ARCHITECTURAL ABBR.

A	AB	ANCHOR BOLT
	ABBV	ABBREVIATION
	ACT	ACOUSTICAL CEILING TILE
	AD	AREA DRAIN
	ADA	AMERICANS W/ DISABILITIES ACT
	ADD	ADDENDUM
	ADDL	ADDITIONAL
	ADJ	ADJACENT/ ADJUSTABLE
	ADMIN	ADMINISTRATION
	AF	ACCESS FLOOR
	AFF	ABOVE FINISH FLOOR
	AGG	AGGREGATE
	AHU	AIR HANDLING UNIT
	AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
	ALT	ALTERNATE
	ALUM	ALUMINUM
	AMEND	AMENDMENT
	ANOD	ANODIZE
	AP	ACCESS PANEL
	APC	ARCHITECTURAL PRECAST CONCRETE
	APPROX	APPROXIMATE
	ARA	AREA OF RESCUE ASSISTANCE
	ARCH	ARCHITECTURAL
	ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
	AUTO	AUTOMATIC
	AUX	AUXILIARY
	AV	AUDIOVISUAL
	AVG	AVERAGE
	AWT	ACCOUSTICAL WALL TREATMENT
B	B/	BOTTOM OF
	BA	BUILDING ACCESSORY
	BBD	BULLETIN BOARD
	BC	BRICK COURSES
	BD	BOARD
	BEV	BEVEL
	BG	BUMPER GUARD
	BIT	BITUMINOUS
	BLDG	BUILDING
	BLKG	BLOCKING
	BLT	BORROWED LIGHT
	BLW	BELOW
	BM	BEAM
	BO	BY OWNER
	BOH	BACK OF HOUSE
	BR	BRICK
	BRG	BEARING
	BRKT	BRACKET
	BRL	BRICK LEDGE
	BSMT	BASEMENT
	BT	BETWEEN
	BULL	BULLETIN
	BUR	BUILT-UP ROOFING
C	C/	CENTER OF
	CAB	CABINET
	CCTV	CLOSED CIRCUIT TELEVISION
	CDISP	CUP DISPENSER
	CEM	CEMENT
	CFM	CUBIC FEET PER MINUTE
	CG	CORNER GUARD
	CH	COAT HOOK
	CJ	CONTROL JOINT
	CL	CENTER LINE
	CLG	CEILING
	CLL	CONTRACT LIMIT LINE
	CLO	CLOSET
	CLR	CLEAR
	CM	CONSTRUCTION MANAGER
	CMU	CONCRETE MASONRY UNIT
	CO	CLEANOUT
	COL	COLUMN
	COMM	COMMUNICATION
	COMP	COMPUTER
	CONC	CONCRETE
	CONF	CONFERENCE
	CONT	CONTINUOUS
	CONTR	CONTRACTOR
	CONST	CONSTRUCTION
	COORD	COORDINATE
	CORR	CORRIDOR
	CPT	CARPET
	CPU	CENTRAL PROCESSING UNIT
	CR	CRASH RAIL
	CT	CERAMIC TILE
	CTR	CENTER
	CTSK	COUNTERSINK
	CUH	CABINET UNIT HEATER
	CW	CURTAIN WALL
	CYL	CYLINDER
D	DBL	DOUBLE
	DB	DECIBEL
	DEG	DEGREE
	DEMO	DEMOLITION
	DEPR	DEPRESSION
	DEPT	DEPARTMENT
	DET	DETAIL
	DF	DRINKING FOUNTAIN
	DIA	DIAMETER
	DIAG	DIAGONAL
	DIFF	DIFFUSER
	DIM	DIMENSION
	DISP	DISPENSER
	DIST	DISTRIBUTION
	DIV	DIVISION
	DL	DEAD LOAD
	DN	DOWN
	DP	DEMOUNTABLE PARTITION
	DR	DOOR
	DS	DOWNSPOUT
	DW	DUMBWAITER
	DWG	DRAWING
	DWLS	DOWELS
E	E/	EDGE OF
	ED	EDUCATION
	EF	EXHAUST FAN
	EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
	EJ	EXPANSION JOINT
	EL	ELEVATION
	ELEC	ELECTRICAL
	ELEV	ELEVATOR
	EMER	EMERGENCY
	EMPL	EMPLOYEE
	ENCL	ENCLOSURE
	ENTR	ENTRANCE
	EQ	ELECTRICAL OUTLET
	EQ	EQUAL
	EQUIP	EQUIPMENT
	EWC	ELECTRIC WATER COOLER
	EXA	EXHAUST AIR
	EXC	EXCAVATE
	EXH	EXHAUST HOOD
	EXIST	EXISTING
	EXP	EXPANSION
	EXT	EXTERIOR
F	FA	FIRE ALARM
	FB	FIRE BLANKET
	FBR	FACE BRICK
	FCU	FAN COIL UNIT
	FD	FLOOR DRAIN
	FDN	FOUNDATION
	FDV	FIRE DEPARTMENT VALVE
	FE	FIRE EXTINGUISHER
	FEC	FIRE EXTINGUISHER CABINET
	FF	FINISHED FLOOR
	FFE	FINISHED FLOOR ELEVATION
	FH	FIRE HOSE
	FHC	FIRE HOSE CABINET
	FHP	FULL HEIGHT PARTITION
	FHV	FIRE HOSE VALVE
	FIN	FINISH
	FIXT	FIXTURE
	FLR	FLOOR
	FLASH	FLSHING
	FLEX	FLEXIBLE
	FLUOR	FLUORESCENT
	FOH	FRONT OF HOUSE
	FP	FIRE PROOFING
	FRM	FRAME
	FRMG	FRAMING
	FS	FLOOR SINK
	FSE	FOOD SERVICE EQUIPMENT
	FSTOP	FIRESTOPPING
	FT	FEET
	FTG	FOOTING
	FUR	FURRING
	FUT	FUTURE
	FVL	FIRE VALVE CABINET
G	GA	GAUDE
	GAL	GALLON
	GALV	GALVINIZED
	GB	GRAB BAR
	GC	GENERAL CONTRACTOR
	GEN	GENERAL
	GL	GLASS
	GMU	GLASS MASONRY UNIT
	GR	GRADE
	GRD	GROUND
	GRL	GUARDRAIL
	GRT	GROUT
	GWB	GYPSUM WALLBOARD
H	HB	HOSE BIB
	HD	HAND DRYER
	HDCP	HANDICAP
	HDR	HEADER
	HDW	HARDWARE
	HM	HOLLOW METAL
	HORIZ	HORIZONTAL
	HR	HOUR
	HRL	HANDRAIL
	HT	HEIGHT
	HTR	HEATER
	HVAC	HEATING, VENTILATION, AIR CONDITION
	HVC	HOSE VALVE CABINET
	HW	HOT WATER
	HWH	HOT WATER HEATER
	HWD	HARDWOOD
I	IBC	INTERNATIONAL BUILDING CODE
	IC	INTERCOM
	ID	INSIDE DIAMETER
	IN	INCH
	INFO	INFORMATION
	INS	INSULATION
	INT	INTERIOR
	INTV	INTERVIEW
	ISO	ISOLATION
J	JAN	JANITOR
	JB	JUNCTION BOX
	JST	JOIST
	JT	JOINT
K	KIT	KITCHEN
	KO	KNOCK OUT
L	LAB	LABORATORY
	LAM	LAMINATE
	LAV	LAVATORY
	LB	POUND
	LD	LINEAR DIFFUSER
	LIB	LIBRARY
	LIN	LINEAR
	LINM	LINOLEUM
	LKR	LOCKER
	LL	LIVE LOAD
	LMC	LINEAR METAL CEILING
	LOC	LOCATION
	LS	LIGHT SWITCH
	LSC	LIFE SAFETY CODE
	LT	LIGHT
	LTG	LIGHTING
	LVR	LOUVER
	LWC	LINEAR WOOD CEILING
M	MACH	MACHINE
	MAN	MANUAL
	MAS	MASONRY
	MAT	MATERIAL
	MAX	MAXIMUM
	MKBD	MARKER BOARD
	MC	MEDICINE CABINET
	MDF	MEDIUM DENSITY FIBER BOARD
	MECH	MECHANICAL
	MEMB	MEMBRANE
	MET	METAL
	MEZZ	MEZZANINE
	MFR	MANUFACTURER
	MIN	MINIMUM
	MIR	MIRROR
	MISC	MISCELLANEOUS
	ML	METAL LOCKER
	MO	MASONRY OPENING
	MONO	MONOLITHIC
	MPC	METAL PAN CEILING
	MPU	MULTI-PURPOSE UNIT
	MTD	MOUNTED
	MULL	MULLION
N	N	NORTH
	NA	NOT APPLICABLE
	NC	NOISE CRITERIA
	NIC	NOT IN CONTRACT
	NOM	NOMINAL
	NRC	NOISE REDUCTION COEFFICIENT
	NTS	NOT TO SCALE
O	OA	OVERALL
	OC	ON CENTER
	OD	OUTSIDE DIAMETER
	OFF	OFFICE
	OF/ OI	OWNER FURNISHED/ OWNER INSTALLED
	OH	OPPOSITE HAND
	OHD	OVERHEAD
	OP	OPERABLE PARTITION
	OPER	OPERATOR
	OPNG	OPENING
	OPP	OPPOSITE
	ORD	OVERFLOW ROOF DRAIN
P	PART	PARTITION
	PB	PUSH BUTTON
	PC	PRECAST CONCRETE
	PCDISP	PAPER CUP DISPENSER
	PED	PEDESTAL
	PERP	PERPENDICULAR
	PH	PENTHOUSE
	PL	PLATE
	PLAM	PLASTIC LAMINATE
	PLBG	PLUMBING
	PLS	PLASTER
	PLW	PLYWOOD
	PNL	PANEL
	POL	POLISHED
	PR	PAIR
	PREFAB	PREFABRICATED
	PRELIM	PRELIMINARY
	PREP	PREPARATION
	PRES	PLASTIC RESIN
	PRESS	PRESSURE
	PRIM	PRIMARY
	PROJ	PROJECTION
	PROP	PROPERTY
	PRV	POWER ROOF VENTILATOR
	PSF	POUNDS PER SQUARE FOOT
	PSI	POUNDS PER SQUARE INCH
	PT	PAINT
	PTC	PAPER TOWEL CABINET
	PTN	PARTITION
	PTR	PRINTER
	PVC	POLYVINYL CHLORIDE
Q	QT	QUARRY TILE
	QTY	QUANTITY
R	R	RADIUS
	RB	RESILIENT BASE
	RCP	REFLECTED CEILING PLAN
	RD	ROOF DRAIN
	RE	RELOCATE EXISTING
	REC	RECESSED
	RECPT	RECEPTACLE
	REF	REFERENCE
	REFR	REFRIGERATOR
	REG	REGISTER
	REINF	REINFORCE
	REM	REMOVE
	REQD	REQUIRED
	RET	RETAINING
	REV	REVISE
	RFG	ROOFING
	RFL	RESILIENT FLOOR
	RH	ROOF HATCH
	RM	ROOM
	RO	ROUGH OPENING
	ROW	RIGHT OF WAY
	RVL	REVEAL
S	SCHED	SCHEDULE
	SCR	SCREEN
	SCWD	SOLID CORE WOOD DOOR
	SD	SHOWER DRAIN
	SDISP	SOAP DISPENSER
	SECT	SECTION
	SEC	SECRETARY
	SF	SQUARE FOOT
	SGL	SPANDREL GLASS
	SH	SHOWER
	SHD	SHOWER HEAD
	SHT	SHEET
	SHTG	SHEATHING
	SIM	SIMILAR
	SL	SEALER
	SLDG	SLIDING
	SLNT	SEALANT
	SLV	SLEEVE
	SM	SURFACE MOUNTED
	SNC	SANITARY NAPKIN CABINET
	SND	SANITARY NAPKIN DISPOSER
	SOG	SLAB ON GRADE
	SP	STANDPIPE
	SPEC	SPECIFICATIONS
	SPR	SINGLE PLY ROOF
	SQ	SQUARE
	SQ YD	SQUARE YARD
	SR	SERVICE RECEPTOR
	SS	SERVICE SINK
	SSF	SOLID SURFACE
	SST	STAINLESS STEEL
	ST	STREET
	STC	SOUND TRANSMISSION CLASS
	STD	STANDARD
	STL	STEEL
	STN	STONE
	STNL	STONE LEDGE
	STOR	STORAGE
	STRUCT	STRUCTURAL
	STS	STEEL STRUCTURE
	SUPV	SUPERVISOR
	SUSP	SUSPENDED
	SW	SWITCH
	SWD	SOFTWOOD
	SYS	SYSTEM
	SYM	SYMMETRICAL
T	T/	TOP OF
	TAN	TANGENT
	TBD	TO BE DETERMINED
	TKBD	TACKBOARD
	TC	TIME CLOCK
	TCAB	TOWEL CABINET
	TD	TRENCH DRAIN
	TDISP	TISSUE DISPENSER
	TEL	TELEPHONE
	TEMP	TEMPERATURE
	TER	TERRAZZO
	TG	TONGUE AND GROOVE
	THK	THICKNESS
	THRES	THRESHOLD
	TLT	TOILET
	TPH	TOILET PAPER HOLDER
	TRANS	TRANSFORMER
	TRNG	TRAINING
	TS	TUBE SECTION
	TV	TELEVISION
	TYP	TYPICAL
U	UBC	UNIFORM BUILDING CODE
	UC	UNDERCOUNTER
	UFAS	UNIFORM FEDERAL ACCESSIBILITY STANDARD
	UG	UNDERGROUND
	UH	UNIT HEATER
	UL	UNDERWRITER'S LABORATORIES, INC.
	UNFIN	UNFINISHED
	UNO	UNLESS NOTED OTHERWISE
	UR	URINAL
	US	UTILITY SHELF
	UTIL	UTILITY
V	VB	VAPOR BARRIER
	VC	VALVE CABINET
	VDO	VOICE/ DATA OUTLET
	VCT	VINYL COMPOSITION TILE
	VENT	VENTILATION
	VERT	VERTICAL
	VEST	VESTIBULE
	VIF	VERIFY IN FIELD
	VTR	VENT THROUGH ROOF
W	W	WIDE FLANGE
	W/	WITH
	W/O	WITHOUT
	WC	WATER CLOSET
	WCG	WALL COVERING
	WD	WOOD
	WDW	WINDOW
	WG	WALL GUARD
	WH	WALL HYDRANT
	WHCH	WHEELCHAIR
	WHTR	WATER HEATER
	WOM	WOMEN
	WP	WATERPROOF
	WPS	WALL PROTECTION SYSTEM
	WPT	WORKING POINT
	WR	WASTE RECEPTACLE
	WS	WEATHERSTRIP
	WSCT	WAINSCOT
	WT	WEIGHT
	WW	WOOD WINDOW
	WWF	WELDED WIRE FABRIC

MATERIALS LEGEND

- SAND, GYPSUM BOARD, PLASTER
- CONCRETE
- MASONRY
- BRICK
- METAL, STEEL
- STONE, GRAVEL
- EARTH
- WOOD, FINISHED
- WOOD, BLOCKING OR FRAMING
- PLYWOOD
- INSULATION, BATT
- INSULATION, RIGID

DRAWING CONVENTIONS

- NORTH ARROW
- DATUM POINT, WORK POINT
- KEYNOTE
- PARTITION TAG
- WINDOW TAG
- LOUVER TAG
- EQUIPMENT TAG
- REVISION DESIGNATION
- A1 NEW COLUMN CENTERLINE DESIGNATION
- A1 EXISTING COLUMN CENTERLINE DESIGNATION
- DIMENSION DIMENSION TO FACE OF CONSTRUCTION

ROOM NAME, ROOM NUMBER, DEPARTMENT, FLOOR, ACTUAL NUMBER — ROOM NAME ED104 — ROOM NAME CONVENTION

SHEET NAME, DISCIPLINE, SERIES, SECTION NUMBER, SHEET NUMBER — A6.0.02 — SHEET NAME CONVENTION

REFERENCED DETAIL, REFERENCED SHEET NAME — INTERIOR ELEVATION REFERENCE

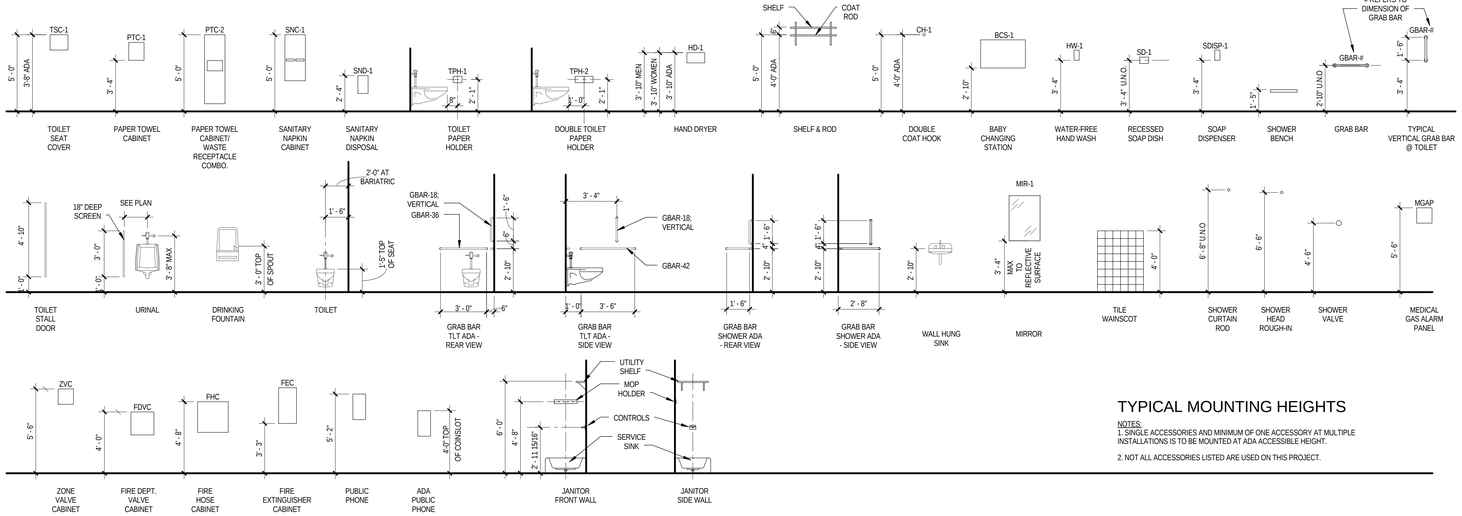
REFERENCED DETAIL, REFERENCED SHEET NAME — EXTERIOR ELEVATION REFERENCE

REFERENCED DETAIL, REFERENCED SHEET NAME — SECTION REFERENCE

DETAIL — REFERENCED DETAIL, REFERENCED SHEET NAME — DETAIL REFERENCE

12" MIN. (IF DOOR HAS CLOSER); 5" TYP.; 18" MIN.; DOOR NUMBER

TYPICAL DOOR LOCATION

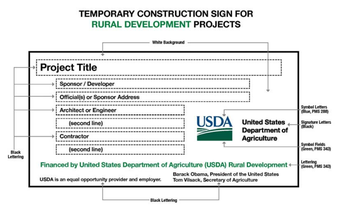


TYPICAL MOUNTING HEIGHTS

NOTES:
1. SINGLE ACCESSORIES AND MINIMUM OF ONE ACCESSORY AT MULTIPLE INSTALLATIONS IS TO BE MOUNTED AT ADA ACCESSIBLE HEIGHT.

2. NOT ALL ACCESSORIES LISTED ARE USED ON THIS PROJECT.

TEMPORARY CONSTRUCTION SIGN FOR RURAL DEVELOPMENT PROJECTS



SIGN DIMENSIONS: 1200 mm x 2400 mm x 19 mm (approx. 4' x 8' x ¾")
PLYWOOD PANEL (APA RATED A-B GRADE–EXTERIOR)

NOTE:
CONTRACTOR TO PROVIDE ONE JOB SIGN AND INSTALL PER DIRECTION OF OWNER. ARCHITECT TO PROVIDE IMAGE TO BE PRINTED ON VINYL, WEATHER RESISTANT MATERIAL BY CONTRACTOR MOUNT TO 4' X 8' EXTERIOR GRADE PLYWOOD, AND SUPPORT VIA (2) 6"X6" P.T. POSTS

Earl Architects

Earl Architects, LLC
301 N. Main Street
Greenville, SC 29601
864 271 7555

Consultant

DUNCAN CHAPEL FIRE DISTRICT STATION 2

NEW FACILITY GREENVILLE, SC

Keyplan

Professional Seal

STATE OF SOUTH CAROLINA — EARL ARCHITECTS, LLC — GREENVILLE, SC — 100021 — REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA — RICHARD EARL — REGISTERED ARCHITECT

Issued for Permit

Revision

SYMBOLS AND ABBREVIATIONS

A0.01

In Charge	RRE
Drawn By	DMR
Checked By	SJM
Project Number	1033.00.00
Date	11/18/2014

BUILDING CODE SUMMARY

GENERAL INFORMATION

Name of Project: DUNCAN CHAPEL FIRE DISTRICT, STATION 2
Address: 935 FOOT HILLS RD, GREENVILLE, SC 29617
Proposed Use: R-2 - RESIDENTIAL
Owner or Authorized Agent: DUNCAN CHAPEL FIRE DEPT. Phone #: 864-294-4827 E-Mail:
Owned By: ☐ City/County ■ Private ☐ State
Code Enforcement Jurisdiction: ☐ City ■ County GREENVILLE ☐ State

APPLICABLE CODES:

INTERNATIONAL BUILDING CODE, 2012 EDITION,
INTERNATIONAL FIRE CODE, 2012 EDITION,
INTERNATIONAL PLUMBING CODE, 2012 EDITION,
INTERNATIONAL MECHANICAL CODE, 2012 EDITION,
INTERNATIONAL FUEL GAS CODE, 2012 EDITION,
NATIONAL ELECTRICAL CODE, 2011 EDITION
INTERNATIONAL ENERGY CONSERVATION CODE, 2009 EDITION,

2010 ADA STANDARDS FOR ACCESSIBLE DESIGN
2009 ICC/ANSI A117.1
UNIFORM FEDERAL ACCESSIBILITY STANDARDS (UFAS)

BUILDING DATA

Construction Type: (check all that apply) ☐ I-A ☐ I-B ☐ II-A ☐ II-B ☐ III-A ☐ III-B ☐ IV ☐ V-A ■ V-B

Sprinklers: ☐ No ☐ Partial ■ Yes ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ■ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Fire District: ☐ No ■ Yes (Primary) Flood Hazard Area: ■ No ☐ Yes
Building Height: 23'-6" Feet

Gross Building Area:

FLOOR	EXISTING (SQ. FT.)	NEW (SQ. FT.)	SUB-TOTAL
6th Floor:	--	--	--
5th Floor:	--	--	--
4th Floor:	-	--	-
3rd Floor:	-	-	-
2nd Floor:	-	--	--
Mezzanine:	--	-	-
1st Floor:	-	5,283	5,283
Basement			
TOTAL	-	5,283	5,283

ALLOWABLE AREA

Occupancy: Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
Business ☐
Educational ☐
Factory-Industrial ☐ F-1 Moderate ☐ F-2
High-Hazard ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 ☐ I-2 ☐ I-3 ☐ I-4
I-3 Use Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Mercantile ☐
Residential ☐ R-1 ■ R-2 ☐ R-3 ☐ R-4
Storage ☐ S-1 Moderate ☐ S-2 Low ☐ High-Piled
☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Accessory Occupancies: Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
Business ☐
Educational ☐
Factory-Industrial ☐ F-1 Moderate ☐ F-2
High-Hazard ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 ☐ I-2 ☐ I-3 ☐ I-4
I-3 Use Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Mercantile ☐
Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ■ S-1 Moderate ☐ S-2 Low ☐ High-Piled
☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Mixed Occupancy: ☐ No ■ Yes

STORY NO.	DESCRIPTION AND USE	(A) BLDG. AREA PER STORY (ACTUAL)	(B) TABLE 503 [5] AREA	(C) AREA FOR OPEN SPACE [1] INCREASE	(D) AREA FOR SPRINKLER [2] INCREASE	(E) ALLOWABLE AREA OR UNLIMITED [3]	(F) MAXIMUM BUILDING AREA [4]
1	R2 - RESIDENTIAL	5,283	7,000	5,250	21,000	26,250	26,250
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-

1 Open space area increases from Section 506.2 are computed as thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width= 323-10'(F)
b. Total Building Perimeter = 323'-10" (P)
c. Ratio (F/P) = 1.0 (F/P)
d. W = Minimum Width of Public Way = 30' (W)
e. Percent of Frontage Increase I = 100 [f/p - 0.25] x W/30 $_F$ .75 (%)

2 The Sprinkler Increase per Section 506.3 is as follows:
a. Multi-Story Building I = 200 Percent $_S$
b. Single Story Building I = 300 Percent $_S$

3 Unlimited area applicable under conditions of Section 507

4 Maximum Building Area = Total number of stories in the building x E but not greater than 3 x E.

5 The maximum area of parking garages must comply with 406.3.5. The maximum area of air traffic control towers must comply with 412.1.2.

ALLOWABLE HEIGHT

	ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE
TYPE OF CONSTRUCTION	TYPE V-B		TYPE V-B	
BUILDING HT. IN FEET	FEET 40'	FEET = H + 20' = 60'	23'-6"	IBC TABLE 503
BUILDING HT. IN STORIES	STORIES 2	STORIES + 1 = 3	STORIES 1	IBC TABLE 503

PLUMBING FIXTURE REQUIREMENTS

USE		WATERCLOSETS MALE	WATERCLOSETS FEMALE	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	SHOWERS/ TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SPACE	EXISTING	-	-	-	-	-	-	-	-
	NEW	1	2	1	1	1	2	1	1
	REQUIRED	1	1	1	1	1	2	1	1

ACCESSIBLE PARKING

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	TOTAL # OF PARKING SPACES PROVIDED	# OF ACCESSIBLE SPACES PROVIDED REGULAR W/ 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	TOTAL # ACCESSIBLE PROVIDED
		19	1	N/A	1	2
TOTAL		19	1	N/A	1	2

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ ---- (REDUCTION))	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
Structural frame, including columns, girders and trusses	N/A	N/A	N/A	---	---	---	---
Bearing Walls							
Exterior							
North	>30'	0HR	0HR	---	---	---	---
East	>30'	0HR	0HR	---	---	---	---
West	>30'	0HR	0HR	---	---	---	---
South	>30'	0HR	0HR	---	---	---	---
Interior	N/A	0HR	0HR	---	---	---	---
Non-Bearing walls and Partitions							
Exterior							
North	>30'	0HR	0HR	---	---	---	---
East	>30'	0HR	0HR	---	---	---	---
West	>30'	0HR	0HR	---	---	---	---
South	>30'	0HR	0HR	---	---	---	---
Interior	N/A	0HR	0HR	---	---	---	---
Floor construction including support beams and joists	N/A	0HR	0HR	---	---	---	---
Roof construction including support beams and joists	N/A	0HR	0HR	---	---	---	---
Shafts Enclosures - Exit	N/A	N/A	N/A	---	---	---	---
Shafts Enclosures - Other	N/A	N/A	N/A	---	---	---	---
Corridor-Separation	N/A	N/A	N/A	---	---	---	---
Occupancy Separation	N/A	1HR	1HR	A0.06	U305	---	---
Party/Fire Wall Separation	N/A	N/A	N/A	---	---	---	---
Smoke Barrier Separation	N/A	N/A	N/A	---	---	---	---
Tenant Separation	N/A	N/A	N/A	---	---	---	---
Incidental Use Separation	N/A	N/A	N/A	---	---	---	---

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: ☐ No ■ Yes
Exit Signs: ☐ No ■ Yes
Fire Alarm: ☐ No ■ Yes
Smoke Detection Systems: ☐ No ■ Yes ☐ Partial
Panic Hardware: ☐ No ■ Yes

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: A0.02

■ Fire and/or smoke rated wall locations
■ Assumed and real property line locations
■ Exterior wall opening area with respect to distance to assumed property lines
■ Existing structures within 30' of the proposed building
■ Occupancy types for each area as it relates to occupant load calculation
■ Occupant loads for each area
■ Exit access travel distances
■ Common path of travel distances
■ Dead end lengths
■ Clear exit widths for each exit door
■ Maximum calculated occupant load capacity each exit door can accommodate based on egress width
■ Actual occupant load for each exit door
☐ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
■ Location of doors with panic hardware
☐ Location of doors with delayed egress locks and the amount of delay
☐ Location of doors with electromagnetic egress locks
☐ Location of doors equipped with hold-open devices
☐ Location of emergency escape windows
■ The square footage of each fire area
☐ The square footage of each smoke compartment
☐ Note any exceptions or table notes that may have been utilized regarding the items above

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 budget vs allowable annual energy cost budget.

Climate Zone: ■ 3 ☐ 4 ☐ 5

Method of Compliance: ■ Prescriptive (Energy Code)
☐ Performance (Energy Code)
☐ Prescriptive (ASHRAE 90.1)
☐ Performance (ASHRAE 90.1)

THERMAL ENVELOPE

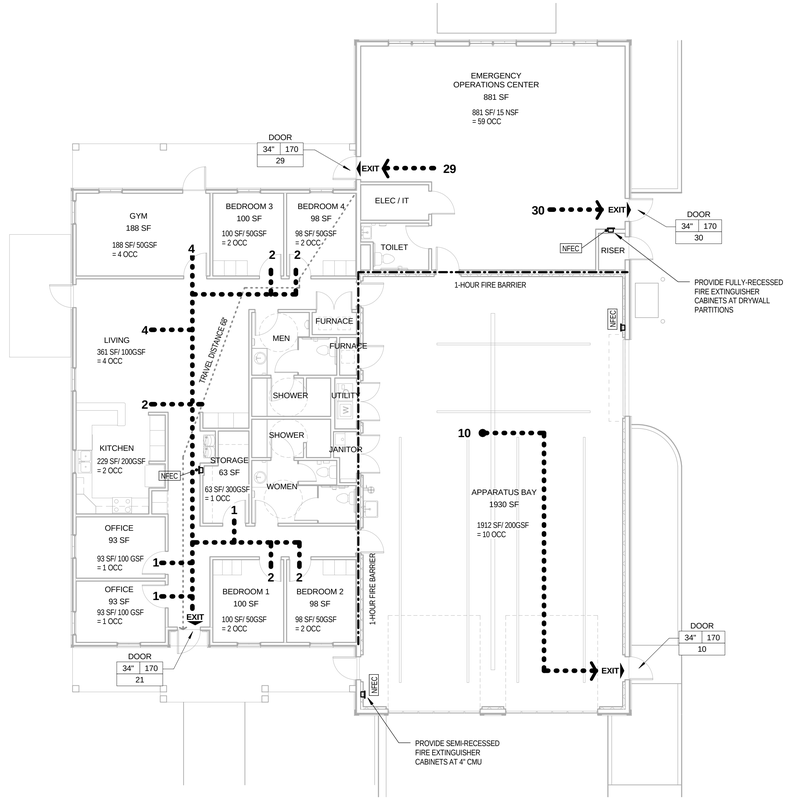
Roof/Ceiling Assembly (each assembly) ASPHALT SHINGLES, ROOF SHEATHING, WOOD
Description of assembly: TRUSSES, BATT INSUATION @ CEILING
U-Value of total assembly: 0.033
R-Value of insulation: R-30
Skylights in each assembly: N/A
U-Value of Skylight: N/A
Total square footage of skylights in each assembly: N/A

Exterior Walls (each assembly)
Description of assembly: VINYL SIDING, 1/2" EXT. SHEATHING, 3 1/2" BATTS, 5/8" GWB
U-Value of total assembly: 0.0769
R-Value of insulation: R-13
Openings (windows or doors with glazing)
U-Value of assembly: N/A
Solar heat gain coefficient: N/A
Projection factor: N/A
Door R-Values: N/A

Walls below grade
Description of assembly: N/A
U-Value of total assembly: N/A
R-Value of insulation: N/A

Floors over unconditioned space (each assembly)
Description of assembly: N/A
U-Value of total assembly: N/A
R-Value of insulation: N/A

Floors Slab On Grade
Description of assembly: 4" CONCRETE SLAB, 4" GRAVEL
U-Value of total assembly: 0.09
R-Value of insulation: NOT REQUIRED
Horizontal/vertical requirement: NOT REQUIRED
Slab heated N/A



1 FIRST FLOOR LIFE SAFETY PLAN
1/8" = 1'-0"

0' 4' 8' 16' 32'

LIFE SAFETY PLAN GENERAL NOTES / KEYNOTES

ONE HOUR FIRE BARRIER
TWO HOUR FIRE BARRIER
SMOKE TIGHT CONSTRUCTION
ONE HOUR SMOKE BARRIER

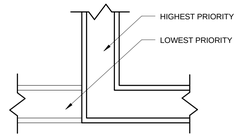
NFEC NEW FIRE EXTINGUISHER CABINET - FULLY RECESSED CABINET W/ S.S. TRIM BY J.I. INDUSTRIES OR EQUAL - 10# ABC FIR EXTINGUISHER
NFE NEW FIRE EXTINGUISHER - WALL MOUNTED - BRACKET BY J.I. INDUSTRIES OR EQUAL - 10# ABC FIRE EXTINGUISHER
36" 180 PROVIDED WIDTH
OCCUPANT LOAD SUPPORTED
85 ANTICIPATED OCCUPANT LOAD
P PANIC HARDWARE

A) SEE THIS SHEET FOR WALL PRIORITY PLAN DETAILS FOR TYPICAL PARTITION CONSTRUCTION AT WALL INTERSECTIONS.

PARTITION I.D. SCHEDULE

THE FOLLOWING WALLS/ PARTITIONS SHALL BE IDENTIFIED EFFECTIVELY AND PERMANENTLY WITH STENCILLED MARKING CONSISTING OF 4" HIGH LETTERS AT 20'-0" ON CENTER MINIMUM ON BOTH SIDES OF THE WALL/ PARTITION AND AT CHANGES OF DIRECTION OF WALL/ PARTITION. ALSO PROVIDE MARKING AT EACH STARTING AND ENDING DESIGNATION OF THE RATING. COLOR OF STENCILLED LETTERS IS TO BE RED.

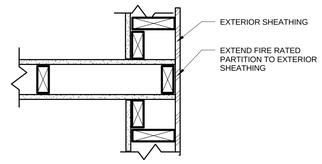
TYPE OF WALL PARTITION	SIGN SHALL READ
SMOKE RESISTANT CORRIDOR PARTITION	SMOKE RESISTANT BARRIER PROTECT ALL OPENINGS
1 HOUR SMOKE BARRIER	1 HOUR SMOKE BARRIER PROTECT ALL OPENINGS
1 HOUR FIRE BARRIER	1 HOUR FIRE BARRIER PROTECT ALL OPENINGS
2 HOUR FIRE PARTITION	2 HOUR FIRE BARRIER PROTECT ALL OPENINGS



HIGHEST: PRIORITY 1: 2 HOUR FIRE AND SMOKE WALL
PRIORITY 2: 2 HOUR FIRE WALL
PRIORITY 3: 1 HOUR FIRE AND SMOKE WALL
PRIORITY 4: 1 HOUR FIRE WALL
PRIORITY 5: SMOKE TIGHT CONSTRUCTION
PRIORITY 6: NON-RATED WALL TO DECK
LOWEST: PRIORITY 7: NON-RATED WALL OR FURR-OUTS

WALL PRIORITY LEGEND

TYPICAL SCALE 1 1/2" = 1'-0"



WALL PRIORITY LEGEND

INTERSECTION WITH EXTERIOR WALL SCALE 1 1/2" = 1'-0"

Earl Architects

Earl Architects, LLC
301 N. Main Street
Greenville, SC 29601
864 271 7555

Consultant

DUNCAN CHAPEL FIRE DISTRICT STATION 2

NEW FACILITY
GREENVILLE, SC

Keyplan

Professional Seal

STATE OF SOUTH CAROLINA
EARL ARCHITECTS, LLC
GREENVILLE, SC
10021
REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA
RICHARD M. EARL
GREENVILLE, SC
REGISTERED ARCHITECT

Issued for Permit

Revision

CODE ANALYSIS AND LIFE SAFETY PLAN

A0.02

In Charge	Approver
Drawn By	Author
Checked By	Checker
Project Number	1033.00.00
Date	11/18/2014

TERMS:

1. ALL WORK NOTED "BY OTHERS" OR "NIC" WILL BE ACCOMPLISHED BY CONTRACTORS OTHER THAN THE GENERAL CONTRACTOR AND IS NOT TO BE PART OF THE CONSTRUCTION AGREEMENT. THE GENERAL CONTRACTOR IS TO COORDINATE WITH "OTHER" CONTRACTORS AS REQUIRED.

2. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER GRAPHIC SCALE.

3. "ALIGN" AS USED IN THESE DOCUMENTS SHALL MEAN TO ACCURATELY LOCATE FINISH FACES TO THE SAME PLANE OR AT A 90° ANGLE AS SHOWN ON DRAWINGS.

4. "TYPICAL" AS USED IN THESE DRAWINGS SHALL MEAN THE CONDITION IS THE SAME OR REPRESENTATIVE FOR ALL SIMILAR CONDITIONS, UNLESS NOTED OTHERWISE.

BUILDING RULES:

1. ITEMS LISTED BELOW ARE APPLICABLE TO ALL CONTRACTORS, VENDORS, SUPPLIERS AND MATERIAL HANDLERS. A VIOLATION, IN WHOLE, OR IN PART, COULD BE CAUSE FOR REMOVAL FROM THE BUILDING, AND COULD JEOPARDIZE THE CONTRACT.

2. THE BUILDING OWNER WILL PROVIDE TO THE CONTRACTOR, BUILDING STANDARDS, REGULATIONS, AND ANY OTHER ADDITIONAL INFORMATION FOR BUILDING STANDARD COMPLIANCE.

3. PURCHASE AND MAINTAIN CERTIFICATIONS OF INSURANCE WITH RESPECT TO WORKERS COMPENSATION, PUBLIC LIABILITY, AND PROPERTY DAMAGE FOR LIMITS AS REQUIRED BY LAW. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING SAFETY PRECAUTIONS IN CONNECTION WITH WORK. PROOF OF CERTIFICATE OF NECESSARY INSURANCE SHALL BE FILED WITH OWNER TO INDEMNIFY AND HOLD HARMLESS OWNER, ARCHITECT AND AGENTS THEREOF FROM DAMAGES AND LOSSES RESULTING FROM EXECUTION OF WORK.

4. DO NOT ALLOW DEBRIS TO ACCUMULATE. REMOVE AND DISPOSE OF ALL DEBRIS CAUSED BY CONSTRUCTION - LEAVING THE CONSTRUCTION SITE CLEAN. FAILURE TO DO SO COULD RESULT IN A CHARGE TO THE CONTRACTOR, WITH THE WORK COMPLETED BY OTHERS.

5. DAMAGE CAUSED BY THE CONTRACTOR TO THE BUILDING OR ITS SYSTEM(S) ARE TO BE REPAIRED IMMEDIATELY AFTER RECEIVING NOTICE. FAILURE TO DO SO COULD RESULT IN A CHARGE TO THE CONTRACTOR, WITH THE WORK TO BE COMPLETED BY OTHERS.

6. WHEN NECESSARY, PROVIDE AND INSTALL PROTECTIVE COVERING(S) FOR SURFACES THAT ARE SUBJECT TO DAMAGE OF ANY TYPE.

7. NO SPACE OTHER THAN THE CONSTRUCTION SITE SHALL BE PROVIDED FOR STORAGE, STAGING, FINISHING OR FOR AN OFFICE UNLESS COORDINATED WITH THE OWNER.

8. COORDINATE CONSTRUCTION NEEDS FOR PHONE, POWER, LIGHTING, ETC. WITH OWNER PRIOR TO CONSTRUCTION.

9. WHERE PIPES, CONDUITS, OR LOW TENSION WIRING PENETRATES A FIRE-RATED ENCLOSURE, SUCH AS WALL OR SLAB, THE SPACE AROUND SUCH PENETRATION SHALL NOT EXCEED 1/2" AND SHALL BE PACKED SOLID WITH MINERAL WOOL OR EQUAL AND THEN CLOSED OFF WITH A TIGHT FITTING ESCUTCHEON OR EQUAL ON BOTH SIDES OF THE RATED ENCLOSURE TO INSURE FULL FIRE-RATING IN COMPLIANCE WITH THE BUILDING CODE.

