2179 Hicks Rd Youngsville NC 27596

FRANKLIN COUNTY BLDG SUBMISSION - 12/15/2022





PROJECT LOCATION

		_
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01 - GEN G200 G201 G202 G203 G204 G205 G206 G207 G208 G209 G210	SPECIFICATIONS SPECIFICATIONS SPECIFICATIONS SPECIFICATIONS SPECIFICATIONS SPECIFICATIONS SPECIFICATIONS	
G211	SPECIFICATIONS	

G212 SPECIFICATIONS

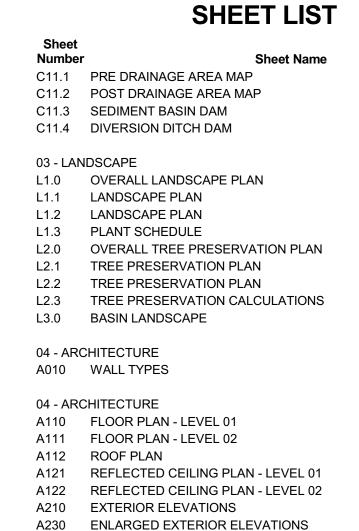
G213 SPECIFICATIONS

G214 SPECIFICATIONS

G215 SPECIFICATIONS

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C2.0	NOTE SHEET	
C3.0	EX CONDITION/DEMO PLAN	
C4.0	SITE PLAN	
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C7.0	STORM PROFILES	
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A231 ENLARGED EXTERIOR ELEVATIONS

A232 GLAZING SYSTEM ELEVATIONS

A310 BUILDING SECTIONS

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A321	WALL SECTIONS
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A401	ENLARGED LOCKER ROOM PLANS + ELEVATION
A521	PLAN & SECTION DETAILS
A522	ROOF DETAILS
A523	ROOF DETAILS
A601	VERTICAL CIRCULATION - STAIRS
A602	VERTICAL CIRCULATION - ELEVATOR
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A821	INTERIOR ELEVATIONS - COMMONS
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06 - STP	UCTURAL
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S101 LEVEL 01 FOUNDATION PLAN

S103 LEVEL 03 ROOF FRAMING PLAN

S102 LEVEL 02 FRAMING PLAN

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SHEET LIST

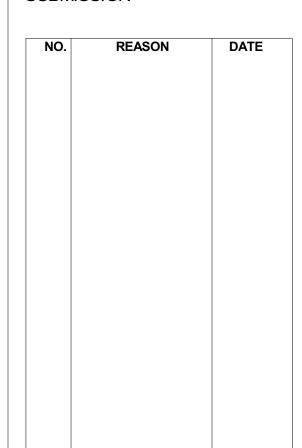
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P111	FLOOR PLAN - LEVEL 02 - WASTE & VENT
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07 - MEC	CHANICAL
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M1.1	LEVEL 1 HVAC PLAN
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SHEET LIST

	SHEET LIST
Sheet Number	Sheet Name
09- ELEC E001 E002 E003 E004 E101 E102 E103 E201 E202	ELECTRICAL - SYMBOLS, ABBREVIATIONS & GEN NOTES ELECTRICAL - RISER AND PANEL SCHEDULES ELECTRICAL - UNDERGROUND CONDUIT PLAN ELECTRICAL - DETAILS ELECTRICAL - POWER TELE/DATA, FIRE ALARM - LVL 1 ELECTRICAL - POWER TELE/DATA, FIRE ALARM - LVL 2 ELECTRICAL - POWER TELE/DATA, FIRE ALARM - ROOF ELECTRICAL - LIGHTING - LEVEL 1
FP101 FP102	E SUPRESSION FIRE SPINKLER GENERAL NOTES & SPECIFICATIONS FIRE SPRINKLER FIRST FLOOR FIRE SPRINKLER SECOND FLOOR

	Millian Millian
11.	ON ERED TOWN TO
1	NO. 6414
1	0.00 6414 12.15.21 10.097H CAROLLA
7	NO 6414 12.15.21 OPTH CAROLL OPTH CAROLL

FRANKLIN COUNTY BLDG SUBMISSION



Issue Date: 12/15/2022 Job Number: 112 18134 00 Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

COVER SHEET

9829 SPENCER ROAD

BRIGHTON, MI 48114

810.852.4721

ARCHITECT LITTLE 615 SOUTH COLLEGE ST, STE 1600 CHARLOTTE, NC 28202 704.561.3414

TOM BALKE

C11.0 DRAINAGE AREA MAP

CIVIL ENGINEER COLE STL 2701 E. CAMELBACK RD. SUITE 175 PHOENIX, AZ, 85016 480.417.2592

JOHN MCGHEE

LANDSCAPE ARCHITECT COLE STL 2701 E. CAMELBACK RD. SUITE 175 PHOENIX, AZ 85016 480.417.2592

JOHN MCGHEE

STRUCTURAL ENGINEER LITTLE 615 SOUTH COLLEGE ST, STE 1600 CHARLOTTE, NC 28202 704.561.3414

BRAD MCCONELL

Number

S202 ELEVATIONS

S203 ELEVATIONS

ELECTRICAL / FIRE ALARM HVAC ENGINEER -ENGINEER-BETTAC ENGINEERING 16 Strathmore Dr Arden, NC 28704 828.457.9532

JARED BETTAC

RKB ENGINEERING 1507 TALBOT RD. PLEASANT GARDEN, NC 27313 336.420.2686 **ROBERT BOUKNIGHT**

PLUMBING ENGINEER RKB ENGINEERING 1507 TALBOT RD. PLEASANT GARDEN, NC 27313 336.420.2686

ROBERT BOUKNIGHT

FIRE PROTECTION **EX4 FIRE PROTECTION** 204 LANGHORNE DR MT. HOLLY, NC 28120 828.851.0080

MARK E. ECKARD

REVIEWED FOR CODE COMPLIANCE
FRANKLIN COUNTY NORTH CAROLINA
Plans must be on site at all times. It is the responsibility of the Permit holder or Contractor to comply with all local Ordinances, rules and regulations and the North Carolina Building Codes as if they were part of the specifications for the building. These shall be considered the official approved plans over anything shown, described or implied to the contrary. Reviewer is not responsible for mistakes or oversights during the plan review. -- PFaulkner

03/30/2023

C:\Revit Local\1121813400 YOUNGSVILLE ACADEMY HS A22_pedro.pinera.r

ABBREVIATIONS

Abbr.	Abbreviated Phrase	Abbr.	Abbreviated Phrase	Abbr.	Abbreviated Phrase
ACT	ACOUSTIC CEILING TILE	FO	FACE OF	ОС	ON CENTER
ΔDA	AMERICANS WITH DISABILITIES ACT	FOB	FACE OF BRICK	OFF	OFFICE
NDJ	ADJUSTABLE	FOG	FACE OF GLASS	ОН	OPPOSITE HAND
AED	AUTOMATED EXTERNAL	FOS	FACE OF SHEATHING	OPNG	OPENING
	DEFIBRILLATOR	FR	FIRE RETARDANT TREATED		
\FF	ABOVE FINISH FLOOR	FRP	FIBERGLASS REINFORCED PLASTIC	PED	PEDESTAL, PEDESTRIAN, PEDIATI
۸L	ALUMINUM	113	(POLYMER)	PERF	PERFORATE(D)
LT	ALTERNATE	FT	FOOT, FEET	PFB	PREFABRICATE(D)
AMC	ACOUSTICAL METAL CEILING	FURR	FURR(ED), (ING)	PFN	` '
APC	ACOUSTICAL PANEL CEILING	FUT	FUTURE		PREFINISH(ED)
APPROX	APPROXIMATE	FWC	FABRIC WALL COVERING	PL, PLAM	PLASTIC LAMINATE
				PLAS	PLASTER, PLASTIC
ARCH	ARCHITECT(URAL)	FWP	FABRIC WRAPPED PANEL	PLWD	PLYWOOD
ARP	ACRYLIC RESIN PANEL	0.4	CALLOE	PNL	PANEL
AWC	ACOUSTICAL WOOD CEILING	GA	GAUGE	PNT	PAINT(ED)
		GALV	GALVANIZED	PR	PAIR
BBD	BULLETIN BOARD	GB	GLASS BOARD	PT	PRESSURE TREAT(ED)
BD	BOARD	GC	GENERAL CONTRACTOR	PTN	PARTITION
30	BOTTOM OF	GL	GLASS, GLAZING		
BOT	BOTTOM	GR	GROUT	QT	QUARRY TILE
		GRAN	GRANITE	QZ	QUARTZ, ENGINEERED QUARTZ
C/L, CL	CENTERLINE	GWB	GYPSUM WALL BOARD		,
CAB	CABINET	GYP	GYPSUM	RB	RUBBER BASE
CC	CUBICLE CURTAIN			RBT	RUBBER TILE
CIR	CIRCLE	HC	HOLLOW CORE	REC	RECEPTACLE
CLG	CEILING	HD	HAND DRYER	REF	REFERENCE, REFER
CLOS	CLOSET	HDR	HEADER		
CLR	CLEAR(ANCE)	HDW	HARDWARE	REFR	REFRIGERATOR
COL	COLUMN	HGT	HEIGHT	REM	REMOVE
				REQ'D	REQUIRED
CON, CONC	CONCRETE	HORIZ	HORIZONTAL(LY)	RM	ROOM
CONST	CONSTRUCTION	HR	HOUR	RS	RESILIENT
		HVAC	HEATING, VENTILATION, AND AIR CONDITIONING		
CONT	CONTINUOUS / CONTINUE	LBAID		S&R	SHELF AND ROD
CONTR	CONTRACTOR	HWD	HARDWOOD	SCW	SOLID CORE WOOD
COORD	COORDINATE			SECT	SECTION
CPT	CARPET	IBC	INTERNATIONAL BUILDING CODE	SF	SQUARE FEET
CRB	COVED RUBBER BASE	ID	INSIDE DIAMETER	SFRM	SPRAYED FIRE RESISTIVE MATER
CT	CERAMIC OR PORCELAIN TILE	INCL	INCLUDE(D), (ING)	SHR	SHOWER
CTR	CENTER	INSUL	INSULATE(D), (ING)	SIM	SIMILAR
		INT	INTERIOR	SPEC	SPECIFICATION(S)
)	DRYER			SS	STAINLESS STEEL
OBL	DOUBLE	JAN	JANITOR'S CLOSET	SSM	SOLID SURFACE MATERIAL
DEG	DEGREE	JT	JOINT	ST	STONE
DEMO	DEMOLISH / DEMOLITION			STD	
DET, DTL	DETAIL	KIT	KITCHEN		STANDARD
DIA [´]	DIAMETER	KPL	KICK PLATE	STOR	STORAGE
DIM	DIMENSION			SUSP	SUSPENDED
DR	DOOR	L	LENGTH		SUSPENDED CEILING
DS .	DOWNSPOUT	LAM	LAMINATE(D)	SV	SHEET VINYL
			` '	SYS	SYSTEM
DWG	DRAWING(S)	LBL	LABEL		
OWN	DOWN	LCKR	LOCKER	TB	TACK BOARD
DWR	DRAWER	LIN	LINOLEUM	TEMP	TEMPERED, TEMPORARY
		LT	LIGHT	TME	TO MATCH EXISTING
ĒΑ	EACH	LVL	LAMINATED VENEER LUMBER	TYP	TYPICAL
EL	ELEVATION	LVT	LUXURY VINYL TILE	TZ	TERRAZZO
ELEC	ELECTRICAL				
ELEV	ELEVATOR	MATL	MATERIAL(S)	UNO	UNLESS NOTED OTHERWISE
EOS	EDGE OF SLAB	MAX	MAXIMUM	0110	CHEEGO HOTED OTHERWISE
₽	EPOXY FLOORING	MB	MARKER BOARD	VB	VINYL BASE
EQ.	EQUAL(LY)	MECH	MECHANICAL		
EQPT	EQUIPMENT	MFR	MANUFACTURE(R)	VCT	VINYL COMPOSITE TILE
EW	EACH WAY	MIN	MINIMUM	VERT	VERTICAL(LY)
EWC	ELECTRIC WATER COOLER	MISC	MISCELLANEOUS	VIF	VERIFY IN FIELD
EXIST	EXISTING	MP	METAL PANEL	VIN	VINYL
				VT	VINYL TILE
EXP	EXPANSION	MTD	MOUNTED	VWC	VINYL WALL COVERING
EXT	EXTERIOR	MTL	METAL		
		MULL	MULLION	W	WIDTH
FAAP	FIRE ALARM ANNUNCIATOR PANEL	MWK	MILLWORK	W/	WITH
FACP	FIRE ALAM CONTROL PANEL			W/O	WITHOUT
ВО	FURNISHED BY OTHERS	N	NORTH	WB	WOOD BASE
-DC	FIRE DEPARTMENT CONNECTION	NIC	NOT IN CONTRACT		
Έ	FIRE EXTINGUISHER	NO,#	NUMBER	WC	WATER CLOSET
EC	FIRE EXTINGUISHER CABINET	NO, # NR	NOISE REDUCTION	WD	WOOD
				WGT	WEIGHT
F	FINISH FLOOR	NRC	NOISE REDUCTION COEFFICIENT	WIN	WINDOW
-IN	FINISH(ED)	NTS	NOT TO SCALE	WM	WALK-OFF MAT/ FLOORING
	FLOOR(ING)				=0.14/411
FLR FLUOR	FLUORESCENT			WTW	WALL TO WALL

GENERAL NOTES

- WORK NOTED "BY OTHERS" OR "NIC" IS NOT IN CONTRACT.
 WORK OUTSIDE "AREA OF WORK", IS NOT IN CONTRACT, UNLESS
- OTHERWISE NOTED.

 3. EXTEND WALLS TO DECK ABOVE STOREFRONT SYSTEMS AND
- GLASS WALL PARTITIONS.

 4. WHERE NEW PARTITION ALIGNS WITH THE FACE OF AN EXISTING FURRED COLUMN OR PARTITION, REMOVE CORNER BEAD, TAPE, SPACKLE AND SAND JOINT BETWEEN NEW AND EXISTING GYPSUM
- 5. EXISTING WALL SURFACES AND PARTITIONS TO REMAIN SHALL BE PATCHED, SPACKLED AND SANDED SMOOTH SO AS NOT TO LEAVE
- ANY EVIDENCE OF DEMOLITION OR REPAIR WORK.

 6. PROVIDE FIRE EXTINGUISHER CABINETS, SMOKE DETECTORS AND ALL OTHER LIFE SAFETY DEVICES AS REQUIRED BY CODE. PROVIDE DRAWING SHOWING LOCATION, OF DEVICES FOR REVIEW TO TO THE
- FRAMING SHOWING LOCATION, OF DEVICES FOR REVIEW PRIOR TO FRAMING OF WALLS. DO NOT PLACE IN FIRE RATED PARTITIONS.

 7. PROVIDE OR REUSE HOT AND COLD WATER LINES, SOIL, VENT LINES AND PRESSURE AND SHUTOFF VALVES AS REQUIRED IN ACCORDANCE WITH LOCAL BUILDING AND PLUMBING CODES FOR PLUMBING FIXTURES.
- 8. VERIFY DIMENSIONS AND FIELD CONDITIONS TO CONFIRM CONSTRUCTABILITY. ANY CONFLICTS OR OMISSIONS SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT FOR CLARIFICATION PRIOR TO THE PERFORMANCE OF WORK.
- COORDINATE AND PROVIDE BLOCKING IN PARTITIONS AND CEILING FOR MILLWORK, WALL AND CEILING ATTACHED ITEMS.
 DO NOT SCALE DRAWINGS. ALL PARTITION LOCATIONS, DIMENSIONS AND TYPES, DOOR AND WINDOW LOCATIONS SHALL BE AS
- SHOWN ON PARTITION PLAN. IN CASE OF CONFLICT, NOTIFY ARCHITECT. PARTITION PLAN SUPERSEDES OTHER PLANS.

 11. COORDINATE SCHEDULE FOR TELEPHONE, DATA, SECURITY AND AUDIO VISUAL INSTALLATIONS, WITH TENANT AND OWNER.
- PARTITIONS ARE DIMENSIONED FROM FINISH FACE TO FINISH FACE, UNLESS OTHERWISE NOTED. DIMENSIONS MARKED "CLEAR" SHALL BE MAINTAINED AND SHALL ALLOW FOR THICKNESS OF FINISHES.
 PARTITIONS AT BUILDING PERIMETER SHALL BE CENTERED ON CENTER LINE OF COLUMN OR WINDOW MULLION, UNLESS
- OTHERWISE NOTED. 14. COLUMN CENTER LINES, OR GRID LINES, ARE SHOWN FOR
- DIMENSIONING, VERIFY EXACT LOCATIONS IN FIELD.

 15. PROVIDE PARTITION TYPE WITH THE HIGHEST UL AND/OR
- PARTITION TYPE IS INDICATED.

 16. ALIGN FINISHES ON EXPOSED SIDE OF PARTITION AND FURR CONCEALED SIDE OF PARTITION AS REQUIRED TO PROVIDE FLUSH INSTALLATION WHERE ADJACENT PARTITION TYPES DIFFER IN OVERALL THICKNESS.

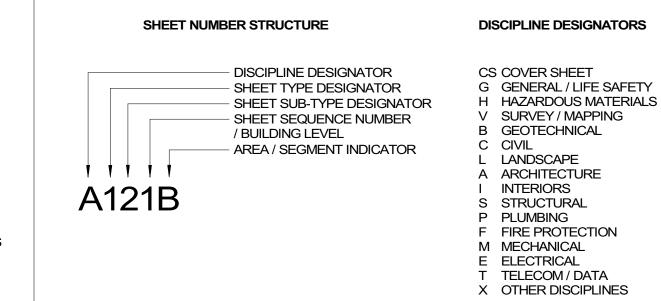
ACOUSTICAL PERFORMANCE RATING WHERE MORE THAN ONE

- 17. PROVIDE GLASS-MAT WATER RESISTANT GYPSUM WALL BOARD FOR INTERIOR PARTITIONS IN A TOILET ROOM, JANITOR'S CLOSET AND LOCATIONS TO RECEIVE TILE.
 18. CROSS BRACE CHASE PARTITIONS FROM STUD TO STUD AT 4'-0" O.C. VERTICAL MINIMUM AND PER MANUFACTURER'S
- RECOMMENDATIONS.

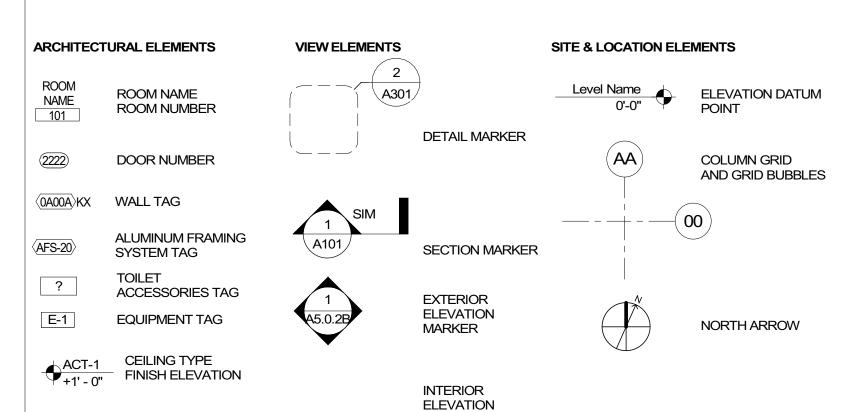
 19. PROVIDE SOUND BATT INSULATION FULL HEIGHT OF PARTITIONS AROUND PERIMETER OF TOILET ROOMS, MECHANICAL ROOMS, MECHANICAL SHAFTS, PLUMBING CHASES AND ABOVE SCHEDULED CEILINGS WHERE PARTITIONS DO NOT EXTEND TO UNDERSIDE OF DECK ABOVE.
- 20. PROVIDE ACOUSTICAL CAULKING AROUND PERIMETER EDGES AND PENETRATIONS AT SOUND INSULATED WALLS. OFFSET ELECTRICAL AND TELEPHONE OUTLETS 16" MINIMUM IN SEPARATE STUD CAVITIES.
- 21. OFFSET ELECTRICAL AND TELEPHONE OUTLETS 16" MINIMUM IN SEPARATE STUD CAVITIES.
 22. MATERIALS USED IN UL RATED PARTITIONS SHALL CONFORM TO REFERENCED STANDARDS.
 23. STENCIL BOTH SIDES OF UL RATED PARTITIONS ABOVE SCHEDULED
- 24. FIRE STOP PENETRATIONS IN UL RATED PARTITIONS TO MAINTAIN/ACHIEVE LEVEL OF PROTECTION REQUIRED FOR PARTITION TYPE. FIRE STOP ALONG PERIMETER OF RATED PARTITIONS WHERE VOIDS OCCUR.

CEILING WITH REQUIRED PROTECTION TEXT.

SHEET NUMBERING LEGEND



SYMBOLS



MARKER





Main: 877-244-8562 Facsimile: 810-852-4721 www.bccgp.com



JNGSVILLE ACADEM JEW HIGH SCHOOL



FRANKLIN COUNTY BLDG SUBMISSION

NO.	REASON	DATE

Issue Date: 12/15/2022

Job Number: 112 18134 00

Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

GENERAL INFORMATION AND SHEET INDEX

2018 Appendix B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS NAME OF PROJECT: YOUNGSVILLE ACADEMY HIGH SCHOOL ADDRESS: 2179 Hicks Rd, Youngsville, NC OWNER/AUTHORIZED AGENT: TIMOTHY LEMOINE PHONE NUMBER: (T) 616-648-8302 E-MAIL: tim@bccgp.com OWNED BY: Private City County State Other City AHJ: YOUNGSVILLE CODE ENFORCEMENT JURISDICTION: ☐ City ☐ County ☐ State County AHJ: FRANKLIN **PRIMARY POINT OF CONTACT:** NAME: TOM BALKE COMPANY: Little Diversified Architectural Consulting PHONE NUMBER: 704-561-3414 **EMAIL:** TOM.BALKE@littleonline.com **Architect of Record:** LICENSE NUMBER: 6414 COMPANY: Little Diversified Architectural Consulting EMAIL: TOM.BALKE@littleonline.com Civil Engineer of Record: COMPANY: COLE STL EMAIL: jmcghee@colestl.com **Electrical Engineer of Record:** NAME: JARED BETTAC COMPANY: BETTAC ENGINEERING EMAIL: jared@bettacengineering.com Fire Alarm Engineer of Record: NAME: JARED BETTAC COMPANY: BETTAC ENGINEERING EMAIL: jared@bettacengineering.com Plumbing Engineer of Record: COMPANY: RKB ENGINEERING

PHONE NUMBER: 704-561-3414 LICENSE NUMBER: 038197 PHONE NUMBER: 480-417-2592 LICENSE NUMBER: 045339 PHONE NUMBER: <u>828-457-9532</u> LICENSE NUMBER: 045339 PHONE NUMBER: 828-457-9532 LICENSE NUMBER: 14846 PHONE NUMBER: 336-420-2686 EMAIL: rkb@rkbeng.com Mechanical Engineer of Record: LICENSE NUMBER: 14846 COMPANY: RKB ENGINEERING PHONE NUMBER: 336-420-2686 EMAIL: rkb@rkbeng.com Fire Suppression & Sprinkler Standpipe Engineer of Record: NAME: MARK E. ECKARD LICENSE NUMBER COMPANY: 4EX FIRE PROTECTION PHONE NUMBER: <u>828 851 0080</u> EMAIL: ex4fire@gmail.com Structural Engineer of Record: NAME: BRAD MCONNELL LICENSE NUMBER: 32597 Retaining Walls (> 5'-0" high) Engineer of Record: LICENSE NUMBER: COMPANY: PHONE NUMBER: EMAIL: Other Discipline Designer of Record LICENSE NUMBER: COMPANY: PHONE NUMBER:

PHONE NUMBER: COMPANY: 2018 NC Building Code: ☐ N/A ■ New Building ☐ Addition ☐ 1st Time Interior Completion Renovation

Shell & Core*

Phased Construction - Shell & Core* * Contact local inspection justisdiction for possible additional precedures & requirements.

LICENSE NUMBER:

2018 NC Existing Building Code: ■ N/A □ Prescriptive □ Repair □ Chapter 14 Alteration Level 1
Alteration Level 2
Alteration Level 3 ☐ Historic Property ☐ Change of Use

Constructed: (date) MM/DD/YYYY Current Occupancy(s): (Ch. 3) ##### Renovated: (date) MM/DD/YYYY Proposed Occupancy(s): (Ch. 3) ##### Occupancy Category: Current: | I | II | III | IV | N/A

BASIC BUILDING DATA

Construction Type: ☐ I-A ☐ I-B ☐ II-A ■ II-B ☐ III-A ☐ III-B ☐ IV ☐ V-A ☐ V-B

Proposed: | I | II | III | IV | N/A

☐ Class I - Dry ☐ Class II - Wet ☐ Class II - Dry Class III - Wet 🗌 Class III - Dry

Special Inspections Required:

SEE SHEET S002 FOR SCHEDULE OF SPECIAL INSPECTIONS

Primary Fire District: ☐ Yes ■ No Flood Hazard Area:

Yes No

(Table 1604.5)

Other Discipline Designer of Record

Special Inspections Required: ■ Yes* □ No

* Contact local inspection justisdiction for possible additional precedures & requirements.

TOTAL SCOPE OF WORK AREA: 36,500 SF

PROJECT SCOPE OF WORK DESCRIPTION: NEW TWO STORY CHARTER HIGH SCHOOL. TILT-UP CAST IN PLACE CONCRETE PANEL CONSTRUCTION TO HOUSE CLASSROOMS, A GYM, AND ASSOCIATED OFFICE SPACE.

Gross	Building	Area	Table

Floor	Existing Building Area	New Construction Area	Sub-Total
LEVEL 01	0 SF	25,000 SF	25,000 SF
LEVEL 02	0 SF	11,500 SF	11,500 SF
< <insert level="" name="">></insert>	0 SF	0 SF	0 SF
< <insert level="" name="">></insert>	0 SF	0 SF	0 SF
< <insert level="" name="">></insert>	0 SF	0 SF	0 SF
< <insert level="" name="">></insert>	0 SF	0 SF	0 SF
< <insert level="" name="">></insert>	0 SF	0 SF	0 SF
< <insert level="" name="">></insert>	0 SF	0 SF	0 SF
< <insert level="" name="">></insert>	0 SF	0 SF	0 SF
< <insert level="" name="">></insert>	0 SF	0 SF	0 SF
< <insert level="" name="">></insert>	0 SF	0 SF	0 SF
< <insert level="" name="">></insert>	0 SF	0 SF	0 SF
Totals:	0 SF	36,500 SF	36,500 SF

Allowable Area Classification & Uses

n	nary Occupa	ncy Classification(s)	:						
	<u>Assembly</u>	<u>Business</u>		<u>Hazardous</u>	<u>Institutional</u>	Merca	<u>antile</u>	<u>Storage</u>	Utility & Misc
	☐ A-1	□В		H-1 (Detonate)	I-1 (Condition 1)		M	S-1 (Moderate	e) 🗌 U
	☐ A-2	<u>Education</u>		H-2 (Deflagrate)	I-1 (Condition 2)	Reside	<u>ential</u>	S-1 (High Pile	;d)
	☐ A-3	■ E		H-3 (Combust)	I-2 (Condition 1)	F	₹-1	S-2 (Low)	
	☐ A-4	<u>Factory</u>		H-4 (Health)	I-2 (Condition 2)	F	₹-2	S-2 (High Pile	;d)
	☐ A-5	F-1 (Moderate)		H-5 (HPM)	I-3 (Condition 1)	F	₹-3	☐ Parking Gara	ge (Open)
		☐ F-2 (Low)			I-3 (Condition 2)	F	₹-4	☐ Parking Gara	ge (Enclosed)
					I-3 (Condition 3)			Repair Garag	е
					I-3 (Condition 4)				
					I-3 (Condition 5)				

Accessory Occupancy Classification(s): S-2, A-4, B Incidental Uses (Table 509): NONE

ZIP CODE: 27596

Special Uses (Chapter 4 - List Code Sections): 2018 NCBC 410.4

(Section 508.4)

Special Provisions (Chapter 5 - List Code Sections): NONE Exception: TABLE 508.4 - E / S-2 - BUILDING Mixed Occupancy? QUIPED WITH AN AUTOMATIC Yes, Non-Separated Use __ 1 Hour 2 Hour SPRINKLER SYSTEM (Section 508.3) ☐ 3 Hour ☐ 4 Hour Yes, Separated Use

Occupancy Type	Actual Area (ft²)	Allowable Area (ft²)	[Actual Area]÷[Allowable Area
	NOT APF	CABLE	
	APF		
	MOLL		

Allowable Area Increase Calculations					
Story #	Description & Use	(A) Building Area per Story [Actual]	(B) Table 506.2 ⁴ Area	(C) Area for Frontage Increase ^{1,5}	(D) Allowable Area pe Story or Unlimited
LEVEL 01	CLASSROOM, ADMINISTRATION, GYM, STORAGE	25,000 ft²	43,500 ft²	14,500 ft²	57,710 ft²
LEVEL 02	CLASSROOMS	11,500 ft²	43,500 ft ²	14,500 ft²	57,710 ft²
Bldg Level # - or- N/A	Building Level Description - or- N/A	O ft²	0 ft²	O ft²	0 ft²
Bldg Level # - or- N/A	Building Level Description - or- N/A	O ft²	O ft²	O ft²	O ft²
Bldg Level # - or- N/A	Building Level Description - or- N/A	O ft²	O ft²	O ft²	O ft²
Bldg Level # - or- N/A	Building Level Description - or- N/A	O ft²	O ft²	O ft²	O ft²

¹ Frontage area increases from Section 506.2 are computed below:

Perimeter which fronts a public way or open space having 20 feet minimum width = (F). (F) = 172'-0' Total Building Perimeter = (P) Ratio = (F/P)(F/P) = 0.238Minimum width of public way = (W)

FIRE PROTECTION REQUIREMENTS

Provided (w/

Detail # &

(W) = 25' - 0"

Sheet # for

Rated

Sheet # for

Design # for

Percent of frontage increase $I_f = 100[F/P - 0.25] \times W/30$ (If) = -0.98%² Unlimited area applicable under conditions of Section 507. ³ Maximum Building Area = Total number of stories in the building * D (Maxumum 3 stories) (506.2).

⁴ The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table 412.3.1. Frontage increase is based on the unsprinklered area value in Table 506.2.

Separation

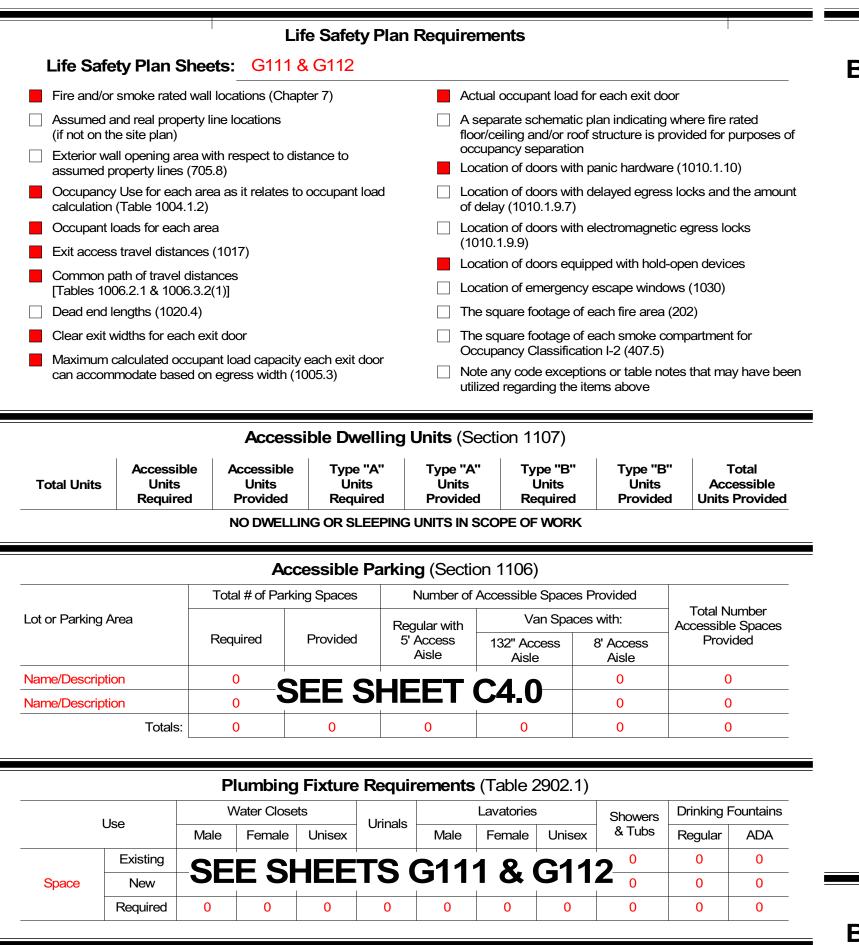
Indicate section number permitting reduction

Element	Distance (feet)	Required	Section ### reduction)*	Sheet #	Assembly	Penetration	Rated Joints
Structural Frame (Columns, girders, trusses, etc.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Bearing	Walls			
Exterior							
North	N/A	N/A	N/A	N/A	N/A	N/A	N/A
East	N/A	N/A	N/A	N/A	N/A	N/A	N/A
West	N/A	N/A	N/A	N/A	N/A	N/A	N/A
South	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Interior Bea	ring Walls	N/A	N/A	N/A	N/A	N/A	N/A
			Nonbearing Wa	alls & Partitions			
Exterior							
North	N/A	N/A	N/A	N/A	N/A	N/A	N/A
East	N/A	N/A	N/A	N/A	N/A	N/A	N/A
West	N/A	N/A	N/A	N/A	N/A	N/A	N/A
South	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Interior Walls	& Partitions	N/A	N/A	N/A	N/A	N/A	N/A
Floor Constructions beautiful supporting beautiful supporting beautiful supporting beautiful supporting beautiful supporting supporting beautiful supporting supporting beautiful supporting supportin		N/A	N/A	N/A	N/A	N/A	N/A
Floor Ceiling	Assembly	N/A	N/A	N/A	N/A	N/A	N/A
Columns Supp	orting Floors	N/A	N/A	N/A	N/A	N/A	N/A
Roof Construct supporting bea		N/A	N/A	N/A	N/A	N/A	N/A
Roof Ceiling	Assembly	N/A	N/A	N/A	N/A	N/A	N/A
Columns Sup	porting Roof	N/A	N/A	N/A	N/A	N/A	N/A
Shaft Enclos	sures - Exit	N/A	N/A	N/A	N/A	N/A	N/A
Shaft Enclose	ures - Other	N/A	N/A	N/A	N/A	N/A	N/A
Corridor S	eparation	N/A	N/A	N/A	N/A	N/A	N/A
Occupancy/ Separ		N/A	N/A	N/A	N/A	N/A	N/A
Party/Fire Wa	II Separation	N/A	N/A	N/A	N/A	N/A	N/A
Smoke Barrie	r Separation	N/A	N/A	N/A	N/A	N/A	N/A
Smoke F	Partition	N/A	N/A	N/A	N/A	N/A	N/A
Fire Riser Ro	om Partition	1 HR	N/A	1/A010	UL U 419	A010	A010
Incidental Use	e Separation	N/A	N/A	N/A	N/A	N/A	N/A

'				
Life Safety System Requirements				
Emergency Lighting:	■ Yes □ No	Smoke Detection System: \square Yes \square No		
Exit Signs:	■ Yes □ No	■ Partial HVAC SYSTEM		
Fire Alarm:	■ Yes □ No	Carbon Monoxide Detection: ■ Yes □ No HVAC SYSTEM		
	Percentage of Wall	Opening Calculations (Table 705.8)		

	Fire Seperation Distance (ft) from Property Line	Degree of Openings Protection (Table 705.8)	Allowable Area (%)	Actual Shown on Plan (%
Northern Elevation	32'-6"	UP, S	NO LIMIT	NO LIMIT
Eastern Elevation	32'-6"	UP, S	NO LIMIT	NO LIMIT
Southern Elevation	32'-6"	UP, S	NO LIMIT	NO LIMIT
Western Elevation	32'-6"	UP, S	NO LIMIT	NO LIMIT

Allowable Height			
	Allowable	Shown on Plans	Code References
Building Height in Feet (Table 504.3)	75'-0"	32'-6"	N/A
Building Height in Stories (Table 504.4)	3	2	N/A
¹ Provide code reference if the "Shown of	on Plans" quantity is not base	ed on Table 504.3 or 504.4.	



SPECIAL APPROVALS

Special approvals: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc.) Described Below: NC DEPARTMENT OF INSURANCE FRANKLIN COUNTY BUILDING DEPARTMENT

2018 Appendix B

BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

ENERGY SUMMARY

ENERGY REQUIREMENTS: The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

EXISTING BUILDING ENVELOPE COMPLIES WITH CODE: ☐ Yes ☐ No ■ Not Applicable

EXEMPT BUILDING: ☐ Yes ☐ No ■ Not Applicable Climate Zone:

METHOD OF COMPLIANCE: ☐ No Change to Existing Systems ☐ Prescriptive (ASHRAE 90.1-2013) ☐ Performance (ASHRAE 90.1-2013) Prescriptive (NCECC 2018) ☐ Performance (NCECC 2018)

2018 Appendix B **BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS** THERMAL ENVELOPE: **Roof/Ceiling Assemblies:**

Mark/ Lag	RS01	
Description	SEE SHEET A112 & SPECS	
Assembly Total U-Value	0.030	
R-Value of Insulation	R-30ci	
Skylights in Assembly	N/A	
Skylight Area in Assembly	N/A	
kylight Assemblies: N	/A	
Mark/Tag		
Assembly U-Value		
SHCC		

Exterior Wall Assemblies:

Mark/Tag	WS01	
Description	2" RIGID INSUL. ON 7 1/4" THICK CONCRETE PANEL	
Assembly Total U-Value	0.1	
R-Value of Insulation	10ci	

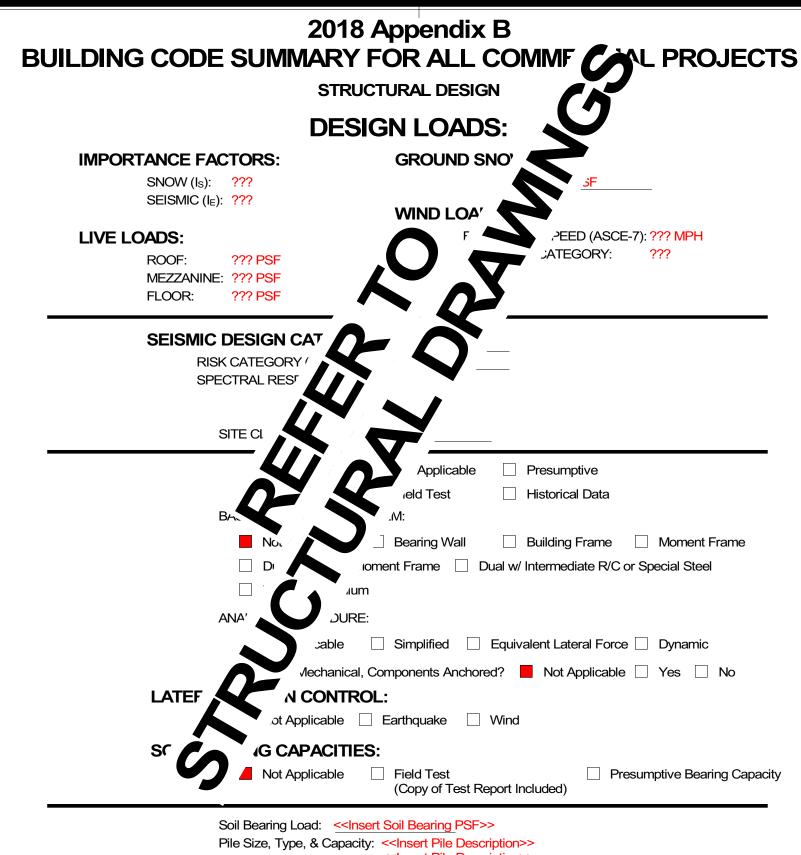
Openings (Windows/Doors with Glazing):

Mark/Tag	CW	ESF	
Assembly U-Value	0.38	0.38	
SHGC	0.25	0.25	
Projection Factor	-	-	
Door R-Value	1.29	1.29	
alls Below Grade: N/A			

	Mark/Tag		
	Description		
	Assembly Total U-Value		
	R-Value of Insulation		
FI	oors Over Uncondition	oned Space: N/A	
	Mork/Tog		

	Description		
	Assembly Total U-Value		
	R-Value of Insulation		
FI	oors Slab-on-Grade:		
	Mark/Tag	SLAB ON GRADE	

SEE DETAIL 4/A521 Description Assembly Total U-Value U-0.06 R-15 R-Value of Insulation Horizontal/Vertical Reg. 24" Slab Heated? UNHEATED



2018 Appendix B

BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS MECHANICAL DESIGN & SUMMARY

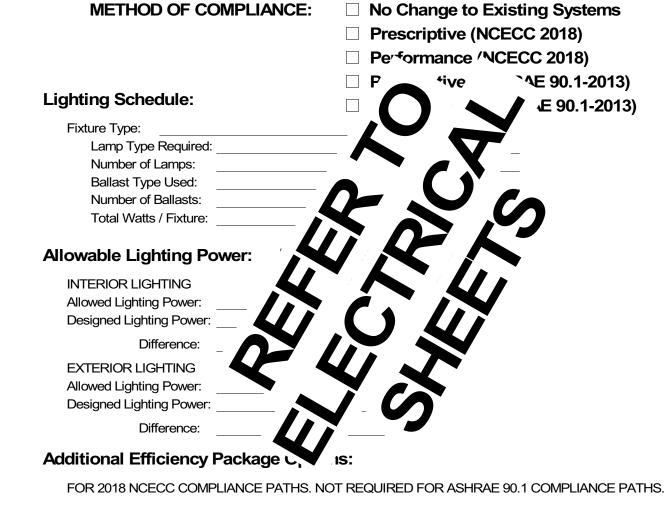


2018 Appendix B **BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS**

Number of phases Minimum efficiency:

Number of poles:

ELECTRICAL DESIGN & SUMMARY Electrical Systems and Equipment



- ☐ C406.2 More Efficient HVAC Equipment Performance
- C406.3 Reduced Lighting Power Density
- ☐ C406.4 Enhanced Digital Lighting Controls
- C406.5 On-Site Renewable Energy
- C406.6 Dedicated Outside Air System
- C406.7 Reduced Energy Use in Service Water Heating Not Applicable

REVIEWED FOR CODE COMPLIANCE FRANKLIN COUNTY NORTH CAROLINA lans must be on site at all times. It is the responsibility of the Permi holder or Contractor to comply with all local Ordinances, rules and egulations and the North Carolina Building Codes as if they were par of the specifications for the building. These shall be considered the icial approved plans over anything shown, described or implied to th

ontrary. Reviewer is not responsible for mistakes or oversights during the plan review. -- PFaulkner





9829 Spencer Road Brighton MI 48114 Main: 877-244-8562 Facsimile: 810-852-4721 www.bccgp.com



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FRANKLIN COUNTY BLDG SUBMISSION				
	NO.	REASON	DATE	
'	10.	REAGOIT	DAIL	

Issue Date: 12/15/2022 Job Number: 112 18134 00 Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA BUILDING CODE SUMMARY

1. Floor and Ceiling Runners — (Not Shown) — For use with Item 2 — Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth to accommodate stud size, with min 1-1/4 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max. 1A. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2B, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max. **CALIFORNIA EXPANDED METAL PRODUCTS CO** — Viper25™ Track CRACO MFG INC — SmartTrack25™ MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™ Track IMPERIAL MANUFACTURING GROUP INC — Viper25™ Track REVIEWED FOR CODE COMPLIANCE
FRANKLIN COUNTY NORTH CAROLINA
Plans must be on site at all times. It is the responsibility of the Permit holder or Contractor to comply with all local Ordinances, rules and regulations and the North Carolina Building Codes as if they were part of the specifications for the building. These shall be considered the official approved plans over anything shown, described or implied to the contrary. Reviewer is not responsible for mistakes or oversights during the plan review. -- PFaulkner 03/30/2023





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FRANKLIN COUNTY BLDG SUBMISSION

NO.	REASON	DATE

Issue Date: 12/15/2022

Job Number: 112 18134 00

Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

G010

FIRE RESISTANCE DESIGNS

1 LIFE SAFETY PLAN - LEVEL 01

ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM (GROSS)

A-3

ASSEMBLY WITHOUT FIXED SEATS - CONCENTRATED (NET)

B

BUSINESS AREA (GROSS)

EDUCATIONAL - CLASSROOM AREA (NET)

LOCKER ROOMS (GROSS)

LIFE SAFETY SYMBOLS

- CLEAR OPENING WIDTH OCCUPANCY TYPE - CLEAR WIDTH PER OCCUPANT OCCUPANT CAPACITY CLASSROOM SPACE USE - ACTUAL OCCUPANT LOAD 450 SF AREA PANIC HARDWARE - ACCESS CONTROL DEVICE - AREA PER OCCUPANT 100 GSF (E.G. CARD READER) (GROSS / NET / FIXED) REQUEST TO EXIT 15.1 --- OCCUPANTS - CLEAR STAIR WIDTH CLEAR WIDTH PER OCCUPANT - OCCUPANT CAPACITY ILLUMINATED EXIT SIGN - ACTUAL OCCUPANT LOAD EXTERIOR EMERGENCY LIGHT TRAVEL DISTANCE SHOWN: 000' RECESSED DOWNLIGHT W/ EXIT EGRESS DISTANCE EMERGENCY BACKUP - EXIT EGRESS COMMON PATH

EXIT EGRESS COMMON PATH

TRAVEL DISTANCE SHOWN: 000'

EXIT EGRESS DEAD END DISTANCE

DIAGONAL DISTANCE: 14' - 0"

OVERALL DIAGONAL DISTANCE

DISTANCE BETWEEN EXITS: 14' - 0"

EXIT REMOTENESS DISTANCE

DISTANCE TO FECs: 14' - 0"

TRAVEL DISTANCE TO FEC

FUNCTION (USE) OF SPACE	AREA	AREA PER OCCUPANT TEST	OCCUPANT LOAD
A-3			
ASSEMBLY WITHOUT FIXED SEATS - CONCENTRATED (NET)	8127 SF	7 SF	1162
()	8127 SF		1162
В			
BUSINESS AREA (GROSS)	1285 SF	100 SF	13
BUSINESS AREA (GROSS)	218 SF	100 SF	3
BUSINESS AREA (GROSS)	297 SF	100 SF	3
BUSINESS AREA (GROSS)	166 SF	100 SF	2
E	1966 SF		22
LOCKER ROOMS (GROSS)	787 SF	50 SF	16
EDUCATIONAL - CLASSROOM AREA (NET)	716 SF	20 SF	36
EDUCATIONAL - CLASSROOM AREA (NET)	687 SF	20 SF	35
EDUCATIONAL - CLASSROOM AREA (NET)	739 SF	20 SF	37
EDUCATIONAL - CLASSROOM AREA (NET)	1075 SF	20 SF	54
EDUCATIONAL - CLASSROOM AREA (NET)	1070 SF	20 SF	54
EDUCATIONAL - CLASSROOM AREA (NET)	705 SF	20 SF	36
	5780 SF		269
S-2			
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM (GROSS)	253 SF	300 SF	1
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM (GROSS)	518 SF	300 SF	2
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM (GROSS)	176 SF	300 SF	1
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM (GROSS)	119 SF	300 SF	1
	1065 SF		6
LEVEL 01 OCCUPANT LOAD	16939 SF		1457

PLUMBING FIXTURE REQUIREMENTS

TOTAL PROVIDED

facility per NC Fire Code Section 907.2.3.

PLUMBING FIXTURE OCCUPANCY COUNT LEVEL 01										
STAFF ²		STUDENT ¹			ASSEMBLY ³			STORAGE		
ICE STAFF	22	STUDENTS / CL	STUDENTS / CLASSROOM 33		OCCUPA	JPANT COUNT 1,162		OCCUPANT COUNT		6
OOM STAFF	11		TOTAL	165		MALE	581		MALE	3
TOTAL	33		MALE	83		FEMALE	581		FEMALE	3
FEMALE	19		FEMALE	83						
		FICE STAFF 22 DOM STAFF 11 TOTAL 33	FICE STAFF 22 STUDENTS / CL DOM STAFF 11 TOTAL 33	STAFF ² STUDENT ¹ FICE STAFF 22 STUDENTS / CLASSROOM DOM STAFF 11 TOTAL TOTAL 33 MALE	STAFF2 STUDENT¹ FICE STAFF 22 STUDENTS / CLASSROOM 33 DOM STAFF 11 TOTAL 165 TOTAL 33 MALE 83	STAFF2 STUDENT¹ A FICE STAFF 22 STUDENTS / CLASSROOM 33 OCCUPAL DOM STAFF 11 TOTAL 165 TOTAL 33 MALE 83	STAFF ² STUDENT ¹ ASSEMBLY ³ FICE STAFF 22 STUDENTS / CLASSROOM 33 OCCUPANT COUNT DOM STAFF 11 TOTAL 165 MALE TOTAL 33 MALE 83 FEMALE	STAFF2 STUDENT¹ ASSEMBLY³ FICE STAFF 22 STUDENTS / CLASSROOM 33 OCCUPANT COUNT 1,162 DOM STAFF 11 TOTAL 165 MALE 581 TOTAL 33 MALE 83 FEMALE 581	STAFF2 STUDENT¹ ASSEMBLY³ STUDENTS FICE STAFF 22 STUDENTS / CLASSROOM 33 OCCUPANT COUNT 1,162 OCCUPANT DOM STAFF 11 TOTAL 165 MALE 581 TOTAL 33 MALE 83 FEMALE 581	STAFF2 STUDENT¹ ASSEMBLY³ STORAGE FICE STAFF 22 STUDENTS / CLASSROOM 33 OCCUPANT COUNT 1,162 OCCUPANT COUNT DOM STAFF 11 TOTAL 165 MALE 581 MALE TOTAL 33 MALE 83 FEMALE 581 FEMALE

NOTE: THE ABOVE OCCUPANCY COUNTS ARE BASED ON SQUARE FOOTAGE AREAS AND NOT BASED ON ACTUAL NUMBER OF STUDENTS PER ROOM. SEE PLUMBING FIXTURE NOTES BELOW.

S	** ALL FIXTURE CALCULATIONS ARE BASE ON 2018 NCPC TABLE 403.								
DESCRIPTION		WATER (CLOSETS	LAVAT	ORIES	DRINKING			
		MALE	FEMALE	MALE	FEMALE	FOUNTIANS	WC	LAV	D.F.'S
B - BUSINESS / STAFF	33 OCCS	0.46	0.76	0.175	0.175	0.35	1 / 30 1 / 25	1 / 100	1 / 100
S-2 - STORAGE	6 OCCS	0.01	0.12	0.03	0.03	0.006	1 / 100	1 / 100	1 / 1,000
SUB-TOTAL		0.47	0.88	0.178	0.178	0.041			
TOTAL REQUIRED		1	1	1	1	1			
TOTAL PROVIDED		1	1	1	1	4			

S	TUDENT PI		FIXTURE F VEL 01	REQUIREM	ENTS ¹				
DESCRIPTION		WATER CLOSETS		LAVATORIES		DRINKING			
		MALE	FEMALE	MALE	FEMALE	FOUNTIANS	wc	LAV	D.F.'S
E- CLASSROOM	198 OCCS	3.3	3.96	0.99	0.99	1.98	1 / 30 1 / 25	1 / 100	1 / 100
SUB-TOTAL		3.3	3.96	0.99	0.99	1.98			
TOTAL REQUIRED		4	4	1	1	2			
TOTAL PROVIDED		6	7	4	4	4			
AS	SSEMBLY P		FIXTURE VEL 01	REQUIREN	MENTS ³				
DESCRIPTION		WATER (CLOSETS	LAVAT	ORIES	DRINKING			
		MALE	FEMALE	MALE	FEMALE	FOUNTIANS	wc	LAV	D.F.'S
A-3 - GYM	1,162 OCCS	4.64	5.81	2.90	2.90	2.32	1 / 125 1 / 100	1 / 200	1 / 500
SUBTOTAL		4.64	5.81	2.90	2.90	2.32			
TOTAL REQUIRED		5	6	3	3	3			

- OCCUPANT COUNT FOR PLUMBING FIXTURES FOR STUDENTS IS CALCULATED BASED ON 33 STUDETNS PER CLASSROOM 2018 NCBC 2902.9.1 - <u>LEVEL 01 CONTAINS 6 CLASSROOMS > 500 SF. STUDENT OCCUPANCY = 6 X 33 = 198.</u>
- OCCUPANT COUNT FOR PLUMBING FIXTURES FOR STAFF IS CALCULATED BASED ON A 1.75 STAFFING FACTOR AND PROVIDED AT A STAFFING RATIO OF 70/30 FEMALE/MALE - 2018 NCBC 2902.9.3 - <u>LEVEL 01 CONTAINS 5 CLASSROOMS > 500 SF. STAFF</u> OCCUPANCY = 6 X 1.75 = 10.5
- 3. FIXTURES PROVIDED FOR GYMNASIUM ARE BEING USED TO SATISFY THE TOTAL NUMBER OF REQUIRED FIXTURES FOR THE CLASSROOMS. THE FIXTURE COUNTS ARE ASSUMED TO NOT BE USED CONCURRENTLY BETWEEN THE GYMNASIUM AND THE CLASSROOMS 2018 NCBC 2902.9.4.

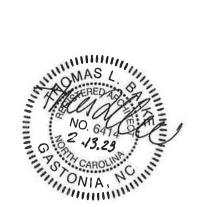




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OUNGSVILLE ACADEM NEW HIGH SCHOOL



FRANKLIN COUNTY BLDG SUBMISSION

UBINII SSI ON								
NO. 2		DATE 2/13/2023						

Issue Date: 12/15/2022

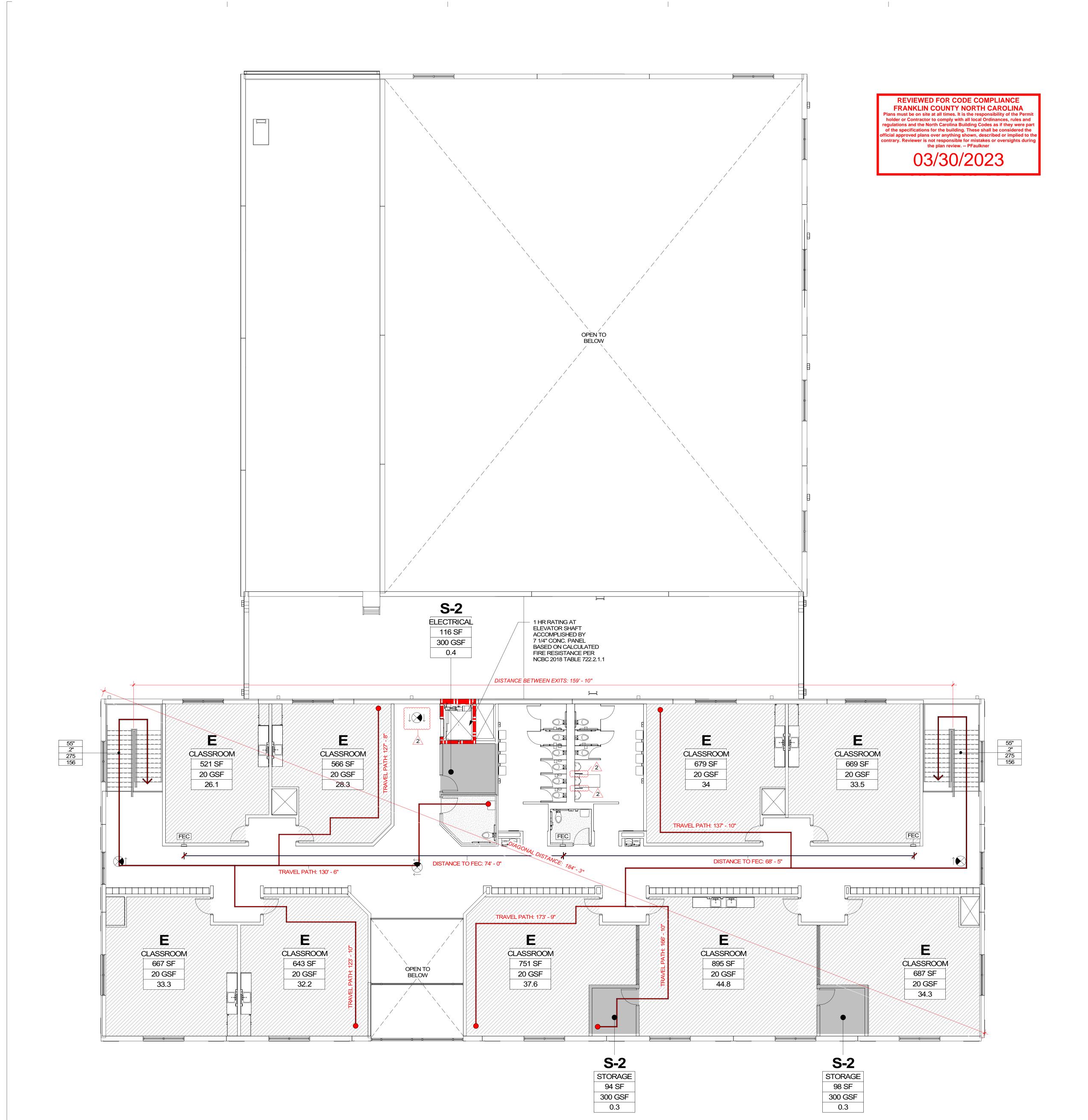
Job Number: 112 18134 00

Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

LIFE SAFETY PLAN - LEVEL 01

G111



LIFE SAFETY USE LEGEND

S-2 ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM (GROSS)

EDUCATIONAL - CLASSROOM AREA (NET)

LIFE SAFETY SYMBOLS

CLEAR OPENING WIDTH

CLEAR WIDTH PER OCCUPANT

O.2"
OCCUPANT CAPACITY

ACTUAL OCCUPANT LOAD

75
PANIC HARDWARE
ACCESS CONTROL DEVICE
(E.G. CARD READER)
REQUEST TO EXIT

CLEAR STAIR WIDTH

CLEAR WIDTH PER OCCUPANT

O.2"
OCCUPANT CAPACITY

ACTUAL OCCUPANT LOAD

75

CLASSROOM

SPACE USE

450 SF

AREA

AREA PER OCCUPANT

(GROSS / NET / FIXED)

15.1

OCCUPANTS

ILLUMINATED EXIT SIGN

TRAVEL DISTANCE SHOWN: 000'

EXIT EGRESS DISTANCE
EXIT EGRESS COMMON PATH

EXTERIOR EMERGENCY LIGHT

RECESSED DOWNLIGHT W/
EMERGENCY BACKUP

DIAGONAL DISTANCE: 14' - 0"

OVERALL DIAGONAL DISTANCE

DISTANCE BETWEEN EXITS: 14' - 0"

EXIT REMOTENESS DISTANCE

DISTANCE TO FECs: 14' - 0"

TRAVEL DISTANCE TO FEC

		AREA PER							
FUNCTION (USE) OF SPACE	AREA	OCCUPANT TEST	LOAD						
E									
EDUCATIONAL - CLASSROOM AREA (NET)	667 SF	20 SF	34						
EDUCATIONAL - CLASSROOM AREA (NET)	643 SF	20 SF	33						
EDUCATIONAL - CLASSROOM AREA (NET)	751 SF	20 SF	38						
EDUCATIONAL - CLASSROOM AREA (NET)	895 SF	20 SF	45						
EDUCATIONAL - CLASSROOM AREA (NET)	687 SF	20 SF	35						
EDUCATIONAL - CLASSROOM AREA (NET)	669 SF	20 SF	34						
EDUCATIONAL - CLASSROOM AREA (NET)	679 SF	20 SF	34						
EDUCATIONAL - CLASSROOM AREA (NET)	566 SF	20 SF	29						
EDUCATIONAL - CLASSROOM AREA (NET)	521 SF	20 SF	27						
	6079 SF		308						
0.0									
S-2 ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM (GROSS)	116 SF	300 SF	1						
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM (GROSS)	94 SF	300 SF	1						
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM (GROSS)	98 SF	300 SF	1						
(Ortoo)	308 SF	330 01	2						
LEVEL 02 OCCUPANT LOAD	6386 SF		311						

NOTE: THE ABOVE OCCUPANCY COUNTS ARE BASED ON SQUARE FOOTAGE AREAS AND NOT BASED ON ACTUAL NUMBER OF STUDENTS PER ROOM. SEE PLUMBING FIXTURE NOTES BELOW.

PLUMBING FIXTURE REQUIREMENTS

			PLUMBIN	_	E OCC	_	COUNT					
STAFF ²			STUI	STUDENT ¹			ASSEMBLY ³			STORAGE		
OFF	ICE STAFF	0	STUDENTS / CLASSROOM		33	OCCUPA	PANT COUNT (OCCUPA	NT COUNT		
CLASSRO	OOM STAFF	16		TOTAL	165		MALE	0		MALE		
	TOTAL	16		MALE	83		FEMALE	0		FEMALE		
	FEMALE	12		FEMALE	83		-		-			
	MALE	4		•	•	•						

	MALE	4								
	ST	TAFF PLU	UMBING FI LE	XTURE RE	QUIREME	NTS ²		** ALL FIXTURE CALCULATIONS ARE BAS ON 2018 NCPC TABLE 403		
DESCRIPTION			WATER (CLOSETS	LAVAT	ORIES	DRINKING			
			MALE	FEMALE	MALE	FEMALE	FOUNTIANS	wc	LAV	D.F.'S
E- CLASSROOM	M STAFF	16 OCCS	0.13	0.4	0.08	0.08	0.33	1 / 30 1 / 25	1 / 100	1 / 100
S-2 - STORAGE	Ī	2 OCCS	0.01	0.01	0.01	0.01	0.002	1 / 100	1 / 100	1 / 1,000
SUB-TOTAL			0.14	0.41	0.18	0.18	0.332			
TOTAL REQUIR	RED		1	1	1	1	1			
TOTAL PROVID	DED		1	1	1	1	4			

STUDENT PLUMBING FIXTURE REQUIREMENTS ¹ LEVEL 02									
DESCRIPTION		WATER CLOSETS		LAVATORIES		DRINKING			
		MALE	FEMALE	MALE	FEMALE	FOUNTIANS	wc	LAV	D.F.'S
E- CLASSROOM	297 OCCS	4.96	5.96	1.49	1.49	2.97	1 / 30 1 / 25	1 / 100	1 / 100
SUB-TOTAL		4.96	5.96	1.49	1.49	2.97			
TOTAL REQUIRED		5	6	2	2	3			
TOTAL PROVIDED		6	6	4	4	4			

- OCCUPANT COUNT FOR PLUMBING FIXTURES FOR STUDENTS IS CALCULATED BASED ON 33 STUDETNS PER CLASSROOM 2018 NCBC 2902.9.1 - <u>LEVEL 02 CONTAINS 5 CLASSROOMS > 500 SF. STUDENT OCCUPANCY = 9 X 33 = 297.</u>
- OCCUPANT COUNT FOR PLUMBING FIXTURES FOR STAFF IS CALCULATED BASED ON A 1.75 STAFFING FACTOR AND PROVIDED
 AT A STAFFING RATIO OF 70/30 FEMALE/MALE 2018 NCBC 2902.9.3 LEVEL 01 CONTAINS 9 CLASSROOMS > 500 SF. STAFF
 OCCUPANCY = 9 X 1.75 = 15.75.

ADEN.





JNGSVILLE ACADEMY JEW HIGH SCHOOL



FRANKLIN COUNTY BLDG SUBMISSION

NO.	REASON	DATE
2	COUNTY REVIEW CYCLE 1	2/13/2023

Issue Date: 12/15/2022

Job Number: 112 18134 00

Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

LIFE SAFETY PLAN - LEVEL 02

G112

SECTION 01 10 00 - SUMMARY

SUMMARY A. Section Includes: Project information.

Work covered by Contract Documents. Specification and Drawing conventions.

Miscellaneous provisions 1.3 PROJECT INFORMATION

Project Identification: Youngsville Academy High School, 2179 Hicks Road, Youngsville, NC 27596 B. Project Owner: BC Construction Group, Tim Lemoine, (616) 648-8302. Design-Builder: BC Construction Group 10153 E Grand River Ave, Ste. B, Brighton, MI 48116

Architecture and Structural: Little Diversified Architectural Consulting, 615 S College St. Suite 1600, Charlotte, NC 28202. Web-Based Project Software: Administered by Design-Build Entity.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following: New construction of an approximately 36,500 square feet, two-story educational space including classrooms, offices, and multi-purpose room. B. Type of Contract: Single prime contract, Architect serves as a consultant to Design Build Entity who contracts directly with the Owner.

Build America, Buy America Act (BABAA) Requirements

All products must meet BABAA requirements. Include Manufacturer's Certification for BABAA requirements with all applicable submittals. If a specific manufacturer is used in the bidding, a statement that Manufacturer will comply with BABAA must be included with the bid submission.

3. Comply with BABAA requirements, including coordination with manufacturers, distributors, and suppliers to correct deficiencies in any BABAA documentation. Approval of shop drawings or samples shall include review of BABAA documentation.

5. Contractor will certify upon completion that all work and materials have complied with BABAA For change orders, provide BABAA documentation for new products or materials required by the change. Installation of materials or products that are not compliant with BABAA requirements will be considered defective work. Contractor to ensure that the Architect has an approved Manufacturer's Certification or

waiver prior to items being delivered to the project site. 8. By submitting an application for payment, based in whole or in part on furnishing equipment or materials. the Contractor certifies that such equipment and materials are compliant with BABAA requirements.

SPECIFICATION AND DRAWING CONVENTIONS A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a

sentence or phrase. B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications

 Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products: Terminology: Materials and products are identified by the typical generic terms used in the individual

Specifications Sections. 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.

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01 10 00 - 2

3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

SUMMARY

SUMMARY

SECTION 01 25 00 - SUBSTITUTION PROCEDURES

ACTION SUBMITTALS

QUALITY ASSURANCE

SUBSTITUTION PROCEDURES

Division 01 Specification Sections, apply to this Section.

accommodate proposed substitution.

Samples, where applicable or requested

compliance with requirements indicated.

availability, or delays in delivery.

appropriate for applications indicated

names and addresses of architects and owners.

any, from the Work specified.

Section includes administrative and procedural requirements for substitutions.

Substitution Request Form: Use facsimile of form provided in Project Manual.

Certificates and qualification data, where applicable or requested.

Cost information, including a proposal of change, if any, in the Contract Sum.

days of receipt of additional information or documentation, whichever is later.

necessary because of failure of proposed substitution to produce indicated results.

Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related

3. Architect's Action: If necessary, Architect will request additional information or documentation for

products and materials. Engage a qualified testing agency to perform compatibility tests recommended by

evaluation within seven days of receipt of a request for substitution. Architect will notify Design-Build

Entity of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other

Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or

installation method to be replaced. Include Specification Section number and title and Drawing numbers and

Documentation: Show compliance with requirements for substitutions and the following, as applicable:

Statement indicating why specified product or fabrication or installation method cannot be provided,

Coordination of information, including a list of changes or revisions needed to other parts of the

Work and to construction performed by Owner and separate contractors that will be necessary to

Detailed comparison of significant qualities of proposed substitutions with those of the Work

specified. Include annotated copy of applicable Specification Section. Significant qualities may

include attributes, such as performance, weight, size, durability, visual effect, sustainable design

characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if

Product Data, including drawings and descriptions of products and fabrication and installation

List of similar installations for completed projects, with project names and addresses as well as

Material test reports from a qualified testing agency, indicating and interpreting test results for

Detailed comparison of Contractor's construction schedule using proposed substitutions with

products specified for the Work, including effect on the overall Contract Time. If specified product

or method of construction cannot be provided within the Contract Time, include letter from

manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of

Contractor's certification that proposed substitution complies with requirements in the Contract

Contractor's waiver of rights to additional payment or time that may subsequently become

Documents, except as indicated in substitution request, is compatible with related materials and is

Research reports evidencing compliance with building code in effect for Project, from ICC-ES.

PART 3 - EXECUTION (Not Used) END OF SECTION 01 10 00

Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

A. Substitutions for Convenience: Architect will consider requests for substitution if received within 10 days prior to

Requested substitution provides specified warranty.

products, and is acceptable to all contractors involved.

bid. Requests received after that time may be considered or rejected at discretion of Architect. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements: Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or

other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations. Requested substitution does not require extensive revisions to the Contract Documents. Requested substitution is consistent with the Contract Documents and will produce indicated

Substitution request is fully documented and properly submitted.

If requested substitution involves more than one contractor, requested substitution has been

coordinated with other portions of the Work, is uniform and consistent, is compatible with other

01 25 00 - 2

01 31 00 - 1

Requested substitution will not adversely affect Contractor's construction schedule. Requested substitution has received necessary approvals of authorities having jurisdiction. Requested substitution is compatible with other portions of the Work. Requested substitution has been coordinated with other portions of the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used) END OF SECTION 01 25 00

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

SUBSTITUTION PROCEDURES

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

This Section includes administrative provisions for coordinating construction operations on Project including, but Coordination Drawings Project meetings.

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

Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration

given to conservation of energy, water, and materials. 1.5 PROJECT MEETINGS General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated. Attendees: Inform participants and others involved, and individuals whose presence is required, of date

and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting. Progress Meetings: Conduct progress meetings at biweekly regular intervals. Coordinate dates of meetings

with preparation of payment requests. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of

significance that could affect progress. Include topics for discussion as appropriate to status of Project. Minutes: Record and distribute the meeting minutes to all in attendance or who should have been in attendance within 3 business days. Coordination Meetings: Conduct Project coordination meetings as needed in order to coordinate the work Attendees: Contractor, sub-contractor, supplier, and other entity concerned with current progress or

involved in planning, coordination, or performance of future activities shall be represented at these

meetings. All participants at the conference shall be familiar with Project and authorized to conclude

matters relating to the Work.

1.6 REQUESTS FOR INTERPRETATION (RFIs) Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with

Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of

Content of the RFI: Include a detailed, legible description of item needing interpretation and the following: Project name. Date.

PROJECT MANAGEMENT AND COORDINATION

Name of Contractor. Name of Architect. RFI number, numbered sequentially. Specification Section number and title and related paragraphs, as appropriate.

Drawing number and detail references, as appropriate. Field dimensions and conditions, as appropriate.

Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI. Contractor's signature. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and

other information necessary to fully describe items needing interpretation. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow seven working days for Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the

The following RFIs will be returned without action:

Requests for approval of submittals Requests for approval of substitutions.

Requests for coordination information already indicated in the Contract Documents. Requests for adjustments in the Contract Time or the Contract Sum.

Requests for interpretation of Architect's actions on submittals. Incomplete RFIs or RFIs with numerous errors. response will start again.

Architect's action may include a request for additional information, in which case Architect's time for Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification

a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within seven days of receipt of the RFI response. C. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used) END OF SECTION 01 31 00

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

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

Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals,

ACTION SUBMITTALS Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by

construction schedule. Include time required for initial contractor review, processing as indicated below in

Article 1.5 C. Processing Time, ordering, manufacturing, fabrication, and delivery when establishing dates. 1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will not be provided by Architect for Contractor's use in preparing submittals.

for portions of the Work are indicated on approved submittal schedule.

submittals until related submittals are received.

 Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity. Submit all submittal items required for each Specification Section concurrently unless partial submittals

Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals. 4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination. Architect reserves the right to withhold action on a submittal requiring coordination with other

Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including 1. Initial Review: Allow 14 days for initial review of each submittal. Allow additional time if coordination with

subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination. 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial

Resubmittal Review: Allow 14 days for review of each resubmittal. 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 21 days for review of each

D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows: Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item. Name file with submittal number or other unique identifier, including revision identifier. Provide means for insertion to permanently record Contractor's review and approval markings and action

taken by Architect. Options: Identify options requiring selection by Architect. Resubmittals: Make resubmittals in same form and number of copies as initial submittal. Note date and content of previous submittal.

submittal. Submittal will be returned to Architect before being returned to Contractor.

Note date and content of revision in label or title block and clearly indicate extent of revision. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

SUBMITTAL PROCEDURES 01 33 00 - 1

G. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators,

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections. Product Data: Collect information into a single submittal for each element of constru

Submit Product Data before or concurrent with Samples. Submit Product Data in the following format: a. PDF electronic file.

activities. Show distribution on transmittal forms.

are marked with approval notation from Architect's action stamp.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

installers, authorities having jurisdiction, Owner and others as necessary for performance of construction

H. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that

 Identification of products. b. Schedules.

Notation of coordination requirements Notation of dimensions established by field measurement. Relationship and attachment to adjoining construction clearly indicated

Seal and signature of professional engineer if specified. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches. Submit Shop Drawings in the following format:

 Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as Transmit Samples that contain multiple, related components such as accessories together in one submittal package. Identification: Attach label on unexposed side of Samples that includes the following:

 Generic description of Sample. Product name and name of manufacturer. Sample source.

limits of variations

assigned by Contractor if none is indicated.

Number and name of room or space.

Submit product schedule in the following format:

Location within room or space.

a. PDF electronic file.

owners, and other information specified.

with requirements in the Contract Document

with requirements in the Contract Documents

Name of evaluation organization.

Time period when report is in effect.

performance requirements in the Contract Documents.

Product and manufacturers' names.

Date of evaluation.

Description of product.

Limitations of use.

Test procedures and results

Manufacturer and product name, and model number if applicable.

Qualification Record on AWS forms. Include names of firms and personnel certified.

a. PDF electronic file.

SUBMITTAL PROCEDURES

Compliance with specified standards.

Number and title of applicable Specification Section. Specification paragraph number and generic name of each item.

For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

 Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use property of Contractor.

Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material

to be used for the Work, cured and finished in manner specified, and physically identical with material or

product proposed for use, and that show full range of color and texture variations expected. Samples

include, but are not limited to, the following: partial sections of manufactured or fabricated components;

small cuts or containers of materials; complete units of repetitively used materials; swatches showing

color, texture, and pattern; color range sets; and components used for independent testing and

Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets;

remainder will be returned. Mark up and retain one returned Sample set as a project record

Submit a single Sample where assembly details, workmanship, fabrication techniques,

If variation in color, pattern, texture, or other characteristic is inherent in material or product

represented by a Sample, submit at least three sets of paired units that show approximate

connections, operation, and other similar characteristics are to be demonstrated.

E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types

of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or

Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person.

G. Welding Certificates: Prepare written certification that welding procedures and personnel comply with

H. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies

J. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies

Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies

Include lists of completed projects with project names and addresses, contact information of architects and

requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure

with requirements in the Contract Documents and, where required, is authorized by manufacturer for this

Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer

complies with requirements in the Contract Documents. Include evidence of manufacturing experience where

Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form,

with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer

and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard

form, indicating and interpreting results of tests performed before installation of product, for compliance with

indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

M. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies

N. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having

jurisdiction, that product complies with building code in effect for Project. Include the following information:

b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

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G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with

additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction,

are similar in material, design, and extent to those indicated for this Project.

indicated and shall be engaged for the activities indicated.

QUALITY REQUIREMENTS 01 40 00 - 1

Requirements of authorities having jurisdiction shall supersede requirements for specialists.

P. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard

Q. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either

R. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and

Performance and Design Criteria: Where professional design services or certifications by a design professional

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required

Documents. Include list of codes, loads, and other factors used in performing these services.

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location,

A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required.

B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other

Section includes administrative and procedural requirements for quality assurance and quality control.

control procedures that facilitate compliance with the Contract Document requirements.

These services do not relieve Contractor of responsibility for compliance with the Contract Document

1. Specific quality-assurance and -control requirements for individual construction activities are specified in

the Sections that specify those activities. Requirements in those Sections may also cover production of

Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -

Requirements for Contractor to provide quality-assurance and -control services required by Architect,

Referenced Standards: If compliance with two or more standards is specified and the standards establish

different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent

requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision

provided or performed. The actual installation may comply exactly with the minimum quantity or quality

specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated

numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum

General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual

Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project

Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated

for this Project and with a record of successful in-service performance, as well as sufficient production capacity

and with a record of successful in-service performance, as well as sufficient production capacity to produce

Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in

Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction

where Project is located and who is experienced in providing engineering services of the kind indicated.

Engineering services are defined as those performed for installations of the system, assembly, or product that

Specialists: Certain Specification Sections require that specific construction activities shall be performed by

entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements

material, design, and extent to that indicated for this Project, whose work has resulted in construction with a

Owner, Commissioning Authority, or authorities having jurisdiction are not limited by provisions of this

comply with requirements. Architect will forward each submittal to appropriate party.

E. Submittals not required by the Contract Documents may be returned by the Architect without action.

Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with

submittal number. Specification Section title and number, name of reviewer, date of Contractor's approval, and

statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract

and post it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to

Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received

Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal

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written recommendations for primers and substrate preparation needed for adhesion.

and version of software, if any, used for calculations. Include page numbers.

the Contract Documents.

2.2 DELEGATED-DESIGN SERVICES

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

3.2 ARCHITECT'S ACTION

without review.

END OF SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.3 CONFLICTING REQUIREMENTS

to produce required units.

to Architect for a decision before proceeding.

record of successful in-service performance.

Specification Sections specify additional requirements.

before proceeding.

indicate action, as follows:

Furnish as Corrected.

Revise and Resubmit

prior approval from Architect.

SECTION 01 40 00 - QUALITY REQUIREMENTS

Division 01 Specification Sections, apply to this Section.

Reviewed.

Rejected.

specific performance and design criteria indicated.

for additional information to Architect.

approval stamp before submitting to Architect.

or certified by a design professional.

form, indicating and interpreting results of compatibility tests performed before installation of product. Include

during installation of product or after product is installed in its final location, for compliance with requirements in

design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other

performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name

are specifically required of Contractor by the Contract Documents, provide products and systems complying with

submittals, submit digitally signed PDF electronic file paper copies of certificate, signed and sealed by the

responsible design professional, for each product and system specifically assigned to Contractor to be designed

If criteria indicated are not sufficient to perform services or certification required, submit a written request

Indicate that products and systems comply with performance and design criteria in the Contract

NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are

similar in material, design, and extent to those indicated for this Project. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project. J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance

with specified requirements for performance and test methods, comply with the following: Contractor responsibilities include the following: Provide test specimens representative of proposed products and construction. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.

Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements. Build site-assembled test assemblies and mockups using installers who will perform same tasks for e. When testing is complete, remove test specimens, assemblies, and mockups; do not reuse

Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect and Commissioning Authority, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction

and finish required to comply with the following requirements, using materials indicated for the completed Work: Build mockups in location and of size indicated or, if not indicated, as directed by Architect. Notify Architect seven days in advance of dates and times when mockups will be constructed. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be

Obtain Architect's approval of mockups before starting work, fabrication, or construction. Allow seven days for initial review and each re-review of each mockup. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work. Demolish and remove mockups when directed unless otherwise indicated.

Demonstrate the proposed range of aesthetic effects and workmanship.

employed during the construction at Project.

1.5 QUALITY CONTROL A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility. Owner will engage a qualified testing agency to perform these services. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to

by Change Order. B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having

comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted

jurisdiction, whether specified or not Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services. a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility

6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so 7. Provide Backflow Prevention Assembly Test Report to local authorities having jurisdiction and provides a copy Architect. Form attached to this section for reference.

Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 01 33 00 "Submittal Procedures."

Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents. F. Testing Agency Responsibilities: Cooperate with Architect, Commissioning Authority and Contractor in

performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect, Commissioning Authority, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services. Determine the location from which test samples will be taken and in which in-situ tests are conducted. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements. 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service

through Contractor. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work. Do not perform any duties of Contractor. G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-

of operations to permit assignment of personnel. Provide the following: Access to the Work. Incidental labor and facilities necessary to facilitate tests and inspections Adequate quantities of representative samples of materials that require testing and inspecting. Assist

control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance

agency in obtaining samples. Facilities for storage and field curing of test samples. Delivery of samples to testing agencies.

Preliminary design mix proposed for use for material mixes that require control by testing agency. Security and protection for samples and for testing and inspecting equipment at Project site. H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to

Schedule times for tests, inspections, obtaining samples, and similar activities. I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses. 1. Distribution: Distribute schedule to Owner, Architect, Commissioning Authority, testing agencies, and

each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

accommodate testing and inspecting.

TEST AND INSPECTION LOG

PART 3 - EXECUTION

 Test and Inspection Log: Prepare a record of tests and inspections. Include the following: Date test or inspection was conducted. Description of the Work tested or inspected.

QUALITY REQUIREMENTS

Date test or inspection results were transmitted to Architect. Identification of testing agency or special inspector conducting test or inspection.

log for Architect's, Commissioning Authority's, and reference during normal working hours.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection

REPAIR AND PROTECTION General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining

rotect construction exposed by or for quality-control service activities. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-

areas with durable seams that are as invisible as possible. Comply with the Contract Document

01 40 00 - 3

requirements for cutting and patching in Section 01 73 00 "Execution." END OF SECTION 01 40 00

01 40 00 - 4

QUALITY REQUIREMENTS

SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

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

Section includes administrative and procedural requirements for the following: Disposing of nonhazardous construction waste.

1.3 QUALITY ASSURANCE Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION RECYCLING CONSTRUCTION WASTE, GENERAL

General: Recycle paper and beverage containers used by on-site workers. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable

waste by type at Project site to the maximum extent practical according to approved construction waste Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin. Inspect containers and bins for contamination and remove contaminated materials if found.

Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust. Stockpile materials away from construction area. Do not store within drip line of remaining trees

Remove recyclable waste from Owner's property and transport to recycling receiver or processor. RECYCLING CONSTRUCTION WASTE

requirements for recycling wood.

Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location. Polystyrene Packaging: Separate and bag materials. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with

Crates: Break down crates into component wood pieces and comply with requirements for recycling

B. Wood Materials: Clean Cut-Offs of Lumber: Grind or chip into small pieces.

Store components off the ground and protect from the weather.

Clean Sawdust: Bag sawdust that does not contain painted or treated wood. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

01 25 00 - 1

PROJECT MANAGEMENT AND COORDINATION

01 31 00 - 2

SUBMITTAL PROCEDURES

01 33 00 - 3

QUALITY REQUIREMENTS

01 40 00 - 2

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

01 74 19 - 1

615 South College Street, Suite 1600 Charlotte, NC 28202 T: 704.525.6350 www.littleonline.com

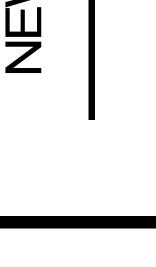
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FRANKLIN COUNTY BLDG SUBMISSION

NO. REASON

3 CONSTRUCTION 04/03/2023 DOCUMENTS BID SET

Issue Date: 12/15/2022

Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

SPECIFICATIONS

Minutes of preinstallation conference

ACI Concrete Flatwork Technician.

A. Installer Qualifications: A qualified installer who employs Project personnel qualified as a ACI-certified Flatwork

B. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete

products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

Technician and Finisher and a supervisor who is a certified ACI Flatwork Concrete Finisher/Technician or an

1.7 QUALITY ASSURANCE

Cementitious Materials: Fly Ash: ASTM C618, Class C or F. Air-Entraining Admixture: ASTM C260/C260M. admixtures containing calcium chloride. CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL 01 74 19 - 2 CAST-IN-PLACE CONCRETE SECTION 03 30 00 - CAST-IN-PLACE CONCRETE recommended adhesive or pressure-sensitive tape. 2.4 CURING MATERIALS PART 1 - GENERAL Color: A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section. A. Section Includes: A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with 2.5 RELATED MATERIALS Water/Cement Ratio (w/cm): The ratio by weight of water to cementitious materials. 1.4 PREINSTALLATION MEETINGS A. Preinstallation Conference: Conduct conference at Project site. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including 2.6 REPAIR MATERIALS Contractor's superintendent. Independent testing agency responsible for concrete design mixtures. Ready-mix concrete manufacturer. Concrete Subcontractor. defined in ASTM C219. Special concrete finish Subcontractor Review the following: Testing and inspecting agency procedures for field quality control. Construction joints, control joints, isolation joints, and joint-filler strips. underlayment manufacturer. Semirigid joint fillers. ASTM C109/C109M. Vapor-retarder installation Anchor rod and anchorage device installation tolerances. Cold and hot weather concreting procedures. Concrete finishes and finishing. Curing procedures. Forms and form-removal limitations Methods for achieving specified floor and slab flatness and levelness. Floor and slab flatness and levelness measurements. Concrete repair procedures ASTM C109/C109M. m. Concrete protection. CONCRETE MIXTURES, GENERAL ACTION SUBMITTALS Product Data: For each of the following. Portland cement. Fly ash. Aggregates. Admixtures: a. Include limitations of use, including restrictions on cementitious materials, supplementary Fly Ash: 20 percent by mass. cementitious materials, air entrainment, aggregates, temperature at time of concrete placement, relative humidity at time of concrete placement, curing conditions, and use of other admixtures. Vapor retarders. placement and workability Floor and slab treatments. Curing materials. adverse placement conditions. Joint fillers. Repair materials B. Design Mixtures: For each concrete mixture, include the following: CAST-IN-PLACE CONCRETE 03 30 00 - 1 CAST-IN-PLACE CONCRETE CONCRETE MIXTURES Mixture identification Class A: Normal-weight concrete used for footings. Minimum 28-day compressive strength Durability exposure class. Exposure Class: ACI 318 F0. Maximum w/cm. Slump limit. Maximum w/cm: 0.53. Nominal maximum aggregate size. Indicate amounts of mixing water to be withheld for later addition at Project site if permited. Intended placement method C. Shop Drawings: Exposure Class: ACI 318 F0. Construction Joint Layout: Indicate proposed construction joints required to construct the structure. Location of construction joints is subject to approval of the Architect. Samples: For vapor retarder. Concrete Schedule: For each location of each Class of concrete indicated in "Concrete Mixtures" Article, including the following: Concrete Class designation Location within Project. used in trowel-finished floors. Exposure Class designation Formed Surface Finish designation and final finish. Normal-weight concrete used for tilt-wall panels Final finish for floors. Exposure Class; ACI 318 F0. Curing process. Floor treatment if any. Maximum W/C ratio: 0.48 INFORMATIONAL SUBMITTALS Qualification Data: For the following: Installer: Include copies of applicable ACI certificates. used in trowel-finished floors. Material Certificates: For each of the following, signed by manufacturers: Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement. Cementitious materials Class C: Structural normal weight concrete used for interior suspended slabs (lightweight). Admixtures. Exposure Class: ACI 318 F0. Fiber reinforcement Minimum Compressive Strength: 4,000 psi at 28 days. Curing compounds. Maximum w/cm: 0.52. Bonding agents. Slump Limit: 8 inches, plus or minus 1 inch for concrete with verified slump of 2 to 4 inches before adding Adhesives. Vapor retarders high-range water-reducing admixture or plasticizing admixture. Semirigid joint filler. a. Do not use an air-entraining admixture or allow total air content to exceed 3 percent for concrete Joint-filler strips. Repair materials used in trowel-finished floors. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement. Material Test Reports: For the following, from a qualified testing agency: Portland cement. Maximum unit weight: 115 pcf 2.9 CONCRETE MIXING Slag cement. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94/C94M, and Blended hydraulic cement. furnish batch ticket information. Silica fume. Performance-based hydraulic cement. Aggregates. PART 3 - EXECUTION Admixtures: Floor surface flatness and levelness measurements report, indicating compliance with specified tolerances. Preconstruction Test Reports: For each mix design. 3.1 EXAMINATION Field quality-control reports. A. Verification of Conditions:

General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials

from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having

Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-

Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

Disposal: Remove waste materials from Owner's property and legally dispose of them.

Burning: Do not burn waste materials.

END OF SECTION 01 74 19

Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1, and as follows: Maintain concrete temperature at time of discharge to not exceed 95 deg F Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas. PART 2 - PRODUCTS CONCRETE, GENERAL ACI Publications: Comply with the following unless modified by requirements in the Contract Documents: 2.2 CONCRETE MATERIALS Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant. Obtain each type of admixture from single source from single manufacturer. Portland Cement: ASTM C150/C150M, Type I/II. Normal-Weight Aggregates: ASTM C33/C33M, coarse aggregate or better, graded. Provide aggregates from a Maximum Coarse-Aggregate Size: 3/4 inch nominal. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or Water-Reducing Admixture: ASTM C494/C494M, Type A. Retarding Admixture: ASTM C494/C494M, Type B. Water-Reducing and -Retarding Admixture: ASTM C494/C494M, Type D. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F. High-Range, Water-Reducing and -Retarding Admixture: ASTM C494/C494M, Type G. Plasticizing and Retarding Admixture: ASTM C1017/C1017M, Type II. Water and Water Used to Make Ice: ASTM C94/C94M, potable 03 30 00 - 3 Sheet Vapor Retarder, Class A: ASTM E1745, Class A; not less than 10 mils thick. Include manufacturer's Moisture-Retaining Cover: ASTM C171, polyethylene film burlap-polyethylene sheet. Ambient Temperature Below 50 deg F: Black. Ambient Temperature between 50 deg F and 85 deg F: Any color. Ambient Temperature Above 85 deg F: White. Water: Potable or complying with ASTM C1602/C1602M. Clear, Waterborne, Membrane-Forming, Dissipating Curing Compound: ASTM C309, Type 1, Class B. With product submittal provide plan and procedures for removal of residual curing compound prior to application of sealers, coatings, stains, pavement markings and other finishes. Provide a summary of testing to show adequate surface preparation for successful application of sealers, coatings, stains, pavement markings, and other finishes Expansion- and Isolation-Joint-Filler Strips: ASTM D1751, asphalt-saturated cellulosic fiber. Epoxy Bonding Adhesive: ASTM C881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows: Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete. 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. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand, as recommended by Compressive Strength: Not less than 4100 psi at 28 days when tested in accordance with 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. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as Primer: Product of topping manufacturer recommended for substrate, conditions, and application. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping Compressive Strength: Not less than 5000 psi at 28 days when tested in accordance with Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with ACI 301. Use a qualified testing agency for preparing and reporting proposed mixture designs, based on laboratory Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in Admixtures: Use admixtures in accordance with manufacturer's written instructions. Use water-reducing high-range water-reducing or plasticizing admixture in concrete, as required, for Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, and concrete with a w/cm below 0.50. 03 30 00 - 4 Minimum Compressive Strength: 3,500 psi at 28 days. Slump Limit: 4-inches +/-1-inch or 8 inches, plus or minus 1 inch for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement. B. Class B: Normal-weight concrete used for interior slabs-on-ground. Minimum Compressive Strength: 3,500 psi at 28 days. Slump Limit: 4-inches +/- 1-inch or 8 inches, plus or minus 1 inch for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture. a. Do not use an air-entraining admixture or allow total air content to exceed 3 percent for concrete Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement. Minimum Compressive Strength, 4,000 psi at 28 days Slump Limit: 4-inches +/-1 inch or 8 inches plus or minus 1 inch for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture. Do not use an air-entraining admixture or allow total air content to exceed 3 percent for concrete

Before placing concrete, verify that installation of concrete forms, accessories, and reinforcement, and

Place and secure anchorage devices and other embedded items required for adjoining Work that is attached to

Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be

embedded items is complete and that required inspections have been performed.

Do not proceed until unsatisfactory conditions have been corrected.

INSTALLATION OF EMBEDDED ITEMS

or supported by cast-in-place concrete.

embedded.

Personnel performing laboratory tests shall be an ACI-certified Concrete Strength Testing Technician and

Personnel conducting field tests shall be qualified as an ACI Concrete Field Testing Technician, Grade 1,

Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing

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.

Do not place concrete in contact with surfaces less than 35 deg F, other than reinforcing steel.

Field Quality Control Testing Agency Qualifications: An independent agency, qualified in accordance with

certified Concrete Laboratory Testing Technician, Grade II.

Cold-Weather Placement: Comply with ACI 301 and ACI 306.1 and as follows.

Do not use frozen materials or materials containing ice or snow.

in accordance with ACI CPP 610.1 or an equivalent certification program.

ASTM C1077 and ASTM E329 for testing indicated.

DELIVERY, STORAGE, AND HANDLING

1.9 FIELD CONDITIONS

Comply with ASTM C94/C94M and ACI 301.

actions, or low temperatures.

Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor shall be an ACI-

radius of 1/8 inch. Repeat grooving of control joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces. Sawed Joints: Form control joints with power saws equipped with shatterproof abrasive or diamondrimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random cracks. Isolation Joints in Slabs-on-Ground: 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. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated on Drawings. 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 07 92 00 "Joint Sealants," are indicated. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas. CAST-IN-PLACE CONCRETE 03 30 00 - 6 2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses Notify Architect and testing and inspection agencies 24 hours prior to commencement of concrete placement. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301, but not to exceed the amount indicated on the concrete delivery ticket. Do not add water to concrete after adding high-range water-reducing admixtures to mixture. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is 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. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints. Consolidate placed concrete with mechanical vibrating equipment in accordance with ACI 301 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. d. 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 Do not place concrete floors and slabs in a checkerboard sequence. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners. Maintain reinforcement in position on chairs during concrete placement. Screed slab surfaces with a straightedge and strike off to correct elevations. Level concrete, cut high areas, and fill low areas. Slope surfaces uniformly to drains where required 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. FINISHING FORMED SURFACES 1. ACI 301 Surface Finish SF-1.0: As-cast concrete texture imparted by form-facing material. Patch voids larger than 1-1/2 inches wide or 1/2 inch deep. Remove projections larger than 1 inch. Tie holes do not require patching Surface Tolerance: ACI 117 Class D Apply to concrete surfaces not exposed to public view. 2. ACI 301Surface Finish SF-2.0: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams Patch voids larger than 3/4 inch wide or 1/2 inch deep. Remove projections larger than 1/4 inch. Patch tie holes. Surface Tolerance: ACI 117 Class B. Locations: Apply to concrete surfaces exposed to public view. ACI 301 Surface Finish SF-3.0: Patch voids larger than 3/4 inch wide or 1/2 inch deep. Remove projections larger than 1/8 inch. Patch tie holes. Surface Tolerance: ACI 117 Class A. Locations: Apply to concrete surfaces exposed to public view, to receive a rubbed finish, or to be covered with a coating or covering material applied directly to concrete. B. Rubbed Finish: Apply the following to as cast surface finishes where indicated on Drawings: Smooth-Rubbed Finish Perform no later than one day after form removal. CAST-IN-PLACE CONCRETE 03 30 00 - 7 Moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a If sufficient cement paste cannot be drawn from the concrete by the rubbing process, use a grout made from the same cementitious materials used in the in-place concrete. Grout-Cleaned Rubbed Finish: Clean concrete surfaces after contiguous surfaces are completed and accessible.

Do not clean concrete surfaces as Work progresses.

burlap, and keep surface damp by fog spray for at least 36 hours.

smooth and finish with a color and texture matching adjacent formed surfaces.

Wet concrete surfaces.

c. Wet concrete surfaces.

matches adjacent surfaces.

Compress grout into voids by grinding surface.

e. In a swirling motion, finish surface with a cork float.

floating if area is small or inaccessible to power-driven floats.

complies with ACI 117 tolerances for conventional concrete.

waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

Cork-Floated Finish:

Related Unformed Surfaces:

D. Trowel Finish:

otherwise indicated.

FINISHING FLOORS AND SLABS

surfaces. Do not wet concrete surfaces.

Mix 1 part portland cement to 1-1/2 parts fine sand, complying with ASTM C144 or ASTM C404, by

e. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean

a. Mix 1 part portland cement to 1 part fine sand, complying with ASTM C144 or ASTM C404, by

b. Mix 1 part portland cement and 1 part fine sand with sufficient water to produce a mixture of stiff

grout. Add white portland cement in amounts determined by trial patches, so color of dry grout

volume, with sufficient water to produce a mixture with the consistency of thick paint.

1. At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off

2. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless

Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete

Apply scratch finish to surfaces to receive mortar setting beds for bonded cementitious floor finishes.

When bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit

Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture and

3. Apply float finish to surfaces to receive trowel finish and to be covered with fluid-applied or sheet

After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel.

Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

Do not apply hard-troweled finish to concrete, which has a total air content greater than 3 percent.

quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.

values of flatness, F_F 24; and of levelness, F_L 17.

Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and

Apply a trowel finish to surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or

Finish surfaces to the following tolerances, in accordance with ASTM E1155, for a randomly trafficked

Specified overall values of flatness, F_F 30; and of levelness, F_L 20; with minimum local

operation of specific float apparatus, consolidate concrete surface with power-driven floats or by hand

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 depth of 1/4 inch in one direction.

volume, with sufficient water to produce a mixture with the consistency of thick paint. Add white

portland cement in amounts determined by trial patches, so color of dry grout matches adjacent

Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5

3. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete

Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder in accordance with ASTM E1643 and

3. Lap vapor retarder over footings and grade beams not less than 6 inches, sealing vapor retarder to

Terminate vapor retarder at the top of floor slabs, grade beams, and pile caps, sealing entire perimeter to

Repair damaged areas by patching with vapor retarder material, overlapping damages area by 6

Install so strength and appearance of concrete are not impaired, at locations indicated on Drawings or as

Do not continue reinforcement through sides of strip placements of floors and slabs.

Locate joints for slabs at third points of spans. Offset joints in girders a minimum distance of twice the

5. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the

6. Space vertical joints in walls as indicated on Drawings. Unless otherwise indicated on Drawings, locate

1. Grooved Joints: Form control joints after initial floating by grooving and finishing each edge of joint to a

C. Control Joints in Slabs-on-Ground: Form weakened-plane control joints, sectioning concrete into areas as

indicated. Construct control joints for a depth equal to at least one-fourth of concrete thickness as follows:

vertical joints beside piers integral with walls, near corners, and in concealed locations where possible.

Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially

frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.

Install vapor retarder with longest dimension parallel with direction of concrete pour.

Seal penetrations in accordance with vapor retarder manufacturer's instructions.

Face laps away from exposed direction of concrete pour.

floor slabs, grade beams, foundation walls, or pile caps.

Place joints perpendicular to main reinforcement.

beam width from a beam-girder intersection.

4. Lap joints 6 inches and seal with manufacturer's recommended tape.

Protect vapor retarder during placement of reinforcement and concrete.

Construct joints true to line, with faces perpendicular to surface plane of concrete.

Construction Joints: Coordinate with floor slab pattern and concrete placement sequence.

3. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.

Continue reinforcement across construction joints unless otherwise indicated.

inches on all sides, and sealing to vapor retarder.

INSTALLATION OF VAPOR RETARDER

manufacturer's written instructions.

approved by Architect.

top of footings or floor slabs.

hardened concrete surfaces

CAST-IN-PLACE CONCRETE Maintain continuity of coating and repair damage during curing period. D. Curing Unformed Surfaces: Comply with ACI 308.1 as follows: Begin curing immediately after finishing concrete. Interior Concrete Floors: a. Floors to Receive Floor Coverings Specified in Other Sections: Contractor has option of the 1) Absorptive Cover: As soon as concrete has sufficient set to permit application without Floors to Receive Curing Compound: 1) Apply uniformly in continuous operation by power spray or roller in accordance with Floors to Receive Curing and Sealing Compound: 1) Apply uniformly to floors and slabs indicated in a continuous operation by power spray or 3.10 TOLERANCES A. Conform to ACI 117. JOINT FILLING Prepare, clean, and install joint filler in accordance with manufacturer's written instructions. 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 joints clean 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. 3.12 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.

Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing. 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. CAST-IN-PLACE CONCRETE 03 30 00 - 10 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.

E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces where ceramic or quarry tile is to be

Comply with flatness and levelness tolerances for trowel-finished floor surfaces.

Mix, place, and cure concrete, as specified, to blend with in-place construction.

Coordinate sizes and locations of concrete bases with actual equipment provided.

otherwise indicated on Drawings, or unless required for seismic anchor support.

Minimum Compressive Strength: As required by equipment manufacturer.

Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items.

Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

If forms remain during curing period, moist cure after loosening forms.

Comply with ACI 301 and ACI 306.1 for cold weather protection during curing.

Comply with ACI 301 and ACI 305.1 for hot-weather protection during curing.

Continuous Sprinkling: Maintain concrete surface continuously wet.

absorptive material to maintain concrete surface continuously wet.

roller in accordance with manufacturer's written instructions.

but not less than seven days.

b) Cure for not less than seven days.

b) Continuous water-fog spray.

manufacturer's written instructions

repair damage during curing period.

inches, and sealed by waterproof tape or adhesive

rods on 18-inch centers around the full perimeter of concrete base.

Prior to pouring concrete, place and secure anchorage devices.

Cast-in inserts and accessories, as shown on Drawings.

Cast anchor-bolt insert into bases.

Screed, tamp, and trowel finish concrete surfaces.

C. Curing Formed Surfaces: Comply with ACI 308.1 as follows:

taping, or lapping seams.

Provide other miscellaneous concrete filling indicated or required to complete the Work.

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.

broom perpendicular to main traffic route.

Equipment Bases and Foundations:

3.9 CONCRETE CURING

before float finishing.

into structural concrete substrate.

perpendicular to main traffic route.

INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

Coordinate required final finish with Architect before application.

Coordinate required final finish with Architect before application.

installed by either thickset or thinset method. While concrete is still plastic, slightly scarify surface with a fine

Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and locations indicated on

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom

1. Fill in holes and openings left in concrete structures after Work of other trades is in place unless otherwise

Construct concrete bases 6 inches high unless otherwise indicated on Drawings, and extend base not less

Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel

For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor

Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be

Install anchor bolts to elevations required for proper attachment to supported equipment.

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 in accordance

with manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but

1. Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar

If removing forms before end of curing period, continue curing for remainder of curing period, as follows:

Continuous Fogging: Maintain standing water on concrete surface until final setting of concrete.

Absorptive Cover: Pre-dampen absorptive material before application; apply additional water to

Water-Retention Sheeting Materials: Cover exposed concrete surfaces with sheeting material,

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Membrane-Forming Curing Compound: Apply uniformly in continuous operation by power spray or

Recoat areas subject to heavy rainfall within three hours after initial application.

marring concrete surface, install prewetted absorptive cover over entire area of floor.

Maintain absorptive cover water saturated, and in place, for duration of curing period,

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

a) Immediately repair any holes or tears during curing period, using cover material and

Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for

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 does not interfere with bonding of floor covering

Repeat process 24 hours later, and apply a second coat. Maintain continuity of coating, and

Lap edges and ends of absorptive cover not less than 12-inches.

not less than seven days, utilizing one, or a combination of, the following:

Maintain continuity of coating, and repair damage during curing period.

roller in accordance with manufacturer's written instructions.

Recoat areas subjected to heavy rainfall within three hours after initial application.

Recoat areas subjected to heavy rainfall within three hours after initial application

than 6 inches in each direction beyond the maximum dimensions of supported equipment unless

Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement, so that, when dry, patching mortar matches surrounding color a. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding Compact mortar in place and strike off slightly higher than surrounding surface. Repair defects on concealed formed surfaces that will 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. Repair finished surfaces containing surface defects, including spalls, popouts, honeycombs, rock pockets,

crazing, and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions. After concrete has cured at least 14 days, correct high areas by grinding. Correct localized low areas during, or immediately after, completing surface-finishing operations by cutting out low areas and replacing with patching mortar.

Correct other low areas scheduled to remain exposed with repair topping.

 Finish repaired areas to blend into adjacent concrete. 5. Correct other low areas scheduled to receive floor coverings with a repair underlayment. a. Prepare, mix, and apply repair underlayment and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.

a. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor Prepare, mix, and apply repair topping and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. 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-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. c. Mix patching concrete of same materials and mixture as original concrete, except without coarse Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete. Repair random cracks and single holes 1 inch or less in diameter with patching mortar.

a. Groove top of cracks and cut out holes to sound concrete, and clean off dust, dirt, and loose 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. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.13 FIELD QUALITY CONTROL

Testing Agency: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

1. Testing agency shall immediately report to Architect, Contractor, and concrete manufacturer any failure of Work to comply with Contract Documents. 2. Testing agency shall report results of tests and inspections, in writing, to Owner, Architect, Contractor, and

concrete manufacturer within 48 hours of inspections and tests. Test reports shall include reporting requirements of ASTM C31/C31M and ASTM C39/C39M, including the following as applicable to each test and inspection: Project name.

Name of testing agency Names and certification numbers of field and laboratory technicians performing inspections and testing.

Name of concrete manufacturer. Date and time of inspection, sampling, and field testing. Date and time of concrete placement. Location in Work of concrete represented by samples

Date and time sample was obtained. Truck and batch ticket numbers. Design compressive strength at 28 days Concrete mixture designation, proportions, and materials.

Information on storage and curing of samples before testing, including curing method and maximum and minimum temperatures during initial curing period Type of fracture and compressive break strengths at seven days and 28 days. Batch Tickets: For each load delivered, submit three copies of batch delivery ticket to testing agency, indicating quantity, mix identification, admixtures, design strength, aggregate size, design air content, design slump at time

of batching, and amount of water that can be added at Project site. Inspections: Headed bolts and studs Verification of use of required design mixture. Concrete placement, including conveying and depositing.

Verification of concrete strength before removal of shores and forms from beams and slabs. Batch Plant Inspections: On a random basis, as determined by Architect. Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C 172/C 172M shall be performed in accordance with the following requirements: Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding

Curing procedures and maintenance of curing temperature.

5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used. Slump: ASTM C143/C143M: 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. Air Content: ASTM C231/C231M pressure method, for normal-weight concrete; ASTM C173/C173M volumetric method, for structural lightweight concrete. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture Concrete Temperature: ASTM C1064/C1064M:

 One test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample. Compression Test Specimens: ASTM C31/C31M: Cast and laboratory cure six (6) 4-inch by 8-inch cylinder specimens for each composite sample. Compressive-Strength Tests: ASTM C39/C39M.

 Test three cylinders laboratory-cured specimens at seven days and three cylinders specimens at b. A compressive-strength test shall be the average compressive strength from a set of three cylinders obtained from same composite sample and tested at age indicated.

7. 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-

CAST-IN-PLACE CONCRETE 03 30 00 - 12

strength test value falls below specified compressive strength by more than 500 psi if specified compressive strength is 5000 psi, or no compressive strength test value is less than 1 percent of specified compressive strength if specified compressive strength is greater than 5000 psi. 8. 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. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate

that slump, air entrainment, compressive strengths, or other requirements have not been met, as b. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42/C42M or by other methods as directed by Architect.

 Acceptance criteria for concrete strength shall be in accordance with ACI 301 section 10. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of

 Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract END OF SECTION 03 30 00

replaced or additional work with specified requirements.

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

SECTION 03 47 13 - TILT-UP CONCRETE

Monolithic panels.

PREINSTALLATION MEETINGS

01 Specification Sections, apply to this Section.

Section includes load-bearing, tilt-up concrete, including the following:

Face-down Surface: Concealed surface of as-cast, tilt-up panel formed against the casting slab.

Independent testing agency responsible for concrete design mixtures.

Project conditions, weather, test results, or other circumstances warrant adjustments.

Include additional steel reinforcement to resist hoisting and erection stresses.

Before submitting design mixes, review concrete design mixture and examine procedures for ensuring

Review testing and inspecting agency procedures for field quality control; tilt-up concrete finishes and

finishing; cold- and hot-weather concreting procedures; curing procedures; casting-slab construction,

flatness and levelness, finish, and joint requirements; steel reinforcement installation; hoisting and

erection plans; measurement of fabrication and erection tolerances; tilt-up concrete repair procedures;

Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials,

elevations, dimensions, shapes, cross sections, and details of steel embedments. Match panel identification

Include steel reinforcement, detailing fabrication, bending, and placing. Include material, grade, bar

schedules, stirrup spacing, bent-bar diagrams, arrangement, and supports of concrete reinforcement.

Include engineering analysis data of additional steel reinforcement and hoisting and erection details.

Indicate welded connections by AWS standard symbols. Detail cast-in inserts, connections, and joints,

Shop Drawings: Detail fabrication and installation of tilt-up concrete units. Indicate panel locations, plans,

Include locations and details of hoisting points and lifting devices for handling and erection.

signed and sealed by the qualified professional engineer responsible for their preparation.

quality of concrete materials. Require representatives of each entity directly concerned with tilt-up

Thin-brick-faced, architectural precast concrete units.

Face-up Surface: Exposed upper surface of as-cast, tilt-up panel.

Preinstallation Conference: Conduct conference at Project site.

concrete to attend, including the following:

Tilt-up concrete Subcontractor.

Ready-mix concrete manufacturer.

and tilt-up concrete protection, embed plate submittal.

designations on Shop Drawings with those on Contract Drawings.

Qualification Data: For Installer manufacturer testing agency.

Material Certificates: For each of the following, signed by manufacturers:

Contractor's superintendent

Product Data: For each type of product.

including accessories.

INFORMATIONAL SUBMITTALS

Cementitious materials.

Steel reinforcement and accessories.

Welding certificates.

Admixtures.

Bond breakers Curing compounds.

1.1 RELATED DOCUMENTS

FRANKLIN COUNTY BLDG

9829 Spencer Road

Brighton MI 48114

Main: 877-244-8562

Facsimile: 810-852-4721

www.bccgp.com

615 South College Street, Suite 1600

Charlotte, NC 28202

T: 704.525.6350

www.littleonline.com

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division

SUBMISSION

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NO. REASON 3 CONSTRUCTION 04/03/2023 DOCUMENTS BID SET

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

SPECIFICATIONS

CAST-IN-PLACE CONCRETE 03 30 00 - 2 CAST-IN-PLACE CONCRETE 03 30 00 - 5 CAST-IN-PLACE CONCRETE 03 30 00 - 8 CAST-IN-PLACE CONCRETE 03 30 00 - 11 TILT-UP CONCRETE

Do not add water to concrete surface.

floor surface:

a. Slabs on Ground:

Inserts and embedments Brick units and accessories Material Test Reports: For the following, from a qualified testing agency: Aggregates. Field quality-control reports. 1.7 QUALITY ASSURANCE Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production B. Installer Qualifications: A qualified installer who employs a supervisor on Project who is an ACI-certified Tilt-up Testing Agency Qualifications: An independent agency, qualified according to ASTM C1077 and ASTM E329 for testing indicated. 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade I, according to ACI CP-1 or an equivalent certification program. Welding Qualifications: Qualify procedures and personnel according to the following: AWS D1.1/D1.1M. AWS D1.4/D1.4M. PRECONSTRUCTION TESTING Preconstruction Testing Service: Engage a qualified independent testing agency to perform preconstruction testing on concrete mixtures. PART 2 - PRODUCTS 2.1 TILT-UP CONCRETE Comply with ACI 301, unless modified by requirements in the Contract Documents. 2.2 FORMS AND ACCESSORIES A. Forms: Metal, dressed lumber, or other approved materials that are nonreactive with concrete and that will provide continuous, true, and smooth concrete surfaces. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch. C. Form Liners: Units of face design, texture, arrangement, and configuration indicated. Furnish with manufacturer's recommended liquid-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent surface treatments of concrete. Reveal Strips: Metal, PVC, rubber, straight dressed wood, or plywood; with sides kerfed. Sealer: Penetrating, clear, polyurethane wood form sealer formulated to reduce absorption of bleedwater and prevent migration of set-retarding chemicals from wood or plywood. STEEL REINFORCEMENT Reinforcing Bars: ASTM A615/A615M, Grade 60, deformed. Low-Alloy-Steel Reinforcing Bars: ASTM A706/A706M, deformed. Bar Supports: Manufactured according to CRSI's "Manual of Standard Practice" of plastic or CRSI Class 1 plastic-protected steel wire or Class 2 stainless-steel wire. 2.4 CONCRETE MATERIALS 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 B. Cementitious Material: Portland Cement: ASTM C150/C150M, Type I/II. Fly Ash: ASTM C618, Class F. C. Coarse Aggregate: ASTM C33/C33M, Class 4M coarse aggregate or better, graded. Provide aggregates from single source. Maximum Coarse-Aggregate Size: 3/4 inch nominal. TILT-UP CONCRETE D. Fine Aggregate: ASTM C33/C33M or ASTM C144, manufactured or natural sand, from same source for Project, free of materials with deleterious reactivity to alkali in cement. Air-Entraining Admixture: ASTM C260/C260M. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride. Water-Reducing Admixture: ASTM C494/C494M, Type A. Retarding Admixture: ASTM C494/C494M, Type B. Water-Reducing and Retarding Admixture: ASTM C494/C494M, Type D. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F. High-Range, Water-Reducing and Retarding Admixture; ASTM C494/C494M, Type G Plasticizing and Retarding Admixture: ASTM C1017/C1017M, Type II. Water: ASTM C94/C94M and potable. 2.5 BOND BREAKERS Solvent-Borne, Chemically Reactive Bond Breaker: Penetrating polymerized solution containing no oils, waxes, paraffins, or silicones, and compatible with casting-slab curing compound Solvent-Borne, Membrane-Forming Bond Breaker: Dissipating polymerized solution containing no oils, waxes, paraffins, or silicones, and compatible with casting-slab curing compound. Waterborne, Chemically Reactive Bond Breaker: Penetrating polymerized emulsion containing no oils, waxes, paraffins, or silicones, and compatible with casting-slab curing compound. Waterborne, Membrane-Forming Bond Breaker: Dissipating polymerized emulsion containing no oils, waxes, oz./sq. yd. when dry.

paraffins, or silicones, and compatible with casting-slab curing compound. 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 Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C309, Type 1, Class B. CONNECTION MATERIALS Embedded Metal Items and Loose Hardware: Comply with Section 05 50 00 "Metal Fabrications" for materials for securing tilt-up concrete panels together and to supporting and adjacent construction. B. Loose Hardware: Comply with Section 05 50 00 "Metal Fabrications" for materials for securing tilt-up concrete panels together and to supporting and adjacent construction. Carbon-Steel Shapes and Plates: ASTM A36/A36M. Carbon-Steel Bolts and Studs: ASTM A307, Grade A; carbon-steel, hex-head bolts and studs; carbon-steel nuts; and flat, unhardened steel washers. Unheaded Carbon-Steel Rods and Nuts: ASTM A36/A36M, threaded rods with ASTM A563, nuts. Welded Headed Studs: AWS D1.1/D1.1M, Type B headed studs, and cold-finished, carbon-steel bars. Low-Alloy-Steel Reinforcing Bars: ASTM A706/A706M, deformed. Chord Bar Sleeves: Tubular sheathing, plastic or moisture-resistance-treated cardboard. Welding Electrodes: Comply with AWS standards. Hot-Dip Galvanized Finish: Apply zinc coating to steel connections by hot-dip process, complying with ASTM A123/A123M or ASTM A153/A153M as applicable. Zinc Repair Paint: SSPC-Paint 20. K. Shop-Primed Finish: Prepare surfaces of steel connections, except those surfaces to be embedded in concrete, according to requirements in SSPC-SP 3, and shop-apply primer according to SSPC-PA 1. Primer: MPI#79. LIFTING INSERTS AND ACCESSORIES

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 Furnish inserts, dowels, bolts, nuts, washers, and other items to be cast in panels for tilting and lifting. Manufacture inserts with feet of plastic, galvanized-steel wire, plastic-tipped steel wire, or stainless-steel-Furnish brace anchors and other accessories to be cast in panels and in casting slab for attaching bracing. Manufacture wall brace anchors and accessories with feet of galvanized-steel wire, plastic-tipped steel wire, or stainless-steel-tipped steel wire. Manufacture floor brace anchors that do not penetrate vapor retarder under slab-on-grade. TILT-UP CONCRETE 03 47 13 - 3

2.9 BEARING PADS Elastomeric Pads: AASHTO M 251, plain, vulcanized, 100 percent polychloroprene (neoprene) elastomer, molded to size or cut from a molded sheet; Type A Shore durometer hardness of 50 to 70, ASTM D2240; and minimum tensile strength of 2250 psi, ASTM D412. Random, Fiber-Reinforced Elastomeric Pads: Preformed, randomly oriented synthetic fibers set in elastomer with a Type A Shore durometer hardness of 70 to 90, ASTM D2240. Cotton-Duck-Fabric-Reinforced Elastomeric Pads: Preformed, horizontally layered cotton-duck fabric bonded in elastomer with a Type A Shore durometer hardness of 80 to 100, ASTM D2240. High-Density Plastic Strips: Multimonomer, nonleaching plastic. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica 3.12 FILLING AND REPAIR sands, portland cement, shrinkage-compensating agents, and plasticizing and water-reducing agents; complying with ASTM C1107, of consistency suitable for application. Bonding Agent: ASTM C1059, Type II, nonredispersible, acrylic emulsion or styrene butadiene. B. Patching Mortar: Dry-pack mix consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing No. 16sieve, using only enough water for handling and placing. 2.12 CONCRETE MIXTURES Obtain each color, size, type, and variety of concrete mixture from single manufacturer with resources to provide END OF SECTION 03 47 13 concrete of consistent quality in appearance and physical properties. B. Prepare design mixtures for each type and strength of concrete, proportioned on basis of laboratory trial mixture or field test data, or both, according to ACI 301. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures based on laboratory trial mixtures. Proportion concrete mixture as follows: Minimum Compressive Strength: 4000 psi at 28 days. Maximum W/C Ratio: 0.45. Slump Limit: 3 inches plus or minus 1 inch or 8 inchesfor concrete with verified slump of 2 to 4 inchesbefore adding high-range, water-reducing admixture or plasticizing admixture, plus or minus 1 inch. Admixtures: Use admixtures according to manufacturer's written instructions. 2.13 CONCRETE MIXING Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C94/C94M, and furnish When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes. 2.14 THIN BRICK AND ACCESSORIES A. Products: Subject to compliance with requirements, provide the following: Manufacturer: MetroBrick. a. Color: 365 Schoolhouse Red Flashed. B. Thin Brick: Not less than 1/2 inch or more than 1 inch thick, and as follows: Dimensional Tolerances: Plus 0 inch or minus 1/16 inch for any dimension 8 inches or less and plus 0 inch or minus 3/32 inch for any dimension more than 8 inches. Out-of-Square Tolerance: Plus or minus 1/16 inch. Warpage Tolerance: Plus 0 inch or minus 1/16 inch. Variation of Shape from Specified Angle: Plus or minus one degree. Modulus of Rupture: Not less than 250 psi when tested according to ASTM C 67. Tensile Bond Strength: Not less than 150 psi when tested before and after freeze-thaw test according to ASTM E 488 as modified: Adhere a steel plate with a welded rod on a single thin-brick face with epoxy for

24-Hour Cold-Water Absorption: Not more than 6 percent when tested according to ASTM C 67.

cycles when tested according to ASTM C 666/C 666M, Method B.

Efflorescence: Tested according to ASTM C 67 and rated "not effloresced."

TILT-UP CONCRETE

Chemical Resistance: Tested according to ASTM C 650 and rated "not affected."

Freeze-Thaw Resistance: No detectable disintegration or separation after 300 freezing-and-thawing

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General: Comply with CRSI's "Manual of Standard Practice" for fabricating and placing reinforcement. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Field weld reinforcement according to AWS D1.4/D1.4M, where indicated. Do not tack-weld crossing reinforcing bars. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces. Accurately place and securely support embedded items, anchorages, inserts, cramps, retainers, bar chords and sleeves, and other items to be built into panels. Coordinate with other trades for installing cast-in items. PANEL CASTING, GENERAL Comply with ACI 301 for handling, placing, and consolidating concrete. Maintain position of steel reinforcement, inserts, and anchors during concrete placement, consolidation, and Screed panel surfaces to correct level with a straightedge and strike off. Begin initial floating before excess moisture or bleedwater appears on the surface. Use bull floats or darbies to form a uniform and open-textured surface plane free of humps or hollows. Do not disturb panel surfaces before beginning finishing operations. Form chamfers at top edges of panel perimeters, openings, and similar locations not formed by chamfer strips Surface Defects: Limit visible surface defects to those permitted by TCA's "Tilt-up Concrete Association's Guideline Specifications" for Grade A, Architectural panel surfaces. TILT-UP CONCRETE 03 47 13 - 5 CASTING TOLERANCES Cast tilt-up concrete panels without exceeding the tolerances of TCA's "Tilt-up Concrete Association's Guideline FACE-UP FINISHES Float Finish: Consolidate surface of plastic concrete with power-driven floats or by hand floating. Restraighten and cut down high spots and fill low spots. Repeat float passes and restraighten until surface is left with a uniform, smooth, granular texture. B. Trowel Finish: After applying float finish, apply first trowel finish and consolidate plastic concrete by hand trowel or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and is uniform in texture and appearance. Trowel and Fine-Broom Finish: After applying float finish, apply a partial trowel finish to plastic concrete, stopping after second troweling. Immediately after second troweling, and when concrete is still plastic, slightly scarify the surface with a fine broom Broom surface in a top-to-bottom direction. FACE-DOWN FINISHES Smooth, As-Cast Finish: Cast panel to produce a surface free of pockets, sand streaks, and honeycombs. Produce a surface appearance of uniform color and texture. Form-Liner Finish: Cast panel over form liners placed, secured, and sealed over casting slab to produce a textured surface free of pockets, streaks, and honeycombs. Produce a surface appearance of uniform color and CONCRETE PROTECTING AND CURING Protect freshly placed concrete from premature drying and excessive cold or hot temperatures according to Apply evaporation retarder in hot, dry, or windy weather to protect concrete from rapid moisture loss before and during finishing operations. Apply according to manufacturer's written instructions after

11. Surface Coating: Thin brick with colors or textures applied as coatings shall withstand 50 cycles of

Sand-Cement Mortar: Portland cement, ASTM C 150/C 150M, Type I, and clean, natural sand, ASTM C 144.

Back Surface Texture: Scored, combed, wire roughened, ribbed, keybacked, or dovetailed.

Mix at ratio of 1-part cement to 4-parts sand, by volume, with minimum water required for placement.

Polymer Type: Acrylic resin in dry, redispersible form, packaged with other dry ingredients.

Construct and brace formwork so tilt-up concrete panels are of size, shape, alignment, elevation, and position

Place form liners accurately to provide finished surface texture indicated. Provide solid backing and

supports to maintain stability of liners during concreting. Coat form liner with form-release agent.

Construct forms for easy removal without hammering or prying against concrete surfaces. Use kerfed inserts,

Chamfer exposed corners and edges, unless otherwise indicated, using chamfer strips fabricated to produce

Uniformly and continuously apply two coats of bond breaker to casting-slab surfaces by power spray or roller

according to manufacturer's written instructions, before placing steel reinforcement. Recoat areas subjected to

After placing steel reinforcement, touch up or recoat worn or damaged areas with bond breaker. Do not splash

Construct forms on slab-on-grade or on temporary casting slab, at Contractor's option.

Coat contact surfaces of wood forms and chamfers with sealer before placing reinforcement.

Provide for openings, offsets, recesses, reveals, rustications, reglets, and blockouts.

Pointing Grout: Packaged, polymer-modified, sanded grout complying with ANSI A118.7.

G. Thin brick shall be waxed sufficiently on face to be exposed to prevent adhesion by concrete/mortar.

Special Shapes: Include corners, edge corners, and end edge corners.

such as those forming reglets, rustications, and recesses, for easy removal.

moisture before drying. Maintain continuity of coating until concrete placement.

Set edge forms for panels to achieve required panel thickness.

uniform, smooth lines and tight edge joints.

BOND BREAKER INSTALLATION

or coat steel reinforcement and inserts.

REINFORCEMENT AND INSERT INSTALLATION

Face Size: 2-1/4 inches high by 7-5/8 inches long.

PART 3 - EXECUTION

TILT-UP CONCRETE

TILT-UP CONCRETE

3.1 FORMWORK INSTALLATION

freezing and thawing; ASTM C 67 with no observable difference in applied finish when viewed from 10

SECTION 04 20 00 - UNIT MASONRY

RELATED DOCUMENTS

Face brick.

SUBMITTALS

Mortar and grout.

Reinforcing steel.

Ties and anchors.

Embedded flashing.

Cavity-wall insulation.

B. Samples for Verification: For the following:

Concrete masonry units.

Masonry joint reinforcement

Miscellaneous masonry accessories.

Division 01 Specification Sections, apply to this Section.

This Section includes unit masonry assemblies consisting of the following:

Shop Drawings: Show fabrication and installation details for the following:

Samples to indicate types and amounts of pigments used.

Weep holes/vents in color to match mortar color.

Accessories embedded in the masonry.

of the Architect and approved in writing.

type and proportions of grout ingredients.

compliance with requirements indicated:

Each type of masonry unit required.

masonry units.

Each type of masonry unit required.

masonry units.

weight slips at time of delivery.

with cold-weather requirements.

manufacturer for each product required.

inches high by full thickness.

Build sample panels facing south.

Contractor's expense

1.4 QUALITY ASSURANCE

according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602

Each material and grade indicated for reinforcing bars.

Each type and size of anchor, tie, and metal accessory.

qualified professional engineer responsible for their preparation.

Submittal to include delegated design engineer qualifications.

located and who is experienced in providing engineering services of the type indicated.

Clay Masonry Unit Test: For each clay masonry unit indicated, per ASTM C 67.

Clean exposed faces of panels with masonry cleaner indicated.

Concrete Masonry Unit Test: For each concrete masonry unit indicated, per ASTM C 140.

Where masonry is to match existing, build panels adjacent and parallel to existing surface.

Wall Mockups: Build mockups to set quality standards for materials and execution. See Section 01 43 39

Protect approved sample panels from the elements with weather-resistant membrane.

material and construction qualities specifically approved by Architect in writing.

Clean exposed faces of mockups with masonry cleaner as indicated.

Protect accepted mockups from the elements with weather-resistant membrane.

in mockups unless Architect specifically approves such deviations by Change Order.

Each type and size of joint reinforcement.

UNIT MASONRY

textures, and dimensions to be expected in the completed construction

Qualification Data: For firms and persons specified in "Quality Assurance" Article.

Drawings and general provisions of the Contract, including General and Supplementary Conditions and

Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315,

Full-size units for each different exposed masonry unit required, showing the full range of exposed colors,

2. Colored mortar Samples for each color required, showing the full range of colors expected in the finished

manufacturers' product names, model numbers, lot numbers, batch numbers, source of supply, and other

information as required to identify materials used. Include mix proportions for mortar and grout and source of

1. Submittal is for information only. Neither receipt of list nor approval of mockup constitutes approval of

Material Test Reports: From a qualified testing agency indicating and interpreting test results of the following for

Include size-variation data for brick, verifying that actual range of sizes falls within specified

Include test results, measurements, and calculations establishing net-area compressive strength of

Include size-variation data for brick, verifying that actual range of sizes falls within specified

Include test data, measurements, and calculations establishing net-area compressive strength of

2. Each cement product required for mortar and grout, including name of manufacturer, brand, type, and

3. Each combination of masonry unit type and mortar type. Include statement of net-area compressive

Cold-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply

Delegated Design Submittals: For masonry anchors and ties, including analysis data signed and sealed by the

Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a

B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for

uniform blend within the ranges accepted for these characteristics, through one source from a single

exposed masonry, from one manufacturer for each cementitious component and from one source or producer

Delegated Design Engineer: A professional engineer who is legally qualified to practice in state where Project is

Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction,

qualified according to ASTM C 1093 to conduct the testing indicated, as documented according to ASTM E 548.

Preconstruction Testing Service: General Contractor will engage a third party qualified independent testing

Sample Panel Mockups: Build sample panels to verify selections made under Sample submittals and to

demonstrate aesthetic effects. Comply with requirements in Section 01 40 00 "Quality Requirements" for

Build sample panels for each type of typical exterior wall in sizes approximately 48 inches long by 48

Approval of sample panels is for color, texture, and blending of masonry units; relationship of mortar and

Approval of sample panels does not constitute approval of deviations from the Contract Documents

contained in sample panels unless Architect specifically approves such deviations in writing.

Approval of mockups does not constitute approval of deviations from the Contract Documents contained

sealant colors to masonry unit colors; tooling of joints; aesthetic qualities of workmanship; and other

agency to perform preconstruction testing indicated below. Payment for these services will be made by

General Contractor. Retesting of materials failing to meet specified requirements shall be done at

strength of masonry units, mortar type, and net-area compressive strength of masonry determined

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2. Grout mixes complying with compressive strength requirements of ASTM C 476. Include description of

F. Material Certificates: Signed by manufacturers certifying that each of the following items complies with

deviations from the Contract Documents, unless such deviations are specifically brought to the attention

List of Materials Used in Constructing Mockups: List generic product names together with manufacturers,

construction. Make samples using the same sand and mortar ingredients to be used on Project. Label

"Details and Detailing of Concrete Reinforcement." Show elevations of reinforced walls.

PART 1 - GENERAL

screeding and bull floating concrete, but before float finishing. Begin curing immediately after finishing concrete. Cure by one or a combination of the following methods according to ACI 308.1: Moisture Curing: Keep surfaces continuously moist for no fewer than seven days. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover. Cure for no 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. ERECTION Use erection equipment with care to prevent damage to floor slabs and panels. Lift, support, and erect panels only at designated lifting or supporting points indicated on Shop Drawings. Do not erect panels until 75 percent of 28-day compressive strength of concrete has been verified. Install tilt-up concrete panels level, plumb, square, and true. Place panels on leveled grout-setting pads or shims in correct position. Maintain joint width of 1/2 inch between panels. Install tilt-up concrete panels with face-down surfaces exposed to exterior of building Temporarily brace and support panels securely in position against loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to panels are secured.

Concrete placement, including conveying and depositing.

Testing Services: Tests shall be performed according to ACI 301.

Curing procedures and maintenance of curing temperature.

Verification of concrete strength before erection of tilt-up panels.

"Mockups" for additional construction requirements for integrated exterior mockups. Anchor panels in place and, if indicated, to one another. Weld steel connectors to steel supports and embedments indicated, complying with AWS D1.1/D1.1M. Build mockup as indicated on Drawings G. Solidly grout-fill gaps between foundation system and bottom of panels. Include a sealant-filled joint at least 16 inches long in exterior wall mockup. Include lower corner of window opening at upper corner of exterior wall mockup. Make opening approximately 12 inches wide by 16 inches high. 3.10 FIELD QUALITY CONTROL c. Include through-wall flashing installed for a 24-inch length in corner of exterior wall mockup Testing Agency: Engage a qualified testing agency to perform tests and inspections and to submit reports. approximately 16 inches down from top of mockup, with a 12-inchlength of flashing left exposed to view (omit masonry above half of flashing) Steel reinforcement placement. Include metal studs, sheathing, sheathing joint-and-penetration treatment, air barrier, veneer Steel reinforcement welding. anchors, flashing, cavity drainage material, and weep holes in exterior masonry-veneer wall Headed bolts and studs. Verification of use of required design mixture. 03 47 13 - 6 UNIT MASONRY 04 20 00 - 2

Tilt-up concrete panels will be considered defective if they do not pass tests and inspections. Subject to compliance with requirements, approved mockups may become part of the completed Work if Prepare test and inspection reports. undisturbed at time of Substantial Completion. ERECTION TOLERANCES DELIVERY, STORAGE, AND HANDLING A. Install tilt-up concrete panels without exceeding the erection tolerances in TCA's "Tilt-up Concrete Association's Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, Guideline Specifications." cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious Patch holes and voids left by erecting and bracing inserts on tilt-up panels and slabs-on-grade. Cut or chip materials that have become damp. edges of voids perpendicular to concrete surface. Fill blockouts where indicated. Store aggregates where grading and other required characteristics can be maintained and contamination Clean, dampen with water, and brush-coat holes, voids, and blockouts with bonding agent. Fill and compact with patching mortar of a stiff consistency before bonding agent has dried. D. Deliver preblended, dry mortar mix in moisture-resistant containers designed for lifting and emptying into dispensing silo. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and Finish surfaces of fills and repairs to Architect's approval, with materials of same colors and textures as in a dry location or in a metal dispensing silo with weatherproof cover. finishes on surrounding surfaces. Repair damaged galvanized-steel surfaces of connectors by cleaning and applying a coat of zinc repair paint. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil. Repair damage to tilt-up panels and slabs-on-grade resulting from tilt-up work, as directed by Architect. PROJECT CONDITIONS Remove and replace tilt-up panels that do not comply with requirements in this Section. at end of each day's work. Cover partially completed masonry when construction is not in progress. Extend cover a minimum of 24 inches down both sides and hold cover securely in place. minimum of 24 inches down face next to unconstructed wythe and hold cover in place. building masonry walls or columns. painted. Immediately remove grout, mortar, and soil that come in contact with such masonry. Protect sills, ledges, and projections from mortar droppings. finishes, from mortar droppings. and dirt onto completed masonry. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602 and will remain so until masonry has dried, but not less than 7 days after completing cleaning. materials as required. spreading mortar. PART 2 - PRODUCTS

UNIT MASONRY

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Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting Where one wythe of multiwythe masonry walls is completed in advance of other wythes, secure cover a B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or Protect base of walls from rain-splashed mud and from mortar splatter by coverings spread on ground Protect surfaces of window and door frames, as well as similar products with painted and integral 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above E. Hot-Weather Requirements: Protect unit masonry work when temperature and humidity conditions produce excessive evaporation of water from mortar and grout. Provide artificial shade and wind breaks and use cooled 1. When ambient temperature exceeds 100 deg F, or 90 deg F with a wind velocity greater than 8 mph, do not spread mortar beds more than 48 inches ahead of masonry. Set masonry units within one minute of 2.1 CONCRETE MASONRY UNITS A. General: Provide shapes indicated and as follows: 1. Provide special shapes for lintels, corners, jambs, sash, control joints, headers, bonding, and other Provide bullnose units for outside corners, unless otherwise indicated. Provide square-edged units for outside corners, unless indicated as bullnose.

 a. Provide bullnose where indicated. 04 20 00 - 3

E. Plastic Weep Hole/Vent: One-piece, flexible extrusion made from UV-resistant polypropylene copolymer B. Concrete Masonry Units: Current Edition of ASTM C 90 and as follows: designed to fill head joint with outside face held back 1/8 inch from exterior face of masonry, in color selected Concrete masonry units shall not contain cinders bottom ash and shall be free of organic impurities that will cause rusting, staining, or pop-outs. from manufacturer's standard. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2000 Plastic weep vent is to sit directly on through wall flashing. F. Cavity Drainage Material: 2-inch- thick, free-draining mesh; made from polyethylene strands and shaped to Weight Classification: 100 percent Light weight aggregates meeting ASTM C330-C331, unless otherwise avoid being clogged by mortar droppings. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells with Stalite expanded slate with 6 to 10 percent absorption rate. loops for holding reinforcing bars in center of cells. Units are formed from 0.187-inch steel wire, hot-dip Size (Width): Manufactured to the following dimensions: galvanized after fabrication.

Walls requiring vertical reinforcing shall use open end masonry units manufactured by the CMU supplier. A. General: Provide shapes indicated and as follows for each form of brick required: Provide units without cores or frogs and with exposed surfaces finished for ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces. Provide special shapes for applications requiring brick of size, form, color, and texture on exposed surfaces that

8 inches nominal; 7-5/8 inches actual.

cannot be produced by sawing Provide special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels. Provide special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view C. Face Brick: ASTM C 216, Grade SW, Type FBX, and as follows: 1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 3000

Initial Rate of Absorption: Less than 20 g/30 sq. in. per minute when tested per ASTM C 67.

Efflorescence: Provide brick that has been tested according to ASTM C 67 and is rated "not effloresced." Application: Use where brick is exposed, unless otherwise indicated. Manufacturer: Subject to compliance with requirements, provide by the following Taylor Clay Products Inc.; Thin Brick. Color: Woodleaf. Texture: Wirecut.

2.3 MORTAR AND GROUT MATERIALS Portland Cement-Lime Mix: Packaged blend of portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207. Mortar Cement: Complying with ASTM C 1329. Masonry Cement is prohibited. Aggregate for Mortar: ASTM C 144; except for joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve. White-Mortar Aggregates: Natural white sand or ground white stone.

Colored-Mortar Aggregates: Natural-colored sand or ground marble, granite, or other sound stone; of color necessary to produce required mortar color. Masonry cement is not allowed. Aggregate for Grout: ASTM C 404. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with a record of satisfactory performance in masonry mortar.

G. Water: Potable. 2.4 REINFORCING STEEL Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M; ASTM A 616/A 616M, including Supplement 1; or

ASTM A 617/A 617M, Grade 60. 2.5 MASONRY JOINT REINFORCEMENT

A. General: ASTM A 951 and as follows: Hot-dip galvanized, carbon-steel wire for both interior and exterior walls.

Wire Size for Cross Rods: W2.8 or 0.188-inch diameter.

UNIT MASONRY

UNIT MASONRY

Stainless-steel wire for exterior walls Wire Size for Side Rods: W2.8 or 0.188-inch diameter.

Provide in lengths of not less than 10 feet, with prefabricated corner and tee units where indicated.

For single-wythe masonry, provide either ladder or truss type with single pair of side rods and cross rods spaced

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not more than 16 inches o.c. 2.6 TIES AND ANCHORS, GENERAL General: Provide ties and anchors, specified in subsequent articles, made from materials that comply with this Article, unless otherwise indicated. Hot-Dip Galvanized Carbon-Steel Wire: ASTM A 82; with ASTM A 153, Class B-2 coating.

Steel Sheet, Galvanized after Fabrication: ASTM A 1008/A 1008M cold-rolled, carbon-steel sheet hot-dip galvanized after fabrication to comply with ASTM A 153. D. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M. 2.7 ADJUSTABLE MASONRY-VENEER ANCHORS General: Provide thermally broken, two-piece assemblies that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall, for attachment over sheathing to wood or metal

studs, and as follows: Structural Performance Characteristics: Capable of withstanding a 100-lbf load in both tension and compression without deforming or developing play in excess of 0.05 inch. Adjustable Masonry-Veneer Anchors: General: Provide anchors that allow vertical adjustment but resist a 100-lbf load in both tension and compression perpendicular to plane of wall without deforming or developing play in excess of 1/16 inch.

Fabricate wire ties from 0.187-inch-diameter, hot-dip galvanized-steel wire unless otherwise indicated. Provide one of the following: Screw-Attached, Masonry-Veneer Anchors: Wire tie and a gasketed sheet metal anchor section, 1-1/4 inches wide by 6 inches long, with screw holes top and bottom; top and bottom ends bent to form pronged legs of length to match thickness of insulation or sheathing; and raised rib-stiffened strap, 5/8 nch wide by 6 inches long, stamped into center to provide a slot between strap and base for inserting wire tie. Self-adhering, modified bituminous gasket fits behind anchor plate and extends beyond pronged

Provide the following: Hohmann & Barnard, Inc.; X-Seal. Screw-Attached, Masonry-Veneer Anchors: Zinc-alloy barrel section with flanged head with eye and corrosion-resistant, self-drilling, eye-screw designed to receive wire tie and to serve as head for drilling fastener into framing. Barrel length to suit sheathing thickness, allow screw to seat directly against framing with flanged head covering hole in sheathing. a. Provide the following:

 Heckmann Building Products, Inc.; Pos-I-Tie. Stainless-Steel Drill Screws for Steel Studs: Proprietary fastener consisting of carbon-steel drill point and 300 Series stainless-steel shank, complying with ASTM C 954 except manufactured with hex washer head and neoprene washer, No. 10 diameter by length required to penetrate steel stud flange by not less than three

2.8 MISCELLANEOUS ANCHORS Unit Type Inserts in Concrete: Cast-iron or malleable-iron inserts of type and size indicated. Dovetail Slots: Furnish dovetail slots with filler strips, of slot size indicated, fabricated from 0.0336-inch, galvanized steel sheet. Anchor Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153, Class C; of diameter and length indicated and in the following configurations:

Headed bolts. Nonheaded bolts, bent in manner indicated. Postinstalled Anchors: Anchors as described below, with capability to sustain, without failure, load imposed

within factors of safety indicated, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency. Type: Chemical anchors.

Corrosion Protection: Carbon-steel components zinc plated to comply with ASTM B 633, Class Fe/Zn 5

For Postinstalled Anchors in Concrete: Capability to sustain, without failure, a load equal to four times the

Fabricate through-wall metal flashing embedded in masonry from sheet metal indicated above and with

Fabricate metal drip edges from sheet metal indicated above. Do not expose edge of flashing. Edge of

Laminated Stainless Steel Flashing: Manufacturer's standard Stainless steel core with polymer fabric

laminated to the bottom stainless steel face with non-asphalt adhesive. The top face (exposed side) must

Self-Adhering, Stainless Steel Fabric Flashing: Composite, flashing product consisting of 2 mil of

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

Applications: Use 10-mil- (0.25-mm-) thick flashing at windows, doors, and small wall penetrations;

not at base of walls. Use 40-mil- (1.0-mm-) thick flashing at base of walls.

C. Solder and Sealants for Sheet Metal Flashings: As specified in Division 07 Section "Sheet Metal Flashing and

D. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products

Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35

Preformed Control-Joint Gaskets: Material as indicated below, designed to fit standard sash block and to

Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15

D. Cell Vents: Composite cellular vents consisting of small passageways bonded together. 3/8 inch wide by 2 –

recommended by the flashing manufacturer for bonding flashing sheets to each other and to substrates.

Type 304 stainless steel sheet, bonded to a layer of polymeric fabric with a butyl adhesive, to produce an

5. For Postinstalled Anchors in Grouted Masonry Units: Capability to sustain, without failure, a load equal to

Fabricate metal expansion-joint strips from sheet metal indicated above, formed to shape indicated.

not be covered with a polymer fabric. Use only where flashing is fully concealed in masonry.

Metal Flashing: Fabricate from the following metal complying with requirements specified in Division 07 Section

ribs at 3-inch intervals along length of flashing to provide an integral mortar bond.

Illinois Products, Inc.; IPCO Stainless Steel Fabric Flashing

STS Coatings, Inc.; Wall Guardian Stainless Steel TWF

5 microns) for Class SC 1 service condition (mild).

six times the loads imposed.

"Sheet Metal Flashing and Trim" and below:

flashing to remain behind face of joint. B. Concealed Flashing: Use the following unless otherwise indicated:

Laminated Stainless Steel Flashing Products:

TK Products, Inc.; TK TWF

overall thickness of 10 mil and 40 mil.

Wire-Bond.

York Manufacturing, Inc.; Multi-Flash SS

Prosoco, Inc.; R-Guard SS ThruWall

Hohmann & Barnard, Inc.

E. Products: Subject to compliance with requirements, provide one of the following:

Illinois Products, Inc.; IPCO Stainless Steel Fabric Flashing

STS Coatings, Inc.; Wall Guardian Stainless Steel TWF

percent; of width and thickness indicated; formulated from neoprene or urethane.

Styrene-Butadiene-Rubber Compound: ASTM D 2000, Designation M2AA-805.

1/2 inch deep by 3-3/8 inch long; color as selected by Architect from manufacturer's full range.

maintain lateral stability in masonry wall; size and configuration as indicated.

York Manufacturing, Inc.; Multi-Flash SS

Prosoco, Inc.; R-Guard SS ThruWall

STS Coatings, Inc.

VaproShield LLC

Laminated Stainless Steel Flashing Products:

TK Products, Inc.; TK TWF

PVC: ASTM D 2287, Type PVC-65406.

2.10 MISCELLANEOUS MASONRY ACCESSORIES

UNIT MASONRY

EMBEDDED FLASHING MATERIALS

Type: Expansion anchors

UNIT MASONRY

Specifications. Fill in solidly with masonry around built-in items.

 Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above,

Provide units with either two loops or four loops as needed for number of bars indicated.

At all exposed joints, provide custom color sealants as selected by Architect.

repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

Limit cementitious materials in mortar to portland cement, mortar cement, and lime.

For masonry below grade, in contact with earth, and where indicated, use Type M.

CAVITY-WALL INSULATION

washer in place.

2.12 MORTAR AND GROUT MIXES

characteristics. Nominal density of 6 lb/cu. ft.

Do not use calcium chloride in mortar or grout.

Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification.

For reinforced masonry and where indicated, use Type S.

pigments to the following percentages of cement content by weight:

ensure that mortar color is consistent.

indicated, use Type N.

Mix to match Architect's sample.

F. Grout for Unit Masonry: Comply with ASTM C 476.

cementitious materials.

2.13 SOURCE QUALITY CONTROL

to ASTM C 140.

EXAMINATION

Specifications

conditions affecting performance.

INSTALLATION, GENERAL

CONSTRUCTION TOLERANCES

As indicated on Drawings.

below and rod mortar or grout into core.

horizontal face dimensions at corners or jambs.

3.4 LAYING MASONRY WALLS

Verify that foundations are within tolerances specified.

masonry to match the construction immediately adjacent to the opening.

Mix units from several pallets or cubes as they are placed.

Comply with tolerances in ACI 530.1/ASCE 6/TMS 602 and the following:

from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.

particularly at corners, jambs, and, where possible, at other locations.

less than nominal 4-inch horizontal face dimensions at corners or jambs.

do not vary from plumb by more than 1/4 inch in 20 feet, nor 1/2 inch maximum.

Verify that reinforcing dowels are properly placed.

with cut surfaces and, where possible, cut edges concealed.

more than 1/4 inch in 20 feet, nor 1/2 inch maximum.

PART 3 - EXECUTION

UNIT MASONRY

Control and expansion joint sealants: Provide sealants, expansion joints and preformed joint seals as specified

A. Mineral-Wool Board, Type II, Unfaced: ASTM C 612, Type II; with maximum flame-spread and smoke-

developed indexes of 15 and zero, respectively, per ASTM E 84; passing ASTM E 136 for combustion

to projecting spindle; capable of holding insulation of specified thickness securely in position with self-locking

General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in the form of a preblended mix. Measure

Add cold-weather admixture (if used) at the same rate for all mortar, regardless of weather conditions, to

quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to

Limit cementitious materials in mortar for exterior masonry to portland cement, mortar cement, and lime.

bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not

Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with

Concrete Masonry Unit Tests: For each type of concrete masonry unit indicated, units will be tested according

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5. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-

D. Pigmented Mortar: Select and proportion pigments with other ingredients to produce color required. Limit

Colored-Aggregate Mortar: Produce required mortar color by using colored aggregates combined with selected

For mineral-oxide pigments and portland cement-lime mortar, not more than 10 percent.

Table 5 of ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.

Brick Tests: For each type and grade of brick indicated, units will be tested according to ASTM C 67.

Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other

Proceed with installation only after unsatisfactory conditions have been corrected.

single-wythe walls to the actual widths of masonry units, using units of widths indicated.

E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.

Before installation, examine rough-in and built-in construction to verify actual locations of piping connections.

For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance.

Thickness: Build cavity and composite walls and other masonry construction to the full thickness shown. Build

Build chases and recesses to accommodate items specified in this Section and in other Sections of the

provide a continuous pattern and to fit adjoining construction. Where possible, use full-size units without cutting.

Allow units cut with water-cooled saws to dry before placing, unless wetting of units is specified. Install cut units

Leave openings for equipment to be installed before completing masonry. After installing equipment, complete

D. Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to

F. Wetting of Brick: Wet brick before laying if the initial rate of absorption exceeds 30 g/30 sg. in. per minute when

For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints,

For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, nor 1/2

maximum thickness limited to 1/2 inch. Do not vary from bed-joint thickness of adjacent courses by more than

For conspicuous horizontal lines, such as exposed lintels, sills, parapets, and reveals, do not vary from level by

E. For exposed bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a

F. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary

Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for

Bond Pattern for Exposed Masonry: Lay exposed masonry in the following bond pattern; do not use units with

One-half running bond with vertical joint in each course centered on units in courses above and below.

Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches.

Stopping and Resuming Work: In each course, rack back one-half-unit length for one-half running bond or one-

masonry units lightly if required, and remove loose masonry units and mortar before laying fresh masonry.

Fill space between hollow-metal frames and masonry solidly with mortar, unless otherwise indicated.

Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch

third-unit length for one-third running bond; do not tooth. Clean exposed surfaces of set masonry, wet clay

Built-in Work: As construction progresses, build in items specified under this and other Sections of the

Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath in the joint

accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units,

tested per ASTM C 67. Allow units to absorb water so they are damp but not wet at the time of laying.

Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143.

For carbon-black pigment and portland cement-lime mortar, not more than 2 percent.

Anchors: Provide adhesively attached, spindle-type anchors as recommended by manufacturer; Angle welded

unless otherwise indicated. Install compressible filler in joint between top of partition and underside of structure above. All interior masonry walls shall be braced to roof or floor structure above, as indicated.

3.5 MORTAR BEDDING AND JOINTING

 A. Lay hollow masonry units as follows: With full mortar coverage on horizontal and vertical face shells. Bed webs in mortar in starting course on footings and in all courses of piers, columns, and pilasters, and where adjacent to cells or cavities to be filled with grout. For starting course on footings where cells are not grouted, spread out full mortar bed, including areas

B. Lay solid brick-size masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

 At cavity walls, bevel beds away from cavity, to minimize mortar protrusions into cavity. As work progresses, trowel mortar fins protruding into cavity flat against the cavity face of the brick.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than the joint thickness, unless

D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint), unless otherwise indicated

3.6 BONDING OF MULTIWYTHE MASONRY Use masonry joint reinforcement installed in horizontal mortar joints to bond wythes together.

B. Corners: Provide interlocking masonry unit bond in each wythe and course at corners, unless otherwise

 Provide continuity with masonry joint reinforcement at corners by using prefabricated "L" joint reinforcement units as well as masonry bonding C. Intersecting and Abutting Walls: Unless vertical expansion or control joints are shown at juncture, bond walls

Provide continuity with masonry joint reinforcement by using prefabricated "T" units. Provide rigid metal anchors not more than 24 inches o.c. If used with hollow masonry units, embed ends

in mortar-filled cores.

3.7 CAVITIES

UNIT MASONRY

 Keep cavities clean of mortar droppings and other materials during construction. Use wood strips temporarily placed in cavity to collect mortar droppings. As work progresses, remove strips, clean off mortar droppings, and replace in cavity.

B. Coat cavity face of backup wythe to comply with Division 07 Section "Bituminous Dampproofing."

C. Installing Cavity-Wall Insulation: Place small dabs of adhesive, spaced approximately 12 inches o.c. both ways, on inside face of insulation boards, or attach with plastic fasteners designed for this purpose. Fit courses of

SPECIFICATIONS

9829 Spencer Road Brighton MI 48114 Main: 877-244-8562

Facsimile: 810-852-4721

www.bccgp.com



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FRANKLIN COUNTY BLDG SUBMISSION

NO. REASON

3 CONSTRUCTION 04/03/2023

DOCUMENTS BID SET

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

insulation between wall ties and other confining obstructions in cavity, with edges butted tightly both ways. Press units firmly against inside wythe of masonry or other construction as shown. Fill cracks and open gaps in insulation with crack sealer compatible with insulation and masonry. 3.8 MASONRY JOINT REINFORCEMENT

A. General: Provide continuous masonry joint reinforcement as indicated. Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement

Space reinforcement not more than 16 inches o.c. Space reinforcement not more than 8 inches o.c. in foundation walls and parapet walls, unless otherwise indicated on Drawings. 3. Provide reinforcement not more than 8 inches above and below wall openings and extending 24 inches

beyond openings, unless otherwise indicated on Drawings.

 Reinforcement above is in addition to continuous reinforcement. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

 Provide continuity at corners and wall intersections by using prefabricated "L" and "T" sections. Cut and bend reinforcing units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.9 ANCHORING MASONRY TO STRUCTURAL MEMBERS

A. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the 1. Provide an open space not less than 1 inch in width between masonry and structural member, unless

otherwise indicated. Keep open space free of mortar or other rigid materials. 2. Anchor masonry to structural members with flexible anchors embedded in masonry joints and attached to Space anchors as indicated, but not more than 16 inches o.c. vertically and 16 inches o.c. horizontally.

3.10 ANCHORING MASONRY VENEERS Anchor masonry veneers to wall framing or concrete and masonry backup with masonry-veneer anchors to comply with the following requirements: Fasten screw-attached anchors through sheathing to wall framing with metal fasteners of type indicated.

Use two fasteners unless anchor design only uses one fastener. Embed tie sections in masonry joints. Locate anchor sections to allow maximum vertical differential movement of ties up and down. Space anchors as indicated, but not more than 16 inches o.c. vertically and 16inches o.c. horizontally,

with not less than one anchor for each 2.67 sq. ft. of wall area. Install additional anchors within 12 inches of openings and at intervals, not exceeding 8inches, around perimeter Provide not less than 2 inches of airspace between back of masonry veneer and face of insulation. Keep airspace clean of mortar droppings and other materials during construction. Bevel beds away from

airspace, to minimize mortar protrusions into airspace. Do not attempt to trowel or remove mortar fins protruding 3.11 ANCHORING MASONRY TO STRUCTURAL STEEL Anchor masonry to structural steel and concrete, where masonry abuts or faces structural steel or concrete, to comply with the following:

1. Provide an open space not less than 1 inch wide between masonry and structural steel or concrete unless otherwise indicated. Keep open space free of mortar and other rigid materials. Anchor masonry with anchors embedded in masonry joints and attached to structure Space anchors as indicated, but not more than 24 inches o.c. vertically and 36 inches o.c. horizontally.

UNIT MASONRY 04 20 00 - 10

Keep head joints free and clear of mortar or rake joint.

3.12 CONTROL AND EXPANSION JOINTS A. General: Install control and expansion joints in unit masonry where indicated. Build-in related items as masonry progresses. Do not form a continuous span through movement joints unless provisions are made to prevent in- If vertical control joints are not located on the documents, contractor is to provide and install 3/8" control joints in Brick and CMU at 24'-0" O.C. max and coordinate locations with the Architect. General Contractor shall include in his price the cost to provide sealant and backer rod at all control joints installed

in Brick and CMU. Form control joints in concrete masonry as follows: Generally, install preformed control-joint gaskets designed to fit standard sash block. Where indicated, install interlocking units designed for control joints. Install bond-breaker strips at joint.

Form expansion joints in brick as follows: Form open joint of width indicated, but not less than 3/8 inch for installation of sealant and backer rod specified in Division 07 Section "Joint Sealants." Keep joint free and clear of mortar. Build in horizontal, pressure-relieving joints where indicated; construct joints by inserting a compressible filler of width required for installing sealant and backer rod specified in Division 07 Section "Joint Sealants." 1. Locate horizontal, pressure-relieving joints beneath shelf angles supporting masonry veneer and attached

to structure behind masonry veneer. 3.13 LINTELS Install steel lintels where indicated Provide masonry lintels where shown and where openings of more than 12 inches for brick-size units and 24

inches for block-size units are shown without structural steel or other supporting lintels.

compressive strength and with reinforcing bars indicated or required to support loads indicated. Cure precast lintels by the same method used for concrete masonry units. Provide prefabricated or built-in-place masonry lintels. Use specially formed bond beam units with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and

1. Provide precast lintels made from concrete matching concrete masonry units in color, texture, and

installing. Temporarily support built-in-place lintels until cured. 3. Provide either of above at Contractor's option or provide precast or formed-in-place concrete lintels complying with requirements in Division 3 Section "Cast-in-Place Concrete."

Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

3.14 FLASHING, WEEP HOLES, AND VENTS A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Unless otherwise indicated, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing

C. Install flashing as follows: 1. At multiwythe masonry walls, including cavity walls, extend flashing from exterior face of outer wythe of masonry, through outer wythe, turned up a minimum 8 inches, and through inner wythe to within 1/2 inch of the interior face of the wall in exposed masonry. Where interior surface of inner wythe is concealed by furring, carry flashing completely through inner wythe and turn flashing up approximately 2 inches, unless

otherwise indicated. At masonry-veneer walls, extend flashing from exterior face of veneer, through veneer, up face of sheathing at least 8 inches, and behind air-infiltration barrier or building paper. At lintels and shelf angles, extend flashing a minimum of 4 inches into masonry at each end. At heads

and sills, extend flashing 4 inches at ends and turn flashing up not less than 2 inches to form a pan. Install weep holes in the head joints in exterior wythes of the first course of masonry immediately above embedded flashing and as follows: Use plastic weep hole/vents to form weep holes.

Place cavity drainage material immediately above flashing in cavities at bottom of cavity and as indicated

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3.15 REINFORCED UNIT MASONRY INSTALLATION

UNIT MASONRY

UNIT MASONRY

Temporary Formwork and Shores: Construct formwork and shores to support reinforced masonry elements

leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction. Placing Reinforcement: Comply with requirements of ACI 530.1/ASCE 6/TMS 602.

Construct formwork to conform to shape, line, and dimensions shown. Make it sufficiently tight to prevent

Grouting: Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist grout pressure. Comply with requirements of ACI 530.1/ASCE 6/TMS for cleanouts and for grout placement, including

minimum grout space and maximum pour height. 3.16 FIELD QUALITY CONTROL

 Owner may engage a qualified independent testing agency to perform field quality-control testing indicated Payment for these services will be made by Owner. Retesting of materials failing to meet specified requirements shall be done at Contractor's expense.

Mortar properties will be tested per ASTM C 780. Grout will be sampled and tested for compressive strength per ASTM C 1019.

Brick Tests: For each type and grade of brick indicated, units will be tested according to ASTM C 67. Concrete Masonry Unit Tests: For each type of concrete masonry unit indicated, units will be tested according

3.17 REPAIRING, POINTING, AND CLEANING A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with

mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows: Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels. Remove effloresce from unit masonry walls.

Comply with Section "Masonry Cleaning" for final cleaning procedures. 3.18 MASONRY WASTE DISPOSAL

Excess Masonry Waste: Remove excess masonry waste, and legally dispose of off Owner's property.

PART 1 - GENERAL

SECTION 05 12 00 - STRUCTURAL STEEL FRAMING

1.1 RELATED DOCUMENTS Drawings and general provisions of the Contract, including General and Supplementary Conditions and

Division 01 Specification Sections, apply to this Section. SUMMARY Section Includes:

Structural steel. Shear stud connectors. Shrinkage-resistant grout.

1.3 DEFINITIONS Structural Steel: Elements of the structural frame indicated on Drawings and as described in ANSI/AISC 303.

Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

PREINSTALLATION MEETINGS A. Preinstallation Conference: Conduct conference at Project site.

1.6 ACTION SUBMITTALS

Product Data: Structural-steel materials

High-strength, bolt-nut-washer assemblies. Shear stud connectors. Anchor rods. Threaded rods Shop primer.

Shrinkage-resistant grout. Shop Drawings: Show fabrication of structural-steel components. Include details of cuts, connections, splices, camber, holes, and other pertinent data.

Include embedment Drawings. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned

Identify members and connections of the seismic-load-resisting system. Indicate locations and dimensions of protected zones. Identify demand-critical welds. Identify members not to be shop primed

Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs): Provide in accordance with AWS D1.1/D1.1M for each welded joint qualified by testing, including the following: Power source (constant current or constant voltage). Electrode manufacturer and trade name, for demand-critical welds

and slip-critical, high-strength bolted connections.

1.7 INFORMATIONAL SUBMITTALS Qualification Data: For Installer fabricator professional engineer. Welding certificates.

C. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop

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Mill test reports for structural-steel materials, including chemical and physical properties. Product Test Reports: For the following: Bolts, nuts, and washers, including mechanical properties and chemical analysis. Direct-tension indicators.

Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.1/D1.1M.

Tension-control, high-strength, bolt-nut-washer assemblies. Shear stud connectors. F. Survey of existing conditions.

primers are compatible with topcoats

STRUCTURAL STEEL FRAMING

1.8 QUALITY ASSURANCE Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category BU or is accredited by the IAS Fabricator Inspection Program for Structural Steel (Acceptance Criteria 172)

DELIVERY, STORAGE, AND HANDLING Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration. 1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

Store fasteners in a protected place in sealed containers with manufacturer's labels intact. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging Clean and relubricate bolts and nuts that become dry or rusty before use.

Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F3125/F3125M. Grade F1852 bolt assemblies and for retesting bolt assemblies after lubrication.

PART 2 - PRODUCTS

STRUCTURAL-STEEL MATERIALS W-Shapes: ASTM A992/A992M. Channels, Angles, M-Shapes: ASTM A36/A36M.

Plate and Bar: ASTM A36/A36M. Cold-Formed Hollow Structural Sections: ASTM A500/A500M, Grade C structural tubing. Steel Pipe: ASTM A53/A53M, Type E or Type S, Grade B.

Weight Class: As indicated. Finish: As indicated. Welding Electrodes: Comply with AWS requirements.

steel; AWS D1.1/D1.1M, Type B.

Configuration: Straight.

Threaded Rods: ASTM A36/A36M.

and compatible with topcoat.

SHRINKAGE-RESISTANT GROUT

ANSI/AISC 303 and to ANSI/AISC 360.

manufacturer's written instructions

Joint Type: Snug tightened.

Camber structural-steel members where indicated.

Mark and match-mark materials for field assembly

Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

Joints Using High-Strength Bolts" for type of bolt and type of joint specified.

specifications, weld quality, and methods used in correcting welding work.

Bolt Holes: Cut. drill, or punch standard bolt holes perpendicular to metal surfaces.

Finishing: Accurately finish ends of columns and other members transmitting bearing loads

Fabricate beams with rolling camber up.

structural-steel framing has been erected

Finish: Plain.

Finish: Plain.

PRIMER

Steel Primer

STRUCTURAL STEEL FRAMING

2.2 BOLTS AND CONNECTORS A. High-Strength A325 Bolts, Nuts, and Washers: ASTM F3125/F3125M, Grade A325, Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-steel washers; all with plain finish Direct-Tension Indicators: ASTM F959/F959M, Type 325-1, compressible-washer type with plain finish. High-Strength A490 Bolts, Nuts, and Washers: ASTM F3125/F3125M, Grade A490, Type 1, heavy-hex steel

structural bolts or Grade F2280 tension-control, bolt-nut-washer assemblies with splined ends; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-steel washers; all with plain finish Direct-Tension Indicators: ASTM F959/F959M, Type 490-1, compressible-washer type with plain finish. Tension-Control, High-Strength Bolt-Nut-Washer Assemblies: ASTM F3125/F3125M, Grade F1852, Type 1, heavy-hex head assemblies, consisting of steel structural bolts with splined ends; ASTM A563, Grade DH,

heavy-hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-steel washers.

Shear Stud Connectors: ASTM A108, AISI C-1015 through C-1020, headed-stud type, cold-finished carbon

Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer complying with MPI#79

Nonmetallic, Shrinkage-Resistant Grout: ASTM C1107/C1107M, factory-packaged, nonmetallic aggregate grout,

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate in accordance with

Plane thermally cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.

Cleaning: Clean and prepare steel surfaces that are to remain unpainted in accordance with SSPC-SP 1.

Weld threaded nuts to framing and other specialty items indicated to receive other work.

Shear Stud Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Weld

using automatic end welding of headed-stud shear connectors in accordance with AWS D1.1/D1.1M and

Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel

Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes

Baseplate Holes: Cut. drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.

High-Strength Bolts: Shop install high-strength bolts in accordance with RCSC's "Specification for Structural

Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure

noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working

Identify high-strength structural steel in accordance with ASTM A6/A6M and maintain markings until

Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.

Unheaded Anchor Rods: ASTM F1554, Grade 36 or Grade 55, weldable

Nuts: ASTM A563 heavy-hex carbon steel.

Headed Anchor Rods: ASTM F1554, Grade 36, straight.

Nuts: ASTM A563 heavy-hex carbon steel.

Nuts: ASTM A 63 heavy-hex carbon steel

Washers: ASTM A36/A36M carbon steel

Plate Washers: ASTM A36/A36M carbon steel.

Plate Washers: ASTM A36/A36M carbon steel.

Washers: ASTM F436, Type 1, hardened carbon steel.

Washers: ASTM F436, Type 1, hardened carbon steel.

Shop prime steel surfaces, except the following: 1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2

Surfaces to be field welded. Surfaces of high-strength bolted, slip-critical connections.

Surfaces to receive sprayed fire-resistive materials (applied fireproofing). Surfaces enclosed in interior construction. Surface Preparation of Steel: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag,

or flux deposits. Prepare surfaces in accordance with the following specifications and standards: All steel:SSPC-SP 2. WT's: SSPC-SP 11. Priming: Immediately after surface preparation, apply primer in accordance with manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Use priming

methods that result in full coverage of joints, corners, edges, and exposed surfaces. Stripe paint corners, crevices, bolts, welds, and sharp edges. Apply two coats of shop paint to surfaces that are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

SOURCE QUALITY CONTROL Testing Agency: Engage a qualified testing agency to perform shop tests and inspections. Allow testing agency access to places where structural-steel work is being fabricated or produced to Bolted Connections: Inspect shop-bolted connections in accordance with RCSC's "Specification for

Structural Joints Using High-Strength Bolts."

Ultrasonic Inspection: ASTM E164.

Prepare test and inspection reports.

Do not use thermal cutting during erection.

END OF SECTION 05 12 00

STRUCTURAL STEEL FRAMING

Section Includes:

B. Related Requirements

Shop Drawings:

Welding certificates.

Manufacturer certificates.

Field quality-control reports.

1.6 QUALITY ASSURANCE

responsible for its preparation

"Structural Welding Code - Steel."

DELIVERY, STORAGE, AND HANDLING

PART 1 - GENERAL

SECTION 05 21 00 - STEEL JOIST FRAMING

K-series steel joists.

Steel joist girden

Joist accessories.

INFORMATIONAL SUBMITTALS

Qualification Data: For manufacturer.

Mill Certificates: For each type of bolt.

KCS-type K-series steel joists.

K-series steel joist substitutes.

Division 01 Specification Sections, apply to this Section.

LH- and DLH-series long-span steel joists.

Product Data: For each type of joist, accessory, and product.

qualified professional engineer responsible for their preparation.

standard specifications and load tables in SJI's "Specifications."

Deliver, store, and handle joists as recommended in SJI's "Specifications."

joists to comply with performance requirements.

Using High-Strength Bolts" for bolt and joint type specified.

Radiographic Inspection: ASTM E94/E94M.

and the following inspection procedures, at testing agency's option: Liquid Penetrant Inspection: ASTM E165/E165N Magnetic Particle Inspection: ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.

Welded Connections: Visually inspect shop-welded connections in accordance with AWS D1.1/D1.1M

PART 3 - EXECUTION

FXAMINATION Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.

 B. Proceed with installation only after unsatisfactory conditions have been corrected. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated on Drawings.

ERECTION Set structural steel accurately in locations and to elevations indicated and in accordance with ANSI/AISC 303 and ANSI/AISC 360. Baseplates Bearing Plates and Leveling Plates: Clean concrete- and masonry-bearing surfaces of bondreducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates. Set plates for structural members on wedges, shims, or setting nuts as required.

Weld plate washers to top of baseplate. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.

STRUCTURAL STEEL FRAMING 05 12 00 - 4

installation instructions for grouting. Maintain erection tolerances of structural steel within ANSI/AISC 303. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that are in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure. Slope roof framing members to slopes indicated on Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service. Splice members only where indicated.

G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to FIELD CONNECTIONS A. High-Strength Bolts: Install high-strength bolts in accordance with RCSC's "Specification for Structural Joints

Joint Type: Snug tightened. B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work. 1. Comply with ANSI/AISC 303 and ANSI/AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds. Remove backing bars or runoff tabs where indicated, back gouge, and grind steel smooth.

Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in ANSI/AISC 303 for mill material. FIELD QUALITY CONTROL Special Inspections: Owner will engage a special inspector to perform special inspections per the Statement of

 Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections Bolted Connections: Inspect and test bolted connections in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts." Welded Connections: Visually inspect field welds in accordance with AWS D1.1/D1.1M.

 In addition to visual inspection, test and inspect field welds in accordance with AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option: Liquid Penetrant Inspection: ASTM E165/E165M. Magnetic Particle Inspection: ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.

05 12 00 - 5

Radiographic Inspection: ASTM E94/E94M. Touchup Painting: Immediately after erection, clean exposed areas where primer is damaged or missing, and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted

Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.

Ultrasonic Inspection: ASTM E164.

Drawings and general provisions of the Contract, including General and Supplementary Conditions and

A. SJI's "Specifications": Steel Joist Institute's "Standard Specifications, Load Tables and Weight Tables for Steel

C. Delegated-Design Submittal: For all joists and joist girders, include analysis data signed and sealed by the

Comprehensive engineering analysis of special joists signed and sealed by the qualified professional engineer

Manufacturer's responsibilities include providing professional engineering services for designing special

Welding Qualifications: Qualify field-welding procedures and personnel according to AWS D1.1/D1.1M,

A. Manufacturer Qualifications: A manufacturer certified by SJI to manufacture joists complying with applicable

Protect joists from corrosion, deformation, and other damage during delivery, storage, and handling.

Special Joists: Steel joists or joist girders requiring modification by manufacturer to support nonuniform,

Include joining and anchorage details; bracing, bridging, and joist accessories; splice and connection

Section 03 30 00 "Cast-in-Place Concrete" for installing bearing plates in concrete.

Section 05 12 00 "Structural Steel Framing" for field-welded shear connectors.

unequal, or special loading conditions that invalidate load tables in SJI's "Specifications."

Include layout, designation, number, type, location, and spacing of joists.

locations and details; and attachments to other construction.

Section 03 47 13 "Tilt-Up Concrete" for installing embed plates in concrete.

C. High-Strength Bolts, Nuts, and Washers: ASTM F3125/F3125M, Grade A325, Type 1, heavy-hex steel structural Promptly pack shrinkage-resistant grout solidly between bearing surfaces and plates, so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written

> Welding Electrodes: Comply with AWS standards. Furnish miscellaneous accessories including splice plates and bolts required by joist manufacturer to complete joist assembly.

CLEANING AND SHOP PAINTING A. Clean and remove loose scale, heavy rust, and other foreign materials from fabricated joists and accessories by

Deliver steel bearing plates to be built into construction.

Use ASD; data are given at service-load level.

in SJI's "Specifications," with steel-angle or -channel members.

of joist type and end and top-chord arrangements as follows:

Camber long-span steel joists according to SJI's "Specifications."

Camber joist girders according to SJI's "Specifications."

Camber joists according to SJI's "Specifications.".

Joist Type: LH-series steel joists.

End Arrangement: Underslung.

Structural Performance: Provide special joists and connections capable of withstanding design loads indicated.

Roof Joists: Vertical deflection of 1/240 of the span for total load.

Joist Type: K-series steel joists and KCS-type K-series steel joists.

Provide holes in chord members for connecting and securing other construction to joists.

Provide holes in chord members for connecting and securing other construction to joists.

Design special joists to withstand design loads with live-load deflections no greater than the following:

Manufacture steel joists of type indicated according to "Standard Specification for Open Web Steel Joists, K-

Series" in SJI's "Specifications," with steel-angle top- and bottom-chord members, underslung ends, and parallel

Steel Joist Substitutes: Manufacture according to "Standard Specifications for Open Web Steel Joists, K-Series"

Extended Ends: Extend bearing ends of joists with SJI's Type R extended ends where indicated, complying with

Equip bearing ends of joists with manufacturer's standard beveled ends or sloped shoes if joist slope exceeds

Manufacture steel joists according to "Standard Specification for Longspan Steel Joists, LH-Series and Deep

Longspan Steel Joists, DLH-Series" in SJI's "Specifications," with steel-angle top- and bottom-chord members;

Equip bearing ends of joists with manufacturer's standard beveled ends or sloped shoes if joist slope exceeds

Equip bearing ends of joists with manufacturer's standard beveled ends or sloped shoes if joist slope exceeds

Manufacture joist girders according to "Standard Specification for Joist Girders" in SJI's "Specifications," with

A. Primer: SSPC-Paint 15, or manufacturer's standard shop primer complying with performance requirements in

Bridging: Provide bridging anchors and number of rows of horizontal or diagonal bridging of material, size, and

B. Fabricate steel bearing plates from ASTM A36/A36M steel with integral anchorages of sizes and thicknesses

type required by SJI's "Specifications" for type of joist, chord size, spacing, and span. Furnish additional erection

bolts; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-

05 21 00 - 2

steel-angle top- and bottom-chord members; with end and top-chord arrangements as indicated.

Provide holes in chord members for connecting and securing other construction to joist girders.

Floor Joists: Vertical deflection of 1/480 of the span for live load; 1/360 of the span for total load

Floor Joist Girders: Vertical deflection of 1/480 of the span for live load; 1/360 of the span for total

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

SJI's "Specifications."

1/4 inch per 12 inches.

2.3 LONG-SPAN STEEL JOISTS

2.4 JOIST GIRDERS

SSPC-Paint 15.

bridging if required for stability.

indicated. Shop prime paint.

2.6 JOIST ACCESSORIES

STEEL JOIST FRAMING

hand-tool cleaning, SSPC-SP 2 or power-tool cleaning, SSPC-SP 3. Apply one coat of shop primer to joists and joist accessories to be primed to provide a continuous, dry paint film

PART 3 - EXECUTION

A. Examine supporting substrates, embedded bearing plates, and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance of the Work. Proceed with installation only after unsatisfactory conditions have been corrected.

INSTALLATION

A. Do not install joists until supporting construction is in place and secured. Install joists and accessories plumb, square, and true to line; securely fasten to supporting construction according to SJI's "Specifications," joist manufacturer's written instructions, and requirements in this Section. Before installation, splice joists delivered to Project site in more than one piece. Space, adjust, and align joists accurately in location before permanently fastening.

Install temporary bracing and erection bridging, connections, and anchors to ensure that joists are stabilized during construction Delay rigidly connecting bottom-chord extensions to columns or supports until dead loads are applied. Field weld joists to supporting steel bearing plates and framework. Coordinate welding sequence and procedure with placement of joists. Comply with AWS requirements and procedures for welding, appearance and quality of

welds, and methods used in correcting welding work. Bolt joists to supporting steel framework using carbon-steel bolts. Install and connect bridging concurrently with joist erection, before construction loads are applied. Anchor ends of bridging lines at top and bottom chords if terminating at walls or beams.

3.3 FIELD QUALITY CONTROL Testing Agency: Engage a qualified testing agency to perform tests and inspections. Visually inspect field welds according to AWS D1.1/D1.1M.

Visually inspect bolted connections. Prepare test and inspection reports

Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A780/A780M and manufacturer's written instructions Touchup Painting: After installation, promptly clean, prepare, and prime or reprime field connections, rust spots, and abraded surfaces of prime-painted joists, bearing plates, abutting structural steel, and accessories. Clean and prepare surfaces by hand-tool cleaning according to SSPC-SP 2 or power-tool cleaning

according to SSPC-SP 3. Apply a compatible primer of same type as primer used on adjacent surfaces. END OF SECTION 05 21 00

STEEL DECKING

1.2

END OF SECTION 05 31 00

SECTION 05 50 00 - METAL FABRICATIONS

Metal ladders.

Alternating tread devices

anchorage and accessory items.

by field measurements before fabrication.

PERFORMANCE REQUIREMENTS

Uniform Load: 100 lbf/sq. ft..

Requirements," to design ladders and alternating tread devices.

Concentrated Load: 300 lbf applied on an area of 4 sq. in..

and stresses within limits and under conditions specified in ANSI A14.3.

Section Includes

SUBMITTALS

Division 01 Specification Sections, apply to this Section.

Elevator machine beams and hoist beams.

Steel shapes for supporting elevator door sills.

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

SECTION 05 31 00 - STEEL DECKING

Division 01 Specification Sections, apply to this Section.

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and

SUMMARY Section Includes Composite floor deck.

STEEL JOIST FRAMING

1.3 ACTION SUBMITTALS Product Data: For each type of deck, accessory, and product indicated. B. Shop Drawings: Include layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, special jointing, accessories, and attachments to other construction.

1.4 INFORMATIONAL SUBMITTALS Welding certificates. Product Certificates: For each type of steel deck. Product Test Reports: For tests performed by a qualified testing agency, indicating that each of the following complies with requirements:

1.5 QUALITY ASSURANCE Welding Qualifications: Qualify procedures and personnel according to AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."

Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

PART 2 - PRODUCTS

American Specification for the Design of Cold-Formed Steel Structural Members."

A. Roof Deck: Fabricate panels, without top-flange stiffening grooves, to comply with "SDI Specifications and Commentary for Steel Roof Deck," in SDI Publication No. 31, and with the following: Galvanized-Steel Sheet: ASTM A653/A653M, Structural Steel (SS), Grade 40, G60 zinc coating.

Design Uncoated-Steel Thickness: As indicated. Span Condition: Triple span or more. Side Laps: Overlapped or interlocking seam at Contractor's option.

2.3 COMPOSITE FLOOR DECK No. 31, with the minimum section properties indicated, and with the following:

design criteria, including analysis data signed and sealed by the qualified professional engineer registered in Power-actuated mechanical fasteners. state which project is located responsible for their preparation. C. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers certifying that shop primers are compatible with topcoats.

05 21 00 - 3

2.1 PERFORMANCE REQUIREMENTS A. AISI Specifications: Comply with calculated structural characteristics of steel deck according to AISI's "North

Deck Profile: As indicated. Profile Depth: As indicated.

 Composite Floor Deck: Fabricate panels, with integrally embossed or raised pattern ribs and interlocking side laps, to comply with "SDI Specifications and Commentary for Composite Steel Floor Deck," in SDI Publication

Galvanized-Steel Sheet: ASTM A653/A653M, Structural Steel (SS), Grade 33, G60 zinc coating. Profile Depth: As indicated. Design Uncoated-Steel Thickness: As indicated Span Condition: Triple span or more.

General: Provide manufacturer's standard accessory materials for deck that comply with requirements indicated. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.

Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 10 minimum diameter. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi, not less than

0.0359-inch design uncoated thickness, of same material and finish as deck; of profile indicated or required for F. Pour Stops and Girder Fillers: Steel sheet, minimum yield strength of 33,000 psi, of same material and finish as deck, and of thickness and profile recommended by SDI Publication No. 31 for overhang and slab depth. G. Column Closures, End Closures, Z-Closures, and Cover Plates: Steel sheet, of same material, finish, and

thickness as deck unless otherwise indicated. H. Weld Washers: Uncoated steel sheet, shaped to fit deck rib, 0.0747 inch thick, with factory-punched hole of 3/8inch minimum diameter. Flat Sump Plates: Single-piece steel sheet, 0.0747 inch thick, of same material and finish as deck. For drains, J. Recessed Sump Pans: Single-piece steel sheet, 0.0747 inch thick, of same material and finish as deck, with 3-

inch-wide flanges and sloped recessed pans of 1-1/2-inch minimum depth. For drains, cut holes in the field. Galvanizing Repair Paint: ASTM A780/A780M. Repair Paint: Manufacturer's standard rust-inhibitive primer of same color as primer.

PART 3 - EXECUTION

EXAMINATION Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the Work. Proceed with installation only after unsatisfactory conditions have been corrected.

INSTALLATION, GENERAL Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 31, manufacturer's written instructions, and requirements in this Section Install temporary shoring before placing deck panels if required to meet deflection limitations.

Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks. Place deck panels flat and square and fasten to supporting frame without warp or deflection. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent

Locate deck bundles to prevent overloading of supporting members.

 G. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of deck, and Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality

of welds, and methods used for correcting welding work. ROOF-DECK INSTALLATION A. Fasten roof-deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated or arc seam welds with an equal perimeter that is not less than 1-1/2 inches long, and as follows: Weld Diameter: As indicated

Weld Spacing: Weld edge and interior ribs of deck units with a minimum of two welds per deck unit at each support. Space welds as indicated. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals as indicated:

STEEL DECKING 05 31 00 - 2

 Fasten with a minimum of 1-1/2-inch-long welds. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints as follows: End Joints: Lapped 2 inches minimum or butted at Contractor's option.

 Roof Sump Pans and Sump Plates: Install over openings provided in roof deck and weld flanges to top of deck. Space welds not more than 12 inches apart with at least one weld at each corner. Install reinforcing channels or zees in ribs to span between supports and weld. Miscellaneous Roof-Deck Accessories: Install ridge and valley plates, finish strips, end closures, and reinforcing channels according to deck manufacturer's written instructions. Weld to substrate to provide a complete deck

Weld cover plates at changes in direction of roof-deck panels unless otherwise indicated F. Flexible Closure Strips: Install flexible closure strips over partitions, walls, and where indicated. Install with adhesive according to manufacturer's written instructions to ensure complete closure. 3.4 FLOOR-DECK INSTALLATION

 Fasten floor-deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter Weld Diameter: As indicated. Weld Spacing: Space and locate welds as indicated. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals not exceeding the lesser of one-half of the span or 36 inches, and as follows:

 End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints as follows: End Joints: Lapped or butted at Contractor's option. D. Pour Stops and Girder Fillers: Weld steel sheet pour stops and girder fillers to supporting structure according to SDI recommendations unless otherwise indicated.

E. Floor-Deck Closures: Weld steel sheet column closures, cell closures, and Z-closures to deck, according to SDI

recommendations, to provide tight-fitting closures at open ends of ribs and sides of deck. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

Field welds will be subject to inspection Prepare test and inspection reports.

Fasten with a minimum of 1-1/2-inch-long welds.

Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A780/A780M and manufacturer's written instructions. Repair Painting: Wire brush and clean rust spots, welds, and abraded areas on both surfaces of prime-painted deck immediately after installation, and apply repair paint Apply repair paint, of same color as adjacent shop-primed deck, to bottom surfaces of deck exposed to

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other

Steel framing and supports for applications where framing and supports are not specified in other

Include plans, elevations, sections, and details of metal fabrications and their connections. Show

Delegated-Design Submittal: For installed products indicated to comply with performance requirements and

Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications

manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one

anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be

Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding

Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating

B. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality

B. Structural Performance of Aluminum Ladders: Ladders, including landings, are to withstand the effects of loads

Structural Performance of Alternating Tread Devices: Alternating tread devices are to withstand the effects of

gravity loads and the following loads and stresses within limits and under conditions indicated:

embedded in concrete or masonry. Deliver such items to Project site in time for installation.

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FRANKLIN COUNTY BLDG SUBMISSION

NO. REASON

DOCUMENTS BID SET

3 CONSTRUCTION 04/03/2023

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

SPECIFICATIONS

STEEL JOIST FRAMING 05 21 00 - 1 STEEL DECKING 05 31 00 - 1 METAL FABRICATIONS 05 50 00 - 1

04 20 00 - 12

STRUCTURAL STEEL FRAMING

SHOP CONNECTIONS

05 12 00 - 3

PART 2 - PRODUCTS

9829 Spencer Road

Main: 877-244-8562

Facsimile: 810-852-4721

www.bccgp.com

615 South College Street, Suite 1600

Charlotte, NC 28202

T: 704.525.6350

www.littleonline.com

Brighton MI 48114

FERROUS METALS to be galvanized Evebolts: ASTM A 489. METAL FABRICATIONS base metals. 2.9 METAL LADDERS METAL FABRICATIONS B. Steel Ladders:

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trade names, or blemishes
       FABRICATION, GENERAL
2.13 FINISHES, GENERAL
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3. Uniform and concentrated loads need not be assumed to act concurrently. 4. Alternating Tread Device Framing: Capable of withstanding stresses resulting from railing loads in addition to loads specified above. Comply with applicable railing loadings in Section 05 "Pipe and Tube Railings." A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled Steel Plates, Shapes, and Bars: ASTM A 36/A 36M. Machine Screws: ASME B18.6.3. Lag Screws: ASME B18.2.1. Wood Screws: Flat head, ASME B18.6.1. Plain Washers: Round, ASME B18.22.1. 2.5 MISCELLANEOUS MATERIALS MPI#79 and compatible with topcoat paints specified to be used over it. Remove welding flux immediately operable partition Shop Drawings. allowing ease of movement. Comply with ANSI A14.3. Space siderails 16 inches apart unless otherwise indicated. Rungs: 3/4-inch-diameter, steel bars. 2.10 ALTERNATING TREAD DEVICES Alternating Tread Devices: Fabricate alternating tread devices of open-type construction with channel or plate stringers and pipe and tube railings unless otherwise indicated. Provide brackets and fittings for installation. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated or comparable product by one of the following: Basis of Design: Precision Ladders, LLC; Precision Ladders' AT Series. Lapeyre Stair Inc. 2. Tread depth is not to be less than 5 inches exclusive of nosing or less than 8-1/2 inches, including the nosing, tread width is not to be less than 7 inches, and riser height is not to be more than 9-1/2 inches. Tread depth is not to be less than 8-1/2 inches exclusive of nosing or less than 10-1/2 inches, including the nosing, tread width is not to be less than 7 inches, and riser height is not to be more than 8 inches. Fabricate from aluminum and assemble by welding or with stainless steel fasteners. Comply with applicable railing requirements in Section 05 "Pipe and Tube Railings." 2.11 MISCELLANEOUS STEEL TRIM A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work. Provide with integrally welded steel strap anchors for embedding in concrete or masonry construction. 2.12 STEEL WELD PLATES AND ANGLES Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Finish metal fabrications after assembly. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface. 2.14 STEEL AND IRON FINISHES A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion. B. Shop prime iron and steel items not indicated to be galvanized unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated. Shop prime with universal shop primer unless zinc-rich primer is indicated.

