY CONNECTIONS TO BUILDING VERIFY INVERTS ON PLUMBING AND FIRE PROTECTION PLANS PRIOR TO SEWER CONSTRUCTION.

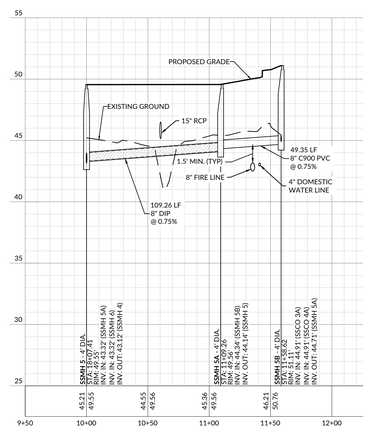
3. SANITARY SEWER CLEANOUTS LOCATED WITHIN CONCRETE, ASPHALT, OR GRAVEL SHALL UTILIZE A CLEANOUT COVER FOR VEHICLE TRAFFIC AS DETAILED ON SHEET C9.21.

4. ALL SANITARY SEWER LINES TO BUILDING SHALL HAVE A MINIMUM SLOPE OF 1.0%.

SANITARY SEWER - SSMH 1 TO SSMH 7 PROFILE



SANITARY SEWER - SSMH 5 TO SSMH 5B PLAN



PROFILE VIEW
GRAPHIC SCALE
1" = 50' HORZ.
1" = 5' VERT.
0 50 100

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WR PROJECT NO. 23-0576

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 056166 SPENCER W. MEEKINS
8/21/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

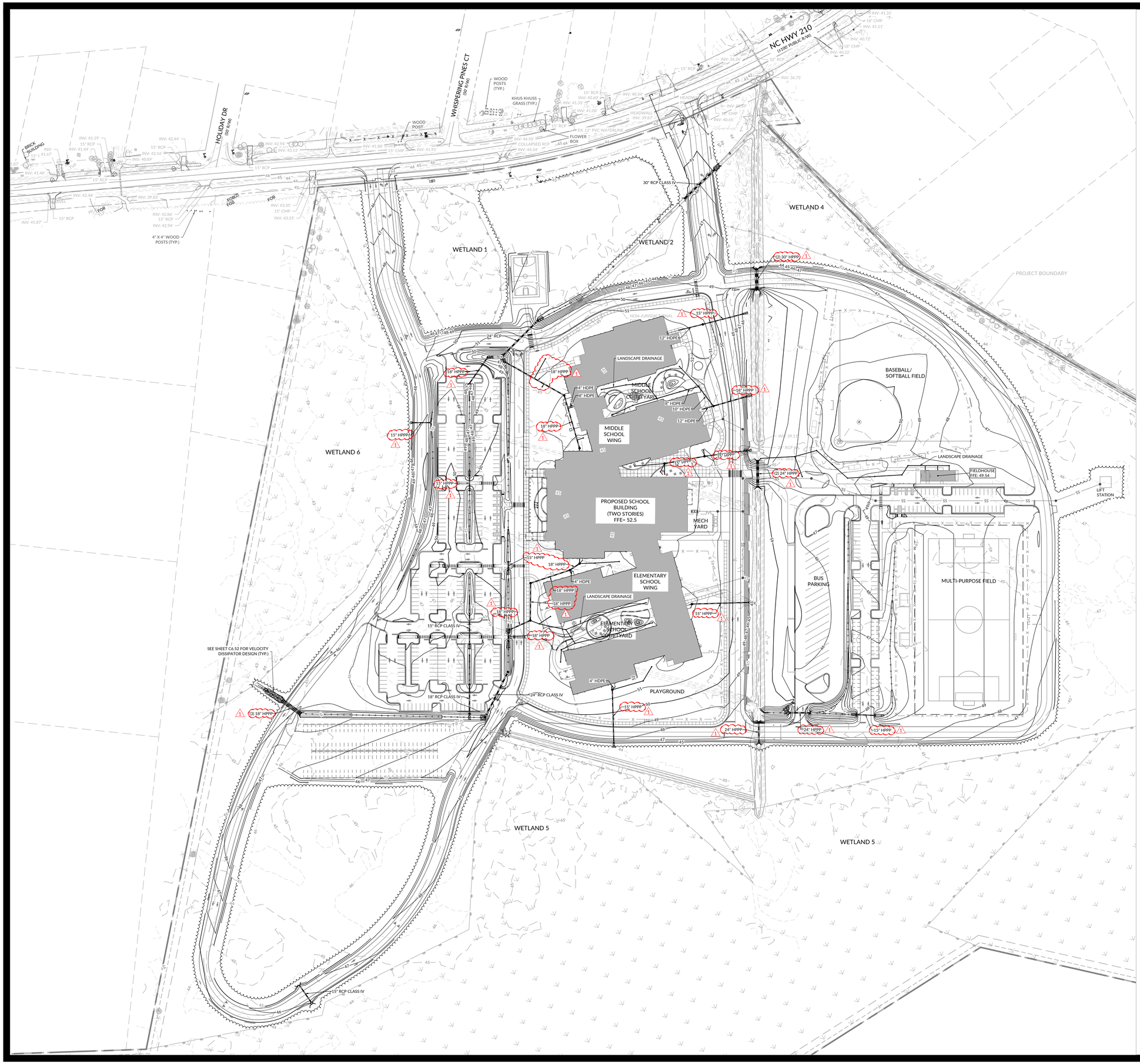
PROJECT NO: 631310
DATE: 8/06/2024

REVISIONS

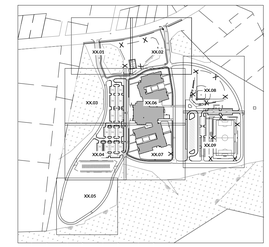
DATE	DESCRIPTION
08/21/2024	1 - GMP 2, ADDENDUM 2

SANITARY SEWER PLAN AND PROFILE

C3.03



KEY MAP



DRAINAGE & GRADING LEGEND:

SYMBOL	DESCRIPTION
101	EXISTING CONTOUR MINOR
100	EXISTING CONTOUR MAJOR
101	PROPOSED CONTOUR MINOR
100	PROPOSED CONTOUR MAJOR
	PROPOSED STORM PIPE
	PROPOSED FLARED END SECTION
	PROPOSED WINGWALL
	PROPOSED CLEANOUT
	PROPOSED MANHOLE
	PROPOSED LANDSCAPE AREA DRAIN

NOTE:
ALL PROPOSED SWALE SIDE SLOPES SHALL NOT BE STEEPER THAN 3:1.

SCALE: 1 inch = 80 ft.

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8/21/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: 8/06/2024

REVISIONS

DATE	DESCRIPTION
08/21/2024	1 - GMP 2, ADDENDUM 2

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WR PROJECT NO. 23-0576

OVERALL STORM DRAINAGE AND GRADING PLAN

C4.00

J:\23\0576-Moseley Architects - Pender County - DB New K-8 School\CAD\Drawing Sets\DDs\C4.00 OVERALL STORM DRAINAGE AND GRADING PLAN.dwg- Wednesday, August 21, 2024 4:26:47 PM - JSCOTT

NC HWY 210 IMPROVEMENTS
OFF-SITE IMPROVEMENTS ALONG NC HWY 210 WILL BE EVALUATED AND DESIGNED FOLLOWING TIA RESULTS (CURRENTLY UNDERWAY) MULIT-USE PATH ALONG ROW ARE PROPOSED WITH OFF-SITE ROAD IMPROVEMENTS.

NC HWY 210
(100' PUBLIC R/W)

DEANS, CALVIN CARL JR
PIN: 3282-29-1992-0000
DB 2701 PG 288
MC 19 PG 52
ZONING: RP
USE: SINGLE FAMILY

HUDSON, RANDALL E
PIN: 3282-29-3910-0000
DB 1449 PG 237
MC 19 PG 52
ZONING: RP
USE: SINGLE FAMILY

HARKER, KEVIN
PIN: 3282-29-4479-0000
DB 4796 PG 1423
MC 70 PG 132
ZONING:RP
USE: FARM

KHUS KHUSS GRASS (TYP.)

FLOWER BOX

EX. 12" PVC WATERLINE

18" CMP

15" RCP

HEADWALL INV: 39.87

HEADWALL INV: 39.53

INV: 40.34

INV: 41.08

INV: 41.23

INV: 40.60

INV: 40.65'

EX 44.54

EX 44.84

EOP: 43.93

EOP: 43.70

44.17

43.74

42.80

42.73

BFP

BFP

6' CONC SIDEWALK

WINGWALL - 300-EX
INV.: 41.50'

92.00 LF 30" RCP CLASS IV @ 1.15%

WINGWALL - (11)
INV.: 42.56'

BUS ROUTE ROAD

WETLAND 2

SEE SHEETS C7.03 FOR BUS ROUTE ROAD PLAN AND PROFILE

WETLAND 4

JURISDICTIONAL DITCH D1 (NON-WETLAND) CENTERLINE

SEE SHEETS C7.04 THROUGH C7.06 FOR RECREATIONAL LOOP ROAD PLAN AND PROFILE

NON-JURISDICTIONAL DITCH

RECREATIONAL LOOP ROAD

WINGWALL - (16)
INV.: 38.66'

(2) 46.88 LF 30" HPPP @ 0.21%

WINGWALL - (15)
INV.: 38.76

S-301-A
TRAPEZOIDAL SWALE
2' MIN. DEPTH
BOTTOM WIDTH: 6'

FES - 303-A
INV.: 44.59'

FES RD 11
INV.: 45.50'

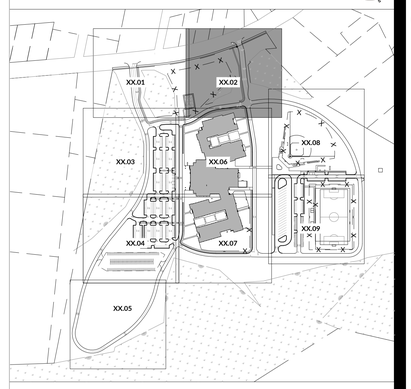
MH RD 12
RIM: 51.12'
INV. IN: 46.40' (CO 12)
INV. OUT: 46.15' (FES RD 11)

54.33 LF 12" HDPE @ 1.10%

25.17 LF 15" HDPE @ 0.76%

SEE SHEET C6.52 FOR VELOCITY DISSIPATOR DESIGN (TYP.)

KEY MAP



DRAINAGE & GRADING LEGEND:

SYMBOL	DESCRIPTION
101	EXISTING CONTOUR MINOR
100	EXISTING CONTOUR MAJOR
101	PROPOSED CONTOUR MINOR
100	PROPOSED CONTOUR MAJOR
	PROPOSED STORM PIPE
RD RD	PROPOSED ROOF DRAIN
	PROPOSED FLARED END SECTION
	PROPOSED WINGWALL
	PROPOSED CLEANOUT PROPOSED LANDSCAPE AREA DRAIN
	PROPOSED MANHOLE
	PROPOSED LANDSCAPE AREA DRAIN (ADS NYLOPLAST DRAIN BASIN OR APPROVED EQUAL)
101.00	PROPOSED SPOT ELEVATION
TOC: 101.00	PROPOSED SPOT ELEVATION TOP OF CURB
FL: 101.00	PROPOSED SPOT ELEVATION FLOW LINE
EOP: 101.00	PROPOSED SPOT ELEVATION EDGE OF PAVEMENT

NOTES:
1. ALL PROPOSED SWALE SIDE SLOPES SHALL NOT BE STEEPER THAN 3:1.
2. ROOF LEADER AND DOWN SPOUT LOCATIONS AND INVERTS ON THE PLUMBING PLANS SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION OF SITE STORM DRAINAGE SYSTEM. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES ARE DISCOVERED.
3. ADA PARKING AND AISLE SHALL BE 2.0% MAXIMUM IN ALL DIRECTIONS.
4. SIDEWALKS SHALL MAINTAIN A MAXIMUM LONGITUDINAL GRADE OF 5% AND A MAXIMUM GRADE OF 2%.
5. SEE TABLE ON SHEET C6.52 FOR RIP RAP OUTLET PROTECTION SIZING. RIP RAP APRONS SHALL BE SIZED AS SHOWN ON THE PLANS OR AS DIMENSIONED IN THE TABLE, WHICHEVER IS GREATER.
6. HPPP AND HDPE PIPE ON THE SITE SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS AND DETAILS INCLUDING, BUT NOT LIMITED TO:
   6.1. BEDDING AND BACKFILL TO CONCRETE FLARED END SECTIONS, HEADWALLS, AND STRUCTURES.
   6.2. BEDDING AND ANCHORING REQUIREMENTS FOR PIPE INSTALLATION AT OR BELOW THE SEASON HIGH WATER TABLE TO PREVENT PIPE FLOTATION.

SCALE: 1 inch = 20 ft.

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NORTH CAROLINA PROFESSIONAL SEAL 056186 ENGINEER SPENCER W. MEEKINS
8/21/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

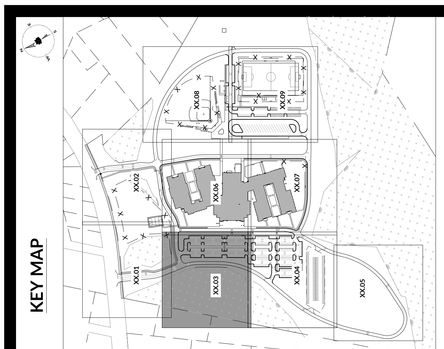
PROJECT NO:	631310
DATE:	8/06/2024

REVISIONS

DATE	DESCRIPTION
08/21/2024	1 - GMP 2, ADDENDUM 2

STORM DRAINAGE AND GRADING PLAN

C4.02



KEY MAP

DRAINAGE & GRADING LEGEND:

SYMBOL	DESCRIPTION
- -101- -	EXISTING CONTOUR MINOR
—100—	EXISTING CONTOUR MAJOR
—101—	PROPOSED CONTOUR MINOR
—100—	PROPOSED CONTOUR MAJOR
▬ ▭ ▬ ▭	PROPOSED STORM PIPE
—RD—RD—	PROPOSED ROOF DRAIN
◗	PROPOSED FLARED END SECTION
⌒	PROPOSED WINGWALL
•	PROPOSED CLEANOUT PROPOSED LANDSCAPE AREA DRAIN
●	PROPOSED MANHOLE
■	PROPOSED LANDSCAPE AREA DRAIN (ADS NYLOPLAST DRAIN BASIN OR APPROVED EQUAL)
101.00	PROPOSED SPOT ELEVATION
TOC: 101.00	PROPOSED SPOT ELEVATION TOP OF CURB
FL: 101.00	PROPOSED SPOT ELEVATION FLOW LINE
EOP: 101.00	PROPOSED SPOT ELEVATION EDGE OF PAVEMENT

NOTES:

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3. ADA PARKING AND AISLE SHALL BE 2.0% MAXIMUM IN ALL DIRECTIONS.
4. SIDEWALKS SHALL MAINTAIN A MAXIMUM LONGITUDINAL GRADE OF 5% AND A MAXIMUM GRADE OF 2%.
5. SEE TABLE ON SHEET C6.52 FOR RIP RAP OUTLET PROTECTION SIZING. RIP RAP APRONS SHALL BE SIZED AS SHOWN ON THE PLANS OR AS DIMENSIONED IN THE TABLE, WHICHEVER IS GREATER.
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056188
SPENSER W. MEEKINS
8/21/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: 8/06/2024

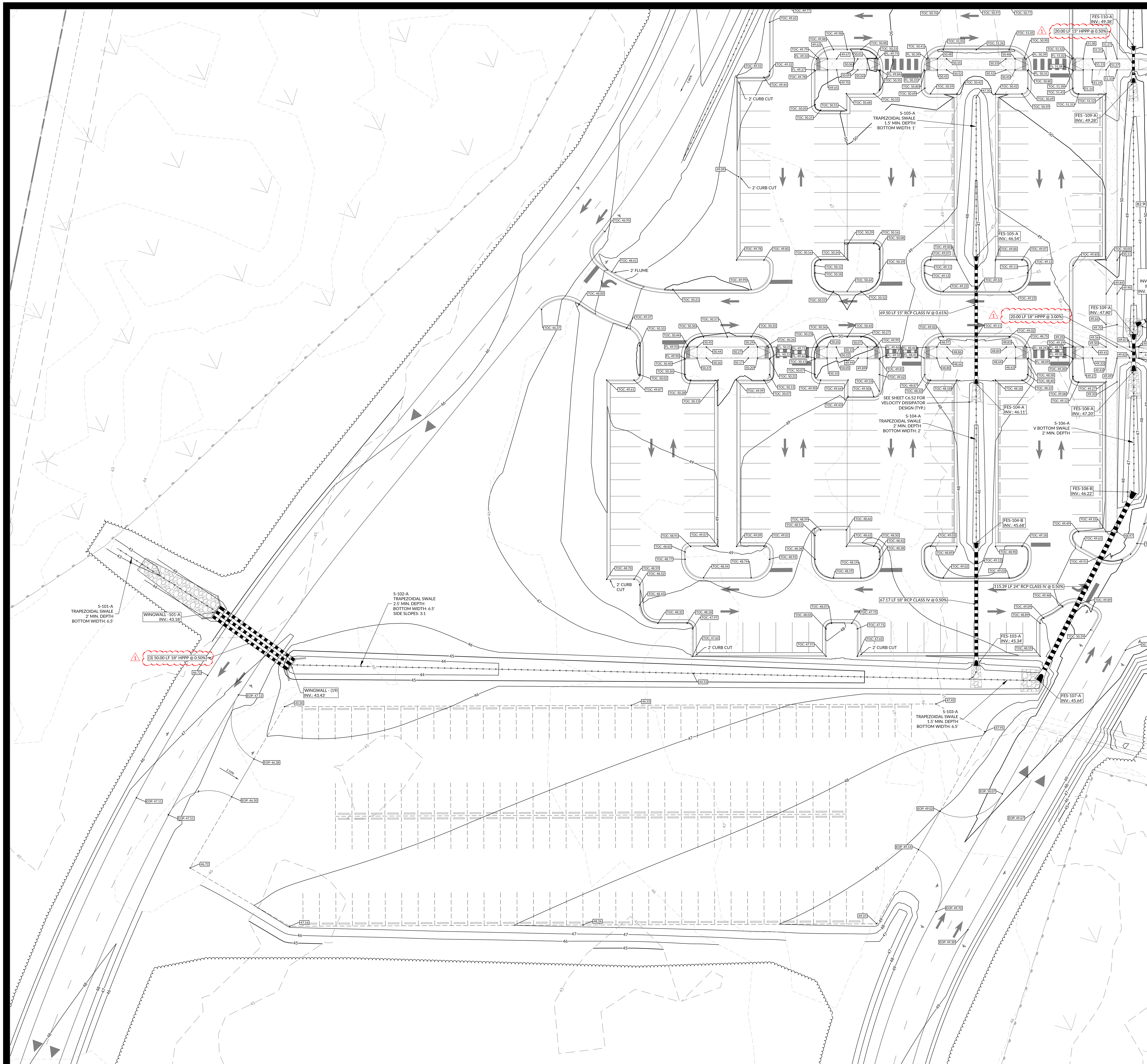
REVISIONS

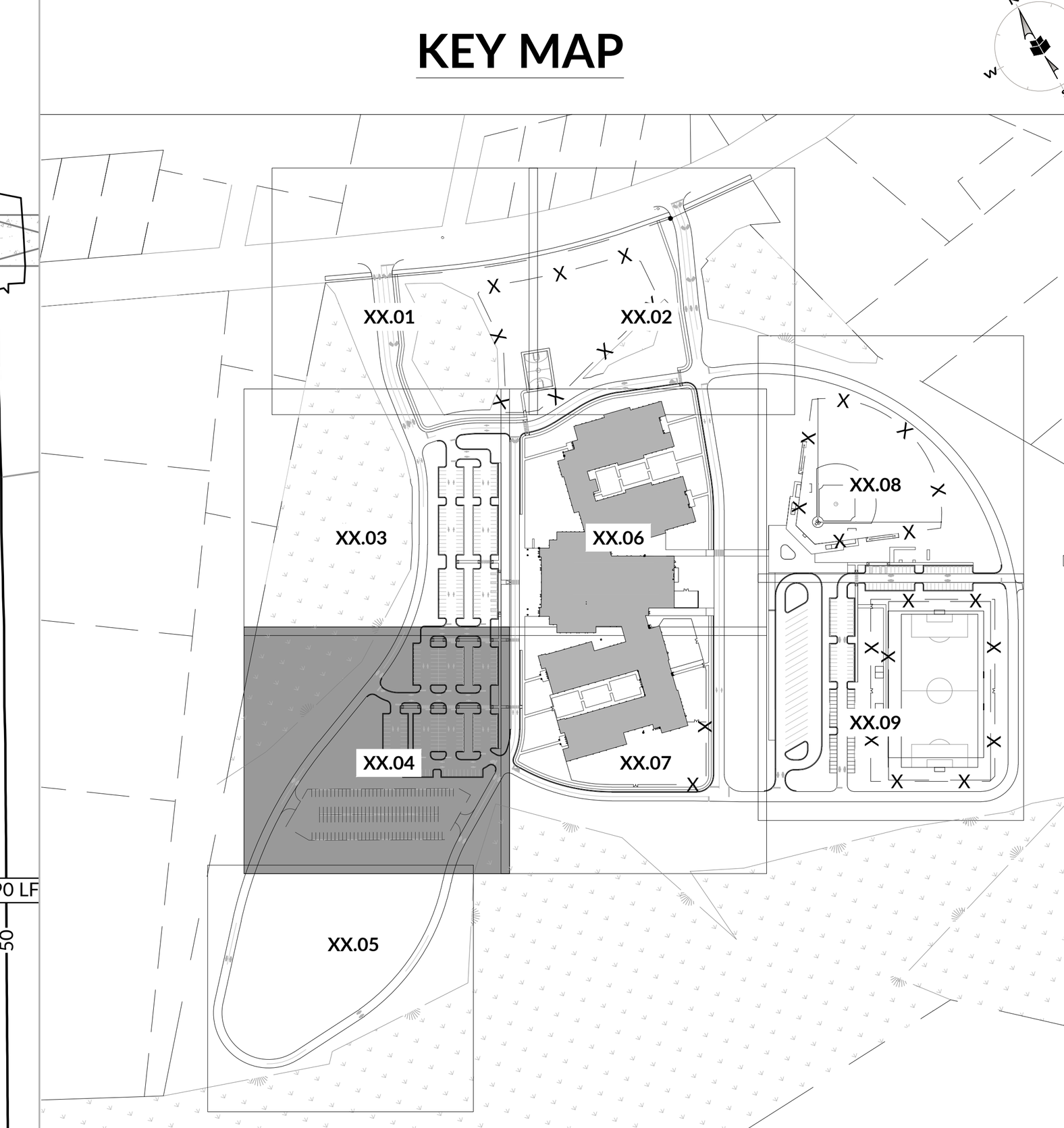
DATE	DESCRIPTION
08/21/2024	1 - GMP 2, ADDENDUM 2

STORM DRAINAGE AND GRADING PLAN

C4.03

J:\23\0576-Moseley Architects - Pender County - DB New K-8 School\CAD\Drawing Sets\DDs\C4.01 - C4.09 STORM DRAINAGE AND GRADING PLAN.dwg- Wednesday, August 21, 2024 4:27:56 PM - JSCOTT





DRAINAGE & GRADING LEGEND:

SYMBOL	DESCRIPTION
101 (dashed)	EXISTING CONTOUR MINOR
100 (dashed)	EXISTING CONTOUR MAJOR
101	PROPOSED CONTOUR MINOR
100	PROPOSED CONTOUR MAJOR
	PROPOSED STORM PIPE
RD RD	PROPOSED ROOF DRAIN
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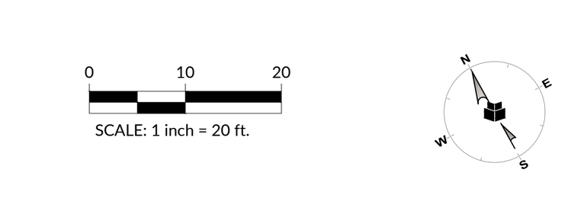
   - 6.2. BEDDING AND ANCHORING REQUIREMENTS FOR PIPE INSTALLATION AT OR BELOW THE SEASON HIGH WATER TABLE TO PREVENT PIPE FLOTATION.

8/21/2024



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PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: 8/06/2024

REVISIONS

DATE	DESCRIPTION
08/21/2024	1 - GMP 2, ADDENDUM 2

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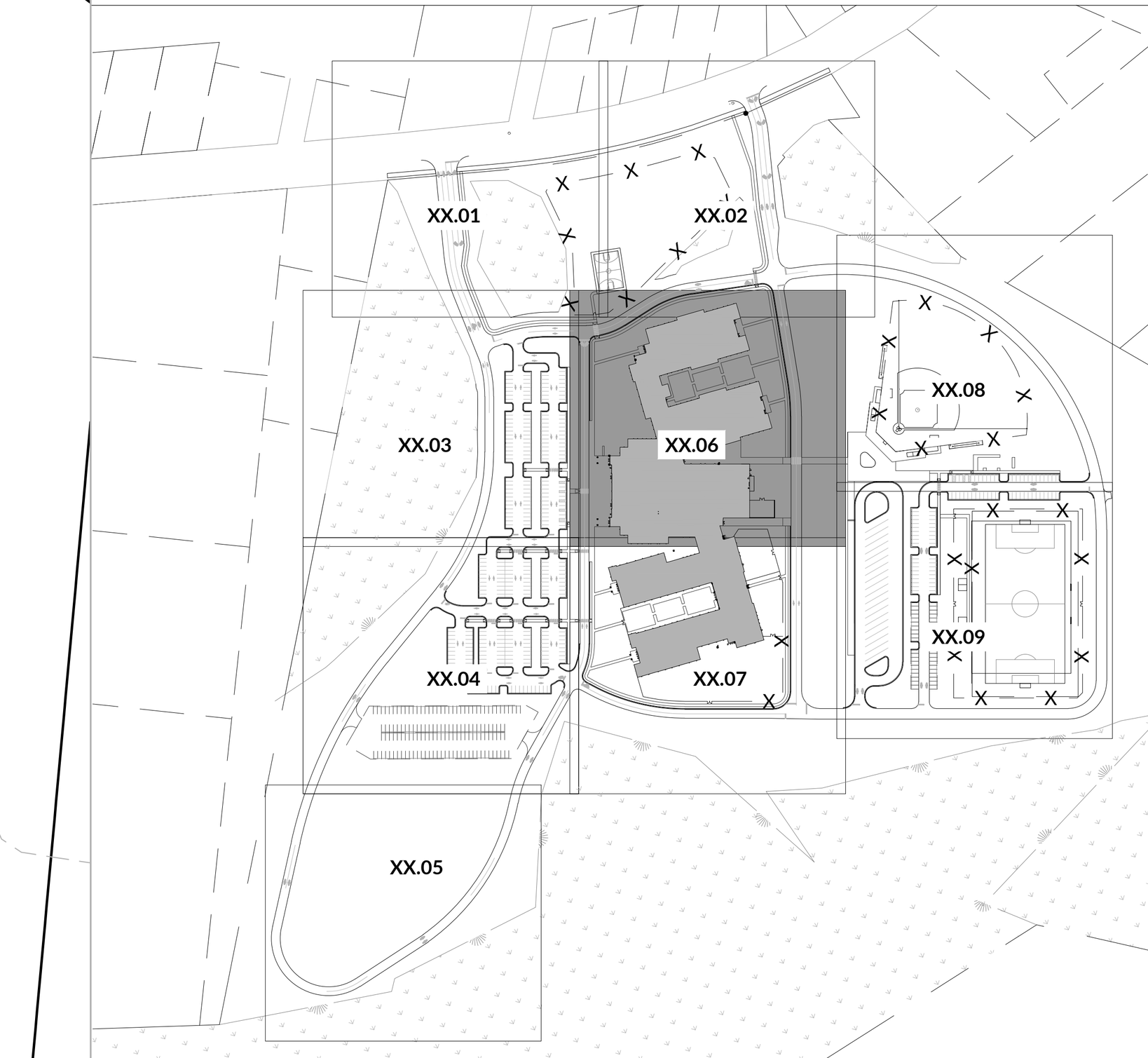
WR PROJECT NO. 23-0576

STORM DRAINAGE AND GRADING PLAN

C4.04

KEY MAP



DRAINAGE & GRADING LEGEND:

SYMBOL	DESCRIPTION
101	EXISTING CONTOUR MINOR
100	EXISTING CONTOUR MAJOR
101	PROPOSED CONTOUR MINOR
100	PROPOSED CONTOUR MAJOR
	PROPOSED STORM PIPE
RD RD	PROPOSED ROOF DRAIN
	PROPOSED FLARED END SECTION
	PROPOSED WINGWALL
	PROPOSED CLEANOUT PROPOSED LANDSCAPE AREA DRAIN
	PROPOSED MANHOLE
	PROPOSED LANDSCAPE AREA DRAIN (ADS NYLOPLAST DRAIN BASIN OR APPROVED EQUAL)
101.00	PROPOSED SPOT ELEVATION
TOC: 101.00	PROPOSED SPOT ELEVATION TOP OF CURB
FL: 101.00	PROPOSED SPOT ELEVATION FLOW LINE
EOP: 101.00	PROPOSED SPOT ELEVATION EDGE OF PAVEMENT

NOTES:

1. ALL PROPOSED SWALE SIDE SLOPES SHALL NOT BE STEEPER THAN 3:1.
2. ROOF LEADER AND DOWN SPOUT LOCATIONS AND INVERTS ON THE PLUMBING PLANS SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION OF SITE STORM DRAINAGE SYSTEM. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES ARE DISCOVERED.
3. ADA PARKING AND AISLE SHALL BE 2.0% MAXIMUM IN ALL DIRECTIONS.
4. SIDEWALKS SHALL MAINTAIN A MAXIMUM LONGITUDINAL GRADE OF 5% AND A MAXIMUM GRADE OF 2%.
5. SEE TABLE ON SHEET C6.52 FOR RIP RAP OUTLET PROTECTION SIZING. RIP RAP APRONS SHALL BE SIZED AS SHOWN ON THE PLANS OR AS DIMENSIONED IN THE TABLE, WHICHEVER IS GREATER.
6. HPPP AND HDPE PIPE ON THE SITE SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS AND DETAILS INCLUDING, BUT NOT LIMITED TO:
   6.1. CONNECTIONS TO CONCRETE FLARED END-SECTIONS, HEADWALLS, AND STRUCTURES.
   6.2. BEDDING AND ANCHORING REQUIREMENTS FOR PIPE INSTALLATION AT OR BELOW THE SEASON HIGH WATER TABLE TO PREVENT PIPE FLOTATION.

SCALE: 1 inch = 20 ft.

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NORTH CAROLINA PROFESSIONAL SEAL 056186 ENGINEER SPENSER W. MEEKINS
8/21/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

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08/21/2024	1 - GMP 2, ADDENDUM 2

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WR PROJECT NO. 23-0576

STORM DRAINAGE AND GRADING PLAN

C4.06

J:\23\0576-Moseley Architects - Pender County - DB New K-8 School\CAD\Drawing Sets\DDs\C4.01 - C4.09 STORM DRAINAGE AND GRADING PLAN.dwg- Wednesday, August 21, 2024 4:28:38 PM - JSCOTT

KEY MAP

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MOSELEYARCHITECTS.COM

DRAINAGE & GRADING LEGEND:

SYMBOL	DESCRIPTION
— — 101 — —	EXISTING CONTOUR MINOR
—— 100 ——	EXISTING CONTOUR MAJOR
—— 101 ——	PROPOSED CONTOUR MINOR
—— 100 ——	PROPOSED CONTOUR MAJOR
▬▭▬▭▬	PROPOSED STORM PIPE
—RD——RD—	PROPOSED ROOF DRAIN
	PROPOSED FLARED END SECTION
	PROPOSED WINGWALL
•	PROPOSED CLEANOUT PROPOSED LANDSCAPE AREA DRAIN
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056186
SPENSER W. MEEKINS
8/21/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: 8/06/2024

REVISIONS	
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08/21/2024	1 - GMP 2, ADDENDUM 2

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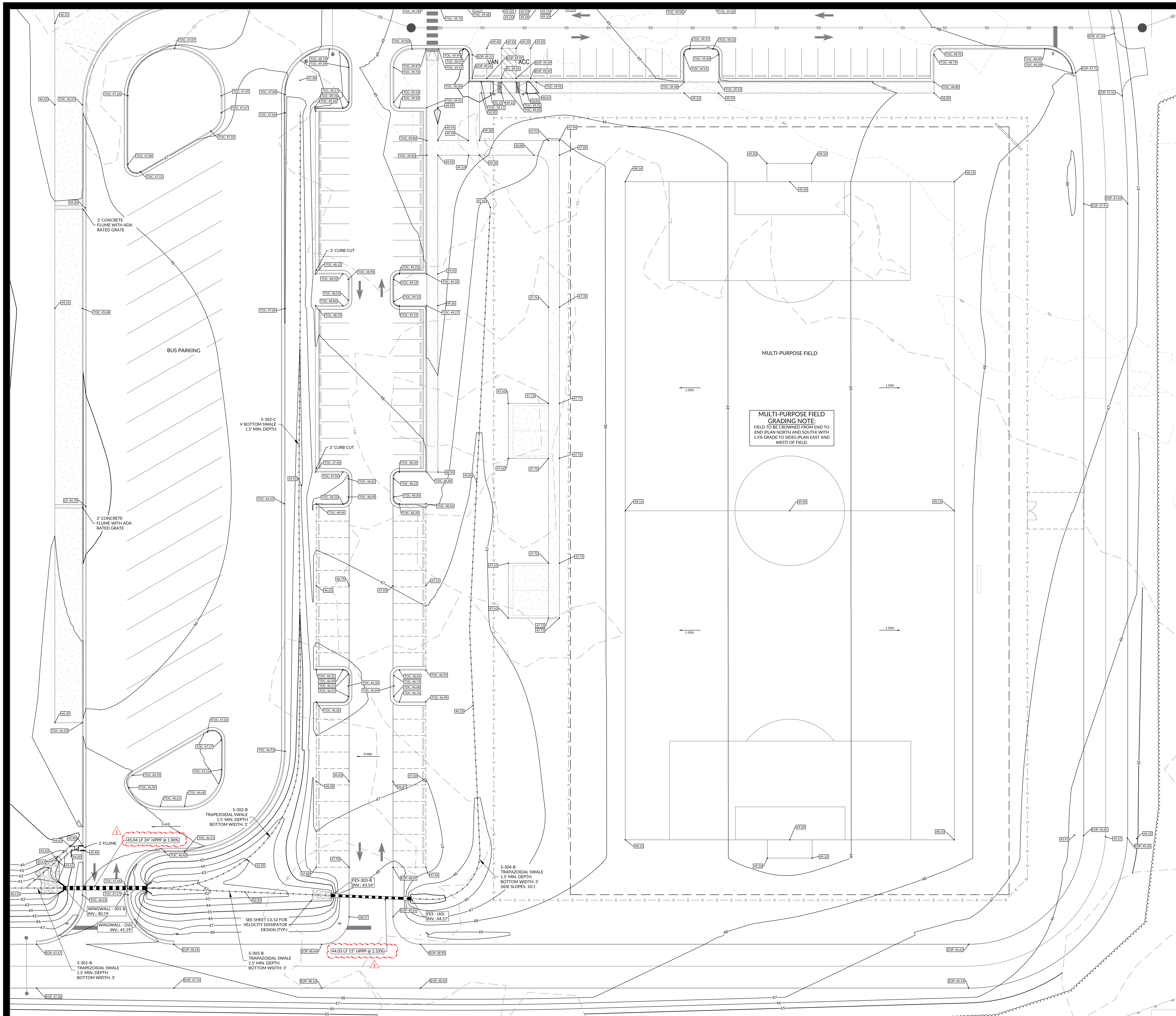
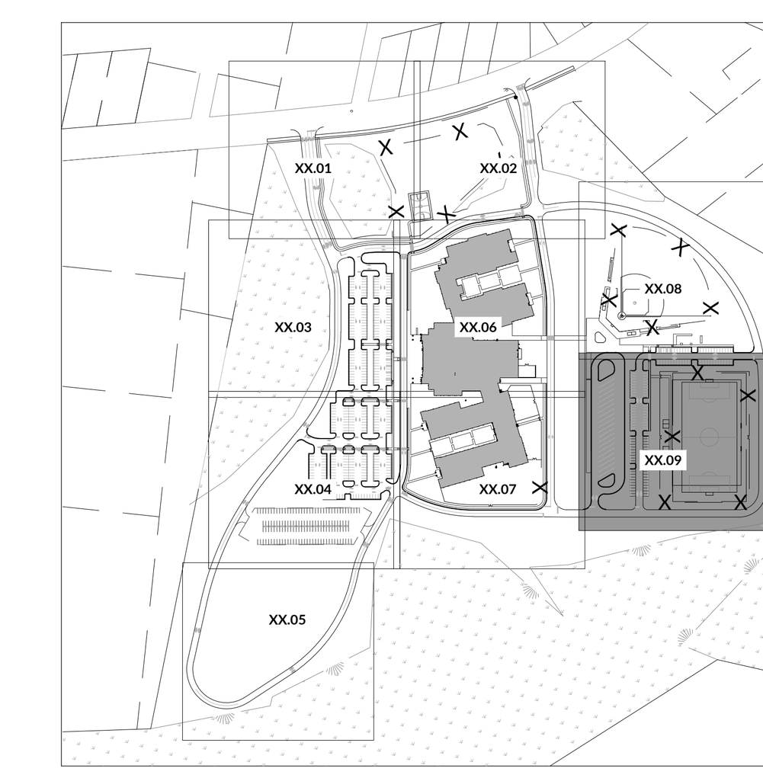
WR PROJECT NO. 23-0576

STORM DRAINAGE AND GRADING PLAN



J:\23\0576-Moseley Architects - Pender County - DB New K-8 School\CAD\Drawing Sets\DDs\C4.01 - C4.09 STORM DRAINAGE AND GRADING PLAN.dwg- Wednesday, August 21, 2024 4:29:17 PM - JSCOTT

KEY MAP



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SCALE: 1 inch = 20 ft

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8/21/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: 8/06/2024

REVISIONS	
DATE	DESCRIPTION
08/21/2024	1 - GMP 2, ADDENDUM 2

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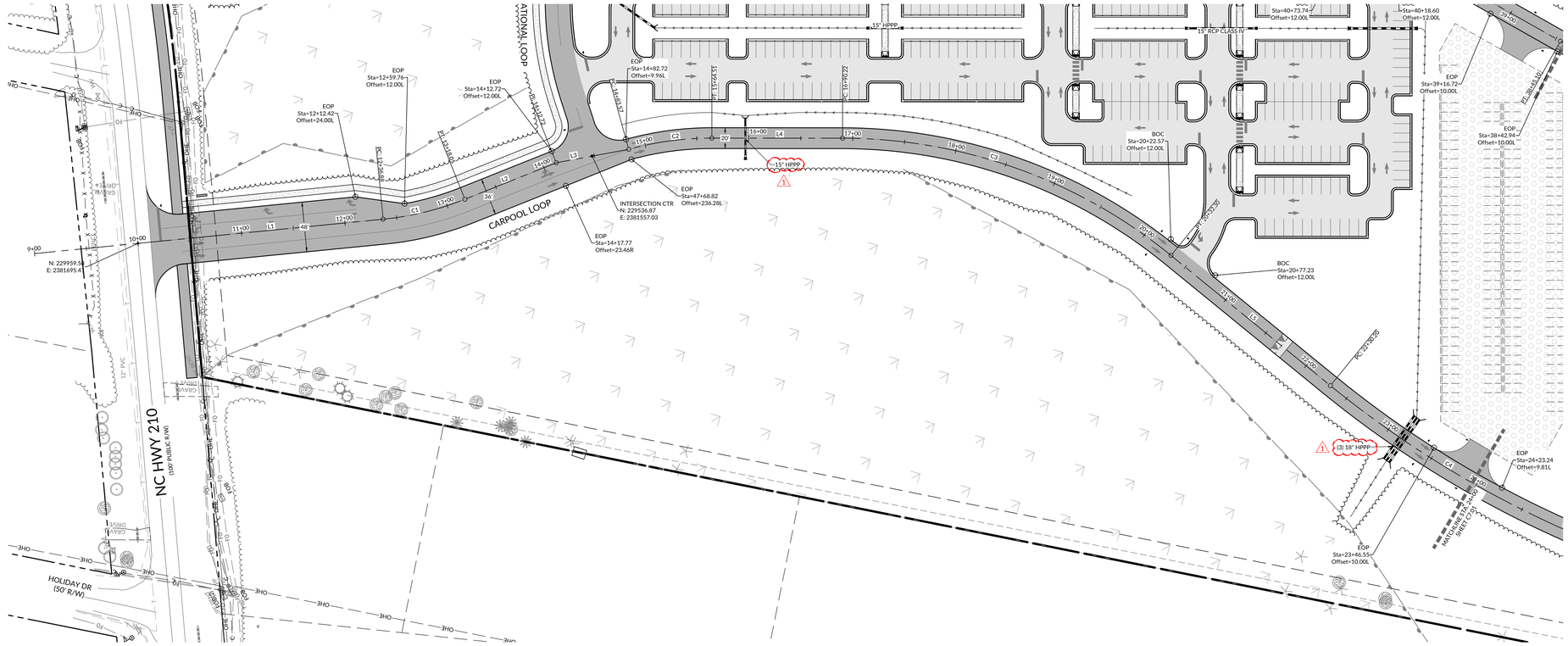
WR PROJECT NO. 23-0576

STORM DRAINAGE AND GRADING PLAN

C4.09



CARPOOL LOOP CENTERLINE

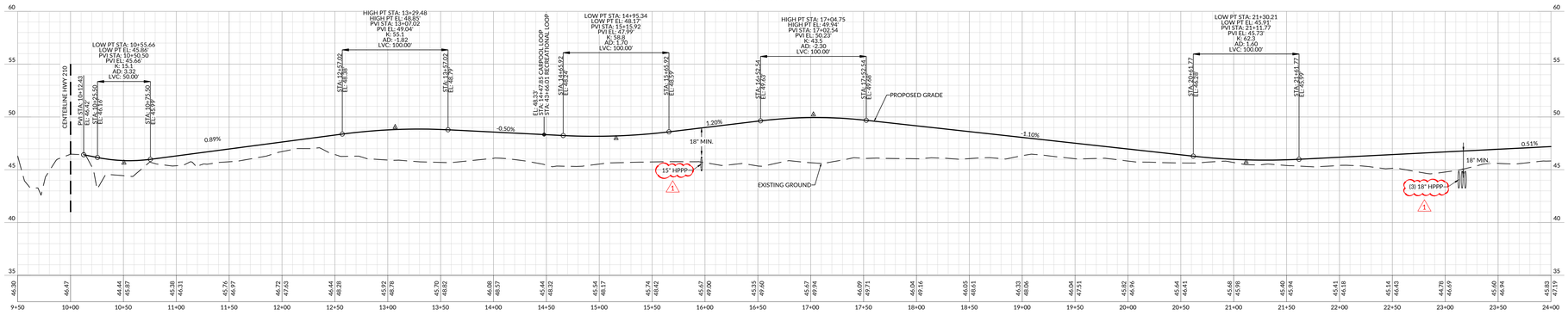
LINE TABLE

LINE #	LENGTH	DIRECTION
L1	336.88	S23° 22' 25"W
L2	94.66	S07° 13' 31"W
L3	70.86	S18° 29' 35"W
L4	125.71	S29° 02' 28"W
L5	197.91	S68° 14' 25"W
L6	32.50	S41° 34' 11"W
L7	163.95	S41° 34' 11"W
L8	183.88	N85° 54' 24"E
L9	209.20	N58° 26' 41"E
L10	708.63	N29° 02' 28"E

CURVE TABLE

CURVE #	RADIUS	LENGTH	CHORD LENGTH	CHORD DIRECTION
C1	288.00	81.17	80.90	S15° 17' 58"W
C2	300.00	80.94	80.69	S21° 18' 44"W
C3	500.00	342.08	335.44	S48° 38' 27"W
C4	1000.01	464.38	460.22	S54° 52' 24"W
C5	120.00	284.13	222.26	S26° 15' 42"E
C6	500.00	375.98	367.19	N61° 58' 07"E
C7	350.00	110.07	109.61	N49° 26' 08"E
C8	150.00	76.98	76.14	N43° 44' 35"E

CARPOOL LOOP STA 9+5 0 - 24+00



PROFILE VIEW
GRAPHIC SCALE
1" = 50' HORZ.
1" = 5' VERT.
0 50 100

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8/21/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: 8/06/2024

REVISIONS

DATE	DESCRIPTION
08/21/2024	1 - GMP 2, ADDENDUM 2

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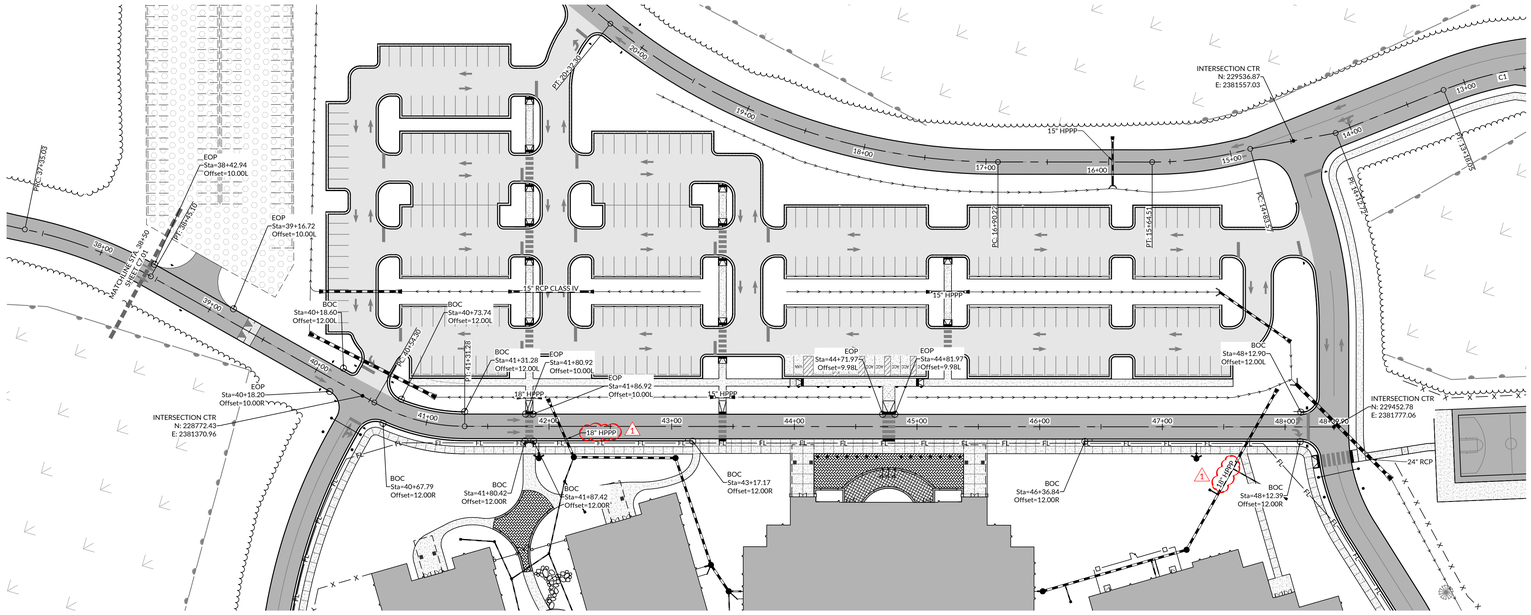
WR PROJECT NO. 23-0576

CARPOOL LOOP ROAD
PLAN & PROFILE STA
9+50-24+00

C7.00

J:\23\0576-Moseley Architects - Pender County - DB New K-8 School\CAD\Drawing Sets\DDs\C7.06 RECREATIONAL LOOP ROAD PLAN & PROFILE STA 34+50-44+00.dwg - Wednesday, August 21, 2024 4:41:59 PM - JSCOTT



0 25 50
SCALE: 1 inch = 50 ft.

CARPOOL LOOP CENTERLINE

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CURVE TABLE

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C3	500.00	342.08	335.44	S48° 38' 27"W
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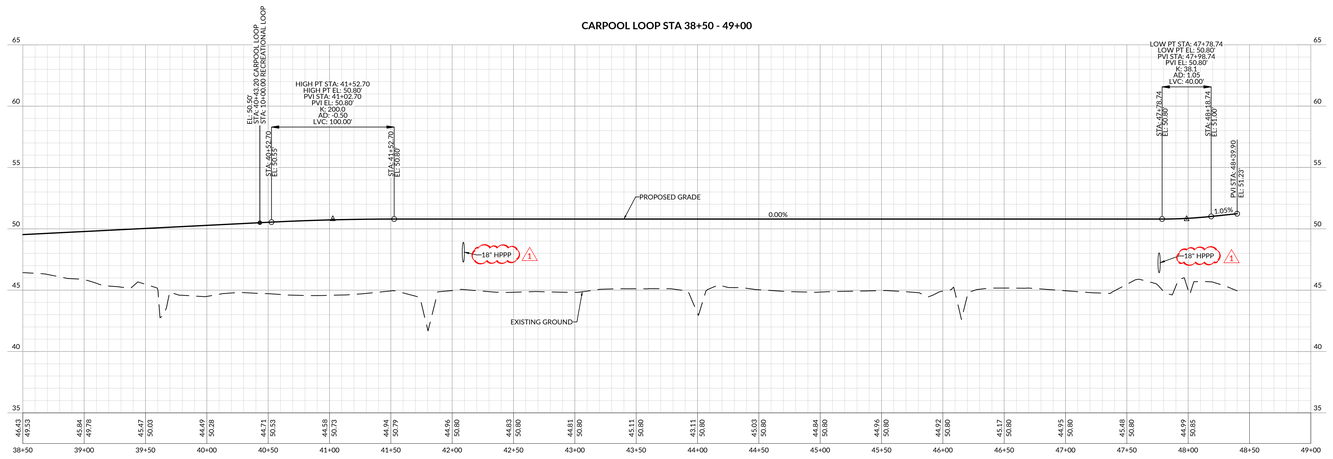

PROFILE VIEW
GRAPHIC SCALE
1" = 50' HORZ.
1" = 5' VERT.
5
0
0 50 100

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8/21/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: 8/06/2024

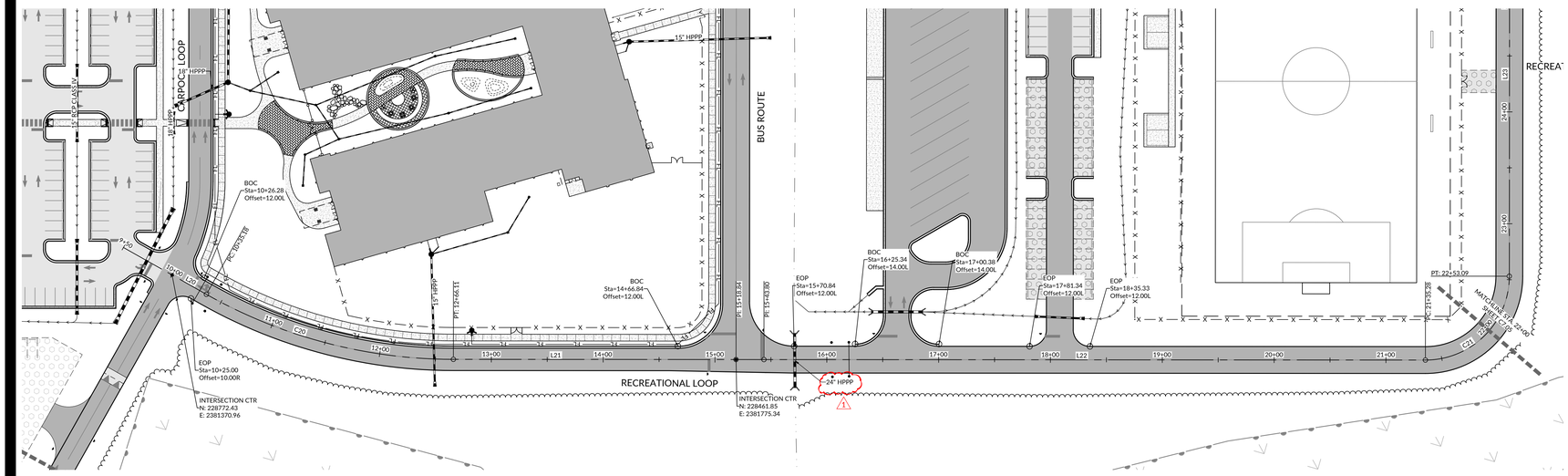
REVISIONS

DATE	DESCRIPTION
08/21/2024	1 - GMP 2, ADDENDUM 2

CARPOOL LOOP ROAD
PLAN & PROFILE STA
38+50-49+00

C7.02

J:\23\0576-Moseley Architects - Pender County - DB New K-8 School\CAD\Drawing Sets\DDs\C7.06 RECREATIONAL LOOP ROAD PLAN & PROFILE STA 34+50-44+00.dwg - Wednesday, August 21, 2024 4:42:16 PM - JSCOTT



0 25 50
SCALE: 1 inch = 50 ft.

RECREATIONAL LOOP CENTERLINE

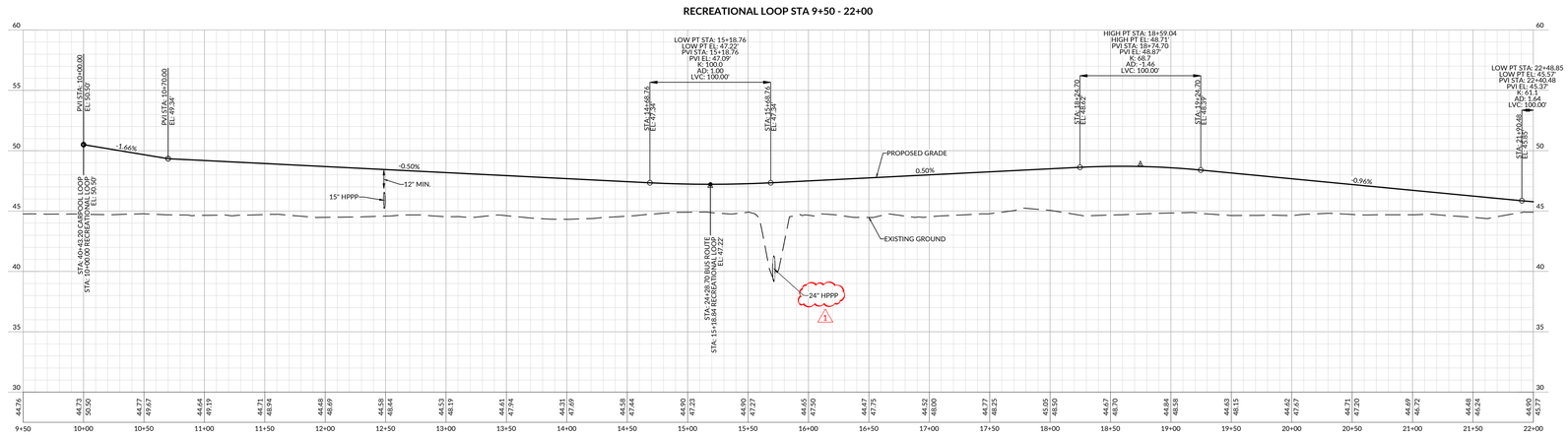
LINE TABLE

LINE #	LENGTH	DIRECTION
L20	85.18	S31° 33' 19"E
L21	252.73	S60° 57' 32"E
L22	591.47	S60° 57' 32"E
L23	342.06	N29° 02' 28"E
L24	257.63	N69° 11' 45"W
L25	257.63	N69° 11' 45"W
L26	70.81	S86° 47' 53"W
L27	87.35	N60° 57' 32"W
L28	59.79	N79° 00' 46"W

CURVE TABLE

CURVE #	RADIUS	LENGTH	CHORD LENGTH	CHORD DIRECTION
C20	450.00	230.94	228.41	S46° 15' 25"E
C21	75.00	117.81	106.07	N74° 02' 28"E
C22	590.00	1011.59	892.16	N20° 04' 38"W
C23	250.00	104.75	103.98	N81° 11' 56"W
C24	150.00	84.41	83.30	N77° 04' 49"W
C25	300.00	94.53	94.14	N69° 59' 09"W

RECREATIONAL LOOP CENTERLINE



RECREATIONAL LOOP STA 9+50 - 22+00

PROFILE VIEW
GRAPHIC SCALE
1" = 50' HORZ.
1" = 5' VERT.
0 50 100

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 056188 SPENCER W. MEEKINS
8/21/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
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RECREATIONAL LOOP ROAD PLAN & PROFILE STA 9+50-22+00

C7.04

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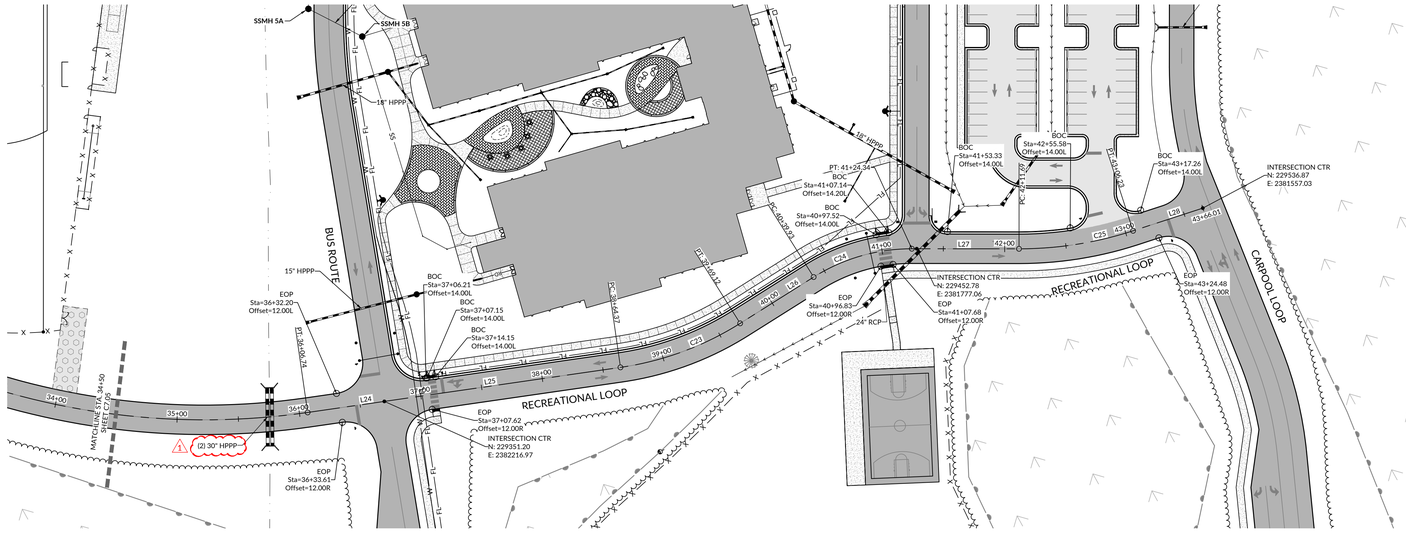
J:\23\0576-Moseley Architects - Pender County - DB New K-8 School\CAD\Drawing Sets\DDs\C7.06 RECREATIONAL LOOP ROAD PLAN & PROFILE STA 34+50-44+00.dwg - Wednesday, August 21, 2024 4:42:30 PM - JSCOTT



0 25 50
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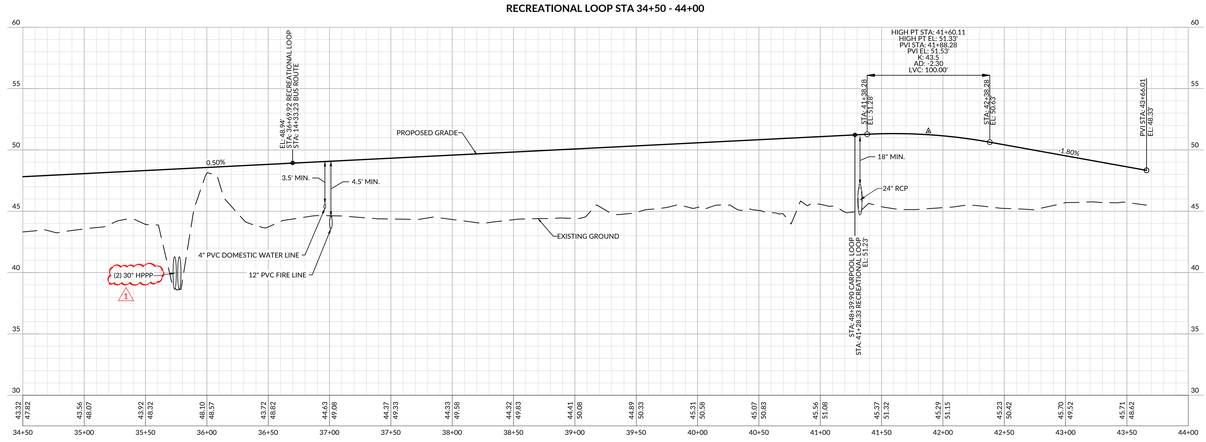
C25	300.00	94.53	94.14	N69° 59' 09"W

RECREATIONAL LOOP STA 34+50 - 44+00



PROFILE VIEW
GRAPHIC SCALE
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 056188 SPENCER W. MEEKINS
8/21/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

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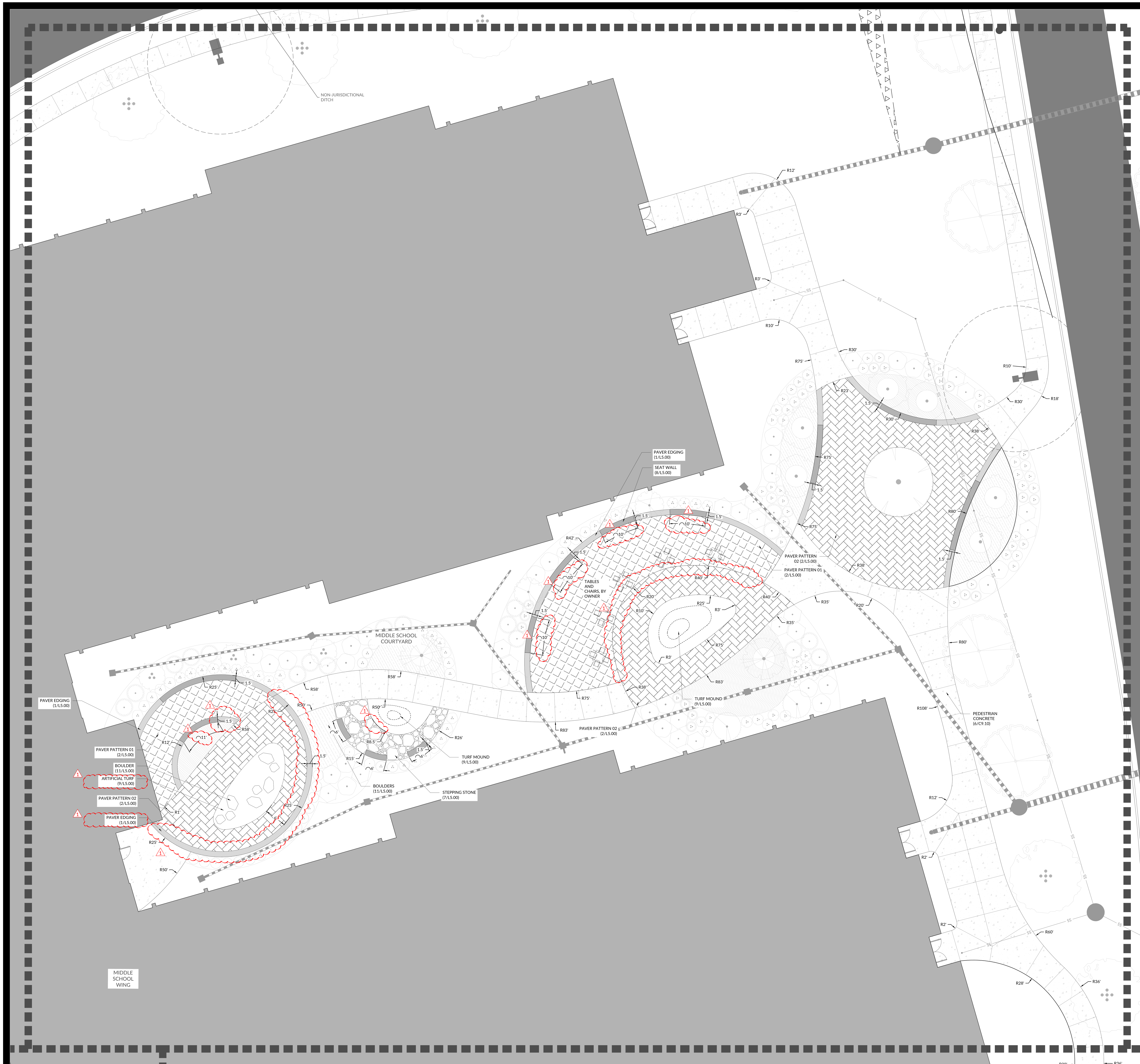
RECREATIONAL LOOP
ROAD PLAN & PROFILE
STA 34+50-44+00

C7.06



SITE LEGEND

SYMBOL	DESCRIPTION	DETAIL/SHEET
	PEDESTRIAN CONCRETE	6/C9.10
	HD VEHICULAR CONCRETE	7/C9.10
	PAVER EDGING	1/L5.00
	PAVER PATTERN 02	2/L5.00
	PAVER PATTERN 01	2/L5.00
	PLAY SURFACE	5/L5.00
	SEAT WALL	8/L5.00

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 2069 JONATHAN A. BLASCO

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

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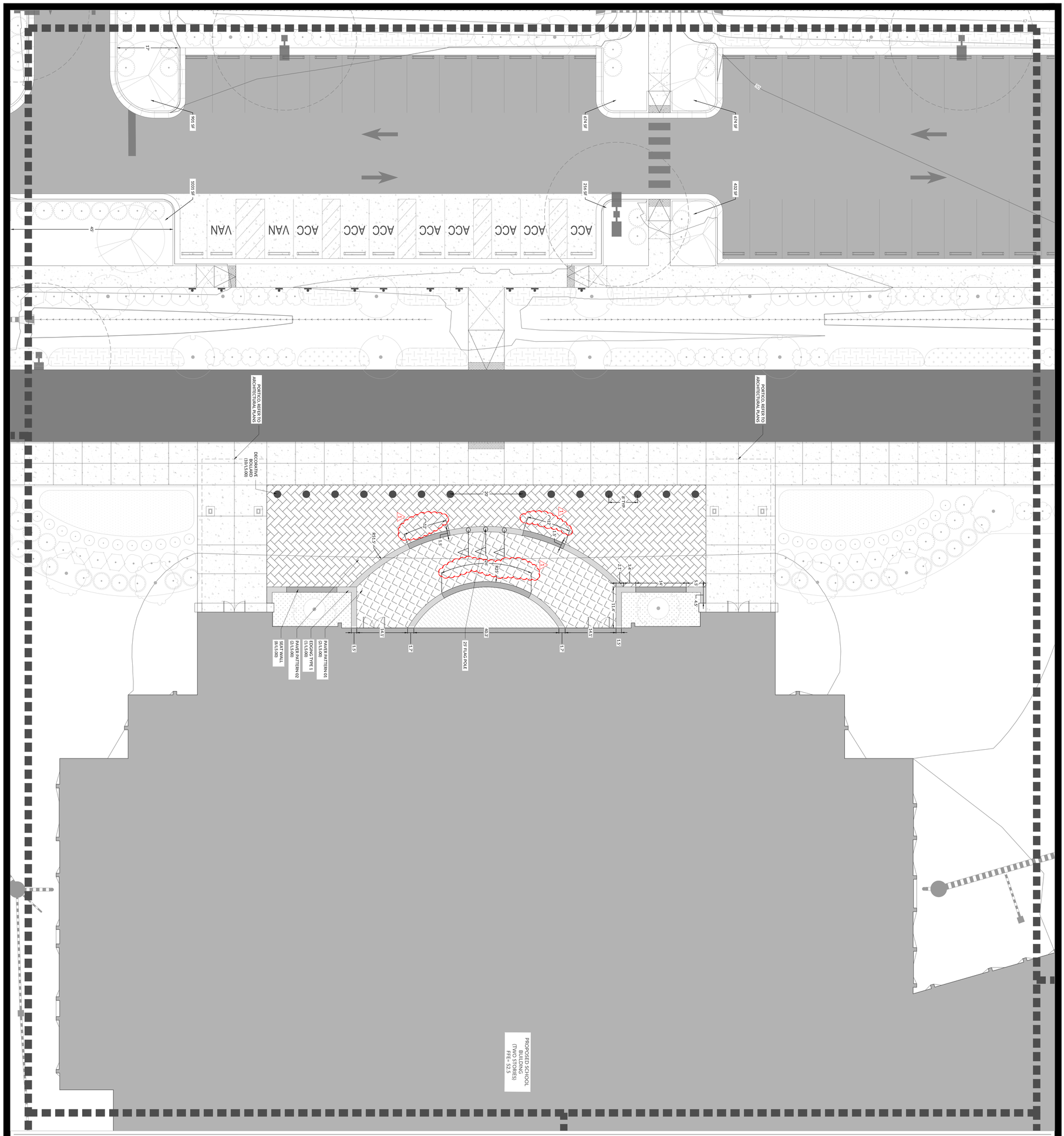
WR PROJECT NO. 23-0576

AMENITY LAYOUT PLAN

L4.01



SITE LEGEND

SYMBOL	DESCRIPTION	DETAIL/SHEET
	PEDESTRIAN CONCRETE	6/CP3.10
	HD VEHICULAR CONCRETE	7/CP3.10
	PAVER EDGING	1/L5.00
	PAVER PATTERN 02	2/L5.00
	PAVER PATTERN 01	2/L5.00
	PLAY SURFACE	5/L5.00
	SEAT WALL	8/L5.00

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WR PROJECT NO. 23-0576

SCALE: 1"=20'-0"

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO 23-0576
ISSUED 08/21/2024

DATE	REVISIONS
DATE	DESCRIPTION
08/21/2024	1 - CMP 2, ADDENDUM 2

AMENITY LAYOUT PLAN

L4.02

MOSELEYARCHITECTS
3200 NORFOLK STREET, RICHMOND, VA 23230
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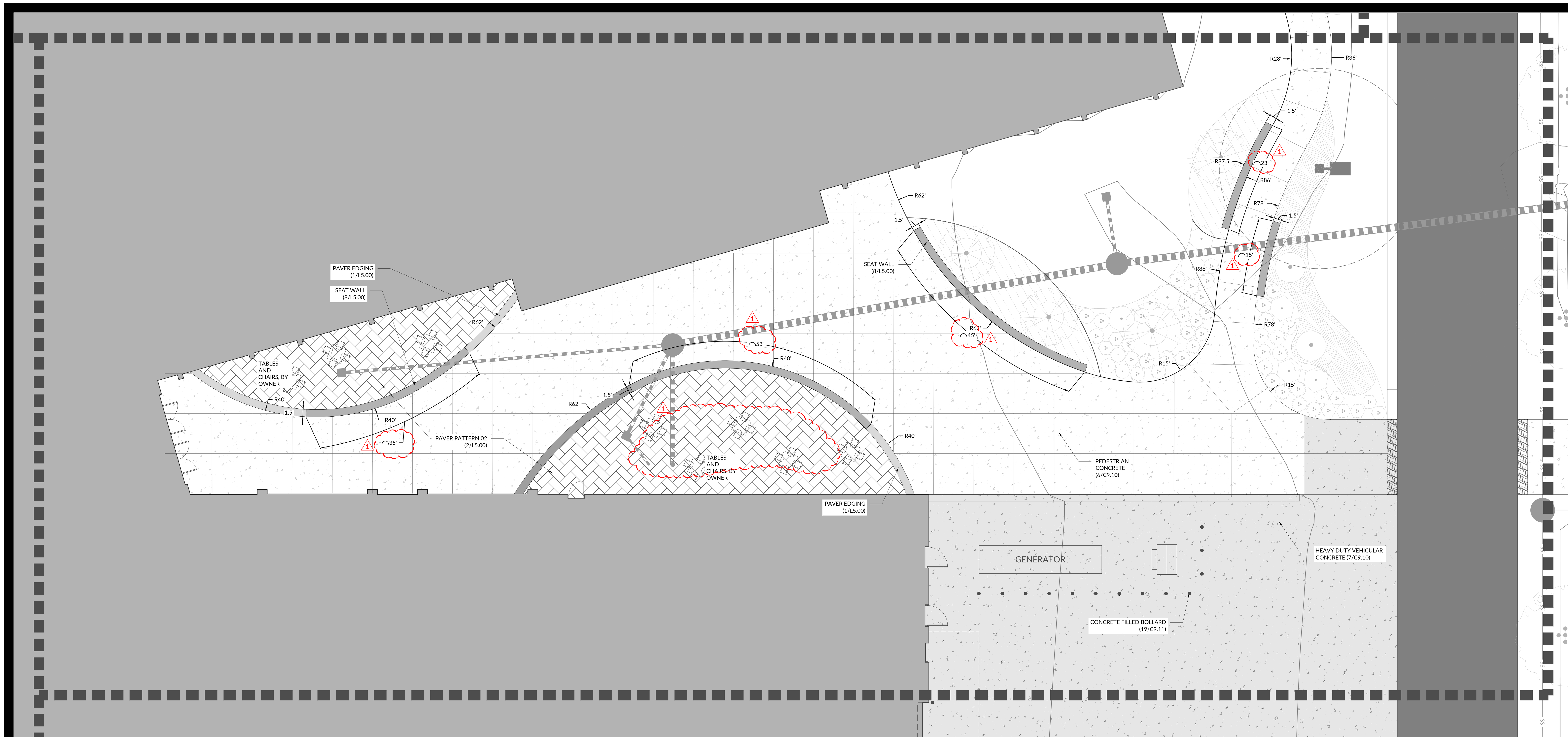

SITE LEGEND

SYMBOL	DESCRIPTION	DETAIL/SHEET
	PEDESTRIAN CONCRETE	6/C9.10
	HD VEHICULAR CONCRETE	7/C9.10
	PAVER EDGING	1/L5.00
	PAVER PATTERN 02	2/L5.00
	PAVER PATTERN 01	2/L5.00
	PLAY SURFACE	5/L5.00
	SEAT WALL	8/L5.00

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PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: 8/06/2024

REVISIONS

DATE	DESCRIPTION
08/21/2024	1 - GMP 2, ADDENDUM 2

SCALE: 1 inch = 10 ft.

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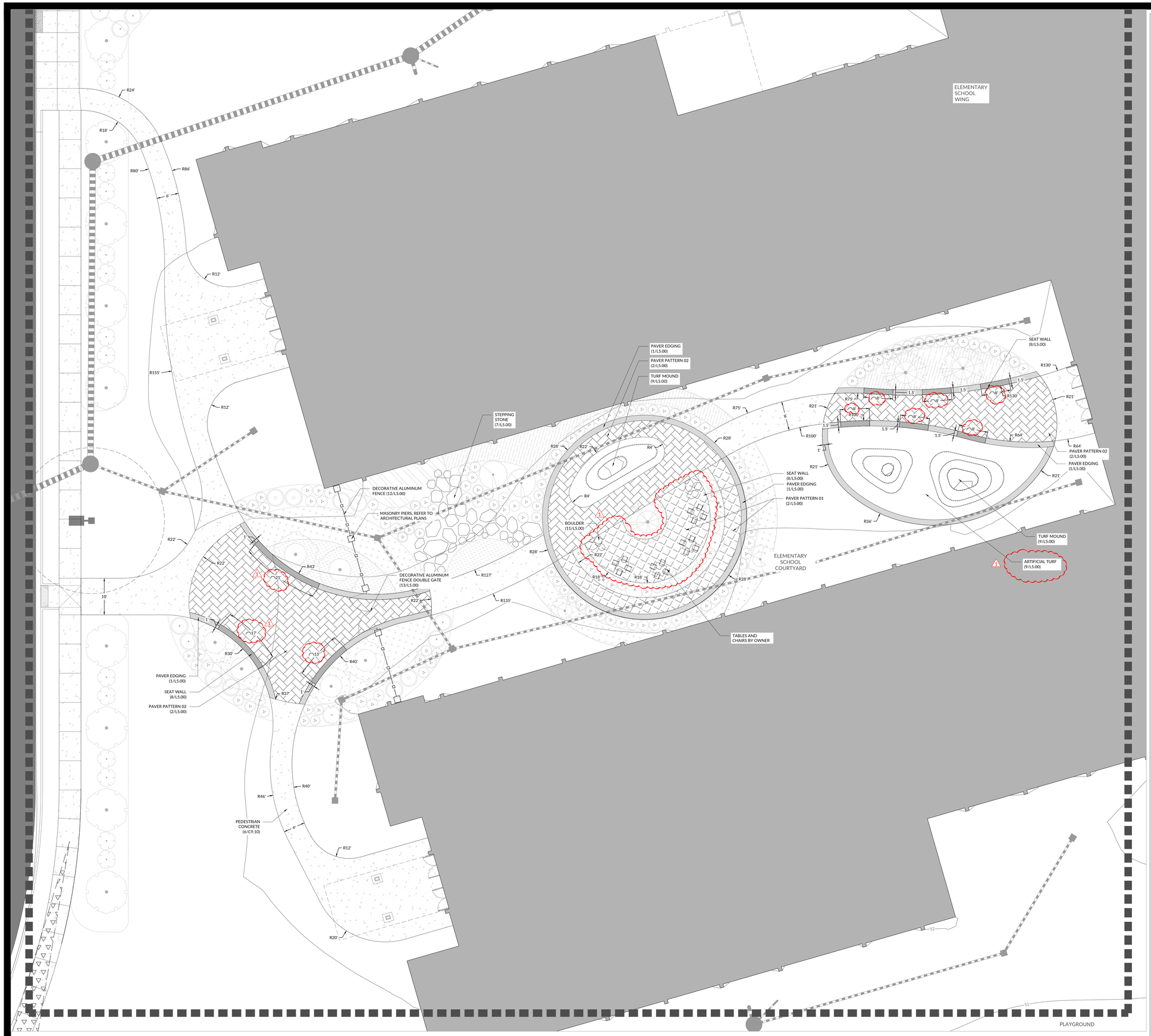
WR PROJECT NO. 23-0576

AMENITY LAYOUT PLAN

L4.03



SITE LEGEND

SYMBOL	DESCRIPTION	DETAIL/SHEET
	PEDESTRIAN CONCRETE	6/C9.10
	HD VEHICULAR CONCRETE	7/C9.10
	PAVER EDGING	1/L5.00
	PAVER PATTERN 02	2/L5.00
	PAVER PATTERN 01	2/L5.00
	PLAY SURFACE	5/L5.00
	SEAT WALL	8/L5.00

SCALE: 1 inch = 10 ft.

MOSELEYARCHITECTS
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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 2069 THOMAS A. BLACK

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WR PROJECT NO. 23-0576

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: 8/06/2024

REVISIONS

DATE	DESCRIPTION
08/21/2024	1 - GMP 2, ADDENDUM 2

AMENITY LAYOUT PLAN

L4.04

J:\23\0576-Moseley Architects - Pender County - DB New K-8 School\CAD\Drawing Sets\DDs\L4.00 Amenity Layout Plan.dwg - Wednesday, August 21, 2024 4:18:51 PM - RSHARMIN

NON-JURISDICTIONAL DITCH

MIDDLE SCHOOL COURTYARD

MIDDLE SCHOOL WING

(1) IVI
(2) LAN
(3) ROF
(2) CAH
(3) AAA
(2) ROF
(2) IVI
(3) LAN
(2) CVI
(193) CPE
(2) CCF
(6) AAA
(5) ASU
(47) CAU
(2) PYE
(3) CAH
(3) AIG
(4) IVI
(4) AGU
(1) CSO
(4) ACR
(4) AUW
(2) CAH
(1) CSO
(3) AUW
(3) AGU
(2) LCH
(1) CAJ
(3) CAH
(3) CAH
(1) CAJ
(3) LCH
(5) AGU
(1) CAJ
(2,998 sf) CDA
(2) LCH
(5) AUW
(132) CPE
(3) LCH
(38) CAU
(6) ACR
(3) GJA
(1) APA
(47) CAU
(3) ACH
(3) LCH
(4) IVI
(6) AAA
(2) LCH
(3) IVI
(3) LCH
(1) APA
(420) CPE
(84) CAU
(1) CAH
(1) ROF
(3) LAN
(3) AAA
(2) ROF
(2) IVI
(4) ACO
(2) LAN
(2) LAN
(3) ROF
(2) CAH
(3) CAH
(7) AGU
(1) CSG
(5) ASU
(1) CSG
(3) AIG
(3) CAH
(2) IVI
(4) ACH
(1,101 sf) CDA
(1,614 sf) CDA
(6) AUW
(3) GJA
(3) CHD
(3) IVI
(3) CAH
(1) IVI
(3) CHD
(2) GJA
(3) CHD
(3) GJA
(4) CHD

PLANT SCHEDULE MIDDLE SCHOOL

SYMBOL	CODE	BOTANICAL NAME
CANOPY TREES		
	GBI	GINKGO BILOBA
UNDERSTORY TREE		
	APA	ACER PALMATUM 'FIREGLOW'
	CCF	CERCIS CANADENSIS 'FOREST PANSY'
	CVI	CHIONANTHUS VIRGINICUS
	PYE	PRUNUS X YEDOENSIS
SHRUBS		
	AIG	AZALEA INDICA 'MRS. G.G. GERBING'
	ACH	AZALEA X 'CHINZAN'
	ACO	AZALEA X 'CONLED'
	ACR	AZALEA X 'CORAL BELLS'
	AGU	AZALEA X 'GUMPO PINK'
	AUW	AZALEA X 'GUMPO WHITE'
	AAA	AZALEA X 'ROBLEG'
	ASU	AZALEA X 'ROBLEN'
	CAJ	CAMELLIA JAPONICA 'APPLE BLOSSOM'
	CSO	CAMELLIA SASANQUA 'GREEN 97-039'
	CSG	CAMELLIA SASANQUA 'SHISHI GASHIRA'
	CHD	CEPHALOTAXUS HARRINGTONIA 'DUKE GA
	CAH	CLETHRA ALNIFOLIA 'HUMMINGBIRD'
	GJA	GARDENIA JASMINOIDES 'FROSTPROOF'
	IVI	ITEA VIRGINICA
	LAN	LAVANDULA ANGUSTIFOLIA
	LCH	LOROPETALUM CHINENSE 'BLUSH'
	ROF	ROSMARINUS OFFICINALIS
GROUNDCOVERS		
	CAU	CAREX ELATA 'AUREA'
	CPE	CAREX PENSYLVANICA
	CDA	CYNODON DACTYLON TIFTUF

NOTE: ALL DISTURBED AREAS NOT NOTED FOR SOD, LANDSCAPE BEDS, OR HARDSCAPE SHALL BE SEEDED WITH TURF GRASS PER THE SPECIFICATIONS.

SCALE: 1 inch = 10 ft.

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WR PROJECT NO. 23-0576

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT JONATHAN A. BLASCO 2069

8/21/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

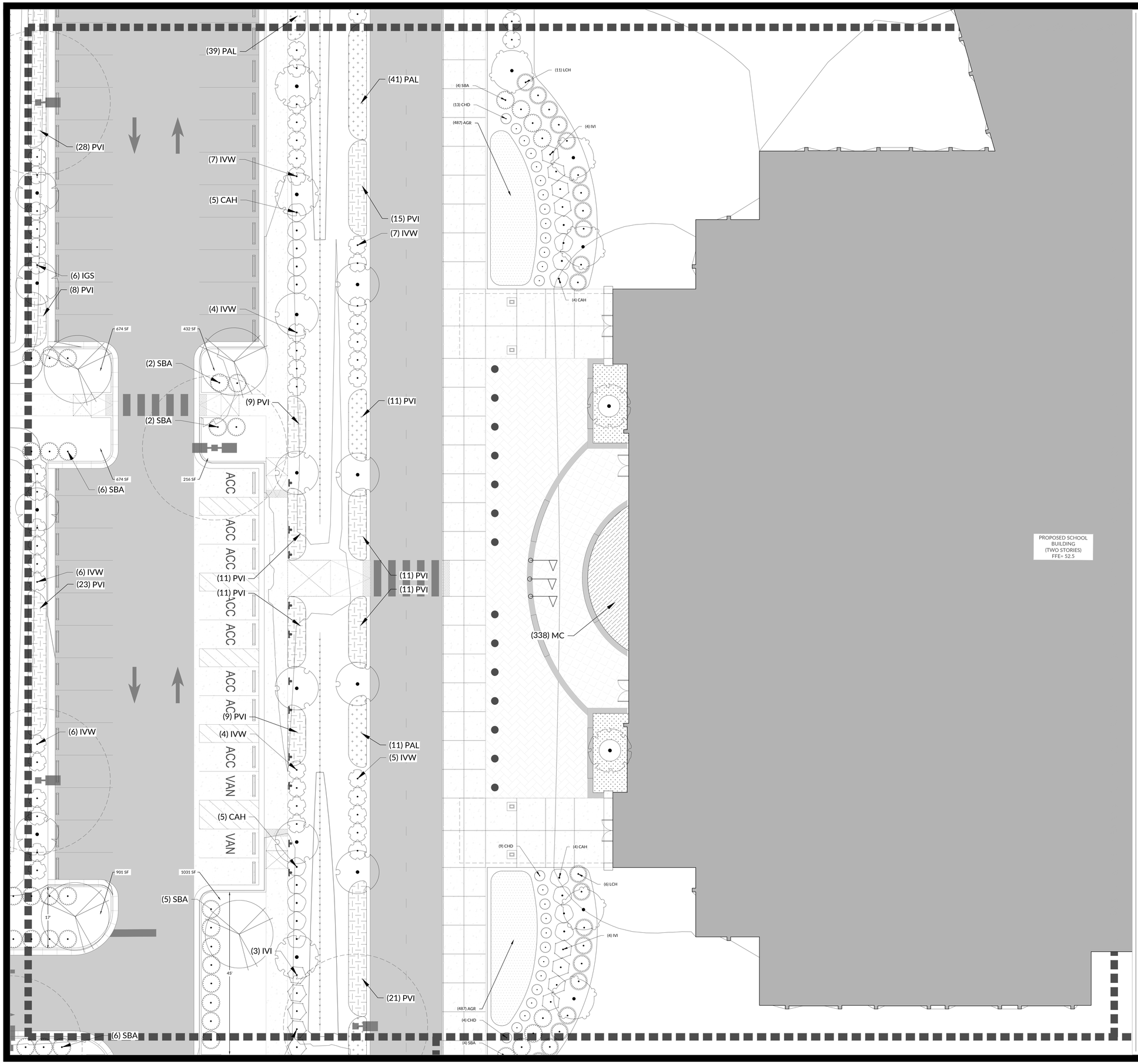
PROJECT NO: 631310
DATE: 8/06/2024

REVISIONS

DATE	DESCRIPTION
08/21/2024	1 - GMP 2, ADDENDUM 2

AMENITY PLANTING PLAN

L4.11



PLANT SCHEDULE MAIN ENTRANCE

SYMBOL	CODE	BOTANICAL NAME
UNDERSTORY TREE		
	CCF	CERCIS CANADENSIS 'FOREST PANSY'
SHRUBS		
	CHD	CEPHALOTAXUS HARRINGTONIA 'DUKE GARDENS'
	CAH	CLETHRA ALNIFOLIA 'HUMMINGBIRD'
	IGS	ILEX GLABRA 'SHAMROCK'
	IVI	ITEA VIRGINICA
	LCH	LOROPETALUM CHINENSE 'BLUSH'
	SBA	SPIRAEA X BUMALDA 'ANTHONY WATERER'
GROUNDCOVERS		
	AGR	ACORUS GRAMINEUS 'VARIEGATUS'

NOTE: ALL DISTURBED AREAS NOT NOTED FOR SOD, LANDSCAPE BEDS, OR HARDSCAPE SHALL BE SEEDED WITH TURF GRASS PER THE SPECIFICATIONS.

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NORTH CAROLINA LANDSCAPE ARCHITECT 2069 JONATHAN A. BLASCO
8/21/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

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DATE	DESCRIPTION
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SCALE: 1 inch = 10 ft.