10. FINISH SURFACES SHALL HAVE A FLAME SPREAD RATING EQUAL TO OR BETTER THAN THAT REQUIRED BY THE BUILDING CODE.

11. BUILDING OWNER OR ARCHITECT RESERVES THE RIGHT TO REJECT ANY SUBCONTRACTOR IF IT IS THE ARCHITECT'S OPINION THAT: (1) SHOP CAPACITY, EXPERIENCE OF WORKMEN, EQUIPMENT, OR SUPPLY OF MATERIAL WILL NOT RESULT IN THE REQUIRED QUALITY AND WITHIN THE TIME OF COMPLETION. OR (2) PREVIOUS PERFORMANCES HAS BEEN UNSATISFACTORY.

SHOP DRAWINGS, SAMPLES, AND LITERATURE:

1. REVIEW, ADD REQUIRED FIELD DIMENSIONS, STAMP AND FORWARD ONE SET OF DIGITAL SHOP DRAWINGS AND TWO SETS OF SAMPLES TO ARCHITECT FOR APPROVAL.

2. PRIOR TO START OF CONSTRUCTION OF ANY ITEMS AND/OR ORDERING OF FINISH MATERIALS, SUBMIT TO ARCHITECT, WITH AN ACCOMPANYING TRANSMITTAL, ONE (1) REPRODUCIBLE DRAWING AND ONE (1) PRINT OF REQUIRED SHOP DRAWINGS, FOR THE ARCHITECT'S RECORDS. CONTACT ARCHITECT PRIOR TO INSTALLATION IF ITEM DOES NOT MATCH APPROVED SAMPLE.

3. THERE SHALL BE NO SUBSTITUTION DURING BIDDING OF MATERIALS WHERE A MANUFACTURER IS SPECIFIED. WHERE THE TERM "OR EQUAL" IS USED, ARCHITECT ALONE SHALL DETERMINE EQUALITY BASED UPON INFORMATION AND COSTS SUBMITTED BY CONTRACTOR.

4. CHANGES IN SHOP DRAWINGS FROM DESIGN OR SPECIFICATIONS INDICATED MUST BE NOTED TO ARCHITECT FOR APPROVAL. ANY ITEM CLEARLY DIFFERENT THAN DESIGN INDICATED MAY BE REJECTED IN FIELD AT SUPPLIERS COST EVEN WITH APPROVED SHOP DRAWINGS.

GENERAL NOTES:

1. ALL CONTRACTORS AND SUBCONTRACTORS SHALL VISIT THE JOB SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS BEFORE SUBMITTING BIDS AND PROCEEDING WITH ANY WORK.

2. REVIEW DOCUMENTS WITH LOCAL BUILDING OFFICIAL AND OBTAIN ALL PERMITS BEFORE START OF CONSTRUCTION. ARCHITECT AND OWNER MUST BE NOTIFIED OF DEFICIENCIES.

3. WORK SHALL CONFORM TO REQUIREMENTS OF CURRENT STATE, FEDERAL AND LOCAL BUILDING CODES AND ORDINANCES, OSHA, ADA AND OTHER APPLICABLE CODES AND GOVERNING AUTHORITY HAVING JURISDICTION.

4. THESE DRAWINGS REPRESENT VISUAL DESIGN INTENT AS EXPRESSED BY ARCHITECT. IN NO WAY ARE THEY MEANT TO DIRECT THE CONTRACTOR IN MATTERS PERTAINING TO STRUCTURAL PERFORMANCE, FRAMING, SUPPORTS, MANUFACTURER'S INSTRUCTIONS, MILLWORK CONSTRUCTION, ETC. CONTRACTOR IS FULLY RESPONSIBLE FOR STRUCTURAL INTEGRITY AND PERFORMANCE OF ALL ITEMS CALLED FOR IN DRAWINGS. CONTACT ARCHITECT WITH CONFLICTS.

5. DURING PERIOD OF CONTRACT EXECUTION, INTERFERENCE FOUND WHICH MAY PROHIBIT THE DESIGN INTENT OF THESE DOCUMENTS MUST BE REPORTED TO ARCHITECT. CONSTRUCTION WHICH IS NOT IN ACCORDANCE WITH DESIGN INTENT, OR WHICH PROCEEDED WITHOUT APPROVAL FROM ARCHITECT AND/OR BUILDING OWNER SHALL BE LIABLE TO RECONSTRUCTION AT CONTRACTOR'S EXPENSE.

6. CONTRACTOR OR SUPPLIER SHALL NOT PROCEED WITH ANY WORK THAT CHANGES THE DESIGN INTENT UNLESS HE RECEIVES THE WRITTEN AUTHORIZATION FROM THE OWNER AND/OR ARCHITECT. FAILURE TO OBTAIN SUCH AUTHORIZATION MAY INVALIDATE ANY CLAIM FOR ADDITIONAL COMPENSATION. THE DOCUMENT TO BE USED SHALL BE THE "PROPOSAL REQUEST" ISSUED BY THE ARCHITECT.

7. CONTRACTOR OR SUPPLIER SHALL NOT PROCEED WITH ANY WORK FOR WHICH HE EXPECTS ADDITIONAL COMPENSATION BEYOND THE WRITTEN CONTRACT UNLESS HE RECEIVES WRITTEN AUTHORIZATION FROM THE ARCHITECT. FAILURE TO OBTAIN SUCH AUTHORIZATION MAY INVALIDATE ANY CLAIM FOR ADDITIONAL COMPENSATION. THE DOCUMENT TO BE USED SHALL BE THE "PROPOSAL REQUEST" ISSUED BY THE ARCHITECT, AND APPROVED BY OWNER AND OWNER REPRESENTATIVE.

8. PROVIDE NON-COMBUSTIBLE BLOCKING IN WALL FOR WALL HUNG ITEMS INCLUDING, WALL HUNG OWNER PROVIDED ITEMS OR FURNITURE (NOT IN CONTRACT). COORDINATE WITH VENDOR AND SEE PLANS.

9. PROVIDE A LIST OF ALL ITEMS AND EQUIPMENT THAT WILL NOT BE INSTALLED, DELIVERED, OR FUNCTIONING BEFORE THE SCHEDULED OWNER MOVE IN DATE. LIST SHOULD ALSO INCLUDE WHEN WORK SHALL BE COMPLETED AND WHAT TEMPORARY MEASURES ARE INTENDED TO COMPENSATE FOR THE DELAYS. COSTS FOR KNOWN DELAYS SHOULD BE PART OF ORIGINAL BID AND LIST SHOULD BE PART OF CONTRACTORS BID.

10. THE GENERAL CONTRACTOR TO PROVIDE A LIST OF SUBCONTRACTORS AND SCHEDULE OF THEIR WORK INCLUDING CRITICAL DATES TO MEET FINAL COMPLETION DATE.

11. THE GENERAL CONTRACTOR TO SCHEDULE PUNCH LIST TO TAKE PLACE A MINIMUM OF 5 WORKING DAYS BEFORE SCHEDULED OWNER OCCUPANCY DATE. THIS WILL ALLOW FOR FURNITURE AND PHONE INSTALLATION. PROVIDE NOTIFICATION TO ARCHITECT AND OWNER WHEN PUNCH LIST ITEMS HAVE BEEN COMPLETED OR WHICH ITEMS REMAIN AND WHY. WORK REQUIRED AFTER OWNER MOVES IN SHALL BE COMPLETED AFTER OWNER'S WORKING HOURS AND AT NO ADDITIONAL COST. COORDINATE REQUIRED WORK WITH OWNER AND PROTECT AND/OR MOVE ANY OWNER ITEMS AND FURNITURE IF NEEDED. PUNCHLIST ITEMS MUST BE COMPLETED WITHIN 30 DAYS OF PUNCH LIST DATE.

12. THE GENERAL CONTRACTOR TO PROVIDE A PROFESSIONAL CLEANING SERVICE PRIOR TO PUNCH LIST AND OWNER FURNITURE MOVE. THIS SHALL INCLUDE CLEANING GLASS, WAXING, WASHING, POLISHING, DUSTING, VACUUMING, ETC. WORK COMPLETED AFTER PUNCH LIST WILL ALSO BE CLEANED IN SUCH A MANNER. COORDINATE WITH OWNER FOR BUILDING SERVICES THAT MAY BE USED PRIOR TO BIDDING.

13. CERTIFICATES: A "CERTIFICATE OF OCCUPANCY" SHALL BE OBTAINED PRIOR TO MOVE IN DATE AND PRESENTED TO OWNER AT TIME OF PUNCH LIST WALK THRU.

14. COORDINATE WITH OWNER TO MAKE CERTAIN THAT HOUSEKEEPING ITEMS ARE COMPLETED PRIOR TO MOVE IN. GENERAL CONTRACTOR TO HAVE A STANDBY PERSON ON SITE DURING MOVE TO PROVIDE FINAL ADJUSTMENTS OR PROBLEM SOLVING.

15. NO WORK DEFECTIVE IN WORKMANSHIP, QUALITY OR DEFICIENT IN REQUIREMENTS OF CONTRACT DOCUMENTS WILL BE ACCEPTABLE DESPITE THE ARCHITECT'S FAILURE TO DISCOVER OR POINT OUT DEFECTS OR DEFICIENCIES DURING CONSTRUCTION OR PUNCH. DEFECTIVE WORK REVEALED WITHIN THE TIME PROVIDED BY GUARANTEES AND WARRANTIES SHALL BE REPLACED BY CONTRACTOR WITH WORK CONFORMING WITH THE INTENT OF THE CONTRACT. NO PAYMENT EITHER PARTIAL OR FINAL SHALL BE CONSTRUED AS ACCEPTANCE OF DEFECTIVE WORK OR IMPROPER MATERIALS.

16. DURING COURSE OF CONSTRUCTION, DEVIATIONS FROM DRAWINGS SHALL BE INDICATED TO SCALE IN CONTRASTING INK ON THE DRAWINGS. UPON COMPLETION OF PROJECT, CONTRACTOR WILL PROVIDE ARCHITECT WITH A SET OF ORIGINAL DOCUMENTS CONSPICUOUSLY MARKED "AS-BUILT" DOCUMENTATION.

17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISTRIBUTION OF DRAWINGS TO ALL TRADES UNDER HIS JURISDICTION.

18. FIRE RESISTIVE RATINGS: ALL MATERIALS INSTALLED SHALL BE FIRE RESISTIVE AND RATED AS TESTED AND APPROVED BY UNDERWRITERS LABORATORIES, AND MUST MEET THE REQUIREMENTS OF THE US PUBLIC HEALTH SERVICES. FIRE RESISTANT RATING OF MATERIALS SHALL BE A MINIMUM OF CLASS A AND MEET ALL FIRE CODES AND NOT LESS THAN THOSE APPLICABLE IN THE BUILDING. CONTRACTOR TO NOTIFY PROJECT DESIGNER IN WRITING IF MATERIALS SPECIFIED DO NOT MEET THE REQUIREMENTS.

19. CONTRACTOR TO COORDINATE WITH AND FOLLOW APPROPRIATE PROCEDURAL REQUIREMENTS IMPOSED BY OWNER'S FINANCING MECHANISM, PER USDA RURAL DEVELOPMENT. OWNER SHALL HAVE DAILY CONSTRUCTION REPRESENTATIVE ON-SITE PER USDA RD REQUIREMENTS. CONTRACTOR TO COMMUNUCATE ALL CONSTRUCTION RELATED ISSUES WITH ARCHITECT AND OWNER DESIGNATED CONSTRUCTION REPRESENTATIVE. CONTRACTOR SHALL NOT DEVIATE FROM CONTRACT DOCUMENTS WITHOUT WRITTEN CONSENT FROM ARCHITECT AND OWNER DESIGNATED CONSTRUCTION REPRESENTATIVE. DESIGNATED CONSTRUCTION REPRESENTATIVE SHALL SERVE AS THE CONSULTING ARCHITECT FOR THE OWNER.

20. DIVISION 00 PROCEDURAL AND CONTRACTING REQUIREMENTS AND DIVISION 01 GENERAL REQUIREMENTS ARE INCLUDED IN PROJECT MANUAL.

SECTION 033000 - CAST-IN-PLACE CONCRETE

REFER TO STRUCTURAL DRAWINGS

SECTION 033543 - POLISHED CONCRETE FINISHING

PART ONE - GENERAL

1.1. SUMMARY

A. SECTION INCLUDES: PRODUCTS AND PROCEDURES FOR COLORING AND DIAMOND POLISHING CONCRETE FLOORS USING MULTI-STEP WET/DRY MECHANICAL PROCESS, AND ACCESSORIES INDICATED, SPECIFIED, OR REQUIRED TO COMPLETE POLISHING.

1.2. SUBMITTALS

A. PRODUCT DATA: MANUFACTURER'S TECHNICAL LITERATURE FOR EACH PRODUCT INDICATED, SPECIFIED, OR REQUIRED. INCLUDE MANUFACTURER'S TECHNICAL DATA, APPLICATION INSTRUCTIONS, AND RECOMMENDATIONS.

B. INSTALLER QUAILIFICATIONS: DATA FOR COMPANY, PRINCIPAL PERSONNEL, EXPERIENCE, AND TRAINING SPECIFIED IN PART 1 "QUALITY ASSURANCE" ARTICLE.

C. FIELD QUALITY CONTROL - STATIC COEFFICIENT OF FRICTION TEST REPORTS: REPORTS OF TESTING SPECIFIED IN PART 3 "FIELD QUALITY CONTROL" ARTICLE.

D. MAINTENANCE DATA: FOR INCLUSION IN MAINTENANCE MANUAL.

1. INCLUDE MANUFACTURER'S INSTRUCYIONS FOR MAINTENANCE OF INSATLLED WORK, INCLUDING METHODS AND FREQUENCY RECOMMENDEDFOR MAINTAINING OPTIMUM CONDITION UNDER ANTICIPATED USE.
2. INCLUDE PRECAUTIONS AGAINST CLEANING PRODUCTS AND METHODS WHICH MAY BE DETRIMENTAL TO FINISHES AND PERFORMANCE.

1.3. QUALITY ASSURANCE

A. POLISHER QUALIFICATIONS:

1. EXPERIENCE: COMPANY EXPERIENCED IN PERFORMING SPECIFIED WORK SIMILAR IN DESIGN, PRODUCTS, AND EXTENT TO SCOPE OF THIS PROJECT; WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE; AND WITH SUFFICIENT PRODUCTION CAPABILITY, FACILITIES, AND PERSONNEL TO PRODUCE SPECIFIED WORK.
2. SUPERVISION: MAINTAIN COMPETENT SUPERVISOR WHO IS AT PROJECT DURING TIMES SPECIFIED WORK IS IN PROGRESS, AND IS CURRENTLY CERTIFIED AS CRAFTSMAN OR MASTER CRAFTSMAN BY CPAA.
3. MANUFACTURER QUALIFICATION: APPROVED BY MANUFACTURER TO APPLY LIQUID APPLIED PRODUCTS.

B. WALKWAY AUDITOR: CERTIFIED BY NFSI TO TEST POLISHED FLOORS FOR STATIC COEFFICIENT OF FRICTION ACCORDING TO NFSI 101-A.

C. STATIC COEFFICIENTOF FRICTION: ACHIEVE NOT LESS THAN 0.6 FOR LEVEL FLOOR SURFACES AS DETERMINED BY QUALITY CONTROL TESTING ACCORDING TO NFSI 101-A.

D. FIELD MOCK-UP FOR AESTHETIC PURPOSES: BEFORE PERFORMING WORK OF THIS SECTION, PROVIDE AS MANY FIELD MOCK-UPS REQUIRED TO VERIFY SELECTIONS MADE UNDER SUBMITTALS AND TO DEMONSTRATE AESTHETICS OF POLISHING. APPROVAL DOES NOT CONSTITUTE APPROVAL OF DEVIATIONS FROM CONTRACT DOCUMENTS, UNLWSS SUCH DEVIATIONS ARE SPECIFICALLY APPROVED BY ARCHITECT IN WRITING.

1. GRIND, HONE, AND POLISH 12 FEET SQUARE FLOOR AREA FOR EACH FINISH APPROVED UNDER SAMPLE SUBMITTALS; INCLUDE EDGES AND JOINTS.
2. USE SAME PERSONNEL, INCLUDING SUPERVISORS, WHICH WILL PERFORM WORK.
3. INSTALL PRODUCTS AND MATERIALS ACCORDING TO SPECIFIED REQUIREMENTS.
4. WORK SHALL BE REPRESENTATIVE OF THOSE TO BE EXPECTED FOR WORK.
5. FINISH VARIOUS COMPONENTS TO SHOW MAXIMUM VARIATION THAT WILL EXIST IN WORK.
6. APPROVAL IS FOR FOLLOWING AESTHETIC QUALITIES:
   a. COMPLIANCE WITH APPROVED SUBMITTALS
   b. UNIFORMITY OF EXPOSED AGGREGATE
   c. UNIFORMITY OF SHEEN
   d. UNIFORMITY OF COLOR
7. OBTAIN ARCHITECT'S APPROVAL BEFORE STARTING WORK ON PROJECT.
8. MAINTAIN FIELD MOCK-UPS DURING CONSTRUCTION IN AN UNDISTURBED CONDITION AS A STANDARD FOR JUDGING COMPLETED WORK.
9. DO NOT DEMOLISH, ALTER, OR REMOVE FIELD MOCK-UPS UNTIL ACCEPTABLE TO OWNER AND ARCHITECT.

1.4. FIELD CONDITIONS
A. DAMAGE AND STAIN PREVENTION: TAKE PRECAUTIONS TO PREVENT DAMAGE AND STAINING OF CONCRETE SURFACES TO BE POLISHED.

1. PROHIBIT VEHICLE PARKING OVER CONCRETE SURFACES TO BE POLISHED.
2. PROHIBIT PIPE CUTTING OPERATIONS OVER CONCRETE SURFACES TO BE POLISHED.
3. PROHIBIT STORAGE OF ANY ITEMS OVER CONCRETE SURFACES TO BE POLISHED FOR NOT LESS THAN 28 DAYS AFTER CONCRETE PLACEMENT.
4. PROHIBIT FERROUS METALS STORAGE OVER CONCRETE SURFACES TO BE POLISHED.
5. PROTECT FROM PETROLEUM, OIL, HYDRAULIC FLUID, OR OTHER LIQUID DRIPPING FROM EQUIPMENT WORKING OVER CONCRETE SURFACES TO BE POLISHED.
6. PROTECT FROM ACIDS AND ACIDIC DETERGENTS CONTACTING CONCRETE SURFACES TO BE POLISHED.
7. PROTECT FROM PAINTING ADDITIVES OVER CONCRETE SURFACES TO BE POLISHED.

B. ENVIRONMENTAL LIMITATIONS: COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR SUBSTRATE TEMPERATURE, AMBIENT TEMPERATURE, MOISTURE, VENTILATION, AND OTHER CONDITIONS AFFECTING LIQUID APPLIED PRODUCT APPLICATION.

PART TWO - PRODUCTS

2.1. LIQUID APPLIED PRODUCTS
A. LIQUID DENSIFIER: ODORLESS, NON-HAZARDOUS, SILICATE THAT PENETRATES CONCRETE TO REACT WITH FREE LIME AND CALCIUM HYDROXIDE TO PRODUCE PERMANENT CHEMICAL REACTION THAT HARDENS AND DENSIFIES CONCRETE SURFACE.

B. DYES: EXTREMELY FINE MOLECULES OF COLOR SOLVENT OR DYE FO MIXING WITH WATER OR ACETONE THAT IS DESIGNED TO PENETRATE AND COLOR CONCRETE SURFACE.

C. POLISH GUARD: NON-FILM FORMING, STAIN RESISTANT, FOOD RESISTANT, CHEMICAL STAIN RESISTANT, IMPREGNATING SEALANT DESIGNED TO BE USED ON CONCRETE SURFACES PREVIOUSLY DENSIFIED.

2.2. ACCESSORIES
A. PATCHING COMPOUND: COM[OUND COMPOSED OF 40 PERCENT PORTLAND CEMENT, 45 PERCENT LIMESTONE, AND 15 PERCENT COPOLYMER, WHEN MIXED WITH DUST SALVAGED FROM GRINDING PROCESS FORMS A PASTE THAT HARDENS WHEN SURFACE IMPERFECTIONS ARE FILLED.

B. GROUT MATERIAL: CLEAR MODIFIED SILICATE SEALANT, CONTAINING NO PORE CLOGGING LATEX, WHEN MIXED WITH DUST SALVAGED FROM GRINDING PROCESS FORMS A PASTE THAT REACTS WITH CALCIUM HYDROXIDE IN CONCRETE THAT HARDENS WHEN SURFACE IMPERFECTIONS ARE FILLED.

C. PROTECTIVE COVER: NON-WOVEN, PUNCTURE AND TEAR RESISTANT, POLYPROPYLENE FIBERS LAMINATED WITH A MULTI-PLY, TEXTURED MEMBRANE, NOT LESS THAN 18 MILS IN THICKNESS.

2.3. POLISHING EQUIPMENT
A. FIELD GRINDING AND POLISHING EQUIPMENT:

1. VARIABLE SPEED, MULTIPLE HEAD, COUNTER-ROTATING, WALK-BEHIND MACHINE WITH NOT LESS THAN 600 POUNDS OF DOWN PRESURE ON GRINDING OR DIAMOND POLISHING PADS.
2. IF DRY GRINDING, HONING, OR POLISHING, USE DUST EXTRACTION EQUIPMENT WITH FLOW RATE SUITABLE FOR DUST GENERATED, WITH SQUEEGEE ATTACHMENTS.

B. EDGE GRINDING AND POLISHING EQUIPMENT: HAND-HELD OR WALK-BEHIND MACHINES WHICH PRODUCES SAME RESULTS, WITHOUT NOTICEABLE DIFFERENCES, AS FIELD GRINDING AND POLISHING EQUIPMENT.

C. BURNISHING EQUIPMENT: HIGH SPEED WALK-BEHIND OR RIDE-ON MACHINES CAPABLE OF GENERATING 1000 TO 2000 REVOLUTIONS PER MINUTE AND WITH SUFFICIENT HEAD PRESSURE OF NOT LESS THAN 20 POUNDS TO RAISE FLOOR TEMPERATURE BY 20 DEGREES F.

D. METAL BONDED PADS: GRINDING PADS WITH EMBEDDED INDUSTRIAL GRADE DIAMONDS OF VARYING GRITS FABRICATED FOR MOUNTING ON EQUIPMENT.

E. RESIN BONDED PADS: POLISHING PADS WITH EMBEDDED INDUSTRIAL GRADE DIAMONDS OF VARYING GRITS FABRICATED FOR MOUNTING ON EQUIPMENT.

F. BURNISHING PADS: MAINTENANCE PADS FOR USE WITH HIGH SPEED BURNISHING EQUIPMENT.

PART THREE - EXECUTION

3.1. EXAMINATION
A. ACCEPTANCE OF SURFACES AND CONDITIONS:

1. EXAMINE SUBSTRATES TO BE POLISHED FOR COMPLIANCE WITH REQUIREMENTS AND OTHER CONDITIONS AFFECTING PERFORMANCE.
2. PROCCED ONLY WHEN UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN A MANNER COMPLYING WITH CONTRACT DOCUMENTS.
3. STARTING WORK WITHIN PARTICULAR AREA WILL BE CONSTRUED AS ACCEPTANCE OF SURFACE CONDITIONS.

3.2. PREPARATION
A. CLEANING NEW CONCRETE SURFACES:

1. PREPARE AND CLEAN CONCRETE SURFACES.
2. PROVIDE SOUND CONCRETE SURFACES FREE OF LAITANCE, GLAZE, EFFLORESCENCE, CURING COMPOUNDS, FORM-RELEASE AGENTS, DUST, DIRT, GREASE, OIL, PAINT SPLATTER, AND OTHER CONTAMINANTS INCOMPATIBLE WITH LIQUID APPLIED PRODUCTS AND POLISHING.

3.3. VAPOR TESTING CONCRETE FLOORS
A. ALKALINITY:

1. TEST METHOD: MEASURE PH ACCORDING TO METHOD INDICATED IN ASTM F 710
2. ACCEPTABLE RESULTS: PH BETWEEN 8 AND 10.

B. MOISTURE VAPOR TRANSMISSION RATE:

1. TEST METHOD: PERFORM ANHYDROUS CALCIUM CHLORIDE TEST ACCORDING TO ASTM F 1869.
2. ACCEPTABLE RESULTS: NOT MORE THAN 5 POUNDS PER 1000 SQUARE FEET IN 24 HOURS.

C. RELATIVE HUMIDITY:

1. TEST METHOD: PERFORM RELATIVE HUMIDITY TEST USING IN SITU PROBES ACCORDING TO ASTM F 2170.
2. ACCEPTABLE RESULTS: NOT MORE THAN 75 PERCENT.

3.4. COLORING CONCRETE FLOORS
A. DYE OR PIGMENTED MICROSTAIN APPLICATION:

1. APPLY SOLUTION BY METHODS AND TECHNIQUES REQUIRED BY MANUFACTURER TO PRODUCE FINISH MATCHING APPROVED MOCK-UPS.
2. MAINTAIN WET EDGE, WORKING NEWLY APPLIED SOLUTIPN INTO EDGES OF ADJACENT WET EDGES OF PREVIOUSLY TREATED SURFACES.
3. MAINTAIN CONSISTENT SATURATION THROUGHOUT APPLICATION.
4. AVOID SPLASHING, DRIPPING, OR PUDDLING OF SOLUTION ON DJACENT SUBSTRATES.
5. WHEN COLOR MATCHES APPROVED MOCK-UPS, NEUTRALIZE AS REQUIRED BY MANUFACTURER.

3.5. POLISHING CONCRETE FLOORS
A. SEQUENCE OF POLISHING: PERFORM POLISHING AFTER PARTITION STUDS ARE ERECTED, BUT BEFORE GYPSUM BOARD IS INSTALLED.

SECTION 033543 - POLISHED CONCRETE FINISHING - CONT.

B. INITIAL GRINDING:

1. USE GRINDING EQUIPMENT WITH METAL BONDED GRINDING PADS.
2. BEGIN GRINDING IN ONE DIRECTION USING SUFFICIENT SIZE GRIT PAD.
3. MAKE SEQUENTIAL PASSES WITH EACH PASS PERPENDICULAR TO PREVIOUS PASS USING FINER GRIT PAD WITH EACH PASS, UP TO 150 GRIT.
4. ACHIEVE MAXIMUM REFINEMENT WITH EACH PASS BEFORE PROCEEDING TO FINER GRIT PADS.
5. VACUUM FLOOR USING SQUEEGEE VACUUM ATTACHMENT AFTER EACH PASS.
6. CONTINUE GRINDING UNTIL AGGREGATE EXPOSURE MATCHES APPROVED FIELD MOCK-UPS.

C. TREATING SURFACE IMPERFECTIONS.

1. MIX PATCHING COMPOUND AND GROUT MATERIAL WITH DUST CREATED BY GRINDING OPERATIONS TO MATCH COLOR OF ADJACENT CONCRETE SURFACE.
2. FILL SURFACE IMPERFECTIONS INCLUDING, BUT NOT LIMITED TO, HOLES, SURFACE DAMAGE, SMALL AND MICRO CRACKS, AIR HOLES, POP-OUTS, AND VOIDS.
3. WORK COMPOUND AND TREATMENT UNTIL COLOR DIFFERENCES BETWEEN CONCRETE SURFACE AND FIELD SURFACE IMPERFECTIONS ARE NOT REASONABLY NOTICEABLE WHEN VIEWED FRFOM 10 FEET AWAY UNDER LIGHTING CONDITIONS THAT WILL BE PRESENT AFTER CONSTRUCTION.

D. LIQUID DENSIFIER APPLICATION: APPLY UNDILUTED TO POINT OF REJECTION, REMOVE EXCESS LIQUID, AND ALLOWTO CURE ACCORDING TO MANUFACTURERS INSTRUCTIONS.

E. GROUT GRINDING:

1. USE GRINDING EQUIPMENT AND APPROPRIATE GRIT GRINDING PADS.
2. WHIE APPLYING FRESH GROUT MATERIAL PRIOR TO, GRIND CONCRETE IN DIRECTION PERPENDICULAR TO INITIAL GRINDING TO REMOVE SCRATCHES.
3. VACUUM FLOOR USING SQUEEGEE VACUUM ATTACHMENT AFTER EACH PASS.

F. HONING

1. USE GRINDING EQUIPMENT WITH RESIN BONDED GRINDING PADS.
2. GRIND CONCRETE IN ONE DIRECTION STARTING WITH 50 GRIT PAD AND MAKE AS MANY SEQUENTIAL PASSES REQUIRED TO REMOVE SCRATCHES, EACH PASS PERPINDICULAR TO PREVIOUS PASS, UP TO 400 GRIT PAD REACHING MAXIMUM REFINEMENT WITH EACH PASS BEFORE PROCEEDING TO FINER GRIT PADS.
3. AUTO SCRUB OR VACUUM FLOOR USING SQUEEGEE VACUUM ATTACHMENT AFTER EACH PASS.

G. POLISHING

1. USE POLISHING EQUIPMENT WITH RESIN BONDED POLISHING AND BURNISHING PADS.
2. BEGIN POLISHING IN ONE DIRECTION STARTING WITH 800 GRIT PAD.
3. MAKE SEQUENTIAL PASSES WITH EACH PASS PERPENDICULAR TO PREVIOUS PASS USING FINER GRIT PAD WITH EACH PASS, UP TO 1500 GRIT.
4. ACHIEVE MAXIMUM REFINEMENT WITH EACH PASS BEFORE PROCEEDING TO FINER GRIT PADS.
5. AUTO SCRUB OR VACUUM FLOOR USING SQUEEGEE VACUUM ATTACHMENT AFTER EACH PASS.
6. CONTINUE POLISHING UNTIL GLOSS APPEARANCE, AS MEASURED ACORDING TO ASTM E 430, MATCHES APPROVED FIELD MOCK-UPS.

H. POLISH GUARD: UNIFORMLY APPLY AND REMOVE EXCESSIVE LIQUID ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

I. FINAL POLISH: USING BURNISHING EQUIPMENT AND FINEST GRIT BURNISHING PADS, BURNISH TO UNIFORM SHEEN MATCHING APPROVED MOCK-UP.

J. FINAL POLISHED CONCRETE FLOOR FINISH:

1. CLASS A - CREAM FINISH: POLISH PORTLAND CEMENT PASTE RESULTING IN LITTLE OR NO AGGREGATE EXPOSURE.
2. LEVEL 3 - HIGH GLOSS APPEARANCE:
   a. PROCEDURE: NOT LESS THAN 6 STEPS WITH FULL REFINEMENT OF EACH DIAMOND PAD UP TO 1500 GRIT RESIN BONDED PAD WITH ONE APPLICATION OF DENSIFIER.
   b. GLOSS READING: NOT LESS THAN 60 ACCORDING TO ASTM E 430 BEFORE POLISH GUARD APPLICATION.

3.6. FIELD QUALITY CONTROL
A. FIELD TESTING: ENGAGE A QULAIFIED WAKWAY AUDITOR TO PERFORM FIELD TESTING ACCORDING TO NFSI 101-A TO DETERMINE IF POLISHED CONCRETE FLOOR FINISH COMPLIES WITH SPECIFIED STATIC COEFFICIENT OF FRICTION.

3.7. CLOSEOUT ACTIVITIES
A. MAINTENANCE TRAINING: CPAA MASTER CRAFTSMAN SHALL TRAIN OWNER'S DESIGNATED PERSONNEL IN PROPER PROCEDURES FOR MAINTAINING POLISHD CONCRETE FLOR.

3.8. PROTECTION
A. COVERING: AFTER COMPLETION OF POLISHING, PROTECT POLISHED FLOORS FROM SUBSEQUENT CONSTRUCTION ACTIVITIES WITH PROTECTIVE COVERING.

NOTE: TO BE PERFORMED AFTER BEARING WALLS ARE PLACED. CONTRACTOR TO PROTECT ACCORDINGLY THROUGHOUT CONSTRUCTION. CONTRACTOR TO SCHEDULE A PRECONSTRUCTION MEETING WITH SUB-CONTRACTOR, ARCHITECT, AND OWNER TO DISCUSS COORDINATION OF THIS WORK WITH OTHER TRADES.

SECTION 042200 - CONCRETE MASONRY UNIT

PART ONE - GENERAL

1.1. SECTION INCLUDES
A. CONCRETE MASONRY UNITS (CMU'S)
B. MORTAR AND GROUT
C. STEEL REINFORCING BARS
D. MASONRY JOINT REINFORCEMENT

1.2. SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
B. SHOP DRAWINGS: FOR REINFORCING STEEL. DETAIL BENDING AND PLACEMENT OF UNIT MASONRY REINFORCING BARS. COMPLY WITH ACI 315, DETAILS AND DETAILING OF CONCRETE REINFORCEMENT.
C. MATERIAL CERTIFICATES: FOR EACH TYPE AND SIZE OF PRODUCT INDICATED. FOR MASONRY UNITS INCLUDE MATERIAL TEST REPORTS SUBSTANTIATING COMPLIANCE WITH REQUIREMENTS.
D. MIX DESIGNS: FOR EACH TYPE OF GROUT AND MORTAR. INCLUDE DESCRIPTION OF TYPE AND PROPORTIONS OF INGREDIENTS.

1.3. QUALITY ASSURANCE
A. MASONRY STANDARD: COMPLY WITH ACI 530.1/ASCE 6/TMS602 UNLESS MODIFIED BY REQUIREMENTS IN THE CONTRACT DOCUMENTS.

1.4. PROJECT CONDITIONS
A. STAIN PREVENTION: PREVENT GROUT, MORTAR, AND SOIL FROM STAINING THE FAC OF MASONRY TO BE LEFT EXPOSED OR PAINTED. IMMEDIATELY REMOVE GROUT, MORTAR AND SOIL THAT COME IN CONTACT WITH SUCH MASONRY.
1. PROTECT BASE OF WALLS FROM RAIN-SPLASHED MUD AND FROM MORTAR SPLATTER BY SPREADING COVERINGS ON THE GROUND AND OVER THE WALL SURFACE.
2. PROTECT SILLS, LEDGES, AND PROJECTIONS FROM MORTAR DROPPINGS.
3. PROTECT SURFACES OF WINDOW AND DOOR FRAMES, AS WELL AS SIMILAR PRODUCTS WITH PAINTED AND INTEGRAL FINISHES, FROM MORTAR DROPPINGS.

C. 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 FREEZING CONDITIONS. COMPLY WITH COLD-WEATHER CONSTRUCTION REQUIREMENTS CONTAINED IN ACI 530.1/ASCE 6/TMS 602.

D. HOT-WEATHER REQUIREMENTS: COMPLY WITH HOT-WEATHER CONSTRUCTION REQUIREMENTS CONTAINED IN ACI 530.1/ASCE 6/TMS 602.

PART TWO - PRODUCTS

2.1. CONCRETE MASONRY UNITS
A. SHAPES: PROVIDE SHAPES INDICATED AND FOR LINTELS, JAMBS, SASHES, MOVEMENT JOINTS, HEADERS, BONDING, AND OTHER SPECIAL CONDITIONS.

B. CMU'S: ASTM C 90

1. UNIT COMPRESSIVE STRENGTH: PROVIDE UNITS WITH MINIMUM AVERAGE NET-AREA COMPRESSIVE STRENGTH OF 2150 PSI.
2. DENSITY CLASSIFICATION: NORMAL WEIGHT.

2.2. MASONRY LINTELS
A. MASONRY LINTELS: PREFABRICATED OR BUILY-IN-PLACE MASONRY LINTELS MDE FROM BOND BEAM CMU'S WITH REINFORCING BARS PLACED AS INDICATED AND FILLED WITH COARSE GROUT.

2.3. MORTAR AND GROUT MATERIALS
A. PORTLAND CEMENT-LIME MIX: PACKAGED BLEND OF PORTLAND CEMENT AND HYDRATED LIME CONTAINING NO OTHER INGREDIENTS.

B. MORTAR CEMENT: ASTM C 1329

C. AGGREGATE FOR MORTAR: ASTM C 144

D. AGGREGATE FOR GROUT: ASTM C 404

E. WATER: POTABLE

2.4. REINFORCEMENT
A. UNCOATED REINFORCING BARS: ASTM 615/A 615M OR ASTM A 996/A 996M, GRADE 60.

B. MASONRY JOINT REINFORCEMENT, GENERAL: ASTM A 951/A 951M

1. INTERIOR WALLS: MILL-GALVANIZED, CARBON STEEL.
2. WIRE SIZE FOR SIDE RODS: 0.148-INCH DIAMETER.
3. WIRE SIZE FOR CROSS RODS: 0.148-INCH DIAMETER.
4. SPACING OF CROSS RODS, TABS, AND CROSS TIES: NOT MORE THAN 16 INCHES O.C.
5. PROVIDE IN LENGTHS OF NOT LESS THAN 10 FEET, WITH PREFABRICATED CORNER AND TEE UNITS.

C. MASONRY JOINT REINFORCEMENT FOR SINGLE-WYTHE MASONRY: TRUSS TYPE WITH SINGLE PAIR OF SIDE RODS.

2.5. TIES AND ANCHORS
A. PARTITION TOP ANCHORS: 0.105-INCH-THICK METAL PLATE WITH 3/8-INCH-DIAMETER METAL ROD 6 INCHES LONG WELDED TO PLATE AND WITH CLOSED-END PLASTIC TUBE FITTED OVER ROD THAT ALLOWS ROD TO MOVE IN AND OUT OF TUBE. FABRICATE FROM STEEL, HOT-DIP GALVANIZED AFTER FABRICATION.

2.6. MISCELLANEOUS MASONRY ACCESSORIES
A. COMPRESSIBLE FILLER: PREMOLDED FILLER STRIPS COMPLYING WITH ASTM D 1056, GRADE 2A1; COMPRESSIBLE UP TO 35 PERCENT; FORMULATED FROM NEOPRENE OR URETHANE.

B. PREFORMED CONTROL-JOINT GASKETS: MADE FROM STYRENE-BUTADIENE-RUBBER COMPOUND, COMPLYING WITH ASTM D 2000, DESIGNATION M2AA-805 AND DESIGNED TO FIT STANDARD SASH BLOCK AND TO MAINTAIN LATERAL STABILITY IN MASONRY WALL; SIZE AND CONFIGURATION AS INDICATED.

C. REINFORCING BAR POSITIONERS: WIRE UNITS DESIGNED TO FIT INTO MORTAR BED JOINTS SPANNING MASONRY UNIT CELLS AND HOLD REINFORCING BARS IN CENTER OF CELLS. UNITS ARE FORMED FROM 0.148-INCH STEEL WIRE, HOT-DIP GALVANIZED AFTER FABRICATION. PROVIDE UNITS DESIGNED FOR NUMBER OF BARS INDICATED.

SECTION 042200 - CONCRETE MASONRY UNIT - CONT.

2.7. MASONRY CLEANERS
A. PROPRIETARY BUFFERED ACIDIC CLEANER: MANUFACTURER'S STANDARD-STRENGTH CLEANER DESIGNED FOR REMOVING MORTAR/GROUT STAINS, EFFLORESCENCE, AND OTHER NEW CONSTRUCTION STAINS FROM NEW MASONRY WITHOUT DISCOLORING OR DAMAGING MASONRY SURFACES. USE PRODUCT EXPRESSLY APPROVED FOR INTENDED USE BY CLEANER MANUFACTURER AND MANUFACTURER OF MASONRY UNITS BEING CLEANED.

1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
   a: DIEDRICH TECHNOLOGIES, INC.
   b: PROSOCO, INC

2.8. MORTAR AND GROUT MIXES
A. GENERAL: DO NOT USE ADMIXTURES, INCLUDING PIGMENTS, AIR-ENTRAINING AGENTS, ACCELERATORS, RETARDERS, WATER-REPELLANT AGENTS, ANTIFREEZE COMPOUNDS, OR OTHER ADMIXTURES UNLESS OTHERWISE INDICATED.

1. DO NOT USE CALCIUM CHLORIDE IN MORTAR OR GROUT.

B. MORTAR FOR UNIT MASONRY: COMPLY WITH ASTM C 270, PROPERTY SPECIFICATION. PROVIDE THE FOLLOWING TYPES OF MORTAR FOR APPLICATIONS STATED UNLESS ANOTHER TYPE IS INDICATED.