Use materials and methods that minimize distortion and develop strength and corrosion resistance of Steel Tubing: ASTM A 500, cold-formed steel tubing. Obtain fusion without undercut or overlap. Steel Pipe: ASTM A 53/A 53M, standard weight (Schedule 40) unless otherwise indicated. Stainless-Steel Sheet, Strip, and Plate: ASTM A 240/A 240M or ASTM A 666, Type 304. Remove welding flux immediately At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows Stainless-Steel Bars and Shapes: ASTM A 276, Type 304. after finishing and contour of welded surface matches that of adjacent surface. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are A. General: Unless otherwise indicated, provide Type 304 stainless-steel fasteners for exterior use and zinc-plated required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry fasteners with coating complying with ASTM B 633 or ASTM F 1941, Class Fe/Zn 5, at exterior walls. Select inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors. fasteners for type, grade, and class required. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar B. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A 325, Type 3; with hex nuts, ASTM A 563, Grade C3: and, where indicated, flat washers. INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS Anchor Bolts: ASTM F 1554, Grade 36, of dimensions indicated; with nuts, ASTM A 563; and, where indicated, General: Install framing and supports to comply with requirements of items being supported, including 1. Hot-dip galvanize or provide mechanically deposited, zinc coating where item being fastened is indicated manufacturers' written instructions and requirements indicated on Shop Drawings. Anchor supports for operable partitions securely to and rigidly brace from building structure. Support steel girders on solid grouted masonry, concrete, or steel pipe columns. Secure girders with anchor bolts embedded in grouted masonry or concrete or with bolts through top plates of pipe columns. Where grout space under bearing plates is indicated for girders supported on concrete or masonry, install as specified in "Installing Bearing and Leveling Plates" Article. Install pipe columns on concrete footings with grouted baseplates. Position and grout column baseplates as Lock Washers: Helical, spring type, ASME B18.21.1. specified in "Installing Bearing and Leveling Plates" Article. Anchors, General: Anchors capable of sustaining, without failure, a load equal to six times the load imposed Grout baseplates of columns supporting steel girders after girders are installed and leveled. when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency. INSTALLING BEARING AND LEVELING PLATES K. Cast-in-Place Anchors in Concrete: Either threaded type or wedge type unless otherwise indicated; galvanized Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to ferrous castings, either ASTM A 47/A 47M malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, surfaces. Clean bottom surface of plates washers, and shims as needed, all hot-dip galvanized per ASTM F 2329. Set bearing and leveling plates on wedges, shims, or leveling nuts. After bearing members have been Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors positioned and plumbed, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B 633 or with edge of bearing plate before packing with grout. ASTM F 1941, Class Fe/Zn 5, unless otherwise indicated. 1. Use nonshrink grout, either metallic or nonmetallic, in concealed locations where not exposed to moisture; use nonshrink, nonmetallic grout in exposed locations unless otherwise indicated. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded. ADJUSTING AND CLEANING B. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for Use primer containing pigments that make it easily distinguishable from zinc-rich primer. C. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with touching up shop-painted surfaces. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop Nonshrink, Metallic Grout: Factory-packaged, ferrous-aggregate grout complying with ASTM C 1107, paint are specified in Division 09 painting Sections. specifically recommended by manufacturer for heavy-duty loading applications. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with Unless otherwise indicated, clean metals by washing thoroughly with clean water and soap, rinsing with clean ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications. water, and drying with soft cloths. END OF SECTION 05 50 00 05 50 00 - 2 METAL FABRICATIONS A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as SECTION 05 51 13 - METAL PAN STAIRS necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. learly mark units for reassembly and coordinated installation B. Cut, drill, and punch metals cleanly and accurately. Remove burns and ease edges to a radius of approximately PART 1 - GENERAL 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Form exposed work with accurate angles and surfaces and straight edges. Division 01 Specification Sections, apply to this Section. Weld corners and seams continuously to comply with the following: 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of Section Includes: Obtain fusion without undercut or overlap. Preassembled steel stairs with concrete-filled treads Steel tube railings attached to metal stairs. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows Steel tube handrails attached to walls adjacent to metal stairs. after finishing and contour of welded surface matches that of adjacent surface. Shop Priming for field painting F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless COORDINATION otherwise indicated. Locate joints where least conspicuous. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating G. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide manufacturers' written instructions to ensure that shop primers and topcoats are compatible with one another. weep holes where water may accumulate. B. Coordinate installation of anchorages for metal stairs and railings. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to inserts, anchor bolts, blocking for attachment of wall-mounted handrails, and items with integral anchors, secure metal fabrications rigidly in place and to support indicated loads. that are to be embedded in concrete or masonry. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel Deliver such items to Project site in time for installation. strap anchors, 1/8 by 1-1/2 inches, with a minimum 6-inch embedment and 2-inch hook, not less than 8 Coordinate locations of hanger rods and struts with other work so they do not encroach on required stair width inches from ends and corners of units and 24 inches o.c., unless otherwise indicated. and are within fire-resistance-rated stair enclosure. Schedule installation of railings so wall attachments are made only to completed walls. MISCELLANEOUS FRAMING AND SUPPORTS General: Provide steel framing and supports not specified in other Sections as needed to complete the Work. 1.4 ACTION SUBMITTALS Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction. Include plans, elevations, sections, details, and attachments to other work. Fabricate units from slotted channel framing where indicated Indicate sizes of metal sections, thickness of metals, profiles, holes, and field joints. Furnish inserts for units installed after concrete is placed. Include plan at each level. Fabricate supports for operable partitions from continuous steel beams of sizes recommended by partition Indicate locations of anchors, weld plates, and blocking for attachment of wall-mounted handrails. manufacturer with attached bearing plates, anchors, and braces as recommended by partition manufacturer. Delegated-Design Submittal: For stairs, railings,, including analysis data signed and sealed by the qualified Drill or punch bottom flanges of beams to receive partition track hanger rods; locate holes where indicated on

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set

Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as

and free of rack; and measured from established lines and levels.

C. Field Welding: Comply with the following requirements:

metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true,

exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade

surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field

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professional engineer responsible for their preparation. D. Fabricate steel pipe columns for supporting wood frame construction from steel pipe with steel baseplates and INFORMATIONAL SUBMITTALS top plates as indicated. Drill or punch baseplates and top plates for anchor and connection bolts and weld to Qualification Data: For professional engineer's experience with providing delegated-design engineering services pipe with fillet welds all around. Make welds the same size as pipe wall thickness unless otherwise indicated. of the kind indicated, including documentation that engineer is licensed in the State in which Project is located. Unless otherwise indicated, fabricate from Schedule 40 steel pipe. Welding certificates. Unless otherwise indicated, provide 1/2-inch baseplates with four 5/8-inch anchor bolts and 1/4-inch top Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats. Galvanize miscellaneous framing and supports where exposed to elements and where indicated. Prime miscellaneous framing and supports with zinc-rich primer where indicated. QUALITY ASSURANCE Installer Qualifications: Fabricator of products. Welding Qualifications: Qualify procedures and personnel according to the following: Fabricate units from galvanized steel corrugated sheets, shapes, plates, and bars of welded construction unless AWS D1.1/D1.1M, "Structural Welding Code - Steel."

otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent Furnish inserts for units installed after concrete is placed. Hardware: Provide gate hinges and latching as indicated to securely anchor and support the weight while

Preparation for Shop Priming: Prepare surfaces to comply with SSPC-SP 6/NACE No. 3, "Commercial Blast

Items Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

D. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop,

Items Indicated to Receive Primers Specified in Division 09 Section "High-Performance Coatings":

Exterior Items: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

Other Items: SSPC-SP 3, "Power Tool Cleaning."

Field, and Maintenance Painting of Steel," for shop painting.

METAL FABRICATIONS

Stripe paint corners, crevices, bolts, welds, and sharp edges.

For elevator pit ladders, comply with ASME A17.1/CSA B44.

PART 2 - PRODUCTS

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Siderails: Continuous, 3/8-by-2-1/2-inch steel flat bars, with eased edges. PERFORMANCE REQUIREMENTS Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality Fit rungs in centerline of siderails; plug-weld and grind smooth on outer rail faces. Requirements," to design stairs, railings,, including attachment to building construction. Provide nonslip surfaces on top of each rung. Structural Performance of Stairs: Metal stairs shall withstand the effects of gravity loads and the following loads Galvanize and prime exterior ladders, including brackets. and stresses within limits and under conditions indicated: Prime exterior ladders, including brackets and fasteners, with zinc-rich primer. Uniform Load: 100 lbf/sq. ft.. Concentrated Load: 300 lbf applied on an area of 4 sq. in..

METAL PAN STAIRS

Uniform and concentrated loads need not be assumed to act concurrently. Stair Framing: Capable of withstanding stresses resulting from railing loads in addition to loads specified Limit deflection of treads, platforms, and framing members to L/240 or 1/4 inch, whichever is less. Structural Performance of Railings: Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

Uniform load of 50 lbf/ft, applied in any direction.

AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."

Store materials to permit easy access for inspection and identification.

1.7 DELIVERY, STORAGE, AND HANDLING

members or supporting structures.

Handrails and Top Rails of Guards:

a qualified independent testing agency.

METAL PAN STAIRS

Concentrated load of 200 lbf applied in any direction. Uniform and concentrated loads need not be assumed to act concurrently. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft.. Infill load and other loads need not be assumed to act concurrently Thermal Movements: Allow for thermal movements from ambient and surface temperature changes. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces. Seismic Performance of Stairs: Metal stairs shall withstand the effects of earthquake motions determined

Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers.

Do not store materials on structure in a manner that might cause distortion, damage, or overload to

Protect steel members and packaged materials from corrosion and deterioration

Repair or replace damaged materials or structures as directed.

according to ASCE/SEI 7. Component Importance Factor: 1.5. Metal Surfaces: Provide materials with smooth, flat surfaces unless otherwise indicated. For components exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names,

Steel Plates, Shapes, and Bars: ASTM A 36/A 36M. Steel Tubing for Railings: ASTM A 500/A 500M (cold formed) or ASTM A 513/A 513M. Steel Pipe for Railings: ASTM A 53/A 53M, Type F or Type S, Grade A, Standard Weight (Schedule 40), unless another grade and weight are required by structural loads. Uncoated, Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, either commercial steel, Type B, or structural steel, Grade 25, unless another grade is required by design loads; exposed. Aluminum Extrusions: ASTM B 221, Alloy 6063-T6. Aluminum Castings: ASTM B 26/B 26M, Alloy 443.0-F.

General: Provide zinc-plated fasteners with coating complying with ASTM B 633 or ASTM F 1941/F 1941M, Class Fe/Zn 12 for exterior use, and Class Fe/Zn 5 where built into exterior walls. Select fasteners for type, grade, and class required. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.

Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A; with hex nuts, ASTM A 563; and, where indicated, flat washers. Anchor Bolts: ASTM F 1554, Grade 36, of dimensions indicated; with nuts, ASTM A 563; and, where indicated, flat washers. Provide mechanically deposited or hot-dip, zinc-coated anchor bolts for stairs indicated to be galvanized and stairs indicated to be shop primed with zinc-rich primer. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load

imposed when installed in concrete, as determined by testing according to ASTM E 488/E 488M, conducted by

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1. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B 633 or ASTM F 1941/F 1941M, Class Fe/Zn 5, unless otherwise indicated. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594. MISCELLANEOUS MATERIALS

Handrail Wall Brackets: Cast aluminum, center of rail 2-1/2 inches from face of wall. Welding Electrodes: Comply with AWS requirements. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer. Concrete: Work of Section 03 30 00 "Cast-in-Place Concrete". Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications. Sure-Grip High Performance Grout; Dayton Superior Corp. Euco N-S Grout; Euclid Chemical Co.

 e. Sealtight 588 Grout; W.R. Meadows, Inc. FABRICATION, GENERAL Provide complete stair assemblies, including metal framing, hangers, struts, railings, concealed clips, brackets, bearing plates, and other components necessary to support and anchor stairs and platforms on supporting Join components by welding unless otherwise indicated. Use connections that maintain structural value of joined pieces.

Five Star Grout; Five Star Products.

Crystex; L & M Construction Chemicals, Inc.

Assemble stairs and railings in shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Cut. drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing

 Form exposed work with accurate angles and surfaces and straight edges. Weld connections to comply with the following: 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of Obtain fusion without undercut or overlap. Remove welding flux immediately. Weld exposed corners and seams continuously unless otherwise indicated.

At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Finish #2 - Completely sanded joint with some undercutting and pinholes okay. G. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) screws or bolts unless otherwise indicated. Locate joints where least conspicuous. Fabricate joints that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate internally.

FABRICATION OF STEEL-FRAMED STAIRS NAAMM Stair Standard: Comply with NAAMM AMP 510, "Metal Stairs Manual," for Architectural Class, unless more stringent requirements are indicated. Fabricate stringers of steel plates or steel channels.

Stringer Size: As required to comply with "Performance Requirements" Article. Provide closures for exposed ends of channel and rectangular tube stringers. Finish: Shop primed. 2. Construct platforms of steel plate or channel headers and miscellaneous framing members as required to comply with "Performance Requirements" Article.

METAL PAN STAIRS 05 51 13 - 3

 a. Provide closures for exposed ends of channel and rectangular tube framing. b. Finish: Shop primed. Weld stringers to headers; weld or bolt framing members to stringers and headers. If using bolts, fabricate

and join so bolts are not exposed on finished surfaces.

Where masonry walls support metal stairs, provide temporary supporting struts designed for erecting steel stair components before installing masonry. Metal Pan Stairs: Form risers, subtread pans, and subplatforms to configurations shown from steel sheet of thickness needed to comply with performance requirements, but not less than 0.067 inch. Fabricate treads and landing subplatforms of exterior stairs so finished walking surfaces slope to drain. Steel Sheet: Uncoated, cold-rolled steel sheet unless otherwise indicated. Directly weld metal pans to stringers; locate welds on top of subtreads where they will be concealed by concrete fill. Do not weld risers to stringers.

Attach risers and subtreads to stringers with brackets made of steel angles or bars. Weld brackets to stringers and attach metal pans to brackets by welding, riveting, or bolting. Shape metal pans to include nosing integral with riser. 6. At Contractor's option, provide stair assemblies with metal pan subtreads filled with reinforced concrete

FABRICATION OF STAIR RAILINGS Fabricate railings to comply with requirements indicated for design, dimensions, details, finish, and member sizes, including wall thickness of member, post spacings, wall bracket spacing, and anchorage, but not less than that needed to withstand indicated loads. Welded Connections: Fabricate railings with welded connections.

 Fabricate connections that are exposed to weather in a manner that excludes water. a. Provide weep holes where water may accumulate internally. Form changes in direction of railings by radius bends of radius indicated or by inserting prefabricated elbow fittings of radius indicated. D. For changes in direction made by bending, use jigs to produce uniform curvature for each repetitive configuration required. Maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.

Close exposed ends of railing members with prefabricated end fittings. Connect posts to stair framing by direct welding unless otherwise indicated. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, end closures, flanges, miscellaneous fittings, and anchors for interconnecting components and for attaching to other work. Furnish inserts and other anchorage devices for connecting to concrete or masonry work. For nongalvanized railings, provide nongalvanized ferrous-metal fittings, brackets, fasteners, and sleeves, except galvanize anchors embedded in exterior masonry and concrete construction.

H. Fillers: Provide fillers made from steel plate, or other suitably crush-resistant material, where needed to transfer wall bracket loads through wall finishes to structural supports. Size fillers to suit wall finish thicknesses and to produce adequate bearing area to prevent bracket rotation and overstressing of substrate.

Provide wall returns at ends of wall-mounted handrails unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch or less. Finish metal stairs after assembly.

Preparation for Shop Priming: Prepare uncoated, ferrous-metal surfaces to comply with SSPC-SP 3, "Power Apply shop primer to uncoated surfaces of metal stair components, except those with galvanized finishes and those to be embedded in concrete or masonry unless otherwise indicated. Comply with SSPC-PA 1, "Paint

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Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

PART 3 - EXECUTION

METAL PAN STAIRS

METAL PAN STAIRS

A. Verify elevations of floors, bearing surfaces and locations of bearing plates, and other embedments for compliance with requirements.

 For wall-mounted railings, verify locations of concealed reinforcement within gypsum board and plaster Proceed with installation only after unsatisfactory conditions have been corrected.

INSTALLING METAL PAN STAIRS Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal stairs to in-place construction. 1. Include threaded fasteners for concrete and masonry inserts, through-bolts, lag bolts, and other B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal stairs. Set units

accurately in location, alignment, and elevation, measured from established lines and levels and free of rack. Install metal stairs by welding stair framing to weld plates cast into concrete unless otherwise indicated. 1. Grouted Baseplates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates. Set plates for structural members on wedges, shims, or setting nuts.

Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar

 Fit exposed connections accurately together to form hairline joints. 1. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. 2. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections. Comply with requirements for welding in "Fabrication, General" Article.

Adjust railing systems before anchoring to ensure matching alignment at abutting joints with tight, hairline joints. Space posts at spacing indicated or, if not indicated, as required by design loads. Plumb posts in each direction, within a tolerance of 1/16 inch in 3 feet. Align rails so variations from level for horizontal members and variations from parallel with rake of stairs for sloping members do not exceed 1/4 inch in 12 fee

F. Place and finish concrete fill for treads and platforms to comply with Section 03 30 00 "Cast-in-Place Concrete."

Secure posts and rail ends to building construction as follows:

 Anchor posts to steel by welding or bolting to steel supporting members. b. Anchor handrail ends to concrete and masonry with steel round flanges welded to rail ends and anchored with post-installed anchors and bolts. Attach handrails to wall with wall brackets. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads. Secure wall brackets to building construction as follows:

a. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag For steel-framed partitions, use self-tapping screws fastened to steel framing or to concealed steel reinforcements.

A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.

SECTION 05 52 13 - PIPE AND TUBE RAILINGS

PART 1 - GENERAL

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

1.2 SUMMARY A. This Section includes the following: Steel railings. Aluminum railings.

1.3 SUBMITTALS A. Product Data: For the following: Grout, anchoring cement, and paint products.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation. C. Samples for Verification: For each type of exposed finish required. 1. Sections of each distinctly different linear railing member, including handrails, top rails, posts, and

Fittings and brackets. 1.4 QUALITY ASSURANCE

B. Welding: Qualify procedures and personnel according to the following: AWS D1.1, "Structural Welding Code--Steel." AWS D1.2, "Structural Welding Code--Aluminum." 1.5 PROJECT CONDITIONS A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field

Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating railings without field measurements. Coordinate wall and other contiguous construction to ensure that actual dimensions correspond to established Provide allowance for trimming and fitting at site.

measurements before fabrication and indicate measurements on Shop Drawings.

A. Source Limitations: Obtain each type of railing through one source from a single manufacturer.

1.6 COORDINATION AND SCHEDULING A. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation. B. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not satisfy structural performance requirements.

PART 2 - PRODUCTS

PIPE AND TUBE RAILINGS

2.1 PERFORMANCE REQUIREMENTS A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality Requirements," to design railings, including attachment to building construction. Structural Performance: Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated: Handrails and Top Rails of Guards:

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Uniform load of 50 lbf/ ft. applied in any direction.

 Concentrated load of 200 lbfapplied in any direction. Uniform and concentrated loads need not be assumed to act concurrently Infill of Guards:

Concentrated load of 50 lbfapplied horizontally on an area of 1 sq. ft.. Infill load and other loads need not be assumed to act concurrently. C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes. Temperature Change: 120 deg F, ambient; 180 deg F.

A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes. B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated.

2.3 STEEL AND IRON A. Tubing: ASTM A 500 (cold formed) or ASTM A 513, Type 5 (mandrel drawn). B. Pipe: ASTM A 53/A 53M, Type F or Type S, Grade A, Standard Weight (Schedule 40), unless another grade and weight are required by structural loads. Provide galvanized finish for exterior installations and where indicated. C. Plates, Shapes, and Bars: ASTM A 36/A 36M.

D. Castings: Either gray or malleable iron, unless otherwise indicated. Gray Iron: ASTM A 48/A 48M, Class 30, unless another class is indicated or required by structural loads. Malleable Iron: ASTM A 47/A 47M.

A. Source Limitations: Obtain each type of railing from single source from single manufacturer. Aluminum, General: Provide alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than the strength and durability properties of alloy and temper designated

below for each aluminum form required. C. Extruded Tubing: ASTM B221, Alloy 6063-T5/T52. D. Extruded Structural Pipe: ASTM B429/B429M, Alloy 6063-T6. 1. Provide Standard Weight (Schedule 40) pipe unless otherwise indicated.

E. Plate and Sheet: ASTM B209, Alloy 6061-T6. F. Castings: ASTM B26/B26M, Alloy A356.0-T6.

2.5 FASTENERS A. General: Provide the following: 1. Steel Railings: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited Aluminum Railing Components: Type 304 stainless steel fasteners.

B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads. C. Fasteners for Interconnecting Railing Components: Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless otherwise indicated. D. Anchors: Provide cast-in-place, chemical, or torque-controlled expansion anchors, fabricated from corrosionresistant materials with capability to sustain, without failure, a load equal to six times the load imposed when

installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency. 2.6 MISCELLANEOUS MATERIALS A. Welding Rods and Bare Electrodes: Select in accordance with AWS specifications for metal alloy welded. For aluminum railings, provide type and alloy as recommended by producer of metal to be welded and as

required for color match, strength, and compatibility in fabricated items. B. Shop Primers: Provide primers that comply with Division 09 Section "Painting". C. Shop Primer for Galvanized Steel: Zinc-dust, zinc-oxide primer formulated for priming zinc-coated steel and for compatibility with finish paint systems indicated, and complying with SSPC-Paint 5. D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

PIPE AND TUBE RAILINGS 05 52 13 - 2

E. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications. F. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound.

Water-Resistant Product: At exterior locations provide formulation that is resistant to erosion from water

exposure without needing protection by a sealer or waterproof coating and that is recommended by manufacturer for exterior use. A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads. B. Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and

coordinated installation. Use connections that maintain structural value of joined pieces. C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces. D. Form work true to line and level with accurate angles and surfaces.

E. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate. F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items. G. Connections: Fabricate railings with either welded or nonwelded connections, unless otherwise indicated. H. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this

Use materials and methods that minimize distortion and develop strength and corrosion resistance of Obtain fusion without undercut or overlap. Remove flux immediately Remove all burrs, rough and sharp areas on the railing components and grind all welds smooth prior to priming and shipping railings.

purpose. Weld all around at connections, including at fittings.

clearance between end of rail and wall is 1/4 inch or less.

2.8 FINISHES, GENERAL

PIPE AND TUBE RAILINGS

I. Nonwelded Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints. J. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components. K. Close exposed ends of railing members with prefabricated end fittings.

L. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated. Close ends of returns unless

M. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work, unless otherwise indicated. 1. At brackets and fittings fastened to gypsum board partitions, provide fillers made from crush-resistant material, or other means to transfer wall loads through wall finishes to structural supports and prevent bracket or fitting rotation and crushing of substrate. N. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with

supporting structure. For railing posts set in concrete, provide steel sleeves not less than 6 inches long with inside dimensions not less than 1/2 inch greater than outside dimensions of post, with steel plate forming bottom closure. Penetrations in concrete to be fully sealed flush with concrete. P. Toe Boards: Where indicated, provide toe boards at railings around openings and at edge of open-sided floors and platforms. Fabricate to dimensions and details indicated.

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. B. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before

C. Provide exposed fasteners with finish matching appearance, including color and texture, of railings.

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2.9 STEEL AND IRON FINISHES

A. Galvanized Railings: Hot-dip galvanize steel and iron railings, including hardware, after fabrication. Comply with ASTM A 123/A 123M for hot-dip galvanized railings. Comply with ASTM A 153/A 153M for hot-dip galvanized hardware.

B. Fill vent and drain holes that will be exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth. C. For galvanized railings, provide hot-dip galvanized fittings, brackets, fasteners, sleeves, and other ferrous

 D. For nongalvanized steel railings, provide nongalvanized ferrous-metal fittings, brackets, fasteners, and sleeves, except galvanize anchors to be embedded in exterior concrete or masonr E. Preparation for Shop Priming: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign

matter, and treat with metallic-phosphate process. F. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed

Exterior Railings (SSPC Zone 1B): SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning." Interior Railings (SSPC Zone 1A): SSPC-SP 7/NACE No. 4, "Brush-off Blast Cleaning."

2.10 ALUMINUM FINISHES A. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are unacceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast. B. Clear Anodic Finish: AAMA 611, AA-M12C22A31.

C. Color Anodic Finish: AAMA 611, AA-M12C22A32/A34. Color: As selected by Architect from full range of industry colors and color densities. D. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish. Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.2 INSTALLATION, GENERAL

from direct contact with incompatible materials.

A. Examine gypsum board assemblies, where reinforced to receive anchors, to verify that locations of concealed reinforcements have been clearly marked for Installer. Locate reinforcements and mark locations if not already

 A. Fit exposed connections together to form tight, hairline joints. B. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack. 1. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after

fabrication and that are intended for field connection by mechanical or other means without further cutting Set posts plumb within a tolerance of 1/16 inch in 3 feet. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials

1. Coat, with a heavy coat of bituminous paint, concealed surfaces of aluminum that are in contact with grout, concrete, masonry, wood, or dissimilar metals. Adjust railings before anchoring to ensure matching alignment at abutting joints. E. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

PIPE AND TUBE RAILINGS

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3.3 RAILING CONNECTIONS A. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with

B. Expansion Joints: Install expansion joints at locations indicated but not farther apart than required to accommodate thermal movement. Provide slip-joint internal sleeve extending 2 inches beyond joint on either side, fasten internal sleeve securely to 1 side, and locate joint within 6 inches of post.

sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions. . Form or core-drill holes not less than 5 inches deep and 3/4 inch larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written

A. Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into

requirements for welded connections in Part 2 "Fabrication" Article whether welding is performed in the shop or

 Leave anchorage joint exposed; wipe off surplus anchoring material; and leave 1/8-inch buildup, sloped away from 3.5 ANCHORING RAILING ENDS A. Anchor railing ends to concrete and masonry with round flanges connected to railing ends and anchored to wall

construction with anchors and bolts. B. Anchor railing ends to metal surfaces with flanges bolted to metal surfaces and welded to railing ends or connected to railing ends using nonwelded connections.

3.6 ATTACHING HANDRAILS TO WALLS A. Attach handrails to wall with wall brackets. Provide brackets with 1-1/2-inch clearance from inside face of handrail and finished wall surface. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolt. B. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads. C. Secure wall brackets to building construction as follows:

For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts. For hollow masonry anchorage, use toggle bolts. For steel-framed gypsum board plaster partitions, fasten brackets directly to steel framing or concealed steel reinforcements using self-tapping screws of size and type required to support structural loads.

ADJUSTING AND CLEANING Clean aluminum by washing thoroughly with clean water and soap and rinsing with clean water. B. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 for

touching up shop-painted surfaces. C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

3.8 PROTECTION A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion. B. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 05 52 13

PIPE AND TUBE RAILINGS 05 52 13 - 5

SECTION 06 10 53 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

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

Section Includes: Wood blocking, cants, and nailers Wood furring and grounds. Wood sleepers. Engineered wood panels.

Plywood backing panels Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.

 Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating

plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to

4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

For adhesives, documentation including printed statement of VOC content. INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For the following, from ICC-ES: Preservative-treated wood Fire-retardant-treated wood.

Power-driven fasteners. Powder-actuated fasteners. Expansion anchors.

DELIVERY, STORAGE, AND HANDLING Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

MISCELLANEOUS ROUGH CARPENTRY

 Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of

WOOD PRODUCTS, GENERAL

06 10 53 - 1

SPECIFICATIONS

Issue Date: 12/15/2022

Job Number: 112 18134 00 Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

9829 Spencer Road

Main: 877-244-8562

Facsimile: 810-852-4721

www.bccgp.com

615 South College Street, Suite 1600

Charlotte, NC 28202

www.littleonline.com

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FRANKLIN COUNTY BLDG

3 CONSTRUCTION 04/03/2023

DOCUMENTS BID SET

NO. REASON

SUBMISSION

T: 704.525.6350

Brighton MI 48114

Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated. Factory mark each piece of lumber with grade stamp of grading agency Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber. Provide dressed lumber, S4S, unless otherwise indicated. 2.2 WOOD-PRESERVATIVE-TREATED MATERIALS Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground. warped or does not comply with requirements for untreated material. Application: Treat items indicated on Drawings, and the following: connection with roofing, flashing, vapor barriers, and waterproofing.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is

Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in

Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete

2.3 FIRE-RETARDANT-TREATED MATERIALS General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency. B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the

centerline of the burners at any time during the test. C. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes. D. Application: Treat items indicated on Drawings, and the following: Items in contact with roofing.

Concealed blocking. Roof framing and blocking Plywood backing panels.

MISCELLANEOUS LUMBER General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following: Blocking.

Rooftop equipment bases and support curbs.

 For concealed boards, provide lumber with 19 percent maximum moisture content and the following species and Mixed southern pine, No. 2 grade; SPIB.

 For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

ENGINEERED WOOD PANELS Plywood: Either DOC PS 1. B. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue.

MISCELLANEOUS ROUGH CARPENTRY 06 10 53 - 2

Tempered High Density Fiberboard: ANSI A208.2, Grade HD. Factory mark panels to indicate compliance with applicable standard.

A. Equipment Backing Panels: DOC PS 1, Exposure 1, C-D Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 1/2-inch nominal thickness.

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for 1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M. Power-Driven Fasteners: NES NER-272. Wood Screws: ASME B18.6.1

Screws for Fastening to Metal Framing: ASTM C 1002, length as recommended by screw manufacturer for Lag Bolts: ASME B18.2.1 Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat

 G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

MISCELLANEOUS MATERIALS A. Adhesives for Gluing Furring and Sleepers to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer. Adhesives shall have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 - EXECUTION

MISCELLANEOUS ROUGH CARPENTRY

END OF SECTION 06 10 53

MISCELLANEOUS ROUGH CARPENTRY

INSTALLATION, GENERAL Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction B. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible

flashing separator between wood and metal decking. C. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless D. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels. Install fire-retardant treated plywood backing panels with classification marking of testing agency

Metal Framing Anchors: Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole. Do not splice structural members between supports unless otherwise indicated. G. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:

1. Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than 96 inches o.c. with solid wood blocking or noncombustible materials accurately fitted to close furred spaces. 2. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than 96 inches o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal thickness.

3. Fire block concealed spaces between floor sleepers with same material as sleepers to limit concealed spaces to not more than 100 sq. ft. and to solidly fill space below partitions. H. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are

too small to use with minimum number of joints or optimum joint arrangement.

06 10 53 - 3

 Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber. Use inorganic boron for items that are continuously protected from liquid water. Use copper naphthenate for items not continuously protected from liquid water. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the

NES NER-272 for power-driven fasteners. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code. K. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

WOOD BLOCKING AND NAILER INSTALLATION Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless

otherwise indicated. C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove

temporary grounds when no longer required. 3.3 WOOD FURRING INSTALLATION

 Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of B. Furring to Receive Plywood or Hardboard Paneling: Install 1-by-3-inch nominal-size furring horizontally at 24

Protect miscellaneous rough carpentry from weather. If, despite protection, miscellaneous rough carpentry

becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-

2.6 PLASTIC-LAMINATE COUNTERTOPS Furring to Receive Gypsum Board: Install 1-by-2-inch nominal-size furring vertically at 16 inches o.c. PROTECTION A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label

PART 3 - EXECUTION

END OF SECTION 06 40 23

located directly under tops

Grade: Custom.

INTERIOR ARCHITECTURAL WOODWORK

PLASTIC-LAMINATE CABINETS

Edges: Grade HGS.

Materials for Semiexposed Surfaces

AWI Type of Cabinet Construction: Flush overlay.

Postformed Surfaces: Grade HGP.

in color, pattern, and finish.

Drawer Bottoms: Hardwood plywood.

High-Pressure Decorative Laminate Grade: HGS.

Core Material: Particleboard made with exterior glue.

As indicated on Finish Schedule

Grain Direction: Parallel to cabinet fronts.

As indicated on Finish Schedule.

Vertical Surfaces: Grade HGS.

Horizontal Surfaces Other Than Tops: Grade HGS.

pressure decorative laminate, Grade VGS.

Drawer Sides and Backs: Solid-hardwood lumber.

laminate surfaces complying with the following requirements:

laminate surfaces complying with the following requirements:

Edge Treatment: Same as laminate cladding on horizontal surfaces.

Surfaces Other Than Drawer Bodies: Thermoset decorative panels.

Direction: Install with grain direction horizontal, unless directed otherwise by Architect.

3.1 INSTALLATION Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches.

Backer Sheet: Provide plastic-laminate backer sheet, Grade BKL, on underside of countertop substrate.

Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.

 Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.

SECTION 06 64 00 - PLASTIC PANELING

Testing Agency: Acceptable to authorities having jurisdiction.

Crane Composites, Inc.

Color: Match panels

Nudo Products, Inc.

Flame-Spread Index: 25 or less.

Smoke-Developed Index: 450 or less

Color: As selected by Architect from manufacturer's full range.

edges of factory-laminated panels and to be fastened to substrate.

Adhesives shall have a VOC content of 50 g/L or less.

Adhesive: As recommended by plastic paneling manufacturer.

Sealant shall have a VOC content of 250 g/L or less.

tolerances and other conditions affecting performance of the Work.

Proceed with installation only after unsatisfactory conditions have been corrected

Install plastic paneling according to manufacturer's written instructions.

Apply sealant to fastener holes before installing fasteners.

manufacturer and then wipe with clean dry cloths until no residue remains.

Install trim accessories with adhesive. Do not fasten through panels

Drill oversized fastener holes in panels and center fasteners in holes.

Exposed Fasteners: Nylon drive rivets recommended by panel manufacturer.

Nominal Thickness: Not less than 0.075 inch.

occupancy levels during the remainder of the construction period.

Source Limitations: Obtain plastic paneling and trim accessories from single manufacturer.

Surface Finish: As selected by Architect from manufacturer's full range.

manufacturer and complying with requirements in Division 07 Section "Joint Sealants."

PART 1 - GENERAL

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

Environmental Limitations: Do not deliver or install plastic paneling until spaces are enclosed and weathertight

Glass-Fiber-Reinforced Plastic Paneling: Gelcoat-finished, glass-fiber-reinforced plastic panels complying with

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

2. Surface-Burning Characteristics: As follows when tested by a qualified testing agency according to

Trim Accessories: Manufacturer's standard one-piece vinyl extrusions designed to retain and cover edges of

Concealed Mounting Splines: Continuous, H-shaped aluminum extrusions designed to fit into grooves routed in

Sealant: Mildew-resistant, single-component, neutral-curing silicone sealant recommended by plastic paneling

Examine substrates and conditions, with Installer present, for compliance with requirements for installation

A. Remove wallpaper, vinyl wall covering, loose or soluble paint, and other materials that might interfere with

Prepare substrate by sanding high spots and filling low spots as needed to provide flat, even surface for panel

Condition panels by unpacking and placing in installation space before installation according to manufacturer's

Locate panel joints to allow clearance at panel edges according to manufacturer's written instructions.

E. Lay out paneling before installing. Locate panel joints to provide equal panels at ends of walls not less than half

Install panels with fasteners. Layout fastener locations and mark on face of panels so that fasteners are

Fill grooves in trim accessories with sealant before installing panels, and bed inside corner trim in a bead of

F. Maintain uniform space between adjacent panels and between panels and floors, ceilings, and fixtures. Fill

Remove excess sealant and smears as paneling is installed. Clean with solvent recommended by sealant

Clean substrates of substances that could impair adhesive bond, including oil, grease, dirt, and dust.

Mark plumb lines on substrate at panel joint locations for accurate installation.

06 64 00 - 1

06 64 00 - 2

panels. Provide division bars, inside corners, outside corners, and caps as needed to conceal edges.

ASTM E84. Identify products with appropriate markings of applicable testing agency.

and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at

Section Includes: Plastic sheet paneling.

PART 2 - PRODUCTS

PLASTIC PANELING

PART 3 - EXECUTION

written recommendations

Install panels in a full spread of adhesive.

INSTALLATION

space with sealant.

Wood furring, blocking, shims, and hanging strips for installing interior architectural woodwork items that are not concealed within other construction. ACTION SUBMITTALS Shop finishing of interior woodwork. Product Data: For each type of product. Samples: For plastic paneling and trim accessories, in manufacturer's standard sizes.

ACTION SUBMITTALS Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components. Qualification Data: For fabricator.

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other

1.4 QUALITY ASSURANCE Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance. Shop is a certified participant in AWI's Quality Certification Program.

Installer Qualifications: Fabricator of products. 1.5 PROJECT CONDITIONS Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete,

and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity etween 25 and 55 percent during the remainder of the construction period Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements

before being enclosed, and indicate measurements on Shop Drawings. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating woodwork without field measurements. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond

 Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that interior architectural woodwork can be supported and installed as

Hardware Coordination: Distribute copies of approved hardware schedule specified in Division 08 Section "Door

Hardware (Scheduled by Describing Products)" to fabricator of architectural woodwork; coordinate Shop

Drawings and fabrication with hardware requirements.

SECTION 06 40 23 - INTERIOR ARCHITECTURAL WOODWORK

Division 01 Specification Sections, apply to this Section.

Plastic-laminate-clad cabinets and countertops

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. This Section includes the following:

General: Provide materials that comply with requirements of AWI's quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.

Wood Products: Comply with the following: Hardboard: AHA A135.4.

PART 2 - PRODUCTS

INTERIOR ARCHITECTURAL WOODWORK 06 40 23 - 1

the following as indicated on Finish Schedule.

Drawer Locks: BHMA A156.11, E07041

Medium-Density Fiberboard: ANSI A208.2, Grade MD, made with binder containing no urea formaldehyde. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or, if not indicated, as required by woodwork quality standard. Manufacturer: Subject to compliance with requirements, provide high-pressure decorative laminates by

CABINET HARDWARE AND ACCESSORIES General: Provide cabinet hardware and accessory materials associated with architectural cabinets, except for

items specified in Division 08 Section "Door Hardware (Scheduled by Describing Products). Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 125 degrees of opening, self-closing. Pulls: Back mounted, solid metal, as indicated on Drawings. Catches: Magnetic catches, BHMA A156.9, B03141. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081.

Shelf Rests: BHMA A156.9, B04013; metal. Drawer Slides: BHMA A156.9, B05091. As indicated on Drawings. Door Locks: BHMA A156.11, E07121.

matching plastic caps with slot for wire passage. Basis-of-Design: Doug Mockett & Company, Inc. K. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated. Satin Chromium Plated: BHMA 626 for brass or bronze base: BHMA 652 for steel base. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements

Grommets for Cable Passage through Countertops: 3-inch OD, warm grey, molded-plastic grommets and

in BHMA A156.9. MISCELLANEOUS MATERIALS Furring, Blocking, Shims, and Hanging Strips: Fire-retardant-treated softwood lumber, kiln dried to less than 15 percent moisture content. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide

nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls and elsewhere as required for corrosion resistance. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors. Adhesives, General: Do not use adhesives that contain urea formaldehyde. Adhesive for Bonding Plastic Laminate: Contact cement. Adhesive for Bonding Edges: Hot-melt adhesive or adhesive specified above for faces.

FABRICATION, GENERAL A. Interior Woodwork Grade: Unless otherwise indicated, provide Custom Grade interior woodwork complying with referenced quality standard. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the Corners of Cabinets and Edges of Solid-Wood (Lumber) Members 3/4 Inch Thick or Less: 1/16 inch.

Edges of Rails and Similar Members More Than 3/4 Inch Thick: 1/8 inch. Corners of Cabinets and Edges of Solid-Wood (Lumber) Members and Rails: 1/16 inch. Complete fabrication, including assembly, finishing, and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting. Shop-cut openings to maximum extent possible to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce

Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate complying with the following

a. Edges of Plastic-Laminate Shelves: PVC tape, 0.018-inch minimum thickness, matching laminate

b. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-

Concealed Backs of Panels with Exposed Plastic Laminate Surfaces: High-pressure decorative laminate,

Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed

Provide dust panels of 1/4-inch plywood or tempered hardboard above compartments and drawers, unless

Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed

06 40 23 - 2

accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

PLASTIC PANELING

SECTION 07 14 16 - COLD FLUID-APPLIED WATERPROOFING PART 1 - GENERAL

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

Section Includes: Polyurethane waterproofing. Prefabricated drainage composite

1.3 ACTION SUBMITTALS

Show locations and extent of waterproofing. Include details for substrate joints and cracks, sheet flashings, penetrations, inside and outside corners, tie-ins with adjoining waterproofing, and other termination conditions. 3. Include setting drawings showing layout, sizes, sections, profiles, and joint details of pedestal-supported

INFORMATIONAL SUBMITTALS Sample Warranties: For special warranties.

QUALITY ASSURANCE Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by waterproofing manufacturer.

1.6 FIELD CONDITIONS Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures ecommended in writing by waterproofing manufacturer. 1. Do not apply waterproofing to a damp or wet substrate, when relative humidity exceeds 85 percent, or when temperatures are less than 5 deg F above dew point.

2. Do not apply waterproofing in snow, rain, fog or mist, or when such weather conditions are imminent during application and curing period. Maintain adequate ventilation during application and curing of waterproofing materials.

 Manufacturer's Special Warranty: Manufacturer agrees to repair or replace waterproofing that fails in materials or workmanship within specified warranty period Warranty Period: 10 years from date of Substantial Completion. B. Installer's Special Warranty: Specified form, signed by Installer, covering Work of this Section, for warranty 1. Warranty includes removing and reinstalling protection board, drainage panels, insulation, pedestals, and

PART 2 - PRODUCTS

pavers on plaza decks.

SINGLE-COMPONENT POLYURETHANE WATERPROOFING Single-Component, Modified Polyurethane Waterproofing: ASTM C 836/C 836M and coal-tar free. Products: Subject to compliance with requirements, provide one of the following: Carlisle Coatings & Waterproofing Inc; Miraseal.

 Henry Company; CM100. Sika Corporation; Sikalastic 320. Tremco Incorporated; TREMproof 250 GC.

COLD FLUID-APPLIED WATERPROOFING 07 14 16 - 1 e. W.R. Meadows; Hydralastic 836.

2.2 AUXILIARY MATERIALS General: Provide auxiliary materials including composite drainage panels serving as protection course, as recommended in writing by waterproofing manufacturer for intended use and compatible with one another and

2.3 PREFABRICATED COMPOSITE DRAINAGE PANELS A. Prefabricated Drainage Composite: Non-woven filter fabric bonded to individual dimples of a molded polypropylene core to minimum fabric instruction into flow of channels cause by backfill pressure, serving as protection course for below grade waterproofing.

PART 3 - EXECUTION

 Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work. Verify that concrete has cured and aged for minimum time period recommended in writing by waterproofing manufacturer. Verify that substrate is visibly dry and within the moisture limits recommended in writing by manufacturer. Test for capillary moisture by plastic sheet method according to ASTM D 4263.

 Proceed with installation only after unsatisfactory conditions have been corrected. Clean, prepare, and treat substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrates for waterproofing application.

Close off deck drains and other deck penetrations to prevent spillage and migration of waterproofing fluids. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, acid residues, and other penetrating contaminants or film-forming coatings from concrete. Abrasive blast clean concrete surfaces uniformly to expose top surface of fine aggregate according to ASTM D 4259 with a self-contained, recirculating, blast-cleaning apparatus. Remove material to provide a sound surface free of laitance, glaze, efflorescence, curing compounds, concrete hardeners, or formrelease agents. Remove remaining loose material and clean surfaces according to ASTM D 4258.

Remove fins, ridges, and other projections, and fill honeycomb, aggregate pockets, holes, and other voids.

B. Mask off adjoining surfaces not receiving waterproofing to prevent spillage and overspray affecting other

3.3 PREPARATION AT TERMINATIONS, PENETRATIONS, AND CORNERS Prepare surfaces at terminations and penetrations through waterproofing and at expansion joints, drains, sleeves, and corners according to waterproofing manufacturer's written instructions and to recommendations in ASTM C 898/C 898M and ASTM C 1471/C 1471M. Apply waterproofing in two separate applications, and embed a joint reinforcing strip in the first preparation coat

when recommended by waterproofing manufacturer.

COLD FLUID-APPLIED WATERPROOFING

3.5 WATERPROOFING APPLICATION

ASTM C 898/C 898M and ASTM C 1471/C 1471M.

3.6 MOLDED-SHEET DRAINAGE PANEL INSTALLATION

panels during subsequent construction.

written instructions.

3.8 FIELD QUALITY CONTROL

3.9 PROTECTION

END OF SECTION 07 14 16

COLD FLUID-APPLIED WATERPROOFING

SECTION 07 21 00 - THERMAL INSULATION

This Section includes the following:

1.3 PERFORMANCE REQUIREMENTS

authorities having jurisdiction.

Mineral-fiber batt insulation

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

SUMMARY

1.4 QUALITY ASSURANCE

PART 2 - PRODUCTS

3.7 INSULATION DRAINAGE PANEL INSTALLATION

waterproofing or part thereof.

Prepare test and inspection reports.

components and to furnish daily reports to Architect.

reapply waterproofing, and repair sheet flashings.

Division 01 Specification Sections, apply to this Section.

Do not permit foot or vehicular traffic on unprotected membrane.

3.4 JOINT AND CRACK TREATMENT Prepare, treat, rout, and fill joints and cracks in substrate according to waterproofing manufacturer's written instructions and to recommendations in ASTM C 898/C 898M and ASTM C 1471/C 1471M. Before coating surfaces, remove dust and dirt from joints and cracks according to ASTM D 4258. Comply with ASTM C 1193 for joint-sealant installation

Apply bond breaker on sealant surface, beneath preparation strip.

Prime substrate along each side of joint and apply a single thickness of preparation strip at least 6 inches wide along each side of joint. Apply waterproofing in two separate applications and embed a joint reinforcing strip in the first preparation coat. Install sheet flashing and bond to deck and wall substrates where required according to waterproofing manufacturer's written instructions.

A. Apply waterproofing according to manufacturer's written instructions and to recommendations in

Apply primer over prepared substrate unless otherwise instructed in writing by waterproofing manufacturer.

Verify manufacturer's recommended wet film thickness of waterproofing every 100 sq. ft.,

Cure waterproofing, taking care to prevent contamination and damage during application and curing.

adhesive. If membrane cures before application of protection course, use adhesive.

Place and secure molded-sheet drainage panels, with geotextile facing away from wall or deck substrate,

A. Install drainage panels over waterproofed surfaces. Cut and fit to within 3/4 inch of projections and penetrations.

Manufacturer's Field Service: Engage a site representative qualified by waterproofing membrane manufacturer

to inspect substrate conditions, surface preparation, membrane application, flashings, protection, and drainage

Protect installed insulation drainage panels from damage due to UV light, harmful weather exposures, physical

abuse, and other causes. Provide temporary coverings where insulation is subject to abuse and cannot be

Correct deficiencies in or remove waterproofing that does not comply with requirements; repair substrates,

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other

A. Plenum Rating: Provide glass-fiber insulation where indicated in ceiling plenums whose test performance is

Source Limitations: Obtain each type of building insulation through one source from a single manufacturer.

characteristics indicated, as determined by testing identical products per test method indicated below by UL or

another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with

B. Fire-Test-Response Characteristics: Provide insulation and related materials with the fire-test-response

A. Extruded-Polystyrene Board Insulation: ASTM C 578, of type and minimum compressive strength indicated

Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.

A. Mineral-Wool Blanket, Unfaced: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers;

Adhesive for Bonding Insulation: Product with demonstrated capability to bond insulation securely to substrates

with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing

Basis of Design Products: Subject to compliance with requirements, provide Roxul, Inc.; AFB or

below, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84.

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

of interior surface of duct assembly, after testing for 4 hours at 2500-fpm air velocity.

surfaces and storing for 60 days at 100 percent relative humidity in the dark.

appropriate markings of applicable testing and inspecting agency.

Surface-Burning Characteristics: ASTM E 84.

Fire-Resistance Ratings: ASTM E 119.

2.1 FOAM-PLASTIC BOARD FOR BELOW GRADE PERIMETER

Dow Chemical Company (The).

DiversiFoam Products.

Pactiv Building Products

Owens Corning.

without damaging insulation and substrates.

ASTM E 136 for combustion characteristics.

comparable by one of the following: Industrial Insulation Group, LLC.

Type VI, 40 psi, minimum

2.2 MINERAL-WOOL BLANKETS

Combustion Characteristics: ASTM E 136.

rated as follows for use in plenums as determined by testing identical products per "Erosion Test" and "Mold

Growth and Humidity Test" described in UL 181, or on comparable tests from another standard acceptable to

Erosion Test Results: Insulation shows no visible evidence of cracking, flaking, peeling, or delamination

Mold Growth and Humidity Test Results: Insulation shows no evidence of mold growth, delamination, or

other deterioration due to the effects of high humidity, after inoculation with Chaetomium globosium on all

Foam-plastic board insulation for below-grade perimeter foundation wall

On vertical surfaces, set insulation drainage panels in adhesive or tape applied according to manufacturer's

Testing agency shall verify thickness of waterproofing during application for each 600 sq. ft. of installed

Unreinforced Waterproofing Applications: Mix materials and apply waterproofing by spray, roller, notched

Install protection course with butted joints over waterproofing before starting subsequent construction

1. For vertical applications, set protection course in nominally cured membrane, which will act as an

according to manufacturer's written instructions. Use adhesive or another method that does not penetrate

waterproofing. Lap edges and ends of geotextile to maintain continuity. Protect installed molded-sheet drainage

Insulation drainage panels may be used in place of a separate protection course for vertical applications

Apply one or more coats of waterproofing to obtain a seamless membrane free of entrapped gases and

Start installing waterproofing in presence of manufacturer's technical representative.

Apply waterproofing to prepared wall terminations and vertical surfaces.

squeegee, trowel, or other application method suitable to slope of substrate.

pinholes, with a minimum dry film thickness of 60 mils.

when approved in writing by waterproofing manufacturer.

Ensure that drainage channels are aligned and free of obstructions.

Testing Agency: Engage a qualified testing agency to perform tests and inspections:

Waterproofing will be considered defective if it does not pass tests and inspections.

Protect waterproofing from damage and wear during remainder of construction period.

concealed and protected by permanent construction immediately after installation.

07 14 16 - 2

07 14 16 - 3

b. Thermafiber, Inc.

INSTALLATION OF GENERAL BUILDING INSULATION

PART 3 - EXECUTION

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

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

Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units. B. Install mineral-fiber insulation in cavities formed by framing members according to the following requirements:

 Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.

Maintain 3-inch clearance of insulation around recessed lighting fixtures. 4. For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping stapling flanges to flanges of metal studs.

> Facsimile: 810-852-4721 www.bccgp.com

9829 Spencer Road

Brighton MI 48114

Main: 877-244-8562

615 South College Street, Suite 1600 Charlotte, NC 28202

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T: 704.525.6350 www.littleonline.com

SECTION 07 54 23 - THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

PART 1 - GENERAL

THERMAL INSULATION

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

07 21 00 - 2

07 54 23 - 1

A. Section Includes: Thermonlastic polyolefin (TPO) roofing assembly (20 year warranty

Roof insulation (mechanically attached first layer, fully adhered top layers) PREINSTALLATION MEETINGS

 A. Preinstallation Roofing Conference: Conduct conference at Project site. PERFORMANCE REQUIREMENTS General Performance: Installed roofing system and flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roof system and flashings shall remain watertight. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according

to ASTM G152, ASTM G154, or ASTM G155 Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience. C. Roofing System Design: Provide membrane roofing system that is identical to systems that have been successfully tested by a qualified testing agency to resist the following uplift pressures calculated according to

ASCE/SEI 7: Corner Uplift Pressure: As indicated on Structural Drawings. Perimeter Uplift Pressure: As indicated on Structural Drawings. Field-of-Roof Uplift Pressure: As indicated on Structural Drawings.

Energy Performance: Roofing system shall have an initial solar reflectance of not less than 0.70 and an emissivity of not less than 0.75 when tested according to CRRC-1. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

ACTION SUBMITTALS Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work, Layout and thickness of insulation.

Base flashings and membrane termination details. Flashing details at penetrations. Tapered insulation layout, thickness, and slopes. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.

Tie-in with adjoining air barrier. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements. INFORMATIONAL SUBMITTALS

Qualification Data: For Installer and manufacturer Sample Warranties: For manufacturer's special warranties.

1.7 QUALITY ASSURANCE

THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

 Manufacturer Qualifications: A qualified manufacturer that is UL listed for roofing system identical to that used for this Project. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer

to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

roofing or approved by membrane roofing manufacturer. DELIVERY, STORAGE, AND HANDLING Deliver roofing materials to Project site in original containers with seals unbroken and labeled with

manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components. B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

Source Limitations: Obtain components for membrane roofing system from same manufacturer as membrane

Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

 Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Special warranty includes roof membrane, base flashings, roof insulation, fasteners, cover boards, substrate board, and other components of roofing system. Warranty Period: 20 years from date of Substantial Completion.

B. Special Project Warranty: Submit roofing Installer's warranty, signed by Installer, covering the Work of this Section, including all components of roofing system such as roof membrane, base flashing, roof insulation, fasteners, cover boards, substrate boards, and walkway products, for the following warranty period: Warranty Period: Two years from date of Substantial Completion

PART 2 - PRODUCTS

accessories.

THERMOPLASTIC POLYOLEFIN (TPO) ROOFING A. Fabric-Reinforced Self-Adhered Thermoplastic Polyolefin Sheet: ASTM D6878/D6878M, internally fabric- or scrim-reinforced, TPO sheet. 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following or

 Carlisle SynTec Incorporated. Firestone Building Products. GAF Materials Corporation.

Versico Incorporated. Thickness: 60 mils, nominal. Exposed Face Color: White.

AUXILIARY ROOFING MATERIALS General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other

ROOF INSULATION Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 2, Grade 2, felt or glass-fiber mat facer on both major surfaces.

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FRANKLIN COUNTY BLDG

SUBMISSION

NO. REASON

DOCUMENTS BID SET

3 CONSTRUCTION 04/03/2023

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

SPECIFICATIONS

06 10 53 - 4 INTERIOR ARCHITECTURAL WOODWORK 06 40 23 - 3 THERMAL INSULATION 07 21 00 - 1 THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

 Manufacturers: Subject to compliance with requirements, provide product by one of the following or Atlas Roofing Corporation. CertainTeed Corporation Firestone Building Products. Hunter Panels. e. Johns Manville. Compressive Strength: 25 psi, min Size: 48 by 96 inches. Thicknesses: As indicated on Drawings. B. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches unless otherwise indicated Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated. 2.4 INSULATION ACCESSORIES A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening roof insulation and cover boards to substrate, and acceptable to roofing system manufacturer. Modified asphaltic, asbestos-free, cold-applied adhesive. Bead-applied, low-rise, one-component or multicomponent urethane adhesive. Full-spread, spray-applied, low-rise, two-component urethane adhesive. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads, approximately 3/16 inch thick and acceptable to roofing system manufacturer. Size: Approximately36 by 60 inches. Color: Contrasting with roof membrane. PART 3 - EXECUTION Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work: Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place. 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation. 3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 05 31 00 "Steel Decking." Proceed with installation only after unsatisfactory conditions have been corrected. PREPARATION Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections. B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast. ROOFING INSTALLATION, GENERAL Install roofing system according to roofing system manufacturer's written instructions, and listed roof assembly Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning Work on adjoining roofing. C. Coordinate installation and transition of roofing system component serving as an air barrier with air barrier specified under Section 07 27 26 "Fluid-Applied Membrane Air Barriers." THERMOPLASTIC POLYOLEFIN (TPO) ROOFING INSULATION INSTALLATION Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation. Installation On Metal Decking: Install base layer of insulation with end joints staggered not less than 12 inches in adjacent rows. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting Make joints between adjacent insulation boards not more than 1/4 inch in width. Fill gaps exceeding 1/4 inch with insulation. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation. Install with long joints continuous and with end joints staggered not less than 12 inches in adjacent Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks Make joints between adjacent insulation boards not more than 1/4 inch in width. Fill gaps exceeding 1/4 inch with insulation. e. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations. Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place. INSTALLATION OF BASE FLASHING Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions. Do not apply to seam area of flashing. ensure a watertight seam installation INSTALLATION OF WALKWAYS 3.6 A. Flexible Walkways: Detail walkways on Roof Plan. Install walkway at the following locations: Perimeter of each rooftop unit. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations. Top and bottom of each roof access ladder. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit As required by roof membrane manufacturer's warranty requirements. Provide 6-inch clearance between adjoining pads. 4. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to

Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

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roofing system manufacturer's written instructions.

FIELD QUALITY CONTROL Testing Agency: Engage a qualified testing agency to inspect substrate conditions, surface preparation, membrane application, flashings, protection, and drainage components, and to furnish reports to Architect. B. Final Roof Inspection: Upon completion of the Work and prior to final payment, the membrane manufacturer's representative, in the presence of the Owner and Architect, shall inspect Work. Discrepancies shall be recorded and immediately rectified. Final payment will not be issued until the manufacturer's representative has given his approval for Work and closeout submittals, including roof maintenance manual and warranties, have been received by the Architect.

Notify Architect or Owner 48 hours in advance of the date and time of inspection. C. Verify field strength of seams a minimum of twice daily, according to manufacturer's written instructions, and repair seam sample areas.

 Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or

PROTECTING AND CLEANING Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements. Provide daily cleaning to include, but not limited to: Picking up and storing of all loose items, sweeping clean roof surface and removal and cleaning of all stains and spills prior to stopping of work for the day.

D. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended

by manufacturer of affected construction. PATCHING LIMITATIONS Patching Restrictions:

providing overlay membrane.

THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

additional work complies with specified requirements.

1. No more than five (5) in-field patches and no more than a total of 4 linear feet of seam patching per 100 sq. ft. of roof's total square footage and as determined by Architect. Seam patches shall be minimum 8 inches wide by 24 inches long strip patch.

Manufacturer's required circular seam intersection patches shall not be considered when calculating number of patches. 4. Typical patch size shall be minimum 6 inches square with rounded corners or as recommended by the roof membrane manufacturer. The use of large size patches for covering multiple penetrations to avoid exceeding the limits set forth above shall not be permitted.

6. The use of large patches in excess of 24 by 36 inches shall be justification for replacement or for

END OF SECTION 07 54 23 Formed Aluminum: 0.032 inch thick. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where reglet is provided separate from metal counterflashing Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing lower edg

> Aluminum Finish: Two-coat fluoropolymer. Color: As selected by Architect from manufacturer's full range. 2.6 UNDERLAYMENT MATERIALS Self-Adhering, High-Temperature Sheet: Minimum 30 milsthick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with releasepaper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer according to written recommendations of underlayment manufacturer.

 Henry Company: Blueskin PE200 HT Grace Construction Products; Ultra HT Thermal Stability: ASTM D 1970; stable after testing at 240 deg For higher. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus 20 deg For lower. MISCELLANEOUS MATERIALS

General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.

General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible. 1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance

requirements, but not less than that specified for each application and metal. Obtain field measurements for accurate fit before shop fabrication. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of

1/4 inch in 20 feeton slope and location lines indicated on Drawings and within 1/8-inchoffset of adjoining faces and of alignment of matching profiles. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard. D. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with elastomeric sealant

E. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured. F. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

 Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping. C. Coil-Coated Aluminum Sheet Finishes High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent

PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions. Concealed Surface Finish: Apply pretreatment and manufacturer's standard acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they

are within one-half of the range of approved Samples. Noticeable variations in the same piece are not

acceptable. Variations in appearance of other components are acceptable if they are within the range of

PART 3 - EXECUTION

EXAMINATION Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of work. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored. Proceed with installation only after unsatisfactory conditions have been corrected.

approved Samples and are assembled or installed to minimize contrast

INSTALLATION, GENERAL General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim Torch cutting of sheet metal flashing and trim is not permitted.

SHEET METAL FLASHING AND TRIM 07 62 00 - 4

B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals. Coat side of uncoated aluminum sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene underlayment.

Bed flanges in thick coat of asphalt roofing cement where required for waterproof performance. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and elastomeric sealant. E. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonettype expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with elastomeric sealant concealed within joints. G. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4 inches for nails and not less

than 3/4 inch for wood screws. Seal joints with elastomeric sealant as required for watertight construction. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F, set joint members for 50 percent movement either way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at

Prepare joints and apply sealants to comply with requirements in Division 07 Section "Joint Sealants." 3.3 ROOF FLASHING INSTALLATION General: Install sheet metal roof flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight

 Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch centers. C. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending a minimum of 4 inches over base flashing. Install stainless-steel draw band and

D. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints a minimum of 4 inches and bed with elastomeric sealant. Secure in a waterproof manner by means of snap-in installation and sealant or lead wedges and sealant. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Install flashing as follows:

Turn lead flashing down inside vent piping, being careful not to block vent piping with flashing. Seal with elastomeric sealant and clamp flashing to pipes penetrating roof except for lead flashing on vent F. Wall Flashing: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to

SMACNA recommendations and as indicated. Coordinate installation of wall flashing with installation of wallopening components such as windows, doors, and louvers. COPING INSTALLATION

Install cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed

B. Anchor copings with manufacturer's required devices, fasteners, and fastener spacing to meet performance

Interlock face and back leg drip edges of snap-on coping cap into cleated anchor plates anchored to

07 62 00 - 5

REGLET AND COUNTERFLASHING INSTALLATION General: Coordinate installation of reglets and counterflashings with installation of base flashings. Counterflashings: Insert counterflashings into reglets or other indicated receivers; ensure that counterflashings overlap 4 inchesover top edge of base flashings. Lap counterflashing joints a minimum of 4 inchesand bed with butyl sealant. Fit counterflashings tightly to base flashings.

substrate at manufacturer's required spacing that meets performance requirements.

ERECTION TOLERANCES Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

CLEANING AND PROTECTION Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering. Clean and neutralize flux materials. Clean off excess solder and sealants.

stems, and pieces of flashing. Maintain in a clean condition during construction.

Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures. END OF SECTION 07 62 00

SECTION 07 72 00 - ROOF ACCESSORIES

PART 1 - GENERAL

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

A. Section Includes: Roof hatches. Preformed flashing sleeves.

1.3 ACTION SUBMITTALS A. Shop Drawings: For roof accessories. Include plans, elevations, keyed details, and attachments to other work. Indicate dimensions, loadings, and special conditions. Distinguish between plant- and field-assembled work.

 A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finishes or replace roof accessories that show evidence of deterioration of factory-applied finishes within specified warranty period. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following: Color fading more than 5 Hunter units when tested according to ASTM D 2244. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.

Cracking, checking, peeling, or failure of paint to adhere to bare metal.

Finish Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Roof accessories shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction B. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality Requirements," to design roof curbs and equipment supports to comply with wind performance requirements, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

2.2 ROOF HATCHES A. Roof Hatches: Metal roof-hatch units with lids and insulated double-walled curbs, welded or mechanically fastened and sealed corner joints, continuous lid-to-curb counterflashing and weathertight perimeter gasketing, stepped integral metal cant raised the thickness of roof insulation, and integrally formed deckmounting flange at perimeter bottom. Manufacturers: Subject to compliance with requirements, provide products by one of the following or

> Bilco Company (The). Custom Curb, Inc. J. L. Industries, Inc. Milcor Inc.; a Gibraltar Company.

Nystrom, Inc. Wasco Products, Inc. Type and Size: Single-leaf lid, 36 by 96 inches.

Loads: Minimum 40-lbf/sq. ft. external live load and 20-lbf/sq. ft. internal uplift load. Hatch Material: Zinc-coated (galvanized) steel sheet. Thickness: Manufacturer's standard thickness for hatch size indicated.

ROOF ACCESSORIES

Finish: Factory prime coating. E. Construction:

Insulation: 1-inch-thick, glass-fiber board. Hatch Lid: Opaque, insulated, and double walled, with manufacturer's standard metal liner of same material and finish as outer metal lid. Curb Liner: Manufacturer's standard, of same material and finish as metal curb.

Fabricate curbs to minimum height of 12 inchesabove roofing surface unless otherwise indicated. F. Hardware: Spring operators, hold-open arm, galvanized steel spring latch with turn handles, galvanized steel butt- or pintle-type hinge system, and padlock hasps inside and outside. Safety Railing System: Roof-hatch manufacturer's standard system including rails, clamps, fasteners, safety barrier at railing opening, and accessories required for a complete installation; attached to roof hatch and

complying with 29 CFR 1910.23 requirements and authorities having jurisdiction. Height: 42 inches above finished roof deck. Posts and Rails: Galvanized-steel pipe, 1-1/4 inchesin diameter or galvanized-steel tube, 1-5/8 inchesin Flat Bar: Galvanized steel, 2 incheshigh by 3/8 inchthick.

07 72 00 - 1

Self-Latching Gate: Fabricated of same materials and rail spacing as safety railing system. Provide manufacturer's standard hinges and self-latching mechanism. Post and Rail Tops and Ends: Weather resistant, closed or plugged with prefabricated end fittings. Provide weep holes or another means to drain entrapped water in hollow sections of handrail and railing

Fabricate joints exposed to weather to be watertight. Fasteners: Manufacturer's standard, finished to match railing system. Finish: Manufacturer's standard. Color: As selected by Architect from manufacturer's full range.

2.3 PREFORMED TUBING WRAPS A. Prefabricated Square Tubing Wrap: Fabricated from reinforced 60-mil TPO membrane providing flexibility and allows elimination of T-join covers at crossovers. Utilize at base of square post for equipment screens at roof. Products: Subject to compliance with requirements, provide the following

Carlisle Syntec Systems; Sure-Weld TPO Square Tubing Wraps. Square Tube Sizes: As indicated on Drawings. Height: 11 inches.

Color: White.

2.4 METAL MATERIALS

 Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M, G90 coating designation. Factory Prime Coating: Where field painting is indicated, apply pretreatment and white or light-colored, factory-applied, baked-on epoxy primer coat, with a minimum dry film thickness of 0.2 mil. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester-backer finish consisting of prime coat and wash coat, with a minimum total dry film thickness of 0.5 mil. Steel Shapes: ASTM A 36/A 36M, hot-dip galvanized according to ASTM A 123/A 123M unless otherwise

Steel Tube: ASTM A 500/A 500M, round tube. Galvanized-Steel Tube: ASTM A 500/A 500M, round tube, hot-dip galvanized according to ASTM A 123/A 123M.

E. Steel Pipe: ASTM A 53/A 53M, galvanized. 2.5 MISCELLANEOUS MATERIALS

 General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation. Polyisocyanurate Board Insulation: ASTM C 1289, thickness and thermal resistivity as indicated.

PART 3 - EXECUTION

 Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.

ROOF ACCESSORIES 07 72 00 - 2

General: Install roof accessories according to manufacturer's written instructions. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

3.3 REPAIR AND CLEANING A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing according to ASTM A 780/A 780M.

 Clean exposed surfaces according to manufacturer's written instructions. END OF SECTION 07 72 00

SECTION 07 84 13 - PENETRATION FIRESTOPPING

PART 1 - GENERAL

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

This Section includes penetrating firestopping for penetrations through the following fire-resistance-rated assemblies, including both empty openings and openings containing penetrating items: Floors.

Walls and partitions. Penetrations in fire-resistance-rated walls

PERFORMANCE REQUIREMENTS General: For the following constructions, provide penetrating firestopping that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of assembly penetrated. Fire-resistance-rated load-bearing walls, including partitions, with fire-protection-rated openings. Fire-resistance-rated non-load-bearing walls, including partitions, with fire-protection-rated openings.

Fire-resistance-rated floor assemblies. Fire-resistance-rated roof assemblies F-Rated Systems: Provide penetrating firestopping with F-ratings indicated, as determined per ASTM E 814 UL 1479, but not less than that equaling or exceeding fire-resistance rating of constructions penetrated. T-Rated Systems: For the following conditions, provide penetrating firestopping with T-ratings indicated, as well as F-ratings, as determined per ASTM E 814, where systems protect penetrating items exposed to potential contact with adjacent materials in occupiable floor areas:

> Penetrations located outside wall cavities. Penetrations located outside fire-resistive shaft enclosures. Penetrations located in construction containing fire-protection-rated openings.

Penetrating items larger than 4-inch-diameter nominal pipe or 16 sq. in. in overall cross-sectional area. For penetrating firestopping exposed to view, traffic, moisture, and physical damage, provide products that after curing do not deteriorate when exposed to these conditions both during and after construction. For piping penetrations for plumbing and wet-pipe sprinkler systems, provide moisture-resistant throughpenetration firestop systems.

2. For floor penetrations with annular spaces exceeding 4 inches in width and exposed to possible loading

and traffic, provide firestop systems capable of supporting floor loads involved either by installing floor For penetrations involving insulated piping, provide through-penetration firestop systems not requiring removal of insulation. E. For penetrating firestopping exposed to view, provide products with flame-spread ratings of less than 25 and

smoke-developed ratings of less than 450, as determined per ASTM E 84. Shop Drawings: For each penetrating firestopping, show each kind of construction condition penetrated, relationships to adjoining construction, and kind of penetrating item. Include firestop design designation of testing and inspecting agency acceptable to authorities having jurisdiction that evidences compliance with

requirements for each condition indicated. 1. Submit documentation, including illustrations, from a qualified testing and inspecting agency that is applicable to each penetrating firestopping configuration for construction and penetrating items. Where Project conditions require modification of qualified testing and inspecting agency's illustration to suit a particular penetrating firestopping condition, submit illustration, with modifications marked,

approved by penetrating firestopping m manufacturer's fire-protection engineer. Closeout Records: Signed by installer, provide a detailed listing of actual systems with UL designations and location of each penetrating firestopping product installed.

PENETRATION FIRESTOPPING 07 84 13 - 1

QUALITY ASSURANCE A. Fire-Test-Response Characteristics: Provide penetrating firestopping that comply with the following requirements and those specified in "Performance Requirements" Article: Firestopping tests are performed by a qualified testing and inspecting agency. A qualified testing and inspecting agency is UL, or another agency performing testing and follow-up inspection services for firestopping systems acceptable to authorities having jurisdiction

> with the following requirements: Penetrating firestopping products bear classification marking of qualified testing and inspecting Penetrating firestopping correspond to those indicated by reference to penetrating firestopping

Penetrating firestopping are identical to those tested per ASTM E 814. Provide rated systems complying

designations listed by the following: UL in "Fire Resistance Directory

PART 2 - PRODUCTS

MANUFACTURERS A. Manufacturers: Subject to compliance with requirements, provide products by one of the following: Hilti Construction Chemicals, Inc.

Specified Technologies Inc.

FIRESTOPPING, GENERAL Compatibility: Provide penetrating firestopping that are compatible with one another, with the substrates forming openings, and with the items, if any, penetrating firestopping, under conditions of service and application, as demonstrated by penetrating firestopping manufacturer based on testing and field experience. Provide penetration firestopping that is produced and installed to resist spread of fire according to requirements

indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems shall be compatible with one another, with the substrates forming openings, and with penetrating items if any. Accessories: Provide components for each penetrating firestopping that are needed to install fill materials and to comply with "Performance Requirements" Article. Use only components specified by penetrating firestopping

manufacturer and approved by the qualified testing and inspecting agency for firestopping systems indicated. Accessories include, but are not limited to, the following items: Permanent forming/damming/backing materials, including the following: Slag-/rock-wool-fiber insulation.

 Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state. Fire-rated form board.

Fillers for sealants. Temporary forming materials. Substrate primers.

Steel sleeves.

 General: Provide penetrating firestopping containing the types of fill materials by the UL design. Fill materials are those referred to in directories of the referenced testing and inspecting agencies as fill, void, or cavity B. Cast-in-Place Firestop Devices: Factory-assembled devices for use in cast-in-place concrete floors and

consisting of an outer metallic sleeve lined with an intumescent strip, a radial extended flange attached to one end of the sleeve for fastening to concrete formwork, and a neoprene gasket. Latex Sealants: Single-component latex formulations that after cure do not re-emulsify during exposure to

 Firestop Devices: Factory-assembled collars formed from galvanized steel and lined with intumescent material sized to fit specific diameter of penetrant. Intumescent Composite Sheets: Rigid panels consisting of aluminum-foil-faced elastomeric sheet bonded to galvanized steel sheet.

07 84 13 - 2

lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogeneous Pillows/Bags: Reusable, heat-expanding pillows/bags consisting of glass-fiber cloth cases filled with a combination of mineral-fiber, water-insoluble expansion agents and fire-retardant additives.

H. Mortars: Prepackaged, dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers, and

Grade for Horizontal Surfaces: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces. Grade for Vertical Surfaces: Nonsag formulation for openings in vertical and other surfaces.

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

PART 3 - EXECUTION

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

PREPARATION

Surface Cleaning: Clean out openings immediately before installing penetrating firestopping to comply with written recommendations of firestopping system manufacturer and the following requirements: Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of penetrating firestopping. 2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with penetrating firestopping. Remove loose particles remaining from cleaning operation. Remove laitance and form-release agents from concrete.

 Priming: Prime substrates where recommended in writing by penetrating firestopping manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces. Masking Tape: Use masking tape to prevent penetrating firestopping from contacting adjoining surfaces that will remain exposed on completion of Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from firestop system materials. Remove tape as soon

THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATION

system manufacturer's written installation instructions and published drawings for products and applications Install forming/damming/backing materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated. After installing fill materials, remove combustible forming materials and other accessories not indicated as

permanent components of firestop systems. C. Install fill materials for firestopping by proven techniques to produce the following results: Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.

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FRANKLIN COUNTY BLDG

3 CONSTRUCTION 04/03/2023

DOCUMENTS BID SET

NO. REASON

SUBMISSION

Manufacturers: Subject to compliance with the requirements, provide products by one of the following: GAF Materials Corporation; WIP 300HT

ROOF ACCESSORIES

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PENETRATION FIRESTOPPING

Checked By: TOM BALKE, AIA 07 84 13 - 3

Issue Date: 12/15/2022

Job Number: 112 18134 00

Drawn By: PEDRO PINERA

THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

07 54 23 - 5

SHEET METAL FLASHING AND TRIM

SECTION 07 62 00 - SHEET METAL FLASHING AND TRIM

This Section includes the following:

Formed wall flashing and trim.

Formed overhead-piping safety pans.

Roof-drainage sheet metal fabrications

Division 01 Specification Sections, apply to this Section.

Formed low-slope roof sheet metal fabrications.

Manufactured copings, reglets and counterflashings.

between shop- and field-assembled work. Include the following

between shop- and field-assembled work

and contraction from fixed points.

Include details of special conditions

as applicable.

1.6 DELIVERY, STORAGE, AND HANDLING

warping, twisting, and surface damage.

QUALITY ASSURANCE

other surface damage.

SHEET METAL FLASHING AND TRIM

PERFORMANCE REQUIREMENTS

loosen, and shall remain watertight.

resisting the following design pressure:

temporary protective film before shipping.

fabricate interior and exterior corners.

Aluminum: 0.032 inch.

Finish and Color: To match gutters.

Formed Aluminum: 0.032 inch thick

Formed Aluminum: 0.032 inch thick

ATAS International, Inc.

Johns Manville.

REGLETS AND COUNTERFLASHING

Formed Aluminum: 0.050 inch thick.

Corners: Factory mitered and soldered.

from the following exposed metal:

Cheney Flashing Company

Hickman Company, W. P.

Merchant & Evans, Inc.

MM Systems Corporation

Size: 4 inch.

from the following materials

SHEET METAL FLASHING AND TRIM

Aluminum: 0.032 inch thick.

finished with fluoropolymer coating.

and nighttime-sky heat loss.

Design Pressure: As indicated on Drawings

coating; minimum 0.02 inch thick base metal

fluoropolymer finish system

Gutter Style: Square, fully welded, hanging.

ROOF-DRAINAGE SHEET METAL FABRICATIONS

PART 2 - PRODUCTS

Include details of roof-penetration flashing.

Include details of connections to adjoining work.

materials and fabrications during transportation and handling.

Include plans, elevations, sections, and attachment details

clips, and other attachments. Include pattern of seams.

Include details of termination points and assemblies.

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other

Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be

flashed, and joints and seams in adjacent materials to provide leakproof, secure, and noncorrosive installation.

Shop Drawings: Show layouts of sheet metal flashing and trim, including plans and elevations. Distinguish

Include identification of material, thickness, weight, and finish for each item and location in Project.

Include details for forming, including profiles, shapes, seams, and dimensions.

Conform to dimensions and profiles shown unless more stringent requirements are indicated.

shows evidence of deterioration of factory-applied finishes within specified warranty period.

Color fading more than 5 Hunter units when tested according to ASTM D 2244.

Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.

General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally

induced movement, and exposure to weather without failure due to defective manufacture, fabrication,

Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's

"Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent

SPRI Wind Design Standard: Manufacture and install copings tested according to SPRI ES-1 and capable of

Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent

buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and

other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain

Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable,

Hanging Gutters: Fabricate to cross section required, complete with end pieces, outlet tubes, and other

accessories as required. Fabricate in minimum of 96-inch-long sections. Furnish flat stock gutter brackets and

flat-stock gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet

metal standard but with thickness not less than twice the gutter thickness. Fabricate expansion joints,

expansion-joint covers, gutter bead reinforcing bars, and gutter accessories from same metal as gutters. Shop

Downspouts: Fabricate rectangular downspouts to dimensions indicated on Drawings, complete with mitered

Parapet Scuppers: Fabricate scuppers to dimensions required, with closure flange trim to exterior, 4-inch-wide

wall flanges to interior, and base extending 4 inches beyond cant or tapered strip into field of roof. Fabricate

Conductor Heads: Fabricate conductor heads with flanged back and stiffened top edge and of dimensions and

Copings: Manufactured coping system consisting of formed-metal coping cap in section lengths not exceeding

Era Roof Edge Solutions or comparable product by one of the following:

Coping-Cap Material: Formed aluminum, 0.125 inch (3.18 mm) thick.

Face Leg Cleats: Concealed, continuous galvanized-steel sheet.

against base flashings with joints lapped, from the following exposed metal:

Coping-Cap Attachment Method: Snap-on, fabricated from coping-cap material.

Exterior Finish: Two-coat fluoropolymer.

Corners: Factory mitered and continuously welded.

12 feet, concealed anchorage; corner units, end cap units, and concealed splice plates with same finish as

Basis-of-Design Product: Subject to compliance with requirements, provide Anchor-Tite coping by Metal-

Snap-on-Coping Anchor Plates: Concealed, galvanized-steel sheet, 12 inches (300 mm) wide, with

Reglets: Manufactured units formed to provide secure interlocking of separate reglet and counterflashing pieces,

Counterflashings: Manufactured units of heights to overlap top edges of base flashings by 4 inches and in

lengths not exceeding 12 feet designed to snap into reglets or through-wall-flashing receiver and compress

Masonry Type, Embedded: Provide reglets with offset top flange for embedment in masonry mortar joint.

shape required, complete with outlet tubes, exterior flange trim, and built-in overflows. Fabricate from the

07 62 00 - 2

Fabricated Hanger Style: Fig. 1-35H in accordance with SMACNA's "Architectural Sheet Metal Manual."

elbows. Furnish with metal hangers from same material as downspouts and anchors. Shop fabricate elbows.

Galvanized Steel (Unexposed Flashing/Counterflashing): ASTM A 653/A 653M, with G90/Z275 zinc

Pre-Finished Aluminum (All Exposed Flashing): ASTM B209 (ASTM B 209M); 0.032 inch thick; factory

a. Fluoropolymer Coating: High Perforamnce Organic Finish, AAMA 2604; 2-coat, thermally cured

installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or

Cracking, checking, peeling, or failure of paint to adhere to bare metal.

Finish Warranty Period: 20 years from date of Substantial Completion.

Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

Color: As selected by Architect from manufacturer's standard colors.

Finish and Color: As selected by Architect from manufacturer's full range.

Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish

Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats,

Include details of expansion joints and expansion-joint covers, including showing direction of expansion

Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counterflashings

Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual."

Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim

Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending,

Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store

sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or

Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

07 62 00 - 3

SHEET METAL FLASHING AND TRIM

SHEET METAL FLASHING AND TRIM

07 62 00 - 6

PENETRATION FIRESTOPPING

 Intumescent Putties: Nonhardening dielectric, water-resistant putties containing no solvents, inorganic fibers, or Intumescent Wrap Strips: Single-component intumescent elastomeric sheets with aluminum foil on one side.

Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam K. Silicone Sealants: Moisture-curing, single-component, silicone-based, neutral-curing elastomeric sealants of

as possible without disturbing firestop system's seal with substrates.

General: Install penetrating firestopping to comply with "Performance Requirements" Article and firestopping

Apply materials so they contact and adhere to substrates formed by openings and penetrating items.

SPECIFICATIONS

3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform

Inspecting agency will state in each report whether inspected through-penetration firestop systems

permanently to surfaces of penetrated construction on both sides of each penetrating firestopping installation

where labels will be visible to anyone seeking to remove penetrating items or firestop systems. Include the

1. The words: "Warning--Penetrating Firestopping -- Do Not Disturb. Notify Building Management of Any

Inspecting Agency: Owner will engage a qualified independent inspecting agency to inspect penetrating

Proceed with enclosing through-penetration firestop systems with other construction only after inspection reports

Identify penetrating firestopping with pressure-sensitive, self-adhesive, preprinted vinyl labels. Attach labels

Clean off excess fill materials adjacent to openings as Work progresses by methods and with cleaning materials

Provide final protection and maintain conditions during and after installation that ensure penetrating firestopping

install new materials to produce penetrating firestopping complying with specified requirements.

that are approved in writing by penetrating firestopping manufacturers and that do not damage materials in

are without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or

deterioration occurs, cut out and remove damaged or deteriorated penetrating firestopping immediately and

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Where deficiencies are found, repair or replace penetrating firestopping so they comply with requirements.

Penetrating firestopping designation of applicable testing and inspecting agency.

surfaces that are flush with adjoining finishes.

comply with or deviate from requirements.

Contractor's name, address, and phone number.

Penetrating firestopping manufacturer's name.

PENETRATION FIRESTOPPING SCHEDULE (Attached)

3.4 FIELD QUALITY CONTROL

firestopping and to prepare test reports.

following information on labels:

Date of installation.

Installer's name.

3.6 CLEANING AND PROTECTION

which openings occur.

END OF SECTION 07 84 13

PENETRATION FIRESTOPPING

SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

JOINT SEALANTS

1.6 FIELD CONDITIONS

WARRANTY

PART 2 - PRODUCTS

JOINT SEALANTS

JOINT SEALANTS, GENERAL

SILICONE JOINT SEALANTS

Grade Nonsag (NS).

Class: 50.

Joint Locations:

manufacturer, based on testing and field experience.

Neutral-Curing Silicone Joint Sealant: ASTM C 920.

Pecora Corporation; 895. Type: Single component (S).

food, provide products that comply with 21 CFR 177.2600.

Dow Chemical Company; DOWSIL 795.

Construction joints in cast-in-place concrete.

Control and expansion joints in ceilings.

Dow Chemical Company; DOWSIL 786.

Other joints as indicated on Drawings.

Tremco Incorporated; Vulkem 227

Building-to-pavement conditions.

Tremco Incorporated; Tremflex 834. Sonneborn, Division of ChemRex Inc.; Sonolac.

Other joints as indicated on Drawings.

Product: Emseal Joint Systems, Ltd.; Emseal DSM

latex sealant complying with ASTM C 834 and the following:

Pecora Corporation; Dynatred.

Sika; Sikaflex-2C NS.

Horizontal traffic joints.

a. Pecora Corporation; AC-20+.

Tile control and expansion joints where indicated.

Vertical joints between precast concrete wall panels.

Areas subject to foot and light vehicle traffic.

Product: Subject to compliance with requirements, provide the following:

g. Other joints as indicated on Drawings.

Mildew-Resistant, Neutral-Curing Silicone Sealant:

a. Pecora Corporation; 898

Tremco, Tremsil 600.

Type: Single-component (S)

Grade: Nonsag (NS)

URETHANE JOINT SEALANTS

Urethane Joint Sealant: ASTM C 920.

Type: multicomponent (M).

Grade: nonsag (NS).

Class: 25.

Joint Locations:

LATEX JOINT SEALANTS

PREFORMED JOINT SEALANT

ACOUSTICAL JOINT SEALANTS

Joint Locations

2.7 JOINT SEALANT BACKING

JOINT SEALANTS

Class: 25.

Joint Locations:

Control and expansion joints in unit masonry.

Joints between different materials listed above

RELATED DOCUMENTS Drawings and general provisions of the Contract, including General and Supplementary Conditions and other

SUMMARY Section Includes:

Silicone joint sealants. Urethane joint sealants. Mildew-resistant joint sealants.

Latex joint sealants. SUBMITTALS

Joint-Sealant Schedule: Include the following information: Joint-sealant application, joint location, and designation.

Division 01 Specification Sections, apply to this Section.

Joint-sealant manufacturer and product name. Joint-sealant formulation.

Joint-sealant color.

1.4 QUALITY ASSURANCE

Installer Qualifications: An authorized representative who is trained and approved by manufacturer. Product Testing: Test joint sealants using a qualified testing agency. PRECONSTRUCTION TESTING Preconstruction Laboratory Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples

of materials that will contact or affect joint sealants. Adhesion Testing: Use ASTM C 794 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates. Compatibility Testing: Use ASTM C 1087 to determine sealant compatibility when in contact with glazing and gasket materials.

Stain Testing: Use ASTM C 1248 to determine stain potential of sealant when in contact with masonry Submit manufacturer's recommended number of pieces of each type of material, including joint

substrates, joint-sealant backings, and miscellaneous materials. Schedule sufficient time for testing and analyzing results to prevent delaying the Work. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures,

ncluding use of specially formulated primers. Testing will not be required if joint-sealant manufacturers submit data that are based on previous testing. not older than 24 months, of sealant products for adhesion to, staining of, and compatibility with joint substrates and other materials matching those submitted. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint

substrates as follows: Locate test joints where indicated on Project or, if not indicated, as directed by Architect. Conduct field tests for each kind of sealant and joint substrate. Notify Architect seven days in advance of dates and times when test joints will be erected. Arrange for tests to take place with joint-sealant manufacturer's technical representative present. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab,

in Appendix X1.1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.

satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

performance and other requirements specified in this Section within specified warranty period.

Disintegration of joint substrates from causes exceeding design specifications.

Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

Products: Subject to compliance with requirements, provide one of the following:

GE Advanced Materials – Silicones; SilPruf NB SCS9000.

Joints between plant-precast architectural concrete units.

Products: Subject to compliance with requirements, provide one of the following:

Joints between plumbing fixtures and adjoining walls, floors, and counters.

Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

Perimeter joints between interior wall surfaces and frames of interior doors windows and elevator

Preformed Joint Sealant System: Three component joint sealant consisting of 1) cellular polyurethane foam

impregnated with hydrophobic 100 percent acrylic, water-based emulsion, factory coated with highway grade,

Location for Use: Below grade exterior joints in precast concrete panels forming building enclosure.

Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard nonsag, paintable, nonstaining

1. Product effectively reduces airborne sound transmission through perimeter joints and openings in building

Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other

joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), and of size and

density to control sealant depth and otherwise contribute to producing optimum sealant performance. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

construction as demonstrated by testing representative assemblies according to ASTM D 90.

fuel-resistant silicone; 2) field-applied epoxy adhesive primer; 3) field-injected silicone sealant beads.

Product: Subject to compliance with requirements, provide one of the following:

Control joints on exposed interior surfaces of exterior walls.

Pecora Corporation; AC-20 FTR Aoustical and Insulation Sealant

United States Gypsum Co.; SHEETROCK Acoustical Sealant.

Mechanical damage caused by individuals, tools, or other outside agents.

When ambient and substrate temperature conditions are outside limits permitted by joint-sealant

Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.

Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with

Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint

Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another

and with joint substrates under conditions of service and application, as demonstrated by joint-sealant

Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with

Perimeter joints between materials listed above and frames of doors windows and louvers.

07 92 00 - 2

07 92 00 - 3

sealants that do not comply with performance and other requirements specified in this Section within specified

Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written

Where contaminants capable of interfering with adhesion have not yet been removed from joint

Do not proceed with installation of joint sealants under the following conditions:

Warranty Period: Two years from date of Substantial Completion.

Warranty Period: Five years from date of Substantial Completion.

specifications for sealant elongation and compression.

07 92 00 - 1

Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

> Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work. END OF SECTION 07 92 00

JOINT SEALANTS 07 92 00 - 4

Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint

backing materials, free of oily residues or other substances capable of staining or harming joint substrates and

adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint

substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant

Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to

Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for

Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by

Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm

preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant

manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or

Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces

that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to

Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as

produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum

Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of

Install sealants using proven techniques that comply with the following and at the same time backings are

Remove absorbent sealant backings that have become wet before sealant application and replace them

Install sealant backings of kind indicated to support sealants during application and at position required to

joint configuration, installation tolerances, and other conditions affecting performance of the Work.

substrates, or leave residues capable of interfering with adhesion of joint sealants.

remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

Proceed with installation only after unsatisfactory conditions have been corrected.

Remove laitance and form-release agents from concrete.

applicable to materials, applications, and conditions indicated.

Do not leave gaps between ends of sealant backings.

Completely fill recesses in each joint configuration

Remove excess sealant from surfaces adjacent to joints.

Do not stretch, twist, puncture, or tear sealant backings.

Place sealants so they directly contact and fully wet joint substrates.

PART 3 - EXECUTION

PREPARATION

INSTALLATION

sealant manufacturer's written instructions.

migration onto adjoining surfaces.

sealant movement capability.

movement capability.

Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.

07 92 00 - 5

08 11 13 - 1

Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each 24 inches of frame height above 7 feet. E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of Postinstalled Expansion Anchor: Minimum 3/8-inch-diameter bolts with expansion shields or inserts, with configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of

manufacturer's standard pipe spacer. B. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor. Material: ASTM A 879/A 879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.

Face: Uncoated steel sheet, minimum thickness of 0.042 inch.

Edge Bevel: Provide manufacturer's standard beveled or square edges.

Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware

B. Heavy-Duty Doors and Frames: SDI A250.8, Level 2; SDI A250.4, Level B. At locations indicated in the Door

Edge Bevel: Provide manufacturer's standard beveled or square edges.

Materials: Uncoated steel sheet, minimum thickness of 0.053 inch.

locations, hardware reinforcement, tolerances, and clearances, and as specified.

Type: As indicated in the Door and Frame Schedule.

bottoms of exterior doors to permit moisture to escape.

Edge Construction: Model 1, Full Flush.

Seal joints against water penetration.

Fabricate of uncoated steel sheet, minimum thickness of 0.053 inch.

joint, fabricated of metal of same or greater thickness as metal as frames.

Core: Manufacturer's standard kraft-paper honeycomb, polystyrene, polyurethane,

polyisocyanurate, mineral-board, or vertical steel-stiffener core at manufacturer's discretion...

Face: Metallic-coated steel sheet, minimum thickness of 0.042 inch, with minimum A60 coating.

Top Edge Closures: Close top edges of doors with flush closures of same material as face sheets.

Bottom Edges: Close bottom edges of doors where required for attachment of weather stripping

Core: Manufacturer's standard kraft-paper honeycomb, polystyrene, polyurethane.

polyisocyanurate, mineral-board, or vertical steel-stiffener core at manufacturer's discretion.

Fire-Rated Core: Manufacturer's standard laminated mineral board core for fire-rated doors.

Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames

are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each

Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for

Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise

Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch, with minimum A60coating.

with end closures or channels of same material as face sheets. Provide weep-hole openings in

Fire-Rated Core: Manufacturer's standard laminated mineral board core for fire-rateddoors.

Edge Construction: Model 1, Full Flush.

Construction: Face welded.

2.4 EXTERIOR STANDARD STEEL DOORS AND FRAMES

Thickness: 1-3/4 inches.

Construction: Face welded.

Exposed Finish: Prime.

Construction: Face welded.

indicated.

2.6 FRAME ANCHORS

A. Jamb Anchors:

Exposed Finish: Prime.

and Frame Schedule.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M; hot-dip galvanized according to ASTM A 153/A 153M, Class B.

HOLLOW METAL DOORS AND FRAMES 08 11 13 - 2

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or

surface defects; pickled and oiled. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.

2.8 FABRICATION Door Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fireperformance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted or as required to comply with published listing of qualified testing agency. B. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.

Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows, Keep holes clear during construction. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.

Double-Door Frames: Drill stop in head jamb to receive two door silencers. Hardware Preparation: Factory prepare hollow-metal doors and frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

Comply with BHMA A156.115 for preparing hollow-metal doors and frames for hardware. Glazed Lites: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints.

2.9 STEEL FINISHES A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-

applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 PREPARATION A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factoryapplied finishes where spreaders are removed B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.2 INSTALLATION General: Install hollow-metal doors and frames plumb, rigid, properly aligned, and securely fastened in place.

Comply with approved Shop Drawings and with manufacturer's written instructions. B. Hollow-Metal Frames: Comply with SDI A250.11. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work. a. Where frames are fabricated in sections, field splice at approved locations by welding face joint

continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes. HOLLOW METAL DOORS AND FRAMES 08 11 13 - 3

Install frames with removable stops located on secure side of opening. Fire-Rated Openings: Install frames according to NFPA 80. Floor Anchors: Secure with postinstalled expansion anchors. a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion

anchors if so indicated and approved on Shop Drawings. Solidly pack mineral-fiber insulation inside frames. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout or mortar.

In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces. Installation Tolerances: Adjust hollow-metal frames to the following tolerances: a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb

perpendicular to frame head. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.

 d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor. Hollow-Metal Doors: Fit and adjust hollow-metal doors accurately in frames, within clearances specified below. Non-Fire-Rated Steel Doors: Comply with SDI A250.8. Fire-Rated Doors: Install doors with clearances according to NFPA 80.

Smoke-Control Doors: Install doors according to NFPA 105.