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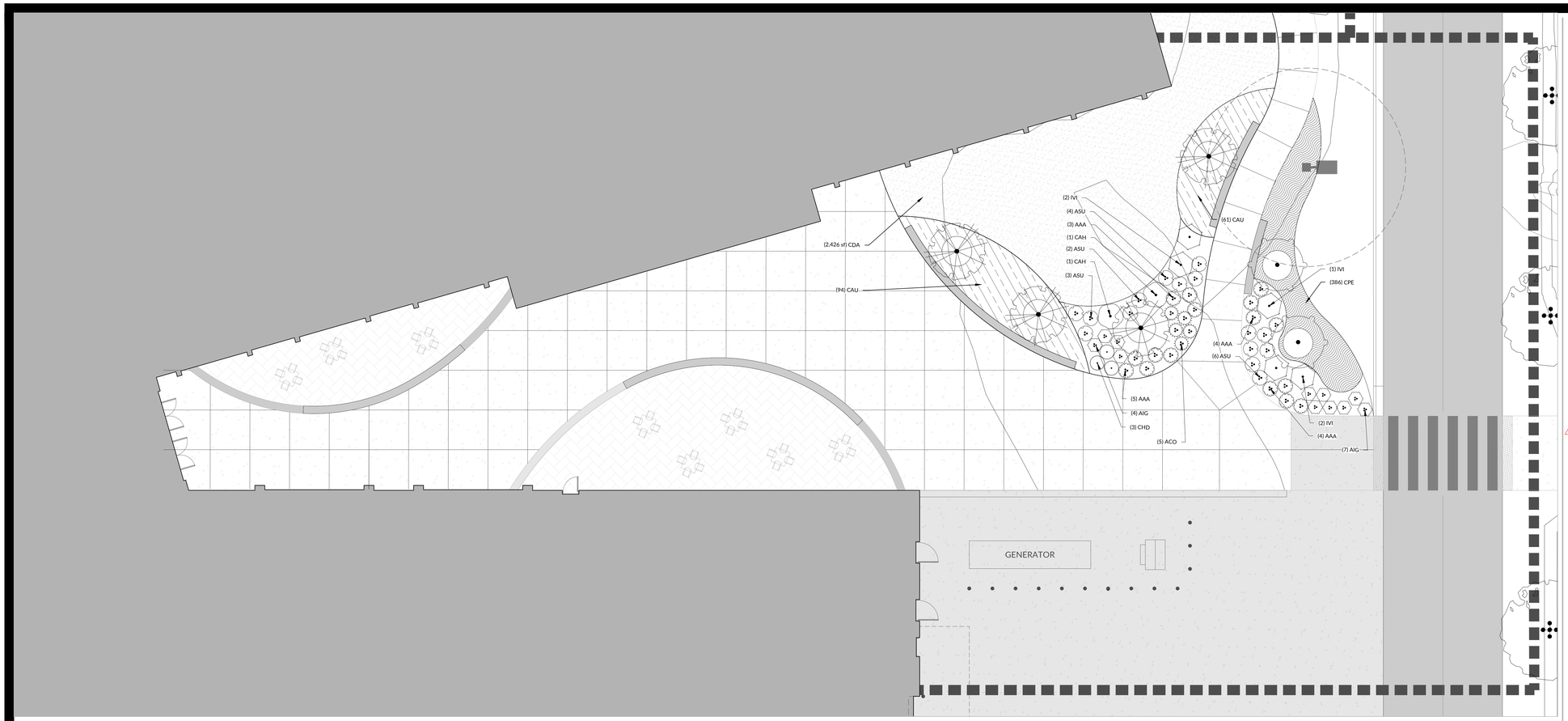
WR PROJECT NO. 23-0576

AMENITY PLANTING PLAN

L4.12

J:\23\0576-Moseley Architects - Pender County - DB New K-8 School\CAD\Drawing Sets\DDs\L5.00 Amenity Planting Plan.dwg- Thursday, August 22, 2024 11:51:59 AM - JBLASCO



PLANT SCHEDULE BUS ENTRANCE

SYMBOL	CODE	BOTANICAL NAME
UNDERSTORY TREE		
	APA	ACER PALMATUM 'FIREGLOW'
	CVI	CHIONANTHUS VIRGINICUS
SHRUBS		
	AIG	AZALEA INDICA 'MRS. G.G. GERBING'
	ACO	AZALEA X 'CONLED'
	AAA	AZALEA X 'ROBLEG'
	ASU	AZALEA X 'ROBLEN'
	CHD	CEPHALOTAXUS HARRINGTONIA 'DUKE GARDENS'
	CAH	CLETHRA ALNIFOLIA 'HUMMINGBIRD'
	IVI	ITEA VIRGINICA
GROUNDCOVERS		
	CAU	CAREX ELATA 'AUREA'
	CPE	CAREX PENSYLVANICA
	CDA	CYNODON DACTYLON TIFTUF

NOTE: ALL DISTURBED AREAS NOT NOTED FOR SOD, LANDSCAPE BEDS, OR HARDSCAPE SHALL BE SEEDED WITH TURF GRASS PER THE SPECIFICATIONS.

SCALE: 1 inch = 10 ft.

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NORTH CAROLINA LANDSCAPE ARCHITECT 2069 JONATHAN A. BLASCO

8/21/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

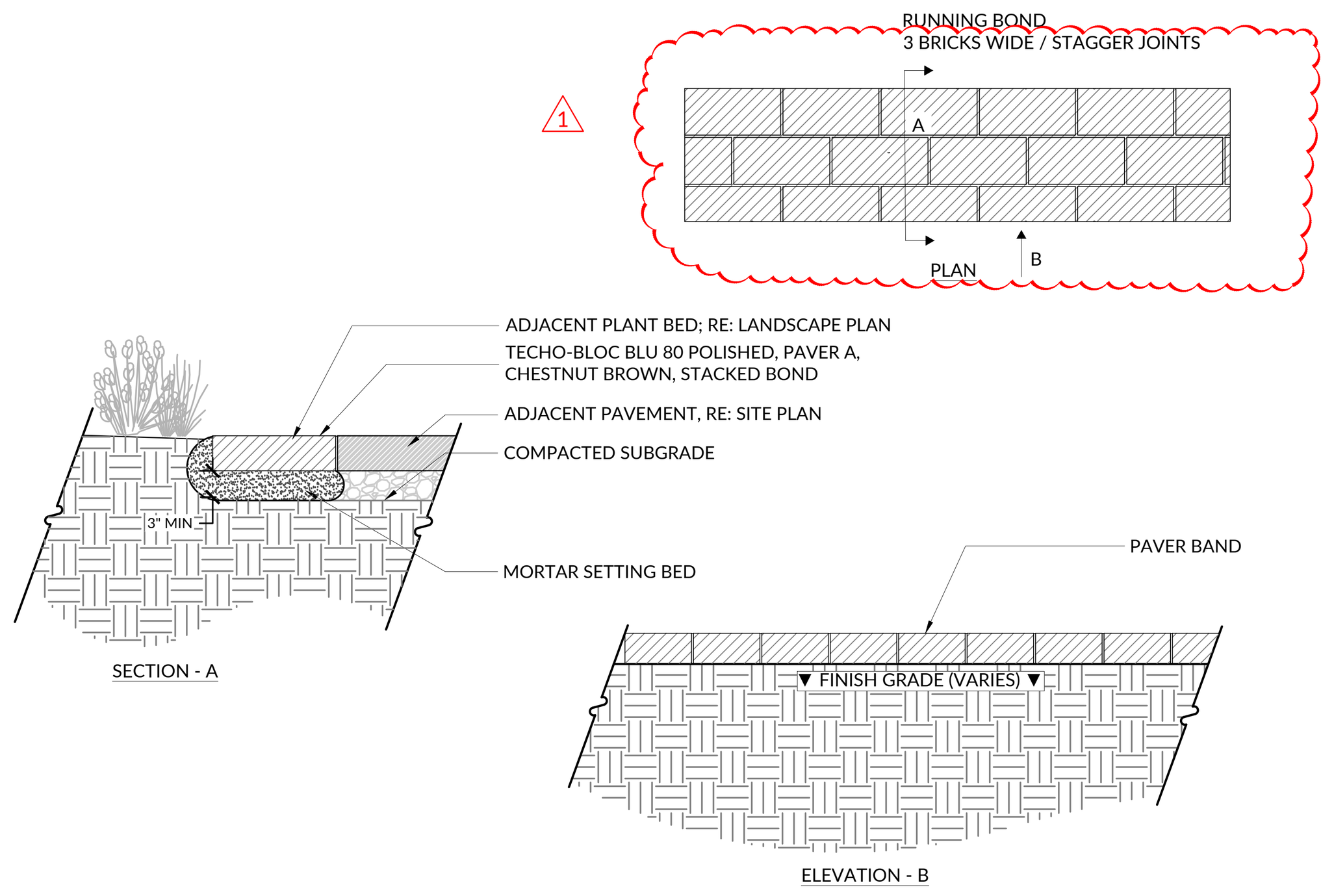
PROJECT NO: 631310
DATE: 8/06/2024

REVISIONS

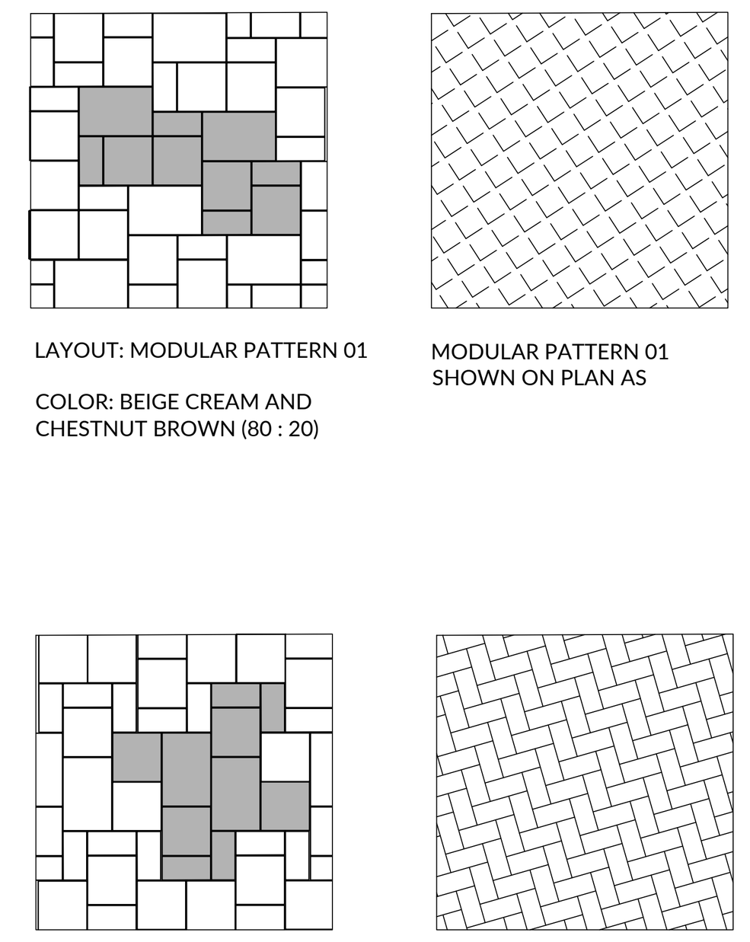
DATE	DESCRIPTION
08/21/2024	1 - GMP 2, ADDENDUM 2

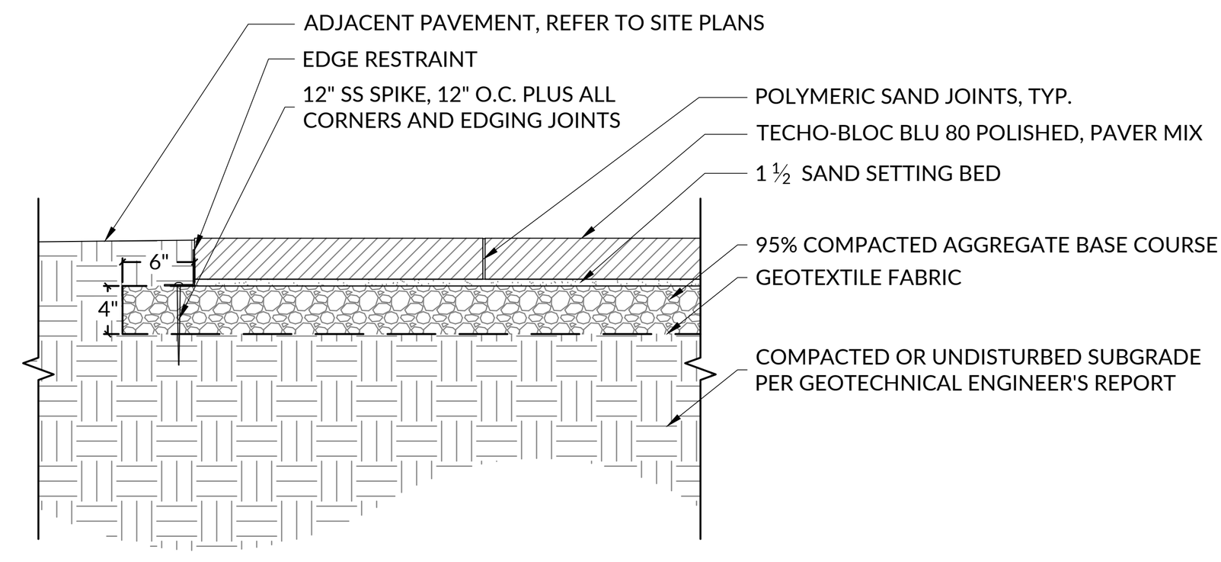
AMENITY PLANTING PLAN

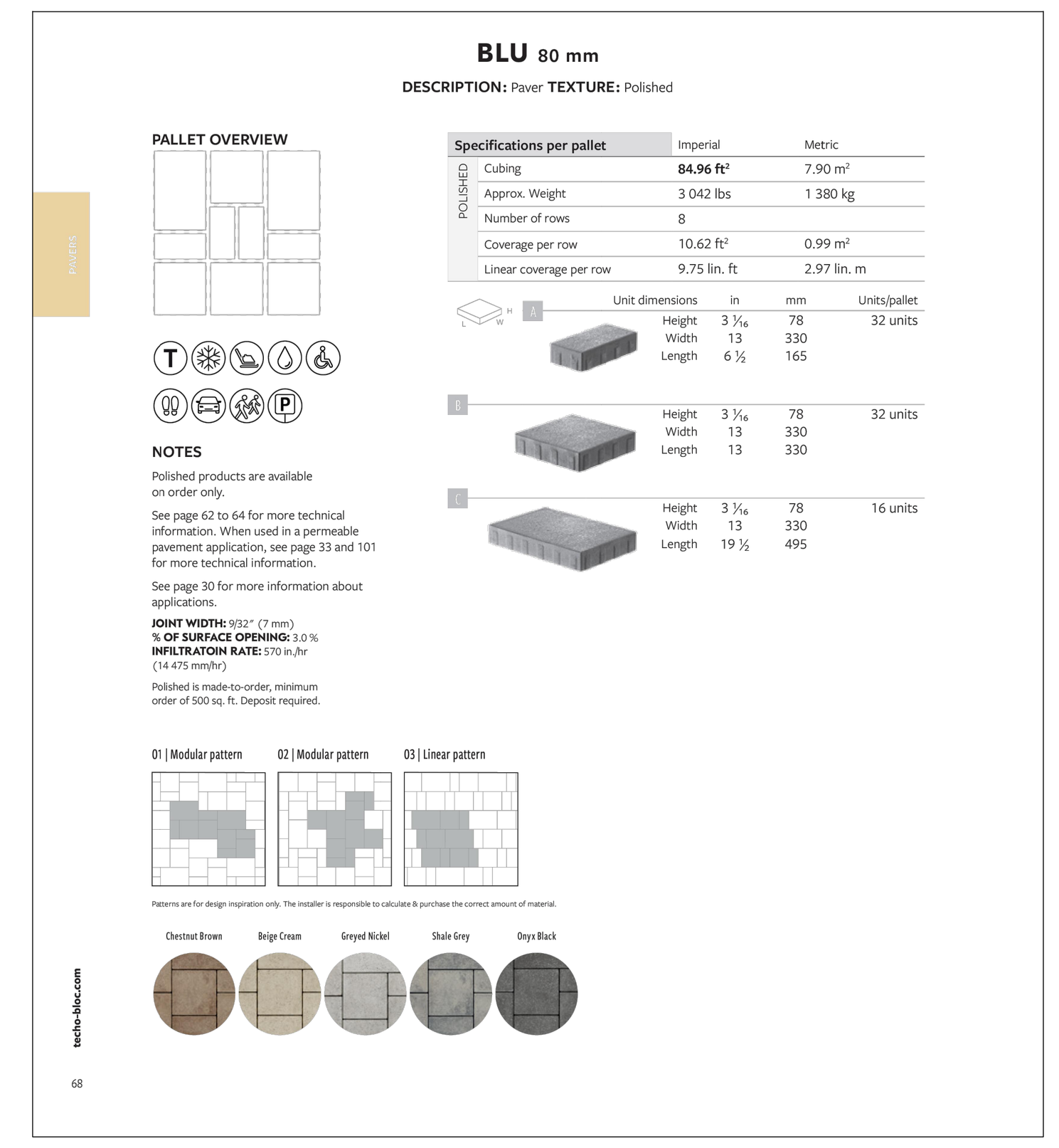
L4.13



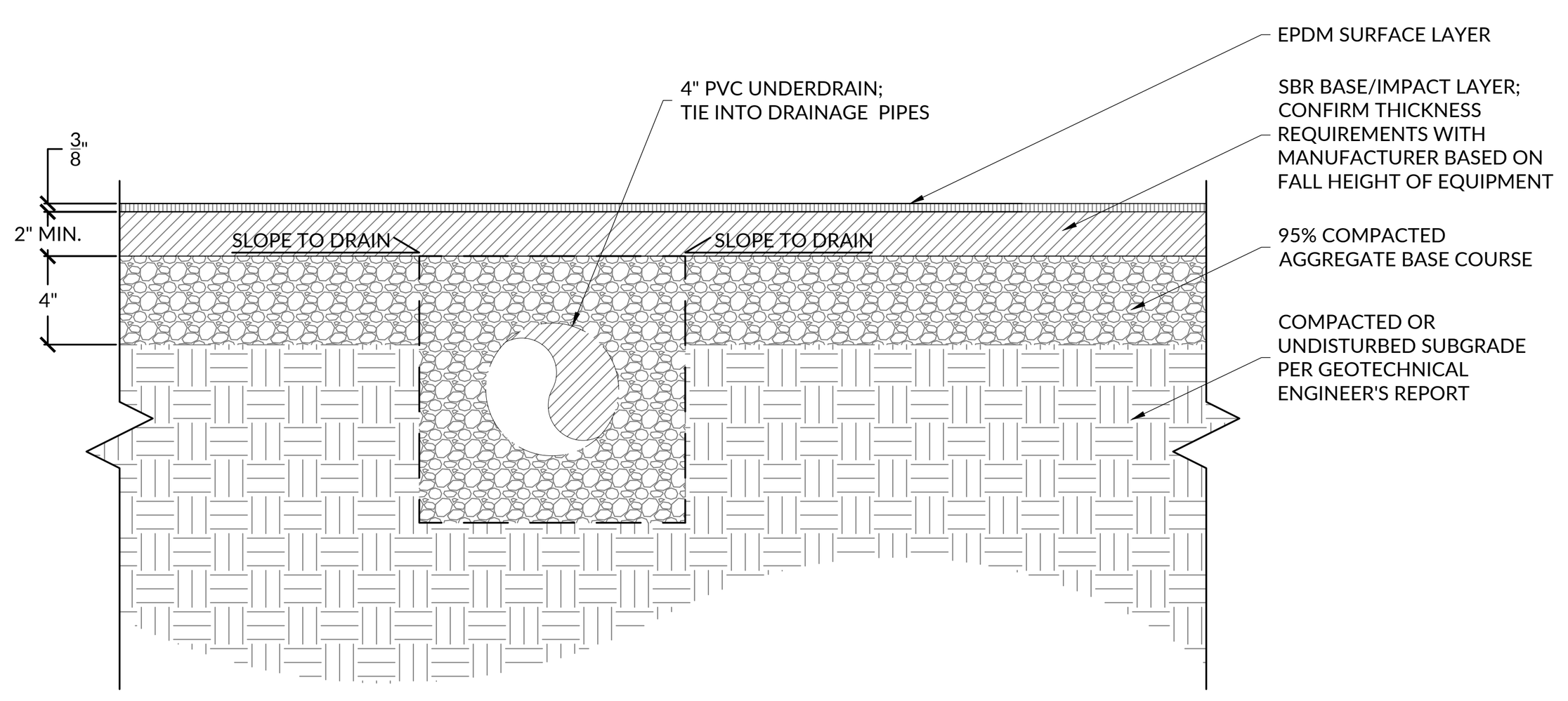
01 PAVER EDGING — SECTION
SCALE: 3/4" = 1'-0"







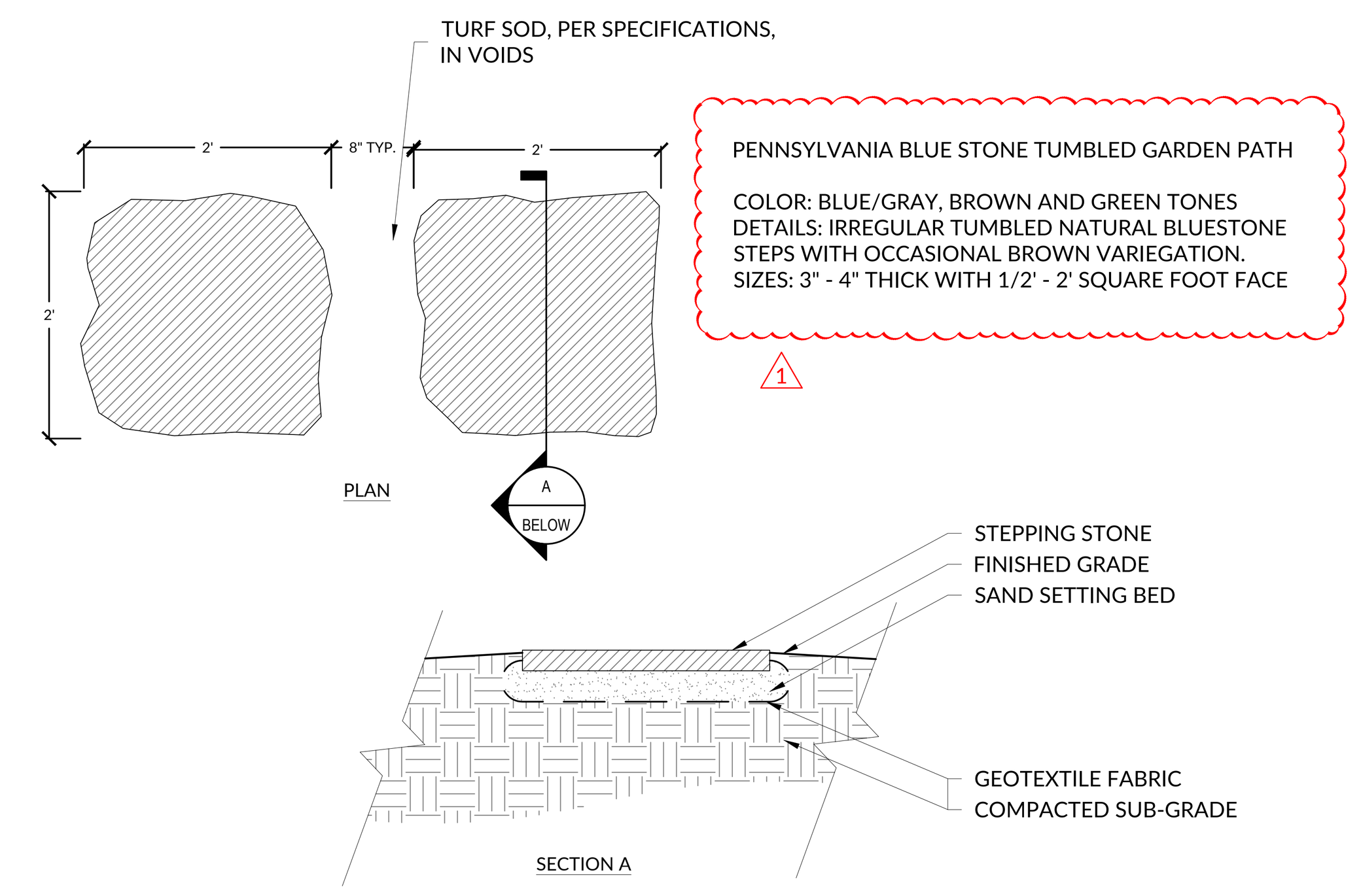
02 LIGHT DUTY MODULAR PAVERS — SECTION
SCALE: 3/4" = 1'-0"



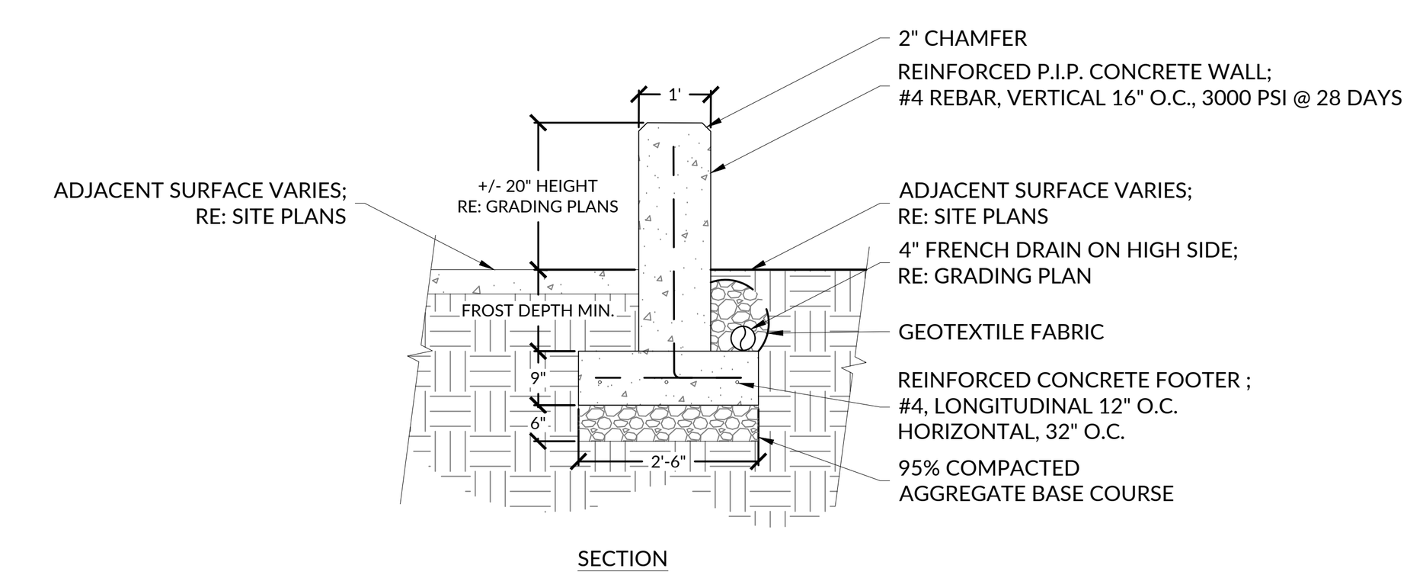
NOTE:

1. SAFETY SURFACING IS TO BE LEVEL WITH SURROUNDING HARDSCAPE EDGES. IMPACT LAYER THICKNESS TO VARY WITH SLOPING SUBGRADE, REFER TO GRADING PLANS FOR GRADING INFORMATION TO DETERMINE BASE COURSE THICKNESS.
2. SUBMIT SAMPLE OF ALL PLAY SURFACES TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION
3. PLAY SURFACING TO BE PROVIDED BY PLAYGROUND INSTALLER.
4. COLOR MIX TO BE SELECTED/APPROVED BY OWNER DURING CONSTRUCTION
5. PLAYGROUND INSTALLERS: LANDSCAPE STRUCTURES, BURKE, KOMPAN, PLAYWORLD, OR APPROVED EQUAL
6. INSTALL PER MANUFACTURER'S INSTRUCTIONS.

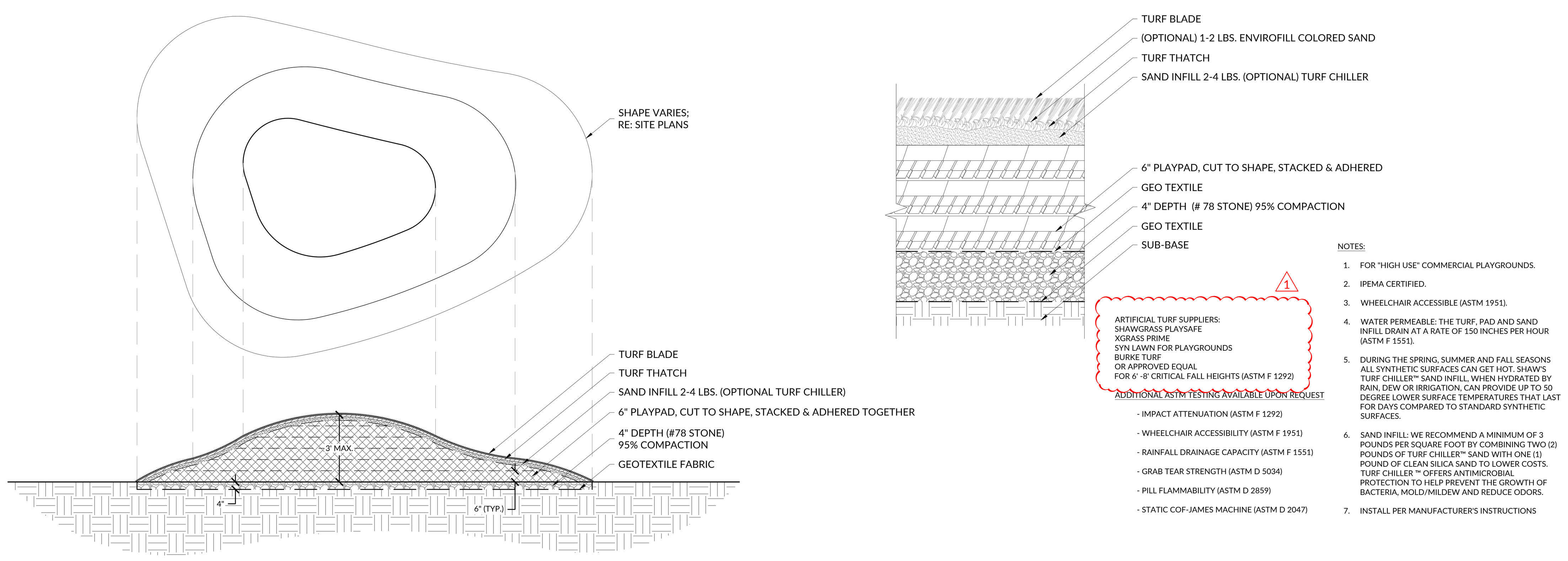
5 PLAY SURFACE — SECTION
SCALE: 1 1/2" = 1'-0"



7 STEPPING STONE — SECTION
SCALE: 3/4" = 1'-0"



8 SEAT WALL — SECTION
SCALE: 3/8" = 1'-0"



ARTIFICIAL TURF SUPPLIERS:
SHAWGRASS PLAYSAFE
XGRASS PRIME
SYN LAWN FOR PLAYGROUNDS
BURKE TURF
OR APPROVED EQUAL
FOR 6' -8' CRITICAL FALL HEIGHTS (ASTM F 1292)

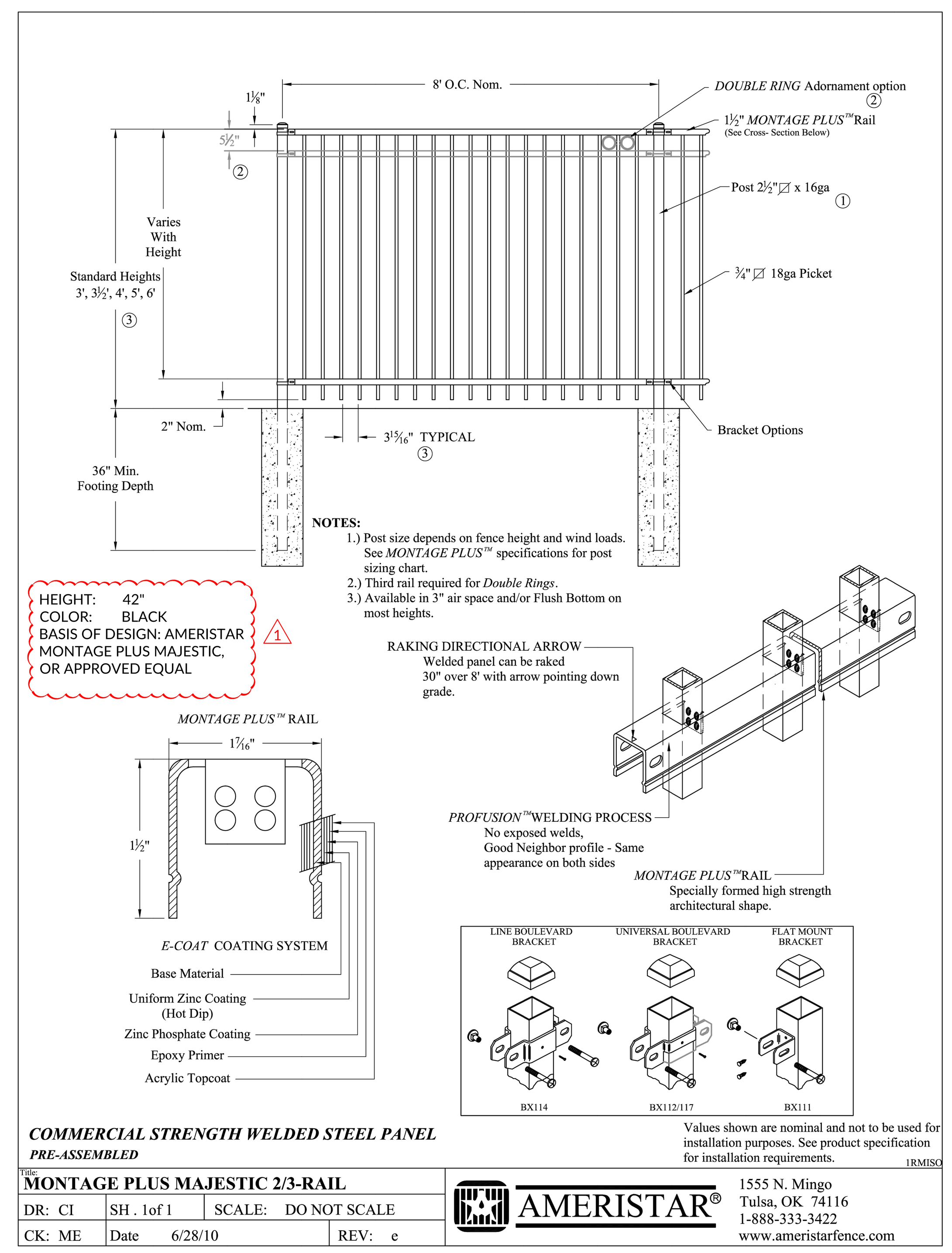
ADDITIONAL ASTM TESTING AVAILABLE UPON REQUEST

- IMPACT ATTENUATION (ASTM F 1292)
- WHEELCHAIR ACCESSIBILITY (ASTM F 1951)
- RAINFALL DRAINAGE CAPACITY (ASTM F 1551)
- GRAB TEAR STRENGTH (ASTM D 5034)
- PILL FLAMMABILITY (ASTM D 2859)
- STATIC COF-JAMES MACHINE (ASTM D 2047)

NOTES:

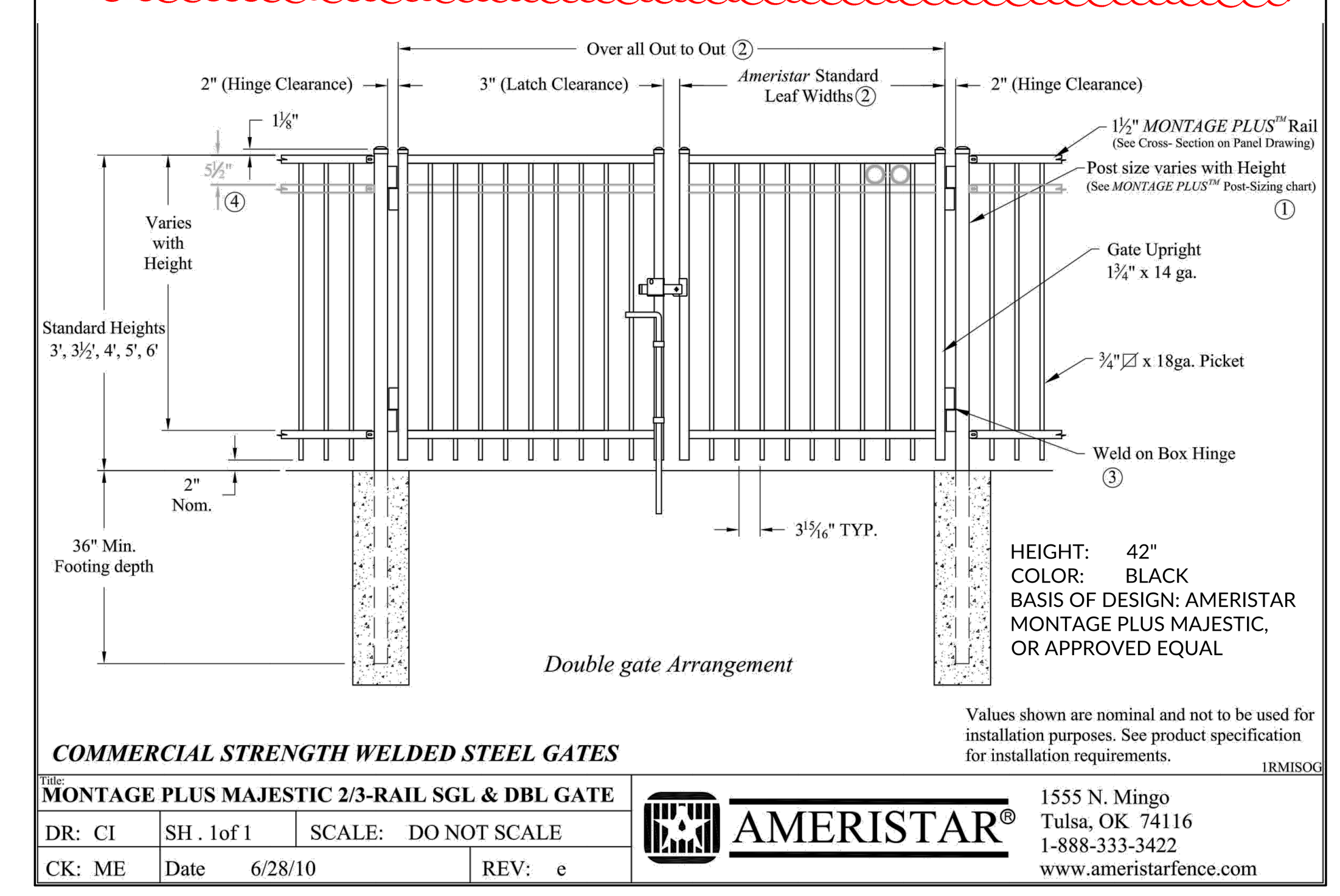
1. FOR "HIGH USE" COMMERCIAL PLAYGROUNDS.
2. IPEMA CERTIFIED.
3. WHEELCHAIR ACCESSIBLE (ASTM 1951).
4. WATER PERMEABLE: THE TURF, PAD AND SAND INFILL DRAIN AT A RATE OF 150 INCHES PER HOUR (ASTM F 1551).
5. DURING THE SPRING, SUMMER AND FALL SEASONS ALL SYNTHETIC SURFACES CAN GET HOT. SHAW'S TURF CHILLER™ SAND INFILL, WHEN HYDRATED BY RAIN, DEW OR IRRIGATION, CAN PROVIDE UP TO 50 DEGREE LOWER SURFACE TEMPERATURES THAT LAST FOR DAYS COMPARED TO STANDARD SYNTHETIC SURFACES.
6. SAND INFILL: WE RECOMMEND A MINIMUM OF 3 POUNDS PER SQUARE FOOT BY COMBINING TWO (2) POUNDS OF TURF CHILLER™ SAND WITH ONE (1) POUND OF CLEAN SILICA SAND TO LOWER COSTS. TURF CHILLER ™ OFFERS ANTIMICROBIAL PROTECTION TO HELP PREVENT THE GROWTH OF BACTERIA, MOLD/MILDEW AND REDUCE ODORS.
7. INSTALL PER MANUFACTURER'S INSTRUCTIONS

9 TURF MOUND — SECTION
SCALE: 1/4" = 1'-0"



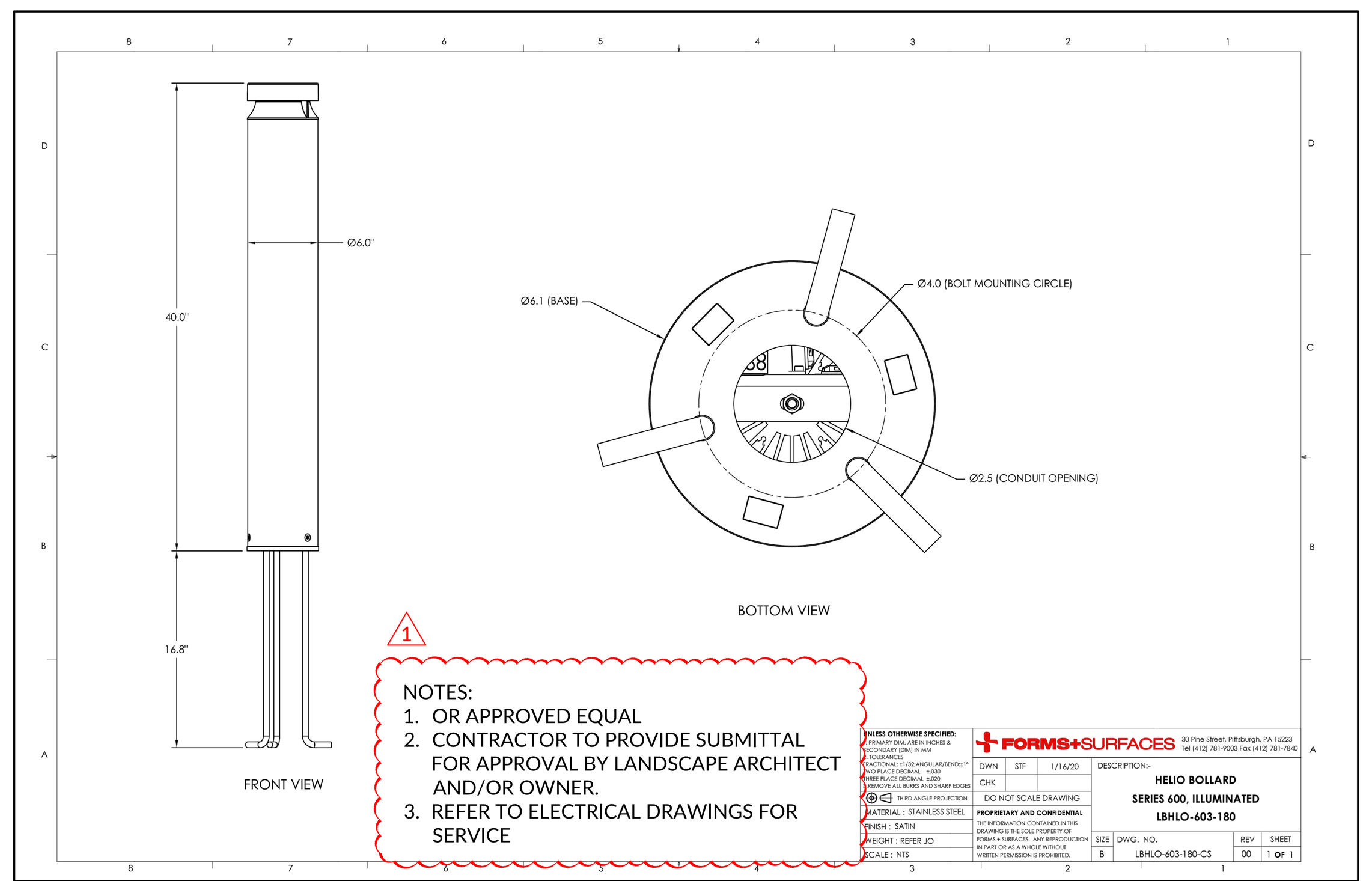
HEIGHT: 42"
COLOR: BLACK
BASIS OF DESIGN: AMERISTAR MONTAGE PLUS MAJESTIC, OR APPROVED EQUAL

12 MONTAGE PLUS MAJESTIC GATE — SECTION
SCALE: NTS



HEIGHT: 42"
COLOR: BLACK
BASIS OF DESIGN: AMERISTAR MONTAGE PLUS MAJESTIC, OR APPROVED EQUAL

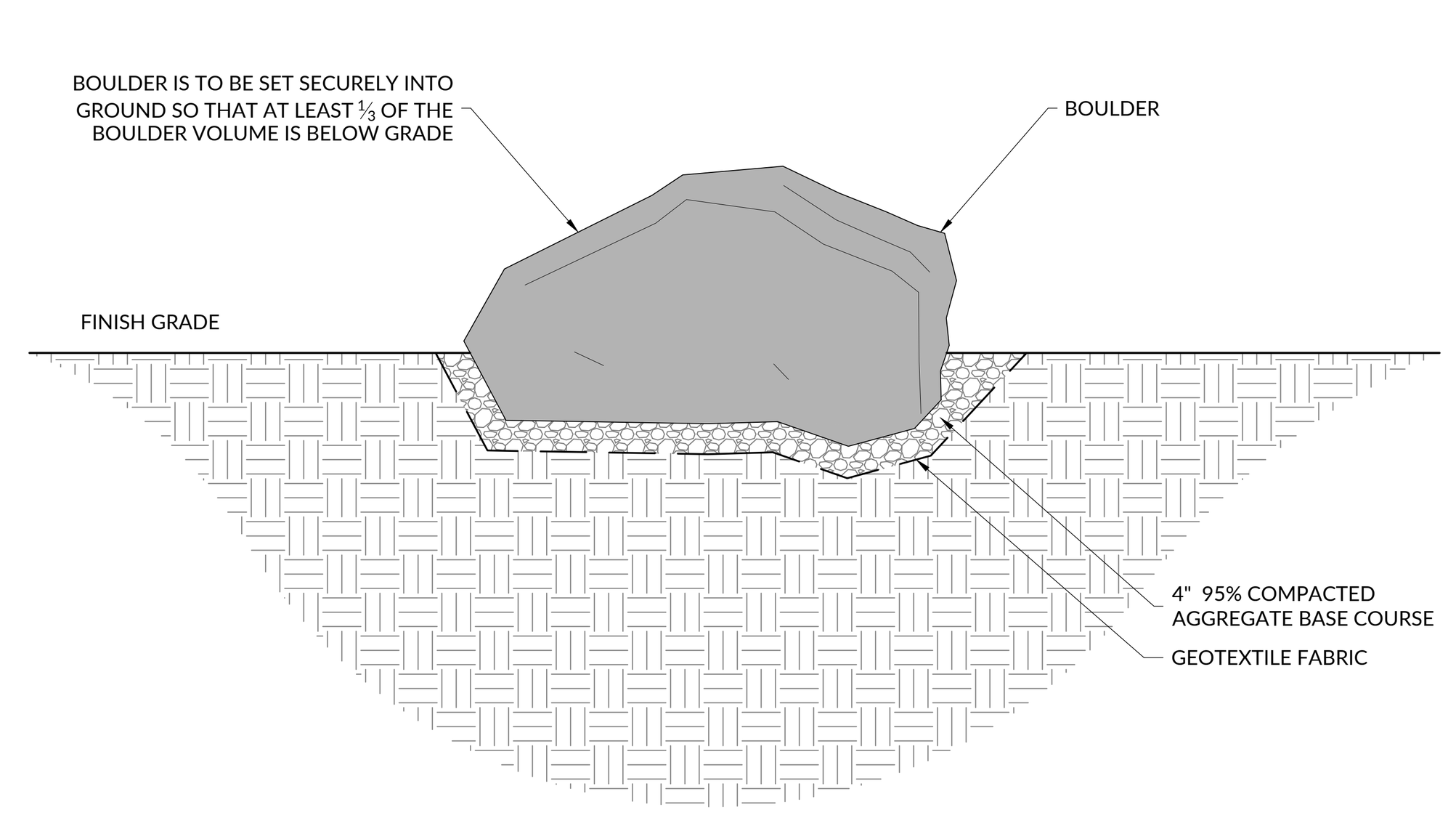
13 MONTAGE PLUS MAJESTIC FENCE — SECTION
SCALE: NTS



NOTES:
1. OR APPROVED EQUAL
2. CONTRACTOR TO PROVIDE SUBMITTAL FOR APPROVAL BY LANDSCAPE ARCHITECT AND/OR OWNER.
3. REFER TO ELECTRICAL DRAWINGS FOR SERVICE

10 DECORATIVE BOLLARD — SECTION
SCALE: 1/2" = 1'-0"

TYPE: DELAWARE BOULDERS
COLOR: TAN & BROWN
SIZES: 24" TO 36" (+/-)



11 BOULDER — SECTION
SCALE: 1/2" = 1'-0"

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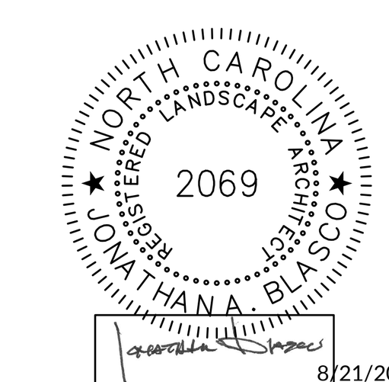


PENDER COUNTY SCHOOLS K-8 SCHOOL
Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: 8/06/2024

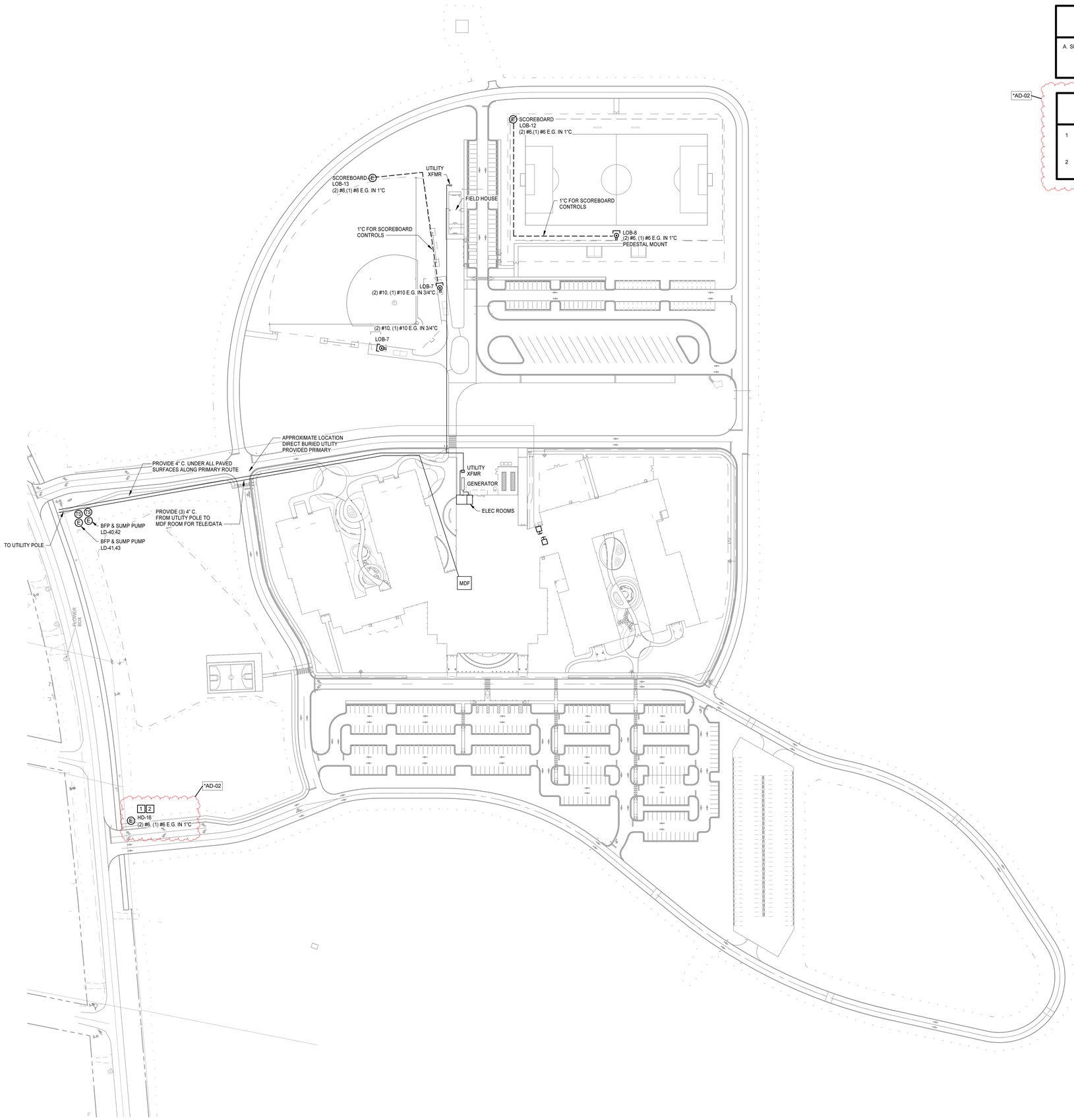
REVISIONS	
DATE	DESCRIPTION
08/21/2024	1 - GMP 2, ADDENDUM 2

WithersRavenel
137 S Wilmington Street | Suite 200 | Raleigh, NC 27601
License #: F-1479 | t: 919.469.3340 | www.withersravenel.com

WR PROJECT NO. 23-0576

AMENITY DETAILS

L5.00



ELECTRICAL SITE PLAN

1" = 80'-0"

GENERAL SITE NOTES

A. SITE LIGHTING SHALL BE PROVIDED AND CONTROLLED BY UTILITY.

*AD-02

KEYNOTES

APPLIES TO THIS DRAWING

1 PROVIDE A NEMA 3R DISCONNECT AT THE MONUMENT SIGN. PROVIDE A 277V TO 120V, NEMA 3R, 2KVA TRANSFORMER, MOUNTED TO THE BACK OF THE MONUMENT SIGN. CONNECT 120V SECONDARY SIDE TO MONUMENT SIGN.

2 PROVIDE 2 PAIR SINGLE MODE FIBER OPTIC CABLE IN 2"C FROM MDF TO THE MONUMENT SIGN.

MOSELEY ARCHITECTS
911 N. WEST STREET, SUITE 205 RALEIGH, NORTH CAROLINA 27603
PHONE (919) 840-0091
MOSELEYARCHITECTS.COM

NORTH CAROLINA PROFESSIONAL SEAL 040202 ENGINEER BRYAN C. WELLS

8/ 2/ 2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/16/24	*AD-01
8/23/24	*AD-02

SITE PLAN

E1.1

8/23/2024 1:13:03 PM

GENERAL NOTES

A. REFER TO AV DRAWINGS FOR ADDITIONAL RACEWAY AND BOXES REQUIREMENTS. PROVIDE CIRCUITRY AS INDICATED ON AV DRAWINGS, FROM PANEL LA.

B. FOR ROUTING OF MAJOR FEEDERS FROM MAIN ELECTRICAL ROOM(S) TO EQUIPMENT THROUGHOUT THE BUILDING, DO NOT ROUTE CONDUITS EXPOSED WITHIN THE DINING AREA. ROUTE UNDERGROUND THROUGHOUT THE LENGTH OF THE ROUTE. COORDINATE FEEDER ROUTING WITH ARCHITECT PRIOR TO ROUGH-IN.

*AD-02

UTILITY TRANSFORMER

GENERATOR

(E) JACKET HEATER ELBR-64

(E) BATTERY CHARGER ELBR-66

LBR-15

LBR-14

OVERHEAD DOOR

ELBR-63

ECB-ATS-X

MDP-X

ATS-X

MDS

SB

ECB-ATS-E

MDP-E

ATS-E

ELECTRICAL B112

CORR B114

EM ELEC B113

DISC

TK

LK

RECEIVING B115

ELA-10

EEC

REFER TO FS SERIES DRAWINGS

HK

LK

KITCHEN B104

1 E3.1

CORRIDOR B116

MS SERVING LINES B102

FEC

ES SERVING LINES B105

ELA-9

MS DINING B101

OPERABLE PARTITION

30A/NF DISCONNECT

ES DINING B117

LA-13

LA-34

MECHANICAL/ ELECTRICAL B119

LA-39

XHBR

ELBR

TEBR

EHBR

HBR

LBR

BR

CORRIDOR B118

CORRIDOR B120

STAIR B121

LG-25

LG-26

LA-40

LA-41

ES ART B122

60A/NF NEMA 1

50Y

LBR-21,23,25

KILN B123

LA-46

HAND DRYER (E) LBR-28

FIRST FLOOR PLAN - POWER - PART B

1/8" = 1'-0"

MOSELEY ARCHITECTS

911 N. WEST STREET, SUITE 205 RALEIGH, NORTH CAROLINA 27603
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NORTH CAROLINA REGISTERED SEAL 040202 ENGINEER BRIAN C. WELLS

8/2/2024

B

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/16/24	*AD-01
8/23/24	*AD-02

FIRST FLOOR PLAN - POWER - PART B

E2.1.2.2

8/23/2024 1:13:08 PM

DIV 22 & 23 ELECTRICAL CONNECTION SCHEDULE E2.1.2.4

TAG	VOLTAGE	# POLES	LOAD	PANEL	CCT#	WIRE	DISCONNECTING MEANS	REMARKS
B-1	120 V	1	1.2 kVA	ELBR	1	(2) #12, (1) #12 E.G. IN 3/4"C	MOTOR RATED SWITCH	
B-2	120 V	1	1.2 kVA	ELBR	2	(2) #12, (1) #12 E.G. IN 3/4"C	MOTOR RATED SWITCH	
B-3	120 V	1	1.2 kVA	ELBR	3	(2) #12, (1) #12 E.G. IN 3/4"C	MOTOR RATED SWITCH	
BC-00	120 V	1	0.5 kVA	ELBR	4	(2) #12, (1) #12 E.G. IN 3/4"C	N/A	
BC-CW	120 V	1	0.5 kVA	ELBR	5	(2) #12, (1) #12 E.G. IN 3/4"C	N/A	
BC-HW	120 V	1	0.5 kVA	ELBR	6	(2) #12, (1) #12 E.G. IN 3/4"C	N/A	
BP-1	120 V	1	1.0 kVA	ELBR	7	(2) #12, (1) #12 E.G. IN 3/4"C	MANUAL MOTOR STARTER	
BP-2	120 V	1	1.0 kVA	ELBR	8	(2) #12, (1) #12 E.G. IN 3/4"C	MANUAL MOTOR STARTER	
BP-3	120 V	1	1.0 kVA	ELBR	9	(2) #12, (1) #12 E.G. IN 3/4"C	MANUAL MOTOR STARTER	
CH-1	460 V	3	506.2 kVA	MDS	13	(6) 500KCM, (2) #1/0 E.G. IN (2) 4"C	BY DIV 23	
CH-1 EVAP HEATER	120 V	1	0.5 kVA	LBR	24	(2) #12, (1) #12 E.G. IN 3/4"C	MOTOR RATED SWITCH	
CH-2	460 V	3	506.2 kVA	MDS	14	(6) 500KCM, (2) #1/0 E.G. IN (2) 4"C	BY DIV 23	
CH-2 EVAP HEATER	120 V	1	0.5 kVA	LBR	26	(2) #12, (1) #12 E.G. IN 3/4"C	MOTOR RATED SWITCH	
CHWP-1	480 V	3	54.0 kVA	HBR	2,4,6	(3) #1, (1) #6 E.G. IN 1-1/2"C	VIA VFD	ROUTE THROUGH VFD
CHWP-2	480 V	3	54.0 kVA	HBR	7,9,11	(3) #1, (1) #6 E.G. IN 1-1/2"C	VIA VFD	ROUTE THROUGH VFD
FCU-B-11	277 V	1	0.8 kVA	HBR	8	(2) #12, (1) #12 E.G. IN 3/4"C	BY DIV 23	
FCU-B-12	277 V	1	0.8 kVA	HBR	10	(2) #12, (1) #12 E.G. IN 3/4"C	BY DIV 23	
FCU-B-13	277 V	1	0.8 kVA	HBR	12	(2) #12, (1) #12 E.G. IN 3/4"C	BY DIV 23	
GI-1	120 V	1	0.5 kVA	LBR	1	(2) #12, (1) #12 E.G. IN 3/4"C	VIA CONTROL PANEL	COORDINATE WITH DIV 22 FOR CONTROL PANEL LOCATION
GWH-1	120 V	1	0.7 kVA	ELBR	10	(2) #12, (1) #12 E.G. IN 3/4"C	MOTOR RATED SWITCH	
GWH-2	120 V	1	0.7 kVA	ELBR	11	(2) #12, (1) #12 E.G. IN 3/4"C	MOTOR RATED SWITCH	
GWH-3	120 V	1	0.7 kVA	ELBR	12	(2) #12, (1) #12 E.G. IN 3/4"C	MOTOR RATED SWITCH	
HEAT TRACE CP	277 V	1	1.0 kVA	EHBR	2	(2) #12, (1) #12 E.G. IN 3/4"C	BY DIV 23	
HWP-1	480 V	3	11.6 kVA	EHBR	19,21,23	(3) #10, (1) #10 E.G. IN 3/4"C	VIA VFD	ROUTE THROUGH VFD
HWP-2	480 V	3	11.6 kVA	EHBR	20,22,24	(3) #10, (1) #10 E.G. IN 3/4"C	VIA VFD	ROUTE THROUGH VFD
RCP-1	120 V	1	0.5 kVA	ELBR	13	(2) #12, (1) #12 E.G. IN 3/4"C	MANUAL MOTOR STARTER	
RCP-2	120 V	1	0.5 kVA	ELBR	14	(2) #12, (1) #12 E.G. IN 3/4"C	MANUAL MOTOR STARTER	
SSI-B-11	208 V	2	0.1 kVA	ELBR	15,17	(2) #12, (1) #12 E.G. IN 3/4"C	MOTOR RATED SWITCH	FED FROM OUTDOOR UNIT
SSI-B-12	208 V	2	0.1 kVA	ELBR	16,18	(2) #12, (1) #12 E.G. IN 3/4"C	MOTOR RATED SWITCH	FED FROM OUTDOOR UNIT
SSI-B-13	208 V	2	0.1 kVA	ELBR	19,21	(2) #12, (1) #12 E.G. IN 3/4"C	MOTOR RATED SWITCH	FED FROM OUTDOOR UNIT
SSO-B-11	208 V	2	4.2 kVA	ELBR	15,17	(2) #12, (1) #12 E.G. IN 3/4"C	30A/NF NEMA 3R	
SSO-B-12	208 V	2	4.2 kVA	ELBR	16,18	(2) #12, (1) #12 E.G. IN 3/4"C	30A/NF NEMA 3R	
SSO-B-13	208 V	2	4.2 kVA	ELBR	19,21	(2) #12, (1) #12 E.G. IN 3/4"C	30A/NF NEMA 3R	

KEYNOTES

APPLIES TO THIS DRAWING

1 PROVIDE 6 POLE CONTACTOR & ROUTE BOILER AND BOILER PUMP CIRCUITS THROUGH CONTACTOR. CONNECT E.P.O. BUTTONS INDICATED TO CONTACTOR TO DE-ENERGIZE BOILER EQUIPMENT UPON ACTIVATION.

*AD-02

UTILITY TRANSFORMER
GENERATOR
SSO-B-11
SSO-B-12
CH-2
CH-1
GI-1
SEE KITCHEN EQUIPMENT SCHEDULE ON E3.1
01C
01G
SSO-B-13
SSI-B-12
SSI-B-11
ECB-ATS-X
ATS-X
MDP-X
ECB-ATS-E
MDP-E
ATS-E
SB
MDS
ELECTRICAL B112
1K
EM ELEC B113
CORR B114
FCU-B-12
RECEIVING B115
FCU-B-13
OFFICE B111
LOCKER B110
TOILET B109
HK
LK
FEC
SSI-B-13
DRY STORAGE B108
KITCHEN B104
JANITOR B107
CORRIDOR B116
DISH ROOM B103
MS SERVING LINES B102
ES SERVING LINES B105
DISH ROOM B106
MS DINING B101
ES DINING B117
CORRIDOR B118
MECHANICAL/ ELECTRICAL B119
CHWP-2
CHWP-1
RCP-2
RCP-1
VFD CHWP-2
VFD CHWP-1
XHBR
ELBR
TEBR
EHBR
HBR
LBR
TBR
HWP-1
HWP-2
VFD HWP-1
VFD HWP-2
B-3
B-2
B-1
BP-3
BP-2
BP-1
BC-00
BC-CW
BC-HW
1
*AD-02
FCU-B-11
CORRIDOR B120
STAIR B121
CORRIDOR B124
ES ART B122
KILN B123

KEY PLAN

FIRST FLOOR PLAN - MECHANICAL POWER - PART B

1/8" = 1'-0"

MOSELEY ARCHITECTS
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NORTH CAROLINA REGISTERED SEAL 040202 ENGINEER BRIAN C. WELTY
8/2/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/23/24	*AD-02

FIRST FLOOR PLAN - MECHANICAL POWER - PART B

E2.1.2.4

8/23/2024 1:13:10 PM

KEYNOTES

APPLIES TO THIS DRAWING

1 CONNECT DUCT TO LOUVER. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT SIZE AND LOCATION.

2 OPEN END DUCT, COVER WITH 1/2"x1/2" WELDED WIRE MESH.

3 8" DRYER VENT UP TO DRYER VENT ON ROOF. ROOF PENETRATION SHALL BE A MINIMUM 4' FROM FIRE WALL. SIZE AND INSTALL IN ACCORDANCE WITH COMMERCIAL DRYER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

4 REFER TO ENLARGED PLAN FOR CONTINUATION.

5 ALL SUPPLY DUCTWORK EXPOSED IN SPACE TO BE 1" DOUBLE WALL DUCT WITH PERFORATED INNER LINER.

KEYNOTES

APPLIES TO THIS DRAWING

6 PROVIDE KILN EXHAUST BLOWER AND FLEXIBLE DUCT TO BOTTOM CONNECTION OF KILN. REFER TO DIVISION 11. PROVIDE VENT TERMINATION ON EXTERIOR WALL. MOUNT BLOWER ON WALL AND POWER WITH PLUG RECEPTACLE. INTERLOCK FAN CONTROLS WITH KILN.

7 WRAP ALL ROUND RETURN DUCTWORK EXPOSED IN THIS SPACE WITH ONE LAYER OF MASS-LOADED VINYL WRAP. REFER TO SECTION 230700 FOR ADDITIONAL DETAILS.

8 WRAP ALL RECTANGULAR RETURN DUCT EXPOSED IN THIS SPACE WITH TWO LAYERS OF MASS-LOADED VINYL WRAP. REFER TO SECTION 230700 FOR ADDITIONAL DETAILS.

9 DUCT PENETRATES UNRATED FLOOR. FILL THE ANNULAR SPACE AROUND THE PENETRATING DUCT WITH APPROVED NONCOMBUSTIBLE MATERIAL THAT RESISTS THE FREE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION IN ACCORDANCE WITH 607.6.3, EXCEPTION 2 OF THE NCMC.

KEYNOTES

APPLIES TO THIS DRAWING

10 BALANCE OUTSIDE AIR FOR SPLIT SYSTEM TO VALUE LISTED IN SPLIT SYSTEM SCHEDULE.

11 PROVIDE ALUMINUM DUCT FROM ALL EXHAUST DUCT ASSOCIATED WITH THIS EXHAUST FAN.

12 PROVIDE ALUMINUM DUCT FROM THIS TAP BACK TO GRILLE.

DWG M2.2.1

DWG M2.5.1

DWG M2.3.1

DWG M2.7.1

CORRIDOR A134 · STAIR A133 · EQUIP A132 · G. STOR A127 · GUID CONF A130 · GUID OFF A131 · GUIDANCE A126 · BOOK STORAGE A125 · GUID OFF A128 · GUID OFF A129 · WORKROOM A124 · A.P. A123 · BREAK AREA A122 · SRO A117 · BOOKKEEPER A120 · RECORDS A119 · CORR A118 · PRINCIPAL A109 · TOILET A111 · CORRIDOR A113 · SECRETARY A108 · TOILET A110 · CORR A121 · STORAGE A112 · TOILET A107 · CLINIC A106 · CONFERENCE A105 · STAIR A180 · WAITING/ RECEPTION A104 · LOBBY A103

JANITOR A139 · DATA A135 · BOYS A137 · GIRLS A138 · ELEC A136 · RAMP A140 · PLATFORM A140 · RAMP A141 · STAIR A151 · GYM STORAGE A150 · MS GYMNASIUM A142 · TOILET A149 · BOYS LOCKER ROOM A148A · OFFICE A147 · LAUNDRY A146 · OFFICE A145 · GIRLS LOCKER ROOM A144 · TOILET A143 · CONCESSIONS A102 · LOBBY/ COMMONS A101

GIRLS A152 · BOYS A153 · STUDENT SERVICES A156 · G. STOR A155 · GUID CONF A157 · G. OFFICE A158 · GUIDANCE A154 · G. OFFICE A161 · G. OFFICE A160 · A.P. A159 · CORRIDOR A176 · A.P. A164 · WORK/ BREAK ROOM A162 · RECORDS A163 · BOOKKEEPER A165 · CORRIDOR A166 · PRINCIPAL A170 · STORAGE A167 · SECRETARY A171 · TOILET A165 · TOILET A169 · TOILET A173 · CLINIC A174 · CONFERENCE A172 TYP OF 2 · WAITING/ RECEPTION A175 · LOBBY A179

FIRST FLOOR PLAN - PART A - DUCTWORK

1/8" = 1'-0"

0' 2' 4' 8' 16'

1/8" = 1'-0"

8/21/2024 3:10:13 PM

MOSELEYARCHITECTS

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NORTH CAROLINA REGISTERED PROFESSIONAL SEAL 043951 ENGINEER BRITTNEY WHEELER

8/2/2024

A

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/16/24	*AD-01
8/23/24	*AD-02

FIRST FLOOR PLAN - PART A - DUCTWORK

M2.1.1

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1 SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

2 REFRIGERANT SUCTION AND LIQUID UP TO CONDENSING UNIT ON ROOF. ROUTE PIPING THROUGH PIPE CURB, REFER TO REFRIGERANT PIPE PENETRATION DETAIL - ROOF FOR ADDITIONAL DETAILS.

3 REFRIGERANT SUCTION AND LIQUID UP TO FLOOR ABOVE.

4 DISCHARGE CONDENSATE DRAIN 6" ABOVE GRADE ONTO SPLASH BLOCK.

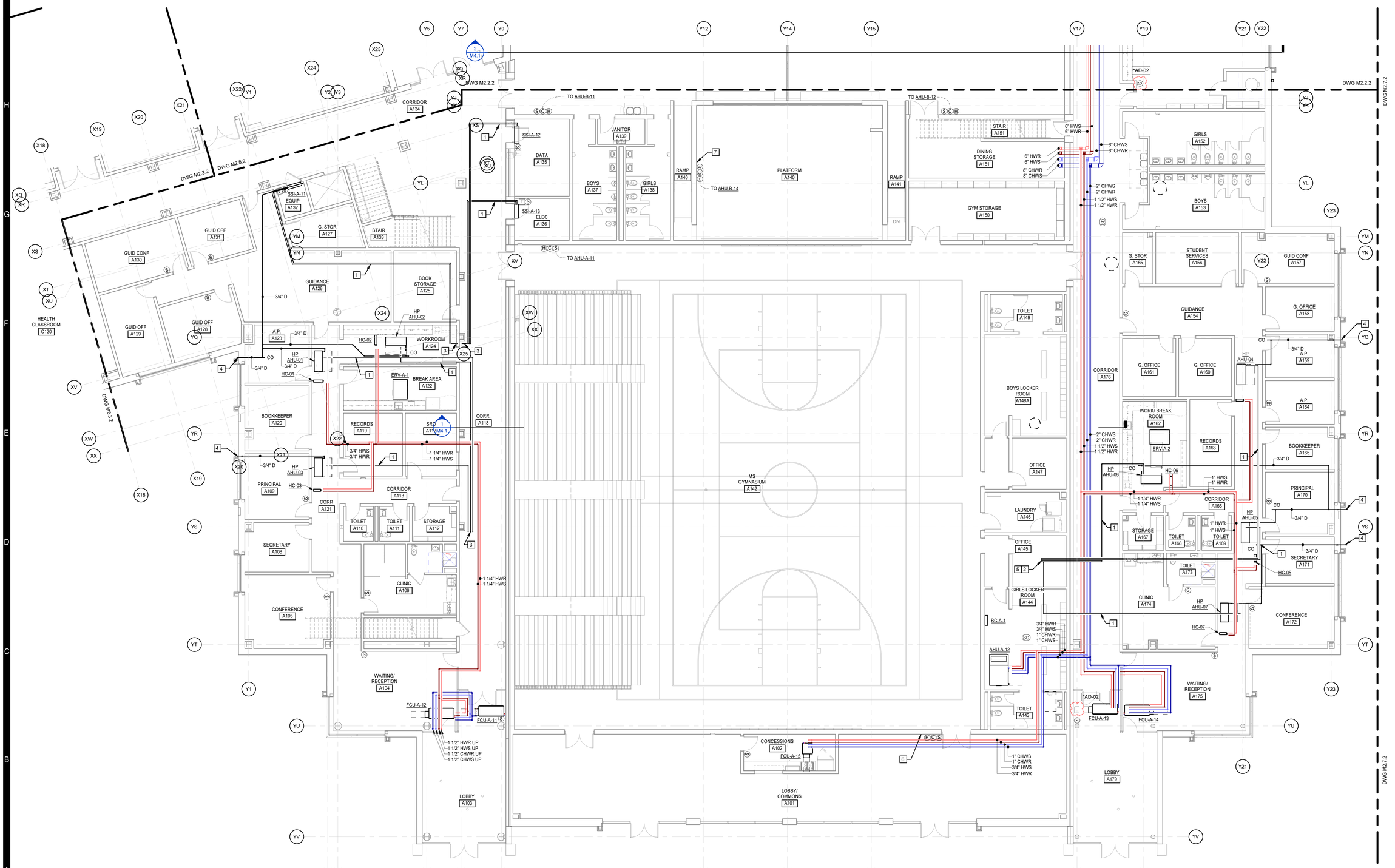
KEYNOTES

APPLIES TO THIS DRAWING

5 PIPE PENETRATION THROUGH ROOF MUST BE A MINIMUM 4 FEET AWAY FROM THE FIREWALL.

6 LOCATE DIFFERENTIAL PRESSURE SENSOR INDOOR INLET FOR AHU-A-12 AT THIS LOCATION.

7 LOCATE DIFFERENTIAL PRESSURE SENSOR INDOOR INLET FOR AHU-B-14 AT THIS LOCATION.



FIRST FLOOR PLAN - PART A - PIPING

1/8" = 1'-0"

0' 2' 4' 8' 16'

1/8" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 043951 ENGINEER BRITTNEY WHITE

8/ 2/ 2024

A

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/23/24	*AD-02

FIRST FLOOR PLAN - PART A - PIPING

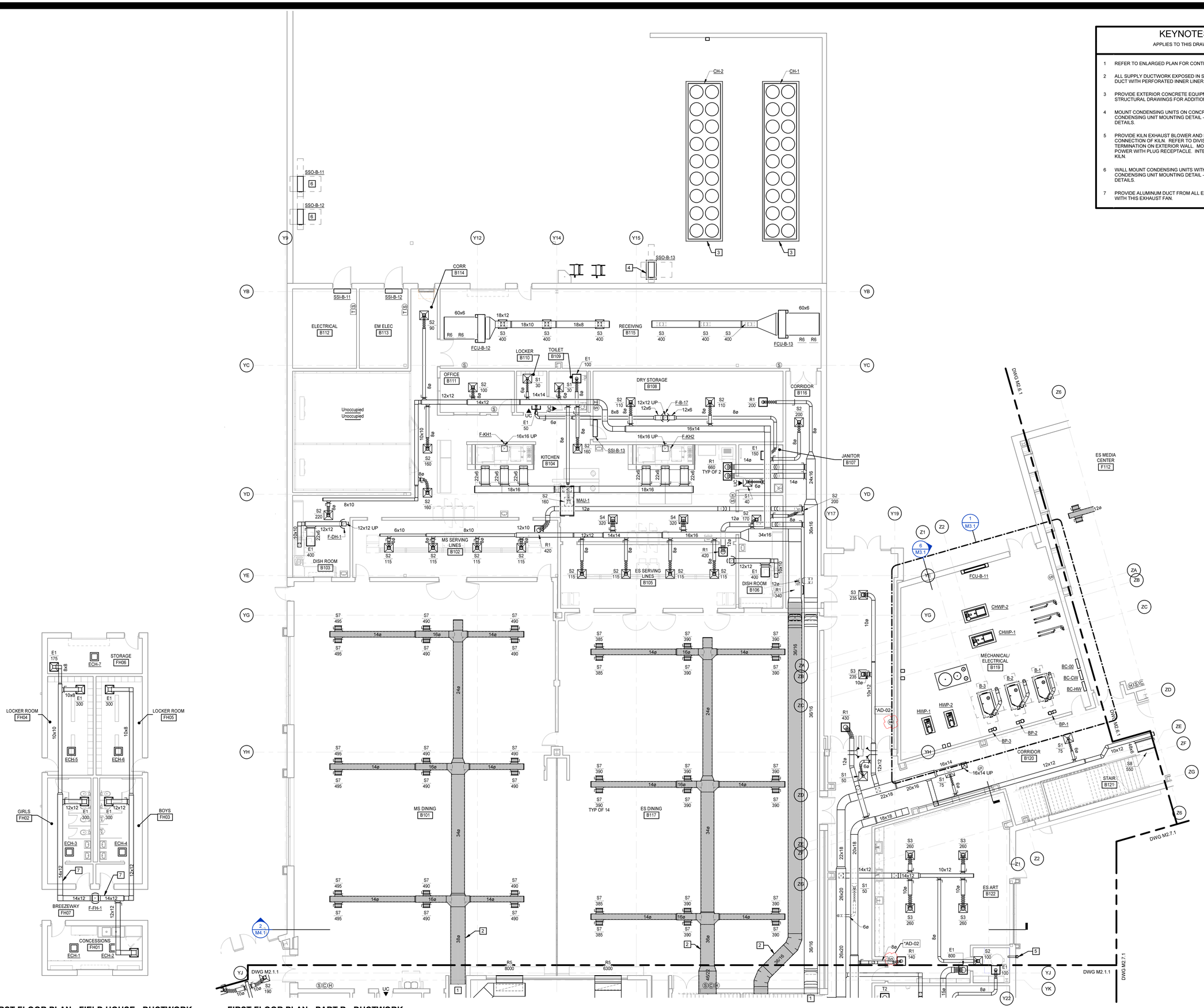
M2.1.2

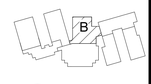
8/21/2024 3:10:20 PM

KEYNOTES

APPLIES TO THIS DRAWING

1. REFER TO ENLARGED PLAN FOR CONTINUATION.
2. ALL SUPPLY DUCTWORK EXPOSED IN SPACE TO BE 1" DOUBLE WALL DUCT WITH PERFORATED INNER LINER.
3. PROVIDE EXTERIOR CONCRETE EQUIPMENT PAD. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS.
4. MOUNT CONDENSING UNITS ON CONCRETE PADS. REFER TO THE CONDENSING UNIT MOUNTING DETAIL - ON GRADE FOR ADDITIONAL DETAILS.
5. PROVIDE KILN EXHAUST BLOWER AND FLEXIBLE DUCT TO BOTTOM CONNECTION OF KILN. REFER TO DIVISION 11. PROVIDE VENT TERMINATION ON EXTERIOR WALL. MOUNT BLOWER ON WALL AND POWER WITH PLUG RECEPTACLE. INTERLOCK FAN CONTROLS WITH KILN.
6. WALL MOUNT CONDENSING UNITS WITH WALL STAND. REFER TO CONDENSING UNIT MOUNTING DETAIL - ON WALL FOR ADDITIONAL DETAILS.
7. PROVIDE ALUMINUM DUCT FROM ALL EXHAUST DUCT ASSOCIATED WITH THIS EXHAUST FAN.





FIRST FLOOR PLAN - FIELD HOUSE - DUCTWORK
1/8" = 1'-0"

FIRST FLOOR PLAN - PART B - DUCTWORK
1/8" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 043951 ENGINEER KEITH T WHITE
8/2/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/16/24	*AD-01
8/23/24	*AD-02

FIRST FLOOR PLAN - PART B - DUCTWORK

M2.2.1

8/21/2024 3:10:30 PM

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

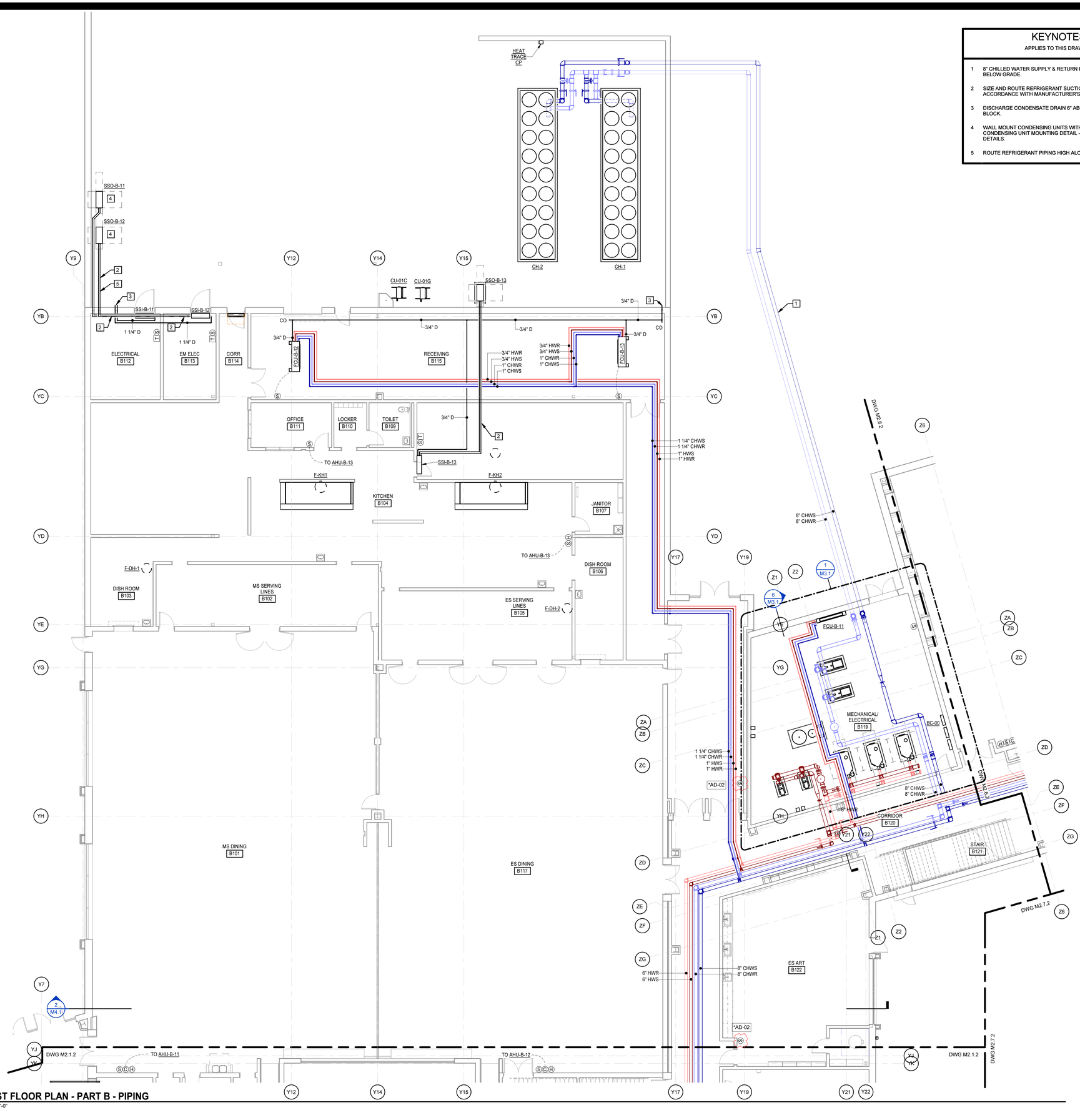
1 8" CHILLED WATER SUPPLY & RETURN BELOW GRADE MINIMUM 3'-0" BELOW GRADE.

2 SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

3 DISCHARGE CONDENSATE DRAIN 6" ABOVE GRADE ONTO SPLASH BLOCK.

4 WALL MOUNT CONDENSING UNITS WITH WALL STAND. REFER TO CONDENSING UNIT MOUNTING DETAIL - ON WALL FOR ADDITIONAL DETAILS.

5 ROUTE REFRIGERANT PIPING HIGH ALONG WALL.



FIRST FLOOR PLAN - PART B - PIPING

1/8" = 1'-0"

0' 2' 4' 8' 16'

1/8" = 1'-0"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043951 MATTHEW WHITE

8/2/2024

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/23/24	*AD-02

FIRST FLOOR PLAN - PART B - PIPING

M2.2.2

8/21/2024 3:10:39 PM

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1 PROVIDE 6" THICK HOUSEKEEPING PAD. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS.

2 CONNECT TO UNIT FULL SIZE OF UNIT CONNECTION.

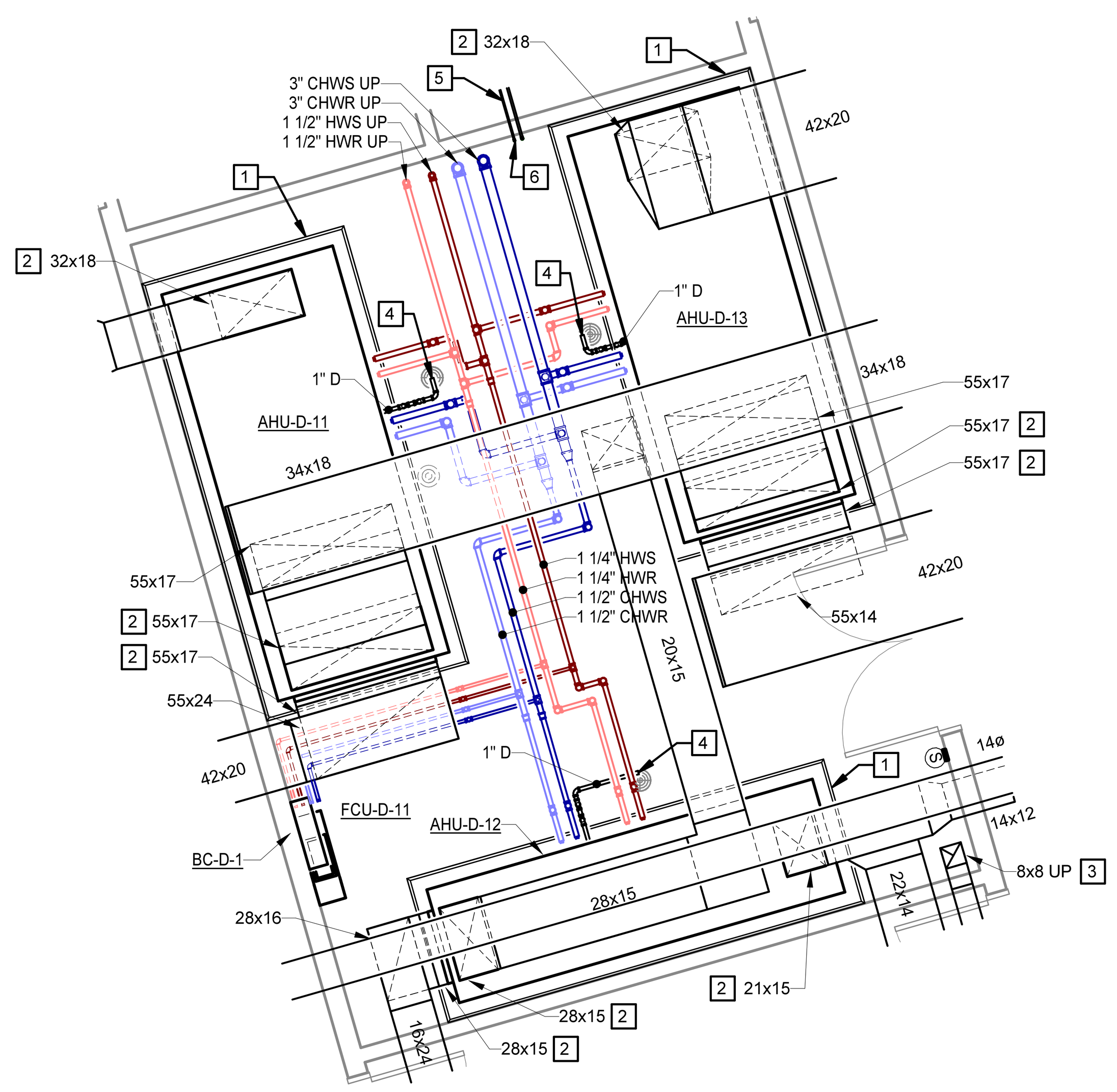
3 DUCT PENETRATES UNRATED FLOOR. FILL THE ANNULAR SPACE AROUND THE PENETRATING DUCT WITH APPROVED NONCOMBUSTIBLE MATERIAL THAT RESISTS THE FREE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION IN ACCORDANCE WITH 607.6.3, EXCEPTION 2 OF THE NCMC.