1. FOR REINFORCED MASONRY, USE TYPE S
2. FOR INTERIOR NON-LOAD-BEARING PARTITIONS; AND FOR OTHER APPLICATIONS WHERE ANOTHER TYPE IS NOT INDICATED, USE TYPE N.

C. GROUT FOR UNIT MASONRY: COMPLY WITH ASTM C 476.

1. USE GROUT OF TYPE INDICATED OR, IF NOT OTHERWISE INDICATED, OF TYPE (FINE OR COARSE) THAT WILL COMPLY WITH TABLE 1.15.1 IN ACI 530.1/ASCE 6/TMS 602 FOR DIMENSIONS OF GROUT SPACES AND POUR HEIGHT.
2. PROPORTION GROUT IN ACCORDANCE WITH ASTM C 476, TABLE 1 OR PARAGRAPH 4.2.2 FOR SPECIFIED 28-DAY COMPRESSIVE STRENGTH INDICATED, BUT NOT LESS THAN 2000 PSI.
3. PROVIDE GROUT WITH A SLUMP OF 8 TO 11 INCHES AS MEASURED ACCORDING TO ASTM C 143/C 143M.

PART THREE - EXECUTION

3.1. TOLERANCES
A. DIMENSIONS AND LOCATIONS OF ELEMENTS:

1. FOR DIMENSIONS IN CROSS SESTION OR ELEVATION DO NOT VARY BY MORE THAM PLUS 1/2 INCH OR MINUS 1/4 INCH.
2. FOR LOCATION OF ELEMENTS IN PLAN DO NOT VARY FROM THAT INDICATED BY MORE THAN PLUS OR MINUS 1/2 INCH.
3. FOR LOCATION OF ELEMENTS IN ELEVATION DO NOT VARY FROM THAT INDICATED BY MORE THAN PLUS OR MINUS 1/4 INCH IN A STORY HEIGHT OR 1/2 INCH TOTAL.

B. LINES AND LEVELS:

1. FOR BED JOINTS AND TOP SURFACES OF BEARING WALLS DO NOT VARY FROM LEVEL BY MORE THAN 1/4 INCH IN 10 FEET, OR 1/2 INCH MAXIMUM.
2. FOR CONSPICUOUS HORIZONTAL LINES, SUCH AS LINTELS, SILLS, PARAPETS, AND REVEALS, DO NOT VARY FROM LEVEL BY MORE THAN 1/8 INCH IN 10 FEET, 1/4 INCH IN 20 FEET, OR 1/2 INCH MAXIMUM.
3. FOR VERTICAL LINES AND SURFACES DO NOT VARY FROM PLUMB BY MORE THAN 1/4 INCH IN 10 FEET, 3/8 INCH IN 20 FEET, OR 1/2 INCH MAXIMUM.
4. FOR CONSPICUOUS VERTICAL LINES, SUCH AS EXTERNAL CORNERS, DOOR JAMBS, REVEALS, AND EXPANSION AND CONTROL JOINTS, DO NOT VARY FROM PLUMB BY MORE THAN 1/8 INCH IN 10 FEET, 1/4 INCH IN 20 FEET, OR 1/2 INCH MAXIMUM.

C. JOINTS:

1. FOR BED JOINTS, DO NOT VARY FROM THICKNESS INDICATED BY MORE THN PLUS OR MINUS 1/8 INCH, WITH MAXIMUM THICKNESS LIMITED TO 1/2 INCH.
2. FOR HEAD AND COLLAR JOINTS, DO NOT VARY FROM THICKNESS INDICATED BY MORE THAN PLUS 3/8 INCH OR MINUS 1/4 INCH.
3. FOR EXPOSED HEAD JOINTS, DO NOT VARY FROM THICKNESS INDICATED BY MORE THAN PLUS OR MINUS 1/8 INCH.

3.2. LAYING MASONRY WALLS
A. LAY OUT WALLS IN ADVANCE FOR ACCURATE SPACING OF SURFACE BOND PATTERNS ITH UNIFORM JOINT THICKNESSES AND FOR ACCURATE LOCATION OF OPENINGS, MOVEMENT-TYPE JOINTS, RETURNS AND OFFSETS. AVOID USING LESS-THAN-HALF-SIZE UNITS, PARTCULARLY AT CORNERS, JAMBS, AND WHERE POSSIBLE, AT OTHER LOCATIONS.

B. USE FULL-SIZE UNITS WITHOUT CUTTING IF POSSIBLE. IF CUTTING IS REQUIRED TO PROVIDE CONTINUOUS PATTERN OR TO FIT ADJOINING CONSTRUCTION, CUT UNITS WITH MOTOR-DRIVEN SAWS; PRVIDE CLEAN, SHARP, UNCHIPPED EDGES. ALLOW UNITS TO DRY BEFORE LAYING UNLESS WETTING OF UNITS IS SPECIFIED. INSTALL CUT UNITS WITH CUT SURFACES AND, WHERE POSSIBLE, CUT EDGES CONCEALED.

C. BOND PATTERN FOR EXPOSED MASONRY: UNLESS OTHERWISE INDICATED, LAY EXPOSED MASONRY IN RUNNING BOND; DO NOT USE UNITS WITH LESS THAN NOMINAL 4-INCH HORIZONTAL FACE DIMENSIONS AT CORNER OR JAMBS.

D. FILL CORES IN HOLLOW CMU'S WITH GROUT 24 INCHES UNDER BEAMS, LINTELS, AND SIMILAR ITEMS UNLESS OTHERWISE INDICATED.

3.3. MORTAR BEDDING AND JOINTING
A. LAY HOLLOW CMU'S AS FOLLOWS:

1. WITH FACE SHELLS FULLY BEDDED IN MORTAR AND WITH HEAD JOINTS OF DEPTH EQUAL TO BED JOINTS.

B. TOOL EXPOSED JOINTS SLIGHTLY CONCAVE WHEN THUMBPRINT HARD, USING A JOINTER LARGER THAN JOINT THICKNESS UNLESS OTHERWISE INDICATED.

3.4. MASONRY JOINT REINFORCMENT
A. GENERAL: INSTALL ENTIRE LENGTH OF LONGITUDINAL SIDE RODS IN MORTAR WITH MINIMUM COVER OF 5/8 INCH ON EXTERIOR SIDE OF WALLS, 1/2 INCH ELSEWHERE. LAP REINFORCEMENT A MINIMUM OF 6 INCHES.

1. SPACE REINFORCEMENT NOT MORE THAN 16 INCHES O.C.
2. SPACE REINFORCEMENTNOT MORE THAN 8 INCHES ABOVE AND BELOW WALL OPENINGS AND EXTENDING 12 INCHES BEYOND OPENINGS IN ADDITION TO CONTINUOUS REINFORCEMENT.

B. INTERRUPT JOINT REINFORCEMENT AT CONTROL AND EXPANSION JOINTS UNLESS OTHERWISE INDICATED.

C. PROVIDE CONTINUITY AT CORNERS USING PREFABRICATED L-SHAPED UNITS.

3.5. CONTROL AND EXPANSION JOINTS
A. GENERAL: INSTALL CONTROL AND EXPANSION JOINT MATERIALS IN UNIT MASONRY AS MASONRY PROGRESSES. DO NOT ALLOW MATERIALS TO SPAN CONTROL AND EXPANSION JOINTS WITHOUT PROVISION TO ALLOW FOR IN-PLANE WALL OR PARTITION MOVEMENT.

B. FORM CONTROL JOINTS IN CONCRETE MASONRY USING ONE OF THE FOLLOWING METHODS:

1. FIT BOND-BREAKER STRIPS INTO HOLLOW CONTOUR IN ENDS OF CMU'S ON ONE SIDE OF CONTROL JOINT. FILL RESULTANT CORE WITH GROUT AND RAKE OUT JOINTS IN EXPOSED FACES FOR APPLICATION OF SEALANT.
2. INSTALL PREFORMED CONTROL-JOINT GASKETS DESIGNED TO FIT STANDARD SASH BLOCK.
3. INSTALL INTERLOCKING UNITS DESIGNED FOR CONTROL JOINTS. INSTALL BOND-BREAKER STRIPS AT JOINT. KEEP HEAD JOINTS FREE AND CLEAR OF MORTAR OR RAKE OUT JOINT FOR APPLICATION OF SEALANT.
4. INSTALL TEMPORARY FOAM-PLASTIC FILLER IN HEAD JOINTS AND REMOVE FILLER WHEN UNIT MASONRY IS COMPLETE FOR APPLICATION OF SEALANT.

3.6. LINTELS
A. PROVIDE MASONRY LINTELS WHERE SHOWN AND WHERE OPENINGS OF MORE THAN 16 INCHES FOR BLOCK-SIZE UNITS ARE SHOWN WITHOUT STRUCTURAL STEEL OR OTHER SUPPORTING LINTELS.

B. PROVIDE MINIMUM BEARING OF 8 INCHES AT EACH JAMB UNLESS OTHERWISE INDICATED.

3.7. REPAIRING, POINTING, AND CLEANING
A. IN-PROGRESS CLEANING: CLEAN UNIT MASONRY AS WORK PROGRESSES BY DRY BRUSHING TO REMOVE MORTAR FINS AND SMEARS BEFORE TOOLING JOINTS.

B. FINAL CLEANING: AFTER MORTAR IS THOROUGHLY SET AND CURED, CLEAN EXPOSED MASONRY AS FOLLLOWS:

1. TEST CLEANING METHODS ON AREA TO BE DETERMINED BY ARCHITECT.

2. CLEAN CONCRETE MASONRY BY CLEANING METHOD INDICATED IN NCMA TEX 8-2A APPLICABLE TO TYPE OF STAIN ON EXPOSED SURFACES.

SECTION 044313.16 - ADHERED STONE MASONRY VENEER

PART ONE - GENERAL

1.1. SECTION INCLUDES
A. STONE MASONRY ADHERED TO WOOD FRAMING AND SHEATHING

1.2 PREINSTALLATION MEETINGS
A. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

1.3. SUBMITTALS
A. PRODUCT DATA: FOR EACH VARIETY OF STONE, STONE ACCESSORY, AND MANUFACTURED PRODUCT.
B. SAMPLES FOR VERIFICATION:
1. FOR EACH STONE TYPE INDICATED. INCLUDE AT LEAST TWO SAMPLES IN EACH SET AND SHOW THE FULL RANGE OF COLOR AND OTHER VISUAL CHARACTERISTICS IN COMPLETED WORK.
C. QUALIFICATION DATA: FOR INSTALLER.

1.4 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: A QUALIFIED INSTALLER WHO EMPLOYS EXPERIENCED STONEMASONS AND STONE FITTERS.
B. MOCKUPS: BUILD MOCKUPS TO DEMONSTRATE AESTHETIC EFFECTS AND TO SET QUALITY STANDARDS FOR MATERIALS AND EXECUTION.
1. BUILD MOCKUP OF TYPPICAL WALL AREA AS SHOWN ON DRAWINGS.
2. BUILD MOCKUPS FOR TYPICAL EXTERIOR WALL SIN SIZES APPROXIMATELY. 48 INCHES LONG BY 48 INCHES HIGH BY FULL THICKNESS, INCLUDING FACE AND BACKUP WYTHES AND ACCESSORIES.
3. PROTECT ACCEPTED MOCKUPS FROM THE ELEMENTS WITH WEATHER-RESISTANT MEMBRANE.
4. APPROVAL OF MOCKUPS DOES NOT CONSTITUTE APPROVAL OF DEVIATIONS FORM THE CONTRACT DOCUMENTS CONTAINED IN MOCKUPS UNLESS ARCHITECT SPECIFICALLY APPROVES SUCH DEVIATIONS IN WRITING.
5. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, APPROVED MOCKUPS MAY BECOME PART OF THE COMPLETED WORK IF UNDISTURBED AT TIME OF SUBSTANTIAL COMPLETION.

1.5. FIELD CONDITIONS
A. PROTECTION OF STONE MASONRY: DURING CONSTRUCTION, COVER TOPS OF WALLS, PROJECTIONS, AND SILLS WITH WATERPROOF SHEETING AT END OF EACH DAYS WORK. COVER PARTIALLY COMPLETED STONE MASONRY WHEN CONSTRUCTION IS NOT IN PROGRESS.
1. EXTEND COVER A MINMUM OF 24 INCHES DOWN BOTH SIDES AND HOLD COVERS SECURELY IN PLACE.

B. STAIN PREVENTION: IMMEDIATELY REMOVE MORTAR AND SOIL TO PREVENT THEM FROM STAINING STONE MASONRY FACE.
1. PROTECT BASE OF WALLS FROM RAIN-SPLASHED MUD AND MORTAR SPLATTER USING COVERINGS SPREAD ON THE GROUND AND OVER THE WALL SURFACE.
2. PROTECT SILLS, LEDGES, AND PROJECTIONS FROM MORTAR DROPPINGS.
3. PROTECT SURFACES OF WINDOW AND DOOR FRAMES, AS WELL AS SIMILAR PRODUCTS WITH PAINTED AND INTEGRAL FINISHES, FROM MORTAR DROPPINGS.

C. 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 STONE MASONRY DAMAGED BY FROST OR FREEZING CONDITIONS. COMPLY WITH COLD-WEATHER CONSTRUCTION REQUIREMENTS CONTAINED IN ACI 530.1/ASCE 6/TMS 602.
1. COLD-WEATHER CLEANING: USE LIQUID CLEANING METHODS ONLY WHEN AIR TEMPERATURE IS 40 DEG F AND ABOVE AND WILL REMAIN SO UNTI MASONRY HAS DRIED, BUT NOT LESS THAN SEVEN DAYS AFTER COMPLETING CLEANING.

D. HOT-WEATHER REQUIREMENTS: COMPLY WITH HOT-WEATHER CONSTRUCTION REQUIREMENTS CONTAINED IN ACI 530.1/ASCE 6/TMS 602.

SECTION 044313.16 - ADHERED STONE MASONRY VENEER - CONT.

1.6 COORDINATION
A. ADVISE INSTALLERS OF OTHER WORK ABOUT SPECIFIC REQUIREMENTS FOR PLACEMENT OF FLASHING AND SIMILAR ITEMS TO TO BE BUILT INTO STONE MASONRY.

PART TWO - PRODUCTS

2.1 MANUFACTURERS
A. SOURCE LIMITATIONS FOR STONE: OBTAIN EACH VARIETY OF STONE , REGARDLESS OF FINISH, FROM SINGLE QUARRY WITH RESOURCES TO PROVIDE MATERIALS OF CONSISTENT QUALITY IN APPEARANCE AND PHYSICAL PROPERTIES.
B. SOURCE LIMITATIONS FOR MORTAR MATERIALS: OBTAIN MORTAR INGREDIENTS OF UNIFORM QUALITY FOR EACH CEMENTITIOUS COMPONENT FROM SINGLE MANUFACTURER AND EACH AGGREGATE FROM SINGLE SOURCE OR PRODUCER.

2.2 NATURAL STONE
A. VARIETIES AND SOURCES: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE SOUND NATURAL STONE SIMILAR TO SWANANNOA ASHLAR BY THE FOLLOWING COMPANY:
1. THIN STONE VENEER BY THREE RIVER STONE, GREER, SC
B. STONE FABRICATION: FABRICATE STONE UNITS IN SIZES AND SHAPES REQUIRED TO COMPLY WITH REQUIREMENTS INDICATED.
1. THICKNESS: THIN STONE IS TO BE CUT APPROXIMATELY 1-1/4 INCH THICK FROM NATURAL STONES. OUTSIDE CORNERS ARE TO BE CUT FROM NATURAL STONES WITH A ONE PIECE LEG IN EACH DIRECTION AT 90 DEGREES TO EACH OTHER, GIVING THE APPEARANCE OF FULL THICKNESS SOLID STONE UNITS AT THE CORNERS.
   a. CONSTRUCTING CORNERS WITH THIN FLAT STONES IS NOT ACCEPTABLE.

2.3 MORTAR MATERIALS
A. PORTLAND CEMENT-LIME MIX: PACKAGED BLEND OF PORTLAND CEMENT AND HYDRATED LIME CONTAINING NO OTHER INGREDIENTS.
B. AGGREGATE: ASTM C 144
C. WATER: POTABLE.

2.4 MISCELLANEOUS MASONRY ACCESSORIES
A. DRAINAGE MAT: RANDOMLY ORIENTED GEOMETRIC PATTERNED DRAINAGE AND VENTILATION MAT DESIGNED TO ELIMINATE MOISTURE AND MOISTURE VAPOR IN WALL APPLICATIONS; NOMINAL 0.40 INCH THICK.
1. PRODUCT: DRIWALL RAINSCREEN 10MM AS MANUFACTURED BY KEENE BUILDING PRODUCTS.
B. EXPANDED METAL LATH: 3.4 LB/SQ. YD., SELF FURRING, DIAMOND MESH LATH COMPLYING WITH ASTM C 847. FABRICATE FROM STRUCTURAL-QUALITY, ZINC-COATED (GALVANIZED) STEEL SHEET COMPLYING WITH ASTM A 653/A 653 M, G60.
C. LATH ATTACHMENT DEVICES: MATERIAL AND TYPE REQUIRED BY ASTM C 1063 FOR INSTALLATIONS INDICATED.
D. FOUNDATION WEEP SCREE: FABRICATED FROM HOT-DIP GALVANIZED-STEEL SHEET, ASTM A 653/A653 M, G60 ZINC COATING.

2.5 MASONRY CLEANERS
A. PROPRIETRY ACIDIC CLEANER: MANUFACTURER'S STANDARD-STRENGTH CLEANER DESIGNED FOR REMOVING MORTAR AND GROUT STAINS, EFFLORESENCE, AND OTHER NEW CONSTRUCTION STAINS FROM STONE MASONRY SURFACES WITHOUT DISCOLORING OR DAMAGING MASONRY SURFACES; EXPRESSLY APPROVED FOR INTENDED USE BY CLEANER ANUFACTURER AND STONE PRODUCER.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
   a. DIEDRICH TECHNOLOGIES, INC.
   b. DOMINION RESTORATION PRODUCTS.
   c. EACO CHEM, INC.
   d. HYDROCHEMICAL TECHNIQUES, INC.
   e. PROSOCO, INC.

2.6 FABRICATION
A. GENERAL: FABRICATE STONE UNITS IN SIZES AND SHAPES REQUIRED TO COMPLY WITH REQUIREMENTS INDICATED.
B. CUT STONE TO PRODUCE PIECES OF THICKNESS, SIZE, AND SHAPE INDICATED, INCLUDING DETAILS ON DRAWINGS.
C. DRESS JOINTS (BED AND VERTICAL) STRAIGHT AND AT RIGHT ANGLE TO FACE UNLESS OTHERWISE INDICATED. SHAPE BEDS TO FIT SUPPORTS.
D. THICKNESS OF STONE: PROVIDE THICKNESS INDICATED, BUT NOT LESS THAN THE FOLLOWING:
1. THICKNESS: 1 INCH PLUS OR MINUS 1/8 INCH

2.7 MORTAR MIXES
A. GENERAL: DO NOT USE ADMIXTURES, INCLUDING PIGMENTS, AIR-ENTRAINING AGENTS, ACCELERATORS, RETARDERS, WATER-REPELLENT AGENTS, ANTIFREEZE COMPOUNDS, OR OTHER ADMIXTURES, UNLESS OTHERWISE INDICATED.
1. DO NOT USE CALCIUM CHLORIDE.
2. USE PORTLAND CEMENT-LIME MORTAR UNLESS OTHERWISE INDICATED.
B. PREBLENDED, DRY MORTAR MIX: FURNISH DRY MORTAR INGREDIENTS IN THE FORM OF A PREBLENDED MIX. MEASURE QUANTITIES BY WEIGHT TO ENSURE ACCURATE PROPORTIONS, AND THOROUGHLY BLEND INGREDIENTS BEFORE DELIVERING TO PROJECT SITE.
C. MORTAR FOR STONE MASONRY: COMPLY WITH ASTM C 270, PROPORTION SPECIFICATION.
1. MORTAR FOR SETTING STONE: TYPE S.
D. CEMENT-PASTE BOND COAT: MIX EITHER NEAT CEMENT AND WATER OR CEMENT, SAND, AND WATER TO A CONSISTENCY SIMILAR TO THAT OF THICK CREAM.
E. MORTAR FOR SCRATCH COAT OVER METAL LATH: 1 PART PORTLAND CEMENT, 1/2 PART LIME, 5 PARTS LOOSE DAMP SAND, AND ENOUGH WATER TO PRODUCE A WORKABLE CONSISTENCY.

PART THREE - EXECUTION

3.1 EXAMINATION
A. EXAMINE SURFACES INDICATED TO RECEIVE STONE MASONRY, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF STONE MASONRY.
B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2 PREPARATION
A. CLEAN DIRTY OR STAINED STONE SURFACES BY REMOVING SOIL, STAINS, AND FOREIGN MATERIALS BEFORE SETTING. CLEAN STONE BY THOROUGHLY SCRUBBING WITH FIBER BRUSHES AND THEN DRENCHING WITH CLEAR WATER. USE ONLY MILD CLEANING COMPOUNDS THAT CONTAIN NO CAUSTIC OR HARSH MATERIALS OR ABRASIVES

3.3 SETTING OF STONE MASONRY, GENERAL
A. PERFORM NECESSARY FIELD CUTTING AND TRIMMIMG AS STONE IS SET.
1. USE HAMMER AND CHISEL TO SPLIT STONE THAT IS FABRICATED WITH SPLIT SURFACES. MAKE EDGES STRAIGHT AND TRUE, MATCHING SIMILAR SURFACES THAT WERE SHOP OR QUARRY FABRICATED.
2. PITCH FACE AT FIELD-SPLIT EDGES AS NEEDED TO MATCH STONES THAT ARE NOT FIELD SPLIT.
B. SORT STONE BEFORE IT I SPLACED IN WALL TO REMOVE STONE THAT DOES NOT COMPLY WITH REQUIREMENTS RELATING TO AESTHETIC EFFECTS, PHYSICAL PROPERTIES, OR FABRICATION, OR THAT IS OTHERWISE UNSUITABLE FOR INTENDED USE.
C. ARRANGE STONES IN COURSED RUBBLE PATTERN WITH JOINT WIDTHS WITHIN TOLERANCES INDICATED. INSERT SMALL STONES INTO SPACES BETWEEN LARGER STONES AS NEEDED TO PRODUCE JOINTS AS UNIFORM IN WIDTH AS PRACTICAL.
D. ARRANGE STONES WITH COLOR AND SIZE VARIATIONS UNIFORMLY DISPERSED FOR AN EVENLY BLENDED APPEARANCE.
E. SET STONE TO COMPLY WITH REQUIREMENTS INDICATED ON DRAWINGS. INSTALL SUPPORTS, FASTENERS, AND OTHER ATTACHMENTS INDICATED OR NECESSARY TO SECURE STONE MASONRY IN PLACE. SET STONE ACCURATELY IN LOCATIONS INDICATED WITH EDGES AND FACES ALIGNED ACCORDING TO ESTABLISHED RELATIONSHIPS AND INDICATED TOLERAMCES.
F. MAINTAIN UNIFORM JOINT WIDTHS EXCEPT FOR VARIATIONS DUE TO DIFFERENT STONE SIZES AND WHERE MINOR VARIATIONS ARE REQUIRED TO MAINTAIN BOND ALIGNMENT IF ANY. LAY WALLS WITH JOINTS NOT LESS THAN 3/8 INCH AT NARROWEST POINTS OR MORE THAN 1 INCH AT WIDEST POINTS.
G. INSTALL EMBEDDED FLASHING AND WEEP HOLES AT SHELF ANGLES, LINTELS, LEDGES, OTHER OBSTRUCTIONS TO DOWNWARD FLOW OF WATER IN WALL, AND WHERE INDICATED.

3.4 INSTALLATION OF ADHERED STONE MASONRY VENEER
A. INSTALL FOUNDATION WEEP SCREED AT THE BASE OF THE WALL.
B. INSTALL DRAINAGE MAT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
C. INSTALL METAL LATH OVER DRAINAGE MAT BY FASTENING INTO SOLID SUBSTRATE.
D. INSTALL SCRATCH COAT OVER METAL LATH 3/8 INCH THICK TO COMPLY WITH ASTM C 926.
E. COAT BACKS OF STONE UNITS AND FACE OF SCRATCH COAT WITH CEMENT-PASTE BOND COAT, THEN BUTTER BOTH SURFACES WITH SETTING MORTAR. USE SUFFICIENT SETTING MORTAR SO A LIGHT EXCESS WILL BE FORCED OUT THE EDGES OF STONE UNITS AS THEY ARE SET. TAP UNITS INTO PLACE, COMPLETELY FILLING SPACE BETWEEN UNITS AND SCRATCH COAT.

3.5 ADJUSTING AND CLEANING
A. IN-PROGRESS CLEANING: CLEAN STONE MASONRY AS WORK PROGRESSES. REMOVE MORTAR FINS AND SMEARS BEFORE TOOLING JOINTS.
B. FINAL CLEANING: AFTER MORTAR IS THOROUGHLY SET AND CURED, CLEAN STONE MASONRY AS FOLLOWS:
1. REMOVE LARGE MORTAR PARTICLES BY HAND WITH WOODEN PADDLES AND NONMETALLIC SCRAPE HOES OR CHISELS.
2. TEST CLEANING METHIDS ON MOCKUP; LEAVE ONE-HALF OF PANEL UNCLEANED FOR COMPARISON PURPOSES. OBTAIN ARCHITECT'S APPROVAL OF SAMPLE CLEANING BEFORE CLEANING STONE MASONRY.
3. PROTECT ADJACENT STONE AND NONMASONRY SURFACES FROM CONTACT WITH CLEANER BY COVERING THEM WITH LIQUID STRIPPABLE MASKING AGENT, POLYETHYLENE FILM, OR WATERPROOF MASKING TAPE.
4. WET WALL SURFACES WITH WATER BEFORE APPLYING CLEANER; REMOVE CLEANER PROMPTLY BY RINSING THOROUGHLY WITH CLEAR WATER.
5. CLEAN STONE MASONRY BY BUCKET AND BRUSH HAND-CLEANING METHOD DESCRIBED IN BIA TECHNICAL NOTE NO. 20, REVISED II, USING JOB-MIXED DETERGENT SOLUTION.
6. CLEAN STONE MASONRY WITH PROPRIETARY ACIDIC CLEANER APPLIED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

3.6 EXCESS MATERIALS AND WASTE
A. DISPOSAL AS FILL MATERIAL: DISPOSE OF CLEAN MASONRY WASTE, INCLUDING MORTAR AND EXCESS OR SOIL-CONTAMINATED SAND, BY CRUSHING AND MIXING WITH FILL MATERIAL AS FILL IS PLACED.
1. CRUSH MASONRY WASTE TO LESS THAN 4 INCHES IN GREATEST DIMENSION.
2. MIX MASONRY WASTE WITH AT LEAST 2 PARTS OF SPECIFIED FILL MATERIAL FOR EACH PART OF MASONRY WASTE.
3. DO NOT DISPOSE OF MASONRY WASTE AS FILL WITHIN 18 INCHES OF FINISHED GRADE.
B. EXCESS MASONRY WASTE: REMOVE EXCESS CLEAN MASONRY WASTE THAT CANNOT BE USED AS FILL, AS DESCRIBED ABOVE. AND OTHER WASTE, AND LEGALLY DISPOSE OFF OF OWNER'S PROPERTY.

SECTION 061000 - ROUGH CARPENTRY - FRAMING

REFER TO STRUCTURAL DRAWINGS

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART ONE - GENERAL

1.1. SECTION INCLUDES
A. WOOD BLOCKING AND NAILERS
B. PLYWOOD BACKING PANELS

1.2. SUBMITTALS
A. EVALUATION REPORTS: FOR THE FOLLOWING, FROM ICC-ES"

1. PRESERVATIVE-TREATED WOOD.
2. FIRE-RETARDENT-TREATED WOOD.

PART TWO - PRODUCTS

2.1. WOOD PRODUCTS, GENERAL
A. 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 REVIEW. PROVIDE LUMBER GRADED BY AN AGENCY CERTIFIED BY THE ALSC BOARD OF REVIEW TO INSPECT AND GRADE LUMBER UNDER THE RULES INDICATED.

1. FACTORY MARK EACH PIECE OF LUMBER WITH GRADE STAMP OF GRADING AGENCY.
2. PROVIDE DRESSED LUMBER, S4S, UNLESS OTHERWISE INDICATED.

B. MAXIMUM MOISTURE CONTENT OF LUMBER: 19 PERCENT FOR 2-INCH NOMINAL THICKNESS OR LESS, NO LIMIT FOR MORE THAN 2-INCH NOMINAL THICKNESS UNLESS OTHERWISE INDICATED.

Earl Architects

Earl Architects, LLC
301 N. Main Street
Greenville, SC 29601
864 271 7555

Consultant

DUNCAN CHAPEL
FIRE DISTRICT
STATION 2

NEW FACILITY
GREENVILLE, SC

Keyplan

Professional Seal

STATE OF SOUTH CAROLINA
EARL ARCHITECTS, LLC
GREENVILLE, SC
100021
REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA
RICHARD R. EARL
GREENVILLE, SC
REGISTERED ARCHITECT

Issued for Permit

Revision

SPECIFICATIONS

A0.03

In Charge	RRE
Drawn By	DMR
Checked By	SJM
Project Number	1033.00.00
Date	11/18/2014

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY - CONT.

2.2. WOOD-PRESERVATIVE-TREATED MATERIALS
A. PRESERVATIVE TREATMENT BY PRESSURE PROCESS: AWPA U1; USE CATEGORY UC2 FOR INTERIOR CONSTRUCTION NOT IN CONTACT WITH THE GROUND, USE CATEGORY UCB3 FOR EXTERIOR CONSTRUCTION NOT IN CONTACT WITH THE GROUND, AND USE CATEGORY UC4A FOR ITEMS IN CONTACT WITH THE GROUND.

1. PRESERVATIVE CHEMICALS: ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION AND CONTAINING NO ARSENIC OR CHROMIUM.

B. KILN-DRY LUMBER AFTER TREATMENT TO A MAXIMUM MOISTURE CONTENT OF 19 PERCENT. DO NOT USE MATERIAL THAT IS WARPED OR DOES NOT COMPLY WITH REQUIREMENTS FOR UNTREATED MATERIAL.

C. MARK LUMBER WITH TREATMENT QUALITY MARK OF AN INSPECTION AGENCY APPROVED BY THE ALSC BOARD OF REVIEW.

D. APPLICATION: TREAT ITEMS INDICATED ON DRAWINGS, AND THE FOLLOWING:

1. WOOD NAILERS, CURBS, BLOCKING, AND SIMILAR MEMBERS IN CONNECTION WITH ROOFING, LASHING, VAPOR BARRIERS, AND WATERPROOFING.
2. WOOD SILLS, BLOCKING, AND SIMILAR CONCEALED MEMBERS IN CONTACT WITH MASONRY OR CONCRETE.
3. WOOD FLOOR PLATES THAT ARE INSTALLED OVER CONCRETE SLABS-ON-GRADE.

2.3. FIRE-RETARDENT-TREATED MATERIALS

A. FIRE-RETARDENT-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 TEH BURNERS T ANY TIME DURING THE TEST.

1. EXTERIOR TYPE: TREATED MATERIALS SHALL COMPLY WITH REQUIREMENTS SPECIFIED ABOVE FOR FIRE-RETARDENT-TREATED LUMBER AND PLYWOOD BY PRESSURE PROCESS AFTER BEING SUBJECTED TO ACCELERATED WEATHERING ACCORDING TO ASTM D 2898. USE FOR EXTERIOR LOCATIONS AND WHERE INDICATED.
2. INTERIOR TYPE A: TREATED MATERIALS SHALL HAVE A MOISTURE CONTENT OF 28 PERCENT OR LESS WHEN TESTED IN ACCORDANCE WITH ASTM D 3201 AT 92 PERCENT RELATIVE HUMIDITY. USE WHERE EXTERIOR TYPE IS NOT INDICATED.

B. KILN-DRY LUMBER AFTER TREATMENT TO A MAXIMUM MOISTURE CONTENT OF 19 PERCENT.

C. IDENTIFY FIRE-RETARDENT-TREATED WOOD WITH APPROPRIATE CLASSIFICATION MARKING OF TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

D. APPLICATION: TREAT ITEMS INDICATED ON DRAWINGS, AND THE FOLLOWING:

1. PLYWOOD BACKING PANELS

2.4. PLYWOOD BACKING PANELS

A. EQUIPMENT BACKING PANELS: DOC PS 1, EXPOSURE1, C-D PLUGGED, FIRE-RETARDENT TREATED, IN THICKNESS INDICATED OR, IF NOT INDICATED, NOT LESS THAN 1/2-INCH NOMINAL THICKNESS.

2.5. FASTENERS

A. GENERAL: PROVIDE FASTENERS OF SIZE AND TYPE INDICATED THAT COMPLY WITH REQUIREMENTS SPECIFIEC IN THIS ARTICLE FOR MATERIAL AND MANUFACTURE.

1. WHERE CARPENTRY IS EXPOSED TO WEATHER, IN GROUND CONTACT, PRESSURE-PRESERVATIVE TREATED, OR IN AN AREA OF HIGH RELATIVE HUMIDITY, PROVIDE FASTENERS WITH HOT-DIP ZINC COATING COMPLYING WITH ASTM A 153/A 153 M.

B. POWER-DRIVEN FASTENERS: NES NER-272

2.6. MISCELLANEOUS MATERIALS

A. FLEXIBLE FLASHING: SELF-ADHESIVE BTYL RUBBER OR RUBBERIZED-ASPHALT COMPOUND, BONDED TO A HIGH-DENSITY POLYETHYLENE FILM, ALUMINUM FOIL, OR SPUNBONDED PLOYOLEFIN TO PRODUCE AN OVERALL THICKNESS OF NOT LESS THAN 0.025 INCH.

PART THREE - EXECUTION

3.1. INSTALLATION, GENERAL

A. SET CARPENTRY TO REQUIRED LEVELS AND LINES, WITH MEMBERS PLUMB, TRUE TO LINE, CUT AND FITTED. FIT CARPENTRY TO OTHER CONSTRUCTION, SCRIPE AND COPE AS NEEDED FOR ACCURATE FIT.

B. INSTALL PLYWOOD BACKING PANELS BY FASTENING TO STUDS; COORDINATE LOCATIONS WITH UTILITIES REQUIRING BACKING PANELS. INSTALL FIRE-RETARDENT TREATED PLYWOOD BACKING PANELS WITH CLASSIFICATION MARKING OF TESTING AGENCY EXPOSED TO VIEW.

C. COMPLY WITH AWPA M4 FOR APPLYING FIELD TREATMENT TO CUT SURFACES OF PRESERVATIVE-TREATED LUMBER.

D. SECURELY ATTACH CARPENTRY WORK TO SUBSTRATE BY ANCHORING AND FASTENING AS INDICATED, COMPLYING WITH THE FOLLOWING:

1. NES NER-272 FOR POWER DRIVEN FASTENERS.
2. TABLE 2304.9.1, "FASTENING SCHEDULE, " IN ICC'S INTERNATIONAL BUILDING CODE.

3.2. PROTECTION

A. PROTECT WOOD THAT HAS BEEN TREATED WITH INORGANIC BORON (SBX) FROM THE 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.

SECTION 061600 - SHEATHING

REFER TO STRUCTURAL DRAWINGS

SECTION 061753 - WOOD TRUSSES

REFER TO STRUCTURAL DRAWINGS

SECTION 072100 - THERMAL INSULATION.

PART ONE - GENERAL

1.1. SECTION INCLUDES
A. FOAM-PLASTIC BOARD INSULATION.
B. GLASS-FIBER BLANKET INSULATION.

1.2. SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.

B. PRODUCT TEST REPORTS.

C. RESEARCH/EVALUATION REPORTS.

1.3. QUALITY ASSURANCE
A. SURFACE-BURNING CHARACTERISTICS: AS DETERMINED BY TESTING IDENTICAL PRODUCTS ACCORDING TO ASTM E 84 BY A QUALIFIED TESTING AGENCY. IDENTIFY PRODUCTS WITH APPROPRIATE MARKINGS OF APPLICABLE TESTING AGENCY.

PART TWO - PRODUCTS

2.1. FOAM-PLASTIC BOARD INSULATION
A. EXTRUDED-POLYSTERENE BOARD INSULATION: ASTM C 578, WITH MAXIMUM FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF 75 AND 450, RESPECTIVELY, PER ASTM E 84.

1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
a. DIVERSIFOAM PRODUCTS.
b. DOW CHEMICAL COMPANY (THE).
c. OWENS CORNING.
d. PACTIV BUILDING PRODUCTS.
2. UNDER SLAB ON GRADE: TYPE VII, 60 PSI.

2.2. GLASS FIBER BLANKET INSULATION
A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

1. CERTAINTEED CORPORATION.
2. GUARDIAN BUILDING PRODUCTS, INC.
3. JOHNS MANVILLE.
4. KNAUF INSULATION.
5. OWENS CORNING.

B. UNFACED, GLASS-FIBER BLANKET INSULATION: ASTM C 665, TYPE I (BLANKETS WITHOUT MEMBRANE FACING); CONSISTING OF FIBERS; WITH MAXIMUM FLAME-SPREAD AND SMOKE-DEVELOPED INDEXS OF 25 AND 50, RESPECTIVELY, PER ASTM E 136 FOR COMBUSTION CHARACTERISTICS.

PART THREE - EXECUTION

3.1. INSTALLATION, GENERAL
A. COMPLY WITH INSLATION MANUFACTURER'S WRITTEN INSTRUCTIONS APPLICABLE TO PRODUCTS AND APPLICATIONS INDICATED.

B. INSTALL INSULATION THAT IS UNDAMAGED, DRY, AND UNSOILED AND THAT HAS NOT BEEN LEFT EXPOSED TO ICE, RAIN, OR SNOW AT ANY TIME.

C. EXTEND INSULATION TO ENVELOP ENTIRE AREA TO BE INSULATED. CUT AND FIT TIGHTLY AROUND OBSTRUCTIONS AND FILL VOIDS WITH INSULATION. REMOVE PROJECTIONS THAT INTERFERE WITH PLACEMENT.

D. PROVIDE SIZES TO FIT APPLICATIONS INDICATED AND SELECTED FROM MANUFACTURER'S ATANDAR THICKNESSES, WIDTHS, AND LENGTHS. APPLY SINGLE LAYER OF INSULATION UNITS TO PRODUCE THICKNESS INDICATED UNLESS MULTIPLE LAYERS ARE OTHERWISE SHOWN OR REQUIRED TO MAKE UP TOTAL THICKNESS.

3.2. INSTALLATION OF INSULATION FOR FRAMED CONSTRUCTION
A. GLASS-FIBER BLANKET INSULATION: INSTALL IN CAVITIES FORMED BY FRAMING MEMBERS ACCORDING TO THE FOLLOWING REQUIREMENTS:

1. USE INSULATION WIDTHS AND LENGTHS THAT FILL THE CAVITIES FORMED BY FRAMING MEMBERS. IF MORE THAN ONE LENGTH IS REQUIRED TO FILL THE CAVITIES, PROVIDE LENGTHS THAT WILL PRODUCE A SNUG FIT BETWEEN ENDS.
2. PLACE INSULATION IN CAVITIES FORMED BY FRAMING MEMBERS TO PRODUCE A FRICTION FIT BETWEEN EDGES OF INSULATION AND ADJOINING FRAMING MEMBERS.

B. MISCELLANEOUS VOIDS: INSTALL INSULATION IN MISCELLANEOUS VOIDS AND CAVITY SPACES WHERE REQUIRED TO PREVENT GAPS IN INSULATION USING THE FOLLOWING MATERIALS:

1. FILL VOIDS IN THE PERIMETER OF THE BUILDING SHELL WHETHER OR NOT INDICATED ON THE DRAWINGS. THIS INCLUDES SPACE BEIND STEEL BEAMS, CHANNELS, CMU, AND MISCELLANEOUS FRAMING.

3.3. INSULATION SCHEDULE

A. INSULATION TYPE: UNFACED, GLASS FIBER BLANKET INSULATION.

1. USE: EXTERIOR WOOD STUD WALLS
a. PROVIDE R-13 AT ALL EXTERIOR 2X4 STUD CAVITIES.
b. PROVIDE R-19 AT ALL EXTERIOR 2X6 STUD CAVITIES.
2. USE: ATTIC
a. PROVIDE R-30 AT ALL ATTIC SPACES.