SECTION 08 14 16 - FLUSH WOOD DOORS

PART 1 - GENERAL

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

Section Includes: Solid-core doors with wood-veneer faces.

Factory finishing flush wood doors. Factory fitting flush wood doors to frames and factory machining for hardware. 1.3 ACTION SUBMITTALS

 Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following: Dimensions and locations of blocking.

Dimensions and locations of mortises and holes for hardware. Dimensions and locations of cutouts.

Requirements for veneer matching. Doors to be factory finished and finish requirements.

FIELD CONDITIONS

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

 Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 25 and 55 percent during remainder of construction period.

PART 2 - PRODUCTS

MANUFACTURERS Eggers Industries Masonite Architectural (legacy brands Marshfield, Mohawk and Algoma).

Oshkosh Door Company. VT Industries.

FLUSH WOOD DOORS, GENERAL Quality Standard: In addition to requirements specified, comply with WDMA I.S.1-A, "Architectural Wood Flush

B. WDMA I.S.1-A Performance Grade: Heavy Duty unless otherwise indicated. Extra Heavy Duty: Classrooms, public toilets, janitor's closets, assembly spaces, exits, and where

VENEER-FACED DOORS FOR TRANSPARENT FINISH

Interior Solid-Core Doors: Grade: Custom (Grade A faces).

Species: Select white birch. Cut: Plain Sawn

Match between Veneer Leaves: Book match. Assembly of Veneer Leaves on Door Faces: Center-balance match.

FLUSH WOOD DOORS 08 14 16 - 1

Room Match: Match door faces within each separate room or area of building. Corridor-door faces do not need to match where they are separated by 10 feet or more. Exposed Vertical and Top Edges: Same species as faces - edge Type A. Core: Particleboard.

10. Construction: Five or seven plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering.

 Construction: Seven plies, either bonded or nonbonded construction. WDMA I.S.1-A Performance Grade: Extra Heavy Duty. LIGHT FRAMES AND LOUVERS

Pair and Set Match: Provide for doors hung in same opening.

Metal Frames for Light Openings in Fire-Rated Doors: Manufacturer's standard frame formed of 0.048-inchthick, cold-rolled steel sheet; with baked-enamel- or powder-coated finish; and approved for use in doors of fire protection rating indicated. Color: As selected by Architect. FABRICATION

Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, BHMA-156.115-W, and hardware templates. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory

 Openings: Factory cut and trim openings through doors. Light Openings: Trim openings with moldings of material and profile indicated.

Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 08 80 00 "Glazing." Louvers: Factory install louvers in prepared openings.

FACTORY FINISHING General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing. 1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on top and

bottom edges, edges of cutouts, and mortises. B. Factory finish doors.

PART 3 - EXECUTION

Examine doors and installed door frames, with Installer present, before hanging doors.

Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs. Reject doors with defects.

Proceed with installation only after unsatisfactory conditions have been corrected.

INSTALLATION

Hardware: For installation, see Section 08 71 00 "Door Hardware." Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.

Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.

 Clearances: Provide 1/8 inch at heads, jambs, and between pairs of doors. Provide 1/8 inch from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide1/4 inch from bottom of door to top of threshold unless otherwise indicated. Bevel non-fire-rated doors 1/8 inch in 2 inches at lock and hinge edges. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

FLUSH WOOD DOORS 08 14 16 - 2

 Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site. END OF SECTION 08 14 16





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NO. REASON 3 CONSTRUCTION 04/03/2023 DOCUMENTS BID SET

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

B. Product Schedule: For hollow-metal doors and frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final door hardware

PART 2 - PRODUCTS

JOINT SEALANTS

PART 1 - GENERAL

Section includes:

1.3 ACTION SUBMITTALS

MANUFACTURERS Ceco Door Products; an Assa Abloy Group company. Curries Company; an Assa Abloy Group company.

SECTION 08 11 13 - HOLLOW METAL DOORS AND FRAMES

Division 01 Specification Sections, apply to this Section.

Interior standard steel doors and frames.

Exterior standard steel doors and frames.

Locations of reinforcement and preparations for hardware.

Details of anchorages, joints, field splices, and connections.

Details of each different wall opening condition.

Details of moldings, removable stops, and glazing.

Shop Drawings: Include the following:

security systems.

HOLLOW METAL DOORS AND FRAMES

Details of accessories.

Elevations of each door type.

Custom Metal Products Fleming Door Products; an Assa Abloy Group company. Mesker Door Inc. Pioneer Industries.

Republic Doors and Frames; an Allegion company.

Steelcraft; an Allegion company. PERFORMANCE REQUIREMENTS Fire-Rated Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency

pressure according to NFPA 252 or UL 10C. B. Fire-Rated, Borrowed-Lite Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing

acceptable to authorities having jurisdiction for fire-protection ratings indicated, based on testing at positive

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other

Details of doors, including vertical- and horizontal-edge details and metal thicknesses.

Frame details for each frame type, including dimensioned profiles and metal thicknesses.

Details of electrical raceway and preparation for electrified hardware, access control systems, and

INTERIOR STANDARD STEEL DOORS AND FRAMES Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified. B. Heavy-Duty Doors and Frames: SDI A250.8, Level 2; SDI A250.4, Level B. At locations indicated in the Door and Frame Schedule.

Type: As indicated in the Door and Frame Schedule.

HOLLOW METAL DOORS AND FRAMES

END OF SECTION 08 11 13

08 11 13 - 4

FLUSH WOOD DOORS

SPECIFICATIONS 08 14 16 - 3

 Shop Drawings: Show fabrication and installation details of access doors and frames for each type of substrate. Include plans, elevations, sections, details, and attachments to other work. Access Door and Frame Schedule: Provide complete access door and frame schedule, including types, locations, sizes, latching or locking provisions, and other data pertinent to installation.

C. Ceiling Coordination Drawings: Reflected ceiling plans, drawn to scale, on which ceiling-mounted items

plumbing, mechanical, or other concealed work, and indicate in the schedule specified in "Submittals" Article.

including access doors and frames, lighting fixtures, diffusers, grilles, speakers, sprinklers, and special trim are shown and coordinated with each other. 1.4 COORDINATION A. Verification: Determine specific locations and sizes for access doors needed to gain access to concealed

PART 2 - PRODUCTS

A. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS) with A60 zinc-iron-alloy (galvannealed) coating or G60 mill-phosphatized zinc coating; stretcher-leveled standard of flatness; with minimum thickness indicated representing specified thickness according to ASTM A 924/A 924M. B. Steel Finishes: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Surface Preparation for Steel Sheet: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, or other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or Factory-Primed Finish: Apply shop primer immediately after cleaning and pretreating.

C. Drywall Beads: Edge trim formed from 0.0299-inch zinc-coated steel sheet formed to receive joint compound and in size to suit thickness of gypsum board.

2.2 ACCESS DOORS AND FRAMES FOR WALLS AND CEILINGS Manufacturers: Subject to compliance with requirements, provide products by one of the following:

The Bilco Company. J. L. Industries, Inc. Milcor Inc.

Nystrom, Inc.

Or equal. B. Flush Access Doors and Trimless Frames: Fabricated from steel sheet.

Locations: Wall and ceiling surfaces. Door: Minimum 0.060-inch-thick sheet metal, set flush with surrounding finish surfaces. Frame: Minimum 0.060-inch-thick sheet metal with drywall or plaster bead flange.

Hinges: Spring-loaded, concealed-pin type. Latch: Cam latch operated by screwdriver with interior release. Lock: Cylinder.

ACCESS DOORS AND FRAMES

08 31 13 - 1

 General: Provide access door and frame assemblies manufactured as integral units ready for installation. Metal Surfaces: For metal surfaces exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade Doors and Frames: Grind exposed welds smooth and flush with adjacent surfaces. Furnish attachment devices

and fasteners of type required to secure access panels to types of supports indicated. For trimless frames with drywall bead, provide edge trim for gypsum board securely attached to perimeter Provide mounting holes in frames for attachment of units to metal or wood framing.

Provide mounting holes in frame for attachment of masonry anchors. Furnish adjustable metal masonry anchors. l ssecoA hessen n face of panel to provide recess for application of applied finish. Reinforce panel as required to prevent buckling.

Latching Mechanisms: Furnish number required to hold doors in flush, smooth plane when closed. For cylinder lock, furnish two keys per lock and key all locks alike. For recessed panel doors, provide access sleeves for each locking device. Furnish plastic grommets and install in holes cut through finish.

PART 3 - EXECUTION

INSTALLATION Comply with manufacturer's written instructions for installing access doors and frames. Install doors flush with adjacent finish surfaces or recessed to receive finish material. END OF SECTION 08 31 13

Oldcastle BuildingEnvelope. YKK AP America Inc.

 Framing Members: Manufacturer's extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads. Construction: Thermally-broken, as indicated.

Glazing System: Retained mechanically with gaskets on four sides. Glazing Plane: Front.

 a. Interior Storefront: Clear anodic finish. Exterior Storefront: High-performance organic finish. Fabrication Method: Field-fabricated stick system.

Edge Trim: Wrap framing members at walls as indicated on Drawings. Backer Plates: Manufacturer's standard, continuous backer plates for framing members, if not integral, where framing abuts adjacent construction.

Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

 Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated. Sheet and Plate: ASTM B 209. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221. Extruded Structural Pipe and Tubes: ASTM B 429/B 429M.

Structural Profiles: ASTM B 308/B 308M. Steel Reinforcement: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM, and prepare surfaces according to applicable SSPC standard. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.

 Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M. ENTRANCE DOOR SYSTEMS Basis-of-Design Product: Subject to compliance with requirements, provide Kawneer Model 500 or a

comparable product by one of the following: EFCO Corporation Kawneer North America. Oldcastle BuildingEnvelope.

YKK AP America Inc.

Or approved equal. Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing operation. Door Construction: 2-inch overall thickness, with minimum 0.188-inch-thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods.

Door Design: Wide stile; 5-inchnominal width. Glazing Stops and Gaskets: Beveled, snap-on, extruded-aluminum stops and preformed gaskets. a. Provide nonremovable glazing stops on outside of door.

ENTRANCE DOOR HARDWARE Entrance Door Hardware: As specified in Division 08 Section "Door Hardware." General: Provide entrance door hardware and entrance door hardware sets indicated in door and frame schedule for each entrance door to comply with requirements in this Section.

Glazing: Comply with Division 08 Section "Glazing." Glazing Sealants: As recommended by manufacturer

Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.

ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration. Reinforce members as required to receive fastener threads.

08 41 13 - 2

Use exposed fasteners with countersunk Phillips screw heads, finished to match framing system. B. Anchors: Three-way adjustable anchors with minimum adjustment of 1 inch that accommodate fabrication and installation tolerances in material and finish compatible with adjoining materials and recommended by manufacturer. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A 123/A 123M or ASTM A 153/A 153M requirements.

Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials D. Bituminous Paint: Cold-applied asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos, formulated for 30-mil thickness per coat.

FABRICATION

Form or extrude aluminum shapes before finishing. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding. Fabricate components that, when assembled, have the following characteristics:

Profiles that are sharp, straight, and free of defects or deformations. Accurately fitted joints with ends coped or mitered. Physical and thermal isolation of glazing from framing members. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.

Provisions for field replacement of glazing from exterior. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware. 1. At interior doors, provide silencers at stops to prevent metal-to-metal contact. Install three silencers on

strike jamb of single-door frames and two silencers on head of frames for pairs of doors. At exterior doors, provide compression weather stripping at fixed stops. F. Entrance Doors: Reinforce doors as required for installing entrance door hardware. At pairs of exterior doors, provide sliding-type weather stripping retained in adjustable strip and mortised

At exterior doors, provide weather sweeps applied to door bottoms. G. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.7 ALUMINUM FINISHES A. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

PART 3 - EXECUTION

A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work. Proceed with installation only after unsatisfactory conditions have been corrected.

INSTALLATION

Comply with manufacturer's written instructions. Do not install damaged components. Fit joints to produce hairline joints free of burrs and distortion. Rigidly secure nonmovement joints.

to prevent impeding movement of moving joints.

Plumb: 1/8 inch in 10 feet; 1/4 inch in 40 feet.

from true alignment to 1/8 inch.

from true alignment to 1/4 inch.

Level: 1/8 inch in 20 feet; 1/4 inch in 40 feet.

limit offset from true alignment to 1/16 inch.

surfaces with bituminous paint.

Seal perimeter and other joints watertight unless otherwise indicated.

Install components plumb and true in alignment with established lines and grades.

Entrance Doors: Install doors to produce smooth operation and tight fit at contact points.

4. Location: Limit variation from plane to 1/8 inch in 12 feet; 1/2 inch over total length.

Testing Agency: Engage a qualified testing agency to perform tests and inspections.

ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

Metal Protection:

3.3 ERECTION TOLERANCES

FIELD QUALITY CONTROL

END OF SECTION 08 41 13

Prepare test and inspection reports.

Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and

Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact

2. Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact

Set continuous sill members and flashing in full sealant bed as specified in Division 07 Section "Joint Sealants"

Erection Tolerances: Install aluminum-framed entrances and storefronts to comply with the following maximum

Aluminum-framed entrances and storefronts will be considered defective if they do not pass tests and

surfaces with materials recommended by manufacturer for this purpose or by installing nonconductive

Field-Installed Entrance Door Hardware: Install surface-mounted entrance door hardware according to

entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent

Where surfaces abut in line or are separated by reveal or protruding element up to 1/2 inch wide,

Where surfaces are separated by reveal or protruding element from 1/2 to 1 inch wide, limit offset

Where surfaces are separated by reveal or protruding element of 1 inch wide or more, limit offset

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SECTION 08 41 13 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

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08 41 13 - 1

PART 1 - GENERAL

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

A. Section Includes: Storefront framing.

ACCESS DOORS AND FRAMES

Manual-swing entrance doors. 1.3 ACTION SUBMITTALS Shop Drawings: For aluminum-framed entrances and storefronts. Include plans, elevations, sections, full-size details, and attachments to other work.

1. Include details of provisions for assembly expansion and contraction and for draining moisture occurring within the assembly to other work. Include full-size isometric details of each vertical-to-horizontal intersection of aluminum-framed entrances

and storefronts, showing the following: Joinery, including concealed welds. Anchorage.

Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers.

 Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by Testing Agency Qualifications: Qualified according to ASTM E 699 for testing indicated.

A. Special Warranty: Manufacturer agrees to repair or replace components of aluminum-framed entrances and storefronts that do not comply with requirements or that fail in materials or workmanship within specified warranty period.

 Failures include, but are not limited to, the following: Structural failures including, but not limited to, excessive deflection Noise or vibration created by wind and thermal and structural movements.

Water penetration through fixed glazing and framing areas. Failure of operating components. Warranty Period: One years from date of Substantial Completion. Special Finish Warranty: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of factory-applied finishes within specified warranty period. Deterioration includes, but is not limited to, the following:

Color fading more than 5 Hunter units when tested according to ASTM D 2244. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214. Cracking, checking, peeling, or failure of paint to adhere to bare metal. Warranty Period:

Interior Storefront: 10 years from date of Substantial Completion. Exterior Storefront: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

2.1 STOREFRONT SYSTEMS A. Basis-of-Design Product: Subject to compliance with requirements, provide Kawneer Trifab VersaGlaze 451T entrance system, or a comparable product by one of the following:

ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

SECTION 08 42 13 - ALUMINUM-FRAMED ENTRANCES

PART 1 - GENERAL

RELATED DOCUMENTS A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other

Division 01 Specification Sections, apply to this Section.

Section Includes: Aluminum-framed entrance door systems.

PREINSTALLATION MEETINGS A. Preinstallation Conference: Conduct conference at Project site. 1.4 ACTION SUBMITTALS A. Product Data: For each type of product. Include construction details, material descriptions, dimensions of individual components and profiles, and

B. Shop Drawings: For aluminum-framed entrances. Include plans, elevations, sections, full-size details, and attachments to other work. Include details of provisions for assembly expansion and contraction and for draining moisture occurring within the assembly to the exterior. Include full-size isometric details of each type of vertical-to-horizontal intersection of aluminum-framed

entrances, showing the following: Joinery, including concealed welds Anchorage.

Expansion provisions Flashing and drainage. Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers. Include point-to-point wiring diagrams showing the following:

Power requirements for each electrically operated door hardware. Location and types of switches, signal device, conduit sizes, and number and size of wires. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.

1.5 INFORMATIONAL SUBMITTALS Energy Performance Certificates: For aluminum-framed entrances, accessories, and components, from

a. Basis for Certification: NFRC-certified energy performance values for each aluminum-framed entrance. B. Field-Quality-Control Submittals:

Field quality-control reports. Qualification Statements:

 Submit documentation of compliance with NFPA 101, Section 7.2.1.15.4. Submit copy of DHI's Fire and Egress Door Assembly Inspector (FDAI) certificate. D. Sample warranties.

1.6 CLOSEOUT SUBMITTALS A. Operation and Maintenance Data: For aluminum-framed entrances.

1.7 QUALITY ASSURANCE A. Qualifications:

ALUMINUM-FRAMED ENTRANCES

1. Installers: An entity that employs installers and supervisors who are trained and approved by Testing Agency: Qualified in accordance with ASTM E699 for testing indicated and acceptable to Owner

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 Special Warranty: Manufacturer agrees to repair or replace components of aluminum-framed entrances that do ot comply with requirements or that fail in materials or workmanship within specified warranty period. Warranty Period: Two years from date of Substantial Completion.

Special Finish Warranty, Anodized Finishes; Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of anodized finishes within specified warranty period. Deterioration includes, but is not limited to, the following Color fading more than 5 Delta E units when tested in accordance with ASTM D 2244. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D 4214.

Cracking, peeling, or chipping Warranty Period: 5 years from date of Substantial Completion.

PART 2 - PRODUCTS

 Source Limitations: Obtain all components of aluminum-framed entrance, including framing and accessories, from single manufacturer.

PERFORMANCE REQUIREMENTS A. General Performance: Comply with performance requirements specified, as determined by testing of aluminumframed entrances representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction. B. Structural Loads:

Wind Loads: As indicated on Drawings. C. Structural: Test in accordance with ASTM E330/E330M as follows: When tested at 150 percent of positive and negative wind-load design pressures, entrance doors, including anchorage, do not evidence material failures, structural distress, or permanent deformation of main framing members exceeding 0.2 percent of span.

Test Durations: As required by design wind velocity, but not less than 10 seconds. D. Water Penetration under Static Pressure: Test in accordance with ASTM E331 as follows: No evidence of water penetration through fixed glazing and framing areas of entrance doors when tested according to a minimum static-air-pressure differential of 20 percent of positive wind-load design pressure, but not less than 10 lbf/sq. ft..

Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces. ALUMINUM-FRAMED ENTRANCE DOOR SYSTEMS Product: Subject to compliance with requirements, provide Kawneer; 350 Medium Stile Entrance.

Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing or automatic operation. Door Construction: 1-3/4-inch overall thickness, with minimum 0.125-inch- thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods. Thermal Construction: High-performance plastic connectors separate aluminum members exposed to the exterior from members exposed to the interior. Door Design: Medium stile; 3-1/2-inch nominal width.

Glazing Stops and Gaskets: Beveled, snap-on, extruded-aluminum stops and preformed gaskets. Provide nonremovable glazing stops on outside of door. Door Finish: Clear anodic finish.

C. Framing Members: Manufacturer's standard extruded aluminum, minimum 0.125 inch thick and reinforced as required to support imposed loads. Nominal Size: As indicated on Drawings to receive doors scheduled. Exterior Framing Construction: Thermally broken.

ALUMINUM-FRAMED ENTRANCES

Glazing Stops and Gaskets: Beveled, snap-on, extruded-aluminum stops and preformed gaskets.

Backer Plates: Manufacturer's standard, continuous backer plates for framing members, if not integral, where Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

Provide nonremovable glazing stops on outside of door.

Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated Sheet and Plate: ASTM B209. Extruded Bars, Rods, Profiles, and Tubes: ASTM B221.

Structural Profiles: ASTM B308/B308M. Steel Reinforcement: Structural Shapes, Plates, and Bars: ASTM A36/A36M. Cold-Rolled Sheet and Strip: ASTM A1008/A1008M.

Hot-Rolled Sheet and Strip: ASTM A1011/A1011M. Steel Reinforcement Primer: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods in accordance with recommendations in SSPC-SP COM, and prepare surfaces in accordance with applicable SSPC standard.

ENTRANCE DOOR HARDWARE Entrance Door Hardware: As specified in Section 08 71 00 "Door Hardware." Weather Stripping: Manufacturer's standard replaceable components.

Compression Type: Made of ASTM D2000 molded neoprene or ASTM D2287 molded PVC. Sliding Type: AAMA 701/702, made of wool, polypropylene, or nylon woven pile with nylon-fabric or Weather Sweeps: Manufacturer's standard exterior-door bottom sweep with concealed fasteners on mounting

Thresholds: BHMA A156.21 raised thresholds beveled with a slope of not more than 1:2, with maximum height of 1/2 inch.

Glazing: Comply with Section 08 80 00 "Glazing." Glazing Sealants: As recommended by manufacturer

ACCESSORIES

ALUMINUM-FRAMED ENTRANCES

Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials. 1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration. Reinforce members as required to receive fastener threads. Anchors: Three-way adjustable anchors with minimum adjustment of 1 inch that accommodate fabrication and

installation tolerances in material and finish compatible with adjoining materials and recommended by manufacturer. 1. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A123/A123M or ASTM A153/A153M requirements. Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials.

Bituminous Paint: Cold-applied asphalt-mastic paint containing no asbestos, formulated for 30-mil thickness per

FABRICATION Form or extrude aluminum shapes before finishing. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

Fabricate components that, when assembled, have the following characteristics: Profiles that are sharp, straight, and free of defects or deformations.

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Accurately fitted joints with ends coped or mitered. Physical and thermal isolation of glazing from framing members. Accommodations for thermal and mechanical movements of glazing and framing to maintain required

Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware

At interior and exterior doors, provide compression weather stripping at fixed stops. Entrance Doors: Reinforce doors as required for installing entrance door hardware. At pairs of exterior doors, provide sliding-type weather stripping retained in adjustable strip and mortised

At exterior doors, provide weather sweeps applied to door bottoms. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes. G. After fabrication, clearly mark components to identify their locations in Project in accordance with Shop

ALUMINUM FINISHES A. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

PART 3 - EXECUTION

into door edge.

EXAMINATION Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work. Proceed with installation only after unsatisfactory conditions have been corrected.

INSTALLATION, GENERAL Comply with manufacturer's written instructions. Do not install damaged components

Fit joints to produce hairline joints free of burrs and distortion. Rigidly secure nonmovement joints. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.

Seal perimeter and other joints watertight unless otherwise indicated. Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with materials recommended by manufacturer for this purpose or installing nonconductive

Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact

surfaces with bituminous paint. H. Set continuous sill members and flashing in full sealant bed, as specified in Section 07 92 00 "Joint Sealants," to produce weathertight installation. Install joint filler behind sealant as recommended by sealant manufacturer. Install components plumb and true in alignment with established lines and grades.

INSTALLATION OF GLAZING Install glazing as specified in Section 08 80 00 "Glazing."

INSTALLATION OF ALUMINUM-FRAMED ENTRANCE DOORS Install entrance doors to produce smooth operation and tight fit at contact points.

Exterior Doors: Install to produce weathertight enclosure and tight fit at weather stripping. Field-Installed Entrance Door Hardware: Install surface-mounted entrance door hardware according to entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent

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ALUMINUM-FRAMED ENTRANCES

FIELD QUALITY CONTROL Tests and Inspections: Perform the following tests on aluminum-framed entrances. Water-Spray Test: Before installation of interior finishes has begun, areas designated by Architect shall be tested in accordance with AAMA 501.2 and shall not evidence water penetration. Egress Door Inspections: Inspect each aluminum-framed entrance door equipped with panic hardware,

arrangements, in accordance with NFPA 101, Section 7.2.1.15. Aluminum-framed entrances will be considered defective if they do not pass tests and inspections. Prepare test and inspection reports.

3.6 MAINTENANCE SERVICE

ALUMINUM-FRAMED ENTRANCES

SECTION 08 44 13 - GLAZED ALUMINUM CURTAIN WALLS

1.3 PERFORMANCE REQUIREMENTS

Structural loads.

failure, the effects of the following:

Thermal movements

Failure includes the following

Sealant failure.

Deflection of Framing Members:

AAMA 501.4.

GLAZED ALUMINUM CURTAIN WALLS

B. Structural Loads:

Division 01 Specification Sections, apply to this Section.

Deflection exceeding specified limits

movements, to glazing.

Wind Loads: As indicated on Drawings.

Seismic Loads: As indicated on Drawings

applied to the leading edge of the coping face.

framing members exceeding 0.2 percent of span.

earthquake motions determined according to SEI/ASCE 7.

Design Displacement: As indicated on Drawings.

This Section includes conventionally glazed aluminum curtain walls installed.

Thermal stresses transferred to building structure.

Dimensional tolerances of building frame and other adjacent construction.

Noise or vibration created by wind and thermal and structural movements.

Test Duration: As required by design wind velocity but not less than 60 seconds.

deflection of individual glazing lites to 3/4 inch, whichever is less.

and glazing or other fixed components to less than 1/8 inch.

Component Importance Factor as indicated on the drawings.

Loosening or weakening of fasteners, attachments, and other components.

instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of entrance door hardware 2. Initial Maintenance Service: Beginning at Substantial Completion, provide six months' full maintenance by skilled employees of entrance door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for

Drawings and general provisions of the Contract, including General and Supplementary Conditions and

General: Provide glazed aluminum curtain-wall systems, including anchorage, capable of withstanding, without

Movements of supporting structure indicated on Drawings including, but not limited to, story drift, twist,

Periodic Maintenance-Equipment Loads: Curtain wall parapet to withstand 330 pound vertical load

When tested at positive and negative wind-load design pressures, systems do not evidence deflection

When tested at 150 percent of positive and negative wind-load design pressures, systems, including

anchorage, do not evidence material failures, structural distress, and permanent deformation of main

Deflection Normal to Wall Plane: Limited to 1/175 of clear span for spans up to 13 feet 6 inches and to

Deflection Parallel to Glazing Plane: Limited to amount not exceeding that which reduces glazing bite to

Seismic Performance: Conventionally captured-glazing curtain wall systems shall withstand the effects of

F. Story Drift: Provide glazed aluminum curtain-wall systems that accommodate design displacement of adjacent

1/240 of clear span plus 1/4 inch for spans greater than 13 feet 6 inches or an amount that restricts edge

less than 75 percent of design dimension and which reduces edge clearance between framing members

Test Performance: No glass breakage, anchor failures, or structural damage when tested according to

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Structural-Test Performance: Provide glazed aluminum curtain-wall systems tested according to ASTM E 330

column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.

Framing members transferring stresses, including those caused by thermal and structural

each aluminum-framed entrance door located in an exit enclosure, each electrically controlled aluminumframed egress door, and each aluminum-framed entrance door equipped with special locking

Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance

proper entrance door hardware operation at rated speed and capacity. Use parts and supplies that are the same as those used in the manufacture and installation of original equipment. END OF SECTION 08 42 13

G. Thermal Movements: Provide glazed aluminum curtain-wall systems that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces. Test Performance: No buckling, stress on glass, glazing-edge seal failure, sealant failure, excess stress on curtain-wall framing, anchors and fasteners, or reduction of performance when tested according to AAMA 501.5.

 Test High Exterior Ambient Air Temperature: That which produces an exterior metal surface temperature of 180 deg F.

 Test Low Exterior Ambient Air Temperature: 0 deg F. Test Interior Ambient Air Temperature: 75 deg F.

Air Infiltration: Provide glazed aluminum curtain-wall systems with maximum air leakage of 0.06 cfm/sq. ft. of fixed wall area when tested according to ASTM E 283 at a minimum static-air-pressure differential of 1.57 lbf/sq. ft.. Consistent with results for other openings and exterior skin systems. Water Penetration Under Static Pressure: Provide aluminum glazed curtain-wall systems that do not evidence water penetration when tested according to ASTM E 331 at a minimum differential static pressure of 20 percent of positive design wind load, but not less than 15 lbf/sq. ft.

Maximum Water Leakage: No uncontrolled water penetrating systems or appearing on systems' normally exposed interior surfaces from sources other than condensation. Water controlled by flashing and gutters that is drained to exterior and cannot damage adjacent materials or finishes is not considered water J. Water Penetration under Dynamic Pressure: Provide aluminum-framed systems that do not evidence water leakage through fixed glazing and framing areas when tested according to AAMA 501.1 under dynamic pressure

 Maximum Water Leakage: Water leakage does not include water controlled by flashing and gutters that is drained to exterior and water that cannot damage adjacent materials or finishes. Condensation Resistance: Provide glazed aluminum curtain-wall systems with condensation-resistance factor (CRF) of not less than 55 when tested according to AAMA 1503. Average Thermal Conductance: Provide glazed aluminum curtain-wall systems with average U-factor of not more than 0.45 Btu/sq. ft. x h x deg F when tested according to AAMA 1503.

M. Sound Transmission: Provide glazed aluminum curtain-wall systems with minimum STC 31 according to

Include structural analysis data signed and sealed by the qualified professional engineer responsible for

equal to 20 percent of positive wind-load design pressure, but not less than 15 lbf/sq. ft.

Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of product indicated. Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication and assembly of glazed aluminum curtain-wall systems.

 Analysis to be part of the shop drawings and dated the same date. Coping engineer Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes. Fabrication Sample: Of each vertical-to-horizontal intersection of systems, made from 12-inch lengths of full-

size components and showing details of the following: Joinery. Anchorage.

Flashing and drainage. Welding certificates. Qualification Data: For Installer and testing agency. Coordinate all tests with Owner. Install no finishes interior) prior to successful testing. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for glazed aluminum curtain-wall systems.

Preconstruction Test Reports: For glazed aluminum curtain-wall systems. Field quality-control test reports. Warranties: Special warranties specified in this Section. Manufacturer's Installation: Manufacturer's written installation and maintenance instruction.

Expansion provisions.

GLAZED ALUMINUM CURTAIN WALLS 08 44 13 - 2

Build mockup of typical wall area as shown on Drawings.

Noise or vibration caused by thermal movements.

Failure of operating components to function normally.

Water leakage.

A. Installer Qualifications: Capable of assuming engineering responsibility and performing Work of this Section and who is acceptable to manufacturer.

 Shop Drawings based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project and submission of reports of tests performed on manufacturer's standard assemblies. Shop Drawings, Project-specific preconstruction-testing program development, and comprehensive engineering analysis by a qualified professional engineer. Testing Agency Qualifications: An independent agency qualified according to ASTM E 699 for testing indicated.

Engineering Responsibility: Preparation of data for glazed aluminum curtain-wall systems including the

Product Options: Information on Drawings and in Specifications establishes requirements for systems' aesthetic

effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements,

Mockups: Build mockups to demonstrate aesthetic effects and set quality standards for fabrication and

alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review. Welding: Qualify procedures and personnel according to AWS D1.2, "Structural Welding Code--Aluminum."

Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to glazed aluminum curtain-wall systems. PROJECT CONDITIONS Field Measurements: Verify actual locations of structural supports for glazed aluminum curtain-wall systems by field measurements before fabrication and indicate measurements on Shop Drawings. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating glazed aluminum curtain-wall systems without field

measurements. Coordinate construction to ensure that actual dimensions correspond to established 1.7 WARRANTY Special Assembly Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace

components of glazed aluminum curtain-wall systems that do not comply with requirements or that deteriorate as defined in this Section within specified warranty period. Failures include, but are not limited to, the following: Structural failures including, but not limited to, excessive deflection.

Special Watertight Warranty: Standard form in which manufacturer agrees to repair curtain wall related water

Warranty Period: Ten years from date of Substantial Completion. Special Finish Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components on which finishes fail within specified warranty period. Warranty does not include normal Warranty Period: 20 years from date of Substantial Completion.

Warranty Period: Three years from date of substantial completion.

PART 2 - PRODUCTS MANUFACTURERS A. Basis of Design Manufacturer: Basis of Design is Kawneer. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:

 Oldcastle BuildingEnvelope. GLAZED ALUMINUM CURTAIN WALLS 08 44 13 - 3

YKK AP America Inc. EFCO.

Curtain Wall: Kawneer; 1620UT, 6 by 2-inch fully captured.

 Outside-glazed pressure plate format. Interior mullion partition closers. Product: Mull It Over Products; Classic Mullion Trim Caps, sound and fire ratings as required or indicated. FRAMING SYSTEMS

Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

Sheet and Plate: ASTM B 209. Extruded Bars, Rods, Shapes, and Tubes: ASTM B 221. Extruded Structural Pipe and Tubes: ASTM B 429. Welding Rods and Bare Electrodes: AWS A5.10/A5.10M. B. Steel Reinforcement: With manufacturer's standard corrosion-resistant primer complying with SSPC-PS Guide No. 12.00 applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC

Structural Shapes, Plates, and Bars: ASTM A 36/A 36M. Cold-Rolled Sheet and Strip: ASTM A 611. Hot-Rolled Sheet and Strip: ASTM A 570/A 570M. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners

and accessories compatible with adjacent materials Use self-locking devices throughout. Reinforce members as required to receive fastener threads. At movement joints, use slip-joint linings, spacers, and sleeves of material and type recommended by Anchors: Three-way adjustable anchors that accommodate fabrication and installation tolerances in material

and finish compatible with adjoining materials and recommended by manufacturer. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A 123/A 123M or ASTM A 153/A 153M requirements. Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials.

H. Framing Sealants: As recommended by manufacturer for joint type. GLAZING SYSTEMS

A. Glazing: As specified in Division 08 Section "Glazing."

framing where indicated.

GLAZED ALUMINUM CURTAIN WALLS

2.4 ACCESSORY MATERIALS Insulating Materials: Specified in Division 07 Section "Thermal Insulation." Bituminous Paint: Cold-applied asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos, formulated for 30-mil thickness per coat.

Miscellaneous Brake Metal Fabrications: Provide miscellaneous brake metal fabrications to match curtain wall

FABRICATION Form aluminum shapes before finishing. B. Fabricate components that, when assembled, have the following characteristics:

Framing Gaskets: As recommended by manufacturer for joint type.

Sharp profiles, straight and free of defects or deformations.

Accurately fitted joints with ends coped or mitered. Internal guttering systems or other means to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior. Physical and thermal isolation of glazing from framing members.

5. Accommodations for thermal and mechanical movements of glazing and framing to prevent glazing-toglazing contact and to maintain required glazing edge clearances.

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SUBMISSION

NO. REASON 3 CONSTRUCTION 04/03/2023 DOCUMENTS BID SET

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

SPECIFICATIONS

Factory-Assembled Frame Units: ALUMINUM FINISHES designating aluminum finishes. PART 3 - EXECUTION EXAMINATION INSTALLATION A. General: surfaces from welding. B. Metal Protection: with bituminous paint. GLAZED ALUMINUM CURTAIN WALLS FIELD QUALITY CONTROL GLAZED ALUMINUM CURTAIN WALLS SECTION 08 51 13 - ALUMINUM WINDOWS

Provisions for reglazing from interior Rigidly secure nonmovement joints. Seal joints watertight, unless otherwise indicated. Pressure equalize system at its interior face. recommendations for applying and designating finishes. Color and Gloss: Custom colors as indicated. conditions affecting performance of work. Comply with manufacturer's written instructions Do not install damaged components Fit joints to produce hairline joints free of burrs and distortion. Rigidly secure nonmovement joints. to prevent impeding movement of moving joints. Seal joints watertight, unless otherwise indicated. by manufacturer for this purpose migrating within the system to exterior. Install glazing as specified Division 08 Section "Glazing." Install sealants as specified in Division 07 Section "Joint Sealants." Plumb: 1/8 inch in 10 feet; 1/4 inch in 40 feet. Level: 1/8 inch in 20 feet; 1/4 inch in 40 feet. limit offset from true alignment to 1/16 inch. from true alignment to 1/8 inch. from true alignment to 1/4 inch. and inspections and prepare test reports. Testing to be performed prior to installing interior finishes. replaced or additional work with specified requirements. Division 01 Specification Sections, apply to this Section. A. Section includes aluminum windows for exterior locations. 1.3 ACTION SUBMITTALS A. Shop Drawings: For aluminum windows. INFORMATIONAL SUBMITTALS Qualification Data: For manufacturer and Installer.

Window: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

ALUMINUM WINDOWS

MANUFACTURERS

2.2 WINDOW PERFORMANCE REQUIREMENTS

Minimum Performance Class: CW.

to AAMA 1503, showing a CRF of 52.

Glazing Units: 10 years from date of Substantial Completion

Source Limitations: Obtain aluminum windows from single source from single manufacturer.

Window Certification: AAMA certified with label attached to each window.

B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:

A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of

Thermal Transmittance: NFRC 100 maximum whole-window U-factor of 0.35 Btu/sq. ft, x h x deq F

Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-window SHGC of 0.27.

performance, materials, components, accessories, and fabrication unless more stringent requirements are

Condensation-Resistance Factor (CRF): Provide aluminum windows tested for thermal performance according

resulting from the following maximum change (range) in ambient and surface temperatures by preventing

08 51 13 - 1

Thermal Movements: Provide aluminum windows, including anchorage, that allow for thermal movements

Aluminum Finish: 10 years from date of Substantial Completion.

other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding. heat gain and nighttime-sky heat loss. B. Shall comply with all code requirements. Temperature Change: 120 deg F ambient; 180 deg F material surfaces. Sound Transmission Class (STC): Rated for not less than 30 STC when tested for laboratory sound 2.3 HINGES transmission loss according to ASTM E 90 and determined by ASTM E 413. H. Outside-Inside Transmission Class (OITC): Rated for not less than 26 OITC when tested for laboratory sound Install glazing to comply with requirements in Division 08 Section "Glazing." transmission loss according to ASTM E 90 and determined by ASTM E 1332. Windborne-Debris-Impact Resistance: Capable of resisting impact from windborne debris based on testing After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings. glazed windows identical to those specified, according to ASTM E 1886 and testing information in ASTM E 1996 and requirements of authorities having jurisdiction. A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for ALUMINUM WINDOWS Manufacturers; Subject to compliance with requirements, provide products by one of the following: Finish designations prefixed by AA comply with the system established by the Aluminum Association for Wausau Window and Wall Systems; Apogee Wausau Group, Inc. High-Performance Organic Finish: Two-coat fluoropolymer finish complying with AAMA 2605 and containing not Graham Architectural Products Corporation. less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply Winco Manufacturing Co. coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions. Frames and Sashes: Aluminum extrusions complying with AAMA/WDMA/CSA 101/I.S.2/A440. Thermally Improved Construction: Fabricate frames, sashes, and muntins with an integral, concealed, low-conductance thermal barrier located between exterior materials and window members exposed on interior side in a manner that eliminates direct metal-to-metal contact. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with adjacent materials; Examine areas, with Installer present, for compliance with requirements for installation tolerances and other designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated. Proceed with installation only after unsatisfactory conditions have been corrected. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other Exposed Fasteners: Do not use exposed fasteners to greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened. 2.4 FABRICATION Fabricate aluminum windows in sizes indicated. Include a complete system for assembling components and anchoring windows Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and Glaze aluminum windows in the factory. Weep Holes: Provide weep holes and internal passages to conduct infiltrating water to exterior. Weld components in concealed locations to minimize distortion or discoloration of finish. Protect glazing Mullions: Provide mullions and cover plates, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions and cover plates capable of withstanding design wind loads of window units. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact Window Assemblies: Provide fixed units in configuration indicated. Provide window frames, sashes, hardware, surfaces with primer or by applying sealant or tape or installing nonconductive spacers as recommended and other trim and components necessary for a complete, secure, and weathertight installation. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces GENERAL FINISH REQUIREMENTS Comply with NAAMM's "Metal Finishes Manual" for recommendations for applying and designating finishes. Install components to drain water passing joints, condensation occurring within framing members, and moisture Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective Install components plumb and true in alignment with established lines and grades. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or Install insulation materials as specified in Division 07 Section "Thermal Insulation." installed to minimize contrast. H. Erection Tolerances: Install glazed aluminum curtain-wall systems to comply with the following maximum Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes. Class I, Clear Anodic Finish: AA-M12C22A41 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: a. Where surfaces abut in line or are separated by reveal or protruding element up to 1/2 inch wide, etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with 08 44 13 - 5 08 51 13 - 2 ALUMINUM WINDOWS Where surfaces are separated by reveal or protruding element from 1/2 to 1 inch wide, limit offset PART 3 - EXECUTION Where surfaces are separated by reveal or protruding element of 1 inch wide or greater, limit offset EXAMINATION A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for Location: Limit variation from plane to 1/8 inch in 12 feet; 1/2 inch over total length. compliance with requirements for installation tolerances and other conditions affecting performance of the Work. Verify rough opening dimensions, levelness of sill plate, and operational clearances. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure Testing Agency: Owner to engage a qualified independent testing and inspecting agency to perform field tests weathertight window installation Proceed with installation only after unsatisfactory conditions have been corrected. Testing Services: Testing and inspecting of representative areas to determine compliance of installed system with specified requirements shall take place as follows and in successive stages as indicated on Drawings. Do not proceed with installation of the next area until test results for previously completed areas show compliance A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112. 1. Air Infiltration: Areas shall be tested for air leakage of 1.5 times the rate specified under Part 1 B. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored Performance Requirements" Article, but not more than 0.09 cfm/sq, ft., of fixed wall area when tested securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to according to ASTM E 783 at a minimum static-air-pressure differential of 1.57 lbf/sq. ft.. Water Penetration: Areas shall be tested according to ASTM E 1105 at minimum uniform and cyclic Install windows and components to drain condensation, water penetrating joints, and moisture migrating within static-air-pressure difference of 0.67 times the pressure specified under Part 1 "Performance windows to the exterior. Requirements" Article, but not less than 6.24 lbf/sq. ft. and shall not evidence water penetration. D. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of Water Spray Test: After the installation of minimum area of 75-feet-by-2-story glazed aluminum curtaincontact with other materials. wall system has been completed but before installation of interior finishes has begun, a 2-bay area of Prepare test and inspection reports. system designated by Architect shall be tested according to AAMA 501.2 and shall not evidence water END OF SECTION 08 51 13 4. Water Spray Test: Before installation of interior finishes has begun, areas designated by Architect shall be tested according to AAMA 501.2 and shall not evidence water penetration. Test Area: A minimum area of 75 feet by three story of glazed aluminum curtain wall. Repair or remove work where test results and inspections indicate that it does not comply with specified Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of 08 44 13 - 6 ALUMINUM WINDOWS 08 51 13 - 3 SECTION 08 71 00 - DOOR HARDWARE PART 1 - GENERAL Drawings and general provisions of the Contract, including General and Supplementary Conditions and other A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section. This Section includes the following: Commercial door hardware. Cylinders for doors specified in other Sections. Electrified door hardware. Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation. Shop Drawings: Include details of electrified door hardware and wiring diagrams. B. Product Schedule: For aluminum windows. Use same designations indicated on Drawings. Door Hardware Schedule: Organized into door hardware sets indicating type, style, function, size, label, hand, manufacturer, fasteners, location, degree of opening, and finish of each door hardware item. Include description of each electrified door hardware function, wiring diagrams and sequence of operation. Keying Schedule: Detail Owner's final keying instructions for locks in the form of a schematic. Product Test Reports: For each type of aluminum window, for tests performed by a qualified testing agency. Field quality-control reports. QUALITY ASSURANCE Sample Warranties: For manufacturer's warranties. Supplier Qualifications Person who is or employs a qualified DHI Architectural Hardware Consultant. Shall have supplied jobs of similar size and value. Manufacturer's Warranty: Manufacturer agrees to repair or replace aluminum windows that fail in materials or Shall have been in the business of supplying finish hardware for a minimum of five years. workmanship within specified warranty period. Source Limitations: Obtain electrified door hardware from same manufacturer as mechanical door hardware, Failures include, but are not limited to, the following: unless otherwise indicated. Manufacturers that are listed to perform electrical modifications, by a testing and Failure to meet performance requirements inspecting agency acceptable to authorities having jurisdiction, are acceptable. Structural failures including excessive deflection, water leakage, condensation, and air infiltration. Keying Conference: Conduct conference at Project site. Incorporate keying conference decisions into final keying Faulty operation of movable sash and hardware schedule. Submit schematic to manufacturer at time of order. Deterioration of materials and finishes beyond normal weathering. Pre-installation Conference: Conduct conference at Project site. Failure of insulating glass. Keys: All keys shall be labeled and copy of finalized schematic delivered to owner by registered mail. Warranty Period: Templates: Obtain and distribute templates for doors, frames, finish hardware and other work specified to be

factory prepared for installing door hardware.

hardware item indicated in Door Hardware Sets.

WARRANTY

PART 2 - PRODUCTS

MANUFACTURERS

2.2 DOOR HARDWARE

DOOR HARDWARE

Standards: Comply with RHMA A156 series standards. Grade 1. unless Grade 2 is indicated.

Certified Products: Provide door hardware that is listed in BHMA directory of certified products.

Warranty Period for Manual Closers: 10 years from date of Substantial Completion.

Basis-of-Design Product: Product named for each door hardware item indicated in Door Hardware Sets

establishes the basis of design. Provide either the named product or a comparable product meeting this

08 71 00 - 1

of door hardware that fail in materials or workmanship within warranty period.

Warranty Period for Locks: Five years from date of Substantial Completion

specification by one of the manufacturers specified for each type of hardware item.

buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and

Corbin Russwin Architectural Hardware. (RU). Sargent Manufacturing Company (SA). Schlage Lock Company; an Ingersoll-Rand Company (SCH). Lockset shall meet ANSI A156. 2 Grade 1. Lockset Design: Lustra by Corbin Russwin (Basis of Design). Dummy Trim: Lever, trim and finish shall match lockset design. Latch bolts shall have a mechanical anti-friction latches. Lock Throw: Comply with labeled fire door requirements. Backset: 2-3/4 inches, unless otherwise indicated. Fire-Rated Doors: Comply with labeled fire door requirements. Flush Bolts: BHMA Grade 1, unless Grade 2 is indicated, designed for mortising into door edge. Manufacturers: DOOR HARDWARE Glynn-Johnson; an Allegion Company (GJ). Rockwood Manufacturing Company (RM). Trimco, Inc. (TR). d. Or equal. EXIT DEVICES Manufacturers: Corbin Russwin Architectural Hardware Inc. (RU). ED-5000 Series Sargent Manufacturing Company (SA).80 Series. Von Duprin; an Allegion Company (VD), 98 Series according to UL 305 and NFPA 252 Shall meet ANSI A156.3, Grade 1. All exposed metal shall be in BHMA 630 Outside operating trim shall be through-bolted with concealed fasteners. Dummy Push Bar: Nonfunctioning push bar matching functional push bar. OPERATING TRIM A. Push-Pull Design: As scheduled. Baldwin Hardware Corporation (BH). Don-Jo Mfg., Inc. (DJO). Hager Companies (HAG HEWI, Inc. (HEW). Hiawatha, Inc. (HIA). Rockwood Manufacturing Company (RO). Stanley Commercial Hardware; Div. of The Stanley Works (STH). Trimco, Inc. (TR). 2.8 ACCESSORIES FOR PAIRS OF DOORS Coordinators: BHMA A156.3. Manufacturers: Door Controls International (DCI). Glynn-Johnson; an Ingersoll-Rand Company (GJ). Hager Companies (HAG) Rockwood Manufacturing Company (RO). e. Trimco, Inc. (TR). B. Removable Mullions: BHMA A156.3. Manufacturers Corbin Russwin Architectural Hardware Inc. (RU). Precision Hardware, Inc. (PH). Von Duprin; an Ingersoll-Rand Company (VD). devices for which they have been tested. CLOSERS Shall be certified ANSI A156.4 Grade 1. Surface-Mounted Closers: Shall have full covers. DOOR HARDWARE Manufacturers: Corbin Russwin Architectural Hardware, Inc. (RU) DC-6000 Series. LCN Closers; an Allegion Company (LCN) 4040XP Series. Norton Door Controls, Inc. (NO) 7500 Series. C. Closer Holder Release Devices: BHMA A156.15. Manufacturers: Corbin Russwin Architectural Hardware, Inc. (RU). LCN Closers; an Ingersoll-Rand Company (LCN). Rixson-Firemark, Inc. (RF). Provide extended closer spindle to accommodate thickness of floor finish. 2.10 PROTECTIVE TRIM UNITS Shall be beveled on four sides. Material: Metal. Fasten to door using fasteners provided by manufacturer. Manufacturers: Baldwin Hardware Corporation (BH). Don-Jo Mfg., Inc. (DJO). Hager Companies (HAG) Rockwood Manufacturing Company (RO). Trimco, Inc. (TR). 2.11 STOPS AND HOLDERS doors, walls or finish hardware from damage. Oversized floor stops are only permitted for exterior doors. Closer stop arms are only permitted if specified in hardware set. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components Manufacturers: Baldwin Hardware Corporation (BH). Door Controls International (DCI) Glynn-Johnson; an Ingersoll-Rand Company (GJ). Hager Companies (HAG). Rixson-Firemark, Inc. (RF). Rockwood Manufacturing (RO) Trimco, Inc. (TR). Silencers for Door Frames: Neoprene or rubber; fabricated for drilled-in application to frame. Product: Subject to compliance with code and function requirements, provide the product named for each door 2.12 DOOR GASKETING AND THRESHOLDS

and elsewhere as indicated.

Gasketing:

Hager Companies (HAG).

Manufacturers:

DOOR HARDWARE

Hinge Base Metal: Unless otherwise indicated, provide the following: Exterior Hinges: Stainless steel, with stainless-steel pin; unless otherwise scheduled. Hinges for Fire-Rated Assemblies: Steel, with steel pin. Non-removable Pins: Provide set screw in hinge barrel that prevents removal of pin while door is closed; Screws: Phillips flat-head screws; screw heads finished to match surface of hinges. Metal Doors and Frames: Machine screws (drilled and tapped holes). Wood Doors and Frames: Wood screws. Fire-Rated Wood Doors: Threaded-to-the-head wood screws 08 71 00 - 2 Panic Exit Devices: Shall be listed and labeled for panic protection, based on testing according to UL 305. Fire Exit Devices: Shall complying with NFPA 80, listed and labeled for fire and panic protection, based on testing 1. Carry-Open Bars: Where a coordinator is specified, provide carry-open bars for inactive leaves of pairs of Sargent Manufacturing Company; As ASSA ABLOY Company (SGT). Fire-Exit Removable Mullions: Complying with NFPA 80 that are listed and labeled for fire and panic protection, based on testing according to UL 305 and NFPA 252. Mullions shall be used only with exit Shall have multi sized spring power adjustment for sizes 2 thru 6 or 1thru 4 for barrier free applications. a. Where specified supply Unitrol (UNI) type with spring stop and backcheck at 65 degrees. In lieu of Unitrol type stop arm provide rigid parallel arm with an auxiliary overhead stop. Overhead stop to be an 8HD type. Provide arm bracket to coordinate overhead stop with door closer. 08 71 00 - 3 Where specified provide Closer Plus Spring Arm (CPS). In lieu of Closer Plus Spring Arm provide Provide soffit plate for parallel arm applications using aluminum frames with blade stops or snap on stops. 1 Mullion Exit Device Exit Device 2 Cylinder Recessed Floor Plates: Provide insert of floor finish material for floor closers, unless thresholds are indicated. Electric Strike Size of Units: Multi-sized, adjustable to meet field conditions and requirements for opening force. 2 Offset Pull A. Protective Trim Units: Sized 2 inchesless than door width on push side and 1 inch less than door width on pull Threshold side, by height scheduled or indicated. Plates to be applied 1/2" from bottom of door to bottom of plate and centered Card Reader All doors shall have a doorstop that effectively protects any and all doors, walls and finish hardware that comes into contact with the operation of the function of the door. Wall stops are the preferred method. Provide sufficient blocking and reinforcement for secure installation and operation of all stops and holders. Overhead stops shall be provided where noted in hardware sets or if wall stop can not stop and protect the 1 Mullion Exit Device 1 Exit Device 2 Cylinder 2 Offset Pull 1 Threshold Mullion Gasketing Door Gasketing: Provide continuous weather-strip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated or scheduled. Provide non-corrosive fasteners for exterior applications National Guard Products, Inc. (NGP). Pemko Manufacturing Co., Inc. (PE). DOOR HARDWARE 08 71 00 - 4

Scheduled Door Hardware: Provide door hardware according to Door Hardware Sets at the end of Part 3.

General: Except for hinges to be installed entirely (both leaves) into wood doors and frames, provide only

Butt Hinges: Two hinges for every door up to 60". One additional hinge for every additional 30" of

Butt Hinges: Shall meet manufactures requirements for size based on door weight and width.

5. Anti friction butt hinges shall be used on any door with a closer or overhead stop. Heavy weight hinges shall

be used in accordance with manufacture's recommendations for door weight.

Manufacturers' names are abbreviated

Baldwin Hardware Corporation (BH)

McKinney Products Company. (MC).

Bommer Industries, Inc. (BI).

Lawrence Hardware Inc. (LHI).

Stanley: a Dormakaba company.

Hager Companies (HAG).

Gallery Hinge Co. (GAL)

Hagar Companies (HAG)

Markar Products, Inc. (MAR)

Continuous Hinges shall comply with ANSI 156.26.

Shall be full mortised unless indicated in hardware sets.

Interior Hinges: Steel, with steel pin.

Continuous: Shall be the exact size height of the door.

b. Continuous Pin and Barrel Hinge:

Butt hinges shall comply with ANSI 156.1

b. Continuous: One hinge per door.

template-produced units.

door height.

for outswinging exterior doors

MECHANICAL LOCKS AND LATCHES

Manufacturers

Manufacturers:

labeled for use with fire alarm systems. 2.14 CYLINDERS, KEYING, AND STRIKES Set: 4.0 Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver. Manufacturer of cylinders shall be the same as lock manufacturer supplied. T4A3386 x NRP US32D Exit Device 6100ED 121NL 630 Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without Cylinder AS REQUIRED 630 cylinder removal. Provide 10 construction master keys. Keying System: Factory-registered keying system; grand master key system. Offset Pull RM201 x MTG 12XHD US32D Keys: Provide nickel-silver keys permanently inscribed with a visual key control number and "DO NOT 689 Surface Closer CPS7500 DUPLICATE" notation. In addition to one extra blank key for each lock, provide three change keys and five Kick Plate K1050 8" high CSK US32D master and grand master keys. Threshold Key Control System: Include key-holding hooks, labels, key tags with self-locking key holders, envelopes, and markers. Contain system in wall-mounted type metal cabinet with baked-enamel finish. Include cross-index Set Weatherstrip 303AS system set up by key control manufacturer, with card index. 346C Rain Guard Manufacturers: 3452CNB Door Bottom Sweep Key Control Systems, Inc. (KCS). Major Metalfab Co. (MM). Sunroc Corporation (SUN). Strikes: Manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set. Base Metals: Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18 for finishes. Do not furnish manufacturer's standard materials if different from specified standard. Fasteners: Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated. Provide steel machine or wood screws or steel through bolts for fire-rated applications. Spacers or Sex Bolts: For through bolting of hollow metal doors. DOOR HARDWARE 08 71 00 - 5 DOOR HARDWARE 08 71 00 - 8 Fasteners for Wood Doors: Comply with requirements of DHI WDHS.2, "Recommended Fasteners for Wood Set: 5.0 E. Finishes: Comply with BHMA A156.18. T4A3386 x NRP US32D Hinge 1 Mullion KRM200 600 Exit Device 6100ED 121NL 630 PART 3 - EXECUTION Exit Device 6100ED EO 630 AS REQUIRED 630 2 Cylinder Examine doors and frames for compliance with requirements for installation tolerances, labeled fire door assembly RM201 x MTG 12XHD US32D 2 Offset Pull construction, wall and floor construction, and other conditions affecting performance. Examine roughing-in for 689 electrical power systems to verify actual locations of wiring connections before electrified door hardware 2 Surface Closer CPS7500 2 Kick Plate K1050 8" high CSK US32D Steel Door and Frame Preparation: Comply with DHI A115 series. Drill and tap doors and frames for surface- Threshold applied hardware according to SDI 107. 303AS Set Weatherstrip Wood Door Preparation: Comply with DHI A115-W series. 346C Hardware Installation: Shall be in accordance to manufactures instructions. Rain Guard Mounting Heights: Comply with the following requirements, unless otherwise indicated: 5110BL Mullion Gasketing Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for 3452CNB 2 Door Bottom Sweep Standard Steel Doors and Frames.' Custom Steel Doors and Frames: DHI's "Recommended Locations for Builders' Hardware for Custom Steel Set: 6.0 Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors." Miscellaneous Accessories: Shall be provided as necessary for the proper and secure attachment of all hardware T4A3386 x NRP US32D to doors and frames. Storeroom Lock AU 4705LN 626 Adjust and reinforce attachment substrates as necessary for proper installation and operation. Drill and tap units that are not factory prepared for fasteners. Space fasteners and anchors according to industry standards. Surface Closer CPS7500 689 Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with Kick Plate K1050 8" high CSK US32D requirements specified in Division 7 Section "Joint Sealants." 1 Threshold 2005AT Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply Set Weatherstrip 303AS with accessibility requirements. Door Closers Adjustments: 346C Rain Guard a. Adjust sweep period so that from an open position of 70 degrees, the door will take at least three 1 Door Bottom Sweep 3452CNB seconds to move to a point 3 inches from the latch, measured to the leading edge of the door. Adjust back-check to slow the door opening at about 75 degrees, when door is forcibly opened Set: 7.0 3.2 FIELD QUALITY CONTROL 2 Continuous Hinge FM100 628 Inspections: Owner will engage a qualified independent Architectural Hardware Consultant to perform inspections KRM200 1 Mullion 600 and to prepare inspection reports. Exit Device 6100ED 121NL 630 3.3 HARDWARE SETS Exit Device 6100ED EO 630 2 Cylinder AS REQUIRED 630 ABBREVIATIONS: 1 Electric Strike 9600-LBM 630 MK - McKinney SMART Pac Bridge Rectifier MR - Markar 2 Offset Pull RM201 x MTG 12XHD US32D 3. RO - Rockwood 2 Surface Closer UNI8501 x BRKTS REQ'D 689 YA - Yale Mullion Gasketing 5110BL 5. HS - HES Set Door Seals BY DOOR MANUFACTURER RF - Rixson QC-C000P x LAR 1 ElectroLynx Harness NO - Norton Wiring Diagram WD-SYSPK 8. PE - Pemko 1 Card Reader FURNISHED IN OTHER SECTION 9. OT - Other 2 Door Position Switch DPS-M-BK AK - Alarm Controls AQD AS REQUIRED Power Supply SU - Securitron 08 71 00 - 9 DOOR HARDWARE DOOR HARDWARE 08 71 00 - 6 OPERATION: DOORS NORMALLY CLOSED AND LOCKED. PRESENTATION OF AUTHORIZED CREDENTIAL RELEASES ELECTRIC STRIKE AND ALLOWS INGRESS. EGRESS BY EXIT DEVICE PUSH BAR AT ALL TIMES. Hardware Sets Set: 8.0 Set: 1.0 2 Continuous Hinge FM100 628 FM100 628 2 Continuous Hinge KRM200 600 KRM200 600 1 Exit Device 6100ED 121NL 630 6100ED 121NL 630 Exit Device 6100ED EO 630 6100ED EO 630 AS REQUIRED 2 Cylinder 630 AS REQUIRED 630 RM201 x MTG 12XHD US32D Offset Pull 9600-LBM 630 SMART Pac Bridge Rectifier UNI8501 x BRKTS REQ'D 2 Surface Closer 689 2005M3 US32D Mullion Gasketing 5110BL RM201 x MTG 12XHD Set Door Seals BY DOOR MANUFACTURER UNI7500 x BRTKS REQ'D 2 Surface Closer 689 Set: 9.0 Set Weatherstrip BY DOOR MANUFACTURER Mullion Gasketing 5110BL Continuous Hinge FM100 1 ElectroLynx Harness QC-C000P x LAR 1 Storeroom Lock AU 4705LN 626 Wiring Diagram WD-SYSPK Electric Strike 1006-LBM 630 FURNISHED IN OTHER SECTION SMART Pac Bridge Rectifier 2005M3 2 Door Position Switch DPS-M-BK Surface Closer UNI8501 x BRKTS REQ'D Power Supply AQD AS REQUIRED BY DOOR MANUFACTURER Set Door Seals QC-C1500P (@ JAMB) 1 ElectroLynx Harness OPERATION: DOORS NORMALLY CLOSED AND LOCKED. PRESENTATION OF AUTHORIZED CREDENTIAL RELEASES ELECTRIC STRIKE AND ALLOWS INGRESS. EGRESS BY EXIT DEVICE PUSH BAR AT ALL TIMES. Wiring Diagram WD-SYSPK 1 Card Reader FURNISHED IN OTHER SECTION Door Release TS-18 Door Position Switch DPS-M-BK AQD AS REQUIRED Power Supply OPERATION: DOOR NORMALLY CLOSED AND LOCKED. PRESENTATION OF AUTHORIZED CREDENTIAL OR FM100 628 2 Continuous Hinge INPUT FROM DOOR RELEASE SWITCH RELEASES ELECTRIC STRIKE AND ALLOWS INGRESS. EGRESS BY KRM200 600 INSIDE LEVER AT ALL TIMES. 6100ED 121NL 630 YA 6100ED EO 630 YA AS REQUIRED 630 YA Set: 10.0 RM201 x MTG 12XHD US32D UNI7500 x BRTKS REQ'D 689 2 Surface Closer US26D 171A 1 Mullion KRM200 600 BY DOOR MANUFACTURER Set Weatherstrip 2 Exit Device 6100 AU626F 5110BL

Reese Enterprises, Inc. (RE).

Sealeze Corporation (SEL).

Hager Companies (HAG).

Reese Enterprises, Inc. (RE)

Sealeze Corporation (SEL).

National Guard Products, Inc. (NGP)

Pemko Manufacturing Co., Inc. (PE).

Gasketing Materials: Comply with ASTM D 2000 and AAMA 701/702.

Ultra Industries; a Macklanburg-Duncan Company (ULT).

Ultra Industries; a Macklanburg-Duncan Company (ULT).

2. Air Leakage: Not to exceed 0.50 cfm per footof crack length for gasketing other than for smoke control, as

Smoke-Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled, based on

Fire-Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled, based on testing

Sound-Rated Gasketing: Assemblies that are listed and labeled, based on testing according to ASTM E

Boxed Power Supplies: Modular unit in NEMA ICS 6, Type 4 enclosure; filtered and regulated; and listed and

Door Bottoms:

tested according to ASTM E 283.

according to UL 10C or NFPA 252.

testing according to UL 1784.

Thresholds: Of type scheduled or indicated.

Hager Companies (HAG).

National Guard Products, Inc. (NGP).

Pemko Manufacturing Co., Inc. (PE).

Reese Enterprises, Inc. (RE).

Rixson-Firemark, Inc. (RF).

Zero International, Inc. (ZRO).

Manufacturers:

2.13 MISCELLANEOUS DOOR HARDWARE



Set: 3.0

T4A3386 x NRP

6100ED 121NL

AS REQUIRED

K1050 8" high CSK

6100ED EO

9600-LBM

2005M3

CPS7500

2005AT

303AS

346C

5110BL

3452CNB

WD-SYSPK

DPS-M-BK

OPERATION: DOORS NORMALLY CLOSED AND LOCKED. PRESENTATION OF AUTHORIZED CREDENTIAL

RELEASES ELECTRIC STRIKE AND ALLOWS INGRESS. EGRESS BY EXIT DEVICE PUSH BAR AT ALL TIMES.

QC-C000P x LAR

AQD AS REQUIRED

FURNISHED IN OTHER SECTION

KRM200

1 Mullion

Exit Device

Exit Device

Electric Strike

2 Surface Closer

Set Weatherstrip

Mullion Gasketing

2 Door Bottom Sweep

Wiring Diagram

1 Card Reader

Power Supply

1 ElectroLynx Harness

2 Door Position Switch

2 Kick Plate

Threshold

Rain Guard

SMART Pac Bridge Rectifier

2 Cylinder

US32D

600

630

630

630

630

689

US32D

NO

YA

YA

YA

YA

RO

NO

NO

RO

YA

YA

YA

YA

YA

YA

YA

YA

RO

NO

YA

YA

NO

630

08 71 00 - 10

US32D

AS REQUIRED

K1050 8" high CSK

S88D/608 AS REQUIRED

CPS8501

5110BL

3 Cylinder

2 Surface Closer

Mullion Gasketing

DOOR HARDWARE

08 71 00 - 7

Set Door Seals/Silencers

2 Kick Plate



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FRANKLIN COUNTY BLDG SUBMISSION

NO. REASON 3 CONSTRUCTION 04/03/2023 DOCUMENTS BID SET

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

SPECIFICATIONS

Set: 14.0 TA2714 US26D AU 4708LN 1 Classroom Lock 626 YA US26D RO Door Stop 409/441CU Set Door Seals/Silencers S88D/608 AS REQUIRED Set: 15.0 TA2714 US26D 1 Classroom Lock AU 4708LN 626 YA 409/441CU US26D RO Door Stop S773D Set Door Seals Door Bottom 411ARL 08 71 00 - 11 DOOR HARDWARE Set: 16.0 TA2714 US26D AU 4708LN 626 1 Classroom Lock YA Surface Closer 8501 689 NO Kick Plate K1050 8" high CSK US32D RO Door Stop 409/441CU US26D 1 Set Door Seals/Silencers S88D/608 AS REQUIRED Set: 17.0 TA2714 US26D 1 Storeroom Lock AU 4705LN 626 YA US26D Door Stop 409/441CU S88D/608 AS REQUIRED Set Door Seals/Silencers Set: 18.0 TA2714 US26D AU 4705LN 626 Storeroom Lock YA Surface Closer 689 NO K1050 8" high CSK US32D Kick Plate RO 1 Door Stop 409/441CU US26D RO Set Door Seals/Silencers S88D/608 AS REQUIRED Set: 19.0 TA2714 US26D 1 Storeroom Lock AU 4705LN 626 YA PR8501 689 NO Surface Closer K1050 8" high CSK US32D RO Kick Plate Door Stop 409/441CU US26D RO Set Door Seals/Silencers S88D/608 AS REQUIRED Set: 20.0 TA2714 US26D US26D 2 Flush Bolt 555/557 RO US26D Dust Proof Strike 570 RO 626 1 Storeroom Lock AU 4705LN YA 2 Overhead Stop 10 SERIES 689 RF Set Door Seals/Silencers S88D/608 AS REQUIRED PE DOOR HARDWARE 08 71 00 - 12 Set: 21.0 TA2714 US26D MK US32D RO Push Plate Pull Plate BF 111x70C US32D RO Surface Closer 689 NO 8501 Kick Plate K1050 8" high CSK US32D RO Door Stop 409/441CU US26D RO S88D/608 AS REQUIRED 1 Set Door Seals/Silencers END OF SECTION 08 71 00 DOOR HARDWARE 08 71 00 - 13

Set: 11.0

AUR 8802FL V21

US26D

YA

NO

626

689

TA2714

8501

Privacy Lock

Surface Closer

 Drawings and general provisions of the Contract, including General and Supplementary Conditions and other US32D RO Kick Plate K1050 8" high CSK Division 01 Specification Sections, apply to this Section. Door Stop 409/441CU US26D RO 1 Set Door Seals/Silencers S88D/608 AS REQUIRED 1.2 SUMMARY A. Section includes: Windows. Set: 12.0 Interior borrowed lites in hollow metal frames TA2714 US26D Storefront framing. Hotel Lock AUR 8820FL V21 626 YA Glazing sealants and accessories. Surface Closer 8501 689 NO US32D Kick Plate K1050 8" high CSK RO Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, 409/441CU US26D RO Door Stop and adequate sealant thicknesses, with reasonable tolerances. S88D/608 AS REQUIRED Set Door Seals/Silencers 1.4 ACTION SUBMITTALS A. Glazing Accessory Samples: For sealants, in 12-inch lengths. Install sealant Samples between two strips of Set: 13.0 material representative in color of the adjoining framing system. B. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations TA2714 US26D Delegated-Design Submittal: For glass indicated to comply with performance requirements and design criteria, Office Lock AU 4707LN 626 YA including analysis data signed and sealed by the qualified professional engineer responsible for their Door Stop 409/441CU US26D RO 1 Set Door Seals/Silencers S88D/608 AS REQUIRED 1.5 INFORMATIONAL SUBMITTALS Qualification Data: For Installer. Product Certificates: For glass Product Test Reports: For insulating glass and glazing sealants, for tests performed by a qualified testing For glazing sealants, provide test reports based on testing current sealant formulations within previous 36-month period. Preconstruction adhesion and compatibility test report. Sample Warranties: For special warranties. 1.6 QUALITY ASSURANCE Installer Qualifications: A qualified installer who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program. Glass Testing Agency Qualifications: A qualified independent testing agency accredited according to the NFRC CAP 1 Certification Agency Program. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to 1.7 PRECONSTRUCTION TESTING A. Preconstruction Adhesion and Compatibility Testing: Test each glass product, tape sealant, gasket, glazing accessory, and glass-framing member for adhesion to and compatibility with elastomeric glazing sealants. 1.8 DELIVERY, STORAGE, AND HANDLING A. Protect glazing materials according to manufacturer's written instructions. Prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes. B. Comply with insulating-glass manufacturer's written instructions for venting and sealing units to avoid hermetic seal ruptures due to altitude change. GLAZING 08 80 00 - 1 WARRANTY Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass. Warranty Period: 10 years from date of Substantial Completion. PART 2 - PRODUCTS MANUFACTURERS In other Part 2 articles where titles helpy introduce lists, the following requirements apply to product selection: Products: Subject to compliance with requirements, provide products by one of the following Guardian Industries Corp. Vitro Architectural Glass c. AGC Glass North America. PERFORMANCE REQUIREMENTS General: Installed glazing systems shall withstand normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction. Structural Performance: Glazing shall withstand the following design loads within limits and under conditions indicated determined according to the IBC and ASTM E 1300. Design Wind Pressures: As indicated on Drawings. Maximum Lateral Deflection: For glass supported on all four edges, limit center-of-glass deflection at design wind pressure to not more than 1/50 times the short-side length or 1 inch, whichever is less. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below: For monolithic-glass lites, properties are based on units with lites 6 mm thick. For laminated-glass lites, properties are based on products of construction indicated. For insulating-glass units, properties are based on units of thickness indicated for overall unit and for U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 5.2 computer program, expressed as Btu/sq. ft. x h x deg F. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program. Visible Reflectance: Center-of-glazing values, according to NFRC 300. GLASS PRODUCTS, GENERAL Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC. D. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass that complies with performance requirements and is not less than the thickness indicated. Strength: Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where heatstrengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where fully tempered float glass is indicated, provide fully tempered float glass. GLASS PRODUCTS Clear Annealed Float Glass: ASTM C 1036, Type I, Class 1 (clear), Quality-Q3. 08 80 00 - 2

SECTION 08 80 00 - GLAZING

PART 1 - GENERAL

tape, use thickness slightly less than final compressed thickness of tape. G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics. Set glass lites with proper orientation so that coatings face exterior or interior as specified. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement. K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer. MONOLITHIC GLASS SCHEDULE Glass Type: Clear heat-strengthened or fully tempered float glass as indicated or required. Minimum Thickness: 6 mm. Safety glazing required. LAMINATED GLASS SCHEDULE Glass Type: Clear laminated glass with two plies of fully tempered float glass. Minimum Thickness of Each Glass Ply: 3 mm. Interlayer Thickness: 0.030 inch. Safety glazing required. INSULATING GLASS SCHEDULE A. Glass Type: Low-E-coated, clear insulating glass Basis-of-Design Product: Guardian SNX 62/27 UltraClear Overall Unit Thickness: 1 inch. GLAZING Minimum Thickness of Each Glass Lite: 6 mm. Outdoor Lite: Tempered float glass. Interspace Content: Air. Indoor Lite: Fully tempered float glass, clear. Low-E Coating: Sputtered on second surface. Winter Nighttime U-Factor: 0.24 maximum. Summer Daytime U-Factor: 0.21 maximum. Visible Light Transmittance: 64 percent minimum Solar Heat Gain Coefficient: 0.26 maximum. Safety glazing as required END OF SECTION 08 80 00

B. Clean-cut or flat-grind vertical edges of butt-glazed monolithic lites to produce square edges with slight chamfers

Examine framing, glazing channels, and stops, with Installer present, for compliance with the following:

Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.

Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing

materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

Protect glass edges from damage during handling and installation. Remove damaged glass from Project site

Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction

D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless

and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections

otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size

Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing

and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have

demonstrated ability to maintain required face clearances and to comply with system performance

08 80 00 - 4

at junctions of edges and faces.

PART 3 - EXECUTION

EXAMINATION

GLAZING, GENERAL

Grind smooth and polish exposed glass edges and corners.

Presence and functioning of weep systems.

Minimum required face and edge clearances.

Effective sealing between joints of glass-framing members.

Proceed with installation only after unsatisfactory conditions have been corrected.

that, when installed, could weaken glass, impair performance, or impair appearance.

Provide spacers for glass lites where length plus width is larger than 50 inches.

Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

LOUVERS AND VENTS 08 80 00 - 5

Screen Location for Fixed Louvers: Interior face. Screening Type: Insect screening. Secure screen frames to louver frames with stainless-steel machine screws, spaced a maximum of 6 inchesfrom each corner and at 12 incheso.c. Louver Screen Frames: Fabricate with mitered corners to louver sizes indicated. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Metal: Same type and form of metal as indicated for louver to which screens are attached. Reinforce extruded-aluminum screen frames at corners with clips. Finish: Same finish as louver frames to which louver screens are attached.

 Section includes the following types of silvered flat glass mirrors annealed monolithic glass mirrors. ACTION SUBMITTALS Shop Drawings: Include mirror elevations, edge details, mirror hardware, and attachments to other work.

1.4 DELIVERY, STORAGE, AND HANDLING A. Protect mirrors according to mirror manufacturer's written instructions and as needed to prevent damage to mirrors from moisture, condensation, temperature changes, direct exposure to sun, or other causes. Comply with mirror manufacturer's written instructions for shipping, storing, and handling mirrors as needed to prevent deterioration of silvering, damage to edges, and abrasion of glass surfaces and applied coatings. Store

WARRANTY Special Warranty: Manufacturer's standard form in which mirror manufacturer agrees to replace mirrors that deteriorate within specified warranty period. Deterioration of mirrors is defined as defects developed from normal use that are not attributed to mirror breakage or to maintaining and cleaning mirrors contrary to manufacturer's written instructions. Defects include discoloration, black spots, and clouding of the silver film.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

Subpart D (EPA Method 24).

GLAZING

SECTION 08 83 00 - MIRRORS

Division 01 Specification Sections, apply to this Section.

PART 1 - GENERAL

2.1 SILVERED FLAT GLASS MIRRORS Glass Mirrors, General: ASTM C 1503; manufactured using copper-free, low-lead mirror coating process. B. Clear Glass: Mirror Select Quality; ultraclear (low-iron) float glass with a minimum 91 percent visible light Nominal Thickness: 6.0 mm.

MISCELLANEOUS MATERIALS Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5. Edge Sealer: Coating compatible with glass coating and approved by mirror manufacturer for use in protecting against silver deterioration at mirrored glass edges. Mirror Mastic: An adhesive setting compound, asbestos-free, produced specifically for setting mirrors and certified by both mirror manufacturer and mastic manufacturer as compatible with glass coating and substrates on which mirrors will be installed.

A. Top and Bottom Aluminum J-Channels for Full Length Mirrors: Aluminum extrusions with a return deep enough to produce a glazing channel to accommodate mirrors of thickness indicated and in lengths required to cover bottom and top edges of each mirror in a single piece. 1. Bottom Trim: J-channels formed with front leg and back leg not less than 3/8 and 7/8 inch in height, respectively, and a thickness of not less than 0.05 inch.

Top Trim: J-channels formed with front leg and back leg not less than 5/8 and 1 inch in height, espectively, and a thickness of not less than 0.062 inch. Finish: Clear bright anodized.

Adhesive shall have a VOC content of not more than 70 g/L when calculated according to 40 CFR 59,

B. Fasteners: Fabricated of same basic metal and alloy as fastened metal and matching it in finished color and texture where fasteners are exposed Anchors and Inserts: Provide devices as required for mirror hardware installation. Provide toothed or lead-

shield expansion-bolt devices for drilled-in-place anchors. Provide galvanized anchors and inserts for applications on inside face of exterior walls and where indicated FABRICATION Mirror Sizes: To suit Project conditions, cut mirrors to final sizes and shapes.

Cutouts: Fabricate cutouts for notches and holes in mirrors without marring visible surfaces. Locate and size cutouts so they fit closely around penetrations in mirrors. Mirror Edge Treatment: Beveled. 1. Seal edges of mirrors with edge sealer after edge treatment to prevent chemical or atmospheric

penetration of glass coating. Require mirror manufacturer to perform edge treatment and sealing in factory immediately after cutting to

PART 3 - EXECUTION

MIRRORS

PART 1 - GENERAL

SECTION 08 90 00 - LOUVERS AND VENTS

Division 01 Specification Sections, apply to this Section.

other work. Show frame profiles and blade profiles, angles, and spacing.

and showing compliance with performance requirements specified.

AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."

Welding Qualifications: Qualify procedures and personnel according to the following:

engineer, using structural performance requirements and design criteria indicated.

Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

A. Section includes fixed, extruded-aluminum louvers.

Show mullion profiles and locations.

same type, design, or factory-applied color finish.

fabrication, construction details, and installation procedures.

Airolite Company, LLC (The).

Blade Profile: Chevron-shaped blade.

General: Provide screen at each exterior louver.

Type: Non-rewirable, U-shaped frames.

recommended by metal producer for required finish.

conducted by a qualified independent testing agency.

designed to permit expansion and contraction.

Provide subsills made of same material as louvers for recessed louvers.

surfaces to comply with coating and resin manufacturers' written instructions.

Color and Gloss: As selected by Architect from manufacturer's full range.

Bird Screening: Aluminum, 1/2-inch-square mesh, 0.063-inch wire.

Aluminum Extrusions: ASTM B 221, Alloy 6063-T5, T-52, or T6.

Fasteners: Use types and sizes to suit unit installation conditions.

D. Louver Screening for Aluminum Louvers:

produce uniform appearance.

or 72 incheso.c., whichever is less.

mullions at corners.

ALUMINUM FINISHES

LOUVERS AND VENTS

Finish louvers after assembly

AMCA Seal: Mark units with AMCA Certified Ratings Seal.

Construction Specialties, Inc.

1.1 RELATED DOCUMENTS

SUMMARY

1.3 ACTION SUBMITTALS

1.5 QUALITY ASSURANCE

PART 2 - PRODUCTS

2.1 MANUFACTURERS

1.4 INFORMATIONAL SUBMITTALS

2.2 PERFORMANCE REQUIREMENTS

2.3 FIXED EXTRUDED-ALUMINUM LOUVERS

Louver Depth: 4 inches.

Mullion Type: Exposed.

LOUVER SCREENS

A. Horizontal Drainable-Blade Louver:

Examine substrates, over which mirrors are to be mounted, with Installer present, for compliance with installation tolerances, substrate preparation, and other conditions affecting performance of the Work. Proceed with installation only after unsatisfactory conditions have been corrected and surfaces are dry.

INSTALLATION Provide a minimum air space of 1/8 inch between back of mirrors and mounting surface for air circulation between back of mirrors and face of mounting surface. Wall-Mounted Mirrors: Install mirrors with mastic and mirror hardware. Attach mirror hardware securely to mounting surfaces with mechanical fasteners installed with anchors or inserts as applicable. Install fasteners so heads do not impose point loads on backs of mirrors. Top and Bottom Aluminum J-Channels: Provide setting blocks 1/8 inch thick by 4 inches long at quarter points. To prevent trapping water, provide, between setting blocks, two slotted weeps not less than 1/4

inch wide by 3/8 inch long at bottom channel. 2. Top Channel/Cleat and Bottom Aluminum J-Channels: Fasten J-channel directly to wall and attach top trim to continuous cleat fastened directly to wall. Install mastic as follows: a. Apply barrier coat to mirror backing where approved in writing by manufacturers of mirrors and

08 83 00 - 2

 Apply mastic to comply with mastic manufacturer's written instructions for coverage and to allow air circulation between back of mirrors and face of mounting surface. After mastic is applied, align mirrors and press into place while maintaining a minimum air space of 1/8 inch between back of mirrors and mounting surface. END OF SECTION 08 83 00

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other

Shop Drawings: For louvers and accessories. Include plans, elevations, sections, details, and attachments to

Show weep paths, gaskets, flashing, sealant, and other means of preventing water intrusion.

Product Test Reports: Based on evaluation of comprehensive tests performed according to AMCA 500-L by a

Source Limitations: Obtain louvers from single source from a single manufacturer where indicated to be of

Delegated Design: Design louvers, including comprehensive engineering analysis by a qualified professional

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

Louver Performance Ratings: Provide louvers complying with requirements specified, as demonstrated by

testing manufacturer's stock units identical to those provided, except for length and width according to

SMACNA Standard: Comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" for

Frame and Blade Nominal Thickness: Not less than 0.060 inchfor blades and 0.080 inchfor frames.

Aluminum Sheet: ASTM B 209, Alloy 3003 or 5005 with temper as required for forming, or as otherwise

Postinstalled Fasteners for Concrete and Masonry: Torque-controlled expansion anchors, made from stainless-

steel components, with capability to sustain, without failure, a load equal to 4 times the loads imposed, for concrete, or 6 times the load imposed for masonry, as determined by testing according to ASTM E 488,

Factory assemble louvers to minimize field splicing and assembly. Disassemble units as necessary for shipping

Maintain equal louver blade spacing, including separation between blades and frames at head and sill, to

Provide vertical mullions of type and at spacings indicated, but not more than is recommended by manufacture

Join frame members to each other and to fixed louver blades with fillet welds concealed from view, unless

otherwise indicated or size of louver assembly makes bolted connections between frame members necessary.

High-Performance Organic Finish: Two-coat fluoropolymer finish complying with AAMA 2604 and containing not

less than 50 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal

1. Fully Recessed Mullions: Where indicated, provide mullions fully recessed behind louver blades. Where

length of louver exceeds fabrication and handling limitations, fabricate with close-fitting blade splices

Exterior Corners: Prefabricated corner units with mitered and welded blades and with fully recessed

Fabricate frames, including integral sills, to fit in openings of sizes indicated, with allowances made for

Use tamper-resistant screws for exposed fasteners unless otherwise indicated.

For fastening aluminum, use aluminum or 300 series stainless-steel fasteners

and handling limitations. Clearly mark units for reassembly and coordinated installation.

Include supports, anchorages, and accessories required for complete assembly.

fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints.

Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

For color-finished louvers, use fasteners with heads that match color of louvers.

qualified testing agency or by manufacturer and witnessed by a qualified testing agency, for each type of louver

PART 3 - EXECUTION

during louver installation.

END OF SECTION 08 90 00

EXAMINATION Examine substrates and openings, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION Coordinate setting drawings, diagrams, templates, instructions, and directions for installation of anchorages that

are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site. INSTALLATION

Locate and place louvers level, plumb, and at indicated alignment with adjacent work. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection. Form closely fitted joints with exposed connections accurately located and secured. Provide perimeter reveals and openings of uniform width for sealants and joint fillers, as indicated.

Protect unpainted galvanized- and nonferrous-metal surfaces that are in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a heavy coating of bituminous paint or by separating surfaces with waterproof gaskets or nonmetallic flashing. Install concealed gaskets, flashings, joint fillers, and insulation as louver installation progresses, where weathertight louver joints are required. Comply with Section 07 92 00 "Joint Sealants" for sealants applied

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SECTION 09 21 16 - GYPSUM BOARD SHAFT WALL ASSEMBLIES

PART 1 - GENERAL

LOUVERS AND VENTS

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

SUMMARY A. Section Includes: Gypsum board shaft wall assemblies.

PART 2 - PRODUCTS

PERFORMANCE REQUIREMENTS A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency. STC-Rated Assemblies: Provide materials and construction identical to those of assemblies tested according to ASTM E 90 and classified according to ASTM E 413 by a testing and inspecting agency.

GYPSUM BOARD SHAFT WALL ASSEMBLIES Fire-Resistance Rating: 2 hours.

STC Rating: 51, minimum. Studs: Manufacturer's standard profile for repetitive members, corner and end members, and fire-resistancerated assembly indicated. Depth: As indicated. Minimum Base-Metal Thickness: 0.018 inch.

Runner Tracks: Manufacturer's standard J-profile track with manufacturer's standard long-leg length, but at least 2 inches long and matching studs in depth. Minimum Base-Metal Thickness: 0.018 inch.

08 90 00 - 3

09 21 16 - 1

Firestop Tracks: Provide firestop track at head of shaft wall on each floor level. Elevator Hoistway Entrances: Manufacturer's standard J-profile jamb strut with long-leg length of 3 inches, matching studs in depth, and not less than 0.033 inch thick. Room-Side Finish: Finished as indicated.

Shaft-Side Finish: Manufacturer's standard moisture resistant finish Insulation: Sound attenuation blankets.

PANEL PRODUCTS

Panel Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated. B. Gypsum Shaftliner Board, Moisture- and Mold-Resistant Type X: ASTM C 1396/C 1396M; manufacturer's proprietary fire-resistive liner panels with moisture- and mold-resistant core and surfaces. Products: Subject to compliance with requirements, provide one of the following:

 Georgia-Pacific Gypsum LLC, Subsidiary of Georgia Pacific; Dens-Glass Ultra Shaftliner. National Gypsum Company; Gold Bond Brand Fire-Shield Shaftliner XP. USG Corporation; Sheetrock Brand Mold Tough Gypsum Liner Panel. Thickness: 1 inch.

Long Edges: Double bevel. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274. C. Gypsum Board: As specified in Division 09 Section "Gypsum Board."

2.4 NON-LOAD-BEARING STEEL FRAMING

 Steel Framing Members: Comply with ASTM C 645 requirements for metal unless otherwise indicated. Protective Coating: ASTM A 653/A 653M, G60, hot-dip galvanized unless otherwise indicated. Firestop Tracks: Top runner manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.

GYPSUM BOARD SHAFT WALL ASSEMBLIES

 Products: Subject to compliance with requirements, provide one of the following: Fire Trak Corp.; Fire Trak System attached to studs with Fire Trak Posi Klip. Grace Construction Products; FlameSafe FlowTrak System. Metal-Lite, Inc.; The System

 Steel Network Inc. (The); VertiClip SLD Series. 2.5 AUXILIARY MATERIALS

 General: Provide auxiliary materials that comply with manufacturer's written recommendations. Trim Accessories: Cornerbead, edge trim, and control joints of material and shapes as specified in Division 09 Section "Gypsum Board" that comply with gypsum board shaft wall assembly manufacturer's written recommendations for application indicated.

Steel Drill Screws: ASTM C 1002 unless otherwise indicated. Track Fasteners: Power-driven fasteners of size and material required to withstand loading conditions imposed on shaft wall assemblies without exceeding allowable design stress of track, fasteners, or structural substrates in which anchors are embedded 1. Expansion Anchors: Fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 5 times design load, as determined by testing according to ASTM E 488 conducted by a qualified testing agency.

2. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 10 times design load, as determined by testing according to ASTM E 1190 conducted by a qualified testing agency.

Sound Attenuation Blankets: As specified in Division 09 Section "Gypsum Board." Acoustical Sealant: As specified in Division 09 Section "Gypsum Board."

PART 3 - EXECUTION

EXAMINATION Examine substrates to which gypsum board shaft wall assemblies attach or abut, with Installer present, including hollow-metal frames, elevator hoistway door frames, cast-in anchors, and structural framing. Examine for compliance with requirements for installation tolerances and other conditions affecting performance. Examine panels before installation. Reject panels that are wet, moisture damaged, or mold damaged.

Proceed with installation only after unsatisfactory conditions have been corrected. A. Sprayed Fire-Resistive Materials: Coordinate with gypsum board shaft wall assemblies so both elements of Work remain complete and undamaged. Patch or replace sprayed fire-resistive materials removed or damaged

B. After sprayed fire-resistive materials are applied, remove only to extent necessary for installation of gypsum

board shaft wall assemblies and without reducing the fire-resistive material thickness below that which is required to obtain fire-resistance rating indicated. Protect remaining fire-resistive materials from damage.

furnishings, wall-mounted door stops, and similar items that cannot be supported directly by shaft wall assembly

during installation of shaft wall assemblies to comply with requirements specified in Division 07 Section "Applied

INSTALLATION General: Install gypsum board shaft wall assemblies to comply with requirements of fire-resistance-rated

assemblies indicated, manufacturer's written installation instructions, and ASTM C 754 other than stud-spacing

B. Do not bridge building expansion joints with shaft wall assemblies; frame both sides of expansion joints with furring and other support. Install supplementary framing in gypsum board shaft wall assemblies around openings and as required for blocking, bracing, and support of gravity and pullout loads of fixtures, equipment, services, heavy trim,

1. Elevator Hoistway: At elevator hoistway-entrance door frames, provide jamb struts on each side of door Reinforcing: Where handrails directly attach to gypsum board shaft wall assemblies, provide galvanized steel reinforcing strip with 0.033-inch minimum thickness of base metal (uncoated), accurately positioned

and secured behind at least one layer of face panel.





NO. REASON 3 | CONSTRUCTION | 04/03/2023 DOCUMENTS BID SET

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

SPECIFICATIONS

MIRRORS GLAZING 08 80 00 - 3

B. Fully Tempered Float Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise

unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.

Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge

1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge

Laminated Glass: ASTM C 1172. Use materials that have a proven record of no tendency to bubble, discolor, or

Construction: Laminate glass with polyvinyl butyral interlayer to comply with interlayer manufacturer's

2. Interlayer Thickness: Provide thickness not less than that indicated and as needed to comply with

Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated

Compatibility: Compatible with one another and with other materials they contact, including glass

Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing

Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining

and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by

tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA 800 for

Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces;

General: Provide products of material, size, and shape complying with referenced glazing standard, with

Fabricate glazing units in sizes required to fit openings indicated for Project, with edge and face clearances,

edge and surface conditions, and bite complying with written instructions of product manufacturer and to comply

requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven

AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of

application, as demonstrated by sealant manufacturer based on testing and field experience.

sealants suitable for applications indicated and for conditions existing at time of installation.

Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.

AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.

AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.

AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.

products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and

VOC Content: For sealants used inside of the weatherproofing system, not more than 250 g/L when

Sealing System: Dual seal, with manufacturer's standard primary and secondary sealants.

Perimeter Spacer: Manufacturer's standard spacer material and construction.

calculated according to 40 CFR 59, Subpart D (EPA Method 24).

Product: Dow Corning Corporation; 790.

Heat-Strengthened Float Glass: ASTM C 1048, Kind HS (heat strengthened), Type I, Condition A (uncoated)

indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.

lose physical and mechanical properties after fabrication and installation.

of glass as installed unless otherwise indicated.

of glass as installed unless otherwise indicated.

Interlayer Color: Clear unless otherwise indicated.

interspace, qualified according to ASTM E 2190.

requirements.

INSULATING GLASS

2.7 GLAZING SEALANTS

GLAZING TAPES

products indicated below:

2.9 MISCELLANEOUS GLAZING MATERIALS

with system performance requirements.

2.10 FABRICATION OF GLAZING UNITS

AAMA 804.3 tape, where indicated

and complying with AAMA 800 for the following types:

record of compatibility with surfaces contacted in installation

08 83 00 - 1

08 90 00 - 1

08 90 00 - 2

GYPSUM BOARD SHAFT WALL ASSEMBLIES

09 21 16 - 2

GYPSUM BOARD SHAFT WALL ASSEMBLIES 09 21 16 - 3 SECTION 09 22 16 - NON-STRUCTURAL METAL FRAMING PART 1 - GENERAL A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section. A. This Section includes non-load-bearing steel framing members for the following applications: Interior framing systems (e.g., supports for partition walls, framed soffits, furring, etc.) Interior suspension systems (e.g., supports for ceilings, suspended soffits, etc.). A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency. B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent PART 2 - PRODUCTS MANUFACTURERS Manufacturers: Subject to compliance with requirements, provide products by one of the following or equal: ClarkDietrich Building Systems, LLC. Steel Construction Systems, LLC. Steel Network, Inc. (The). Telling Industries. 2.2 NON-LOAD-BEARING STEEL FRAMING, GENERAL Framing Members, General: Comply with ASTM C 754 for conditions indicated. Steel Sheet Components: Comply with ASTM C 645 requirements for metal, unless otherwise indicated. Protective Coating: ASTM A 653/A 653M, G60, hot-dip galvanized, unless otherwise indicated. 2.3 SUSPENSION SYSTEM COMPONENTS A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.0625-inch-diameter wire, or double strand of 0.0475-inch-diameter wire Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.162-inch diameter. Flat Hangers: Steel sheet, 1 by 3/16 inch by length indicated. Carrying Channels: Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.0538 inch and minimum 1/2-inch-wide flanges Depth: 2-1/2 inches. E. Furring Channels (Furring Members) 1. Cold-Rolled Channels: 0.0538-inch bare-steel thickness, with minimum 1/2-inch-wide flanges, 3/4 inch Steel Studs: ASTM C 645. Minimum Base-Metal Thickness: 0.0312 inch. Depth: As indicated on Drawings. Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch deep. Minimum Base Metal Thickness: 0.0312 inch. Resilient Furring Channels: 1/2-inch-deep members designed to reduce sound transmission. Configuration: Asymmetrical or hat shaped. F. Grid Suspension System for Ceilings: ASTM C 645, direct-hung system composed of main beams and crossfurring members that interlock. NON-STRUCTURAL METAL FRAMING 09 22 16 - 1 Products: Subject to compliance with requirements, provide one of the following or equal: Armstrong World Industries, Inc.; Drywall Grid Systems. Chicago Metallic Corporation; 640-C Drywall Furring System. USG Corporation; Drywall Suspension System. 2.4 STEEL FRAMING FOR FRAMED ASSEMBLIES A. Steel Studs and Runners: ASTM C 645.