4 DISCHARGE CONDENSATE DRAIN INTO OPEN SITE FLOOR DRAIN.

5 SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

6 REFRIGERANT SUCTION AND LIQUID UP TO FLOOR ABOVE.

FIRST FLOOR PLAN - PART D - DUCTWORK
1/8" = 1'-0"



2 ENLARGED PLAN - FIRST FLOOR - PART D - MECHANICAL ROOM
M2.1.2 M2.4.1
1/4" = 1'-0"

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KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO. 631310
DATE AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/23/24	*AD-02

FIRST FLOOR PLAN - PART D - DUCTWORK

M2.4.1

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1 SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

2 DISCHARGE CONDENSATE DRAIN 6" ABOVE GRADE ONTO SPLASH BLOCK.

FIRST FLOOR PLAN - PART D - PIPING
1/8" = 1'-0"

0' 2' 4' 8' 16'
1/8" = 1'-0"

MOSELEY ARCHITECTS
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NORTH CAROLINA PROFESSIONAL SEAL 043951 ENGINEER MATTHEW WHITE
8/2/2024

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

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DATE	DESCRIPTION
8/23/24	*AD-02

FIRST FLOOR PLAN - PART D - PIPING

M2.4.2

8/21/2024 3:10:52 PM

GENERAL NOTES

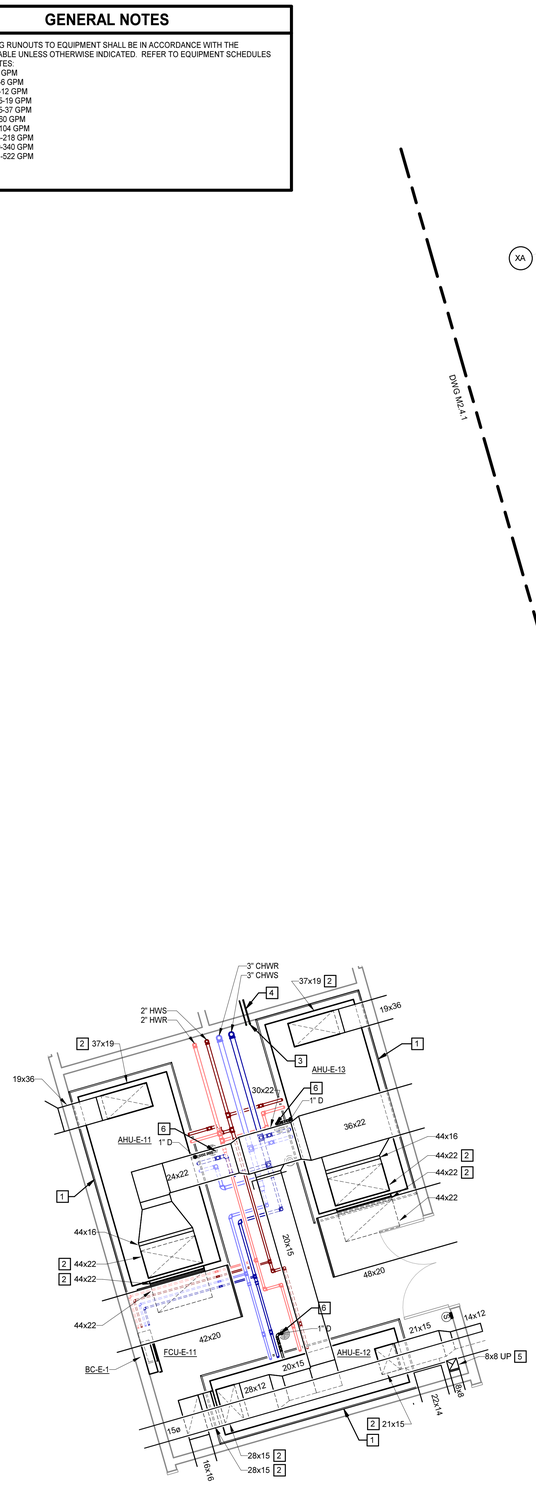
A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1. PROVIDE 6" THICK HOUSEKEEPING PAD. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS.
2. CONNECT TO UNIT FULL SIZE OF UNIT CONNECTION.
3. REFRIGERANT SUCTION AND LIQUID UP TO FLOOR ABOVE.
4. SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
5. DUCT PENETRATES UNRATED FLOOR. FILL THE ANNULAR SPACE AROUND THE PENETRATING DUCT WITH APPROVED NONCOMBUSTIBLE MATERIAL THAT RESISTS THE FREE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION IN ACCORDANCE WITH 607.6.3, EXCEPTION 2 OF THE NCMC.
6. DISCHARGE CONDENSATE DRAIN INTO OPEN SITE FLOOR DRAIN.



2 M2.1.2 M2.5.1 **ENLARGED PLAN - FIRST FLOOR - PART E - MECHANICAL ROOM**
1/4" = 1'-0"

FIRST FLOOR PLAN - PART E - DUCTWORK
1/8" = 1'-0"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043951 ROBERT T WHITE
8/2/2024

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/23/24	*AD-02

FIRST FLOOR PLAN - PART E - DUCTWORK

M2.5.1

1/4" = 1'-0"
1/8" = 1'-0"

8/21/2024 3:11:01 PM

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1 SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

2 DISCHARGE CONDENSATE DRAIN 6" ABOVE GRADE ONTO SPLASH BLOCK.

FIRST FLOOR PLAN - PART E - PIPING

1/8" = 1'-0"

0' 2' 4' 8' 16'

1/8" = 1'-0"

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8/2/2024

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/23/24	*AD-02

FIRST FLOOR PLAN - PART E - PIPING

M2.5.2

8/21/2024 3:11:07 PM

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

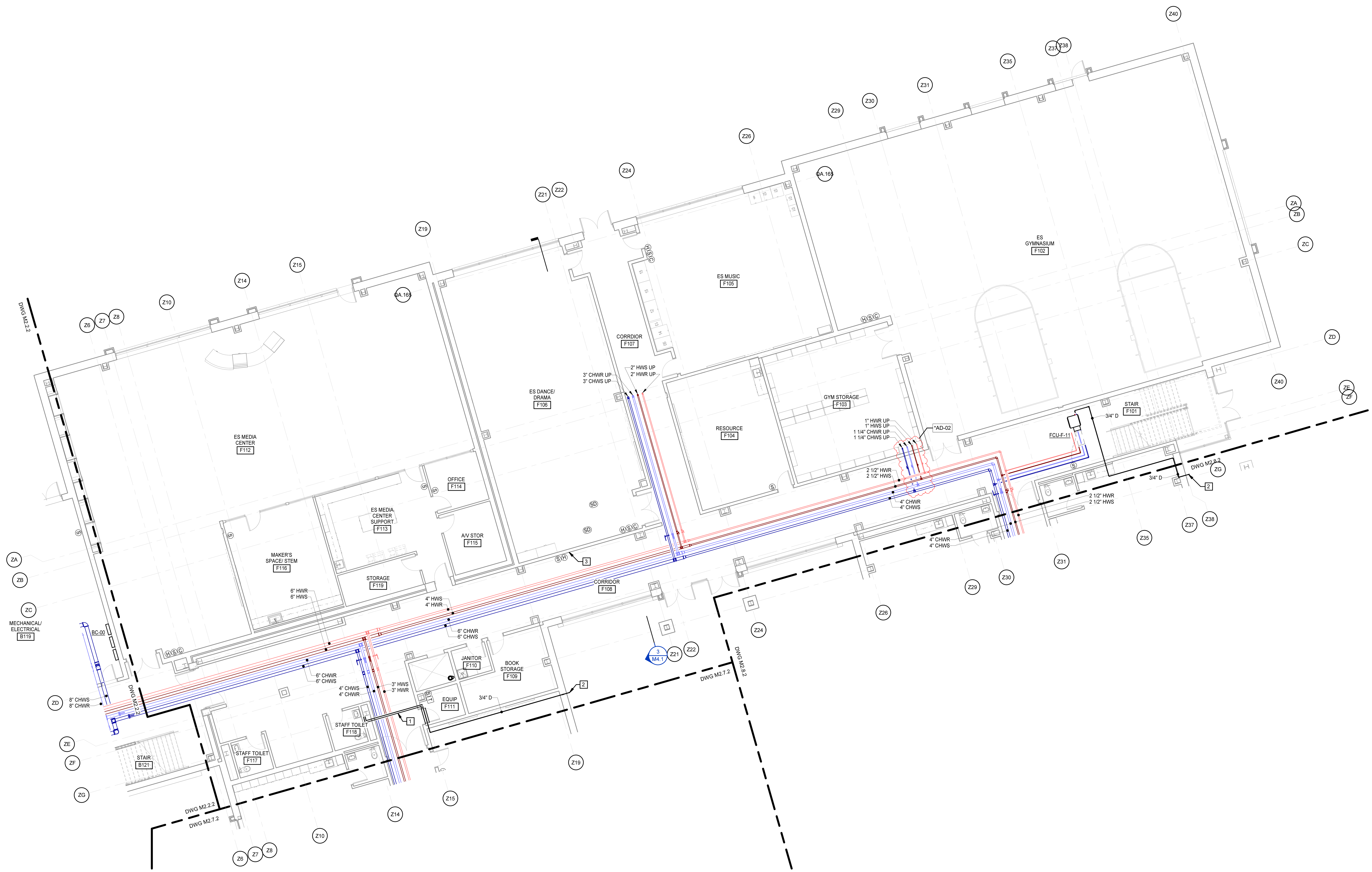
KEYNOTES

APPLIES TO THIS DRAWING

1 SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

2 DISCHARGE CONDENSATE DRAIN 6" ABOVE GRADE ONTO SPLASH BLOCK.

3 LOCATE DIFFERENTIAL PRESSURE SENSOR INDOOR INLET FOR AHU-F-14 AT THIS LOCATION.



FIRST FLOOR PLAN - PART F - PIPING

1/8" = 1'-0"

1/8" = 1'-0"

8/21/2024 3:11:12 PM

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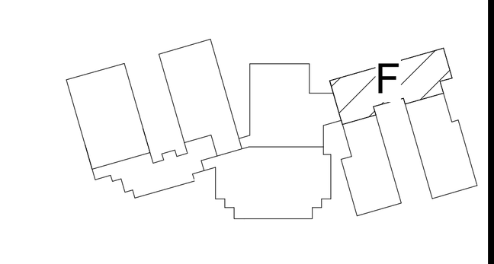

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
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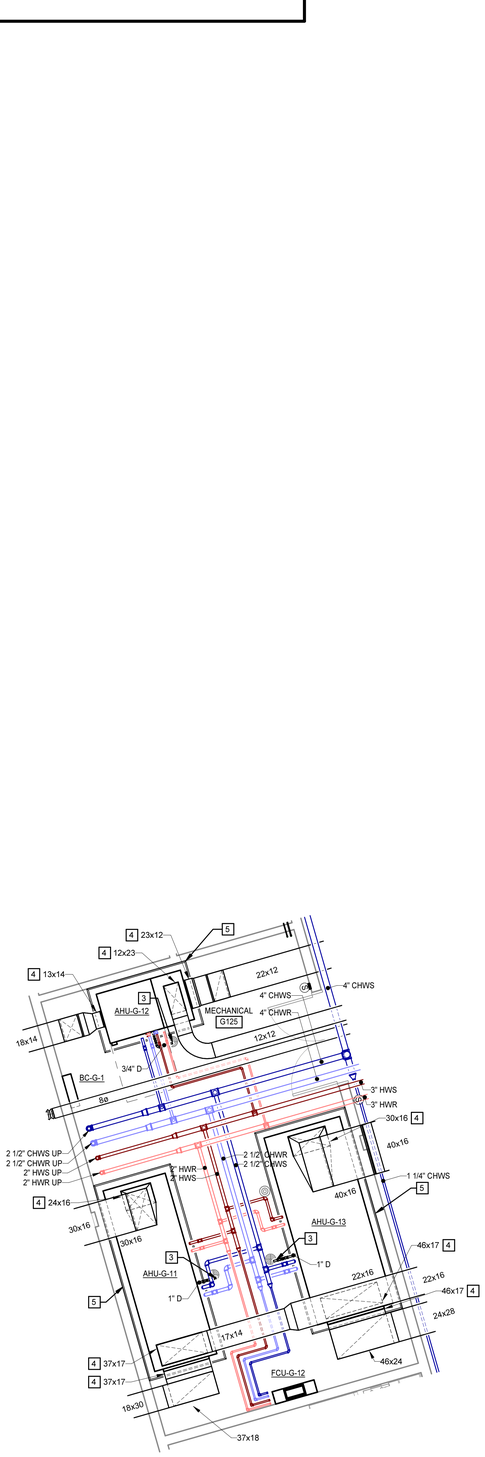
FIRST FLOOR PLAN - PART F - PIPING

M2.6.2

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM



2 M2.1.2 M2.7.1 **ENLARGED PLAN - FIRST FLOOR - PART G - MECHANICAL ROOM**
1/4" = 1'-0"

FIRST FLOOR PLAN - PART G - DUCTWORK
1/8" = 1'-0"

KEYNOTES

APPLIES TO THIS DRAWING

1. 4" DOWN TO DRYER VENT WALL BOX. MOUNT AT HEIGHT TO ALIGN WITH DRYER EXHAUST VENT. PROVIDE NAMEPLATE ON WALL LISTING DRYER VENT EQUIVALENT LENGTH AS INSTALLED. REFER TO SECTION 233113 FOR ADDITIONAL DETAILS.
2. SIDEWALL DRYER VENT TERMINATION IN ACCORDANCE WITH DRYER MANUFACTURER'S INSTRUCTIONS. REFER TO SECTION 233113 FOR ADDITIONAL DETAILS. PAINT TO MATCH WALL COLOR.
3. DISCHARGE CONDENSATE DRAIN INTO OPEN SITE FLOOR DRAIN.
4. CONNECT TO UNIT FULL SIZE OF UNIT CONNECTION.
5. PROVIDE 6" THICK HOUSEKEEPING PAD. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS.
6. PROVIDE ALUMINUM DUCT FROM THIS TAP BACK TO GRILLE.

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NORTH CAROLINA PROFESSIONAL SEAL 043951 ENGINEER BRITTON T WHITE
8/2/2024

G

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310	
DATE:	AUGUST 2, 2024
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8/23/24	*AD-02

FIRST FLOOR PLAN - PART G - DUCTWORK

0' 1' 2' 4' 8'
1/4" = 1'-0"

0' 2' 4' 8' 16'
1/8" = 1'-0"

M2.7.1

8/21/2024 3:11:20 PM

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1 DISCHARGE CONDENSATE DRAIN 6" ABOVE GRADE ONTO SPLASH BLOCK.

FIRST FLOOR PLAN - PART G - PIPING

1/8" = 1'-0"

0' 2' 4' 8' 16'

1/8" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 043951 ENGINEER MATTHEW T WHITE

8/2/2024

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

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DATE	DESCRIPTION
8/23/24	*AD-02

FIRST FLOOR PLAN - PART G - PIPING

M2.7.2

8/21/2024 3:11:25 PM

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1 CONNECT TO UNIT FULL SIZE OF UNIT CONNECTION.

2 PROVIDE 6" THICK HOUSEKEEPING PAD. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS.

3 DISCHARGE CONDENSATE DRAIN INTO OPEN SITE FLOOR DRAIN.

2 M2.1.2 | M2.8.1 **ENLARGED PLAN - FIRST FLOOR - PART H - MECHANICAL ROOM**

1/4" = 1'-0"

FIRST FLOOR PLAN - PART H - DUCTWORK

1/8" = 1'-0"

0' 1' 2' 4' 8'
1/4" = 1'-0"

0' 2' 4' 8' 16'
1/8" = 1'-0"

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8/2/2024

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

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8/16/24	*AD-01
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FIRST FLOOR PLAN - PART H - DUCTWORK

M2.8.1

8/21/2024 3:11:32 PM

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1. DISCHARGE CONDENSATE DRAIN 6" ABOVE GRADE ONTO SPLASH BLOCK.
2. SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. REFRIGERANT SUCTION AND LIQUID UP TO FLOOR ABOVE.
4. LOCATE DIFFERENTIAL PRESSURE SENSOR FOR HOT WATER SYSTEM AT THIS LOCATION.
5. LOCATE DIFFERENTIAL PRESSURE SENSOR FOR CHILLED WATER SYSTEM AT THIS LOCATION.

FIRST FLOOR PLAN - PART H - PIPING
1/8" = 1'-0"

0' 2' 4' 8' 16'
1/8" = 1'-0"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043951 ANTHONY T WHITE
8/2/2024

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310	
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DATE	DESCRIPTION
8/23/24	*AD-02

FIRST FLOOR PLAN - PART H - PIPING

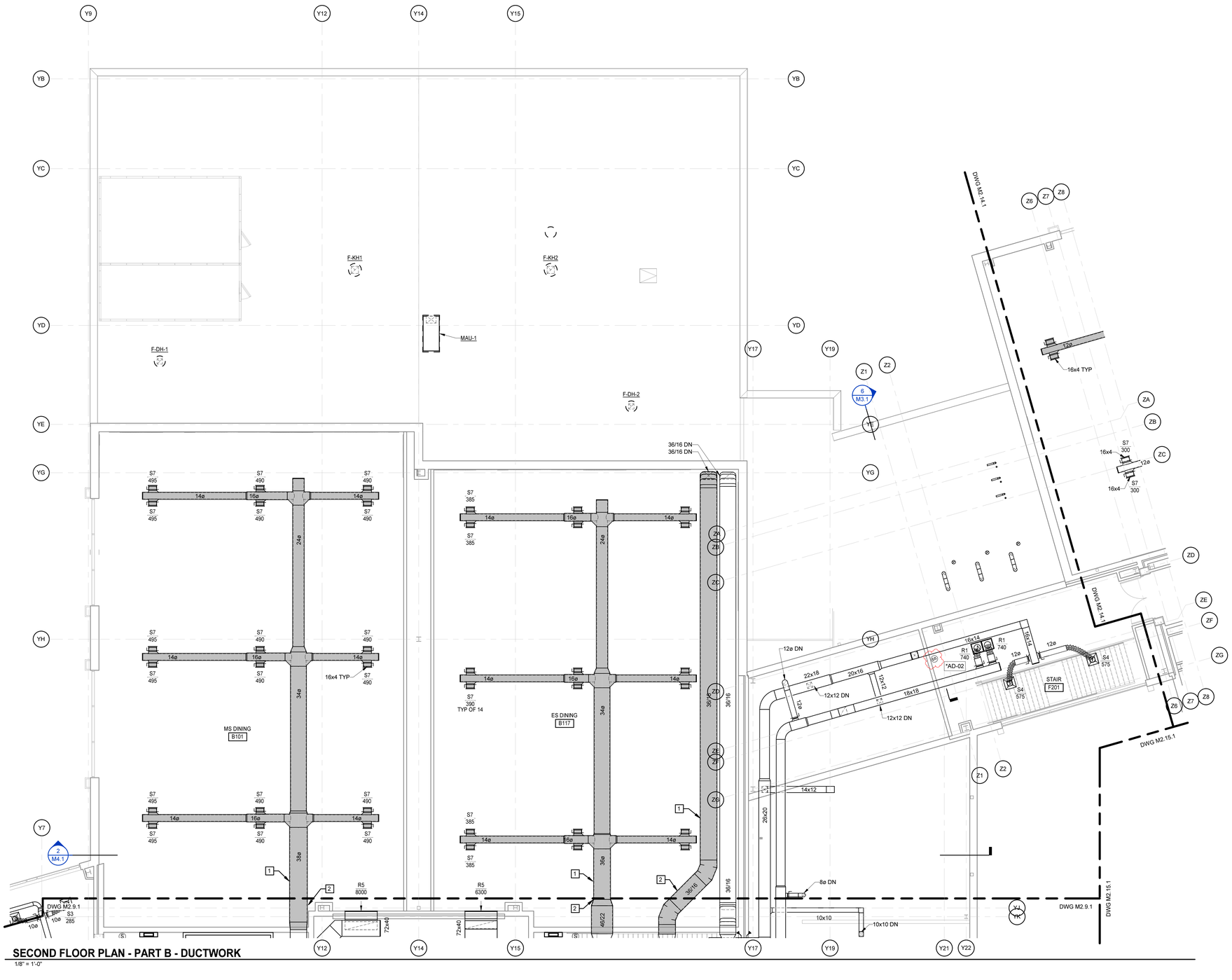
M2.8.2

8/21/2024 3:11:38 PM

KEYNOTES

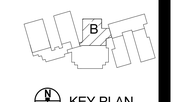
APPLIES TO THIS DRAWING

1. ALL SUPPLY DUCTWORK EXPOSED IN SPACE TO BE 1" DOUBLE WALL DUCT WITH PERFORATED INNER LINER.
2. REFER TO ENLARGED PLAN FOR CONTINUATION.



SECOND FLOOR PLAN - PART B - DUCTWORK

1/8" = 1'-0"



KEY PLAN

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NORTH CAROLINA PROFESSIONAL SEAL 043951 ENGINEER KEITH T WHITFIELD

8/2/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/23/24	*AD-02

SECOND FLOOR PLAN - PART B - DUCTWORK

M2.10.1

0' 1' 2' 4' 8'
1/4" = 1'-0"

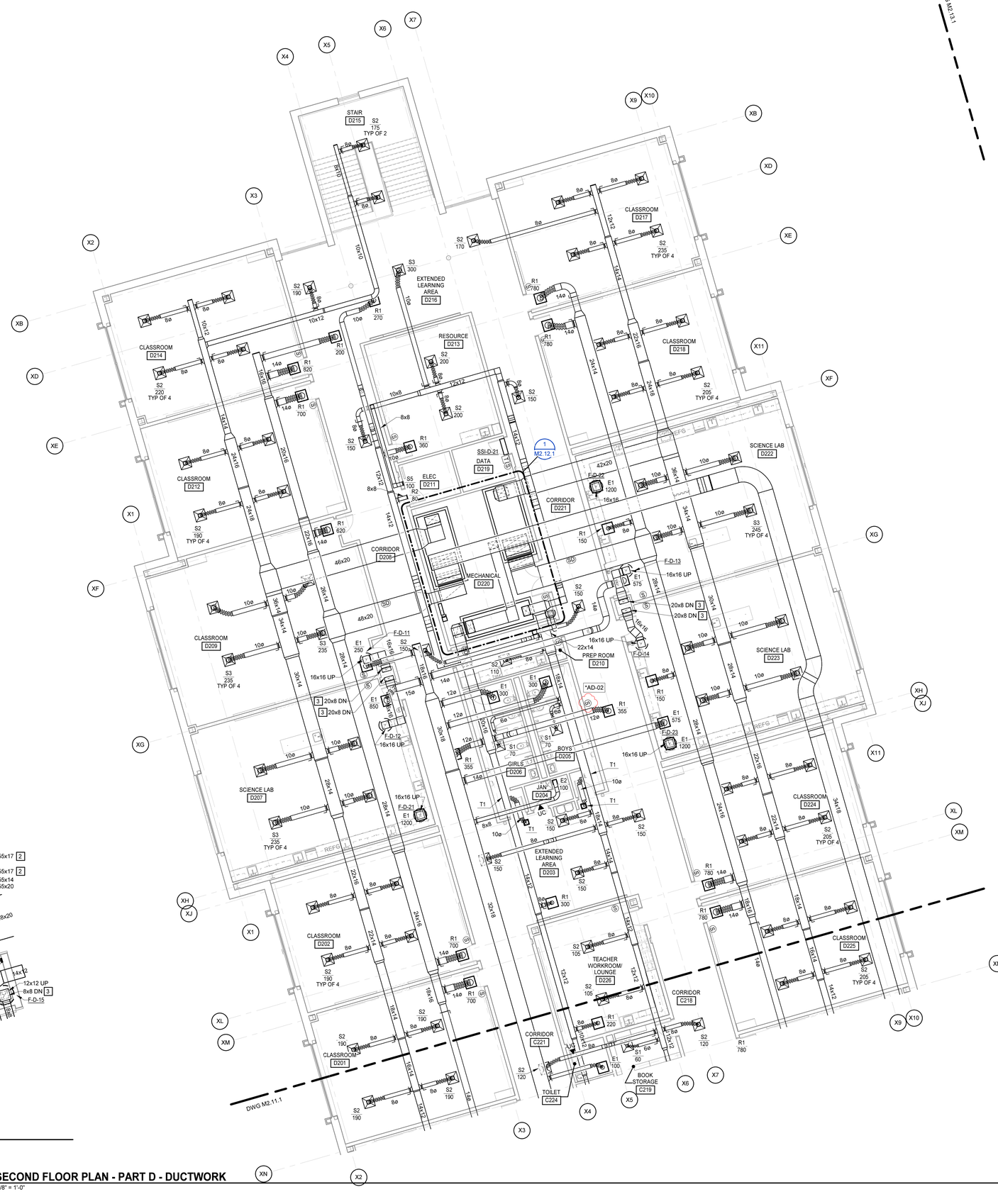
0' 2' 4' 8' 16'
1/8" = 1'-0"

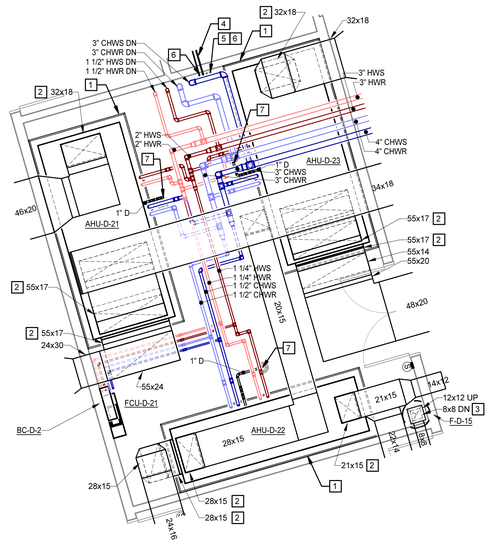
8/21/2024 3:11:44 PM

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM





KEYNOTES

APPLIES TO THIS DRAWING

1. PROVIDE 6" THICK HOUSEKEEPING PAD. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS.
2. CONNECT TO UNIT FULL SIZE OF UNIT CONNECTION.
3. DUCT PENETRATES UNRATED FLOOR. FILL THE ANNULAR SPACE AROUND THE PENETRATING DUCT WITH APPROVED NONCOMBUSTIBLE MATERIAL THAT RESISTS THE FREE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION IN ACCORDANCE WITH 607.6.3, EXCEPTION 2 OF THE NCMC.
4. SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
5. REFRIGERANT SUCTION AND LIQUID DOWN TO FLOOR BELOW.
6. REFRIGERANT SUCTION AND LIQUID UP TO CONDENSING UNIT ON ROOF. ROUTE PIPING THROUGH PIPE CURB, REFER TO REFRIGERANT PIPE PENETRATION DETAIL - ROOF FOR ADDITIONAL DETAILS.
7. DISCHARGE CONDENSATE DRAIN INTO OPEN SITE FLOOR DRAIN.

1 M2.9.2 | M2.12.1 **ENLARGED PLAN - SECOND FLOOR - PART D**
1/4" = 1'-0"

SECOND FLOOR PLAN - PART D - DUCTWORK
1/8" = 1'-0"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043951 BRITTNEY T WHITE
8/2/2024

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

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SECOND FLOOR PLAN - PART D - DUCTWORK

0' 1' 2' 4' 8'
1/4" = 1'-0"

0' 2' 4' 8' 16'
1/8" = 1'-0"

M2.12.1

8/21/2024 3:11:52 PM

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1 SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

SECOND FLOOR PLAN - PART D - PIPING

1/8" = 1'-0"

0' 2' 4' 8' 16'

1/8" = 1'-0"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043951 MATTHEW WHITE

8/2/2024

D

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/23/24	*AD-02

SECOND FLOOR PLAN - PART D - PIPING

M2.12.2

8/21/2024 3:11:57 PM

GENERAL NOTES

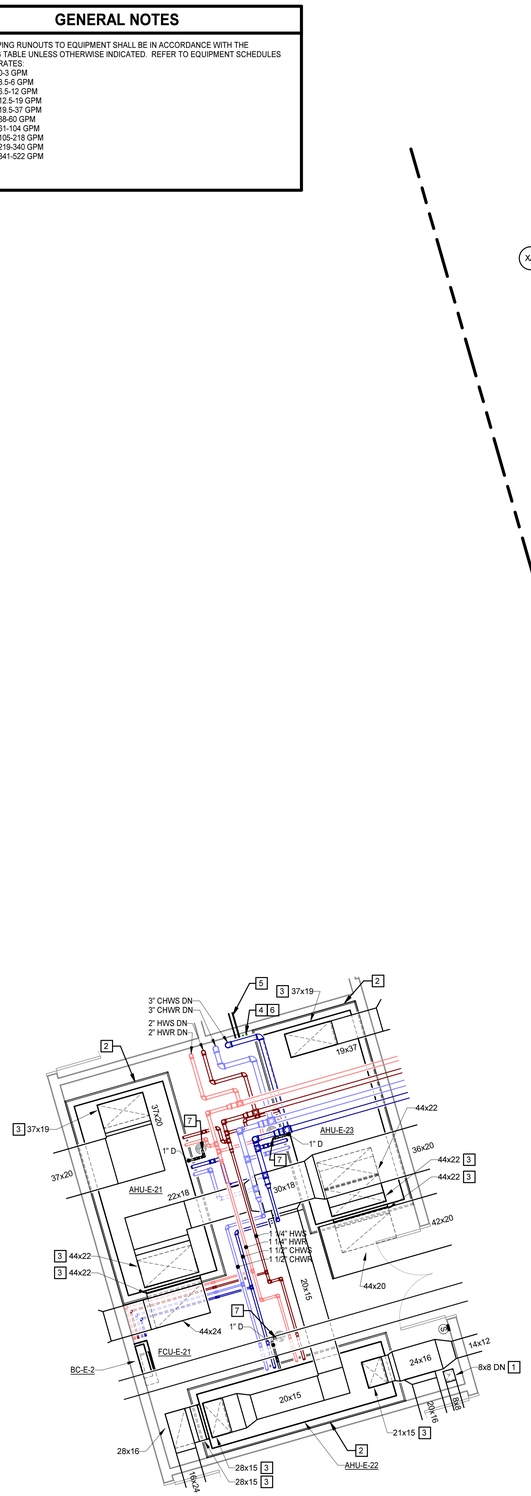
A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1. DUCT PENETRATES UNRATED FLOOR. FILL THE ANNULAR SPACE AROUND THE PENETRATING DUCT WITH APPROVED NONCOMBUSTIBLE MATERIAL THAT RESISTS THE FREE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION IN ACCORDANCE WITH 607.6.3, EXCEPTION 2 OF THE NCMC.
2. PROVIDE 6" THICK HOUSEKEEPING PAD. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS.
3. CONNECT TO UNIT FULL SIZE OF UNIT CONNECTION.
4. REFRIGERANT SUCTION AND LIQUID DOWN TO FLOOR BELOW.
5. SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
6. REFRIGERANT SUCTION AND LIQUID UP TO CONDENSING UNIT ON ROOF. ROUTE PIPING THROUGH PIPE CURB. REFER TO REFRIGERANT PIPE PENETRATION DETAIL - ROOF FOR ADDITIONAL DETAILS.
7. DISCHARGE CONDENSATE DRAIN INTO OPEN SITE FLOOR DRAIN.



ENLARGED PLAN - SECOND FLOOR - PART E - MECHANICAL ROOM

1/4" = 1'-0"

SECOND FLOOR PLAN - PART E - DUCTWORK

1/8" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 043951 ENGINEER KEITH T WHITLEY
8/2/2024

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310	
DATE:	AUGUST 2, 2024
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SECOND FLOOR PLAN - PART E - DUCTWORK

M2.13.1

8/21/2024 3:12:08 PM

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1 SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

SECOND FLOOR PLAN - PART E - PIPING
1/8" = 1'-0"

0' 2' 4' 8' 16'
1/8" = 1'-0"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043951 BRITTNEY WHITE
8/2/2024

E

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/23/24	*AD-02

SECOND FLOOR PLAN - PART E - PIPING

M2.13.2

8/21/2024 3:12:15 PM

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

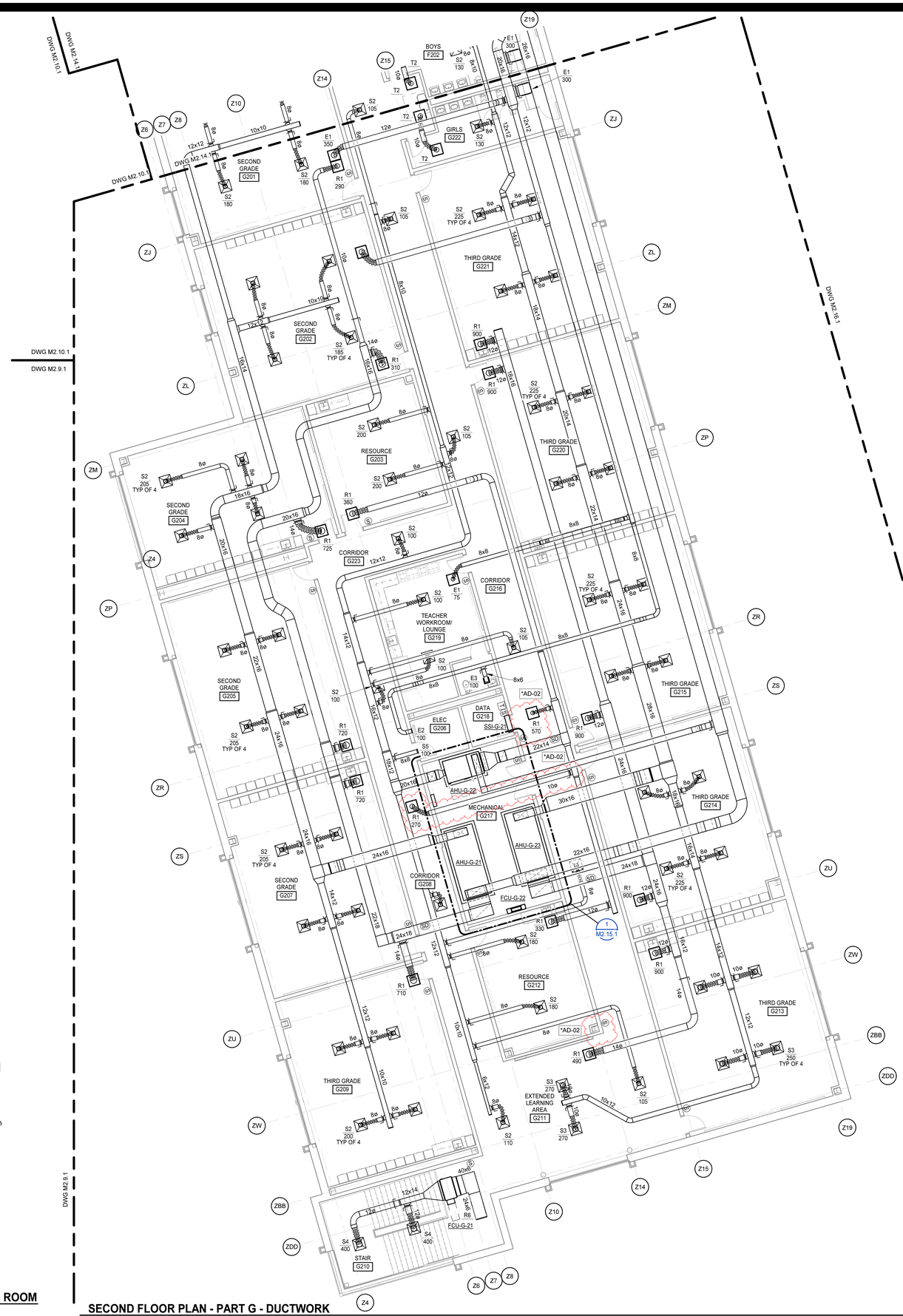
3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1. PROVIDE 6" THICK HOUSEKEEPING PAD. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS.
2. CONNECT TO UNIT FULL SIZE OF UNIT CONNECTION.
3. REFRIGERANT SUCTION AND LIQUID UP TO CONDENSING UNIT ON ROOF. ROUTE PIPING THROUGH PIPE CURB, REFER TO REFRIGERANT PIPE PENETRATION DETAIL - ROOF FOR ADDITIONAL DETAILS.
4. SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
5. REFRIGERANT SUCTION AND LIQUID DOWN TO FLOOR BELOW.
6. DISCHARGE CONDENSATE DRAIN INTO OPEN SITE FLOOR DRAIN.

1 M2.9.2 M2.15.1 **ENLARGED PLAN - SECOND FLOOR - PART G - MECHANICAL ROOM**
1/4" = 1'-0"



SECOND FLOOR PLAN - PART G - DUCTWORK
1/8" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 043951 ENGINEER BRITTNEY T WHITE
8/2/2024

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/16/24	*AD-01
8/23/24	*AD-02

SECOND FLOOR PLAN - PART G - DUCTWORK

M2.15.1

1/4" = 1'-0"
1/8" = 1'-0"

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GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
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1-1/4":	6.5-12 GPM
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2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1 SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

SECOND FLOOR PLAN - PART G - PIPING

1/8" = 1'-0"

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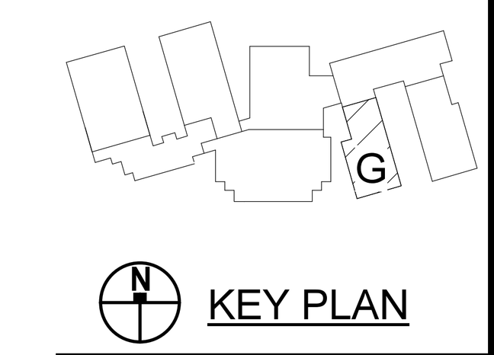

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS

DATE	DESCRIPTION
8/23/24	*AD-02

SECOND FLOOR PLAN - PART G - PIPING

0' 2' 4' 8' 16'
1/8" = 1'-0"

M2.15.2

8/21/2024 3:12:25 PM

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
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2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1 PROVIDE 6" THICK HOUSEKEEPING PAD. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS.

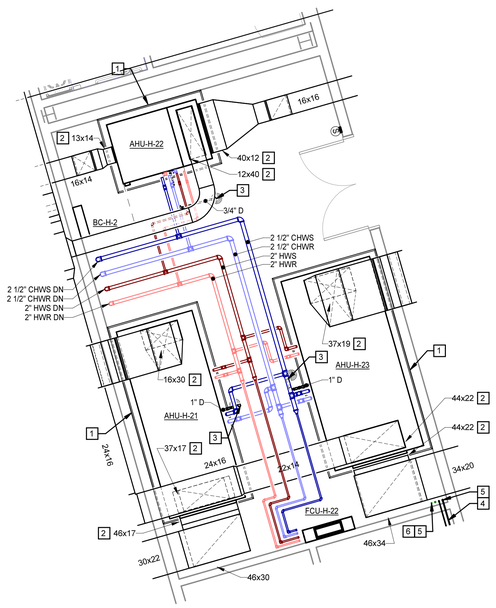
2 CONNECT TO UNIT FULL SIZE OF UNIT CONNECTION.

3 DISCHARGE CONDENSATE DRAIN INTO OPEN SITE FLOOR DRAIN.

4 SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

5 REFRIGERANT SUCTION AND LIQUID UP TO CONDENSING UNIT ON ROOF. ROUTE PIPING THROUGH PIPE CURB. REFER TO REFRIGERANT PIPE PENETRATION DETAIL - ROOF FOR ADDITIONAL DETAILS.

6 REFRIGERANT SUCTION AND LIQUID DOWN TO FLOOR BELOW.



1 M2.9.2 M2.16.1 **ENLARGED PLAN - SECOND FLOOR - PART H - MECHANICAL ROOM**
1/4" = 1'-0"

SECOND FLOOR PLAN - PART H - DUCTWORK
1/8" = 1'-0"

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8/2/2024

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS	
DATE	DESCRIPTION
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8/23/24	*AD-02

SECOND FLOOR PLAN - PART H - DUCTWORK

1/4" = 1'-0"
1/8" = 1'-0"

M2.16.1

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GENERAL NOTES

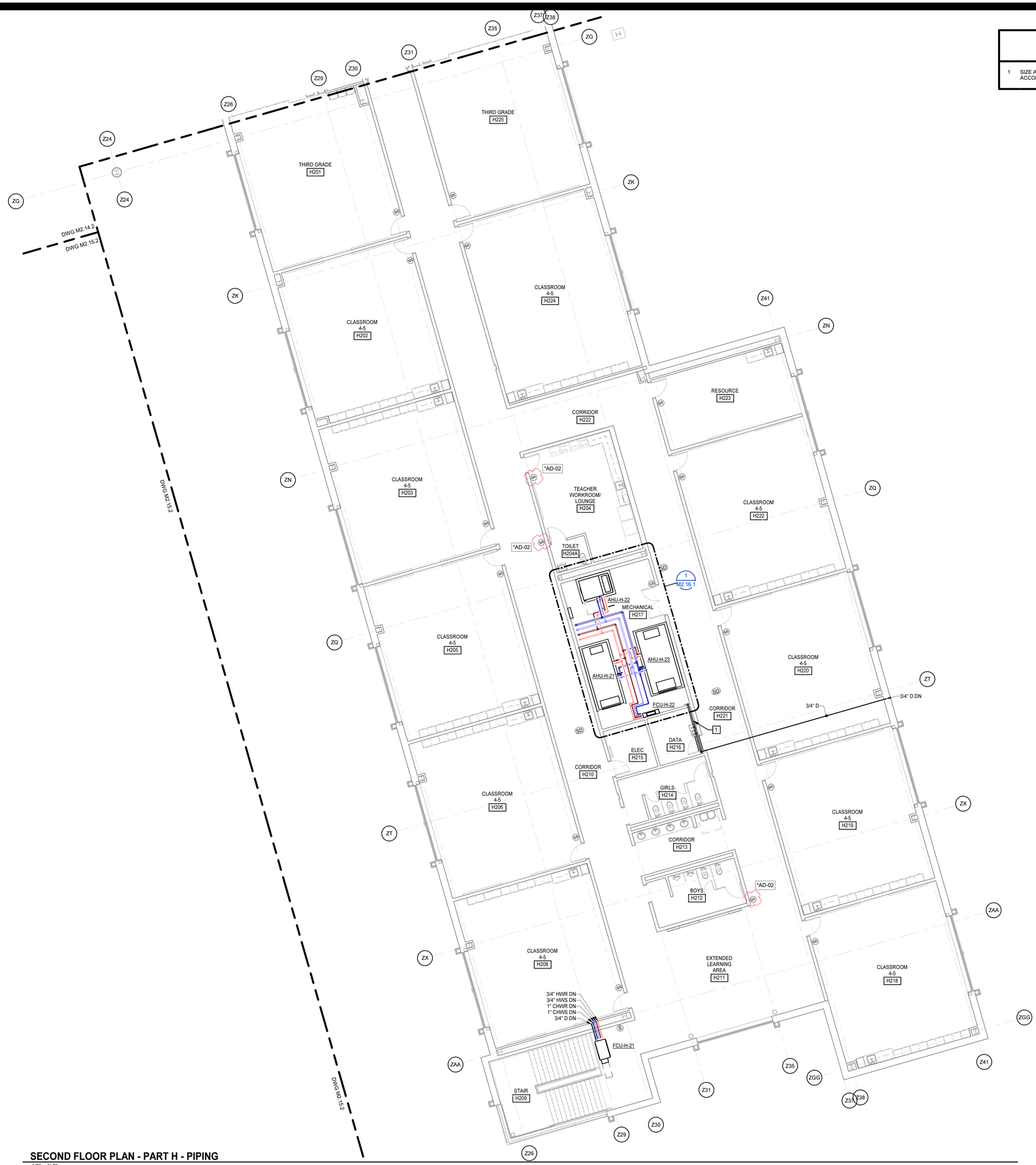
A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES:

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1 SIZE AND ROUTE REFRIGERANT SUCTION AND LIQUID IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.



SECOND FLOOR PLAN - PART H - PIPING

1/8" = 1'-0"

0' 2' 4' 8' 16'

1/8" = 1'-0"

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8/2/2024

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/23/24	*AD-02

SECOND FLOOR PLAN - PART H - PIPING

M2.16.2

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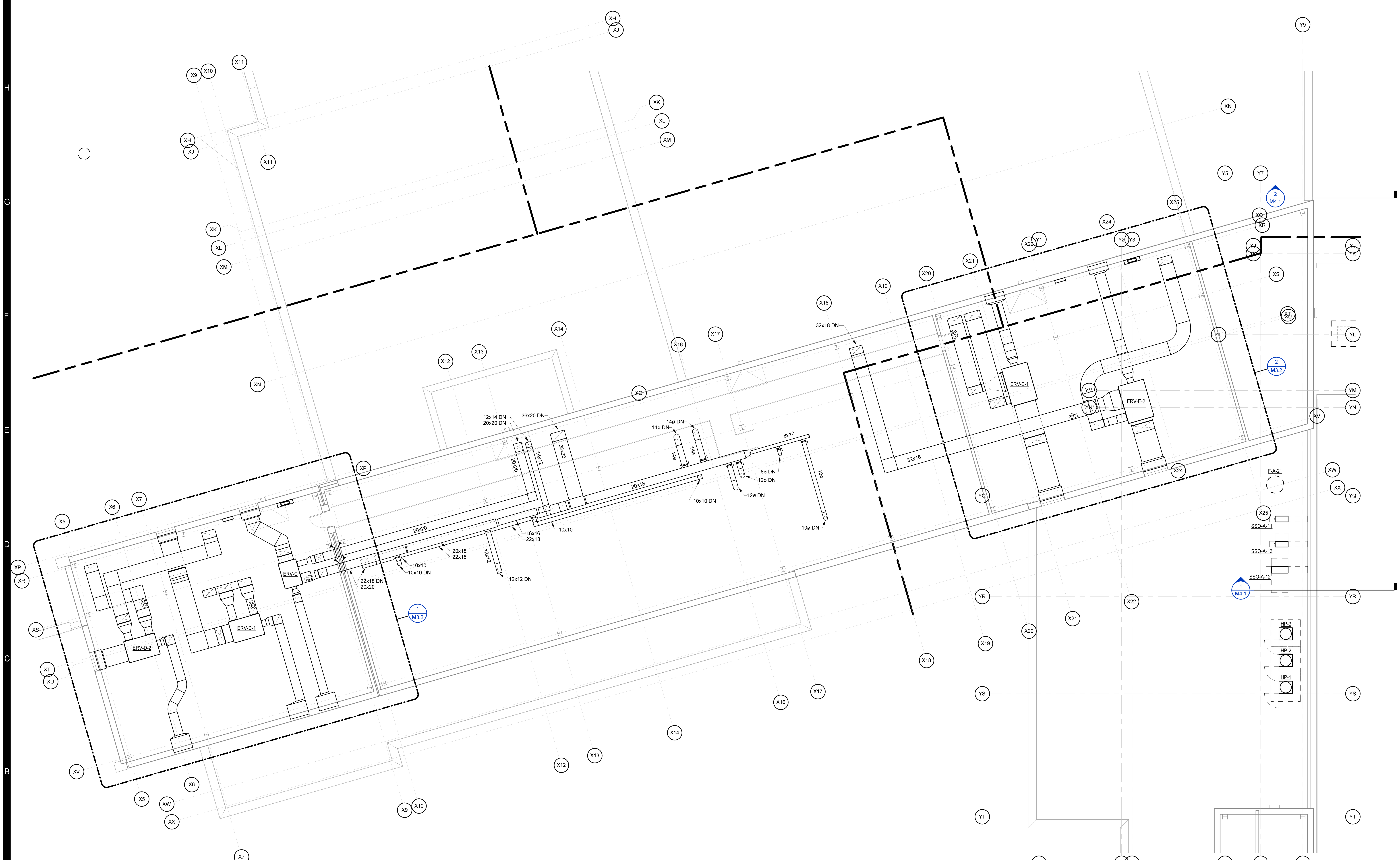
*AD-02



PENTHOUSE FLOOR PLAN - PART A & C - DUCTWORK PLANS

1/8" = 1'-0"

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KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO.	631310
DATE	AUGUST 2, 2024
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PENTHOUSE FLOOR PLAN - PART A & C - DUCTWORK

M2.17.1

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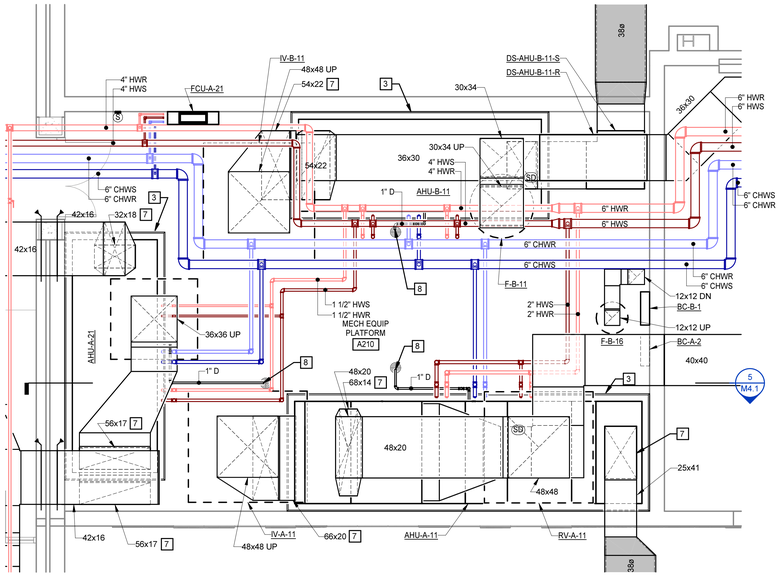
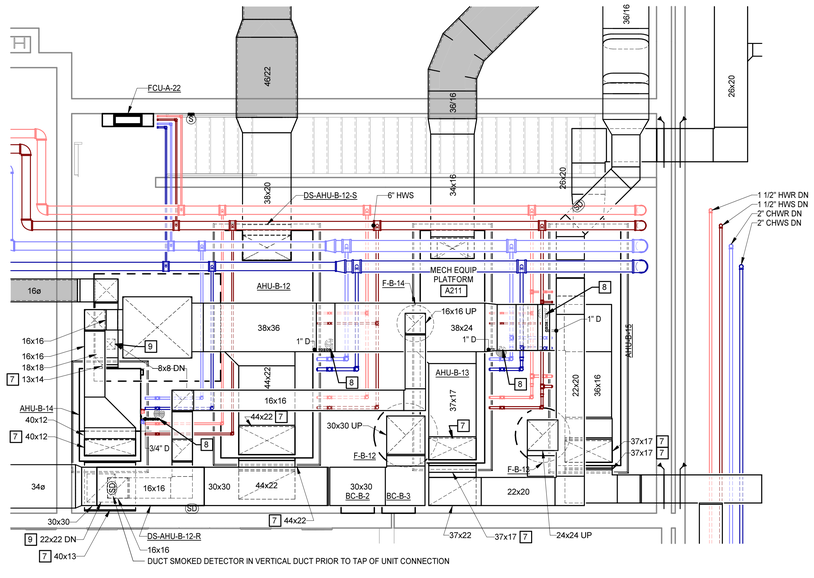


2 ENLARGED PLAN - SECOND FLOOR - PART A - A210
M2.9.1 M3.1 — 1/4" = 1'-0"



3 ENLARGED PLAN - SECOND FLOOR - PART A - A211
M2.9.1 M3.1 — 1/4" = 1'-0"

GENERAL NOTES

A. BRANCH PIPING RUNOUTS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE INDICATED. REFER TO EQUIPMENT SCHEDULES FOR FLOW RATES.

3/4":	0-3 GPM
1":	3.5-6 GPM
1-1/4":	6.5-12 GPM
1-1/2":	12.5-19 GPM
2":	19.5-37 GPM
2-1/2":	38-60 GPM
3":	61-104 GPM
4":	105-218 GPM
5":	219-340 GPM
6":	341-522 GPM

KEYNOTES

APPLIES TO THIS DRAWING

1 BOILER COMBUSTION AIR TERMINATION THRU ROOF. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

2 BOILER VENT TERMINATION THRU ROOF. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND BOILER FLUE TERMINATION DETAIL.

3 PROVIDE 6" THICK HOUSEKEEPING PAD. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS.

4 8" TEMPORARY CHILLER TAPS.

5 DOMESTIC WATER HEATER VENT TERMINATION THRU ROOF. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND BOILER FLUE TERMINATION DETAIL.

6 DOMESTIC WATER HEATER COMBUSTION AIR TERMINATION THRU ROOF. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

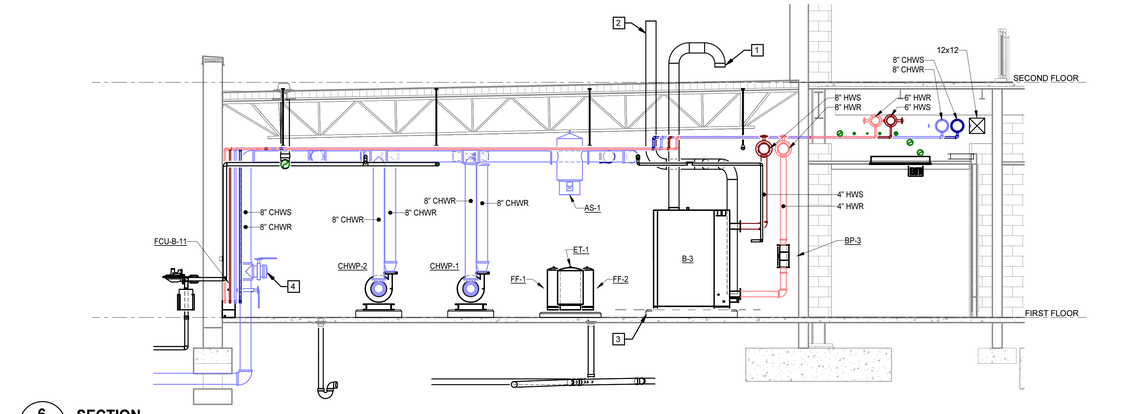
7 CONNECT TO UNIT FULL SIZE OF UNIT CONNECTION.

8 DISCHARGE CONDENSATE DRAIN INTO OPEN SITE FLOOR DRAIN.

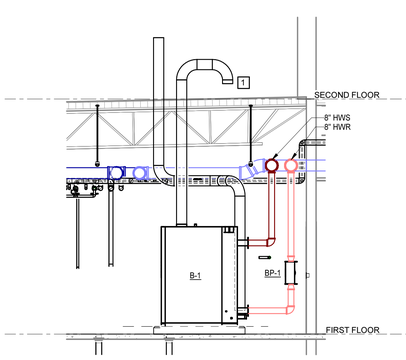
9 DUCT PENETRATES UNRATED FLOOR. FILL THE ANNULAR SPACE AROUND THE PENETRATING DUCT WITH APPROVED NONCOMBUSTIBLE MATERIAL THAT RESISTS THE FREE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION IN ACCORDANCE WITH 607.6.3, EXCEPTION 2 OF THE NCMC.

*AD-02 10 LOCATE HOT WATER FLOW METER IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTINOS.

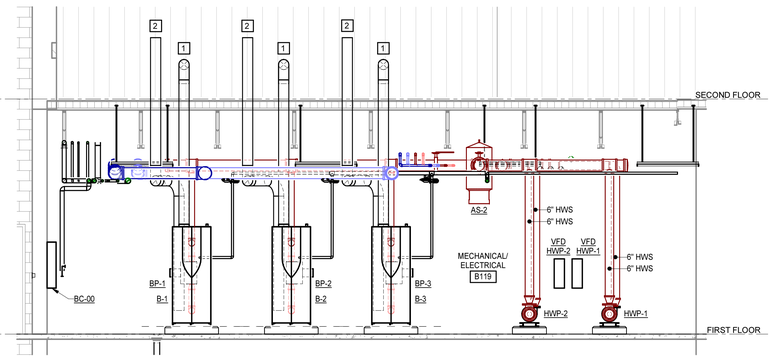
11 LOCATE CHILLED WATER FLOW METER IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.



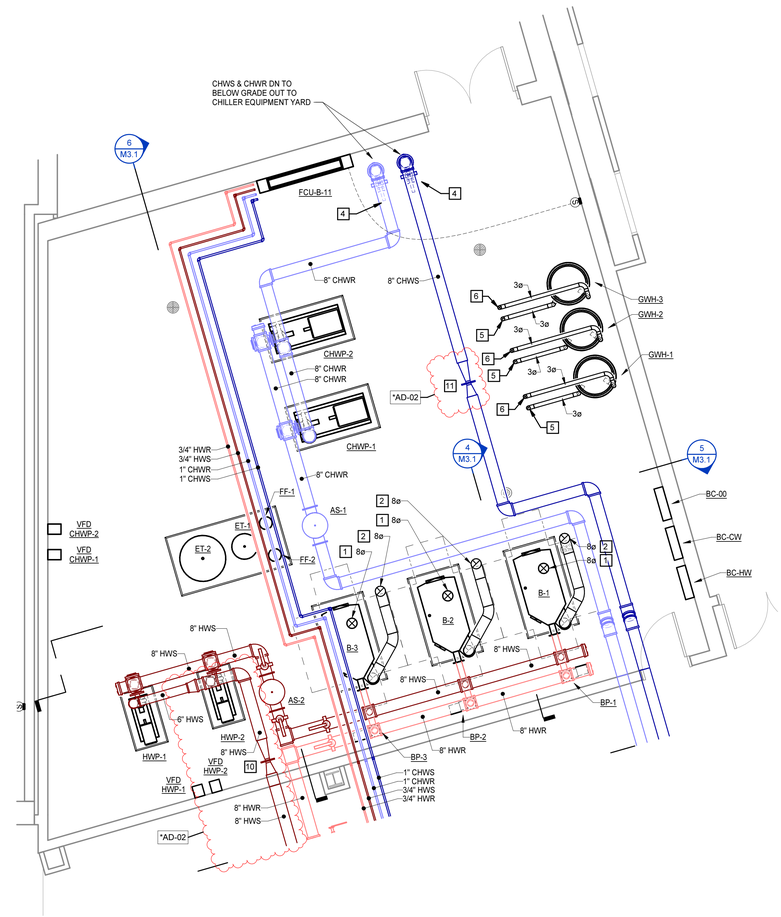
6 SECTION
M2.2.1 M3.1 — 1/4" = 1'-0"



4 SECTION
M3.1 M3.1 — 1/4" = 1'-0"



5 SECTION
M3.1 M3.1 — 1/4" = 1'-0"



1 ENLARGED PLAN - FIRST FLOOR - PART B - MECHANICAL ROOM
M2.1.2 M3.1 — 1/4" = 1'-0"

0' 1' 2' 4' 8'
1/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043951 BRITTNEY WHITE
8/2/2024

B

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/23/24	*AD-02

ENLARGED PLANS

M3.1

8/21/2024 3:12:54 PM

CONTROL PANEL SCHEDULE

TAG	NUMBER	NAME	SERVING	NOTES
BC-00	B119	MECHANICAL/ ELECTRICAL	BAS HEAD END	
BC-A-1	A144	GIRLS LOCKER ROOM	AHU-A-12	
BC-A-2	A210	MECHANICAL	AHU-A-11	
BC-B-1	A210	MECHANICAL	AHU-A-21, B-11	
BC-B-2	A211	MECHANICAL	AHU-B-12, B-14	
BC-B-3	A211	MECHANICAL	AHU-B-13, B-15	
BC-C-1	C119	MECHANICAL	AHU-C-11	
BC-C-2	C216	MECHANICAL	AHU-C-21	
BC-C-3	MP01	MECHANICAL PLATFORM	ERV-C, D-1, D-2	
BC-CW	B119	MECHANICAL/ ELECTRICAL	CHILLED WATER SYSTEM	
BC-D-1	D120	MECHANICAL	AHU-D-11, D-12, D-13	
BC-D-2	D220	MECHANICAL	AHU-D-21, D-22, D-23	
BC-E-1	E125	MECHANICAL	AHU-E-11, E-12, E-13	
BC-E-2	E229	MECHANICAL	AHU-E-21, E-22, E-23	
BC-E-3	MP02	MECHANICAL PLATFORM	ERV-E-1, E-2	
BC-F-1	F205	MECHANICAL	AHU-F-11, F-12	
BC-F-2	F205	MECHANICAL	AHU-F-13, F-14, F-21	
BC-G-1	G125	MECHANICAL	AHU-G-11, G-12, G-13	
BC-G-2	G217	MECHANICAL	AHU-G-21, G-22, G-23	
BC-G-3	MP03	MECHANICAL PLATFORM	ERV-G	
BC-H-1	H126	MECHANICAL	AHU-H-11, H-12, H-13	
BC-H-2	H217	MECHANICAL	AHU-H-21, H-22, H-23	
BC-H-3	MP04	MECHANICAL PLATFORM	ERV-H	
BC-HW	B119	MECHANICAL/ ELECTRICAL	HOT WATER SYSTEM	
HEAT TRACE CP				

GENERAL NOTES:
A. PROVIDE A CONTROLLER FOR EACH AIR HANDLING UNIT. MULTIPLE CONTROLLERS MAY BE INSTALLED IN EACH CONTROL ENCLOSURE. CONTROL PANELS INDICATED FOR POWER. CONTROLS CONTRACTOR SHALL PROVIDE CONTROL PANELS AND CONTROLLERS AS REQUIRED PER 230900.

SEQUENCES OF CONTROL

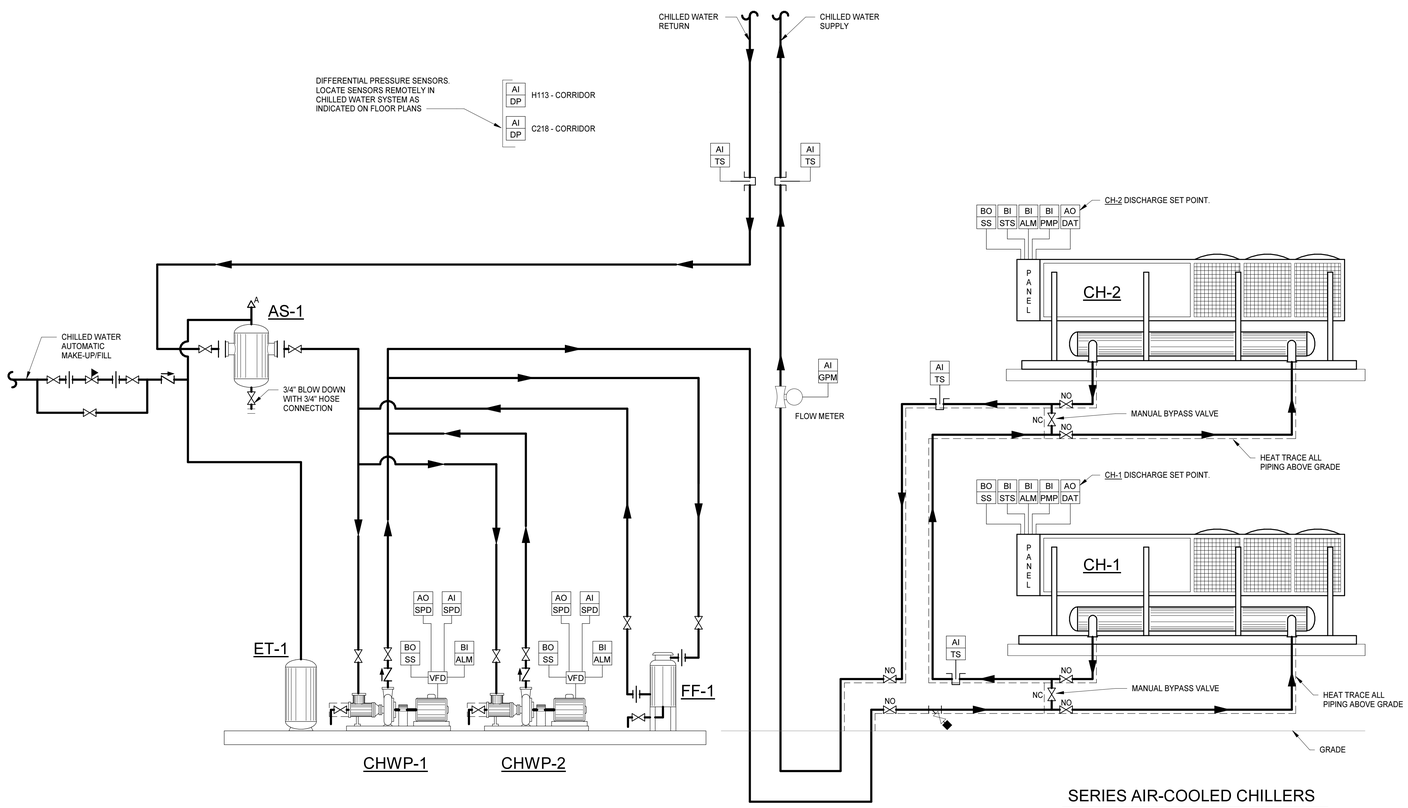
CHILLER PLANT

A. General: The intent is to allow chiller operation year-round. Individual chillers may be shut down for maintenance periodically, but chilled water production shall be available at all times. Scheduled operation of the chillers shall be controlled by the BAS.
B. Control of the chillers' starting, stopping, capacity modulation, supply water temperature control, compressor staging, VFD modulation, etc. shall be controlled by the chiller unit-mounted controller. The BAS shall enable/disable the chillers, provide supply water temperature setpoints, and receive chiller alarms.
C. The chiller plant shall be controlled through software interlocking as follows:
   1. When any one of the air handling units call for cooling, the BAS shall enable the lead chiller.
   2. Once started, the BAS shall call for chilled water until none of the air handling units call for cooling.
   3. The BAS shall shut down the chiller plant with no call for cooling. Individual chillers may start and stop at any time based on building load or other parameters in the unit controller.
D. Power Failure
   1. Upon detection of a power failure through the emergency generator being operational, all chilled water pumps and chillers will be inoperative. The BAS shall re-enable the plant when normal power is restored.
E. Phase Loss
   1. Each piece of equipment shall have its own phase loss protection.
F. System Monitoring and Alarming
   1. Should, at any time, a chiller safety or loss of water flow in the primary loop be registered, the chiller plant shall be shut down and the appropriate alarm recorded on the chiller UCP.
   2. The BAS shall monitor chiller and pump operations including but not limited to: individual chiller chilled water supply and return temperatures, chiller alarms, pump status, etc.
   3. The BAS system shall accumulate run time for the chillers.
G. Initial Set Points:
   1. Chiller lead lag time period: Two weeks (adjustable).
   2. Pump lead lag time period: Two weeks (adjustable).
   3. Chilled water system temperature set point: 42 degrees F.
   4. Chiller lead lag: Change chiller start order each time period.
   5. Chilled water pump lead lag: There are two chilled water pumps. The BAS shall alternate the two pumps in the lead position.
H. Chilled water enable/disable: On a call for cooling by any piece of equipment, the chilled water sequence shall be enabled. If there is no call for cooling by any piece of equipment for more than 30 minutes, or the chilled water temperature falls to two degrees below set point and there is no call for cooling by any equipment, the BAS shall disable the chiller plant.
I. System Startup: On startup, the lead chiller shall start. The lead chilled water pump shall be started. The chiller shall confirm chilled water flow via its flow sensor. The chiller controller shall modulate the cooling capacity as required to provide chilled water at the chilled water set point.
J. Chiller Sequencing:
   1. The chillers are piped in series. Chiller 1 is the upstream chiller, and Chiller 2 is the downstream chiller.
   2. The lead chiller shall run by itself (time determined by manufacturer) prior to enabling the lag chiller to allow time to cool the chilled water loop. The chiller's set point shall be the chilled water system set point.
   3. If the lead chiller is in alarm, fails to start, or is not producing chilled water, the BAS shall enable the lag chiller and index it to the lead position.
   4. On a rise in demand such that the lead chiller cannot maintain chilled water supply at set point for and adjustable period, the BAS shall start the lag chiller.
      a. The intent is to equalize the load on both chillers. When both chillers are operating, the BAS shall set different setpoints for each chiller.
      b. The upstream chiller set point shall be reset to about halfway between the system return temperature and the chilled water system set point (= (chilled water return temp – ((chilled water return temp – chilled water system supply set point)/2)).
      c. The downstream chiller set point shall be the chilled water system set point.
   5. On a fall in demand, the BAS shall stage off the lag chiller. When both chillers reach 40% loading based on RLA, the BAS shall shut down the lag chiller and reset the chilled water set point of the lead chiller to the system chilled water set point.
K. Chilled Water Temperature Reset: The chilled water temperature shall be maintained such that a minimum of one chilled water valve is 85% open. If all chilled water valves are less than 85% open the chilled water temperature shall be reset up 1 degree F. every 10 minutes until one valve reaches 85% open. Maximum chilled water temperature shall be 8 degrees above chilled water temperature set point. If any valve reaches 95% open, the chilled water temperature shall be reset down 1 degree F. every 10 minutes until no valve is more than 95 % open. Whenever there is a need for dehumidification, the chilled water temperature shall be returned to set point until dehumidification is no longer required. When humidity levels are returned to set point, the chilled water temperature reset sequence shall resume.
L. System Monitoring
   1. The BAS shall monitor the chiller controllers for alarms. When a chiller generates an alarm, the BAS shall receive the alarm signal and indicate the alarm and the chiller on the head end graphics.
   2. The following points shall be passed from the chiller controllers to the BAS head end graphics:
      a. Chilled water request to start
      b. Chilled water system supply temperature
      c. Chilled water system return temperature
      d. Chiller 1 RLA
      e. Chiller 2 RLA
      f. Chiller 1 chilled water supply/return temperature
      g. Chiller 2 chilled water supply/return temperature
      h. Chilled water flow rate
      i. Chiller 1 alarm
      j. Chiller 2 alarm

CHILLED WATER PUMPS

A. The pumps are in a duty/standby configuration. The BAS shall rotate the lead pump to equalize run times.
B. The BAS shall start the lead pump on a call for cooling and an operating chiller. If cooling is not required and the chillers shutdown, then the BAS shall stop the pumps.
C. Chilled Water Pump Speed Control:
   1. Loop Differential Pressure
      a. The BAS shall modulate the speed of the pumps to maintain the chilled water differential pressure set point as transmitted by two remote pressure differential transmitters (indicated on drawings).
      b. The BAS shall have field-programmable, independent set points, the value of which shall be the optimum differential pressure at each remote location to provide the design flow to the remaining hydronic system. The differential pressure set point shall be determined during testing and balancing and programmed into the BAS.
      c. The BAS shall monitor all three differential pressure values and control the pump speed based on the value furthest from set point.
   2. Minimum Pump Speed
      a. Minimum pump speed shall be set to provide the minimum flow rate required by the chiller. Flow rate will be monitored by the chilled water loop flow meter. The minimum flow required by the chiller shall be programmed into the BAS as the minimum pump flow rate.
D. Pump Failure: Upon detection of pump failure via a pump current switch or VFD fault, the BAS shall start the other pump and issue an alarm at the BAS head end.
E. General:
   1. The chilled water pump control systems shall include semi-automatic and manual modes of operation. The operator shall be capable of starting each pump manually but allow the automatic control to adjust the pump speed to maintain system differential pressure. The operator shall also have the option of starting each pump and controlling its speed manually. This shall be accomplished by utilizing the hand-off-auto switch and manual speed control on each variable frequency drive control panel.
   2. The control system shall include a failure alarm for each pump. Upon a pump failure alarm, the pump shall be stopped and locked-out of service until the alarm is manually reset. A pump failure alarm shall automatically replace the failed pump with the next pump in the sequence.
F. System Monitoring:
   1. Temperatures for chiller supply/return and building chilled water supply/return sensed by temperature sensors shall be indicated on the BAS head end graphics along with available points from the chiller control panel.
   2. The following points shall be passed from the pump system to the BAS head end graphics:
      a. Chilled water pump 1 speed
      b. Chilled water pump 2 speed
      c. Chilled water pump on/off 1 status
      d. Chilled water pump on/off 2 status
      e. Chilled water pump 1 alarm
      f. Chilled water pump 2 alarm
      g. Chilled water zone differential pressure 1
      h. Chilled water zone differential pressure 2

*AD-02



1 **CHILLED WATER SYSTEM SCHEMATIC AND CONTROLS**
NO SCALE

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8/2/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/23/24	*AD-02

CHILLED WATER SYSTEM SCHEMATIC & CONTROLS

M6.1

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SEQUENCES OF CONTROL

BOILER PLANT CONTROL

A. General: The system consists of three condensing type, gas-fired, hot water boilers with variable speed primary pumps and two variable speed hot water secondary pumps. The BAS shall control secondary system pumping, enable the boiler manufacturers' Boiler Management System (BMS) panel to operate the boilers, and provide a Hot Water Supply setpoint signal. The BMS shall stage boilers and modulate primary hot water pumps as recommended by boiler manufacturer to optimize efficiency and equalize run time on boilers.

B. Pump Selection
1. Pumps HWP-1 and HWP-2 shall be controlled through the BAS with Active/Stand-by rotation. The Active/Stand-by status of the pumps shall be rotated through the BAS automatically based on a program to equalize pump run times. Pump Active/Standby status shall be automatically rotated weekly.
   a. This rotation shall be schedules as determined by the owner. The initial schedule shall be Mondays at 8:00 am.
   b. To prevent a boiler from shutting down on due to a loss of flow, if a pump is already running the Standby pump shall be engaged and proof On prior to shutting down one of the active pumps.
2. Pumps BP-1, BP-2, and BP-3 are variable speed boiler pumps and shall operate when their respective boiler is enabled through the BMS control panel.

C. Boiler Plant Control
1. Enable/Disable Control Parameters
   a. The BAS system shall be programmed with the following parameters to enable the boiler plant:
      1. The BAS shall enable the boiler plant anytime the outdoor air temperature is 50°F (adj) or below. While the outside air temperature is 50°F or below, the boiler plant shall remain in constant operation.
      2. The BAS system shall monitor all HVAC equipment (AHUs and FCUs) served by this boiler plant. While the outside air temperature is above 50°F, a call for Hot Water from any one (1) AHU or any three (3) fan coil units or duct heating coils shall trigger the BAS system to enable the boiler plant (Start the pumps and send the Enable command to the BMS).
      3. While the outside air temperature is above 50°F, if none of the HVAC equipment (AHUs, Fan Coil Units, or Duct Heating Coils) call for Hot Water for a minimum of 15 minutes (adj.) the BAS shall disable the BMS and shut down the pumps.
2. Hot Water Setpoint Reset Control
   a. The Hot Water setpoint is to be reset between 140°F and 100°F based on outside air temperature.
      1. When the Outside Air Temperature is 50°F or greater the Hot Water setpoint shall be 100°F.
      2. When the Outside Air Temperature is between 50°F and 30°F the BAS shall linearly reset the Hot Water setpoint from 100°F to 140°F.
      3. When the Outside Air Temperature is 30°F or less the Hot Water setpoint shall be 140°F.
      4. When the Outside Air Temperature is 10°F or less the Hot Water setpoint shall be 160°F to provide additional capacity at below design outside air conditions.
3. Pump Speed Control
   a. Loop Differential Pressure
      1. The BAS shall monitor the Differential Pressure Transmitters on the HW loop piping. The BAS system shall be programmed to modulate the speed of the pump to maintain the HW loop differential pressure.
      2. The BAS shall monitor the remote DP transducers, each DP shall be provided with its own setpoint. This setpoint shall be established with coordination from the TAB contractor. The setpoint value shall be the optimum differential pressure for that portion of the system.
      3. The differential pressure sensors shall be calibrated to record pressure in PSI and Feet of Water Column.
      4. The BAS shall simultaneously monitor all DP values and run separate pump speed calculations for each based on its individual setpoint and pressure value. The BAS shall pass the maximum calculated pump speed signal to the pump control output.
   b. Pump Minimum Speed/GPM
      1. Minimum pump speed shall be limited to the minimum operating flow rate of the boilers or the minimum pump flow rate, whichever is greater as monitored by the Hot Water Loop Flow meter.
4. Pump Failure
   a. Upon detection of pump failure via a pump current switch or VFD Fault status, the BAS shall initiate a "Pump Failure" sequence.
      1. When the BAS detects a pump failure the BAS shall start the stand-by pump.
      2. The failed active pump shall remain "On" for 60 seconds.
      3. If the failed active pump run status is picked up again (the pump was shut down for a brief period) the BAS shall shut down the standby pump and resume operation of the active pump.
      4. If the failed active pump run status is not picked up again (the pump was shut down or failed) the BAS shall shut down the failed active pump and continue operation of the stand-by pump.
      5. A message shall be recorded to indicate a problem was detected and the automatic pump rotation was sequenced to continue operation.
   b. Should both hot water pumps fail to operate a "Heating System Failure" alarm shall be recorded.

D. Power Failure
1. Upon detection of the building running on emergency power, the BAS shall reset all boiler plant and pump control programs to a restart sequence.

*AD-02

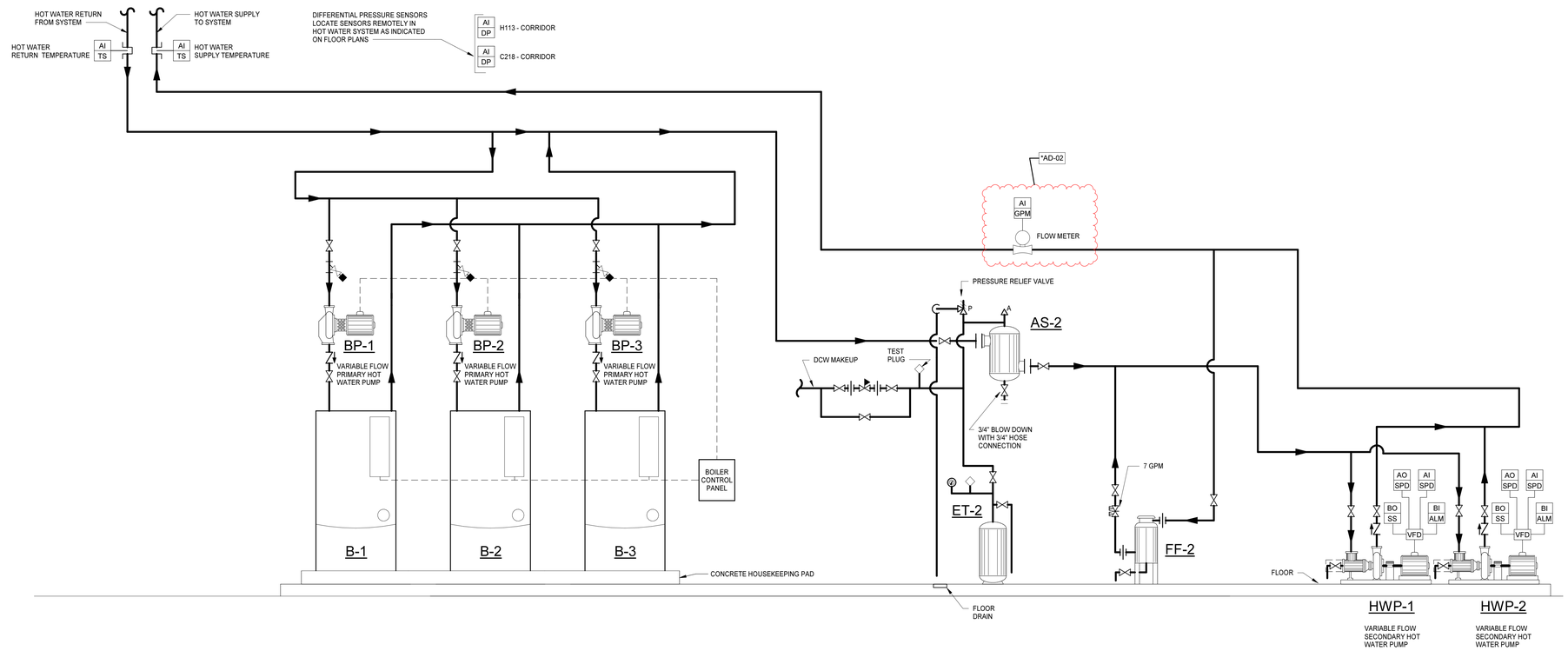
E. Phase Monitoring:
1. Each piece of equipment shall have its own integral phase loss monitoring.

F. Commissioning and Performance Testing
1. For testing purposes, provide programming that allows simple override of all Pump Active/Stand-by selections. In addition provide a simple and convenient method of overriding all control valve positions on a per zone basis to observe pump reactions.

G. Network Interface
1. The BAS is to be interface to the boiler controls with a direct data communication network, BACnet or LONtalk or approved other, for additional points. The BAS contractor shall provide a list of available monitoring that the interface can support and coordinate with PWCS for which points are be used on the Graphics for the operators to review.

H. System Monitoring and Alarming
1. The BAS shall monitor all pump status, drive speed feedback, drive faults, pump run times and the HW loop differential pressure.
2. The BAS system shall accumulate run time for the pump motors.
3. The BAS system shall accumulate run time for the individual boilers (Isolation Valve Open = Boiler Running)
4. HW Loop alarm conditions:
   a. The BAS shall report any detected sensor failure.
   b. The BAS shall monitor the building HW loop differential pressure. The BAS shall have a 5 min. initial delay after pump startup or Active/Standby rotation to allow the system to stabilize. After this initial delay all pressure alarms shall be immediately triggered. The BAS shall disable the alarm when the HW pumps are not operating. The BAS shall signal an alarm anytime any building loop DP sensor is 5 psi below the setpoint for more than 5 minutes.
   c. The BAS shall monitor the Fault status for the pumps. The BAS shall trigger an alarm "HW Pump VFD Fault Alarm" when the VFD Fault input is activated.
   d. The BAS shall monitor the speed feedback for the HW pumps. The BAS shall trigger an alarm "HW Pump Speed Alarm" when the feedback signal is not ± 2% of the command signal.
5. Boiler system alarm conditions:
   a. The BAS shall report any detected sensor failure.
   b. The BAS shall alarm any hot water system temperature sensor that is less than 35°F.
   c. The BAS shall alarm any time the Building HW supply temperature is less than 5°F (adj.) below setpoint for more than 20 min. (adj.) and the BMS has been enabled.
6. In the event the boiler system is inoperable (all boilers have failed or been disabled or any other system failure) the BAS shall record "Boiler System Failure" alarm. The BAS shall signal this alarm condition over the building automation system indicating an immediate need for service. This alarm shall also be transmitted across BAS system network and any equipment requiring HW for dehumidification modes shall also be disabled due to a lack of available HW.
7. An Emergency cut-off switch shall be provided at the exit door out of the mechanical room by Division 26 to disable the boilers and water heaters if depressed.

*AD-02



1 **HOT WATER SYSTEM SCHEMATIC AND CONTROLS**
NO SCALE

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NORTH CAROLINA PROFESSIONAL SEAL 043951 ENGINEER MATT WHITE
8/2/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/23/24	*AD-02

HOT WATER SYSTEM SCHEMATIC & CONTROLS

M6.2

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SEQUENCES OF CONTROL: SINGLE ZONE VARIABLE AIR VOLUME (VAV) AIR HANDLING UNIT (AHU) WITH ENERGY RECOVERY WHEEL (AHU-B-14)

A. DESCRIPTION: Commercial variable volume modular indoor unit with 100% economizer capability, variable speed supply fan(s), chilled water cooling coil located upstream of a hot water re-heating coil serving multiple spaces.

B. Graphics: A system graphic similar to the proposed equipment layout shall be developed and shall be readable from the BAS head end.

C. Sensed points shall be displayed on the graphic and shall readable from the BAS head end.

D. Fan operation shall be displayed on the graphic and shall be readable from the BAS head end.

E. In all modes of operation, commanded and reported position values for all control devices shall be displayed on the graphic and shall readable from the BAS head end.

F. Initial Set Points:
1. Occupied Mode:
   a. Space Cooling Temperature: 75°F (Adj).
   b. Space Heating Temperature: 70°F (Adj).
   c. Space Relative Humidity: 50% RH (Adj).
   d. Space Carbon Dioxide Setpoint: 1000 PPM (Adj).
   e. Supply Fan(s) Start/Stop Position: Start
   f. Maximum Supply Fan(s) Motor Speed: As required under section "Testing, Adjusting, and Balancing" to supply design maximum airflow.
   g. Minimum Supply Fan(s) Motor Speed: As required by unit manufacturer.
   h. Return Damper (D-2) Position: Modulating inversely with outdoor air dampers.
   i. Outdoor Air Damper Position (D-1): Modulating inversely with return air dampers and as required to maintain outside airflow at set point.
   j. Minimum Unit Leaving Air Temperature: 55°F
   k. Maximum Unit Leaving Air Temperature: 90°F
   l. Maximum Unit Leaving Air Temperature During Morning Warm Up: 90°F
   m. High Return Air Relative Humidity: 55%
   n. Outside Air (CFM): Refer to Schedule on Drawings.
   o. Unit Pressurization Differential (CFM): Refer to Schedule on Drawings.
   p. Economizer high limit temperature: 68°F
2. Unoccupied Mode:
   a. Space Cooling Temperature: 80°F (Adj).
   b. Space Heating Temperature: 65°F (Adj).
   c. Space Relative Humidity: 60% RH (Adj).
   d. Supply Fan Start/Stop Position: Stop
   e. Maximum Supply Fan(s) Motor Speed: As required under section "Testing, Adjusting, and Balancing" to supply design maximum airflow.
   f. Minimum Supply Fan Motor Speed: As required by unit manufacturer.
   g. Return Damper (D-2) Position: Fully Open
   h. Outdoor Air Damper Position (D-1): Fully Closed
   i. Minimum Unit Leaving Air Temperature: 55°F
   j. Maximum Unit Leaving Air Temperature: 90°F
   k. Maximum Unit Leaving Air Temperature During Morning Warm Up: 90°F
   l. High Return Air Relative Humidity: 60%
   m. Outside Air (CFM): 0
   n. Unit Pressurization Differential (CFM): N/A
   o. Economizer high limit temperature: 68°F

G. Start/Stop:
1. Start: The unit shall be started in stages as follows:
   a. Stage 1: D-2 return damper shall be positioned fully open. Provide 30 Seconds for this to occur.
   b. Stage 2: The supply fan(s) shall be ramped up to operating speed and then speed shall modulate in accordance with applicable sequences.
   c. Stage 3: Operation of the entire unit shall be turned over to applicable sequences.
2. Stop: The unit shall be stopped in stages as follows:
   a. Stage 1: Operation of the entire unit shall be taken from applicable sequences
   b. Stage 2: The supply fans shall be ramped down over 15 seconds.
   c. Stage 3: The supply fans shall be stopped.
   d. Stage 4: D-1 outdoor air damper shall be positioned fully closed. Provide 30 Seconds for this to occur
   e. Stage 5: D-2 recirculation damper shall remain fully open.
   f. Stage 6: Operation of the entire unit shall be turned over to applicable sequences.
3. Emergency stop: Perform all stop stages at once.
4. Occupied Mode Operation: During occupied hours the unit shall be started, the supply fan(s) shall be running, the cooling and heating coils shall be active with their valves modulating in accordance with applicable sequences below, and dampers shall modulate in accordance with applicable sequences below.
5. Unoccupied Mode: During unoccupied hours, the unit shall be stopped, the supply fan(s) shall be de-energized, the heating coil control valve shall continue to modulate in accordance with applicable sequences below, the cooling coil control valve shall be closed, the return damper (D-2) shall be open, and the outdoor air damper (D-1) shall be closed.

H. Space Temperature Averaging:
1. Refer to floor plans for number of space temperature sensors. All space temperature sensors in rooms served by an associated unit shall be averaged together. The BAS shall control to the average of all sensors to determine the heating, cooling, and airflow requirements sequenced below. If any space temperature sensor indicates a temperature of 10°F (adj) outside of the rest of the sensors, the BAS shall automatically remove this sensor from the averaging calculation and report an alarm to the BAS head end "Check space temperature sensor" with the associated room location.

I. Operational Overrides:
1. Unoccupied Heating: During unoccupied mode operation should two or more spaces require heating the BAS shall start the air handling unit with the supply air temperature at maximum set point until all space temperature sensors indicate that space temperature has risen to 5°F above the unoccupied heating space temperature set point, at which time the BAS shall return the air handling unit to normal unoccupied mode operation.
2. Unoccupied Cooling: During unoccupied mode operation should two or more spaces require cooling, the BAS shall start the air handling unit with the supply air temperature at minimum set point until all the space temperature sensors indicate that space temperature has fallen to 5°F below the unoccupied cooling space temperature set point, at which time the BAS shall return the air handling unit to normal unoccupied mode operation.
3. Morning Warm up Operation: The BAS shall optimize early start of the unit in warm-up mode. The unit shall be started early enough for spaces to reach their occupied space heating set points a minimum of 30 minutes prior to occupied time. During warm up the supply fan shall be ramped up to satisfy all spaces, the return damper fully open and all other dampers shall remain closed. Leaving air temperature shall be reset to its maximum morning warm up set point until occupied time when the BAS shall place the unit in occupied mode operation.
4. Morning Cool down Operation: The BAS shall optimize the early start of the unit in cool-down mode. The unit shall be started early enough for spaces to reach their occupied space cooling set points a minimum of 30 minutes prior to the occupied time. During cool down the supply fan shall be ramped up to satisfy all spaces, the return damper fully open and all other dampers shall remain closed. Leaving air temperature shall be reset to its minimum set point until occupied time when the BAS shall place the unit in occupied mode operation.
5. Unoccupied Dehumidification: During unoccupied mode operation should any of the space humidity sensors rise above the unoccupied humidity setpoint (60% RH adjustable), then the air handling unit shall run in the dehumidification mode. The outdoor air dampers shall remain closed during unoccupied dehumidification mode, unless economizer conditions exist. Refer to Dehumidification mode sequence for additional details.