SECTION 072500 - WEATHER BARRIERS.

PART ONE - GENERAL

1.1. SUMMARY
A. SECTION INCLUDES
1. BUILDING PAPER.
2. BUILDING WRAP.
3. FLEXIBLE FLASHING

1.2. SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.

1. FOR BUILDING WRAP, INCLUDE DATA ON AIR AND WATER-VAPOR PERMEANCE BASE ON TESTNG ACCORDING TO REFERENCED STANDARDS.

B. EVALUATION REPORTS: FOR WATER-RESISTIVE BARRIER AND FLEXIBLE FLASHING, FROM ICC-ES

PART TWO - PRODUCTS

2.1. MATERIALS, GENERAL
A. SOURCE LIMITATIONS: OBTAIN PRIMARY AIR-BARRIER MATERIALS AND AIR-BARRIER ACCESSORIES FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.

2.2. WATER-RESISTIVE BARRIER
A. BUILDING PAPER: ASTM D 226, TYPE 1 (NO. 30 ASPHALT-SATURATED ORGANIC FELT), UNPERFORATED.

B. BUILDING PAPER: WATER-VAPOR-PERMEABLE, ASPHALT-SATURATED KRAFY BUILDING PAPER.

1. WAPER VAPOR TRANSMISSION NOT LESS THAN 35 G/SQ. M X 24 HR PER ASTM D779.
2. WATER RESISTANCE NOT LESS THAN 20 MINUTES PER ASTM F 1249.

C. BUILDING WRAP: ASTM E 1677, TYPE 1 AIR BARRIER; WITH FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF LESS THAN 24 NAD 450, RESPECTIVELY, WHEN TESTED ACCORDING TO ASTM E 84; UV STABILIZED; AND ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS PROVIDE ONE OF THE FOLLOWING:
a. DOW CHEMICAL COMPANY (THE); STYROFOAM WEATHERMATE PLUS BRAND HOUSEWRAP.
b. DUPONT; TYVEK COMMERCIALWRAP.
c. RAVEN INDUSTRIES INC.; FORTRESS PRO WEATHER PROTECTIVE BARRIER.
d. REEMAY, INC.; TYPAR HOUSE WRAP
2. WATER-VAPOR PERMEANCE: NOT LESS THAN 500G THROUGH 1 SQ. M OF SURFACE IN 24 HOURS PER ASTM E 96/ E 96M, DESICCANT METHOD (PROCEDURE A).
3. AIR PERMEANCE: NOT MORE THAN 0.004 CFM/SQ. FT. AT 0.3-INCH WG WHEN TESTED ACCORDING TO ASTM E 2178.
4. ALLOWABLE UV EXPOSURE TIME: NOT LESS THAN THREE MONTHS.

D. BUILDING-WRAP TAPE: PRESSURE-SENSITIVE PLASTIC TAPE RECOMMENDED BY BUILDING-WRAP MANUFACTURER FOR SEALING JOINTS AND PENETRATIONS IN BUILDING WRAP.

2.3. MISCELLANEOUS MATERIALS
A. FLEXIBLE FLASHING: COMPOSITE, SELF-ADHESIVE, FLASHING PRODUCT CONSISTING OF A PLIABLE, BUTYL RUBBER OR RUBBERIZED-ASPHALT COMPOUND, BONDED TO A HIGH-DENSITY POLYETHYLENE FILM, ALUMINUM FOIL, OR SPUNBONDED POLYOLEFIN TO PRODUCE AN OVERALL THICKNESS OF NOT LESS THAN 0.025 INCH.

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
a. DUPONT; DUPONT FLASHING TAPE.
b. GRACE CONSTRUCTION PRODUCTS; VYCOR BUTYL SELF-ADHERED FLASHING.
c. RAVEN INDUSTRIES INC.; FORTRESS FLASHFIELD.
d. CARLISLE COATINGS & WATERPROOFING; CCW-705-TWF THRU-WALL FLASHING.

B. PRIMER FOR FLEXIBLE FLASHING: PRODUCT RECOMMENDED BY MANUFACTURER OF FLEXIBLE FLASHING FOR SUBSTRATE.

C. MECHANICAL FASTENERS:

1. NAILS AND STAPLES: ASTM F 1667.
2. PLASTIC WASHERS OR CORROSION RESISTANT METAL WASHERS.

PART THREE - EXECUTION

3.1. WATER-RESISTIVE BARRIER INSTALLATION
A. COVER EXPOSED EXTERIOR SURFACE OF SHEATHING WITH WATER-RESISTIVE BARRIER SECURELY FASTENED TO FRAMING IMMEDIATELY AFTER SHEATHING IS INSTALLED.

B. COVER SHEATHING WITH WATER-RESISTIVE BARRIER AS FOLLOWS:

1. CUT BACK BARRIER 1/2-INCH ON EACH SIDE OF THE BREAK IN SUPPORTING MEMBERS AT EXPANSION OR CONTROL-JOINT LOCATIONS.
2. APPLY BARRIER TO COVER VERTICAL FLASHING WITH A MINIMUM 4-INCH OVERLAP UNLESS OTHERWISE INDICATED.

C. BUILDING PAPER: APPLY HIRIZONTALLY WITH A 2-INCH OVERLAP AND A 6-INCH END LAP; FASTEN TO SHEATHING WITH GALVANIZED STAPLES OR ROOFING AILS.

D. BUILDING WRAP: COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

1. SEAL SEAMS, EDGES, FASTENERS, AND PENETRATIONS WITH TAPE.
2. EXTEND INTO JAMBS OF OPENINGS AND SEAL CORNERS WITH TAPE.

3.2. FLEXIBLE FLASHING INSTALLATION
A. APPLY FLEXIBLE FLASHING WHERE INDICATED TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

1. PRIME SUBSTRATES AS RECOMMENDED BY FLASHING MANUFACTURER.
2. LAP SEAMS AND JUNCTURES WITH OTHER MATERIALS AT LEAST 4 INCHES EXCEPT THAT AT FLASHINGFLANGES OF OTHER CONSTRUCTION, LAPS NEED NOT EXCEED FLASHING WIDTH.
3. LAP FLASHING OVER WATER-RESISTIVE BARRIER AT BOTTOM AND SIDES OF OPENINGS.
4. LAP WATER-RESISTIVE BARRIER OVER FLASHING AT HEADS OF OPENINGS.
5. AFTER FLASHING HAS BEEN APPPLIED, ROLL SURFACES WITHA A HARD RUBBER OR METAL ROLLER TOENSURE THAT FLASHING IS COMPLETELY ADHERED TO SUBSTRATES.

SECTION 073113 - ASPHALT SHINGLES.

PART ONE - GENERAL

1.1. SUMMARY
A. SECTION INCLUDES
1. ASPHALT SHINGLES.
2. UNDERLAYMENT.
3. RIDGE VENT.
4. SOFFIT VENT.

1.2. DEFINITION
A. ROOFING TERMINOLOGY: SEE ASTM D 1079 AND GLOSSARY OF NRCA'S "THE NRCA ROOFING AND WATERPROOFING MANUAL" FOR DEFINITIONS OF TERMS RELATED TO ROOFING WORK IN THIS SECTION.

1.3. SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.

B. SAMPLES FOR INITIAL SELECTION: FOR EACH TYPE OF ASPHALT SHINGLE RIDGE AND HIP CAP SHINGLES, RIDGE VENT, EXPOSED VALLEY LINING AND DRIP EDGE.

1. INCLUDE SIMILAR SAMPLES OF TRIM AND ACCESSORIES INVOLVING COLOR SELECTION.

C. SAMPLES FOR VERIFICATION: FOR THE FOLLOWING PRODUCTS, OF SIZES INDICTED, TO VERIFY COLOR SELECTED:

1. ASPHALT SHINGLE: FULL SIZE.
2. RIDGE AND HIP CAP SHINGLES: FULL SIZE.
3. RIDGE VENT: 12-INCH LONG SAMPLE.
4. EXPOSED VALLEY LINING: 12 INCHES SQUARE.
5. SWELF-ADHERING UNDERLAYMENT: 12 INCHES SQUARE.
6. SOFFIT VENT: 12 INCH LONG SAMPLE.

D. QUALIFICATION DATA: F FOR QUALIFIED INSTALLER.

E. MAINTENANCE DATA: FOR EACH TYPE OF ASPALT SHINGLE TO INCLUDE IN MAINTENANCE MANUALS.

F. WARRANTIES: SAMPLE OF SPECIAL WARRANTIES.

1.4. QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: MANUFACTURER'S AUTHORIZED REPRESENTATIVE WHO IS TRAINED AND APPROVED FOR INSTALLATION OF UNITS REQUIRED FOR THIS PROJECT.

B. SOURCE LIMITATIONS: OBTAIN RIDGE AND HIP CAP SHINGLES RIDGE VENTS, FELT UNDERLAYMENT, AND SELF-ADHERING SHEET UNDERLAYMENT FROM SINGLE SOURCE, SINGLE MANUFACTURER.

C. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

1.5. DELIVERY, STORAGE, AND HANDLING
A. STORE ROOFING MATERIALS IN A DRY, WELL VENTILATED, WEATHERTIGHT LOCATION ACCORDING TO ASPHALT SHINGLE MANUFACTURER'S WRITTEN INSTRUCTIONS. STORE UNDERLAYMENT ROLLS ON END ON PALLETS OR OTHER RAISED SURFACES. DO NOT DOUBLE STACK ROLLS.

1. HANDLE, STORE, AND PLACE ROOFING MATERIALS IN A MANNER TO AVOID SIGNIFICANT OR PERMANENT DAMAGE TO ROOF DECK OR STRUCTURAL SUPPORTING MEMBERS.

B. PROTECT UNUSED UNDERLAYMENT FROM WEATHER, SUNLIGHT, AND MOISTURE WHEN LEFT OVERNIGHT OR WHEN ROOFING WORK IS NOT IN PROGRESS.

1.6. PROJECT CONDITIONS
A. INSTALL SELF-ADHERING SHEET UNDERLAYMENTWITHIN THE RANGE OF AMBIENT AND SUBSTRATE TEMPERATURES RECOMMENDED BY MANUFACTURER.

1.7. WARRANTY
A. SPECIAL WARRANTY: STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE ASPHALT SHINGLES THAT FAIL IN AMTERIALS OR WORKMANSHIP WITHIN SPECIFIED WRRANTY PERIOD.

1. FAILURE TO INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:
a. MANUFACTURING DEFECTS.
b. STRUCTURAL FAILURES INCLUDING FAILURE OF ASPHALT SHINGLES TO SELF-SEAL AFTER A REASONABLE TIME.
2. MATERIAL WARRANTY PERIOD: 30 YEARS FROM DATE OF SUBSTANTIAL COMPLETION, PRORATED, WITH FIRST 7 YEARS NONPRORATED.
3. WIND-SPEED WARRANTY PERIOD: ASPHALT SHINGLES WILL RESIST BLOW-OFF OR DAMAGE CAUSED BY WIND SPEEDS UP TO 90 MPH 10 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
4. ALGAE-DISCOLORATION WARRANTY PERIOD: ASPHALT SHINGLES WILL NOT DISCOLOR 10 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
5. WORKMANSHIP WARRANTY PERIOD: 10 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

B. SPECIAL PROJECT WARRANTY: ROOFING INSTALLER'S WARRANTY, OR WARRANTY FORM AT END OF THIS SECTION, SIGNED BY ROOFING INSTALLER, COVERING THE WORK OF THIS SECTION, IN WHICH ROOFING INSTALLER AGREES TO REPAIR OR EPLACE COMPONENTS OF ASPHALT SHINGLE ROOFING THAT FAIL IN AMTERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.

1. WARRANTY PERIOD: TWO YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

1.8. EXTRA MATERIALS:
A. FURNISH EXTRA MATERIALS THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.

1. ASPHALT SHINGLES: 100 SQ. FT. OF EACH TYPE, IN UNBROKEN BUNDLES.

SECTION 073113 - ASPHALT SHINGLES - CONT.

PART TWO - PRODUCTS

2.1. GLASS-FIBER-REINFORCED ASPHALT SHINGLES
A. ASTM D 3462, LAMINATED, MULTI-PLY OVERLAY CONSTRUCTION, GLASS-FIBER REINFORCED, MINERAL-GRANULE SURFACED, AND SELF SEALING.

1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE FOLLOWING MANUFACTURERS, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. TAMKO ROOFING PRODUCTS INC.; HERITAGE 30 AR
b. CERTAINTEED CORPORATION; LANDMARK TL SHINGLE
c. GAF PREMIUM BUILDING PRDUCTS; TIMBERLINE SERIES SHINGLE
d. OWENS CORNING ROOFING & ASPHALT LLC; DURATION PREMIUM SHINGLES
2. BUTT EDGE: STRAIGHT CUT.
3. STRIP SIZE: MANUFACTURER'S STANDARD.
4. ALGAE RESISTANCE: GRANULES TREATED TO RESIST ALGAE DISCOLORATION.
5. COLORS AND BLENDS: B.O.D. COLOR - MAX DEF COLONIAL SLATE BY CERTAINTEED LANDMARK PRO.

B. HIP AND RIDGE SHINGLES: MANUFACTURER'S STANDARD UNITS TO MATCH ASPHALT SHINGLES.

2.2. UNDERLAYMENT MATERIALS
A. FELT: ASTM D 4869, TYPE II, 30# ASPHALT-SATURATED ORGANIC FELTS, NONPERFORATED.

B. SELF-ADHERING SHEET UNDERLAYMENT, POLYETHYLENE FACED: ASTM D 1970, MINIMUM OF 40-MIL THICK, SLIP-RESISTING, POLYETHYLENE-FILM-REINFORCED TOP SURFACE LAMINATED TO SBS-MODIFIED ASPHALT ADHESIVE, WITH RELEASE PAPER BACKING; COLD APPLIED.

1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING, BUT ARE NOT LIMITED TO, THE FOLOWING:
a. CARLISLECOATINGS & WATERPROOFING, INC.
b. GRADE, W.R. & CO.
c. HENRY COMPANY,
d. JOHNS MANVILLE.
e. OWENS CORNING.
f. POLYGUARD PRODUCTS, INC.
g. PROTECTO WRAP COMPANY.

C. GRANULAR-SURFACED VALLEY LINING: ASTM D 3909, MINERAL-GRANULAR-SURFACED, GLASS-FELT-BASED, ASPHALT ROLL ROOFING; 36 INCHES WIDE.

2.3. RIDGE VENTS
A. RIGID RIDGE VENT: MANUFACTURER'S STANDARD, RIGID SECTION HIGH-DENSITY POLYPROPYLENE OR OTHER UV-STABILIZED PLASTIC RIDGE VENT WITH NOWOVEN GEOTEXTILE FILTER STRIPS AND EXTERNAL DEFLECTOR BAFFLES FOR USE UNDER RIDGE SHINGLES.

1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING AVAILABLE MANUFACTURERS, BUT ARE NOT LIMITED TO, THE FOLLOWING:
a. AIR VENT, INC.; A GIBRALTAR INDUSTRIES COMPANY.
b. COR-A-VENT, INC.
c. GAF MATERIALS CORPORATION.
d. LOMANCO, INC.
e. MID-AMERICA BUILDING PRODUCTS.
f. OBDYKE, BENJAMIN INCORPORATED.
g. OWEND CORNING.
h. RGM PRODUCTS, INC.
i. TRIMLINE BUILDING PRODUCTS.

B. SOFFIT VENT: ALUMINUM CONTINUOUS SOFFIT VENT.

1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING AVAILABLE MANUFACTURERS, BUT ARE NOT LIMITED TO, THE FOLLOWING:
a. AIR VENT, INC. MODEL SV201, COLOR TO MATCH EXISTING SOFFIT VENT.

2.4. ACCESSORIES:
A. ASPHALT ROOFING CEMENT: ASTM D 4586, TYPE II ASBESTOS FREE.

B. ROOFING NAILS: ASTM F 1667; ALUMINUM, STAINLESS-STEEL, COPPER, OR HOT-DIP GALVANIZED-STEEL WIRE SHINGLE NAILS, MINIMUM 0.120-INCH DIAMETER, SMOOTH SHANK, SHARP-POINTED, WITH A MINIMUM 3/8-INCH DIAMETER FLAT HEAD AND OF SUFFICIENT LENGTH TO PENETRATE 3/4 INCH INTO SOLID WOOD DECKING OR EXTEND AT LEAST 1/8 INCH THROUGH OSB OR PLYWOOD SHEATHING.

1. WHERE NAILS ARE IN CONTACT WITH METAL FLASHING, USE NAILS MADE FROM AME METAL AS FLASHING.

C. FELT UNDERLAYMENT NAILS: ALUMINUM, STAINLESS-STEEL, OR HOT-DIP GALVANIZED-STEEL WIRE WITH LOW-PROFILE CAPPED HEADS OR DISC CAPS, 1-INCH MINIMUM DIAMETER

2.5. METAL FLASHING AND TRIM
A. GENERAL: COMPLY WITH REQUIREMENTS IN DIVIDION 07 "SHEET METAL FLASHING AND TRIM."

PART THREE - EXECUTION

3.1. EXAMINATION
A. EXAMINE SUBSTRATES, AREAS, AND CONDITIONS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK.

1. EXAMINE ROOF SHEATHING TO VERIFY THAT SHEATHING JOINTS ARE SUPPORTED BY FRAMING AND BLOCKINGOR METAL CLIPS AND THAT INSTALLATION IS WITHIN FLATNESS TOLERANCES.
2. VERIFY THAT SUBSTRATE IS SOUND, DRY, SMOOTH, CLEAN, SLOPED FOR DRAINAGE, AND COMPLETELY ANCHORED; AND THAT PROVISION HAS BEEN MADE FOR FLASHINGS AND PENETRATIONS THROUGH ASPHALT SHINGLES.

B. PREPARE WRITTEN REPORT, ENDORSED BY INSTALLER, LISTING CONDITIONS DETRIMENTAL TO PERFORMANCE OF THE WORK.

C. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2. UNDERLAYMENT INSTALLATION
A. GENERAL: COMPLY WITH UNDERLAYMENT MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS APPLICABLE TO PRODUCTS AND APPLICATIONS INDICATED UNLESS MORE STRINGENT REQUIREMENTS APPLY.

B. SINGLE-LAYER FELT UNDERLAYMENT: INSTALL ON ROOF DECK IN ACCORDANCE WITH SHINGLE MANUFACTURER'S RECOMMENDATIONS.

C. SELF-ADHERING SHEET UNDERLAYMENT: INSTALL, WRINKLE FREE, ON ROOF DECK. COMPLY WITH LOW-TEMPERATURE INSTALLATION RESTRICTIONS OF UNDERLAYMENT MANUFACTURER IF APPLICABLE. INSTALL AT LOCATIONS INDICATED BELOW AND ON DRAWINGS, LAPPED IN DIRECTION TO SHED WATER. LAP SIDES NOT LESS THAN 3-1/2 INCHES. LAP ENDS NOT LESS THAN 6 INCHES STAGGERED 72 INCHES BETWEEN COURSES. ROLL LAPS WITH ROLLER. COVER UNDERLAYMENT WITHIN SEVEN DAYS.

1. EAVES: EXTEND FROM EDGES OF EAVES 36 INCHES BEYOND INTERIOR FACE OF EXTERIOR WALL.
2. RAKES: EXTEND FROM EDGES OF RAKE 36 INCHES BEYOND INTERIOR FACE OF EXTERIOR WALL.
3. VALLEYS: EXTEND FROM LOWEST TO HIGHEST POINT 18 INCHES ON EACH SIDE.
4. HIPS: EXTEND 18 INCHES ON EACH SIDE.
5. RIDGES: EXTEND 36 INCHES ON EACH SIDE WITHOUT OBSTRUCTING CONTINUOUS RIDGE VENT SLOT.
6. SIDEWALLS: EXTEND BEYOND SIDEWALL 18 INCHES RETURN VERTICALLY AGAINST SIDEWALL NOT LESTHAN 3 INCHES.
7. CHIMNEYS AND OTHER ROOF-PENETRATING ELEMENTS: EXTEND BEYOND PENETRATING ELEMENT 18INCHES AND RETURN VERTICALLY AGAINST PENETRATING ELEMENT NOT LESS THAN 4 INCHES.
8. ROOF SLOPE TRANSITIONS: EXTEND 18 INCHES ON EACH ROOF SLOPE.

D. CLOSE-CUT VALLEY LINING: COMPLY WITH NRCA'S RECOMMENDATIONS. INSTALL A 36-INCH WIDE FELT UNDERLAYMENT CENTRED IN VALLEY. FASTEN TO ROOF DECK WITH FELT UNDERLAYMENT NAILS.

1. LAP ROOF-DECK FELT UNDERLAYMENT OVER VALLEY FELT UNDERLAYMENT AT LEAST 6 INCHES.
2. INSTALL A 36-INCH WIDE STRIP OF GRANULAR-SURFACED VALLEY LINING CENTRED IN VALLEY, WITH GRANULAR-SURFACE FACE UP. LAP ENDS OF STRIPS AT LEAST 12 INCHES IN DIRECTION TO SHED WATER, AND SEAL WITH ASPHALT ROOFING CEMENT. FASTEN TO ROOF DECK WIT ROOFING NAILS.
4. INSTALL IN ACCORDANCE WITH SHINGLE MANUFACTURER'S RECOMMENDATIONS.

E. METAL-FLASHED, OPEN-VALLEY UNDERLAYMENT: INSTALL TWO LAYERS OF 36-INCH WIDE FELT UNDERLAYMENT CENTRED IN VALLEY. STAGGER END LAPS BETWEEN LAYERS AT LEAST 72 INCHES. LAP ENDS OF EACH LAYER AT LEAST 12 INCHES IN DIRECTION TO SHED WATER, AND SEAL WITH ASPHALT ROOFING CEMENT. FASTEN EACH LAYER TO ROOF DECK WITH ROOFING NAILS.

1. LAP ROOF-DECK FELT UNDERLAYMENT OVER FIRST LAYER OF VALLEY FELT UNDERLAYMENT AT LEAST 6 INCHES.
2. INSTALL IN ACCORDANCE WITH SHINGLE MANUFACTURER'S RECOMMENDATIONS.

3.3. METAL FLASHING INSTALLATION
A. GENERAL: INSTALL METAL FLASHINGS AND OTHER SHEET METAL TO COMPLY WITH REQUIREMENTS IN DIVISION 07 SECTION "SHEET METAL FLASHING AND TRIM."

3.4. ASPHALT SHINGLE INSTALLATION
A. GENERAL: INSTALL ASPHALT SHINGLES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS, RECOMMENDATIONS IN ARMA'S "RESIDENTIAL ASPHALT ROOFING MANUAL," AND ASPHALT SHINGLE RECOMMENDATIONS IN NRCA'S "THE NRCA ROOFING AND WATTERPROOFING MANUAL."

B. INSTALL STARTER STRIP ALONG LOWEST ROOF EDGE, CONSISTING OF AN ASPHALT SHINGLE STRIP WITH TABS REMOVED AT LEAST 7 INCHES WIDE WITH SELF-SEALINF STRIP FACE UP AT ROOF EDGE.

1. EXTEND ASPHALT SHINGLES 1/2 INCH OVER FASCIAE AT EAVES AND RAKES.
2. INSTALL STARTER STRIP ALONG RAKE EDGE.

C. INSTALL FIRST AND REMAINING COURSES OF ASPHALT SHINGLES STAIR-STEPPING DIAGONALLY ACROSS ROOF DECK WITH MANUFACTURER'S RECOMMENDED OFFSET PATTERN AT SUCCEEDING COURSES, MAINTAINING UNIFORM EXPOSURE.

D. INSTALL ASPHALT SHINGLES BY SINGLE-STRIP COLUMN, MAINTAINING UNIFORM EXPOSURE. INSTALL FULL-LENGTH FIRST COURSE FOLLOWED BY CUT SECOND COURSE, REPEATING ALTERNATING PATTERN IN SUCCEEDING COURSES. MAINTAIN CONSISTENT STRAIGHT ROWS OVER ENTIRE ROOF SURFACE.

E. FASTEN ASPHALT SHINGLE STRIPS WITH ROOFING NAILS LOCATED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

F. CLOSED-CUT VALLEYS: EXTEND ASPHALT SHINGLE STRIPS FROM ONE SIDE OF VALLEY 12 INCHES BEYOND CENTER OF VALLEY. USE ONE-PIECE SHINGLE STRIPS WITHOUT JOINTS IN VALLEY. FASTEN WITH EXTRA NAIL IN UPPER END OF SHINGLE. INSTALL ASPHALT SHINGLE COURSES FROM OTHER SIDE OF VALLEY AND CUT BACK TO A STRAIGHT LINE 2 INCHES SHORT OF VALLEY CENTERLINE. TRIM UPPER CONCEALED CORNERS OF CUT-BACK SHINGLE STRIPS.

1. DO NOT NAIL ASPHALT SHINGLES WITHIN 6 INCHES OF VALLEY CENTER.
2. SET TRIMMED, CONCEALED-CORNER ASPHALT SHINGLES IN A 3-INCH WIDE BED OF ASPHALT ROOFINGCEMENT.

G. OPEN VALLEYS: CUT AND FIT ASPHALT SHINGLES AT OPEN VALLEYS, TRIMMING UPPER CONCEALED CORNERS OF SHINGLE STRIPS. WIDEN EXPOSED PORTION OF OPRN VALLEY 1/8 INCH IN 12 INCHES (1:96) FROM HIGHEST TO LOWEST POINT.

1. SET VALLEY EDGE OF ASPHALT SHINGLES IN A 3-INCH WIDE BED OF ASPHALT ROOFING CEMENT.
2. DO NOT NAIL ASPHALT SHINGLES TO METAL OPEN-VALLEY FLASHINGS.

H. RIDGE VENTS: INSTALL CONTINUOUS RIDGE VENTS OVER ASPHALT SHINGLES ACCORDING TO MANUFCTURER'S WRITTEN INSTRUCTIONS. FASTEN WITH ROOFING NAILS OF SUFFICIENT LENGTH TO PENETRATE SHEATHING.

I. RIDGE CAP SHINGLES: MAINTAIN SAME EXPOSURE OF CAP SHINGLES AS ROOFING SHINGLE EXPOSURE. LAP CAP SHINGLES AT RIDGES TO SHED WATER AWAY FROM DIRECTION OF PREVAILING WINDS. FASTEN WITH ROOFING NAILS OF SUFFICIENT LENGTH TO PENETRATE SHEATHING.

1. FASTEN RIDGE AND HIP CAP ASPHALT SHINGLES TO COVER RIDGE VENT WITHOUT OBSTRUCTING AIRFLOW.

SECTION 074633 - PLASTIC SIDING

PART ONE - GENERAL

1.1. SUMMARY
A. SECTION INCLUDES:

1. VINYL SIDING AND SOFFIT.
2. VINYL ACCESSORIES AND TRIM.

B. RELATED REQUIREMENTS:

1. SECTION 061000 "ROUGH CARPENTRY" FOR WOOD FURRING, GROUNDS, NAILERS, AND BLOCKING.
2. SECTION 072500 " WEATHER BARRIERS" FOR WEATHER-RESISTIVE BARRIERS.

1.2. COORDINATION
A. COORDINATE SIDING INSTALLATION WITH FLASHINGS AND OTHER ADJOINING CONSTRUCTION TO ENSURE PROPER SEQUENCING.

1.3. SUBMITTALS
A. PRODUCT DATA: PROVIDE MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING:

1. PREPARATION INSTRUCTIONS AND RECOMMENDATIONS.
2. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS.
3. INSTALLATION METHODS.
4. FOR VINYL SIDING, INCLUDE VSI'S OFFICIAL CERTIFICATION LOGO PRINTED ON PRODUCT DATA.

B. SAMPLES FOR INITIAL SELECTION: FOR EACH FINISH PRODUCT SPECIFIED, PROVIDE TWO COMPLETE SETS OF COLOR CHIPS REPRESENTING MANUFACTURER'S FULL RANGE OF AVAILABLE COLORS AND PATTERNS.
C. SAMPLES FOR VERIFICATION:
1. 12-INCH LONG-BY-ACTUAL-WIDTH SAMPLE OF SIDING.
2. 12-INCH LONG-BY-ACTUAL-WIDTH SAMPLE OF SOFFIT.
3. 12-INCH LONG-BY-ACTUAL-WIDTH SAMPLE OF TRIM AND ACCESSORIES.

D. QUALIFICATION DATA: FOR VINYL SIDING INSTALLER.
E. PRODUCT CERTIFICATES: FOR EACH TYPE OF VINYL SIDING AND SOFFIT.
F. RESEARCH/EVALUATION REPORTS: FOR EACH TYPE OF VINYL SIDING REQUIRED, FROM ICC-ES.
G. SAMPLE WARRANTY: FOR SPECIAL WARRANTY.

1.4. CLOSEOUT SUBMITTALS
A. MAINTENANCE DATA: FOR EACH TYPE OF PRODUCT, INCLUDING RELATED ACCESSORIES, TO INCLUDE IN MAINTENANCE MANUALS.

1.5. MAINTENANCE MATERIAL SUBMITTALS:
A. FURNISH EXTRA MATERIALS THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.

1. FUNISH FULL LENGTHS OF VINYL SIDING AND SOFFIT INCLUDING RELATED ACCESSORIES, IN A QUANTITY EQUAL TO 2 PERCENT OF AMOUNT NSTALLED.

1.6. QUALITY ASSURANCE
A. VINYL SIDING INSTALLER QUALIFICATIONS: INSTALLER HAVING NOT LESS THAN THREE YEARS EXPERIENCE WITH PRODUCTS SPECIFIED.

1.7. DELIVERY, STORAGE, AND HANDLING
A. DELIVER AND STORE PACKAGED MATERIALS IN UNOPENED ORIGINAL PACKAGING WITH LABELS INTACT UNTIL TIME OF USE. REFER TO MANUFACTURER'S INDTALLATION INSTRUCTIONS FOR SPECIFIC STORAGE AND HANDLING REQUIREMENTS.

1.8. SITE CONDITIONS
A. MAINTAIN ENVIRONMENTAL CONDITIONS (TEMPERATURE, HUMIDITY, AND VENTILATION) WITHIN LIMITS RECOMMENDED BY MANUFACTURER. DO NOT INSTALL PRODUCTS UNDER ENVIRONMENTAL CONDITIONS OUTSIDE MANUFACTURER'S RECOMMENDED LIMITS.

1.9. WARRANTY
A. PROVIDE MANUFACTURER'S STANDARD LIFETIME LIMITED WARRANTY ON SIDING PRODUCTS, TRANSFERABLE TO NEW OWNERS.

PART TWO - PRODUCTS

2.1. MANUFACTURERS
A. SOURCE LIMITATIONS: OBTAIN PRODUCTS, INCLUDING RELATED ACCESSORIES, FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.

2.2. MATERIALS
A. PROVIDE VINYL SIDING, SOFFIT, AND COMPONENT MADE OF EXTRUDED POLYVINYL CHLORIDE MANUFACTURED TO COMPLY WITH ASTM D 3679 REQUIREMENTS.
1. PROVIDE ELONGATED NAILING SLOTS ON NAILING FLANGES TO ALLOW MOVEMENT.
2. FACTORY-NOTCH ENDS OF HORIZONTAL PANELS TO FORM OVERLAPPING JOINTS.
3. WEATHERING REQUIREMENTS: MEEY ASTM D 3679.

2.3. PERFORMANCE/DESIGN CRITERIA
A. FIRE RESISTANCE: PROVIDE VINYL SIDING PRODUCTS THAT MEET OR EXCEED THE FOLLOWING RATINGS:
1. FLAME SPREAD INDEX: LESS THAN 25, PER ASTM 84.
2. SMOKE DEVELOPMENT RATING: LESS THAN 450, PER ASTM E 84.
3. FIRE ENDURANCE CLASSIFICATION; 1 HOUR, PER ASTM E 119 IN A WALL ASSEMBLY

B. FIRE RESISTANCE: PROVIDE VINYL SIDING PRODUCTS THAT MEET OR EXCEED THE FOLLOWING RATINGS.
1. FLAME SPREAD INDEX: LESS THAN 200, PER ASTM 84.

2.4. VINYL SIDING
A. VINYL SIDING: INTEGRAL COLORED PRODUCT COMPLYING WITH ASTM D 3679.
1. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE MITTEN; NAMED PRODUCT OR COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
a. ALSIDE.
b. EXTERIOR PORTFOLIO BY CRANE.
c. GENTEK BUILDING PRODUCTS, INC.
d. HEARTLAND BUILDING PRODUCTS; A PROVIA COMPANY.
e. KAYCAN LTD.
f. MASTIC HOME EXTERIORS.
g. CERTAINTEED CORPORATION.
h. NORANDEX; BUILDING MATERIALS DISTRIBUTION,INC.
i. RMC SIDING.
j. ROYAL BUILDING PRODUCTS.
k. VARIFORM, INC.

B. VINYL SIDING CERTIFICATION PROGRAM: PROVIDE PRODUCTS THAT ARE LISTED IN VSI'S LIST OF CERTIFIED PRODUCTS..
C. DESCRIPTION: DOUBLE 5" DUTCHLAP SIDING
1. BASIS-OF-DESIGN PRODUCT: MITTEN; HIGHLAND.
2. DESIGN: DOUBLE 5-INCH DUTCHLAP.
3. NAIL HEM: ROLLED OVER, SINGLE-ROW, WITH ELONGATED NAILING HOLES 1 1/4 INCHES LONG AT 1 5/8 INCHES ON CENTER.
4. LENGTH: 12 FEET.
5. AVERAGE THICKNESS: 0.042 INCH.
6. PANEL EXPOSURE: 10 INCHES.
7. MAXIMUM WARP (PER 2 PANELS): 0.25 INCH.
8. COLOR: SANDALWOOD.
9. FINISH: LIGHT WOOD-GRAIN TEXTURE.

2.5. VINYL SOFFIT
A. VINYL SOFFIT: INTEGRALLY COLORED PRODUCT COMPLYING WITH ASTM D 4477.
1. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE MITTEN; NAMED PRODUCT OR COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
a. ALSIDE.
b. EXTERIOR PORTFOLIO BY CRANE.
c GENTEK BUILDING PRODUCTS, INC.
d. HEARTLAND BUILDING PRODUCTS; A PROVIA COMPANY.
e. KAYCAN LTD.
f. MASTIC HOME EXTERIORS.
g. CERTAINTEED CORPORATION.
h. NORANDEX; BUILDING MATERIALS DISTRIBUTION,INC.
i. RMC SIDING.
j. ROYAL BUILDING PRODUCTS.
k. VARIFORM, INC.

B. VINYL SIDING CERTIFICATION PROGRAM: PROVIDE PRODUCTS THAT ARE LISTED IN VSI'S LIST OF CERTIFIED PRODUCTS..

C. DESCRIPTION: TRIPLE 4" SOFFIT - LANCED FULL VENT.
1. DESIGN: TRIPLE 4" SOFFIT.
2. WIDTH: 12 INCHES.
3. LENGTH: 12 FEET.
4. AVERAGE THICKNESS: 0.040 INCH.
5. PANEL EXPOSURE: 12 INCHES.
6. NAILING HEM: SINGLE-ROW, WITH ELONGATED NAILING HOLES 1-1/4 INCHES LONG AT 16 INCHES ON CENTER.
7. VENTILATION: 7.2 SQ. INCHES PER SQ. FT.
8. COLOR: FROST.

D. DESCRIPTION: BEADED SOFFIT - TRIPLE 2 BEAD PROFILE - SOLID
1. DESIGN: TRIPLE 2 BEAD.
2. WIDTH: 6 INCHES.
3. LENGTH: 12 FEET 6 INCHES.
4. AVERAGE THICKNESS: 0.040 INCH.
5. PANEL EXPOSURE: 12 INCHES.
6. NAILING HEM: SINGLE-ROW, WITH ELONGATED NAILING HOLES 1-1/4 INCHES LONG AT 1 5/8 INCHES ON CENTER.
7. FINISH: LOW=GLOSS MATTE TEXTURE.
8. COLOR: WHITE.

2.6. ACCESSORIES
A. SOFFIT ACCESSORIES:
1. J-CHANNEL: FOR VERTICAL AND EAVE APPLICATIONS.
a. 3/4 INCH
b. LENGTH: 12 FEET - 6 INCHES.
2. F-CHANNEL:
a. 3/4 INCH
b. LENGTH: 12 FEET - 6 INCHES.
3. SOFFIT H-BAR:
a. 3/4 INCH
b. LENGTH: 12 FEET - 6 INCHES.
4. SOFFIT COVE TRIM:
a. 1/2 INCH.
b. LENGTH: 12 FEET - 6 INCHES.

B. VINYL ACCESSORIES:

1. CORNER POST:
a. 3" OUTSIDE CORNER POST.
b. LENGTH: 10 FEET.
2. J-CHANNEL:
a. STANDARD WIDTH.
b. LENGTH: 12 FEET.
3. UNDERSILL TRIM:
a. FACE 3/4 INCH
b. LENGTH: 12 FEET - 6 INCHES.
4. VINYL STARTER STRIP: 2-1/2 INCH.
5. WINDOW AND DOOR CASING: 3-1/2 INCHES

Earl Architects

Earl Architects, LLC
301 N. Main Street
Greenville, SC 29601
864 271 7555

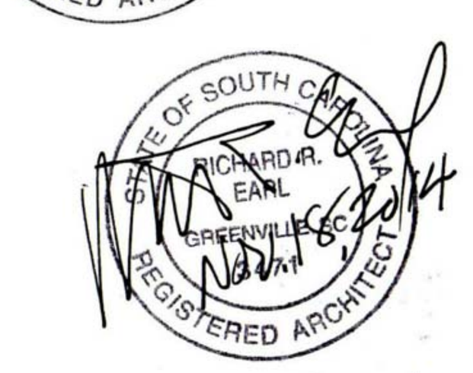
Consultant

DUNCAN CHAPEL FIRE DISTRICT STATION 2

NEW FACILITY GREENVILLE, SC

Keyplan

Professional Seal



Issued for Permit

Revision

SPECIFICATIONS

A0.04

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SECTION 074633 - PLASTIC SIDING - CONT.

C. FLASHING: PROVIDE ALUMINUM FLASHING COMPLYING WITH SECTION 076200 "SHEET METAL FLASHING AND TRIM" AT WINDOW AND DOOR HEADS AND WHERE INDICATED.

D. FASTENERS:

1. PROVIDE GALVANIZED OR OTHER CORROSION-RESISTANT NAILS AS RECOMMENDED BY MANUFACTURER OF SIDING PRODUCTS.

PART THREE - EXECUTION

3.1. EXAMINATION
A. EXAMINE SUBSTRATES FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF VINYL SIDING AND SOFFIT AND RELATED ACCESSORIES.

B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2. PREPARATION
A. CLEAN SUBSTRATES OF PROJECTIONS AND SUBSTANCES DETRIMENTAL TO APPLICATION.

3.3. INSTALLATION
A. GENERAL: COMPLY WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS APPLICABLE TO PRODUCTS AND APPLICATIONS INDICATED UNLESS MORE STRINGENT REQUIREMENTS APPLY.

1. CENTER NAILS IN ELONGATED NAIL SLOTS WITHOUT BINDING SIDING TO ALLOW FOR THERMAL MOVEMENT.
2. DRIVE NAILS STRAIGHT, LEAVING 1/16 INCH SPACE BETWEEN NAIL HEAD AND PANEL FLANGE.
3. HORIZONTAL SIDING:
   a. STAGGER LAP JOINTS IN UNIFORM PATTERN AS SUCCESSIVE COURSES OF SIDING ARE INSTALLED.
   b. OVERLAP HORIZONTAL PANEL ENDS ONE-HALF THE WIDTH OF FACTORY PRE-CUT NOTCHES.
4. ALLOW SPACE BETWEEN BOTH ENDS OF SIDING PANELS AND TRIM FOR THERMAL MOVEMENT.