D. Penetrations: At penetrations in shaft wall, maintain fire-resistance rating of shaft wall assembly by installing

Firestop Tracks: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.

G. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect

H. Sound-Rated Shaft Wall Assemblies: Seal gypsum board shaft walls with acoustical sealant at perimeter of

Cant Panels: At projections into shaft exceeding 4 inches, install 1/2- or 5/8-inch-thick gypsum board cants

Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the

Slope cant panels at least 75 degrees from horizontal. Set base edge of panels in adhesive and secure

Where steel framing is required to support gypsum board cants, install framing at 24 inches o.c. and

each assembly where it abuts other work and at joints and penetrations within each assembly.

top edges to shaft walls at 24 inches o.c. with screws fastened to shaft wall framing.

devices, elevator call buttons, elevator floor indicators, and similar items.

extend studs from the projection to shaft wall framing

while maintaining fire-resistance rating of gypsum board shaft wall assemblies.

continuity of fire-rated construction.

covering tops of projections.

END OF SECTION 09 21 16

plane formed by faces of adjacent framing.

supplementary steel framing around perimeter of penetration and fire protection behind boxes containing wiring

Isolate perimeter of gypsum panels from building structure to prevent cracking of panels, while maintaining

PART 3 - EXECUTION

INSTALLATION, GENERAL

sides of joints independently.

accessories, furnishings, or similar construction

prevent transfer of loading imposed by structural movement.

cause hangers to deteriorate or otherwise fail.

Do not attach hangers to steel roof deck.

not part of supporting structural or suspension system.

bracing, countersplaying, or other equally effective means.

limits established by referenced installation standards

manner that will not cause hangers to deteriorate or otherwise fail.

Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.

Do not connect or suspend steel framing from ducts, pipes, or conduit.

Seismic Bracing: Sway-brace suspension systems with hangers used for support.

Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.

Suspend hangers from building structure as follows:

Install bracing at terminations in assemblies.

INSTALLING SUSPENSION SYSTEMS

Installation Standard: ASTM C 754, except comply with framing sizes and spacing indicated.

1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing

Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both

Install suspension system components in sizes and spacings indicated on Drawings, but not less than those

Isolate suspension systems from building structure where they abut or are penetrated by building structure to

Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are

Splay hangers only where required to miss obstructions and offset resulting horizontal forces by

interfere with locations of hangers required to support standard suspension system members, install

Size supplemental suspension members and hangers to support ceiling loads within performance

other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not

screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a

Where width of ducts and other construction within ceiling plenum produces hanger spacings that

supplemental suspension members and hangers in the form of trapezes or equivalent devices.

Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or

4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye

Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical

Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured

surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall

required by referenced installation standards for assembly types and other assembly components indicated.

Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet

lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes. INSTALLING FRAMED ASSEMBLIES Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall. Install studs so flanges within framing system point in same direction. Space studs as follows: Single-Layer Application: 16 inches o.c., unless otherwise indicated. Multilayer Application: 16 inches o.c., unless otherwise indicated. Tile backing panels: 16 inches o.c., unless otherwise indicated. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies. NON-STRUCTURAL METAL FRAMING 09 22 16 - 3 2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs. Install two studs at each jamb, unless otherwise indicated. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch clearance from jamb stud to allow for installation of control joint in finished assembly. Other Framed Openings: Frame openings other than door openings the same as required for door openings, unless otherwise indicated. Install framing below sills of openings to match framing required Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated. D. Direct Furring: Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c. E. Z-Furring Members: Erect insulation (specified in Division 07 Section "Thermal Insulation") vertically and hold in place with Zurring members spaced 24 inches o.c. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than 12 inches from corner and cut insulation to fit. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing. END OF SECTION 09 22 16 NON-STRUCTURAL METAL FRAMING 09 22 16 - 4 SECTION 09 29 00 - GYPSUM BOARD PART 1 - GENERAL 1.1 RELATED DOCUMENTS Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section. 1.2 SUMMARY Section Includes: Interior gypsum board.

Store materials inside under cover and keep them dry and protected against weather, condensation, direct

sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers

Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written

Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

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

Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested

identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent

Moisture- and Mold-Resistant Gypsum Board: ASTM C 1396/C 1396M. With moisture- and mold-resistant core

Glass-Mat, Water-Resistant Backing Board: ASTM C 1178/C 1178M, with manufacturer's standard edges.

Products: Subject to compliance with requirements, provide the following:

Georgia-Pacific Gypsum LLC; DensShield Tile Backer.

thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly. Recycled Content of Blankets: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 20 percent. E. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90. Products: Subject to compliance with requirements, provide one of the following: GYPSUM BOARD 09 29 00 - 2 Accumetric LLC; BOSS 824 Acoustical Sound Sealant. Grabber Construction Products; Acoustical Sealant GSC. Pecora Corporation; AC-20 FTR. Specified Technologies, Inc.; Smoke N Sound Acoustical Sealant. USG Corporation; SHEETROCK Acoustical Sealant. 2. Acoustical joint sealant shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59. Subpart D (EPA Method 24). PART 3 - EXECUTION EXAMINATION A. Examine areas and substrates including welded hollow-metal frames and framing, with Installer present, for compliance with requirements and other conditions affecting performance. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged. Proceed with installation only after unsatisfactory conditions have been corrected. APPLYING AND FINISHING PANELS, GENERAL Comply with ASTM C 840 Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of Form control and expansion joints with space between edges of adjoining gypsum panels. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area. Fit gypsum panels around ducts, pipes, and conduits. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch-wide joints to install G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch-wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant. H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open unsupported) edges of stud flanges first. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings. J. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side. APPLYING INTERIOR GYPSUM BOARD Install interior gypsum board in the following locations: Type X: Vertical surfaces unless otherwise indicated. Flexible Type: As required. Ceiling Type: Ceiling surfaces. Abuse-Resistant Type: As indicated on Drawings. Moisture- and Mold-Resistant Type: In showers and as indicated on Drawings. Acoustically Enhanced Type: As indicated on Drawings. B. Single-Layer Application: GYPSUM BOARD 09 29 00 - 3 On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints. Stagger abutting end joints not less than one framing member in alternate courses of panels. At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members. Fastening Methods: Apply gypsum panels to supports with steel drill screws. C. Multilaver Application: 1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions: apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints one framing member, 16 inches minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly. 2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least

Core: 5/8 inch, Type X.

A. Interior Trim: ASTM C 1047

Shapes:

a. Cornerbead

a. Fry Reglet Corp.

JOINT TREATMENT MATERIALS

Alloy 6063-T5

Gordon, Inc.

Pittcon Industries

General: Comply with ASTM C 475/C 475M.

Interior Gypsum Board: Paper.

compounds applied on previous or for successive coats.

drying-type, all-purpose compound.

Joint Compound for Tile Backing Panels:

Subpart D (EPA Method 24).

Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

AUXILIARY MATERIALS

continuous substrate.

Mold Resistance: ASTM D 3273, score of 10.

Expansion (control) joint.

Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel

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

Finish: Corrosion-resistant primer compatible with joint compound and finish materials specified.

C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other

Use setting-type compound for installing paper-faced metal trim accessories.

Glass-Mat, Water-Resistant Backing Panel: As recommended by backing panel manufacturer.

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's

B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to

1. Laminating adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59,

by airless sprayer and to be used instead of skim coat to produce Level 5 finish.

1. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use

Skim Coat: For final coat of Level 5 finish, use high-build interior coating product designed for application

Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B 221,

LC-Bead: J-shaped; exposed long flange receives joint compound.

L-Bead: L-shaped; exposed long flange receives joint compound.

Curved-Edge Cornerbead: With notched or flexible flanges.

Aluminum Trim: Extruded accessories of profiles and dimensions indicated.

Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.

Tile Backing Panels: As recommended by panel manufacturer.

Fill Coat: For second coat, use drying-type, all-purpose compound

Finish Coat: For third coat, use drying-type, all-purpose compound.

 Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining GYPSUM BOARD SECTION 09 30 00 - TILING PART 1 - GENERAL 1.1 RELATED DOCUMENTS Section Includes: Wall and Floor Tile Waterproof membrane. Crack isolation membrane. Metal edge strips. PERFORMANCE REQUIREMENTS PART 2 - PRODUCTS 2.1 TILE PRODUCTS A. Ceramic Tile Type: Glazed Ceramic Wall Tile: Face Size: As indicated. Surface: Glazed, semi-gloss. B. Ceramic Tile Type: Porcelain floor tile: Face Size: As indicated. Face: Rectified. Bond Pattern: As indicated 2.2 CRACK ISOLATION MEMBRANE recommended by manufacturer. 2.3 SETTING MATERIALS additive at Project site. one stud or furring member with base-layer joints, unless otherwise indicated or required by fire-

PROTECTION

END OF SECTION 09 29 00

Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall

Protect installed products from damage from weather, condensation, direct sunlight, construction, and other

surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

causes during remainder of the construction period.

isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles. Grout Sealer: Apply grout sealer to grout joints in tile floors according to grout-sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth. 3.4 CRACK ISOLATION MEMBRANE INSTALLATION A. Install crack isolation membrane to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness and bonded securely to substrate. B. Do not install tile or setting materials over crack isolation membrane until membrane has cured. INTERIOR TILE INSTALLATION SCHEDULE A. Interior Floor Installations, Concrete Subfloor Large Format Tile Installation TCNA F125 Full: Thin-set mortar on crack isolation membrane. Tile Type: As indicated on Drawings. Thin-Set Mortar: Medium-bed, modified dry-set. Grout: Water-cleanable epoxy grout. B. Interior Wall Installations, Metal Studs or Furring: Tile Installation TCNA W245: Organic adhesive on coated glass-mat, water-resistant gypsum backer Tile Type: As indicated on Drawings. Thin-Set Mortar: Latex-portland cement mortar. Grout: Water-cleanable epoxy grout END OF SECTION 09 30 00 09 30 00 - 3 09 29 00 - 5 SECTION 09 51 13 - ACOUSTICAL PANEL CEILINGS PART 1 - GENERAL Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section. Division 01 Specification Sections, apply to this Section. SUMMARY This Section includes acoustical panels and exposed suspension systems for ceilings. 1.3 ACTION SUBMITTALS Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved: 1.4 QUALITY ASSURANCE A. Acoustical Testing Agency Qualifications: An independent testing laboratory, or an NVLAP-accredited A. Static Coefficient of Friction: For tile installed on walkway surfaces, provide products with the values as laboratory, with the experience and capability to conduct the testing indicated. NVLAP-accredited laboratories determined by testing identical products per ASTM C 1028. must document accreditation, based on a "Certificate of Accreditation" and a "Scope of Accreditation" listing the test methods specified. Source Limitations: Obtain each type of acoustical ceiling panel and supporting suspension system through one A. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of source from a single manufacturer. expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces. Fire-Test-Response Characteristics: Provide acoustical panel ceilings that comply with the following 1. Fire-Resistance Characteristics: Where indicated, provide acoustical panel ceilings identical to those of assemblies tested for fire resistance per ASTM E 119 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction a. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another testing and inspecting agency. Identify materials with appropriate markings of applicable testing and inspecting agency. Product: As indicated on drawings. 2. Surface-Burning Characteristics: Provide acoustical panels with the following surface-burning characteristics complying with ASTM E 1264 for Class A materials as determined by testing identical Thickness: Manufacturer's standard. products per ASTM E 84: Face: Smooth with manufacturer's standard edges. Tile Color and Pattern: As indicated on Drawings. Coordinate layout and installation of acoustical panels and suspension system with other construction that Grout Color: As selected by Architect from manufacturer's full range. penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. and partition assemblies. Product: As indicated on drawings. Furnish extra materials described below that match products installed and that are packaged with protective Thickness: Manufacturer's standard. covering for storage and identified with labels describing contents. Acoustical Ceiling Panels: Full-size panels equal to 2.0 percent of quantity installed. Tile Color, Glaze, and Pattern: As indicated on drawings. Grout Color: As selected by Architect from manufacturer's full range. PART 2 - PRODUCTS Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching 2.1 ACOUSTICAL PANELS, GENERAL characteristics of adjoining flat tile. Provide shapes as follows: A. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with Base: Custom, as indicated on Drawings. Internal Corners: Field-butted square corners. ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances, unless Additional shapes as required. 1. Mounting Method for Measuring NRC: Type E-400; plenum mounting in which face of test specimen is 15-3/4 inches away from test surface per ASTM E 795. A. General: Manufacturer's standard product that complies with ANSI A118.12 for high performance and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories 09 30 00 - 1 ACOUSTICAL PANEL CEILINGS 09 51 13 - 1 METAL SUSPENSION SYSTEM FOR ACOUSTICAL PANEL CEILING B. Corrugated Polyethylene: Corrugated polyethylene with dovetail-shaped corrugations and with anchoring Basis-of-Design Product: Subject to compliance with requirements, provide Basis-of-Design indicated or a webbing on the underside; 3/16-inch nominal thickness. comparable product by one of the following: Products: Subject to compliance with requirements, provide the following: Schluter Systems L.P.; DITRA. USG Interiors Armstrong World Industries, Inc. Chicago Metallic Corporation. Wide-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-Latex-Portland Cement Mortar (Thin Set): ANSI A118.4. rolled steel sheet, prepainted, electrolytically zinc coated, or hot-dip galvanized according to Manufacturers: Subject to compliance with requirements, provide products by one of the following: ASTM A 653/A 653M, not less than G30 coating designation, with prefinished 15/16-inch-wide metal caps on Custom Building Products. Laticrete International, Inc. Structural Classification: Heavy-duty system. MAPEI Corporation. End Condition of Cross Runners: Override (stepped) or butt-edge type. Mer-Kote Products, Inc. Face Design: Flush. Provide prepackaged, dry-mortar mix combined with acrylic resin or styrene-butadiene-rubber liquid-latex Cap Material: Steel or aluminum cold-rolled sheet. Cap Finish: Painted white. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.4. METAL EDGE MOLDINGS AND TRIM Products: Subject to compliance with requirements, provide one of the following: GROUT MATERIALS Armstrong World Industries, Inc. Water-Cleanable Epoxy Grout: ANSI A118.3, with a VOC content of 65 g/L or less when calculated according CertainTeed Corporation. to 40 CFR 59, Subpart D Fry Reglet Corporation. Manufacturers: Subject to compliance with requirements, provide products by one of the following: Gordon, Inc. Custom Building Products. Rockfon (Rockwool International). Laticrete International, Inc. USG Corporation MAPEI Corporation. B. Extruded-Aluminum Edge Moldings and Trim: Where indicated, provide manufacturer's extruded-aluminum

TILE INSTALLATION

of setting and grouting materials used.

disrupting pattern or joint alignments.

A. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods specified in tile

B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without

electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.

Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated

than half of a tile. Provide uniform joint widths unless otherwise indicated.

F. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:

joints between sheets are not apparent in finished work.

or trim, align joints unless otherwise indicated.

Ceramic Mosaic Tile: 1/16 inch.

Wall tile: 1/16 inch.

Porcelain tile: 1/16 inch.

installation schedules. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic

Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types

interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without

Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to

Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in

both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less

1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so

Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and

Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.

Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls,

Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces.







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FRANKLIN COUNTY BLDG
SUBMISSION
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NO. REASON 3 CONSTRUCTION 04/03/2023 DOCUMENTS BID SET

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

Minimum Base-Metal Thickness: 0.0312 inch.

and in width to accommodate depth of studs.

indicated for studs and in width to accommodate depth of studs.

Metal-Lite, Inc.; The System.

Minimum Base Metal Thickness: 0.0312 inch.

Configuration: Asymmetrical or hat shaped.

strand of 0.0475-inch-diameter wire.

F. Hat-Shaped, Rigid Furring Channels: ASTM C 645.

Depth: As indicated on Drawings

Depth: 1-1/2 inches

Depth: 3/4 inch.

AUXILIARY MATERIALS

Slip-Type Head Joints: Where indicated, provide one of the following:

within 12 inches of the top of studs to provide lateral bracing.

Single Long-Leg Runner System: ASTM C 645 top runner with 2-inch-deep flanges in thickness not less

than indicated for studs, installed with studs friction fit into top runner and with continuous bridging located

not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.

partition framing resulting from deflection of structure above; in thickness not less than indicated for studs

Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior

Double-Runner System: ASTM C 645 top runners, inside runner with 2-inch-deep flanges in thickness

a. Products: Subject to compliance with requirements, provide one of the following:

C. Firestop Tracks: Top runner manufactured to allow partition heads to expand and contract with movement of

the structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than

Superior Metal Trim; Superior Flex Track System (SFT).

Fire Trak Corp.; Fire Trak attached to studs with Fire Trak Slip Clip.

E. Cold-Rolled Channel Bridging: 0.0538-inch bare-steel thickness, with minimum 1/2-inch-wide flanges.

Clip Angle: Not less than 1-1/2 by 1-1/2 inches, 0.068-inch-thick, galvanized steel.

G. Resilient Furring Channels: 1/2-inch-deep, steel sheet members designed to reduce sound transmission.

Cold-Rolled Furring Channels: 0.0538-inch bare-steel thickness, with minimum 1/2-inch-wide flanges.

Furring Brackets: Adjustable, corrugated-edge type of steel sheet with minimum bare-steel thickness of

3. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.0625-inch-diameter wire, or double

Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches, wall attachment flange of 7/8

1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other

Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without

inch, minimum bare-metal thickness of 0.0179 inch, and depth required to fit insulation thickness indicated.

Asphalt-Saturated Organic Felt: ASTM D 226, Type I (No. 15 asphalt felt), nonperforated.

Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.

Steel Network Inc. (The); VertiClip SLD Series.

Products: Subject to compliance with requirements, provide one of the following:

Minimum Base-Metal Thickness: As indicated on Drawings 0.0179 inch.

General: Provide auxiliary materials that comply with referenced installation standards.

foam displacement, 1/8 inch thick, in width to suit steel stud size.

properties required to fasten steel members to substrates.

Isolation Strip at Exterior Walls: Provide one of the following:

Depth: As indicated on Drawings.

Tile backing panels.

A. Product Data: For each type of product.

1.4 DELIVERY, STORAGE AND HANDLING

on a flat platform to prevent sagging.

PERFORMANCE REQUIREMENTS

INTERIOR GYPSUM BOARD

USG Corporation.

and paper surfaces.

2.3 TILE BACKING PANELS

Core: 5/8 inch, Type X.

Long Edges: Tapered.

Core: 5/8 inch. Type X.

Long Edges: Tapered.

Georgia-Pacific Gypsum LLC.

Abuse-Resistant Gypsum Board: ASTM C 1629/C 1629M, Level 1.

Mold Resistance: ASTM D 3273, score of 10.

Mold Resistance: ASTM D 3273, score of 10.

National Gypsum Company.

recommendations, whichever are more stringent.

ACTION SUBMITTALS

1.5 FIELD CONDITIONS

PART 2 - PRODUCTS

Level 1: Ceiling plenum areas, concealed areas, and where indicated.

resistance-rated assembly. Stagger joints on opposite sides of partitions.

member. Locate edge joints of base layer over furring members.

panels. Otherwise, attach trim according to manufacturer's written instructions.

Cornerbead: Use at outside corners unless otherwise indicated.

APPLYING TILE BACKING PANELS

INSTALLING TRIM ACCESSORIES

C. Interior Trim: Install in the following locations:

L-Bead: Use where indicated.

LC-Bead: Use at exposed panel edges.

residual joint compound from adjacent surfaces.

Level 2: Panels that are substrate for tile.

Curved-Edge Cornerbead: Use at curved openings.

Aluminum Trim: Install in locations indicated on Drawings.

visual effect.

GYPSUM BOARD

3.6 FINISHING GYPSUM BOARD

3. On Z-furring members, apply base layer vertically (parallel to framing) and face layer either vertically

studs, joists, furring members, or base layer of gypsum board), comply with gypsum board manufacturer's

Glass-Mat, Water-Resistant Backing Panels: Comply with manufacturer's written installation instructions and

install at locations indicated to receive tile. Install with 1/4-inch gap where panels abut other construction or

Fastening Methods: Fasten base layers and face layers separately to supports with screws.

D. Laminating to Substrate: Where gypsum panels are indicated as directly adhered to a substrate (other than

written recommendations and temporarily brace or fasten gypsum panels until fastening adhesive has set.

B. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for

General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads,

C. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:

Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.

Primer and its application to surfaces are specified in other Division 09 Sections.

surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove

Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to

Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for

(parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring

09 29 00 - 4

requirements for installation tolerances and other conditions affecting performance of installed tile.

Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to

One-Part, Mildew-Resistant Silicone Sealant: ASTM C 920; Type S; Grade NS; Class 25; Uses NT, G, A, and,

as applicable to nonporous joint substrates indicated, O; formulated with fungicide, intended for sealing interior

ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and

Tile and Grout Sealer: Manufacturer's standard silicone product for sealing tile and grout joints and that does

MAPEI Corporation; KER 003, Silicone Spray Sealer for Cementitious Tile Grout.

Summitville Tiles, Inc.; SL-15, Invisible Seal Penetrating Grout and Tile Sealer.

TEC; a subsidiary of H. B. Fuller Company; TA-256 Penetrating Silicone Grout Sealer.

Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with

140 deg F and 212 deg F, respectively, and certified by manufacturer for intended use.

Proceed with installation only after unsatisfactory conditions have been corrected. 3.2 PREPARATION

Mer-Kote Products, Inc.

TEC; a subsidiary of H. B. Fuller Company.

Custom Building Products; Surfaceguard Sealer.

Summitville Tiles, Inc.

not change color or appearance of grout.

ELASTOMERIC SEALANTS

extreme temperatures.

2.6 MISCELLANEOUS MATERIALS

PART 3 - EXECUTION

EXAMINATION

Products: Subject to compliance with requirements, provide one of the following:

Fill cracks, holes, and depressions in concrete substrates for tile floors installed with adhesives or thin-set mortar with trowelable leveling and patching compound specifically recommended by tile-setting material

09 30 00 - 2

ACOUSTICAL PANEL CEILINGS

INSTALLATION

END OF SECTION 09 51 13

PART 3 - EXECUTION

09 51 13 - 2

edge moldings and trim of profile indicated or referenced by manufacturer's designations, including splice plates,

1. Baked-Enamel or Powder-Coat Finish: Minimum dry film thickness of 1.5 mils. Comply with

A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach

Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges

or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect

ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting

of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected

General: Install acoustical panel ceilings to comply with ASTM C 636 and seismic design requirements

ASTM C 635/C 635M and coating manufacturer's written instructions for cleaning, conversion coating,

corner pieces, and attachment and other clips, complying with seismic design requirements.

Proceed with installation only after unsatisfactory conditions have been corrected.

indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."

Fire-Rated Assembly: Install fire-rated ceiling systems according to tested fire-rated design.

and applying and baking finish.

performance of acoustical panel ceilings.

SPECIFICATIONS

SECTION 09 64 66 - WOOD ATHLETIC FLOORING

A. This Section includes the following: Fixed resilient hardwood sports performance floor system.

Expansion provisions and trim details

 Shop Drawings: Show installation details including fastening of athletic-flooring assembly and accessory. Include the following:

Details at perimeter of wood flooring including vented aluminum wall base Location and layout of each type of wood finish, direction of strip flooring Layout, colors, widths, and dimensions of game lines and markers. Locations of volleyball floor sleeves installed in wood flooring intended to anchor 3-1/2 inch diameter upright

volleyball posts 1.4 QUALITY ASSURANCE Installer Qualifications: An experienced installer who has completed wood, athletic flooring similar in material,

design, and extent to that indicated for this Project and whose work has resulted in wood, athletic-flooring installations with a record of successful in-service performance. Installer's Responsibilities: Installation of flooring assembly, including the following:

Vapor retarder. Subfloor. Wood finish flooring

Game lines and markers. Accessories. Certification: Provide flooring that carries MFMA Certification Mark on each piece.

to receive sports-floor assemblies during the conditioning period.

 Conditioning: Maintain relative humidity conditions planned for building occupants, but not greater or less than the relative humidity range recommended by MFMA, and an ambient temperature between 55 and 75 deg F in spaces to receive wood flooring for at least seven days before installation, during installation, and for at least seven days after installation. After postinstallation period, maintain relative humidity conditions and ambient

temperature planned for building occupants. B. Conditioning period begins not less than seven days before sports-floor assembly installation, is continuous through installation, and continues not less than seven days after sports-floor installation. Environmental Conditioning: Maintain an ambient temperature between 65 and 75 deg F and relative humidity planned for building occupants, but not less than 35 percent or more than 50 percent, in spaces

Wood Conditioning: Move wood components into spaces where they will be installed, no later than beginning of the conditioning period. After conditioning period, maintain relative humidity and ambient temperature planned for building occupants.

PART 2 - PRODUCTS

MANUFACTURERS Basis of Design: Subject to compliance with requirements, provide The Sports Flooring Group; Interlock Air Floor System, or comparable products by one of the following: Aacer Flooring, LLC.

WOOD ATHLETIC FLOORING

09 64 66 - 1

Robbins Sports Surfaces. Action Floor Systems, LLC 2.2 MAPLE FLOORING

 A. Strip Flooring: Northern hard maple, kiln dried. Grade: Second & Better. Cut: Flat grain. Lengths: Nominal 15 to 96 inches complying with MFMA grading rules.

Backs: Channeled (kerfed) for stress relief. Thickness: 25/32 inch. Face Width: 2-1/4 inches.

WOOD SUBFLOOR SYSTEM Plywood Subflooring: APA rated, C-D Plugged, exterior glue, 15/32 inch thick.

B. Resilient Pads: With air voids that provide resiliency and sized for optimum vibration deadening at spacing specified by manufacturer Material: Manufacturer's standard foam or resilient pad.

2.4 FINISHING MATERIALS A. Floor-Finish System: System of compatible components recommended in writing by flooring manufacturer and MFMA approved Type: MFMA Group 5, Oil Based Finishes/Sealer; polyurethane. Floor-Sealer Formulation: Pliable, penetrating type.

Finish-Coat Formulation: Formulated for gloss finish and multicoat application. B. Game-Line and Marker Paint: Industrial enamel compatible with finish coats and recommended in writing by

manufacturers of finish coats, and paint for this use. 2.5 ACCESSORY MATERIALS

Vapor Retarder: ASTM D 4397, polyethylene sheet not less than 6 mils thick.

A. Examine substrates, areas and conditions for compliance with requirements, installation tolerances, and other conditions affecting performance of wood-flooring assembly. Proceed with installation only after unsatisfactory conditions have been corrected Concrete Slabs: Verify that concrete slabs comply with requirements specified in Section 03 30 00 "Cast-in-Place

1. Grind high spots and fill low spots to provide a maximum 1/8-inch deviation in any direction when checked with a 10-foot straight edge. Moisture Testing: Perform anhydrous calcium chloride test per ASTM F 1869, as follows: Perform tests so that each test area does not exceed 200 sq. ft. and perform not less than 2

tests in each installation area and with test areas evenly spaced in installation areas. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours. Perform tests recommended by manufacturer. Proceed with installation only after substrates pass

3.2 INSTALLATION

 General: Comply with flooring-assembly manufacturer's written instructions, but not less than recommendations of MFMA applicable to flooring type indicated. Pattern: Lay flooring parallel with the long dimension of the space to be floored.

Expansion Spaces: Provide as indicated, but not less than that required by manufacturer's written instructions and MFMA's written recommendations at walls and other obstructions, and at interruptions and terminations of

WOOD ATHLETIC FLOORING

09 64 66 - 2

Cover expansion spaces with base molding, trim, and saddles, as indicated.

E. Installation Tolerances: 1/8 inch in 10 feet variance from level.

APA RATED PRE-ENGINEERED SUBFLOOR SYSTEM Plywood Subfloor: 1. Install the lower plywood subfloor in direction required by manufacturer. All joints shall be staggered 4 feet and spaced 1/4 inch apart.

Install solid blocking at doorways and high load areas. Install the upper layer of plywood subfloor at 45 degrees to the lower subfloor plywood panels staggering ioints feet and spacing 1/4 inch apart. Glue and nail according to manufacturer's instructions.

SANDING AND FINISHING Follow applicable recommendations in MFMA's "Industry Recommendations for Sanding, Sealing, Court Lining, Finishing, and Resurfacing of Maple Gym Floors."

Allow installed flooring to acclimate to ambient conditions for at least 10 days before sanding. Machine sand with coarse, medium, and fine grades of sandpaper to achieve a level, smooth, uniform surface without ridges or cups. Remove sanding dust by tack or vacuum. Finish: Apply seal and finish coats of finish system according to finish manufacturer's written instructions. Provide not less than four coats total and not less than two finish coats.

Install base molding and other cover trim indicated for expansion spaces at edges and interruptions of flooring.

Protect wood flooring during remainder of construction period to allow finish to cure and to ensure that flooring and finish are without damage or deterioration at time of Substantial Completion. END OF SECTION 09 64 66

SECTION 09 65 13 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

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

1.2 SUMMARY A. Section Includes: Resilient base

Resilient molding accessories.

SUBMITTALS A. Product Schedule: For resilient products.

1.4 QUALITY ASSURANCE Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

1.5 EXTRA MATERIALS Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents. Furnish not less than 10 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

PART 2 - PRODUCTS

RESILIENT BASE 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

Armstrong World Industries, Inc. Johnsonite Roppe Corporation, USA

Resilient Base Standard: ASTM F 1861. Material Requirement: Type TS (rubber, vulcanized thermoset) or Type TP (rubber, thermoplastic). Manufacturing Method: Group I (solid, homogeneous). Style: Cove (base with toe).

Minimum Thickness: 0.125 inch. Height: 4 inches. Lengths: Coils in manufacturer's standard length.

Outside Corners: Job formed or preformed. Inside Corners: Job formed or preformed. Colors and Patterns: As Indicated on Finish Schedule

RESILIENT MOLDING ACCESSORY Resilient Molding Accessory:

> Manufacturers: Subject to compliance with requirements, provide products by one of the following: Burke Mercer Flooring Products; Division of Burke Industries, Inc. Flexco, Inc.

Johnsonite. Roppe Corporation, USA.

Description: Nosing for carpet, Nosing for resilient floor covering, Reducer strip for resilient floor covering, Joiner for tile and carpet, Transition strips.

09 65 13 - 1

09 65 13 - 2

RESILIENT BASE AND ACCESSORIES

Material: Rubber. Profile and Dimensions: As indicated.

Colors and Patterns: As selected by Architect from full range of industry colors.

PART 3 - EXECUTION

RESILIENT BASE INSTALLATION

RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

SUMMARY

A. Section Includes:

1.3 ACTION SUBMITTALS

SECTION 09 67 23 - RESINOUS FLOORING

Resinous flooring systems.

INFORMATIONAL SUBMITTALS

flooring systems required for this Project.

manufacturer of primary materials.

1.7 DELIVERY, STORAGE, AND HANDLING

resinous flooring systems indicated.

conditions during resinous flooring application.

manufacturer recommends a longer period.

2.1 DECORATIVE RESINOUS FLOORING

CLOSEOUT SUBMITTALS

QUALITY ASSURANCE

1.8 PROJECT CONDITIONS

PART 2 - PRODUCTS

RESINOUS FLOORING

Division 01 Specification Sections, apply to this Section.

Material Test Reports: For each resinous flooring system.

Comply with manufacturer's written instructions for installing resilient base. B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required. Install resilient base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces

 Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates. Do not stretch resilient base during installation.

On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material. G. Preformed Corners: Install preformed corners before installing straight pieces. H. Job-Formed Corners:

1. Outside Corners: Use straight pieces of maximum lengths possible. Form without producing discoloration (whitening) at bends. Inside Corners: Use straight pieces of maximum lengths possible.

RESILIENT ACCESSORY INSTALLATION

Comply with manufacturer's written instructions for installing resilient accessories. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of [carpet] [resilient floor covering] that would otherwise be exposed. END OF SECTION 09 65 13

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and

Product Data: For each type of product indicated. Include manufacturer's technical data, application

Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.

Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of

Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to apply

grouting coats, and topcoats, from single source from single manufacturer. Provide secondary materials,

including patching and fill material, joint sealant, and repair materials, of type and from source recommended by

Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents,

Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels

Environmental Limitations: Comply with resinous flooring manufacturer's written instructions for substrate

Close spaces to traffic during resinous flooring application and for not less than 24 hours after application unless

Resinous Flooring: Abrasion-, impact- and chemical-resistant, decorative-aggregate-filled, epoxy-resin-based,

09 67 23 - 1

B. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting

temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring

instructions, and recommendations for each resinous flooring component required.

Material Certificates: For each resinous flooring component, from manufacturer.

indicating brand name and directions for storage and mixing with other components.

monolithic floor surfacing designed to produce a seamless floor and integral cove base.

Maintenance Data: For resinous flooring to include in maintenance manuals.

Product Schedule: For resinous flooring. Use same designations indicated on Drawings.

Samples for Initial Selection: For each type of exposed finish required.

 Basis-of-Design Product: Subject to compliance with requirements, provide Stonhard; Stontec or comparable product by one of the following Dur-A-Flex, Inc.

Tnemec Company, Inc. C. System Characteristics: Color and Pattern: As selected by Architect from manufacturer's full range. Wearing Surface: Orange-peel texture.

Overall System Thickness: 3/16 inch. Integral Base: 4 inches high. D. Body Coats: Resin: Epoxy.

Aggregates: Colored quartz (ceramic-coated silica).

Formulation Description: Water based. Application Method: Self-leveling slurry with broadcast aggregates. Thickness of Coats: 1/8 inch. Number of Coats: Two.

Topcoat: Sealing or finish coats. Resin: Epoxy. Formulation Description: Water based. Type: Clear.

Finish: Gloss. Number of Coats: Two.

ACCESSORIES A. Primer: Type recommended by manufacturer for substrate and body coats indicated.

Formulation Description: Water based. B. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.

PART 3 - EXECUTION

APPLICATION

3.1 PREPARATION A. General: Prepare and clean substrates according to resinous flooring manufacturer's written instructions for substrate indicated. Provide clean, dry substrate for resinous flooring application. B. Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with resinous

Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup. Comply with ASTM C 811 requirements unless manufacturer's written instructions are more Repair damaged and deteriorated concrete according to resinous flooring manufacturer's written instructions.

Verify that concrete substrates are dry and moisture-vapor emissions are within acceptable levels according to manufacturer's written instructions a. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with application of resinous flooring only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. of slab area in 24 hours. Perform plastic sheet test, ASTM D 4263. Proceed with application only after testing indicates absence of moisture in substrates.

Perform relative humidity test using in situ probes, ASTM F 2170. Proceed with installation only

after substrates have a maximum 75 percent relative humidity level measurement. Alkalinity and Adhesion Testing: Verify that concrete substrates have pH within acceptable range. Perform tests recommended by manufacturer. Proceed with application only after substrates pass

C. Resinous Materials: Mix components and prepare materials according to resinous flooring manufacturer's written instructions

RESINOUS FLOORING

Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written instructions.

General: Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion. Cure resinous flooring components according to manufacturer's written instructions. Prevent

contamination during application and curing processes. At substrate expansion and isolation joints, comply with resinous flooring manufacturer's written Apply primer over prepared substrate at manufacturer's recommended spreading rate.

Apply waterproofing membrane, where indicated, in manufacturer's recommended thickness. Apply waterproofing membrane to integral cove base substrates. Integral Cove Base: Apply cove base mix to wall surfaces before applying flooring. Apply according to manufacturer's written instructions and details including those for taping, mixing, priming, troweling, sanding, and topcoating of cove base. Round internal and external corners. Integral Cove Base: 6 inches high.

Apply self-leveling slurry body coats in thickness indicated for flooring system. Broadcast aggregates at rate recommended by manufacturer and, after resin is cured, remove excess aggregates to provide surface texture indicated. Apply grout coat, of type recommended by resinous flooring manufacturer, to fill voids in surface of final body

coat and to produce wearing surface indicated. Apply topcoats in number indicated for flooring system and at spreading rates recommended in writing by 3.3 FIELD QUALITY CONTROL

Core Sampling: At the direction of Owner and at locations designated by Owner, take one core sample per 1000 sq. ft. of resinous flooring, or portion of, to verify thickness. For each sample that fails to comply with requirements, take two additional samples. Repair damage caused by coring and correct deficiencies. Material Sampling: Owner may at any time and any number of times during resinous flooring application require material samples for testing for compliance with requirements. 1. Owner will engage an independent testing agency to take samples of materials being used. Material

Testing agency will test samples for compliance with requirements, using applicable referenced testing

procedures or, if not referenced, using testing procedures listed in manufacturer's product data. If test results show applied materials do not comply with specified requirements, pay for testing, remove noncomplying materials, prepare surfaces coated with unacceptable materials, and reapply flooring materials to comply with requirements. PROTECTION

3.4 Protect resinous flooring from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by resinous flooring END OF SECTION 09 67 23

samples will be taken, identified, sealed, and certified in presence of Contractor.

RESINOUS FLOORING

SECTION 09 68 13 - TILE CARPETING

PART 1 - GENERAL RELATED DOCUMENTS

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

09 67 23 - 3

SUMMARY A. Section includes modular, carpet tile

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

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

Do not install carpet tiles over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive and concrete slabs have pH range recommended by carpet tile manufacturer. Furnish extra materials described below that match products installed and that are package with protective covering for storage and identified with labels describing contents. Deliver extra materials to Owner: Carpet Tile: Full-size units equal to 5 percent of amount installed for each type indicated, but not less

WARRANTY Special Warranty for Carpet Tiles: Manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period. Warranty does not include deterioration or failure of carpet tile due to unusual traffic, failure of substrate vandalism, or abuse.

Failures include, but are not limited to, more than 10 percent edge raveling, snags, runs, dimensional stability, excess static discharge, loss of tuft bind strength, loss of face fiber, and delamination. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

TILE CARPETING

Products: Subject to compliance with requirements, provide product, color, pattern and size as indicated on Finish Schedule B. Fiber Content: 100 percent nylon 6, 6.

Primary Backing/Backcoating: Manufacturer's standard composite high recycled content materials.

Secondary Backing: Manufacturer's standard material high recycled content backing with EPA-3 cushioned Applied Soil-Resistance Treatment: Manufacturer's standard material. Antimicrobial Treatment: Manufacturer's standard material.

INSTALLATION ACCESSORIES A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or recommended by carpet tile manufacturer.

FABRIC-WRAPPED PANELS

Adhesives: Water-resistant, mildew-resistant, nonstaining, pressure-sensitive type to suit products and subfloor D. Dimensional Tolerances of Finished Units: Plus or minus 1/16 inch for the following: conditions indicated, that complies with flammability requirements for installed carpet tile and is recommended

Edge straightness Overall length and width.

Squareness from corner to corner. Chords, radii, and diameters. E. Mounting Devices: Concealed on back of panel, recommended to support weight of panel, with base-support bracket system where recommended by manufacturer for additional support of panels, and as follows: 1. Metal "Z" Clips: Two-part panel clips, with one part of each clip mechanically attached to back of panel

and the other part to wall substrate, designed to allow for panel removal.

PART 3 - EXECUTION

INSTALLATION

EXAMINATION Examine fabric, substrates, blocking, and conditions, with Installer present, for compliance with requirements, installation tolerances, and other conditions affecting performance of fabric-wrapped panels. Proceed with installation only after unsatisfactory conditions have been corrected.

 Wall Panels: Install fabric-wrapped panels in locations indicated with vertical surfaces and edges plumb, top edges level and in alignment with other panels, faces flush, and scribed to fit adjoining work accurately at B. Comply with fabric-wrapped panel manufacturer's written instructions for installation of panels using type of concealed mounting accessories indicated or, if not indicated, as recommended by manufacturer. Anchor

panels securely to supporting substrate Match and level fabric pattern and grain among adjacent panels. Installation Tolerances: As follows:

Variation from Plumb and Level: Plus or minus 1/16 inch. 2. Variation of Panel Joints from Hairline: Not more than 1/16 inch wide.

3.3 CLEANING Clip loose threads; remove pills and extraneous materials. B. Clean panels with fabric facing, on completion of installation, to remove dust and other foreign materials according to manufacturer's written instructions.

3.4 PROTECTION A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, to ensure that fabric-wrapped panels are without damage or deterioration at time of Substantial Completion.

Replace panels that cannot be cleaned and repaired, in a manner approved by Architect, before time of END OF SECTION 09 77 23

FABRIC-WRAPPED PANELS

09 77 23 - 3

09 77 23 - 1

09 77 23 - 2

09 68 13 - 2

PART 1 - GENERAL

SECTION 09 77 23 - FABRIC-WRAPPED PANELS

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

A. This Section includes fabric-wrapped wall panels.

by carpet tile manufacturer for releasable installation.

slabs receiving carpet tile.

Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for

A. General: Comply with CRI 104, Section 6.2, "Site Conditions; Floor Preparation," and with carpet tile

manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile

General: Comply with CRI 104, Section 14, "Carpet Modules," and with carpet tile manufacturer's written

Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including

Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on

Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by

Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges,

finish flooring as marked on subfloor. Use nonpermanent, nonstaining marking device.

Vacuum carpet tile using commercial machine with face-beater element.

B. Protect installed carpet tile to comply with CRI 104, Section 16, "Protecting Indoor Installations."

cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet

performance. Examine carpet tile for type, color, pattern, and potential defects.

Proceed with installation only after unsatisfactory conditions have been corrected.

moisture tests recommended by carpet tile manufacturer.

Maintain dye lot integrity. Do not mix dye lots in same area.

Perform the following operations immediately after installing carpet tile:

Remove yarns that protrude from carpet tile surface.

B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:

Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.

maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet tile

Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may

interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and

Subfloor finishes comply with requirements specified in Division 03 Section "Cast-in-Place Concrete" for

PART 3 - EXECUTION

EXAMINATION

PREPARATION

INSTALLATION

END OF SECTION 09 68 13

TILE CARPETING

alcoves, and similar openings.

CLEANING AND PROTECTION

carpet tile manufacturer

ACTION SUBMITTALS Product Data: For each type of panel edge, core material, and mounting indicated. Shop Drawings: For fabric-wrapped panels. Include mounting devices and details; details at panel head, base,

Include elevations showing panel sizes and direction of fabric weave and pattern matching. Samples for Verification: For the following products. Prepare Samples from same material to be used for the Fabric: Full-width by 36-inch-long Sample from dye lot to be used for the Work, and as follows:

joints, and corners; and details at ceiling, floor base, and wall intersections. Indicate panel edge and core

With specified treatments applied Show complete pattern repeat. Mark top and face of fabric. Panel Edge: 12-inch-long Sample showing edge profile, corner, and finish. Core Material: 12-inch-square Sample showing corner.

Mounting Device: Full-size Sample. Sample Panels: No larger than 24 by 24 inches. Show joints and mounting methods. 1.4 INFORMATIONAL SUBMITTALS Qualification Data: For fabricator and testing agency.

manufacturers' written cleaning and stain-removal recommendations. Warranty: Special warranty specified in this Section. 1.5 QUALITY ASSURANCE A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those

Maintenance Data: For fabric-wrapped panels to include in maintenance manuals. Include fabric

required for this Project and whose products have a record of successful in-service performance. Source Limitations: Obtain fabric-wrapped panels through one source from a single manufacture Fire-Test-Response Characteristics: Provide fabric-wrapped panels with the following surface-burning characteristics as determined by testing identical products per ASTM E 84 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction: Flame-Spread Index: 25 or less. Smoke-Developed Index: 450 or less.

Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." 1.6 DELIVERY, STORAGE, AND HANDLING A. Comply with fabric and fabric-wrapped panel manufacturers' written instructions for minimum and maximum temperature and humidity requirements for shipment, storage, and handling. B. Deliver materials and panels in unopened bundles and store in a temperature-controlled dry place with

 C. Protect panel edges from crushing and impact. 1.7 PROJECT CONDITIONS Environmental Limitations: Do not install fabric-wrapped panels until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and

humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

FABRIC-WRAPPED PANELS

and install panels under conditions free from odor contamination of ambient air.

B. Lighting: Do not install fabric-wrapped panels until a permanent level of lighting is provided on surfaces to receive fabric-wrapped panels. Air-Quality Limitations: Protect fabric-wrapped panels from exposure to airborne odors such as tobacco smoke,

Field Measurements: Verify locations of fabric-wrapped panels by field measurements before fabrication and

indicate measurements on Shop Drawings. WARRANTY Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of fabric-wrapped panels that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, fabric sagging, distorting, or releasing from panel edge; or warping

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

PART 2 - PRODUCTS

Acoustical Solutions

adequate air circulation

Glass-Fiber Board: ASTM C 612, Type IA or Types IA and IB; density as specified, unfaced, dimensionally stable, molded rigid board, with maximum flame-spread and smoke-developed indexes of 25 and 50, Polyester Batting Core Overlay: Flame-retardant, compressible, fiberfill. Plywood: DOC PS 1; AWPA C27, Interior Type A, fire-retardant treated, low-hygroscopic-type formulation. Use

material after treatment. FABRIC-WRAPPED PANEL Basis-of-Design: Subject to compliance with requirements, provide Basis-of-Design products as indicated on the Finish Schedule or comparable products by one of the following:

fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Kiln-dry

Decoustics Limited. Tectum Inc. Wenger Corporation. Facing Material: Fabric from same dye lot; color and pattern indicated on Finish Schedule. Panel Core: Provide the following core material interspersed with plywood nailing strips as indicated on

Glass-Fiber Board: 6- to 7-lb/cu. ft. nominal core density and 2-inch nominal core thickness.

Panel Width and Height: As indicated on Drawings. Panel Edge: Resin-hardened, glass-fiber board. Edge Detail: Square. Corner Detail: Round. Panel Edge and Frame: Extruded PVC. Edge and Corner Detail: Square.

FABRICATION Fabric-Wrapped Panels: Panel construction consisting of facing material adhered or attached to face, edges and back border of dimensionally stable core; with rigid edges to reinforce panel perimeter against warpage and Glass-Fiber Board: Resin harden areas of core for attachment of mounting devices.

blisters, seams, adhesive, or other foreign matter. Applied with visible surfaces fully covered. Where square corners are indicated, tailor corners. Where fabrics with directional or repeating patterns or directional weave are indicated, mark fabric top and attach fabric in same direction so pattern or weave matches in adjacent panels. Color of Fabric: As selected from manufacturer's full range of colors.

Fabric Facing: Stretched straight, on the grain, tight, square, and free from puckers, ripples, wrinkles, sags,

Core-Face Layer: Evenly stretched over core face and edges and securely attached to core; free from puckers, ripples, wrinkles, sags. Provide double thickness of overlay at panel edges.

PART 1 - GENERAL

SECTION 09 91 00 - PAINTING

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section. A. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.

1.3 SUBMITTALS Product Data: For each paint system indicated. Include block fillers and primers. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference

surface treatment specified in other Sections.

specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification. 2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material. 1.4 QUALITY ASSURANCE

A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material,

Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and

successful in-service performance B. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats. EXTRA MATERIALS A. Furnish extra paint materials from the same production run as the materials applied and in the quantities

design, and extent to those indicated for this Project, whose work has resulted in applications with a record of

described below. Package with protective covering for storage and identify with labels describing contents.

Deliver extra materials to Owner. 1. Quantity: 5 percent, but not less than 1 gal. or 1 case, as appropriate, of each materials and color

MANUFACTURERS A. Manufacturers: Beniamin Moore & Co.

PPG Industries, Inc.

not less than 1.6 mils.

PART 2 - PRODUCTS

Sherwin-Williams Co. EXTERIOR PRIMERS Exterior Concrete Primer: Factory-formulated alkali-resistant acrylic-latex primer for exterior application. Benjamin Moore; Moore's Acrylic Masonry Sealer No. 066: Applied at a dry film thickness of not less than

2. Pittsburgh Paints; 6-603 SpeedHide Interior/Exterior Acrylic Latex Alkali Resistant Primer: Applied at a

dry film thickness of not less than 1.5 mils. Sherwin-Williams; Loxon Exterior Masonry Acrylic Primer A24W300: Applied at a dry film thickness of not less than 3.0 miSherwin-Williams recommends using primer below over mineral-fiber-reinforced cement

2.3 INTERIOR PRIMERS A. Interior Gypsum Board Primer: Factory-formulated latex-based primer for interior application.

PAINTING (PROFESSIONAL LINE PRODUCTS) 09 91 00 - 1

 Pittsburgh Paints; 6-2 SpeedHide Interior Quick-Drying Latex Sealer: Applied at a dry film thickness of not less than 1.0 mil. Sherwin-Williams; PrepRite 200 Latex Wall Primer B28W200 Series: Applied at a dry film thickness of

Interior Ferrous and Zinc-Coated Metal Primer: Factory-formulated quick-drying rust-inhibitive acrylic-based 1. Pittsburgh Paints; 90-715 Pitt-Tech Interior/Exterior Primer/Finish: Applied at a dry film thickness of not less than 2.0 mils. 2. Sherwin-Williams; DTM Acrylic Primer No. B66W1: Applied at a dry film thickness of not less than 3.0

Interior Structure Primer: Factory-formulated acrylic primer. Basis of Design: Sherwin-Williams; DTM Acrylic Primer/Finish. EXTERIOR FINISH COATS

Exterior Semigloss Acrylic for Concrete: Factory-formulated exterior enamel.

thickness of minimum 4.0 mils or 1.4 mils dry. INTERIOR FINISH COATS Interior Concrete Floor Sealer: Factory-formulated penetrating, clear, acrylic, low odor, low VOC acrylic sealer. PPG Plex-Seal WB PP3215. Interior Flat Acrylic Paint: Factory-formulated flat acrylic-emulsion latex paint for interior application.

Basis of Design: Sherwin-Williams; A-100 Exterior Latex Satin, A82W00151. Applied at a wet film

Pittsburgh Paints; 6-70 Line SpeedHide Interior Wall Flat-Latex Paint: Applied at a dry film thickness of

Sherwin-Williams; ProMar 200 Interior Latex Flat Wall Paint B30W200 Series: Applied at a dry film thickness of not less than 1.4 mils. Interior Low-Luster Acrylic Enamel: Factory-formulated eggshell acrylic-latex interior enamel. Pittsburgh Paints; 6-400 Series SpeedHide Eggshell Acrylic Latex Enamel: Applied at a dry film thickness of not less than 1.25 mils.

Sherwin-Williams; ProMar 200 Interior Latex Egg-Shell Enamel B20W200 Series: Applied at a dry film thickness of not less than 1.5 mils. Interior Semigloss Acrylic Epoxy for Concrete: Factory-formulated semigloss epoxy interior enamel. Basis of Design: Sherwin-Williams: Armorseal 9100 Water Based Epoxy Floor Coating Part A B70-8160 Satin Series with Part B No. B70V8100 Hardener. Applied at a dry film thickness of not less than 2.5

 Additive: Provide Armoseal Hi-Wear Additive. Interior Satin Acrylic Enamel: Factory-formulated satin acrylic-latex interior enamel. Pittsburgh Paints: 6-3511 Series SpeedHide Interior Satin Acrylic Latex Interior Enamel; Applied at a dry film thickness of not less than 1.2 mils.

Sherwin-Williams; ProMor Interior Latex Satin Enamel: Applied at a dry film thickness of not less than 1.2 F. Interior Semigloss Acrylic Enamel: Factory-formulated semigloss acrylic-latex enamel for interior application. Pittsburgh Paints; 6-500 Series SpeedHide Interior Semi-Gloss Latex; Applied at a dry film thickness of not less than 1.0 mil. Sherwin-Williams; ProMar 200 Interior Latex Semi-Gloss Enamel B31W200 Series: Applied at a dry film

PART 3 - EXECUTION

EXAMINATION A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint

Proceed with paint application only after unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.

Start of painting will be construed as Applicator's acceptance of surfaces and conditions within a particular area.

615 South College Street, Suite 1600 Charlotte, NC 28202 T: 704.525.6350 www.littleonline.com

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FRANKLIN COUNTY BLDG SUBMISSION

NO. REASON

3 | CONSTRUCTION | 04/03/2023

DOCUMENTS BID SET

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA SPECIFICATIONS

09 64 66 - 3

Connor Sports.

Matching: Tongue and groove, and end matched.

PART 3 - EXECUTION 3.1 EXAMINATION

Vapor Retarder: Install with joints lapped a minimum of 6 inches and sealed.

WOOD ATHLETIC FLOORING

09 68 13 - 1

thickness of not less than 1.3 mils.

PAINTING (PROFESSIONAL LINE PRODUCTS)

09 91 00 - 2

3.2 PREPARATION 3.3 APPLICATION Switchgear. Panelboards. Electrical equipment that is indicated to have a factory-primed finish for field painting. H. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface END OF SECTION 09 91 00 PAINTING (PROFESSIONAL LINE PRODUCTS) SECTION 10 14 23 - PANEL SIGNAGE PART 1 - GENERAL

RELATED DOCUMENTS Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section. Section Includes: Panel signs. 1.3 ACTION SUBMITTALS Include fabrication and installation details and attachments to other work. Show sign mounting heights, locations of supplementary supports to be provided by others, and 3. Show message list, typestyles, graphic elements, including raised characters and Braille, and layout for B. Samples for Verification: For each type of sign assembly showing all components and with the required finish(es), in manufacturer's standard size unless otherwise indicated and as follows: Panel Signs: Full-size Sample. C. Sign Schedule: Use same designations specified or indicated on Drawings or in a sign schedule.

B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers. Notify Architect about anticipated problems when using the materials specified over substrates primed by General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting. B. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning. C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat. A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration. C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions. D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer. E. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces. F. Mechanical items to be painted include, but are not limited to, the following: Uninsulated metal piping. Uninsulated plastic piping Pipe hangers and supports. Tanks that do not have factory-applied final finishes. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets. Duct, equipment, and pipe insulation having "all-service jacket" or other paintable jacket material. Mechanical equipment that is indicated to have a factory-primed finish for field painting. G. Electrical items to be painted include, but are not limited to, the following:

of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements. 3.4 EXTERIOR PAINT SCHEDULE Concrete: Provide the following finish systems over exterior concrete, stucco, and brick masonry substrates: Semigloss Acrylic-Enamel Finish: Two finish coats over a primer. Primer: Exterior concrete and masonry primer.

Finish Coats: Exterior semigloss acrylic enamel.

PAINTING (PROFESSIONAL LINE PRODUCTS) 09 91 00 - 3

3.5 INTERIOR PAINT SCHEDULE Concrete: Provide the following paint systems over interior concrete and brick masonry substrates: Semigloss Acrylic-Enamel Finish: Two finish coats over a primer. Primer: Interior concrete and masonry primer. Finish Coats: Interior semigloss acrylic enamel. B. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:

Low-Luster Acrylic-Enamel Finish: Two finish coats over a primer. Primer: Interior gypsum board primer. Finish Coats: Interior low-luster acrylic enamel. Ferrous Metal: Provide the following finish systems over ferrous metal: Semigloss Acrylic-Enamel Finish: Two finish coats over a primer. Primer: Interior ferrous-metal primer. Finish Coats: Interior semigloss acrylic enamel. Water-Based Concrete Floor Sealer System: a. First Coat: Sealer, water based, for concrete floors, matching topcoat. Topcoat: Sealer, water based, for concrete floors.

1. Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.

PART 3 - EXECUTION

PANEL SIGNAGE

PART 1 - GENERAL

1.2 SUMMARY

PART 2 - PRODUCTS

A. Section Includes:

1.3 ACTION SUBMITTALS

2.1 PERFORMANCE REQUIREMENTS

2.2 SOLID-PLASTIC TOILET COMPARTMENTS

Accutec Manufacturing.

Scranton Products.

PLASTIC TOILET COMPARTMENTS

General Partitions Mfg. Corp.

Toilet-Enclosure Style: Floor anchored.

HARDWARE AND ACCESSORIES

compatible with related materials.

Aluminum Castings: ASTM B 26/B 26M.

Stainless-Steel Castings: ASTM A 743/A 743M.

Aluminum Extrusions: ASTM B 221.

Material: Stainless steel.

1.1 RELATED DOCUMENTS

SECTION 10 21 13 - PLASTIC TOILET COMPARTMENTS

Shop Drawings: For toilet compartments.

Show locations of floor drains.

Division 01 Specification Sections, apply to this Section.

Show locations of centerlines of toilet fixtures.

and inspecting agency acceptable to authorities having jurisdiction

Smoke-Developed Index: 450 or less.

Accurate Partitions Corp., an ASI Group Company.

Global Partitions Corp., an ASI Group Company Partition Systems International of S.C. (PSiSC).

Bradmar Partitions by Bradley Corporation

Urinal-Screen Style: Wall hung and Floor anchored.

Show overhead support or bracing locations.

EXAMINATION Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of signage work.

 General: Install signs using mounting methods indicated and according to manufacturer's written instructions. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.

Install signs so they do not protrude or obstruct according to the accessibility standard. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair END OF SECTION 10 14 23

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other

A. Fire-Test-Response Characteristics: Units shall comply with "Surface-Burning Characteristics" or "Fire Growth Contribution" Subparagraph below, or both, as determined by testing identical products by UL or another testing

agency. Identify products with appropriate markings of applicable testing agency.

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

when tested according to NFPA 265 Method B Protocol or NFPA 286.

Integral Hinges: Configure doors and pilasters to receive integral hinges.

edges of solid-plastic components to hinder malicious combustion.

Pilaster Shoes and Sleeves (Caps): Manufacturer's standard design; stainless steel.

pilasters; with shoe and sleeve (cap) matching that on the pilaster.

allowing emergency access by lifting door.

Design and ICC A117.1 for toilet compartments designated as accessible.

Surface-Burning Characteristics: Comply with ASTM E 84 or UL 723; testing by a qualified testing

Fire Growth Contribution: Comply with acceptance criteria of local code and authorities having jurisdiction

Regulatory Requirements: Comply with applicable provisions in U.S. DOJ's 2010 ADA Standards for Accessible

Door, Panel, Screen, and Pilaster Construction: Solid, high-density polyethylene (HDPE) panel material, not less

than 1 inch thick, seamless, with eased edges, and with homogenous color and pattern throughout thickness of

Urinal-Screen Post: Manufacturer's standard post design of material matching the thickness and construction of

Hinges: Manufacturer's standard continuous, cam type that swings to a closed or partially open position,

Latch and Keeper: Manufacturer's standard surface-mounted latch unit designed for emergency access

Coat Hook: Manufacturer's standard combination hook and rubber-tipped bumper, sized to prevent in-

for accessibility. Provide units on both sides of doors at compartments designated as accessible.

Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel, finished to match the

items they are securing, with theft-resistant-type heads. Provide sex-type bolts for through-bolt applications. For

concealed anchors, use stainless-steel, hot-dip galvanized-steel, or other rust-resistant, protective-coated steel

and with combination rubber-faced door strike and keeper. Provide units that comply with regulatory

Door Pull: Manufacturer's standard unit at out-swinging doors that complies with regulatory requirements

Brackets (Fittings): Full-Height (Continuous) Type: Manufacturer's standard design; stainless steel.

Door Bumper: Manufacturer's standard rubber-tipped bumper at out-swinging doors.

Hardware and Accessories: Manufacturer's standard operating hardware and accessories.

requirements for accessibility at compartments designated as accessible.

swinging door from hitting compartment-mounted accessories.

Heat-Sink Strip: Manufacturer's standard continuous, stainless-steel strip fastened to exposed bottom

Color and Pattern: One color and pattern in each room as selected by Architect from manufacturer's full

Solid-plastic toilet compartments configured as toilet enclosures and urinal screens.

Include plans, elevations, sections, details, and attachment details.

Show locations of cutouts for compartment-mounted toilet accessories.

PART 2 - PRODUCTS

1.5 WARRANTY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.3 ACTION SUBMITTALS

1.4 COORDINATION

A. This Section includes the following:

SECTION 10 28 00 - TOILET AND BATH ACCESSORIES

Division 01 Specification Sections, apply to this Section.

Public-use washroom accessories.

A. Product Data: For each type of product indicated.

2.1 PUBLIC-USE WASHROOM ACCESSORIES A. Basis-of-Design Product: The design for accessories is based on products indicated. Subject to compliance with requirements, provide the named product or a comparable product by one of the following: American Specialties, Inc. Bobrick Washroom Equipment, Inc.

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other

Coordinate accessory locations with other work to prevent interference with clearances required for access by

A. Special Mirror Warranty: Manufacturer's standard form in which manufacturer agrees to replace mirrors that

Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.

develop visible silver spoilage defects and that fail in materials or workmanship within specified warranty period.

Bradley Corporation. B. Grab Bars: Basis-of-Design: Bobrick; B-6806 Series Stainless Steel Grab Bar. Mounting: Flanges with concealed fasteners.

Warranty Period: 10 years from date of Substantial Completion.

Material: Stainless steel, 0.05 inch thick. Finish: Smooth, ASTM A480/A480M No. 4 finish (satin). Outside Diameter: 1-1/2 inches. Configuration and Length: 18, 36 and 42 inches where indicated on Drawings. C. Framed Mirror Unit Basis-of-Design: Bobrick; B-290 Series Glass Mirror with Angle Frame.

Corners: Welded and ground smooth. Hangers: Manufacturer's standard rigid, tamper and theft resistant.

Frame: Stainless steel angle, 0.05 inch thick.

PART 3 - EXECUTION

10 14 23 - 2

INSTALLATION Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

TOILET AND BATH ACCESSORIES 10 28 00 - 1

B. Grab Bars: Install to withstand a downward load of at least 250 lbf, when tested according to method in

Secure mirrors to walls in concealed, tamper-resistant manner with special hangers, toggle bolts, or screws.

Set units level, plumb, and square at locations indicated, according to manufacturer's written instruction for substrate indicated. 3.2 ADJUSTING AND CLEANING Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items. Remove temporary labels and protective coatings.

Clean and polish exposed surfaces according to manufacturer's written recommendations. END OF SECTION 10 28 00

 Semirecessed Cabinet: Cabinet box partially recessed in walls of sufficient depth to suit style of trim indicated; with one-piece combination trim and perimeter door frame overlapping surrounding wall surface with exposed trim face and wall return at outer edge (backbend). Provide where walls are of insufficient depth for recessed cabinets but are of sufficient depth to accommodate semirecessed cabinet installation.

Rolled-Edge Trim: 2-1/2-inch backbend depth. Cabinet Trim Material: Stainless-steel sheet. Door Material: Stainless-steel sheet. Door Style: Fully glazed panel with frame.

Door Glazing: Acrylic sheet. Acrylic Sheet Color: Clear transparent acrylic sheet Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated Provide manufacturer's standard.

Provide manufacturer's standard hinge permitting door to open 180 degrees. Mounting Bracket: Manufacturer's standard steel, designed to secure fire extinguisher to fire protection cabinet, of sizes required for types and capacities of fire extinguishers indicated, with plated or baked-

Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as indicated. Identify fire extinguisher in fire protection cabinet with the words "FIRE EXTINGUISHER." Location: Applied to cabinet door.

Application Process: Pressure-sensitive vinyl letters. Lettering Color: Black. Orientation: Vertical.

Stainless Steel: No. 4 directional satin finish 2.3 FABRICATION Fire Protection Cabinets: Provide manufacturer's standard box (tub) with trim, frame, door, and hardware to suit

cabinet type, trim style, and door style indicated. Weld joints and grind smooth. Provide factory-drilled mounting holes. Prepare doors and frames to receive locks.

Install door locks at factory. Cabinet Doors: Fabricate doors according to manufacturer's standards, from materials indicated and coordinated with cabinet types and trim styles selected. Fabricate door frames with tubular stiles and rails and hollow-metal design, minimum 1/2 inch thick.

Miter and weld perimeter door frames. Cabinet Trim: Fabricate cabinet trim in one piece with corners mitered, welded, and ground smooth.

2.4 GENERAL FINISH REQUIREMENTS Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Protect mechanical finishes on exposed surfaces of fire protection cabinets from damage by applying a strippable, temporary protective covering before shipping.

Finish fire protection cabinets after assembly. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

INSTALLATION

END OF SECTION 10 44 13

FIRE EXTINGUISHER CABINETS

SECTION 10 73 16 - METAL CANOPIES

B. Deflection Limits: As follows:

SUBMITTALS

other work.

This Section includes the following:

PERFORMANCE REQUIREMENTS

Wind Loads: As indicated.

Snow Loads: As indicated

a. Flashing and trim.

Downspouts.

Scuppers.

Qualification Data: For Installer.

Seismic Loads: As indicated.

Division 01 Specification Sections, apply to this Section.

Flashings at connection of canopy to building.

Deflection exceeding specified limits.

movements indicated without failure. Failure includes the following:

inch, whichever is smaller, unless otherwise indicated.

effects of the following design loads when supporting full dead loads:

exceeding 0.2 percent of span when tested according to ASTM E 330.

Product Data: For each type of metal canopies and accessories indicated.

Accessories: Include details of the following items:

PART 1 - GENERAL

EXAMINATION Examine walls and partitions for suitable framing depth and blocking where semirecessed cabinets will be

Proceed with installation only after unsatisfactory conditions have been corrected.

FIRE EXTINGUISHER CABINETS 10 44 13 - 2

PREPARATION Prepare recesses for semirecessed fire protection cabinets as required by type and size of cabinet and trim

General: Install fire protection cabinets in locations and at mounting heights indicated or, if not indicated, at heights acceptable to authorities having jurisdiction. B. Fire Protection Cabinets: Fasten cabinets to wall, square and plumb. Fasten mounting brackets to inside surface of fire protection cabinets, square and plumb Identification: Apply vinyl lettering at locations indicated.

ADJUSTING AND CLEANING A. Remove temporary protective coverings and strippable films, if any, as fire protection cabinets are installed

 Adjust fire protection cabinet doors to operate easily without binding. Verify that integral locking devices operate On completion of fire protection cabinet installation, clean interior and exterior surfaces as recommended by manufacturer. Replace fire protection cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

Drawings and general provisions of the Contract, including General and Supplementary Conditions and

General: Provide metal canopy systems capable of withstanding applicable loads and thermal and structural

Framing members transferring stresses, including those caused by thermal and structural movement.

Deflection of the entire length of framing members in any direction is limited to 1/180 of clear span or %

Structural Loads: Provide awning and canopy systems, including anchorage, capable of withstanding the

pressure indicated without material and deflection failures and permanent deformation of structural members

following maximum change (range) in ambient and surface temperatures by preventing buckling and other

Shop Drawings: Show layouts of metal canopy, including plans, elevations, sections, details, and attachment to

Include structural analysis data signed and sealed by the qualified professional engineer responsible for

Samples For Verification: For each type of exposed finish required, prepared on samples of size indicated

1. Metal Canopy Panel: 12 inches long by actual panel width. Include fasteners, closures, and other metal

Flashing and Trim: Nominal 12 inches long. Include fasteners and other exposed accessories.

Test Duration: As required by design wind velocity; fastest 1 mile of wind for relevant exposure category.

Structural Performance: Provide metal canopy systems, including anchorage, capable of withstanding test

E. Thermal Movement: Provide metal canopy systems that allow for thermal movements resulting from the

Test Pressure: 150 percent of positive and negative wind-load design pressures.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F material surfaces.

Pre-fabricated aluminum canopies, post supported, wall mounted walkways.

Noise or vibration created by thermal and structural movement and wind.

Loosening or weakening of fasteners, attachments, and other components.

Installer Qualifications: An employer of workers trained and approved by manufacturer

Engineering Responsibility: Preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer. B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated.

Engineering services are defined as those performed for installations of awnings and canopies that are similar to those indicated for this Project in material, design, and extent. C. Source Limitations: Obtain each type of canopy system, including framing, hardware, and accessories from one source and by a single manufacturer.

Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of canopy systems. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, one another, and adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, or in-service performance. 1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

Preinstallation Conference: Conduct conference at Project site to review methods and procedures related to canopy systems, including, but not limited to, the following: Inspect and discuss condition of substrate and other preparatory work performed by other trades. Review structural load limitations.

Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays. Review required testing procedures.

Review weather and forecasted weather conditions and procedures for unfavorable conditions. DELIVERY, STORAGE, AND HANDLING

Deliver components, sheets, metal canopy panels, and other manufactured items so as not to be damaged or deformed. Package metal canopy panels for protection during transportation and handling. Unload, store, and erect metal canopy panels in a manner to prevent bending, warping, twisting, and surface

 Stack canopy roof panels on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal canopy panels to ensure dryness. Do not store metal canopy panels in contact with other materials that might cause staining, denting, or other surface damage. D. Protect strippable protective covering on metal canopy panels from exposure to sunlight and high humidity, except to extent necessary for period of metal roof panel installation.

1.7 PROJECT CONDITIONS Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal canopy to be performed according to manufacturer's written instructions and warranty

B. Field Measurements: Where canopy systems are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

WARRANTY A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents. B. Special Warranty: Written warranty, executed by manufacturer agreeing to repair or replace components of canopy systems that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, the following:

> Failure of systems to meet performance requirements. Deterioration of metals, metal finishes, and other materials beyond normal weathering. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

Structural failures

10 73 16 - 2 METAL CANOPIES

2.1 MATERIALS A. Manufacturer, Walkways Post Supported Canopies:

1. Basis of Design: Subject to compliance with requirements, provide Mapes Canopies, Inc.; Post Supported Walkway Canopy or a comparable product by one of the following: MASA Architectural Canopies.

Perfection Architectural Corporation. TFC; A Division of Centurion Industries. Other approved equal.

B. Aluminum Canopies: Decking, beams, posts, columns, gutters, and fascia shall be 6063 alloy T-6 temper extruded aluminum. Brackets and Reinforcements: Provide manufacturer's standard high-strength brackets and reinforcements.

Provide nonstaining, nonferrous shims to install and align metal canopies. D. Flashing and Trim: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.022-inch nominal Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae,

E. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories; compatible with adjacent materials. 1. Movement Joints: Provide slip-joint linings, spacers, and sleeves of material and type recommended by Connections to Supporting Structure: ASTM A 307, zinc-coated steel fasteners.

Anchor Bolts: ASTM A 307, Grade A, zinc-coated steel anchor bolts. Concrete or Masonry Inserts: Zinc-coated cast-iron, malleable-iron, or steel inserts; hot-dip galvanized according to ASTM A 123. Bituminous Paint: Cold-applied asphalt mastic paint complying with SSPC-Paint 12, except containing no asbestos, and formulated for 30-mil thickness per coat.

 General: Fabricate and finish metal canopy panels and accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements. Fabricate components that, when assembled, will have accurately fitted joints with ends coped or mitered

to produce hairline joints free of burrs and distortion. 2. Fabricate components to drain water passing joints and to drain condensation and moisture occurring or migrating within system to the exterior. 3. Fabricate components to accommodate expansion, contraction, and field adjustment, and to provide for minimum clearance and shimming at perimeters.

Form shapes with sharp profiles, straight and free of defects or deformations, before finishing. Fit and assemble components to greatest extent practicable before finishing. Fit and secure joints with screw and spline, internal reinforcement, or welding.

Reinforce members as required to retain fastener threads. Where fasteners are exposed to view, countersink bolt or screw heads and finish to match framing. 9. Weld components before finishing and in concealed locations to greatest extent practicable to minimize Before shipping, assemble, mark, and disassemble components that cannot be permanently shop

 Prepare framing to receive anchor and connection devices and fasteners. B. Support columns and gutter beams shall be designed such that the columns will be notched to create a "saddle" that will receive and secure the gutter beams Post and beams shall be mechanically assembled utilizing 3/16" fasteners with a minimum shear stress of 350

lb. Pre-welded or factory-welded connections are not acceptable applied to provide structural integrity for the completed assembly.

D. Decking shall be designed with interlocking extruded aluminum members with mechanical fasteners field Concealed drainage. Water shall drain from covered surfaces into integral gutter beam, downspouts and be connected to boot at underground discharge.

Exposed drainage: Direct water to scuppers connected to type Z drains.

G. Apply a clean acrylic enamel to each column end terminating in concrete to insulate from electrolyte reaction.

10 73 16 - 3 METAL CANOPIES

recommendations for applying and designating finishes. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions. Fluoropolymer Two-Coat System: Manufacturer's standard two-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with physical properties and coating performance

General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for

requirements of AAMA 2605, except as modified below: Humidity Resistance: 2000 hours. Water Resistance: 2000 hours.

Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting metal canopy system performance. Proceed with installation only after unsatisfactory conditions have been corrected.

PREPARATION

Metal Protection: As follows:

with bituminous paint. 3. Where aluminum will contact pressure-treated wood, separate dissimilar materials by methods

1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose. 2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces

recommended by manufacturer. General: Comply with manufacturer's written instructions for protecting, handling, and installing metal canopy

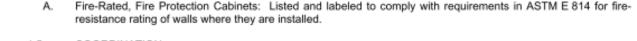
Fit frame joints to produce hairline joints free of burrs and distortion. Rigidly secure nonmovement joints. Accommodate thermal movements.

 Install metal canopy to allow drainage of water with out ponding. Erection Tolerances: Install metal cancov imponents true in plane, accurately aligned, and without warp or rack. Adjust framing to comply with the following tolerances:

Variation from Plane: Limit variation from plane or location shown to 1/8 inch in 10 feet; 1/4 inch over Alignment: Where surfaces abut in line and at corners and where surfaces are separated by less than 3 inches, limit offset from true alignment to less than 1/32 inch; otherwise, limit offset from true alignment to

 Clean metal canopies immediately after installation according to manufacturer's written recommendations. 1. Remove temporary protective coverings and strippable coatings from prefinished metal surfaces. Remove labels and markings from all components.

3.5 PROTECTION General: Institute protective procedures and install protective materials as required to ensure metal canopy systems will be without damage at substantial completion.



Stainless Steel: ASTM A 666, Type 304.

Cabinet Type: Suitable for fire extinguisher.

Potter Roemer LLC.

B. Cabinet Construction: Nonrated and 1-hour fire rated.

Finish: No. 4 directional satin finish

Larsen's Manufacturing Company.

Modern Metal Products, Division of Technico Inc..

SEQUENCING

PART 2 - PRODUCTS

TOILET AND BATH ACCESSORIES

RELATED DOCUMENTS

PART 1 - GENERAL

SECTION 10 44 13 - FIRE EXTINGUISHER CABINETS

Division 01 Specification Sections, apply to this Section.

extinguisher schedule to ensure proper fit and function.

Coordinate sizes and locations of fire protection cabinets with wall depths.

A. Apply vinyl lettering on field-painted, fire protection cabinets after painting is complete.

Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B.

Section Includes: Fire protection cabinets for portable fire extinguishers.

Fabrication, General: Fabricate toilet compartment components to sizes indicated. Coordinate requirements and provide cutouts for through-partition toilet accessories where required for attachment of toilet accessories. Floor-Anchored Units: Provide manufacturer's standard corrosion-resistant anchoring assemblies with leveling adjustment nuts at pilasters for structural connection to floor. Provide shoes at pilasters to conceal anchorage. Urinal-Screen Posts: Provide manufacturer's standard corrosion-resistant anchoring assemblies with leveling

adjustment nuts at bottoms of posts. Provide shoes and sleeves (caps) at posts to conceal anchorage. Door Size and Swings: Unless otherwise indicated, provide 24-inch-wide, in-swinging doors for standard toilet compartments and 36-inch-wide, out-swinging doors with a minimum 32-inch-wide, clear opening for

PART 3 - EXECUTION

MATERIALS

INSTALLATION General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices. Maximum Clearances:

Pilasters and Panels: 1/2 inch. b. Panels and Walls: 1 inch.

Floor-Anchored Units: Set pilasters with anchors penetrating not less than 2 inches into structural floor unless otherwise indicated in manufacturer's written instructions. Level, plumb, and tighten pilasters. Hang doors and adjust so tops of doors are level with tops of pilasters when doors are in closed position. Urinal Screens: Attach with anchoring devices to suit supporting structure. Set units level and plumb, rigid, and secured to resist lateral impact.

Hardware Adjustment: Adjust and lubricate hardware according to hardware manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold doors open approximately 30 degrees from closed osition when unlatched. Set hinges on out-swinging doors to return doors to fully closed position.

mounting holes. Cabinet Material: Stainless-steel sheet.

FIRE EXTINGUISHER CABINETS

FIRE PROTECTION CABINET

Basis-of-Design Product: Larsen 2409-6R or a comparable product by one of the following:

J. L. Industries, Inc., a division of Activar Construction Products Group.

1. Fire-Rated Cabinets: Construct fire-rated cabinets with double walls fabricated from 0.0428-inch-thick, cold-rolled steel sheet lined with minimum 5/8-inch-thick, fire-barrier material. Provide factory-drilled

Drawings and general provisions of the Contract, including General and Supplementary Conditions and

Product Data: For each type of product indicated. Include construction details, material descriptions,

B. Shop Drawings: For fire protection cabinets. Include plans, elevations, sections, details, and attachments to

Coordinate size of fire protection cabinets to ensure that type and capacity of fire extinguishers indicated are

C. Transparent Acrylic Sheet: ASTM D 4802, Category A-1 (cell-cast sheet), 3 mm thick, with Finish 1 (smooth or

1. Fire Protection Cabinets: Include roughing-in dimensions, details showing mounting methods,

Product Schedule: For fire protection cabinets. Coordinate final fire protection cabinet schedule with fire

relationships of box and trim to surrounding construction, door hardware, cabinet type, trim style, and

dimensions of individual components and profiles, and finishes for fire protection cabinets.

10 28 00 - 2

METAL CANOPIES

10 73 16 - 1

METAL CANOPIES

9829 Spencer Road

Brighton MI 48114

Main: 877-244-8562

Facsimile: 810-852-4721

www.bccgp.com

615 South College Street, Suite 1600

Charlotte, NC 28202

www.littleonline.com

T: 704.525.6350

FRANKLIN COUNTY BLDG SUBMISSION

NO. REASON

3 CONSTRUCTION 04/03/2023 DOCUMENTS BID SET

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

PANEL SIGNAGE

PART 2 - PRODUCTS

PERFORMANCE REQUIREMENTS

corners, and precisely formed lines and profiles; and as follows:

Thickness: Manufacturer's standard for size of sign.

and compatible with each material joined, and complying with the following:

Use concealed fasteners and anchors unless indicated to be exposed.

Subparagraph below and as follows:

Mounting: Surface mounted to wall.

PANEL-SIGN MATERIALS

ACCESSORIES

2.5 FABRICATION

10 14 23 - 1

Field Measurements: Verify locations of anchorage devices embedded in permanent construction by other

A. Accessibility Standard: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers

Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities and ICC A117.1 for signs.

Panel Sign: Sign with smooth, uniform surfaces; with message and characters having uniform faces, sharp

Etched and Filled Graphics: Sign face etched or routed to receive enamel-paint infill.

Acrylic Sheet: ASTM D 4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).

on back; die cut to form characters or images as indicated and suitable for exterior applications.

Inserts: Furnish inserts to be set by other trades into concrete or masonry work.

General: Provide manufacturer's standard sign assemblies according to requirements indicated.

Vinyl Film: UV-resistant vinyl film of nominal thickness indicated, with pressure-sensitive, permanent adhesive

Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signage, noncorrosive

1. Solid-Sheet Sign: Acrylic sheet with finish specified in "Surface Finish and Applied Graphics"

installers by field measurements before fabrication, and indicate measurements on Shop Drawings.

09 91 00 - 4

PLASTIC TOILET COMPARTMENTS

10 21 13 - 2

10 44 13 - 1

Maintenance Data: For metal canopy to include in maintenance manual.

10 44 13 - 3

SPECIFICATIONS 10 73 16 - 4

SECTION 11 61 33 - RETRACTABLE STAGES

A. Section Includes: Retractable stage

1.3 ACTION SUBMITTALS A. Product Data: For each type of product

Platform surface.

 Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of unit and their various assembly configurations. Include load capacities, assembly characteristics, and furnished accessories. B. Shop Drawings: For retractable stage.

Include plans, elevations, sections, and details. Include load capacities. C. Samples for Verification: For the following products, 12 inches square:

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For retractable stages to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

 Structural Performance: Retractable stage and components shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated: Stage Platforms: Vertical live load of 100 lbs, per sq. ft, over platform area with a vertical live load of 120 lbs per linear ft, or a concentrated load of 500 lbs. B. Fire-Test-Response Characteristics: As determined by testing identical products according to test method indicated below, by a qualified testing agency.

 Carpet and Resilient Floor Covering: Critical radiant flux Class II, not less than 0.22 W/sq. cm when tested according to NFPA 253. Accessibility Standard: Comply with applicable provisions in the DOJ's 2010 ADA Standards for Accessible Design and ICC A117.1 for accessibility to retractable stages if direct circulation path from the seating area to

2.2 RETRACTABLE STAGE

the stage is required.

 Retractable Stage: Power operated, surface mounted retractable platform stage system. Products: Subject to compliance with requirements, provide the following: Sheridan Seating Inc.; Madsen RS-1. Size: 12 by 20 feet.

 Platform Deck: Manufacturer's standard platform panel construction, and the following: Finish: As selected by the Architect. Operation: Electric winch assembly. 208 Volt, 3ph, 3/4 horsepower motor.

2.3 ACCESSORIES

necessary fittings to attach to platforms or risers.

 Stairs: Stage manufacturer's portable stair assembly not less than 36 inches in nominal width, with handrails on B. Railings: Platform or riser manufacturer's metal railing system consisting of 1-1/4- or 1-1/2-inch OD tubing and

RETRACTABLE STAGES

11 61 33 - 1

2.4 MATERIALS

 A. Plywood: PS 1. B. Hardware and Fasteners: Manufacturer's standard noncorroding type.

FABRICATION

Fabricate retractable stages in accordance with Architect reviewed and accepted shop drawings. Round corners and edges of components and exposed fasteners to reduce snagging and pinching hazards.

Form exposed work with flat, flush surfaces, level and true in line. Supports: Fabricate supports to withstand, without damage to components, the forces imposed by use of retractable stages without failure or other conditions that might impair their usefulness.

INSTALLATION A. Retractable stage shall be installed in accordance with the manufacturer's instructions and final approved shop

3.2 DEMONSTRATION Train Owner's maintenance personnel to adjust, operate, and maintain retractable stages.

END OF SECTION 11 61 23

RETRACTABLE STAGES

PART 1 - GENERAL

SECTION 11 66 23 - GYMNASIUM EQUIPMENT

Basketball equipment.

Safety Strap

Electric Winch

Wall-mounted safety pads.

gymnasium equipment.

grounding provisions.

display panel

C. Samples: For the following products:

out-of-bounds line to equipment

each backstop, and banner system.

Key Pad Control

a. Z-clip direct attachments

Division 01 Specification Sections, apply to this Section.

Backward Folding, Rear Braced Backstop (Main Court)

fastenings. If applicable, include assembly, disassembly, and storage instructions.

Gymnasium Equipment Operators: Include operating instructions.

Provide details of attachments for all equipment to structure

Provide interior elevations for each piece of equipment in lowered position

Flex goal and net assembly with breakaway rim

Center-Strut Rectangular Glass Backboard with bolt-on padding

A. This Section includes the following gymnasium equipment:

 Assemble retractable stages in location directed by Architect to verify that components are complete and in proper working order. Begin assembly demonstration using units in their as-stored condition. C. Adjust hardware, moving parts, and safety devices to function smoothly, and lubricate as recommended by

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and

Gymnasium Scoreboard capable of scoring Volleyball, Basketball, and Wrestling

Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions

Shop Drawings: Show location and extent of fully assembled gymnasium equipment. Show location and extent

Motors: Show nameplate data, ratings, characteristics, and mounting arrangements.

of individual components and profiles, features, and finishes. Include details of anchors, hardware, and

Product Data for Scoreboards, controls, and accessories shall include descriptions of control functions

of disassembled equipment and components and transport and storage accessories. Include elevations, sections,

and details not shown in Product Data. Show method of field assembly, connections, installation details,

Blocking and Reinforcement: Show locations of blocking and reinforcement required for support of

Provide layout of equipment in floor plan with the game lines and bleachers visible and dimensions from

Provide interior elevation of scoreboards and message center panels on each wall, with clearances and

switches, and controls. Indicate motor size, electrical characteristics, drive arrangement, mounting, and

6. Gymnasium Equipment Operators: Show locations and details for installing operator components,

7. Wiring Diagrams: Power, signal, and control wiring. Show control wiring for multi-device keypad control to

8. Provide full wiring diagram for message center to receive data input and communicate content with each

Pad Fabric: Not less than 3 inches square, with specified treatments applied. Mark face of material.

D. Fire Performance Affidavits: Signed by manufacturers certifying that protection pads comply with fire performance

E. Maintenance Data: For gymnasium equipment and gymnasium equipment operator to include in maintenance

mountings, floor inserts, attachments to other Work, operational clearances, and relationship to adjoining work

A. Installer Qualifications: Fabricator of products, or entity that employs installers and supervisors who are trained and approved by manufacture B. Scoreboard Manufacturer Qualifications: Company specializing in manufacturing electronic scoreboards with 10

testing agency acceptable to authorities having jurisdiction, and marked for intended use.

years minimum successful experience Field Measurements: Verify size of space, available clearances, obstructions, and position for gymnasium D. Source Limitations: Obtain each type of gymnasium equipment listed below through one source from a single

manufacturer. Basketball Equipment, Gymnasium Divider, Wall Pads, Operation and Control System Scoreboard, Scorer's Table, and full-color LED Digital Display panel including integrated control system devices, pc with system software for operation, and AV infrastructure coordinated with Communications Cabling design as complete assembly for video wall panel and operation E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a

 Field Measurements: Verify position and elevation of floor inserts and layout for gymnasium equipment. Verify dimensions by field measurements.

COORDINATION Coordinate installation of overhead-supported gymnasium dividers and suspension-system components with other construction including light fixtures, HVAC equipment, fire-suppression-system components, and partition Electrically Operated Dividers: Coordinate electrical requirements for type and location of power supply, conduit,

 Special Warranty: Manufacturer agrees to repair or replace components of gymnasium dividers that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, the following:

Faulty operation of gymnasium dividers. Tearing or deterioration of fabric, seams, or other materials beyond normal use. Warranty Period: Five years from date of Substantial Completion Special Warranty: Manufacturer agrees to repair or replace components of gymnasium equipment that fail in materials or workmanship within specified warranty period.

 Failures include, but are not limited to, the following: Basketball backboard failures including glass breakage. Faulty operation of basketball backstops. Warranty Period: Five years from date of Substantial Completion. Special Warranty: Manufacturer agrees to repair or replace components of scoreboards that fail in materials or

Warranty Period for Scoreboards, wired controls, and accessories: 5 years Warranty Period parts and factory labor for wireless controls and receivers Lifetime telephone Support for Scoreboards and LED Digital Display Panels

workmanship within specified warranty period.

PART 2 - PRODUCTS

1.4 QUALITY ASSURANCE

MATERIALS, GENERAL A. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated; mill finish or decorative, baked-enamel, powder-coat finish. Extruded Bars, Profiles, and Tubes: ASTM B 221.

Cast Aluminum: ASTM B 179. B. Steel: Comply with the following:

wiring, and control boxes.

Steel Plates, Shapes, and Bars: ASTM A 36, hot-dip galvanized. Steel Pipe: Standard-weight steel pipe complying with ASTM A 53.

Cold-Formed Steel Tubing: ASTM A 500, Grade A, unless another grade is required by structural loads.

GYMNASIUM EQUIPMENT

GYMNASIUM EQUIPMENT

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GYMNASIUM EQUIPMENT 11 66 23 - 2

4. Steel Mechanical Tubing: Cold-rolled, electric-resistance-welded carbon or alloy steel tubing complying with ASTM A 513 or steel tubing fabricated from steel complying with ASTM A 569 and complying with the dimensional tolerances in ASTM A 500.

Malleable-Iron Castings: ASTM A 47, grade required by structural loads.

Support Cable: 1/4-inch-diameter, 7x19 galvanized steel aircraft cable with a breaking strength of 7000 lb. Provide fittings complying with cable manufacturer's written recommendations for size, number, and method of installation 7. Support Chain: Proof coil chain, complying with ASTM A 413, Grade 30, size and diameter as required by structural loads; plated or painted. Provide fittings complying with chain manufacturer's written recommendations for size, number, and method of installation.

Anchors, Fasteners, Fittings and Hardware: Manufacturer's standard corrosion-resistant or noncorrodible units; concealed. Provide as required for gymnasium equipment assembly, mounting, and secure attachment. Nonshrink Nonmetallic Grout: Premixed factory-packaged nonstaining noncorrosive nongaseous group complying with ASTM C 1107 with minimum strength recommended in writing by gymnasium equipment

BASKETBALL EQUIPMENT Source Limitations: Obtain basketball equipment, including operators and controls from single manufacturer. Ceiling suspended, backward folding, rear braced backstop with fully-welded center mast frame cambered at 15°. complete assembly spanning height indicated on Drawings, including primary and secondary superstructure support framing to building structure, pipe and cable bracing, adjustable hangers, clamps, cables, chains, pulleys, fittings, hardware, and fasteners. 1. Basis of Design: Subject to compliance with requirements, provide Backward Fold Rear Braced Backstop

Model #9095200 as manufactured by Porter Athletics, or comparable products listed below:

Model 132BS; AALCO Manufacturing Co. EZ- Fold Model TB-25; Draper, Inc. Model IPI345BF; IPI by Bison

 Model 3105; Performance Sports Systems. Framing: Steel pipe, tubing, and shapes. Design framing to minimize vibration during play. Center Mast: 6-5/8 inch O.D. heavy wall structural steel tube with diagonal side sway braces of 2-1/2 inch by 1-1/2 inch rectangular steel tubing or 2-3/8 inch O.D. structural pipe, welded construction. Top horizontal mast, hinge spreader shall be a heavy 4 inch structural channel to support adjustable

Finish: Factory Finished Black 3. Folding Type: Provide manufacturer's standard assembly for backward-folding backstop, with hardware and fittings to permit folding. Overhead-Supported, Forward-Fold, Front Braced Backstop (Side Courts): Ceiling suspended, forward folding, front braced backstop with fully-welded center mast frame cambered at 15°. Complete assembly spanning height indicated on Drawings, including primary and secondary superstructure support framing to building structure, pipe and cable bracing, adjustable hangers, clamps, cables, chains, pulleys, fittings, hardware, and fasteners.

 Basis of Design: Subject to compliance with requirements, provide Forward Fold Front Braced Backstop. Model #9095000 as manufactured by Porter Athletics, or comparable products listed below: Model 137F5K; AALCO Manufacturing Co. EZ- Fold Model TF-20; Draper, Inc. Model IPI360FF; IPI by Bison

 Model 3106; Performance Sports Systems Framing: Fully-welded steel pipe, tubing, and shapes. Design framing to minimize vibration during play. Center Mast: 6-5/8 inch O.D. heavy-wall structural steel tube with diagonal side sway braces of 2-1/2 inch by 1-1/2 inch rectangular steel tubing or 2-3/8 inch O.D. structural pipe, welded construction. Top horizontal mast, hinge spreader shall be a heavy 4 inch structural channel to support adjustable suspension hangers.

Finish: Factory Finished Black Folding Type: Provide manufacturer's standard assembly for forward-folding backstop, with hardware and fittings to permit folding. Backstop/Backboard Safety Device: Designed to limit free fall if support cable, support chain, pulleys, fittings,

Retractor Device: Manufacturer's standard device designed to retract both support and safety cables,

chains, and straps away from play of the basketball when backstop is in playing position; one per folding

Basis of Design: Subject to compliance with requirements, provide Model No. 797 "Saf-Strap"; Porter

Main Court Basketball Backboards (2): Rectangular, 72 by 42 inches width by height, fabricated from the

a. Glass: Not less than 1/2-inch-thick, transparent tempered glass. Provide glass with impact-

marked in pattern and stripe width according to referenced rules.