J. Supply Fan(s) Control:
1. During unoccupied hours, the fan(s) shall be cycled as necessary to maintain worst case zone set points. When fan is cycled on, control shall be similar to occupied operation.
2. During occupied hours, the BAS shall start the supply fan at its minimum speed. The required speed shall be determined by the equipment manufacturer and shall be instituted as the minimum fan speed.
3. Speed Control:
   a. The fan speed shall be modulated from 50% to 100% to control space temperature while maintaining a constant heating or cooling leaving air temperature depending on mode of operation in accordance with applicable sequences.
      1. If the unit is in the dead band (no call for heating or cooling), the unit shall operate at the minimum airflow.
      2. If cooling is required the chilled water coil shall modulate open and control to leaving air temperature at set point. If additional cooling is required the supply airflow will be slowly ramped up while leaving air temperature is maintained at set point. When the airflow has reached 100% of design, and additional cooling is required the cooling coil control valve shall continue to open to control to space temperature (allowing the leaving air temperature to go below the leaving air temperature control set point).
      3. If heating is required the hot water pre-heating coil shall activate and control to leaving air temperature at set point. The unit shall remain at 50% airflow in heating and the leaving air temperature shall be adjusted to maintain space at heating setpoint. If additional heating is required and the unit leaving air temperature is at maximum, the supply airflow will be slowly ramped up while leaving air temperature is maintained at maximum set point. If the hot water pre-heat valve is full open and the unit is not maintaining the maximum discharge air temperature, then the hot water re-heat coil shall be modulated open to maintain leaving air temperature at setpoint.
4. Motor Speed Percentage: Fan motor speed shall be reported to the BAS as a percentage of full speed and it shall be indicated on the head end graphics.
5. Drive Malfunction: Should the VFD malfunction as indicated by drive alarm circuit, an alarm shall be sent to the head end. The fan shall continue to operate unless deactivated by the VFD protection circuitry.
6. Fan Failure Alarm: Should the supply fan fail (sensed by the VFD), the unit shall be disabled, and an alarm shall be sent to the head end identifying the unit and stating that the supply fan has failed.

K. Relief Fan Control:
1. Unoccupied: If the fan is already stopped it shall remain stopped. Otherwise the BAS shall ramp the fan down to minimum speed over 30 seconds before the stop command is issued.
2. During occupied mode, the BAS shall ramp the fan up to minimum speed over 30 seconds and then shall modulate fan speed as indicated. When stopping, the fan shall be ramped down to minimum speed over 30 seconds before the stop command is issued.
3. During economizer mode operation, the BAS shall ramp the fan up to minimum speed over 30 seconds and then shall modulate fan speed as indicated. When stopping, the fan shall be ramped down to minimum speed over 30 seconds before the stop command is issued.
4. Speed Control: The BAS shall modulate relief fan speed to maintain relief airflow at set point based on the following:
   a. Relief fan control airflow setpoint = measured outside airflow minus unit pressurization differential set point
      - For example, AHU-A-11's measured outside air is 7,000 CFM and the unit pressurization differential set point is 950 CFM, therefore the relief fan shall be controlled to 6,050 CFM.
5. CO2 Minimum Control: When the outdoor air and subsequent exhaust flow rate fall below the relief fan minimum flow (as determined by unit manufacturerer), the relief fan shall be staged on at it's minimum to maintain space static pressure setpoint. The enthalpy wheel shall be disabled.
6. Motor Speed Percentage: Fan motor speed shall be reported to the BAS as a percentage of full speed and shall be indicated on head end graphics.
7. Drive Malfunction: Should the VSD malfunction as indicated by drive alarm circuit, an alarm shall be sent to the head end. The fan shall continue to operate unless deactivated by the VSD's protection circuitry.
8. Fan Failure Alarm: Should the relief fan fail (as sensed by its current sensing relay), an alarm shall be sent to the head end identifying the unit and stating that the relief fan has failed or air flow has ceased. The unit shall be placed in unoccupied mode and maintain occupied temperature set points.
9. Relief Air Flow Measuring: Relief airflow shall be reported to the BAS in total CFM the unit outlet or relief fan is moving shall be indicated on the head end graphics.

L. Pre-Heating Coil Control Valve:
1. If the pre-heating coil control valve is commanded open the chilled water coil control valve shall be closed.
2. The valve shall modulate to maintain unit leaving air temperature at set point. On a rise in unit discharge air temperature the valve will modulate towards closed. On a fall in unit discharge air temperature the valve will modulate towards open. The BAS shall adjust the leaving air temperature setpoint as required to maintain space temperature sensors at set point.
3. Unit Leaving Air Temperature: Leaving air temperature shall be sensed by a temperature sensor located in the unit discharge or in the supply air duct.

M. Cooling Coil Control Valve:
1. If the cooling coil control valve is commanded open the pre-heat hot water coil control valve shall be closed.
2. The valve shall modulate to maintain unit leaving air temperature at set point. On a rise in unit discharge air temperature the valve will modulate towards open. On a fall in unit discharge air temperature the valve will modulate towards closed.
3. Unit Leaving Air Temperature: Leaving air temperature shall be sensed by a temperature sensor located in the unit discharge or in the supply air duct. The BAS shall adjust the leaving air temperature setpoint as required to maintain space temperature sensors at set point.

N. Re-Heating Coil Control Valve:
1. The valve shall modulate to maintain space air temperature at setpoint during dehumidification mode. On a rise in space air temperature the valve will modulate towards closed. On a fall in unit space air temperature the valve will modulate towards open.

O. Dehumidification Mode: During occupied or unoccupied operation when the space humidity (as sensed by any of the space sensors) rises above set point, the unit shall be placed in dehumidification mode. The BAS shall reset the control of the cooling coil valve to maintain the cooling coil discharge air temperature set point to 52°F. The unit shall remain in dehumidification mode until the space relative humidity drops to 5% RH below set point for all sensors at which time the BAS shall return to normal leaving air temperature control or unoccupied operation. Unit airflow shall be set to 50% of design airflow, unless additional cooling is required in the space. The re-heat hot water valve shall modulate to maintain space temperatures at set point. The re-heating valve shall only be available during minimum airflow (50% max). Refer to applicable paragraphs for operation of valves, dampers, and fans.

P. Outdoor Air Damper (D-1):
1. Unoccupied: Damper shall be fully closed.
2. Occupied: The damper shall modulate to open inversely with the return air damper (D-2) to maintain scheduled outdoor air (as sensed by the outdoor air flow measuring station).
3. Economizer Mode with outdoor air temperature equal to or higher than supply air temperature set point: The BAS shall fully open the damper.
4. Economizer Mode with outdoor air temperature lower than the supply air temperature set point: The BAS shall modulate the damper inversely with the return air damper (D-2) to maintain the leaving air temperature set point.
5. CO2 Minimum: The scheduled minimum CFM setting of the air handling unit will be overriden to allow the air handling unit to provide the minimum airflow necessary to maintain the CO2 level at set point (as sensed by the space CO2 sensor). On a fall in CO2 sensors below set point, the outside air damper shall be modulated closed until the CO2 minimum setpoint is reached. On a rise in CO2 above set point, the outside air damper shall be modulated open until the CO2 setpoint is reached or until the scheduled minimum CFM is reached.
6. Air Flow Measuring: Outdoor airflow shall be reported to the BAS in total CFM the intake is bringing in and it shall be indicated on the head end graphics.

Q. Return Air Damper (D-2):
1. Unoccupied: Damper shall be fully open.
2. Occupied: The damper shall modulate to close inversely with the outdoor air damper (D-1) to maintain scheduled outdoor air (as sensed by the outdoor air flow measuring station).
3. Economizer Mode with outdoor air temperature equal to or higher than supply air temperature set point: The BAS shall fully close the damper.
4. Economizer Mode with outdoor air temperature lower than the supply air temperature set point: The BAS shall modulate the damper inversely with the outside air damper (D-1) to maintain the leaving air temperature set point.

R. Relief Air Damper (D-3):
1. Unoccupied: Damper shall be fully closed.
2. Occupied: Damper shall be fully open.
3. Economizer Mode: Damper shall be fully open.

S. Wheel Outdoor Air Bypass Damper (D-4)
1. Unoccupied: Damper shall be closed.
2. Occupied: Damper shall be closed.
3. Economizer: Damper shall be open.
4. Frost Control: The BAS shall monitor wheel exhaust discharge air temperature. The outside air enthalpy wheel bypass damper shall be modulated to maintain minimum exhaust air discharge temperature of 33°F (adjustable) or the frost control setpoint provided by enthalpy wheel manufacturer.

T. Wheel Exhaust Air Bypass Damper (D-5)
1. Unoccupied: Damper shall be closed.
2. Occupied: Damper shall be closed.
3. Economizer: Damper shall be open.

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U. Life Safety: Smoke detector(s) located in the return air duct(s), shall upon detection of products of combustion, signal the building fire alarm system, perform an emergency stop on the unit and send an alarm to the head end. This function shall be manually reset from the site and shall be so identified on the head end graphics. Life safety interlocks shall be hard-wired to the fan circuits.

V. Freeze Protection: If the temperature falls below 38°F (as sensed by a freezestat with an averaging bulb located upstream of the cooling coil(s)) the fans shall stop and the outdoor air damper shall be closed and return air dampers shall open. A high level alarm should be issued to the head end BAS graphics. Hot water valve shall spring open upon loss of power. Hardwire interlock for freeze protection for supply fans, outdoor air damper and hot water valve actuators.

W. System Safety: When the supply fan(s) is stopped or airflow ceases for any reason other than a controlled stop (as sensed by a current sensing relay) the BAS shall perform an emergency stop.

X. Mixed Air Temperature: The BAS shall monitor mixed air temperature downstream of the filters and shall display the temperature on the head end.

Y. Supply Air Temperature: The BAS shall monitor supply air temperature downstream of the supply fan and shall display the temperature on the head end.

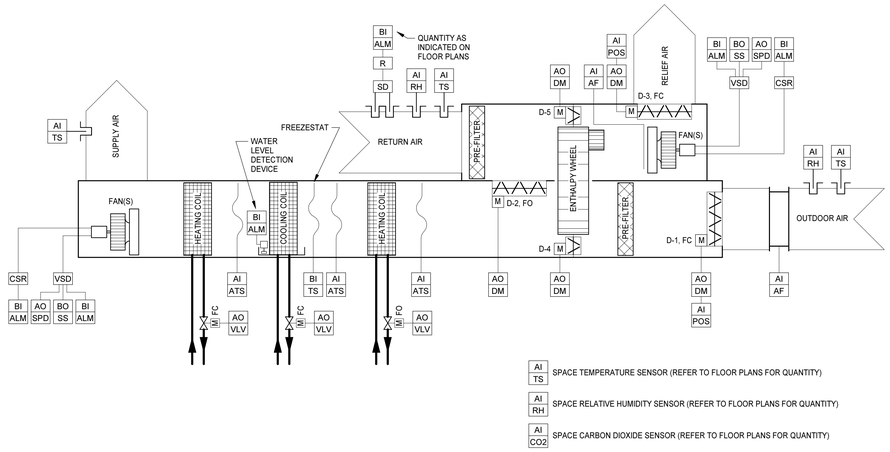
Z. Return Air Temperature: The BAS shall monitor return air temperature downstream of the return air connections and shall display the temperature on the head end.

AA. Return Air Relative Humidity: The BAS shall monitor return air relative humidity downstream of the return air connections and shall display the temperature on the head end.

BB. Cooling Coil Discharge Temperature: The BAS shall monitor the air temperature downstream of the cooling coil and shall display the temperature on the head end.

CC. Pre-Heating Coil Discharge Temperature: The BAS shall monitor the air temperature downstream of the pre-heating coil and shall display the temperature on the head end

DD. The BAS shall monitor the drain pan float water level detection device in the cooling coils condensate drain pan. If the drain pan is not draining properly and raises to activate the water level detection device, cooling shall be disabled and an alarm issued to the head end.



AI TS — SPACE TEMPERATURE SENSOR (REFER TO FLOOR PLANS FOR QUANTITY)

AI RH — SPACE RELATIVE HUMIDITY SENSOR (REFER TO FLOOR PLANS FOR QUANTITY)

AI CO2 — SPACE CARBON DIOXIDE SENSOR (REFER TO FLOOR PLANS FOR QUANTITY)

1 SINGLE ZONE VAV AHU WITH ENERGY RECOVERY (AHU-B-14)
NO SCALE

SEQUENCES OF CONTROL: SINGLE ZONE VARIABLE AIR VOLUME (VAV) AIR HANDLING UNIT (AHU) WITH DIRECT OUTSIDE AIR CONNECTION

A. DESCRIPTION: Commercial variable volume modular indoor unit with 100% economizer capability, variable speed supply fan(s), chilled water cooling coil located upstream of a hot water re-heating coil serving multiple spaces.

B. Graphics: A system graphic similar to the proposed equipment layout shall be developed and shall be readable from the BAS head end.

C. Sensed points shall be displayed on the graphic and shall readable from the BAS head end.

D. Fan operation shall be displayed on the graphic and shall be readable from the BAS head end.

E. In all modes of operation, commanded and reported position values for all control devices shall be displayed on the graphic and shall readable from the BAS head end.

F. Initial Set Points:
1. Occupied Mode:
   a. Space Cooling Temperature: 75°F (Adj).
   b. Space Heating Temperature: 70°F (Adj).
   c. Space Relative Humidity: 50% RH (Adj).
   d. Supply Fan(s) Start/Stop Position: Start
   e. Maximum Supply Fan(s) Motor Speed: As required under section "Testing, Adjusting, and Balancing" to supply design maximum airflow.
   f. Minimum Supply Fan(s) Motor Speed: As required by unit manufacturer.
   g. Return Damper (D-2) Position: Modulating inversely with outdoor air dampers.
   h. Outdoor Air Damper Position (D-1): Modulating inversely with return air dampers and as required to maintain outside airflow at set point.
   i. Minimum Unit Leaving Air Temperature: 55°F
   j. Maximum Unit Leaving Air Temperature: 90°F
   k. Maximum Unit Leaving Air Temperature During Morning Warm Up: 90°F
   l. High Return Air Relative Humidity: 55%
   m. Outside Air (CFM): Refer to Schedule on Drawings.
   n. Unit Pressurization Differential (CFM): Refer to Schedule on Drawings.
   o. Economizer high limit temperature: 68°F
2. Unoccupied Mode:
   a. Space Cooling Temperature: 80°F (Adj).
   b. Space Heating Temperature: 65°F (Adj).
   c. Space Relative Humidity: 60% RH (Adj).
   d. Supply Fan Start/Stop Position: Stop
   e. Maximum Supply Fan(s) Motor Speed: As required under section "Testing, Adjusting, and Balancing" to supply design maximum airflow.
   f. Minimum Supply Fan Motor Speed: As required by unit manufacturer.
   g. Return Damper (D-2) Position: Fully Open
   h. Outdoor Air Damper Position (D-1): Fully Closed
   i. Minimum Unit Leaving Air Temperature: 55°F
   j. Maximum Unit Leaving Air Temperature: 90°F
   k. Maximum Unit Leaving Air Temperature During Morning Warm Up: 90°F
   l. High Return Air Relative Humidity: 60%
   m. Outside Air (CFM): 0
   n. Unit Pressurization Differential (CFM): N/A
   o. Economizer high limit temperature: 68°F

G. Start/Stop:
1. Start: The unit shall be started in stages as follows:
   a. Stage 1: D-2 return damper shall be positioned fully open. Provide 30 Seconds for this to occur.
   b. Stage 2: The supply fan(s) shall be ramped up to operating speed and then speed shall modulate in accordance with applicable sequences.
   c. Stage 3: Operation of the entire unit shall be turned over to applicable sequences.
2. Stop: The unit shall be stopped in stages as follows:
   a. Stage 1: Operation of the entire unit shall be taken from applicable sequences
   b. Stage 2: The supply fans shall be ramped down over 15 seconds.
   c. Stage 3: The supply fans shall be stopped.
   d. Stage 4: D-1 outdoor air damper shall be positioned fully closed. Provide 30 Seconds for this to occur
   e. Stage 5: D-2 return damper shall remain fully open.
   f. Stage 6: Operation of the entire unit shall be turned over to applicable sequences.
3. Emergency stop: Perform all stop stages at once.
4. Occupied Mode Operation: During occupied hours the unit shall be started, the supply fan(s) shall be running, the cooling and heating coils shall be active with their valves modulating in accordance with applicable sequences below, and dampers shall modulate in accordance with applicable sequences below.
5. Unoccupied Mode: During unoccupied hours, the unit shall be stopped, the supply fan(s) shall be de-energized, the heating coil control valve shall continue to modulate in accordance with applicable sequences below, the cooling coil control valve shall be closed, the return damper (D-2) shall be open, and the outdoor air damper (D-1) shall be closed.

H. Space Temperature Averaging:
1. Refer to floor plans for number of space temperature sensors. All space temperature sensors in rooms served by an associated unit shall be averaged together. The BAS shall control to the average of all sensors to determine the heating, cooling, and airflow requirements sequenced below. If any space temperature sensor indicates a temperature of 10°F (adj) outside of the rest of the sensors, the BAS shall automatically remove this sensor from the averaging calculation and report an alarm to the BAS head end "Check space temperature sensor" with the associated room location.

I. Operational Overrides:
1. Unoccupied Heating: During unoccupied mode operation should two or more spaces require heating the BAS shall start the air handling unit with the supply air temperature at maximum set point until all space temperature sensors indicate that space temperature has risen to 5°F above the unoccupied heating space temperature set point, at which time the BAS shall return the air handling unit to normal unoccupied mode operation.
2. Unoccupied Cooling: During unoccupied mode operation should two or more spaces require cooling, the BAS shall start the air handling unit with the supply air temperature at minimum set point until all the space temperature sensors indicate that space temperature has fallen to 5°F below the unoccupied cooling space temperature set point, at which time the BAS shall return the air handling unit to normal unoccupied mode operation.
3. Morning Warm up Operation: The BAS shall optimize early start of the unit in warm-up mode. The unit shall be started early enough for spaces to reach their occupied space heating set points a minimum of 30 minutes prior to occupied time. During warm up the supply fan shall be ramped up to satisfy all spaces, the return damper fully open and all other dampers shall remain closed. Leaving air temperature shall be reset to its maximum morning warm up set point until occupied time when the BAS shall place the unit in occupied mode operation.
4. Morning Cool down Operation: The BAS shall optimize the early start of the unit in cool-down mode. The unit shall be started early enough for spaces to reach their occupied space cooling set points a minimum of 30 minutes prior to the occupied time. During cool down the supply fan shall be ramped up to satisfy all spaces, the return damper fully open and all other dampers shall remain closed. Leaving air temperature shall be reset to its minimum set point until occupied time when the BAS shall place the unit in occupied mode operation.
5. Unoccupied Dehumidification: During unoccupied mode operation should any of the space humidity sensors rise above the unoccupied humidity setpoint (60% RH adjustable), then the air handling unit shall run in the dehumidification mode. The outdoor air dampers shall remain closed during unoccupied dehumidification mode, unless economizer conditions exist. Refer to Dehumidification mode sequence for additional details.

J. Supply Fan(s) Control:
1. During unoccupied hours, the fan(s) shall be cycled as necessary to maintain worst case zone set points. When fan is cycled on, control shall be similar to occupied operation.
2. During occupied hours, the BAS shall start the supply fan at its minimum speed. The required speed shall be determined by the equipment manufacturer and shall be instituted as the minimum fan speed.
3. Speed Control:
   a. The fan speed shall be modulated from 50% to 100% to control space temperature while maintaining a constant heating or cooling leaving air temperature depending on mode of operation in accordance with applicable sequences.
      1. If the unit is in the dead band (no call for heating or cooling), the unit shall operate at the minimum airflow.
      2. If cooling is required the chilled water coil shall modulate open and control to leaving air temperature at set point. If additional cooling is required the supply airflow will be slowly ramped up while leaving air temperature is maintained at set point. When the airflow has reached 100% of design, and additional cooling is required the cooling coil control valve shall continue to open to control to space temperature (allowing the leaving air temperature to go below the leaving air temperature control set point).
      3. If heating is required the hot water re-heating coil shall activate and control to leaving air temperature at set point. The unit shall remain at 50% airflow in heating and the leaving air temperature shall be adjusted to maintain space at heating setpoint. If additional heating is required and the unit leaving air temperature is at maximum, the supply airflow will be slowly ramped up while leaving air temperature is maintained at maximum set point. If the unit is at full heating airflow, and the maximum unit leaving air temperature and the space is still not at setpoint, the hot water valve shall be allowed to modulate open to 100%.
4. Motor Speed Percentage: Fan motor speed shall be reported to the BAS as a percentage of full speed and it shall be indicated on the head end graphics.
5. Drive Malfunction: Should the VFD malfunction as indicated by drive alarm circuit, an alarm shall be sent to the head end. The fan shall continue to operate unless deactivated by the VFD protection circuitry.
6. Fan Failure Alarm: Should the supply fan fail (sensed by the VFD), the unit shall be disabled, and an alarm shall be sent to the head end identifying the unit and stating that the supply fan has failed.

K. Relief Fan Control: (AHU-B-14, AHU-F-14 & AHU-F-21 only)
1. Unoccupied: If the fan is already stopped it shall remain stopped. Otherwise the BAS shall ramp the fan down to minimum speed over 30 seconds before the stop command is issued.
2. During occupied mode, the BAS shall ramp the fan up to minimum speed over 30 seconds and then shall modulate fan speed as indicated below. When stopping, the fan shall be ramped down to minimum speed over 30 seconds before the stop command is issued. When outside airflow matches the unit pressurization differential, the relief fan shall be off, other than economizer mode.
3. Speed Control:
   a. Occupied (Normal Operation): The BAS shall maintain the fan at the set speed (as determined during system testing and balancing).
   b. Occupied (Economizer Operation): The BAS shall modulate relief fan speed to maintain building static pressure at set point.
   c. Unoccupied: The fan shall be off.
4. Motor Speed Percentage: Fan motor speed shall be reported to the BAS as a percentage of full speed and shall be indicated on head end graphics.
5. Drive Malfunction: Should the VFD/ECM malfunction as indicated by drive alarm circuit, an alarm shall be sent to the head end. The fan shall continue to operate unless deactivated by the VFD/ECM's protection circuitry.
6. Fan Failure Alarm: Should the relief fan fail (as sensed by its current sensing relay), an alarm shall be sent to the head end identifying the unit and stating that the relief fan has failed or air flow has ceased. The unit shall be placed in unoccupied mode and maintain occupied temperature set points.

L. Relief Damper Control: (AHU-A-12 only)
1. During unoccupied hours, the damper shall be fully closed.
2. During unoccupied hours, the damper shall be fully closed.
3. During economizer operation, the damper shall be modulated open to maintain the space static pressure at setpoint.

M. Cooling Coil Control Valve:
1. If the cooling coil control valve is commanded open the hot water coil control valve shall be closed, except for when required by dehumidification sequence.
2. The valve shall modulate to maintain unit leaving air temperature at set point. On a rise in unit discharge air temperature the valve will modulate towards open. On a fall in unit discharge air temperature the valve will modulate towards closed.
3. Unit Leaving Air Temperature: Leaving air temperature shall be sensed by a temperature sensor located in the unit discharge or in the supply air duct. The BAS shall adjust the leaving air temperature setpoint as required to maintain space temperature sensors at set point.

N. Heating Coil Control Valve:
1. If the heating coil control valve is commanded open the chilled water coil control valve shall be closed, except for when required by dehumidification sequence.
2. The valve shall modulate to maintain unit leaving air temperature at set point. On a rise in unit discharge air temperature the valve will modulate towards closed. On a fall in unit discharge air temperature the valve will modulate towards open. The BAS shall adjust the leaving air temperature setpoint as required to maintain space temperature sensors at set point.
3. Unit Leaving Air Temperature: Leaving air temperature shall be sensed by a temperature sensor located in the unit discharge or in the supply air duct.

O. Outdoor Air Damper (D-1):
1. Unoccupied: Damper shall be fully closed.
2. Occupied: The damper shall modulate to open inversely with the return air damper (D-2) to maintain scheduled outdoor air (as sensed by the outdoor air flow measuring station).
3. Air Flow Measuring: Outdoor airflow shall be reported to the BAS in total CFM the intake is bringing in and it shall be indicated on the head end graphics.

P. Return Air Damper (D-2):
1. Unoccupied: Damper shall be fully open.
2. Occupied: The damper shall modulate to close inversely with the outdoor air damper (D-1) to maintain scheduled outdoor air (as sensed by the outdoor air flow measuring station).

Q. Life Safety: Smoke detector(s) located in the return air duct(s), shall upon detection of products of combustion, signal the building fire alarm system, perform an emergency stop on the unit and send an alarm to the head end. This function shall be manually reset from the site and shall be so identified on the head end graphics. Life safety interlocks shall be hard-wired to the fan circuits.

R. Freeze Protection: If the temperature falls below 38°F (as sensed by a freezestat with an averaging bulb located upstream of the cooling coil(s)) the fans shall stop and the outdoor air damper shall be closed and return air dampers shall open. A high level alarm should be issued to the head end BAS graphics. Hot water valve shall spring open upon loss of power. Hardwire interlock for freeze protection for supply fans, outdoor air damper and hot water valve actuators.

S. System Safety: When the supply fan(s) is stopped or airflow ceases for any reason other than a controlled stop (as sensed by a current sensing relay) the BAS shall perform an emergency stop.

T. Mixed Air Temperature: The BAS shall monitor mixed air temperature downstream of the filters and shall display the temperature on the head end.

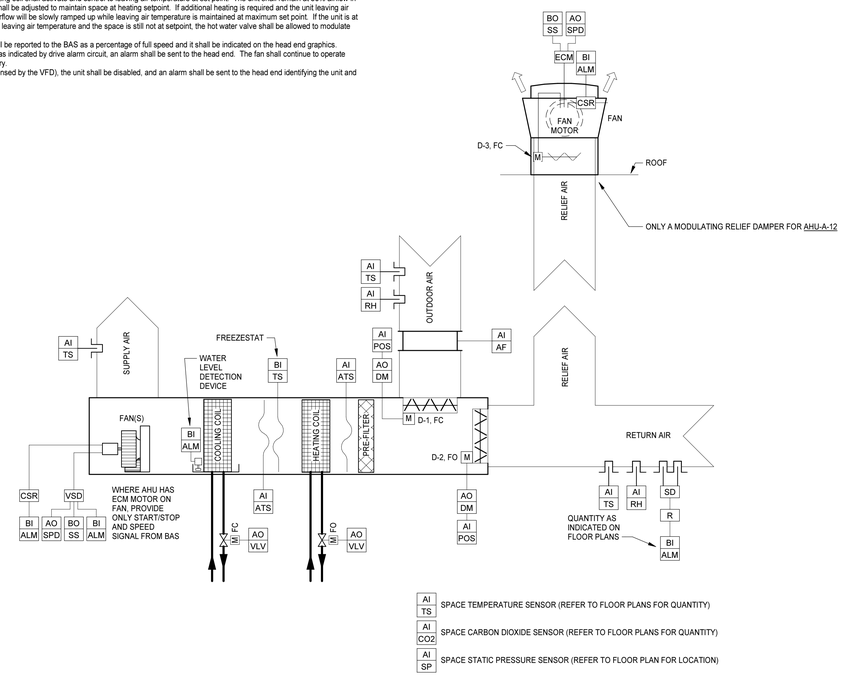
U. Supply Air Temperature: The BAS shall monitor supply air temperature downstream of the supply fan and shall display the temperature on the head end.

V. Return Air Temperature: The BAS shall monitor return air temperature downstream of the return air connections and shall display the temperature on the head end.

W. Return Air Relative Humidity: The BAS shall monitor return air relative humidity downstream of the return air connections and shall display the temperature on the head end.

X. Pre-Heating Coil Discharge Temperature: The BAS shall monitor the air temperature downstream of the pre-heating coil and shall display the temperature on the head end.

Y. The BAS shall monitor the drain pan float water level detection device in the cooling coils condensate drain pan. If the drain pan is not draining properly and raises to activate the water level detection device, cooling shall be disabled and an alarm issued to the head end.



AI TS — SPACE TEMPERATURE SENSOR (REFER TO FLOOR PLANS FOR QUANTITY)

AI CO2 — SPACE CARBON DIOXIDE SENSOR (REFER TO FLOOR PLANS FOR QUANTITY)

AI SP — SPACE STATIC PRESSURE SENSOR (REFER TO FLOOR PLAN FOR LOCATION)

2 SINGLE ZONE VAV AHU PRE-HEAT, OUTSIDE AIR DIRECT
NO SCALE

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8/2/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: AUGUST 2, 2024

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DATE	DESCRIPTION
8/23/24	*AD-02

CONTROLS

M7.2

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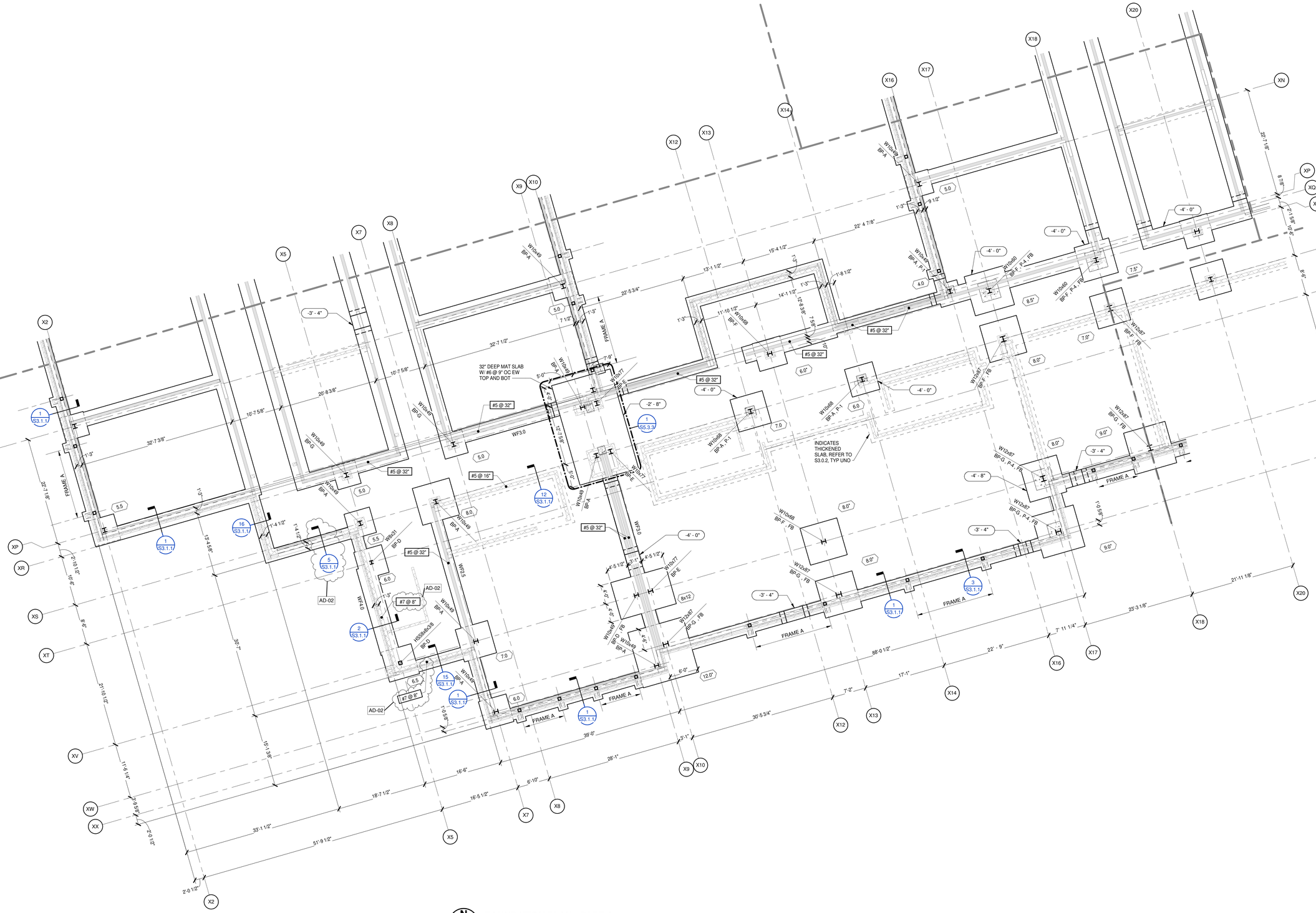

FOUNDATION PLAN - PART C

1/8" = 1'-0"

NOTES:

1. REFER TO S1.1.1 FOR FOUNDATION PLAN NOTES.

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8/23/2024

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

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FOUNDATION PLAN - PART C

S1.1.3

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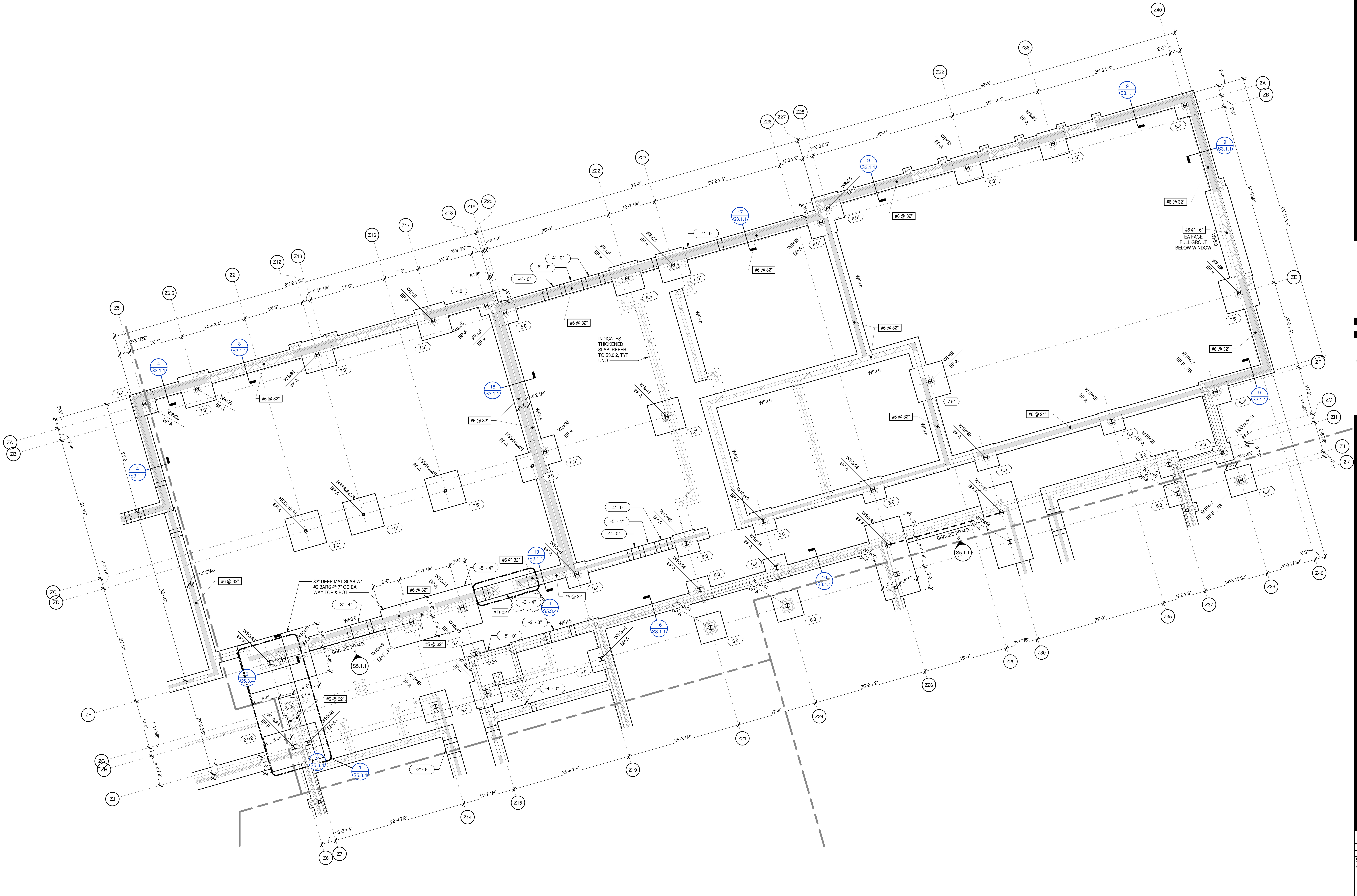

FOUNDATION PLAN - PART F

1/8" = 1'-0"

NOTES:

1. REFER TO S1.1.1 FOR FOUNDATION PLAN NOTES.

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FOUNDATION PLAN - PLAN F

S1.1.6

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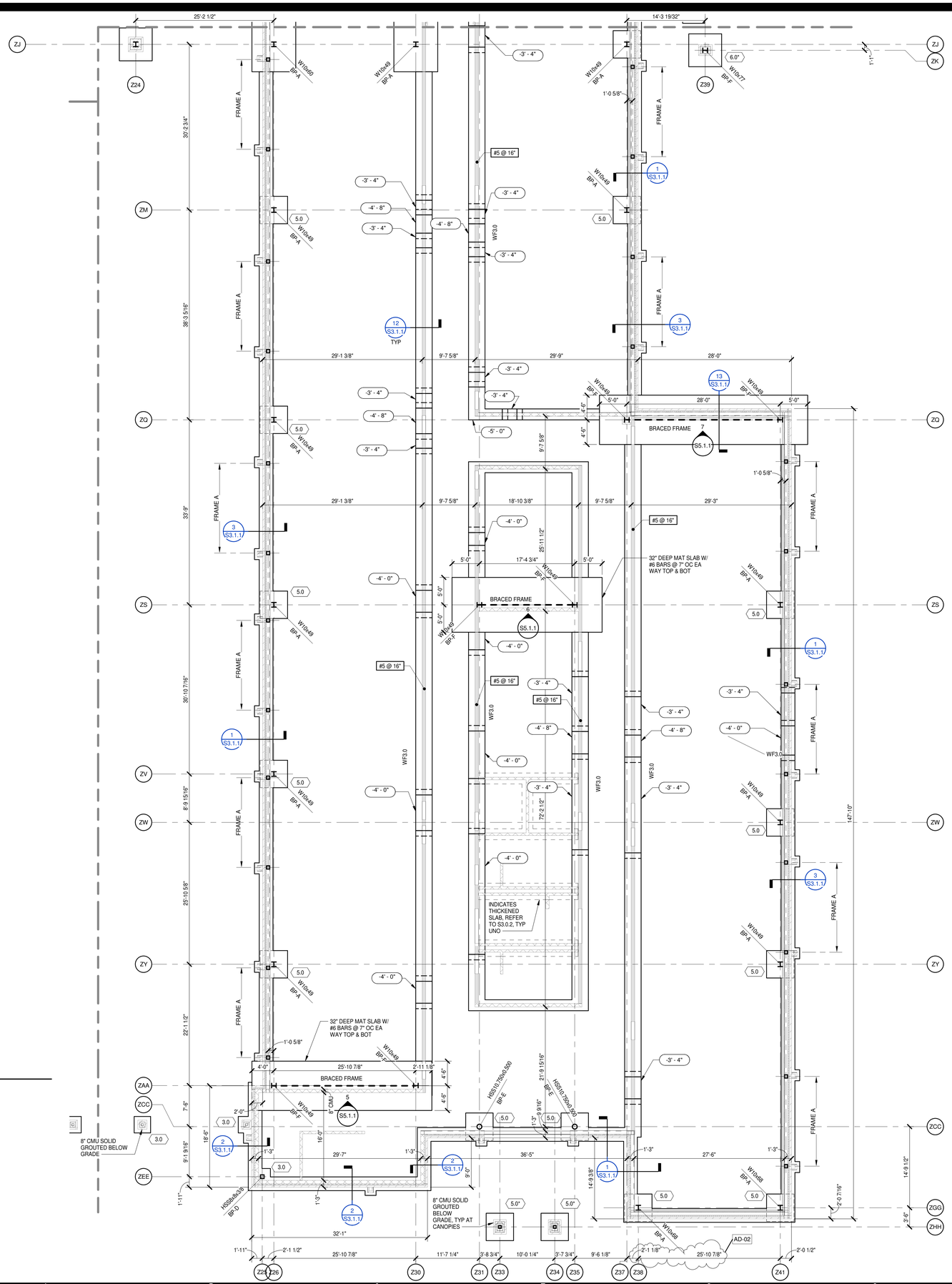

FOUNDATION PLAN - PART H

1/8" = 1'-0"

NOTES:

1. REFER TO S1.1.1 FOR FOUNDATION PLAN NOTES.

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FOUNDATION PLAN - PLAN H

S1.1.8

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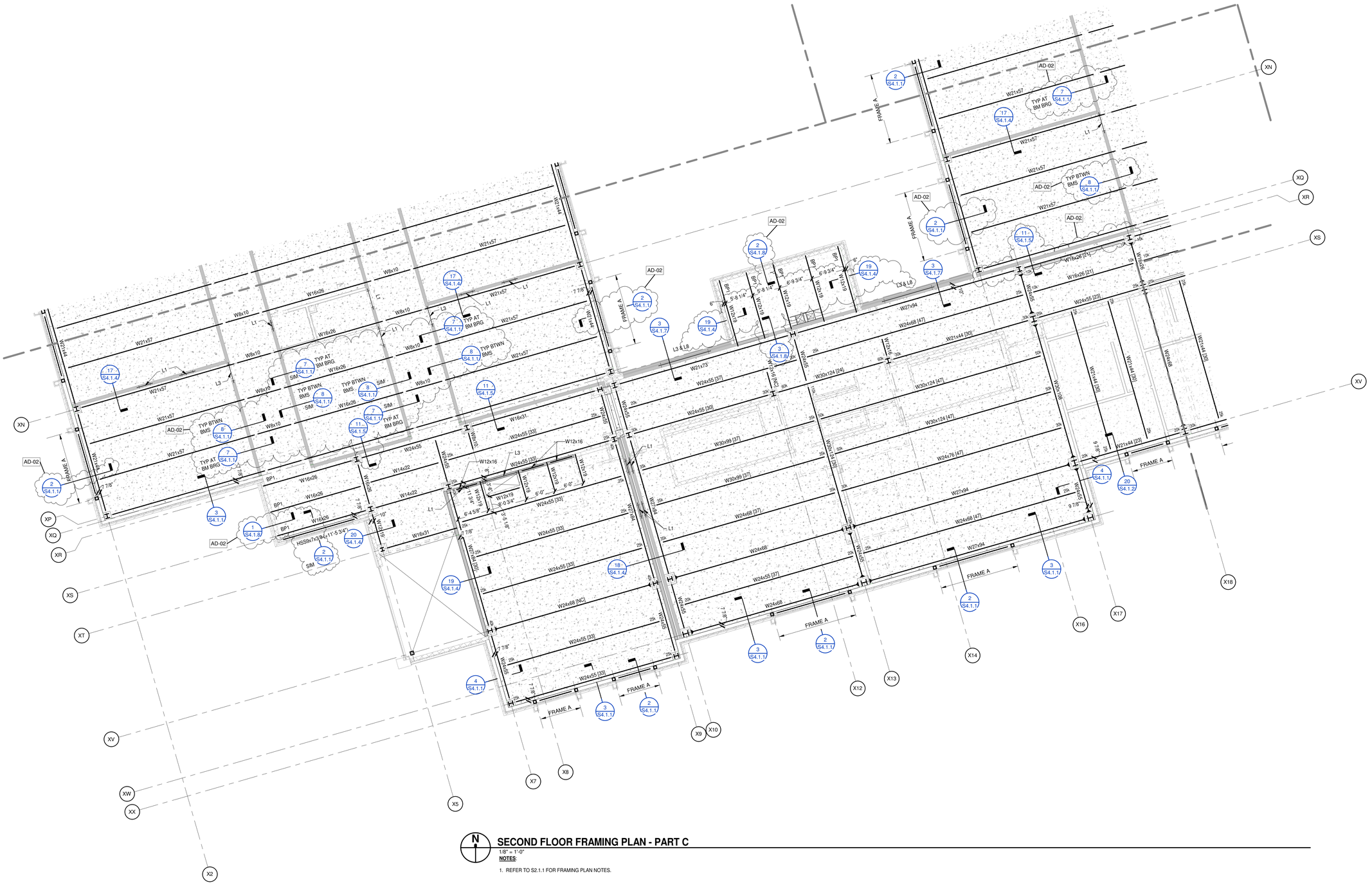

SECOND FLOOR FRAMING PLAN - PART C

1/8" = 1'-0"

NOTES:

1. REFER TO S2.1.1 FOR FRAMING PLAN NOTES.

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SECOND FLOOR FRAMING PLAN - PART C

S2.1.3

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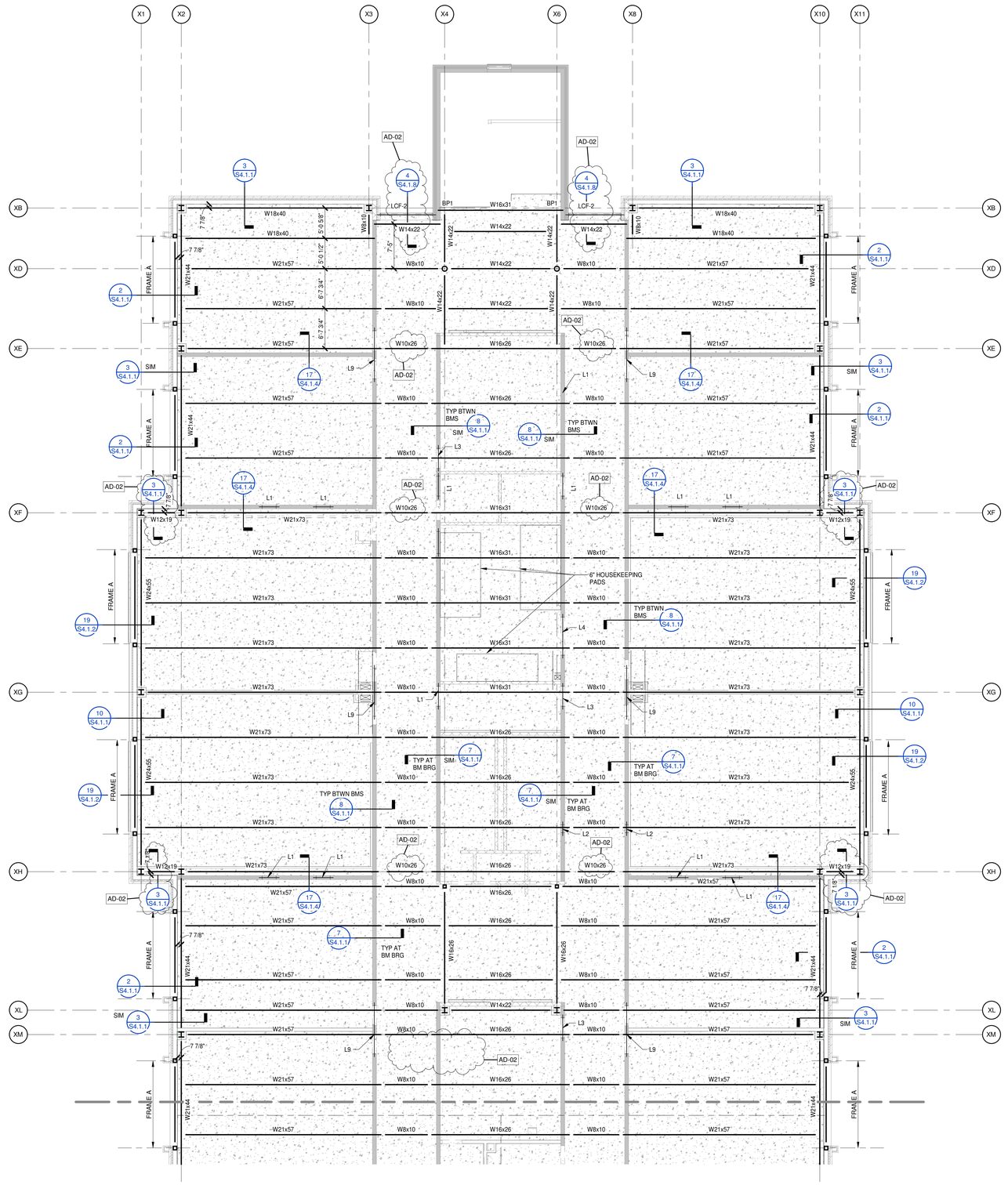

N

SECOND FLOOR FRAMING PLAN - PART D

1/8" = 1'-0"

FLOOR FRAMING PLAN NOTES:

1. REFER TO S2.1.1 FOR NOTES.

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SECOND FLOOR FRAMING PLAN - PART D

S2.1.4

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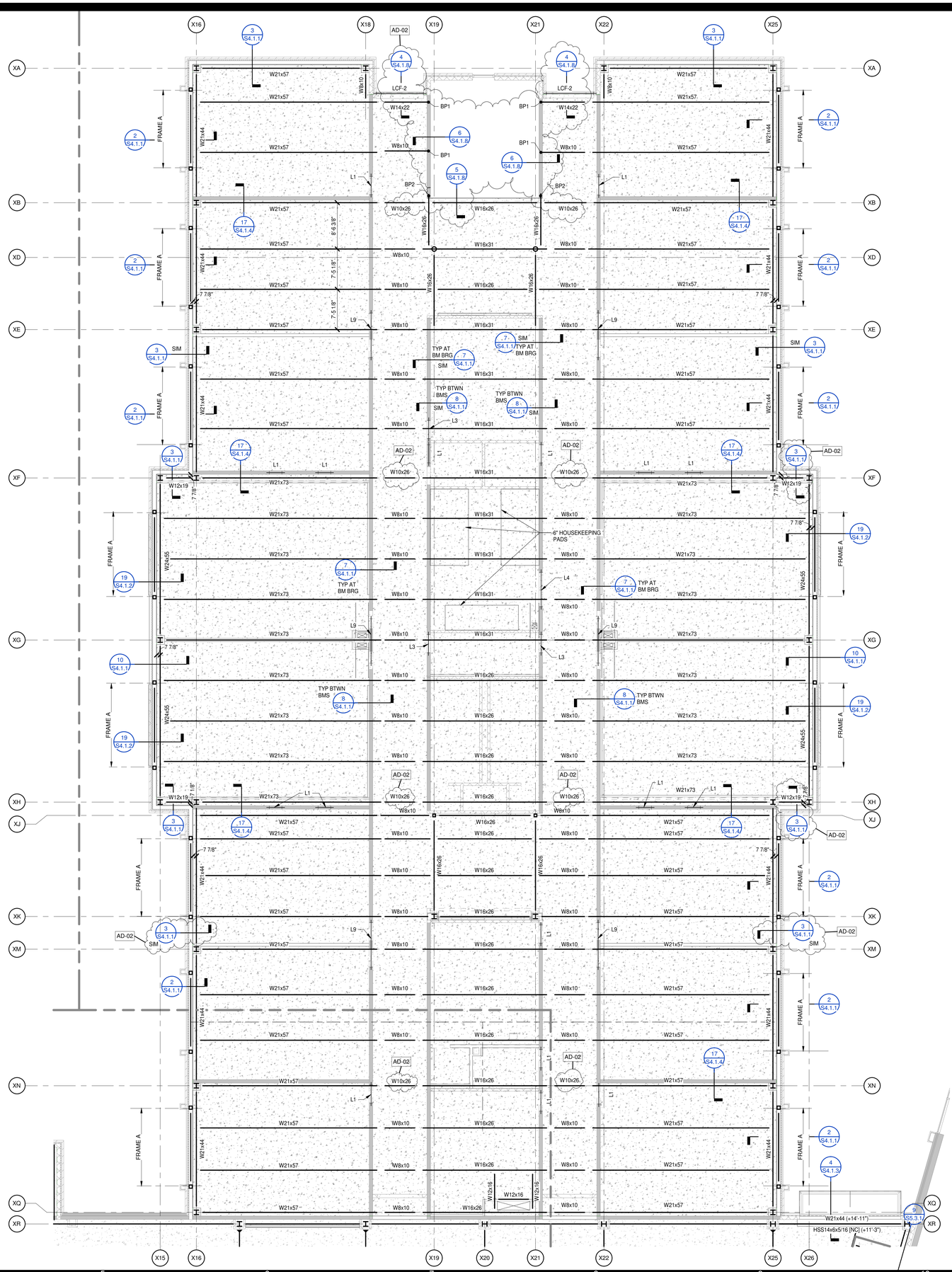

SECOND FLOOR FRAMING PLAN - PART E

1/8" = 1'-0"

NOTES:

1. REFER TO S2.1.1 FOR FRAMING PLAN NOTES.

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SECOND FLOOR FRAMING PLAN - PART E

S2.1.5

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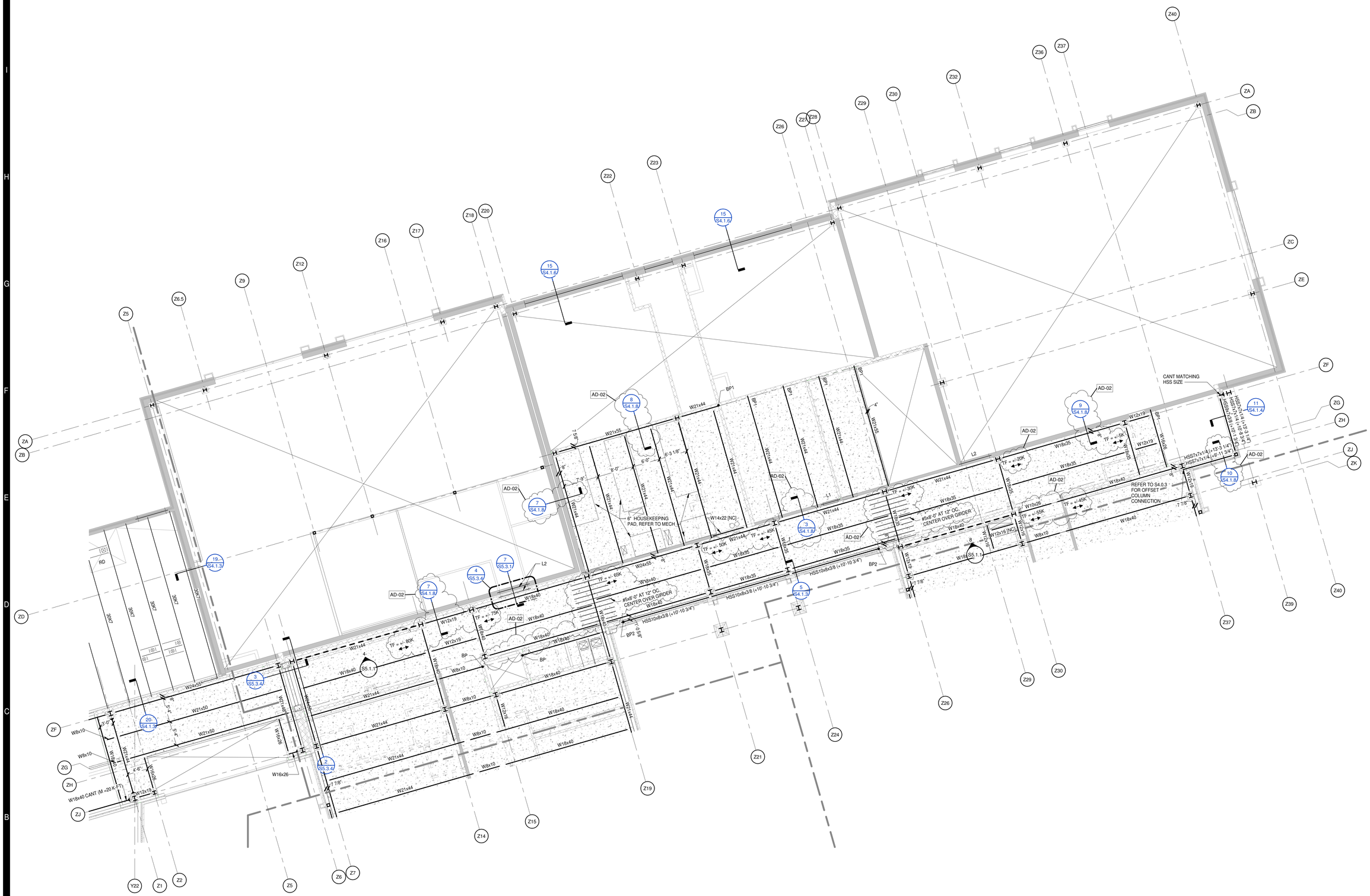

SECOND FLOOR & LOW ROOF FRAMING PLAN - PART F

1/8" = 1'-0"

NOTES:

1. REFER TO S2.1.1 FOR FRAMING PLAN NOTES.

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SECOND FLOOR & LOW ROOF FRAMING PLAN - PART F

S2.1.6

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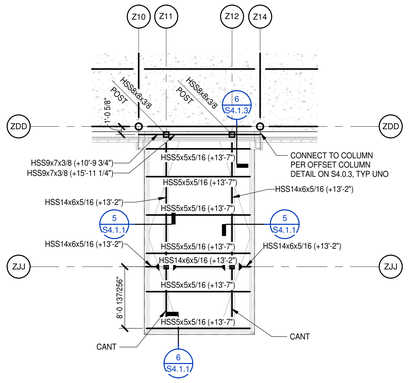


ENTRY CANOPY FRAMING - PART G

1/8" = 1'-0"

NOTES:

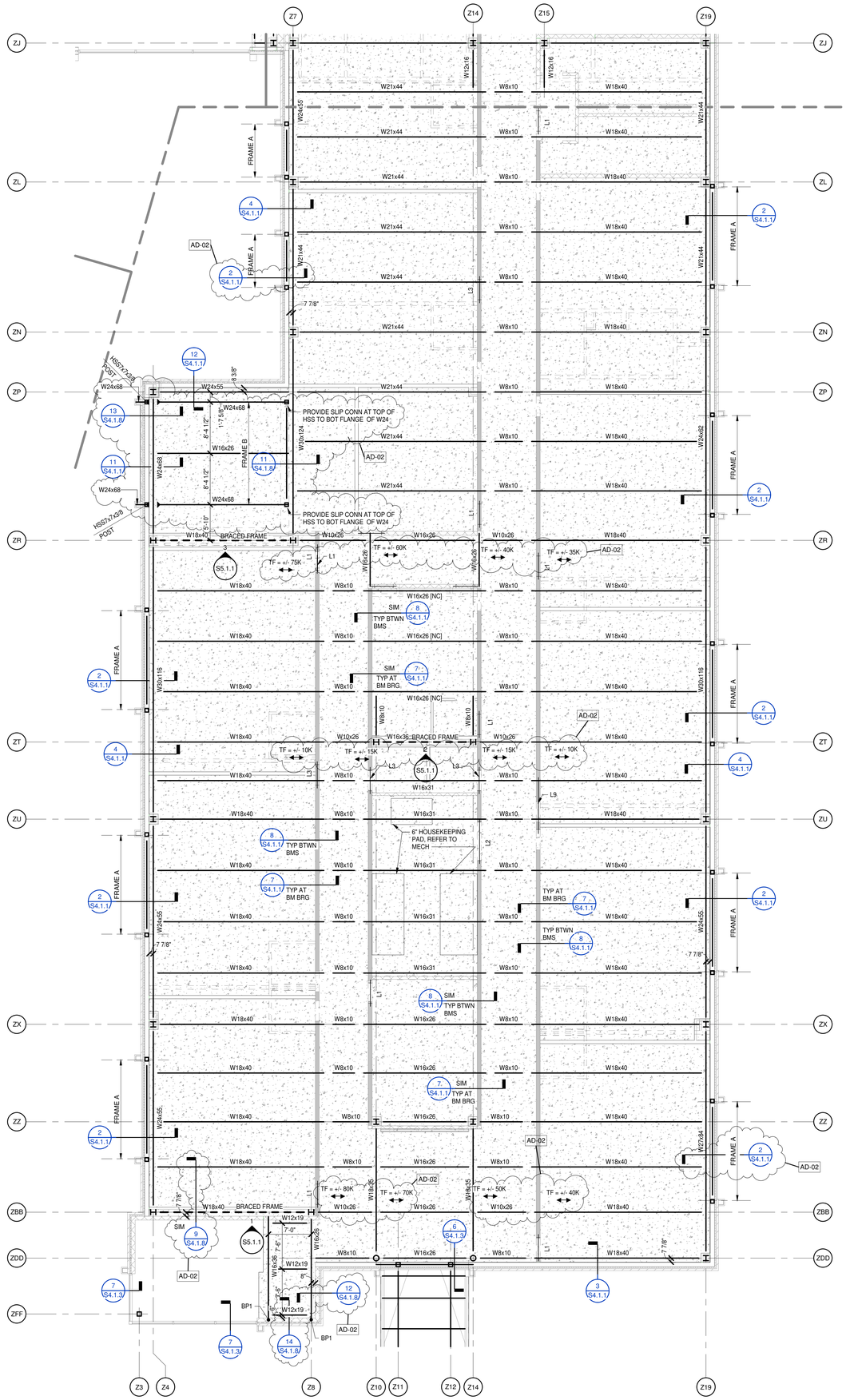
1. REFER TO S2.1.1 FOR FRAMING PLAN NOTES.

SECOND FLOOR FRAMING PLAN - PART G

1/8" = 1'-0"

NOTES:

1. REFER TO S2.1.1 FOR FRAMING PLAN NOTES.



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SECOND FLOOR FRAMING PLAN - PART G

S2.1.7

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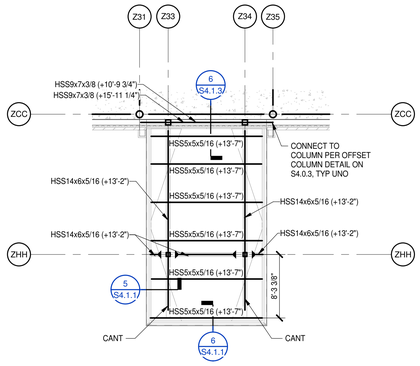
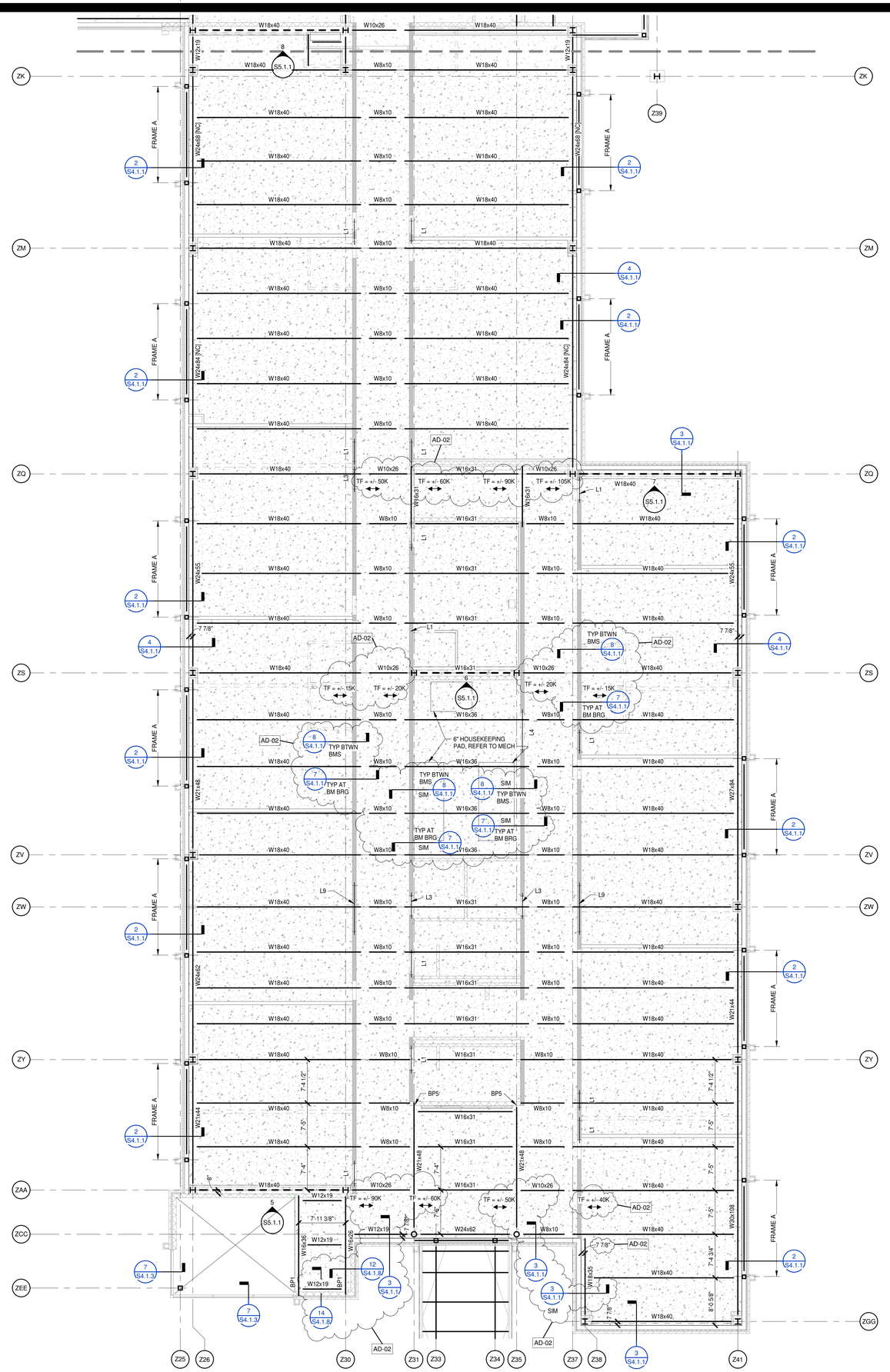


ENTRY CANOPY FRAMING - PART H
1/8" = 1'-0"



SECOND FLOOR FRAMING PLAN - PART H
1/8" = 1'-0"

NOTES:

1. REFER TO S2.1.1 FOR FRAMING PLAN NOTES.

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SECOND FLOOR FRAMING PLAN - PART H

S2.1.8

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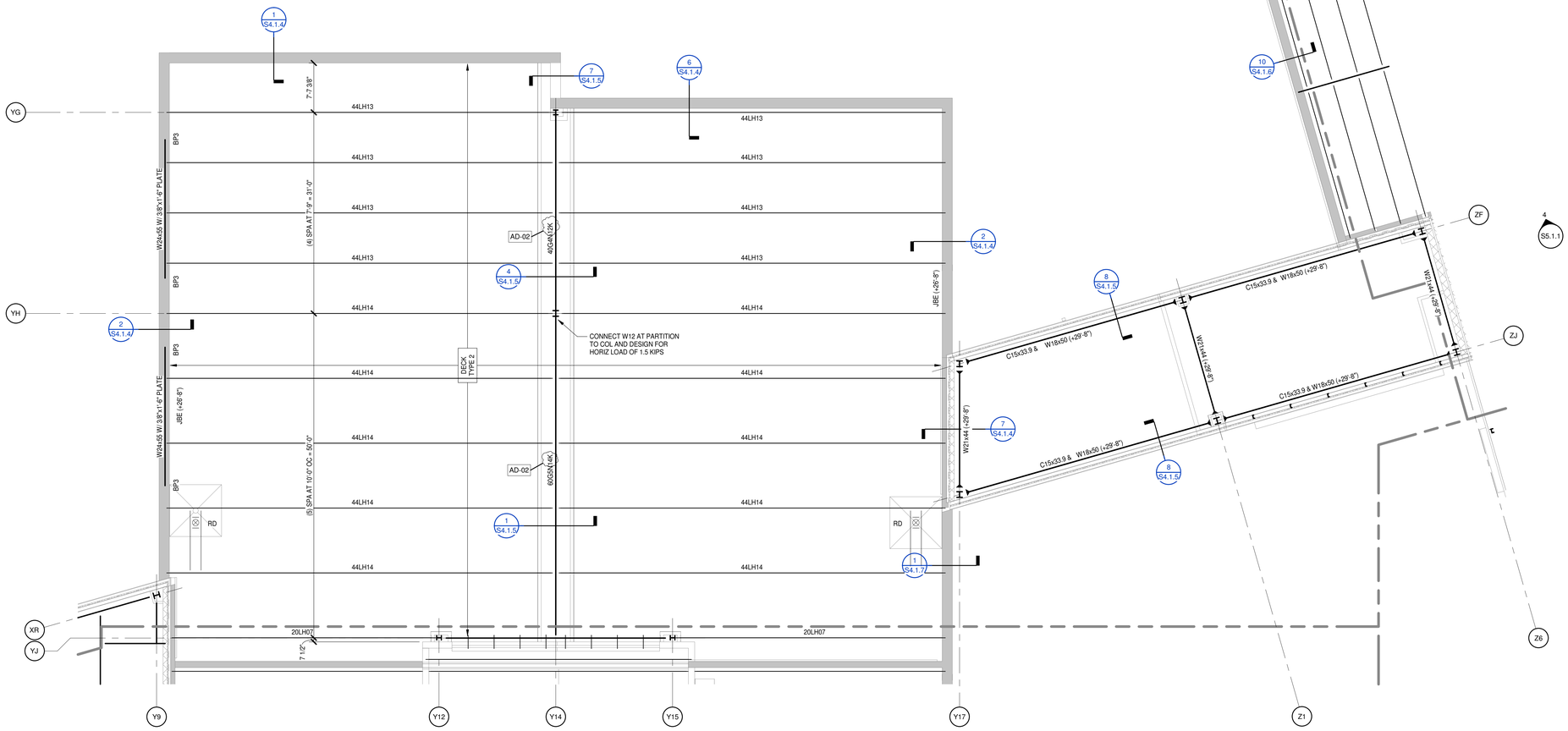

ROOF FRAMING PLAN - PART B

1/8" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. REFER TO S2.2.1 FOR NOTES.

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KEY PLAN

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ROOF FRAMING PLAN - PART B

S2.2.2

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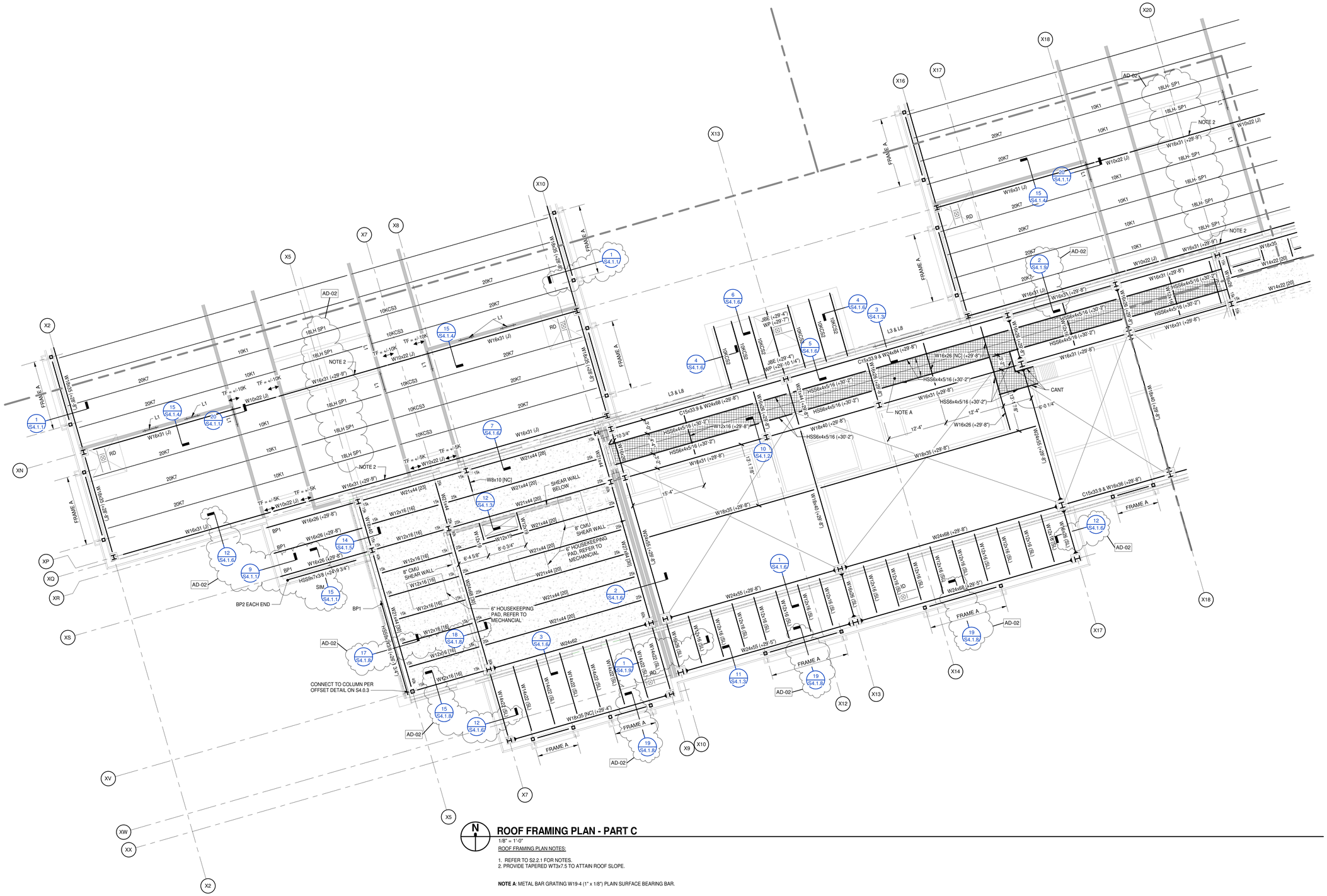

N

ROOF FRAMING PLAN - PART C

1/8" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. REFER TO S2.2.1 FOR NOTES.
2. PROVIDE TAPERED WT3x7.5 TO ATTAIN ROOF SLOPE.

NOTE A: METAL BAR GRATING W19-4 (1" x 1/8") PLAIN SURFACE BEARING BAR.

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ROOF FRAMING PLAN - PART C

S2.2.3

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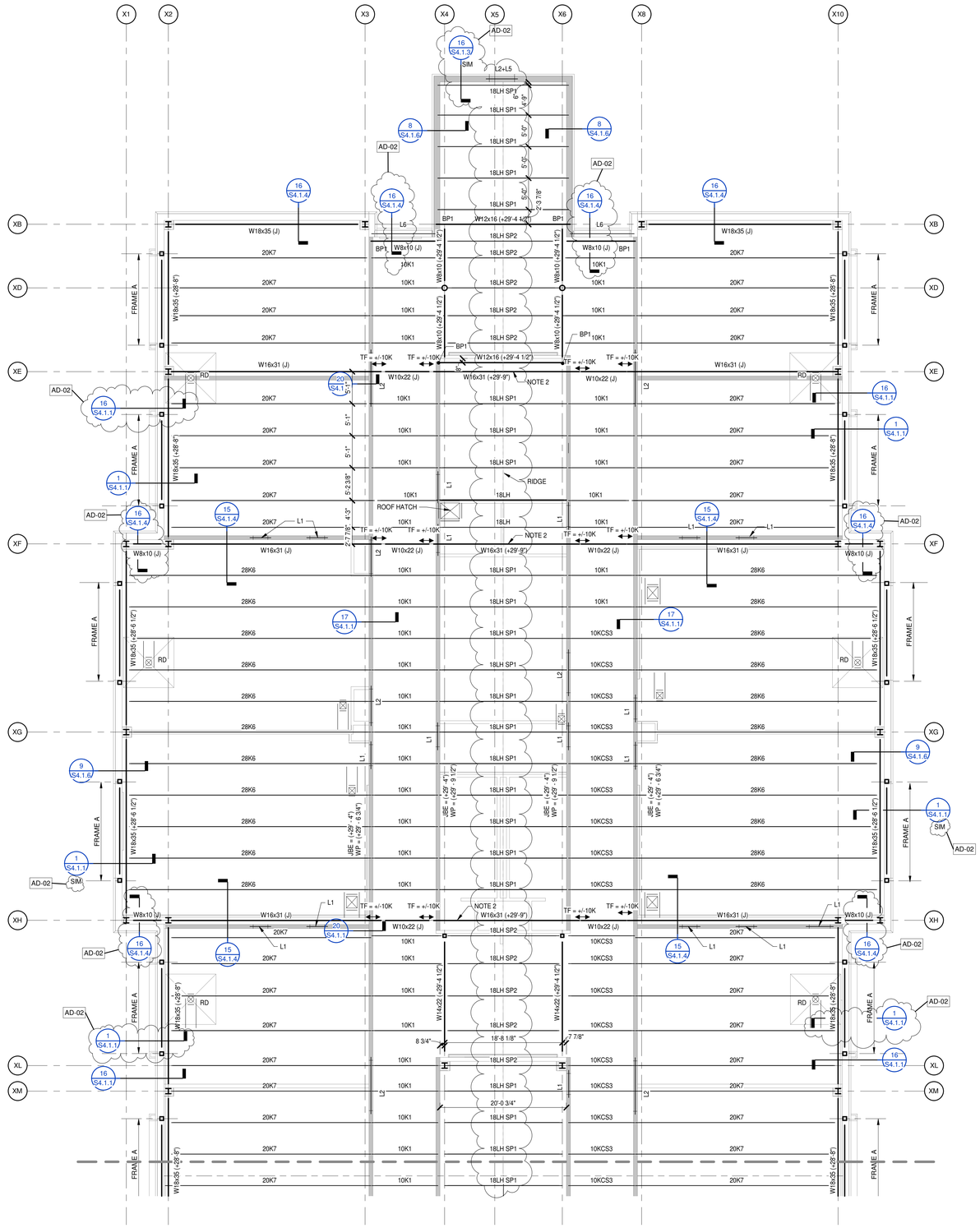

N

ROOF FRAMING PLAN - PART D

1/8" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. REFER TO S2.2.1 FOR NOTES.
2. PROVIDE TAPERED WT3x7.5 TO ATTAIN ROOF SLOPE.

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NORTH CAROLINA PROFESSIONAL SEAL 035434 ENGINEER KAREN M COLLINS
8/23/2024

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310	
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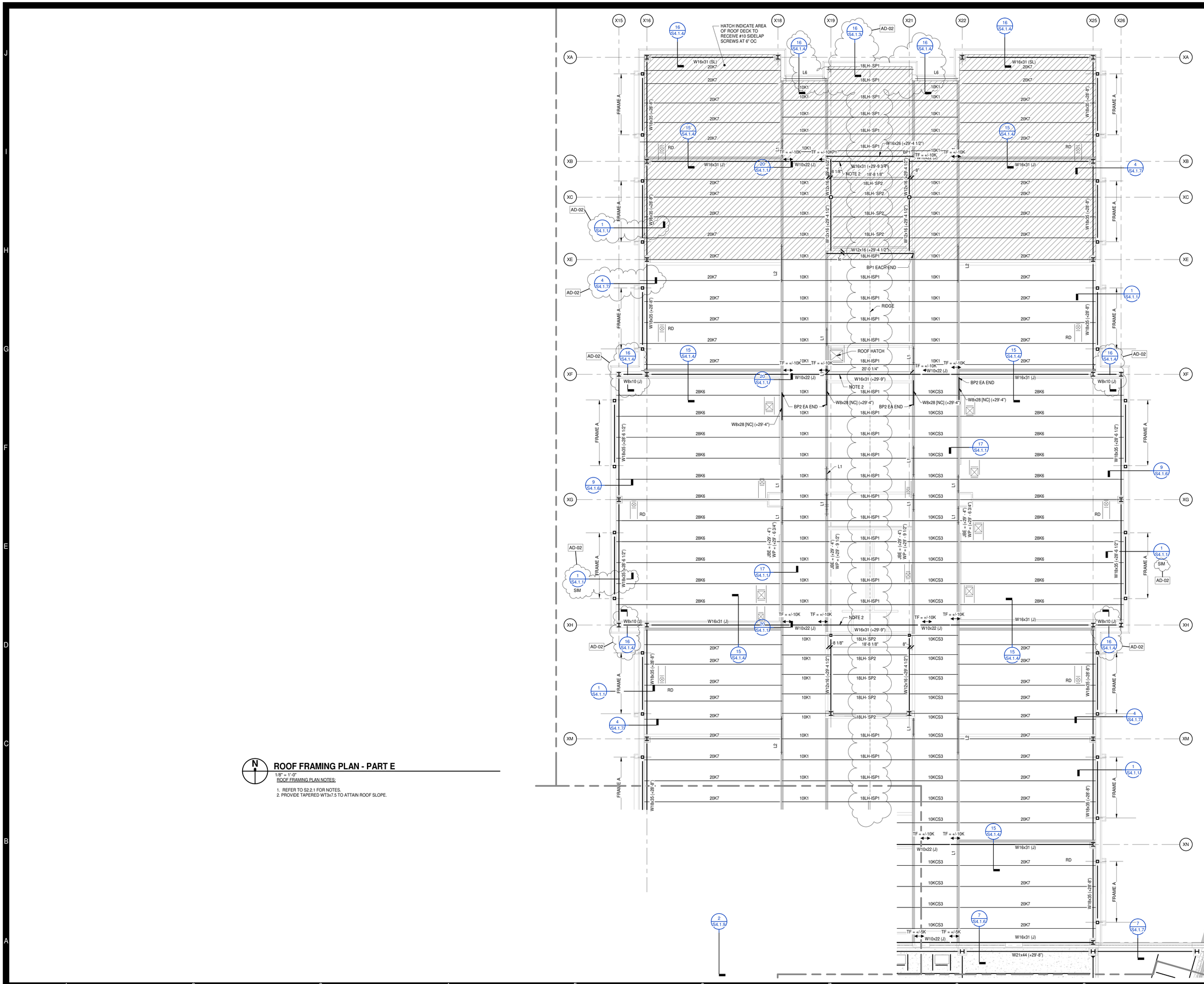
ROOF FRAMING PLAN - PART D

S2.2.4

8/23/2024 1:29:12 PM



ROOF FRAMING PLAN - PART E

1/8" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. REFER TO S2.2.1 FOR NOTES.
2. PROVIDE TAPERED WT3x7.5 TO ATTAIN ROOF SLOPE.

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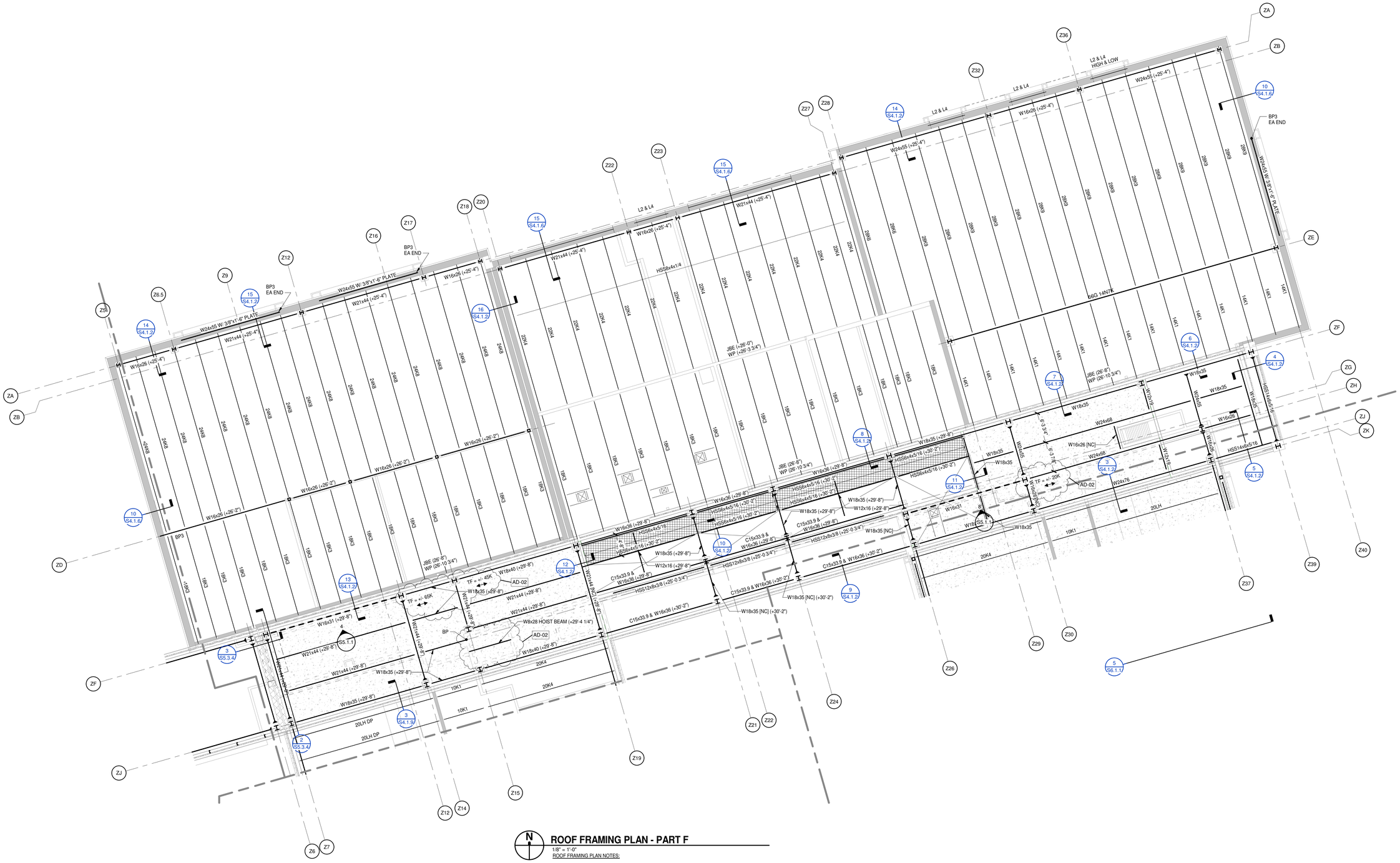
ROOF FRAMING PLAN - PART E

S2.2.5

8/23/2024 1:29:17 PM



ROOF FRAMING PLAN - PART F

1/8" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. REFER TO S2.2.1 FOR NOTES.

NOTE A: METAL BAR GRATING W19-4 (1" x 1/8") PLAIN SURFACE BEARING BAR.

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PENDER COUNTY SCHOOLS K-8 SCHOOL

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ROOF FRAMING PLAN - PART F

S2.2.6

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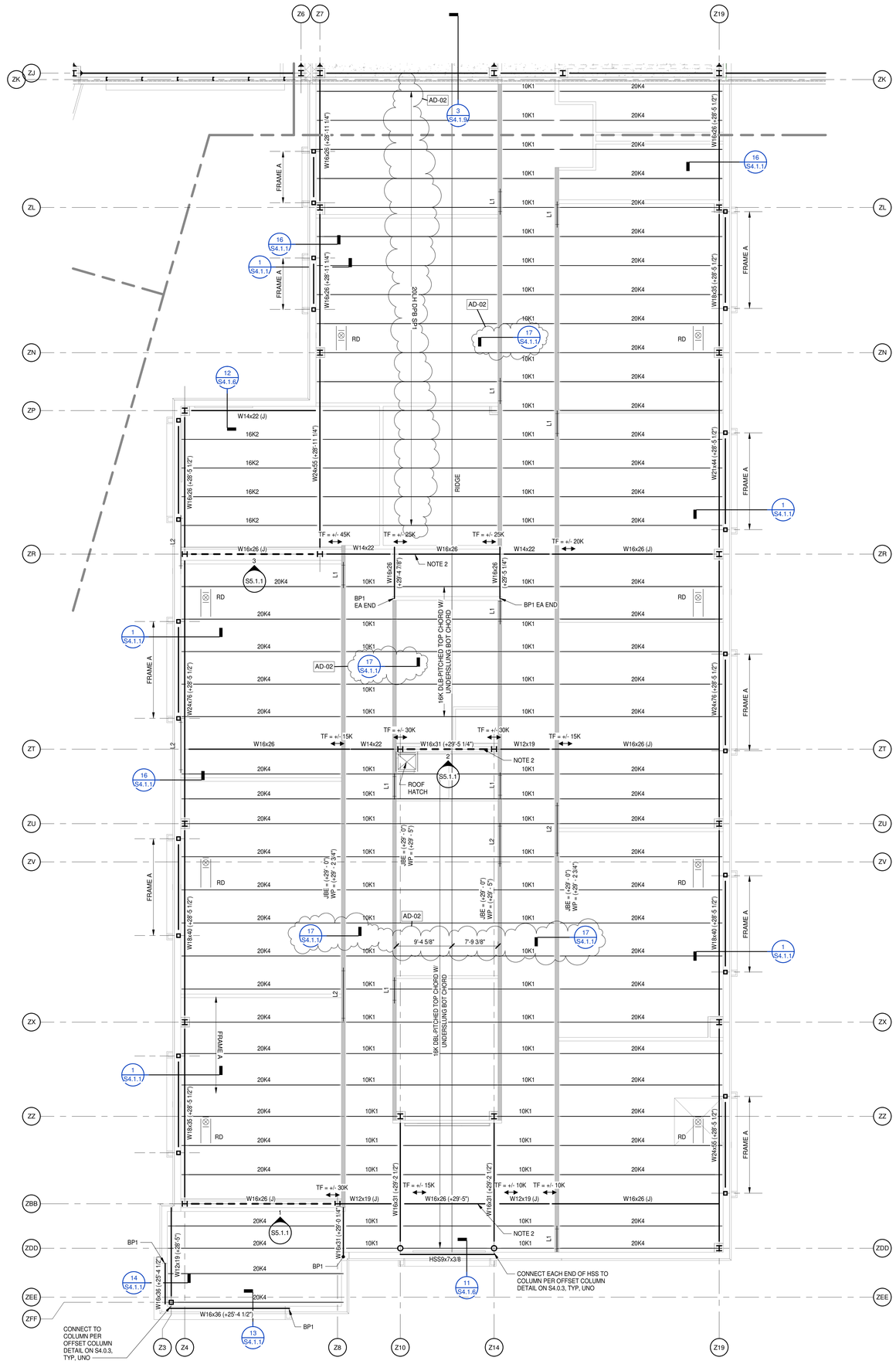

ROOF FRAMING PLAN - PART G

1/8" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. REFER TO S2.2.1 FOR NOTES.
2. PROVIDE TAPERED WT3x7.5 TO ATTAIN ROOF SLOPE.