B. INSTALL VINYL SIDING AND SOFFIT AND RELATED ACCESSORIES ACCORDING TO ASTM D 4756.

1. INSTALL FASTENERS FOR HORIZONTAL SIDING NO MORE THAN 16 INCHES O.C.

C. INSTALL POLYMER SIDING AND SOFFIT AND RELATED ACCESSORIES ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

D. INSTALL JOINT SEALANTS AS SPECIFIED IN SECTION 079200 "JOINT SEALANTS" AND TO PRODUCE A WEATHERTIGHT INSTALLATION.

3.4. PROTECTION
A. PROTECT INSTALLED PRODUCTS UNTIL COMPLETION OF PROJECT.

3.5. ADJUSTING AND CLEANING
A. REMOVE DAMAGED, IMPROPERLY INSTALLED, OR OTHERWISE DEFECTIVE MATERIALS AND REPLACE WITH NEW MATERIALS COMPLYING WITH SPECIFIED REQUIREMENTS.

B. CLEAN FINISHED SURFACES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND MAINTAIN A CLEAN CONDITION DURING CONSTRUCTION.

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART ONE - GENERAL

1.1. SUMMARY
A. SECTION INCLUDES:

1. FORMED ROOF DRAINAGE SHEET METAL FABRICATIONS.
2. FORMED STEEP- SLOPE ROOF SHEET METAL FABRICATIONS.
3. FORMED WALL SHEET METAL FABRICATIONS.

B. RELATED SECTIONS:

1. DIVISION 07 SECTION "ASPHALT SHINGLES" FOR INSTALLING SHEET METAL FLASHING AND TRIM INTEGRAL WITH ROOFING.
2. DIVISION 07 SECTION "JOINT SEALANTS"

E. INSECT SCREEN FOR SOFFIT VENTS: (PVC-COATED, GLASS FIBER FABRIC, 18-BY-14 OR 18-BY-16 MESH)

1.2. PERFORMANCE REQUIREMENTS
A. GENERAL: SHEET METAL FLASHING AND TRIM ASSEMBLIES AS INDICATED SHALL WITHSTAND WIND LOADS, STRUCTURAL MOVMENT, THERMALLY INDUCED MOVEMENT, AND EXPOSURE TO WEATHER WITHOUT FAILURE DUE TO DEFECTIVE MANUFACTURE, FABRICATION, INSTALLATION, OR OTHER DEFECTS IN CONSTRUCTION. COMPLETED SHEET METAL FLASHING AND TRIM SHALL NOT RATTLE, LEAK, OR LOOSEN, AND SHALL REMAIN WATERTIGHT.

1.3. SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.

B. SHOP DRAWINGS: SHOW INSTALLATION LAYOUTS OF SHEET METAL FLASHING AND TRIM, INCLUDING PLANS, ELEVATIONS, AND KEYED DETAILS. DISTINGUISH BETWEEN SHOP AND FIELD ASSEMBLED WORK. PROVIDE DETAILS OF ALL UNIQUE ROOFING CONDITIONS.

1. INCLUDE DETAILS FOR FORMING, JOINING, SUPPORTING, AND SECURING SHEET METAL FLASHING AND TRIM, INCLUDING PATTERN OF SEAMS, TERMINATION POINTS, FIXED POINTS, EDGE CONDITIONS, SPECIAL CONDITIONS, AND CONNECTIONS TO ADJOINING WORK.

C. SAMPLES: FOR EACH EXPOSED PRODUCT AND FOR EACH FINISH SPECIFIED.

1. 12-INCH-LONG SAMPLES OF FACTORY-FABRICATED PRODUCTS EXPOSED AS FINISHED WORK. PROVIDE COMPLETE WITH SPECIFIED FACTORY FINISH.
2. FULL SIZE UNIT FOR THE FOLLOWING SHEET METAL FLASHING AND TRIM IN PROFILES AS DETAILED:
   a. GUTTER - 12-INCH LONG.
   b. DOWNSPOUT - 12-INCH LONG.

D. QUALIFICATION DATA: FOR QUALIFIED INSTALLER.

E. MAINTENANCE DATA: FOR SHEET METAL FLASHING, TRIM, AND ACCESSORIES TO INCLUDE IN MAINTENANCE MANUALS..

1.4. QUALITY ASSURANCE
A. FABRICATOR QUALIFICATIONS: SHOP THAT EMPLOYS SKILLED WORKERS WHO CUSTOM FABRICATE SHEET METAL FLASHING AND TRIM SIMILAR TO TAHAT REQUIRED FOR THIS PROJECT AND WHOSE PRODUCTS HAVE A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE.

B. SHEET METAL FLASHING AND TRIM STANDARD: COMPLY WITH SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" UNLESS MORE STRINGENT REQUIREMENTS ARE SPECIFIED OR SHOWN ON DRAWINGS.

C. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

1.5. DELIVERY, STORAGE, AND HANDLING
A. DO NOT STORE SHEET METAL FLASHING AND TRIM MATERIALS IN CONTACT WITH OTHER MATERIALS THAT MIGHT CAUSE STAINING, DENTING, OR OTHER SURFACE DAMAGE. STORE SHEET METAL FLASHING AND TRIM MATERIALS AWAY FROM UNCURED CONCRETE AND MASONRY.

B. PROTECT STRIPPABLE PROTECTIVE COVERING ON SHEET METAL FLASHING AND TRIM FROM EXPOSURE TO SUNLIGHT AND HIGH HUMIDITY, EXCEPT TO THE EXTENT NECESSARY FOR THE PERIOD OF SHEET METAL FLASHING AND TRIM INSTALLATION.

PART TWO - PRODUCTS

2.1. SHEET METALS
A. ALUMINUM SHEET: ASTM B 209 (ASTM B209M), ALLOY AS STANDARD WITH MANUFACTURER FOR FINISH REQUIRED, WITH TEMPER AS REQUIRED TO SUIT FORMING OPERATIONS AND PERFORMANCE REQUIRED.

1. EXPOSED COIL-COATED FINISHES:
   a. FLUOROPOLYMER KYNAR 500 FINISH.
2. COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.
3. CONCEALED FINISH: PRETREAT WITH MANUFACTURER'S STANDARD WHITE OR LIGHT-COLORED ACRYLIC OR OLYESTER BACKER FINISH, CONSISTING OF PRIME COAT AND WASH COAT WITH A MINIMUM TOTAL DRY FILM THICKNESS OF MIL.

2.2. MISCELLANEOUS MATERIALS
A. 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 AND RECOMMENDED BY MANUFACTURER OF PRIMARY SHEET METAL OR MANUFACTURED ITEM UNLESS OTHERWISE INDICATED.

B. FASTENERS: WOOD SCREWS, ANNULAR THREADED NAILS, SELF-TAPPING SCREWS, SELF-LOCKING RIVETS AND BOLTS, AND OTHER SUITABLE FASTENERS DESIGNED TO WITHSTAND DESIGN LOADS AND RECOMMENDED BY MANUFACTURER OF PRIMARY SHEET METAL OR MANUFACTURED ITEM.

1. GENERAL: BLIND FASTENERS OR SELF-DRILLING SCREWS, GASKETED, WITH HEX-WASHER HEAD.
   a. EXPOSED FASTENERS: HEADS MATCHING COLOR OF SHEET METAL USING PLASTIC CAPS OR FACTORY-APPLIED COATING
   b. BLIND FASTENERS: HIGH-STRENGTH ALUMINUM OR STAINLESS-STEEL RIVETS SUITABLE FOR METAL BEING FASTENED.

C. SEALANT TAPE: PRESSURE-SENSITIVE, 100 PERCENT SOLIDS, GRAY POLYISOBUTYLENE COMPOUND SEALANT TAPE WITH RELEASE-PAPER BACKING. PROVIDE PERMANENTLY ELASTIC, NONSAG, NONTOXIC, NONSTAINING TAPE 1/2 INCH WIDE AND 1/8 INCH THICK.

D. EPOXY SEAM SEALER: TWO-PART, NONCORROSIVE, ALUMINUM SEAM-CEMENTING COMPOUND, RECOMMENDED BY ALUMINUM MANUFACTURER FOR EXTERIOR NONMOVING JOINTS, INCLUDING RIVETED JOINTS.

E. BITUMINOUS COATING: COLD-APPLIED ASPHALT EMULSION COMPLYING WITH ASTM D 1187.

F. ASPHALT ROOFING CEMENT: ASTM D 4586, ASBESTOS FREE, OF CONSISTENCY REQUIRED FOR APPLICATION.

2.3. FABRICATION, GENERAL
A. GENERAL: CUSTOM FABRICATE SHEET METAL FLASHING AND TRIM TO COMPLY WITH RECOMMENDTAIONS IN SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" THAT APPLY TO DESIGN, DIMENSIONS, GEOMETRY, MTAL THICKNESS, AND OTHER CHARACTERISTICS OF ITEM INDICATED. FABRICATE ITEMS AT THE 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.
2. OBTAIN FIELD MEASUREMENTS FOR ACCURATE FIT BEFORE SHOP FABRICATION.
3. FORM SHEET METAL FLASHING AND TRIM WITHOUT EXCESSIVE OIL CANNING, BUCKLING, AND TOOL MARKS AND TRUE LINE AND LEVELS INDICATED, WITH EXPOSED EDGES FOLDED BACK TO FORM HEMS.
4. CONCEAL FASTENERS AND EXPANSION PROVISIONS WHERE POSSIBLE. EXPOSED FASTENERS ARE NOT ALLOWED ON FACES EXPOSED TO VIEW.

B. FABRICATION TOLERANCES: FABRICATE SHEET METAL FLASHING AND TRIM THAT IS CAPABLE OF INSTALLATION TO A TOLERANCE OF 1/4 INCH IN 20 FEET ON SLOPE AND LOCATION LINES AS INDICATED AND WITHIN 1/8-INCH OFFSET OF ADJOINING FACES AND OF ALIGNMENT OF MATCHING PROFILES.

C. FABRICATION TOLERANCES: FABRICATE SHEET METAL FLASHING AND TRIM THAT IS CAPABLE OF INSTALLATION TO TOLERANCES SPECIFIED IN MCA'S "GUIDE SPECIFICATION FOR RESIDENTIAL METAL ROOFING."

D. SEALED JOINTS: FORM NONEXPANSION BUT MOVABLE JOINTS IN METAL TO ACCOMMODATE ELASTOMERIC SEALANT.

E. EXPANSION PROVISIONS: WHERE LAPPED EXPANSION PROVISIONS CNNOT BE USED, FORM EXPANSION JOINTS OF INTERMESHING HOOKED FLANGES, NOT LESS THAN 1 INCH DEEP, FILLED WITH BUTYL SEALANT CONCEALED WITHIN JOINTS.

F. FABRICATE CLEATS AND ATTACHMENT DEVICES FROM SAME MATERIAL AS ACCESSORY BEING ANCHORED OR FROM COMPATIBLE, NONCORROSIVE METAL.

SECTION 076200 - SHEET METAL FLASHING AND TRIM - CONT.

G. FABRICATE CLEATS AND ATTACHMENT DEVICES OF SIZES AS RECOMMENDED BY SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" AND BY FMG LOSS PREVENTION DATA SHEET 1-49 FOR APPLICATION, BUT NOT LESS THAN THICKNESS OF METAL BEING SECURED.

H. SEAMS FOR ALUMINUM: FABRICATE NONMOVING SEAMS WITH FLAT-LOCK SEAMS. FORM SEAMS AND SEAL WITH EPOXY SEAM SEALER. RIVER JOINTS WHERE NECESSARY FOR STRENGTH.

2.4. ROOF DRAINAGE SHEET METAL FABRICATIONS
A. HANGING GUTTERS: FABRICATE TO CROSS SECTION INDICATED, COMPLETE WITH END PIECES, OUTLET TUBES, AND OTHER ACCESSORIES AS REQUIRED. FABRICATE STRAIGHT RUNS IN COMPLETE SECTIONS WITH NO JOINTS.. FURNISH FLAT-STOCK GUTTER SPACERS AND GUTTER BRACKETS FABRICATED FROM SAME METAL AS GUTTERS, OF SIZE RECOMMENDED BY SMACNA BUT 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.

1. GUTTER PROFILE: SMACNA STYLE A
2. FABRICATE FORM THE FOLLOWING MATERIALS:
   a. ALUMINUM: 0.032 INCH THICK.
   b. ARCHITECT TO SELECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

B. DOWNSPOUTS: FABRICATE RECTANGULAR DOWNSPOUTS COMPLETE WITH MITRED ELBOWS. FURNISH WITH METAL HANGERS, FROM SAME MATERIAL AS DOWNSPOUTS, AND ANCHORS.

1. FABRICATE FROM THE FOLLOWING MATERIALS:
   a. ALUMINUM: 0.032 INCH THICK.
   b. ARCHITECT TO SELECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

2.5. STEEP-SLOPE ROOF SHEET METAL FABRICATIONS
A. APRON, STEP, CRICKET, AND BACKER FLASHING: FABRICATE FROM THE FOLLOWING MATERIALS:
1. ALUMINUM: 0.032 INCH THICK.
2. ARCHITECT TO SELECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

B. VALLEY FLASHING: FABRICATE FROM THE FOLLOWING MATERIALS:
1. ALUMINUM: 0.032 INCH THICK.
2. ARCHITECT TO SELECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

C. DRIP EDGES: FABRICATE FROM THE FOLLOWING MATERIALS:
1. ALUMINUM: 0.032 INCH THICK.
2. ARCHITECT TO SELECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

D. EAVE, RAKE, RIDGE, AND HIP FLASHING: FABRICATE FROM THE FOLLOWING MATERIALS:
1. ALUMINUM: 0.032 INCH THICK.
2. ARCHITECT TO SELECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

E. COUNTERFLASHING: FABRICATE FROM THE FOLLOWING MATERIALS:
1. ALUMINUM: 0.032 INCH THICK.
2. ARCHITECT TO SELECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

F. FLASHING RECEIVERS: FABRICATE FROM THE FOLLOWING MATERIALS:
1. ALUMINUM: 0.032 INCH THICK.
2. ARCHITECT TO SELECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

PART THREE - EXECUTION

3.1. EXAMINATION
A. EXAMINE SUBSTRATES, ARAS, AND CONDITIONS, WITH INSTALLER PRESENT, TO VERIFY ACTUAL LOCATIONS, DIMENSIONS AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK.

1. VERIFY COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES OF SUBSTRATES.
2. VERIFY THAT SUBSTRATE IS SOUND, DRY, SMOOTH, CLEAN, SLOPED FOR DRAINAGE, AND SECURELY ANCHORED.

B. PROCEED WITH INSTALLATION ONLY AFTER ANY UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2. UNDERLAYMENT INSTALLATION
A. POLYETHYLENE SHEET: INSTALL POLYETHYLENE SHEET WITH ADHESIVE FOR ANCHORAGE. APPLY IN SHINGLE FASHION TO SHED WATER, WITH LAPPED AND TAPED JOINTS OF NOT LESS THAN 2 INCHES.

B. FELT UNDERLAYMENT: INSTALL FELT UNDERLAYMENT WITH ADHESIVE FOR ANCHORAGE. APPLY IN SHINGLE FASHION TO SHED WATER, WITH LAPPED AND TAPED JOINTS OF NOT LESS THAN 2 INCHES.

3.3. INSTALLATION, GENERAL
A. GENERAL: ANCHOR SHEET METAL FLASHING AND TRIM AND OTHER COMPONENTS OF THE WORK SECURELY IN PLACE, WITH PROVISIONS FOR THERMAL AND STRUCTURAL MOVEMENT SO THAT COMPLETED SHEET METAL FLASHING AND TRIM SHALL NOT RATTLE, LEAK, OR LOOSEN, AND SHALL REMAIN WATER TIGHT. USE FASTENERS, SOLDER, WELDING RODS, PROTECTIVE COATINGS, SEPARATORS, SEALANTS, AND OTHER MISCELLANEOUS ITEMS AS REQUIRED TO COMPLETE SHEET METAL FLASHING AND TRIM SYSTEM.

1. INSTALL SHEET METAL FLASHING AND TRIM TRUE TO LINE AND LEVELS INDICATED. PROVIDE UNIFORM, NEAT SEAMS WITH MINIMUM EXPOSURE OF SOLDER, WELDS, AND SEALANT.
2. 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.
3. SPACE CLEATS NOT MORE THAN 12 INCHES APART. ANCHOR EACH CLEAT WITH TWO FASTENERS. BEND TABS OVER FASTENERS.
4. INSTALL EXPOSED SHEET METAL FLASHING AND TRIM WITHOUT EXCESSIVE OIL CANNING, BUCKLING, AND TOOL MARKS.
5. INSTALL SEALANT TAPE WHERE INDICATED.
6. TORCH CUTTING OF SHEET METAL FLASHING AND TRIM IS NOT PERMITTED.

B. METAL PROTECTION: WHERE DISSIMILAR METALS WILL CONTACT EACH OTHER OR CORROSIVE SUBSTRATES, PROTECT AGAINST GALVANIC ACTION BY PAINTING SURFACES WITH BITUMINOUS COATING OR BY OTHER PERMANENT SEPARATION AS RECOMMENDED BY SMACNA.

1. COAT BACK SIDE OF UNCOATED ALUMINUM SHEET METAL FLASHING AND TRIM WITH BITUMINOUS COATING WHERE FLASHING AND TRIM WILL CONTACT WOOD, FERROUS METAL, OR CEMENTITIOUS CONSTRUCTION.
2. 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 SHEET.

C. 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 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 SEALANT CONCELAED WITHIN JOINTS.

D. FASTENER SIZES: USE FASTENERS OF SIZES THAT WIL LPENETRATE WOOD SHEATHING NOT LESS THAN 1 1/4 INCHES FOR NAILS AND NOT LESS THAN 3/4 INCH FOR WOOD SCREWS.

E. SEAL JOINTS AS SHOWN AND AS REQUIRED FOR WATERTIGHT CONSTRUCTION.

1. 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 EACH WAY. ADJUST SETTING PROPORTIONATELY FOR INSTALLATION A HIGHER AMBIENT TEMPERATURES. DO NOT INSTALL SEALANT-TYPE JOINTS AT TEMPRATURES BELOW 40 DEG F.

G. RIVETS: RIVET JOINTS IN UNCOATED ALUMINUM WHERE INDICATED AND WHERE NECESSARY FOR STRENGTH.

3.4. ROOF DRAINAGE SYSTEM INSTALLATION
A. GENERAL: INSTALL SHEET METAL ROOF DRAINAGE ITEMS TO PRODUCE COMPLETE ROOF DRAINAGE SYSTEM ACCORDING TO SMACNA RECOMMENDATIONS AND AS INDICATED. COORDINATE INSTALLATION OF ROOF PERIMETER FLASHING WITH INSTALLATION OF ROOF DRAINAGE SYSTEM.

B. HANGING GUTTERS: JOIN SECTIONS WITH LAPPED JOINTS SEALED WITH SEALANT. PROVIDE FOR THERMAL EXPANSION. ATTACH GUTTERS AT EAVE OR FASCIA TO FIRMLY ANCHORED GUTTER BRACKETS SPACED NOT MORE THAN 36 INCHES APART. PROVIDE END CLOSURES AND SEAL WATERTIGHT WITH SEALANT. SLOPE TO DOWNSPOUTS.

1. INSTALL GUTTER WITH EXPANSION JOINTS AT LOCATIONS INDICATED, BUT NOT EXCEEDING, 50 FEET APART. INSTALL EXPANSION-JOINT CAPS.

C. DOWNSPOUTS: JOIN SECTIONS WITH 1-1/2 INCH TELESCOPING JOINTS. PROVIDE HANGERS WITH FASTENERS DESIGNED TO HOLD DOWNSPOUTS SECURELY TO WALLS. LOCATE HANGERS AT TOP AND BOTTOM AND AT APPROXIMATELY 60 INCHES O.C. IN BETWEEN.

3.5. ROOF FLASHING INSTALLATION
A. GENERAL: INSTALL SHEET METAL 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 AND WEATHER RESISTANT.

B. ROOF EDGE FLASHING: ANCHOR TO RESIST UPLIFT AND OUTWARD FORCES ACCORDING TO RECOMMENDATIONS IN SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL."

C. 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 SEALANT. SECURE IN A WATERPROOF MANNER BY MEANS OF SNAP-IN INSTALLATION AND SEALANT OR LEAD WEDGES AND SEALANT OR INTERLOCKING FOLDED SEAM OR BLIND RIVETS AND SEALANT ANCHOR AND WASHER AT 36-INCH CENTERS.

D. ROOF-PENETRATION FLASHING: COORDINATE INSTALLATION OF ROOF PENETRATION FLASHING WITH INSTALLATION OF ROOFING AND OTHER ITEMS PENETRATING ROOF. SEAL WITH ELASTOMERIC BUTYL SEALANT AND CLAMP FLASHING TO PIPES THAT PENETRATE ROOF.

E. OPEN VALLEY FLASHINGS: INSTALL CENTRALLY IN VALLEYS, LAPPING ENDS AT LEAST 8 INCHES IN DIRECTION TO SHED WATER. FASTEN UPPER END OF EACH LENGTH TO ROOF DECK BENEATH OVERLAP.

1. SECURE HEMMED FLANGE EDGES INTO METAL CLEATS SPACED 12 INCHES APART AND FASTENED TO ROOF DECK.
2. ADHERE 9-INCH WIDE STRIP OF SELF ADHERING SHEET TO METAL FLANGES AND TO SELF-ADHERING SHEET UNDERLAYMENT.

F. RAKE DRIP EDGES: INSTALL RAKE DRIP EDGE FLASHINGS OVER UNDERLAYMENT AND FASTEN TO ROOF DECK.

G. EAVE DRIP EDGES: INSTALL EAVE DRIP EDGE FLASHINGS BELOW UNDERLAYMENT AND FASTEN TO ROOF SHEATHING.

H. PIPE FLASHINGS: FORM FLASHING AROUND PIPE PENETRATIONS AND ASPHALT SHINGLES. FASTEN AND SEAL TO ASPHALT SHINGLES AS RECOMMENDED BY MANUFACTURER.

3.6. ERECTION TOLERANCES
A. 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 AS INDICATED AND WITHIN 1/8-INCH OFFSET OF ADJOINING FACES AND OF ALIGNMENT OF MATCHING PROFILES.

B. INSTALLATION TOLERANCES: SHIM AND ALIGN SHEET METAL FLASHING AND TRIM WITHIN INSTALLED TOLERANCES SPECIFIED IN MCA'S "GUIDE SPECIFICATION OF RESIDENTIAL METAL ROOFING."

3.7. CLEANING AND PROTECTION
A. CLEAN EXPOSED METAL SURFACES OF SUBSTANCES THAT INTERFERE WITH UNIFORM OXIDATION AND WEATHERING.

B. CLEAN OFF EXCESS SEALANTS.

C. REMOVE TEMPORARY PROTECTIVE COVERINGS AND STRIPPABLE FILMS AS SHEET METAL FLASHING AND TRIM ARE INSTALLED UNLESS OTHERWISE INDICATED IN MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS. ON COMPLETION OF INSTALLATION, REMOVE UNUSED MATERIALS AND CLEAN FINISHED SURFACES. MAINTAIN IN A CLEAN CONDITION DURING CONSTRUCTION.

D. 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.

SECTION 079200 -JOINT SEALANTS

PART ONE - GENERAL

1.1. SUMMARY
A. SECTION INCLUDES:

1. NONSTAINING SILICONE JOINT SEALANTS.
2. URETHANE JOINT SEALANTS.
3. MILDEW-RESISTANT JOINT SEALANTS.
4. LATEX JOINT SEALANTS.

1.2. SUBMITTALS
A. PRODUCT DATA: FOR EACH JOINT-SEALANT PRODUCT INDICATED.

B. SAMPLES FOR INITIAL SELECTION: MANUFACTURER'S COLOR CHARTS CONSISTING OF STRIPS OF CURED SEALANTS SHOWING FULL RANGE OF COLORS AVAILABLE FOR EACH PRODUCT EXPOSED TO VIEW.

C. JOINT-SEALANT SCHEDULE: INCLUDE THE FOLLOWING INFORMATION.

1. JOINT-SEALANT APPLICATION, JOINT LOCATION, AND DESIGNATION.
2. JOINT-SEALANT MANUFACTURER AND PRODUCT NAME.
3. JOINT-SEALANT FORMULATION.
4. JOINT-SEALANT COLOR.

D. PRODUCT TEST REPORTS: FOR EACH KIND OF JOINT SEALANT, FOR TESTS PERFORMED BY A QUALIFIED TESTING AGENCY.

E. WARRANTIES: SAMPLE OF SPECIAL WARRANTIES.

1.3. QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: AN AUTHORIZED REPRESENTATIVE WHO IS TRAINED AND APPROVED BY MANUFACTURER.

B. MOCKUPS: INSTALL SEALANT IN MOCKUPS OF ASSEMBLIES SPECIFIED IN OTHER SECTIONS THAT ARE INDICATED TO RECEIVE JOINT SELANTS SPECIFIED IN THIS SECTION. USE MATERIALS AND INSTALLATION METHODS SPECIFED IN THIS SECTION.

1.4. FIELD CONDITIONS
A. DO NOT PROCEED WITH INSTALLATION OF JOINT SEALANTS UNDER THE FOLLOWING CONDITIONS:

1. WHEN AMBIENT AND SUBSTRATE TEMPERATURE CONDITIONS ARE OUTSIDE LIMITS PERMITTED BY JOINT-SEALANT MANUFACTURER OR ARE BELOW 40 DEG F.
2. WHEN JOINT SUBSTRATES ARE WET.
3. WHEN JOINT WIDTHS ARE LESS THAN THOSE ALLOWED BY JOINT-SEALANT MANUFACTURER FOR APPLICATIONS INDICATED.
4. WHERE CONTAMINANTS CAPABLE OF INTERFERING WITH ADHESION HAVE NOT YET BEEN REMOVED FROM JOINT SUBSTRATES.

1.5. WARRANTY
A. SPECIAL INSTALLER'S WARRANTY: INSTALLER AGREES TO REPAIR OR REPLACE JOINT SEALANTS THAT DO NOT COMPLY WITH PERFORMANCE AND OTHER REQUIREMENTS SPECIFIED IN THIS SECTION WITHIN SPECIFIED WARRANTY PERIOD.

1. WARRANTY PERIOD: TWO YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

B. SPECIAL MANUFACTURER'S WARRANTY: MANUFACTURER AGREES TO FURNISH JOINT SEALANTS TO REPAIR OR REPLACE THOSE JOINT SEALNTS THAT DO NOT COMPLY WITH PERFORMANCE AND OTHER REQUIREMENTS SPECIFIED IN THIS SECTION WITHIN SPECIFIED WARRANTY PERIOD.

1. WARRANTY PERIOD FOR SILICONES: 20 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
2. WARRANTY PERIOD FOR URETHANES: FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

PART TWO - PRODUCTS

2.1. JOINT SEALANTS, GENERAL
A. COMPATIBILITY: PROVIDE JOINT SEALANTS, BACKINGS, AND OTHER RELATED MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH JOINT SUBSTRATES UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY JOINT-SEALANT MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.

B. COLORS OF EXPOSED JOINT SEALANTS: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

2.2. NONSTAINING SILICONE JOINT SEALANTS
A. NONSTAINING JOINT SEALNTS: NO STAINING OF SUBSTRATES WHEN TESTED ACCORDING TO ASTM C 1248.

B. SILICONE, NONSTAINING, S, NS, 100/50, T, NT: NONSTAINING, SINGLE-COMPONENT, NONSAG, PLUS 100 PERCENT AND MINUS 50 PERCENT MOVEMENT CAPABILITY, TRAFFIC- AND NONTRAFFIC-USE, NEUTRAL-CURING SILICONE JOINT SEALANT; ASTM C 920, TYPE S, GRADE NS, CLASS 100/50, USES T AND NT..

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
   a. DOWCORNING CORPORATION; 790.
   b. PECORA CORPORATION; 890.
   c. SIKA CORPORATION, CONSTRUCTION PRODUCTS DIVISION; SIKASIL-C990.
   d. TREMCO INCORPORATED; SPECTREM 1.

2.3. URETHANE JOINT SEALANTS
A. URETHANE, S, NS, 25, NT: SINGLE-COMPONENT, NONSAG, NONTRAFFIC-USE, PLUS 25 PERCENT AND MINUS 25 PERCENT MOVEMENT CAPIBILITY, URETAHNE JOINT SYSTEM; ASTM C 920, TYPE S, GRADE NS, CLASS 25, USE NT.

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
   a. BASF CONSTRUCTION CHEMICALS LLC, BUILDING SYSTEMS; SONALASTIC TX1.

B. URETHANE, M, NS, 50, T, NT: MULTI-COMPONENT, NONSAG, NONTRAFFIC-USE, PLUS 50 PERCENT AND MINUS 50 PERCENT MOVEMENT CAPIBILITY, TRAFFIC- AND NONTRAFFIC-USE, URETAHNE JOINT SYSTEM; ASTM C 920, TYPE M, GRADE NS, CLASS 50, USES T AND NT.

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
   a. POLYMERIC SYSTEMS, INC.; PSI-270.
   b. TREMCO INCORPORATED; DYMERIC 240 FC.

2.4. MILDEW-RESISTANT JOINT SEALANTS
A. MILDEW-RESISTANT JOINT SEALANTS: FORMULATED FOR PROLONGED EXPOSURE TO HUMIDITY WITH FUNGICIDE TO PREVENT MOLD AND MILDEW GROWTH.

B. SILICONE, MILDEW RESISTANT, ACID CURING, S, NS, 25, NT: MILDEW-RESISTANT, SINGLE-COMPONENT, NONSAG, PLUS 25 PERCENT AND MINUS 25 PERCENT MOVEMENT CAPABILITY, NONTRAFFIC-USE, ACID-CURING SILICONE JOINT SEALANT; ASTM C 920, TYPE S, GRADE NS, CLASS 25, USE NT.

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
   a. DOW CORNING CORPORATION; 786-M WHITE.
   b. GE CONSTRUCTION SELANTS; SCS1700 SANITARY
   c. TREMCO INCORPORATED; TREMSIL 200.

2.5. LATEX JOINT SEALANTS
A. ACRYLIC LATEX: ARCYLIC LATEX OR SILICONIZED ACRYLIC LATEX, ASTM C 834, TYPE OP, GRADE NF.

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
   a. BASF CONSTRUCTION CHEMICALS, LLC, BUILDING SYSTEMS; SONOLAC.
   b. PECORA CORPORATION; AC-20.
   c. TREMCO INCORPORATED; TREMFLEX 834.
   d. SHERWIN-WILLIAMS COMPANY (THE); 850A.

2.6. JOINT-SEALANT BACKING
A. SEALANT BACKING MATERIAL, GENERAL: NONSTAINING, COMPATIBLE WITH JOINT SUBSTRATES, SEALANTS, PRIMERS, AND OTHER JOINT FILLERS; APPROVED FOR APPLICATIONS INDICATED BY SEALANT MANUFACTURER BASED ON FIELD EXPERIENCE AND LABORATORY TESTING.

B. CYLINDRICAL SEALANT BACKINGS: ASTM C 1330, TYPE C (CLOSED-CELL MATERIAL WITH SURFACE SKIN), AND OF SIZE AND DENSITY TO CONTROL SEALANT DEPTH AND OTHERWISE CONTRIBUTE TO PRODUCING OPTIMUM SEALANT PERFORMANCE.

C. BOND-BREAKER TAPE: POLYETHYLENE TAPE OR OTHER PLASTIC TAPE RECOMMENDED BY SEALANT MANUFACTURER FOR PREVENTING SEALANT FROM ADHERING TO RIGID, INFLEXIBLE JOINT-FILLER MATERIALS OR JOINT SURFACES AT BACK OF JOINT. PROVIDE SELF-ADHESIVE TPE WHERE APPLICABLE.

2.7. MISCELLANEOUS MATERIALS
A. PRIMER: MATERIAL RECOMMENDED BY JOINT-SEALANT MANUFACTURER WHERE REQUIRED FOR ADHESION OF SEALANT TO JOINT SUBSTRATES INDICATED.

B. CLEANERS FOR NONPOROUS SURFACES: CHEMICAL CLEANERS ACCEPTABLE TO MANUFACTURERS OF SEALANTS AND SEALANT BACKING MATERIALS, FREE OF OILY RESIDUES OR OTHER SUBSTANCES CAPABLE OF STAINING OR HARMING JOINT SUBSTRATES AND ADJACENT NONPOROUS SURFACES IN ANY WAY, AND FORMULATED TO PROMOTE OPTIMUM ADHESION OF SEALANTS TO JOINT SUBSTRATES.

C. MASKING TAPE: NONSTAINING, NONABSORBENT MATERIAL COMPATIBLE WITH JOINT SEALANTS AND SURFACES ADJACENT TO JOINTS.

PART THREE - EXECUTION

3.1. EXAMINATION
A. EXAMINE JOINTS INDICATED TO RECEIVE JOINT SEALANTS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR JOINT CONFIGURATION, INSTALLATION TOLERANCES, AND OTHER CONDITIONS AFFECTING THE PERFORMANCE OF THE WORK.

B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2. PREPARATION
A. SURFACE CLEANING OF JOINTS: CLEAN OUT JOINTS IMMEDIATELY BEFORE INSTALLING JOINT SEALANTS TO COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTRUCTIONS AND THE FOLLOWING REQUIREMENTS:

1. REMOVE ALL FOREIGN MATERIAL FROM JOINT SUBSTRATES THAT COULD INTERFERE WITH ADHESION OF JOINT SEALANT, INCLUDING DUST, PAINTS (EXCEPT FOR PERMANENT, PROTECTIVE COATINGS TESTED AND APPROVED FOR SEALANT ADHESION AND COMPATIBILITY BY SEALANT MANUFACTURER), OLD JOINT SEALANTS, OIL, GREASE, WATERPROOFING, WATER REPELLENTS, WATER, SURFACE DIRT, AND FROST.
2. CLEAN POROUS JOINT SUBSTRATE SURFACES BY BRUSHING, GRINDING, MECHANICAL ABRADING, OR A COMBINATION OF THESE METHODS TO PRODUCE A CLEAN, SOUND SUBSTRATE CAPBLE OF DEVELOPINGOPTIMUM BOND WITH JOINT SEALANTS. REMOVE LOOSE PARTICLES REMAINING AFTER CLEANING OPERATIONS ABOVE BY VACUUMING OR BLOWING OUT JOINTS WITH OIL-FREE COMPRESSED AIR. POROUS JOINT SUBSTRATES INSLUDE THE FOLLOWING:
   a. CONCRETE.
   b. MASONRY.
   c. UNGLAZED SURFACES OF CERAMIC TILE.
3. REMOVE LATIANCE AND FORM-RELEASING AGENTS FROM CONCRETE.
4. CLEAN NONPOROUS JOINT SUBSTRATE SURFACES WITH CHEMICAL CLEANERS OR OTHER MENAS THAT DO NOT STAIN, HARM SUBSTRATES, OR LEAVE RESIDUES CAPABLE OF INTERFERINH WITH ADHESION OF JOINT SEALANTS. NONPOROUS JOINT SUBSTRATES INCLUDE THE FOLLOWING:
   a. METAL.
   b. GLASS.
   c. PORCELAIN ENAMEL.
   d. GLAZED SURFACES OF CERAMIC TILE.

B. JOINT PRIMING: PRIME JOINT SUBSTRATES WHERE RECOMMENDED BY JOINT-SEALANT MANUFACTURER OR AS INDICATED BY PRECONSTRUCTION JOINT-SEALANT-SUBSTRATE TESTS OR PRIOR EXPERIENCE. APPLY PRIMER TO COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTRUCTIONS. CONFINE PRIMERS TO AREAS OF JOINT-SEALANT BOND; DO NOT ALLOW SPILLAGE OR MIGRATION ONTO ADJOINING SURFACES.

C. MASKING TAPE: USE MASKING TAPE WHERE REQUIRED TO PREVENT CONTACT OF SEALANT OR PRIMER WITH ADJOINING SURFACES THAT OTHERWISE WOULD BE PERMANENTLY STAINED OR DAMAGED BY SUCH CONTACT OR BY CLEANING METHODS REQUIRED TO RMOVE SEALANT SMEARS. REMOVE TAPE IMMEDIATELY AFTER TOOLING WITHOUT DISTURBING JOINT SEAL.

SECTION 079200 -JOINT SEALANTS - CONT.

3.3. INSTALLATION OF JOINT SEALANTS
A. GENERAL: COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR PRODUCTS AND APPLICATIONS INDICATED, UNLESS MORE STRINGENT REQUIREMENTS APPLY.

B. SEALANT INSTALLATION STANDARD: COMPLY WITH RECOMMENDATIONS IN ASTM C 1193 FOR USE OF JOINT SEALANTS AS APPLICABLE TO MATERIALS, APPLICATIONS, AND CONDITIONS INDICATED.

C. INSTALL SEALANT BACKINGS OF KIND INDICATED TO SUPPORT SEALANTS DURING APPLICATION AND AT POSITION REQUIRED TO PRODUCE CROSS-SECTIONAL SHAPES AND DEPTHS OF INSTALLED SEALANTS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.

1. DO NOT LEAVE GAPS BETWEEN ENDS OF SEALANT BACKINGS.
2. DO NOT STRETCH, TWIST, PUNCTURE, OR TEAR SEALANT BACKINGS.
3. REMOVE ABSORBENT SEALANT BACKINGS THAT HAVE BECOME WET BEFORE SEALANT APPLICATION, AND REPLACE THEM WITH DRY MATERIALS..

D. INSTALL BOND-BREAKER TAPE BEHIND SEALANTS WHERE SEALANT BACKINGS ARE NOT USED BETWEEEN SEALANTS AND BACK OF JOINTS.

E. INSTALL SEALANTS USING PROVEN TECHNIQUES THAT COMPLY WITH TEH FOLLOWING AND AT THE TIME THE BACKINGS ARE INSTALLED.

1. PLACE SEALANTS SO THEY DIRECTLY CONTACT AND FULLY WET JOINT SUBSTRATES.
2. COMPLETELY FILL RECESSES IN EACH JOINT CONFIGURATION.
3. PRODUCE, UNIFORM, CROSS-SECTIONAL SHAPES AND DEPTHS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.

F. TOOLING OF NONSAG SEALANTS: IMMEDIATELY AFTER SEALANT APPLICATION AND BEFORE SLINNING OR CURING BEGINS, TOOL SEALANTS ACCORDING TO REQUIREMENTS, SPECIFIED IN SUBPARAGRAPHS BELOW TO FORM SMOOTH, UNIFORM BEADS OF CONFIGURATION INDICATED, TO ELIMINATE AIR POCKETS; AND TO ENSURE CONTACT AND ADHESION OF SEALANT WITH SIDES OF JOINT.

1. REMOVE EXCESS SEALANT FROM SURFACES ADJACENT TO JOINTS.
2. USE TOOLING AGENTS THAT ARE APPROVED IN WRITING BY SEALANT MANUFACTURER AND THAT DO NOT DISCOLOR SEALANTS OR ADJACENT SURFACES.
3. PROVIDE CONCAVE JOINT PROFILER PER FIGURE 8A IN ASTM C 1193 UNLESS OTHERWISE INDICATED.
4. PROVIDE RECESSED JOINT CONFIGURATION OF RECESS DEPTH AND AT LOCATIONS INDICATED ON DRAWINGS ACCORDING TO FIGURE 8C IN ASTM C 1193.
   a. USE MASKING TAPE TO PROTECT SURFACES ADJACENT TO RECESSED TOOLED JOINTS.