Backboard Model #00208000, or comparable products by one of the following:

F. Goal Mounting Assembly: Compatible with goal, backboard, and support framing, with 5 inches o.c. horizontally

Basketball Goals: Complete with flanges, braces, attachment plate, net, and evenly spaced loops welded around

H. Basketball Nets: 12-loop-mesh net, between 15 and 18 inches long, sized to fit rim diameter, and as follows:

Glass Backboard Goal Mounting Assembly: Goal support framing and reinforcement designed to transmit

Direct Mount for Glass Backboard: Designed for mounting goal directly and independently to center mast

Type for Glass Backboards: Movable, breakaway design with manufacturer's standard breakaway

mechanism including positive-lock, preset pressure release, set to release at 180-lbload, and automatic

reset. Provide movable ring with rebound characteristics identical to those of fixed, nonmovable ring. Rim

shall be fabricated from 5/8 inch diameter cold drawn alloy steel and braced with 3/16 inch thick steel formed

Finish: Manufacturer's standard factory-applied, baked powder-coating finish complying with finish

Competition Cord: Antiwhip, made from white nylon cord not less than 120 gm nor more than 144 gm

Safety Pads for Glass Backboards: Provide safety pads, complying with NCAA and NFHS, designed for

backboard thickness indicated and extending continuously along bottom and up sides of backboard and over goal

manufacturer's written instructions for surface preparation including pretreatment, application,

Basis of Design: Subject to compliance with requirements, provide Porter Model #236054 Ultra-Flex

and die=cut welded into position. Breakaway goals with plastic pivot bearings are not acceptable.

of backstop support framing so no force, transmitted by ring, is directly applied to backboard and rigidity

and 4 and 4-1/2 inches o.c. vertically or manufacturer's standard hole pattern for goal attachment.

load from goal to backboard frame and to minimize stresses on glass backboard.

Net Attachment: No-tie loops for attaching net to rim without tying.

baking, and minimum dry film thickness; orange.

EZ Fold 503576: Draper Inc.

mounting and backboard supports as required by referenced rules.

Safety Pad Attachment: Bolt-on.

Model BA35S; IPI by Bison.

Model 28HS4S; AALCO Manufacturing Co.

Model 809; Performance Sports Systems.

maximize relief of stresses on backboard frame and glass.

absorbing, resilient rubber or PVC gasket around perimeter in a fully welded brushed-natural-finish,

extruded-aluminum or steel frame, with steel subframe, reinforcement, and bracing, including center-

strut frame reinforcement, and with mounting slots for mounting backboard frame to backstop support

Direct Mount: Designed for mounting backboard frame to center mast of backstop framing to

1) Target Area and Border Markings for Glass Boards: Permanently etched in white color,

Basis of Design: Subject to compliance with requirements, provide Porter Rectangular Glass

Athletic Equipment Co., or comparable products listed below

Model BA955 Saf-Lok Safety Belt; IPI by Bison.

Basketball Backboard: Provide predrilled holes or preset inserts for mounting goals.

Model 501S; AALCO Manufacturing Co.

Model 950; Performance Sports Systems

Model EZ Fold 503136; Draper, Inc.

Model BA42XL: IPI by Bison.

and stability of goal are maximized

Aut-O-Loc 503229; Draper Inc.

Model AST Safe-Tether, AALCO Manufacturing Co.

Model 1100 Safstop; Performance Sports Systems, Inc.

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winch, or related components fail; with mechanical automatic reset; 6000-lb load capacity; one per folding

Model 417X; Performance Sports Systems

flooring and type of floor plate.

GYMNASIUM EQUIPMENT

b. Draper, Inc.

IPI by Bison

Provide manufacturer's standard molded inserts for trimmed opening in wall pads for access to devices and

J. Electric Operator: Provide factory-assembled electric operator for backstop designed for lifting and lowering

with the building electrical system.

Comply with NFPA 70.

control circuit, maximum 24-V ac or dc.

Heat-dissipating gearbox

Porter Athletics

exceeding nameplate ratings or considering service factor.

Winch as manufactured by Porter Athletics, or approved equivalent.

Motor Characteristics: Single phase, 3/4 hp, 115 V, 60 Hz.

basketball equipment at fully retracted and fully lowered positions.

Size: 8 feet wide by 6 feet tall by 8 inches deep

Basketball: "fouls", "player", and "t.o.l"

Team Scores: Super Bright Amber, 13 inch high digits

Next Possession: Super Bright Amber arrow for each team

Period: Super Bright Amber, 9 inches high digits

Volleyball: "won" and "game"

Timing: Super Bright Red, 13 inch high digits

Rear-Lit Captions: Requiring no maintenance

Scoreboard Color: As selected by Architect.

Nevco Inc. including pc and Director's Software

Approximate hanging weight: 135 lbs

a. 6 inches high

LED displays

Service Factor: According to NEMA MG 1, unless otherwise indicated.

Security code: 4 digit security code to prevent unauthorized use

basketball equipment of type, size, weight, construction, use, and operation frequency indicated. Provide

operation system, of size and capacity and with features, characteristics, and accessories suitable for Project

conditions, recommended by gymnasium equipment manufacturer; complete with winch or hoist designed to move

and hold backstop in any raised or lowered position, electric motor and factory-prewired motor controls with limit

controls, remote-control stations capable of controlling multiple motors, remote-control devices, power disconnect

switch, enclosures protecting controls and all operating parts, and accessories required for proper operation.

Include wiring from motor controls to motor. Coordinate operator wiring requirements and electrical characteristics

Control Equipment: Comply with NEMA ICS 1, NEMA ICS 2, and NEMA ICS 6 with NFPA 70 Class 2

Winch: Consisting of heavy-duty, fully enclosed worm gear reducer, belt and sprocket drive, cable drum,

Electric Motor: UL-approved or -recognized, totally enclosed, insulated, capacitor-start motor, complying

with NEMA MG 1, with thermal-overload protection, brake, and permanently lubricated bearings; sized to

Basis of Design: Subject to compliance with requirements, provide Model #712 – 3/4 HP Electric

Key Pad Control: Push-button control station electric controls NEMA ICS 6, Type 1 enclosure for surface

mounting, capable of controlling up to four backstops simultaneously, and up to 128 gymnasium equipment

pieces independently. Intended to control basketball equipment, and ceiling suspended banner system

Basis of Design: Subject to compliance with requirements, provide Powr-Touch 2.5 #12555-100 by

Operation Safety: Touch pad requires constant pressure on pad button to control gymnasium

Mounting: Flush mounted in standard 2-gang electrical box, 4 inches by 4 inches by 2-1/2

inches with 12-volt control circuit to relay panels located on walls or roof framing structure.

Relay Panels: Minimum of 1 dual-powered relay panel, with a maximum of 16 relay panels

per network. Each relay panel shall contain 2 banks of eight 30-amp relays for operating 8

momentary-controlled type (up and down), 120-volt or low-voltage pieces of equipment. Each

breakers per relay panel. Each relay panel shall include 2 maintained 30-amp relays.

accessories for direct mount to wall adjacent key pad control station. Content includes printed

Basis of Design: Subject to compliance with requirements, provide Total Gymnasium Control

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Equipment Legend: Provide custom equipment legend panel with acrylic cover and mounting

gymnasium floor plan with equipment labels for each backstop, and banner system.

Source limitation: All components including scoreboard, control center, control cable, digital display panel, pc and

Interior, multi-purpose basketball/volleyball/wrestling electronic scoreboard with two integral horns, changeable

captions, programmable electronic team names, and LED displays for time, scores, period, time outs left, number

Time outs left, player numbers with personal fouls, game, and weight: Super Bright Red, 9 inch high

Team fouls, games won, and match: Super Bright Amber, 9 inches high digits

Power requirements: 169 Watts, MAX, 100-240 Volts AC with Power Factor Correction.

a. Profile A: Operate Scoreboards #1 and #2, simultaneously from one console

test mode, power on-off switch, alternate time control and multiple scoreboard operation.

Safety Pad Surface-Burning Characteristics: Provide safety pads with surface burning characteristics of flame-

ASTM E 84 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.

Pad Covers: Provide safety pad fabric covers fabricated from puncture and tear-resistant, not less than 19-oz

Provide option of battery supply for control operation if utility power not available.

Remote hand-held main time switch with integral horn button

Provide carrying case for each control center and hand-held switch

with horn, and 1/10th second display during last minute.

test-response characteristics indicated, lined with fire-retardant liner.

Mounting: Wall Pad Mounting Clips #00347100 by Porter Athletics

or comparable products by one of the following manufacturer's

Fill: Multiple-impact-resistant foam not less than 2-inch-thick bonded polyurethane.

Flame-Resistance Ratings: Passes NFPA 701.

sag and wrinkles and firmly attached to back of backer board.

Number of Panel Sections: As indicated on Drawings.

Model SWP; AALCO Manufacturing Co.

Dimmer control for scoreboard

WALL-MOUNTED SAFETY PADS

Color: Match Scoreboard

Scoreboard Control Center: Comply with Part 15 of FCC Rules regarding interference. Provide two wireless,

microprocessor based operator's control center consoles with two receiver units - one mounted at each

1. Basis of Design: Subject to compliance with requirements, provide Model MPCW as manufactured by

Design each console with two profiles, such that either console is capable of operating based on the

Profile B: Operate Scoreboard #1 from one console, and Scoreboard #2 from the other console

Split and raised 40 key keyboards, internal beeper acknowledging each entry and bookmark capabilities

Provide with LED displays, lithium cell battery backup to maintain scoreboard memory and time of day, self-

Timer features: Time of day display, multiple time out timers with warning, interval horn, upcount auto stop

9. Receiver is sturdy, impact-resistant construction with antenna, and mounting hardware to mount to top of

spread index 25 or less and smoke-developed index of 450 or less, as determined by testing products per

PVC-coated polyester or nylon-reinforced PVC fabric treated with fungicide for mildew resistance, with the fire-

Wall Safety Pads: Padded wall wainscot panels designed to be attached in a continuous row; each panel section

consisting of fill laminated to backer board with visible surfaces fully covered by seamless fabric cover, free from

Size: Each panel section is a minimum of 24 inches wide by not less than 7'-0" tall by 2 inches deep,

Basis of Design: Subject to compliance with requirements, provide Model 9056028XX by Porter Athletics,

Include bonus and double bonus in the form of a 4 inch Super Bright Red LED "B"

of player fouling with personal fouls, team fouls, bonus and double bonus circles, and next possession arrows.

software, and other accessories and installation hardware shall be products of a single manufacturer.

Center #925-000 Custom Equipment Legend (11" x 18") by Porter Athletics

Limit Switches: Adjustable switches, interlocked with motor controls and set to automatically stop

bank of relays shall be independently powered by 120-volt line power, with 2 dedicated circuit

Time Delay: Touch pad automatically reverts back to secure mode if no button is used within

start and operate size and weight of basketball equipment considering Project's service conditions without

SECTION 12 21 13 - HORIZONTAL LOUVER BLINDS

This Section includes the following:

of applicable testing and inspecting agency

Division 01 Specification Sections, apply to this Section.

Horizontal louver blinds with aluminum slats.

Health Product Declaration: For each product.

Flame-Resistance Ratings: Passes NFPA 701.

HORIZONTAL LOUVER BLINDS, ALUMINUM SLATS

Spacing: Not less than every 0.71 inch.

mechanisms on three sides and end plugs and the following:

For Blinds with Nominal Slat Width 1 Inch or Less: Braided string.

Tilt limiter with preselected degree settings.

Tilt Operation: Manual with clear plastic wand.

nanufacturer for weight and size of blind.

and accessories under conditions of normal use.

coordinating with slat color, unless otherwise indicated.

system,]and other conditions affecting performance.

Jamb Mounted: Install headrail flush with face of opening jamb and head.

SECTION 12 36 61.16 - SOLID SURFACING COUNTERTOPS

Solid surface material countertops

A. Product Data: For counterton materials.

and cutouts for plumbing fixtures.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

local sources for products.

QUALITY ASSURANCE

Solid surface material backsplashes.

Show locations and details of joints.

Countertop material, 6 inches square

Installer Qualifications: Fabricator of countertops.

Build mockup of typical countertop as shown on Drawings.

Coordinate locations of utilities that will penetrate countertops or backsplashes.

undisturbed at time of Substantial Completion.

C. Samples for Verification: For the following products:

Show direction of directional pattern, if any.

Division 01 Specification Sections, apply to this Section.

minimum dry film thickness.

PART 3 - EXECUTION

3.2 INSTALLATION

END OF SECTION 12 21 13

HORIZONTAL LOUVER BLINDS

PART 1 - GENERAL

A. Section Includes:

1.3 ACTION SUBMITTALS

entire operational range.

EXAMINATION

Hold-Down Brackets and Hooks or Pins: Manufacturer's standard.

M. Side Channels and Perimeter Light Gap Seals: Manufacturer's standard.

Concealed Components: Noncorrodible or corrosion-resistant-coated materials.

Lift-and-Tilt Mechanisms: With permanently lubricated moving parts.

Hunter Douglas; CE Model.

Width: 1 inch.

HORIZONTAL LOUVER BLINDS

Finish: One color.

Lift Cords: Manufacturer's standard

linkage rod, and the following:

Valance: Manufacturer's standard.

2.2 HORIZONTAL LOUVER BLIND FABRICATION

Capacity: As indicated.

Light-blocking lower back lip.

E. Ladders: Evenly spaced to prevent long-term slat sag.

with crowned profile and radiused corners.

Thickness: Manufacturer's standard

Perforated Openness factor 7 percent.

Shop Drawings: Show fabrication and installation details for horizontal louver blinds.

Product Standard: Provide horizontal louver blinds complying with WCSC A 100.1.

maintained at the levels indicated for Project when occupied for its intended use.

Manufacturers: Subject to compliance with requirements, provide products by the following:

match crowned shape of slat; with enclosed ladders and tapes to prevent contact with sill.

Drawings and general provisions of the Contract, including General and Supplementary Conditions and

Fire-Test-Response Characteristics: Provide horizontal louver blinds with the fire-test-response characteristics

indicated, as determined by testing identical products per test method indicated below by UL or another testing

and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings

Environmental Limitations: Do not install horizontal louver blinds until construction and wet and dirty finish work

Field Measurements: Where horizontal louver blinds are indicated to fit to other construction, verify dimensions

of other construction by field measurements before fabrication and indicate measurements on Shop Drawings.

Allow clearances for operable glazed units' operation hardware throughout the entire operating range. Notify

Slats: Perforated, aluminum; alloy and temper recommended by producer for type of use and finish indicated;

Headrail: Formed steel or extruded aluminum; long edges returned or rolled; fully enclosing operating

Bottom Rail: Formed-steel or extruded-aluminum tube, with plastic or metal capped ends top contoured to

G. Tilt Control: Enclosed worm-gear mechanism, slip clutch or detachable wand preventing overrotation, and

Lift Operation: Manual, cord lock; locks pull cord to stop blind at any position in ascending or descending travel.

Tilt-Control and Cord-Lock Position: Right and left side of headrail, respectively, unless otherwise indicated.

K. Mounting: End mounting, permitting easy removal and replacement without damaging blind or adjacent

B. Unit Sizes: Obtain units fabricated in sizes to fill window and other openings as follows, measured at 74 deg F:

C. Installation Brackets: Designed for easy removal and reinstallation of blind, for supporting headrail, valance,

D. Installation Fasteners: No fewer than two fasteners per bracket, fabricated from metal noncorrosive to blind

F. Component Color: Provide rails, cords, ladders, and exposed-to-view metal, wood, and plastic matching or

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for

A. Install horizontal louver blinds level and plumb and aligned with adjacent units according to manufacturer's

Adjust horizontal louver blinds to operate smoothly, easily, safely, and free of binding or malfunction throughout

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and

Shop Drawings: For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining,

Maintenance Data: For solid surface material countertops to include in maintenance manuals. Include Product

Data for care products used or recommended by Installer and names, addresses, and telephone numbers of

Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate countertops similar to that

Subject to compliance with requirements, approved mockups may become part of the completed Work if

required for this Project, and whose products have a record of successful in-service performance.

C. Mockups: Build mockups to demonstrate aesthetic effects and to set quality standards for fabrication and

Field Measurements: Verify dimensions of countertops by field measurements before countertop fabrication is

written instructions, and located so exterior slat edges in any position are not closer than 1 inch to interior face

of glass. Install intermediate support as required to prevent deflection in headrail. Allow clearances between

Proceed with installation only after unsatisfactory conditions have been corrected.

adjacent blinds and for operating glazed opening's operation hardware if any.

installation tolerances, operational clearances, [accurate locations of connections to building electrical

hardware and adjoining construction; type designed for securing to supporting substrate; and supporting blinds

Metal: For components exposed to view, apply manufacturer's standard baked finish complying with

manufacturer's written instructions for surface preparation including pretreatment, application, baking, and

and operating hardware, and for hardware position and blind mounting method indicated.

Blind Units Installed between (inside) Jambs: Width equal to 1/4 inch per side or 1/2 inch total, plus or

minus 1/8 inch, less than jamb-to-jamb dimension of opening in which each blind is installed. Length

equal to 1/4 inch, plus or minus 1/8 inch, less than head-to-sill dimension of opening in which each blind

1. Provide intermediate support brackets if end support spacing exceeds spacing recommended by

surfaces and finishes; with spacers and shims required for blind placement and alignment indicated.

Length of Tilt Control: Length required to make operation convenient from floor level.

Finish Color Characteristics: Match color, texture, pattern, and gloss of slats.

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Architect of discrepancies. Coordinate fabrication schedule with construction progress to avoid delaying the

in spaces, including painting, is complete and dry and ambient temperature and humidity conditions are

RELATED DOCUMENTS

QUALITY ASSURANCE

PROJECT CONDITIONS

PART 2 - PRODUCTS

PART 1 - GENERAL

PART 3 - EXECUTION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for play court layout, alignment of mounting substrates, installation tolerances, operational clearances, accurate locations of connections to building electrical system, and other conditions affecting performance.

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Verify critical dimensions.

 B. Proceed with installation only after unsatisfactory conditions have been corrected. 3.2 INSTALLATION, GENERAL General: Comply with manufacturer's written installation instructions and competition rules indicated for each type

of gymnasium equipment and gymnasium dividers. Complete equipment field assembly, where required. Permanently Placed Gymnasium Equipment and Components: Rigid, level, plumb, square, and true; anchored securely to supporting structure; positioned at locations and elevations indicated on Shop Drawings; in proper relation to adjacent construction; and aligned with court layout. Floor Insert Location: Coordinate location with application of game lines and markers. Floor Insert Elevation: Coordinate installed heights of floor insert with installation and field finishing of finish

'Operating Gymnasium Equipment: Verify clearances for movable components of gymnasium equipment throughout entire range of operation and for access to operating components. Wall Safety Pads: In Gymnasium mount with wall safety pads bottom edge of attachment flange at 4 inches above finished floor. In Time Out Room C108 mount wall safety pads with bottom edge of attachment flange at finish

 Gymnasium Dividers and Components: Install level, plumb, square, and true; anchored securely to supporting structure; positioned at locations and elevations indicated; in proper relation to adjacent construction; and aligned 1. Verify clearances for movable components of gymnasium dividers throughout entire range of operation and for access to operating components.

E. Anchoring to In-Place Construction: Use anchors and fasteners where necessary for securing built-in and permanently placed gymnasium equipment to structural support and for properly transferring load to in-place ADJUSTING

Adjust movable components of gymnasium equipment to operate safely, smoothly, easily, and quietly, free from binding, warp, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Lubricate hardware and moving parts. After completing gymnasium equipment installation, inspect components. Remove spots, dirt, and debris and

touch up damaged shop-applied finishes according to manufacturer's written instructions. Provide final protection and maintain conditions acceptable to manufacturer and Installer that ensure gymnasium equipment is without damage or deterioration at time of Substantial Completion. Replace gymnasium equipment and finishes that cannot be cleaned and repaired, in a manner approved by Architect, before time of Substantial Completion.

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain gymnasium equipment.

END OF SECTION 11 66 23

1.7 FIELD CONDITIONS

1.8 COORDINATION

PART 2 - PRODUCTS

 Solid Surface Material: Homogeneous-filled plastic resin complying with ICPA. Basis-of-Design Product: Subject to compliance with requirements, provide Basis-of-Design as indicated on the Finish Schedule or comparable by one of the following:

2.1 SOLID SURFACE COUNTERTOP MATERIALS

Formica.

Joints: Fabricate countertops without joints to greatest extent possible

Wilsonart LLC: Solid Surface. Type: Provide Standard type unless Special Purpose type is indicated. Colors and Patterns: As indicated by manufacturer's designations.

Particleboard: ANSI A208.1, Grade M-2. C. Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.

A. Fabricate countertops according to solid surface material manufacturer's written instructions and to the AWI/AWMAC/WI's "Architectural Woodwork Standards."

 Grade: Custom. Front: Straight, slightly eased at top. Backsplash: Straight, slightly eased at corner.

LG Hausys, Ltd.

End Splash: Matching backsplash Countertops: 3/4-inch-thick, solid surface material with front edge built up with same material.

Backsplashes: 1/2-inch-thick, solid surface material. Fabricate tops with shop-applied edges unless otherwise indicated. Comply with solid surface material manufacturer's written instructions for adhesives, sealers, fabrication, and finishing. Fabricate with loose backsplashes for field assembly

Joints: Fabricate countertops in sections for joining in field 1. Joint Locations: Not within 18 inches of a sink or cooktop and not where a countertop section less than 36 inches long would result, unless unavoidable. Splined Joints: Accurately cut kerfs in edges at joints for insertion of metal splines to maintain alignment of surfaces at joints. Make width of cuts slightly more than thickness of splines to provide snug fit. Provide

at least three splines in each joint. H. Cutouts and Holes: 1. Undercounter Plumbing Fixtures: Make cutouts for fixtures in shop using template or pattern furnished by fixture manufacturer. Form cutouts to smooth, even curves.

 a. Provide vertical edges, slightly eased at juncture of cutout edges with top and bottom surfaces of countertop and projecting 3/16 inch into fixture opening. Provide vertical edges, rounded to 3/8-inch radius at juncture of cutout edges with top surface of countertop, slightly eased at bottom, and projecting 3/16 inch into fixture opening.

Provide 3/4-inch full bullnose edges projecting 3/8 inch into fixture opening. 2. Counter-Mounted Plumbing Fixtures: Prepare countertops in shop for field cutting openings for countermounted fixtures. Mark tops for cutouts and drill holes at corners of cutout locations. Make corner holes of largest radius practical.

Fittings: Drill countertops in shop for plumbing fittings, undercounter soap dispensers, and similar items.

2.3 INSTALLATION MATERIALS Adhesive: Product recommended by solid surface material manufacturer.

 Adhesives shall have a VOC content of 70 g/L or less. Sealant for Countertops: Comply with applicable requirements in Section 07 92 00 "Joint Sealants."

PART 3 - EXECUTION

 Examine substrates to receive solid surface material countertops and conditions under which countertops will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of countertops.

Proceed with installation only after unsatisfactory conditions have been corrected.

A. Install countertops level to a tolerance of 1/8 inch in 8 feet, 1/4 inch maximum. Do not exceed 1/64-inch difference between planes of adjacent units. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Predrill holes for screws as recommended by manufacturer. Align adjacent surfaces and, using adhesive in color to match

SOLID SURFACING COUNTERTOPS

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countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface. Fasten subtops to cabinets by screwing through subtops into cornerblocks of base cabinets. Shim as needed to

instructions. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean Bond joints with adhesive and draw tight as countertops are set. Mask areas of countertops adjacent to joints to prevent adhesive smears.

Install metal splines in kerfs in countertop edges at joints. Fill kerfs with adhesive before inserting splines and remove excess immediately after adjoining units are drawn into position. Clamp units to temporary bracing, supports, or each other to ensure that countertops are properly aligned and joints are of specified width. F. Install backsplashes and end splashes by adhering to wall and countertops with adhesive. Mask areas of

Secure countertops to subtops with adhesive according to solid surface material manufacturer's written

countertops and splashes adjacent to joints to prevent adhesive smears. G. Install aprons to backing and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears. Fasten by screwing through backing. Predrill holes for screws as recommended by manufacturer. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while

cutting. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping. Seal edges of cutouts in particleboard subtops by saturating with varnish Apply sealant to gaps at walls; comply with Section 07 92 00 "Joint Sealants."

END OF SECTION 12 36 61.16

SOLID SURFACING COUNTERTOPS

SECTION 12 66 00 - TELESCOPING STANDS

RELATED DOCUMENTS

Division 01 Specification Sections, apply to this Section.

Electrically operated telescoping stands.

away from the stack to the fully extended position.

A. Preinstallation Conference: Conduct conference at Project site.

PREINSTALLATION MEETINGS

Product Data: For each type of product.

Include load capacities.

INFORMATIONAL SUBMITTALS

Qualification Data: For Installer.

Field quality-control reports.

Welding certificates.

finishes for telescoping stands.

PART 1 - GENERAL

SUMMARY

Section Includes:

1.5 ACTION SUBMITTALS

align subtops in a level plane.

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FRANKLIN COUNTY BLDG SUBMISSION

NO. REASON

DOCUMENTS BID SET

3 CONSTRUCTION 04/03/2023

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

GYMNASIUM EQUIPMENT

GYMNASIUM EQUIPMENT

11 66 23 - 4

GYMNASIUM EQUIPMENT

11 66 23 - 7

SOLID SURFACING COUNTERTOPS

12 36 61.16 - 1

TELESCOPING STANDS

Operation and Maintenance Data: For telescoping stands to include in operation and maintenance manuals.

1. In addition to items specified in Section 01 78 23 "Operation and Maintenance Data," include the

b. Precautions for cleaning materials and methods that could be detrimental to telescoping-stand

Drawings and general provisions of the Contract, including General and Supplementary Conditions and

Forward Folding: Wall- or floor-attached bleachers that open in the forward direction by moving the front row

Include construction details, material descriptions, dimensions of individual components and profiles, and

Show seating layout, aisle widths, row-lettering and seat-numbering scheme, and wheelchair accessibility

Signage: Full-size units for row letters, seat numbers, each type of accessibility sign and custom graphics.

4. Show locations and details for installing operator components, switches, and controls. Indicate motor

Include load capacities, assembly characteristics, and furnished accessories.

Shop Drawings: For telescoping stands in both stacked and extended positions.

Include plans, elevations, sections, and attachment details.

Include diagrams for power, signal, and control wiring.

Decking: 6-inch-square Samples of finished material.

Product Certificates: For each type of telescoping stand assembly.

a. Procedures for conducting periodic inspections.

Seat Unit: Full-size unit of each type.

finishes and performance.

Include electrical characteristics of electrical components, devices, and accessories.

size, electrical characteristics, drive arrangement, mounting, and grounding provisions.

Seating Material: 6-inch-square Sample of each seating material, color, and finish indicated.

Samples for Verification: For the following products prepared on Samples of size indicated below:

Metal Components: 6-inch-square Sample of each color and finish indicated.

12 66 00 - 1

12 36 61.16 - 3

Methods for maintaining upholstery fabric.

SPECIFICATIONS

Qualification Data: For Installer G. Sample Warranty: For special warranty on each piece of equipment and operation system

TELESCOPING STANDS

PART 2 - PRODUCTS A. Steps: PART 3 - EXECUTION 3.4 ADJUSTING

```
2.6 FABRICATION
TELESCOPING STANDS
```

```
2.3 COMPONENTS
 TELESCOPING STANDS
   C. Deck: Aluminum.
   H. Control Devices:
2.4 ACCESSORIES
       INSTALLATION
       FIELD QUALITY CONTROL
         replace components as required to restore damaged or soiled areas.
```

```
1.8 QUALITY ASSURANCE
1.9 FIELD CONDITIONS
        Design and ICC A117.1.
              Electrical Controls:

 A. Benches: Seats and skirts.

         indicated on Drawings.
              stored position.
             Row letters at each row end.
              Accessibility signs at each accessible space and accessible aisle seat.
              Custom graphics as indicated on Drawings.
```

```
A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by
   B. Welding Qualifications: Qualify procedures and personnel according to the following:
                AWS D1.1/D1.1M, "Structural Welding Code - Steel."
                AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."
   C. Mockups: Build mockups to demonstrate aesthetic effects and to set quality standards for fabrication and

    Build mockup of typical telescoping stand as shown on Drawings.

               Subject to compliance with requirements, approved mockups may become part of the completed Work if
                 undisturbed at time of Substantial Completion.
   A. Finished Spaces: Do not deliver or install telescoping stands until finishes in spaces to receive them are
           complete, including suspended ceilings, floors, and painting.

    Field Measurements: Indicate measurements on Shop Drawings.

2.1 PERFORMANCE REQUIREMENTS
   A. Structural Performance: Telescoping stands to withstand the effects of gravity loads, operational loads, and
          other loads and stresses according to ICC 300.
   B. Accessibility Standard: Comply with applicable provisions in the DOJ's 2010 ADA Standards for Accessible
   A. System Description: Operable system of multiple-tiered seating on interconnected folding platforms that close
         for storage, without being dismantled, into a nested stack. Telescoping-stand units permit opening and closing
          of adjacent, individual and multiple rows, and close with vertical faces of platforms in the same vertical plane.
         1. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a
                 qualified testing agency, and marked for intended location and application.
                Telescoping-Stands Standard: ICC 300.
   B. Wall-Attached Telescoping Stands: Forward-folding system, in which the bleachers open in the forward direction
         by moving the front row away from the stack to the fully extended position and the rear of bleacher
           understructure permanently attaches to wall construction.

    Products: Subject to compliance with requirements, provide the following:

                     Irwin Seating Company; VersaTract with Infinity Seat Module.
              Row Spacing: As indicated on Drawings.
               Row Rise: As indicated on Drawings.
               Seat Type: Benches.
                Elevated Front Row: Height indicated on Drawings.
                Operation: Electrically operated, with friction-type, integral power unit.
                     Control Devices: Wall-attached control system.
                     Limit Switches: Automatically stop power system when telescoping stands reach fully opened or
                     Motion Monitor: Flashing light with self-contained warning horn, rated at 85 dB at 10 feet, mounted
                       under telescoping seating for audio and visual warning during operation.
                     Transformer: As required to coordinate current characteristics of motor and control station with
                      building electrical system.

    Material: Molded plastic with contour surfaces.

                     Color: As selected by Architect from manufacturer's standard.
                Bench Height: Not less than 16 inches or more than 18 inches.
                Bench Depth: As indicated on Drawings.
   B. Wheelchair-Accessible Seating: Locate seating cutouts to provide wheelchair-accessible seating at locations
               Equip tiers adjacent to wheelchair-accessible seating with front rails as required by ICC 300.
                Equip cutouts with full-width front closure panels that match decking construction and finish and that
                extend from underside of tiers adjacent to cutouts to 1-1/2 inches from finished floor.
             Finish: Color anodized.

    Color: As selected by Architect from manufacturer's standard colors.

         Risers: Steel sheet with manufacturer's standard, rust-inhibiting coating or hot-dip galvanized finish.
         Safety Rails: Steel, finished with manufacturer's standard powder coat system.
                Removable mid-aisle handrails located at centerline of each aisle with seating on both sides.
                 End rails (quards) that are removable
                Back rails (guards) along rear of units where required by ICC 300.
                Removable front rails (guards) along front of units where required by ICC 300.
                Removable rails around accessible seating cutouts and truncations.
                Removable, programming-support front rails to allow seating in upper rows while lower rows remain in the

    F. Understructure: Structural steel.

   B. Closure Panels and Void Fillers:
```

Color: Match Architect's sample. Finish: Manufacturer's standard rust-inhibiting finish. G. Support Column Wheels: Nonmarring, soft, rubber-face wheel assembly under each support column. Include wheels of size, number, and design required to support stands and operate smoothly without damaging the flooring surface, but no fewer than four per column or less than 4 inches in diameter and 1-Wall Attached: Manufacturer's standard control station, located within full view of each stand and its Fasteners: Vibration proof, in manufacturer's standard size and material.

Slip-resistant, abrasive tread nosings at aisles. Intermediate aisle steps, fully enclosed, at each aisle. Transitional top step, fully enclosed, at each aisle where last row of telescoping stands is adjacent to a Removable front steps, fully enclosed, at each aisle, that engage with front row to prevent accidental separation or movement and are equipped with a minimum of four skid-resistant feet. Aisle closures at foot level that produce flush vertical face at aisles when system is stored.

12 66 00 - 2

12 66 00 - 3

12 66 00 - 4

End panels covering exposed ends of stands in the stored position. Back panels covering rear of freestanding units. Panels extend full height and width of unit. Panels at cutouts and truncations for accessible seating. Rear fillers including supports for closing openings between top row and rear wall of adjoining Gap fillers for closing openings between stand units or between stand units and adjoining construction.

 Molded Plastic: High-density polyethylene; blow or injection molded, color-pigmented, textured, impact-resistant, with integral reinforcing ribs for attachment and anchoring points. Provide with UV inhibitors to retard fading.

 Fabricate telescoping stands to operate easily without special tools or separate fasteners unless otherwise Round corners and edges of components and exposed fasteners to reduce snagging and pinching hazards.

Form exposed work with flat, flush surfaces, level and true in line. Supports: Fabricate supports to withstand, without damage to components, the forces imposed by use of stands without failure or other conditions that might impair their usefulness.

Cantilever bench seat supports to produce toe space uninterrupted by vertical bracing.

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work. Proceed with installation only after unsatisfactory conditions have been corrected.

Install telescoping stands according to ICC 300 and manufacturer's written instructions.

Testing Agency: Engage a qualified testing agency to perform tests and inspections. B. Perform the following tests and inspections: ICC 300 Inspection: Inspect installed telescoping stands to verify that construction, installation, and operation are according to ICC 300 requirements. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment. Telescoping stands will be considered defective if they do not pass tests and inspections.

 D. Prepare test and inspection reports. Adjust backrests so that they are at proper angles and aligned with each other in uniform rows. Adjust hardware and moving parts to function smoothly, and lubricate, test, and adjust each telescoping stand unit to operate according to manufacturer's written instructions. C. Clean installed telescoping stands on exposed and semiexposed surfaces. Touch up factory-applied finishes or

DEMONSTRATION A. Engage a factory-authorized service representative to train Owner's maintenance personnel to inspect, adjust, operate, and maintain telescoping stands.

SECTION 14 21 23 - MACHINE ROOM-LESS ELECTRIC TRACTION PASSENGER ELEVATORS

PART 1 - GENERAL

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

A. Section includes electric traction passenger elevators.

1.3 ACTION SUBMITTALS A. Shop Drawings:

Include plans, elevations, sections, and large-scale details indicating service at each landing, coordination with building structure, relationships with other construction, and locations of equipment. Include large-scale layout of car-control station.

Indicate maximum dynamic and static loads imposed on building structure at points of support, and maximum and average power demands. 1.4 INFORMATIONAL SUBMITTALS

Qualification Data: For Installer. Manufacturer Certificates: Signed by elevator manufacturer certifying that hoistway, pit, and control closet layout and dimensions, as shown on Drawings, and electrical service, as shown and specified, are adequate for elevator system being provided. C. Sample Warranty: For special warranty.

1.5 COORDINATION Coordinate installation of sleeves, block outs, elevator equipment with integral anchors, and other items that are embedded in concrete or masonry for elevator equipment. Furnish templates, sleeves, elevator equipment with integral anchors, and installation instructions and deliver to Project site in time for installation. Coordinate locations and dimensions of other work relating to electric traction elevators including pit ladders; sumps and floor drains in pits; entrance subsills; electrical service; and electrical outlets, lights, and switches in hoistways, pits, and machine rooms. WARRANTY

A. Manufacturer's Special Warranty: Manufacturer agrees to repair, restore, or replace elevator work that fails in materials or workmanship within specified warranty period. Failures include, but are not limited to operation or control system failure, including excessive malfunctions; performances below specified ratings; excessive wear; unusual deterioration or aging of materials or finishes; unsafe conditions; need for excessive maintenance; abnormal noise or vibration; and similar unusual, unexpected, and unsatisfactory conditions. Warranty Period: One year from date of Substantial Completion.

PART 2 - PRODUCTS

from single manufacturer.

2.1 MANUFACTURERS Product: Subject to compliance with requirements, provide Schindler Elevator Corp; Model 3100 Gearless Traction Elevator. B. Source Limitations: Obtain elevators and major elevator components, including driving machines, controllers, signal fixtures, door operators, car frames, cars, and entrances, shall be manufactured by single manufacturer

14 21 23 - 1

14 21 23 - 2

14 21 23 - 3

2.2 PERFORMANCE REQUIREMENTS Regulatory Requirements: Comply with ASME A17.1/CSA B44.

MACHINE ROOM-LESS ELECTRIC TRACTION PASSENGER ELEVATORS

B. Accessibility Requirements: Comply with Section 407 in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and with ICC A117.1. Elevator System, General: Manufacturer's standard elevator systems. Unless otherwise indicated,

manufacturer's standard components shall be used, as included in standard elevator systems and as required for complete system. B. Elevator Description: Application: Machine Room Less (MRL) Counterweight Location: Side

Machine Location: Top of the hoistway mounted on car and counterweight guide rails Rated Load: 2100 lb to 3,500 lb. Rated Speed: 100 fpm. Operation System: Selective-collective automatic operation. Auxiliary Operations: Nuisance call cancel.

Security Features: Card-reader operation. Car Enclosures: Inside Width: 5'-9 5/16" inches from side wall to side wall. Inside Depth: 4'-4 7/8" inches from back wall to front wall (return panels). Front Walls (Return Panels): Satin stainless steel, No. 4 finish. Car Fixtures: Satin stainless steel, No. 4 finish. Side and Rear Wall Panels: Satin stainless steel, No. 4 finish. Reveals: Satin stainless steel, No. 4 finish. Door Faces (Interior): Satin stainless steel, No. 4 finish. Door Sills: Aluminum, mill finish.

Ceiling: Satin stainless steel, No. 4 finish with LED lighting. Handrails: 1/2 by 2 inches rectangular satin stainless steel, No. 4 finish. Floor prepared to receive resilient flooring (specified in Section 09 65 00 "Resilient Flooring"). Hoistway Entrances: Width: 7'-4" inches.

Depth: 5'-9" Door Height: 7'-0" Type: Single-speed side sliding. Frames: Satin stainless steel, No. 4 finish. Frames at Other Floors: Satin stainless steel, No. 4 finish. Doors: Satin stainless steel, No. 4 finish. Doors and Transoms at Other Floors: Satin stainless steel, No. 4 finish. Sills: Aluminum, mill finish.

Sills at Other Floors: Aluminum, mill finish. Hall Fixtures: Satin stainless steel, No. 4 finish. Hall Fixtures at Other Floors: Satin stainless steel, No. 4 finish. Additional Requirements: a. Provide inspection certificate in each car, mounted under acrylic cover with frame made from satin stainless steel, No. 4 finish

 Provide hooks for protective pads in all cars and one complete set of full-height protective pads. TRACTION SYSTEMS Elevator Machines: Variable-voltage, variable-frequency, ac-type hoisting machines and solid-state power

Provide regenerative system. Limit total harmonic distortion of regenerated power to 5 percent per IEEE 519. Provide means for absorbing regenerated power when elevator system is operating on standby power. Provide line filters or chokes to prevent electrical peaks or spikes from feeding back into building power Inserts: Furnish required concrete and masonry inserts and similar anchorage devices for installing guide rails,

machinery, and other components of elevator work. Device installation is specified in another Section. Machine Beams: Provide framing to support elevator hoisting machine and deflector sheaves from the building structure. Comply with Section 05 50 00 "Metal Fabrications" for materials and fabrication.

MACHINE ROOM-LESS ELECTRIC TRACTION PASSENGER ELEVATORS

Car Frame and Platform: Bolted- or welded-steel units. Guides: Roller guides or polymer-coated, nonlubricated sliding guides. Provide guides at top and bottom of car and counterweight frames.

2.5 OPERATION SYSTEMS A. General: Provide manufacturer's standard microprocessor operation systems as required to provide type of operation indicated. Auxiliary Operations: In addition to primary operation system features, provide the following operational features

Nuisance Call Cancel: When car calls exceed a preset number while car load is less than a predetermined weight, all car calls are canceled. Preset number of calls and predetermined weight can be Security Features: Provide the following security features, where indicated. Security features shall not affect Card-Reader Operation: System uses card readers at hall push-button stations to authorize calls. Security system determines which landings and at what times calls require authorization by card reader.

Provide required conductors in traveling cable and panel in machine room for interconnecting card readers, other security access system equipment, and elevator controllers. Security access system equipment is not in the Contract. Car-to-Lobby Feature: Feature, activated by keyswitch at main lobby, that causes car to return immediately to lobby and open doors for inspection. On deactivation by keyswitch, calls registered before keyswitch activation are completed and normal operation is resumed.

2.6 DOOR REOPENING DEVICES A. Infrared Array: Provide door reopening device with uniform array of 36 or more microprocessor-controlled, infrared light beams projecting across car entrance. Interruption of one or more light beams shall cause doors to B. Nudging Feature: After car doors are prevented from closing for predetermined adjustable time, through

activating door reopening device, a loud buzzer shall sound and doors shall begin to close at reduced kinetic General: Provide steel-framed car enclosures with nonremovable wall panels, with removable car roof, access doors, power door operators, and ventilation. Provide standard railings complying with ASME A17.1/CSA B44 on car tops where required by ASME

Materials and Finishes: Manufacturer's standards, but not less than the following: Subfloor: Exterior, underlayment grade plywood, not less than 5/8-inchnominal thickness. Plastic-Laminate Wall Panels: Plastic laminate adhesively applied to 1/2-inchfire-retardant-treated particleboard with manufacturer's standard protective edge trim. Panels shall have a flame-spread index of 25 or less, when tested according to ASTM E 84. Fabricate car with recesses and cutouts for signal equipment. Fabricate car door frame integrally with front wall of car.

Stainless-Steel Doors: Flush, hollow-metal construction; fabricated from stainless-steel sheet. Sight Guards: Provide sight guards on car doors. Sills: Extruded metal, with grooved surface, 1/4 inchthick. Luminous Ceiling: Fluorescent light fixtures and ceiling panels of translucent acrylic or other permanent Metal Ceiling: Flush panels, with LED downlights in the center of each panel. Align ceiling panel joints

2.8 HOISTWAY ENTRANCES A. Hoistway Entrance Assemblies: Manufacturer's standard horizontal-sliding, door-and-frame hoistway entrances hoistway wall construction.

Handrails: Manufacturer's standard handrails, of shape, metal, and finish indicated.

with joints between wall panels.

MACHINE ROOM-LESS ELECTRIC TRACTION PASSENGER ELEVATORS

complete with track systems, hardware, sills, and accessories. Frame size and profile shall accommodate B. Fire-Rated Hoistway Entrance Assemblies: Door and frame assemblies shall comply with NFPA 80 and be listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing at as close-to-neutral pressure as possible according to NFPA 252 or UL 10B.

Fire-Protection Rating: As indicated on Drawings. C. Materials and Fabrication: Manufacturer's standards, but not less than the following: Steel Subframes: Formed from cold- or hot-rolled steel sheet, with factory-applied enamel finish or rust-

esistant primer. Fabricate to receive applied finish as indicated. Stainless-Steel Frames: Formed from stainless-steel sheet. Star of Life Symbol: Identify emergency elevators with star of life symbol, not less than 3 incheshigh, on

both inside surfaces of hoistway door frames. Stainless-Steel Doors: Flush, hollow-metal construction; fabricated from stainless-steel sheet.

Sight Guards: Provide sight guards on doors matching door edges. Sills: Extruded metal, with grooved surface, 1/4 inchthick. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M.

2.9 SIGNAL EQUIPMENT A. General: Provide hall-call and car-call buttons that light when activated and remain lit until call has been fulfilled. Fabricate lighted elements with LEDs.

B. Car-Control Stations: Provide manufacturer's standard recessed car-control stations. Mount in return panel adjacent to car door unless otherwise indicated. Mark buttons and switches for required use or function. Use both tactile symbols and Braille. Provide "No Smoking" sign matching car-control station, either integral with car-control station or mounted adjacent to it, with text and graphics as required by authorities having jurisdiction.

Swing-Return Car-Control Stations: Provide car-control stations mounted on rear of hinged return panel adjacent to car door and with buttons, switches, controls, and indicator lights projecting through return panel but substantially flush with face of return panel. Mark buttons and switches for function. Use both tactile symbols and Braille.

Provide "No Smoking" sign matching car-control station, either integral with car-control station or mounted adjacent to it, with text and graphics as required by authorities having jurisdiction. Emergency Communication System: Two-way voice communication system, with visible signal, which dials preprogrammed number of monitoring station and does not require handset use. System is contained in flushmounted cabinet, with identification, instructions for use, and battery backup power supply.

E. Car Position Indicator: Provide illuminated, digital-type car position indicator, located above car door or above car-control station. Also, provide audible signal to indicate to passengers that car is either stopping at or passing each of the floors served. Include travel direction arrows if not provided in car-control station. Hall Push-Button Stations: Provide one hall push-button station at each landing.

Equip units with buttons for calling elevator and for indicating desired direction of travel. a. Provide a means for passengers to indicate that they have disabilities so control system can allow extra room in assigned car. Provide for connecting units that require destination registration to building security access system so a card reader can be used to register calls.

Provide units with flat faceplate for mounting with body of unit recessed in wall.

1. Units with flat faceplate for mounting with body of unit recessed in wall and with illuminated elements projecting from faceplate for ease of angular viewing. H. Hall Annunciator: With each hall lantern, provide audible signals indicating car arrival and direction of travel. Signals sound once for up and twice for down.

G. Hall Lanterns: Units with illuminated arrows; but provide single arrow at terminal landings. Provide the following:

At manufacturer's option, audible signals may be placed on cars. I. Emergency Pictorial Signs: Fabricate from materials matching hall push-button stations, with text and graphics as required by authorities having jurisdiction, indicating that in case of fire, elevators are out of service and exits should be used instead. Provide one sign at each hall push-button station unless otherwise indicated.

2.10 FINISH MATERIALS General: Provide the following materials for exposed parts of elevator car enclosures, car doors, hoistway entrance doors and frames, and signal equipment as indicated. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, commercial steel, Type B, exposed, matte finish. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, commercial steel, Type B, pickled.

Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304. Stainless-Steel Bars: ASTM A 276, Type 304. Stainless-Steel Tubing: ASTM A 554, Grade MT 304. Aluminum Extrusions: ASTM B 221, Alloy 6063.

MACHINE ROOM-LESS ELECTRIC TRACTION PASSENGER ELEVATORS 14 21 23 - 4

PART 3 - EXECUTION

EXAMINATION Examine elevator areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work. Examine hoistways, hoistway openings, pits, and machine rooms as constructed; verify critical dimensions; and examine supporting structure and other conditions under which elevator work is to be installed.

Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work. Proceed with installation only after unsatisfactory conditions have been corrected.

INSTALLATION

Comply with manufacturer's written instructions. Welded Construction: Provide welded connections for installing elevator work where bolted connections are not required for subsequent removal or for normal operation, adjustment, inspection, maintenance, and replacement of worn parts. Comply with AWS standards for workmanship and for qualifications of welding operators. Sound Isolation: Mount rotating and vibrating equipment on vibration-isolating mounts to minimize vibration

transmission to structure and structure-borne noise due to elevator system. Lubricate operating parts of systems, including ropes, as recommended by manufacturers. Alignment: Coordinate installation of hoistway entrances with installation of elevator guide rails for accurate alignment of entrances with car. Where possible, delay final adjustment of sills and doors until car is operable in shaft. Reduce clearances to minimum, safe, workable dimension at each landing.

14 21 23 - 5

Leveling Tolerance: 1/8 inch, up or down, regardless of load and travel direction. Set sills flush with finished floor surface at landing. Fill space under sill solidly with nonshrink, nonmetallic grout. Locate hall signal equipment for elevators as follows unless otherwise indicated:

Place hall lanterns either above or beside each hoistway entrance. Mount hall lanterns at a minimum of 72 inchesabove finished floor.

END OF SECTION 14 21 23

MACHINE ROOM-LESS ELECTRIC TRACTION PASSENGER ELEVATORS

9829 Spencer Road

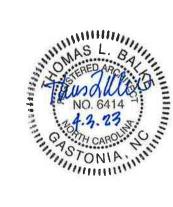
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FRANKLIN COUNTY BLDG SUBMISSION

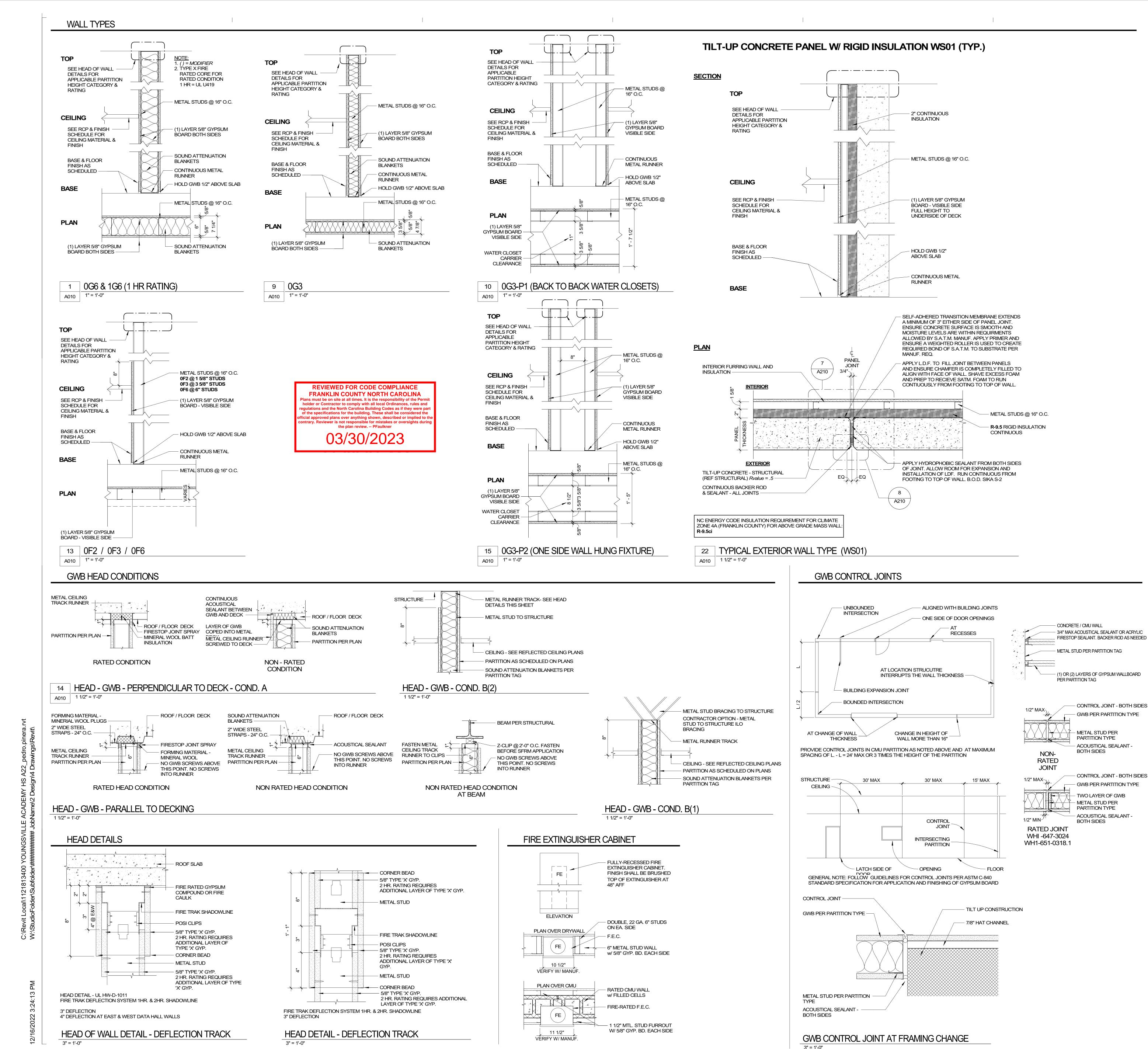
NO. REASON

3	CONSTRUCTION DOCUMENTS BID SET	04/03/2023

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

SPECIFICATIONS



GENERAL NOTES - PARTITIONS

- 1. FIRE- AND SMOKE-RATED PARTITION ASSEMBLIES CONTINUE TO STRUCTURE ABOVE (HEAD CONDITION "A") UNLESS NOTED OTHERWISE, OR UNLESS OTHERWISE INDICATED BY THE
- CORRESPONDING FIRE RATED ASSEMBLY DIAGRAM. PROVIDE ACOUSTICAL CAULKING AROUND ALL PERIMETERS EDGES AND PENETRATIONS AT SOUND-INSULATED WALLS. OFFSET ELECT AND TELEPHONE OUTLETS 16" MIN (SEPARATE STUD CAVITIES). AT SOUND INSULATED WALLS PROVIDE ACOUSTICAL CAULKING AROUND
- ALL PERIMETERS EDGES AND PENETRATIONS. OFFSET ELECT. AND TELEPHONE OUTLETS 16" MIN (SEPARATE STUD CAVITIES) WALLS ARE DIMENSIONED TO FINISH FACE OF WALL, UNLESS
- INDICATED OTHERWISE. 4. WHERE ADJACENT PARTITION TYPES ARE OF DIFFERENT OVERALL
- THICKNESS, ALIGN FINISHES ON VISIBLE SIDE, AND FURR OPPOSITE SIDE AS REQUIRED FOR A FLUSH INSTALLATION 5. PARTITION TYPES AROUND ROOMS AND SPACES SHALL BE CONTINUOUS AROUND THE ENTIRE SPACE. WHERE MORE THAN ONE
- PARTITION TYPE IS INDICATED, THE WALL TYPE WITH THE HIGHEST FIRE AND/OR ACOUSTICAL PERFORMANCE SHALL BE USED. 6. FIRE SAFE ALL PENETRATIONS THROUGH FIRE RATED WALLS TO THE LEVEL OF PROTECTION REQUIRED BY THE WALL. FIRE SAFE AT

PERIMETERS OF RATED WALLS WHERE VOIDS OCCUR, SUCH AS

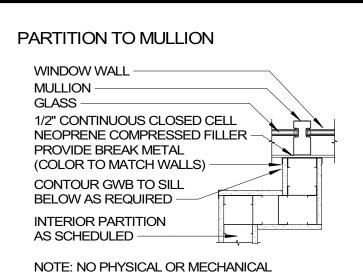
- DECK FLUTES. 7. REFER TO THE FINISH SCHEDULE AND/ OR FLOOR PLANS FOR LOCATION OF FINISH MATERIALS FOR WALL TYPES INDICATING DIFFERENT FINISHES ON EACH SIDE OF WALL.
- 8. WET WALLS IN TOILET ROOMS TO RECEIVE CERAMIC TILE SHALL USE MOISTURE-RESISTANT FIBERGLASS-MAT GYPSUM BOARD IN PLACE
- 9. BRACE ALL CHASE WALLS FROM STUD TO STUD AT 4" OC MIN. VERTICAL AND PER MANUFACTURER'S RECOMMENDATION UNLESS
- NOTED OTHERWISE.
- 10. PROVIDE STEEL STUD GAUGES AND/OR DIAGONAL BRACING AT TOPS OF WALLS PER MANUFACTURER'S RECOMMENDATIONS FOR WALL TYPE, HEIGHT, AND USE BASED ON L/240 LIMITING HEIGHTS."
- 11. ALL CORNERS AND EDGES EXPOSED TO VIEW SHALL RECEIVE METAL EDGE BEADS TREATED WITH DRYWALL COMPOUND TO A HEIGHT OF 6" ABOVE FINISHED CEILINGS MIN.
- STENCILING ABOVE THE FINISHED CEILING ON BOTH FACES, ON ALL WALLS AS "FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS" WITH HOUR RATING INCLUDED. 13. ALL MATERIALS USED IN RATED ASSEMBLIES SHALL CONFORM TO REFERENCED STANDARDS."

EXTENDING 10'-0" OR GREATER IN HEIGHT FROM FINISH FLOOR.

14. USE MOISTURE- AND MOLD-RESISTANT GWB ON INTERIOR SIDE OF MECHANICAL ROOM WALLS." 15. PROVIDE CONTINUOUS HORIZONTAL BRIDGING FOR WALLS

12. ALL UL-RATED WALL ASSEMBLIES SHALL BE IDENTIFIED W/





ATTACHMENT TO MULLION SHALL BE ALLOWED.

RATING HIERARCHY

2 HOUR RATED PARTITION ————————————————————————————————————		
THO LED ON LEGIC	_H	_ЫЫ

LIMITING HEIGHTS - STEEL STUDS

	DEFLECTION	LIMIT OF L/240	DEFLECTION I	LIMIT OF L/360
WALL	WITHOUT	WITH	WITHOUT	WITH
HEIGHT	SHELVING	SHELVING	SHELVING	SHELVING
<10'	362S125-18	362S125-18	362S125-18	362S125-18
	16" O.C	16" O.C	16" O.C	16" O.C
<12'	362S125-18	362S125-33	362S125-18	362S125-33
	16" O.C	16" O.C	16" O.C	16" O.C
<14'	362S125-18	362S125-33	362S125-33	362S125-33
	16" O.C	16" O.C	16" O.C	16" O.C
<16'	362S125-33	362S125-33	362S125-54	362S125-54
	16" O.C	16" O.C	16" O.C	16" O.C
<18'	362S125-43	362S125-43	600S125-33	600S125-33
	16" O.C	16" O.C	16" O.C	16" O.C
<20'	362S125-68	362S125-68	600S125-33	600S125-33
	16" O.C	16" O.C	16" O.C	16" O.C

1. DESIGN LATERAL LOAD OF 5 PSF, AND NO VERTICAL LOAD (NON-LOAD-

2. DEFLECTÍON LIMIT OF L/360 SHALL BE USED FOR BRITTLE WALL FINISHES, SUCH AS TILE, TERRAZO, AND PLASTER. DEFLECTION LIMIT OF L/240 MAY BE USED FOR ALL OTHER CONDITIONS. 3. "WITH SHELVING" DESIGN FOR 16" SHELVING UNIT, LOAD OF 73 POUNDS PER LINEAR FOOT INCLUDING CONTENTS, CENTERED 8"

FROM FACE OF WALL, FOR ONE ROW OF SHELVING ROUGHLY 4' A.F.F. **FLANGE WIDTH** (1-5/8" = 1.625" =**162**× 1/100")

MIL THICKNESS S = STUD OR JOIST SECTION

(.054" = 54 MILS;1 MIL = 1/1000"18 MIL = 25 GA 27 MIL = 22 GA F = FURRING CHANNEL SECTIONS

30 MIL = 20 GA (DRYWALL) 33 MIL = 20 GA (STRUCTURAL) 43 MIL = 18 GA 54 MIL = 16 GA 68 MIL = 14 GA

A ABOVE ACCESS FLOOR

IMPACT RESISTANT

O MOVABLE PARTITION

R MOISTURE RESISTANT

S SOUND ATTENUATION BATTS

(SEE INTERIOR DETAILS)

K SMOKE RATED

(OPERABLE)

V VAPOR BARRIER

Z ACCENT WALL

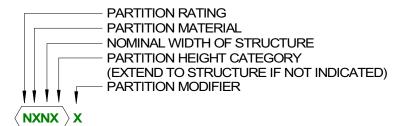
M METAL PANEL

B BALLISTIC LEVEL RATED

E EXTRA LAYER OF GYPSUM

G GROUT MASONRY SOLID

PARTITION TAG KEY



PARTITION RATING: 0xxx NON-RATED 1xxx 1-HOUR RATED 2xxx 2-HOUR RATED

T = TRACK SECTIONS

U = CHANNEL SECTIONS

4xxx 4-HOUR RATED

PARTITION CONSTRUCTION: xFxx <u>F</u>URRING $xGxx = \overline{G}YP / METAL STUD$ xSxx SHAFT

xMxx MASONRY xWxx GYP / WOOD STUD xExx EXISTING NOMINAL WIDTH OF STRUCTURE: (SEE PARTITION STRUCTURE KEY AT LEFT)

PARTITION HEIGHT CATEGORY: XXXA EXTEND TO STRUCTURE ABOVE XXXB TERMINATE ABOVE CEILING XXXC TERMINATE AT CEILING XXXP PARTIAL HEIGHT PARTITIONS







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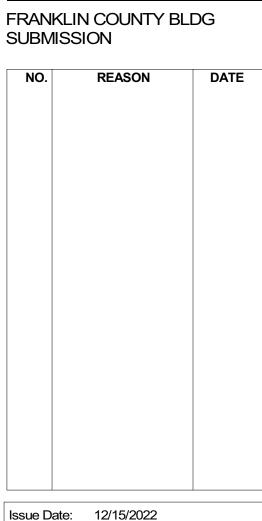
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> DEM =





Job Number: 112 18134 00 Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA WALL TYPES

172' - 4 3/8"





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WORK NOTED "BY OTHERS" OR "NIC" SHALL BE PROVIDED

EXTEND WALLS TO DECK ABOVE STOREFRONT SYSTEMS

REVIEW DOCUMENTS AND VERIFY DIMENSIONS AND FIELD

CONDITIONS WHEN APPLICABLE. CONFIRM THAT WORK IS

BUILDABLE AS SHOWN. ANY CONFLICTS OR OMISSIONS

SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT

FOR CLARIFICATION PRIOR TO THE PERFORMANCE OF

COORDINATE AND PROVIDE METAL OR RATED SOLID

DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS

PARTITIONS AT BUILDING PERIMETER SHALL BE CENTERED ON CENTER LINE OF COLUMN OR WINDOW

HEAD CONDITION 'A' UNLESS OTHERWISE NOTED.

MINIMUM IN SEPARATE STUD WALL CAVITIES. 330 LOCKERS SHOWN FOR REFERENCE ONLY. NIC. ALL INTERIOR PARTITIONS TO BE TYPE 0G6 U.N.O.

MULLION, UNLESS OTHERWISE NOTED.

WOOD BLOCKING (FIRE TREATED) IN PARTITIONS AND CEILING FOR MILLWORK, WALL AND CEILING ATTACHED

GOVERN. ALL PARTITION LOCATIONS, DIMENSIONS AND TYPES, DOOR AND WINDOW LOCATIONS SHALL BE AS SHOWN ON PARTITION PLAN. INCASE OF CONFLICT,

COORDINATE WITH TENANT AND OWNER, THE SCHEDULE FOR TELEPHONE, DATA, SECURITY AND AUDIO VISUAL

PROVIDE PARTITION TYPE WITH THE HIGHEST UL AND/OR

ACOUSTICAL PERFORMANCE RATING WHERE MORE THAN ONE PARTITION TYPE IS INDICATED. PARTITIONS SHALL BE

BY OWNER OR UNDER SEPARATE CONTRACT. SEE SHEET <A010> FOR PARTITION TYPES. ALL EXTERIOR WALLS TO BE WS01 U.N.O.

SPECIFICATIONS AND WHERE SHOWN.

AND GLASS WALL PARTITIONS.

WORK IN QUESTIONS.

ITEMS AS SPECIFIED.

NOTIFY ARCHITECT.

INSTALLATIONS.

SEE SHEET <a href= PROVIDE CONTROL JOINTS ON GYP. BD. ASSEMBLIES PER



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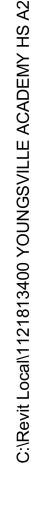
10.	REASON	DATE
10 .	REASON CONSTRUCTABILITY REVIEW	DATE 1/16/2023

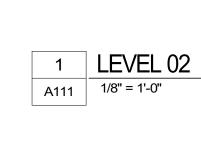
Issue Date: 12/15/2022 Job Number: 112 18134 00

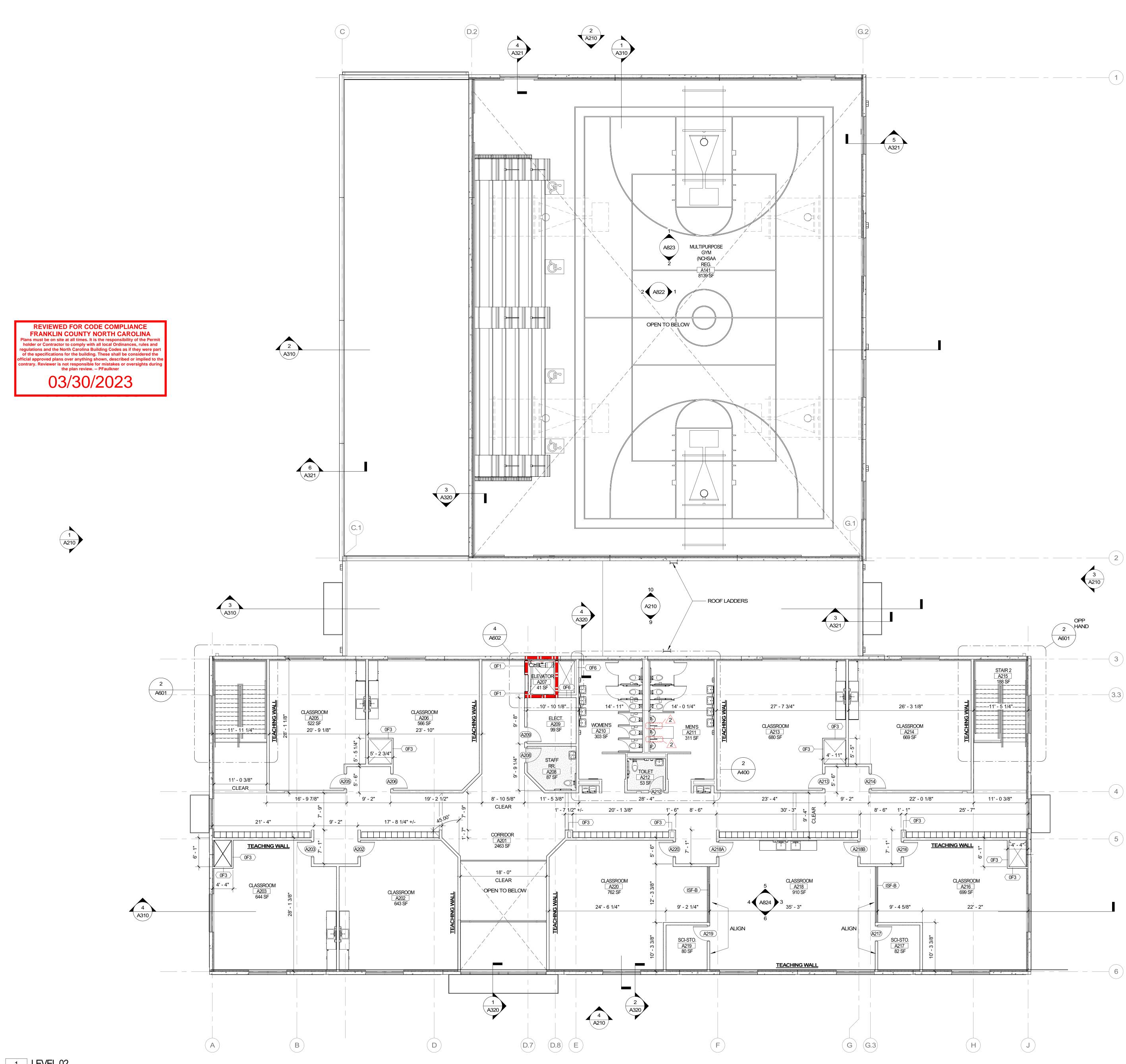
Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

FLOOR PLAN - LEVEL 01









- WORK NOTED "BY OTHERS" OR "NIC" SHALL BE PROVIDED BY OWNER OR UNDER SEPARATE CONTRACT. SEE SHEET <A010> FOR PARTITION TYPES.
- ALL EXTERIOR WALLS TO BE WS01 U.N.O. SEE SHEET <A900> FOR DOOR TYPES AND DETAILS
- PROVIDE CONTROL JOINTS ON GYP. BD. ASSEMBLIES PER SPECIFICATIONS AND WHERE SHOWN. EXTEND WALLS TO DECK ABOVE STOREFRONT SYSTEMS
- AND GLASS WALL PARTITIONS. REVIEW DOCUMENTS AND VERIFY DIMENSIONS AND FIELD CONDITIONS WHEN APPLICABLE. CONFIRM THAT WORK IS BUILDABLE AS SHOWN. ANY CONFLICTS OR OMISSIONS
- SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT FOR CLARIFICATION PRIOR TO THE PERFORMANCE OF WORK IN QUESTIONS.
- COORDINATE AND PROVIDE METAL OR RATED SOLID WOOD BLOCKING (FIRE TREATED) IN PARTITIONS AND CEILING FOR MILLWORK, WALL AND CEILING ATTACHED
- ITEMS AS SPECIFIED. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN. ALL PARTITION LOCATIONS, DIMENSIONS AND TYPES, DOOR AND WINDOW LOCATIONS SHALL BE AS SHOWN ON PARTITION PLAN. INCASE OF CONFLICT,
- NOTIFY ARCHITECT. 10. COORDINATE WITH TENANT AND OWNER, THE SCHEDULE FOR TELEPHONE, DATA, SECURITY AND AUDIO VISUAL
- INSTALLATIONS. PARTITIONS AT BUILDING PERIMETER SHALL BE CENTERED ON CENTER LINE OF COLUMN OR WINDOW
- MULLION, UNLESS OTHERWISE NOTED. PROVIDE PARTITION TYPE WITH THE HIGHEST UL AND/OR ACOUSTICAL PERFORMANCE RATING WHERE MORE THAN
- ONE PARTITION TYPE IS INDICATED. PARTITIONS SHALL BE HEAD CONDITION 'A' UNLESS OTHERWISE NOTED. 13. OFFSET ELECTRICAL AND TELEPHONE OUTLETS 16"
- MINIMUM IN SEPARATE STUD WALL CAVITIES. 330 LOCKERS SHOWN FOR REFERENCE ONLY. NIC.
- ALL INTERIOR PARTITIONS TO BE TYPE 0G6 U.N.O. 16. ALL EXTERIOR CONCRETE PANEL FURRING TO BE 0F3-E





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NO.	REASON	DATE
NO . 2	REASON COUNTY REVIEW CYCLE 1	DATE 2/13/2023

Issue Date: 12/15/2022 Job Number: 112 18134 00

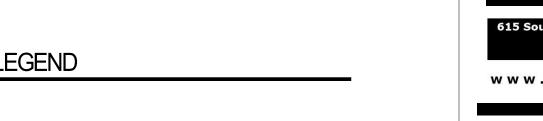
Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

FLOOR PLAN - LEVEL 02

ROOF GENERAL NOTES

- 1. WORK NOTED "BY OTHERS" OR "NIC" SHALL BE PROVIDED BY
- 2. REVIEW DOCUMENTS AND VERIFY DIMENSIONS AND FIELD CONDITIONS WHEN APPLICABLE. CONFIRM THAT WORK IS BUILDABLE AS SHOWN. ANY CONFLICTS OR OMISSIONS SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT FOR CLARIFICATION
- PRIOR TO THE PERFORMANCE OF WORK IN QUESTIONS. 3. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN. ALL PARTITION LOCATIONS, DIMENSIONS AND TYPES, DOOR AND WINDOW LOCATIONS SHALL BE AS SHOWN ON PARTITION PLAN.
- AWAY FROM ADJACENT PENETRATIONS, CURBED UNITS, ETC. HOLD ALL ROOF EQUIPMENT, VENT PENETRATIONS, MECH UNITS, ETC., A
- 5. NO UNPROTECTED PITCH-POCKETS SHALL BE USED. USE HOODED 6. WHERE IT IS NECESSARY TO CLUSTER SMALL PIPES CONSTRUCT
- MEMBRANE ELEVATION IN ONE OR TWO DIRECTIONS ONLY. 7. ALL PLASTIC PIPES SHALL HAVE A TWO PART LEAD JACKET OR AN
- OF THE PIPING. THE LOW PROFILE TYPE FLANGED-NEOPRENE TYPE
- 9. UNUSUAL ROOFTOP PENETRATIONS AND UNITS SHALL HAVE SHOP 10. ALL SHEET METAL SHALL BE INSTALLED IN ACCORDANCE WITH
- CURRENT "SMACNA" STANDARDS. CONTRACTOR TO DESIGN GUTTER & DOWNSPOUT SYSTEM FOR 100 YEAR RAINFALL, 5 MIN.
- 11. COORDINATE LOCATION AND QUANTITY OF WALK PADS AROUND
- CURBS FOR POSITIVE DRAINAGE AWAY FROM UNITS.
- 14. ROOF SYSTEM: SINGLE PLY, 60 MIL TPO, MECHANICALLY ATTACHED
- SYSTEM ON (2) LAYERS ROOF INSULATION BOARD TOTAL MIN. LONG TERM THERMAL RESISTANCE (LTTR) R-VALUE OF 30.0 -STAGGER ROOF INSULATION BOARD JOINTS. THE ROOFING SYSTEM SHALL HAVE A UL CLASS "A" RATING AND A 15 YEAR WARRANTY.





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NO.	REASON	DATE

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

ROOF PLAN

A112

LEVEL 01 REFLECTED CEILING PLAN

GENERAL NOTES

- 1. ALL CEILINGS TO BE INSTALLED AT 9'-0" A.F.F., UNLESS NOTED
- OTHERWISE

 2. COORDINATE CEILING, SOFFIT AND BULKHEAD INSTALLATIONS WITH OTHER ELEMENTS OF WORK.
- WITH OTHER ELEMENTS OF WORK.

 3. CEILING HEIGHTS ARE GIVEN FROM FINISHED FLOOR ELEVATION.

 4. CENTER SUSPENDED CEILING GRIDS IN ROOMS.
- TILES SHALL BE INSTALLED SO GRAIN LINES OF TILE ARE RUNNING IN SAME DIRECTION FOR EACH CEILING TYPE.
 LOCATE MECHANICAL, ELECTRICAL, AND SPRINKLER DEVICES AS INDICATED. LOCATE LINEAR DIFFUSERS AS INDICATED.
- CEILING PLAN SHALL GOVERN FOR LOCATION OF ALL DEVICES AS SHOWN. ENGINEERING DOCUMENTS SHALL PREVAIL ONLY IN CASE OF SCOPE OF WORK AND ELEMENTS OCCURRING ABOVE CEILING. DISCREPANCIES BETWEEN ARCHITECTURAL AND ENGINEERING DOCUMENTS MUST BE BROUGHT TO THE ARCHITECT'S ATTENTION
- PRIOR TO COMMENCING WORK.

 8. MIX TILE IN A UNIFORM MANNER TO ELIMINATE BANDING OR BATCHING.
- 9. SPRINKLER HEADS SHALL BE CENTERED IN MODULE OF THE TILE INDICATED.

10. FULL HEIGHT PARTITION WALLS CAN NOT HAVE ANY PORTION OF A

- V.A.V. BOX OR FAN POWERED BOX ABOVE THEM. RELOCATE
 AFFECTED V.A.V. AND F.P. BOXES AS REQUIRED.

 11. IF CEILING DIFFUSER, LIGHT FIXTURES OR OTHER ELEMENTS ON
 OR ABOVE THE CEILING CAN NOT BE LOCATED AS SHOWN ON THE
 DRAWINGS, SUCH INTERFERENCE SHALL BE REPORTED
- IMMEDIATELY TO ARCHITECT FOR RELOCATION.
 12. PROVIDE EMERGENCY BATTERY PACKS OR EMERGENCY CIRCUITS
 AS REQUIRED BY CODE.
 13. PROVIDE FINAL QUANTITY AND LOCATION OF EMERGENCY
- DEVICES, (INCLUDING BUT NOT LIMITED TO: BATTERY PACKS, EXIT SIGNS, FIRE ALARMS, ETC.) IN COMPLIANCE WITH AUTHORITY HAVING JURISDICTION.

 14. DIMMERS AND SWITCHES SHALL BE GANGED TOGETHER IN
- LARGEST MULTI GANG BOXES WITH COMMON FACE PLATES POSSIBLE. STACKING OF LARGE BOXES (5 SWITCHES ABOVE 5 SWITCHES) IS ACCEPTABLE.
- 15. MATERIALS PLACED IN CEILING SHALL BE REQUIRED TO HAVE A PLENUM RATING.
- 16. STENCIL RATED WALLS ABOVE CEILING.17. MAINTAIN 18" CLEARANCE BETWEEN THE UNDERSIDE OF SPRINKLER HEADS AND THE TOPS OF OBSTRUCTIONS BELOW.

RCP SYMBOLS

2 X 2 DIRECT/INDIRECT LIGHT FIXTURE

2 X 4 DIRECT/INDIRECT LIGHT FIXTURE

SUSPENDED LIGHT FIXTURE

RECESSED LIGHT FIXTURE

ACT CEILING SYSTEM

GWB CEILING

PROJECTOR

WS WALL SCONCE (EXTERIOR)

WALL SCONCE (INTERIOR)

H EXTERIOR EMERGENCY LIGHT

ILLUMINATED EXIT SIGN

RECESSED DOWNLIGHT W/

EMERGENCY BACKUP

MECHANICAL SUPPLY

SINGLE SECURITY CAMERA
PTZ = PAN, TILT, ZOOM

MECHANICAL RETURN

DIFFUSER

DIFFUSER



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FRANKLIN COUNTY BLDG SUBMISSION

NO.	REASON	DATE
1	CONSTRUCTABILITY REVIEW	1/16/2023
2	COUNTY REVIEW CYCLE 1	2/13/2023

Issue Date: 12/15/2022

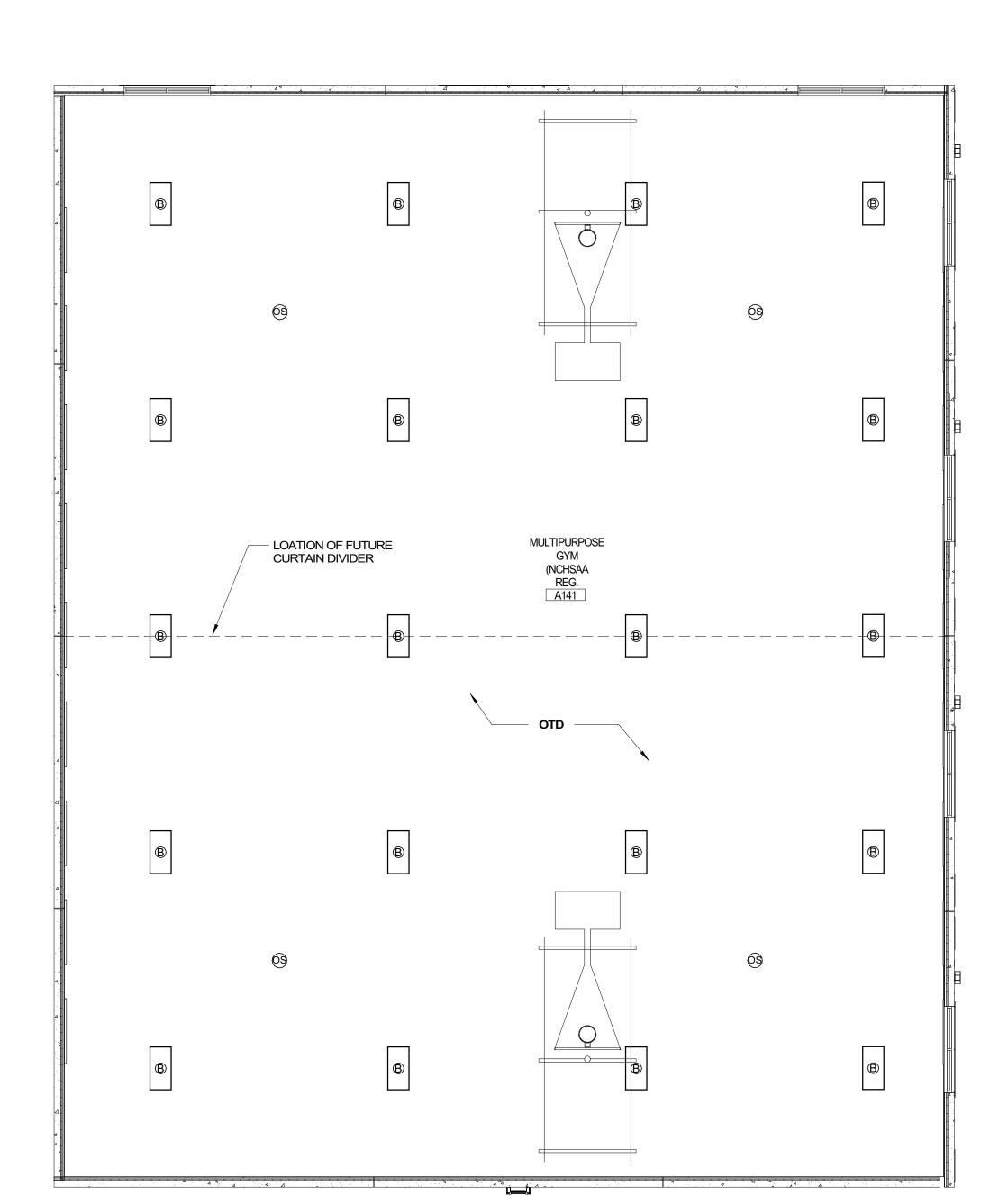
Job Number: 112 18134 00

Drawn By: PEDRO PINERA

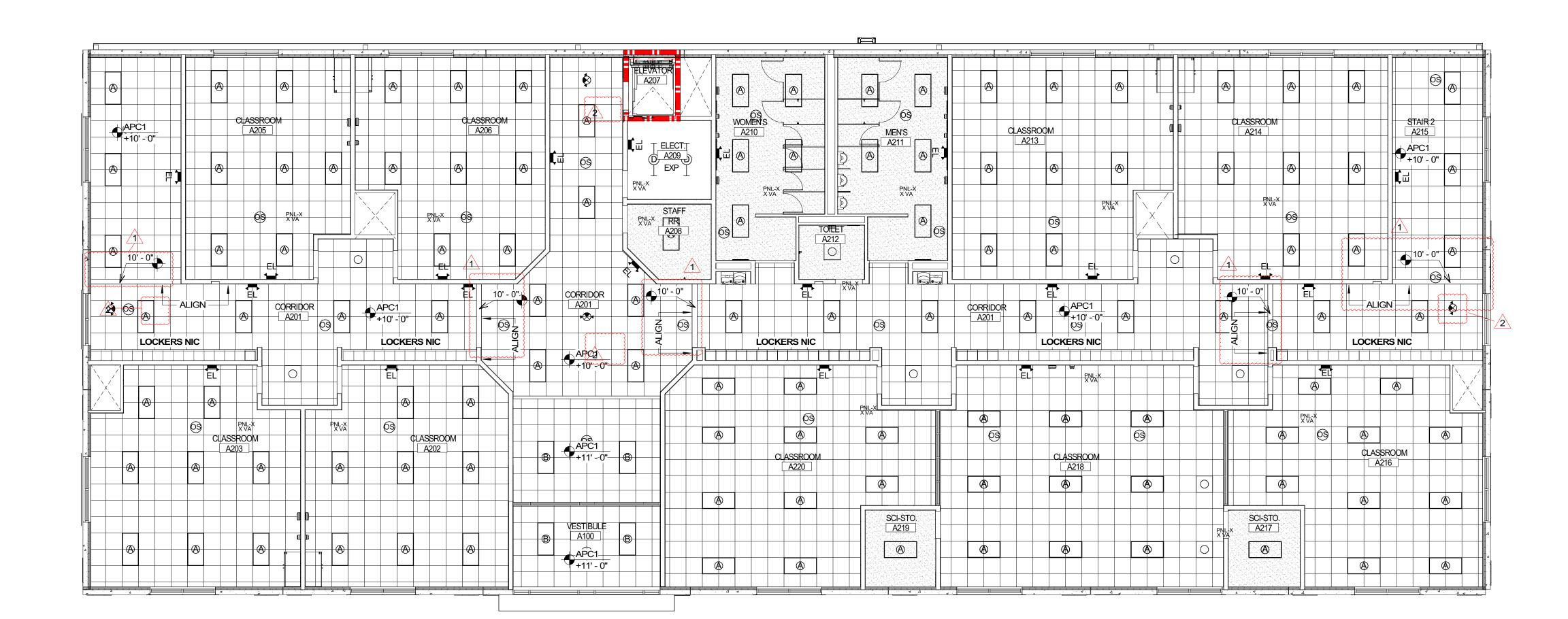
Checked By: TOM BALKE, AIA

REFLECTED CEILING PLAN LEVEL 01

A121



REVIEWED FOR CODE COMPLIANCE FRANKLIN COUNTY NORTH CAROLINA Plans must be on site at all times. It is the responsibility of the Perm holder or Contractor to comply with all local Ordinances, rules and egulations and the North Carolina Building Codes as if they were par of the specifications for the building. These shall be considered the official approved plans over anything shown, described or implied to th contrary. Reviewer is not responsible for mistakes or oversights during the plan review. -- PFaulkner 03/30/2023



1 LEVEL 02 REFLECTED CEILING PLAN A122 1/8" = 1'-0"

1. ALL CEILINGS TO BE INSTALLED AT 9'-0" A.F.F., UNLESS NOTED OTHERWISE 2. COORDINATE CEILING, SOFFIT AND BULKHEAD INSTALLATIONS

GENERAL NOTES

- WITH OTHER ELEMENTS OF WORK. 3. CEILING HEIGHTS ARE GIVEN FROM FINISHED FLOOR ELEVATION. 4. CENTER SUSPENDED CEILING GRIDS IN ROOMS.
- 5. TILES SHALL BE INSTALLED SO GRAIN LINES OF TILE ARE RUNNING IN SAME DIRECTION FOR EACH CEILING TYPE. 6. LOCATE MECHANICAL, ELECTRICAL, AND SPRINKLER DEVICES AS

INDICATED. LOCATE LINEAR DIFFUSERS AS INDICATED.

- 7. CEILING PLAN SHALL GOVERN FOR LOCATION OF ALL DEVICES AS SHOWN. ENGINEERING DOCUMENTS SHALL PREVAIL ONLY IN CASE OF SCOPE OF WORK AND ELEMENTS OCCURRING ABOVE CEILING. DISCREPANCIES BETWEEN ARCHITECTURAL AND ENGINEERING DOCUMENTS MUST BE BROUGHT TO THE ARCHITECT'S ATTENTION PRIOR TO COMMENCING WORK.
- 8. MIX TILE IN A UNIFORM MANNER TO ELIMINATE BANDING OR BATCHING.
- 9. SPRINKLER HEADS SHALL BE CENTERED IN MODULE OF THE TILE INDICATED. 10. FULL HEIGHT PARTITION WALLS CAN NOT HAVE ANY PORTION OF A
- V.A.V. BOX OR FAN POWERED BOX ABOVE THEM. RELOCATE AFFECTED V.A.V. AND F.P. BOXES AS REQUIRED. 11. IF CEILING DIFFUSER, LIGHT FIXTURES OR OTHER ELEMENTS ON OR ABOVE THE CEILING CAN NOT BE LOCATED AS SHOWN ON THE
- DRAWINGS, SUCH INTERFERENCE SHALL BE REPORTED IMMEDIATELY TO ARCHITECT FOR RELOCATION. 12. PROVIDE EMERGENCY BATTERY PACKS OR EMERGENCY CIRCUITS
- AS REQUIRED BY CODE. 13. PROVIDE FINAL QUANTITY AND LOCATION OF EMERGENCY
- DEVICES, (INCLUDING BUT NOT LIMITED TO: BATTERY PACKS, EXIT SIGNS, FIRE ALARMS, ETC.) IN COMPLIANCE WITH AUTHORITY HAVING JURISDICTION.
- 14. DIMMERS AND SWITCHES SHALL BE GANGED TOGETHER IN LARGEST MULTI GANG BOXES WITH COMMON FACE PLATES POSSIBLE. STACKING OF LARGE BOXES (5 SWITCHES ABOVE 5
- SWITCHES) IS ACCEPTABLE. 15. MATERIALS PLACED IN CEILING SHALL BE REQUIRED TO HAVE A
- PLENUM RATING. 16. STENCIL RATED WALLS ABOVE CEILING.
- 17. MAINTAIN 18" CLEARANCE BETWEEN THE UNDERSIDE OF SPRINKLER HEADS AND THE TOPS OF OBSTRUCTIONS BELOW.

RCP SYMBOLS

2 X 2 DIRECT/INDIRECT LIGHT FIXTURE

2 X 4 DIRECT/INDIRECT LIGHT FIXTURE

SUSPENDED $\begin{array}{c} \\ \\ \\ \end{array}$ LIGHT FIXTURE

RECESSED LIGHT FIXTURE

WALL SCONCE (EXTERIOR) WALL SCONCE (INTERIOR)

ILLUMINATED EXIT SIGN

EXTERIOR EMERGENCY LIGHT RECESSED DOWNLIGHT W/

SINGLE SECURITY CAMERA

MECHANICAL SUPPLY

EMERGENCY BACKUP

PTZ = PAN, TILT, ZOOM

DIFFUSER

MECHANICAL RETURN DIFFUSER



JUNGS NEW

FRANKLIN COUNTY BLDG SUBMISSION

NO.	REASON	DATE
1	CONSTRUCTABILITY REVIEW	1/16/2023
2	REVIEW COUNTY REVIEW CYCLE 1	2/13/2023

Issue Date: 12/15/2022

Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

REFLECTED CEILING PLAN -LEVEL 02







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A230

4 FRONT ELEVATION

A210 3/32" = 1'-0"

PANEL TYPE 1

WALL PACK TYP. SEE ELECT. ———



T.O. WALL 32' - 6"

ROOF 28' - 0"

LEVEL 02 14' - 0"

T.O. WALL 32' - 6"

PANEL TYPE 1

PANEL TYPE 1

- SIGNAGE PERMITTED & INSTALLED BY OWNER MATCH STYLE & SIZE OF

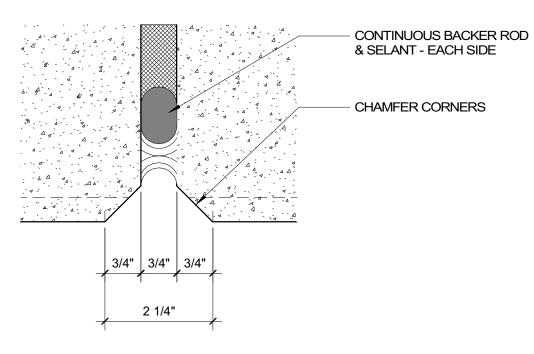
PANEL TYPE 1

LOWER SCHOOL

— KNOX BOX

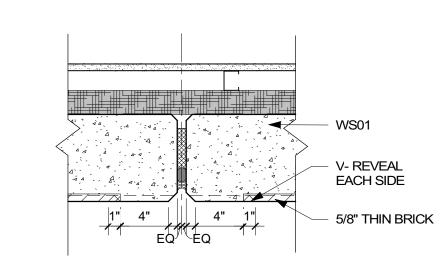
- ROOF ACCESS LADDERS ---

HIGH SCHOOL



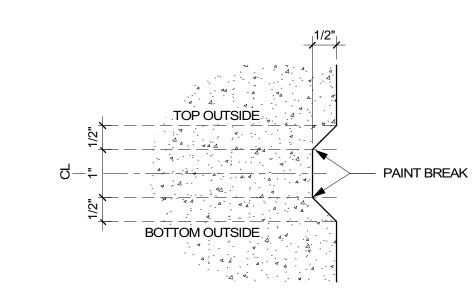
8 PANEL JOINT - EXTERIOR

A210 6" = 1'-0"



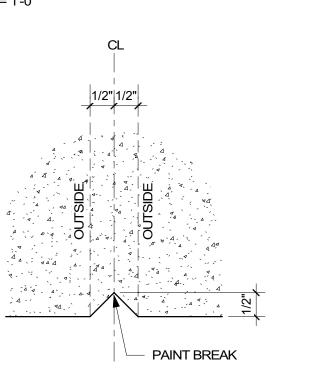
7 TYP. PANEL JOINT DETAIL

A210 1 1/2" = 1'-0"



NOTE: PAINT TRANSITIONS SHALL OCCUR ON INISDE CORNER OF REVEAL; REVIEW TRANSITION LOCATIONS W/ OWNER/ARCHITECT BEFORE PAINTING

6 H-REVEAL TYPE DETAIL A210 6" = 1'-0"



NOTE: PAINT TRANSITIONS SHALL OCCUR ON INISDE CORNER OF REVEAL; REVIEW TRANSITION LOCATIONS W/ OWNER/ARCHITECT BEFORE PAINTING

5 V-REVEAL TYPE DETAIL

A210 6" = 1'-0"

MATERIALS LEGEND



NOTE: ALL EXTERIOR STOREFRONTS TO BE **ESF-A** U.N.O.

SEE SHEET A232 FOR DETAILS.

SHEET GENERAL NOTES

1. ALL ALUMINUM STOREFRONT SYSTEM FINISHES SHALL BE CLEAR ANODIZED AND BE THERMALLY BROKEN. 2. ALL GLASS SHALL BE 1" INSULATED LOW-E GLASS. 3. PAINT ALL H.M. DOORS/FRAMES. COLOR TO MATCH ADJACENT CONC. PANEL.

4. CONTRACTOR TO PROVIDE A MOCK UP OF (2) FULL HEIGHT PANELS FOR OWNER OR OWNER'S REPRESENTATIVE APPROVAL OF ALL EXTERIOR PAINT & BRICK COLORS.

5. GUTTERS & DOWNSPOUTS TO MATCH ADJACENT WALL COLOR. 6. PAINT ALL EXPOSED CONC. PANELS & SOFFITS. 7. PROVIDE KNOX BOX PER LOCAL AUTHORITY REQUIREMENT. SEE PLAN FOR PROPOSED LOCATION.