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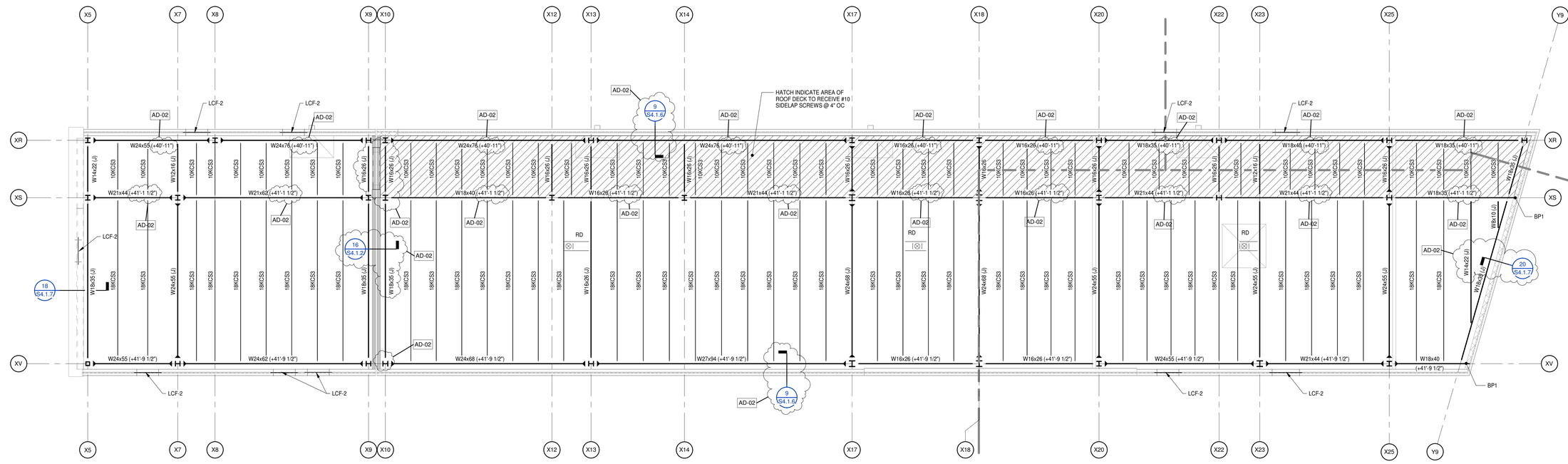
ROOF FRAMING PLAN - PART G

S2.2.7

8/23/2024 1:29:21 PM



PENTHOUSE ROOF FRAMING PLAN PART C

1/8" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. REFER TO S2.2.1 FOR NOTES.

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KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

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PENTHOUSE ROOF FRAMING PLAN - PART C

S2.2.10

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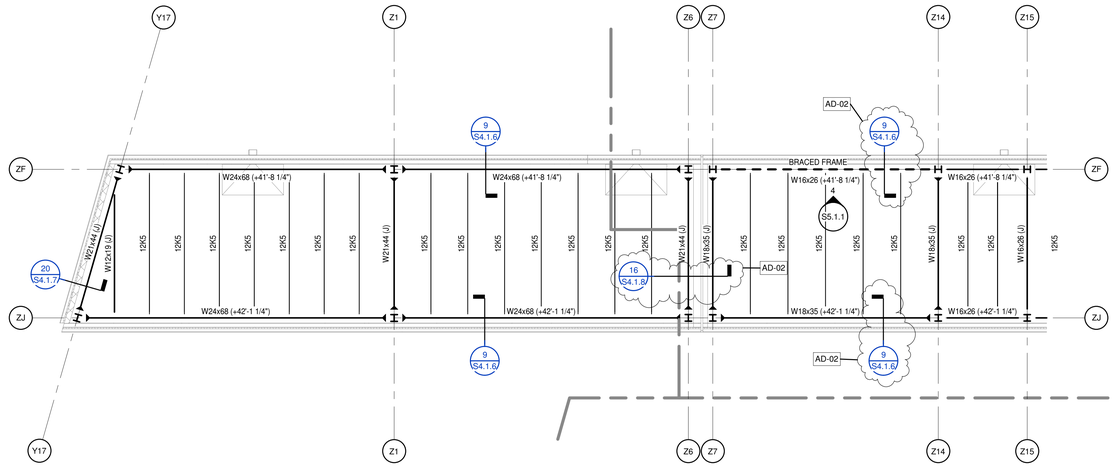
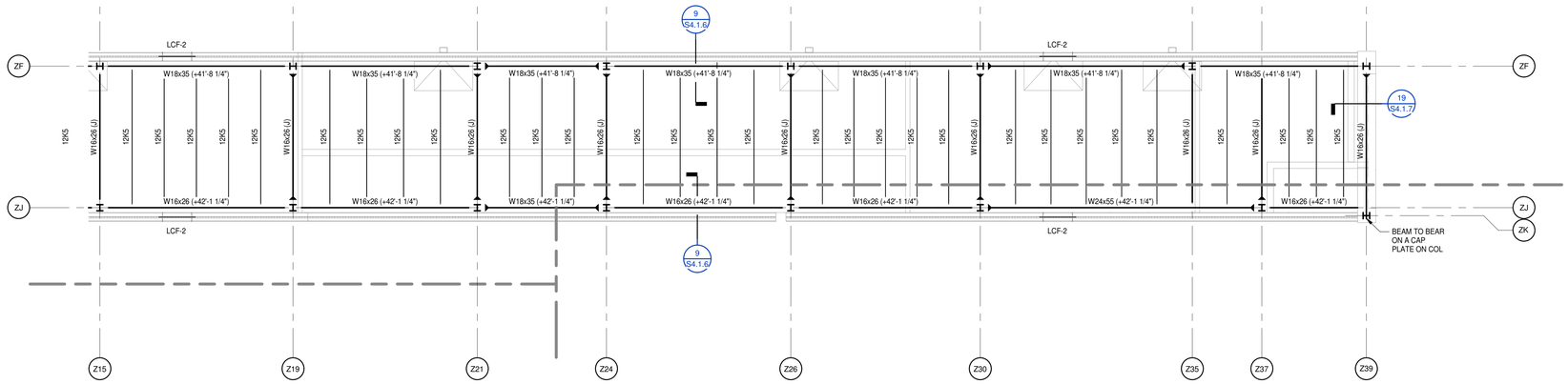


PENTHOUSE ROOF FRAMING PLAN - PART E AND F

1/8" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. REFER TO S2.2.1 FOR NOTES.



PENTHOUSE ROOF FRAMING PLAN - PART F

1/8" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. REFER TO S2.2.1 FOR NOTES.

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F

KEY PLAN

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
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PENTHOUSE ROOF FRAMING PLAN - PART E AND F

S2.2.11

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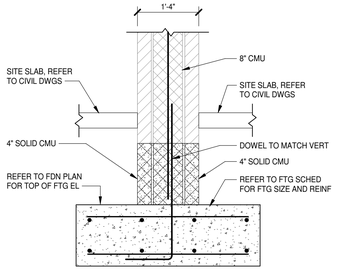
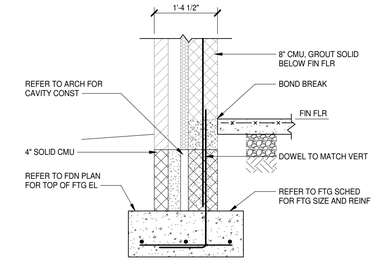
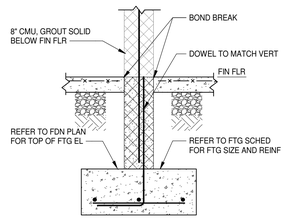


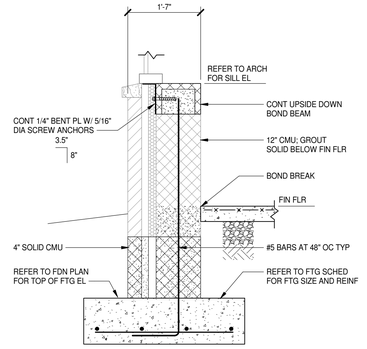
20 SECTION S1.1.5 S3.1.1 3/4" = 1'-0"



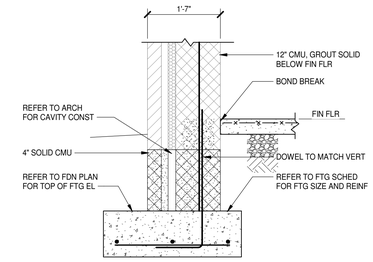
16 SECTION S1.1.3 S3.1.1 3/4" = 1'-0"



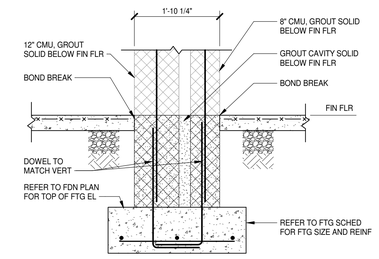
12 SECTION S1.1.3 S3.1.1 3/4" = 1'-0"



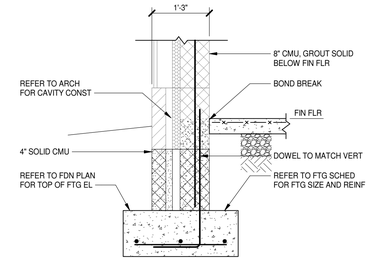
8 SECTION S1.1.2 S3.1.1 3/4" = 1'-0"



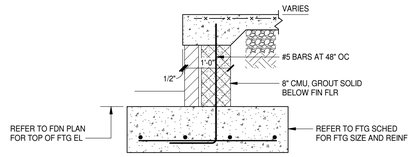
4 SECTION S1.1.1 S3.1.1 3/4" = 1'-0"



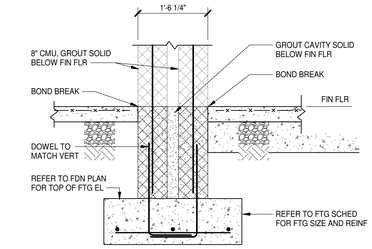
19 SECTION S1.1.6 S3.1.1 3/4" = 1'-0"



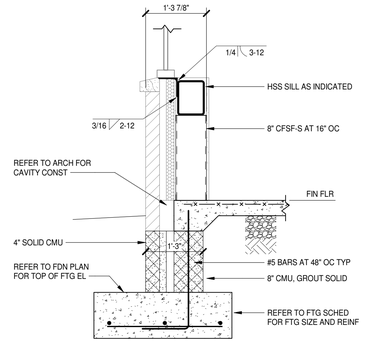
15 SECTION S1.1.3 S3.1.1 3/4" = 1'-0"



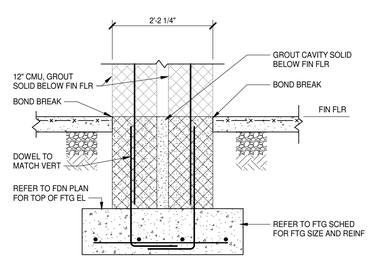
11 SECTION S1.1.2 S3.1.1 3/4" = 1'-0"



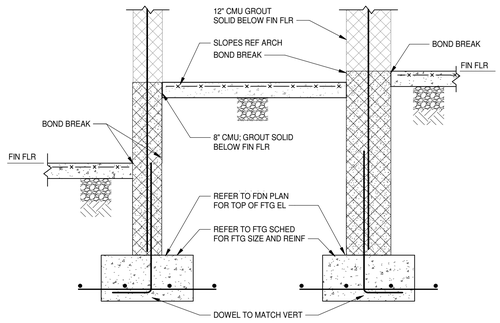
7 SECTION S1.1.1 S3.1.1 3/4" = 1'-0"



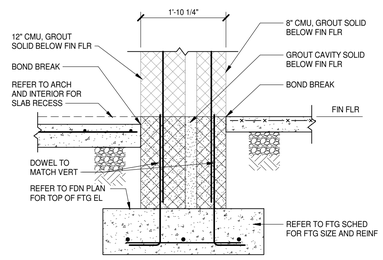
3 SECTION S1.1.1 S3.1.1 3/4" = 1'-0"



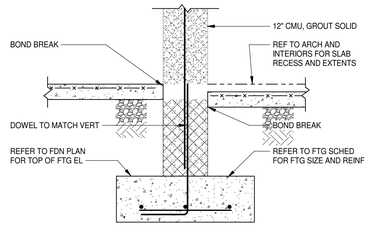
18 SECTION S1.1.6 S3.1.1 3/4" = 1'-0"



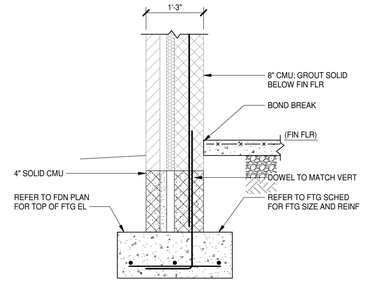
14 SECTION S1.1.1 S3.1.1 3/4" = 1'-0"



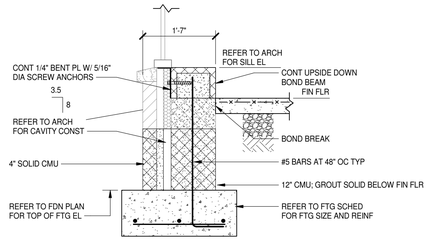
10 SECTION S1.1.1 S3.1.1 3/4" = 1'-0"



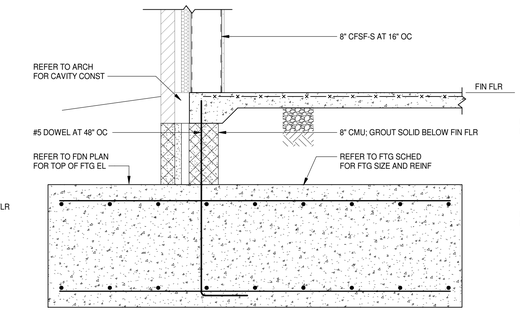
6 SECTION S1.1.1 S3.1.1 3/4" = 1'-0"



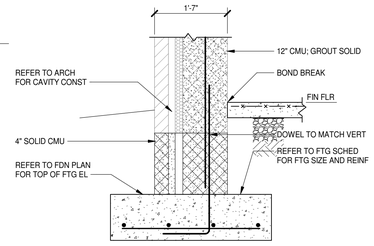
2 SECTION S1.1.1 S3.1.1 3/4" = 1'-0"



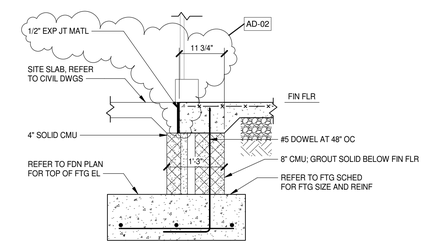
17 SECTION S1.1.6 S3.1.1 3/4" = 1'-0"



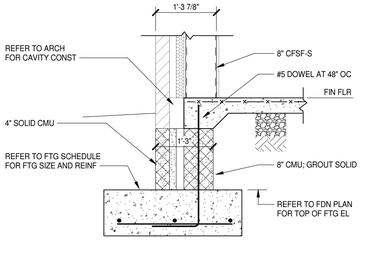
13 SECTION S1.1.8 S3.1.1 3/4" = 1'-0"



9 SECTION S1.1.2 S3.1.1 3/4" = 1'-0"



5 SECTION S1.1.1 S3.1.1 3/4" = 1'-0"



1 SECTION S1.1.1 S3.1.1 3/4" = 1'-0"

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8/23/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
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FOUNDATION SECTIONS

S3.1.1

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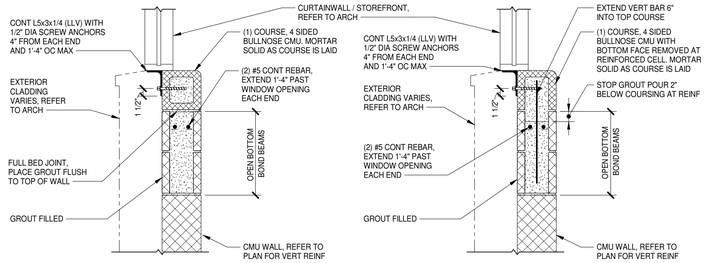
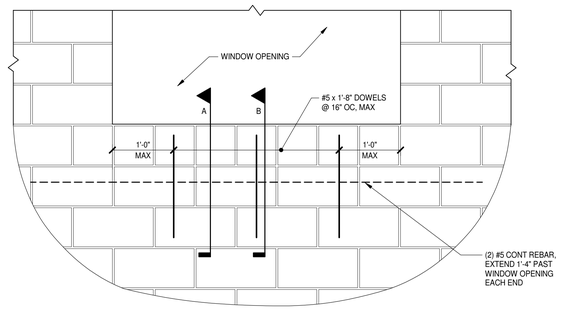


SECTION A-A

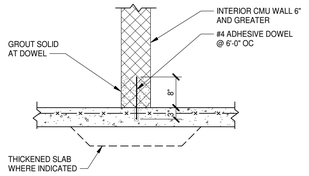
SECTION B-B



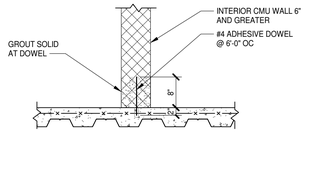
ELEVATION

11 TYPICAL CMU WINDOW SILL DETAIL

S4.0.1 1" = 1'-0"



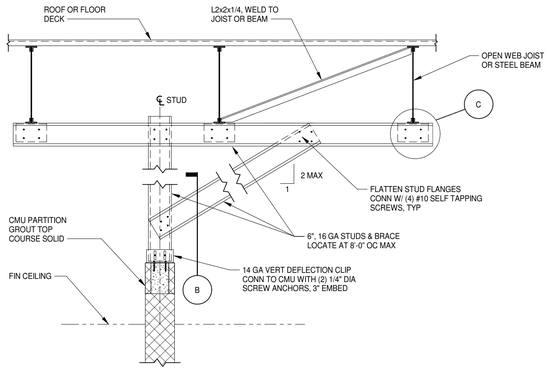
SLAB-ON-GRADE



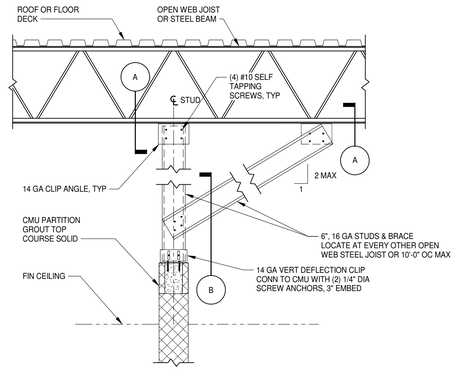
SLAB-ON-DECK

BASE ANCHORAGE OF UNREINFORCED CMU WALLS

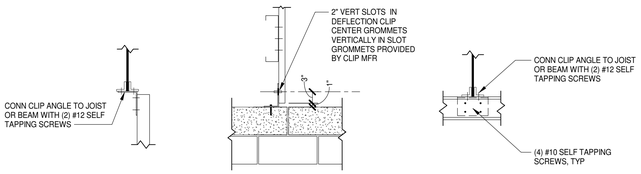
NO SCALE



LOW WALL PARALLEL TO JOIST OR BEAM



LOW WALL PERPENDICULAR TO JOIST OR BEAM



SECTION A **SECTION B** **DETAIL C**

NOTES:

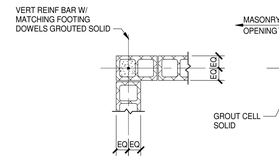
1. BRACE INTERIOR NON-LOAD BEARING MASONRY WALLS IN ACCORDANCE WITH THESE DETAILS UNLESS OTHERWISE INDICATED.
2. IN LIEU OF BRACING AT TOPS OF WALLS, BRACING MAY BE PROVIDED BY INTERSECTING MASONRY WALLS WHEN THE DISTANCE BETWEEN THE INTERSECTING WALLS DOES NOT EXCEED THE FOLLOWING:

NOMINAL THICKNESS OF BRACED WALLS	MAXIMUM SPACING BETWEEN INTERSECTING WALLS
4"	12'-0"
6"	16'-0"
8"	22'-0"
10"	26'-0"
12"	30'-0"

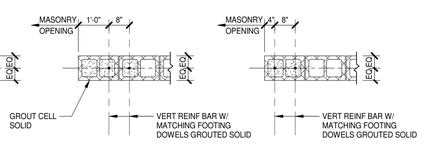
3. BRACING IS REQUIRED IN ACCORDANCE WITH THESE DETAILS IF A VERTICAL CONTROL JOINT OCCURS BETWEEN INTERSECTING WALLS.
4. REFER TO ARCHITECTURAL DRAWINGS FOR INTERIOR PARTITION TYPES AND LOCATIONS.
5. INSTALL BRACING AFTER ALL ROOF DEAD LOAD IS IN PLACE.

BRACING DETAILS FOR NON-LOAD BEARING INTERIOR MASONRY PARTITIONS

NO SCALE

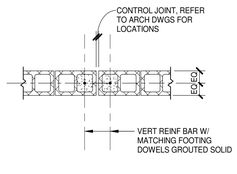


CORNER

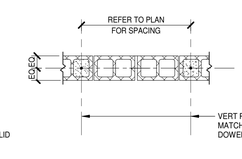


JAMB AT STEEL LINTEL

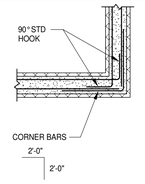
JAMB AT CMU BOND BEAM LINTEL



VERTICAL CONTROL JOINTS



TYPICAL REINFORCED WALL



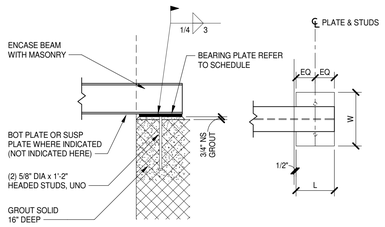
BOND BEAM PLAN DETAIL AT CORNER

NOTES:

1. REINFORCING BAR SIZE INDICATED ON FOUNDATION PLAN.
2. DETAILS ARE PROVIDED FOR VERTICAL REINFORCING STEEL PLACEMENT ONLY. REFER TO ARCHITECTS DRAWINGS FOR SPECIFIC MASONRY DETAILS.
3. DO NOT PLACE CONDUIT IN CELLS CONTAINING STRUCTURAL REINFORCING.

CMU WALL REINFORCING DETAILS

NO SCALE



SECTION **PLAN**

BEAM ANCHORAGE DETAILS

NO SCALE

BEARING PLATE SCHEDULE

MARK	SIZE W	SIZE t	SIZE L	REMARKS
BP1	9"	3/4"	7"	
BP2	7"	3/4"	9"	
BP3	9"	3/4"	11"	
BP4	12"	1"	11"	(2) 3/4" DIA x 6" HEADED STUDS
BP5	11"	3/4"	7"	
BP6	10"	3/4"	5"	
REFER TO BEAM ANCHORAGE DETAILS				

LINTEL SCHEDULE

MARK	DIAGRAM	BOND BEAM (W x H) W = WIDTH OF WALL	REINFORCING	STEEL	NOTES
L1		W x 8	(2) #5 CONT		
L2		W x 16	(2) #5 CONT		
L3		W x 24	(2) #5 CONT, EA COURSE		
L4		W x 32	(2) #5 CONT, EA COURSE	AD-02 L6x6x5/16	
L5					LOOSE ANGLE LINTEL
L6				W8x28 W/ 3/8" BOTTOM PLATE x 1" LESS THAN WALL WIDTH	
L7				W16x36 W/ 3/8" BOTTOM PLATE x 1" LESS THAN WALL WIDTH	
L8				CONT 3/8" BENT PLATE W/ 7" LEGS CONT 5x1/4x0'-7" BENT PLATE AT METAL PANEL	CONN TO CMU W/ 5/8" DIA SCREW ANCHORS AT 0'-8" OC, SET ANCHOR 2" FROM TOP OF VERT LEG, WELD TO STEEL LINTELS, TOP & BOT
L9		W x 40	(2) #5 CONT, EA COURSE		

LINTEL NOTES

1. LINTELS FOR ARCHITECTURAL OPENINGS (WINDOWS, DOORS, LOUVERS) IN BEARING WALLS AND EXTERIOR WALLS ARE IDENTIFIED BY MARK NUMBER ON THE FRAMING PLAN(S) AND INCLUDED IN THE LINTEL SCHEDULE.
2. LINTELS FOR ARCHITECTURAL OPENINGS IN NON-LOAD BEARING WALLS AND OTHER WALLS WHICH ARE NOT INDICATED ON THE FRAMING PLAN(S) SHALL BE CONSTRUCTED PER NOTES A, B OR C BELOW.

   A. STEEL ANGLE LINTELS

   PROVIDE ONE ANGLE FOR EACH NOMINAL 4" OF WALL THICKNESS PER THE FOLLOWING SCHEDULE.

MASONRY OPENING	ANGLE SIZE
UP TO 5'-0"	L3 1/2x3 1/2x 5/16
5'-1" TO 6'-0"	L4x3 1/2x 5/16 (LLV)
6'-1" TO 7'-0"	L5x3 1/2x 3/8 (LLV)
OVER 7'-0"	AS DETAILED

   FOR OPENINGS IN 10" CMU, HORIZONTAL LEGS OF ANGLES SHALL BE A COMBINATION OF 5" AND 4".

   FOR OPENINGS IN 6" CMU REQUIRING STEEL LINTELS, USE WT7x11 UP TO 7'-0" OPENING.

   B. REINFORCED BOND BEAM LINTELS

   LINTELS SHALL MATCH THICKNESS OF WALL. REINFORCE 8", 10" AND 12" BOND BEAM WITH (2) #5 BARS AT BOTTOM. REINFORCE 6" BOND BEAM WITH (1) #5 BAR AT BOTTOM. BOND BEAM SHALL BE 8" DEEP FOR OPENING WIDTH UP TO 5'-0", AND SHALL BEAR 8" ON SOLID MASONRY EACH END. BOND BEAM SHALL BE 16" DEEP FOR OPENING WIDTH UP TO 8'-0" AND SHALL BEAR 16" ON SOLID MASONRY EACH END WITH REINFORCING TOP AND BOTTOM. PLACE GROUT MONOLITHICALLY IN BOTH COURSES OF 16" DEEP BOND BEAM.

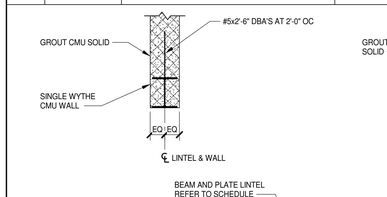
   C. PRECAST CONCRETE LINTELS

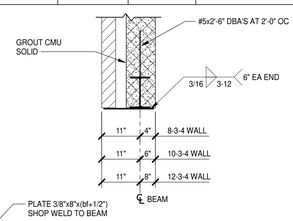
   PRECAST CONCRETE LINTELS SHALL BE 3 5/8" x 7 5/8" FOR EACH NOMINAL 4" THICKNESS OF WALL. REINFORCING SHALL BE (1) #4 TOP AND BOTTOM WITH 1 1/2" COVER. FOR OPENINGS IN 6" CMU, LINTEL SHALL BE 5 5/8" x 7 5/8", REINFORCED WITH (1) #5 TOP AND BOTTOM. MASONRY OPENING WIDTH SHALL BE 6'-0" OR LESS. DO NOT USE PRECAST CONCRETE LINTELS IN EXPOSED LOCATIONS.

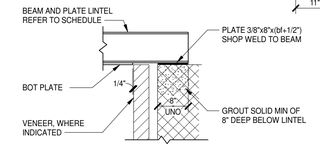
3. LINTELS FOR MECHANICAL DUCTWORK PENETRATIONS NOT OTHERWISE DETAILED SHALL BE ONE OF THE ABOVE (NOTE 2A, 2B OR 2C).
4. LINTELS SHALL BEAR 8" ONTO SOLID OR GROUT FILLED MASONRY, UNLESS OTHERWISE INDICATED.
5. LINTELS ARE REQUIRED OVER ALL MASONRY OPENINGS GREATER THAN 8" IN WIDTH.
6. LINTELS ARE NOT REQUIRED ABOVE HOLLOW METAL FRAMES IN OPENINGS 3'-4" OR LESS IN 6" NON-BEARING MASONRY PARTITIONS. GROUT HEAD OF FRAMES SOLID BEFORE PLACING MASONRY.
7. ALL LINTELS IN EXTERIOR WALLS SHALL BE GALVANIZED.

CFSF HEAD AND JACK / JAMB SCHEDULE

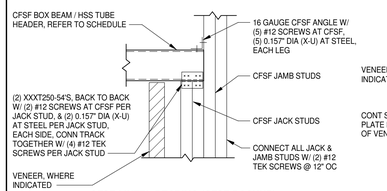
MARK	DIAGRAM	CFSF BOX BEAM / HSS TUBE HEADER VERTICAL	CFSF BOX BEAM / HSS TUBE HEADER HORIZONTAL	CFSF BOX BEAM / HSS TUBE HEADER CONNECTORS	JACK STUD	JAMB STUD	SILL	NOTES
LCF-1		PER DELEGATED DESIGN	PER DELEGATED DESIGN	PER DELEGATED DESIGN	PER DELEGATED DESIGN	PER DELEGATED DESIGN	PER DELEGATED DESIGN	
LCF-2		PER DELEGATED DESIGN	PER DELEGATED DESIGN	PER DELEGATED DESIGN	PER DELEGATED DESIGN	PER DELEGATED DESIGN	PER DELEGATED DESIGN	CONT 14 GA PLATE 1/2" LESS THAN WIDTH OF WALL CONN W/ (2) #10 TEK SCREWS @ 12" OC
LCF-3		HSS6x6x1/4			PER DELEGATED DESIGN	PER DELEGATED DESIGN	PER DELEGATED DESIGN	



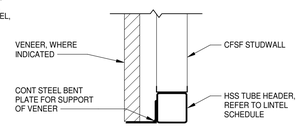




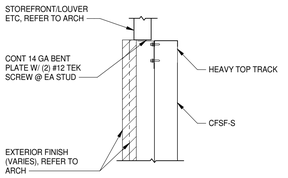
STEEL LINTEL DETAILS (CMU BACKUP)



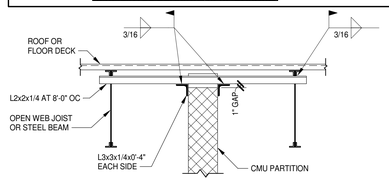
CFSF LINTEL BEARING (CFSF BACKUP)



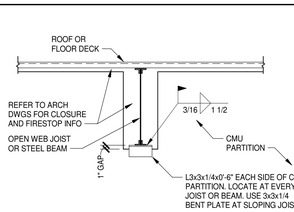
LOOSE ANGLE LINTEL (CFSF BACKUP)



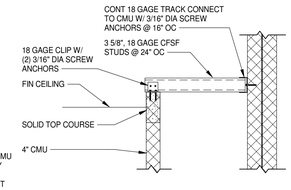
STOREFRONT/CURTAINWALL BOX BEAM AND SILL PLATE (CFSF-S BACKUP)



WALL TO UNDERSIDE OF DECK PARALLEL TO JOISTS



WALL TO UNDERSIDE OF DECK PERPENDICULAR TO JOISTS



4" CMU TOP OF WALL BRACING

MOSELEYARCHITECTS
911 N. WEST STREET, SUITE 205 RALEIGH, NORTH CAROLINA 27603
PHONE (919) 840-0091
MOSELEYARCHITECTS.COM

NORTH CAROLINA PROFESSIONAL SEAL 035434 ENGINEER KIRSTEN M. COOPER

8/23/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

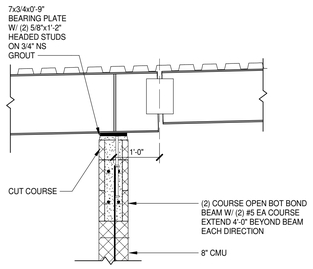
PROJECT NO: 631310
DATE: August 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/23/24	AD-02

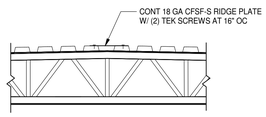
TYPICAL MASONRY WALL AND LINTEL DETAILS

S4.0.1

8/23/2024 1:29:39 PM



20 S2.2.3 S4.1.1 **SECTION** 3/4" = 1'-0"



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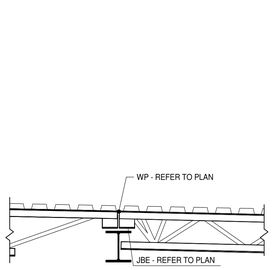

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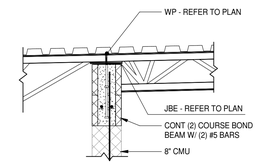

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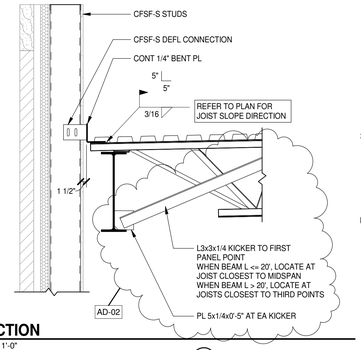

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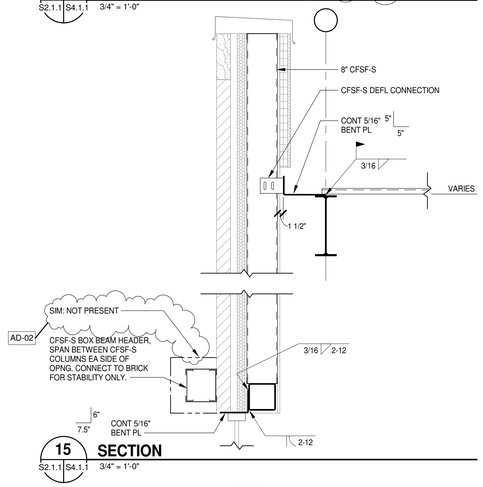

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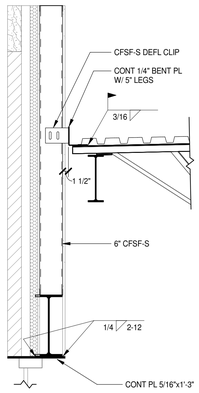

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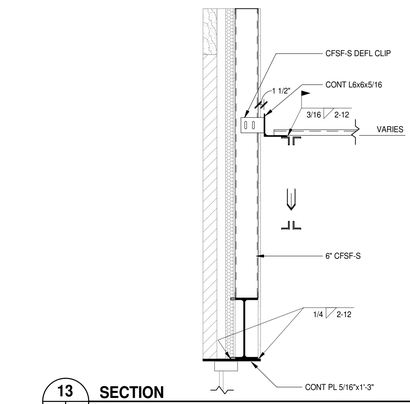

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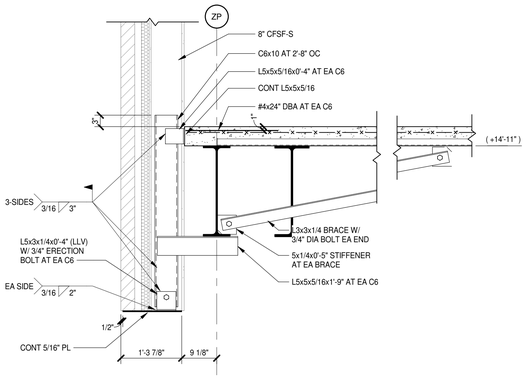

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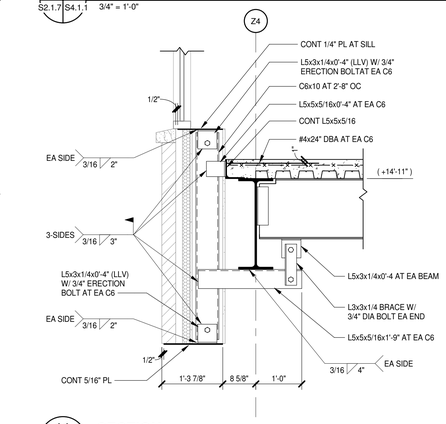

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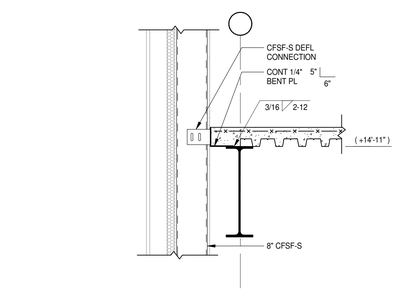

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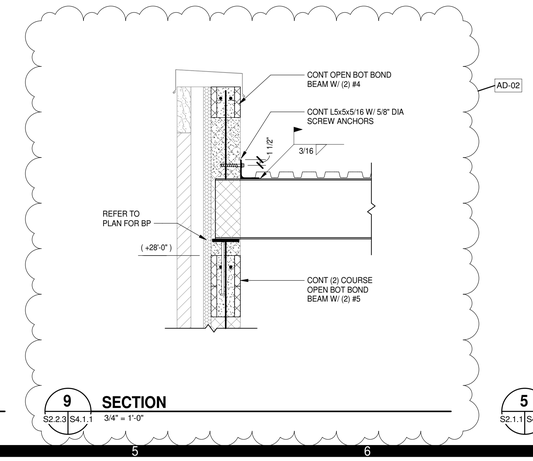

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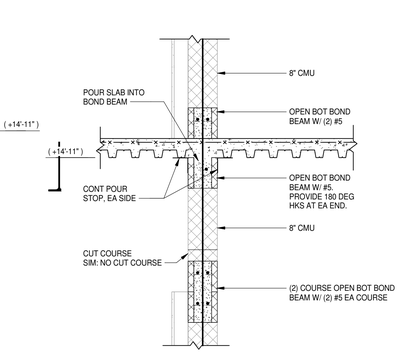

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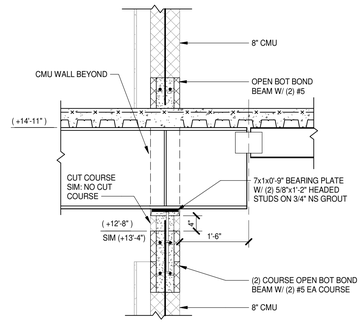

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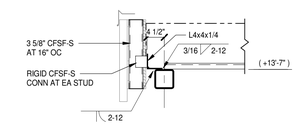

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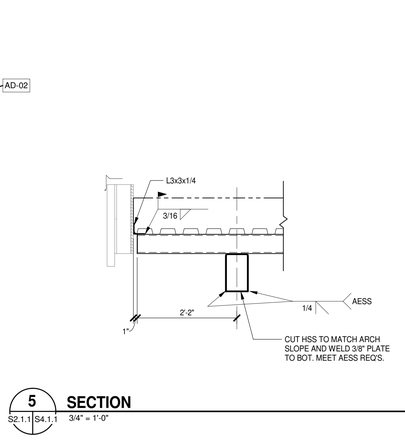

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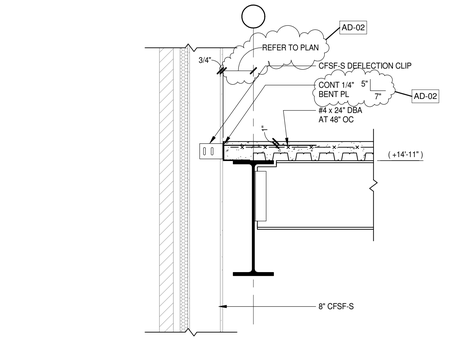

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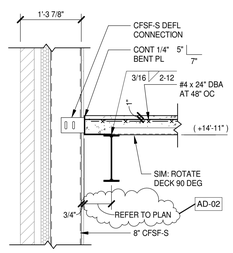
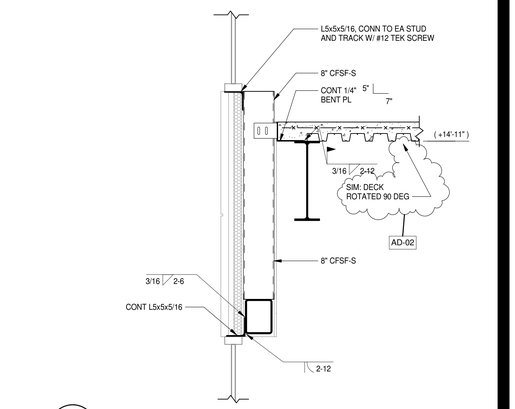


3 S2.1.1 S4.1.1 **SECTION** 3/4" = 1'-0"



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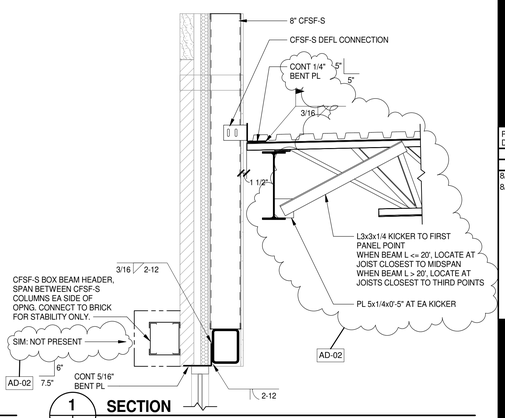

1 S2.1.1 S4.1.1 **SECTION** 3/4" = 1'-0"

MOSELEYARCHITECTS
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NORTH CAROLINA PROFESSIONAL SEAL 035434 ENGINEER KIRSTEN M. COOKE
8/23/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: August 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/15/24	AD-01
8/23/24	AD-02

FRAMING SECTIONS

S4.1.1

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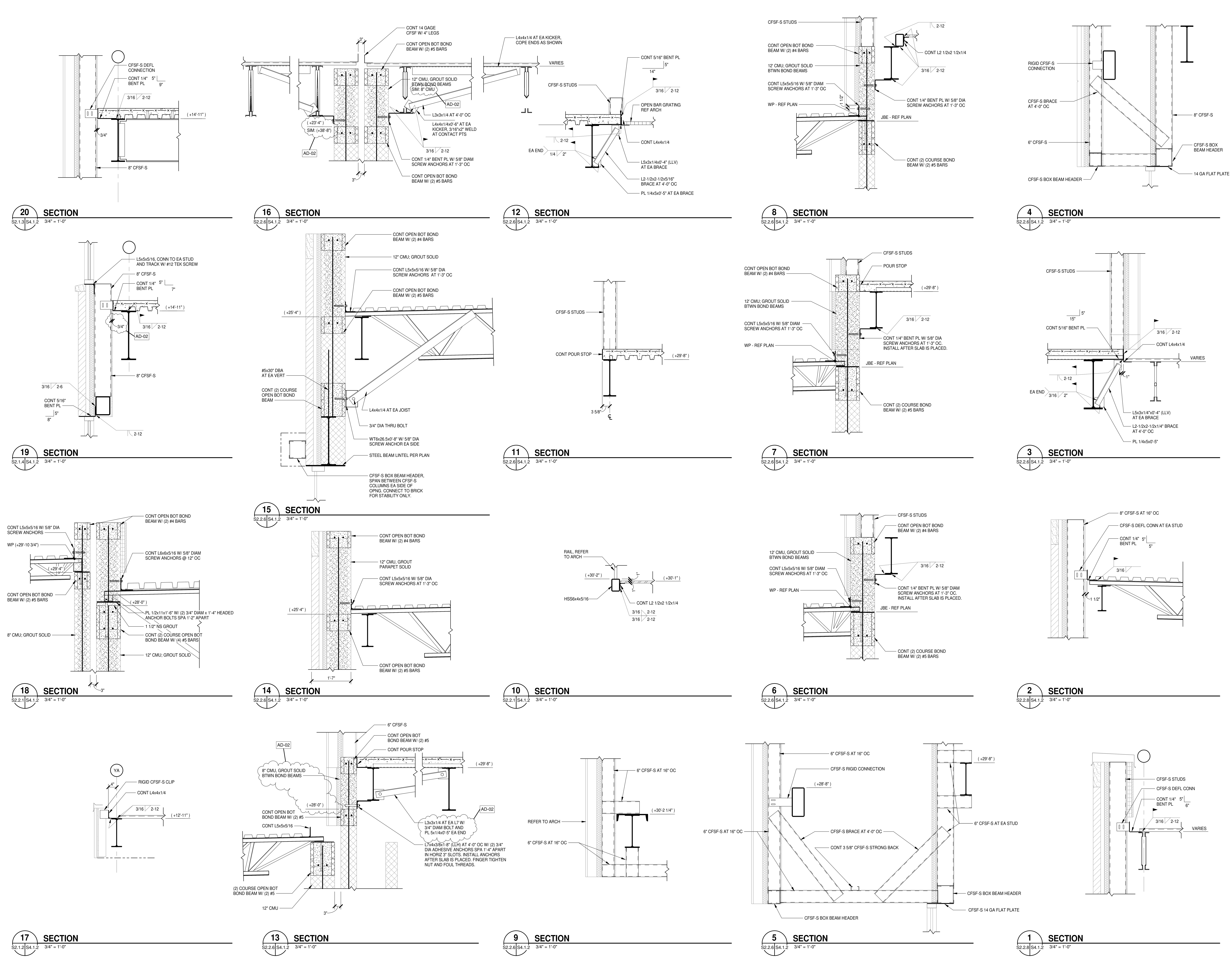
20 SECTION S2.1.3 S4.1.2 3/4" = 1'-0"
CFSF-S DEFL CONNECTION
CONT 1/4" BENT PL
3/16 2-12
(+14'-11")
8" CFSF-S
16 SECTION S2.2.6 S4.1.2 3/4" = 1'-0"
CONT 14 GAGE CFSF W/ 4" LEGS
CONT OPEN BOT BOND BEAM W/ (2) #5 BARS
12" CMU, GROUT SOLID BTWN BOND BEAMS SIM: 8" CMU
AD-02
L3x3x1/4 AT 4'-0" OC
L4x4x1/4x0'-6" AT EA KICKER, 3/16"x2" WELD AT CONTACT PTS
CONT 1/4" BENT PL W/ 5/8" DIAM SCREW ANCHORS AT 1'-3" OC
CONT OPEN BOT BOND BEAM W/ (2) #5 BARS
(+23'-4") SIM: (+38'-8")
12 SECTION S2.2.6 S4.1.2 3/4" = 1'-0"
L4x4x1/4 AT EA KICKER, COPE ENDS AS SHOWN
VARIES
CONT 5/16" BENT PL
CFSF-S STUDS
OPEN BAR GRATING REF ARCH
CONT L4x4x1/4
L5x3x1/4x0'-4" (LLV) AT EA BRACE
L2-1/2x2-1/2x5/16" BRACE AT 4'-0" OC
PL 1/4x5x0'-5" AT EA BRACE
EA END
8 SECTION S2.2.6 S4.1.2 3/4" = 1'-0"
CFSF-S STUDS
CONT OPEN BOT BOND BEAM W/ (2) #4 BARS
12' CMU; GROUT SOLID BTWN BOND BEAMS
CONT L5x5x5/16 W/ 5/8" DIAM SCREW ANCHORS AT 1'-3" OC
WP - REF PLAN
CONT L2 1/2x2 1/2x1/4
CONT 1/4" BENT PL W/ 5/8" DIA SCREW ANCHORS AT 1'-3" OC
JBE - REF PLAN
CONT (2) COURSE BOND BEAM W/ (2) #5 BARS
4 SECTION S2.2.6 S4.1.2 3/4" = 1'-0"
RIGID CFSF-S CONNECTION
CFSF-S BRACE AT 4'-0" OC
6" CFSF-S
CFSF-S BOX BEAM HEADER
8" CFSF-S
CFSF-S BOX BEAM HEADER
14 GA FLAT PLATE
19 SECTION S2.1.4 S4.1.2 3/4" = 1'-0"
L5x5x5/16, CONN TO EA STUD AND TRACK W/ #12 TEK SCREW
8" CFSF-S
CONT 1/4" BENT PL
(+14'-11")
AD-02
8" CFSF-S
CONT 5/16" BENT PL
15 SECTION S2.2.6 S4.1.2 3/4" = 1'-0"
CONT OPEN BOT BOND BEAM W/ (2) #4 BARS
12" CMU; GROUT SOLID
CONT L5x5x5/16 W/ 5/8" DIA SCREW ANCHORS AT 1'-3" OC
CONT OPEN BOT BOND BEAM W/ (2) #5 BARS
(+25'-4")
#5x30" DBA AT EA VERT
CONT (2) COURSE OPEN BOT BOND BEAM
L4x4x1/4 AT EA JOIST
3/4" DIA THRU BOLT
WT6x26.5x0'-8" W/ 5/8" DIA SCREW ANCHOR EA SIDE
STEEL BEAM LINTEL PER PLAN
CFSF-S BOX BEAM HEADER, SPAN BETWEEN CFSF-S COLUMNS EA SIDE OF OPNG. CONNECT TO BRICK FOR STABILITY ONLY.
11 SECTION S2.2.6 S4.1.2 3/4" = 1'-0"
CFSF-S STUDS
CONT POUR STOP
(+29'-8")
7 SECTION S2.2.6 S4.1.2 3/4" = 1'-0"
CFSF-S STUDS
POUR STOP
CONT OPEN BOT BOND BEAM W/ (2) #4 BARS
12' CMU; GROUT SOLID BTWN BOND BEAMS
CONT L5x5x5/16 W/ 5/8" DIAM SCREW ANCHORS AT 1'-3" OC
WP - REF PLAN
(+29'-8")
CONT 1/4" BENT PL W/ 5/8" DIA SCREW ANCHORS AT 1'-3" OC. INSTALL AFTER SLAB IS PLACED.
JBE - REF PLAN
CONT (2) COURSE BOND BEAM W/ (2) #5 BARS
3 SECTION S2.2.6 S4.1.2 3/4" = 1'-0"
CFSF-S STUDS
CONT 5/16" BENT PL
CONT L4x4x1/4
VARIES
EA END
L5x3x1/4"x0'-4" (LLV) AT EA BRACE
L2-1/2x2-1/2x1/4" BRACE AT 4'-0" OC
PL 1/4x5x0'-5"
18 SECTION S2.2.1 S4.1.2 3/4" = 1'-0"
CONT L5x5x5/16 W/ 5/8" DIA SCREW ANCHORS
WP (+29'-10 3/4")
CONT OPEN BOT BOND BEAM W/ (2) #4 BARS
CONT L6x6x5/16 W/ 5/8" DIAM SCREW ANCHORS @ 12" OC
CONT OPEN BOT BOND BEAM W/ (2) #5 BARS
8" CMU; GROUT SOLID
PL 1/2x11x1'-6" W/ (2) 3/4" DIAM x 1'-4" HEADED ANCHOR BOLTS SPA 1'-2" APART
1 1/2" NS GROUT
CONT (2) COURSE OPEN BOT BOND BEAM W/ (4) #5 BARS
12" CMU; GROUT SOLID
14 SECTION S2.2.6 S4.1.2 3/4" = 1'-0"
CONT OPEN BOT BOND BEAM W/ (2) #4 BARS
12" CMU, GROUT PARAPET SOLID
CONT L5x5x5/16 W/ 5/8" DIA SCREW ANCHORS AT 1'-3" OC
(+25'-4")
CONT OPEN BOT BOND BEAM W/ (2) #5 BARS
10 SECTION S2.2.1 S4.1.2 3/4" = 1'-0"
RAIL, REFER TO ARCH
(+30'-2") (+30'-1")
HSS6x4x5/16
CONT L2 1/2x2 1/2x1/4
6 SECTION S2.2.6 S4.1.2 3/4" = 1'-0"
CFSF-S STUDS
CONT OPEN BOT BOND BEAM W/ (2) #4 BARS
12' CMU, GROUT SOLID BTWN BOND BEAMS
CONT L5x5x5/16 W/ 5/8" DIAM SCREW ANCHORS AT 1'-3" OC
WP - REF PLAN
CONT 1/4" BENT PL W/ 5/8" DIAM SCREW ANCHORS AT 1'-3" OC. INSTALL AFTER SLAB IS PLACED.
JBE - REF PLAN
CONT (2) COURSE BOND BEAM W/ (2) #5 BARS
2 SECTION S2.2.8 S4.1.2 3/4" = 1'-0"
8" CFSF-S AT 16" OC
CFSF-S DEFL CONN AT EA STUD
CONT 1/4" BENT PL
17 SECTION S2.1.2 S4.1.2 3/4" = 1'-0"
RIGID CFSF-S CLIP
CONT L4x4x1/4
(+12'-11")
13 SECTION S2.2.6 S4.1.2 3/4" = 1'-0"
6" CFSF-S
CONT OPEN BOT BOND BEAM W/ (2) #5
CONT POUR STOP
AD-02
8" CMU, GROUT SOLID BTWN BOND BEAMS
(+29'-8")
(+28'-0")
CONT OPEN BOT BOND BEAM W/ (2) #5
CONT L5x5x5/16
L3x3x1/4 AT EA L7 W/ 3/4" DIAM BOLT AND PL 5x1/4x0'-5" EA END
L7x4x3/8x1'-8" (LLH) AT 4'-0" OC W/ (2) 3/4" DIA ADHESIVE ANCHORS SPA 1'-4" APART IN HORIZ 3" SLOTS. INSTALL ANCHORS AFTER SLAB IS PLACED. FINGER TIGHTEN NUT AND FOUL THREADS.
(2) COURSE OPEN BOT BOND BEAM W/ (2) #5
12" CMU
9 SECTION S2.2.6 S4.1.2 3/4" = 1'-0"
6" CFSF-S AT 16" OC
REFER TO ARCH
(+30'-2 1/4")
6" CFSF-S AT 16" OC
5 SECTION S2.2.6 S4.1.2 3/4" = 1'-0"
6" CFSF-S AT 16" OC
CFSF-S RIGID CONNECTION
(+28'-8")
(+29'-8")
6" CFSF-S AT EA STUD
CFSF-S BRACE AT 4'-0" OC
CONT 3 5/8" CFSF-S STRONG BACK
CFSF-S BOX BEAM HEADER
CFSF-S 14 GA FLAT PLATE
CFSF-S BOX BEAM HEADER
1 SECTION S2.2.6 S4.1.2 3/4" = 1'-0"
CFSF-S STUDS
CFSF-S DEFL CONN
CONT 1/4" BENT PL
VARIES

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NORTH CAROLINA PROFESSIONAL SEAL 035434 ENGINEER
8/23/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: August 2, 2024

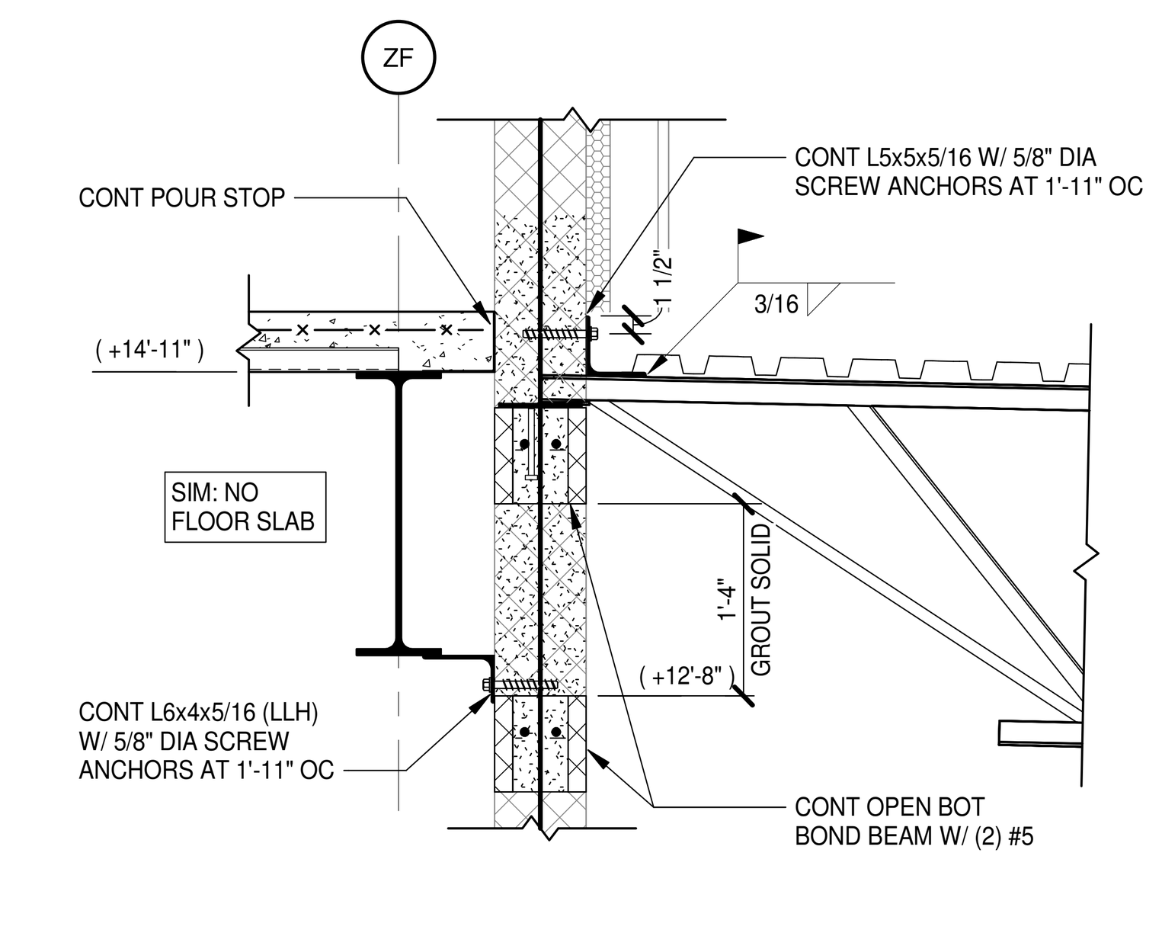
REVISIONS

DATE	DESCRIPTION
8/15/24	AD-01
8/23/24	AD-02

FRAMING SECTIONS

S4.1.2

8/23/2024 1:30:03 PM



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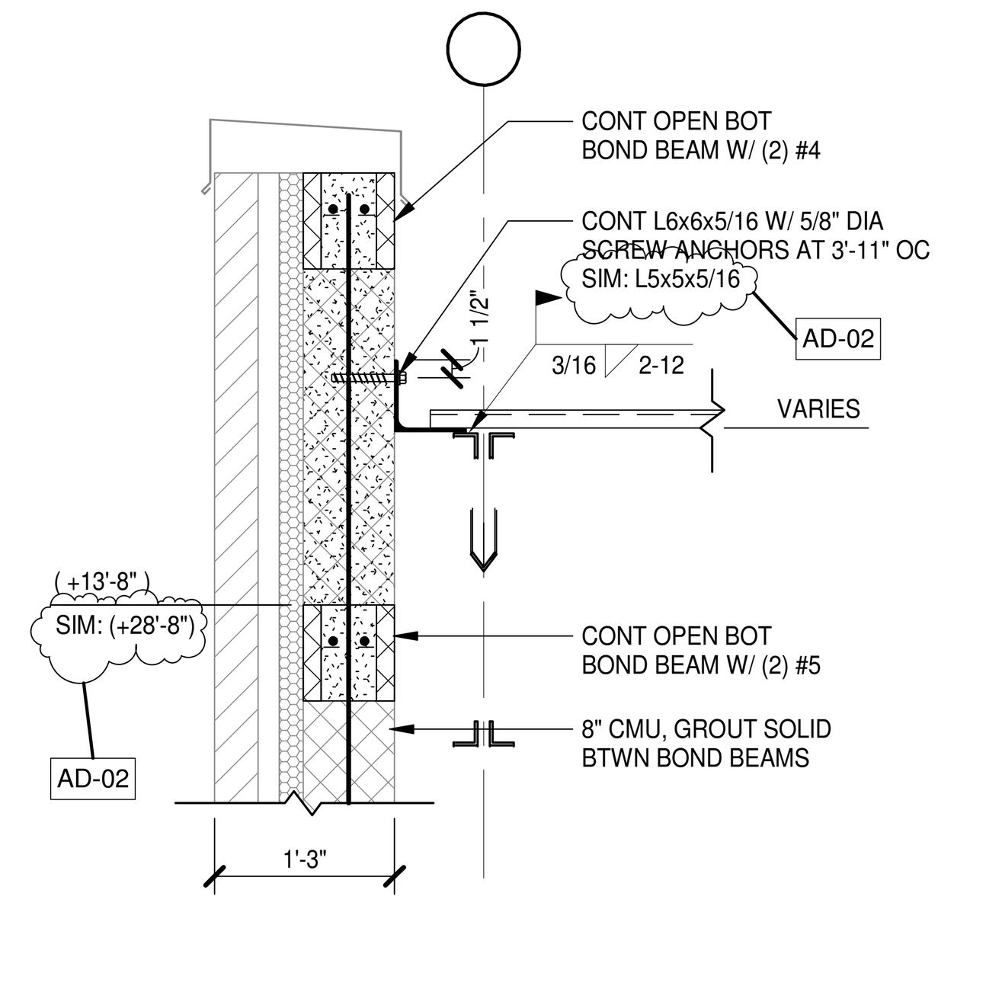

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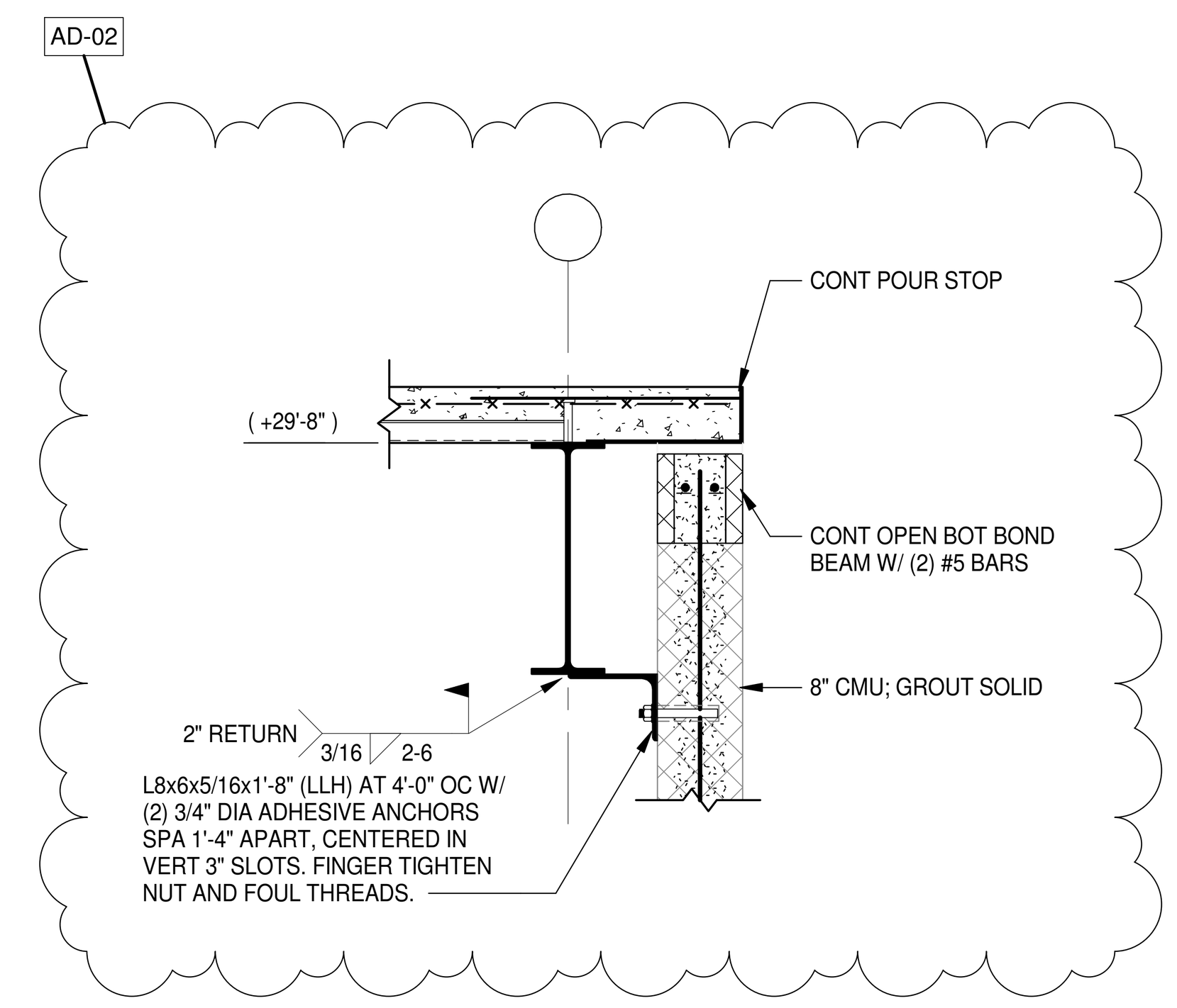

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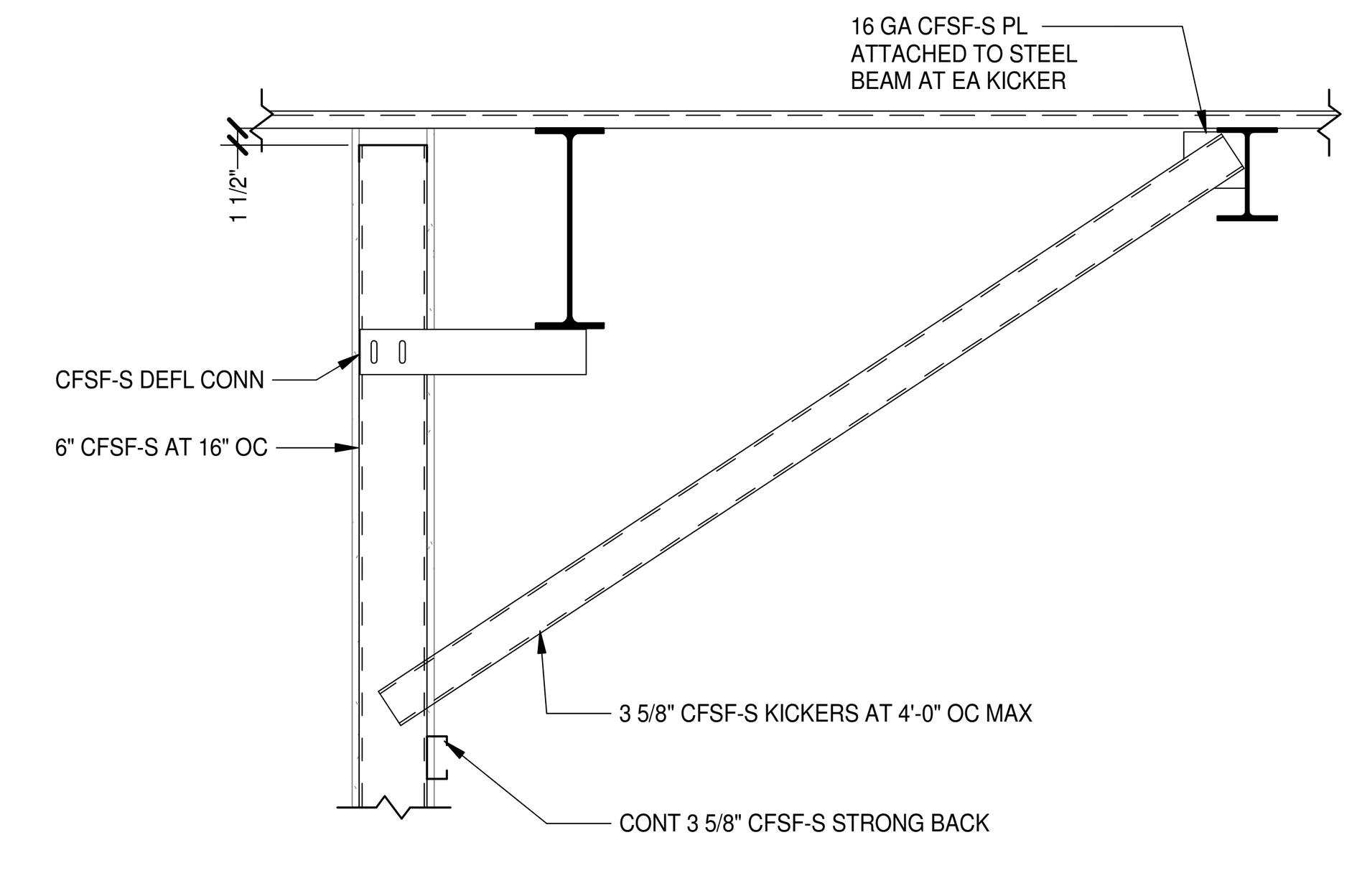
S2.2.3 S4.1.3 3/4" = 1'-0"



8 SECTION
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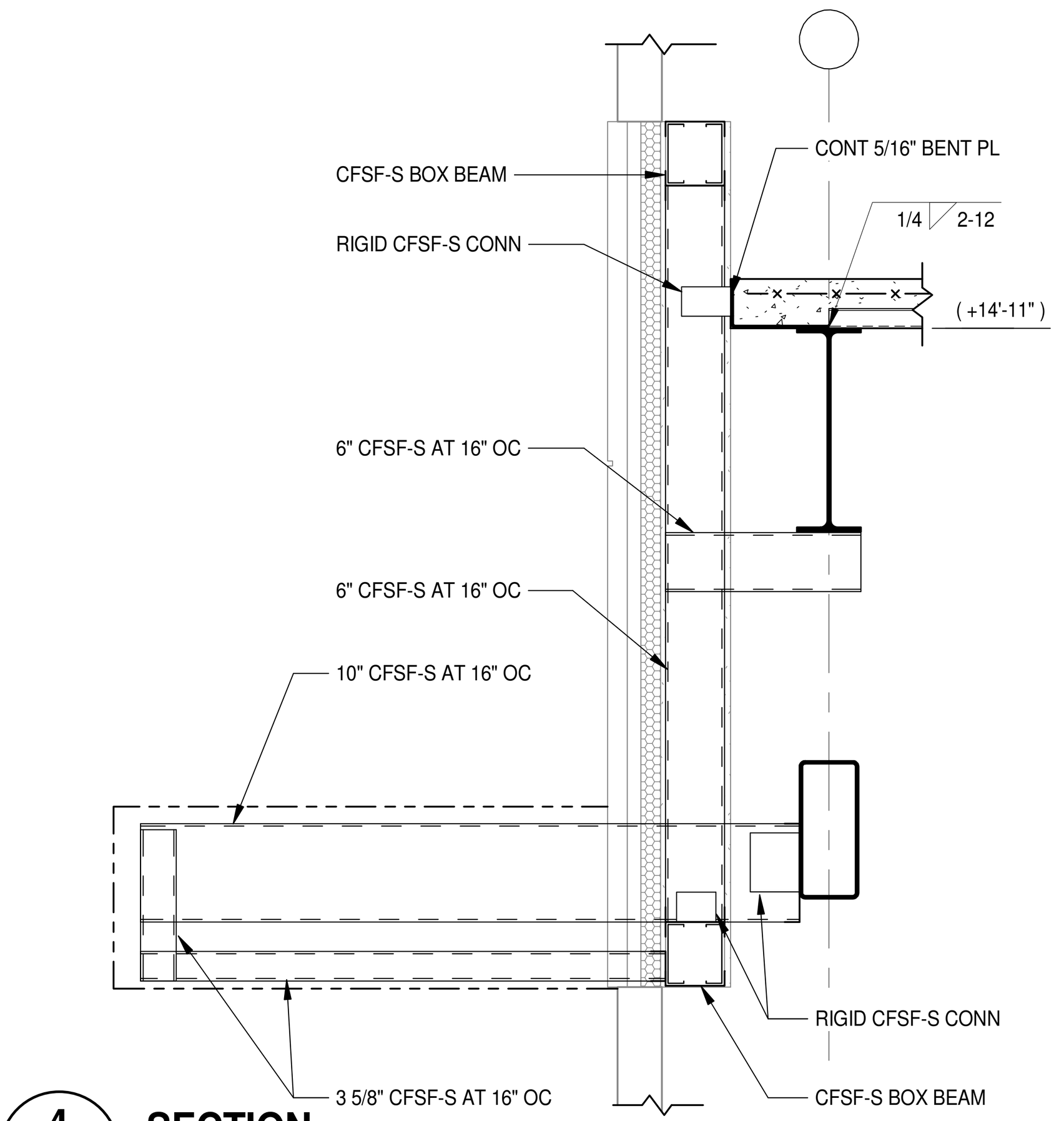

4 SECTION
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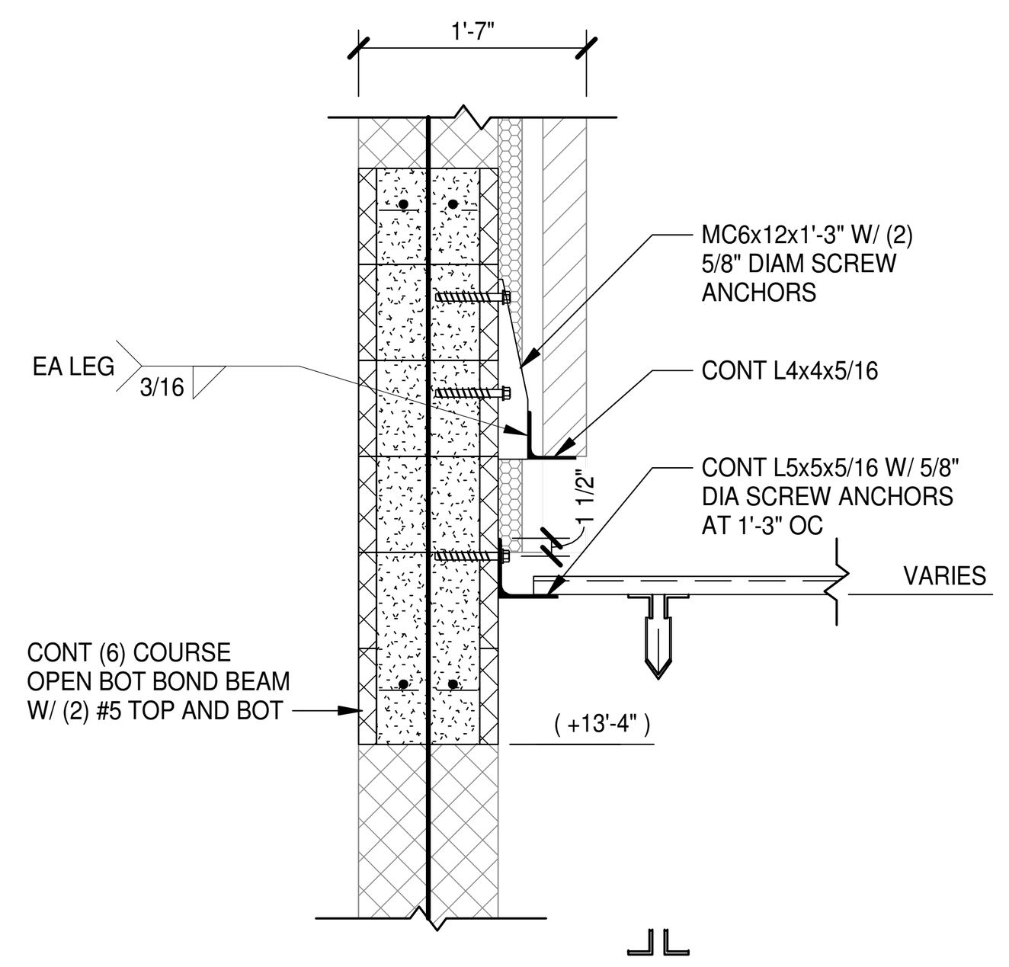

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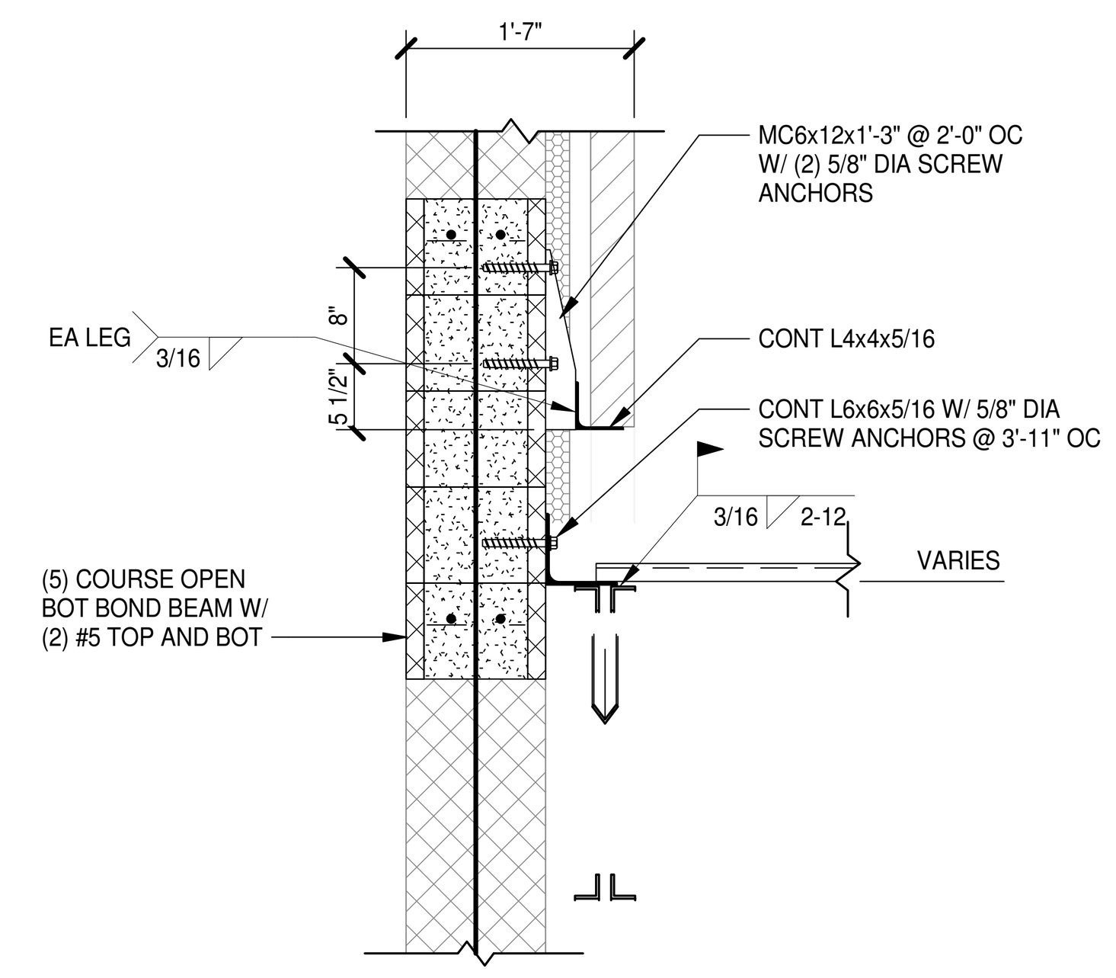

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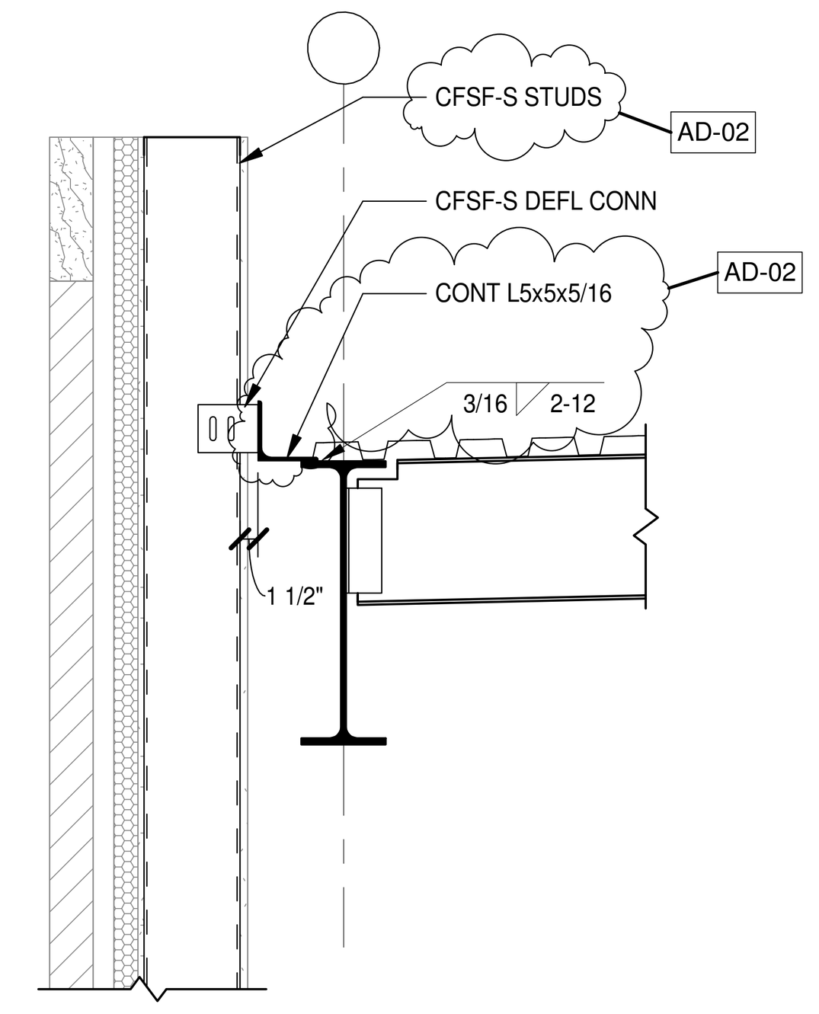

11 SECTION
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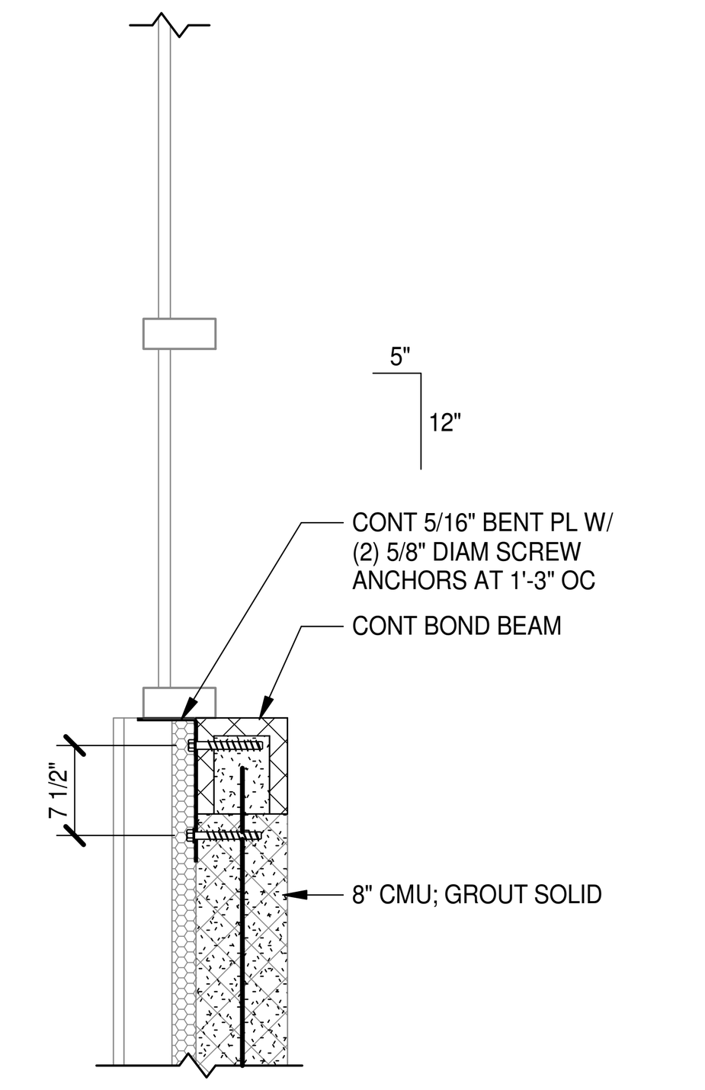

7 SECTION
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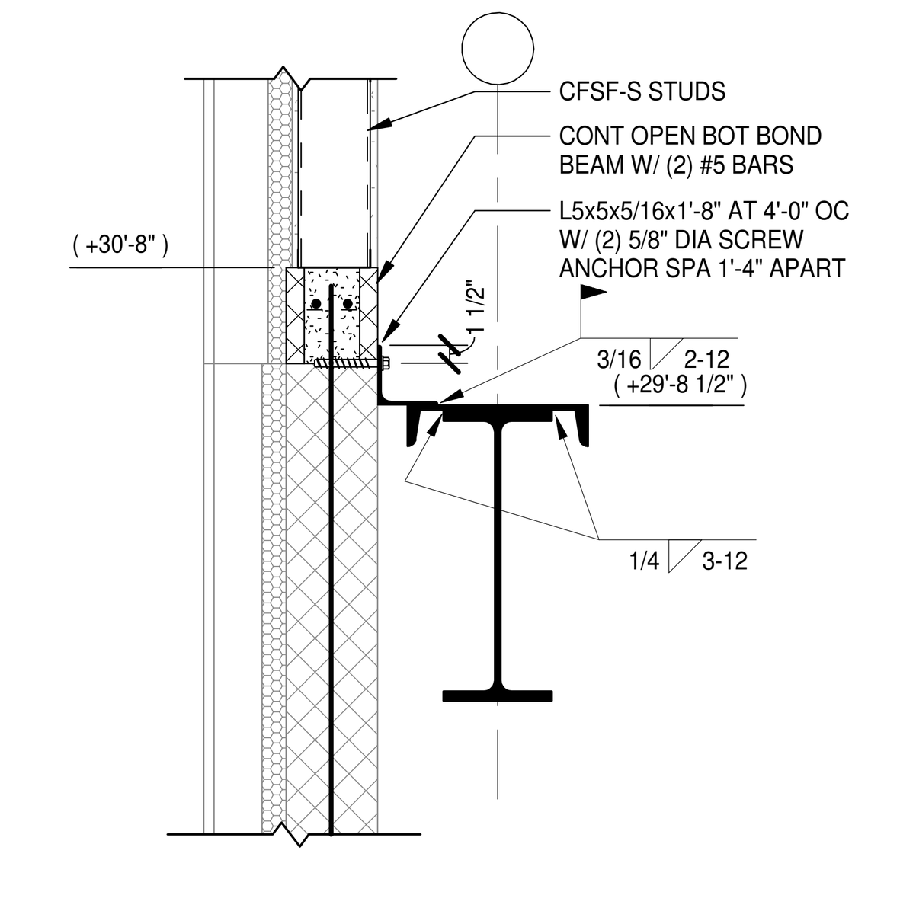
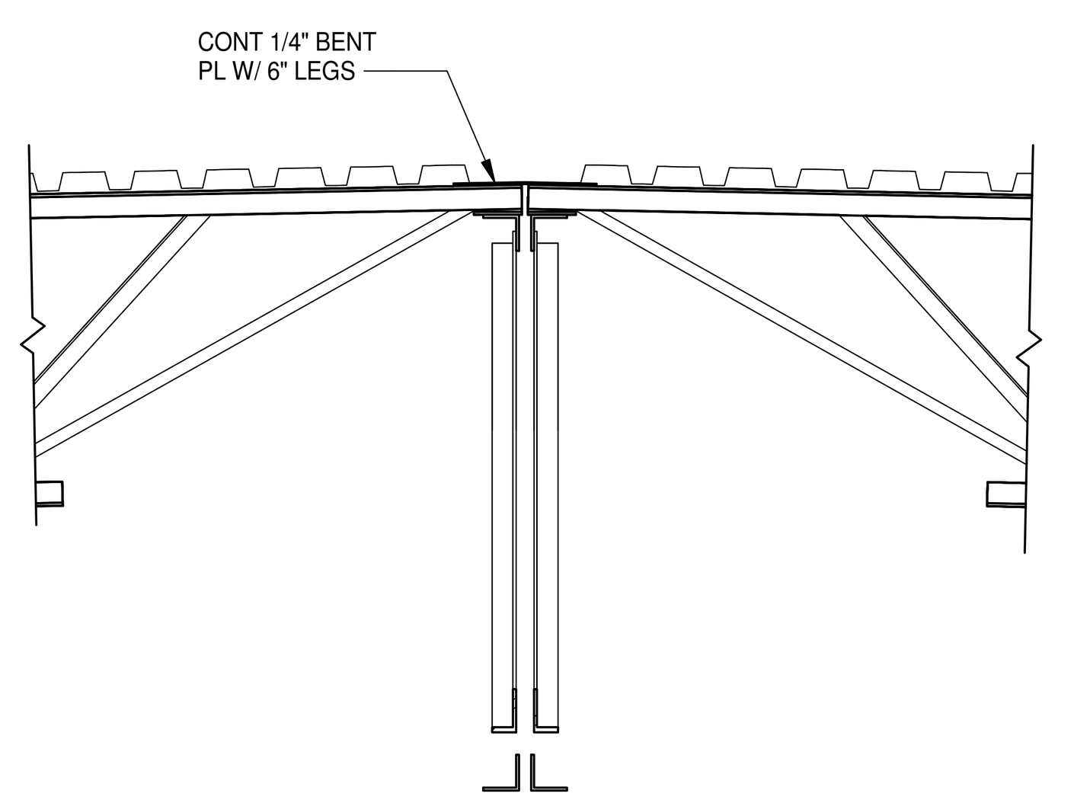