3.4. FIELD QUALITY CONTROL
A. FIELD-ADHESION TESTING: FIELD TEST JOINT-SEALANT ADHESION TO JOINT SUBSTRATES AS FOLLOWS:

1. EXTENT OF TESTING: TEST COMPLETED AND CURED SEALANT JOINTS AS FOLLOWS:
   a. PERFORM 4 TESTS FOR THE FIRST 1000 FEET OF JOINT LENGTH FOR EACH KIND OF SEALANT AND JOINT SUBSTRATE.
2. TEST METHOD: TEST JOINT SEALANTS ACCORDING TO METHOD A, FIELD-APPLIED SEALANT JOINT HAND PULL TAB, IN APPENDIX X1 IN ASTM C 1193 OR METHOD A, TAIL PROCEDURE, IN ASTM C 1521.
   a. 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.
3. INSPECT TESTED JOINTS AND REPORT ON THE FOLLOWING:
   a. WHETHER SEALANTS FILLED JOINT CAVITIES AND ARE FREE OF VOIDS.
   b. WHETHER SEALANT DIMENSIONS AND CONFIGURATIONS COMPLY WITH SPECIFIED REQUIREMENTS.
   c. WHETHER SEALANTS IN JOINTS CONNECTED TO PULL-OUT PORTION FAILED TO ADHERE TO JOINT SUBSTRATES OR TORE COHESIVELY. INCLUDE DATA ON PULL DISTANCE USED TO TEST EACH KIND OF PRODUCT AND JOINT SUBSTRATE. COMPARE THESE RESULTS TO DETERMINE IF ADHESION COMPLIES WITH SEALANT MANUFACTURER'S FIELD-ADHESION HAND-PULL TEST CRITERIA.
4. RECORD TEST RESULTS IN A FIELD-ADHESION-TEST LOG. INCLUDE DATES WHEN SEALANTS WERE INSTALLED, NAMES OF PERSONS WHO INSTALLE DSEALANTS, TEST DATES, TEST LOCATIONS, WHETHER JOINTS WERE PRIMED, ADHESION RESULTS AND PERCENT ELONGATIONS, SEALANT MATERIAL, SEALANT CONFIGURATION, AND SEALANT DIMENSIONS.
5. REPAIR SEALANTS PULLED FROM TEST AREA BY APPLYING NEW SEALANTS FOLLOWING SAME PROCEDURES USED ORIGINALLY TO SEAL JOINTS. ENSURE THAT ORIGINAL SEALANT SURFACES ARE CLEAN AND THAT NEW SEALANT CONTACTS ORIGINAL SEALANT.

B. EVALUATION OF FIELD-ADHESION-TEST RESULTS: SEALANTS NOT EVIDENCING ADHESIVE FAILURE FROM TESTING OR NONCOMPLIANCE WITH OTHER INDICATED REQUIREMENTS WILL BE CONSIDERED SATISFACTORY. REMOVE SEALANTS THAT FAIL TO ADHERE TO JOINT SUBSTRATES DURING TESTING OR TO COMPLY WITH OTHER REQUIREMENTS. RETEST FAILE DAPPLICATIONS UNTIL TEST RESULTS PROVE SEALANTS COMPLY WITH INDICATED REQUIREMENTS.

3.5. CLEANING
A. CLEAN OFF EXCESS SEALANT OR SEALANT SMEARS ADJACENT TO JOINTS AS THE WORK PROGRESSES BY METHODS AND WITH CLEANING MATERIALS APPROVED IN WRITING BY MANUFACTURERS OF JOINT SEALANTS AND OF PRODUCTS IN WHICH JOINTS OCCUR.

3.6. PROTECTION
A. 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 OCCURS, CUT OUT, REMOVE, AND REPAIR DAMGED OR DETERIORATED JOINT SEALANTS IMMEDIATELY SO INSTALLATIONS WITH REPAIRED AREAS ARE INDISTINGUISHABLE FROM ORIGINAL WORK.

3.7. JOINT-SEALANT SCHEDULE
A. JOINT-SEALANT APPLICATION: EXTERIOR JOINTS AT ROOFING AND OTHER FLASHING LOCATIONS WHERE INDICATED.

1. JOINT SEALANT: URETHANE, S, NS, 25, NT.

B. JOINT-SEALANT APPLICATION: EXTERIOR JOINTS IN VERTICAL ND HORIZONTAL NONTRAFFIC SURFACES.

1. JOINT LOCATIONS:
   a. CONTROL AND EXPANSION JOINT SIN UNIT MASONRY.
   b. JOINTS IN EXTERIOR STONE CLADDING.
   c. JOINTS BETWEEN DIFFERENT MATERIALS.
   d. PERIMETER JOINTS BETWEEN MATERIALS LISTED ABOVE AND FRAMES OF DOORS, WINDOWS, AND LOUVERS.
   e. CONTROL AND EXPANSION JOINTS IN CEILINGS AND OTHER OVERHEAD SURFACES.
   f. OTHER JOINTS AS INDICATED ON DRAWINGS.
2. JOINT SEALANT: SILICONE, NONSTAINING, S, NS, 100/50, NT.
3. JOINT-SEALANT COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

C. JOINT-SEALANT APPLICATION: INTERIOR JOINTS IN HORIZONTAL TRAFFIC SURFACES.

1. JOINT LOCATIONS:
   a. ISOLATION JOINTS IN CAST-IN-PLACE CONCRETE SLABS.
   b. OTHER JOINTS AS INDICATED ON DRAWINGS.
2. JOINT SEALANT: URETHANE, M, NS, 50, T, NT.
3. JOINT-SEALANT COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

D. JOINT-SEALANT APPLICATION: INTERIOR JOINTS IN VERTICAL SURFACES AND HORIZONTAL NONTRAFFIC SURFACES.

1. JOINT LOCATIONS:
   a. CONTROL AND EXPANSION JOINTS ON EXPOSED INTERIOR SURFACES OF EXTERIOR WALLS.
   b. VERTICAL JOINTS ON EXPOSED SURFACES ON UNIT MASONRY.
   c. OTHER JOINTS AS INDICATED ON DRAWINGS.
2. JOINT SEALANT; URETHANE, S, NS, 25, NT.
3. JOINT-SEALANT COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

E. JOINT-SEALANT APPLICATION: INTERIOR JOINTS IN VERTICAL SURFACES AND HORIZONTAL NONTRAFFIC SURFACES NOT SUBJECT TO SIGNIFICANT MOVEMENT.

1. JOINT LOCATIONS:
   a. CONTROL JOINTS ON EXPOSED INTERIOR SURFACES OF EXTERIOR WALLS.
   b. PERIMETER JOINTS BETWEEN INTERIOR WALL SURFACES NAD FRAMES OF INTERIOR DOORS, AND WINDOWS.
   c. GYPSUM BOARD SURFACES.
   d. OTHER JOINTS AS INDICATED ON DRAWINGS.
2. JOINT SEALANT; ACRYLIC LATEX.
3. JOINT-SEALANT COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

F. JOINT-SEALANT APPLICATION: MILDEW-RESISTANT INTERIOR JOINTS IN VERTICAL SURFACES AND HORIZONTAL NONTRAFFIC SURFACES.

1. JOINT LOCATIONS:
   a. JOINTS BETWEEN PLUMBING FIXTURES AND ADJOINING WALLS, FLOORS, AND COUNTERS.
   b. OTHER JOINTS AS INDICATED ON DRAWINGS.
2. JOINT SEALANT: SILICONE, MILDEW RESISTANT, ACID CURING, S, NS, 25, NT.
3. JOINT-SEALANT COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART ONE - GENERAL

1.1. SUMMARY
A. SECTION INCLUDES HOLLOW-METAL WORK.

1.2. DEFINITIONS
A. MINIMUM THICKNESS: MINIMUM THICKNESS OF BASE METAL WITHOUT COATINGS ACCORDING TO NAAMM-HMMA 803 OR SDI A250.8.

1.3. SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.

B. SHOP DRAWINGS: INCLUDE ELEVATIONS, FRAME PROFILES, METAL THICKNESSES, PREPARATIONS FOR HARDWARE, AND OTHER DETAILS.

C. SCHEDULE: PREPARED BY OR UNDER THE SUPERVISION OF SUPPLIER, USING SAME REFERENCE NUMBERS FOR DETAILS AND OPENINGS AS THOSE ON THE DRAWINGS.

1.4. QUALITY ASSURANCE
A. SOURCE LIMITATIONS: OBTAIN HOLLOW METAL FRAMES THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER WHEREVER POSSIBLE.

B. QUALITY STANDARD: IN ADDITION TO REQUIREMENTS SPECIFIED, COMPLY WITH ANSI/SDI A250.8, LATEST EDITION, "RECOMMENDED SPECIFICATIONS FOR STANDARD STEEL DOORS AND FRAMES".

C. FIRE-RATED DOOR ASSEMBLIES: ASSEMLIES COMPLYING WITH NFPA 80 THAT ARE LISTED AND LABELED BY A QUALIFIED TESTING AGENCY, FOR FIRE-PROTECTING RATINGS INDICATED, BASED ON TESTING AT POSITIVE PRESSURE ACCORDING TO NFPA 252 (NEUTRAL PRESSURE AT 40" ABOVE SILL) OR UL 10C.

1.5. DELIVERY, STORAGE, AND HANDLING
A. DELIVER HOLLOW METAL WORK PALLETIZED, WRAPPED, OR CRATED TO PROVIDE PROTECTION DURING TRANSIT AND PROJECT SITE STORAGE. DO NOT USE NON-VENTED PLASTIC.

B. DELIVER WELDED FRAMES WITH TWO REMOVABLE SPREADER BARS ACROSS BOTTOM OF FRAMES, TACK WELDED TO JAMBS AND MULLIONS.

C. STORE HOLLOW METAL WORK UNDER COVER AT PROJECT SITE. PLACE IN STACKS OF FIVE UNITS MAXIMUM IN A VERTICAL POSITION WITH HEADS UP, SPACED BY BLOCKING, ON A MINIMUM 4-INCH HIGH WOOD BLOCKING. DO NOT STORE IN A MANNER THAT TRAPS EXCESS HUMIDITY.

1.6. WARRANTY
A. SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPAIR DOOR FRAMES THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.

B. WARRANTY INCLUDES INSTALLATION AND FINISHING THAT MAY BE REQUIRED DUE TO REPAIR OR REPLACEMENT OF DEFECTIVE DOOR FRAMES.

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES - CONT.

PART TWO - PRODUCTS

2.1. MANUFACTURERS
A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

1. AMWELD INTERNATIONAL, LLC.
2. CECO DOOR PRODUCTS; AN ASSA ABLOY GROUP COMPANY.
3. MESKER DOOR INC.
4. PALMETTO METAL PRODUCTS, INC., COLUMBIA, SC.
5. REPUBLIC DOORS AND FRAMES.
6. STEELCRAFT; AN INGERSOLL-RAND COMPANY.

2.2. INTERIOR DOORS AND FRAMES
A. HEAVY-DUTY DOORS AND FRAMES: SDI A250.8, LEVEL 2

1. PHYSICAL PERFORMANCE: LEVEL B ACCORDING TO SDI A250.4
2. FRAMES:
   a. MATERIALS: UNCOATED, STEEL SHEET, MINIMUM THICKNESS OF 0.053 INCH.
   b. CONSTRUCTION: FULL PROFILE WELDED.
3. EXPOSED FINISH: PRIME.

2.3. FRAME ANCHORS
A. JAMB ANCHORS:

1. STUD-WALL TYPE: DESIGNED TO ENGAGE STUD, WELDED TO BACK OF FRAMES; NOT LESS THAN 0.042 INCH THICK.

B. FLOOR ANCHORS: FORMED FROM THE SAME MATERIAL AS FRAMES, MINIMUM THICKNESS OF 0.042 INCH, AND AS FOLLOWS:

1. MOMOLITHIC CONCRETE SLABS: CLIP-TYPE ANCHORS, WITH TWO HOLES TO RECEIVE FASTENERS.

2.4. MATERIALS
A. COLD-ROLLED STEEL SHEET: ASTM A 1008/A 1008M, COMMERCIAL STEEL (CS), TYPE B; SUITABLE FOR EXPOSED APPLICATIONS.

B. HOT-ROLLED STEEL SHEET: ASTM A 1011/A 1011M, COMMERCIAL STEEL (CS), TYPE B; FREE OF SCALE, PITING, OR SURFACE DEFECTS; PICKLED AND OILED.

C. FRAME ANCHORS: ASTM A 879/A 879M, COMMERCIAL STEEL (CS), 04Z COATING DESIGNATION; MILL PHOSPHATIZED.

D. INSERTS, BOLTS, AND FASTENERS: HOT-DIPPED GALVANIZED ACCORDING TO ASTM A 153/A 153 M.

E. POWDER-ACTUATED FASTENERS IN CONCRETE: FROM CORROSION-RESISTANT MATERIALS.

2.5. FABRICATION
A. FABRICATE HOLLOW-METAL WORK TO BE RIGID AND FREE OF DEFECTS, WARP, OR BUCKLE. ACCURATELY FORM METAL TO REQUIRED SIZES AND PROFILES, WITH MINIMUM RADIUS FOR METAL THICKNESS. WHERE PRACTICAL, FIT AND ASSEMBLE UNITS IN MANUFACTURER'S PLANT. TO ENSURE PROPER ASSEMBLY AT PROJECT SITE, CLEARLY IDENTIFY WORK THAT CANNOT BE PERMANENTLY FACTORY ASSEMBLED BEFORE SHIPMENT.

B. HOLLOW-METAL FRAMES: WHERE FRAMES ARE FABRICATED IN SECTIONS DUE TO SHIPPING OR HANDLING LIMITATIONS, PROVIDE ALIGNMENT PLATES OR ANGLES AT EACH JOINT, FABRICATED OF SAME THICKNESS AS FRAMES.

1. PROVIDE COUNTERSUNK, FLAT- OR OVAL-HEAD EXPOSED SCREWS AND BOLTS FOR EXPOSED FASTENERS UNLESS OTHERWISE INDICATED.
2. GROUT GUARDS: WELD GUARDS TO FRAME AT BACK OF HARDWARE MORTISES IN FRAMES TO BE GROUTED.
3. FLOOR ANCHORS: WELD ANCHORS TO BOTTOMS OF JAMBS WITH AT LEAST FOUR SPOT WELDS PER ANCHOR; HOWEVER, FOR SLIP-ON DRYWALL FRAMES, PROVIDE ANCHOR CLIPS OR COUNTERSUNK HOLES AT BOTTOM OF JAMBS.
4. JAMB ANCHORS: PROVIDE NUMBER AND SPACING OF ANCHORS AS FOLLOWS:
   a. STUD-WALL TYPE: LOCATE ANCHORS NOT MORE THAN 18 FROM TOP AND BOTTOM OF FRAME. SPACE ANCHORS NOT MORE THAN 32 INCHES O.C. AND AS FOLLOWS:
      1) THREE ANCHORS PER JAMB UP TO 60 INCHES HIGH.
      2) FOUR ANCHORS PER JAMB FROM 60 INCHES TO 90 INCHES HIGH.
      3) FIVE ANCHORS PER JAMB FROM 90 TO 96 INCHES HIGH.
      4) FIVE ANCHORS PER JAMB PLUS ONE ADDITIONAL ANCHOR PER JAMB FOR EACH 24 INCHES OR FRACTION THEREOF ABOVE 96 INCHES HIGH.
5. DOOR SILENCERS: EXCEPT ON WEATHER-STRIPPED FRAMES, DRILL STOPS TO RECEIVE DOOR SILENCERS.
   a. SINGLE-DOOR FRAMES: DRILL STOP IN STRILE JAMB TO RECEIVE THREE DOOR SILENCERS.
   b. DOUBLE-DOOR FRAMES: DRILL STOP IN HEAD JAMB TO RECEIVE TWO DOOR SILENCERS.

C. HARDWARE PREPARATION: FACTORY PREPARE HOLLOW-METAL WORK TO RECEIVE TEMPLATED MORTISED HARDWARE; INCLUDE CUTOUTS, REINFORCEMENT, MORTISING, DRILLING, AND TAPPING ACCORDING TO SDI A250.6, THE DOOR HARDWARE SCHEDULE, AND TEMPLATES.
1. REINFORCE FRAMES TO RECEIVE NONTEMPLATED, MORTISED, AND SURFACE-MOUNTED DOOR HARDWARE.
2. COMPLY WITH APPLICABLE REQUIREMENTS IN SDI A250.6 AND BHMA A156.115 FOR PREPARATION OF HOLLOW-METAL WORK FOR HARDWARE.

2.6. STEEL FINISHES
A. PRIME FINISH: CLEAN, PRETREAT, AND APPLY MANUFACTURER'S STANDARD PRIMER.

1. SHOP PRIMER: SDI A250.10.

2.7. ACCESSORIES
A. GROUT GUARDS: FORMED FROM SAME MATERIAL AS FRAMES, NOT LESS THAN 0.016 INCH THICK.

PART THREE - EXECUTION

3.1. INSTALLATION
A. HOLLOW-METAL FRAMES: INSTALL HOLLOW-METAL FRAMES OF SIZE AND PROFILE INDICATED. COMPLY WITH SDI A250.11 OR NAAM-HMMA 840 AS REQUIRED BY STANDARDS SPECIFIED.

1. SET FRAMES ACCURATELY IN POSITION; PLUMBED, ALIGNED, AND BRACED SECURELY UNTIL PERMANENT ANCHORS ARE SET. AFTER WALL CONSTRUCTION IS COMPLETE, REMOVE TEMPORARY BRACES, LEAVING SURFACES SMOOTH AND UNDAMAGED.
   a. AT FIRE-RATED OPENINGS, INSTALL FRAMES ACCORDING TO NFPA 80.
   b. INSTALL DOOR SILENCERS IN FRAMES BEFORE GROUTING.
   c. REMOVE TEMPORARY BRACES NECESSARY FOR INSTALLATION ONLY AFTER FRAMES HAVE BEEN PROPERLY SET AND SECURED.
   d. CHECK PLUMB, SQUARE, AND TWIST OF FRAMES AS WALLS ARE CONSTRUCTED. SHIM AS NECESSARY TO COMPLY WITH INSTALLATION TOLERANCES.
2. FLOOR ANCHORS: PROVIDE FLOOR ANCHORS FOR EACH JAMB AND MULLION THAT EXTENDS TO FLOOR, AND SECURE WITH 3/8 INCH DIAMETER BY 3 INCH LONG, POSTINSTALLED EXPANSION ANCHORS.
   a. FLOOR ANCHORS MAY BE SET WITH POWDER-ACTUATED FASTENERS INSTEAD OF POSTINSTALLED EXPANSION ANCHORS IF SO INDICATED AND APPROVED ON SHOP DRAWINGS.
3. METAL-STUD PARTITIONS: SOLIDLY PACK MINERAL-FIBER INSULATION INSIDE FRAMES.
4. INTALLATION TOLERANCES: ADJUST HOLLOW-METAL DOOR FRAMES FOR SQUARENESS, ALIGNMENT, TWIST, AND PLUMB 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.
   b. ALIGNMENT: PLUS OR MINUS 1/16 INCH, MEASURED AT JAMBS ON A HORIZONTAL LINE PARALLEL TO PLANE OF WALL.
   c. 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.

3.2. ADJUSTING AND CLEANING
A. FINAL ADJUSTMENTS: CHECK AND READJUST OPERATING HARDWARE ITEMS IMMMEDIATELY BEFORE FINAL INSPECTION. LEAVE WORK IN COMPLETE AND PROPER OPERATING CONDITION. REMOVE AND REPLACE DEFECTIVE WORK, INCLUDING HOLLOW-METAL WORK THAT IS WARPED, BOWED, OR OTHERWISW UNACCEPTABLE.

B. PRIME-COAT TOUCH-UP: IMMEDIATELY AFTER ERECTION, SOUND SMOOTH RUSTED OR DAMAGED AREAS OF PRIME COAT AND APPLY TOUCHUP OF COMPATIBLE AIR-DRYING, RUST-INHIBITIVE PRIMER.

Earl Architects

Earl Architects, LLC
301 N. Main Street
Greenville, SC 29601
864 271 7555

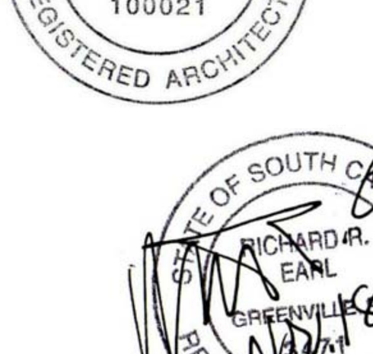
Consultant

DUNCAN CHAPEL
FIRE DISTRICT
STATION 2

NEW FACILITY
GREENVILLE, SC

Keyplan

Professional Seal



Issued for Permit

Revision

SPECIFICATIONS

A0.05

In Charge	RRE
Drawn By	DMR
Checked By	SJM
Project Number	1033.00.00
Date	11/18/2014

SECTION 092900 - GYPSUM BOARD

PART ONE - GENERAL

1.1. SUMMARY
A. SECTION INCLUDES:

1. INTERIOR GYPSUM BOARD.
2. METAL REVEALS.

1.2. SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.

1.3. QUALITY ASSURANCE
A. MOCKUPS: BEFORE BEGINNING GYPSUM BOARD INSTALLATION, INSTALL MOCKUPS OF AT LEAST 100 SQ. FT. IN SURFACE AREA TO DEMONSTRATE AESTHETIC EFFECTS AND SET QUALITY STANDARDS FOR MATERIALS AND EXECUTION.

1. INSTALL MOCKUPS FOR THE FOLLOWING:
   a. EACH LEVEL OF GYPSUM BOARD FINISH INDICATED FOR USE IN EXPOSED LOCATIONS.
2. APPLY OR INSTALL FINAL DECORATION INDICATED, INCLUDING PAINTING AND WALLCOVERINGS, ON EXPOSED SURFACES FOR REVIEW OF MOCKUPS.
3. SIMULATE FINISHED LIGHTING CONDITIONS FOR REVIEW OF MOCKUPS.
4. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, APPROVED MOCKUPS MAY BECOME PART OF THE COMPLETED WORK IF UNDISTURBED AT TIME OF SUBSTANTIAL COMPLETION.

PART TWO - PRODUCTS

2.1. PERFOMANCE 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.

2.2. INTERIOR GYPSUM BOARD
A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING.

1. AMERICAN GYPSUM.
2. CERTAINTEED CORP.
3. GEORGIA-PACIFIC GYPSUM LLC.
4. LAFARGE NORTH AMERICA INC.
5. NATIONAL GYPSUM COMPANY.
6. TEMPLE-INLAND.
7. USG CORPORATION.

B. GYPSUM WALLBOARD: ASTM C 1396/C 1396M.

1. THICKNESS: 5/8 INCH.
2. LONG EDGES: TAPERED.

C. GYPSUM BOARD, TYPE X: ASTM C 1396/C 1396M.

1. THICKNESS: 5/8 INCH.
2. LONG EDGES: TAPERED.

D. GYPSUM CEILING BOARD: ASTM C 1396/C 1396M.

1. THICKNESS: 5/8 INCH.
2. LONG EDGES: TAPERED.

E. ABUSE-RESISTANT GYPSUM BOARD: ASTM C 1629/C 1629M, LEVEL 3

1. CORE: 5/8 INCH, TYPE X.
2. LONG EDGES: TAPERED.
3. MOLD RESISTANCE: ASTM D 3273, SCORE OF 10 AS RATED ACCORDING TO ASTM D 3274.

F. MOISTURE- AND MOLD-RESISTANT GYPSUM BOARD: ASTM C 1396/C 1396M. WITH MOISTURE- AND MOLD-RESISTANT CORE AND PAPER SURFACES.

1. CORE: 5/8 INCH, TYPE X.
2. LONG EDGES: TAPERED.
3. MOLD RESISTANCE: ASTM D 3273, SCORE OF 10 AS RATED ACCORDING TO ASTM D 3274.

2.3. TRIM ACCESSORIES
A. INTERIOR TRIM: ASTM C 1047.

1. MATERIAL: GALVANIZED OR ALUMINUM-COATED SHEET STEEL OR ROLLED ZINC.
2. SHAPES:
   a. CORNERBEAD
   b. LC-BEAD: J-SHAPED; EXPOSED LONG FLANGE RECEIVES JOINT COMPOUND.
   c. L-BEAD: L-SHAPED; EXPOSED LONG FLANGE RECEIVES JOINT COMPOUND.
   d. U-BEAD: J-SHAPED; EXPOSED SHORT FLANGE DOES NOT RECEIVE JOINT COMPOUND.
   e. EXPANSION (CONTROL) JOINT.

B. ALUMINUM TRIM: EXTRUDED ACCESSORIES OF PROFILES AND DIMENSIONS INDICATED.

1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
   a. FRY REGLET CORP.
   b. GORDON, INC.
   c. PITTCON INDUSTRIES.
2. ALUMINUM: ALLOY AND TEMPER WITH NOT LESS THAN THE STRENGTH AND DURABILITY PROPERTIES OF ASTM B 221, ALLOY 6063-T5.
3. FINISH: CORROSION-RESISTANT PRIMER COMPATIBLE WITH JOINT COMPOUND AND FINISH MATERIALS SPECIFIED.

2.4. JOINT TREATMENT MATERIALS
A. GENERAL: COMPLY WITH ASTM C 475/C 475M

B. JOINT TAPE:

1. INTERIOR GYPSUM BOARD: PAPER.

C. JOINT COMPOUND FOR INTERIOR GYPSUM BOARD: FOR EACH COAT USE FORMULATION THAT IS COMPATIBLE WITH OTHER COMPOUNDS APPLIED ON PREVIOUS OR FOR SUCCESSIVE COATS.

1. PREFILLING: AT OPEN JOINTS AND DAMAGED SURFACE AREAS, USE SETTING-TYPE TAPING COMPOUND.
2, EMBEDDING AND FIRST COAT: FOR EMBEDDING TAPE AND FIRST COAT ON JOINTS, FASTENERS, AND TRIM FLANGES, USE DRYING-TYPE, ALL-PURPOSE COMPOUND.
3. FILL COAT: FOR SECOND COAT, USE DRYING-TYPE, ALL-PURPOSE COMPOUND.
4. FINISH COAT: FOR THIRD COAT, USE DRYING-TYPE, ALL-PURPOSE COMPOUND.
5. SKIM COAT: FOR FINAL COAT OF LEVEL 5 FINISH, USE DRYING-TYPE, ALL-PURPOSE COMPOUND.

2.5. AUXILIARY MATERIALS
A. GENERAL: PROVIDE AUXILIARY MATERIALS THAT COMPLY WITH REFERENCED INSTALLATION STANDARDS AND MANUFACTURER'S WRITTEN RECOMMENDATIONS.

B. STEEL DRILL SCREWS: ASTM C 1002, UNLESS OTHERWISE INDICATED.
1. USE TYPE W SCREWS OF SIZE RECOMENDED BY MANUFACTURER FOR FASTENING PANELS TO WOOD STUDS.

C. SOUND ATTENUATION BLANKETS: ASTM C 665, TYPE I (BLANKETS WITHOUT MEMBRANE FACING) PRODUCED BY COMBINING THERMOSETTING RESINS WITH MINERAL FIBERS MANUFACTURED FROM GLASS, SLAG WOOL, OR ROCK WOOL.

1. FIRE-RESISTANCE-RATED ASSEMBLIES: COMPLY WITH MINERAL-FIBER REQUIREMENTS OF ASSEMBLY.

D. THERMAL INSULATION: AS SPECIFIED IN SECTION 072100 "THERMAL INSULATION."

PART 3 - EXECUTION

3.1. APPLYING AND FINISHING PANELS
A. COMPLY WITH ASTM C 840.

B. EXAMINE PANELS BEFORE INSTALLATION. REJECT PANELS THAT ARE WET, MOISTURE DAMAGED, AND MOLD DAMAGED.

C. ISOLATE PERIMETER OF GYPSUM BOARD APPLIED TO NON-LOAD-BEARING PARTITIONS AT STRUCTURAL ABUTMENTS, EXCEPT FLOORS. PROVIDE 1/2- TO 1/2-INCH WIDE SPACES AT THESE LOCATIONS AND TRIM EDGES WITH EDGE TRIM WHERE EDGES OF PANELS ARE EXPOSED. SEAL JINTS BETWEEN EDGES AND ABUTTING STRUCTURAL SURFACES WITH ACOUSTICAL SEALANT.

D. INSTALL TRIM WITH BACK FLANGES INTENDED FOR FASTENERS, ATTACH TO FRAMING WITH SAME FASTENERS USED FOR PANELS. OTHERWISE, ATTACH TRIM ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

1. CONTROL JOINTS: INSTALL CONTROL JOINTS AT LOCATIONS INDICATED ON DRAWINGS ACCORDING TO ASTM C 840 AND IN SPECIFIC LOCATIONS APPROVED BY ARCHITECT FOR VISUAL EFFECT.
2. ALUMINUM TRIM: INSTALL IN LOCATIONS INDICATED ON DRAWINGS.

E. PREFILL OPEN JOINTS AND DAMAGED SURFACE AREAS.

F. APPLY JOINT TAPE OVER GYPSUM BOARD JOINTS, EXCEPT FOR TRIM PRODUCTS SPECIFICALLY INDICATED AS NOT INTENDED TO RECEIVE TAPE.

G. INSTALL SOUND ATTENUATION BLANKETS BEFORE INSTALLING GYPSUM PANELS UNLESS BLANKETS ARE READILY INSTALLED AFTER PANELS HAVE BEEN INSTALLED ON ONE SIDE.

H. INSTALL INTERIOR GYPSUM BOARD IN THE FOLLOWING LOCATIONS:

1. WALLBOARD TYPE: VERTICAL SURFACES UNLESS OTHERWISE INDICATED.
2. TYPE X: WHERE REQUIRED FOR FIRE-RESISTANCE-RATED ASSEMBLY.
3. CEILING TYPE: CEILING SURFACES.
4. ABUSE-RESISTANT TYPE: NOT USED.
5. MOISTURE- AND MOLD-RESISTANT TYPE:
   a. SHOWER ROOMS.
   b. RESTROOMS.
   c. JANITORS CLOSET.
   d. APPARATUS BAY CEILING.
   e. UNCONDITIONED SPACES.
   f. OTHER LOCATIONS AS INDICATED.

I. SINGLE-LAYER APPLICATION:

1. ON CEILINGS, APPLY GYPSUM PANELS BEFORE WALL/PARTITION BOARD APPLICATION TO GREATEST EXTENT POSSIBLE AND AT RIGHT ANGLES TO FRAMING UNLESS OTHERWISE INDICATED.
2. ON PARTITIONS/WALLS, APPLY GYPSUM PANELS VERTICALLY (PARALLEL TO FRAMING) UNLESS OTHERWISE INDICATED OR REQUIRED BY FIRE-RESISTANCE-RATED ASSEMBLY, AND MINIMIZE END JOINTS.
   a. STAGGER ABUTTING END JOINTS NOT LESS THAN ONE FRAMING MEMBER IN ALTERNATE COURSES OF PANELS.

J. GYPSUM BOARD FINISH LEVELS: FIISH PANELS TO LEVELS INDICATED BELOW AND ACCORDING TO ASTM C 840.

1. LEVEL 1: CEILING PLENUM AREAS, CONCEALED AREAS, AND WHERE INDICATED.
2. LEVEL 2: PANELS THAT ARE SUBSTRATE FOR TILE.
3. LEVEL 4: AT PANEL SURFACES THAT WILL BE EXPOSED TO VIEW UNLESS OTHERWISE INDICATED.
4. LEVEL 5: SURFACES TO RECEIVE SEMI-GLOSS OR HIGH GLOSS PAINT, INCLUDING ABUSE-RESISTANT GYPSUM BOARD.

K. PROTECT ADJACENT SURFACES FROM DRYWALL COMPOUND AND PROMPTLY REMOVE FROM FLOORS AND OTHER NON-DRYWALL SURFACES. REPAIR SURFACES STAINED, MARRED, OR OTHERWISE DAMAGED DURING DRYWALL APPLICATION.

L. REMOVE AND REPLACE PANELS THAT ARE WET, MOISTURE DAMAGED, AND MOLD DAMAGED.

SECTION 313116 - TERMITE CONTROL

PART ONE - GENERAL

1.1. SUMMARY
A. SECTION INCLUDES:

1. SOIL TREATMENT WITH TERMITICIDE.

1.2. SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED. INCLUDE THE EPA-REGISTERED LABEL FOR TERMITICIDE PRODUCTS.

B. PRODUCT CERTIFICATES.

C. SOIL TREATMENT APPLICATION REPORT: INCLUDE THE FOLLOWING:

1. DATE AND TIME OF APPLICATION.
2. MOISTURE CONTENT OF SOIL BEFORE APPLICATION.
3. TERMITICIDE BRAND NAME AND MANUFACTURER.
4. QUANTITY OF UNDILUTED TERMITICIDE USED.
5. DILUTIONS, METHODS, VOLUMES USED, AND RATES OF APPLICATION.
6. AREAS OF APPLICATION.
7. WATER SOURCE FOR APPLICATION.

D. WARRANTIES: SAMPLE OF SPECIAL WARRANTIES.

1.3. QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: A SPECIALIST WHO IS LICENSED ACCORDING TO REGULATIONS OF AUTHORITIES HAVING JURISDICTION TO APPLY TERMITE CONTROL TREATMENT AND PRODUCTS IN JURISDICTION WHERE PROJECT IS LOCATED AND WHO EMPLOYS WORKERS TRAINED AND APPROVED BY MANUFACTURER TO INSTALL MANUFACTURER'S PRODUCTS.

B. REGULATORY REQUIREMENTS: FORMULATE AND APPLY TERMITICIDES ND TERMITICIDE DEVICES ACCORDING TO THE EPA-REGISTERED LABEL.

C. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

1.4. PROJECT CONDITIONS
A. ENVIRONMENTAL LIMITATIONS: TO ENSURE PENETRATION, DO NOT TREAT SOIL THAT IS WATER SATURATED OR FROZEN. DO NOT TREAT SOIL WHILE PRECIPITATION IS OCCURING. COMPLY WITH REQUIREMENTS OF THE EPA-REGISTERED LABEL AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

B. COORDINATE SOIL TREATMENT APPLICATION WITH EXCAVATING, FILLING, GRADING, AND CONCRETING OPERATIONS. TREAT SOIL UNDER FOOTINGS, GRADE BEAMS, AND GROUND-SUPPORTED SLABS BEFORE CONSTRUCTION.

1.5. PROJECT RECORD DOCUMENTATION
A. KEEP A LOG BOOK AT THE JOB SITE TO INCLUDE THE FOLLOWING INFORMATION:

1. PROJECT NAME.
2. COMPANY PROVIDING TREATMENT.
3. APPLICATOR'S NAME.
4. TIME OF ARRIVAL AND DEPARTURE.
5. PRODUCT NAME.
6. RECORD DATE OF ALL APPLICATIONS.
7. RATE OF APPLICATION TO ALL REQUIRED AREAS OF THE DESIGNATED SITE.
8. ALL AREAS TO BE TREATED.
9. THE SOIL TREATMENT TRADE NAME.
10. QUANTITY USED FOR THE DESIGNATED TREATED AREAS.
11. QUANTITY OF CONCENTRATE DELIVERED TO THE SITE.
12. THE PERCENTAGE OF ACTIVE INGREDIENT IN DILUTED FORM.
13. FINISHED GALLONS OF SOIL TREATMENT FOR EACH APPLICATION.
14. LINEAR AND SQUARE FOOTAGE AMOUNT TO DETERMINE TOTAL FINISHED SOIL TREATMENT USED.

1.6. WARRANTY
A. SOIL TREATMENT WARRANTY: MANUFACTURER'S STANDARD FORM, SIGNED BY APPLICATOR AND CONTRACTOR, CERTIFYING THAT TERMITE CONTROL WORK, CONSISTING OF APPLIED SOIL TERMITICIDE TREATMENT, WILL PREVENT INFESTATION OF SUBTERRANEAN TERMITES. IF SUBTERRANEAN TERMITE ACTIVITY OR DAMAGE IS DISCOVERED DURING WARRANTY PERIOD, RE-TREAT SOIL AND REPAIR OR REPLACE DAMAGED CAUSED BY TERMITE INFESTATION.

1. WARRANTY PERIOD: FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

1.7. MAINTENANCE SERVICE
A. CONTINUING SERVICE: BEGINNING AT SUBSTANTIAL COMPLETION, PROVIDE 12 MONTHS CONTINUING SERVICE INCLUDING MONITORING, INSPECTION, AND RE-TREATMENT FOR OCCURANCES OF TERMITE ACTIVITY. PROVIDE A STANDARD CONTINUING SERVICE AGREEMENT. STATE SERVICES, OBLIGATIONS, CONDITIONS, TERMS FOR AGREEMENT PERIOD, AND TERMS FOR FUTURE RENEWAL OPTIONS.

PART TWO - PRODUCTS

2.1. SOIL TREATMENT
A. TERMITICIDE: PROVIDE AN EPA-REGISTERED TERMITICIDE, COMPLYING WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION, IN AN AQUEOUS SOLUTION FORMULATED TO PREVENT TERMITE INFESTATION. PROVIDE QUANTITY REQUIRED FOR APPLICATION AT THE LABEL VOLUME AND RATE FOR THE MAXIMUM TERMITICIDE CONCENTRATION ALLOWED FOR EACH SPECIFIC USE, ACCORDING TO PRODUCT'S EPA-REGISTERED LABEL.

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
   a. BASF CORPORATION, AGRICULTURE PRODUCTS; TERMIDOR.
   b. BAYER ENVIRONMENTAL SCIENCE; PREMISE 75.
   c. FMC CORPORATION, AGRICULTURAL PRODUCTS GROUP; TALSTAR OR PREVAIL.
2. SERVICE LIFE OF TREATMENT: SOIL TREATMENT TERMITICIDE THAT IS EFFECTIVE FOR NOT LESS THAN FIVE YEARS AGAINST INFESTATION OF SUBTERRANEAN TERMITES.

PART 3 - EXECUTION

3.1. APPLICATION, GENERAL
A. GENERAL: COMPLY WITH THE MOST STRINGENT REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION AND WITH MANUFACTURER'S EPA-REGISTERED LABEL FOR PRODUCTS..

3.2. APPLYING SOIL TREATMENT
A. EXAMINE SUBSTRATES, AREAS, AND CONDITIONS, WITH APPLICATOR PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR MOISTURE CONTENT OF SOIL PER TERMITICIDE LABEL REQUIREMENTS, INTERFACES WITH EARTHWORK, SLAB AND FOUNDATION WORK, LANDSCAPING, UTILITY INSTALLATION, AND OTHER CONDITIONS AFFECTING PERFORMANCE OF TERMITE CONTROL.

B. PROCEED WITH APPLICATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

C. SOIL TREATMENT PREPARATION: REMOVE FOREIGN MATTER AND IMPERMEABLE SOIL MATERIALS THAT COULD DECREASE EFFECTIVENESS ON AREAS TO BE TREATED. LOOSEN, RAKE, AND LEVEL SOIL TO BE TREATED EXCEPT PREVIOUSLY COMPACTED AREAS UNDER SLABS AND FOOTINGS. TERMITICIDES MAY BE APPLIED BEFORE PLACING COMPACTED FILL UNDER SLABS IF RECOMMENDED IN WRITING BY TERMITICIDE MANUFACTURER.

1. FIT FILLING HOSE CONNECTED TO WATER SOURCE AT THE SITE WITH A BACKFLOW PREVENTER, COMPLYING WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

D. APPLICATION: MIX SOIL TREATMENT TERMITICIDE SOLUTION TO A UNIFORM CONSISTENCY. PROVIDE QUANTITY REQUIRED FOR APPLICATION AT THE LABEL VOLUME AND RATE FOR THE MAXIMUM SPECIFIED CONCENTRATION OF TERMITICIDE, ACCORDING TO MANUFACTURER'S EPA-REGISTERED LABEL, TO THE FOLLOWING SO THAT A CONTINUOUS HORIZONTAL AND VERTICAL TERMITICIDAL BARRIER OR TREATED ZONE IS ESTABLISHED AROUND AND UNDER BUILDING CONSTRUCTION. DISTRIBUTE TREATMENT EVENLY.

1. SLABS-ON-GRADE: UNDER GROUND-SUPPORTED SLAB CONSTRUCTION, INCLUDING FOOTINGS, BUILDING SLABS, AND ATTACHED SLABS AS AN OVERALL TREATMENT. TREAT SOIL MATERIALS BEFORE CONCRETE FOOTINGS AND SLABS ARE PLACED.
2. FOUNDATIONS: ADJACENT SOIL, INCLUDING SOIL ALONG THE ENTIRE INSIDE PERIMETER OF FOUNDATION WALLS; ALONG BOTH SIDES OF INTERIOR PARTITION WALLS; AROUND PLUMBING PIPES AND ELECTRIC CONDUIT PENETRATING THE SLAB; AROUND INTERIOR COLUMN FOOTERS, PIERS, AND CHIMNEY BASES; AND ALONG THE ENTIRE OUTSIDE PERIMETER, FROM GRADE TO BOTTOM OF FOOTING. AVOID SOIL WASHOUT AROUND FOOTINGS.
3. MASONRY: TREAT VOIDS.
4. PENETRATIONS: AT EXPANSION JOINTS, CONTROL JOINTS, AND AREAS WHERE SLABS WILL BE PENETRATED.