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NO.	REASON	DATE

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

EXTERIOR ELEVATIONS



9 TYP. HIGH WINDOW LINTEL DETAIL

A230 1" = 1'-0"



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FRANKLIN COUNTY BLDG

REASON	DATE
	REASON

Issue Date: 12/15/2022

Job Number: 112 18134 00 Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

1" INSULATED LOW-E GLASS.

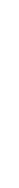
NOTE: ALL EXTERIOR STOREFRONTS TO BE **ESF-A** U.N.O.

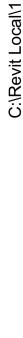
SEE SHEET A232 FOR DETAILS.

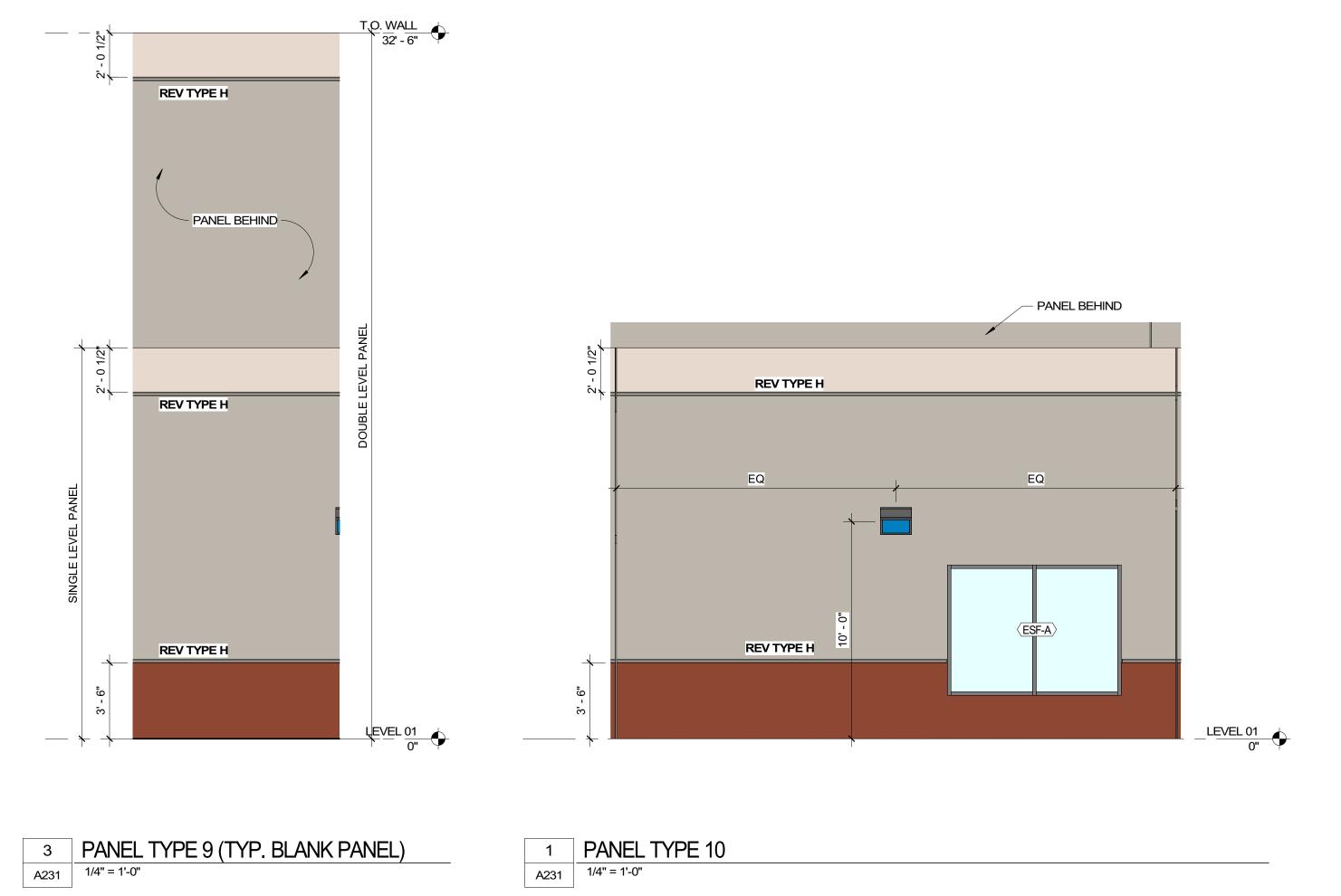
SHGC 0.25 MAX. PROPOSED U.FACTOR 0.38 MAX

FOR PROPOSED LOCATION.

ENLARGED EXTERIOR ELEVATIONS







REVEAL TYPE H DOWNSPOUT PANEL BEHIND REV TYPE H REVEAL TYPE V LEVEL 02 14' - 0" REVEAL TYPE V 5" TO THIN BRICK EDGE REVEAL TYPE H LEVEL 01.

CONT. GUTTER -

1 PANEL TYPE 10 A231 1/4" = 1'-0"

6 PANEL TYPE 11

A231 1/4" = 1'-0"

PANEL TYPE 12 A231 1/4" = 1'-0"

__ CONT. GUTTER REVEAL TYPE H DOWNSPOUT - MATCH EXTERIOR PAINT COLOR TO ROOFLINE (VARIES) - ROOF ASSEMBLY - CEILING OPENINGS VARY. SEE STRUCTURAL DWGS FOR PANEL LAYOUTS

4 PANEL TYPE 13

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SHEET GENERAL NOTES

1. ALL ALUMINUM STOREFRONT SYSTEM FINISHES SHALL BE CLEAR ANODIZED AND BE THERMALLY BROKEN. 2. ALL GLASS SHALL BE 1" INSULATED LOW-E GLASS. 3. PAINT ALL H.M. DOORS/FRAMES. COLOR TO MATCH ADJACENT

CONC. PANEL. 4. CONTRACTOR TO PROVIDE A MOCK UP OF (2) FULL HEIGHT PANELS FOR OWNER OR OWNER'S REPRESENTATIVE APPROVAL OF ALL EXTERIOR PAINT & BRICK COLORS.

5. GUTTERS & DOWNSPOUTS TO MATCH ADJACENT WALL COLOR. 6. PAINT ALL EXPOSED CONC. PANELS & SOFFITS.

7. PROVIDE KNOX BOX PER LOCAL AUTHORITY REQUIREMENT. SEE PLAN FOR PROPOSED LOCATION.





CADEMY HOOL



FRANKLIN COUNTY BLDG SUBMISSION

REASON

Issue D	ate:	12/15/2022		

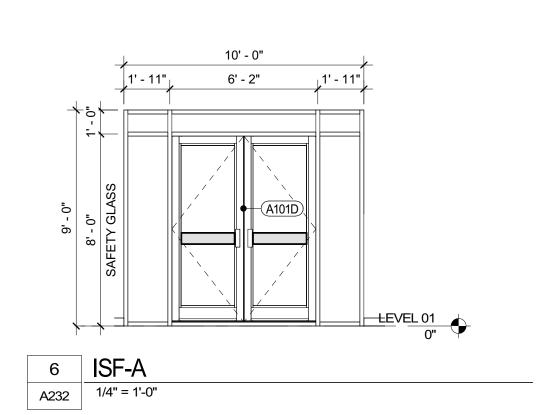
Job Number: 112 18134 00

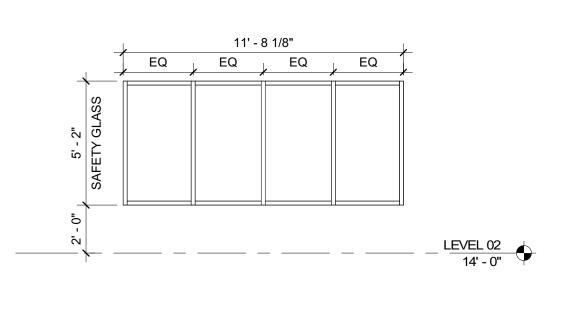
Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

ENLARGED EXTERIOR ELEVATIONS

INTERIOR STOREFRONT TYPES

BASIS OF DESIGN: EFCO 406T SOLARBAN 70XL CLEAR. SHGC 0.25 MAX. PROPOSED U.FACTOR 0.38 MAX.

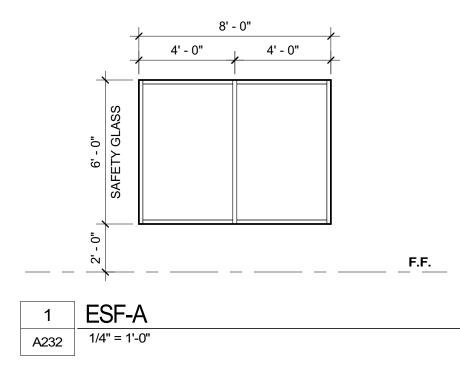


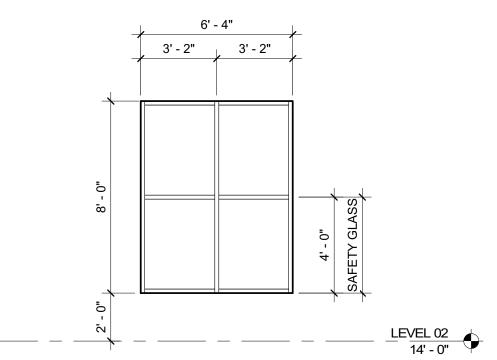


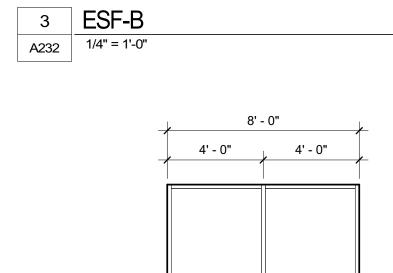
A232 1/4" = 1'-0"

EXTERIOR STOREFRONT TYPES

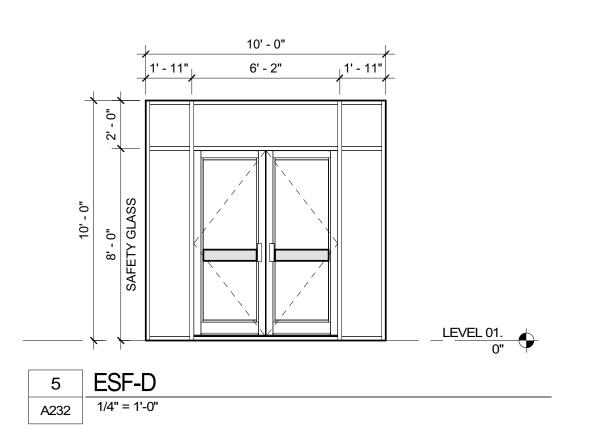
BASIS OF DESIGN: EFCO 406T SOLARBAN 70XL CLEAR. SHGC 0.25 MAX. PROPOSED U.FACTOR 0.38 MAX.







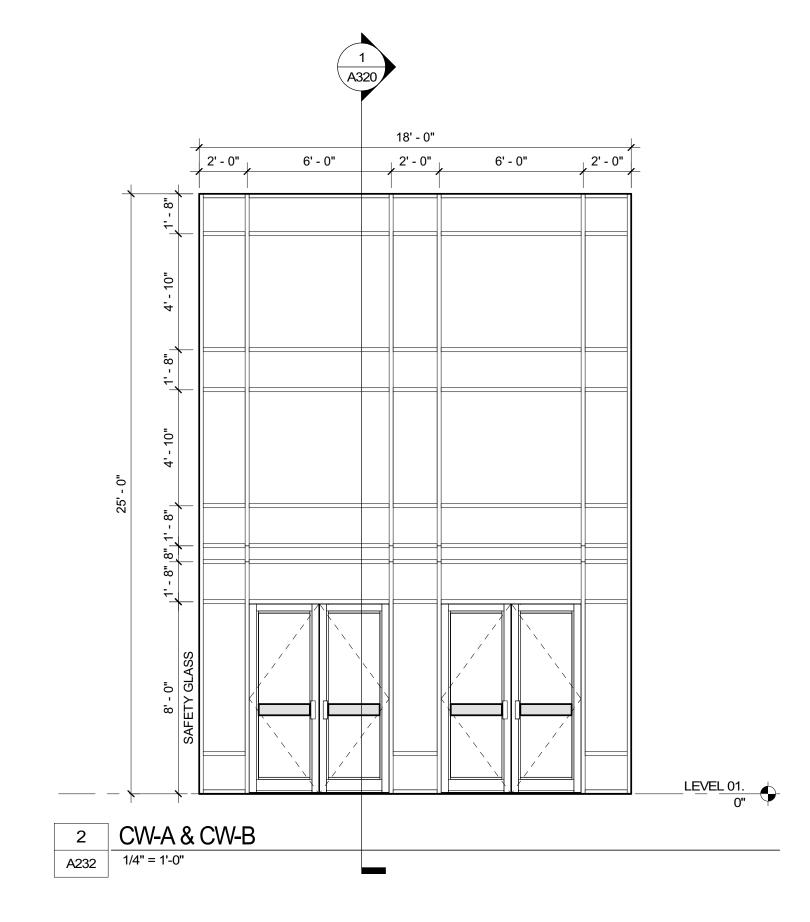




CURTAIN WALL

BASIS OF DESIGN: KAWNEER 1620UT SSG CURTAIN WALL SYSTEM 7 1/2" MULLION SHGC 0.25 MAX. PROPOSED U.FACTOR 0.38 MAX.

COORDINATE DESIGN & INSTALLATION OF PREFAB CANOPY AT THIS ENTRY WITH CURTAIN WALL MANUFACTURER.



REVIEWED FOR CODE COMPLIANCE FRANKLIN COUNTY NORTH CAROLINA Plans must be on site at all times. It is the responsibility of the Permit holder or Contractor to comply with all local Ordinances, rules and regulations and the North Carolina Building Codes as if they were part of the specifications for the building. These shall be considered the official approved plans over anything shown, described or implied to the contrary. Reviewer is not responsible for mistakes or oversights during the plan review. -- PFaulkner 03/30/2023







ADEMY



FRANKLIN COUNTY BLDG SUBMISSION

NO.	REASON	DATE

Issue Date: 12/15/2022

Job Number: 112 18134 00 Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

GLAZING SYSTEM ELEVATIONS

A310 1/8" = 1'-0"







YOUNGSVILLE ACADEMY NEW HIGH SCHOOL



RANKL SUBMIS	LIN COUNTY BLDG SSION	
NO.	REASON	DATE

Issue Date: 12/15/2022

Job Number: 112 18134 00

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Checked By: TOM BALKE, AIA

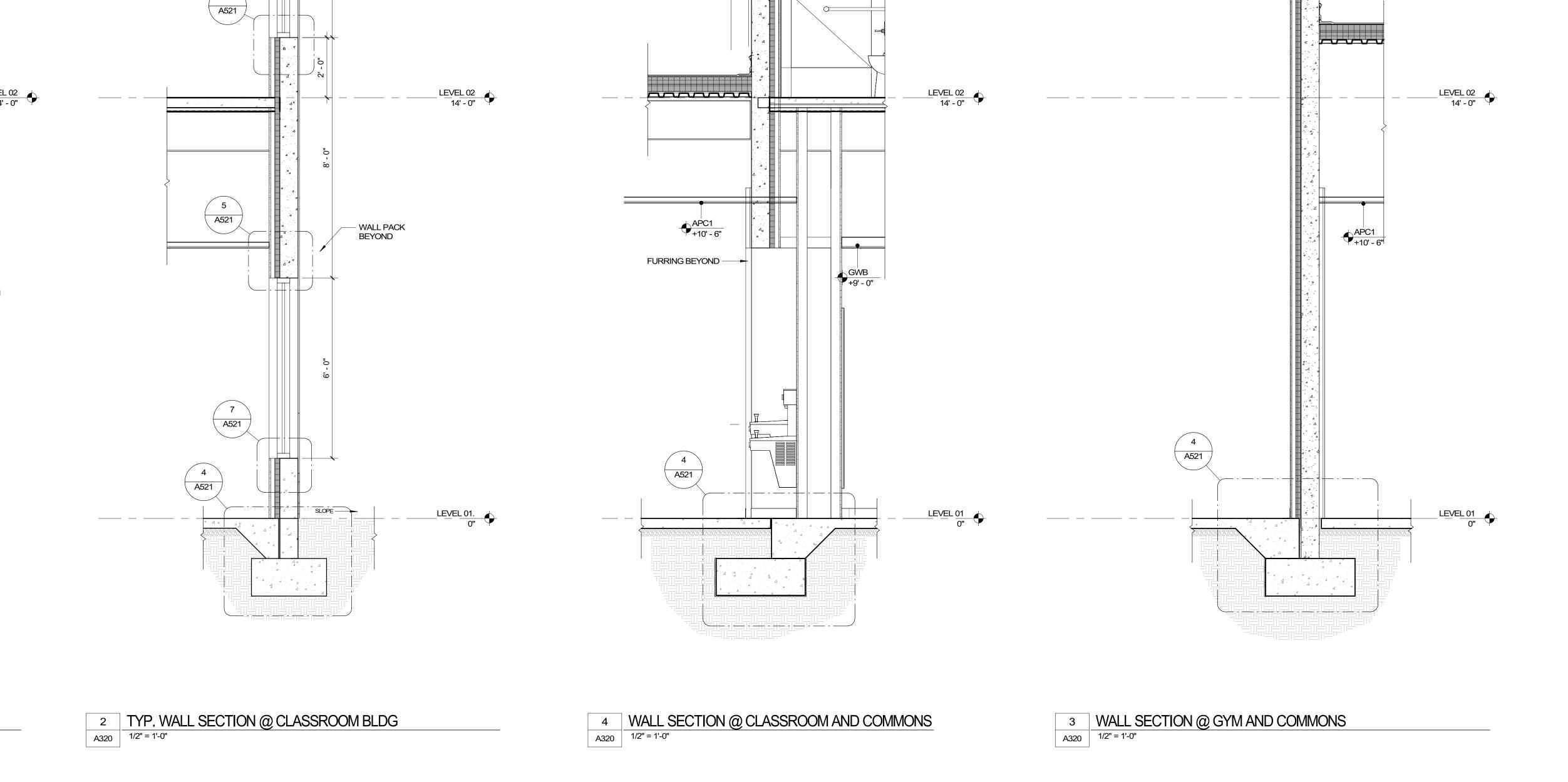
BUILDING SECTIONS

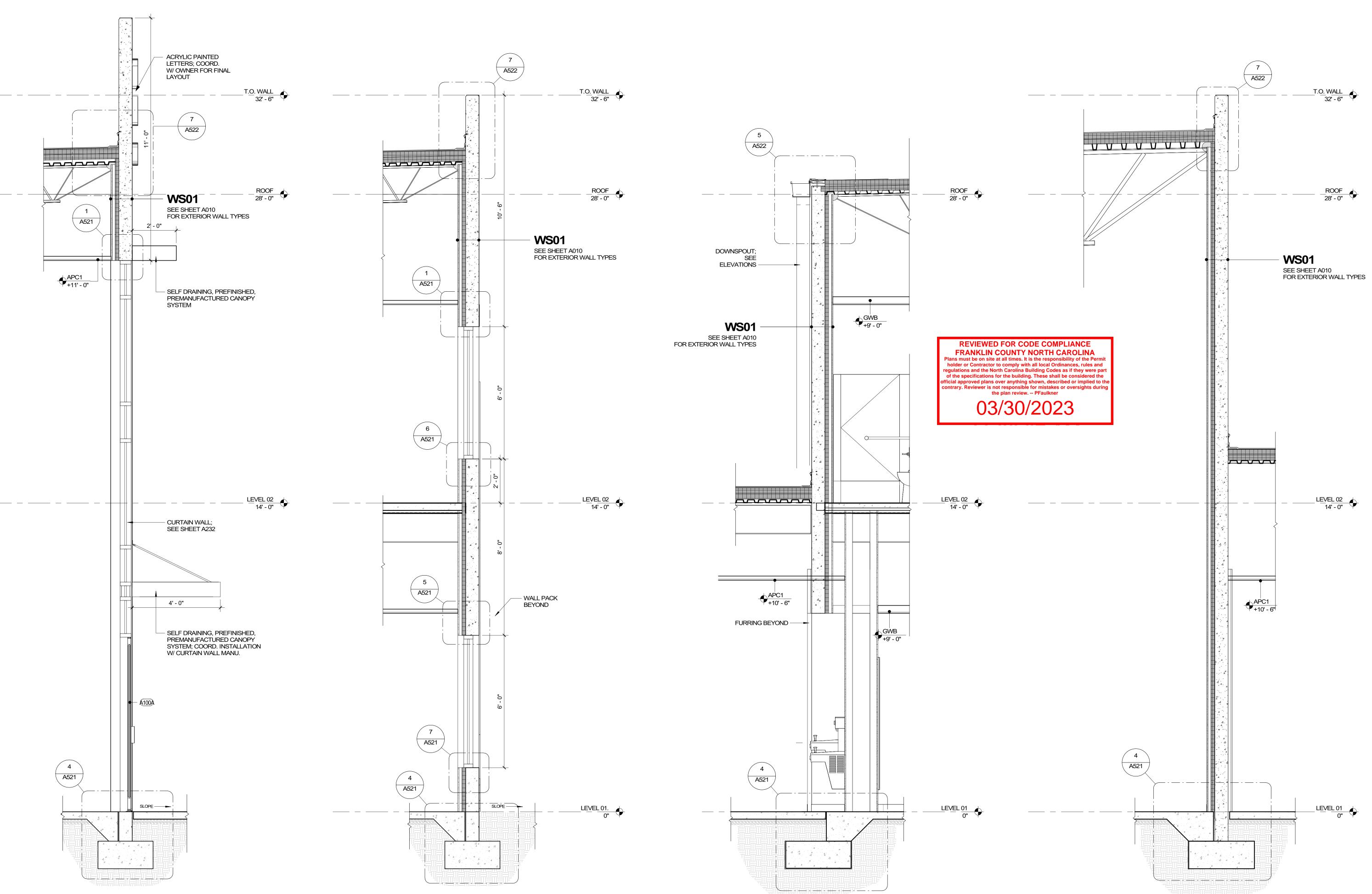
A310



1 WALL SECTION @ MAIN ENTRY

A320 1/2" = 1'-0"













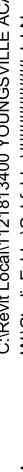


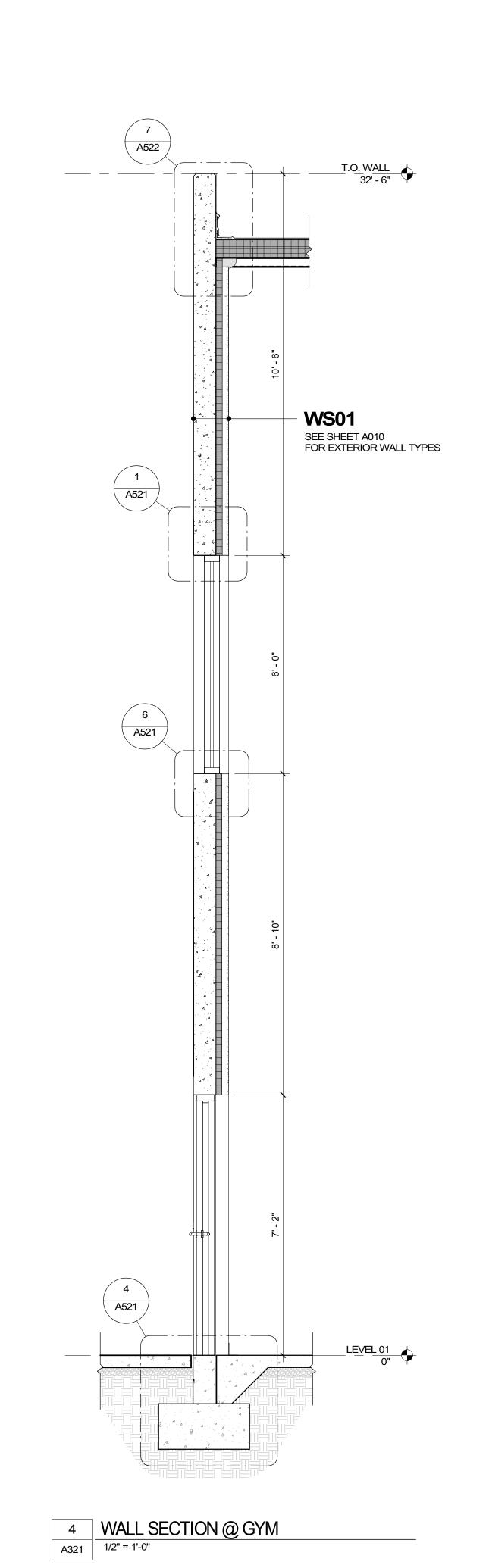
NO.	REASON	DATE

Job Number: 112 18134 00

Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA WALL SECTIONS



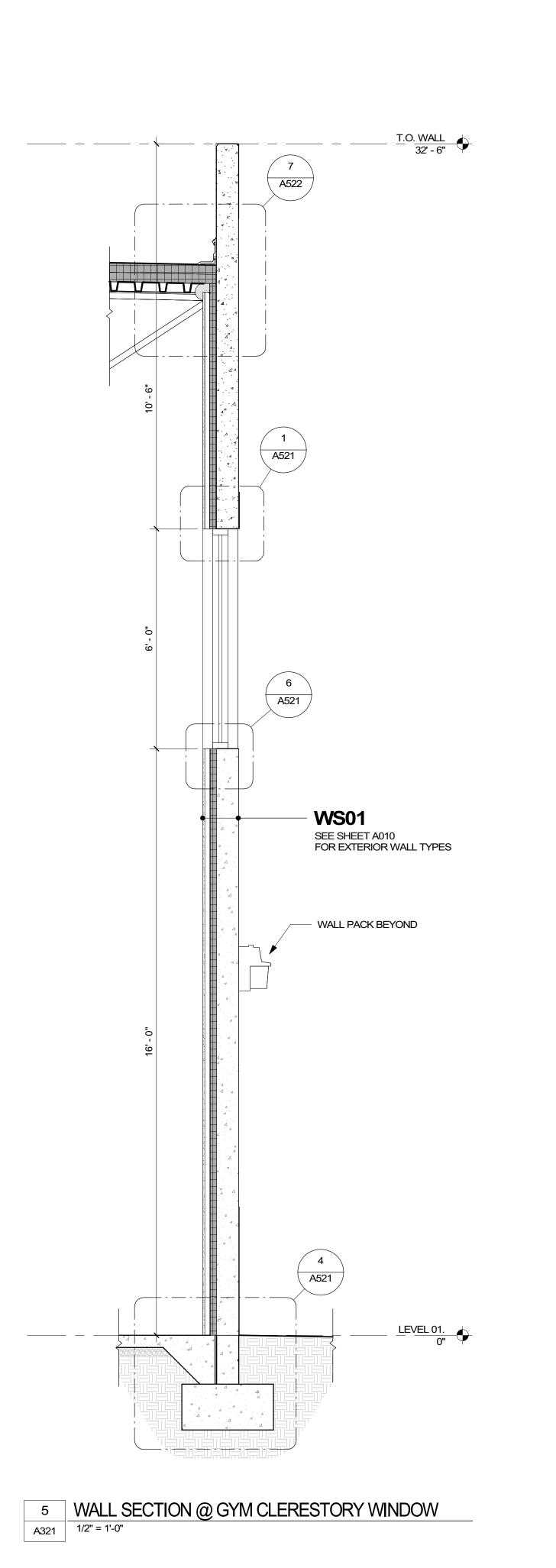


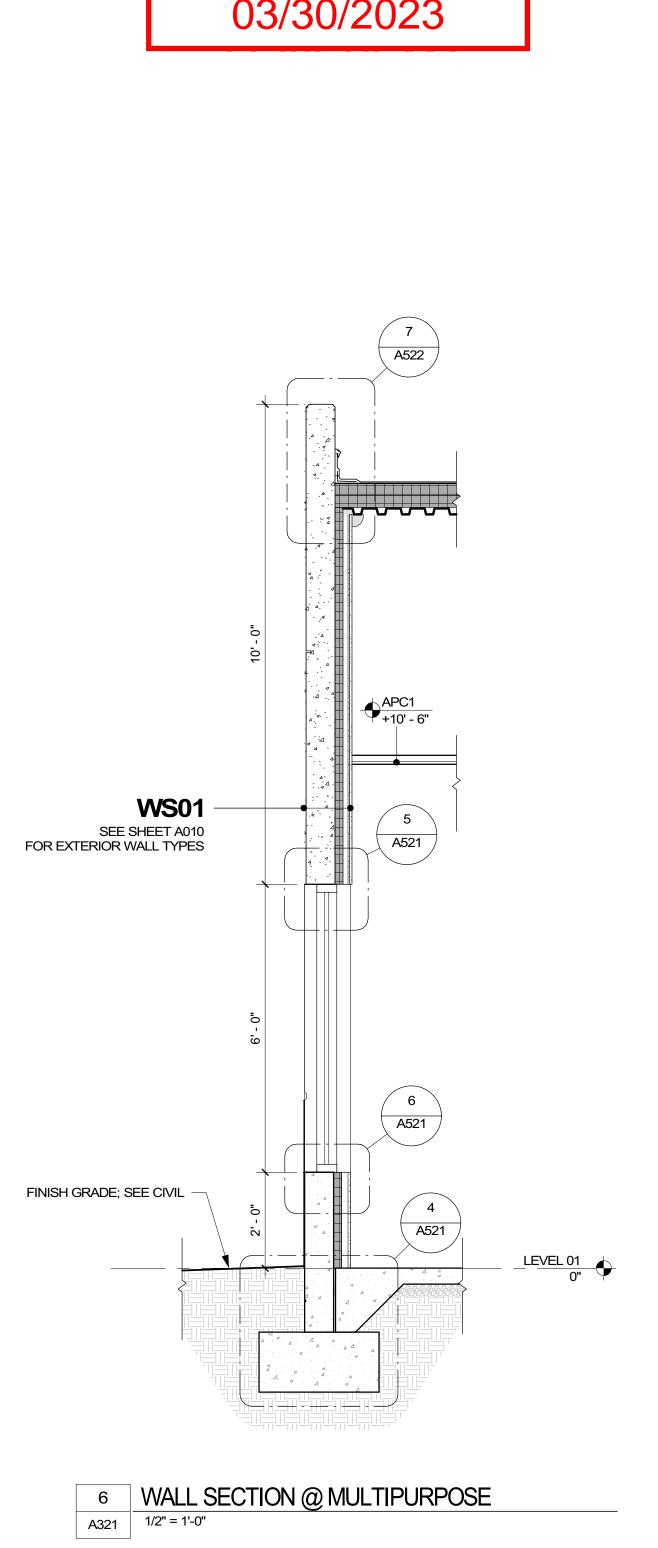
SELF DRAINING, PREFINISHED, PREMANUFACTURED CANOPY SYSTEM

SEE SHEET A010 FOR EXTERIOR WALL TYPES

3 WALL SECTION @ COMMONS ENTRY

1/2" = 1'-0"





REVIEWED FOR CODE COMPLIANCE

FRANKLIN COUNTY NORTH CAROLINA

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ADEMY



FRANKLIN COUNTY BLDG

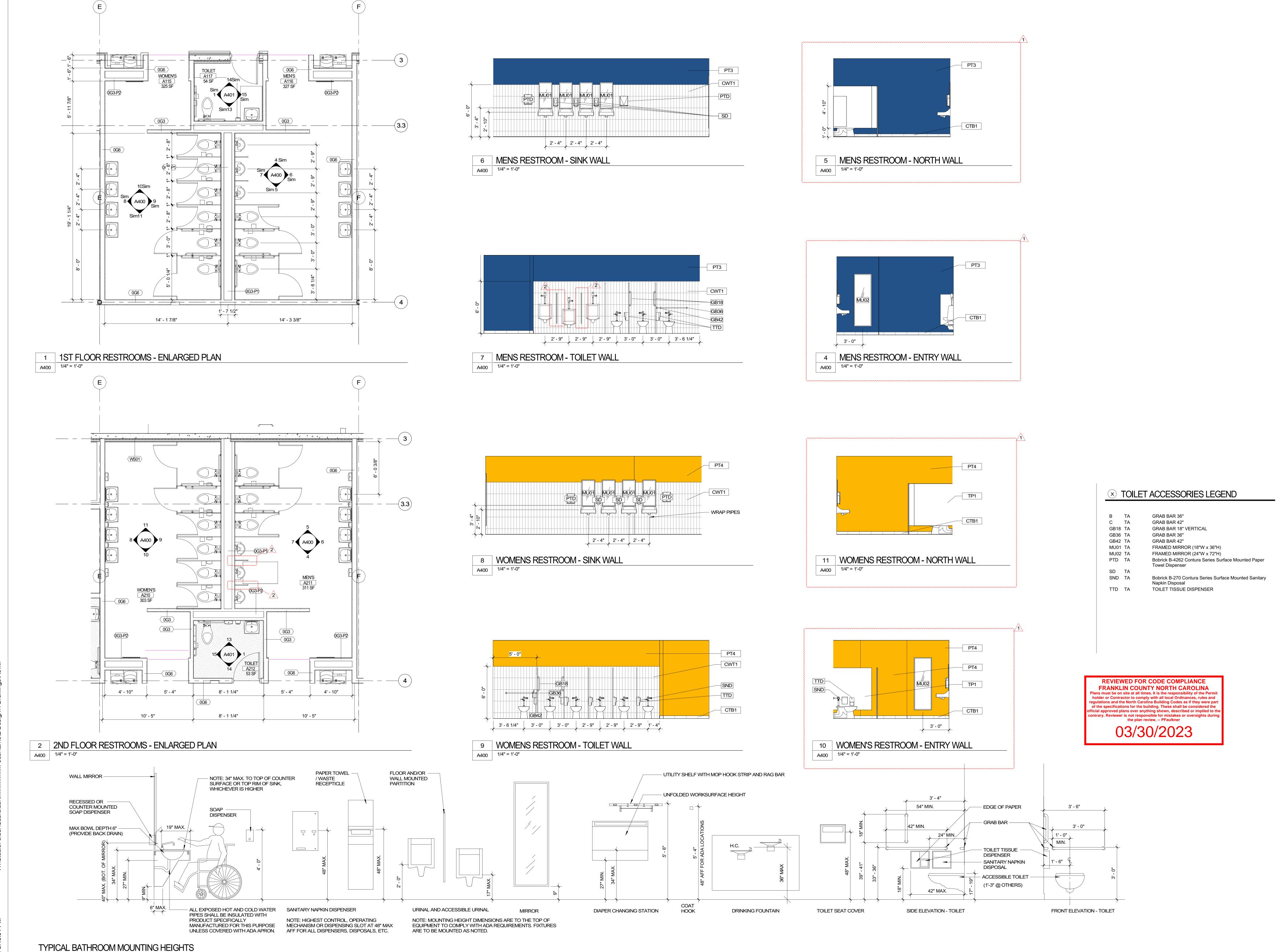
REASON	DATE
	REASON

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

WALL SECTIONS











9829 Spencer Road

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Facsimile: 810-852-4721

ADEMY OUNGSVILLE, NEW HIGH S



FRANKLIN COUNTY BLDG

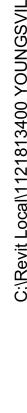
	SUBMISSION			
NO.	REASON	DATE		
1	CONSTRUCTABILITY REVIEW	1/16/2023		
2	COUNTY REVIEW CYCLE 1	2/13/2023		

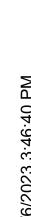
Issue Date: 12/15/2022 Job Number: 112 18134 00

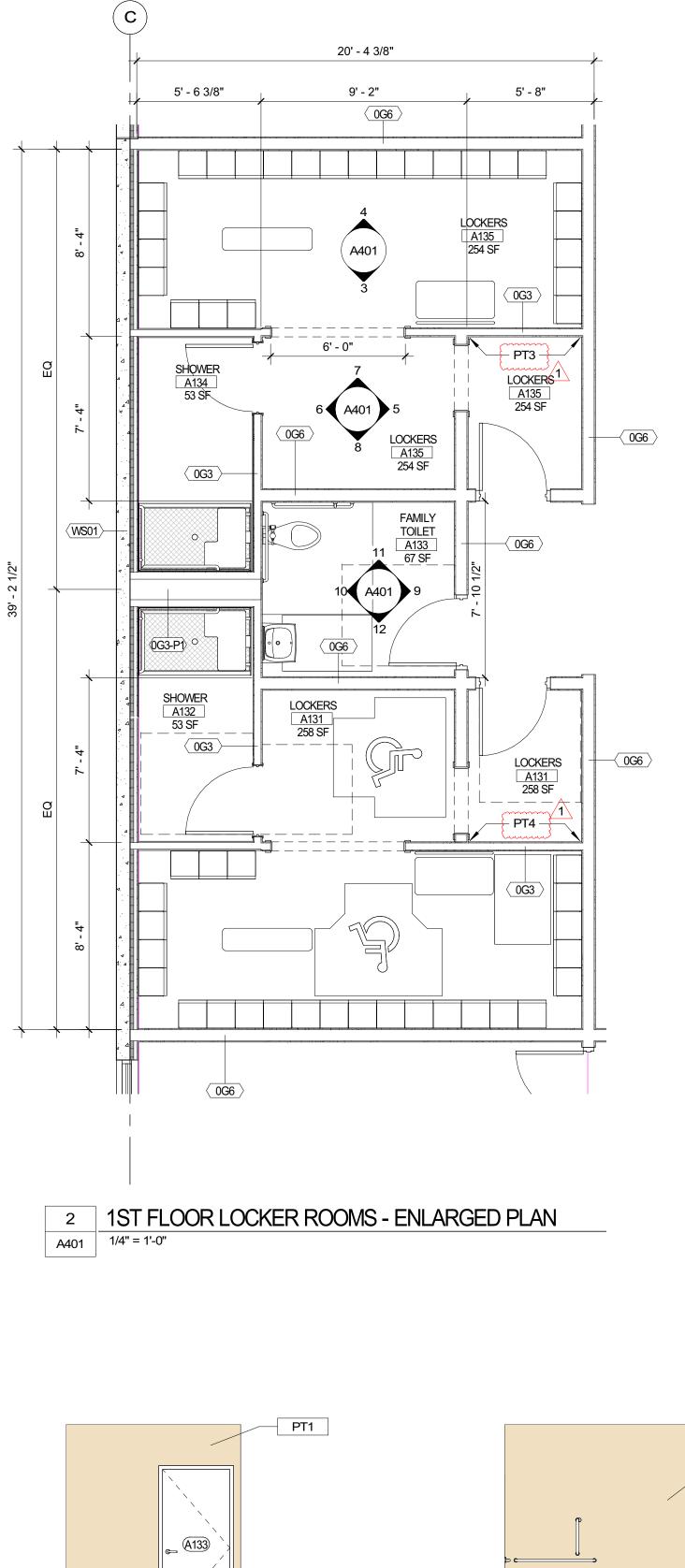
Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA ENLARGED TOILET PLANS +

ELEVATIONS







9 FAMILY TOILET A133 - EAST

10 FAMILY TOILET A133 - WEST

A401 1/4" = 1'-0"

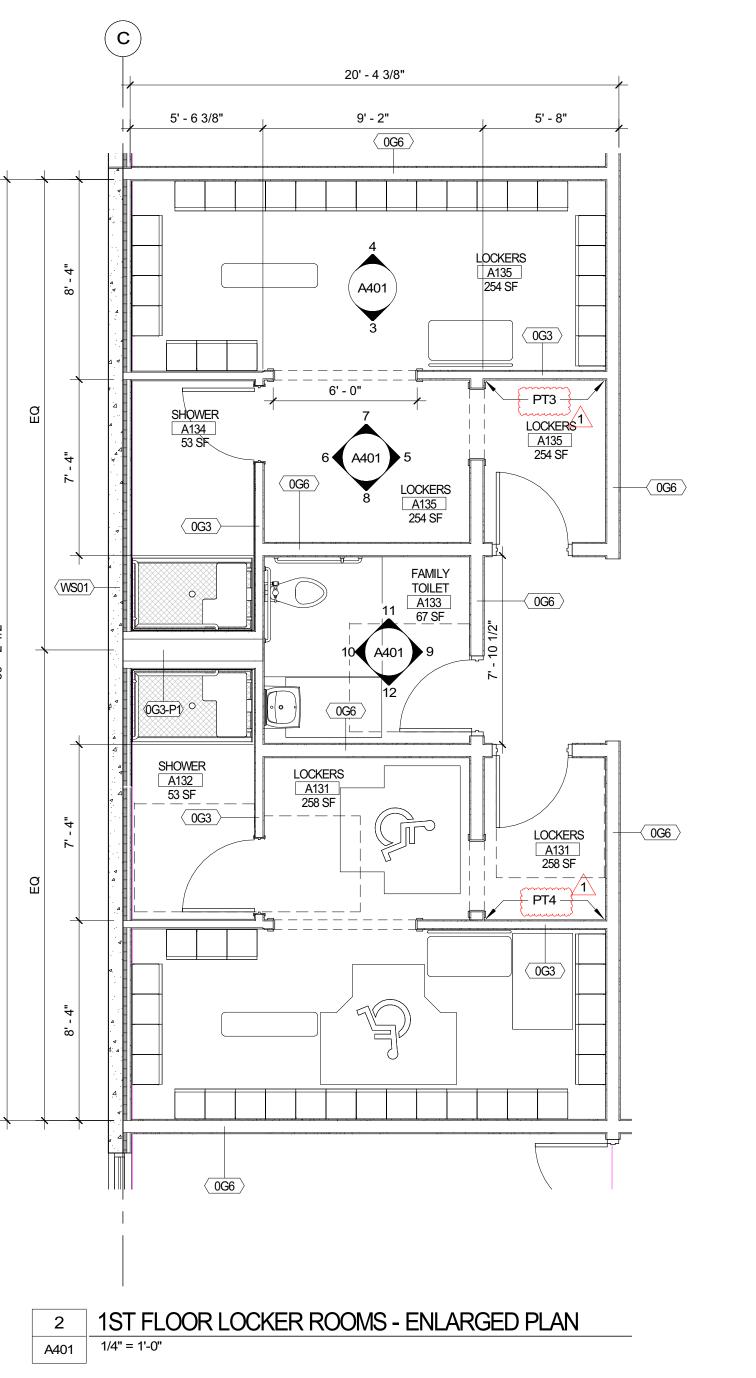
A401 1/4" = 1'-0"

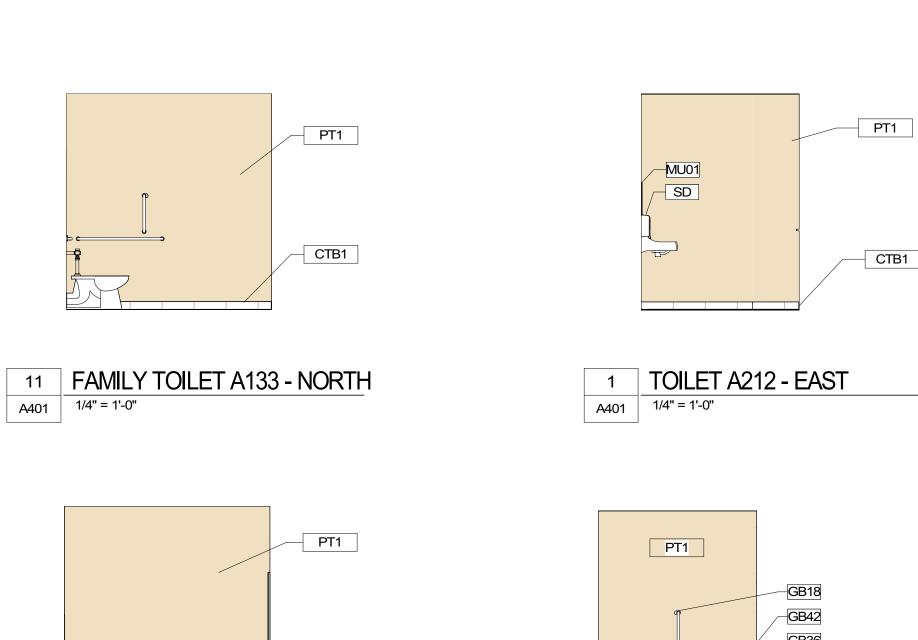
CTB1

12 FAMILY TOILET A133 - SOUTH

A401 1/4" = 1'-0"

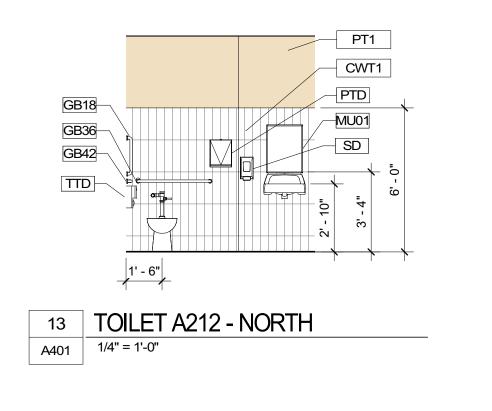
A401 1/4" = 1'-0"

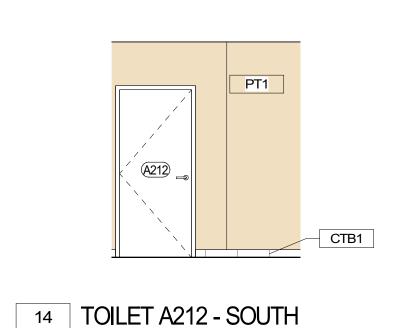




15 TOILET A212 - WEST

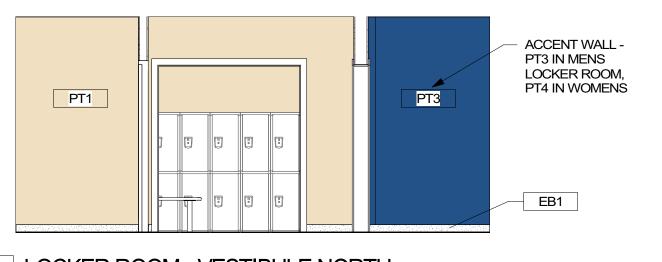
A401 1/4" = 1'-0"



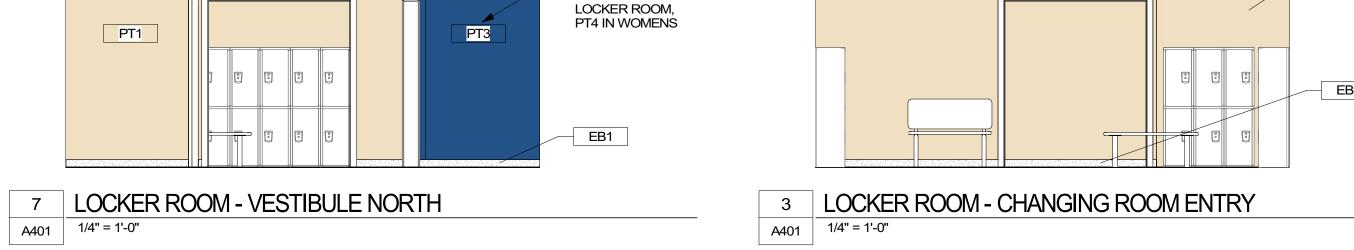


A401 1/4" = 1'-0"

REVIEWED FOR CODE COMPLIANCE lans must be on site at all times. It is the responsibility of the Perm holder or Contractor to comply with all local Ordinances, rules and regulations and the North Carolina Building Codes as if they were part of the specifications for the building. These shall be considered the official approved plans over anything shown, described or implied to the contrary. Reviewer is not responsible for mistakes or oversights during the plan review. -- PFaulkner



8 LOCKER ROOM VESTIBULE SOUTH
A401 1/4" = 1'-0"



- PREFABRICATED SHOWER UNIT

EB1

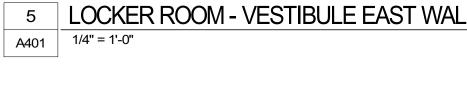


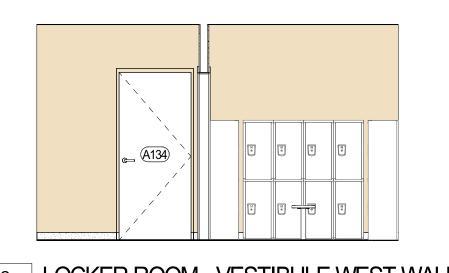
4 LOCKER ROOM - CHANGING ROOM LOCKER WALL

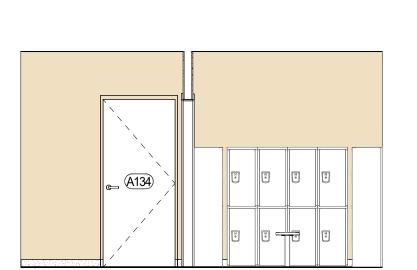
A401 1/4" = 1'-0"

PT1









6 LOCKER ROOM - VESTIBULE WEST WALL

A401 1/4" = 1'-0"



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1 CONSTRUCTABILITY 1/16/2023 REVIEW	6/202

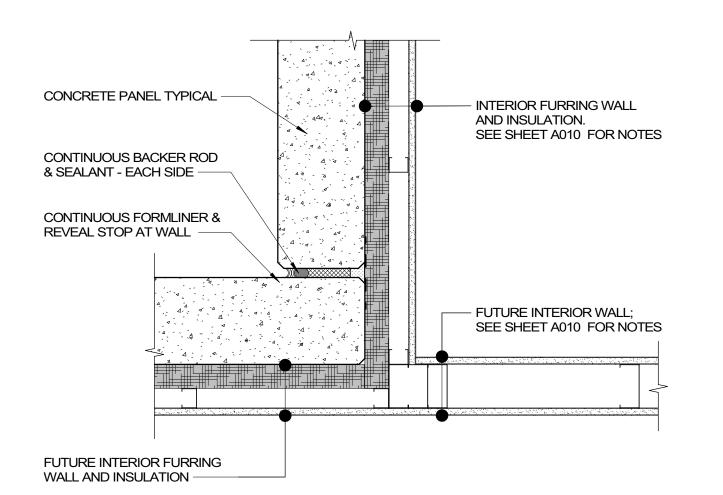
Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

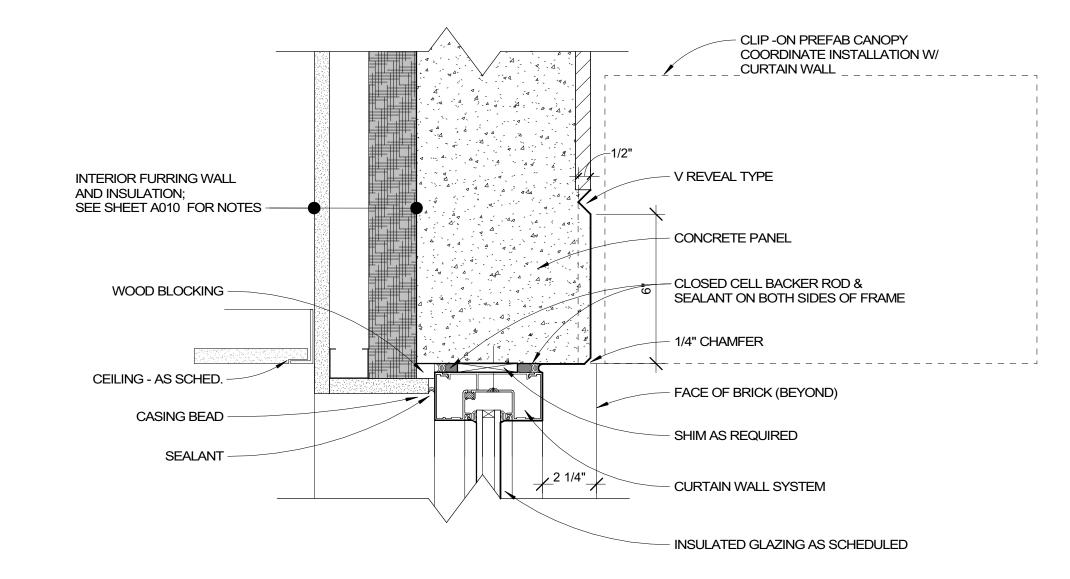
ENLARGED LOCKER ROOM PLANS + ELEVATIONS

A401

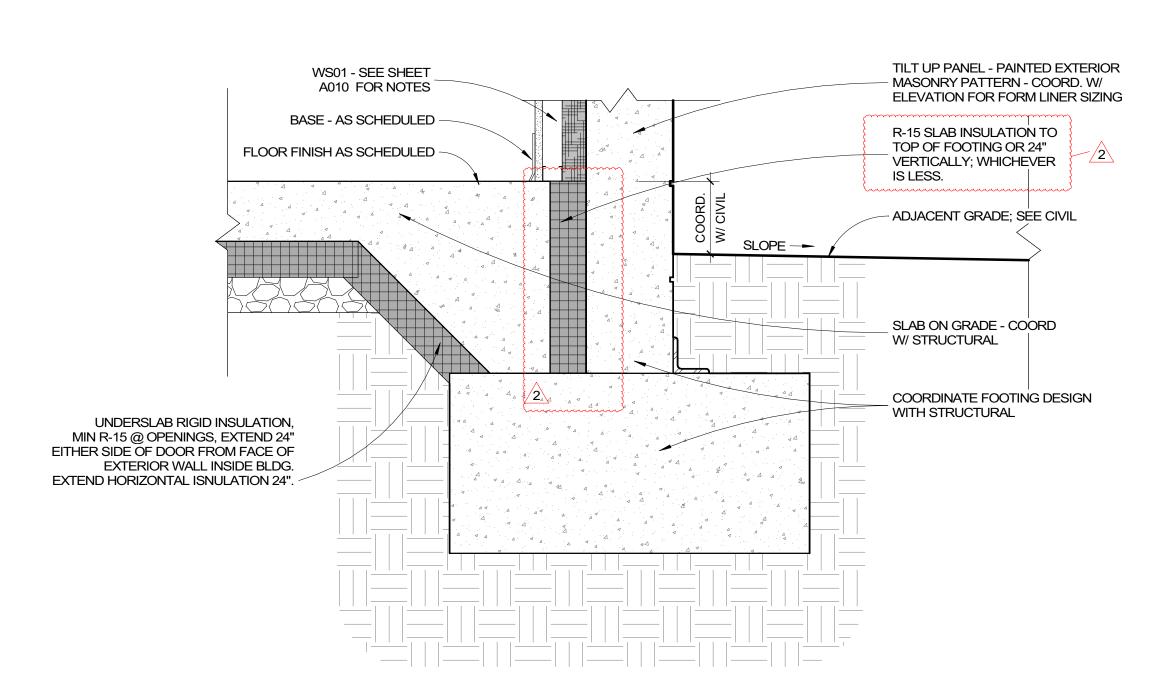


9 INTERIOR LAPPED PANEL JOINT A521 1 1/2" = 1'-0"

> REVIEWED FOR CODE COMPLIANCE FRANKLIN COUNTY NORTH CAROLINA Plans must be on site at all times. It is the responsibility of the Perm holder or Contractor to comply with all local Ordinances, rules and lations and the North Carolina Building Codes as if they were part of the specifications for the building. These shall be considered the ficial approved plans over anything shown, described or implied to the ontrary. Reviewer is not responsible for mistakes or oversights during the plan review. -- PFaulkner

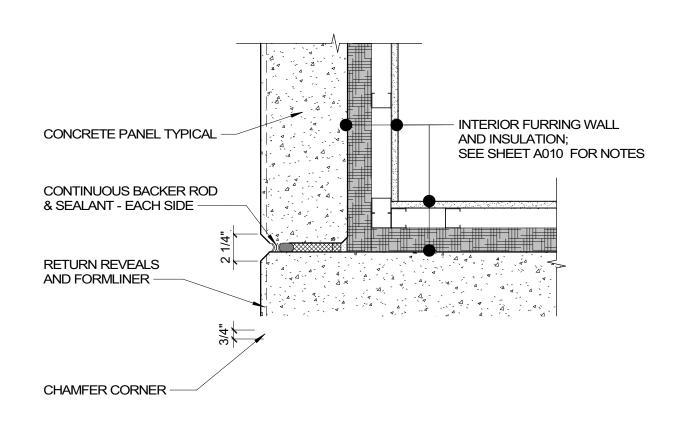


DETAIL - CURTAIN WALL HEAD @ MAIN ENTRY A521 3" = 1'-0"

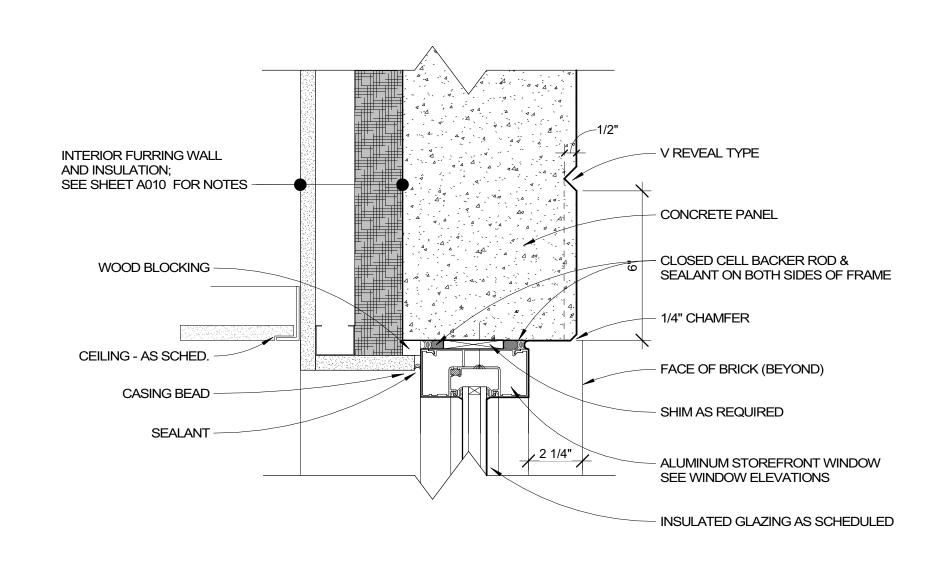


4 DETAIL - TYPICAL PERIMETER FOOTING

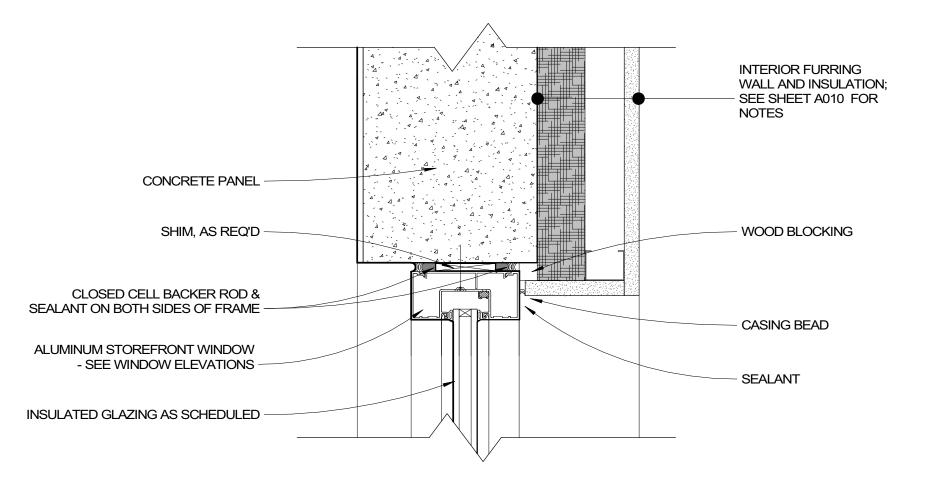
A521 1 1/2" = 1'-0"



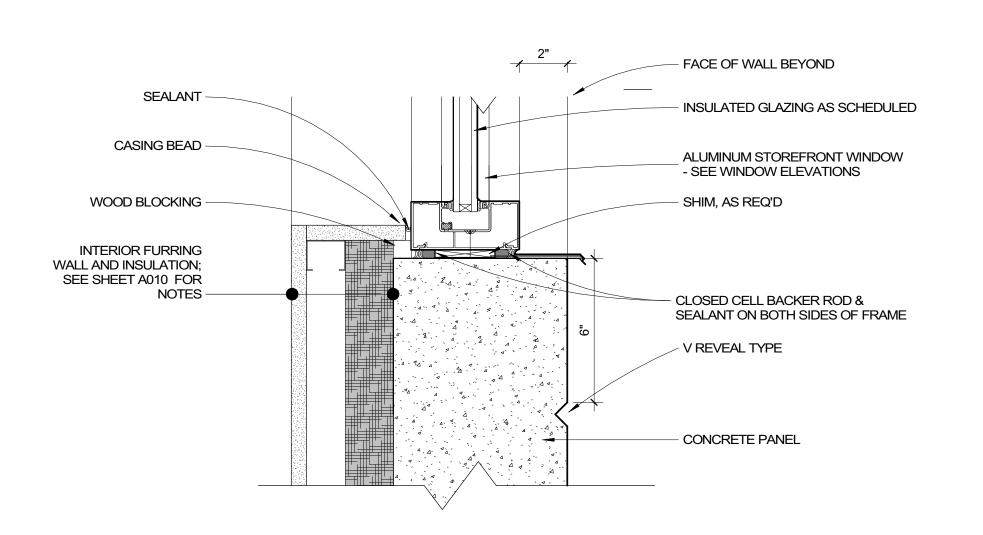
10 LAPPED CORNER JOINT A521 1 1/2" = 1'-0"



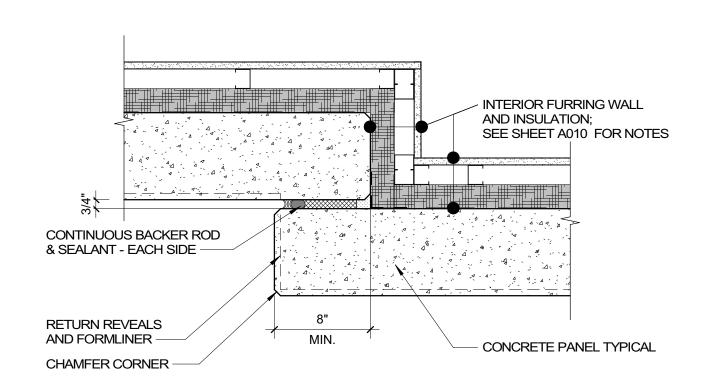
5 DETAIL - STOREFRONT HEAD - CONCRETE - LEVEL 01 A521 3" = 1'-0"



3 DETAIL - STOREFRONT JAMB - CONCRETE A521 3" = 1'-0"

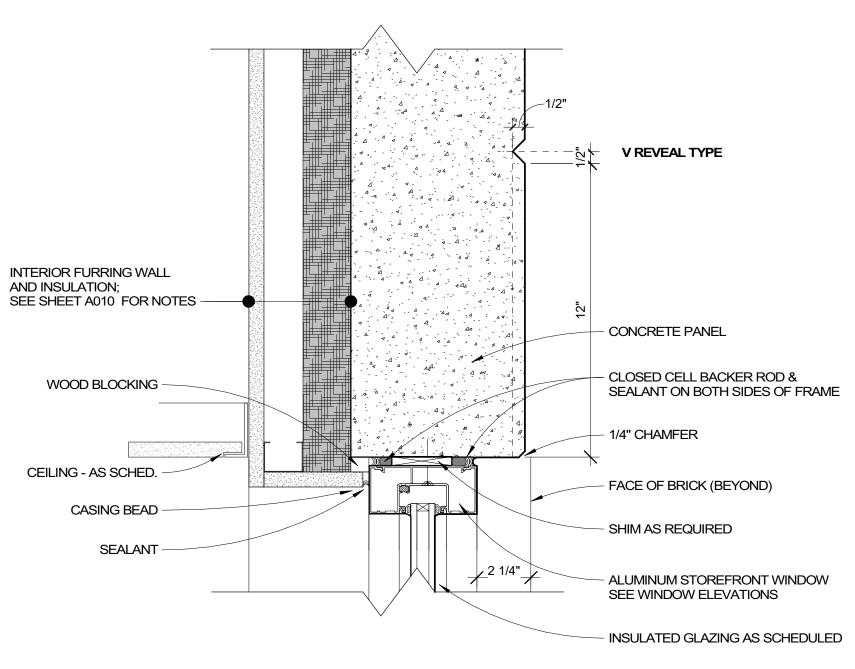


6 DETAIL - STOREFRONT SILL - CONCRETE

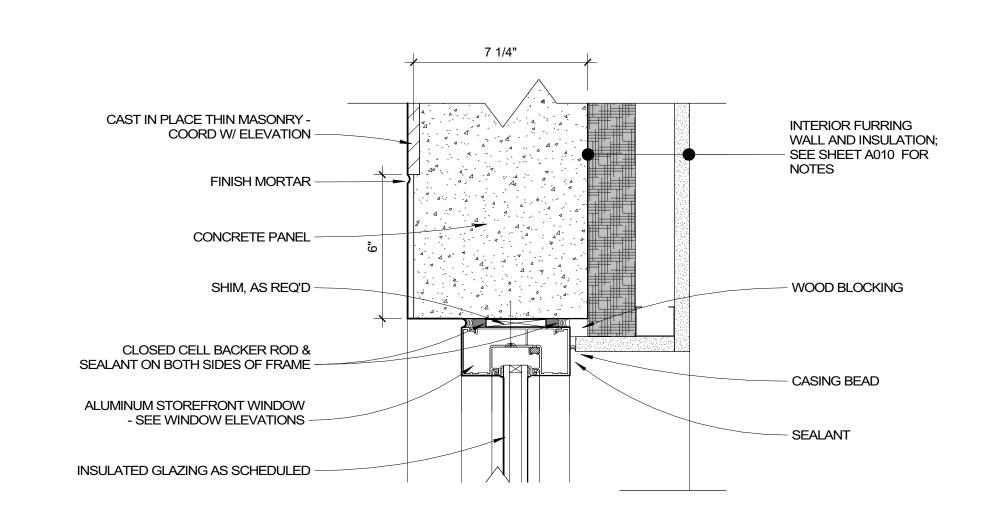


11 TYPICAL LAPPED PANEL JOINT

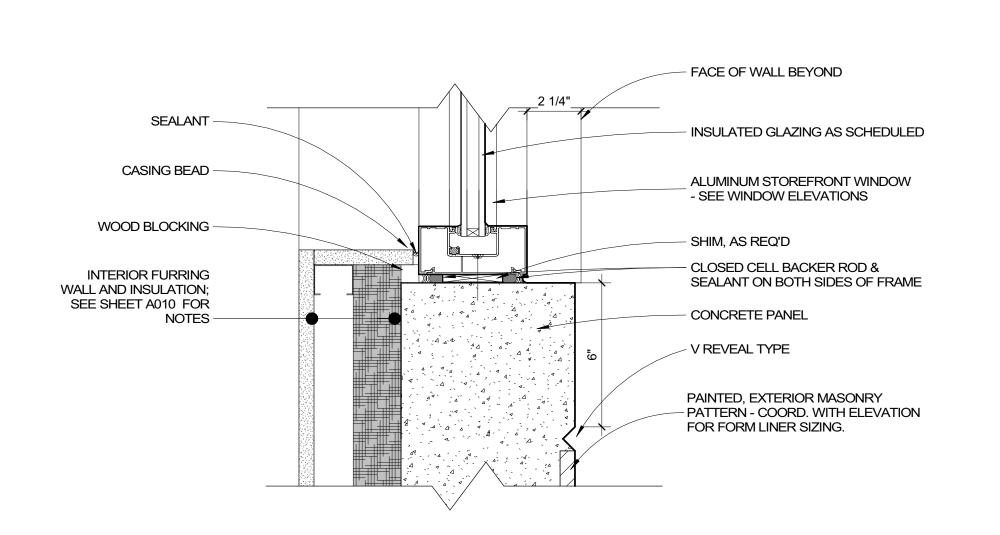
A521 1 1/2" = 1'-0"



1 DETAIL - STOREFRONT HEAD - CONCRETE - LEVEL 02 A521 3" = 1'-0"



2 DETAIL - STOREFRONT JAMB - MASONRY A521 3" = 1'-0"



7 DETAIL - STOREFRONT SILL - MASONRY





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ADEM VILLE SUNG NEW



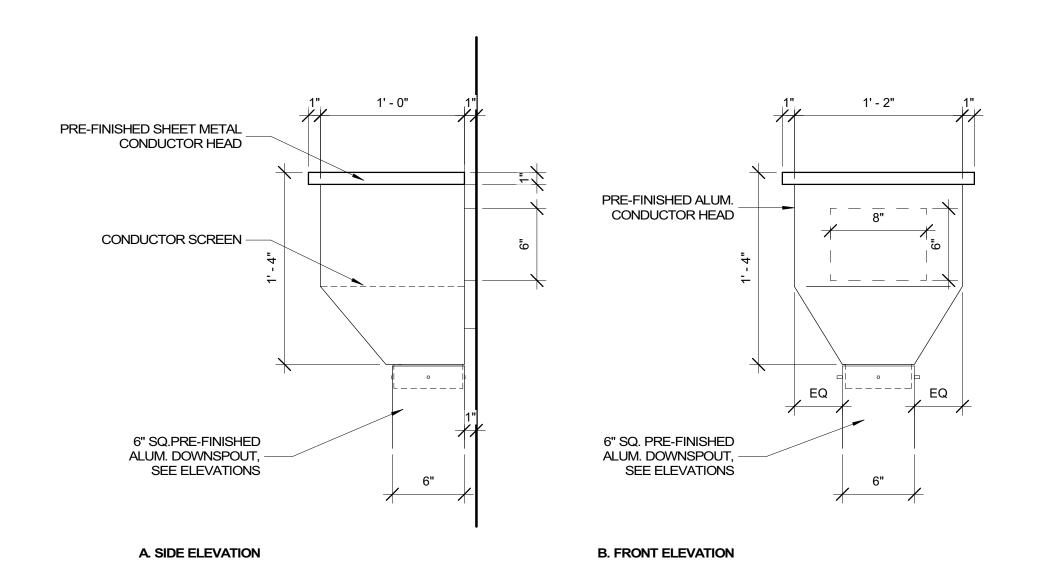
FRANKLIN COUNTY BLDG

NO.	REASON	DATE
2	COUNTY REVIEW CYCLE 1	2/13/2023

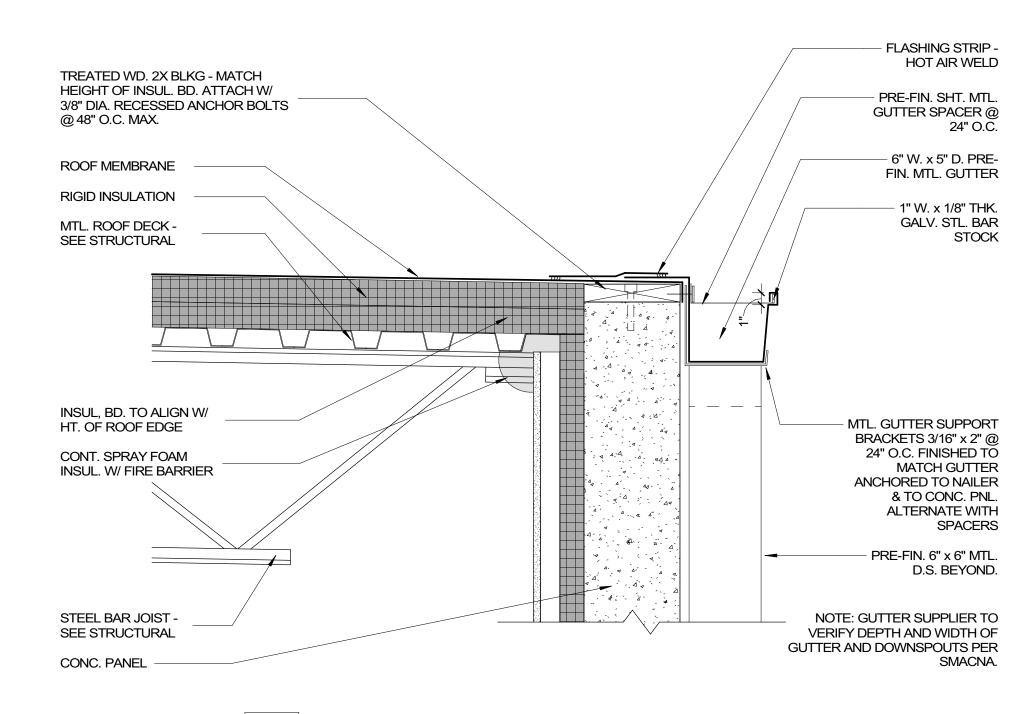
Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

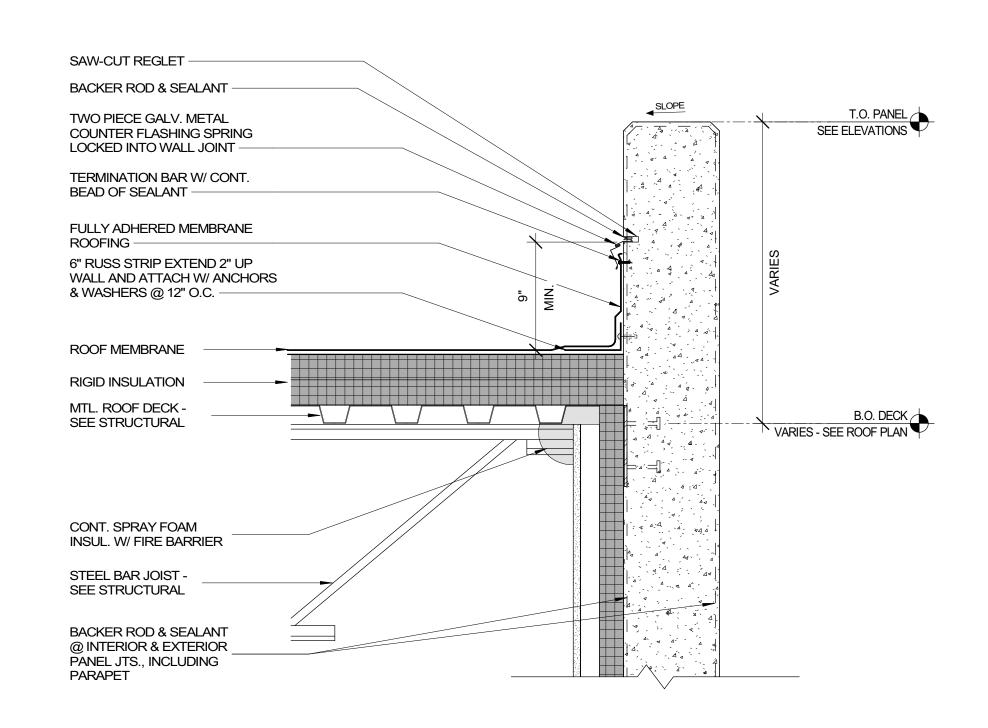
PLAN & SECTION DETAILS



1 DOWNSPOUT CONDUCTOR HEAD, TYPICAL A522 1 1/2" = 1'-0"

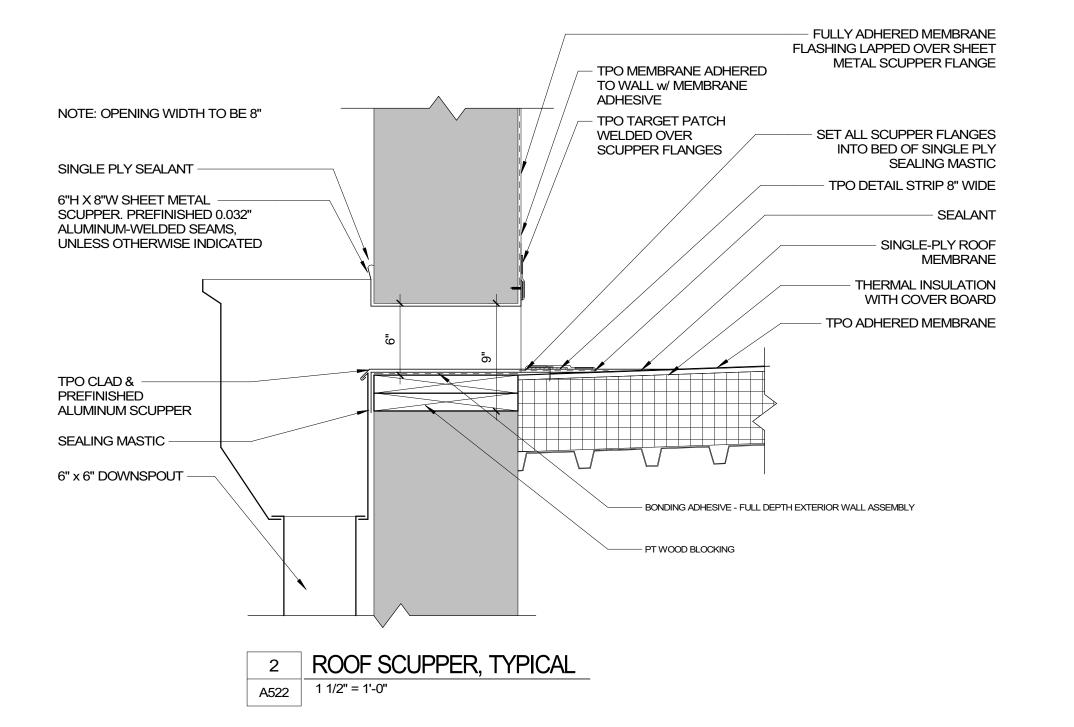


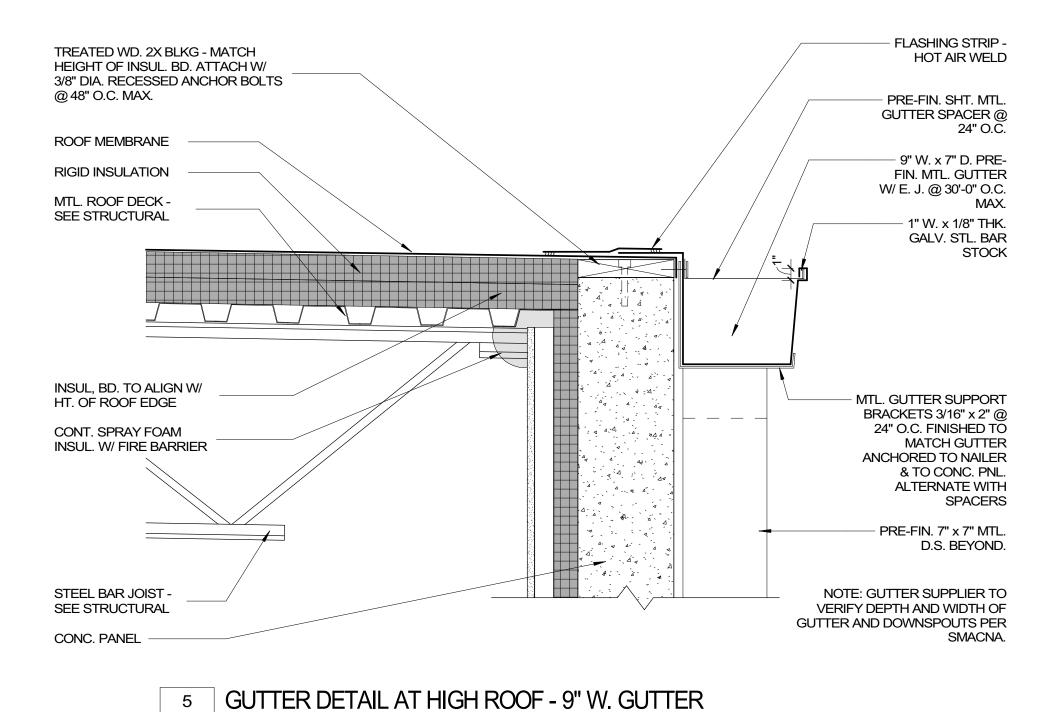
4 GUTTER DETAIL AT LOW ROOF - 6" W. GUTTER A522 1 1/2" = 1'-0"



7 PARAPET DETAIL, TYPICAL

1 1/2" = 1'-0"

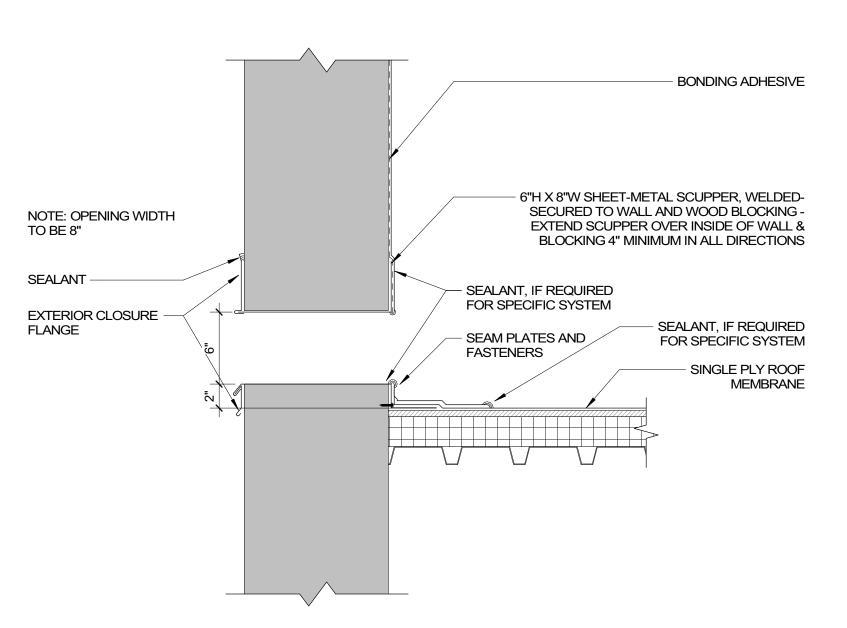




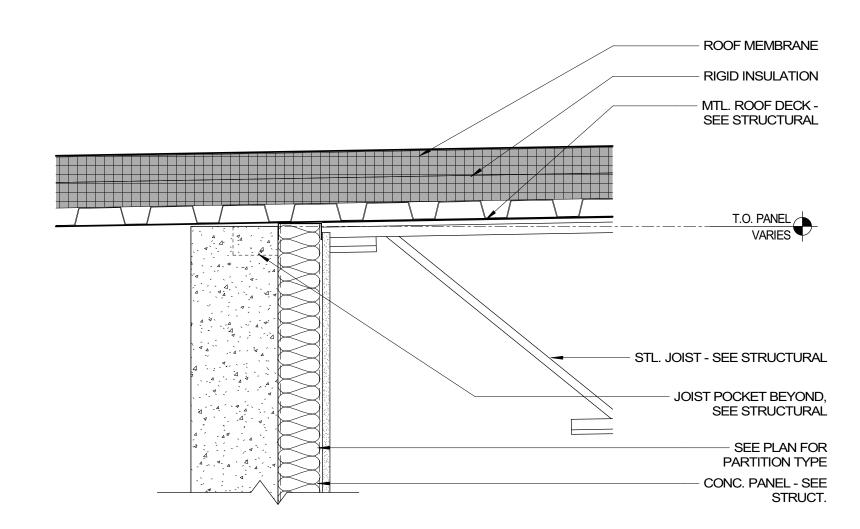
REVIEWED FOR CODE COMPLIANCE
FRANKLIN COUNTY NORTH CAROLINA
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03/30/2023

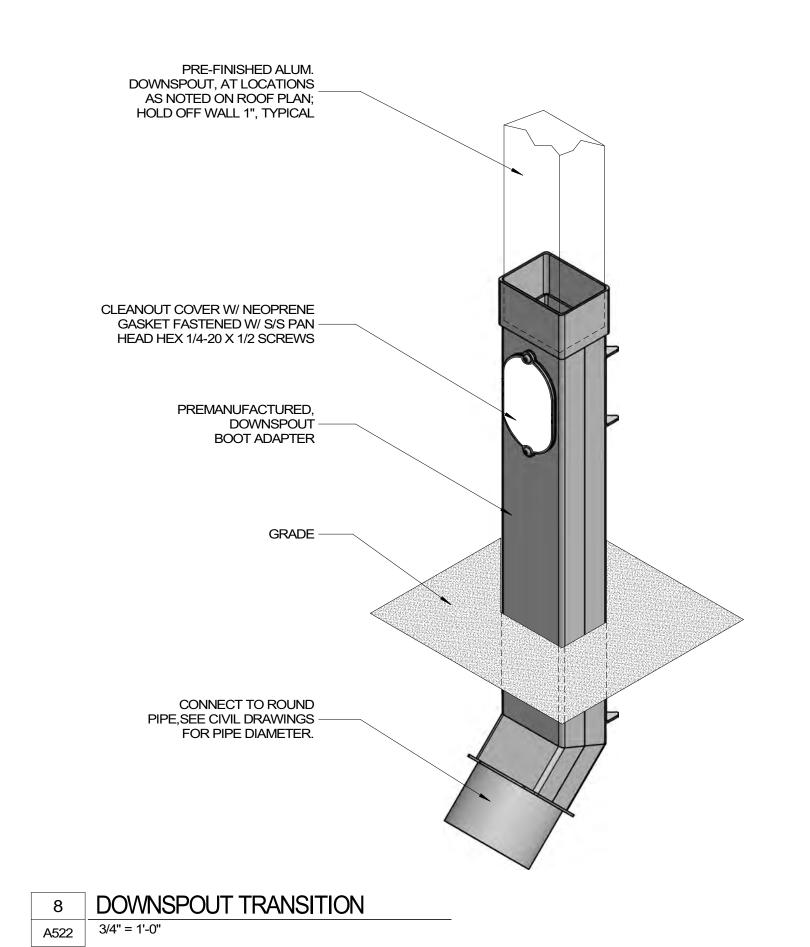
A522 1 1/2" = 1'-0"



3 OVERFLOW SCUPPER, TYPICAL 1 1/2" = 1'-0"











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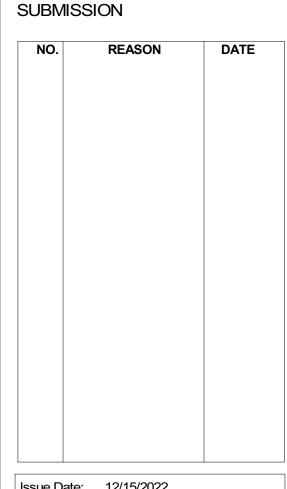
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DUNGSVILLE ACADEMN NEW HIGH SCHOOL



FRANKLIN COUNTY BLDG



Job Number: 112 18134 00

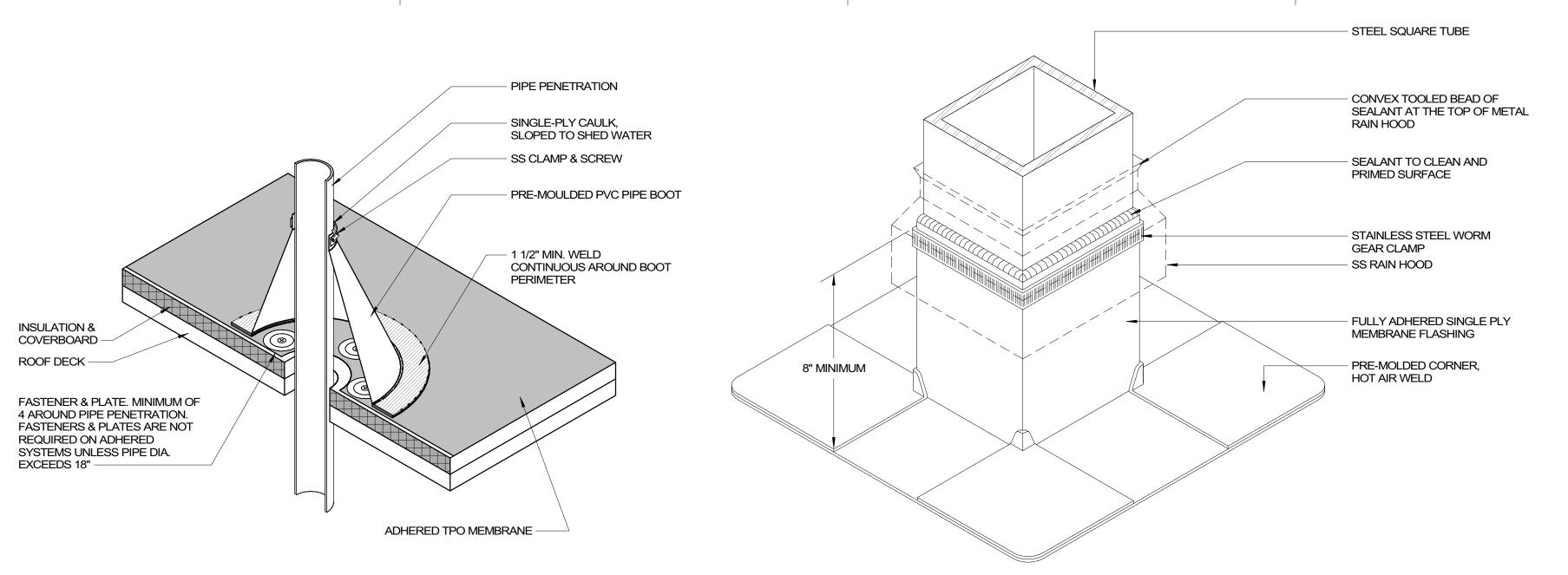
Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

ROOF DETAILS

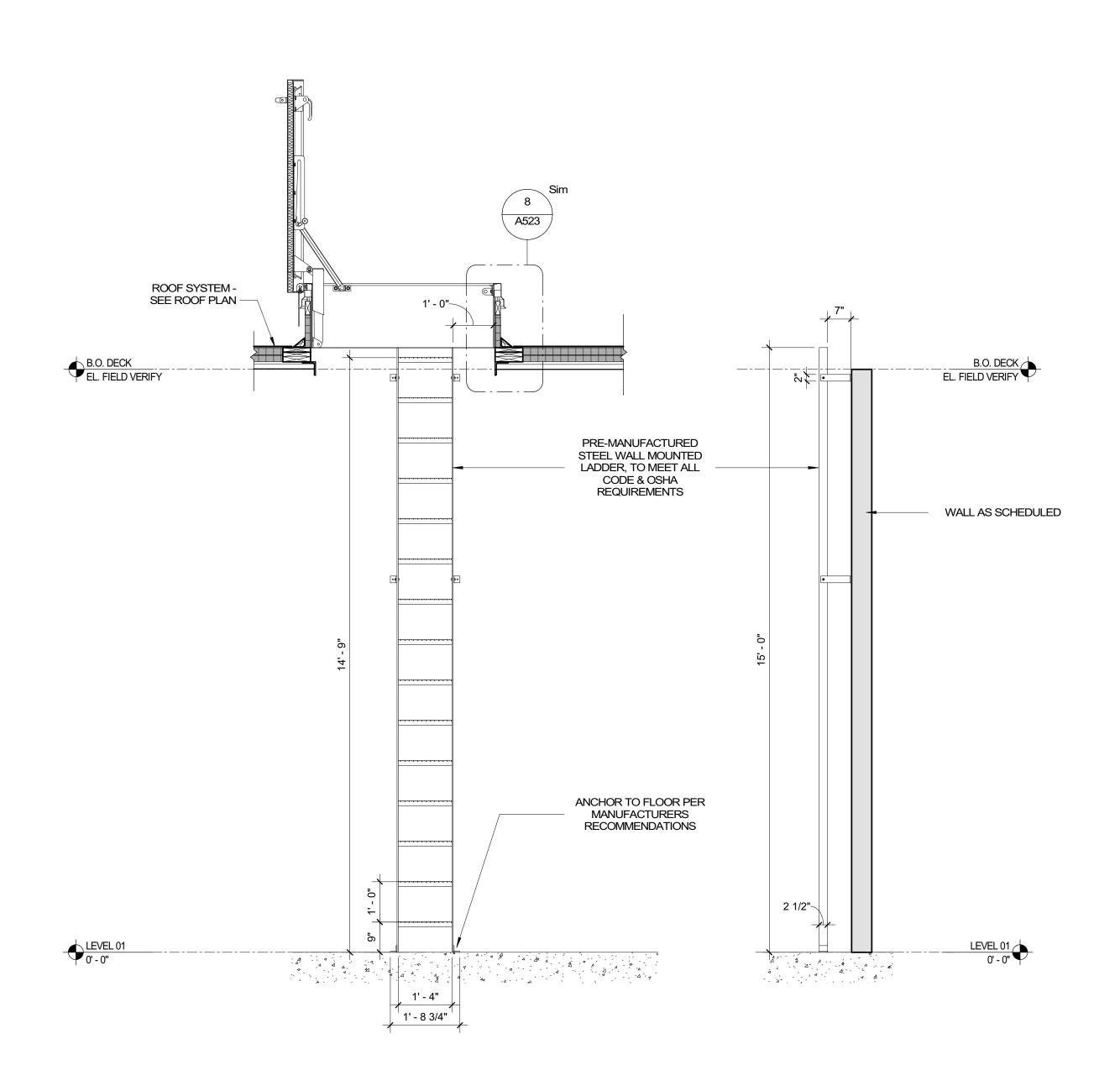
4522





1 ROOF BOOT FLASHING A523 6" = 1'-0"

2 ROOF SQUARE TUBE FLASHING A523 3" = 1'-0"



7 ROOF LADDER SECTION A523 1/2" = 1'-0"

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> holder or Contractor to comply with all local Ordinances, rules and
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- ELASTOMERIC SEALANT - DRAWBAND BONDING ADHESIVE - STREET METAL RAIN COLLAR REMOVEABLE SHEET METAL COUNTERFLASHING WELDED SEAM -SEALANT -SINGLE-PLY ROOF -MEMBRANE THERMAL - FILL VOID W/ INSULATION AND INSULATION COVER BOARD - METAL OR GYPSUM ROOF DECK-SEE LINER, IF REQUIRED STRUCTURAL - DUCT OR FLUE PRESSURE TREATED WOOD — NAILER ATTACHED TO SUBSTRATE - OVERALL THICKNESS TO MATCH INSULATION