3 SECTION
S2.2.3 S4.1.3 3/4" = 1'-0"



18 SECTION
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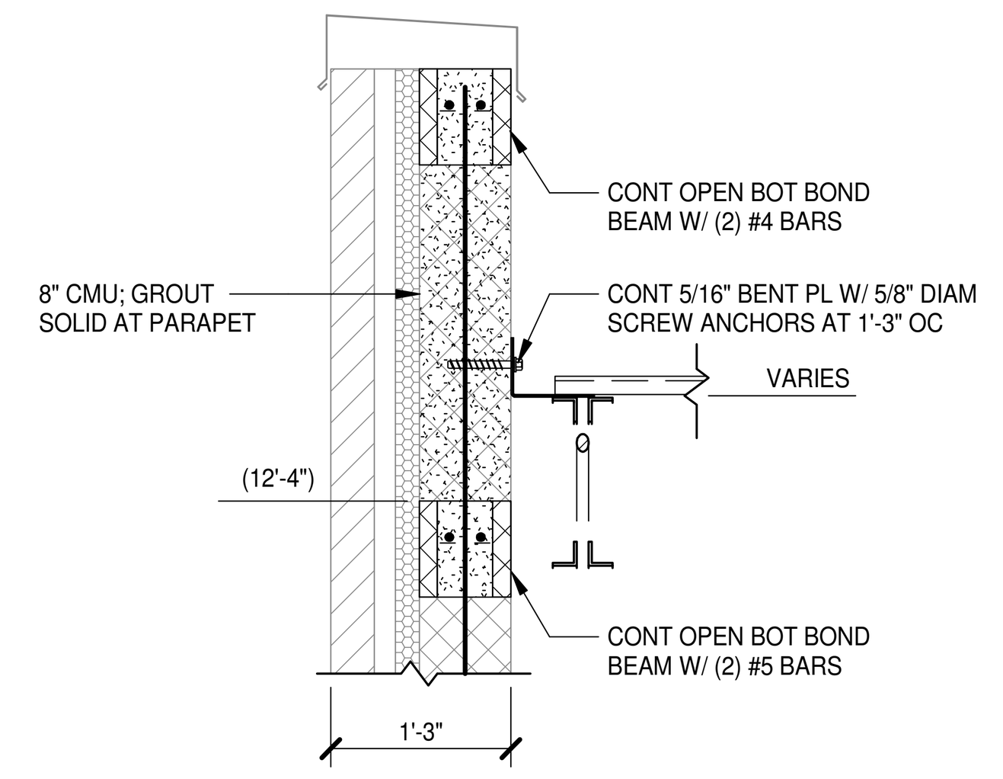

14 SECTION
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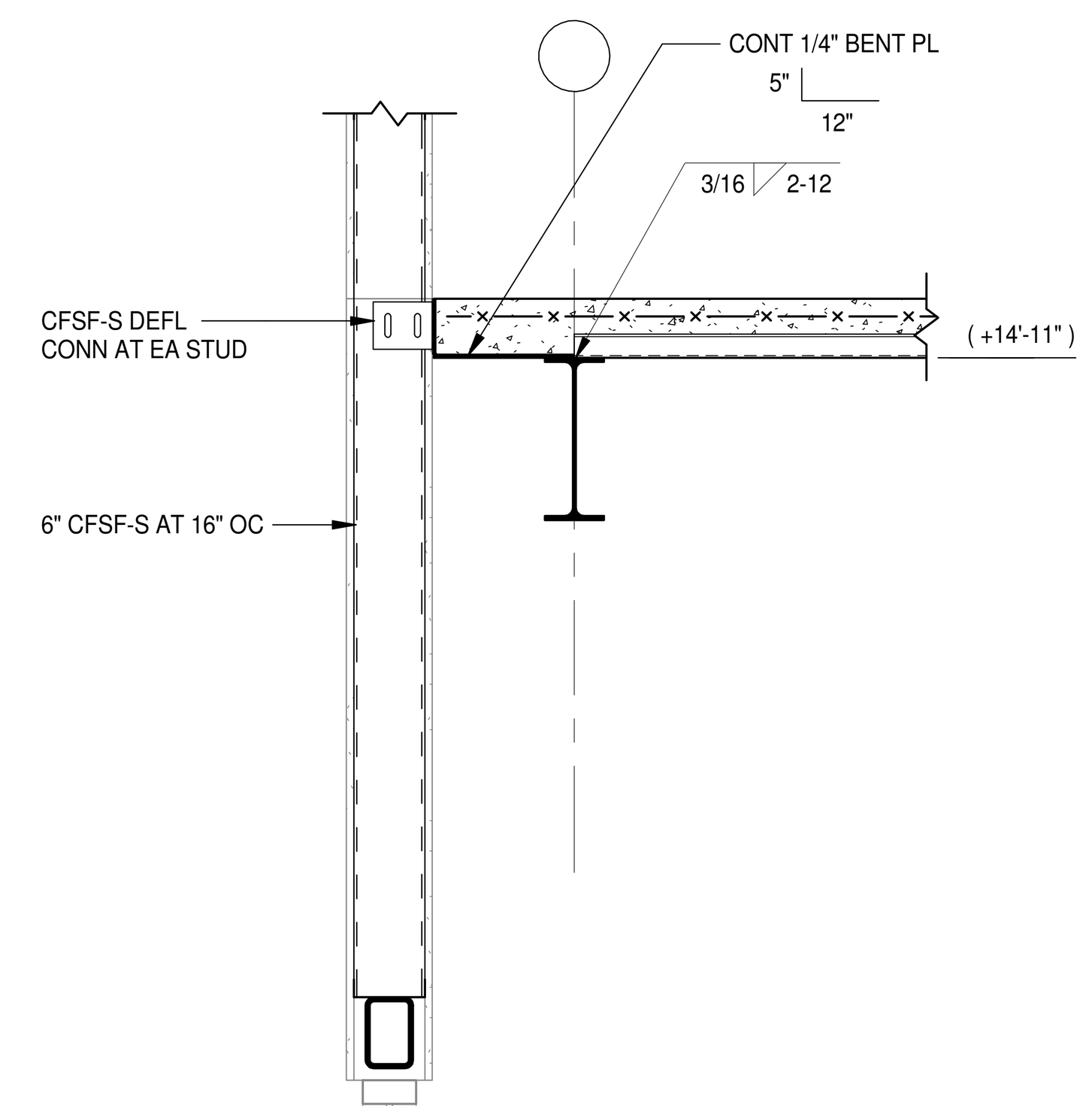

10 SECTION
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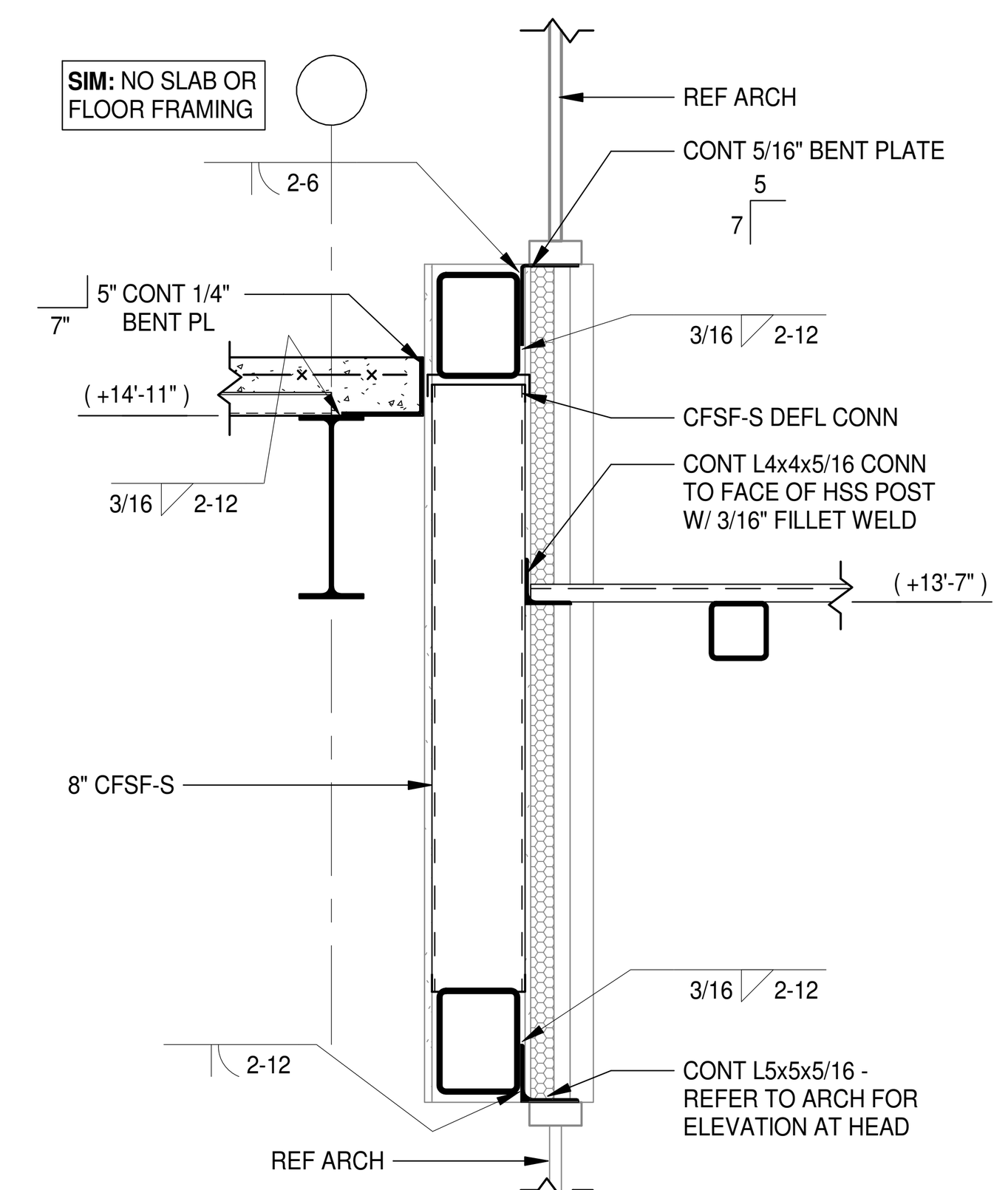

6 SECTION
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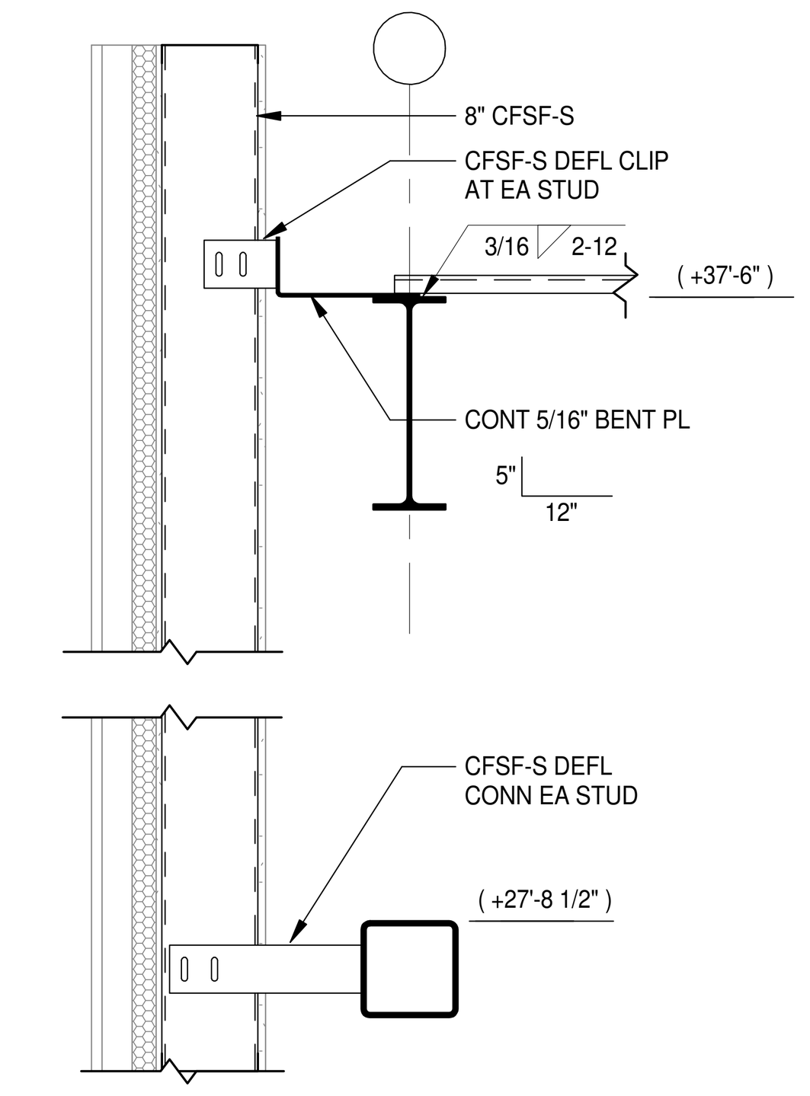

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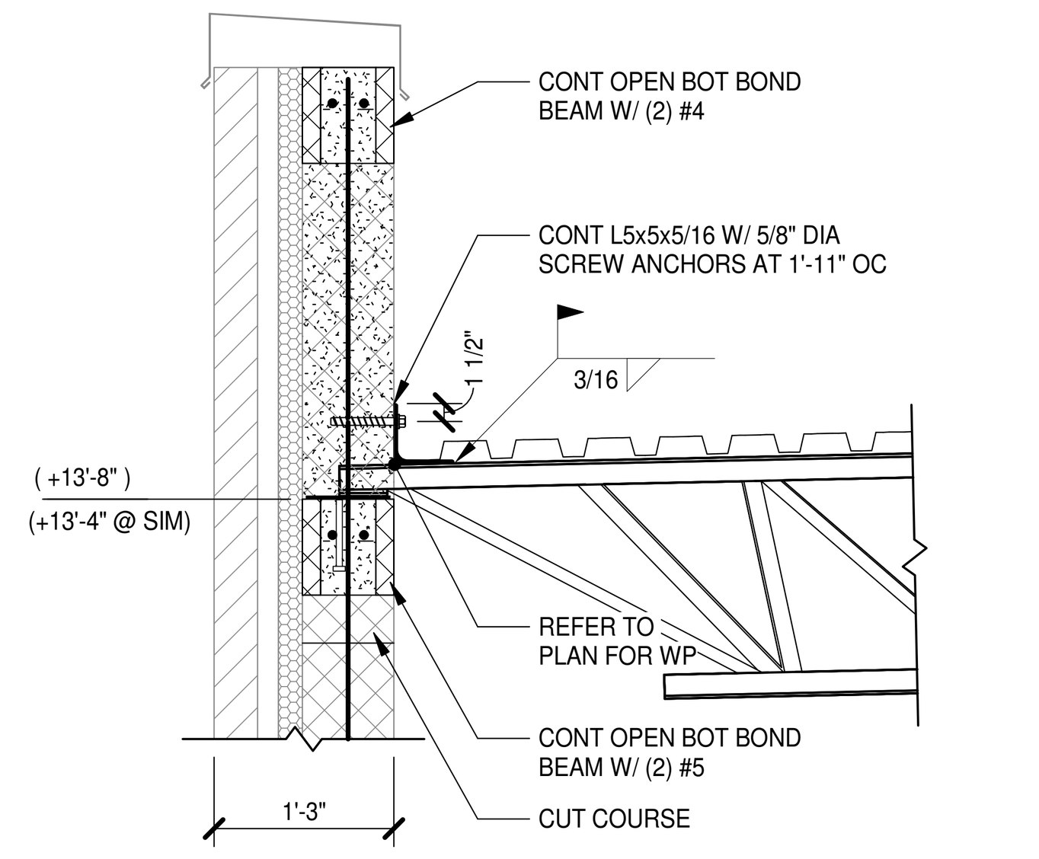

17 SECTION
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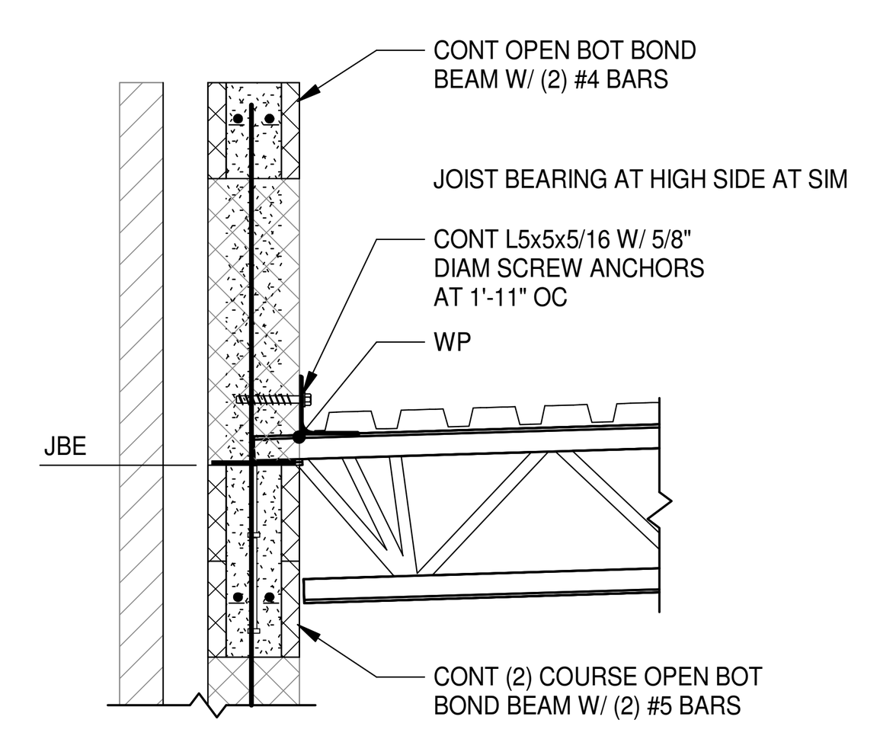
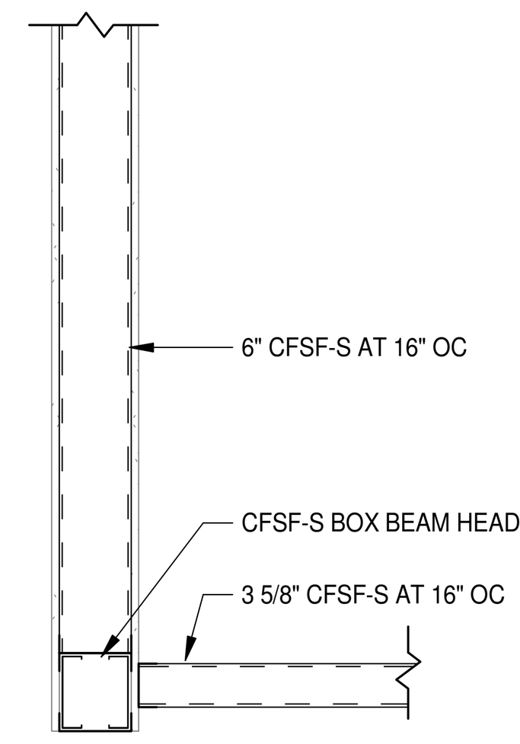
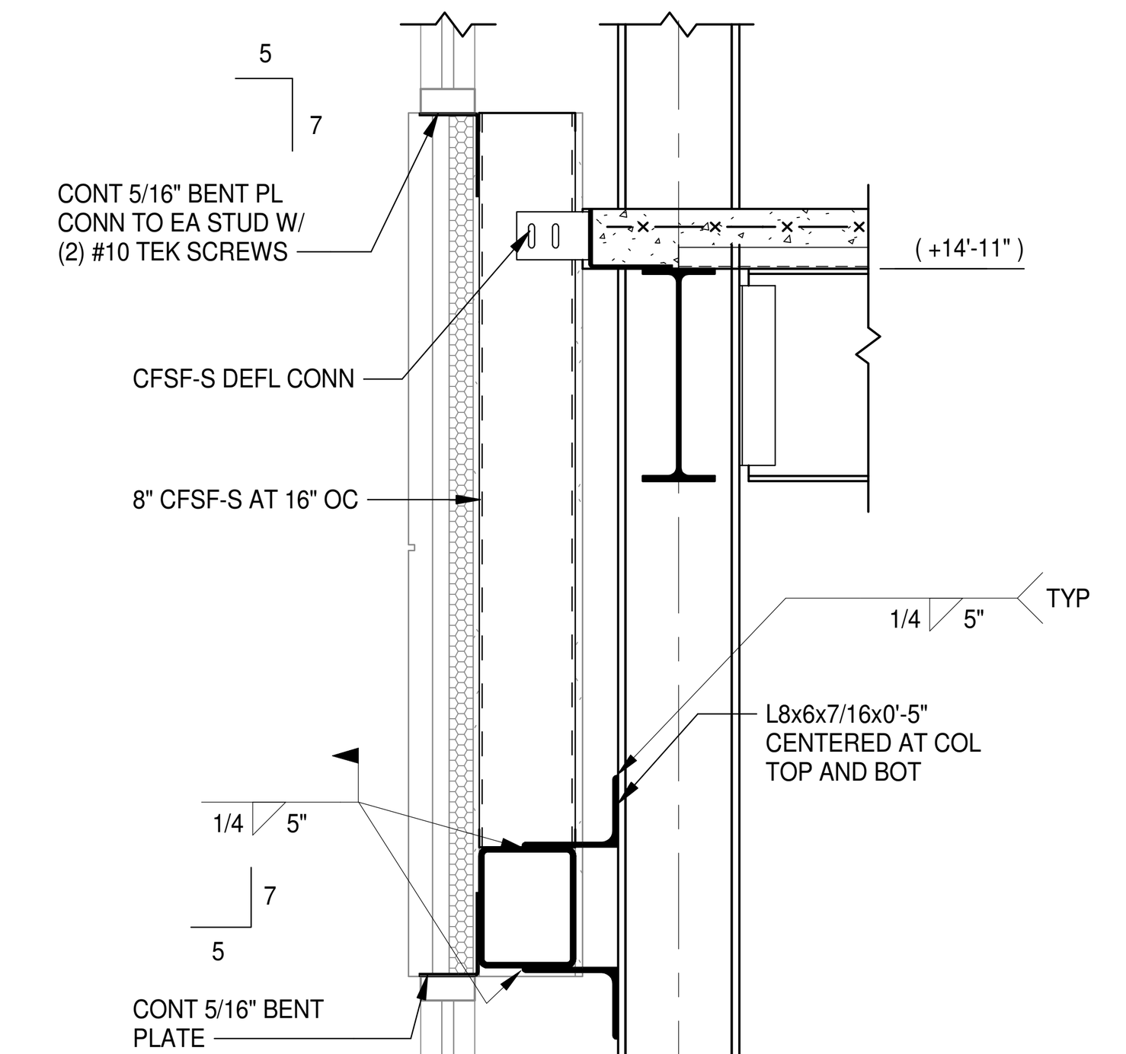


13 SECTION
S2.2.9 S4.1.3 3/4" = 1'-0"



9 SECTION
S2.1.1 S4.1.3 3/4" = 1'-0"



5 SECTION
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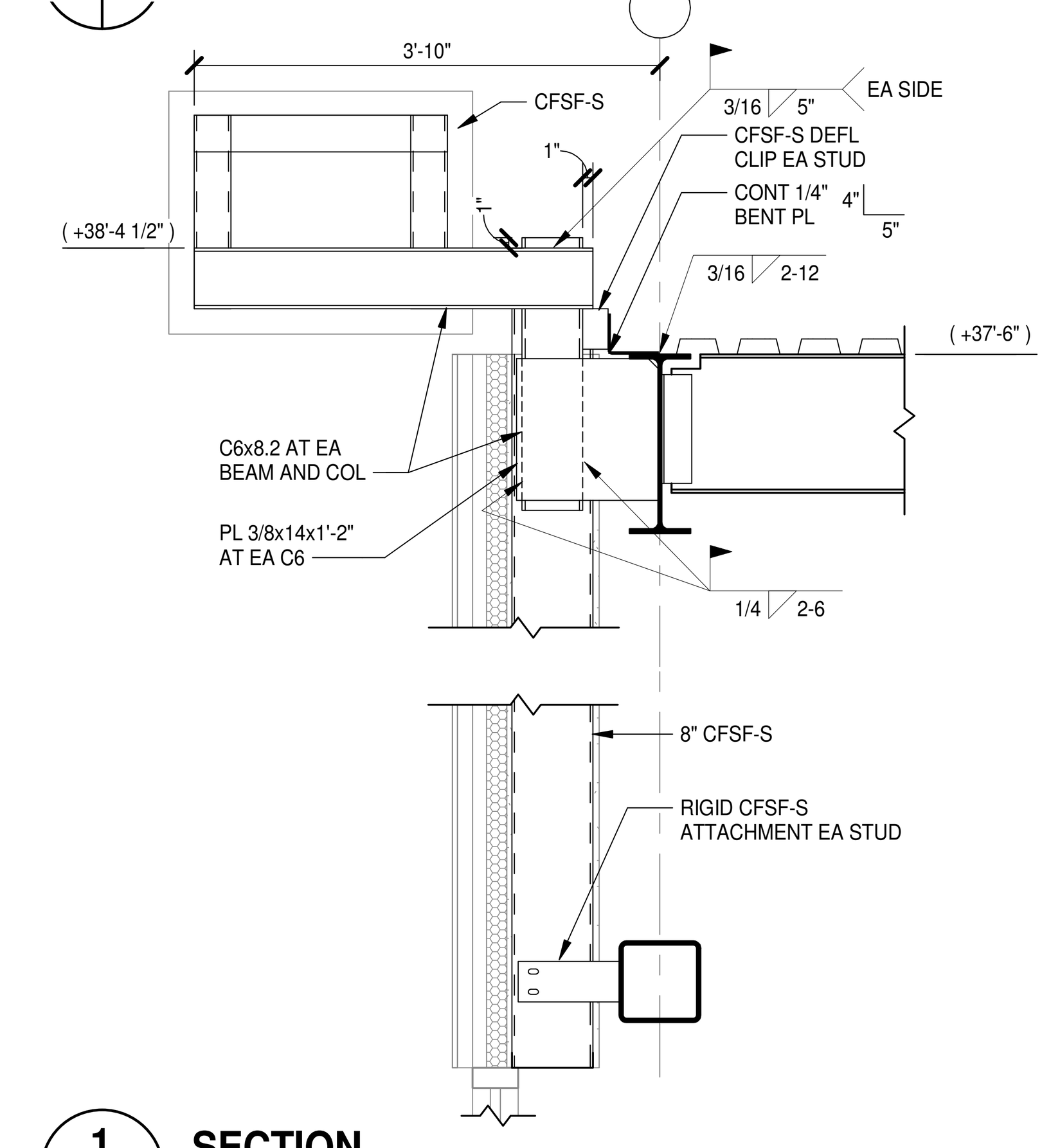

1 SECTION
S2.2.1 S4.1.3 3/4" = 1'-0"

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8/23/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL
Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: August 2, 2024

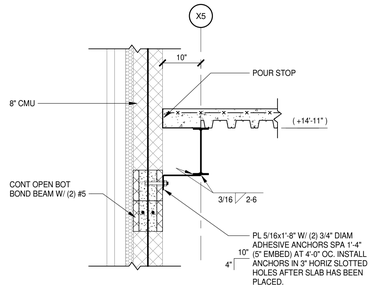
REVISIONS

DATE	DESCRIPTION
8/15/24	AD-01
8/23/24	AD-02

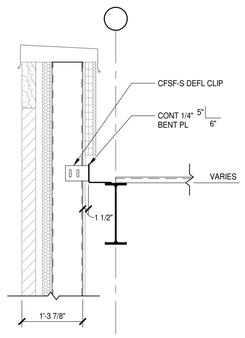
FRAMING SECTIONS

S4.1.3

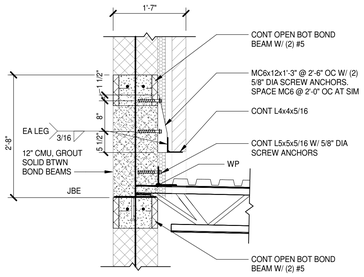
8/23/2024 1:30:12 PM



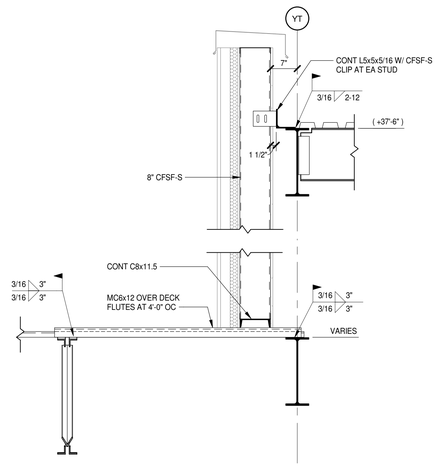
20 S2.1.3 | S4.1.4 **SECTION** 3/4" = 1'-0"

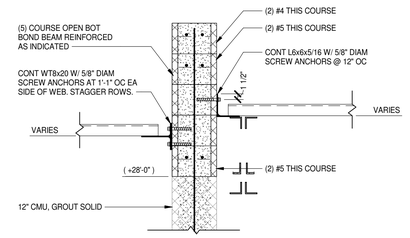


16 S2.2.4 | S4.1.4 **SECTION** 3/4" = 1'-0"

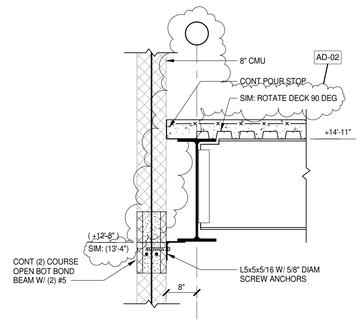


12 S2.1.1 | S4.1.4 **SECTION** 3/4" = 1'-0"

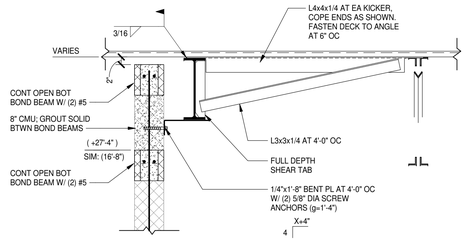




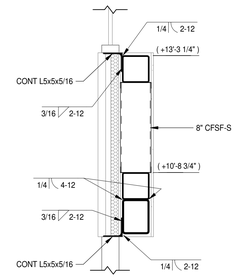
4 S2.2.1 | S4.1.4 **SECTION** 3/4" = 1'-0"



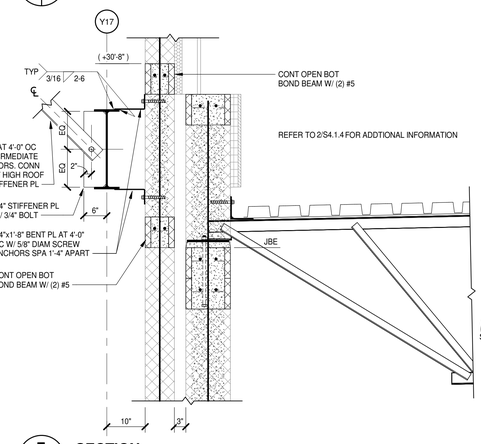
19 S2.1.3 | S4.1.4 **SECTION** 3/4" = 1'-0"



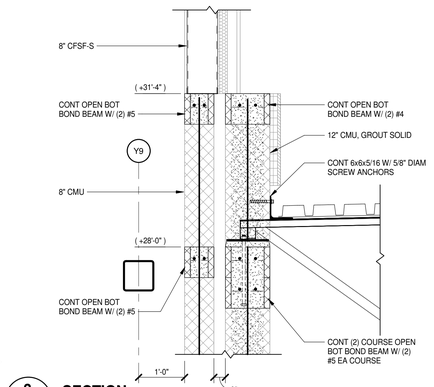
15 S2.1.1 | S4.1.4 **SECTION** 3/4" = 1'-0"



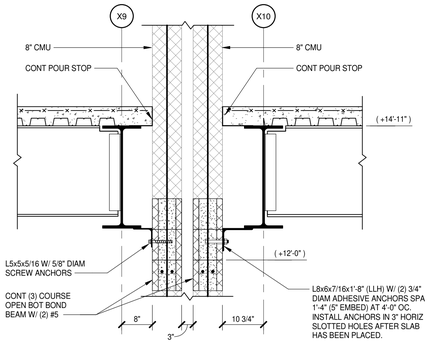
11 S2.1.6 | S4.1.4 **SECTION** 3/4" = 1'-0"



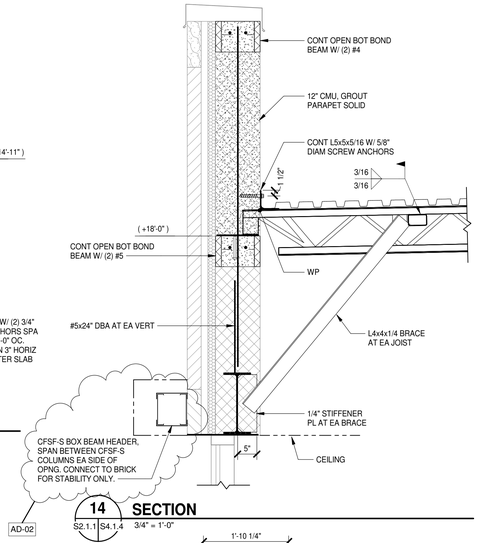
8 S2.1.1 | S4.1.4 **SECTION** 3/4" = 1'-0"



3 S2.2.1 | S4.1.4 **SECTION** 3/4" = 1'-0"



18 S2.1.3 | S4.1.4 **SECTION** 3/4" = 1'-0"



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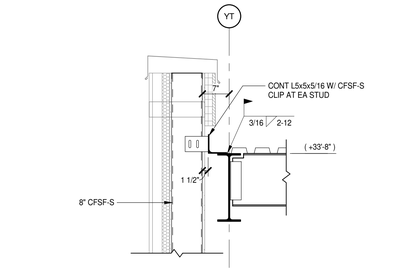
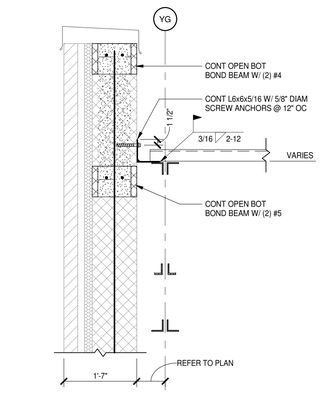


10 S2.2.1 | S4.1.4 **SECTION** 3/4" = 1'-0"



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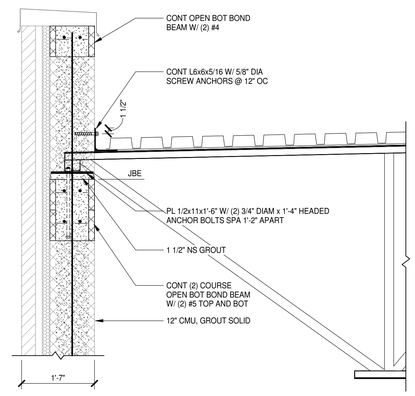
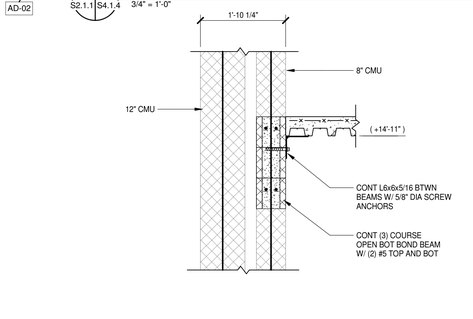


2 S2.2.1 | S4.1.4 **SECTION** 3/4" = 1'-0"



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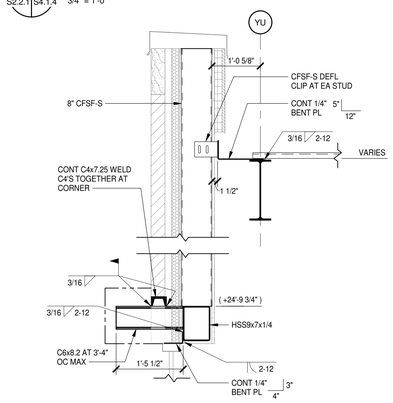
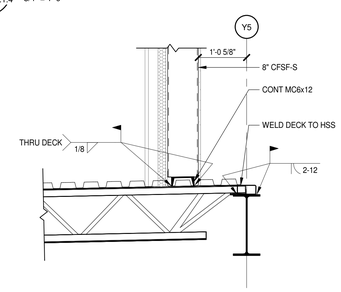
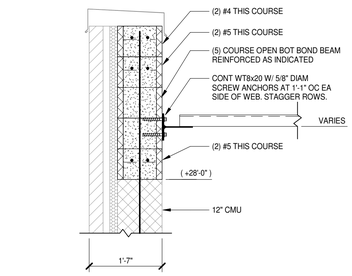


9 S2.2.1 | S4.1.4 **SECTION** 3/4" = 1'-0"



5 S2.2.1 | S4.1.4 **SECTION** 3/4" = 1'-0"



1 S2.2.1 | S4.1.4 **SECTION** 3/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 035434 ENGINEER STEVEN M. COCHRAN
8/23/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

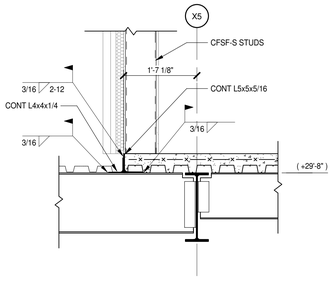
Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310	
DATE:	August 2, 2024
REVISIONS	
DATE	DESCRIPTION
8/15/24	AD-01
8/23/24	AD-02

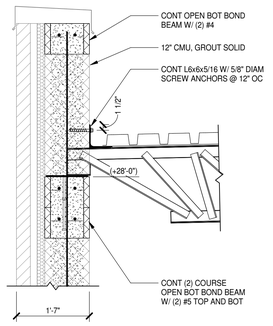
FRAMING SECTIONS

S4.1.4

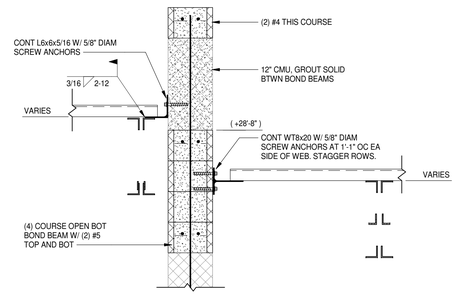
8/23/2024 1:30:22 PM



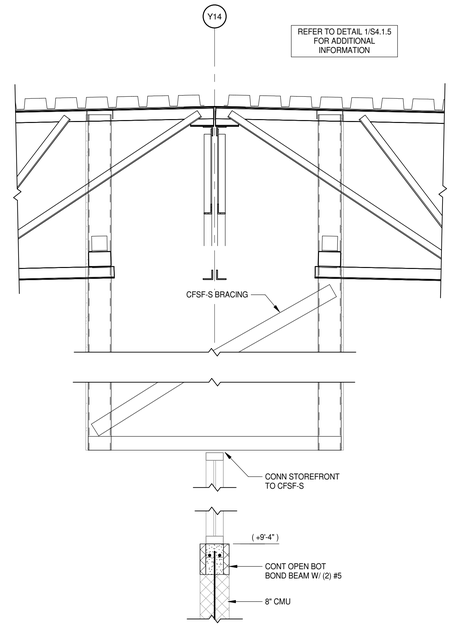
14 SECTION S2.2.3 S4.1.5 3/4" = 1'-0"



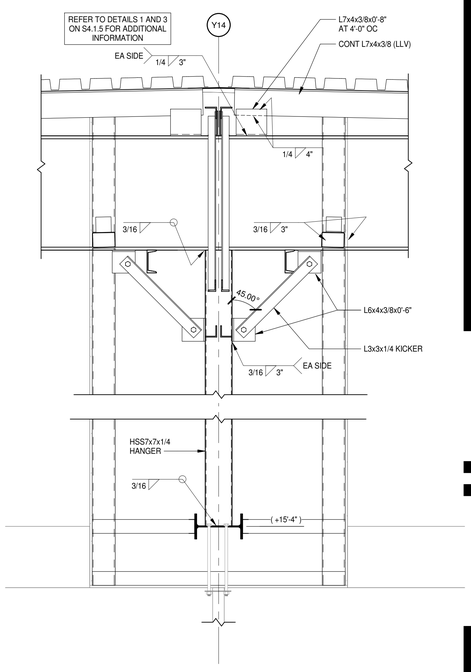
10 SECTION S2.2.1 S4.1.5 3/4" = 1'-0"



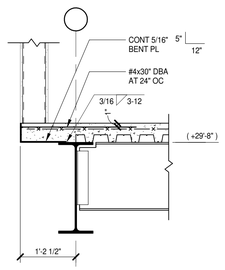
6 SECTION S2.2.1 S4.1.5 3/4" = 1'-0"



4 SECTION S2.1.2 S4.1.5 3/4" = 1'-0"



2 SECTION S2.1.1 S4.1.5 3/4" = 1'-0"



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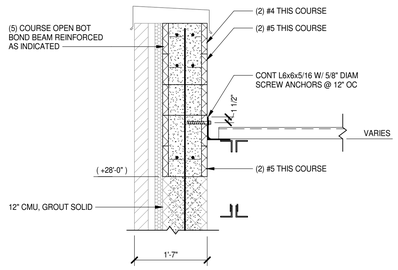
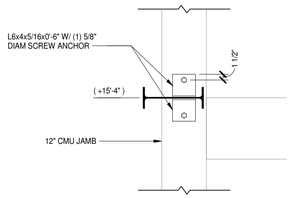
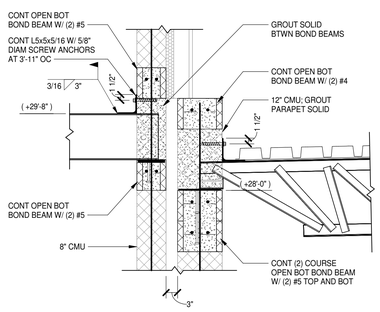


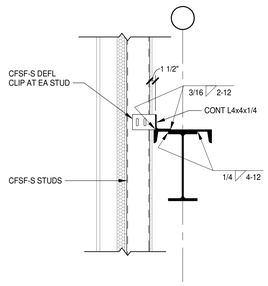
9 SECTION S2.2.1 S4.1.5 3/4" = 1'-0"



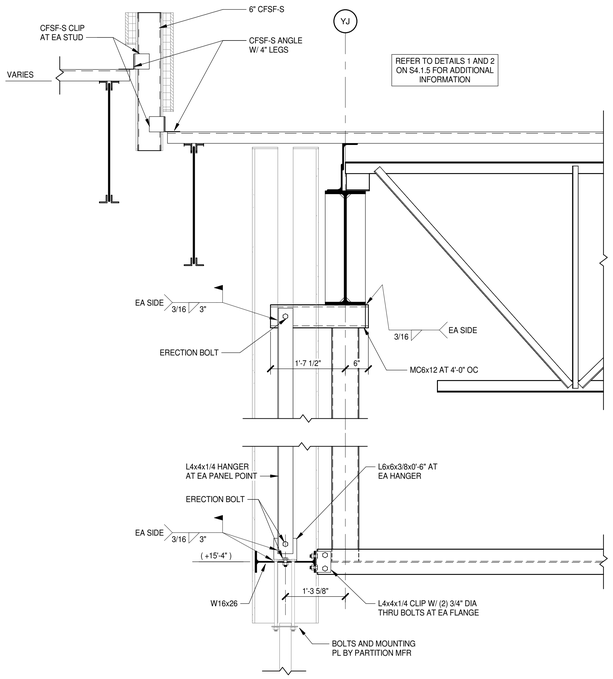
5 SECTION S2.1.1 S4.1.5 3/4" = 1'-0"



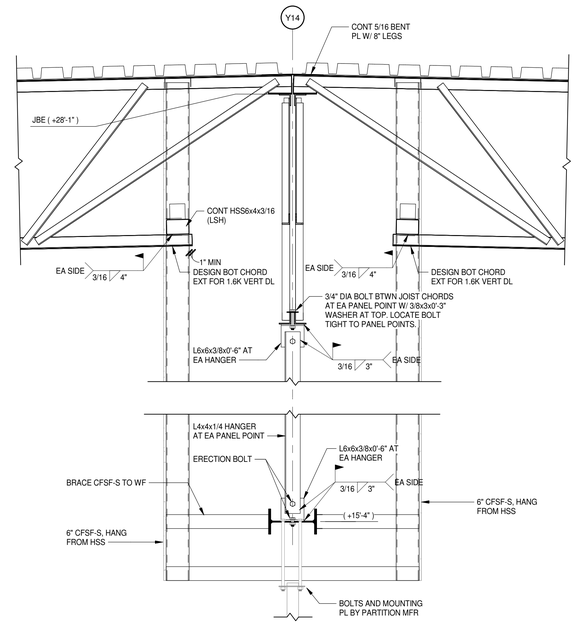
12 SECTION S2.2.1 S4.1.5 3/4" = 1'-0"



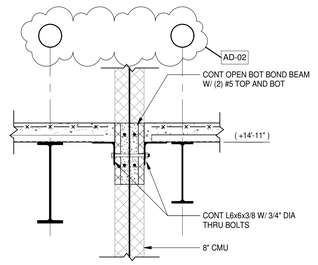
8 SECTION S2.2.1 S4.1.5 3/4" = 1'-0"



3 SECTION S2.1.1 S4.1.5 3/4" = 1'-0"



1 SECTION S2.1.2 S4.1.5 3/4" = 1'-0"



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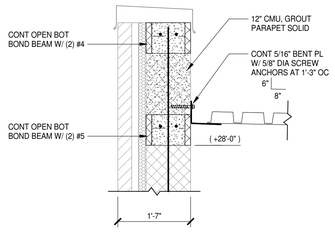

7 SECTION S2.2.2 S4.1.5 3/4" = 1'-0"

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8/23/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

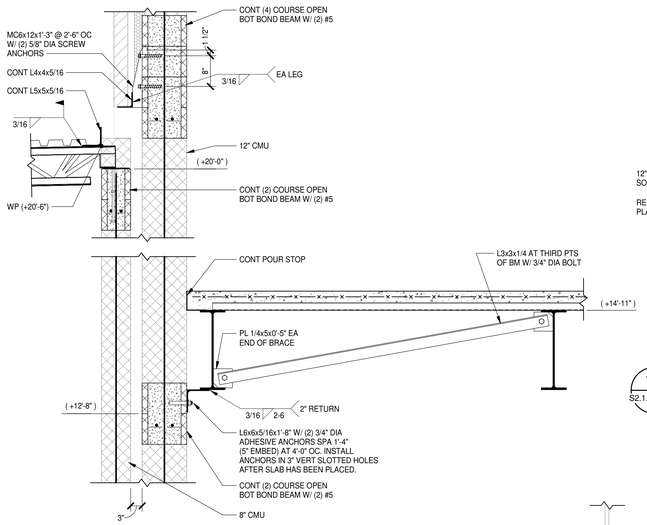
PROJECT NO: 631310
DATE: August 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/15/24	AD-01
8/23/24	AD-02

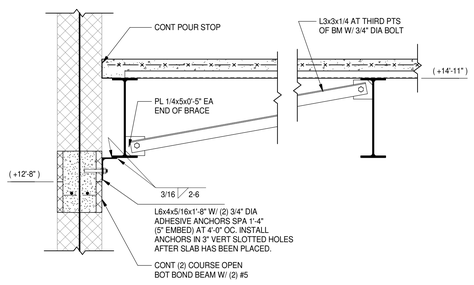
FRAMING SECTIONS

S4.1.5

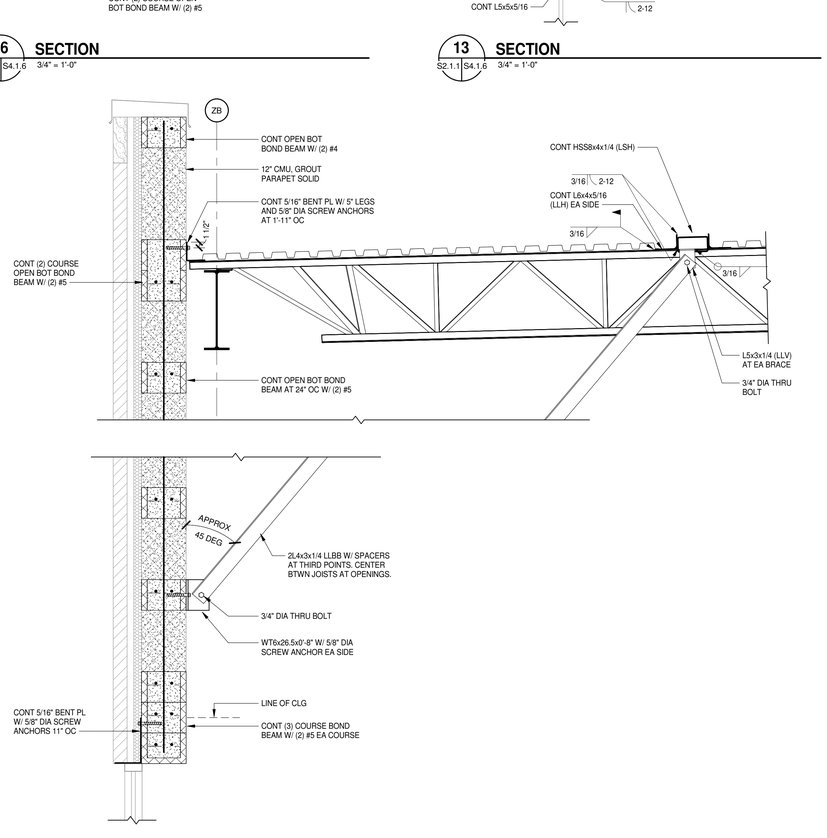
8/23/2024 1:30:30 PM



17 SECTION S2.1.1 | S4.1.6 — 3/4" = 1'-0"



16 SECTION S2.1.1 | S4.1.6 — 3/4" = 1'-0"



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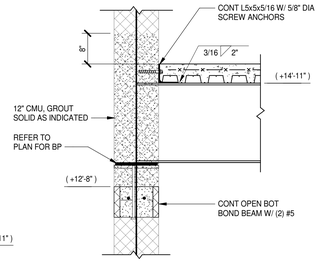
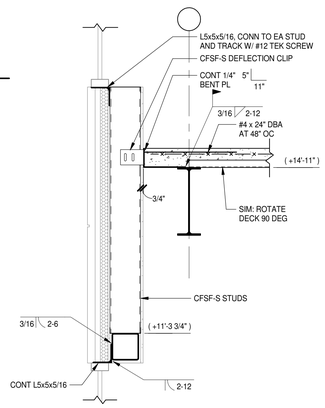


14 SECTION S2.1.1 | S4.1.6 — 3/4" = 1'-0"



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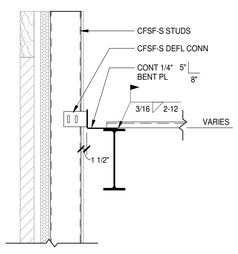
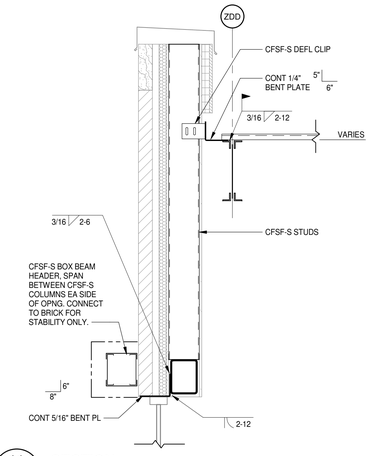


12 SECTION S2.1.1 | S4.1.6 — 3/4" = 1'-0"



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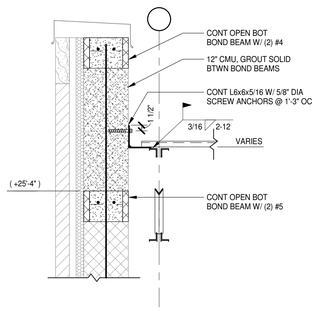

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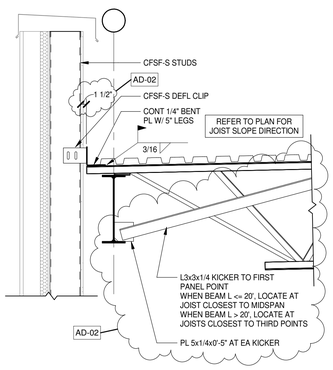

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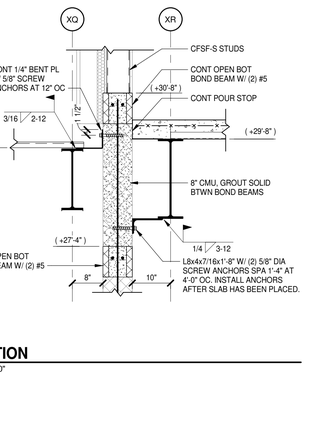
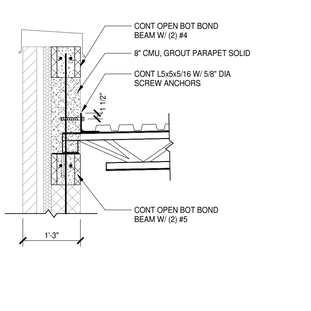


7 SECTION S2.2.1 | S4.1.6 — 3/4" = 1'-0"



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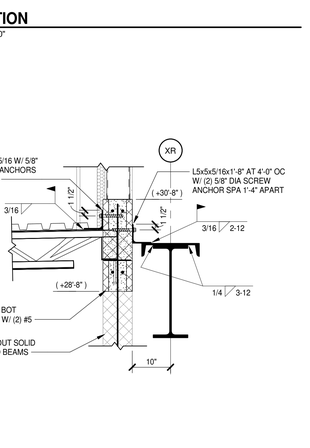

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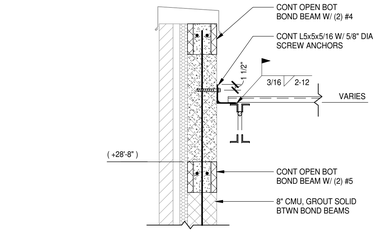

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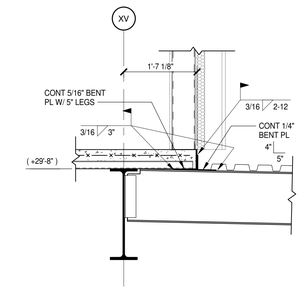

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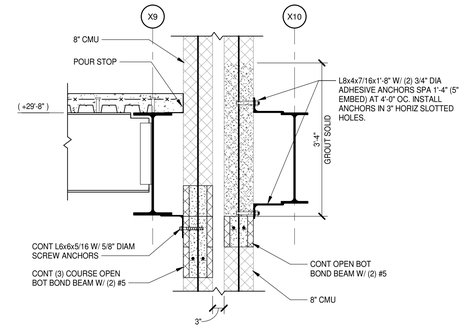
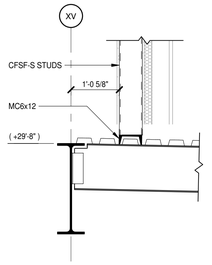


2 SECTION S2.2.3 | S4.1.6 — 3/4" = 1'-0"

5 SECTION S2.2.3 | S4.1.6 — 3/4" = 1'-0"



1 SECTION S2.2.3 | S4.1.6 — 3/4" = 1'-0"

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8/23/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO:	631310
DATE:	August 2, 2024

REVISIONS

DATE	DESCRIPTION
8/15/24	AD-01
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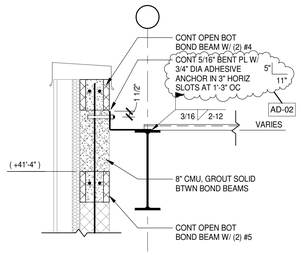
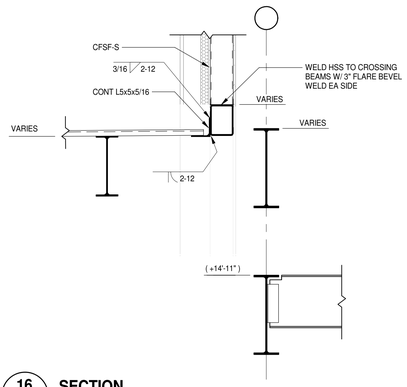
FRAMING SECTIONS

S4.1.6

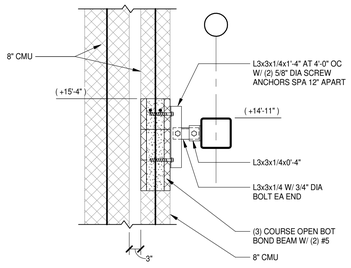
8/23/2024 1:30:39 PM



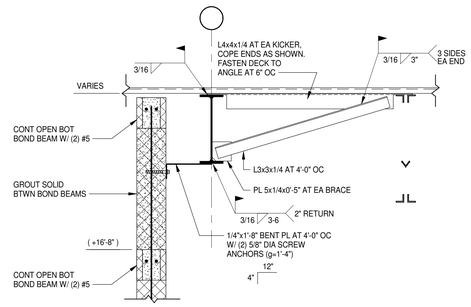
20 S2.2.10 S4.1.7 **SECTION** 3/4" = 1'-0"



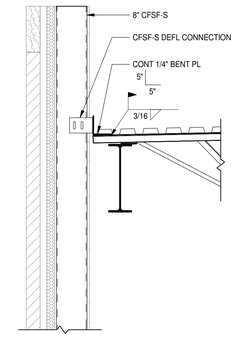
16 S2.1.2 S4.1.7 **SECTION** 3/4" = 1'-0"



12 S2.1.1 S4.1.7 **SECTION** 3/4" = 1'-0"



8 S2.1.1 S4.1.7 **SECTION** 3/4" = 1'-0"



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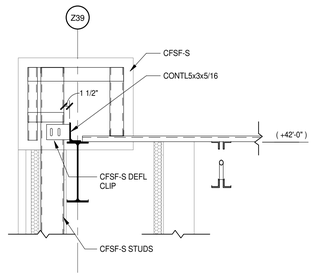

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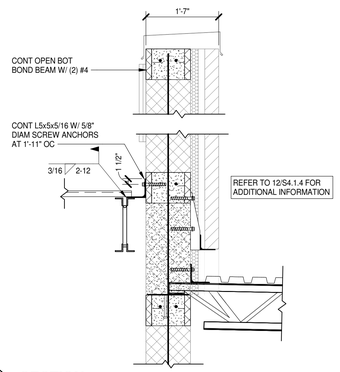
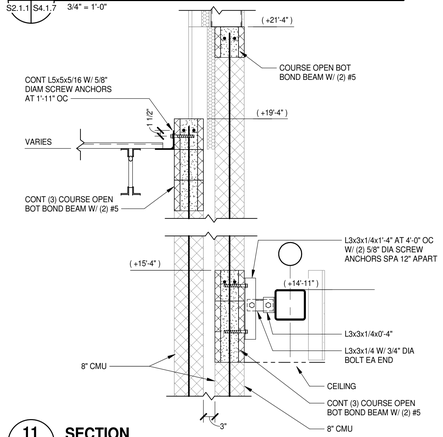
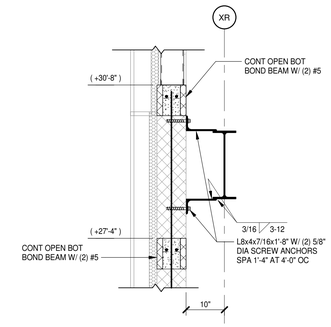


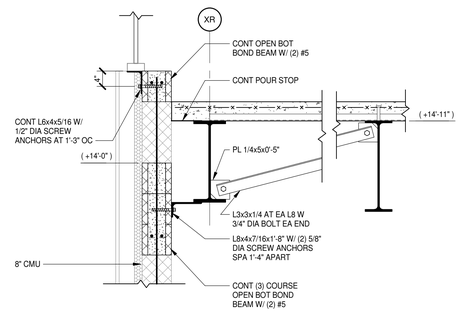
15 S2.1.1 S4.1.7 **SECTION** 3/4" = 1'-0"



11 S2.1.1 S4.1.7 **SECTION** 3/4" = 1'-0"



7 S2.2.1 S4.1.7 **SECTION** 3/4" = 1'-0"



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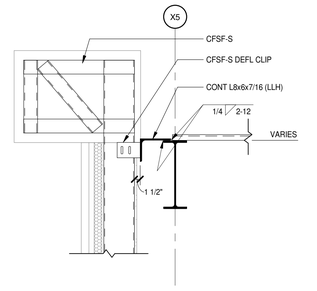

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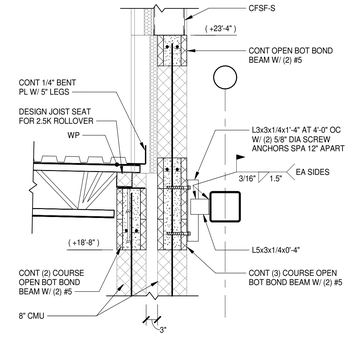

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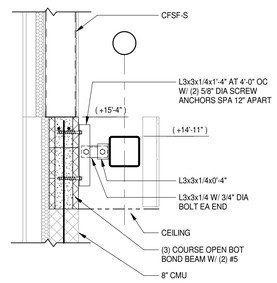

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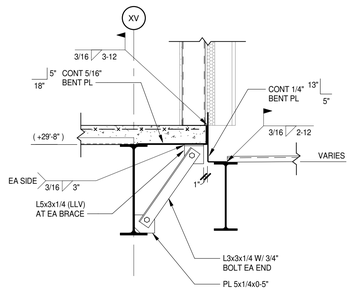
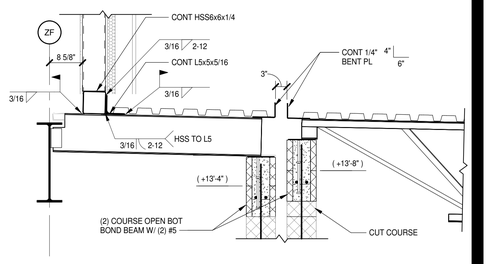
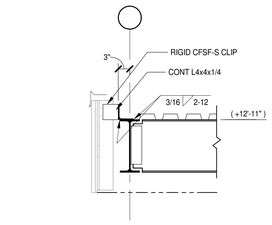


6 S2.2.1 S4.1.7 **SECTION** 3/4" = 1'-0"



2 S2.1.2 S4.1.7 **SECTION** 3/4" = 1'-0"



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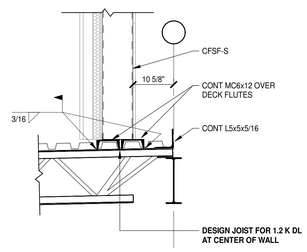

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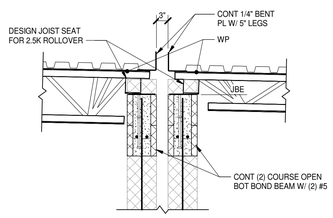
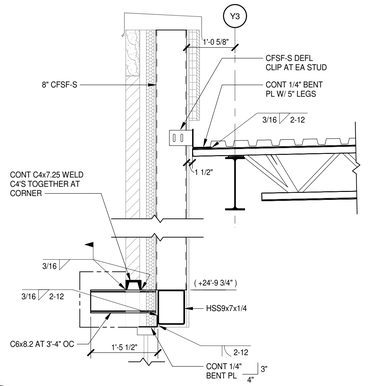
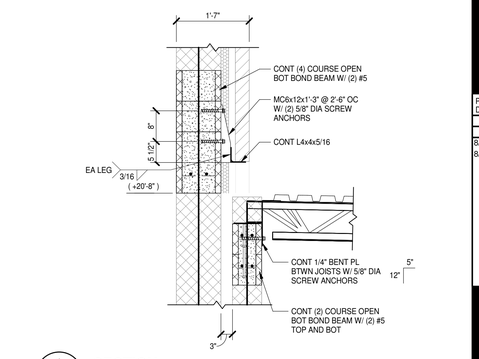


9 S2.1.1 S4.1.7 **SECTION** 3/4" = 1'-0"



5 S2.2.1 S4.1.7 **SECTION** 3/4" = 1'-0"



1 S2.1.1 S4.1.7 **SECTION** 3/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 036434 ENGINEER KAREN M. COLLINS
8/23/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: August 2, 2024

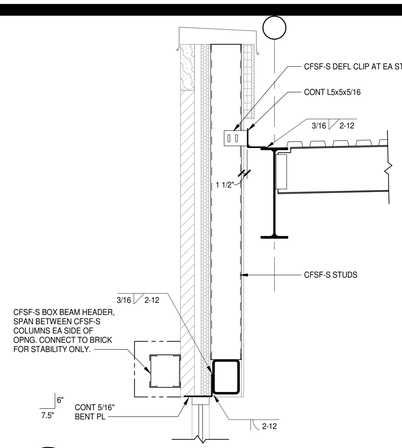
REVISIONS

DATE	DESCRIPTION
8/15/24	AD-01
8/23/24	AD-02

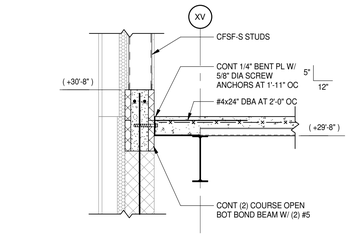
FRAMING SECTIONS

S4.1.7

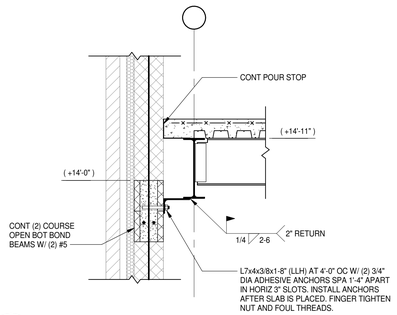
8/23/2024 1:30:49 PM



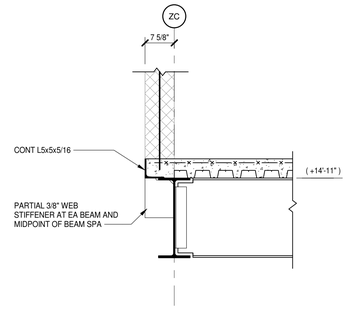
19 SECTION S2.2.3 S4.1.8 3/4" = 1'-0"



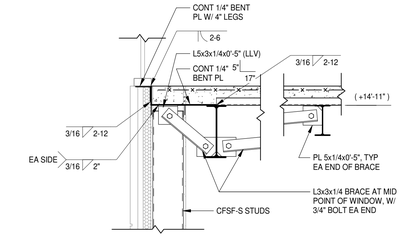
15 SECTION S2.2.3 S4.1.8 3/4" = 1'-0"



12 SECTION S2.1.7 S4.1.8 3/4" = 1'-0"



8 SECTION S2.1.6 S4.1.8 3/4" = 1'-0"



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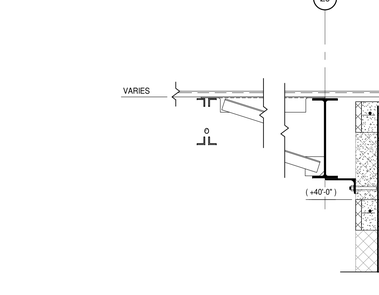
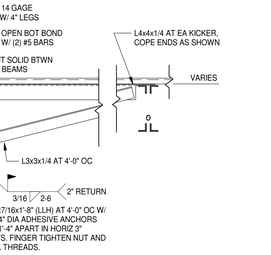
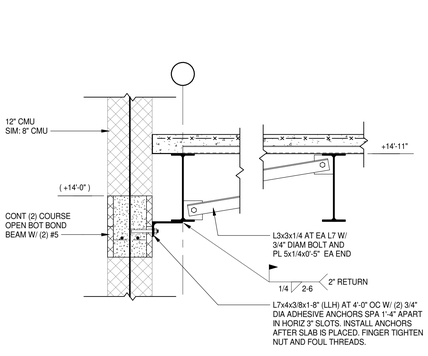


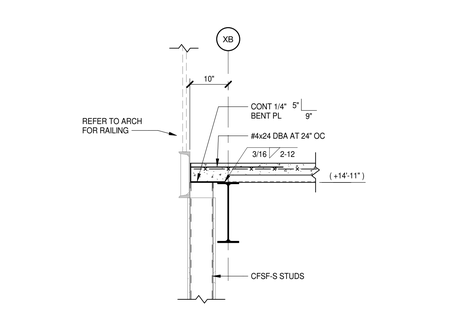
18 SECTION S2.2.3 S4.1.8 3/4" = 1'-0"



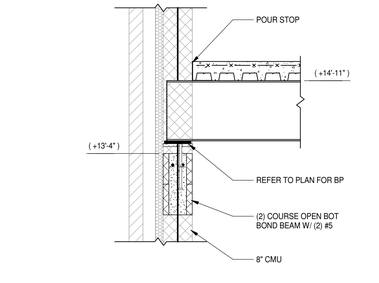
14 SECTION S2.1.7 S4.1.8 3/4" = 1'-0"



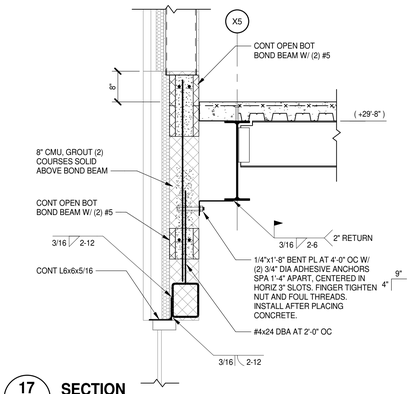
11 SECTION S2.1.7 S4.1.8 3/4" = 1'-0"



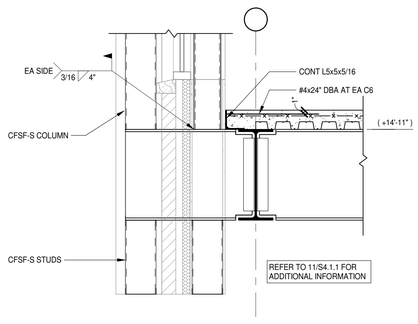
7 SECTION S2.1.6 S4.1.8 3/4" = 1'-0"



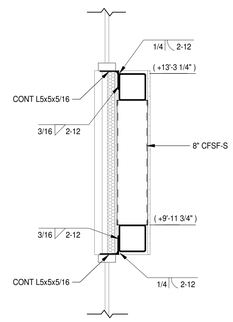
3 SECTION S2.1.3 S4.1.8 3/4" = 1'-0"



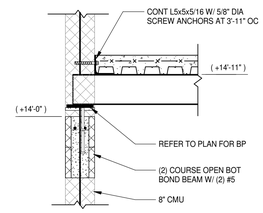
17 SECTION S2.2.3 S4.1.8 3/4" = 1'-0"



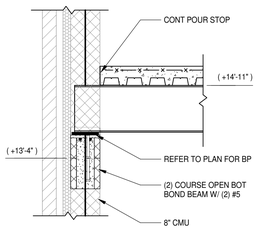
13 SECTION S2.1.7 S4.1.8 3/4" = 1'-0"



10 SECTION S2.1.6 S4.1.8 3/4" = 1'-0"



6 SECTION S2.1.5 S4.1.8 3/4" = 1'-0"



2 SECTION S2.1.3 S4.1.8 3/4" = 1'-0"

16 SECTION S2.2.11 S4.1.8 3/4" = 1'-0"

9 SECTION S2.1.6 S4.1.8 3/4" = 1'-0"

5 SECTION S2.1.5 S4.1.8 3/4" = 1'-0"

1 SECTION S2.1.3 S4.1.8 3/4" = 1'-0"

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8/23/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO:	631310
DATE:	August. 2, 2024

REVISIONS	
DATE	DESCRIPTION
8/23/24	AD-02

FRAMING SECTIONS

AD-02

S4.1.8

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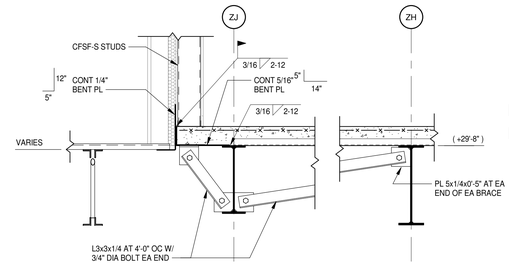
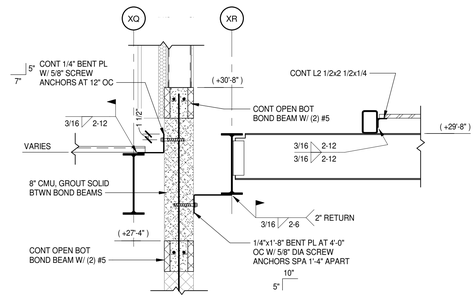


3 S2.2.6 S4.1.9 **SECTION**
3/4" = 1'-0"



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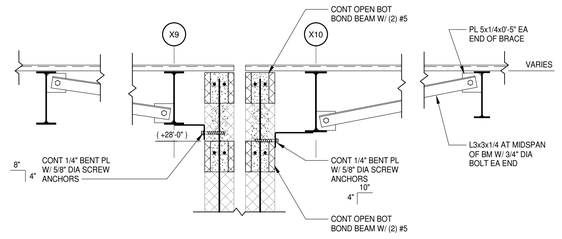
3/4" = 1'-0"



1 S2.2.3 S4.1.9 **SECTION**
3/4" = 1'-0"

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PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO:	631310
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FRAMING SECTIONS

AD-02

S4.1.9

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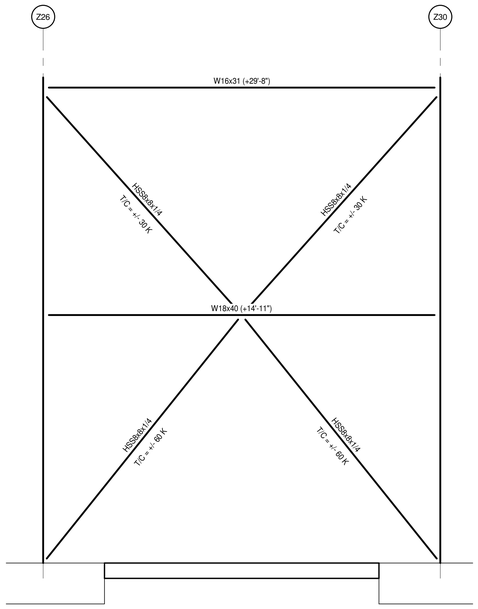
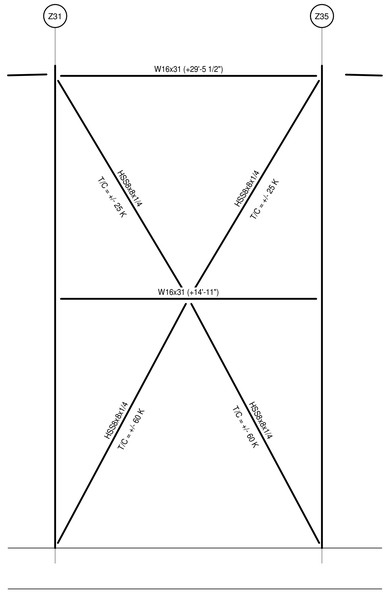


8 S1.1.6 S5.1.1 **FRAME 8**
1/4" = 1'-0"



6 S1.1.8 S5.1.1 **FRAME 6**
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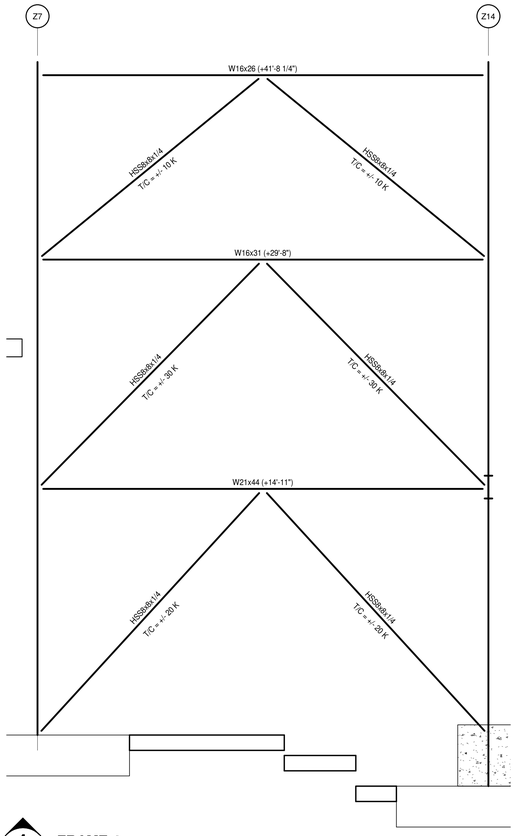
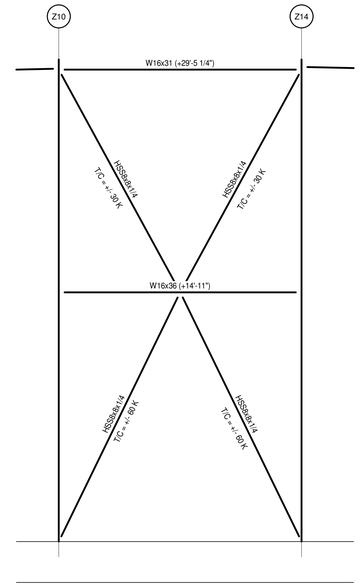


4 S1.1.2 S5.1.1 **FRAME 4**
1/4" = 1'-0"



2 S1.1.7 S5.1.1 **FRAME 2**
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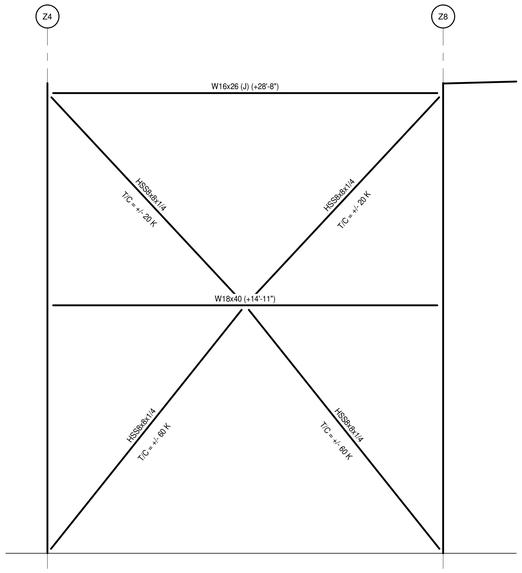
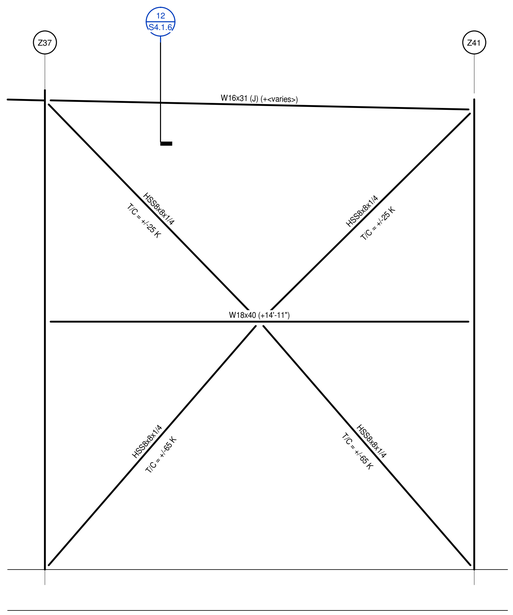
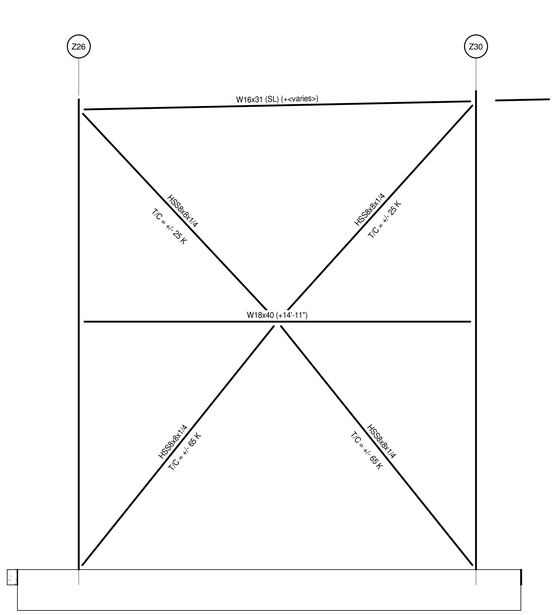


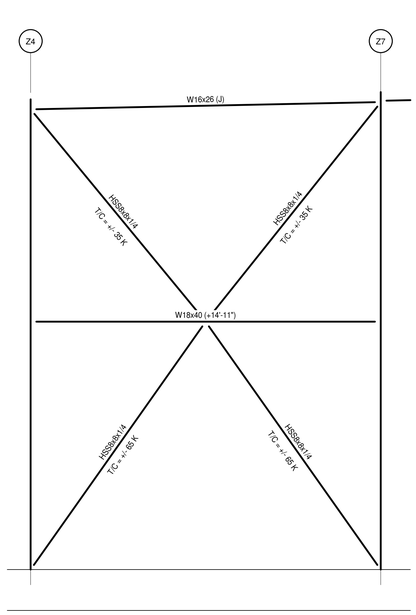
1 S1.1.7 S5.1.1 **FRAME 1**
1/4" = 1'-0"



7 S1.1.8 S5.1.1 **FRAME 7**
1/4" = 1'-0"



5 S1.1.8 S5.1.1 **FRAME 5**
1/4" = 1'-0"



3 S1.1.7 S5.1.1 **FRAME 3**
1/4" = 1'-0"

DELEGATED DESIGN CONNECTION NOTES

1. DESIGN OF ALL BRACING CONNECTIONS SHALL BE PROVIDED BY THE FABRICATOR'S ENGINEER.
2. THE UNIFORM FORCE METHOD SHALL BE USED TO DESIGN BRACING CONNECTIONS. DO NOT USE ANY SPECIAL CASES ASSOCIATED WITH THE UNIFORM FORCE METHOD. DO NOT USE KISS METHOD OR PARALLEL FORCE METHOD.
3. DESIGN CALCULATIONS, SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA, SHALL BE SUBMITTED WITH THE SHOP DRAWINGS.
4. FABRICATOR SHALL REVIEW SHOP DRAWINGS FOR COORDINATION WITH CONNECTION DESIGN CALCULATIONS PRIOR TO SUBMITTING TO THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD FOR REVIEW.
5. BRACING LOADS INDICATED ON S5.1.1 FRAME ELEVATIONS ARE SERVICE LOADS TO BE USED WITH ASD DESIGN METHODOLOGY. BRACING LOADS SHALL BE CONSIDERED TO BE BOTH TENSION AND COMPRESSION.
6. SHEAR LOADS AT THE ENDS OF BRACED FRAME BEAMS ON S5.1.1 FRAME ELEVATIONS ARE SERVICE LOADS (DEAD + LIVE) MAXIMUMS TO BE USED IN DESIGN OF BRACING CONNECTIONS.
7. SHORT HORIZONTAL SLOTTED HOLES MAY BE USED ONLY IN THE LEG OF THE ANGLES THAT CONNECT TO THE COLUMN. ALL OTHER HOLES IN BRACING CONNECTIONS SHALL BE STANDARD ROUND HOLES.
8. AD-02
9. MOMENT CONNECTIONS OF BEAMS TO COLUMNS SHALL BE DESIGNED BY THE STEEL FABRICATOR'S ENGINEER FOR THE FULL BENDING MOMENT CAPACITY OF THE BEAM (UNO) AND FOR THE SHEAR FORCES INDICATED ON THE FRAMING PLANS. LOADS INDICATED ARE SERVICE LOADS TO BE USED WITH ASD DESIGN METHODOLOGY.
10. HORIZONTAL LOADS INDICATED WITH THE LETTERS "TF" ON FRAMING PLANS ARE TRANSFER FORCES INTO THE COLLECTOR BEAMS OF ADJACENT BAYS. THESE SERVICE LOADS ARE TO BE CONSIDERED TO OCCUR IN EITHER DIRECTION IN THE DESIGN OF BRACING CONNECTIONS. THE OVERSRENGTH FACTOR HAS ALREADY BEEN APPLIED. REFER TO FRAMING PLANS FOR OTHER TRANSFER FORCE LOCATIONS.

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8/23/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: August 2, 2024

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8/15/24	AD-01
8/23/24	AD-02

BRACED FRAME ELEVATIONS

S5.1.1

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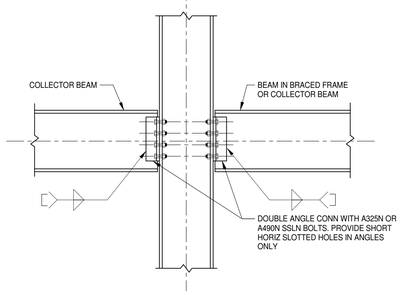
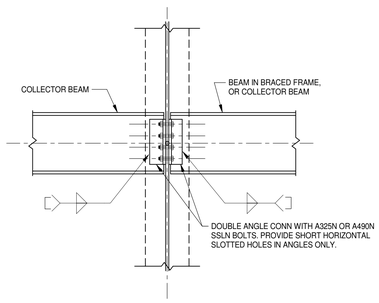
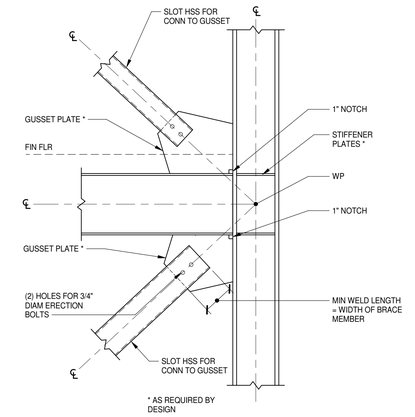
AD-02



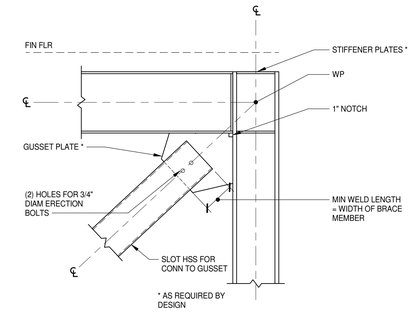
COLLECTOR BEAM CONNECTION INTO COLUMN FLANGE
NO SCALE



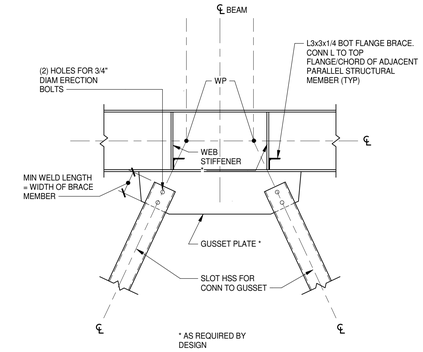
COLLECTOR BEAM CONNECTION INTO COLUMN WEB
NO SCALE



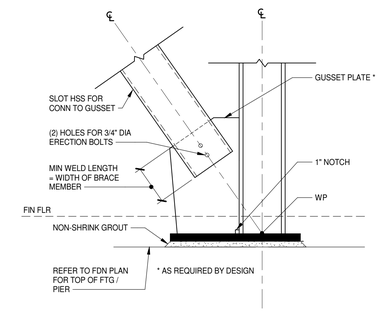
4 DETAIL S5.1.2 3/4" = 1'-0"



3 DETAIL S5.1.2 3/4" = 1'-0"



2 DETAIL S5.1.2 3/4" = 1'-0"



1 DETAIL S5.1.2 3/4" = 1'-0"

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PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: August 2, 2024

REVISIONS

DATE	DESCRIPTION
8/23/24	AD-02

BRACED FRAME DETAILS

S5.1.2

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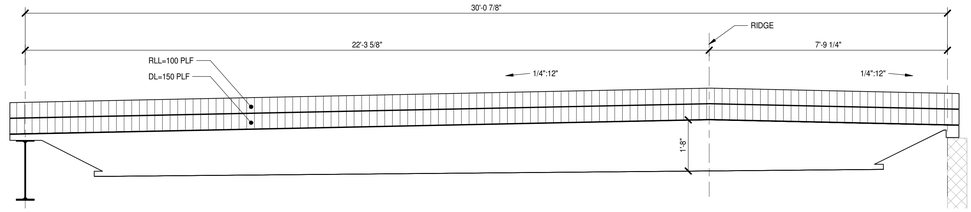
AD-02

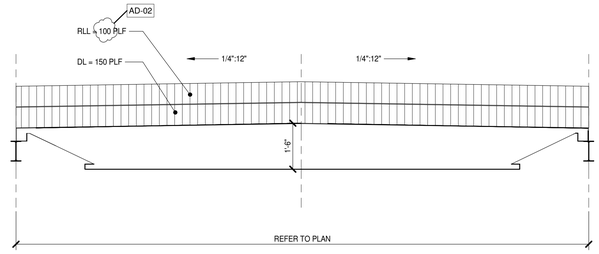


4 20LH DP SP1

S6.1.1

1/2" = 1'-0"

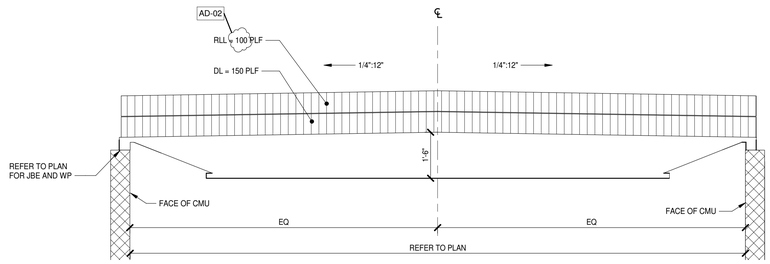
NOTES:
1. REFER TO PLAN SHEETS FOR ADDITIONAL LOADS NOT INDICATED.
2. JOIST MANUFACTURER TO ACCOUNT FOR WEIGHT OF JOIST (NOT INCLUDED IN DESIGN LOAD)
3. DL INCLUDES 10 PSF PV LOAD.



AD-02

18 LH SP2 DOUPLE PITCHED JOIST

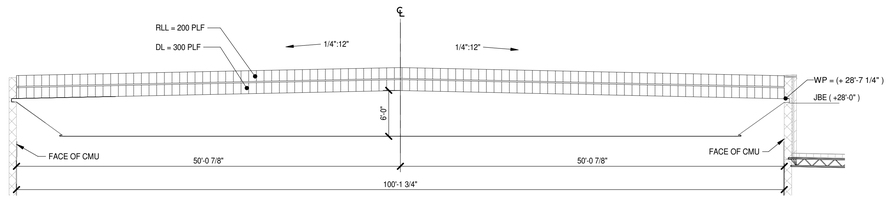
NOTES:
1. REFER TO PLAN SHEETS FOR ADDITIONAL LOADS NOT INDICATED.
2. JOIST MANUFACTURER TO ACCOUNT FOR WEIGHT OF JOIST (NOT INCLUDED IN DESIGN LOAD)
3. DL INCLUDES 10 PSF PV LOAD.