E. RODDING ALONE IS NOT PERMITTED AS THE PRIMARY TECHNIQUE OF TREATING THE SOIL ADJACENT TO THE FOUNDATION WALLS. TRENCHING OR TRENCHING COMBINED WITH RODDINING IS ACCEPTABLE.

F. PROVIDE A COMPATIBLE DYE IN THE TERMITICIDE TO SHOW VISIBLE EVIDENCE OF THE TREATMENT.

G. AVOID DISTURBANCE OF TREATED SOIL APPLICATION. KEEP OFF TREATED AREAS UNTIL COMPLETELY DRY.

H. PROTECT TERMITICIDE SOLUTION, DISPERSED IN TREATED SOILS AND FILLS, FROM BEING DILUTED UNTIL GROUND-SUPPORTED SLABS ARE INSTALLED. USE WATERPROOF BARRIER ACCORDING TO EPA-REGISTERED LABEL INSTRUCTIONS.

I. POST WARNING SIGNS IN AREAS OF APPLICATION.

J. REAPPLY SOIL TREATMENT SOLUTION TO AREAS DISTURBED BY SUBSEQUENT EXCAVATION, GRADING, LANDSCAPING, OR OTHER CONSTRUCTION ACTIVITIES FOLLOWING APPLICATION.

K. CONDUCT A QUALITY CONTROL INSPECTION AFTER TRETMENT AND SUBMIT A WRITTEN REPORT TO THE ARCHITECT.

Design No. U305
BXUV.U305
Fire Resistance Ratings - ANSI/UL 263

Page Bottom

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- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

Design No. U305

June 27, 2014

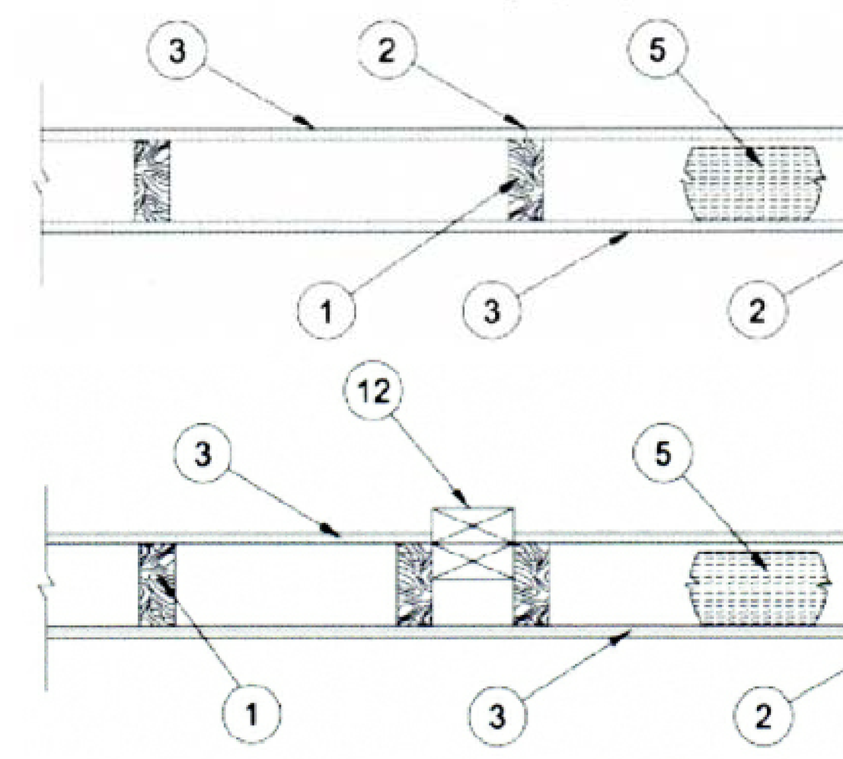
Bearing Wall Rating 1 Hr

Finish Rating See Items 3, 3A, 3D, 3E, 3F, 3G, 3H, 3J and 3L.

STC Rating - 56 (See Item 9)

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. **Wood Studs** Nom 2 by 4 in. spaced 16 in. OC max, effectively firestopped.

2. **Joints and Nail-Heads** Joints covered with joint compound and paper tape. Joint compound and paper tape may be omitted when square edge boards are used. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with the joints reinforced with paper tape. Nailheads exposed or covered with joint compound.

3. **Gypsum Board*** 5/8 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths other than 48 in., gypsum panels are to be installed horizontally. For an alternate method of attachment of gypsum panels, refer to Item 6, 6A or 6B, **Steel Framing Members***.

When Item 6 ,6B, or 6C **Steel Framing Members***, are used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC.

When Item 6A, **Steel Framing Members***, is used, two layers of gypsum panels attached to furring channels. Base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC. Face layer attached to furring channels with 1-5/8 in. long Type S bugle-head steel screws spaced 12 in. OC. All joints in face layers staggered with joints in base layers. One layer of gypsum board attached to opposite side of wood stud without furring channels as described in Item 3.

When Item 7, resilient channels are used, 5/8 in. thick, 4 ft wide gypsum panels applied vertically. Screw attached furring channels with 1 in. long, self-drilling, self-tapping Type S or S-12 steel screws spaced 8 in. OC, vertical joints located midway between studs.

ACADIA DRYWALL SUPPLIES LTD Type X (finish rating 22 min), 5/8 Type X, Moisture Resistant Type X, Gypsum Sheathing Type X, Mold & Mildew Resistant Type X and Mold & Mildew Resistant AR Type X, Type Blueglass Exterior Sheathing

AMERICAN GYPSUM CO Types AGX-1(finish rating 23 min.), M-Glass (finish rating 23 min.), Type AGX-11 (finish rating 26 min), Type LightRoc (finish rating 22 min) or Type AG-C

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO Type DBX-1 (finish rating 24 min).

CERTAINTEED GYPSUM INC Type 1, Type SF3 (finish rating 20 min) or FRPC, Type C or Type X (finish rating 26 min), Type EGRG or GlasRoc (finish rating 23 min)

CGC INC Type AR (finish rating 24 min), Type C (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SCX (finish rating 24 min), Type SHX (finish rating 24 min), Type ULX (finish rating 22 min), Type WRC (finish rating 24 min), Type WRX (finish rating 24 min).

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C Type LGFC6A (finish rating 34 min), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX (finish rating 21 min).

GEORGIA-PACIFIC GYPSUM L L C Type 5 (finish rating 26 min), Type 6 (finish rating 23 min), Type 9 (finish rating 26 min), Type C (finish rating 26 min), Type DGG (finish rating 20 min), Type GPFS1 (finish rating 20 min), Type GPFS2 (finish rating 20 min), Type GPFS6 (finish rating 26 min), Type DS, Type DAP, Type DD (finish rating 20 min), Type DA, Type DAPC, Type LS (finish rating 23 min), Type X, Veneer Plaster Base - Type X, Water Rated - Type X, Sheathing - Type X, Soffit - Type X, Type LWX (finish rating 22 min), Veneer Plaster Base-Type LWX (finish rating 22 min), Water Rated-Type LWX (finish rating 22 min), Sheathing Type-LWX (finish rating 22 min), Soffit-Type LWX (finish rating 22 min), Type DGLW (finish rating 22 min), Water Rated-Type DGLW (finish rating 22 min), Sheathing Type- DGLW (finish rating 22 min), Soffit-Type DGLW (finish rating 22 min), Type LWX (finish rating 22 min), Type LW2X (finish rating 22 min), Veneer Plaster Base - Type LW2X (finish rating 22 min), Water Rated - Type LW2X (finish rating 22 min), Sheathing - Type LW2X (finish rating 22 min), Soffit - Type LW2X (finish rating 22 min), Type DGL2W (finish rating 22 min), Water Rated - Type DGL2W (finish rating 22 min), Sheathing - Type DGL2W (finish rating 22 min).

NATIONAL GYPSUM CO Type FSK (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW (finish rating 20 min), Type FSW-2 (finish rating 24 min), Type FSW-3 (finish rating 20 min), Type FSW-5 (finish rating 22 min), Type FSW-G (finish rating 20 min), Type FSK-C (finish rating 20 min), Type FSW-C (finish rating 20 min), Type FSMR-C, Type FSW-6 (finish rating 20 min), Type FSL (finish rating 24 min), Type FSW-8.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM Types C, PG-2 (finish rating 20 min), PG-3 (finish rating 20 min), Types PG-3W, PG-5W (finish rating 20 min), PG-4 (finish rating 20 min), PG-9 (finish rating 23 min), Types PG-3WS, PG-5WS, PGS-WRS (finish rating 20 min), Types PG-5, PG-9 (finish rating 26 min), PG-11 or Type PG-C.

PANEL REY S A Type GREX, PRX; Types RHX, MDX, ETX (finish rating 22 min)

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD Type EX-1 (finish rating 26 min)

THAI GYPSUM PRODUCTS PCL Type C, Type X (finish rating 26 min)

UNITED STATES GYPSUM CO Type AR (finish rating 24 min), Type C (finish rating 24 min), Type FRX-G (finish rating 29 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type SCX (finish rating 24 min), Type SGX (finish rating 24 min), Type ULX (finish rating 22 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min).

USG MEXICO S A DE C V Type AR (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), SCX (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type ULX (finish rating 22 min).

3A. **Gypsum Board*** (As an alternate to Item 3) 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.

AMERICAN GYPSUM CO Types AGX-1 (finish rating 25 min.), M-Glass (finish rating 25 min.), Type AG-C (finish rating 25 min.).

CERTAINTEED GYPSUM INC Type C or Type X (finish rating 26 min).

CGC INC Type AR (finish rating 24 min), Type C (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SCX (finish rating 24 min), Type SHX (finish rating 24 min), Type WRC (finish rating 24 min), Type WRX (finish rating 24 min).

UNITED STATES GYPSUM CO Type AR (finish rating 24 min), Type SCX (finish rating 24 min), Type SGX (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type FRX-G (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min).

USG MEXICO S A DE C V Type AR (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type SCX, Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min).

3B. **Gypsum Board*** (As an alternate to Item 3) Nom 3/4 in. thick, installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-3/8 in. long Type W coarse thread gypsum panel steel screws as described in Item 3A.

CGC INC Types AR, IP-AR.

UNITED STATES GYPSUM CO Types AR, IP-AR.

USG MEXICO S A DE C V Types AR, IP-AR.

3C. **Gypsum Board*** (As an alternate to Items 3, 3A and 3B) 5/8 in. thick, 2 ft wide, tongue and groove edge, applied horizontally to one side of the assembly. Installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-1/4 in. long Type W coarse thread gypsum panel steel screws as described in Item 3A. Joint covering (Item 2) not required.

CGC INC Type SHX.

UNITED STATES GYPSUM CO Type SHX.

USG MEXICO S A DE C V Type SHX.

3D. **Gypsum Board*** (As an alternate to Items 3, 3A, 3B, or 3C not shown) For Direct Application to Studs Only- Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs or tabs may be used in lieu of or in addition to the lead batten strips or optional at other locations. Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards underneath screw locations prior to the installation of the screws. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

RAY-BAR ENGINEERING CORP Type RB-LBG (finish rating 24 min).

3E. **Gypsum Board*** (As an alternate to Items 3, 3A, 3B, 3C, and 3D) 5/8 in. thick gypsum panels, with square edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last 2 screws 1 and 4 in. from edge of board or nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.

GEORGIA-PACIFIC GYPSUM L L C GreenGlass Type X (finish rating 23 min).

3F. **Gypsum Board*** (As an alternate to Items 3, 3A, 3B, 3C, 3D, and 3E) - 5/8 in. glass-mat faced with square edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC around the perimeter and in the field with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Nails shall be placed 1 inch and 3 inch from horizontal joints and 7 inch OC thereafter.

UNITED STATES GYPSUM CO Type USGX (finish rating 22 min.)

3G. **Gypsum Board*** (As an alternate to Items 3 through 3F) - 5/8 in. thick paper surfaced applied vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.

GEORGIA-PACIFIC GYPSUM L L C Type X ComfortGuard Sound Deadening Gypsum Board (finish rating 27 min).

3H. **Gypsum Board*** (As an alternate to Items 3) - Not to be used with items 6 or 7. 5/8 in. thick paper surfaced applied vertically only. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.

NATIONAL GYPSUM CO SoundBreak XP Type X Gypsum Board

3I. **Gypsum Board *** (As an alternate to Items 3 through 3H, not shown) Nominal 5/8 in. thick, 4 ft wide panels, applied vertically. Panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Panel joints covered with paper tape and two layers of joint compound. Nailheads covered with two layers of joint compound.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM Type QuietRock ES (finish rating 20 min).

3J. **Gypsum Board*** (As an alternate to Items 3) - Not to be used with items 6 or 7. 5/8 in. thick paper surfaced applied vertically only. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.

CERTAINTEED GYPSUM INC Type SilentFX

3K. **Gypsum Board*** (As an alternate to Item 3) - 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 8 in. OC with the last screw 1 in. from the edge of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.

NATIONAL GYPSUM CO Type FSK (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW (finish rating 20 min), Type FSW-2 (finish rating 24 min), Type FSW-3 (finish rating 20 min), Type FSW-5 (finish rating 22 min), Type FSW-G (finish rating 20 min), Type FSK-C (finish rating 20 min), Type FSW-C (finish rating 20 min), Type FSMR-C, Type FSW-6 (finish rating 20 min).

3L. **Gypsum Board*** (As an alternate to Item 3) For Direct Application to Studs Only- Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 10 ft long with a max thickness of 0.140 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, max 5/16 in. diam by max 0.140 in. thick. compression fitted or adhered over the screw heads. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D".

MAYCO INDUSTRIES INC "X-Ray Shielded Gypsum"

3M. **Gypsum Board*** (As an alternate to Items 3) For Direct Application to Studs Only- For use as the base layer or as the face layer. Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field when applied as the base layer. When applied as the face layer screw length to be increased to 2-1/2 in. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Fasteners for face layer gypsum panels (Items 4, 4A or 4B) when installed over lead backed board to be min 2-1/2 in. Type S-12 bugle head steel screws spaced as described in Item 4.

RADIATION PROTECTION PRODUCTS INC Type RPP - Lead Lined Drywall

3N. **Gypsum Board*** (As an alternate to Item 3) 5/8 in. thick, 4 ft. wide, applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Secured as described in Item 3.

CERTAINTEED GYPSUM INC 5/8" Easi-Lite Type X (finish rating 24 min)

3O. **Wall and Partition Facings and Accessories*** (As an alternate to Item 3, not shown) Nominal 5/8 in. thick, 4 ft wide panels, applied vertically. Panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Panel joints covered with paper tape and two layers of joint compound. Nailheads covered with two layers of joint compound.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM Type QuietRock 527 (finish rating 24 min).

3P. **Gypsum Board*** (As an alternate to Item 3, not shown) - Two layers nom. 5/16 in. thick gypsum panels applied vertically or horizontally. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by wood studs. Horizontal joints on the same sidebetween face and base layers need not be staggered. Base layer gypsum panels fastened to studs with 1-1/4 in. long drywall nails spaced 8 in. OC. Face layer gypsum panels fastened to studs with 1-7/8 in. long drywall nails spaced 8 in. OC starting with a 4" stagger.

NATIONAL GYPSUM CO Type FSW (finish rating 25 min)

4. **Steel Corner Fasteners (Optional)** For use at wall corners. Channel shaped, 2 in. long by 1 in. high on the back side with two 1/8 in. wide cleats protruding into the 5/8 in. wide channel, fabricated from 24 gauge galv steel. Fasteners applied only to the end or cut edge (not along tapered edges) of the gypsum board, no greater than 2 in. from corner of gypsum board, max spacing 16 in. OC. Nailed to adjacent stud through tab using one No. 6d cement coated nail per fastener. Corners of wall board shall be nailed to top and bottom plate using No. 6d cement coated nails.

5. **Batts and Blankets*** (Optional - Required when Item 6A is used (RC-1)) Glass fiber or mineral wool insulation. Placed to completely or partially fill the stud cavities. When Item 6A is used, glass fiber or mineral wool insulation shall be friction-fitted to completely fill the stud cavities.

CERTAINTEED CORP

GUARDIAN FIBERGLASS INC

JOHNS MANVILLE INTERNATIONAL INC

KNAUF INSULATION GMBH

MANSON INSULATION INC

OWENS CORNING HT INC, DIV OF OWENS CORNING Corning Fiberglas Corp.

ROCK WOOL MANUFACTURING CO Delta Board.

ROXUL INC Acoustical Fire Batts

THERMAFIBER INC Type SAFB.

5A. **Fiber, Sprayed*** (Not shown - Not for use with Item 6) As an alternate to Batts and Blankets (Item 5) Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft³. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft³, in accordance with the application instructions supplied with the product. When Item 6B is used, Fiber, Sprayed shall be INS735, INS745, INS765LD or INS770LD.

U S GREENFIBER L L C INS735 & INS745 for use with wet or dry application. INS510LD, INS515LD, INS541LD, INS735, INS745, INS765LD, and INS770LD are to be used for dry application only.

5B. **Fiber, Sprayed*** (Not shown - Not for use with Item 6) As an alternate to Batts and Blankets (Item 5) and Item 5A - Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.

NU-WOOL CO INC Cellulose Insulation

5C. **Batts and Blankets*** Required for use with resilient channels, Item 7, 3 in. thick mineral wool batts, friction-fitted to fill interior of wall.

THERMAFIBER INC Type SAFB

5D. **Glass Fiber Insulation** (As an alternate to Item 5C) 3 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, friction-fitted to fill the interior of the wall. See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

5E. **Batts and Blankets*** (Required for use with Wall and Partition Facings and Accessories, Item 3D) Glass fiber insulation, nom 3-1/2 in. thick, min. density of 0.80 pcf, with a flame spread of 25 or less and a smoke developed of 50 or less, friction-fitted to completely fill the stud cavities. See Batts and Blankets Category (BKNV) for names of manufacturers.

5F. **Fiber, Sprayed*** (Optional, Not Shown - Not for use with Item 6, 6A or 6B). As an alternate to Batts and Blankets (Item 5) and Item 5A - Spray applied granulated mineral fiber material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. See **Fiber, Sprayed** (CCAZ).

AMERROCK PRODUCTS L P Rockwool

5G. **Fiber, Sprayed*** (Optional, Not Shown - Not for use with Items6, 6A or 6B). As an alternate to Batts and Blankets (Item 5) and Item 5A - Brown Colored Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed stud cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft³.

INTERNATIONAL CELLULOSE CORP Celbar-RL

6. **Steel Framing Members (Optional, Not Shown)*** Furring channels and Steel Framing Members as described below:

a. **Furring Channels** Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3. b. Steel Framing Members* Used to attach furring channels (Item 6a) to studs. Clips spaced 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels.

b. **Steel Framing Members*** Used to attach furring channels (Item 6a) to studs. Clips spaced 48 in. OC. RSIC-1 clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. RSIC-V clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

PAC INTERNATIONAL INC Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75).

6A. **Steel Framing Members (Optional, Not Shown)*** Furring channels and Steel Framing Members on one side of studs as described below:

a. **Furring Channels** Formed of No. 25 MSG galv steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. Batts and Blankets placed in stud cavity as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members*** used to attach furring channels (Item 6Aa) to one side of studs only. Clips spaced 48 in. OC., and secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction fitted into clips.

KINETICS NOISE CONTROL INC Type Isomax.

6B. **Steel Framing Members** (Optional, Not Shown)* Furring channels and Steel Framing Members as described below:

a. **Furring Channels** Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members*** Used to attach furring channels (Item 6Ba) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

PLITEQ INC Type Genie Clip

6C. **Steel Framing Members** (Optional, Not Shown)* Furring channels and resilient sound isolation clip as described below:

a. **Furring Channels** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured together with four self-tapping No. 8x1/2 Self Drilling screws (2 per side 1 in. and 4 in. from overlap edge). Gypsum board attached to furring channels as described in Item 3. Side joint furring channels shall be attached to studs with RESILMOUNT Sound Isolation Clips located approximately 2 in. from each end of length of channel. Both Gypsum Boards at side joints fastened into channel with screws spaced 8 in. OC, approximately 1/2 in. from joint edge.

b. **Steel Framing Members*** Resilient sound isolation clip used to attach furring channels (Item 6Ca) to studs. Clips spaced 16 in. OC., and secured to studs with No. 10 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

STUDCO BUILDING SYSTEMS RESILMOUNT Sound Isolation Clips - Type A237 or A237R

7. **Furring Channel** Optional - Not Shown - For use on one side of the wall - Resilient channels, 25 MSG galv steel, spaced vertically 24 in. OC, flange portion screw attached to one side of studs with 1-1/4 in. long diamond shaped point, double lead Phillips head steel screws. When resilient channels are used, insulation, Items 5C or 5D is required.

8. **Caulking and Sealants** (not shown, optional) A bead of acoustical sealant applied around the partition perimeter for sound control.

9. **STC Rating** The STC Rating of the wall assembly is 56 when it is constructed as described by Items 1 through 6, except:

A. Item 2, above - Nailheads Shall be covered with joint compound.

B. Item 2, above - Joints As described, shall be covered with fiber tape and joint compound.

C. Item 5, above - Batts and Blankets* The cavities formed by the studs shall be friction fit with R-19 unfaced fiberglass insulation batts measuring 6-1/4 in. thick and 15-1/4 in. wide.

D. Item 6, above - Steel Framing Members* Type RSIC-1 clips shall be used to attach gypsum board to studs on either side of the wall assembly.

E. Item 8, above - Caulking and Sealants (not shown) A bead of acoustical sealant shall be applied around the partition perimeter for sound control.

F. Steel Corner Fasteners (Item 4), Fiber, Sprayed (Items 5A and 5B) and Steel Framing Members (Item 6A), not evaluated as alternatives for obtaining STC rating.

10. **Wall and Partition Facings and Accessories*** (Optional, Not shown) Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM Type QuietRock 510.

11. **Cementitious Backer Units*** (Optional Item Not Shown - For Use On Face Of 1 Hr Systems With All Standard Items Required) - 7/16 in., 1/2 in., 5/8 in., 3/4 in. or 1 in. thick, min. 32 in. wide.- Applied vertically or horizontally with vertical joints centered over studs. Fastened to studs and runners with cement board screws of adequate length to penetrate stud by a minimum of 3/8 in. for steel framing members, and a minimum of 3/4 in. for wood framing members spaced a max of 8 in. OC. When 4 ft. wide boards are used, horizontal joints need not be backed by framing.

NATIONAL GYPSUM CO Type DuraBacker, PermaBase, DuraBacker Plus, or PermaBase Plus

12. **Non-Bearing Wall Partition Intersection** (Optional) Two nominal 2 by 4 in. studs or nominal 2 by 6 in. studs nailed together with two 3 in. long 10d nails spaced a max. 16 in. OC. vertically and fastened to one side of the minimum 2 by 4 in. stud with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Intersection between partition wood studs to be flush with the 2 by 4 in. studs. The wall partition wood studs are to be framed by with a second 2 by 4 in. wood stud fastened with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Maximum one non-bearing wall partition intersection per stud cavity. Non-bearing wall partition stud depth shall be at a minimum equal to the depth of the bearing wall.

13. **Mesh Netting** (Not shown) - Any thin, woven or non-woven fibrous netting material attached with staples to the outer face of one row of studs to facilitate the installation of the sprayed fiber from the opposite row.

14. **Mineral and Fiber Board*** (Optional, Not shown) For optional use as an additional layer on one side of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to framing with 2 in. long Type W steel screws, spaced 12 in. OC. The required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

HOMASOTE CO Homasote Type 440-32

14A. **Mineral and Fiber Board*** (Optional, Not shown) For use with Items 14B-14E) For optional use as an additional layer on one side of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to framing with minimum 1-3/8 in. long ring shanked nails or 1-1/4 in. long Type W steel screws, spaced 12 in. OC along board edges and 24 in. OC in field of board along intermediate framing. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

HOMASOTE CO Homasote Type 440-32

14B. **Glass Fiber Insulation** (For use with Item 14A) 3-1/2 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, placed to fill the interior of the wall. See Batts and Blankets (BKNV or BZJZ) categories for names of Classified companies.

14C. **Batts and Blankets*** (As an alternate to Item 14B, For use with Item 14A), 3 in. thick mineral wool batts, placed to fill interior of wall, attached to the 3-1/2 in. face of the studs with staples placed 24 in. OC.

THERMAFIBER INC Type SAFB

14D. **Adhesive** (For use with Item 14A) - Construction grade adhesive applied in vertical, serpentine, nominal 3/8 in. wide beads down the length of both vertical edges of Mineral and Fiber Board (Item 14A).

14E. **Gypsum Board*** (For use with Item 14A) - 5/8 in. thick, 4 ft wide, applied vertically over Mineral and Fiber Board (Item 14A) with vertical joints located anywhere over stud cavities. Secured to mineral and fiber boards with 1-1/2 in. Type G Screws spaced 8 in. OC along edges of each vertical joint and 12 in. OC in intermediate field of the Mineral and Fiber Board (Item 14A). Secured to outermost studs and bearing plates with 2 in. long Type S screws spaced 8 in. OC. Gypsum Board joints covered with paper tape and joint compound. Screw heads covered with joint compound. Finish Rating 30 Min.

AMERICAN GYPSUM CO Type AG-C

CERTAINTEED GYPSUM INC Type FRPC, Type C

CGC INC Types C, IP-X2, IPC-AR

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C Type LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C Types 5, DAPC, TG-C

NATIONAL GYPSUM CO Types FSK-C, FSW-C

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM Type PG-C.

PANEL REY S A Type PRC

THAI GYPSUM PRODUCTS PCL Type C

UNITED STATES GYPSUM CO Types C, IP-X2, IPC-AR

USG MEXICO S A DE C V Types C, IP-X2, IPC-AR

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2014-06-27

Earl Architects

Earl Architects, LLC
301 N. Main Street
Greenville, SC 29601
864 271 7555

Consultant

DUNCAN CHAPEL
FIRE DISTRICT
STATION 2

NEW FACILITY
GREENVILLE, SC

Keyplan

Professional Seal

STATE OF SOUTH CAROLINA
EARL ARCHITECTS, LLC
GREENVILLE, SC
100021
REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA
RICHARD R. EARL
GREENVILLE, SC
REGISTERED ARCHITECT

Issued for Permit

Revision

SPECIFICATIONS

A0.06

In Charge	RRE
Drawn By	DMR
Checked By	SJM
Project Number	1033.00.00
Date	11/18/2014

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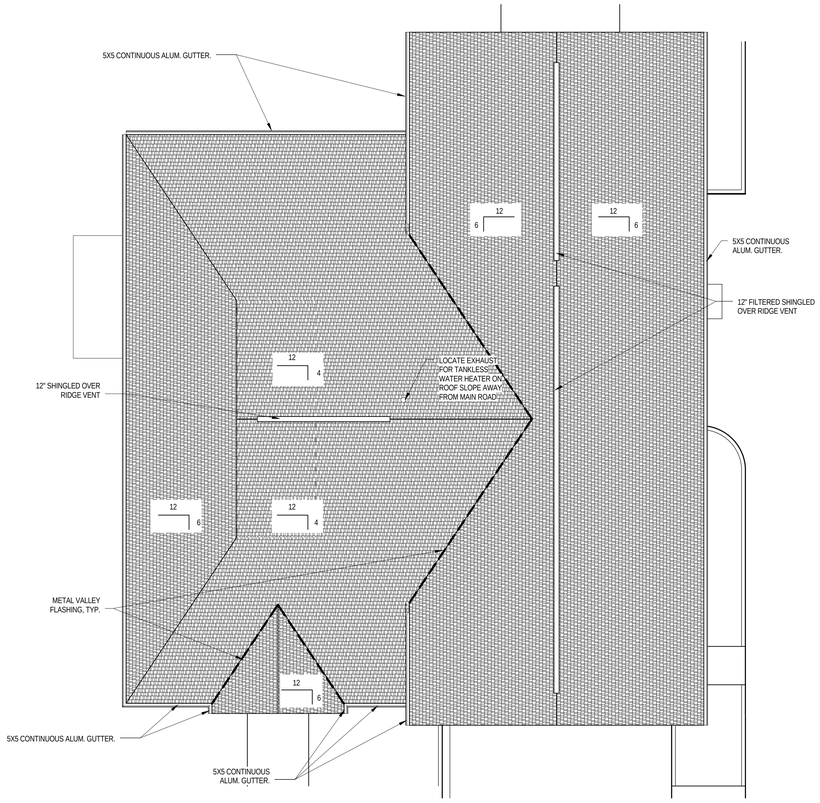
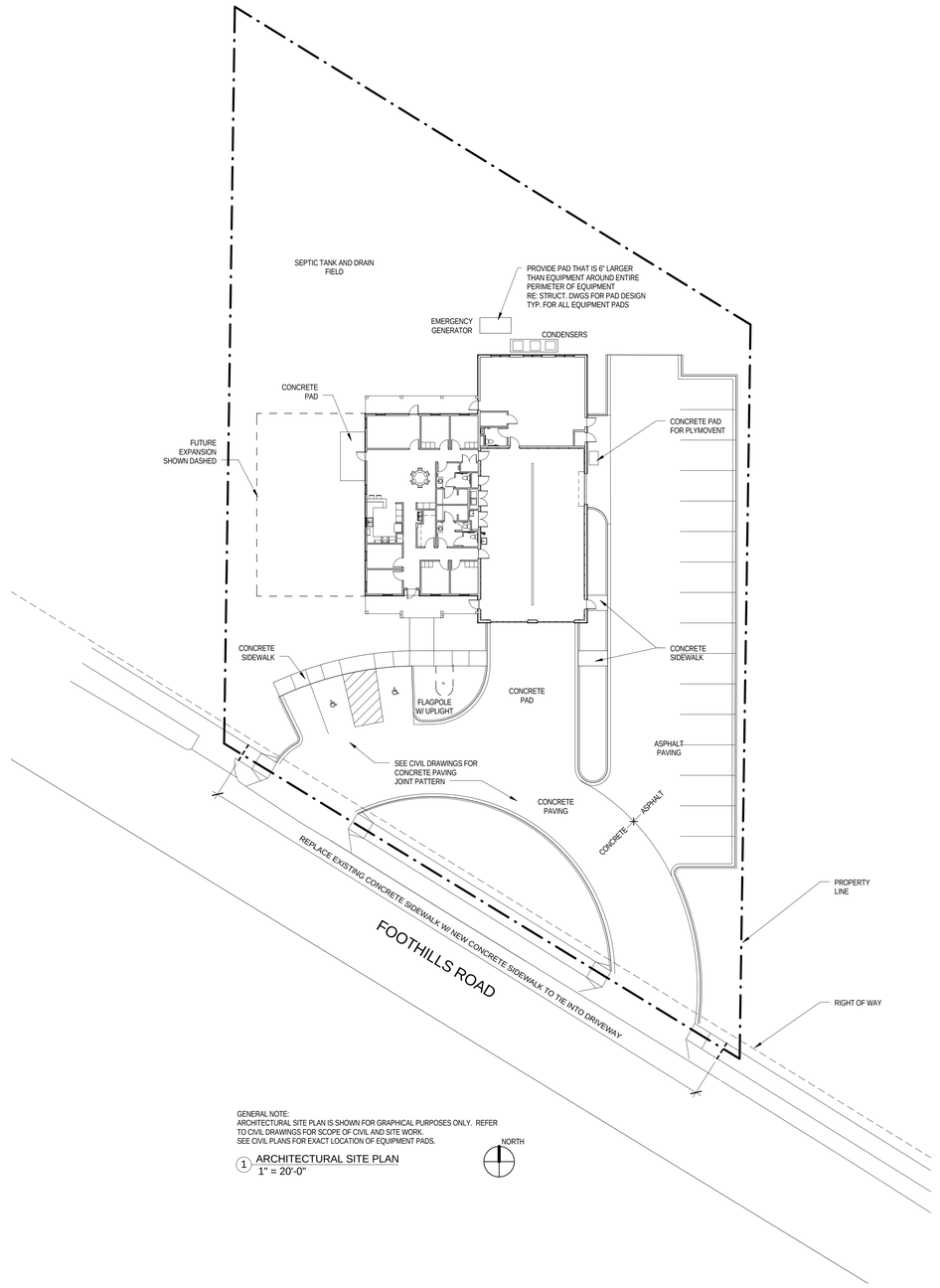


NOTE:
REINFORCE HIPS AND VALLEYS WITH SECOND
LAYER OF ROOF UNDERLAYMENT

2 ROOF PLAN
1/8" = 1'-0"



GENERAL NOTE:
ARCHITECTURAL SITE PLAN IS SHOWN FOR GRAPHICAL PURPOSES ONLY. REFER
TO CIVIL DRAWINGS FOR SCOPE OF CIVIL AND SITE WORK.
SEE CIVIL PLANS FOR EXACT LOCATION OF EQUIPMENT PADS.

NORTH

1 ARCHITECTURAL SITE PLAN
1" = 20'-0"

Earl Architects

Earl Architects, LLC
301 N. Main Street
Greenville, SC 29601
864 271 7555

Consultant

DUNCAN CHAPEL FIRE DISTRICT STATION 2

NEW FACILITY GREENVILLE, SC

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STATE OF SOUTH CAROLINA
EARL ARCHITECTS, LLC
GREENVILLE, SC
100021
REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA
RICHARD R. EARL
GREENVILLE, SC
REGISTERED ARCHITECT

Issued for Permit

Revision

ARCHITECTURAL SITE PLAN

A1.00

In Charge	RRE
Drawn By	SJM
Checked By	RRE
Project Number	1033.00.00
Date	11/18/2014

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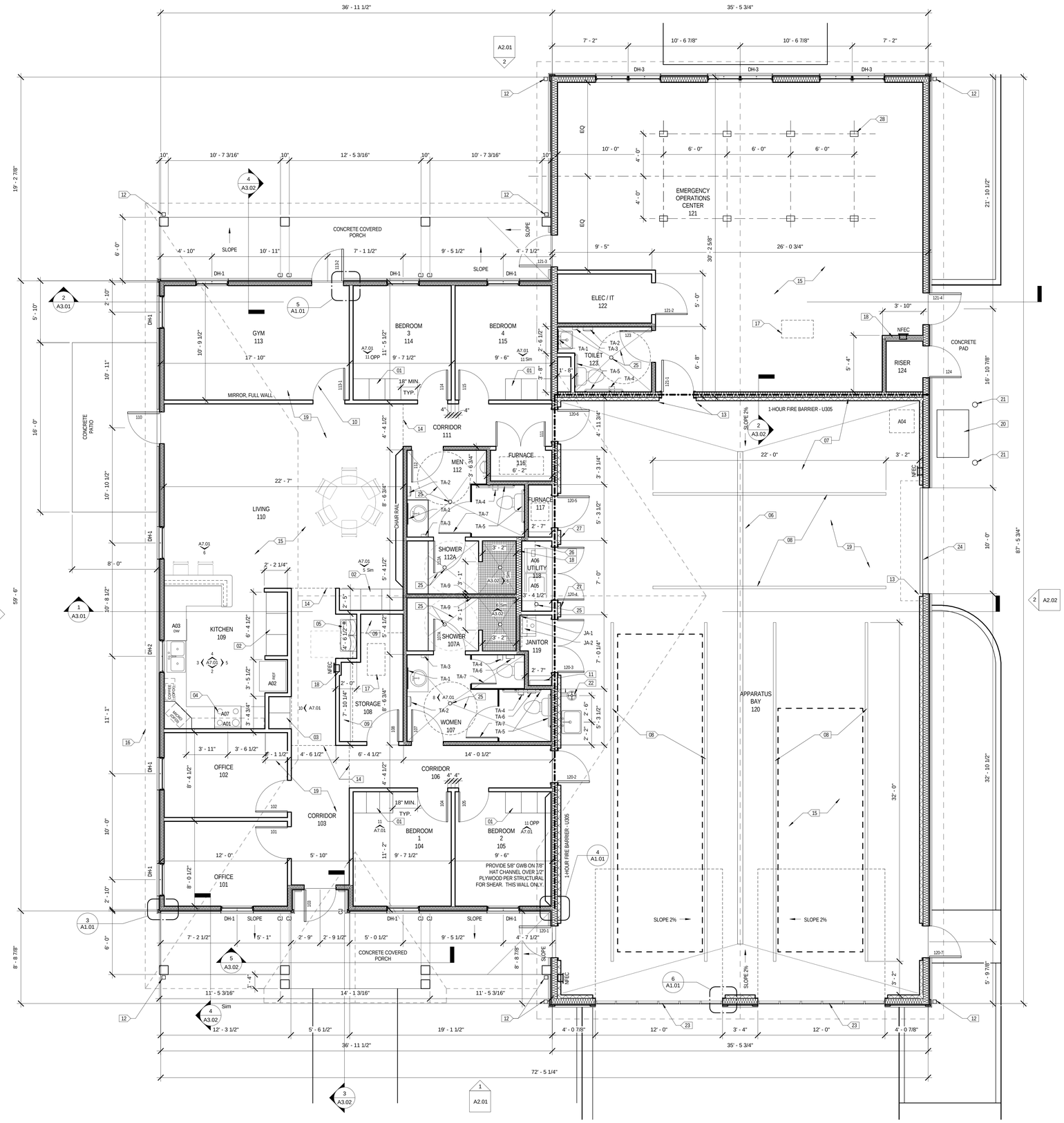


1 FIRST FLOOR PLAN
1/4" = 1'-0"

NEW CONSTRUCTION PLAN GENERAL NOTES

1. FURNITURE IS SHOWN FOR GRAPHIC PURPOSES ONLY. THEY ARE (NIC) NOT IN CONTRACT.
2. ALL PARTITIONS ARE 2X4 WOOD STUD WALLS UNLESS NOTED OTHERWISE.
3. ALL SURROUNDING PARTITIONS OF TOILET ROOMS ARE TO RECEIVE SOUND BATT INSULATION, FULL DEPTH OF PARTITION
4. SEE SHEET A0.01 FOR ACCESSORY MOUNTING HEIGHTS.
5. ADDITION OF FEC AND OTHER WALL-MOUNTED OR RECESSED ACCESSORIES SHALL NOT COMPROMISE THE DESIGNATED WALL RATINGS AS SHOWN
6. PROVIDE COAT HOOKS TO THE ROOM SIDE OF DOORS AT ALL OFFICES, AND TOILETS.
7. GC TO PROVIDE WOOD BLOCKING AS REQUIRED BEHIND ALL TOILET ACCESSORIES, MILLWORK, FEC, AND ALL OTHER ACCESSORIES.
8. PROVIDE GYP BOARD CONTROL JOINTS AS REQUIRED BY MANUFACTURER RECOMMENDATIONS. VERIFY JOINT LOCATIONS WITH ARCHITECT PRIOR TO CONSTRUCTION.
9. PROVIDE 3/4" PLYWOOD (PAINTED WITH FIRE RESISTANT PAINT)FROM ABOVE FLOOR BASE TO CEILING IN "IT" ROOMS FOR MOUNTING OF VOICE/DATA EQUIPMENT. PAINT TO MATCH WALL COLOR. COORDINATE LOCATION WITH OWNER.
10. DIMENSION FROM FACE OF WALL STUD UNLESS NOTED OTHERWISE.

INTERIOR FINISHES

1. WALLS: ALL WALLS TO BE PAINTED SHERWIN WILLIAMS PM 200 0 VOC SEMI-GLOSS COLOR AS SELECTED BY OWNER U.N.O. ALLOW FOR (5) COLORS. AT APPARTUS BAY, PROVIDE ELASTOMERIC EPOXY COATING OVER CMU AND TURN DOWN AT BASE 2" ONTO FINISHED CONCRETE FLOOR.
2. CEILINGS: ALL CEILINGS TO BE PAINTED SHERWIN WILLIAMS PM 200 0 VOC FLAT COLOR SW7007 CEILING BRIGHT WHITE U.N.O.
3. FLOORS: ALL FLOORS TO BE POLISHED CONCRETE PER SPECIFICATION SECTION 033543 TINT COLOR TO BE SELECTED BY OWNER. TRUCK BAY STRIPING SHALL BE INTEGRAL WITH FLOORING FINISH.
4. BASE: ALL EXPOSED GWB WALLS TO RECEIVE BASE. BASE TO BE 1X6 PAINT GRADE MILLWORK BASE MOLDING, AMERICAN HERITAGE WPSM 12. TO BE PAINTED WHITE HIGH-GLOSS.
5. DOOR/WINDOW TRIM: TO BE PAINTED WHITE HIGH-GLOSS. SEE DETAILS FOR CONSTRUCTION.
6. CHAIR RAIL: TO BE PAINT GRADE MILLWORK MOLDING WOODGRAIN MILLWORK WP300. TO BE PAINTED WHITE HIGH-GLOSS.