> 3 FAN DUCT PENETRATION DETAIL A523 1 1/2" = 1'-0"

A523 1 1/2" = 1'-0"

4 PLUMBING VENT

PLUMBING VENT

ROOF DECK -

THERMAL INSULATION —

- SEALANT

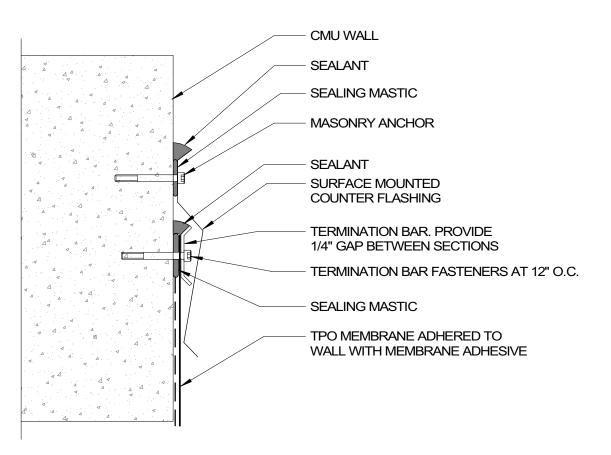
- DRAWBAND

- ADHERED MEMBRANE FLASHING

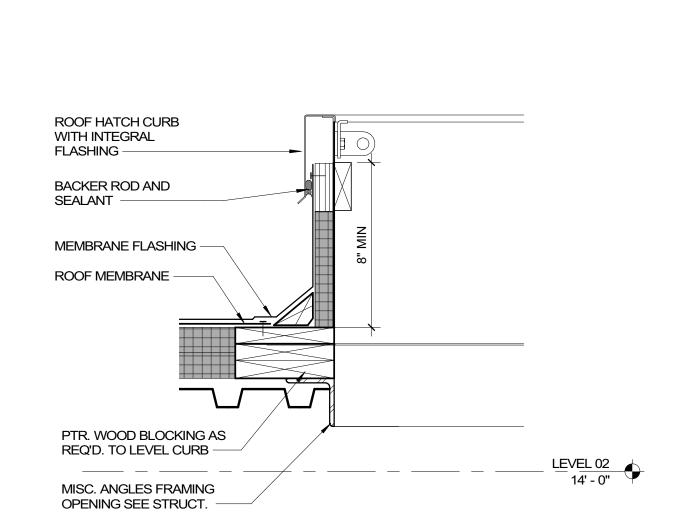
- SEALANT, IF REQUIRED

FOR SPECIFIC SYSTEM

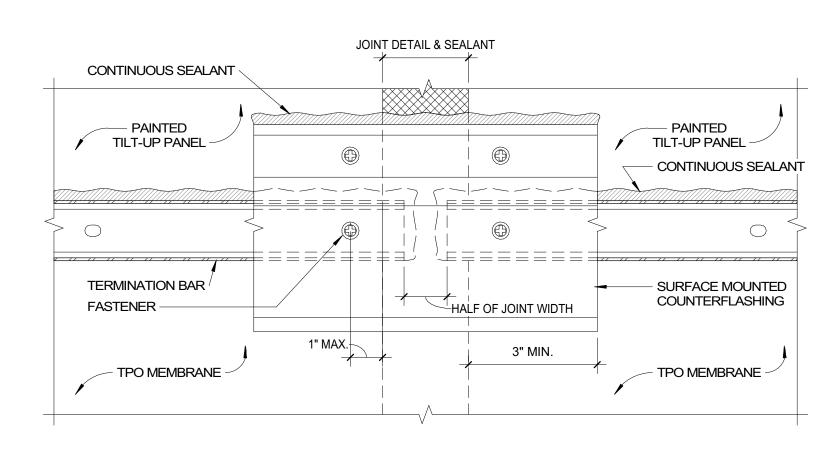
- SINGLE PLY ROOF MEMBRANE



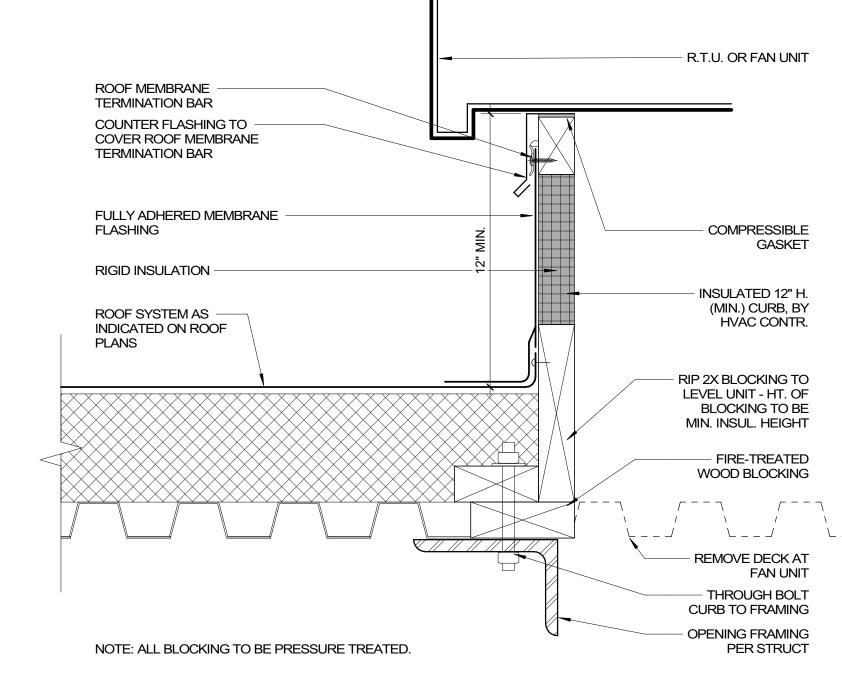
5 TERM BAR SECTION A523 6" = 1'-0"



8 ROOF HATCH DETAIL A523 1 1/2" = 1'-0"



6 TERM BAR DETAIL



9 MECHANICAL CURB DETAIL, TYPICAL A523 3" = 1'-0"



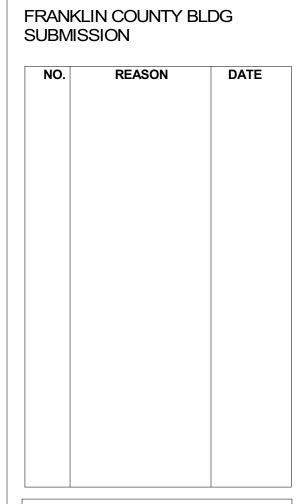






ADEM

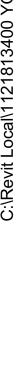


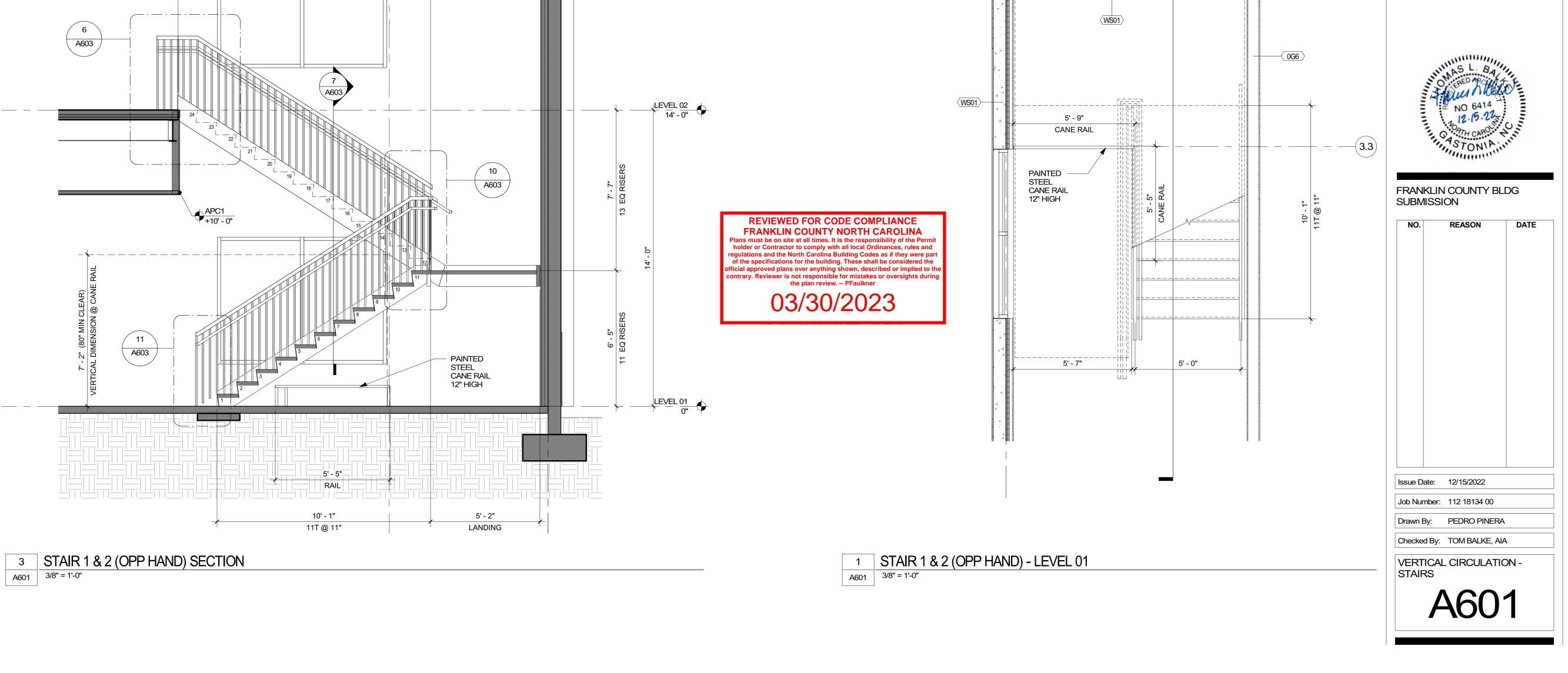


Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

ROOF DETAILS

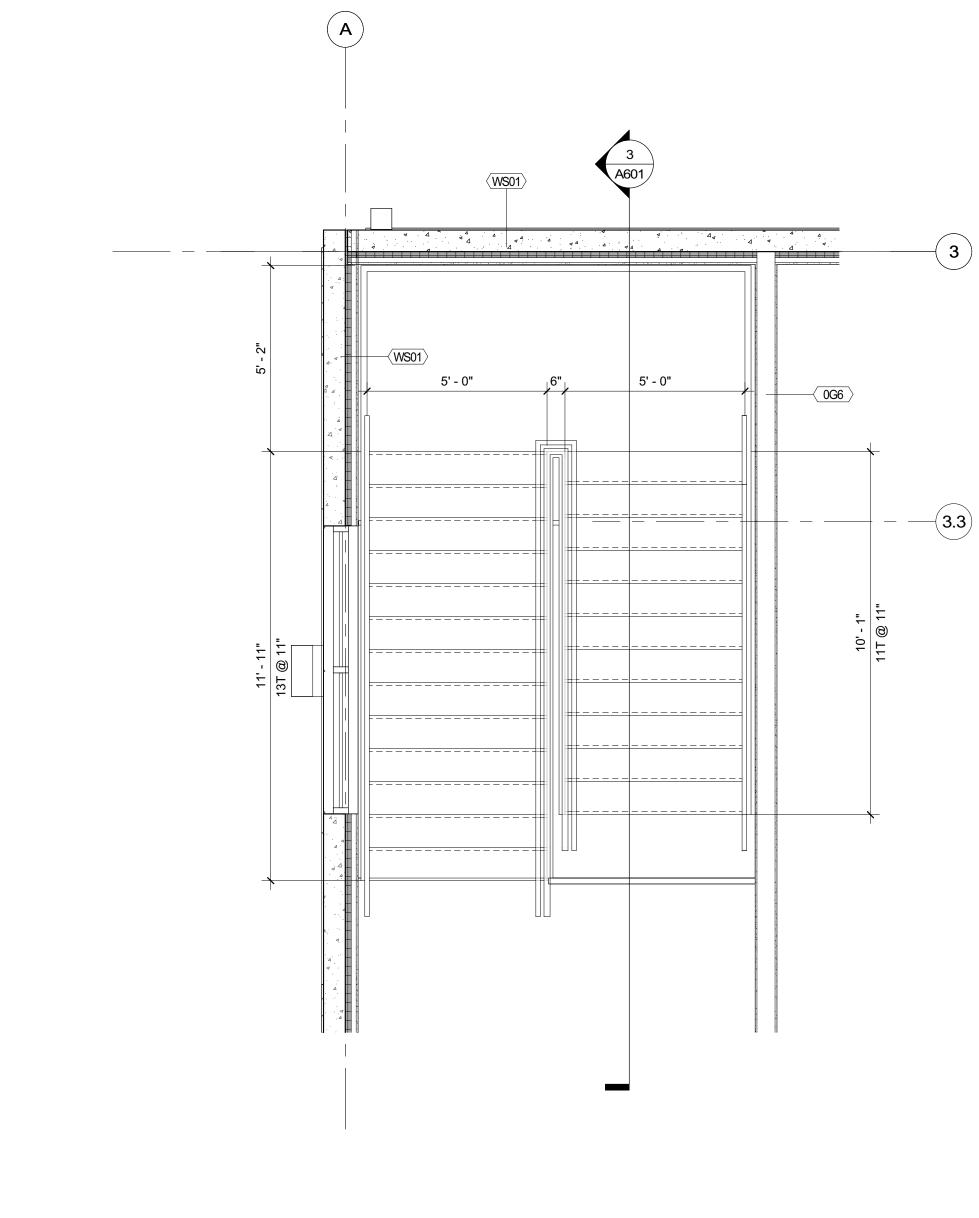




ROOF 28' - 0"

11' - 11"

13T @ 11"



4 4 4 4 4 4

2 STAIR 1 & 2 (OPP HAND) - LEVEL 02

A601 3/8" = 1'-0"

ADEM HOOL

9829 Spencer Road

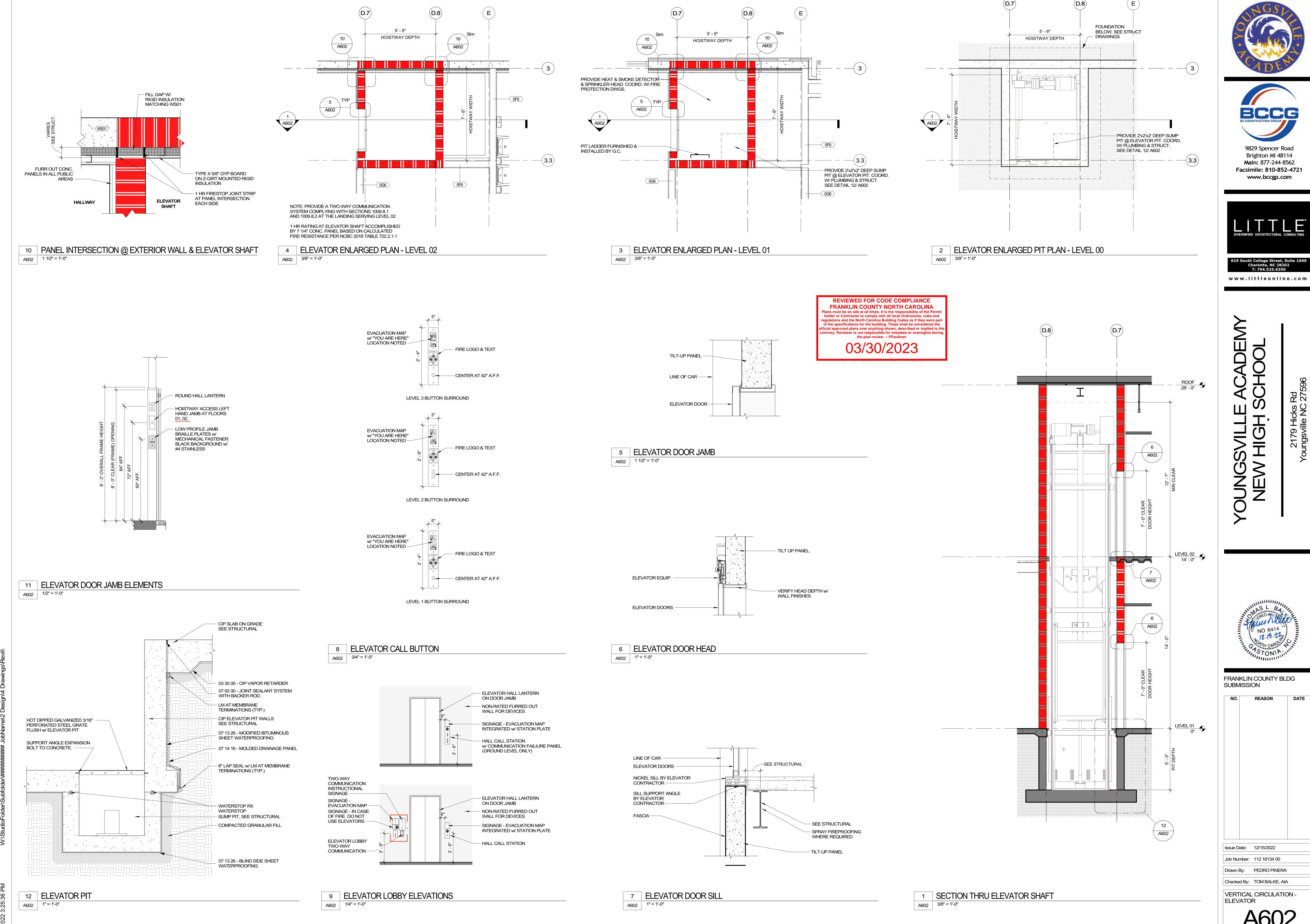
Brighton MI 48114 **Main:** 877-244-8562

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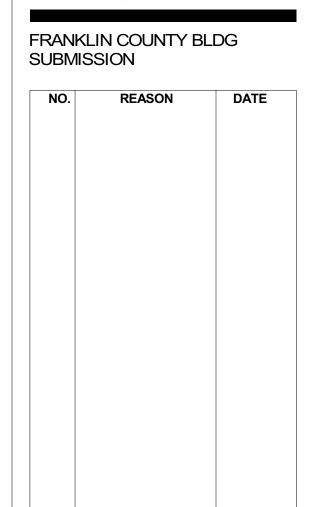




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ADEM

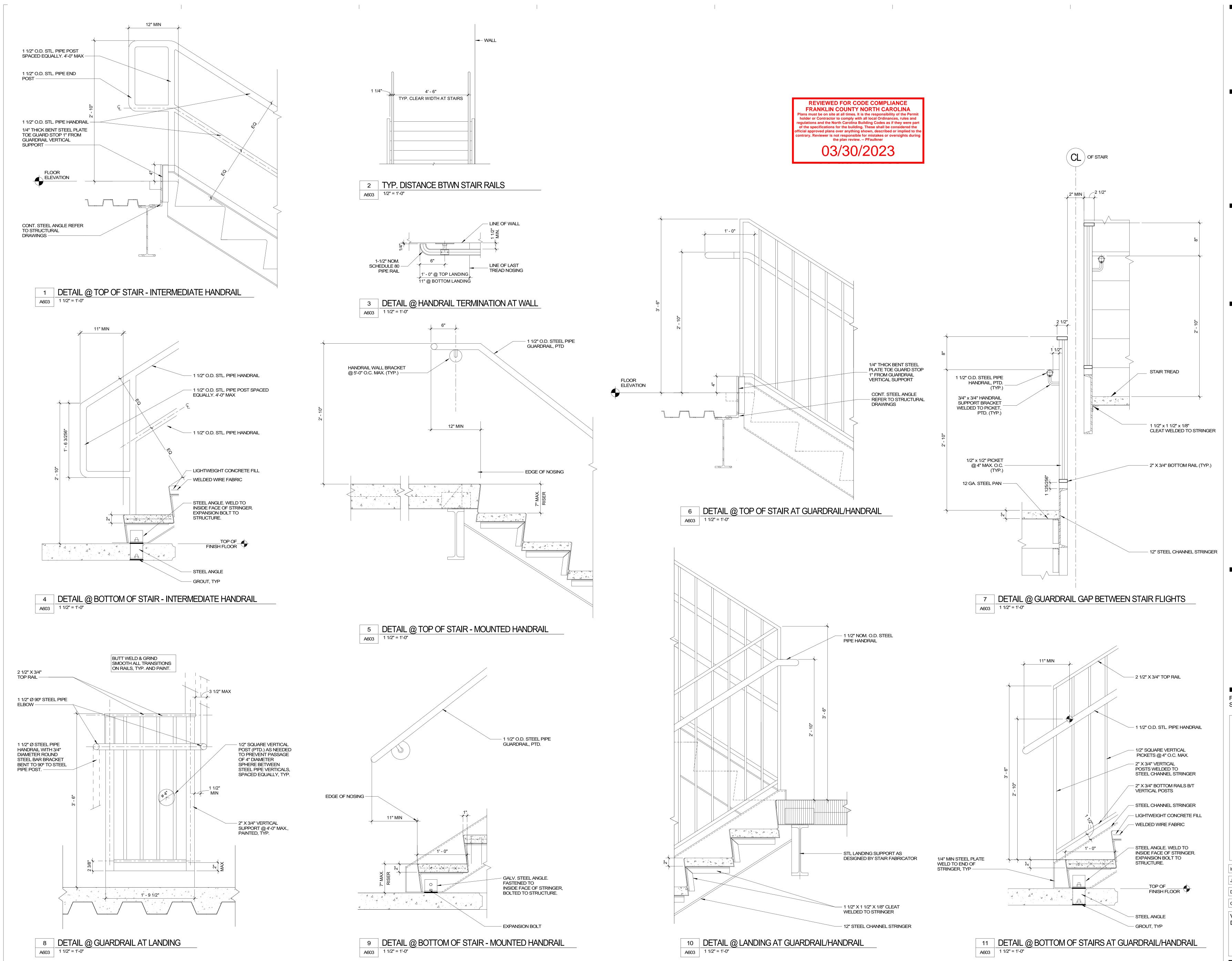




Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

VERTICAL CIRCULATION -ELEVATOR



ONGS PORTON

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615 South College Street, Suite 1600
Charlotte, NC 28202
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W W W . I i t t l e o n l i n e . c o m

ADEM

2179 Hicks Rd

NO. 6414

FRANKLIN COUNTY BLDG SUBMISSION

NO. REASON DATE

Issue Date: 12/15/2022

Job Number: 112 18134 00

Drawn Bv: PEDRO PINERA

Drawn By: PEDRO PINERA

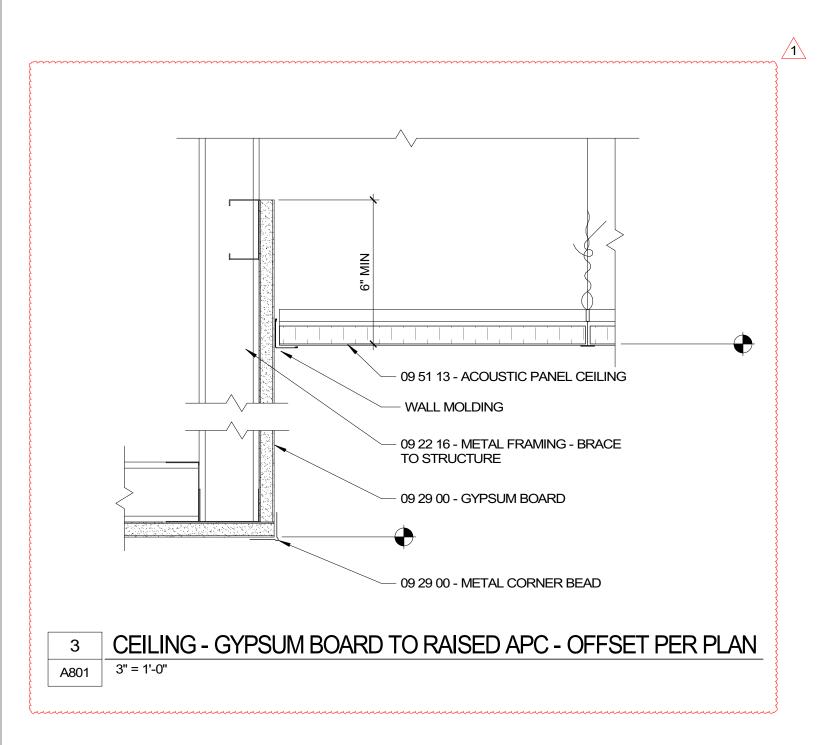
Checked By: TOM BALKE, AIA

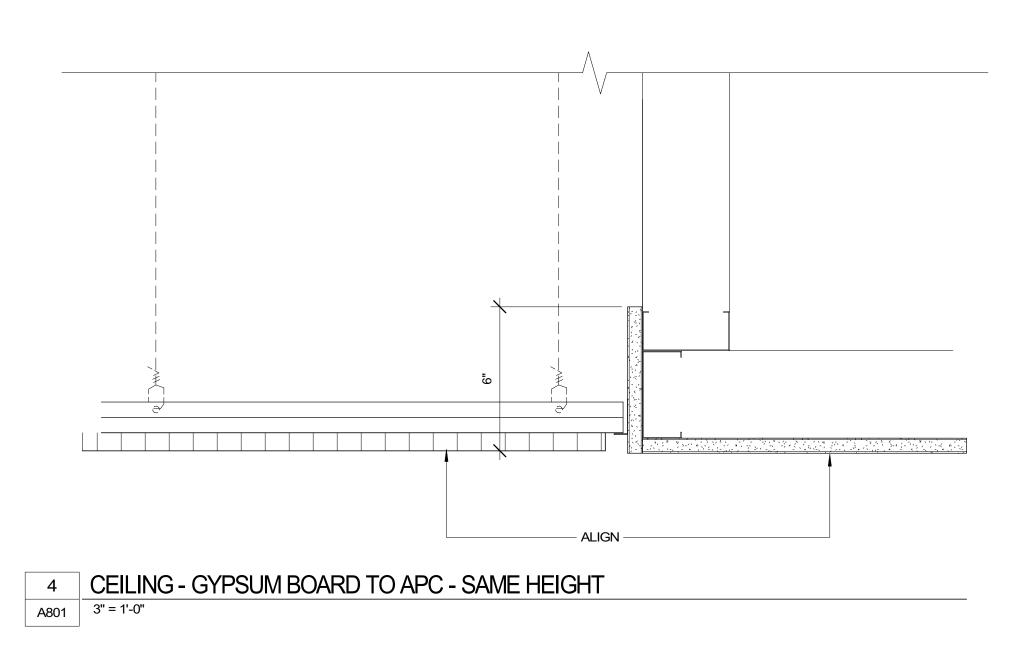
VERTICAL CIRC - STAIR & RAIL DETAILS

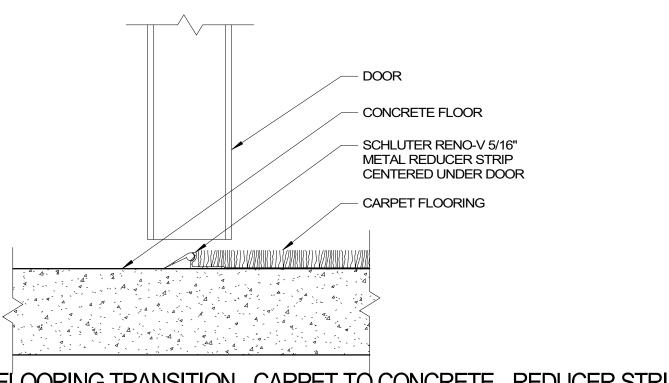
A603

REVIEWED FOR CODE COMPLIANCE FRANKLIN COUNTY NORTH CAROLINA Plans must be on site at all times. It is the responsibility of the Permit holder or Contractor to comply with all local Ordinances, rules and regulations and the North Carolina Building Codes as if they were part of the specifications for the building. These shall be considered the official approved plans over anything shown, described or implied to the contrary. Reviewer is not responsible for mistakes or oversights during the plan review. -- PFaulkner

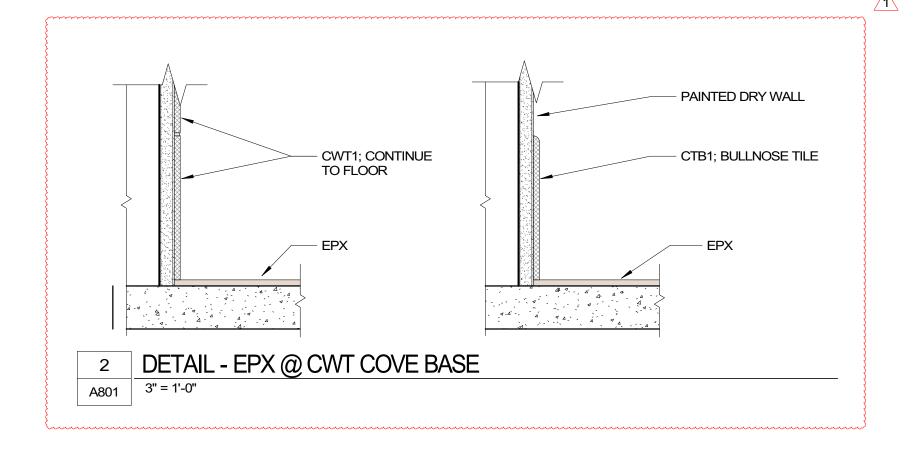
			BASIS OF DESIGN	
KEY	MANUFACTURER	MODEL NUMBER	DESCRIPTION	REMARKS/LOCATION
01-WALL		······	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
CTB1	DALTILE	S44D9	COLOR WHEEL COLLECTION, 4" X 16" BULLNOSE WALL BASE IN COLOR ARTIC WHITE, HIGH GLOSS	BASE AT EPOXY FLOORING
CWT1	DALTILE	0190	COLOR WHEEL LINEAR COLLECTION,4X16" WALL TILE IN COLOR ARTIC WHITE, HIGH GLOSS	INSTALL VERTICAL STACK BOND
EB1	EPOXY COVE BASE		INTEGRAL EPOXY COVE BASE. POURED ON SITE	AT ALL EPOXY FLOORING LOCATIONS UNLESS NOTED OTHERWISE
PT1	SHERWIN WILLIAMS	SW7683	PROMAR 200 ZERO VOC LATEX PAINT IN COLOR BUFF IN EGGSHELL FINISH	FIELD PAINT
PT2	GLIDDEN	A-2014	URETHANE ENAMEL IN COLOR OBSIDIAN GLASS	DOOR FRAMES/METAL DOORS
PT3	SHERWIN WILLIAMS	SW6967	PRO INDUSTRIAL HIGH PERFORMANCE EPOXY IN COLOR FRANK BLUE	SCHOOL COLOR ACCENT BAND; SEE ELEVATIONS
PT4	SHERWIN WILLIAMS	SW6905	PRO INDUSTRIAL HIGH PERFORMANCE EPOXY IN COLOR GOLDFINCH	SCHOOL COLOR ACCENT BAND; SEE ELEVATIONS
PT5	SHERWIN WILLIAMS			CLASSROOM ACCENT WALL
PT6	SHERWIN WILLIAMS			CLASSROOM ACCENT WALL
PT7	SHERWIN WILLIAMS			CLASSROOM ACCENT WALL
RB1	JOHNSONITE	63	4" VINYL COVE BASE IN COLOR BURNT UMBER	BASE AT SEALED CONCRETE FLOORING
RB2	JOHNSONITE	63	4" VENTED VINYL COVE BASE IN COLOR BURNT UMBER	BASE AT WOOD FLOORING IN GYM
02-FLOOR				
CPT1	TARKETT	04990 71622	SQUARE UP 24" X 24" CARPET TILE IN COLOR IRONSAND	INSTALL VERTICAL ASHLAR
EPX1	STONHARD		STONTEC IN COLOR SHENANDOAH BUFF	RESTROOMS AND LOCKER ROOMS
SC1	TBD	N/A	SEALED ON SITE CONCRETE	TEST PATCH APPROVAL REQUIRED BY DESIGNER/ARCHITECT PRIOR TO FINISHING ALL FLOORS
WD1	THE SPORTS FLOORING GROUP		NORTHERN HARD MAPLE STANDARD STRIP FLOORING, 25/32" X 2-1/4" IN CLEAR MAPLE FINISH	GYM FLOORING
WO1	SHAW	5T035 34485	PORTAL 24" X 24" CARPET TILE IN COLOR NAVY	INSTALL QUARTER TURN
03-CEILING				
APC-1	ARMSTRONG	1492	CANYON 24X24X5/8" TILE WITH 15/16" BEVELED TEGULAR EDGE AND 15/16" PRELUDE XL GRID	
GWB-1	SHERWIN WILLIAMS		CEILING BRIGHT WHITE IN FLAT FINISH	
04-CASEWO)RK			
PL1	FORMICA	8908-58	STORM TEAKWOOD IN MATTE FINISH	CASEWORK CABINET FRONTS
PL2	FORMICA	8958-58	BUBBLE ART IN MATTE FINISH	CASEWORK COUNTERTOPS
05-MISC				

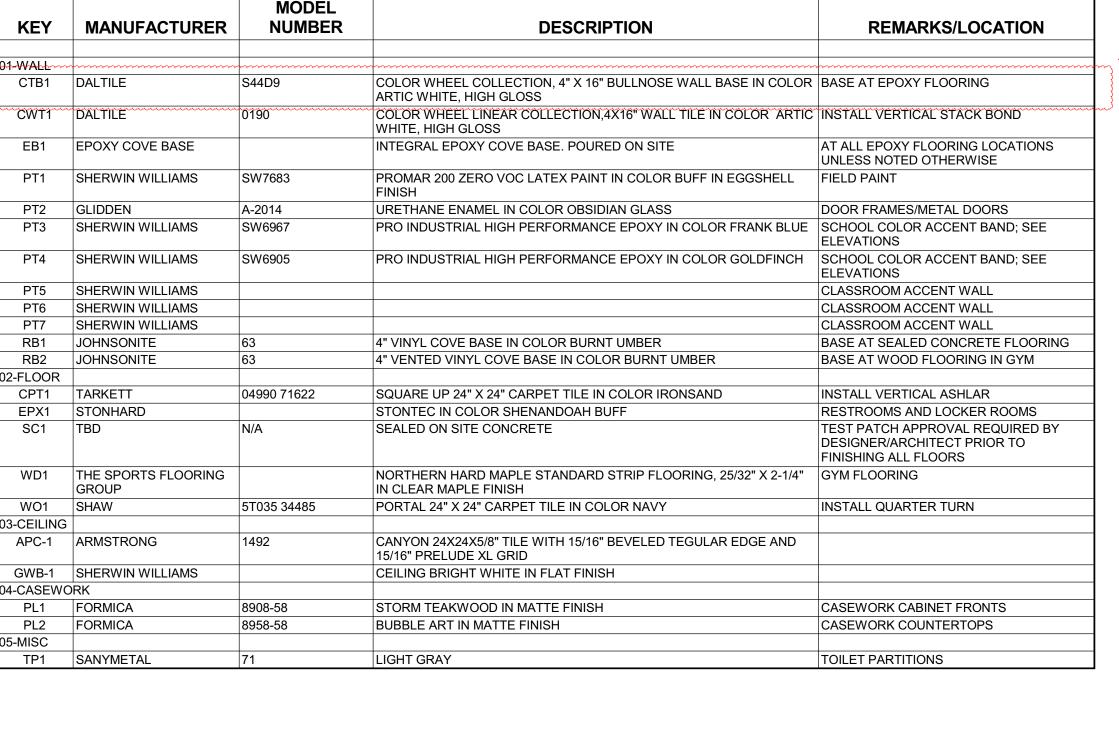






FLOORING TRANSITION - CARPET TO CONCRETE - REDUCER STRIP -1 SCHLUTER A801 6" = 1'-0"





— METAL STUD BRACING @ 16" O.C.-ALTERNATE.

CEILING GRID SUSPENSION SYSTEM SUPPORTED FROM

- 09 51 13 - ACOUSTIC PANEL CEILING

- 09 29 00 - METAL CORNER BEAD

3 5/8" METAL STUD WITH 5/8" GYPSUM BOARD

DECK ABOVE

5 CEILING - APC - GYPSUM BULKHEAD

A801 1 1/2" = 1'-0"

SHEET GENERAL NOTES

- 1. NEW AND EXISTING FINISHES (SCHEDULED TO REMAIN), SHALL BE PROTECTED DURING CONSTRUCTION. ANY DAMAGE SHALL BE REPAIRED BY CONTRACTOR WITH
- NO COST TO OWNER. 2. VARIATIONS IN FLOOR LEVEL IN EXCESS OF 1/4" FOR EVERY 10'-0" SHALL BE LEVELED. LEVELING SHALL BE COMPLETED AND READY TO RECEIVE FLOORING AS SPECIFIED. VERIFY SLAB CONDITION. 3. PRE-PLAN CARPET SEAMING TO PROVIDE UNIFORM DIRECTION OF PATTERN AND LAY OF PILE. LOCATION OF
- SEAMS SHALL BE CENTERED UNDER DOORS AND WITHOUT SEAMS IN THE DIRECTION OF TRAVEL. 4. VCT SHALL BE INSTALLED UNI-DIRECTIONALLY. 5. PROVIDE COVED, TOP SET RESILIENT BASE AT RESILIENT FLOORING, UNLESS OTHERWISE NOTED. PROVIDE A PRE-MOLDED BASE AT ALL INSIDE AND
- OUTSIDE CORNERS. 6. INTERIOR WALL AND CEILING FINISHES SHALL HAVE A CLASS "A" FLAME SPREAD AND SMOKE DEVELOPMENT RATING IN ACCORDANCE WITH ASTM E 84. 7. WHERE SOFFITS OCCUR, PAINT UNDERSIDE OF SOFFIT
- SAME COLOR AS FACE OF SOFFIT, UNLESS OTHERWISE 8. MISCELLANEOUS GRILLES, PLATES, OR OTHER DEVICES

MARK

СТВ

WDF

WDFP

SHALL BE PAINTED TO MATCH THE WALL OR CEILING IN WHICH THEY ARE INSTALLED.

> CORNER GUARD CARPET TILE

EPOXY PAINT

LUXURY VINYL TILE

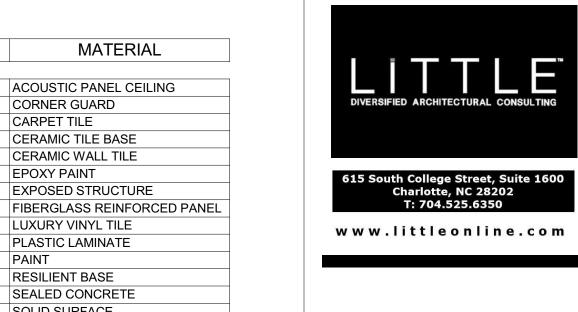
PLASTIC LAMINATE

RESILIENT BASE SEALED CONCRETE SOLID SURFACE TOILET PARTITION WOOD DOOR

WOOD FLOOR

WOOD FLOOR PAINT WALK OFF CARPET







FRANKLIN COUNTY BLDG SUBMISSION

NO.	REASON	DATE
1	CONSTRUCTABILITY REVIEW	1/16/2023

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA FINISH SCHEDULE + DETAILS

GENERAL NOTES - FINISHES

- 1. NEW AND EXISTING FINISHES (SCHEDULED TO REMAIN), SHALL BE PROTECTED DURING CONSTRUCTION. ANY DAMAGE SHALL BE REPAIRED BY CONTRACTOR WITH
- NO COST TO OWNER. 2. VARIATIONS IN FLOOR LEVEL IN EXCESS OF 1/4" FOR EVERY 10'-0" SHALL BE LEVELED. LEVELING SHALL BE COMPLETED AND READY TO RECEIVE FLOORING AS
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- INTERIOR WALL AND CEILING FINISHES SHALL HAVE A CLASS "A" FLAME SPREAD AND SMOKE DEVELOPMENT
- RATING IN ACCORDANCE WITH ASTM E 84. 7. WHERE SOFFITS OCCUR, PAINT UNDERSIDE OF SOFFIT SAME COLOR AS FACE OF SOFFIT, UNLESS OTHERWISE
- 8. MISCELLANEOUS GRILLES, PLATES, OR OTHER DEVICES SHALL BE PAINTED TO MATCH THE WALL OR CEILING IN WHICH THEY ARE INSTALLED.

FINISH TAG LEGEND

WALL FINISH

BASE FINISH FLOOR FINISH NOTES AND ADDTL FINISHES

GUARD RAILS, ETC P_. INTERMEDIATE LANDINGS SHALL BE SEALED CONCRETE 2. CWT TO BE 6'-0"AFF UNO 3. CWT ON WET WALL TO 6'-0"AFF, PT1 AND CTB1 ON ALL OTHER WALLS 4. ACCENT COLOR IN VESTIBULE OPPOSITE OF ENTRY DOOR. COLORS TO BE PT3 IN A135 AND PT4 IN A131

1. PAINT STAIR METAL, RAILINGS, AND

FINISH ABBREVIATIONS

MARK	MATERIAL	
APC	ACOUSTIC PANEL CEILING	
CG	CORNER GUARD	
CPT	CARPET TILE	
СТВ	CERAMIC TILE BASE	
CWT	CERAMIC WALL TILE	
EP	EPOXY PAINT	
ES	EXPOSED STRUCTURE	
FRP	FIBERGLASS REINFORCED PANEL	
LVT	LUXURY VINYL TILE	
PL	PLASTIC LAMINATE	
PT	PAINT	
RB	RESILIENT BASE	
SCONC	SEALED CONCRETE	
SDS	SOLID SURFACE	
TP	TOILET PARTITION	
WD	WOOD DOOR	
WDF	WOOD FLOOR	
WDFP	WOOD FLOOR PAINT	
WO	WALK OFF CARPET	







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ADEM YOUNGSVILLE, NEW HIGH S



FRANKLIN COUNTY BLDG SUBMISSION

		1
NO .	REASON CONSTRUCTABILITY REVIEW	DATE 1/16/2023

Issue Date: 12/15/2022 Job Number: 112 18134 00

Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA FINISH FLOOR PLAN - LEVEL 1

GENERAL NOTES - FINISHES

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 SHALL BE PROTECTED DURING CONSTRUCTION. ANY
 DAMAGE SHALL BE REPAIRED BY CONTRACTOR WITH
- NO COST TO OWNER.

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- 8. MISCELLANEOUS GRILLES, PLATES, OR OTHER DEVICES SHALL BE PAINTED TO MATCH THE WALL OR CEILING IN WHICH THEY ARE INSTALLED.

FINISH TAG LEGEND

ROOM NAME # WALL FINISH BASE FINISH FLOOR FINISH

GUARD RAILS, ETC P_. INTERMEDIATE

- NOTES AND ADDTL FINISHES
- LANDINGS SHALL BE SEALED CONCRETE

 2. CWT TO BE 6'-0"AFF UNO

 3. CWT ON WET WALL TO 6'-0"AFF, PT1 AND
- CTB1 ON ALL OTHER WALLS

 4. ACCENT COLOR IN VESTIBULE OPPOSITE
 OF ENTRY DOOR. COLORS TO BE PT3 IN
 A135 AND PT4 IN A131

1. PAINT STAIR METAL, RAILINGS, AND

FINISH ABBREVIATIONS

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APC	ACOUSTIC PANEL CEILING	
CG	CORNER GUARD	
CPT	CARPET TILE	
СТВ	CERAMIC TILE BASE	
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PL	PLASTIC LAMINATE	
PT	PAINT	
RB	RESILIENT BASE	
SCONC	SEALED CONCRETE	
SDS	SOLID SURFACE	
TP	TOILET PARTITION	
WD	WOOD DOOR	
WDF	WOOD FLOOR	
WDFP	WOOD FLOOR PAINT	
WO	WALK OFF CARPET	





Facsimile: 810-852-4721

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OUNGSVILLE ACADEN NEW HIGH SCHOOL



FRANKLIN COUNTY BLDG SUBMISSION

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Job Number: 112 18134 00

Job Number: 112 18134 00

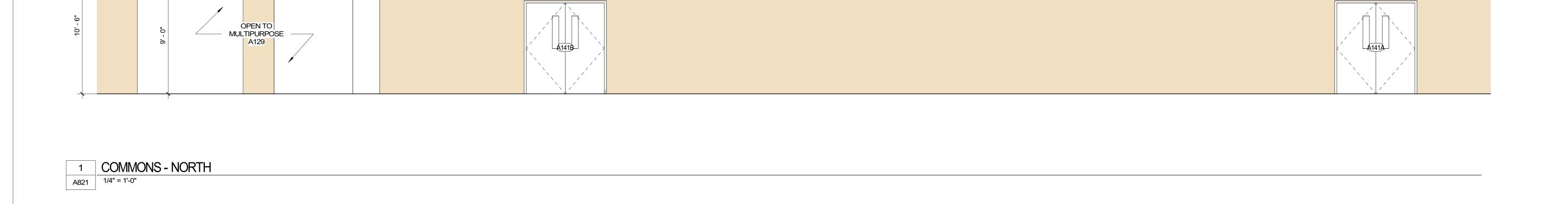
Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

FINISH FLOOR PLAN-LEVEL 2

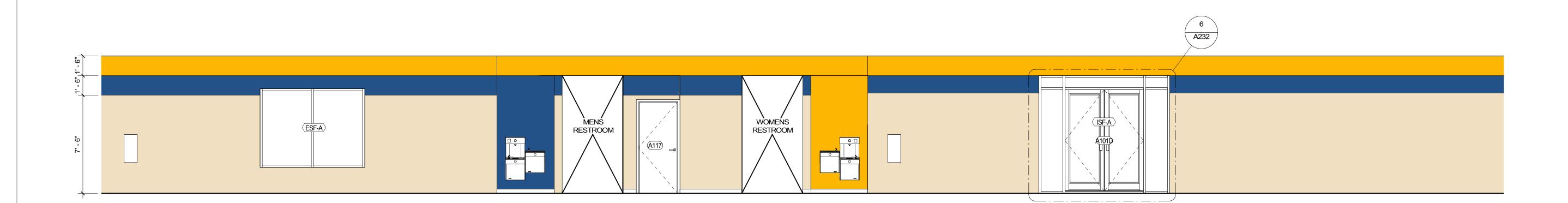
A812





REVIEWED FOR CODE COMPLIANCE FRANKLIN COUNTY NORTH CAROLINA

Plans must be on site at all times. It is the responsibility of the Permit holder or Contractor to comply with all local Ordinances, rules and regulations and the North Carolina Building Codes as if they were part of the specifications for the building. These shall be considered the official approved plans over anything shown, described or implied to the contrary. Reviewer is not responsible for mistakes or oversights during the plan review. — PFaulkner

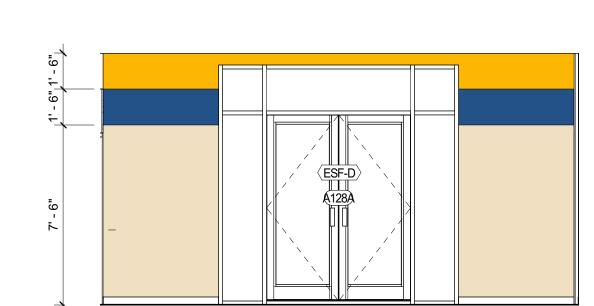


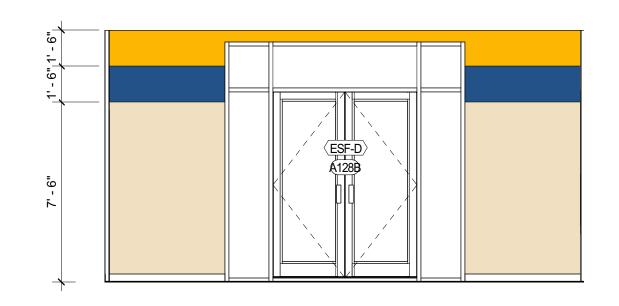
2 COMMONS - SOUTH

1/4" = 1'-0"

3 COMMONS - WEST

1/4" = 1'-0"





4 COMMONS - EAST

1/4" = 1'-0"







ADEMY 100L



FRANKLIN COUNTY BLDG SUBMISSION

NO	DEACON	DATE
NO.	REASON	DATE

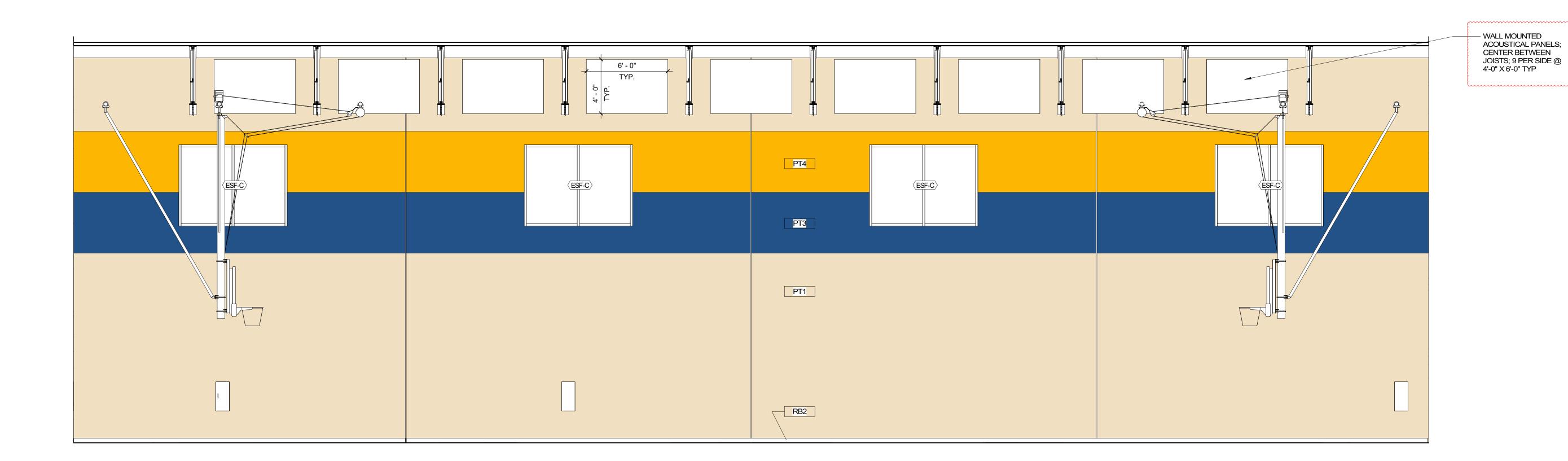
Issue Date: 12/15/2022

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Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

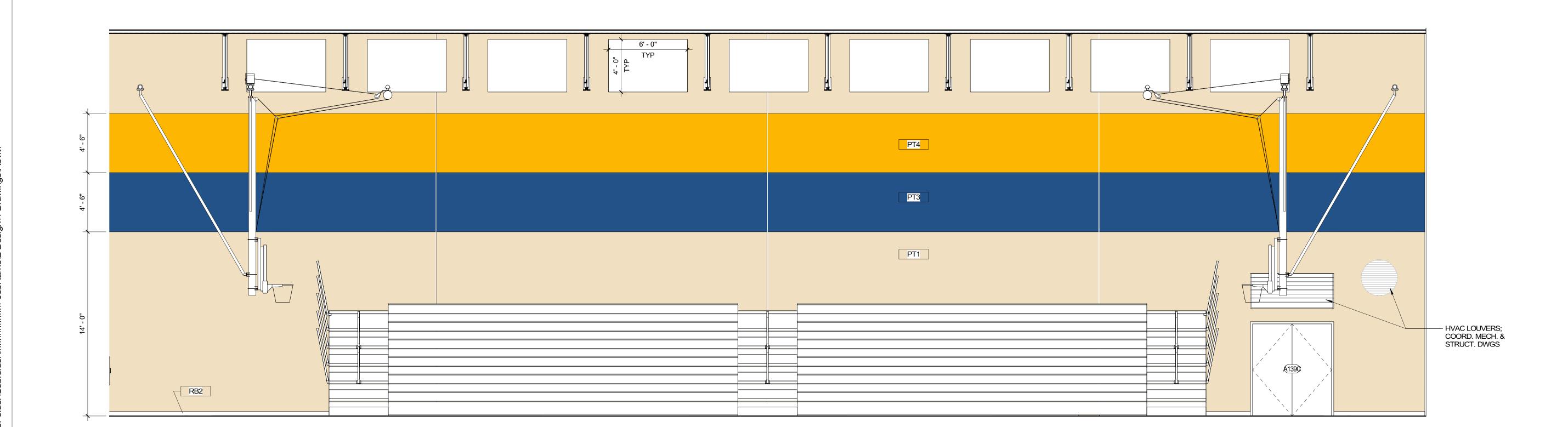
INTERIOR ELEVATIONS - COMMONS



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1 MULTIPURPOSE GYM - EAST



2 MULTIPURPOSE GYM - WEST







CADEMY HOOL



FRANKLIN COUNTY BLDG SUBMISSION

NO.	REASON	DATE
1	CONSTRUCTABILITY REVIEW	1/16/2023

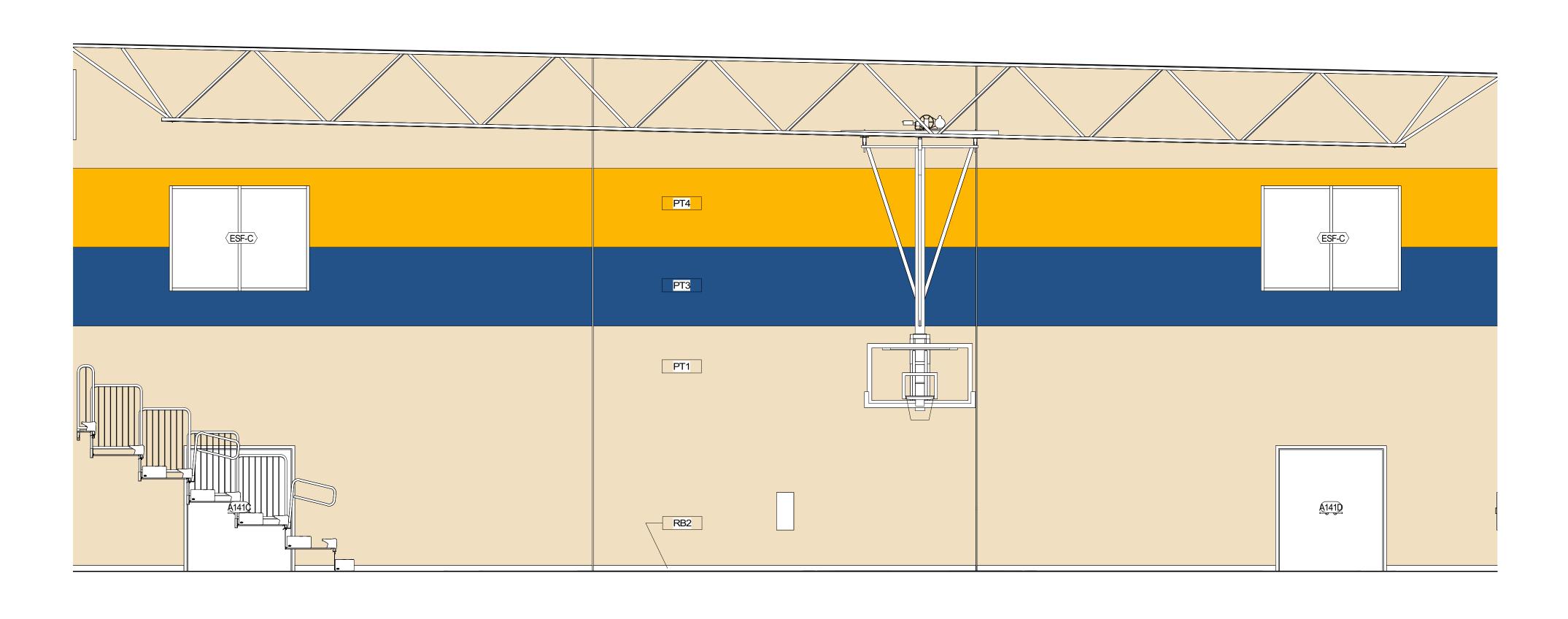
Issue Date: 12/15/2022

Job Number: 112 18134 00 Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

INTERIOR ELEVATIONS - GYM

1 MULTIPURPOSE GYM - NORTH
A823 1/4" = 1'-0"



REVIEWED FOR CODE COMPLIANCE FRANKLIN COUNTY NORTH CAROLINA

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ADEMY



FRANKLIN COUNTY BLDG

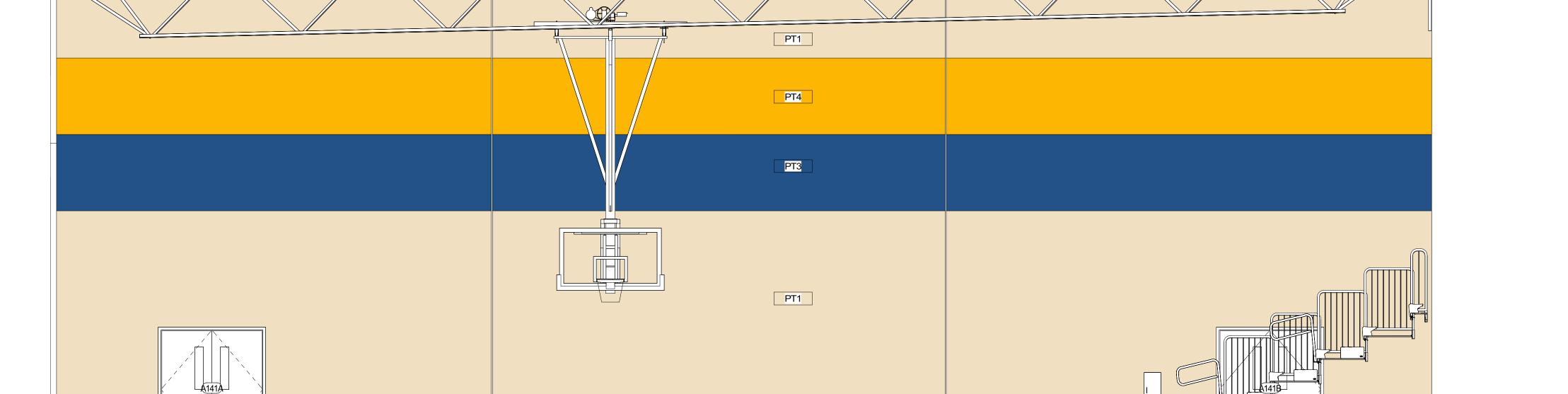
NO.	REASON	DATE

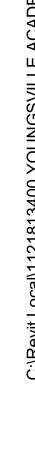
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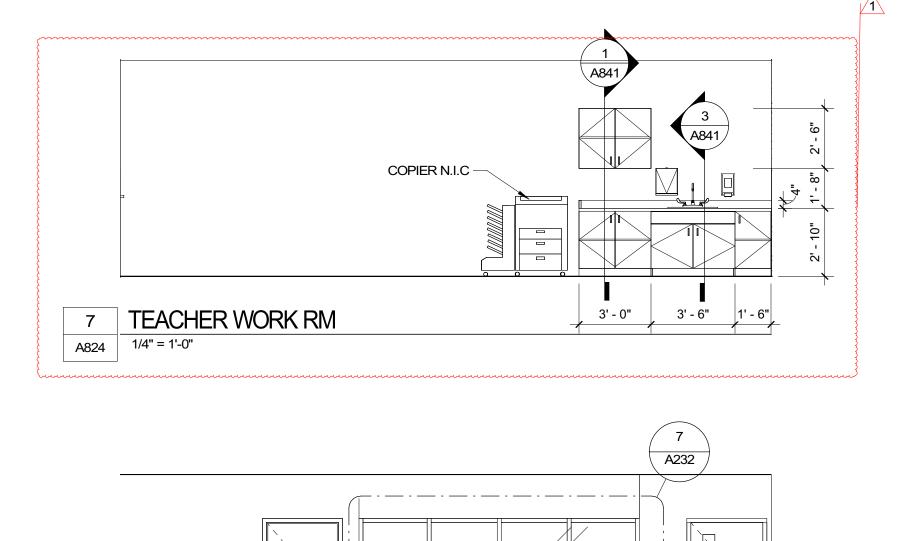
Checked By: TOM BALKE, AIA

INTERIOR ELEVATIONS - GYM





1 ART CLASSROOM - NORTH



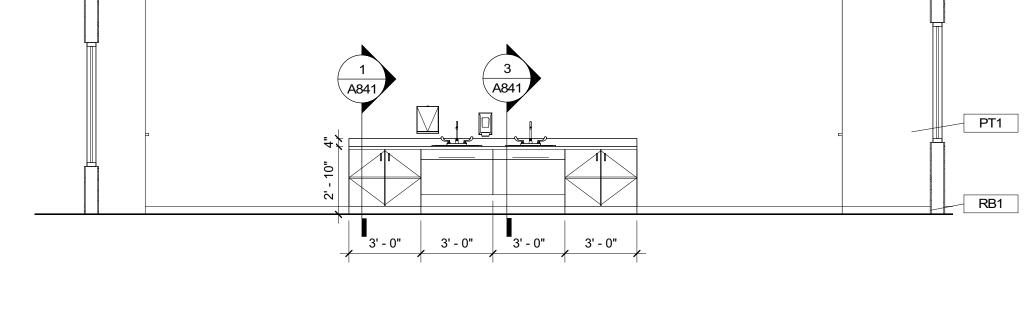
4 SCIENCE CLASSROOM - WEST

A824 1/4" = 1'-0"

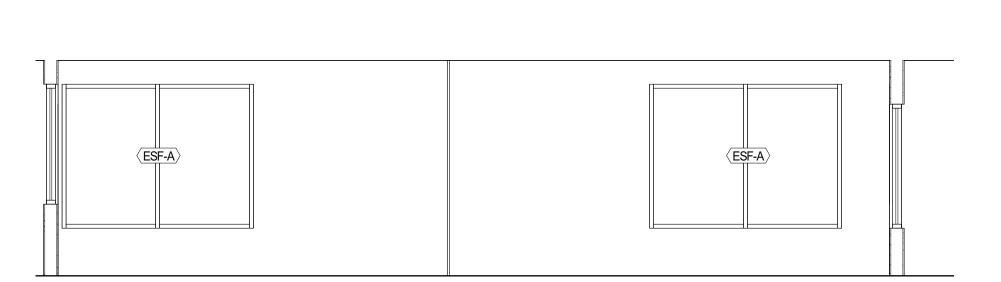
(A217) ₌

A824 1/4" = 1'-0"

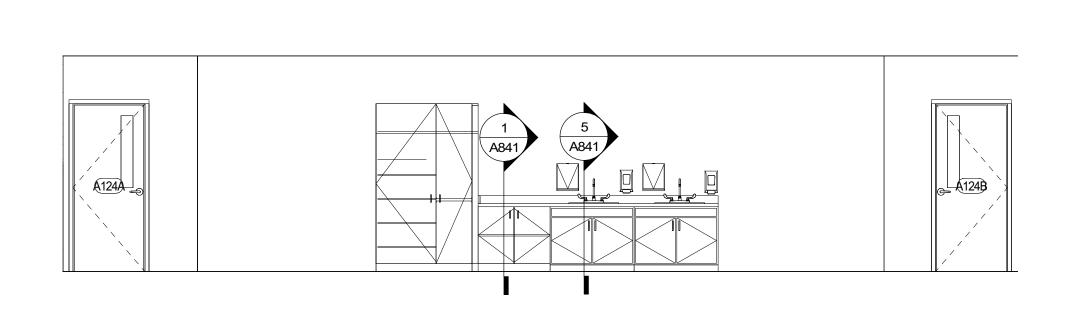
3 SCIENCE CLASSROOM - EAST



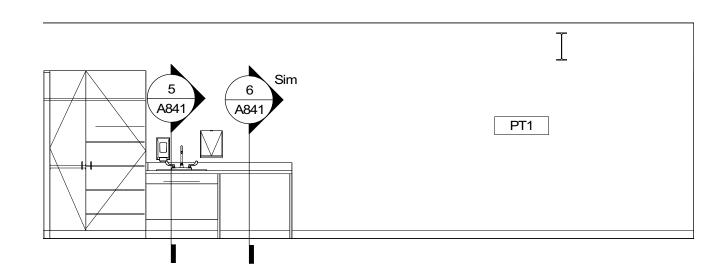
5 SCIENCE CLASSROOM - NORTH A824 1/4" = 1'-0"



6 SCIENCE CLASSROOM - SOUTH
1/4" = 1'-0"



A824 1/4" = 1'-0"



2 TYPICAL CLASSROOM

REVIEWED FOR CODE COMPLIANCE
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03/30/2023







FRANKLIN COUNTY BLDG

NO.	REASON	DATE
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Issue Date: 12/15/2022

Job Number: 112 18134 00

Drawn By: PEDRO PINERA Checked By: TOM BALKE, AIA

INTERIOR ELEVATIONS -CLASSROOMS

2 TALL CABINET - CUBBY/CABINET A841 1 1/2" = 1'-0"

TOP OF WALL CABINET

- 3/4" PLYWOOD SHELF

WITH SCHEDULED PLASTIC LAMINATE FINISH

— 3/4" PLYWOOD WITH SCHEDULED PLASTIC LAMINATE

@ LEVEL 1 = 8'-0" @ LEVEL 2 = 8'-0"

LINE OF WALL

- DOOR PULL

- COAT HOOK

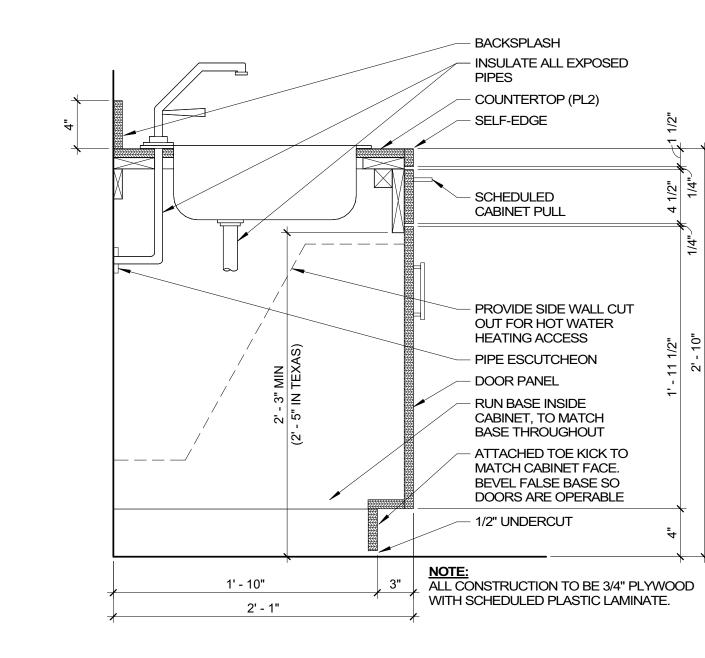
BACKING

- 1/4" VENEER PLYWOOD

- WOOD BLOCKING

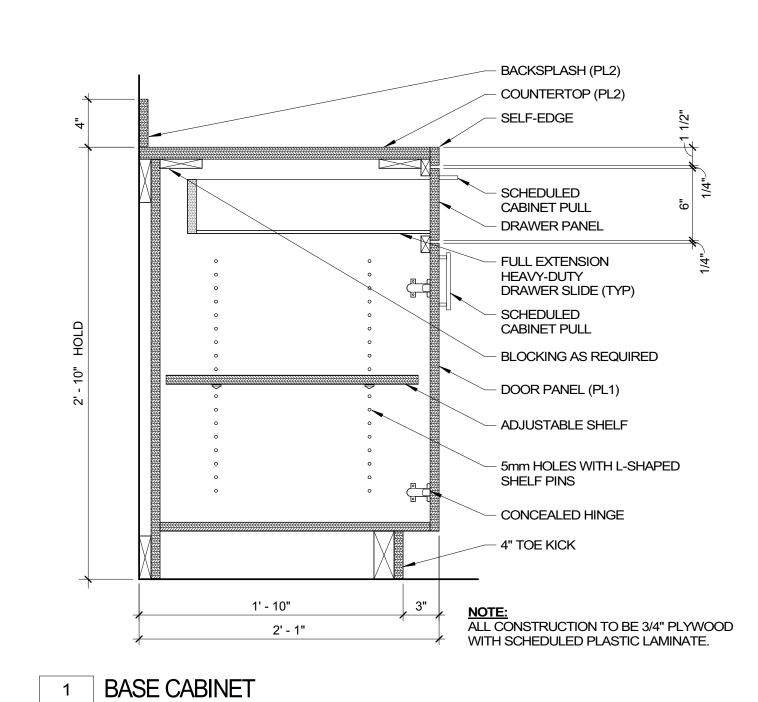
2 1/2" RESILIENT BASE

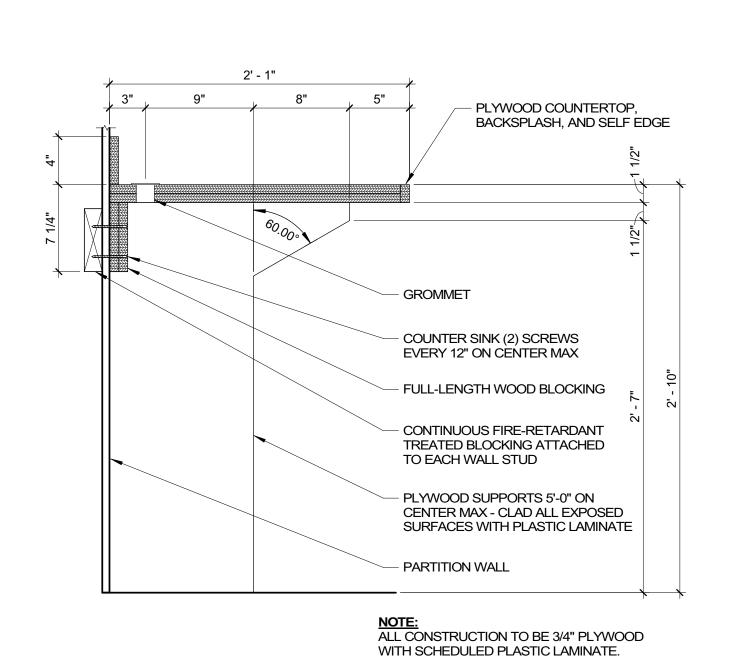
AS REQUIRED



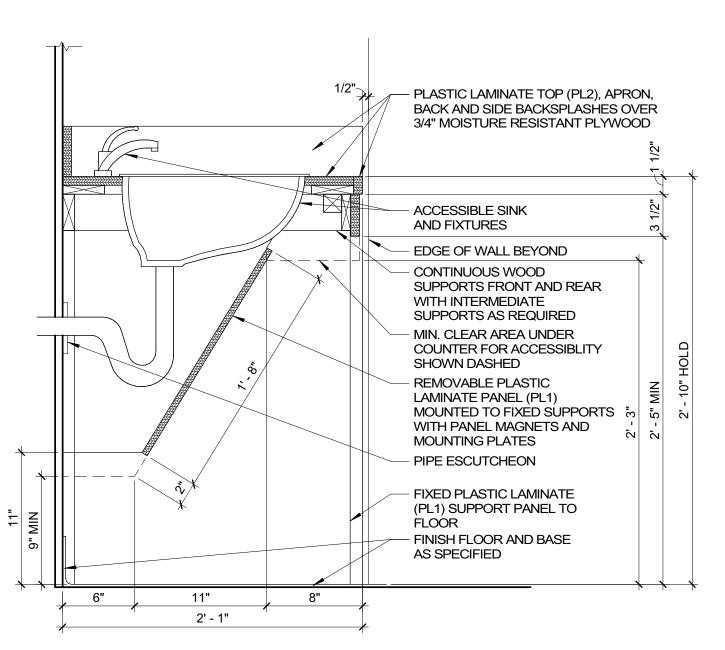
5 BASE CABINET - SINK A841 1 1/2" = 1'-0"

A841 1 1/2" = 1'-0"





6 COUNTERTOP - FLOOR - PLASTIC LAMINATE A841 1 1/2" = 1'-0"



3 BASE CABINET - LAVATORY A841 1 1/2" = 1'-0"

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FRANKLIN COUNTY BLDG SUBMISSION

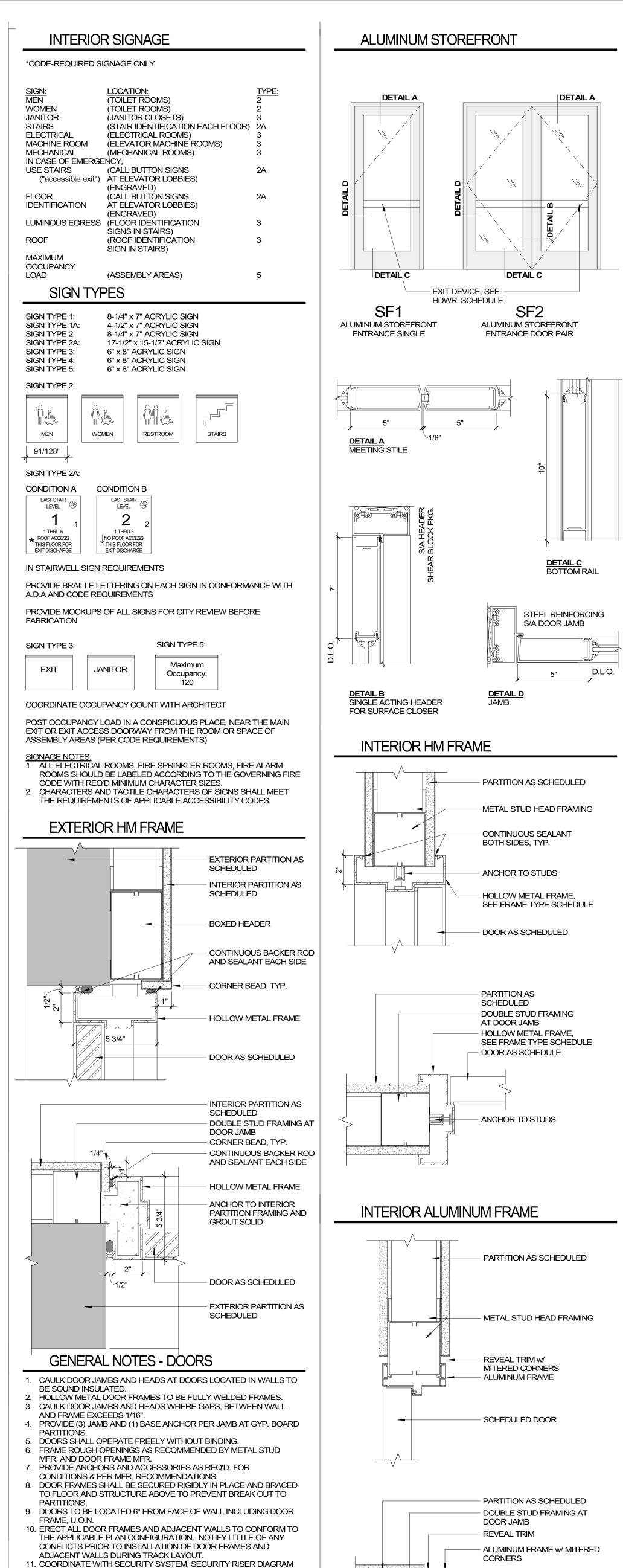
NO.	REASON	DATE

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Job Number: 112 18134 00 Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

CASEWORK DETAILS



AND FIRE ALARM SYSTEM.

MINIMUM ADA REQUIREMENTS.

716.5.7

12. CONFIGURE CURTAIN WALL/STOREFRONT SYSTEM TO

13. DOOR UNDERCUTS SHALL BE KEPT TO A MINIMAL DIMENSION AND

AVERAGE TEMPERATURE RISE DEVELOPED ON THE UNEXPOSED

ELEVATION WITH NO MORE THAN 1/2" DIFFERENCE ON EITHER SIDE.

- SCHEDULED DOOR

SIDE SHALL NOT EXCEED 450 DEGREES F AT THE END OF 30

15. BOTH SIDES OF ALL EXTERIOR DOORS SHALL HAVE THE SAME

16. INSTALLATION OF ALL DOORS AND HARDWARE SHALL MEET

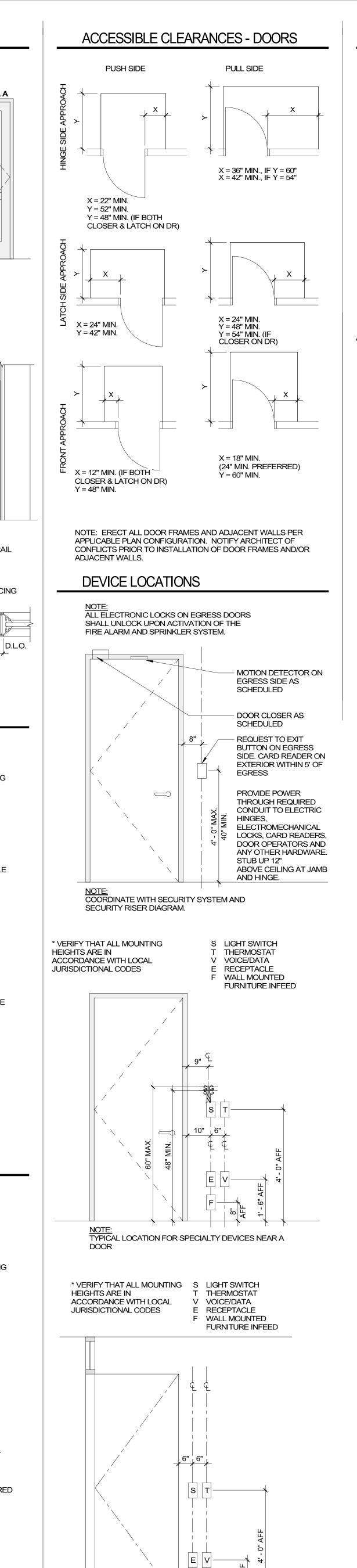
17. PER 716.5.3.1 OF NCBC. ALL RATED DOORS SHALL BE PROVIDED

WITH SMOKE AND DRAFT CONTROL AND SHALL BE LABELED PER

ACCOMMODATE CONDUIT FOR SECURITY DEVICES.

SHALL BE UNIFORM THROUGHOUT PROJECT, U.O.N.
14. FOR 1-HOUR DOORS USED IN STAIRWAY ENCLOSURES THE

MINUTES OF STANDARD FIRE TEST EXPOSURE.



NOTE: TYPICAL LOCATION FOR SPECIALTY DEVICES NEAR A

GLASS OFFICE FRONT AND DOOR

FRAME TYPES	
	STRIKE JAMB AND BUTT JAMB FOR CEILING SEE SCHEDULE SCHEDULE
F1 HOLLOW METAL PAINTED TO MATCH ADJACENT WALL; SEMI GLOSS FINISH	F2 HOLLOW METAL PAINTED TO MATCH ADJACENT WALL; SEMI GLOSS FINISH
DOOR TYPES	
	3'-6"
F	N HG
FLUSH	NARROW LITE HALF GLASS
N8 NARROW LITE DOOR PAIR	F2 DOOR PAIR

					Door					Frame			
Door Number Typ	Туре	Width	Height	Thicknes s	# Leafs	Material	Finish	Rating	Hardware	Туре	Material	Finish	Comments
A100A	SF2	5' - 10"	7' - 11"	1 3/4"	2	ALUM/GLASS	CLR. ANO.		2.0	F2	ALUM	CLR. ANO.	PANIC HARDWARE/INSULATED
A100B	SF2	5' - 10"	7' - 11"	1 3/4"	2	ALUM/GLASS	CLR. ANO.		2.0	F2	ALUM	CLR. ANO.	PANIC HARDWARE/INSULATED
A101A	SF2	5' - 10"	7' - 11"	1 3/4"	2	ALUM/GLASS	CLR. ANO.		7.0	F2	ALUM	CLR. ANO.	PANIC HARDWARE/CARD ACCESS
A101B	SF2	5' - 10"	7' - 11"	1 3/4"	2	ALUM/GLASS	CLR. ANO.		7.0	F2	ALUM	CLR. ANO.	PANIC HARDWARE/CARD ACCESS
A101C	N8	6' - 0"	7' - 0"	1 3/4"	2	НМ	PAINT		3.0	F2	HM	PAINT	PANIC HARDWARE/INSULATED/CARD ACCESS
A101D	SF2	6' - 0"	7' - 9"	1 3/4"	2	ALUM/GLASS			8.0	F2	ALUM		PANIC HARDWARE/INSULATED
A101E	N8	6' - 0"	7' - 0"	1 3/4"	2	НМ	PAINT		3.0	F2	HM	PAINT	PANIC HARDWARE/INSULATED/CARD ACCESS
A102A	SF1	3' - 1"	7' - 0"	1 3/4"	1	ALUM/GLASS			9.0	F1	ALUM		BUZZ IN/CARD ACCESS
A102B	N	3' - 0"	7' - 0"	1 3/4"	1	SCWD	STAIN		16.0	F1	HM	PAINT	
A102C	N	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		16.0	F1	HM	PAINT	
A103	F	3' - 0"	7' - 0"	1 3/4"	1	SCWD	STAIN		11.0	F1	НМ	PAINT	
A104A	N	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		14.0	F1	HM	PAINT	
A104B	N	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		14.0	F1	HM	PAINT	
A105	F	3' - 0"	7' - 0"	1 3/4"	1	SCWD	STAIN		13.0	F1	HM	PAINT	
A106	HG	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		13.0	F1	HM	PAINT	
A107	HG	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		13.0	F1	HM	PAINT	
A108	HG	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		13.0	F1	HM	PAINT	
A110	N	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		14.0	F1	HM	PAINT	
A111	N	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		16.0	F1	HM	PAINT	
A113	F	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		19.0	F1	HM	PAINT	
A117	F	3' - 0"	7' - 0"	1 3/4"	1	SCWD	STAIN		11.0	F1	HM	PAINT	
A118	N	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		14.0	F1	HM	PAINT	
A119	N	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		14.0	F1	HM	PAINT	
A121A	N	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		15.0	F1	HM	PAINT	
A121B	N	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		15.0	F1	HM	PAINT	
A122	F	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		14.0	F1	HM	PAINT	
A123	F	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		14.0	F1	HM	PAINT	
A124A	N	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		14.0	F1	HM	PAINT	
A124B	N	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		14.0	F1	HM	PAINT	
A125	N	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		14.0	F1	HM	PAINT	
A126	F	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		17.0	F1	HM	PAINT	DANIC HADDWADE/INCH! ATED/CARD ACCESS
A128A	SF2	6' - 0"	7' - 9"	1 3/4"	2	ALUM/GLASS			1.0	F2	ALUM		PANIC HARDWARE/INSULATED/CARD ACCESS
A128B	SF2	6' - 0"	7' - 9"	1 3/4"		ALUM/GLASS			1.0	F2	ALUM	CLR. ANO.	PANIC HARDWARE/INSULATED/CARD ACCESS
A130	F	3' - 0" 3' - 0"	7' - 0" 7' - 0"	1 3/4"	1	SCWD	PAINT		13.0	F1	HM	PAINT	
A131 A132	F	3' - 0"	7' - 0"	1 3/4" 1 3/4"	1	SCWD SCWD	STAIN PAINT		21.0 11.0	F1 F1	HM HM	PAINT PAINT	
A132	F	3' - 0"	7' - 0"	1 3/4"	1	SCWD	STAIN		11.0	F1	HM	PAINT	
A133	F	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		11.0	F1	HM	PAINT	
A134 A135	F	3' - 0"	7' - 0"	1 3/4"	1	SCWD	STAIN		21.0	F1	НМ	PAINT	
A136	N8	6' - 0"	7' - 0"	1 3/4"	2	HM	PAINT		20.0	F2	НМ	PAINT	
A136	F	3' - 0"	7' - 0"	1 3/4"	1	HM		45 MIN	6.0	F1	НМ	PAINT	DOOR CLOSER/INSULATED/45 MIN RATING
A137	F	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT	TO IVIIIN	17.0	F1	НМ	PAINT	DOOR GEGGETVIINGGEATED/45 IVIIN RATING
A139A	N	3' - 0"	7' - 0"	1 3/4"	1	SCWD	STAIN		14.0	F1	I IIVI	I VIII	
A139B	F	3' - 0"	7' - 0"	1 3/4"	1	HM	PAINT		4.0	F1	НМ	PAINT	PANIC HARDWARE/INSULATED
A139B A139C	N8	6' - 0"	7' - 0"	1 3/4"	2	HM	PAINT		20.0	F2	НМ	PAINT	I ANNO LIMINDANAINE/IINOOLATED
A141A	N8	6' - 0"	7' - 0"	1 3/4"	2	HM	PAINT		10.0	F2	HM	PAINT	PANIC HARDWARE
A141B	N8	6' - 0"	7' - 0"	1 3/4"	2	HM	PAINT		10.0	F2	HM	PAINT	PANIC HARDWARE
A141C	N8	6' - 0"	7' - 0"	1 3/4"	2	HM	PAINT		5.0	F2	HM	PAINT	PANIC HARDWARE/INSULATED
, T I U	N8	6' - 0"	7' - 0"	1 3/4"	2	HM	PAINT		5.0	F2	HM	PAINT	PANIC HARDWARE/INSULATED
	1.40	3' - 0"	7' - 0"	1 3/4"	1	SCWD	PAINT		14.0	F1	HM	PAINT	
A141D	N		, , U		ı .		. / 311 1 1						
A141D A202	N N		7' - 0"		1	SCWD	PAINT		∣ 14 ∩	I ⊢ 1	∣НМ	PAINI	
A141D A202 A203	N	3' - 0"	7' - 0" 7' - 0"	1 3/4"	1	SCWD SCWD	PAINT		14.0	F1	HM HM	PAINT	
A141D A202 A203 A205	N N	3' - 0" 3' - 0"	7' - 0"	1 3/4" 1 3/4"	1	SCWD	PAINT		14.0	F1	НМ	PAINT	
A141D A202 A203 A205 A206	N N N	3' - 0" 3' - 0" 3' - 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4" 1 3/4"	1	SCWD SCWD	PAINT PAINT		14.0 14.0	F1 F1	HM HM	PAINT PAINT	
A141D A202 A203 A205 A206 A208	N N N	3' - 0" 3' - 0" 3' - 0" 3' - 0"	7' - 0" 7' - 0" 7' - 0"	1 3/4" 1 3/4" 1 3/4" 1 3/4"	1 1 1	SCWD SCWD	PAINT PAINT PAINT		14.0 14.0 12.0	F1 F1 F1	HM HM HM	PAINT PAINT PAINT	
A141D A202 A203 A205 A206 A208 A209	N N N	3' - 0" 3' - 0" 3' - 0" 3' - 0"	7' - 0" 7' - 0" 7' - 0" 7' - 0"	1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4"	1 1 1	SCWD SCWD SCWD	PAINT PAINT PAINT PAINT		14.0 14.0 12.0 18.0	F1 F1 F1	HM HM HM	PAINT PAINT PAINT PAINT	
A141D A202 A203 A205 A206 A208 A209 A212	N N N F F	3' - 0" 3' - 0" 3' - 0" 3' - 0" 3' - 0"	7' - 0" 7' - 0" 7' - 0" 7' - 0" 7' - 0"	1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4"	1 1 1 1	SCWD SCWD SCWD SCWD	PAINT PAINT PAINT PAINT PAINT		14.0 14.0 12.0 18.0 11.0	F1 F1 F1 F1	HM HM HM HM	PAINT PAINT PAINT PAINT PAINT	
A141D A202 A203 A205 A206 A208 A209 A212 A213	N N N F F	3' - 0" 3' - 0" 3' - 0" 3' - 0" 3' - 0" 3' - 0"	7' - 0" 7' - 0" 7' - 0" 7' - 0" 7' - 0" 7' - 0"	1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4"	1 1 1 1 1	SCWD SCWD SCWD SCWD SCWD	PAINT PAINT PAINT PAINT PAINT PAINT		14.0 14.0 12.0 18.0 11.0 14.0	F1 F1 F1 F1 F1	HM HM HM HM HM	PAINT PAINT PAINT PAINT PAINT PAINT	
A141D A202 A203 A205 A206 A208 A209 A212 A213 A214	N N N F F F N N	3' - 0" 3' - 0" 3' - 0" 3' - 0" 3' - 0" 3' - 0" 3' - 0"	7' - 0" 7' - 0" 7' - 0" 7' - 0" 7' - 0" 7' - 0"	1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4"	1 1 1 1 1 1	SCWD SCWD SCWD SCWD SCWD SCWD SCWD	PAINT PAINT PAINT PAINT PAINT PAINT PAINT		14.0 14.0 12.0 18.0 11.0 14.0	F1 F1 F1 F1 F1 F1	HM HM HM HM HM	PAINT PAINT PAINT PAINT PAINT PAINT PAINT PAINT	
A141D A202 A203 A205 A206 A208 A209 A212 A213 A214 A216	N N N F F F N N	3' - 0" 3' - 0"	7' - 0" 7' - 0" 7' - 0" 7' - 0" 7' - 0" 7' - 0" 7' - 0"	1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4"	1 1 1 1 1 1 1 1 1 1	SCWD SCWD SCWD SCWD SCWD SCWD SCWD SCWD	PAINT PAINT PAINT PAINT PAINT PAINT PAINT PAINT PAINT		14.0 14.0 12.0 18.0 11.0 14.0 14.0	F1 F1 F1 F1 F1 F1 F1	HM HM HM HM HM HM	PAINT PAINT PAINT PAINT PAINT PAINT PAINT PAINT PAINT	
A141D A202 A203 A205 A206 A208 A209 A212 A213 A214 A216 A217	N N N F F N N N	3' - 0" 3' - 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4"	1 1 1 1 1 1 1 1 1	SCWD SCWD SCWD SCWD SCWD SCWD SCWD SCWD	PAINT		14.0 14.0 12.0 18.0 11.0 14.0 14.0 14.0	F1 F1 F1 F1 F1 F1 F1 F1	HM HM HM HM HM HM HM	PAINT	
A141D A202 A203 A205 A206 A208 A209 A212 A213 A214 A216 A217	N N N F F N N N	3' - 0" 3' - 0"	7' - 0" 7' - 0" 7' - 0" 7' - 0" 7' - 0" 7' - 0" 7' - 0" 7' - 0" 7' - 0" 7' - 0"	1 3/4" 1 3/4"	1 1 1 1 1 1 1 1 1	SCWD SCWD SCWD SCWD SCWD SCWD SCWD SCWD	PAINT		14.0 14.0 12.0 18.0 11.0 14.0 14.0 14.0 14.0	F1 F1 F1 F1 F1 F1 F1 F1 F1	HM HM HM HM HM HM HM	PAINT	
A141D A202 A203 A205 A206 A208 A209 A212 A213 A214 A216 A217	N N N F F N N N	3' - 0" 3' - 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4"	1 1 1 1 1 1 1 1 1	SCWD SCWD SCWD SCWD SCWD SCWD SCWD SCWD	PAINT		14.0 14.0 12.0 18.0 11.0 14.0 14.0 14.0	F1 F1 F1 F1 F1 F1 F1 F1	HM HM HM HM HM HM HM	PAINT	

DOOR SCHEDULE

REVIEWED FOR CODE COMPLIANCE
FRANKLIN COUNTY NORTH CAROLINA
Plans must be on site at all times. It is the responsibility of the Permit holder or Contractor to comply with all local Ordinances, rules and regulations and the North Carolina Building Codes as if they were part of the specifications for the building. These shall be considered the official approved plans over anything shown, described or implied to the contrary. Reviewer is not responsible for mistakes or oversights during the plan review. -- PFaulkner

03/30/2023





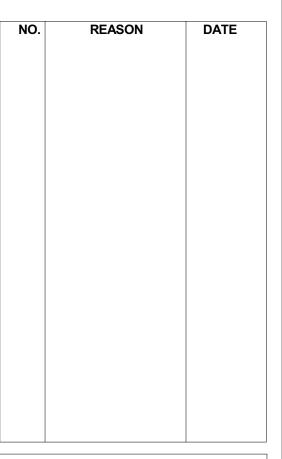
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Brighton MI 48114
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NEW HIGH SCHOOL



FRANKLIN COUNTY BLDG SUBMISSION



 Issue Date:
 12/15/2022

 Job Number:
 112 18134 00

Drawn By: PEDRO PINERA

Checked By: TOM BALKE, AIA

DOOR SCHEDULE

A900