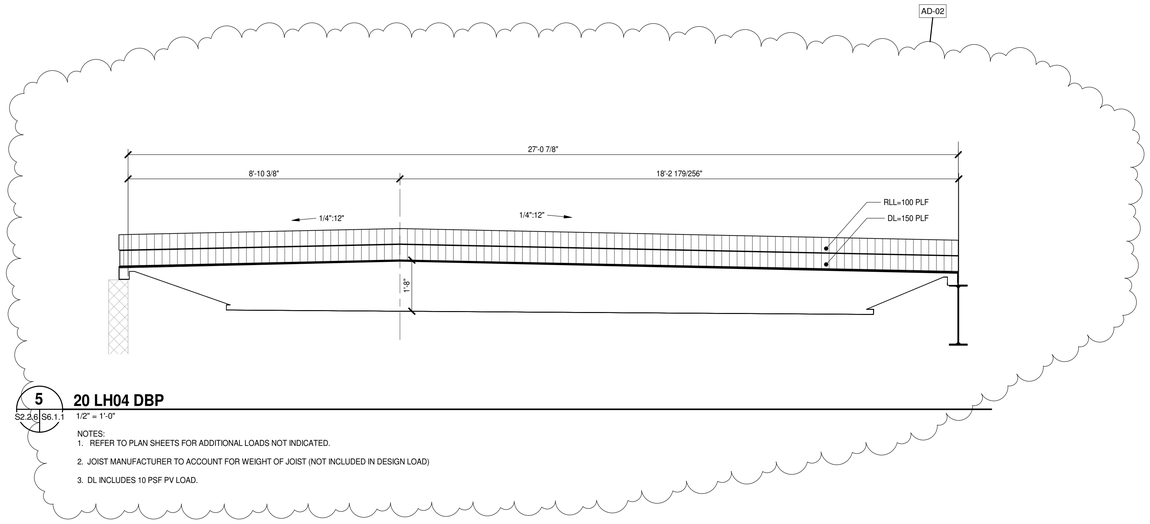
AD-02

18 LH SP 1 DOUPLE PITCHED JOIST

NOTES:
1. REFER TO PLAN SHEETS FOR ADDITIONAL LOADS NOT INCLUDED.
2. JOIST MANUFACTURER TO ACCOUNT FOR WEIGHT OF JOIST (NOT INCLUDED IN DESIGN LOAD)
3. DL INCLUDES 10 PSF PV LOAD.



AD-02



5 20 LH04 DBP

S2.2.6 S6.1.1

1/2" = 1'-0"

NOTES:
1. REFER TO PLAN SHEETS FOR ADDITIONAL LOADS NOT INDICATED.
2. JOIST MANUFACTURER TO ACCOUNT FOR WEIGHT OF JOIST (NOT INCLUDED IN DESIGN LOAD)
3. DL INCLUDES 10 PSF PV LOAD.

72DLH16 DOUBLE PITCH JOIST

NO SCALE

NOTES:
1. REFER TO PLAN SHEETS FOR ADDITIONAL LOADS NOT INDICATED.
2. JOIST MANUFACTURER TO ACCOUNT FOR WEIGHT OF JOIST (NOT INCLUDED IN DESIGN LOAD)
3. DL INCLUDES 10 PSF PV LOAD.

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8/23/2024

PENDER COUNTY SCHOOLS K-8 SCHOOL

Pender County Schools
Highway 210, Hampstead, NC 28443

PROJECT NO: 631310
DATE: August 2, 2024

REVISIONS

DATE	DESCRIPTION
8/15/24	AD-01
8/23/24	AD-02

JOIST LOADING DIAGRAMS

S6.1.1

8/23/2024 1:31:01 PM

SECTION 113013
RESIDENTIAL APPLIANCES

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design.

B. ICC A117.1 - Accessible and Usable Buildings and Facilities.

C. UL (DIR) - Online Certifications Directory.

1.02 SUBMITTALS

A. Product Data: Manufacturer's data indicating dimensions, capacity, and operating features of each piece of residential equipment specified.

1.03 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with a service center within 50 miles of Project site capable of maintenance and emergency repairs.

B. Electric Appliances: Listed and labeled by UL (DIR) and complying with NEMA Standards (National Electrical Manufacturers Association).

C. Accessibility: Where ADA-compliant appliances are indicated, provide appliances that comply with reach ranges and operable parts requirements in compliance with ICC A117.1 and ADA Standards.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers:
   1. BOSCH Home Appliances.
   2. Fisher and Paykel.
   3. Frigidaire Home Products.
   4. GE Appliances.
   5. Jenn-Air.
   6. Maytag.
   7. Whirlpool Corp.

2.02 KITCHEN APPLIANCES

A. Refrigerator: Free-standing, top-mounted freezer, and frost-free.
   1. Basis-of-Design Product: GE Appliances; Model GTE22JTNRSS.
   2. Capacity: Total minimum storage of 21 cubic ft; minimum 25 percent freezer capacity.
      a. Provide ADA-compliant model; at least 50 percent of freezer shall be located within 54 inches of floor.
   3. Energy Usage: Provide ENERGY STAR qualified product.
   4. Features: Include glass shelves, automatic icemaker, and light in freezer compartment. Do not provide water dispenser.
   5. Electrical Requirements: 120V; 60 Hz; 15 Amp.

6. Exterior Finish: Stainless steel.

B. **Refrigerator: Free-standing, undercounter, and manual-defrost. (*AD-02)**
   1. **Basis-of-Design Product: GE Appliances; Model GME04GLKLB.**
   2. **Capacity: Total minimum storage of 4 cubic ft; minimum 10 percent freezer capacity.**
      a. **Prove ADA-compliant model; at least 50 percent of freezer shall be located within 54 inches of floor.**
   3. **Energy Usage: Provide ENERGY STAR qualified product.**
   4. **Features: Include glass shelves, can rack, door shelves, tall bottle door storage, chiller in freezer, defrost tray, 1 mini ice tray, and recessed handles.**
   5. **Electrical Requirements: 120V; 60 Hz; 15 Amp.**
   6. **Exterior Finish: Stainless Steel.**

C. Microwave: Countertop.
   1. Capacity: 0.7 cubic ft.
   2. Power: 700 watts.
   3. Features: Include turntable, cooktop light, night light, 2-speed exhaust fan, and built-in trim kit.
   4. Exterior Finish: Black.

D. Waste Disposer: Standard type, overload protection, direct wired, dishwasher connection, drain elbow, drain connector, and sound reduction features.
   1. Power: 1/3 HP.
   2. Capacity: Large.
   3. Height: 14-1/2 inch.
   4. Depth: 8-1/2 inch.
   5. Controls: Wall switch.
   6. Voltage: 115 volts, 60 Hz, 4 amps.

E. Dishwasher: Undercounter. Provide ADA compliant product, no more than 32-1/4 inch high, to fit under 34 inch counter.
   1. Basis-of-Design Product: GE Appliances; Model GDT226SSLSS.
   2. Width: 24 inches.
   3. Controls: Solid state electronic, top mounted in door.
   4. Energy Usage: Provide ENERGY STAR qualified product.
   5. Wash Levels: Three (3); auto, heavy, and light.
   6. Features: Include rinse aid dispenser, temporary temperature boost option, child lock, delay start, and sanitize option.
   7. Electrical Requirements: 120V; 60 Hz; 8.9 Amp.
   8. Finish: Stainless steel.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify utility rough-ins are provided and correctly located.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Anchor built-in equipment in place.

3.03 ADJUSTING

A. Adjust equipment to provide efficient operation.

3.04 CLEANING

A. Remove packing materials from equipment and properly discard.

B. Wash and clean equipment.

END OF SECTION 113013

SECTION 115213
PROJECTION SCREENS

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data: Manufacturer's catalog cuts and descriptive information on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

B. Shop Drawings: Indicate project-specific dimensions, verified field measurements, mounting details, and interface with adjacent construction.
   1. Include wiring diagrams for motor operators and actuators, wiring connections, and controls and switches.
   2. Provide details, including viewing surface sizes, masking borders, trim accessories, screen seam locations, and extra drop length.

C. Operation and Maintenance Data: Provide manufacturer's operation and maintenance instructions.

1.02 DELIVERY, STORAGE, AND HANDLING

A. Deliver projection screens to project site in manufacturer's original unopened packaging, and inspect for damage and proper size before accepting delivery.

B. Store in a protected, clean, dry area with temperature maintained above 50 degrees F, and stack in accordance with manufacturer's recommendations.

C. Acclimate screens to building temperatures for 24 hours prior to installation, in accordance with manufacturer's recommendations.

PART 2 PRODUCTS

2.01 FRONT PROJECTION SCREENS

A. Manufacturers:
   1. Bretford
   2. Bloch Enterprises, Inc. (BEI)
   3. Da-Lite Screen Company
   4. Draper, Inc (Motorized). **Basis of Design product. Refer to AV Drawings. (*AD-02)**
   5. Stewart Filmscreen Corporation
   6. Substitutions: See Section 016000 - Product Requirements.

B. Front Projection Screens: Factory assembled unless otherwise indicated. **Refer to AV Drawings. (*AD-02)**
   1. ~~**Located in Auditorium: Motorized, matte light diffusing fabric screen, horizontally tensioned, ceiling recessed.**~~
      a. ~~**Screen Dimensions: Manufacturer's standard, approximately 120 inch high by 192 inch wide (226 inch diagonal, 16:10 aspect ratio), with 24 inches of extra black drop at top of screen.**~~ **(*AD-02)**

C. Matte Light Diffusing Fabric: Light diffusing screen fabric; washable, flame retardant per NFPA 701 and mildew resistant per ASTM G 21.
   1. Material: Matte white vinyl on fiberglass backing, with nominal gain of 1.0 over viewing angle not less than 70 degrees from axis, horizontally and vertically.

D. Masking Borders: Black, on four sides.

E. Concealed-in-Ceiling Screen Cases: Aluminum, with integral roller brackets.
   1. Door Slat: Self trim; self-closing and -opening.
   2. Case Finish: Baked enamel.
   3. Case Color: White.
   4. End Caps: Steel; finished to match case.

F. Electrically-Operated Screens:
   1. Roller: Steel, 3 inch in diameter, with locking device.
   2. Vertical Tensioning: Screen fabric weighted at bottom with steel bar and plastic end caps.
   3. Horizontal Tensioning: Tab-guided cable system.

G. Provide mounting hardware, brackets, supports, fasteners, and other mounting accessories required for a complete installation, in accordance with manufacturer's recommendations for specified substrates and mountings.

2.02 ELECTRICAL COMPONENTS

A. Electrical Components: NFPA 70 compliant, listed and classified by UL or other acceptable testing agency as suitable for the purpose specified and indicated.

B. Motors: Direct drive, 110/120 V, 60 Hz.
   1. Screen Motor: Mounted inside roller; three wire with ground; quick reverse type and lifetime lubricated; equipped with thermal overload cut-off, internal junction box, electric brake, and pre-set accessible limit switches.
      a. Electrical Characteristics: 2.4 amps; maximum.
      b. Motor mounted on sound absorber.

C. Controls: Three (3) position control switch with plate.
   1. Provide cover plates that match the finish of other electrical cover plates at each location. Coordinate with Division 26 electrical subcontractor.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate is finished and ready to accept screen installation.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Verify that openings for recessed screens are correctly sized.

D. Verify type and location of electrical connections.

E. Do not install projection screens until climate control systems are in place and interior painting and other finishes are completed.

3.02 PREPARATION

A. Coordinate screen installation with installation of projection systems.

B. Coordinate installation with adjacent construction and fixtures, including ceilings, walls, lighting, speakers, fire suppression, display units (marker/tackboards), registers and grilles, and other indicated wall/ceiling mounted construction.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions, using manufacturer's recommended hardware for relevant substrates.

B. Do not field cut screens.

C. Install screens in mountings as specified and as indicated on drawings.

D. Install plumb and level.

E. Install electrically operated screens ready for connection to power and control systems by others.

F. Adjust projection screens and related hardware in accordance with manufacturer's instructions for proper placement and operation.

G. Test electrical screens for proper working condition. Adjust as needed.

3.04 PROTECTION

A. Protect installed products until completion of project.

B. Touch up, repair, or replace damaged products before Date of Substantial Completion.

END OF SECTION 115213

SECTION 122400
WINDOW SHADES

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

B. NFPA 70 - National Electrical Code.

C. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.

D. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Where motorized shades are to be controlled by control systems provided under other sections, coordinate the work with other trades to provide compatible products.
2. Coordinate the work with other trades to provide rough-in of electrical wiring as required for installation of hardwired motorized shades.

B. Preinstallation Meeting: Convene one week prior to commencing work related to products of this section; require attendance of affected installers.

C. Sequencing:

1. Do not fabricate shades until field dimensions for each opening have been taken with field conditions in place.
2. Do not install shades until final surface finishes and painting are complete.

1.03 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets, including materials, finishes, fabrication details, dimensions, profiles, mounting requirements, and accessories.

1. Motorized Shades: Include power requirements and standard wiring diagrams for specified products.

B. Shop Drawings: Include shade schedule indicating size, location and keys to details, head, jamb and sill details, mounting dimension requirements for each product and condition, and operation direction.

1. Motorized Shades: Provide schematic system riser diagram indicating component interconnections. Include requirements for interface with other systems.

C. Certificates: Manufacturer's documentation that line voltage components are UL listed or UL recognized.

D. Source Quality Control Submittals: Provide test reports indicating compliance with specified fabric properties.

E. Selection Samples: Include fabric samples in full range of available colors and patterns.

1. Motorized Shades: Include finish selections for controls.

F. Verification Samples: Minimum size 6 inches square, representing actual materials, color and pattern.

G. Operation and Maintenance Data: List of all components with part numbers, sources of supply, and operation and maintenance instructions; include copy of shop drawings.

H. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Authorized installation representative of fabricator/manufacturer.

1.05 MOCK-UP

A. Mock-Up: Provide full size mock-up of window shade system complete with selected shade fabric including example of seams and batten pockets when applicable.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver shades in manufacturer's unopened packaging, labeled to identify each shade for each opening.

B. Handle and store shades in accordance with manufacturer's recommendations.

1.07 FIELD CONDITIONS

A. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.08 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Provide manufacturer's warranty from Date of Substantial Completion, covering the following minimum terms:

1. Manual Operating Mechanism / Clutch: 10 years, minimum (excludes bead chain).
2. Fabric: 10 years, minimum.
3. Balance of Shade Hardware and Non-Operating Materials and Components: 25 years, minimum.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Interior Manually Operated Roller Shades:

1. Draper, Inc; Clutch Operated FlexShade.
2. Hunter Douglas Architectural; RB500 Manual Roller Shades.
3. Lutron Electronics Co., Inc; Contract Roller Manual Roller Shades.
4. MechoShade Systems LLC; Mecho/5 System.
5. WT Shade; HeliaRise.
6. Substitutions: See Section 016000 - Product Requirements.

B. Interior Motorized Roller Shades, Motors and Motor Controls:

1. Draper, Inc; Motorized FlexShade.
2. Hunter Douglas Architectural; RB500 Motorized Roller Shades.
3. Lutron Electronics Co., Inc; Contract Roller Motorized Roller Shades.
4. MechoShade Systems LLC; Electroshade.
5. WT Shade; MotoRise.
6. Substitutions: See Section 016000 - Product Requirements.

C. Source Limitations: Provide products produced by a single manufacturer and obtained from a single supplier.

2.02 ROLLER SHADES

A. General:
1. Provide shade system components that are easy to remove or adjust without removal of mounted shade brackets.
2. Provide shade system that operates smoothly when shades are raised or lowered.
3. Motorized Shades: Motor system housed inside roller tube, controlling shade movement via motor controls indicated; listed or recognized to UL 325.
a. Comply with NFPA 70.
b. Electrical Components: Listed, classified, and labeled as suitable for the purpose intended. Where applicable, system components to be FCC compliant.
c. Motors: Size and configuration as recommended by manufacturer for the type, size, and arrangement of shades to be operated; integrated into shade operating components and concealed from view; fully compatible with controls to be installed.

B. Roller Shades:
1. Description - Interior Roller Shades: Single ~~or double~~ roller as indicated, fabric window shade system complete with mounting brackets, roller tubes, hembars, hardware, and accessories. (*AD 02)
a. Drop Position: Regular roll.
b. Roll Direction: Roll down, closed position is at window sill.
c. Mounting: Window jamb mounted - inside, between jambs.
d. Size: As indicated on drawings for rough opening sizes; field verify rough openings prior to fabrication.
2. Brackets and Mounting Hardware: As recommended by manufacturer for mounting indicated and to accommodate shade fabric roll-up size and weight.
a. ~~Double Roller Brackets: Configured for light-filtering and room-darkening shades in one opening.~~ (*AD 02)
1) ~~Light-Filtering Fabric: Room-side of opening.~~ (*AD 02)
2) ~~Room-Darkening Fabric: Glass-side of opening.~~ (*AD 02)
b. Multiple Shade Operation: Provide hardware as necessary to operate more than one shade using a single clutch operator.
3. Roller Tubes: As required for type of shade operation.
a. Material: Extruded aluminum, clear anodized finish or electrogalvanized/epoxy primed steel, as standard with manufacturer.
b. Size: As recommended by manufacturer; selected for suitability for installation conditions, span, and weight of shades.
c. Fabric Attachment: Utilize manufacturer's standard method for attaching shade fabric material to rollers.
4. Hembars: Designed to maintain bottom of shade straight and flat.
a. Style: Full wrap fabric covered bottom bar, flat profile with heat sealed closed ends.
5. Manual Operation for Interior Shades:
a. Clutch Operator: Manufacturer's standard material and design, permanently lubricated.
b. Drive Chain: Continuous loop beaded ball chain, 95 pounds minimum breaking strength. Provide upper and lower limit stops.

6. Accessories:
   a. Fascia: Extruded aluminum, size as required to conceal shade mounting, attachable to brackets without exposed fasteners; baked enamel finish.
      1) Color: As selected by Architect from standard range.
   b. End Caps: Provide manufacturer's standard end caps to cover exposed ends of brackets.
   c. Fasteners: Noncorrosive, and as recommended by shade manufacturer.

2.03 SHADE FABRIC

A. Fabric: Nonflammable, color-fast, impervious to heat and moisture, and able to retain its shape under normal operation.
   1. Products (Light-Filtering):
      a. Lutron Electronics Co., Inc; Basketweave 27 - 3% .
      b. Mermet Corporation; E-Screen - 3%.
      c. Phifer, Inc; Style 2410 3%.
      d. Substitutions: See Section 016000 - Product Requirements.
   2. Products (Blackout):
      a. Lutron Electronics Co., Inc; Standard Blackout - 0%.
      b. Mermet Corporation; Avila Twilight - 0%.
      c. Phifer, Inc; Style 7000 Blackout - 0%.
      d. Substitutions: See Section 016000 - Product Requirements.
   3. Material: Vinyl coated fiberglass.
   4. Performance Requirements:
      a. Flammability: Pass NFPA 701 large and small tests.
      b. Fungal Resistance: No growth when tested according to ASTM G21.
   5. Color: To be selected by Architect from manufacturer’s full range.
   6. Fabrication:
      a. Fabric Orientation: Railroaded, fabric is turned 90 degrees off the roll.
      b. If height of opening requires multiple panels of railroaded fabric, use manufacturer's standard sewn seams.

2.04 MOTOR CONTROLS

A. Unless specifically indicated to be excluded, provide all required equipment, conduit, boxes, wiring, connectors, hardware, supports, accessories, software, system programming, etc. as necessary for a complete operating system that provides the control intent indicated.

B. Provide all components and connections necessary to interface with other systems as indicated.

C. Electric Controls:
   1. Control Functions:
      a. Open: Automatically open controlled shade(s) to fully open position when button is pressed.
      b. Close: Automatically close controlled shade(s) to fully closed position when button is pressed.
      c. Presets: For selection of predetermined shade positions.
   2. Wall Controls: Provided by shade manufacturer.
      a. Finish: Match other electrical wall plates; coordinate with Division 26 electrical.

2.05 ROLLER SHADE FABRICATION

A. Field measure finished openings prior to ordering or fabrication.

B. Dimensional Tolerances: Fabricate shades to fit openings within specified tolerances.

1. Vertical Dimensions: Fill openings from head to sill with 1/4 inch maximum space between bottom bar and window stool.
2. Horizontal Dimensions - Inside Mounting: Fill openings from jamb to jamb, with maximum 1/4 inch gap at each edge of jamb.

C. At openings requiring continuous multiple shade units with separate rollers, locate roller joints at strefront/curtainwall mullion centers; butt rollers end-to-end, with no more than 1/2 inch gap between fabric.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine finished openings for deficiencies that may preclude satisfactory installation.

B. Start of installation shall be considered acceptance of substrates.

3.02 PREPARATION

A. Prepare surfaces using methods recommended by manufacturer for achieving best result for substrate under the project conditions.

B. Coordinate with window installation and placement of concealed blocking to support shades.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions and approved shop drawings, using mounting devices as indicated.

B. Adjust level, projection, and shade centering from mounting bracket. Verify there is no telescoping of shade fabric. Ensure smooth shade operation.

3.04 SYSTEM STARTUP

A. Motorized Shade System: Provide services of a manufacturer's authorized representative to perform system startup.

3.05 CLEANING

A. Clean soiled shades and exposed components as recommended by manufacturer.

B. Replace shades that cannot be cleaned to "like new" condition.

3.06 CLOSEOUT ACTIVITIES

A. Demonstration: Demonstrate operation and maintenance of window shade system to Owner's personnel.

B. Training: Train Owner's personnel on operation and maintenance of system.

1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
2. Provide minimum of two hours training by manufacturer's authorized personnel at Project location.

3.07 PROTECTION

A. Protect installed products from subsequent construction operations.

B. Touch-up, repair, or replace damaged products before Substantial Completion.

END OF SECTION 122400

FOODESIGN™
Associates, Incorporated

August 23, 2024

ADDENDUM INFO
Pender Co. Schools
Pender K-8 School

Please include the following in the next Addendum:

CHANGES TO SPECIFICATIONS

ITEM 01 COLD STORAGE ASSEMBLY QUANTITY AS SCHEDULED

Provide prefabricated cold storage room assembly of size and shape shown on plan and detail drawings. Exact overall size to be field verified prior to fabrication.

A. Insulation:
Panels shall be insulated with 4" urethane, foamed or poured in place using HCPC (no CFC) blowing agent. Foam shall be 2.25 lb. density, 95% closed cell. Panels shall meet STME-84 (UL-723) and be listed by Underwriters laboratories. Panels shall have a maximum flame spread of 25, maximum smoke developed of 450 minimum. Flash ignition of 600 degrees and minimum self-ignition of 800 degrees F.

B. Coved corners:
Assembly shall be constructed so that all interior wall, floor, and ceiling intersections shall comply with N.S.F. requirements.

C. Cam lock fasteners:
All panel intersections and wall, floor and ceiling intersections shall be secured by cam-lock fasteners connected with 2" wide metal straps set in and surrounded by insulation.

D. Finishes:
Exterior and interior finishes shall be as shown on drawings.

E. Doors:
Door size and finish shall be as shown on drawings, and shall be furnished complete with sill wiper gasket, and a minimum of 3 spring loaded lift type hinges. Doors to be Super doors with a reinforced 14 ga. U-Channel steel frame, backed with additional 1/8" steel plate drilled and tapped where all hardware is mounted. 3/16" backing on all doors larger than 42" wide. Exterior door to be equipped with automatic door closer. Cooler and Freezer doors to be equipped with perimeter heat. All doors to be equipped with heavy duty padlocking pull-handle lever, with inside safety release.

F. Thermometers:
Each compartment to be provided with exterior flush mounted thermometer mounted at eye level to each door. Provide remote read-out for freezer compartment at exterior cooler door.

G. Lights:
Each compartment to be furnished complete with manufacturer's standard light fixtures, having protective cover, mounted and pre-wired to switch with pilot light in door section. Extra light fixtures as needed to provide 30-foot candles 30" above floor. Lights to be furnished and installed by this section.

H. Ceiling panels to be one piece, self-supporting and span full width of assembly when available.

I. Floor:
Recessed insulated floor by Food Service Equipment Contractor with .100 diamond tread aluminum

Reinforced floor panels to support minimum 1200 pounds per square foot.
The floor and ceiling shall have maximum length panels to span full length of box, if possible, otherwise stagger joints so there are no common "four corner" intersections and no joints occurring in doorways.

J. Refrigeration System:

Shall be furnished by manufacturer as part of cold storage room assembly, provide each compartment with complete refrigeration system sized to maintain appropriate temperature.
Provide temperature alarm system with remote read-out and recording capability.
~~**Provide two (2) complete and redundant refrigeration systems for each walk-in cooler and freezer compartments. The second refrigeration system shall be designed to alternate running cycles during normal operation and to allow one refrigeration set to continue to run should the other system have a required service. (*AD-02)**~~
Condensing units to be air-cooled, remote. Units to have performance and wiring characteristics as scheduled on drawings. Refrigeration systems to be designed for use with R448 refrigerant. Condensing units to be provided with painted galvanized steel all-weather housing, controls, and crankcase heaters, all suitable for outdoor conditions, and located as shown on drawings. Evaporators to be low-silhouette type with adaptive defrost control equal to a Bally SmartVap+controller. Evaporators to be equipped with 2speed EC motors, running full speed while refrigeration is engaged, and running at 1/3 speed while system is pumped down; mounted at locations shown on drawings. Performance and wiring characteristics to be as scheduled on drawings. Condensing units shall be provided with 2 speed EC fan motors, running full speed while refrigeration is engaged and 1/2" speed while ambient temp is below 60 degrees Fahrenheit. Also, the crank case heater will be turned off at an ambient above 60 degrees Fahrenheit.
The evaporator drain lines are to be provided by this section and extended to floor receptors outside assembly.
Freezer drain lines to be wrapped with heater cable and insulated with pre-molded foamed plastic insulation suitable for the application. Thickness as recommended by manufacturer.
Refrigerant lines over 75 feet must be field verified.
Refrigerant piping to be ACR copper tubing, hard temper, with wrought fittings and silver solder joints. Insulate suction lines with pre-molded foamed plastic insulation, thickness as recommended by manufacturer for temperature and application.
Refrigeration systems to be provided with all required refrigerant piping, insulation, sight glass vibration eliminator, solenoid(s), dryer, suction line filter, expansion valve(s), thermostat(s), heat exchangers, and defrost timers, etc. as necessary for complete installation. Provide pump control circuit consisting of thermostat and solenoid valve. All components including piping and insulation to be installed using accepted industry standards, manufacturer's instructions, and first-class workmanship.

K. Miscellaneous:

Assembly to be installed on depressed building slab. See detail drawing.
Provide 1/8" diamond tread wainscot along exposed front exterior of assembly mounted from floor to 48"A.F.F.
Provide trim strips, closure panels, etc., as necessary to trim assembly to adjacent building surfaces.
Provide removable top closure panels with "C" channel rails. Lift-out panel sections to have turn-down edges for strength and are not to exceed 4'-0" in length.
Provide plastic strip curtains at door locations, transparent vinyl overlapping strips, aluminum bar hanging rod and bracket, suitable for low temperature application, as manufactured by Curtron, Flexstrip Products, Inc., or equal. Size to suit openings.

Provide heated pressure relief port in freezer.
Provide sleeves properly located for utility entrance, drain lines, and refrigeration lines, and after lines are installed, fill sleeves with spray foam compound, suitable for use in refrigerated spaces. Trim excess foam away and cover with stainless steel escutcheon. Cold storage room shall be erected by factory trained, or factory approved installers or shall be supervised by factory personnel. Shop drawing submittal shall indicate who the installer is, and a letter of approval shall accompany the submittal indicating the manufacturer's acceptance of the installers.
Refrigeration systems shall be furnished by cold storage room manufacturer and installed by factory approved personnel.
This specification does not constitute a complete description of cold storage assembly, also see plan and detail drawings.

Cold storage room assembly to be as manufactured by Bally, Arctic, Norlake, American Panel, Imperial/Brown, or Masterbilt complying with specifications and drawings.

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SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Provisions of the Contract and of the Contract Documents apply to this Section.

1.2 SUMMARY

A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:

1. Footings.
2. Foundation walls.
3. Slabs-on-grade.
4. Columns.
5. Beams.
6. Elevated slabs.
7. Slabs on metal deck.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1. Indicate amounts of mixing water to be withheld for later addition at Project site.

C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.

1. Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and reshoring installation and removal.

E. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.

1. Location of construction joints is subject to approval of the Architect.

F. Control Joint Layout at Epoxy Terrazzo Flooring: Indicate proposed locations of slab-on-grade control joints (construction joints and saw-cut contraction joints).

1. Locate construction joints at epoxy terrazzo flooring as indicated, not to exceed ACI-required spacings, and aligned with nearest joint and divider locations indicated on terrazzo floor pattern drawings except as otherwise noted.

2. Locate construction joints at other locations as indicate, or where not indicated, in accordance with ACI. (*AD-02)

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For installer, manufacturer, testing agency.

B. Welding certificates.

C. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.
2. Admixtures.
3. Form materials and form-release agents.
4. Steel reinforcement and accessories.
5. Fiber reinforcement.
6. Waterstops.
7. Curing compounds.
8. Floor and slab treatments.
9. Bonding agents.
10. Adhesives.
11. Vapor retarders.
12. Semirigid joint filler.
13. Joint-filler strips.
14. Repair materials.

D. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:

1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.

E. Floor surface flatness and levelness measurements indicating compliance with specified tolerances.

F. Field quality-control reports.

G. Minutes of preinstallation conference.

H. Quality Control at Epoxy Terrazzo Substrates: Contractor shall establish and provide written quality control concrete slab finishing procedures reviewed by and acceptable to the (096623) epoxy terrazzo flooring manufacturer for (slab on grade) slab areas to receive epoxy terrazzo flooring to maintain the 1/8-inch in 10'-0" tolerance specified. Reduce high spots by approved mechanical means such as shot blast or special grinder. Fill low slab areas with cementitious or epoxy leveling compound acceptable to epoxy terrazzo flooring manufacturer and compatible with epoxy resin to attain level substrate for epoxy terrazzo work. Before concrete slab installation at epoxy terrazzo flooring areas, the General Contractor and installer shall review all

screed elevations and spacing, extent of slab pour to help assure quality, and special conditions such as interface to stairs, elevator entrance thresholds and edge of slabs to minimize miscellaneous cracks.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.

B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

C. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.

E. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M, "Structural Welding Code - Reinforcing Steel."

F. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301, "Specifications for Structural Concrete."
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

G. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

H. Preinstallation Conference: Conduct conference at Project site.

1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
    a. Contractor's superintendent.
    b. Independent testing agency responsible for concrete design mixtures.
    c. Ready-mix concrete manufacturer.
    d. Concrete subcontractor.
    e. Special concrete finish subcontractor.

2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, vapor-retarder installation, steel reinforcement installation, floor and slab flatness and levelness measurement, concrete repair procedures, and concrete protection.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Plywood, metal, or other approved panel materials.
2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
   a. High-density overlay, Class 1 or better.
   b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
   c. Structural 1, B-B or better; mill oiled and edge sealed.
   d. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

D. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

E. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.
3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.2 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade, deformed.

B. Low-Alloy-Steel Reinforcing Bars: ASTM A 706/A 706M, deformed.

C. Plain-Steel Wire: ASTM A 82/A 82M, as drawn.

D. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain, fabricated from as-drawn steel wire into flat sheets.

2.3 REINFORCEMENT ACCESSORIES

A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut true to length with ends square and free of burrs.

B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire or plastic and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.

2.4 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

1. Portland Cement: ASTM C 150, Type I, Type II or Type I/II. Supplement with the following:
   a. Fly Ash: ASTM C 618, Class F.
   b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

B. Silica Fume: ASTM C 1240, amorphous silica.

C. Normal-Weight Aggregates: ASTM C 33. Provide aggregates from a single source.

1. Maximum Coarse-Aggregate Size: 1 inch nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

D. Water: ASTM C 94/C 94M and potable.

2.5 ADMIXTURES

A. Air-Entraining Admixture: ASTM C 260.

B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.

5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.6 FIBER REINFORCEMENT

A. Synthetic Macro-Fiber: Polyolefin macro-fibers engineered and designed for use in concrete, complying with ASTM C 1116/C 1116M, Type III, 1 to 2-1/4 inches long.

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. 3M; Scotchcast Polyolefin Fibers.
   b. Euclid Chemical Company (The), an RPM company; Tuf-Strand SF.
   c. FORTA Corporation; FORTA FERRO.
   d. Grace Construction Products, W. R. Grace & Co.; Strux 90/40.
   e. Nycon, Inc.; XL.
   f. Propex Concrete Systems Corp.; Fibermesh 650.
   g. Sika Corporation; Sika Fiber.

2.7 VAPOR BARRIERS

A. Sheet Vapor Barrier: ASTM E 1745, Class A, with a permeance of less than 0.01 perms after mandatory conditioning (ASTM E1745, Section 7.1). Include manufacturer's recommended mastic, pressure-sensitive tape, and accessory materials.

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. Fortifiber Building Systems Group; Moistop Ultra 15.
   b. Reef Industries, Inc.; Griffolyn 15 mil Green.
   ~~c.~~ Stego Industries, LLC; Stego Wrap 15 mil Class A

B. Granular Fill: Clean mixture of crushed stone or crushed or uncrushed gravel; ASTM D 448, Size 57, with 100 percent passing a 1-1/2-inchsieve and 0 to 5 percent passing a No. 8 sieve.

~~2.8 LIQUID FLOOR TREATMENTS~~

~~A. VOC Content: Liquid floor treatments shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).~~

~~B. Penetrating Liquid Floor Treatment: Clear, chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; that penetrates, hardens, and densifies concrete surfaces.~~ **(*AD-02)**

2.9 CONCRETE SEALING CURING MATERIALS

A. Clear, Waterbord, Membrane-Forming Curing and Sealing Compound (CONC-SLR): ASTM C1315, Type 1, Class A.

1. Products: Subject to compliance with requirements, available products that may by incorporated into the Work include, but are not limited to, the following:
   a. BASF Construction Chemicals - Building Systems; Kure 1315.
   b. ChemMasters; Polyseal WB,

c. Conspec by Dayton Superior; Sealcure 1315 WB.
d. Edoco by Dayton Superior; Cureseal 1315 WB.
e. Euclid Chemical Co., an RPM company; Super Diamond Clear VOX.
f. Kaufman Products, Inc.; Sure Cure 25 Emulsion.
g. Lambert Corporation; UV Safe Seal.
h. L&M Construction Chemicals, Inc.; Lumiseal WB Plus.
i. Meadows, W. R., Inc.; Vocomp-30.
j. Metalcrete Industries; Metcure 30.
k. Right Pointe; Right Sheen WB30.
l. Symons by Dayton Superior; Cure & Seal 31 Percent E.
m. Vexcon Chemicals, Inc.; Vexcon Starseal 1315.

2. VOC Content: Curing and sealing compounds shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 56, Subpart D (EPA Method 24). (*AD-02).

2.10 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.

C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

D. Water: Potable.

E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

F. Terrazzo Floor Areas: Do not use curing agents in areas to receive terrazzo flooring.

2.11 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

B. Bonding Agent: ASTM C 1059/C 1059M, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

C. Reglets: Fabricate reglets of not less than 0.022-inch thick, galvanized-steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

D. Dovetail Anchor Slots: Hot-dip galvanized-steel sheet, not less than 0.034 inch thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

2.12 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 4100 psi at 28 days when tested according to ASTM C 109/C 109M.

B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations.
1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109/C 109M.

2.13 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
1. Fly Ash: 25 percent.
2. Ground Granulated Blast-Furnace Slag: 25 percent.

C. Admixtures: Use admixtures according to manufacturer's written instructions.
1. Use high-range water-reducing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

2.14 CONCRETE MIXTURES FOR BUILDING ELEMENTS

A. Footings: Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 3000 psi at 28 days.

2. Slump Limit: 4 inches, or 8 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.

B. Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 3500 psi at 28 days.
2. Slump Limit: 4-5 inches.
3. Air Content: Do not allow air content of trowel-finished floors to exceed 3 percent.

C. Air Content: Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content of 6% with a tolerance of plus 1 or minus 1.5 percent, for exterior concrete only, unless otherwise indicated.

2.15 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.16 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and furnish batch ticket information.
1. When air temperature is between 85 and 90 deg , reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.
1. For mixer capacity of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
2. For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd..
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

PART 3 - EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Construct forms tight enough to prevent loss of concrete mortar.

D. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.

1. Install keyways, reglets, recesses, and the like, for easy removal.
2. Do not use rust-stained steel form-facing material.

E. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

F. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

G. Chamfer exterior corners and edges of permanently exposed concrete.

H. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

I. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

J. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

K. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's “Code of Standard Practice for Steel Buildings and Bridges.”
2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
3. Install dovetail anchor slots in concrete structures as indicated.

3.3 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.

1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 VAPOR BARRIERS

A. Sheet Vapor Barriers: Place, protect, and repair sheet vapor barrier according to ASTM E 1643 and manufacturer's written instructions.
1. Lap joints 6 inches and seal with manufacturer's recommended tape. Seal to all penetrations and vertical surfaces.

3.5 STEEL REINFORCEMENT

A. General: Comply with CRSI's “Manual of Standard Practice” for placing reinforcement.
1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
1. Weld reinforcing bars according to AWS D1.4/D 1.4M, where indicated.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.6 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch wide joints into concrete when cutting

action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

C. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated.
2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface where joint sealants, specified in Section 079200 "Joint Sealants," are indicated.
3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

D. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

E. Terrazzo Coordination: Locate construction joints at terrazzo floor areas to align with joint and divider locations indicated on terrazzo floor pattern drawing, as approved.

3.7 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.

C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
2. Maintain reinforcement in position on chairs during concrete placement.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

G. Hot-Weather Placement: Comply with ACI 301 and as follows:
1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.8 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces not exposed to public view.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces exposed to public view or to be covered with a coating or covering material applied directly to concrete.

C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:
1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform

color and texture. Do not apply cement grout other than that created by the rubbing process.

2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.9 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch in one direction.

1. Apply scratch finish to surfaces indicated and to receive concrete floor toppings and to receive mortar setting beds for bonded cementitious floor finishes.

C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

1. Apply float finish to surfaces indicated, to surfaces to receive trowel finish and to surfaces to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

1. Apply a trowel finish to surfaces indicated and to surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.

2. Finish surfaces to the following tolerances, according to ASTM E 1155, for a randomly trafficked floor surface:

a. Specified overall values of flatness, F(F) 35; and of levelness, F(L) 25; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 17 (F(L) not required at elevated slab).

b. At areas receiving a terrazzo floor finish, specified overall values of flatness, F(F) 35; and of levelness, F(L) 35; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 24 (F(L) not required at elevated slab).

E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated and to surfaces where ceramic or quarry tile is to be installed by either thickset or thin-set method. While concrete is still plastic, slightly scarify surface with a fine broom.

1. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.

F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.10 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations:

1. Coordinate sizes and locations of concrete bases with actual equipment provided.
2. Minimum Compressive Strength: 3500 psi at 28 days.
3. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of concrete base.
4. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base, and anchor into structural concrete substrate.
5. Prior to pouring concrete, place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
6. Cast anchor-bolt insert into bases. Install anchor bolts to elevations required for proper attachment to supported equipment.

3.11 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
   a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
   b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
   c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project.
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
   a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project.
4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.
5. Terrazzo Floor Areas: At areas to receive terrazzo flooring, cure concrete for a minimum of 28 days. Do not use curing agents in areas to receive terrazzo flooring.

3.12 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least six month(s). Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.13 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete. Limit cut depth to 3/4 inch. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's

written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.

5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inchclearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.14 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Inspections:
1. Steel reinforcement placement.
2. Steel reinforcement welding.
3. Headed bolts and studs.
4. Verification of use of required design mixture.
5. Concrete placement, including conveying and depositing.
6. Curing procedures and maintenance of curing temperature.
7. Verification of concrete strength before removal of shores and forms from beams and slabs.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.

2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
5. Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
6. Compression Test Specimens: ASTM C 31/C 31M.
    a. Cast and laboratory cure one set of five standard cylinder specimens for each composite sample.
7. Compressive-Strength Tests: ASTM C 39/C 39M; test one laboratory-cured specimen at 7 days and one set of three specimens at 28 days and hold one specimen for test at 56 days.
    a. A compressive-strength test shall be the average compressive strength from a set of three specimens obtained from same composite sample and tested at age indicated.
8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
9. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
10. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
11. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that temperature, batch to placement time, slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
13. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

D. Measure floor and slab flatness and levelness according to ASTM E 1155 within 24 hours of finishing.

END OF SECTION 033000

SECTION 042000
UNIT MASONRY

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ACI SP-66 - ACI Detailing Manual.

B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

C. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.

D. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.

E. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement.

F. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.

G. ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus.

H. ASTM C33/C33M - Standard Specification for Concrete Aggregates.

I. ASTM C55 - Standard Specification for Concrete Building Brick.

J. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units Made From Clay or Shale).

K. ASTM C67/C67M - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.

L. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units.

M. ASTM C91/C91M - Standard Specification for Masonry Cement.

N. ASTM C140/C140M - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units.

O. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar.

P. ASTM C151 - Standard Test Method for Autoclave Expansion of Hydraulic Cement.

Q. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale).

R. ASTM C270 - Standard Specification for Mortar for Unit Masonry.

S. ASTM C331/C331M - Standard Specification for Lightweight Aggregates for Concrete Masonry Units.

T. ASTM C404 - Standard Specification for Aggregates for Masonry Grout.

U. ASTM C476 - Standard Specification for Grout for Masonry.

V. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.

W. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.

X. ASTM C641 - Standard Test Method for Iron Staining Materials in Lightweight Concrete Aggregates.

Y. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.

Z. ASTM C887 - Standard Specification for Packaged, Dry, Combined Materials for Surface Bonding Mortar.

AA. ASTM C1019 - Standard Test Method for Sampling and Testing Grout for Masonry.

BB. ASTM D1227/D1227M - Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing.

CC. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

DD. ASTM E154/E154M - Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover.

EE. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing.

FF. BIA Technical Notes No. 13 - Ceramic Glazed Brick Exterior Walls.

GG. BIA Technical Notes No. 20 - Cleaning Brickwork.

HH. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls.

II. BIA Technical Notes No. 46 - Maintenance of Brick Masonry.

JJ. NCMA TEK 08-04A - Cleaning Concrete Masonry.

KK. NCMA TEK 12-01B - Anchors and Ties for Masonry.

LL. NCMA TEK 12-02B - Joint Reinforcement for Concrete Masonry.

MM. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting at the Project site one week before starting work of this section; require attendance by all relevant installers.

1.03 SUBMITTALS

A. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.

B. Shop Drawings: Indicate pertinent dimensions, materials, anchorage, size and type of fasteners, and accessories, for each type of masonry.
   1. Provide elevations indicating steel reinforcing bar locations; provide details of reinforcing including bends and cross-sections, in accordance with ACI SP-66.
   2. Indicate control and expansion joint locations.
   3. Provide flashing details indicating corners, end dams, and other special conditions.

C. Samples: Face brick and mortar selections will be verified in mock-up panel. Provide samples of exposed accessories and trim requiring color selection.

D. Material Certificates and Test Reports: Provide manufacturer's certificates and test reports for the following:
   1. Masonry Units:
      a. Brick: Size data including fabrication tolerances.
      b. Brick: Efflorescence test, per ASTM C67/C67M.
      c. Masonry Units: Compressive strength test data.
      d. Concrete Masonry: Data indicating aggregates comply with ASTM C33/C33M (normal weight), ASTM C331/C331M (lightweight), and ASTM C618 (fly ash).
   2. Mortar and Grout Mixes: Provide description and proportion of materials for each type of mortar and grout.

3. Provide material certificates for each type of metal accessory, including reinforcing bars, joint reinforcement, veneer ties and anchors, and other indicated accessories, indicating compliance with requirements.

E. Installer's Qualification Statement.

1.04 QUALITY ASSURANCE

A. Comply with provisions of ACI 530.1/ASCE 6/TMS 402/602, except where exceeded by requirements of Contract Documents.

B. Fire Rated Assemblies: Provide products that comply with fire-resistance ratings indicated as determined by testing according to ASTM E119, by equivalent testing thickness, or by means acceptable to authorities having jurisdiction.

C. Masonry Subcontractor Qualifications: The work of this section shall be bid and performed by a firm certified as a “North Carolina Masonry Contractors Association Certified Masonry Contractor” as described in the most current version of the NCMCA’s “Guide to Masonry Contractor Certification.” (North Carolina Masonry Contractors Association, PO Box 3463, Hickory, NC 28603-3463, 828-324-1564, information@ncmca.com).

1. The masonry subcontractor shall at all times when work is in progress, provide an individual from its own staff designated by the North Carolina Masonry Contractors Association Masonry Contractor Certification Program as a “CMP-Certified Masonry Professional” or “CME-Certified Masonry Executive” (as described in the most current version of the NCMCA’s “Guide to Masonry Contractor Certification”) on-site to supervise work in progress.

D. Source Limitations for Masonry: Provide each type of masonry unit from a single manufacturer's plant, sourced through a single supplier. Each type of masonry unit shall maintain consistency of color and texture for all product required on the entire project. The approved mockup/sample panel shall be used to determine acceptable color and texture range.

1. Source Limitations for Decorative Concrete Masonry: Provide decorative concrete veneers from a manufacturer with a quality control agreement with water repellant manufacturer, certifying that units have been manufactured with integral water repellant to conform to performance requirements indicated. Provide current certificate from water repellant manufacturer confirming conformance.

E. Source Limitations for Mortar: Provide each mortar mix from a single manufacturer, sourced through a single supplier. Each required mortar mix shall maintain consistency of each component, including cementitious materials and aggregate, to provide consistent color and texture fr all product required on the entire project. The approved mockup/sample panel shall be used to determine acceptable color and texture range.

F. Aggregate for Concrete Masonry Units: If bottom ash is used as aggregate in the CMU, the Source for the bottom ash shall be a power station that has a minimum of ten (10) years continuous experience as a supplier of quality material as verified by independent certified laboratory testing and no defects in the marketplace.

G. Pre-Construction Testing: Owner shall engage an independent testing agency to perform field quality control tests, in accordance with Section 014000 - Quality Requirements.

1. Clay Masonry Unit Tests: Testing agency shall test each variety of clay masonry in accordance with ASTM C67/C67M compressive strength requirements.
2. Concrete Masonry Unit Tests: Testing agency shall test each variety of concrete unit masonry in accordance with ASTM C140/C140M compressive strength requirements.

1.05 MOCK-UPS

A. See Section 014000 - Quality Requirements for additional requirements.

B. Sample Panel: Build a sample panel approximately 48 inches long by 32 inches high. Include each type of masonry veneer and mortar. Include a sealant filled control joint.

1.06 FIELD CONDITIONS

A. Wall Cavity Protection: Provide temporary waterproof sheet coverings over masonry walls at top of walls, sills, parapets, and other horizontal projections. Install coverings at end of each workday, when rain or precipitation is expected, and after masonry work is completed.
   1. Extend coverings down vertically at least 24 inches on each side of masonry wall. At multi-wythe walls where one wythe is more than 24 inches taller than other wythe(s), extend covering as required to fully cover all wythes and cavities.
      a. At roof parapets, extend covering on rear side of parapet full height down to roof deck/membrane, until vertical protection/roof membrane is installed.
   2. Secure all coverings in place with tape or adhesive that does not leave residue, or other securement method that does not penetrate or damage permanent construction.
   3. Provide protective coverings at sills and horizontal projections that can also serve as protection from mortar droppings.
   4. Provide protective coverings over tops of foundation walls containing insulation to protect from exposure to sun and from construction traffic damage.
   5. Do not remove or allow removal of temporary covers until permanent top of wall protection elements (coping, sill, roof surface, waterproof membrane, etc) are underway.

B. Cold- and Hot-Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

A. Concrete Block: Comply with referenced standards and as follows:
   1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depths as indicated on drawings for specific locations.
   2. Special Shapes: Provide nonstandard blocks configured for corners, lintels, headers, other detailed conditions, and as indicated below.
      a. Provide bullnose units for outside corners.
      b. Provide solid block with bullnosed top edges at free-standing CMU walls and where top of block is exposed at window sills and similar applications.
   3. Concrete Masonry Units: ASTM C90, lightweight.
      a. Exposed Faces: Manufacturer's standard color and texture.
      b. Aggregates:
         1) Lightweight Aggregates: Lightweight aggregate shall strictly comply with ASTM C331/C331M, ASTM C151, and ASTM C641. Drying shrinkage of aggregate shall not exceed 0.10% at 100 days.
         2) Waste concrete, scoria, and aglite shall not be permitted.

B. Concrete Brick:
   1. Actual Size: 3-5/8 inches wide by 2-1/4 inches high by 7-5/8 inches long.

2. Concrete Building Brick: ASTM C55; lightweight, solid, for interior or concealed use.

2.02 BRICK UNITS

A. Unit Cost Allowance: Face brick shall be furnished via unit cost allowance. Unit cost shall cover purchase of brick and transport to the project site.
   1. Face Brick Unit Cost: $1,500 per thousand.
   2. Bidders and material suppliers are responsible for determining cost to produce special shape units, such as "lipped" brick units. The unit cost shall not cover installation, overhead or profit.
   3. The Contract Sum will be adjusted to reflect the actual cost of selected brick in accordance with the General Conditions. The Contractor shall submit receipts and initiate Change Order process.
   4. The Contractor is reminded that unit cost includes all required taxes, less applicable trade discounts, in accordance with the General Conditions.

B. Facing Brick: ASTM C216, Type FBS or FBX, Grade SW.
   1. Color and Texture: Provide one of the following:
      a. Face Brick 1: Color and texture to match Architect's sample.
         1) **Basis of Design: Glen-Gery Corporation; Hanley Classics Series, color Burnt Almond wirecut (*AD-02)**
      b. Face Brick 2: Color and texture to match Architect's sample.
         1) **Basis of Design: Palmetto Brick Company; Dark Red wirecut (*AD-02)**
   2. Actual Size: 3-5/8 inches wide by 3-5/8 inches high by 11-5/8 inches long (utility).
   3. Special Shapes: Molded units (plant-fabricated) as required by conditions indicated, unless standard units can be sawn to produce equivalent effect. Cut or sawn edges shall not be exposed in the finished work.
   4. Efflorescence: Provide brick that has been tested per ASTM C67/C67M and received a rating of "not effloresced."

C. Building (Common) Brick: ASTM C62, Grade SW, except MW may be used in locations indicated acceptable in reference standard; solid units.
   1. Actual size: Match face brick.
   2. Locations: May be used in concealed locations in lieu of face brick.

2.03 MORTAR AND GROUT MATERIALS

A. Masonry Cement: ASTM C91/C91M.
   1. Colored Mortar: Premixed cement as required to match Architect's color sample.
   2. Available Products:
      a. Argos USA; Magnolia Masonry Cement.
      b. Holcim (US) Inc.; Rainbow Mortamix Custom Color Masonry Cement.
      c. Lehigh Hanson; flamingo Colored Cement.
      d. Roanoke Cement; a division of Titan America; Colored Masonry Cement.
      e. York Building Products, a Stewart Company; Workrite Colored Masonry Cement.

B. Surface Bonding Mortar (Parge Coat): ASTM C887.

C. Mortar Aggregate: ASTM C144.

D. Grout Aggregate: ASTM C404.

E. Water: Clean and potable.

F. Accelerating Admixture: ASTM C494/C494M, Type C; nonchloride, noncorrosive type for use in cold weather; approved by manufacturer for use in masonry mortar.

2.04 DAMPPROOFING

A. General: Dampproofing may be provided as a Contractor option to parge coat, applied to exterior face of below grade CMU back up wall (prior to insulation or grouting).

B. Bituminous Dampproofing: Cold-applied water-based emulsion; asphalt with mineral colloid or chemical emulsifying agent; with or without fiber reinforcement; asbestos-free; suitable for application on vertical and horizontal surfaces.
   1. Emulsified Asphalt Coating (Brush or Spray Applied): ASTM D1227/D1227M, Type II, Class 1 - Mineral colloid emulsifying agents with non-asbestos fibers or Type III, Class 1 - Mineral colloid emulsifying agents without fibrous reinforcement.
   2. Accessory Materials: Provide asphaltic primer, glass fiber reinforcement, and compatible patching compounds as required and as recommended by manufacturer.
   3. Manufacturers:
      a. Henry Company.
      b. Karnak Corporation.
      c. Mar-Flex Systems, Inc.
      d. W. R. Meadows, Inc.
      e. Substitutions: See Section 016000 - Product Requirements.

2.05 REINFORCEMENT AND ANCHORAGE

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi), deformed billet bars; uncoated.

B. Joint Reinforcement, Anchorage, and Ties, General: Comply with NCMA TEK 12-02B, NCMA TEK 12-01B, and requirements below.
   1. Use ladder type joint reinforcement, unless otherwise indicated. Truss type reinforcement may be used only when approved by Architect, at walls indicated not to have vertical reinforcing steel and not to be grouted.
   2. Provide prefabricated joint reinforcement sections for corners and for T-intersections.
   3. Provide joint reinforcement in minimum 10 foot lengths.
   4. At multi-wythe/cavity wall applications, size all anchors, ties, and reinforcement for depths of cavities indicated, including indicated insulation thickness as applicable. Ties shall maintain full adjustability at veneer wythe without affecting insulation.
   5. At cavities with air space wider than 4-1/2 inches, provide high strength ties engineered for cavity depths indicated.

C. Single Wythe Joint Reinforcement: ASTM A951/A951M.
   1. Material: Mill-galvanized steel for interior walls, hot-dip galvanized steel for exterior walls.
   2. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.

D. Multiple Wythe Joint Reinforcement: ASTM A951/A951M. Provide at composite walls and subgrade walls where all wythes are of the same material.
   1. Material: Mill-galvanized steel for interior walls, hot-dip galvanized steel for exterior walls.
   2. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.
      a. Provide two side rods for each wythe that is nominal 6-inch depth or greater, and one side rod for each wythe that is nominal 4-inch depth.

E. Adjustable Multiple Wythe Joint Reinforcement: ASTM A951/A951M. Provide at cavity walls/masonry veneer walls.
   1. Type: Ladder, with adjustable ties or tabs spaced at 16 in on center.
   2. Material: Hot-dip galvanized steel.
   3. Size: 0.1483 inch side rods with 0.1483 inch cross rods and adjustable components of 0.1875 inch wire, width of components as required to extend at least halfway through veneer wythe, but provide not less than 5/8 inch of mortar coverage from each masonry face.
   4. Vertical adjustment: Not more than 1 1/4 inches.

F. Strap Anchors: Bent steel shapes, 1-1/2 inch width, 0.105 inch thick, 24 inch length, with 2 inch long, 90 degree bend at each end to form a U or Z shape or with cross pins, hot dip galvanized to ASTM A153/A153M Class B.

G. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not less than 5/8 inch of mortar coverage from masonry face.
   1. For Anchorage to Structural Steel Framing: Crimped wire anchors for welding to frame, 0.25 inch thick, with triangular/trapezoidal wire ties 0.1875 inch thick, hot dip galvanized to ASTM A 153/A 153M, Class B.

H. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B. Provide at masonry veneer walls with metal framing backup. At cavity walls with CMU backup and masonry veneer, masonry veneer anchors may be used in conjunction with standard horizontal joint reinforcing, at Contractor's option, in lieu of adjustable multiple wythe joint reinforcement.
   1. Anchor Plates: Not less than 0.075 inch thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
   2. Wire Ties: Manufacturer's standard shape, 0.1875 inch thick.
      a. Size wire ties to extend at least halfway through veneer wythe, but provide not less than 5/8 inch of mortar coverage from masonry face.
   3. Vertical Adjustment: Not less than 3-1/2 inches.

I. Metal-to-Metal Fasteners (for Steel Studs): Self-drilling, self-tapping #10 hex screws; fabricated of either 304 stainless steel or of steel with corrosion resistant polymer coating tested to ASTM B117. Fasteners shall include integral neoprene or EPDM washer.
   1. Manufacturers:
      a. ELCO Construction Products; Dril-Flex with Stalgard Finish.
      b. Heckmann Building Products; #668 TEK Self-Drilling Steel Stud Screw.
      c. ITW Commercial Construction North America; Teks Maxiseal with Climaseal Finish, or Scots Long Life Teks (stainless steel).

2.06 FLASHINGS

A. Combination Nonasphaltic Flashing Materials - Copper:
   1. Copper/Polymer Film or Fabric Flashing: 5 oz/sq ft copper sheet laminated between two sheets of polymer film. Minimum Puncture Resistance of 780 psi, when measured in accordance with ASTM E154/E154M.
      a. Available Products:
         1) Advanced Building Products, Inc.; Copper Sealtite 2000.
         2) Hohmann & Barnard, Inc; Copper-Fabric NA.
         3) STS Coatings, Inc.; Wall Guardian Copper TWF.

4) York Manufacturing, Inc; Multi-Flash 500 Series.

B. Factory-Fabricated Flashing Corners and End Dams: Copper.

C. Termination Bars: One-inch wide, fabricated of 0.125-inch PVC, 0.090-inch extruded aluminum, or 0.075-inch stainless steel; compatible with membrane and adhesives.

D. Drip Edge: Copper; angled drip with hemmed edge; compatible with membrane and adhesives.

E. Flashing Sealant/Adhesive/Liquid Seam Tape: Polyether-based, 100% solids, moisture-curing elastomeric products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates; and that are compatible with asphalt-free flashing materials and air barrier materials. Traditional mastic is not acceptable.

1. Available Products:
   a. Master Builders Solutions; MasterSeal NP150.
   b. STS Coatings; GreatSeal LT-100 Liquid Tape.
   c. York; UniverSeal US-100 Liquid Tape.

2.07 ACCESSORIES

A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.

1. Provide nominal 2.5-inch "standard" and "tee" configurations to suit application unless indicated otherwise.

B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; in maximum lengths available.

C. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.

1. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations. Provide in depth matching cavity depth without gap at front or back of mesh. Fabricate approximately 10 inches high with minimum 6 inch high dovetail shape projections.
   a. Available Products:
      1) Advanced Building Products, Inc; Mortar Break DT.
      2) Heckmann Building Products; WallDefender.
      3) Hohmann & Barnard, Inc.; Mortar Trap.
      4) Mortar Net Solutions; MortarNet.
      5) Wire-Bond; Cavity Net DT (3611D).
   b. At cavities with depth greater than 2 inches, provide companion drainage product by one of the manufacturers above; nominal 1/2-inch thickness by 20 inches wide, to be field inserted into cavity in a "U" configuration. Basis-of-Design is "Mortar Catch 352" by Advanced Building Products, Inc.

D. Bond Break: ASTM D226/D226M, Type I ("No.15") asphalt felt or polyethylene tape.

E. Weeps/Cavity Vents:

1. Cellular Type: Extruded propylene with honeycomb design.
   a. Color(s): To be selected by Architect from manufacturer's full range.
   b. Available Products:
      1) Advanced Building Products, Inc.; Mortar Break weep mesh.
      2) Blok-Lok Limited; Cell-Vent.
      3) CavClear/Archovations, Inc.; CavClear Weep Vent.

4) Heckmann Building Products Inc.; No. 85 Cell Vent.
5) Hohmann & Barnard, Inc.; Quadro-Vent.
6) Mortar Net Solutions; WeepVent.
7) Wire-Bond; Cell Vent.

2. Bed Joint Weep System: Corrugated plastic drainage system incorporating continuous drainage strip within cavity portion of wall with integral weephole extensions at 9-1/2 inches on center located above flashing in the bed joint of the veneer masonry. Provide at masonry units over 32 inches long, and as indicated.
   a. Available Products:
      1) Heckmann Building Products; Core/Cavity Vent Weep System #367.
      2) Masonry Technology Incorporated (MTI); Cavity Weep CV 5010.

F. Reinforcing Positioners: Provide wire positioners in bed joints to keep steel reinforcing bars centered in cells, fabricated of 0.1483-inch hot-dip galvanized steel wire.
   1. Available Products:
      a. Heckmann Building Products, Inc.; No. 376 Rebar Positioner.
      b. Hohmann & Barnard, Inc.; #RB or #RB-Twin Rebar Positioner.
      c. Wire-Bond; O-Ring or Double O-Ring Rebar Positioner.

G. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.08 LINTELS

A. Masonry Lintels: Fabricated of bond beam CMUs, with texture matching adjacent standard CMU. Provide reinforcing bars and grout in accordance with structural requirements. Provide temporary supports until cured.

B. Precast Concrete Lintels: Comply with structural requirements for concrete strength and reinforcing. Precast U-lintels fabricated in accordance with performance standards of PCI MNL-116 with 3500 psi concrete for standard lintels and 6000 psi concrete for prestressed lintels as manufactured by Cast-Crete are acceptable in lieu of rectangular section lintels.

C. Steel Lintels: Refer to Section 055000 - Metal Fabrications.

2.09 MORTAR AND GROUT MIXING

A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
   1. Masonry below grade and in contact with earth: Type S.
   2. Reinforced masonry: Type S.
   3. Mortar parge coats: Type S.
   4. Exterior, loadbearing and non-loadbearing, and interior, loadbearing and non-loadbearing: Type N, except as indicated above.
      a. Interior, non-loadbearing masonry may use Type O at Contractor's option.

B. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio.
   1. Use colored mortar for all veneer masonry. Separate colors shall be required for each type and color of veneer.

C. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

D. Admixtures: Add to mixture at manufacturer's recommended rate and in accordance with manufacturer's instructions; mix uniformly.

E. Mixing: Use mechanical batch mixer and comply with referenced standards.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that related items provided under other sections are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

A. Direct and coordinate placement of metal anchors supplied for installation under other sections.

B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COLD AND HOT WEATHER REQUIREMENTS

A. For installation in cold or hot weather, comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

3.04 GENERAL INSTALLATION REQUIREMENTS

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

1. CMU Coursing: One unit and one mortar joint equal 8 inches.
2. Brick Coursing: Either two or three units with accompanying mortar joints shall equal 8 inches, based on basis-of-design brick size(s) indicated above.

C. Provide running bond for all masonry units unless otherwise indicated.

D. Tool all mortar joints slightly concave where they will be exposed, unless otherwise indicated.

1. Provide flush joints where they will be concealed by surface-applied treatments or finishes other than paint; including but not limited to tile, wall coverings, fluid-applied or SPF air barriers, or membranes.

3.05 PLACING AND BONDING

A. Remove broken, cracked, chipped, or otherwise damaged masonry units from pallets and set aside. Do not use unless they may be field cut to remove damaged section, for installation where special shape is required to fit construction.

B. Create a consistent blend for each type of veneer masonry by mixing units from a minimum of three pallets.

C. Provide asphalt felt or polyethylene tape bond-breaker between clay masonry and concrete or other masonry types. Rake back joints for sealant.

D. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

E. Lay hollow masonry units with face shell bedding on head and bed joints.

F. Remove excess mortar and mortar smears as work progresses.

G. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

H. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
   1. Do not cut masonry unless it is required for certain shapes, such as rowlock sills, or unless it is unavoidable due to fitting around other construction, such as wall penetrations.
   2. Cut masonry edges shall not be visible in the final work. Where special shapes are required that would expose cut edges, they shall be plant-fabricated.

3.06 WEEPS/CAVITY VENTS

A. Install weeps in veneer and cavity walls at 24 inches on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.

3.07 CAVITY MORTAR CONTROL

A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.

B. For cavity walls, build inner wythe ahead of outer wythe to accommodate accessories.

C. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.

3.08 REINFORCEMENT AND ANCHORAGE - GENERAL, SINGLE WYTHE MASONRY, AND CAVITY WALL MASONRY

A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.

B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.

C. Place continuous joint reinforcement in first and second joint below top of walls.

D. At parapets and below-grade/foundations, provide joint reinforcement at 8 inches o.c. vertically.

E. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch mortar cover on each side.

F. Lap joint reinforcement ends minimum 6 inches.

G. Do not extend reinforcement across control, expansion, and other building movement joints.

H. Reinforce corners and intersections with prefabricated T- or L-shaped reinforcing.

I. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches horizontally and 24 inches vertically.

J. Embed ties and anchors in mortar joint and extend at least halfway through masonry veneer unit; with at least 5/8 inch mortar cover to the outside face of the anchor.

3.09 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

A. Masonry and/or Metal Framing Back-Up: Embed anchors to bond veneer at maximum 16 inches on center vertically and 24 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

3.10 REINFORCEMENT AND ANCHORAGES - COMPOSITE UNIT MASONRY

A. Install continuous horizontal joint reinforcement at 16 inches o.c. vertically, except at below grade foundation walls install at 8 inches o.c. vertically.

B. Where concrete foundations are indicated, tie below-grade masonry to concrete with rigid anchors spaced at maximum 8 inches o.c. vertically.

C. Coordinate with parging/dampproofing and with installation of insulation, where indicated.

3.11 MASONRY FLASHINGS

A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
   1. Remove or cover protrusions or sharp edges that could puncture flashings.
   2. Seal lapped ends and penetrations of flashing before covering with mortar.

B. Terminate flashing up 16 inches minimum on vertical surface of backing:
   1. Anchor vertical leg of flashing into backing with a termination bar and sealant.

C. Extend metal flashings to within 1/2 inch of exterior face of masonry and adhere to top of stainless steel angled drip with hemmed edge.
   1. Notch and hem exterior corners of drip edges to eliminate sharp, exposed cut metal edges at locations below 6' - 0" above grade.

D. Support flexible flashings across gaps and openings.

E. Lap end joints of flashings at least 6 inches, minimum, and seal watertight with flashing sealant/adhesive.

3.12 LINTELS

A. Comply with requirements on Structural Drawings for type of lintel at each opening, additional lintel sizing, reinforcement, and installation requirements.

B. Install loose steel or precast lintels over openings, where indicated.

C. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled.
   1. Allow masonry lintels to attain specified strength before removing temporary supports.

D. Maintain minimum 8 inch bearing on each side of opening, unless otherwise indicated.

3.13 GROUTED COMPONENTS

A. Comply with requirements on Structural Drawings for locations of structural grouted components and accessories, including but not limited to, grouted bond beams, reinforced unit masonry walls, (including locations and sizing of vertical steel bar reinforcing), grouted solid CMU, and composite wall collar joints.

B. Lap splices minimum 24 bar diameters.

C. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.

D. Place and consolidate grout fill without displacing reinforcing.

3.14 CONTROL AND EXPANSION JOINTS

A. Do not continue horizontal joint reinforcement through control or expansion joints.

B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

C. Provide control and expansion joints at locations indicated on Drawings, and as follows:
   1. At changes in wall height.
   2. At changes in wall thickness

3. At change in support (eg: transition from foundation support to floor slab support).
4. Adjacent to corners of walls within a distance equal to no more than half the maximum control joint spacing.
5. Wall intersections.
6. Do not place control joints closer than 16 inches to edge of wall openings (doors, windows, louvers, ducts).
7. Distance between joints shall not exceed a length to height ratio of 1.5:1.
8. Distance between joints shall not exceed 25 feet where no openings occur between joints.
9. Distance between joints shall not exceed 20 feet where openings occur between joints.

3.15 BUILT-IN WORK

A. As work progresses, install built-in metal door frames, anchor bolts, and plates and other items to be built into the work and furnished under other sections.

B. Install built-in items plumb, level, and true to line.

C. Bed anchors of metal door frames in adjacent mortar joints. Fill frame voids solid with grout.
   1. Mix mortar (or grout) to a 4-inch maximum slump consistency and hand trowel into place in accordance with Steel Door Institute (SDI-100).
   2. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.

D. Do not build into masonry construction organic materials that are subject to deterioration.

3.16 TOLERANCES

A. Install masonry within the site tolerances found in TMS 402/602.

B. Maximum Variation from Unit to Adjacent Unit: 1/16 inch.

C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.

D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.

E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

F. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.

G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.17 CUTTING AND FITTING

A. Cut and fit for chases, pipes, conduit, and other penetrations. Coordinate with other sections of work to provide correct size, shape, and location.

B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.18 PARGING

A. Dampen masonry walls prior to parging.

B. Parge cavity side of CMU below grade back-up wythe with a single coat of surface-bonding mortar to a total thickness of 1/4 inch.
   1. In lieu of parging, Contractor may at its option apply bituminous dampproofing, at a minimum rate of 1.25 gal per 100 sq. ft. Apply primer if required by manufacturer and comply with manufacturer's installation requirements.

C. Steel trowel surface smooth and flat with a maximum surface variation of 1/8 inch per foot.

D. Strike top edge of parging at 45 degrees.

3.19 FIELD QUALITY CONTROL

A. Field Inspection: The Owner shall engage an independent inspection agency to perform field quality control inspections and prepare field reports.
   1. The Contractor shall permit full access to inspectors in order to perform inspections, including use of temporary facilities and equipment such as scaffolding or lifts.
   2. Do not enclose cavities or spaces to be grouted solid until inspections have approved grout and reinforcement for material properties, size, and installation locations.

B. Field Testing: The Owner shall engage an independent testing agency to perform field quality control tests, as specified in Section 014000 - Quality Requirements. For each type of masonry unit, 5 randomly chosen units shall be sampled for each 5,000 square feet of wall.
   1. Clay Masonry Unit Tests: Testing agency shall test each variety of clay masonry in accordance with ASTM C67/C67M requirements.
   2. Concrete Masonry Unit Tests: Testing agency shall test each variety of concrete unit masonry, of each load-bearing size indicated, in accordance with ASTM C140/C140M requirements.
   3. Mortar Tests: Testing agency shall test each type of mortar in accordance with ASTM C780. Mortar shall be tested on each of the first 3 days. Alert testing agency if mortar mix is altered during construction to allow for retesting.
   4. Grout Test: Testing agency shall test each type of grout in accordance with ASTM C1019. Grout shall be tested on each of the first 3 days. Alert testing agency if grout mix is altered during construction to allow for retesting.

3.20 REPAIR AND CLEANING

A. Remove masonry units that have become damaged or stained, or that do not display acceptable blend of color and texture matching mockup/sample panel. Remove as whole units, do not cut. Replace with new units with fresh mortar joints.

B. Remove excess mortar and mortar droppings.

C. Replace defective mortar and repoint. Enlarge holes or voids at defective mortar, and remove enough adjacent mortar to allow for repointing. Install fresh mortar joint and match to adjacent work.

D. Where expansion/control joints and sealant joints are indicated, clean joints and leave them clear and ready for installation of joint or sealant materials.

E. Clean concrete masonry in accordance with NCMA TEK 08-04A and clean clay masonry in accordance with BIA Technical Notes No. 20. Use hand cleaning/bucket-and-brush methods.

F. To prevent freezing of cleaners and rinse water, do not clean when masonry surface temperature will drop below 40 degrees F.

G. Test cleaning methods and materials on one half of mockup/sample panel; leave the other half uncleaned. Obtain approval of Architect before cleaning the finished work.

H. Protect adjacent non-masonry surfaces from cleaning materials and processes with temporary sheeting or masking.

I. Provide "in-progress" cleaning; clean masonry in each area as soon as possible after mortar has fully cured (approximately 7 to 28 days; coordinate with manufacturer's recommendations for each mortar type specified). Field test a small area to ensure mortar curing is complete prior to large-scale cleaning.

J. Pre-wet masonry surfaces and clean with specified cleaning solution. Rinse surfaces immediately after cleaning; do not allow cleaning solution to dry or set into the masonry.

K. Use non-metallic tools in cleaning operations.

L. Final Cleaning: As part of Project Closeout (prior to Substantial Completion), provide Final Cleaning of masonry veneer. Remove construction dust with a very low pressure rinse. Perform a visual inspection and spot clean to remove effloresence, staining, or organic growth, in accordance with recommendations of BIA and NCMA technical notes.

3.21 PROTECTION

A. Provide temporary protective waterproof sheet coverings over tops of walls, parapets, sills, and other horizontal projections as the work progresses, in accordance with FIELD CONDITIONS article in Part 1 above.

B. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

C. Provide protective vertical boards and horizontal sheeting at grade level base of walls to prevent staining or splashing from rain, mud, or mortar droppings.

3.22 MASONRY WASTE

A. Fill Material: Clean masonry waste may be used as fill material. Break up masonry waste into small pieces no greater than 4 inches any direction. Mix with Division 31 engineered fill material so that masonry waste is no more than 33% of the fill (1 part masonry waste, 2 parts engineered fill). Fill containing masonry waste shall be at least 18 inches below grade level.

1. Excess waste shall be removed and disposed of or recycled in accordance with Division 1 waste disposal requirements.

END OF SECTION 042000

SECTION 072736
SPRAYED FOAM (SPF) AIR BARRIER

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.

B. ASTM C1029 - Standard Specification for Spray-Applied Rigid Cellular Polyurethane Thermal Insulation.

C. ASTM D2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

E. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials.

F. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials.

G. ASTM E2357 - Standard Test Method for Determining Air Leakage Rate of Air Barrier Assemblies.

H. CAN-ULC-S705.1 - Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density - Material Specification.

I. CAN-ULC-S705.2 - Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density - Application.

J. NFPA 259 - Standard Test Method for Potential Heat of Building Materials.

K. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week prior to commencing work of this section.

1.03 SUBMITTALS

A. Product Data: Provide product description, insulation properties, and preparation requirements.
   1. Provide current Evaluation Service Report upon request.

B. Compatibility Data: Provide manufacturer's data indicating compatibility between submitted SPF and transition membrane products.

C. ~~**ABAA Field Quality Control Submittals: Submit third-party reports of testing and inspection as required by ABAA QAP.**~~ **(*AD-02)**

D. ABAA Manufacturer Qualification: Submit documentation of current evaluation of proposed manufacturer and materials.

E. ABAA Installer Qualification: Submit documentation of current contractor accreditation and current installer certification. Keep copies of all contractor accreditation and installer certification on site during and after installation. Present on-site documentation upon request.

1.04 QUALITY ASSURANCE

A. Air Barrier Association of America (ABAA) Quality Assurance Program (QAP):

1. Installer Qualification: Use accredited contractor, certified installers, **and** evaluated materials, ~~**and third-party field quality control audit.**~~ **(*AD-02)**
   a. ~~**Install shall also be certified by ABAA/BPQI (Building Performance Quality Institute) in accordance with the training requirements outlined in the CAN-ULC-S705.2 Installation Standard. Installers shall have their photo-identification certification cards in their possession and available on the project site, for inspection upon request.**~~ **(*AD-02)**
2. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture. Use secondary materials approved in writing by primary material manufacturer.

B. NFPA 285 Tested Assembly: Provide foam plastic insulation products located in exterior wall assemblies that have been tested in accordance with NFPA 285 which represent those exterior wall assemblies for this Project.
   1. Potential heat in Btu per square feet shall not exceed the potential heat of the foam plastic insulation contained in the wall assembly tested as determined by tests in accordance with NFPA 259.

1.05 FIELD CONDITIONS

A. Do not apply foam when temperature is below that specified by the manufacturer for ambient air and substrate.

1.06 WARRANTY

A. Material Warranty: Manufacturer's standard warranty against manufacturing defects, for a minimum period of 3 years.

B. Installation Warranty: Air barrier subcontractor's installation warranty, effective from date of Substantial Completion for a minimum period of 2 years. Installation warranty shall include all components of the air barrier assembly, including loss of airtight seal, loss of watertight seal, loss of adhesion, loss of cohesion, or failure to cure properly.

PART 2 PRODUCTS

2.01 MATERIALS

A. Spray Polyurethane Foam (SPF) Air Barrier/Insulation: Medium-density, rigid, closed cell polyurethane foam; foamed on-site, using blowing agent of water or non-ozone-depleting gas.
   1. Provide insulation that conforms to CAN-ULC-S705.1 or ASTM C1029, Type II, and performance requirements listed.
   2. Thermal Resistance: R-value of 6.0, minimum, per 1 inch thickness at 75 degrees F mean temperature when tested in accordance with ASTM C518.
   3. Density: Minimum 1.9 pounds per cubic foot.
   4. Water Vapor Permeance: Vapor retarder; 2 perms, maximum, when tested at intended thickness in accordance with ASTM E96/E96M, desiccant method.
   5. Water Absorption: Less than 2 percent by volume, maximum, when tested in accordance with ASTM D2842.
   6. Air Permeance (Material): Not to exceed 0.004 cfm per square foot, when tested at intended thickness in accordance with ASTM E2178 at 1.57 psf.
   7. Ozone Depletion Potential (ODP): Zero.
   8. Closed Cell Content: At least 90 percent.

9. Surface Burning Characteristics: Flame spread/smoke developed index of 25/450, maximum, when tested in accordance with ASTM E84.
10. Products:
    a. BASF Corporation; WALLTITE US.
    b. Henry Company; Permax 2.0 HFO.
    c. Huntsman Building Solutions; ProSeal HFO Pro.
    d. Johns Manville; JM Corbond IV Closed Cell Spray Polyurethane Foam.
    e. NCFI Polyurethanes; InsulBloc HFO.
    f. Substitutions: See Section 016000 - Product Requirements.

B. Air Barrier Assembly Performance: Air barrier assembly, including primary air barrier and auxiliary materials, including joints and transitions to adjacent materials, shall have an air leakage rate not to exceed 0.04 cfm per square foot, at 1.57 psf pressure differential when tested per ASTM E2357. The air barrier assembly shall also serve as liquid water control layer, and shall be flashed to direct moisture to the exterior.

2.02 ACCESSORIES

A. Primer: As required by insulation manufacturer.

B. Membrane at Transitions in Substrate and Connections to Adjacent Elements: Nominal 40-mil thick, impermeable, self-adhering sheet membrane.
1. Available Products:
    a. Carlisle Coatings and Waterproofing; CCW-705.
    b. Grace Construction Products; Perm-A-Barrier Flashing.
    c. Henry Company; Blueskin SA.
    d. Protective Coatings Technology, Inc; Poly-Wall Crack Guard.
    e. Tremco, Inc.; ExoAir 110.
    f. W. R. Meadows, Inc.; Air Shield.

C. Membrane at Transitions between Spray Foam Air Barrier and Roofing and Other Adjacent Materials: Provide impermeable transition membrane that complies with both air barrier manufacturer's recommendations and adjacent material manufacturer's recommendations.

D. Spray Foam Stop and Screed: L-shaped stop and screed designed as a spray foam termination accessory, fabricated of stable UV-resistant plastic and acceptable to spray foam manufacturer. Outer leg shall be sized to match spray foam thickness indicated. "Jam-Ex" by Exo-Tec Manufacturing, Inc., or equivalent product.

E. Counterflashing for Masonry Through-Wall Flashing: Nominal 40-mil thick, impermeable, self-adhering membrane.
1. Available Products:
    a. Carlisle Coatings and Waterproofing; CCW-705 TWF.
    b. Grace Construction Products; Perm-A-Barrier Flashing.
    c. Henry Company; Blueskin TWF.
    d. Protective Coatings Technology, Inc.; Poly-Wall Crack Guard.
    e. Tremco, Inc.; ExoAir TWF.
    f. W. R. Meadows, Inc.; Detail Strip.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify work within construction spaces or crevices is complete before insulation application.

B. Verify that surfaces are clean, dry, and free of matter that may inhibit insulation adhesion.

3.02 PREPARATION

A. Mask and protect adjacent surfaces from over spray or dusting.

B. Apply primer in accordance with manufacturer's instructions.

3.03 APPLICATION

A. Apply insulation in accordance with manufacturer's instructions.

B. Apply insulation by spray method, to a uniform monolithic density without voids.

C. Apply to the minimum cured thickness indicated on Drawings.

D. Patch damaged areas.

E. Where applied to voids and gaps assure space for expansion to avoid pressure on adjacent materials that may bind operable parts.

F. Building Expansion Joints: Do not bridge joints with spray foam material. Provide a L-shaped stop/screed on each side of joint, pack joint with compressible insulation, and bridge the joint with flexible transition membrane to provide continuous air barrier assembly.

G. Trim excess away for applied trim or remove as required for continuous sealant bead.

3.04 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements for additional requirements.

B. ~~Field inspections and tests will be performed by a third party ABAA testing agency.~~

C. ~~Inspection will include verification of insulation thickness and density.~~

D. ~~Coordination of ABAA Tests and Inspections:~~

1. ~~Arrange and pay for testing and inspection required by ABAA QAP.~~
    a. ~~Testing and inspection shall verify conformance with ABAA Quality Assurance Program, the CAN-ULC-S705.2 Installation Standard, manufacturer's written installation instructions, and other requirements of this section.~~
    b. ~~Unless indicated otherwise, provide ABAA Quality Assurance Program audits in accordance with current "Frequency & Cost of Audits" posted on ABAA website. Forward written inspection reports to the Architect within 10 working days of the inspection and test being performed. In the case of deficiencies, the ABAA-licensed inspector may verbally advise the licensed installer at time of inspection.~~
2. ~~Notify ABAA in writing of schedule for air barrier work. Allow adequate time for testing and inspection.~~
3. ~~Cooperate with ABAA testing agency.~~
4. ~~Allow access to air barrier work areas and staging.~~
5. ~~Do not cover air barrier work until tested, inspected, and accepted.~~ **(*AD-02)**

E. ~~In addition to the ABAA site inspector, c~~ Coordinate and provide access for air barrier manufacturer's technical representative to make field reviews during installation and provide technical reports to Contractor, Owner, and Architect. **(*AD-02)**

F. Patch air barrier work that was removed or damaged due to testing.

G. If testing and inspection reveals any defects, promptly remove and replace defective work at no additional expense to the Owner.

3.05 PROTECTION

A. Do not permit subsequent construction work to disturb applied insulation.

END OF SECTION 072736

SECTION 087100
DOOR HARDWARE (*AD-02)

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Hardware for wood, aluminum, and hollow metal doors.
B. Hardware for fire-rated doors.
C. Electrically operated and controlled hardware.
D. Lock cylinders for doors with balance of hardware specified in other sections.
E. Thresholds.
F. Weatherstripping and gasketing.

1.02 RELATED REQUIREMENTS

A. Section 062000 - Finish Carpentry: Wood door frames.
B. Section 064100 - Architectural Wood Casework: Cabinet hardware.
C. Section 079200 - Joint Sealants: Sealants for setting exterior door thresholds.
D. Section 080671 - Door Hardware Schedule: Schedule of door hardware sets.
E. Section 081113 - Hollow Metal Doors and Frames.
F. Section 081116 - Aluminum Doors and Frames.
G. Section 081213 - Hollow Metal Frames.
H. Section 081416 - Flush Wood Doors.
I. Section 081613 - Fiberglass Doors.
J. Section 083323 - Overhead Coiling Doors: Door hardware, except cylinders.
K. Section 083326 - Overhead Coiling Grilles: Door hardware, except cylinders.
L. Section 083613 - Sectional Doors: Door hardware, except cylinders.
M. Section 101400 - Signage: Additional signage requirements.
N. Section 281000 - Access Control: Electronic access control devices.
O. Section 284600 - Fire Detection and Alarm: Electrical connection to activate door closers and release magnetic holders.

1.03 REFERENCE STANDARDS

A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
B. BHMA A156.1 - Standard for Butts and Hinges 2021.
C. BHMA A156.3 - Exit Devices 2020.
D. BHMA A156.4 - Door Controls - Closers 2019.
E. BHMA A156.5 - Cylinders and Input Devices for Locks 2020.
F. BHMA A156.6 - Standard for Architectural Door Trim 2021.
G. BHMA A156.7 - Template Hinge Dimensions 2016.
H. BHMA A156.8 - Door Controls - Overhead Stops and Holders 2021.
I. BHMA A156.13 - Mortise Locks & Latches Series 1000 2017.
J. BHMA A156.16 - Auxiliary Hardware 2018.
K. BHMA A156.21 - Thresholds 2019.
L. BHMA A156.22 - Standard for Gasketing 2021.

M. BHMA A156.28 - Recommended Practices For Mechanical Keying Systems 2018.
N. BHMA A156.115 - Hardware Preparation In Steel Doors And Steel Frames 2016.
O. BHMA A156.115W - Hardware Preparation in Wood Doors with Wood or Steel Frames 2006.
P. DHI (H&S) - Sequence and Format for the Hardware Schedule 2019.
Q. DHI (KSN) - Keying Systems and Nomenclature 2019.
R. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.
S. ITS (DIR) - Directory of Listed Products Current Edition.
T. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
U. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.
V. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives 2022.
W. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies 2022.
X. UL (DIR) - Online Certifications Directory Current Edition.
Y. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies Current Edition, Including All Revisions.
Z. UL 1784 - Standard for Air Leakage Tests of Door Assemblies Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.
B. Sequence installation to ensure facility services connections are achieved in an orderly and expeditious manner.
C. Preinstallation Meeting: Convene a preinstallation meeting one week prior to commencing work of this section; require attendance by affected installers and the following:
    1. Architect.
    2. Installer's Architectural Hardware Consultant (AHC).
    3. Hardware Installer.
    4. Owner's Security Consultant.
D. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.
E. Keying Requirements Meeting:
    1. Schedule meeting at project site prior to Contractor occupancy.
    2. Attendance Required:
        1. Contractor.
        2. Owner.
        3. Architect.
        4. Installer's Architectural Hardware Consultant (AHC).
        5. Door Hardware Installer.
        6. Owner's Security Consultant.
    3. Agenda:
        1. Establish keying requirements.
        2. Verify locksets and locking hardware are functionally correct for project requirements.
        3. Verify that keying and programming complies with project requirements.
        4. Establish keying submittal schedule and update requirements.

4. Incorporate "Keying Requirements Meeting" decisions into keying submittal upon review of door hardware keying system including, but not limited to, the following:
    1. Access control requirements.
    2. Key control system requirements.
    3. Schematic diagram of preliminary key system.
    4. Flow of traffic and extent of security required.
5. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.
6. Deliver established keying requirements to manufacturers.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.

C. Shop Drawings - Door Hardware Schedule: A detailed listing that includes each item of hardware to be installed on each door.
1. Prepared by or under supervision of Architectural Hardware Consultant (AHC).
2. Comply with DHI (H&S) using door numbering scheme and hardware set numbers as indicated in Contract Documents.
    1. Submit in vertical format.
3. Include complete description for each door listed.

D. Shop Drawings - Electrified Door Hardware: Include diagrams for power, signal, and control wiring for electrified door hardware that include details of interface with building safety and security systems. Provide elevations and diagrams for each electrified door opening as follows:
1. Prepared by or under supervision of Architectural Hardware Consultant (AHC) and Electrified Hardware Consultant (EHC).
2. Elevations: Include front and back elevations of each door opening showing electrified devices with connections installed and an operations narrative describing how opening operates from either side at any given time.
3. Diagrams: Include point-to-point wiring diagrams that show each device in door opening system with related colored wire connections to each device.

E. Samples for Verification:
1. Submit minimum size of 2 by 4 inch (51 by 102 mm) for sheet samples, and minimum length of 4 inch (102 mm) for other products.
2. Submit one (1) sample of hinge, latchset, lockset, and closer illustrating style, color, and finish.
3. Include product description with samples.

F. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

G. Manufacturer's qualification statement.

H. Installer's qualification statement.

I. Supplier's qualification statement.

J. Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

K. Keying Schedule:
1. Submit three (3) copies of Keying Schedule in compliance with requirements established during Keying Requirements Meeting unless otherwise indicated.

L. Warranty: Submit manufacturer's warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

M. Project Record Documents: Record actual locations of concealed equipment, services, and conduit.

N. Maintenance Materials and Tools: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.

1.06 QUALITY ASSURANCE

A. Standards for Fire-Rated Doors: Maintain one copy of each referenced standard on site, for use by Architect and Contractor.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.

C. Installer Qualifications: Company specializing in performing work of the type specified for commercial door hardware with at least three years of documented experience.

D. Supplier Qualifications: Company with certified Architectural Hardware Consultant (AHC) and Electrified Hardware Consultant (EHC) to assist in work of this section.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Package hardware items individually; label and identify each package with door opening code to match door hardware schedule.

1.08 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide manufacturer warranty against defects in material and workmanship for period indicated, from Date of Substantial Completion. Complete forms in Owner's name and register with manufacturer.
   1. Closers: 30 years minimum.
   2. Exit Devices: Five years, minimum.
   3. Locksets: Limited lifetime.
   4. Cylinders: Three years, minimum.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.

B. Provide individual items of single type, of same model, and by same manufacturer.

C. Closers:
   1. Provide door closer on each exterior door, unless otherwise indicated.
   2. Provide door closer on each fire-rated and smoke-rated door.
   3. Spring hinges are not an acceptable self-closing device, unless otherwise indicated.

D. Overhead Stops and Holders (Door Checks):.
   1. Provide stop for every swinging door, unless otherwise indicated.
   2. Overhead Stop is not required if positive stop feature is specified for door closer; positive stop feature of door closer is not an acceptable substitute for a stop, unless otherwise indicated.
   3. Overhead stop is not required if a floor or wall stop has been specified for the door.

E. Drip Guards: Provide at head of outswinging exterior doors unless protected by roof or canopy directly overhead.

F. Weatherstripping and Gasketing:

1. Provide weatherstripping on each exterior door at head, jambs, and meeting stiles of door pairs, unless otherwise indicated.
2. Provide door bottom sweep on each exterior door, unless otherwise indicated.

G. Electrically Operated and/or Controlled Hardware: Provide necessary power supplies, power transfer hinges, relays, and interfaces as required for proper operation; provide wiring between hardware and control components and to building power connection in compliance with NFPA 70.

H. See Section 281000 for additional access control system requirements.

I. Fasteners:
1. Provide fasteners of proper type, size, quantity, and finish that comply with commercially recognized standards for proposed applications.
    1. Aluminum fasteners are not permitted.
    2. Provide phillips flat-head screws with heads finished to match door surface hardware unless otherwise indicated.
2. Provide machine screws for attachment to reinforced hollow metal and aluminum frames.
    1. Self-drilling (Tek) type screws are not permitted.
3. Provide stainless steel machine screws and lead expansion shields for concrete and masonry substrates.
4. Provide wall grip inserts for hollow wall construction.
5. Fire-Resistance-Rated Applications: Comply with NFPA 80.
    1. Provide wood or machine screws for hinges mortised to doors or frames, strike plates to frames, and closers to doors and frames.
    2. Provide steel through bolts for attachment of surface mounted closers, hinges, or exit devices to door panels unless proper door blocking is provided.

2.02 PERFORMANCE REQUIREMENTS

A. Provide door hardware products that comply with the following requirements:
1. Applicable provisions of federal, state, and local codes.
2. Accessibility: ADA Standards and ICC A117.1.
3. Fire-Resistance-Rated Doors: NFPA 80, listed and labeled by qualified testing agency for fire protection ratings indicated, based on testing at positive pressure in accordance with NFPA 252 or UL 10C.
4. Hardware on Fire-Resistance-Rated Doors: Listed and classified by UL (DIR), ITS (DIR), or testing firm acceptable to authorities having jurisdiction as suitable for application indicated.
5. Hardware for Smoke and Draft Control Doors (Indicated as "S" on Drawings): Provide door hardware that complies with local codes, and requirements of assemblies tested in accordance with UL 1784.
6. Hardware Preparation for Steel Doors and Steel Frames: BHMA A156.115.
7. Hardware Preparation for Wood Doors with Wood or Steel Frames: BHMA A156.115W.
8. Products Requiring Electrical Connection: Listed and classified by UL (DIR) as suitable for the purpose specified.

2.03 HINGES

A. Manufacturers: Conventional butt hinges.
1. BEST (BE)
2. Hager
3. McKinney

B. Properties:
1. Butt Hinges: As applicable to each item specified.
    1. Standard Weight Hinges: Minimum of two (2) permanently lubricated non-detachable bearings.

2. Heavy Weight Hinges: Minimum of four (4) permanently lubricated bearings on heavy weight hinges.
3. Template screw hole locations.
4. Bearing assembly installed after plating.
5. Bearings: Exposed fully hardened bearings.
6. Bearing Shells: Shapes consistent with barrels.
7. Pins: Easily seated, non-rising pins.
    1) Fully plate hinge pins.
    2) Non-Removable Pins: Slotted stainless steel screws.
8. UL 10C listed for fire-resistance-rated doors.

C. Sizes: See Door Hardware Schedule.
1. Hinge Widths: As required to clear surrounding trim.
2. Sufficient size to allow 180 degree swing of door.

D. Grades:
1. Butt Hinges: Comply with BHMA A156.1 and BHMA A156.7 for templated hinges.

E. Material: Base metal as indicated for each item by BHMA material and finish designation.

F. Types:
1. Butt Hinges: Include full mortise hinges.

G. Quantities:
1. Butt Hinges: Three (3) hinges per leaves up to 90 inches (2286 mm) in height. Add one (1) for each additional 30 inches (762 mm) in height or fraction thereof.
    1. Hinge weight and size unless otherwise indicated in hardware sets:
        1) For doors up to 36 inches (914 mm) wide and up to 1-3/4 inches (44.5 mm) thick provide hinges with a minimum thickness of 0.134 inch (3.4 mm) and a minimum of 4-1/2 inches (114 mm) in height.
        2) For doors from 36 inches (914 mm) wide up to 42 inches (1067 mm) wide and up to 1-3/4 inches (44.5 mm) thick provide hinges with a minimum thickness of 0.145 inch (3.7 mm) and a minimum of 4-1/2 inches (114 mm) in height.
        3) For doors from 42 inches (1067 mm) wide up to 48 inches (1219 mm) wide and up to 1-3/4 inches (44.5 mm) thick provide hinges with a minimum thickness of 0.180 inch (4.6 mm) and a minimum of 5 inches (127 mm) in height.
        4) For doors greater than 1-3/4 inches (44.5 mm) thick provide hinges with a minimum thickness of 0.180 inch (4.6 mm) and a minimum of 5 inches (127 mm) in height.

H. Products:
1. Butt Hinges:
    1. Ball Bearing, Five (5) Knuckle.

2.04 CONTINUOUS HINGES

A. Manufacturers:
1. National Guard Products (NA)
2. BEST
3. ABH

B. Properties:
1. Continuous Hinges: As applicable to each item specified.
    1. Geared Continuous Hinges: As applicable to each item specified.
        1) Non-handed.
        2) Anti-spinning through-fastener.
        3) UL 10C listed for fire-resistance-rated doors.
            (a) Metal Door Installation: Rated up to 90 minutes.

(b) Wood Door Installation: Rated up to 60 minutes.

4) Sufficient size to permit door to swing 180 degrees

C. Grades:
1. Continuous Hinges: Comply with BHMA A156.26, Grade 1.

D. Sizes: See Door Hardware Schedule.
1. Hinge Widths: As required to clear surrounding trim.
2. Sufficient size to allow 180 degree swing of door.

E. Code Compliance:
1. As required by authorities having jurisdiction in the State in which the Project is located.

F. Products:
1. HD1400A Series (1-3/4" thick doors)
2. HD2700A Series (2" thick doors)

2.05 REINFORCING PIVOT HINGES

A. Provide as specified.

2.06 BOLTS

A. Manufacturers:
1. Trimco (TR)
2. Baldwin
3. Burns

B. Properties:
1. Auto Flush Bolts:
1. Pairs of Swing Doors: At inactive leaves, provide flush bolts of type as required to comply with code.

C. Products:
1. Provide as specified

2.07 COORDINATORS

A. Manufacturers:
1. Trimco (TR)
2. Baldwin
3. Burns

B. Properties:
1. General: Non-handed devices, with field-selectable active door leaf.
2. Active door to be field-selectable.
3. Coordinators: Devices on pairs of doors with closers and self-latching or automatic flush bolts installed.
1. Coordinator Operation: Only when inactive door is opened.

C. Code Compliance: As required by authorities having jurisdiction in the State in which the Project is located.
1. Meet UL 10C for Positive Pressure.
2. Devices listed with California Department of Forestry and Fire Protection, Office of the State Fire Marshall.

D. Types:
1. Coordinators: Bar.

E. Installation:
1. Mounting: Provide necessary mounting brackets and filler bars to ensure proper installation of coordinator and related hardware.

1. Pull Side: Mount with electrically-held single-point hold open for the inactive door from approximately 80 to 130 degrees.
2. Push Side: Mount with electrically-held selective single-point hold open function for the active and inactive doors from approximately 80 to 120 degrees.

2. Coordination: Properly sequence installation of other door hardware affected by placement of coordinators and carry bars.

F. Products:
1. 3090 Series.

2.08 EXIT DEVICES

A. Manufacturers:
1. BEST (PR)
2. Detex
3. Von Duprin

B. Properties:
1. Actuation: Full-length touchpad.
2. Touchpads: 'T" style metal touchpads and rail assemblies with matching chassis covers end caps.
3. Latch Bolts: Stainless steel deadlocking with 3/4-inch projection using latch bolt.
4. Lever Design: Match project standard lockset trims.
5. Cylinder: Include where cylinder dogging or locking trim is indicated.
6. Strike as recommended by manufacturer for application indicated.
7. Sound dampening on touch bar.
8. Dogging:
   1. Non-Fire-Resistance-Rated Devices: Hex key 1/4 inch (6 mm) hex key dogging.
   2. Fire-Resistance-Rated Devices: Manual dogging not permitted.
9. Touch bar assembly on wide style exit devices to have a 1/4 inch clearance to allow for vision frames.
10. All exposed exit device components to be of architectural metals and "true" architectural finishes.
11. Handing: Field-reversible.
12. Fasteners on Back Side of Device Channel: Concealed - exposed fasteners not allowed.
13. Vertical Latch Assemblies' Operation: Gravity, without use of springs.

C. Grades: Complying with BHMA A156.3, Grade 1.
1. Provide exit devices tested and certified by UL or by a recognized independent laboratory for mechanical operational testing to 10 million cycles minimum with inspection confirming Grade 1 Loaded Forces have been maintained.

D. Options:
1. Electrified Devices:
2. Internally mounted switch used to signal other components.
3. Internally mounted switch that monitors the position of the latchbolt.
4. MLR: Motorized latch retraction.

E. Code Compliance:
1. As required by authorities having jurisdiction in the State in which the Project is located.

F. Products:
1. 2000 Series

2.09 REMOVABLE MULLIONS

A. Manufacturers:
1. BEST (PR)

2. Detex
3. Von Duprin

B. Properties:
1. Rectangular shape 3 inches (76 mm) by 2 inches (51 mm) tubes with minimum 1/8 inch wall thickness.
2. Furnished by the same manufacturer as exit devices.
3. Pre-drilled holes for installation of exit device strikes.
4. Spacers: Provide as required for proper installation, based on frame profile and dimensions.

C. Grades: Complying with BHMA A156.3.

D. Materials: Manufacturer's standard for items specified.
1. Top and Bottom Brackets: Investment-cast steel.

E. Options:
1. Furnish Keyed Removable "KR" feature and corresponding cylinders as specified.
1. Mullions capable of being installed without physical key present.
2. Physical key required to operate.

F. Applications: As indicated on drawings and in Door Hardware Schedule.
1. Fire-Resistance-Rated Openings: Mullions with UL Listed Labels and mullion stabilizers.

G. Products:
1. 822 Series.

2.10 LOCK CYLINDERS

A. Manufacturers:
1. BEST (BE)
2. Substitutions: Not permitted.

B. Properties:
1. Lock Cylinders: Provide key access on outside of each lock, unless otherwise indicated.
1. Provide cylinders from same manufacturer as locking device.
2. Provide cams and/or tailpieces as required for locking devices.
3. Provide cylinders with appropriate format interchangeable cores where indicated.

C. Grades:
1. Standard Security Cylinders: Comply with BHMA A156.5.

D. Material:
1. Manufacturer's standard corrosion-resistant brass alloy.

E. Types: As applicable to each item specified.
1. Standard security small format interchangeable core (SFIC) type cylinders, with seven-pin, 1C - 7-pin cores.

F. Applications: At locations indicated in hardware sets, and as follows
1. As required for items with locking devices provided by other sections, including at elevator controls and cabinets.
1. When provisions for lock cylinders are referenced elsewhere in the Project Manual to this Section, provide compatible type of lock cylinder, keyed to building keying system, unless otherwise indicated.

G. Products:
1. Rim/mortise.

2.11 MORTISE LOCKS

A. Manufacturers:
1. BEST (BE) See Owner's Preferred Hardware Alternate

2. Schlage
3. Sargent

B. Properties:
1. Mechanical Locks: Manufacturer's standard.
1. Fitting modified ANSI A115.1 door preparation.
2. Door Thickness Coordination Fitting 1-3/4 inch (44 mm) to 2-1/4 inch (57 mm) thick doors.
3. Latch: Anti-friction, self-lubricating stainless steel.
1) Latchbolt Throw: 3/4 inch minimum.
4. Auxiliary Deadlatch: One-piece stainless steel, permanently lubricated.
5. Backset: 2-3/4 inch.
6. Lever Trim:
1) Functionality: Allow the lever handle to move up to 45 degrees from horizontal position prior to engaging the latchbolt assembly.
2) Strength: Locksets outside locked lever designed to withstand minimum 1,400 inch-lbs (158.2 Nm) of torque. In excess of that, a replaceable part will shear. Key from outside and/or inside lever will still operate lockset.
3) Spindle: Designed to prevent forced entry from attacking of lever.
4) Independent spring mechanism for each lever.
(a) Trim to be self-aligning and thru-bolted.
5) Handles: Made of forged or cast brass, bronze, or stainless steel construction. Levers that contain a hollow cavity are not acceptable.
6) Levers to operate a roller bearing spindle hub mechanism.
2. Electrified Locks: Same properties as standard locks, and as follows:
1. Voltage: 24 VDC.
2. Function: Electrically locked (Fail Safe) or unlocked (Fail Secure), as indicated for each lock in Door Hardware Schedule.

C. Finishes: See Door Hardware Schedule.
1. Core Faces: Match finish of lockset.

D. Grades:
1. Comply with BHMA A156.13, Grade 1.

E. Options:
1. Provide locksets made in a manufacturing facility to compliant with ISO 9001-Quality Management and ISO 14001-Environmental Management.

F. Products: Mortise locks, including standard and electrified types.
1. 40H Series

2.12 AUXILIARY LOCKS (DEADLOCKS)

A. Manufacturers:
1. BEST (BE) See Owner's Prefered Hardware Alternate
2. Schlage
3. Sargent

B. Properties:
1. Backset: 2-3/4 inch (70 mm), unless otherwise indicated.
2. Strike: Appropriate for door frame.
3. Mortise Deadbolt: Manufacturer's standard, adjustable to accommodate range of door thickness indicated.
1. Door Thickness Fit: 1-3/4 inches (44 mm) to 2-1/4 inches (57 mm) thick doors.
2. Bolt Throw: 1 inch (25.4 mm) stainless steel.
3. UL listed for up to 3 hours.

4. Cylindrical Deadbolt: Manufacturer's standard, adjustable to accommodate range of door thicknesses indicated.
    1. Door Thickness Fit: 1-3/8 inches (35 mm) to 2 inches (51 mm) thick doors.
    2. Bolt Throw: 1 inch (25.4 mm) hardened steel.
    3. UL listed for up to 3 hours.
    4. Thumb Turns: Meet requirements of accessibility codes and regulations.

C. Grades:
1. Mortise Deadbolts: Tested and approved by BHMA A156.36,Operational Grade 1.
2. Cylindrical Deadbolts: Tested and approved by BHMA A156.36, Operational Grade 2.

D. Products:
1. 48/49H (Mortise).

2.13 CLOSERS

A. Manufacturers:
1. BEST (BE)
2. LCN 4040
3. Norton 7500

B. Properties:
1. Surface Mounted Closers: Manufacturer's standard.
    1. Construction: Cast iron.
    2. Maximum Projection from Face of Door: 2-7/16 inches.
    3. Mechanism: Separate tamper-resistant adjusting valves for closing and latching speeds.
        1) Include delayed action feature.
    4. Hydraulic Fluid: All-weather type.
    5. Arm Assembly: Standard for product specified.
        1) Include hold-open, integral stop, or spring-loaded stop feature, as specified in Door Hardware Schedule.
    6. Covers:
        1) Type: Standard for product selected.
            (a) Full.
        2) Material: Plastic.
        3) Finish: Painted.

C. Grades:
1. Closers: Comply with BHMA A156.4, Grade 1.
    1. Underwriters Laboratories Compliance:
        1) Product Listing: UL (DIR) and ULC for use on fire-resistance-rated doors.
            (a) UL 228 - Door Closers-Holders, With or Without Integral Smoke Detectors.

D. Installation:
1. Mounting: Includes surface mounted installations.
2. Mount closers on non-public side of door and stair side of stair doors unless otherwise noted in hardware sets.
3. At outswinging exterior doors, mount closer on interior side of door.
4. Provide adapter plates, shim spacers, and blade stop spacers as required by frame and door conditions.
5. Where an overlapping astragal is included on pairs of swinging doors, provide coordinator to ensure door leaves close in proper order.

E. Products:
1. Surface Mounted:
    1. EHD9000

2.14 SWINGING DOOR OPERATORS

A. Manufacturers:
   1. Dormakaba
   2. LCN

B. Properties:
   1. Where automatic operators are scheduled, provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by the manufacturer of the automatic operator for each individual leaf. Control both doors with actuators simultaneously at pairs. Locate actuators, key switches, and other controls as directed by Architect.
   2. Automatic Door Configuration:
      1. Configuration: Single swing door or pair of doors swinging.
      2. Traffic Pattern: As shown on drawings.
      3. Mounting: Surface applied.
   3. Low Energy Operators:
      1. Construction: Manufacturer's standard units with fine covers.
      2. Door Operation Limits:
         1) Weight: 220 lbs
         2) Width: 48 inches
         3) Temperature Range: 5 to 122 degrees F (Minus 15 to 50 degrees C).
      3. Function Adjustability: Selectable low-energy or power-assist applications. Low-energy function to cycle the door open as programmed. Power-assist function for decreased opening force when manually operated. Operator to have a programmable push-and-go functionality.
      4. Auxiliary Power Supply: 24VDC, 1.5A and form C relay contact for controlling fail safe/secure locking devices 50VAC or DC at 1A max.
      5. Programmable Operation: Include sweep speed, latch speed, and backcheck cushioning.
      6. Power-Open Functions: Include delay time, opening time, opening force, and opening angle.
         1) Angle and door width selector.
         2) Power boost feature.
   4. Additional Options:
      1. On-board cycle counter.
      2. Selectable jumper to accommodate push or pull side applications.
      3. On/off strike delay when the operator must delay while a locking device releases.
      4. Selectable on/off obstacle detection on closing.
      5. Wind Load and Stack Pressure microprocessor monitored with power boost to ensure secure opening and closing in changing conditions
      6. Power-hold Close
      7. Built in Lock Delay
      8. On-Off-Hold Open switch control to control door function, (Automatic-Hold Open- Exit Only)
      9. On-Off Power Switch
      10. Fire Alarm Integration
      11. Field Adjustable Handing
      12. Push and Go
      13. Power Assist Opening Activation
      14. Integrated access control
   5. Actuators:
      1. Touchless

2. Hard-Wired
3. Normally open switch. (tied to exit device switch)
4. Manufacturer: RCI

6. Bollards: (as required)
1. Hard-wired Units
2. Construction: Stainless-steel
3. Coordinate with actuators
4. Location: As directed by Architect.
5. Manufacturer: Wikk

C. Grades:
1. Comply with BHMA A156.19.
2. Underwriters Laboratories Compliance:
1. Product Listing: UL (DIR) and ULC for use on fire-resistance-rated doors.
2. United States: UL 325.

D. Code Compliance: As required by authorities having jurisdiction in the State in which the Project is located.

E. Types:
1. Low-Energy Operators:

F. Installation:
1. Where automatic operators are scheduled, provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by the manufacturer of the automatic operator. Locate the actuators, key switches, and other controls as directed by Architect.
2. Operators: Hard-wire every unit.
3. Operator Actuators: Include required back boxes, mounting rings, accessories as needed for fixed unit installation.

G. Products:
1. ED100LE Series

2.15 OVERHEAD STOPS AND HOLDERS

A. Manufacturers:
1. ABH Manufacturing (AB)
2. Rixson
3. Sargent

B. Properties:

C. Sizes: Manufacturer's standard for the application.

D. Finishes:
1. Arms and Brackets: Zinc-plated.

E. Grades: As applicable to item specified.
1. Comply with BHMA A156.8, Grade 1.

F. Material: Base metal as indicated for each item by BHMA material and finish designation.
1. Track Channel: Extruded aluminum alloy.
2. Slide Block: Machined from solid brass alloy.

G. Types:
1. Surface, as specified
2. Concealed, as specified

H. Products:
1. 9000 Heavy Duty

2. 4000 Medium Duty
3. 1000 Series Heavy Duty

2.16 DOOR PULLS AND PUSH PLATES

A. Manufacturers:
   1. Trimco (TR)
   2. Baldwin
   3. Burns

B. Properties:
   1. Pull Type: Straight, unless otherwise indicated.
   2. Push Plate Type: Flat, with square corners, unless otherwise indicated.
      1. Edges: Beveled, unless otherwise indicated.

C. Grades: Comply with BHMA A156.6.

D. Material: Stainless steel, unless otherwise indicated.

2.17 PROTECTION PLATES

A. Manufacturers:
   1. Trimco (TR)
   2. Baldwin
   3. Burns

B. Properties:
   1. Plates:
      1. Armor Plates: Provide on bottom half of push side of doors that require protection from objects moving through openings that may damage door surface.
      2. Kick Plates: Provide along bottom edge of push side of every wood door with closer, except aluminum storefront and glass entry doors, unless otherwise indicated.
      3. Mop Plates: Provide along bottom edge of pull side of doors to provide protection from cleaning liquids and equipment damage to door surface.
      4. Edges: Beveled, on four (4) unless otherwise indicated.

C. Grades: Comply with BHMA A156.6.

D. Material: As indicated for each item by BHMA material and finish designation.
   1. Metal Properties: Stainless steel.

E. Installation:
   1. Fasteners: Countersunk screw fasteners

2.18 STOPS AND HOLDERS

A. Manufacturers:
   1. Trimco (TR)
   2. Baldwin
   3. Burns

B. General: Provide overhead stop/holder when wall or floor stop is not feasible.

C. Grades:
   1. Door Holders, Wall Bumpers, and Floor Stops: Comply with BHMA A156.16 and Resilient Material Retention Test as described in this standard.

D. Material: Base metal as indicated for each item by BHMA material and finish designation.

E. Types:
   1. Wall Bumpers: Bumper, concave, wall stop.
   2. Floor Stops: Provide with bumper floor stop.

F. Installation:

1. Non-Masonry Walls: Confirm adequate wall reinforcement has been installed to allow lasting installation of wall bumpers.

G. Products:
1. Wall Bumpers.
2. Floor Stops.

2.19 ELECTROMAGNETIC DOOR HOLDERS

A. Manufacturers:
1. ABH (AB)
2. Dormakaba
3. Rixson

B. Properties:
1. Holding Force, Standard Duty: 40 lbs-force (177 N), minimum.
2. Holding Force, Heavy Duty: 300 lbs-force (1334 N), minimum.
3. Power Loss Status: Fail safe; door released to close.
4. Life Safety Interface: With fire detectors, fire-alarm system, and smoke detectors for fire-resistance-rated door assemblies.
5. Access Control Interface: With security system specified in Division 28.

C. Grades: Comply with BHMA A156.15.

D. Types: Wall mounted, single unit, standard duty, with strike plate attached to door.

E. Options: As applicable to each item specified.
1. Voltage: 12/24 VAC.

F. Products:
1. 2100 Series
2. EM Series.

2.20 THRESHOLDS

A. Manufacturers:
1. National Guard Products (NA)
2. Zero (ZE)
3. Reese

B. Properties:
1. Threshold Surface: Fluted horizontal grooves across full width.
2. Exteriors: Seal perimeter to exclude water and vermin. Use butyl-rubber or polyisobutylene sealant complying with requirements in Division 7 "Thermal and Moisture Protection". Non-ferrous 1/4inch fasteners and lead expansion shield anchors, or Red-Head #SFS-1420 (or approved equivalent) Flat Head Sleeve Anchors (SS/FHSL).
3. Fire-rated openings, 90 min or less duration: use thresholds to interrupt floor covering material under the door where that material has a critical radiant flux value less than 0.22 watts per square centimeter, per NFPA 253. Use threshold unit as scheduled. If none scheduled, request direction from Architect.
4. Fire-rated openings, 3hour duration: Thresholds, where scheduled, to extend full jamb depth.
5. Plastic plugs with wood or sheet metal screws are not an acceptable substitute for specified fastening methods.

C. Grades: Thresholds: Comply with BHMA A156.21.

D. Material: Base metal as indicated for each item by BHMA material and finish designation.
1. Threshold Assemblies: Aluminum.

E. Types: As applicable to project conditions. Provide barrier-free type at every location where specified.

1. Saddle Thresholds: Without thermal break.
2. Half-Saddle Thresholds: Smooth flat top metal member installed flush with an offset.
3. Interlocking Thresholds: Fluted-top metal member with integral single lip; designed to engage a hook strip applied to door.
4. Bumper Seal Thresholds with Gasket: Use silicone gaskets.
5. Plate Thresholds: Smooth flat top solid metal member.
    1. Include matching plate supports where indicated or required by project conditions.
6. Ramped Thresholds: Modular, interlocking, sloped, fluted-top metal assemblies with closed return ends; 1:12 slope.
7. Saddle Thresholds for Floor Closers: Type 1, for center-hung doors; ends not mitered.
8. Stone thresholds: Solid stone material as required for water closet areas.
9. Solid thresholds: Where auto door bottoms are specified.

2.21 WEATHERSTRIPPING AND GASKETING

A. Manufacturers:
1. National Guard Products (NA)
2. Zero (ZE)
3. Reese

B. Properties:
1. Weatherstripping Air Leakage Performance: Not exceeding 0.3 cfm/sq ft of door opening at 0.3 inches of water pressure differential for single doors, and 0.5 cfm/sq ft of door area at 0.3 inches of water pressure differential for double doors for gasketing other than smoke control, as tested according to ASTM E283/E283M; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.
2. Adhesive-Backed Perimeter Gasketing: Slilicone gasket material applied to frame with self- adhesive.
3. Rigid, Housed, Perimeter Gasketing: Sponge silicone gasket material held in place by aluminum housing; fastened to frame stop with screws.
4. Adjustable, Housed, Perimeter Gasketing, Screw-Adjustable: Sponge silicone gasket material held in place by aluminum housing; fastened to frame stop with screws.
5. Overlapping Astragals for Meeting Stiles: Neoprene strip gasket material held in place by aluminum housing and overlapping when doors are closed; mounted to face of meeting stile with screws; surface mounted to door.
6. Meeting Astragals for Meeting Stiles: Silicone bulb gasket material held in place by aluminum housing; mounted with screws.
    1. Mounting: Surface mounted on face of each door.
7. Spring Adjustable Astragals for Meeting Stiles: Screw-adjustable silicone gasket material held in place by aluminum housing; mounted with screws.
    1. Mounting: Surface mounted on face of each door.
8. Door Sweeps: Neoprene gasket material held in place by flat aluminum housing or flange; surface mounted to face of door with screws.
9. Door Shoes: Thermoplastic elastomer gasket material held in place by metal retainer; mounted to bottom edge of door with screws.
    1. Mounting: Surface mounted on bottom edge of door.
    2. Extended Housing: One side of door.
10. Automatic Door Bottoms: Sponge neoprene gasket material held in place by aluminum housing that automatically drops to form seal when door is closed.
    1. Mounting: Surface mounted with screws on bottom edge of door.
11. FEMA: Provide FEMA rated products as required.

C. Grades: Comply with BHMA A156.22.

D. Products:

1. Weatherstripping: See Door Hardware Schedule.
2. Smoke Seals: See Door Hardware Schedule.
3. Sound Seals: See Door Hardware Schedule.
4. Meeting Stile Seals: See Door Hardware Schedule.
5. Door Bottom Seals:
    1. Door Sweeps: See Door Hardware Schedule.
    2. Door Bottoms: See Door Hardware Schedule.
    3. Door Shoes: See Door Hardware Schedule.
    4. Automatic Door Bottoms: See Door Hardware Schedule.

2.22 MISCELLANEOUS ITEMS

A. Manufacturers:
1. Trimco (TR)
2. Baldwin
3. Burns

B. Properties:
1. Coat Hooks: Provide on room side of door, screw fastened.
    1. Material: Brass.
2. Silencers: Provide at equal locations on door frame to mute sound of door's impact upon closing.
    1. Single Door: Provide three on strike jamb of frame.
    2. Pair of Doors: Provide two on head of frame, one for each door at latch side.
    3. Material: Rubber, gray color.

C. Products:
1. Coat Hooks.
2. Silencers.

2.23 ELECTRIFIED HARDWARE

A. Manufacturers:
1. BEST (BE)
2. RCI

B. Properties:
1. Power Supply Units: Manufacturer's standard.
    1. Enclosures: Lockable NEMA Type 1, with hinged cover and knockouts.
    2. Power: 24 VCS, 6 Amp surge for 0.5 seconds; field-selectable.
    3. Emergency Release Terminals: Designed to release devices upon activation of fire alarm system.
    4. Auxiliary contacts for remote signaling.
    5. User-selectable time delay from 0 to 4 minutes.
    6. Fire Alarm System Interface: Standard.
2. Wire Harnesses: Of sufficient length, with quick connectors.
    1. Wire Harness End Connection to Power Supply or Junction Box: One end with bare leads.
3. Push Button Switches: Interior devices to initiate door opening.

C. Products:
1. Power Supplies:
    1. ELR150 Series
2. Wire Harnesses:
    1. BEST wire harnesses.

2.24 KEYS AND CORES

A. Manufacturers:
   1. BEST (BE)
   2. Substitutions: Not permitted.

B. Properties: Complying with guidelines of BHMA A156.28.
   1. Provide small format interchangeable core.
   2. Provide Patented CORMAX keys and cores.
   3. Provide keying information in compliance with DHI (KSN) standards.
   4. Keying Schedule: Arrange for a keying meeting, with Architect, Owner and hardware supplier, and other involved parties to ensure locksets and locking hardware, are functionally correct and keying complies with project requirements.
   5. Keying: Master keyed.
   6. Include construction keying and control keying with removable core cylinders.
   7. For estimate, supply keys in following quantities:
      1. Master Keys: 4 each.
      2. Construction Master Keys: 6 each.
      3. Construction Keys: 15 each.
      4. Construction Control Keys: 2 each.
      5. Control Keys if New System: 2 each.
   8. Provide key collection envelopes, receipt cards, and index cards in quantity suitable to manage number of keys.
   9. Deliver keys as directed by Facility.
   10. Permanent Keys and Cores: Stamped with applicable key marking for identification. Do not include actual key cuts within visual key control marks or codes. Stamp permanent keys "Do Not Duplicate."
   11. Include installation of permanent cores and return construction cores to hardware supplier. Construction cores and keys to remain property of hardware supplier.

C. Products:
   1. Patented:
      1. CORMAX.

2.25 KEY CONTROL SYSTEMS

A. Manufacturers:
   1. BEST
   2. Substitutions: Not permitted.

B. Properties: Manufacturer's scalable system for keeping track of keys, users, and doors.
   1. Key Management System: For each keyed lock on project, provide one set of consecutively numbered duplicate key tags with hanging hole and snap catch.
   2. Password Policy for Logins: Configurable.
   3. User Interface: Tile icons and customizable dashboard.
   4. Importing and Appending Data: At any time.
   5. User Directory Synchronization: Active, reducing manual entry.
   6. Email Notifications: Configurable for keys and other items currently due back on a designated day, notifications when keys and items are issued, and notifications when keys and other items are returned.
   7. Global Search Functionality: Capable of listing cores and their location, building, and doors.
   8. Relational Database: Allowing cross-referencing of people to cores and keys, doors, and buildings they access.
   9. Reports: Customizable.
   10. Self-service Password retrieval functionality.

11. Program Installation: Standalone.
12. Software Access: Allowing authorized users secure access to the software from anywhere, provided user can access their organization's secure network.
13. Minimum Installation Requirements: As indicated in manufacturer's written installation instructions.

C. Products:
1. Keystone Web.

2.26 FIRE DEPARTMENT LOCK-BOXES

A. Manufacturers:
1. Knox Company

B. Properties:
1. Heavy-duty, recessed, solid steel box with hinged door and interior gasket seal; single drill-resistant lock with dust covers and tamper alarm.
2. Capacity: Holds 10 keys.
3. Construction complying with UL 1037, UL 1610, and UL 437.

C. Finishes: Manufacturer's standard coating.
1. Color: Manufacturer's standard dark bronze.

D. Material: Steel.

E. Options:. As applicable to each item specified.
1. Tamper Alarm: Connect alarm to facility electronic security system.

F. Products:
1. Knox: Coordinate location with Architect. Provide submittal for review before fabrication or ordering.

2.27 FINISHES

A. Identified in Hardware Sets.

B. Finishes: Provide door hardware of same finish, unless otherwise indicated.
1. Finish: 630; satin stainless steel, with stainless steel 3000 series base material (former US equivalent 32D), 652; satin chromium plated over nickel, with steel base material (former US equivalent 26D), and 689; aluminum painted, with any base material (former US equivalent US28); BHMA A156.18.
2. Exceptions:
1. Where base material metal is specified to be different, provide finish that is an equivalent appearance in accordance with BHMA A156.18.
2. Hinges for Fire-Rated Doors: Steel base material with painted finish, in compliance with NFPA 80.
3. Door Closer Covers and Arms: Color as selected by Architect from manufacturer's standard colors unless otherwise indicated.
4. Aluminum Surface Trim and Gasket Housings: Anodized to match door panel finish, not other hardware, unless otherwise indicated.
5. Hardware for Aluminum Storefront Doors: Finished to match door panel finish, except at hand contact surfaces provide stainless steel with satin finish, unless otherwise indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings.

B. Correct all defects prior to proceeding with installation.

C. Verify that electric power is available to power operated devices and of correct characteristics.

3.02 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions and applicable codes.

B. Install hardware using the manufacturer's fasteners provided. Drill and tap all screw holes located in metallic materials. Do not use "Riv-Nuts" or similar products.

C. Install hardware on fire-rated doors and frames in accordance with applicable codes and NFPA 80.

D. Install hardware for smoke and draft control doors in accordance with NFPA 105.

E. Use templates provided by hardware item manufacturer.

F. Do not install surface mounted items until application of finishes to substrate are fully completed.

G. Wash down masonry walls and complete painting or staining of doors and frames.

H. Complete finish flooring prior to installation of thresholds.

I. Set exterior door thresholds and solid thresholds out of water closets with full-width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.

J. Include in installation for existing doors and frames any necessary field modification and field preparation of doors and frames for new hardware. Provide necessary fillers, reinforcements, and fasteners for mounting new hardware and to cover existing door and frame preparations.

K. Hardware Installer shall coordinate with Security contractor to route cable to connect electrified locks, panic hardware, and fire exit hardware to power transfers or electric hinges at the time these items are installed so as to avoid disassembly and reinstallation of hardware.

L. Make all connections required for proper operation between the power supply and the electro-mechanical hardware. Provide the proper size conductors as specified in the manufacture's technical documentation

3.03 FIELD QUALITY CONTROL

A. Perform field inspection and testing under provisions of Section 014000 - Quality Requirements.

B. Provide an Architectural Hardware Consultant (AHC) to inspect installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's instructions and as specified.

3.04 ADJUSTING

A. Adjust work under provisions of Section 017000 - Execution and Closeout Requirements.

B. Adjust hardware for smooth operation.

C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

3.05 CLEANING

A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.

B. Clean adjacent surfaces soiled by hardware installation activities.

C. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.

D. See Section 017419 - Construction Waste Management and Disposal, for additional requirements.

3.06 PROTECTION

A. Protect finished Work under provisions of Section 017000 - Execution and Closeout Requirements.

B. Do not permit adjacent work to damage hardware or finish.

3.07 HARDWARE SETS

A. See door schedule in drawings for hardware set assignments.

B. The hardware sets represent the basis of design intent and direction of the owner and architect. They should not be considered a detailed hardware schedule. Detailed or omitted items not included in the following hardware set(s) should be scheduled and submitted with the appropriate additional hardware required for proper application and functionality.

C. Manufacturer's Abbreviations:

1. BE BEST
2. PR Precision
3. DM Dormakaba
4. LC LCN
5. TR Trimco
6. AB ABH Manufacturing
7. ZE Zero
8. MA Markar
9. NA National Guard Products
10. RC RCI

Hardware Sets

Set #001

Doors: A101A, F108B, F108C

2	Continuous Hinge	HD2700A (2" thick doors)		NA
1	Removable Mullion	KR822 MCS	689	PR
1	Storage Kit	KMCB822SK (as required)	689	PR
1	Exit Device	2101 LD SNB (6)	630	PR
1	Exit Device	2103 X 1703A CD SNB (2)	630	PR
2	Rim Cylinder	12E-72 L/C	626	BE
1	Mortise Cylinder	1E-74 L/C	626	BE
3	SFIC	1CDX Series	626	BE
2	Closer	EHD9016 SDST TB	689	BE
1	Mullion Seal	5100N		NA
1	Meeting Edge Seal	5070 (as required)		NA
1	Perimeter Seal	700S @ Head & Jambs		NA
2	Door Bottom	200SA		NA
1	Threshold	Per Detail	AL	NA
2	Position Switch	By Security Provider	BLK	RC
1	Wiring & Riser Diagrams	Coordinate w/ Related Trades		

NOTE: Verify hardware as required for door type and material.
NOTE: Provide thru bolts for closers for both 1-3/4" and 2" thick doors.
NOTE: Coordinate additional requirements with Security and Electrical drawings.

Set #002

Doors: A101B

1	Continuous Hinge	HD2700A x EPT (2" Thick Doors)		NA
1	Continuous Hinge	HD2700A (2" thick doors)		NA
1	Removable Mullion	KR822 MCS	689	PR
1	Storage Kit	KMCB822SK (as required)	689	PR
1	Exit Device	TSLS 2101 CD SNB (6)	630	PR
1	Exit Device	MLR TS LS 2103 X 1703A CD SNB (2)	630	PR
2	Rim Cylinder	12E-72 L/C	626	BE
1	Mortise Cylinder	1E-74 L/C	626	BE
3	SFIC	1CDX Series	626	BE
1	Automatic Operator	ED100LE (In-active Leaf)	CL	DM
1	Closer	EHD9016 SDST TB	689	BE
1	Mullion Seal	5100N		NA
1	Meeting Edge Seal	5070 (as required)		NA
1	Perimeter Seal	700S @ Head & Jambs		NA
2	Door Bottom	200SA		NA
1	Threshold	Per Detail	AL	NA
2	Touchless Actuator	910TC	BLK	RC
1	Power Supply	RPSMLR2		
1	Power Transfer	EPT-12C	630	PR
2	Position Switch	By Security Provider	BLK	RC
1	Wiring & Riser Diagrams	Coordinate w/ Related Trades		

NOTE: Coordinate additional requirements with Security and Electrical drawings.

Set #003

Doors: A179A

2	Continuous Hinge	HD2700A x EPT (2" Thick Doors)		NA
1	Removable Mullion	KR822 MCS	689	PR
1	Storage Kit	KMCB822SK (as required)	689	PR
1	Exit Device	TSLS 2101 LD SNB (6)	630	PR
1	Exit Device	MLR TS LS 2103 X 1703A CD SNB (2)	630	PR
1	Mortise Cylinder	1E-74 L/C	626	BE
2	Rim Cylinder	12E-72 L/C	626	BE
3	SFIC	1CDX Series	626	BE
2	Closer	EHD9016 SDST TB	689	BE
2	Custom Hole Spacer	4040XP-201-ST1944		LC
1	Mullion Seal	5100N		NA
1	Perimeter Seal	700S @ Head & Jambs		NA
1	Meeting Edge Seal	5070 (as required)		NA
2	Door Bottom	200SA		NA
1	Threshold	Per Detail	AL	NA
1	Power Supply	RPSMLR2		PR
2	Power Transfer	EPT-12C	630	PR
2	Position Switch	By Security Provider	BLK	RC
1	Remote Switch	By Security Provider		
1	Card Reader	By Security Provider		
1	Junction Box	By Security Provider		
1	Wiring & Riser Diagrams	Coordinate w/ Related Trades		

Set #003

NOTE: Card reader to retract active door latch for authorized access.
NOTE: Provide remote switch at reception desk for monitored access.
NOTE: Coordinate additional requirements with Security and Electrical drawings.

Set #004

Doors: A103A

2	Continuous Hinge	HD2700A x EPT (2" Thick Doors)		NA
1	Removable Mullion	KR822 MCS	689	PR
1	Storage Kit	KMCB822SK (as required)	689	PR
1	Exit Device	TSLS 2101 CD SNB (6)	630	PR
1	Exit Device	MLR TSLS 2103 X 1703A CD SNB (2)	630	PR
1	Mortise Cylinder	1E-74 L/C	626	BE
2	Rim Cylinder	12E-72 L/C	626	BE
3	SFIC	1CDX Series	626	BE
1	Automatic Operator	ED100LE (In-active Leaf)	CL	DM
1	Closer	EHD9016 SDST TB	689	BE
1	Custom Hole Spacer	4040XP-201-ST1944		LC
1	Mullion Seal	5100N		NA
1	Perimeter Seal	700S @ Head & Jambs		NA
1	Meeting Edge Seal	5070 (as required)		NA
2	Door Bottom	200SA		NA
1	Threshold	Per Detail	AL	NA
2	Touchless Actuator	910TC	BLK	RC
1	Power Supply	RPSMLR2		PR
2	Power Transfer	EPT-12C	630	PR
2	Position Switch	By Security Provider	BLK	RC
1	Remote Switch	By Security Provider		
1	Card Reader	By Security Provider		
1	Junction Box	By Security Provider		
1	Wiring & Riser Diagrams	Coordinate w/ Related Trades		

NOTE: Card reader to retract active door latch for authorized access.
NOTE: Provide remote switch at reception desk for monitored access.
NOTE: Retracting or dogging in-active door latch triggers LS switch enabling exterior actuator.
NOTE: Coordinate additional requirements with Security and Electrical drawings.

Set #005

Doors: A134A, B118, C118A, D108A, E110, F107B, G101B, H101B

Set #005

2	Continuous Hinge	HD2700A x EPT (2" Thick Doors)		NA
1	Removable Mullion	KR822 MCS	689	PR
1	Storage Kit	KMCB822SK (as required)	689	PR
1	Exit Device	TSLS 2101 LD SNB (6)	630	PR
1	Exit Device	MLRTSLS 2103 X 1703A CD SNB (2)	630	PR
2	Rim Cylinder	12E-72 L/C	626	BE
1	Mortise Cylinder	1E-74 L/C	626	BE
3	SFIC	1CDX Series	626	BE
2	Closer	EHD9016 SDS90 TB	689	BE
1	Mullion Seal	5100N		NA
1	Meeting Edge Seal	5070 (as required)		NA
1	Perimeter Seal	700S @ Head & Jambs		NA
2	Door Bottom	200SA		NA
1	Threshold	Per Detail	AL	NA
1	Power Supply	RPSMLR2		PR
2	Power Transfer	EPT-12C	630	PR
2	Position Switch	By Security Provider	BLK	RC
1	Card Reader	By Security Provider		
1	Junction Box	By Security Provider		
1	Wiring & Riser Diagrams	Coordinate w/ Related Trades		

NOTE: Card reader to retract active door latch for authorized access.
NOTE: Coordinate additional requirements with Security and Electrical drawings.

Set #006

Doors: A134B, C118B, D108B, D123, E124, F101, G101A, H101A

2	Continuous Hinge	HD2700A (2" thick doors)		NA
1	Removable Mullion	KR822 MCS	689	PR
1	Storage Kit	KMCB822SK (as required)	689	PR
1	Exit Device	2101 LD SNB (6)	630	PR
1	Exit Device	2103 X 1703A CD SNB (2)	630	PR
2	Rim Cylinder	12E-72 L/C	626	BE
1	Mortise Cylinder	1E-74 L/C	626	BE
3	SFIC	1CDX Series	626	BE
2	Closer	EHD9016 SDS90 TB	689	BE
1	Mullion Seal	5100N		NA
1	Meeting Edge Seal	5070 (as required)		NA
1	Perimeter Seal	700S @ Head & Jambs		NA
2	Door Bottom	200SA		NA
1	Threshold	Per Detail	AL	NA
2	Position Switch	By Security Provider	BLK	RC
1	Wiring & Riser Diagrams	Coordinate w/ Related Trades		

NOTE: Coordinate additional requirements with Security and Electrical drawings.

Set #007

Doors: B101B, B121, B122B, C110B, C115A, C118C, F102B, F112B

Set #007

1	Continuous Hinge	HD2700A (2" thick doors)		NA
1	Continuous Hinge	HD1400A (1-3/4" thick doors)		NA
1	Exit Device	2101 LD SNB (6)	630	PR
1	Closer	EHD9016 SDS90 TB	689	BE
1	Custom Hole Spacer	4040XP-201-ST1944		LC
1	Perimeter Seal	700S @ Head & Jambs		NA
1	Door Bottom	200SA		NA
1	Threshold	Per Detail	AL	NA
1	Position Switch	By Security Provider	BLK	RC
1	Wiring & Riser Diagrams	Coordinate w/ Related Trades		

NOTE: Coordinate additional requirements with Security and Electrical drawings.
NOTE: Provide continuous hinge for door thickness as required.

Set #008

Doors: B112, B113

1	Continuous Hinge	HD2700A (2" thick doors)		NA
1	Exit Device	2103 X 1703A LD SNB (2)	630	PR
1	Rim Cylinder	12E-72 L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 SDST TB	689	BE
1	Gasketing	5020 @ Head & Jambs		NA
1	Door Bottom	200SA		NA
1	Threshold	Per Detail	AL	NA

Set #009

Doors: B114, B115A

1	Continuous Hinge	HD2700A (2" thick doors)		NA
1	Lockset	45H-7XR14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Latch Protector	ILP-212	SL	DJ
1	Closer	EHD9016 AF90 REG TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
1	Gasketing	5020 @ Head & Jambs		NA
1	Door Bottom	15NA		NA
1	Threshold	Per Detail	AL	NA

Set #010

Doors: B119B

Set #010

2	Continuous Hinge	HD2700A (2" thick doors)		NA
1	Removable Mullion	KR822 MCS	689	PR
1	Storage Kit	KMCB822SK (as required)	689	PR
1	Exit Device	2101 LD SNB (6)	630	PR
1	Exit Device	2103 X 1703A LD SNB (2)	630	PR
2	Rim Cylinder	12E-72 L/C	626	BE
2	SFIC	1CDX Series	626	BE
2	Closer	EHD9016 SDS90 TB	689	BE
1	Mullion Seal	5100N		NA
1	Meeting Edge Seal	5070 (as required)		NA
1	Perimeter Seal	700S @ Head & Jambs		NA
2	Door Bottom	200SA		NA
1	Threshold	Per Detail	AL	NA
2	Position Switch	By Security Provider	BLK	RC
1	Wiring & Riser Diagrams	Coordinate w/ Related Trades		

NOTE: Coordinate additional requirements with Security and Electrical drawings.

Set #011

Doors: FH01A, FH06A

3	Hinges	STS FBB191 NRP	32D	BE
1	Storeroom Lockset	45H-7D14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Latch Protector	ILP-212	SL	DJ
1	Closer	EHD9016 AF90 REG TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Door Stop	1215CKU or 1270CXSV (as required)	626	TR
1	Door Bottom	15NA		NA
1	Threshold	Per Detail	AL	NA

Set #012

Doors: FH02, FH03, FH04, FH05

1	Continuous Hinge	HD2700A (2" thick doors)		NA
1	Deadlock	48H-7R L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Push Plate	1802-25CC-PH	630	TR
1	Pull Plate	1802-25CC-PL	630	TR
1	Closer	EHD9016 T90	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Door Stop	1215CKU or 1270CXSV (as required)	626	TR
3	Silencer	1229 Series	GRY	TR
1	Threshold	Per Detail	AL	NA

Set #013

Doors: MP01, MP02A, ~~MP02B~~, MP03, MP04

Set #013

3	Hinges	STS FBB191 NRP	32D	BE
1	Storeroom Lockset	45H-7D14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 SDST TB	689	BE
1	Gasketing	5020 @ Head & Jambs		NA
1	Threshold	Per Detail	AL	NA

Set #100

Doors: A102A, A119, A125, A127, A139, B017

3	Hinge	FBB179 NRP	26D	BE
1	Storeroom Lockset	45H-7D14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
3	Silencer	1229 Series	GRY	TR

Set #101 - Overhead

Doors: A102B, B103, B106A, B115B, FH01B, FH06B

NOTE: All hardware provided by door manufacturer.

Set #102

Doors: A103B, A179B

2	Continuous Hinge	HD2700A x EPT (2" Thick Doors)		NA
1	Removable Mullion	KR822 MCS	689	PR
1	Storage Kit	KMCB822SK (as required)	689	PR
1	Exit Device	TSLS 2101 LD SNB (6)	630	PR
1	Exit Device	MLRTSLS 2103 X 1703A CD SNB (2)	630	PR
2	Rim Cylinder	12E-72 L/C	626	BE
1	Mortise Cylinder	1E-74 L/C	626	BE
3	SFIC	1CDX Series	626	BE
2	Closer	EHD9016 SDST TB	689	BE
1	Weatherstrip	By Door Mfr.		
1	Mullion Seal	5100N		NA
1	Threshold	Per Detail	AL	NA
1	Power Supply	RPSMLR2		PR
2	Power Transfer	EPT-12C	630	PR
2	Position Switch	By Security Provider	BLK	RC
1	Remote Switch	By Security Provider		
1	Card Reader	By Security Provider		
1	Junction Box	By Security Provider		
1	Wiring & Riser Diagrams	Coordinate w/ Related Trades		

NOTE: Card reader to retract active door latch for authorized access.
NOTE: Provide remote switch at reception desk for monitored access.
NOTE: Coordinate additional requirements with Security and Electrical drawings.

Set #103

Doors: A104A, A104B, A126B, A154, A175A, A175B

Set #103

3	Hinge	FBB179 NRP	26D	BE
1	Office Lockset	45H-7AT15H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 AF90 REG TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
3	Silencer	1229 Series	GRY	TR

Set #104

Doors: A105, A108, A109, A117, A120, A122, A123, A128, A129, A130, A131, A156, A157, A158, A159, A160, A161, A164, A165, A170, A171, A172, C210, F114, F115

3	Hinge	FBB179 NRP	26D	BE
1	Office Lockset	45H-7AT15H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Wall Bumper	1270CXSV	626	TR
3	Silencer	1229 Series	GRY	TR

Set #105

Doors: A106, A174

3	Hinge	FBB179 NRP	26D	BE
1	Office Lockset	45H-7AT15H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 AF90 REG TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
1	Gasketing	5020 @ Head & Jambs		NA
1	Auto Door Bottom	423N or 320S (as required)		NA
1	Solid Threshold	Per Detail	AL	NA

NOTE: Coordinate door undercut with auto door bottom and threshold.

Set #106

Doors: A107, A173

3	Hinge	FBB179 NRP	26D	BE
1	Privacy Indicator Lock	45H-7T14H L/C VIB	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 DST90 TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Gasketing	5020 @ Head & Jambs		NA
1	Marble Threshold	Per Detail		

Set #107

Doors: A110, A111, A168, A169, B109, C114, C224, C225

Set #107

3	Hinge	FBB179 NRP	26D	BE
1	Privacy Indicator Lock	45H-7T14H L/C VIB	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 AF90 REG TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Mop Plate	KM050 6" x 1" LDW x CSK B4E	630	TR
1	Gasketing	5020 @ Head & Jambs		NA
1	Marble Threshold	Per Detail		

Set #108

Doors: A112, A155, A163, A167, A203, C105, C123, C213, C219, F109, F119

3	Hinge	FBB179 NRP	26D	BE
1	Storeroom Lockset	45H-7D14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Wall Bumper	1270CXSV	626	TR
3	Silencer	1229 Series	GRY	TR

Set #109

Doors: A113, A124, A162A, D126, D226, E128, F207, G219, H125, H204

3	Hinge	FBB179 NRP	26D	BE
1	Storeroom Lockset	45H-7D14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 AF90 REG TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Door Stop	1215CKU or 1270CXSV (as required)	626	TR
3	Silencer	1229 Series	GRY	TR

Set #110

Doors: A126A

3	Hinge	FBB179 NRP	26D	BE
1	Entry Lockset	45H-7A14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 AF90 REG TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
1	Gasketing	5020 @ Head & Jambs		NA

Set #111

Doors: A132, C226

3	Hinge	FBB179 NRP	26D	BE
1	Storeroom Lockset	45H-7D14H L/C	626	BE
1	Closer	EHD9016 AF90P	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
1	Gasketing	5020 @ Head & Jambs		NA

Set #112

Doors: A135, A136

3	Hinge	FBB179 NRP	26D	BE
1	Storeroom Lockset	45H-7D14H L/C TAC/O	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 AF90 REG TB	689	BE
1	Wall Bumper	1270CXSV	626	TR
1	Gasketing	5020 @ Head & Jambs		NA

Set #113

Doors: A142A, A142B

2	Continuous Hinge	HD1400A (1-3/4" thick doors)		NA
1	Removable Mullion	KR822 MCS	689	PR
1	Storage Kit	KMCB822SK (as required)	689	PR
1	Exit Device	2101 LD SNB (6)	630	PR
1	Exit Device	2103 X 1703A CD SNB (2)	630	PR
2	Rim Cylinder	12E-72 L/C	626	BE
1	Mortise Cylinder	1E-74 L/C	626	BE
3	SFIC	1CDX Series	626	BE
2	Closer	EHD9016 SPA90 TB	689	BE
1	Wall Bumper	1270CXSV	626	TR
2	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Mullion Seal	5100N		NA
1	Gasketing	2525 @ Head & Jambs		NA
1	Threshold	Per Detail	AL	NA

Set #114

Doors: A142C, A142D

2	Continuous Hinge	HD1400A (1-3/4" thick doors)		NA
1	Removable Mullion	FLKR822 MCS	689	PR
1	Storage Kit	KMCB822SK (as required)	689	PR
1	Exit Device	FL 2101 SNB (6)	630	PR
2	Exit Device	FL 2110VI X 4908D SNB (2)	630	PR
3	Rim Cylinder	12E-72 L/C	626	BE
3	SFIC	1CDX Series	626	BE
2	Closer	EHD9016 SDS90 TB	689	BE
2	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Mullion Seal	5100N		NA
1	Gasketing	2525 @ Head & Jambs		NA
1	Threshold	Per Detail	AL	NA

Set #115

Doors: A144, A148

Set #115

3	Hinges	STS FBB199 NRP	32D	BE
1	Push Plate	1802-25-PH	630	TR
1	Pull Plate	1802-25-PL	630	TR
1	Closer	EHD9016 SDST TB	689	BE
1	Wall Bumper	1270CXSV	626	TR
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Mop Plate	KM050 6" x 1" LDW x CSK B4E	630	TR
3	Silencer	1229 Series	GRY	TR

Set #116

Doors: A145, A147

3	Hinges	STS FBB191 NRP	32D	BE
1	Office Lockset	45H-7AT15H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
3	Silencer	1229 Series	GRY	TR

Set #117

Doors: B119A, D111, D112, D211, D219, E120, E121, E220, E221, G108, G124, G206, G218, H108, H129, H215, H216

3	Hinge	FBB179 NRP	26D	BE
1	Lockset	45H-7XR14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 AF90 REG TB	689	BE
1	Wall Bumper	1270CXSV	626	TR
1	Gasketing	5050 @ Head & Jambs		NA
1	Bumper Seal Threshold	950S	AL	NA

NOTE: Coordinate door undercut with bumper seal threshold.

Set #118

Doors: A150

6	Hinge	FBB179 NRP	26D	BE
1	Semi-Auto Flushbolt	3825L X 3815L	626	TR
1	Dust Proof Strike	3910 or 3910N (as required)	630	TR
1	Lockset	45H-7XR14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 SDST TB	689	BE
2	Kick Plate	K0050 10" x 1" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
2	Silencer	1229 Series	GRY	TR

NOTE: Closer on active door only.

Set #119

Doors: A151

Set #119

3	Hinge	FBB179 NRP	26D	BE
1	Storeroom Lockset	45H-7D14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 AF90 REG TB	689	BE
1	Wall Bumper	1270CXSV	626	TR
1	Gasketing	5050 @ Head & Jambs		NA
1	Threshold	Per Detail	AL	NA

Set #120

Doors: A162B

3	Hinge	FBB179 NRP	26D	BE
1	Passage Set	45H-0N14H	626	BE
1	Closer	EHD9016 DST90 TB	689	BE
3	Silencer	1229 Series	GRY	TR

Set #121

Doors: A180

3	Hinge	FBB179 NRP	26D	BE
1	Storeroom Lockset	45H-7D14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 SPA90 TB	689	BE
1	Wall Bumper	1270CXSV	626	TR
1	Gasketing	5020 @ Head & Jambs		NA
1	Threshold	Per Detail	AL	NA

Set #122

Doors: A181, C109, F103

6	Hinge	FBB179 NRP	26D	BE
1	Semi-Auto Flushbolt	3825L X 3815L	626	TR
1	Dust Proof Strike	3910 or 3910N (as required)	630	TR
1	Storeroom Lockset	45H-7D14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
2	Kick Plate	K0050 10" x 1" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR

Set #123

Doors: A201A, A210B, F112A

Set #123

6	Hinge	FBB168 NRP	26D	BE
1	Removable Mullion	KR822 MCS	689	PR
1	Exit Device	2101 LD SNB (6)	630	PR
1	Exit Device	2103 X 1703A CD SNB (2)	630	PR
1	Mortise Cylinder	1E-74 L/C	626	BE
2	Rim Cylinder	12E-72 L/C	626	BE
3	SFIC	1CDX Series	626	BE
2	Closer	EHD9016 SDST TB	689	BE
2	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Mullion Seal	5100N		NA
1	Gasketing	2525 @ Head & Jambs		NA
1	Threshold	Per Detail	AL	NA

Set #124

Doors: A202A, A202B

3	Hinge	FBB179 NRP	26D	BE
2	Door Pull	1195-3 G	630	TR
1	Closer	EHD9016 DST90 TB	689	BE
1	Gasketing	5020 @ Head & Jambs		NA
1	Threshold	Per Detail	AL	NA

Set #125

Doors: A204, A205, A206, A207

3	Hinge	FBB179 NRP	26D	BE
1	Intruder Indicator Lock	45H-7INL14H L/C VIN	626	BE
2	SFIC	1CDX Series	626	BE
1	Wall Bumper	1270CXSV	626	TR
3	Silencer	1229 Series	GRY	TR

Set #126

Doors: A210, C119, C209, D120, E125, E229, F205, G125, G217, H126, H217

6	Hinge	FBB179 NRP	26D	BE
1	Coordinator	3090 Series x FB	Silver	TR
1	Automatic Flush Bolt	3810 X 3810	626	TR
1	Lockset	45H-7XR14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
2	Closer	EHD9016 AF90 REG TB	689	BE
2	Kick Plate	K0050 10" x 1" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
1	Meeting Edge Seal	5070 (as required)		NA
1	Gasketing	5020 @ Head & Jambs		NA
1	Bumper Seal Threshold	950S	AL	NA

NOTE: Coordinate door undercut with flush bolt and bumper seal threshold

Set #127

Doors: B101A, B117A

Set #127

6	Hinge	FBB168 NRP	26D	BE
1	Removable Mullion	FLKR822 MCS	689	PR
1	Storage Kit	KMCB822SK (as required)	689	PR
1	Exit Device	FL 2101 SNB (6)	630	PR
1	Exit Device	FL 2110VI X 4908D SNB (2)	630	PR
3	Rim Cylinder	12E-72 L/C	626	BE
3	SFIC	1CDX Series	626	BE
2	Closer	EHD9016 SPA90 TB	689	BE
2	Magnetic Door Holder	2100	US32D	AB
2	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Mullion Seal	5100N		NA
1	Gasketing	5020 @ Head & Jambs		NA
1	Threshold	Per Detail	AL	NA
1	Wiring & Riser Diagrams	Coordinate w/ Related Trades		

NOTE: Provide frame flush with exterior wall for 180-degree door swing.
NOTE: Integrate magnetic holders into fire alarm.

Set #128

Doors: B102A, B102C, B105A, B105C

3	Hinge	FBB179 NRP	26D	BE
1	Intruder Indicator Lock	45H-7INL14H L/C VIN	626	BE
2	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 SDST TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Mop Plate	KM050 6" x 1" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
3	Silencer	1229 Series	GRY	TR

Set #129

Doors: B102B, B105B

6	Hinge	FBB179 NRP	26D	BE
1	Semi-Auto Flushbolt	3825L X 3815L	626	TR
1	Dust Proof Strike	3910 or 3910N (as required)	630	TR
1	Storeroom Lockset	45H-7D14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
2	Kick Plate	K0050 10" x 1" LDW x CSK B4E	630	TR
2	Mop Plate	KM050 6" x 1" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
2	Silencer	1229 Series	GRY	TR

Set #130

Doors: B108, D104, D110A, D110B, D204, D210A, D210B, E104, E108A, E108B, E204, E208A, E208B, F110, F203

Set #130

3	Hinge	FBB179 NRP	26D	BE
1	Storeroom Lockset	45H-7D14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Mop Plate	KM050 6" x 1" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
3	Silencer	1229 Series	GRY	TR

Set #131

Doors: B111

3	Hinge	FBB179 NRP	26D	BE
1	Office Lockset	45H-7AT15H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Mop Plate	KM050 6" x 1" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
3	Silencer	1229 Series	GRY	TR

Set #132

Doors: B115C, B116B

6	Hinge	FBB179 NRP	26D	BE
1	Semi-Auto Flushbolt	3825L X 3815L	626	TR
1	Dust Proof Strike	3910 or 3910N (as required)	630	TR
1	Storeroom Lockset	45H-7D14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 SDST TB	689	BE
2	Kick Plate	K0050 10" x 1" LDW x CSK B4E	630	TR
2	Mop Plate	KM050 6" x 1" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
2	Silencer	1229 Series	GRY	TR

NOTE: Closer on active door only.

Set #133

Doors: B116A

6	Hinge	FBB179 NRP	26D	BE
1	Semi-Auto Flushbolt	3825L X 3815L	626	TR
1	Dust Proof Strike	3910 or 3910N (as required)	630	TR
1	Passage Set	45H-0N14H	626	BE
1	Overhead Holder	9010 Series	US26D	AB
1	Closer	EHD9016 SDST TB	689	BE
2	Kick Plate	K0050 10" x 1" LDW x CSK B4E	630	TR
2	Mop Plate	KM050 6" x 1" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
2	Silencer	1229 Series	GRY	TR

Set #134

Doors: B117B

Set #134

3	Hinge	FBB168 NRP	26D	BE
1	Exit Device	2103 X 4903D LD	630	PR
1	Rim Cylinder	12E-72 L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 SDST TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
3	Silencer	1229 Series	GRY	TR

Set #135

Doors: B117C

3	Hinge	FBB168 NRP	26D	BE
1	Exit Device	2110VI X 4908D LD	630	PR
2	Rim Cylinder	12E-72 L/C	626	BE
2	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 SDST TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Mop Plate	KM050 6" x 1" LDW x CSK B4E	630	TR
3	Silencer	1229 Series	GRY	TR

Set #136

Doors: B122A, C110A, C115B, C202A, C202B, C203A, C203B, C204A, C204B

3	Hinge	FBB179 NRP	26D	BE
1	Intruder Indicator Lock	45H-7INL14H L/C VIN	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 SDST TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
1	Gasketing	5020 @ Head & Jambs		NA
1	Door Shoe	36EV (423N @ doors C202A, C202B)		NA
1	Solid Threshold	Per Detail	AL	NA

NOTE: Coordinate door undercut with door shoe and threshold.

Set #137

Doors: B123

3	Hinge	FBB179 NRP	26D	BE
1	Storeroom Lockset	45H-7D14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Overhead Holder	4410 Series	US26D	AB
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Gasketing	5020 @ Head & Jambs		NA
1	Auto Door Bottom	423N or 320S (as required)		NA
1	Solid Threshold	Per Detail	AL	NA

Set #138

Doors: B124A, B124B, C118, C208, F204

Set #138

6	Hinge	FBB168 NRP	26D	BE
1	Exit Device	FL 2701 LBR SNB (6)	630	PR
1	Exit Device	FL 2714 X 4914D LBR SNB (2)	630	PR
2	Closer	EHD9016 SPA90 TB	689	BE
2	Magnetic Door Holder	2100	US32D	AB
2	Kick Plate	K0050 10" x 1" LDW x CSK B4E	630	TR
1	Mullion Seal	5100N		NA
1	Gasketing	5020 @ Head & Jambs		NA
1	Wiring & Riser Diagrams	Coordinate w/ Related Trades		

NOTE: Integrate magnetic holders into fire alarm.

Set #139

Doors: B142, C102, C104, C107, C120, C121, C124, C215, C212, C217, C220, C222, D101, D102, D107, D109, D113, D114, D115, D118, D119, D121, D122, D124, D125, D201, D202, D207, D209A, D209B, D212, D213, D214, D217, D218, D222, D223, D224, D225, E101, E102, E107, E109, E111, E112, E113, E116, E117, E118, E119, E122, E123, E126, E127, E129, E201, E202, E207, E209, E211, E212, E213, E216, E217, E218, E219, E223, E224, E225, E226, E228, F104, F206, G201, G202, G203, G204, G205, G207, G209, G212, G213, G214, G215, G220, G221, H103, H104, H109, H112, H114, H117, H118, H121, H123, H128, H130, H132, H201, H202, H203, H205(2), H206(2), H208, H218, H219, H220, H222, H223, H224, H225

3	Hinge	FBB179 NRP	26D	BE
1	Intruder Indicator Lock	45H-7INL14H L/C VIN	626	BE
1	SFIC	1CDX Series	626	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Door Stop	1215CKU or 1270CXSV (as required)	626	TR
3	Silencer	1229 Series	GRY	TR

Set #140

Doors: C103, C106, C122, C125, C211, C218, C221, E230, G126, G216, H113, H210

2	Continuous Hinge	HD1400A (1-3/4" thick doors)		NA
1	Exit Device	2701 LBR LD	630	PR
1	Exit Device	2703 X 1703A CD LBR	630	PR
1	Rim Cylinder	12E-72 L/C	626	BE
1	Mortise Cylinder	1E-74 L/C	626	BE
2	SFIC	1CDX Series	626	BE
2	Closer	EHD9016 SDST TB	689	BE
1	Wall Bumper	1270CXSV	626	TR
2	Kick Plate	K0050 10" x 1" LDW x CSK B4E	630	TR
1	Gasketing	5020 @ Head & Jambs		NA
1	Meeting Edge Seal	5070 (as required)		NA

NOTE: Doors normally held-open and cylinder dogged unlocked.

Set #141

Doors: C108, F106A

Set #141

6	Hinge	FBB168 NRP	26D	BE
1	Removable Mullion	KR822 MCS	689	PR
1	Storage Kit	KMCB822SK (as required)	689	PR
1	Exit Device	2101 LD SNB (6)	630	PR
1	Exit Device	2110VI X 4908D LD	630	PR
1	Mortise Cylinder	1E-74 L/C	626	BE
2	Rim Cylinder	12E-72 L/C	626	BE
3	SFIC	1CDX Series	626	BE
2	Closer	EHD9016 SDST TB	689	BE
2	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
1	Meeting Stile Astragal	555AA (set)		ZE
1	Mullion Seal	5100N		NA
1	Gasketing	5020 @ Head & Jambs		NA
1	Perimeter Seal	870AA @ Jambs Only		ZE
2	Auto Door Bottom	423N (Wood Door)		NA
1	Solid Threshold	Per Detail	AL	NA

Set #142

Doors: C112A, C112B, C113A, C113B

3	Hinge	FBB179 NRP	26D	BE
1	Passage Set	45H-0N14H	626	BE
1	Mop Plate	KM050 6" x 1" LDW x CSK B4E	630	TR
1	Dome Stop	1211	626	TR
3	Silencer	1229 Series	GRY	TR

Set #143

Doors: C207, F117, F118

3	Hinge	FBB179 NRP	26D	BE
1	Hotel Lockset	45H-7H14H STD (Option w/ separate key)	626	BE
1	Dormitory Lockset	45H-7TD14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 AF90 REG TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Mop Plate	KM050 6" x 1" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
1	Gasketing	5020 @ Head & Jambs		NA
1	Marble Threshold	Per Detail		

NOTE: Privacy can be interrupted with key unless optional Hotel lockset with separate Standard keying.

Set #144

Doors: D105, D106, D205, D206, E105, E106, E205, E206, F202, G222

Set #144

3	Hinges	STS FBB199 NRP	32D	BE
1	Push Plate	1802-25-PH	630	TR
1	Pull Plate	1802-25-PL	630	TR
1	Closer	EHD9016 SDST TB	689	BE
1	Wall Bumper	1270CXSV	626	TR
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Mop Plate	KM050 6" x 1" LDW x CSK B4E	630	TR
3	Silencer	1229 Series	GRY	TR
1	Marble Threshold	Per Detail		

Set #145

Doors: F102A

6	Hinge	FBB168 NRP	26D	BE
1	Removable Mullion	KR822 MCS	689	PR
1	Storage Kit	KMCB822SK (as required)	689	PR
1	Exit Device	2101 LD SNB (6)	630	PR
1	Exit Device	2103 X 1703A CD SNB (2)	630	PR
1	Mortise Cylinder	1E-74 L/C	626	BE
2	Rim Cylinder	12E-72 L/C	626	BE
3	SFIC	1CDX Series	626	BE
2	Closer	EHD9016 SDST TB	689	BE
2	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Mullion Seal	5100N		NA
1	Gasketing	5020 @ Head & Jambs		NA
1	Threshold	Per Detail	AL	NA

Set #146

Doors: F105A, F105B, F106B

3	Hinge	FBB179 NRP	26D	BE
1	Intruder Indicator Lock	45H-7INL14H L/C VIN	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 SDST TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
1	Perimeter Seal	870AA @ Jambs Only		ZE
1	Gasketing	5020 @ Head & Jambs		NA
1	Auto Door Bottom	423N (Wood Door)		NA
1	Solid Threshold	Per Detail	AL	NA

Set #147 - Double Egress

Doors: F108A

Set #147 - Double Egress

2	Wide Throw Hinge	Custom (verify)		NA
2	Exit Device	FL 2701 LBR SNB (6)	630	PR
2	Magnetic Door Holder	2100	US32D	AB
2	Closer	Special Template (verify)	689	BE
1	Gasketing	5020 @ Head & Jambs		NA
1	Wiring & Riser Diagrams	Coordinate w/ Related Trades		

NOTE: Frame to be installed such that the south swinging leaf shall swing 180 degrees.
NOTE: Custom wide throw hinge required for 180-degree swing in double egress frame.
NOTE: Provide closer that will open 180 degrees on a double egress frame.
NOTE: Integrate magnetic holders into fire alarm.

Set #148

Doors: A146, F111

3	Hinge	FBB179 NRP	26D	BE
1	Lockset	45H-7XR14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 AF90 REG TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Wall Bumper	1270CXSV	626	TR
1	Gasketing	5020 @ Head & Jambs		NA
1	Bumper Seal Threshold	950S	AL	NA

Set #149

Doors: F113B, F116, F113A

3	Hinge	FBB179 NRP	26D	BE
1	Intruder Indicator Lock	45H-7INL14H L/C VIN	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 AF90 REG TB	689	BE
1	Wall Bumper	1270CXSV	626	TR
1	Gasketing	5020 @ Head & Jambs		NA

Set #150

Doors: F208

3	Hinge	FBB179 NRP	26D	BE
1	Lockset	45H-7XR14H L/C	626	BE
1	SFIC	1CDX Series	626	BE
1	Closer	EHD9016 AF90 REG TB	689	BE
1	Wall Bumper	1270CXSV	626	TR
1	Gasketing	5020 @ Head & Jambs		NA
1	Threshold	Per Detail	AL	NA

Set #151

Doors: G103, G105, G107, G110, G113, G116, G117, G120, G122, G127, G130

Set #151

1	Continuous Hinge	HD1400A (1-3/4" thick doors)		NA
1	Intruder Indicator Lock	45H-7INL14H L/C VIN	626	BE
1	SFIC	1CDX Series	626	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Door Stop	1215CKU or 1270CXSV (as required)	626	TR
3	Silencer	1229 Series	GRY	TR

Set #152

Doors: G104, G106, G109, G114, G115, G118A, G118B, G121, G128, G129

1	Continuous Hinge	HD1400A (1-3/4" thick doors)		NA
1	Passage Set	45H-0N14H	626	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Mop Plate	KM050 6" x 1" LDW x CSK B4E	630	TR
1	Dome Stop	1211	626	TR
1	Gasketing	2525 @ Head & Jambs		NA
1	Marble Threshold	Per Detail		

Set #153 - Pocket Door

Doors: G119

NOTE: All hardware provided by door supplier.

Set #154

Doors: H110, H111, H115, H116, H119, H120, H124, H127

3	Hinge	FBB179 NRP	26D	BE
1	Privacy Indicator Latch	45H-0L14H VIB	626	BE
1	Closer	EHD9016 AF90 REG TB	689	BE
1	Kick Plate	K0050 10" x 2" LDW x CSK B4E	630	TR
1	Mop Plate	KM050 6" x 1" LDW x CSK B4E	630	TR
1	Gasketing	5020 @ Head & Jambs		NA
1	Marble Threshold	Per Detail		

END OF SECTION

Opening List

(Delete prior to publication)

Opening	Hdw Set	Opening Label	Door Type	Frame Type
A105	104			
A106	105			
A107	106			
A108	104			
A109	104			
A110	107			
A111	107			
A112	108			
A113	109			
A117	104			
A119	100			
A120	104			
A122	104			
A123	104			
A124	109			
A125	100			
A127	100			
A128	104			
A129	104			
A130	104			
A131	104			
A132	111	Rated		
A135	112	Rated		
A136	112	Rated		
A139	100			
A144	115			
A145	116			
A146	148			
A147	116			
A148	115			
A150	118			
A151	119	Rated		
A154	103			
A155	108			
A156	104			
A157	104			
A158	104			
A159	104			
A160	104			
A161	104			
A163	108			
A164	104			
A165	104			
A167	108			
A168	107			
A169	107			
A170	104			
A171	104			

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Opening	Hdw Set	Opening Label	Door Type	Frame Type
A172	104			
A173	106			
A174	105			
A180	121	Rated		
A181	122			
A203	108			
A204	125			
A205	125			
A206	125			
A207	125			
A210	126			
B017	100			
B103	101			
B108	130			
B109	107			
B111	131			
B112	008		FRP	
B113	008		FRP	
B114	009		FRP	
B118	005		FRP	
B121	007		FRP	
B123	137			
B142	139			
~~B144~~ H208	139			
C102	139			
C103	140			
C104	139			
C105	108			
C106	140			
C107	139			
C108	141			
C109	122			
C114	107			
C118	138	Rated		
C119	126			
C120	139			
C121	139			
C122	140			
C123	108			
C124	139			
C125	140			
C207	143			
C208	138	Rated		
C209	126			
~~C210~~ C215	139			
C211	140			
C212	139			
C213	108			
~~C215~~ C226	111			
~~C216~~ C210	104			
C217	139			
C218	140			
C219	108			

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Opening	Hdw Set	Opening Label	Door Type	Frame Type
C220	139			
C221	140			
C222	139			
C224	107			
C225	107			
D101	139			
D102	139			
D104	130			
D105	144			
D106	144			
D107	139			
~~D108~~ D108A	005		FRP	
D108B	006		FRP	
D109	139			
D111	117			
D112	117			
D113	139			
D114	139			
D115	139			
D118	139			
D119	139			
D120	126			
D121	139			
D122	139			
D123	006		FRP	
D124	139			
D125	139			
D126	109			
D201	139			
D202	139			
D204	130			
D205	144			
D206	144			
D207	139			
D211	117			
D212	139			
D213	139			
D214	139			
D217	139			
D218	139			
D219	117			
D222	139			
D223	139			
D224	139			
D225	139			
D226	109			
E101	139			
E102	139			
E104	130			
E105	144			
E106	144			
E107	139			
E109	139			

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Opening	Hdw Set	Opening Label	Door Type	Frame Type
E110	005		FRP	
E111	139			
E112	139			
E113	139			
E116	139			
E117	139			
E118	139			
E119	139			
E120	117			
E121	117			
E122	139			
E123	139			
E124	006		FRP	
E125	126			
E126	139			
E127	139			
E128	109			
E129	139			
E201	139			
E202	139			
E204	130			
E205	144			
E206	144			
E207	139			
E209	139			
E211	139			
E212	139			
E213	139			
E216	139			
E217	139			
E218	139			
E219	139			
E220	117			
E221	117			
E223	139			
E224	139			
E225	139			
E226	139			
E228	139			
E229	126			
E230	140			
F101	006		FRP	
F103	122			
F104	139			
F108B	001		FRP	
F108C	001		FRP	
F109	108			
F110	130			
F111	148	Rated		
F113A	149			
F114	104			
F115	104			
F116	149			

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Opening	Hdw Set	Opening Label	Door Type	Frame Type
F117	143			
F118	143			
F119	108			
F202	144			
F203	130			
F204	138	Rated		
F205	126			
F206	139			
F207	109			
F208	150	Rated		
FH02	012		FRP	
FH03	012		FRP	
FH04	012		FRP	
FH05	012		FRP	
G103	151			
G104	152			
G105	151			
G106	152			
G107	151			
G108	117			
G109	152			
G110	151			
G113	151			
G114	152			
G115	152			
G116	151			
G117	151			
G119	153			
G120	151			
G121	152			
G122	151			
G124	117			
G125	126			
G126	140			
G127	151			
G128	152			
G129	152			
G130	151			
G201	139			
G202	139			
G203	139			
G204	139			
G205	139			
G206	117			
G207	139			
G209	139			
G212	139			
G213	139			
G214	139			
G215	139			
G216	140			
G217	126			
G218	117			

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Opening	Hdw Set	Opening Label	Door Type	Frame Type
G219	109			
G220	139			
G221	139			
G222	144			
H103	139			
H104	139			
H108	117			
H109	139			
H110	154			
H111	154			
H112	139			
H113	140			
H114	139			
H115	154			
H116	154			
H117	139			
H118	139			
H119	154			
H120	154			
H121	139			
H123	139			
H124	154			
H125	109			
H126	126			
H127	154			
H128	139			
H129	117			
H130	139			
H132	139			
H201	139			
H202	139			
H203	139			
H204	109			
H205	139			
H206	139			
H208	139			
H210	140			
H215	117			
H216	117			
H217	126			
H218	139			
H219	139			
H220	139			
H222	139			
H223	139			
H224	139			
H225	139			
MP01	013	Rated		
MP03	013			
MP04	013			
A101A	001		FRP	
A101B	002		FRP	
A102A	100			

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Opening	Hdw Set	Opening Label	Door Type	Frame Type
A102B	101			
A103A	004		FRP	
A103B	102			
A104A	103			
A104B	103			
A126A	110			
A126B	103			
A134A	005		FRP	
A134B	006		FRP	
A142A	113			
A142B	113			
A142C	114	Rated		
A142D	114	Rated		
A162A	109			
A162B	120			
A175A	103			
A175B	103			
A179A	003		FRP	
A179B	102			
A201A	123			
A202A	124			
A202B	124			
A210B	123			
B101A	127	Rated		
B101B	007		FRP	
B102A	128			
B102B	129			
B102C	128			
B105A	128			
B105B	129			
B105C	128			
B106A	101			
B115A	009		FRP	
B115B	101			
B115C	132			
B116A	133			
B116B	132			
B117A	127	Rated		
B117B	134			
B117C	135			
B119A	117			
B119B	010		FRP	
B122A	136			
B122B	007		FRP	
B124A	138	Rated		
B124B	138	Rated		
C110A	136			
C110B	007		FRP	
C112A	142			
C112B	142			
C113A	142			
C113B	142			
C115A	007		FRP	

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Opening	Hdw Set	Opening Label	Door Type	Frame Type
C115B	136			
C118A	005		FRP	
C118B	006		FRP	
C118C	007		FRP	
C202A	136			
C202B	136			
C203A	136			
C203B	136			
C204A	136			
C204B	136			
D110A	130			
D110B	130			
D209A	139			
D209B	139			
D210A	130			
D210B	130			
E108A	130			
E108B	130			
E208A	130			
E208B	130			
F102A	145			
F102B	007		FRP	
F105A	146			
F105B	146			
F106A	141			
F106B	146			
F107B	005		FRP	
F108A	147	Rated		
F112A	123			
F112B	007		FRP	
F113B	149	Rated		
FH01A	011		FRP	
FH01B	101			
FH06A	011		FRP	
FH06B	101			
G101A	006		FRP	
G101B	005		FRP	
G118A	152			
G118B	152			
H101A	006		FRP	
H101B	005		FRP	
MP02A	013			
~~MP02B~~	~~013~~			

SECTION 095100
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

C. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

E. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions.

F. ASTM E1264 - Standard Classification for Acoustical Ceiling Products.

1.02 SUBMITTALS

A. Shop Drawings: Indicate grid layout and related dimensioning.

B. Product Data: Provide data on suspension system components, acoustical units, and specialty ceiling products as indicated.

C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 016000 - Product Requirements, for additional provisions.
2. Extra Acoustical Panels: Quantity equal to 2 percent of total installed, of each type.

D. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.03 QUALITY ASSURANCE

A. Source Limitations: Provide each acoustical ceiling assembly (ceiling panel and suspension system) from a single manufacturer to obtain manufacturer's system warranty.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver until building is weather-tight and conditioned.

B. Store materials in dry and clean location until needed for installation. During installation, handle in a manner that will prevent damage and to prevent marring and soiling of finished surfaces.

1.05 FIELD CONDITIONS

A. Maintain uniform temperature and humidity at occupancy conditions during and after acoustical unit installation. Allow products to acclimatize prior to installation.

1.06 WARRANTY

A. System Warranty: Provide a single source system warranty covering both acoustical ceiling panels and suspension system.

1. Warranty shall cover material failures including sag, warping, shrinkage, or delamination, biologic growth including mold or mildew, and rusting of suspension system.
2. Warranty Period: Minimum 15 years, from date of Substantial Completion.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Surface Burning Characteristics: Each acoustical ceiling shall be Class A rated, with flame spread index of 25 or less, smoke developed index of 50 or less, when tested in accordance with ASTM E84.

B. Seismic Performance: Ceiling systems designed to withstand the effects of earthquake motions determined according to ASCE 7, which references applicable requirements ofASTM E580/E580M "Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels in Areas Subject to Earthquake Ground Motions." for Seismic Design Category indicated on Structural Drawings and complying with local authorities having jurisdiction.

2.02 ACOUSTICAL PANELS

A. Acoustical Panels - General: ASTM E1264, Class A.
   1. Antibacterial/Antimicrobial Treatment: Provide acoustical panels that have been factory-treated by manufacturer for resistance to bacteria, mold, mildew, and fungus.
   2. Humidity/Sag Treatment: Provide acoustical panels that have been factory-treated by manufacturer for humidity and sag-resistance.

B. Acoustical Panels ACP-1: Painted mineral fiber, with the following characteristics:
   1. Classification: ASTM E1264 Type III.
      a. Form: 2, water felted.
   2. Size: 24 by 24 inches.
   3. Thickness: 3/4 inch.
   4. Light Reflectance: Not less than 0.82, determined in accordance with ASTM E1264.
   5. NRC Range: Not less than 0.70, determined in accordance with ASTM E1264.
   6. Panel Edge: Square.
   7. Color: White.
   8. Suspension System: Exposed grid.
   9. Products:
      a. Armstrong World Industries, Inc; School Zone Fine Fissured - Item #1713.
      b. CertainTeed Ceilings, Inc; Fine Fissured High NRC - Item #HHF-457 HNRCX.
      c. USG Corporation; Radar High-NRC Acoustical Panels - Item #22421.

C. Acoustical Panels ACP-3: Mineral fiber with membrane-faced overlay, with the following characteristics:
   1. Classification: ASTM E1264 Type IV.
      a. Form: 2, water felted.
      b. Pattern: "E" - lightly textured.
   2. Size: 24 by 24 inches.
   3. Thickness: 3/4 inch.
   4. Light Reflectance: Not less than 0.86, determined in accordance with ASTM E1264.
   5. NRC Range: Not less than 0.70, determined in accordance with ASTM E1264.
   6. Ceiling Attenuation Class (CAC): Not less than 35, determined in accordance with ASTM E1264.
   7. Panel Edge: Square.
   8. Color: White.
   9. Products:

a. Armstrong World Industries, Inc; Ultima Health Zone - Item #1935.
b. CertainTeed Ceilings, Inc.; Performa Rx Symphony m - Item #1222-RSX-1.
c. USG Corporation; Mars Healthcare - Item #86169.

D. Acoustical Panels ACP-2: Glass fiber with membrane-faced overlay, with the following characteristics:
1. Classification: ASTM E1264 Type XII.
a. Form: 2, cloth.
1) Pattern: "E" - lightly textured.
b. Size: 24 by 24 inches and 24 by 48 inches, as indicated on Drawings.
2. Thickness: Not less than 1 inch.
3. Light Reflectance: Not less than 0.90, determined in accordance with ASTM E1264.
4. NRC Range: Not less than 0.95, determined in accordance with ASTM E1264.
5. Articulation Class (AC): Not less than 190, determined in accordance with ASTM E1264.
6. Panel Edge: Square.
7. Tile Edge: Square.
8. Color: White.
9. Suspension System: Exposed.
10. Products:
a. Armstrong World Industries, Inc; Optima - Item #3152 and #3153.
b. CertainTeed Ceilings, Inc; Symphony f - Item #1342-IOF-1 and #1340-IOF-1.
c. USG Corporation; Halcyon Acoustical Panels - Item #98221 and #98241.

E. Acoustical Panels [ACP-4]: Quadratic Ceiling Panel: Acoustically diffusing panel designed in accordance with quadratic theory with multiply wells engineered depth in molded thermoplastic panel
1. Size: 48 inches x 48 inches by 0.125 inch thick
2. Finish: Manufacturer's White
3. Ceiling Panel Mounted MEthod: Lay-in ceiling grid. All panels include safety cable attachment to permanent ceiling grid in all four corners of panel.
4. Unit Weight: 35 lb
5. Acoustical Performance: Sound Absorbtion Coeffiecients, One-third Octave Band Center Frequency, Hz, for 48 by 96 inches unit, Mounting Type E-400
a. 125Hz = 0.36
b. 250Hz = 0.54
c. 500Hz = 0.59
d. 1000Hz = 0.43
e. 2000Hz = 0.24
f. 4000Hz = 0.19
6. Fabric Facing Material: 100 percent woven plan weave polyester 2-ply, with the followoing characteristics:
a. Light Fastness: AATCC 16,Option 3: 40 Hours
b. Fastness to Crocking: AATCC 8, #4 Wet & Dry
c. Flammability: ASTM E 84, Class A or 1
d. Basis of Design: Guilford of Maine FR-701
7. Fire Rating: The fiully assembled product, as installed, shall meet Class A fire protection.

8. Layout: Final panel placement to be coordinated with School
9. Products:
    a. Wenger Quadratic Ceiling Diffuser Basis of Design
    b. Acoustical Solutions Inc
    c. Armstrong Ceiling & Wall Solutions
10. Product to be selected by Architect from manufacturer's full range

2.03 SUSPENSION SYSTEM(S)

A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
    1. Materials:
        a. Steel Grid: ASTM A653/A653M, G30 coating, unless otherwise indicated.
    2. Cross Tee/Main Runner Connection: Override (stepped).
    3. Main Runner End Coupling: Bayonet ("stab") type; knuckle type is not acceptable.

B. Exposed Suspension System, Type ACP-3: Hot-dipped galvanized steel grid with aluminum cap.
    1. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
    2. Coating: Provide minimum G60 hot-dip galvanized coating.
    3. Profile: Tee; 15/16 inch face width.
    4. Finish: Baked enamel.
    5. Color: White.
    6. Products:
        a. Armstrong World Industries, Inc; Prelude Plus XL Fire Guard.
        b. CertainTeed Ceilings, Inc; 15/16" EZ Stab Classic Environmental System.
        c. USG Corporation; Donn Brand ZXLA 15/16 inch Acoustical Suspension System.
        d. Substitutions: See Section 016000 - Product Requirements.

C. Exposed Suspension System, Type ACP-1, ACP-2: Hot-dipped galvanized steel grid and cap.
    1. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
    2. Profile: Tee; 15/16 inch face width.
    3. Finish: Baked enamel.
    4. Products:
        a. Armstrong World Industries, Inc; Prelude XL 15/16".
        b. CertainTeed Ceilings, Inc; 15/16" EZ Stab Classic System.
        c. USG Corporation; Donn Brand DX/DXL 15/16 inch Acoustical Suspension System.
        d. Substitutions: See Section 016000 - Product Requirements.

2.04 ~~ACOUSTICAL CLOUDS/CANOPIES~~

A. ~~Acoustical Clouds/Canopies (Auditorium): Prefabricated shapes with consistent size and finish.~~
    1. ~~Classification: ASTM E1264 Type XII.~~
        a. ~~Form: 2, cloth.~~
        b. ~~Pattern: "E" - Lightly Textured; or "G" - Smooth.~~

2. ~~**Shape: Convex; custom size and shape as indicated on Drawings.**~~
3. ~~**Panel Thickness: 7/8-inch.**~~
4. ~~**Suspension: Provide manufacturer's standard individual mounting kit for each panel, consisting of aircraft cables, anchors at each end, and method for fine adjustment after installation. Provide minimum 4 anchors/cables per panel.**~~
5. ~~**Color: White.**~~
6. ~~**Products:**~~
   a. ~~**Basis-of-Design: Armstrong World Industries, Inc; SoundScapes Shapes.**~~
   b. ~~**Certainteed; Ecophon Solo Clouds. (1-1/2 inch thick)**~~
   c. ~~**USG Corporation; Halcyon Canopies (1 inch thick).**~~ **(*AD-02)**

2.05 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.

C. Perimeter Moldings: Same metal and finish as grid.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

3.02 PREPARATION

A. Install after major above-ceiling work is complete.

B. Coordinate the location of hangers with other work.

C. Coordinate with Division 05 Section "Metal Fabrications" to provide slotted channel framing between primary structural components for attachment of hangers where required.

3.03 INSTALLATION - SUSPENSION SYSTEM

A. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

B. Lay out system to a balanced grid design with edge units no less than 50 percent of acoustical unit size.

C. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
   1. Use longest practical lengths.

D. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
   1. Do not hang suspension system directly from steel floor or roof deck.

E. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

F. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

G. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

H. Do not eccentrically load system or induce rotation of runners.

3.04 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

E. Cutting Acoustical Units:

1. Make field cut edges of same profile as factory edges.

F. Where round obstructions and bullnose concrete block corners occur, provide preformed closures to match perimeter molding.

3.05 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION 095100