PAINT: BASIS OF DESIGN PAINT IS SHERWIN WILLIAMS PROMAR 200 0 VOC. PROVIDE SPECIFIED PAINT OR EQUAL. ALL PAINTED SURFACES TO HAVE PRIME COAT TO MATCH FINISH COAT. ALL SURFACES TO RECEIVE A MINIMUM OF ONE PRIME COAT AND TWO FINISH COATS.

MILLWORK:
CABINETS: SOLID WOOD, MAPLE WITH CLEAR NATURAL FINISH.
COUNTERS: CORIAN SOLID SURFACE, GRANOLA.

SHOWER TILE:
FIELD WALL TILE: 3X6 RITTENHOUSE SQUARE MATTE BISCUIT BY DALTILE.
ACCENT WALL TILE: 3X6 RITTENHOUSE SQUARE MATTE ARCHITECTURAL GRAY. BY DALTILE.
FLOOR TILE: 2X2 UNGLAZED COLORBODY PORCELAIN MOSAICS WILLOW A91 BY AMERICAN OLEAN.
GROUT: PROVIDE EPOXY TYPE GROUT SUCH AS SPECTRALOCK BY LATICRETE OR EQUIVALENT. COLOR TO MATCH THE FIELD TILE.

FINISH VERTICAL EDGES OF SHOWER WALL TILE WITH STAINLESS STEEL RONDEC EDGE PROTECTION BY SCHLUTER SYSTEMS OR EQUAL. FINISH EDGE OF FLOOR TILE TO CONCRETE FLOOR WITH STAINLESS STEEL DECO FLOOR PROFILE BY SCHLUTER SYSTEMS OR EQUAL.

SHOWER WALL AND FLOOR TILE TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND TO COMPLY WITH TCA's "HANDBOOK FOR CERAMIC TILE INSTALLATION." USE APPROPRIATE SUBSTRATE FOR WALL TILE AND PROVIDE WATERPROOFING MEMBRANE PER TCA RECOMMENDATIONS.

APPLIANCE SCHEDULE

A01:	JGS8650SEF STAINLESS STEEL GAS STOVE BY GE OR EQUAL.
A02:	GSL22ISD 22CU. FT. STAINLESS STEEL REFRIGERATOR BY GE OR EQUAL.
A03:	GLDT696DSS STAINLESS STEEL DISHWASHER BY GE OR EQUAL
A04:	UD-0140A 208-230V 132lb NEO SERIES UNDERCOUNTER HALF DICE ICE MACHINE BY MANITOWOC OR EQUAL
A05:	GFWR4805FMC 4.8 DOE CU. FT. CAPACITY RIGHT HEIGHT DESIGN FRONT LOAD WASHER BY GE OR EQUAL. METALLIC CARBON FINISH.
A06:	GFDR485GFMC 8.3 CU. FT. CAPACITY RIGHT HEIGHT DESIGN FRONT LOAD GAS DRYER WITH STEAM.
A07:	PLJW125, 30" STAINLESS STEEL RANGE HOOD BY PROLINE OR EQUAL.

TOILET PARTITIONS

TOILET PARTITIONS TO BE FLOOR MOUNTED OVERHEAD BRACED PHENOLIC CORE BY ACCURATE PARTITIONS CORPORATION OR EQUAL.

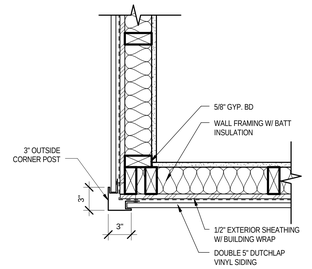
1.DOOR, PANEL AND PILASTER CONSTRUCTION: SOLID PHENOLIC-CORE PANEL MATERIAL WITH MELAMINE FACING ON BOTH SIDES FUSED TO SUBSTRATE DURING PANEL MANUFACTURE. PROVIDE MINIMUM 3/4 INCH THICK DOORS AND PILASTERS AND MINIMUM 3/4 INCH THICK PANELS.
2. BRACKETS: FULL-HEIGHT CONTINUOUS TYPE, STAINLESS STEEL.
3. PHENOLIC PANEL FINISH: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE, WITH MANUFACTURER'S STANDARD THROUGH-COLOR CORE MATCHING FACE SHEET.
4. HARDWARE AND ACCESSORIES: MANUFACTURER'S HEAVY-DUTY STAINLESS STEEL OPERATING HARDWARE AND ACCESSORIES.
   a. MATERIAL: STAINLESS STEEL.
   b. HINGES: MANUFACTURER'S STANDARD PAIRED, SELF-CLOSING TYPE THAT CAN BE ADJUSTED TO HOLD OPEN DOORS AT ANY ANGLE.
   c. LATCH AND KEEPER: MANUFACTURER'S STANDARD SURFACE-MOUNTED LATCH UNIT DESIGNED FOR EMERGENCY ACCESS AND WITH COMBINATION RUBBER FACED DOOR STRIKE AND KEEPER.
   d. COAT HOOK, DOOR BUMPER, DOOR PULL: MANUFACTURER'S STANDARD TO MEET ACCESSIBILITY REQUIREMENTS.
   e. PILASTER SHOE: 3 INCHES HIGH, FABRICATED OF STAINLESS STEEL.
   f. OVERHEAD BRACING: MANUFACTURER'S STANDARD CONTINUOUS, HEAVY-DUTY, EXTRUDED-ALUMINUM HEAD RAIL WITH ANTIGRIP PROFILE, FASTENED TO PILASTER AND SECURED TO ADJACENT CONSTRUCTION WITH STAINLESS STEEL HEAD RAIL BRACKETS.
   g. ANCHORAGES AND FASTENERS: MANUFACTURER'S STANDARD EXPOSED STAINLESS STEEL FASTENERS, WITH TAMPER-RESISTANT HEX-LOPE SECURITY DESIGN.
5. FLOOR-MOUNTED, OVERHEAD-BRACED TOILET COMPARTMENTS: PROVIDE MANUFACTURER'S STANDARD CORROSION-RESISTANT SUPPORTS, LEVELING MECHANISM, AND ANCHORS AT PILASTERS TO SUIT FLOOR CONDITIONS. PROVIDE SHOES AT PILASTERS TO CONCEAL SUPPORTS AND LEVELING MECHANISM.
6. SHOP DRAWINGS: INCLUDE ROOM LAYOUTS, DIMENSIONS, MATERIALS, PANEL CONSTRUCTION, ELEVATIONS, FINISHES, HARDWARE, ACCESSORIES, AND ATTACHMENT DETAILS.

TOILET ACCESSORY LEGEND

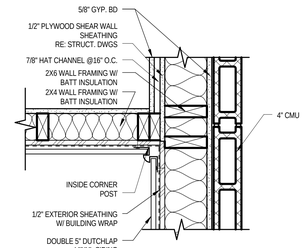
TA-1	24" X 36" S.S. CHANNEL FRAME MIRROR	B.O.D. BOBRICK B-165 2436
TA-2	SURFACE MOUNTED S.S. PAPER TOWEL DISPENSER	B.O.D. BOBRICK B-2620
TA-3	SURFACE MOUNTED SOAP DISPENSER	B.O.D. BOBRICK B-5050
TA-4	SURFACE-MOUNTED S.S. MULTI-ROLL TOILET TISSUE DISPENSER	B.O.D. BOBRICK B-288
TA-5	SURFACE MOUNTED S.S. GRAB BARS - 18", 36" , 42"	B.O.D. BOBRICK B-5806
TA-6	SURFACE MOUNTED S.S. SANITARY NAPKIN DISPOSAL	B.O.D. BOBRICK B-254
TA-7	CLOTHES HOOK	B.O.D. BOBRICK B-212
TA-8	NOT USED	
TA-9	TOWEL BAR	B.O.D. BOBRICK B-530 X 24
JA-1	MOP & BROOM HOLDER	B.O.D. BOBRICK B-223 X 36
JA-2	UTILITY SHELF	B.O.D. BOBRICK B-298 X 24

KEYNOTES - FLOOR PLAN

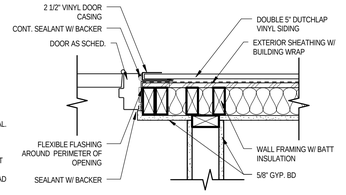
01 (3) 15" WIDE X 24" DEEP X 80" HIGH LOCKERS WITH SOLID WOOD CABINETRY AND DOOR LOCKS. PROVIDE DETAILING TO MATCH KITCHEN CABINETRY.
02 (3) TWO-TIER 24" WIDE X 24" DEEP X 80" HIGH WOOD FOOD PANTRY LOCKERS WITH SOLID WOOD CABINETRY AND DOOR LOCKS. PROVIDE DETAILING TO MATCH KITCHEN CABINETRY.
03 (2) 18" WIDE X 24" DEEP X 84" HIGH CABINET W/ TWO DOORS, RADIO TO BE LOCATED IN UPPER PORTION.
04 PROVIDE STAINLESS STEEL RESIDENTIAL HOOD SYSTEM (VENTILATION / FIRE SUPPRESSION HOOD - GUARDIAN) ABOVE RANGE.
05 BI-LEVEL ELECTRIC WATER COOLER.
06 TRENCH DRAIN.
07 GWB ON CEILING AND ABOVE CMU TO BE 5/8" MOISTURE RESISTANT AND ABUSE RESISTANT
08 4" WIDE TRUCK ALIGNMENT STRIPING. RED COLOR INTEGRAL WITH POLISHED CONCRETE FINISHING.
09 (5) 15" DEEP WHITE MELAMINE ADJ SHELVES ON HEAVY DUTY STANDARDS AND BRACKETS.
10 3'-0" X 7'-0" INSULATED DOOR. TYPICAL.
11 WATER DISTRIBUTION LOCATION.
12 4X3 ALUM. DOWNSPOUT. TIE INTO UNDERGROUND STORM WATER SYSTEM W/ CAST IRON DOWNSPOUT BOOT BY JAY R. SMITH MFG. CO. OR EQUAL.
13 BULLNOSE BLOCK. TYP. AT ALL OPENINGS / OUTSIDE CORNERS. BLOCK TO ABUT OPENING TRIM. PROVIDE SEALANT FULL HEIGHT OF BLOCK.
14 DASHED LINE DENOTES 12" CHANGE IN CEILING PLANE.
15 5/8" DRYWALL CEILING ABOVE W/ SMOOTH PAINT FINISH, ALL CEILINGS, INCLUDING APPARATUS BAY.
16 ROOF PROFILE ABOVE SHOWN HALFTONE.
17 ATTIC ACCESS ABOVE SHOWN DASHED. COORDINATE LOCATION WITH TRUSS LAYOUT. AH2210 CEILING ALUMINUM ATTIC LADDER BY WERNER OR EQUAL
18 2X6 WOOD STUD WALL.
19 PROVIDE STAINED / POLISHED CONCRETE FINISH AT ALL FLOORING, INCLUDING APPARATUS BAY.
20 PROPOSED CONCRETE PAD FOR PLYMOVENT. ISOLATE PAD FROM CONCRETE PAVING. PROVIDE PAD SIZE TO EXTEND APPROX 6" ENTIRE PERIMETER BEYOND EQUIPMENT.
21 42" HIGH, 6" Ø CONCRETE FILLED STEEL PIPE BOLLARD PAINTED TO MATCH SIDING.
22 EYE WASH STATION.
23 12'-0" X 12'-0" HEAVY DUTY ALUMINUM FULL VIEW GLASS SECTIONAL DOORS. MODEL CA220 BY HAAS W/ OPERATOR 120V, 1/2 HP, 0TH BY MANARAS-OPERA.
24 10'-0" X 10'-0" COMMERCIAL INSULATED ROLLING STEEL DOOR . SERIES 625 BY OVERHEAD DOOR. PAINT TO MATCH SIDING COLOR.
25 SLOPE FLOOR TO FLOOR DRAIN.
26 15" DEEP WHITE MELAMINE SHELVES ON HEAVY DUTY STANDARDS AND BRACKETS
27 COORDINATE LOCATION OF OPENING TO PROVIDE FULL WIDTH NOMINAL 16" BLOCK.
28 RECESSED POWER FLOOR BOX. CONFIRM EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION. SEE ELECTRICAL FOR FLOOR BOX SPECIFICATION.



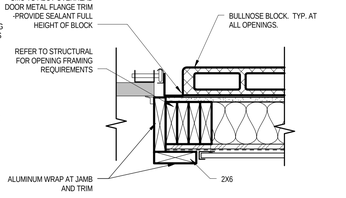
3 PLAN DETAIL @ EXT. CORNER
1 1/2" = 1'-0"



4 PLAN DETAIL @ INT. CORNER
1 1/2" = 1'-0"



5 PLAN DETAIL @ EXT. DOOR
1 1/2" = 1'-0"



6 PLAN DETAIL @ SECTIONAL DOOR
1 1/2" = 1'-0"

Earl Architects

Earl Architects, LLC
301 N. Main Street
Greenville, SC 29601
864 271 7555

Consultant

DUNCAN CHAPEL FIRE DISTRICT STATION 2

NEW FACILITY
GREENVILLE, SC

Keyplan

Professional Seal

STATE OF SOUTH CAROLINA — EARL ARCHITECTS, LLC — GREENVILLE, SC — 100021 — REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA — RICHARD R. EARL — GREENVILLE — REGISTERED ARCHITECT

Issued for Permit

Revision

FIRST FLOOR PLAN

A1.01

In Charge	RRE
Drawn By	SJM
Checked By	RRE
Project Number	1033.00.00
Date	11/18/2014

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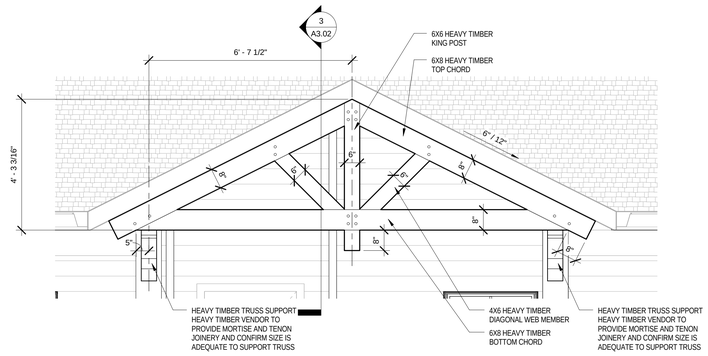
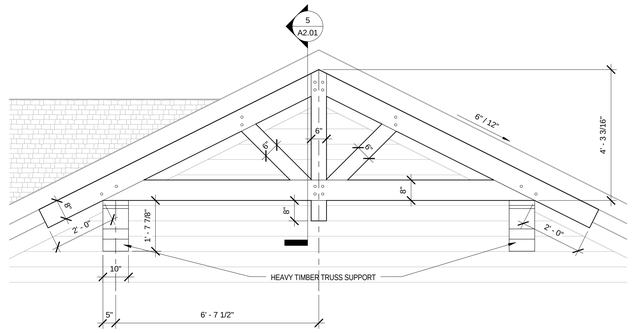
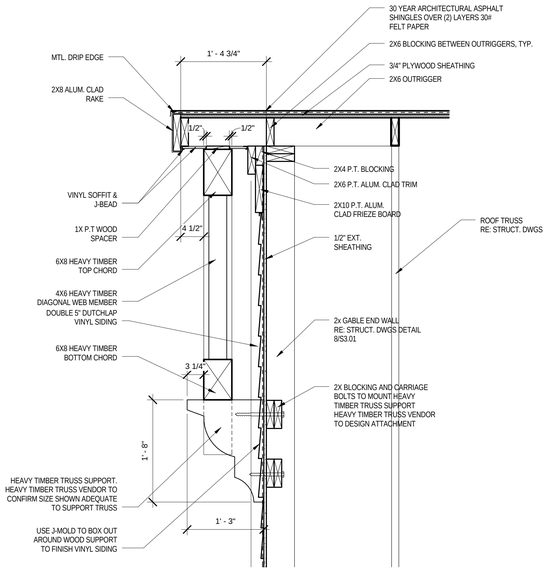


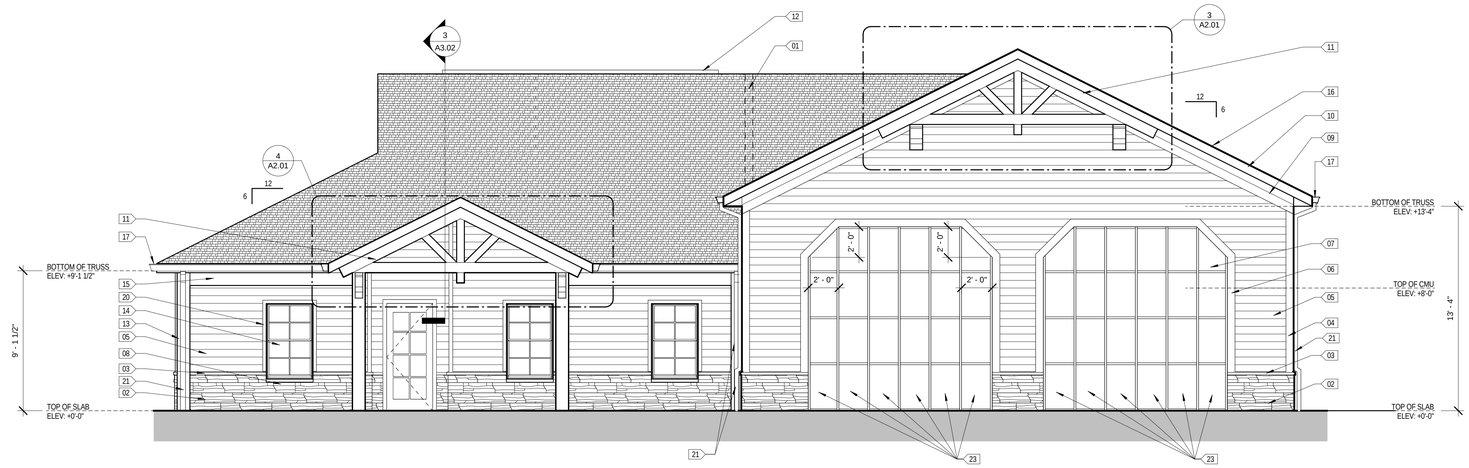
4 ENLARGED ELEVATION OF TRUSS
1/2" = 1'-0"



3 ENLARGED ELEVATION OF TRUSS
1/2" = 1'-0"



5 GABLE TRUSS SECTION DETAIL
1" = 1'-0"



1 FRONT ELEVATION
1/4" = 1'-0"

2 REAR ELEVATION
1/4" = 1'-0"

KEY NOTES - ELEVATIONS

01	ONE HOUR FIRE BARRIER TO UNDERSIDE OF ROOF DECK, SHOWN DASHED.
02	NATURAL THIN STONE VENEER, DRY STACK.
03	CAST STONE WATERTABLE.
04	VINYL CORNER WRAP TRIM
05	DOUBLE 5" DUTCHLAP VINYL SIDING
06	PROVIDE VINYL / ALUM WRAPPED WOOD TRIM AS SHOWN.
07	12'-0" X 12'-0" AUTOMATIC OVERHEAD DOOR, ALUMINUM FRAME W/ LOW E GLAZING.
08	CAST STONE SILL.
09	ALUM. CLAD FASCIA TRIM - SEE SECTION FOR MORE DETAIL.
10	ALUMINUM EDGE METAL AND FASCIA.
11	HEAVY TIMBER DOUGLAS FIR TRUSS, 6X8 TOP AND BOTTOM CHORDS W/ 4X6 WEB MEMBERS ON HAUNCH AS SHOWN, MORTISE AND TENON JOINERY. PROVIDE STAIN FINISH TO MATCH MINWAX ENGLISH CHUSTNUT 233, WITH CABOT CLEAR WOOD PROTECTOR.
12	12" SHINGLED OVER RIDGE VENT
13	10X10 HEAVY TIMBER DOUGLAS FIR POST. STAIN AND CLEAR FINISH COAT TO MATCH TRUSS.
14	ALUMINUM CLAD FRAME WINDOW W/ LOW E GLAZING W/ GRIDS.
15	6X10 HEAVY TIMBER DOUGLAS FIR BEAM. STAIN AND CLEAR FINISH COAT TO MATCH TRUSS.
16	30 YEAR ARCHITECTURAL FIBERGLASS SHINGLES.
17	5X5 CONTINUOUS ALUM GUTTER.
18	ATTIC PROFILE BEYOND, SHOWN DASHED. PROVIDE ROOM / ATTIC TRUSSES TO MAXIMIZE SPACE.
19	2X6 ALUM CLAD FRIEZE BOARD
20	3 1/2" VINYL WINDOW CASING
21	4X3 ALUM. DOWNSPOUT. TIE INTO UNDERGROUND STORMWATER SYSTEM W/ CAST IRON DOWNSPOUT BOOT BY JAY R. SMITH MFG. CO. OR EQUAL
22	RETURN STONE BACK TO WINDOW JAMB BELOW CAST STONE WATERTABLE. TYPICAL AT ALL SIMILAR CONDITIONS. SEE DETAIL, SHEET A3.01.
23	PROVIDE INSULATED (R-9 MIN) METAL PANEL INFILL AT BASE OF DOOR.

Earl Architects

Earl Architects, LLC
301 N. Main Street
Greenville, SC 29601
864 271 7555

Consultant

DUNCAN CHAPEL FIRE DISTRICT STATION 2

NEW FACILITY GREENVILLE, SC

Keyplan

Professional Seal

STATE OF SOUTH CAROLINA
EARL ARCHITECTS, LLC
GREENVILLE, SC
100021
REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA
RICHARD R. EARL
GREENVILLE
REGISTERED ARCHITECT

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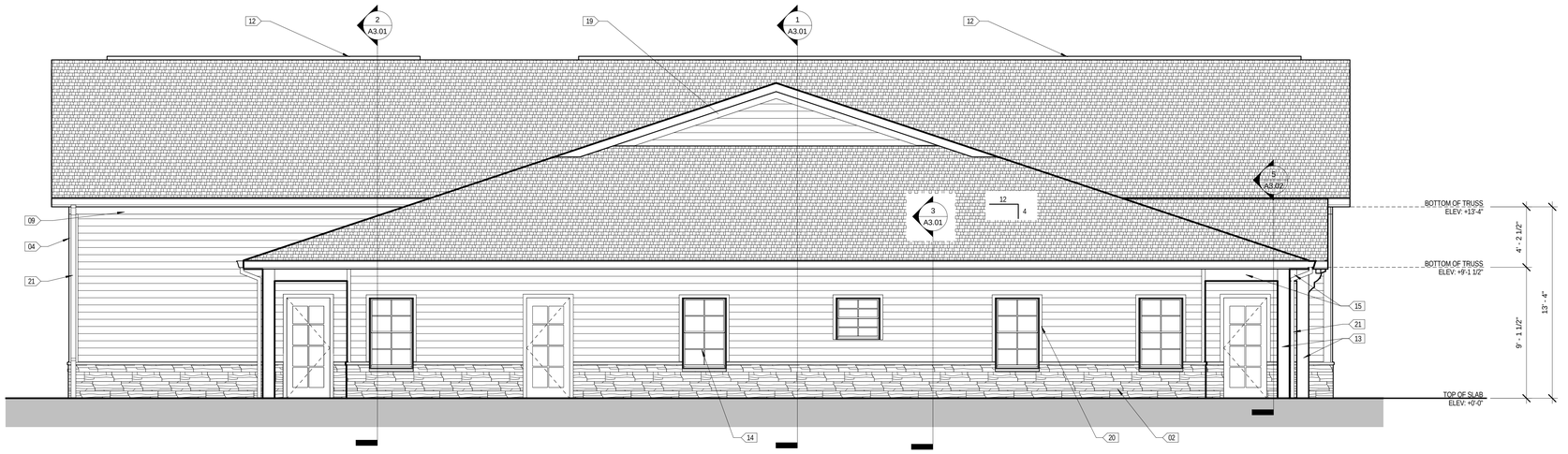
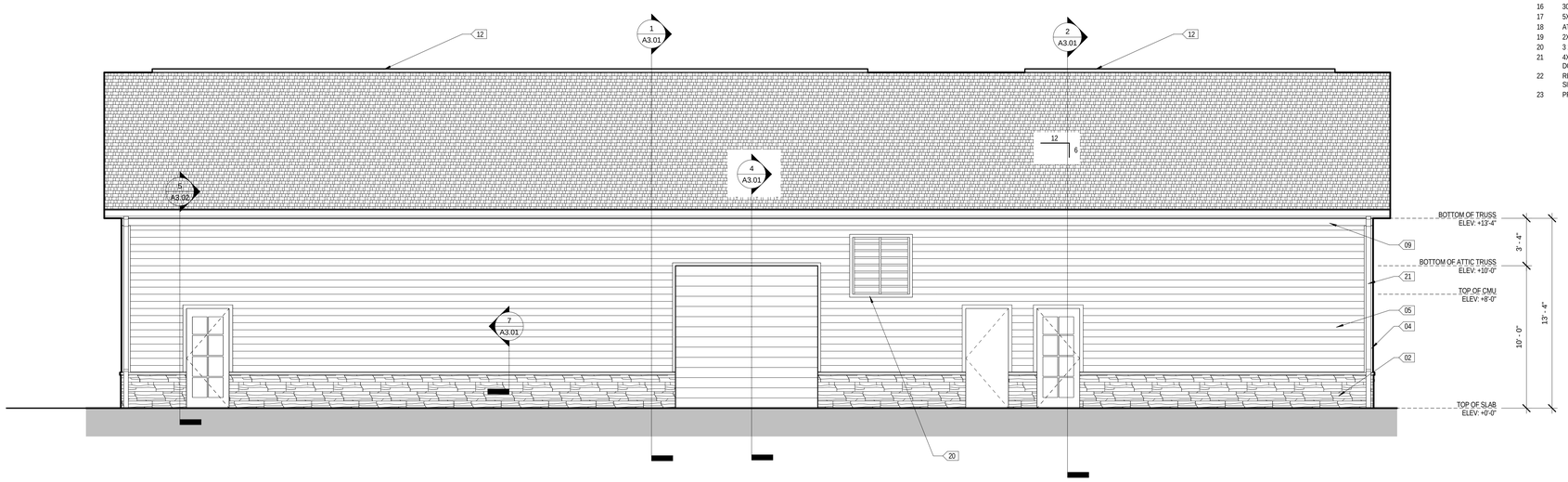
EXTERIOR ELEVATIONS

A2.01

In Charge	RRE
Drawn By	SJM
Checked By	DMR
Project Number	1033.00.00
Date	11/18/2014



1 LEFT SIDE ELEVATION
1/4" = 1'-0"



2 RIGHT SIDE ELEVATION
1/4" = 1'-0"

KEY NOTES - ELEVATIONS

01	ONE HOUR FIRE BARRIER TO UNDERSIDE OF ROOF DECK, SHOWN DASHED.
02	NATURAL THIN STONE VENEER, DRY STACK.
03	CAST STONE WATERTABLE.
04	VINYL CORNER WRAP TRIM
05	DOUBLE 5" DUTCHLAP VINYL SIDING
06	PROVIDE VINYL / ALUM WRAPPED WOOD TRIM AS SHOWN.
07	12'-0" X 12'-0" AUTOMATIC OVERHEAD DOOR, ALUMINUM FRAME W/ LOW E GLAZING.
08	CAST STONE SILL.
09	ALUM. CLAD FASCIA TRIM - SEE SECTION FOR MORE DETAIL.
10	ALUMINUM EDGE METAL AND FASCIA.
11	HEAVY TIMBER DOUGLAS FIR TRUSS, 6X8 TOP AND BOTTOM CHORDS W/ 4X6 WEB MEMBERS ON HAUNCH AS SHOWN, MORTISE AND TENON JOINERY. PROVIDE STAIN FINISH TO MATCH MINWAX ENGLISH CHUSTNUT 233, WITH CABOT CLEAR WOOD PROTECTOR.
12	12" SHINGLED OVER RIDGE VENT
13	10X10 HEAVY TIMBER DOUGLAS FIR POST. STAIN AND CLEAR FINISH COAT TO MATCH TRUSS.
14	ALUMINUM CLAD FRAME WINDOW W/ LOW E GLAZING W/ GRIDS.
15	6X10 HEAVY TIMBER DOUGLAS FIR BEAM. STAIN AND CLEAR FINISH COAT TO MATCH TRUSS.
16	30 YEAR ARCHITECTURAL FIBERGLASS SHINGLES.
17	5X5 CONTINUOUS ALUM GUTTER.
18	ATTIC PROFILE BEYOND, SHOWN DASHED. PROVIDE ROOM / ATTIC TRUSSES TO MAXIMIZE SPACE.
19	2X6 ALUM CLAD FRIEZE BOARD
20	3 1/2" VINYL WINDOW CASING
21	4X3 ALUM. DOWNSPOUT. TIE INTO UNDERGROUND STORMWATER SYSTEM W/ CAST IRON DOWNSPOUT BOOT BY JAY R. SMITH MFG. CO. OR EQUAL
22	RETURN STONE BACK TO WINDOW JAMB BELOW CAST STONE WATERTABLE. TYPICAL AT ALL SIMILAR CONDITIONS. SEE DETAIL, SHEET A3.01.
23	PROVIDE INSULATED (R-9 MIN) METAL PANEL INFILL AT BASE OF DOOR.

Earl Architects

Earl Architects, LLC
301 N. Main Street
Greenville, SC 29601
864 271 7555

Consultant

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NEW FACILITY GREENVILLE, SC

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STATE OF SOUTH CAROLINA — RICHARD R. EARL — REGISTERED ARCHITECT

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Revision

EXTERIOR ELEVATIONS

A2.02

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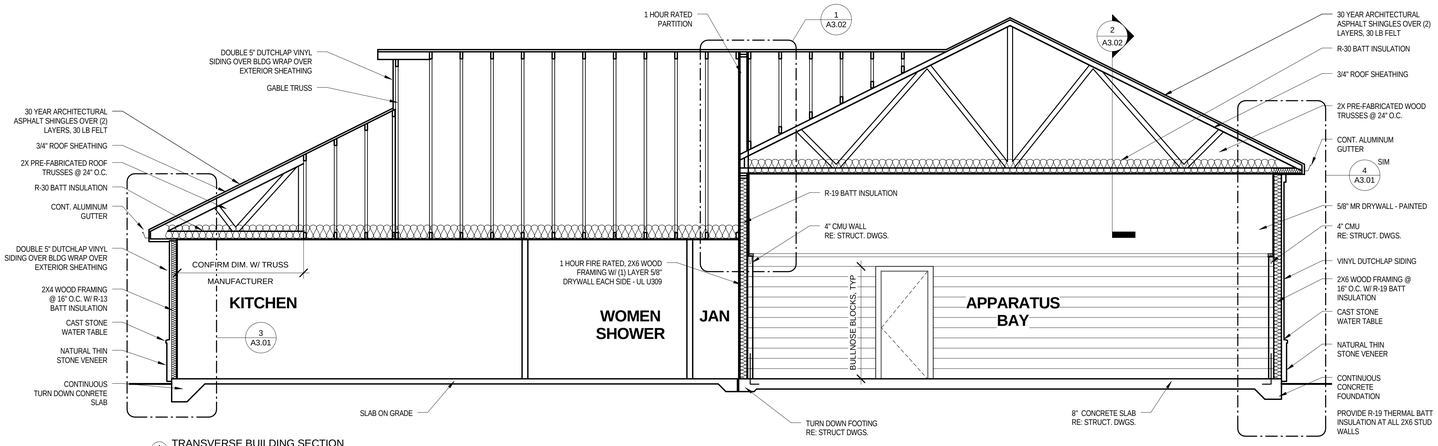
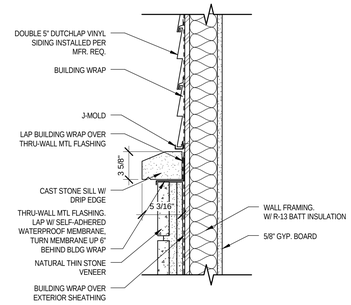
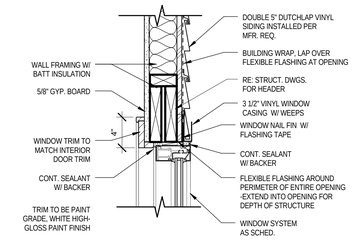


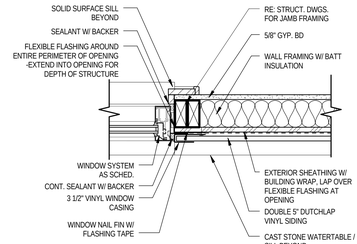
1 TRANSVERSE BUILDING SECTION
1/4" = 1'-0"



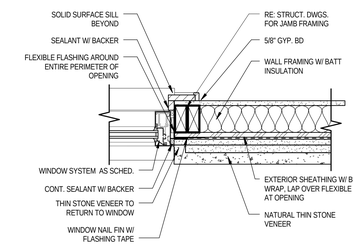
7 TYPICAL SIDING DETAIL @ STONE SILL
1 1/2" = 1'-0"



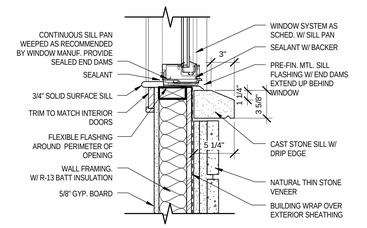
TYPICAL SIDING DETAIL @ HEAD



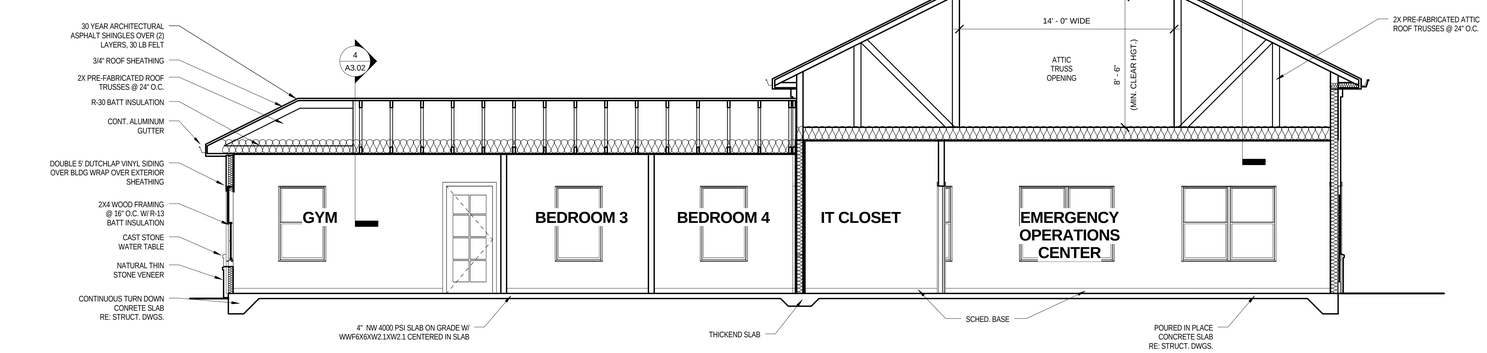
TYPICAL SIDING DETAIL @ JAMB



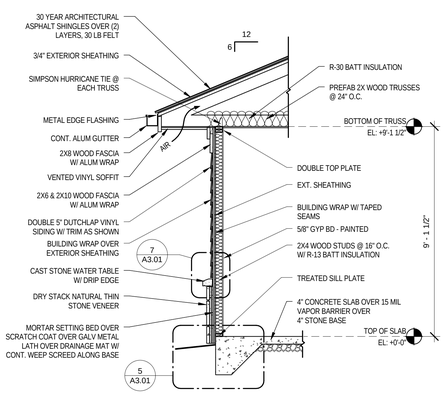
TYPICAL THIN STONE VENEER DETAIL @ JAMB



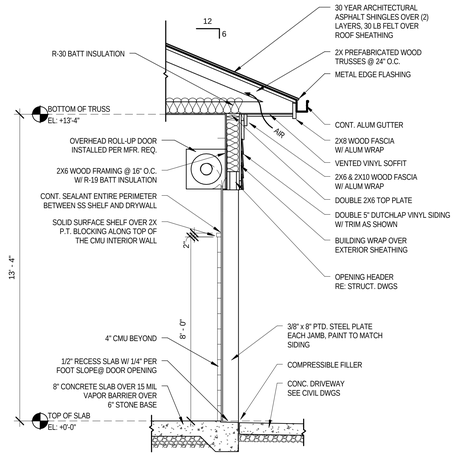
TYPICAL SIDING DETAIL @ SILL



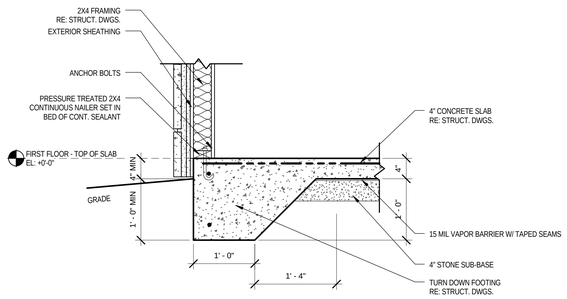
2 TRANSVERS BUILDING SECTION @ ATTIC
1/4" = 1'-0"



3 WALL SECTION @ LIVING QUARTERS
3/8" = 1'-0"



4 WALL SECTION @ OVERHEAD DOOR
3/8" = 1'-0"



5 FOUNDATION DETAIL
1" = 1'-0"

FLEXIBLE FLASHING INSTALLATION: INSTALL AT SILL FIRST, JAMBS SECOND, HEAD LAST, LAP 6" MINIMUM @ TRANSITIONS

6 TYPICAL SIDING DETAIL @ OPENING
1 1/2" = 1'-0"

Earl Architects

Earl Architects, LLC
301 N. Main Street
Greenville, SC 29601
864 271 7555

Consultant

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NEW FACILITY GREENVILLE, SC

Keyplan

Professional Seal

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STATE OF SOUTH CAROLINA — RICHARD R. EARL — REGISTERED ARCHITECT

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Revision

BUILDING SECTIONS & DETAILS

A3.01

In Charge	RRE
Drawn By	DMR
Checked By	SJM
Project Number	1033.00.00
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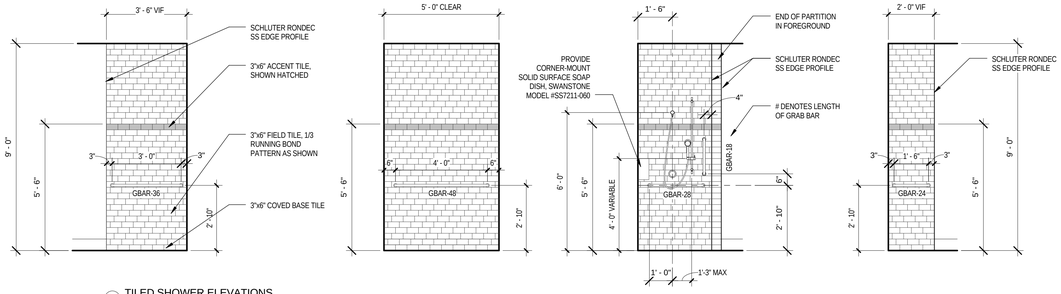
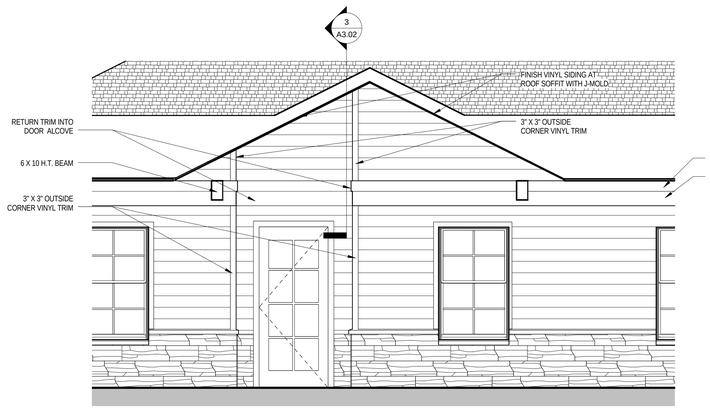
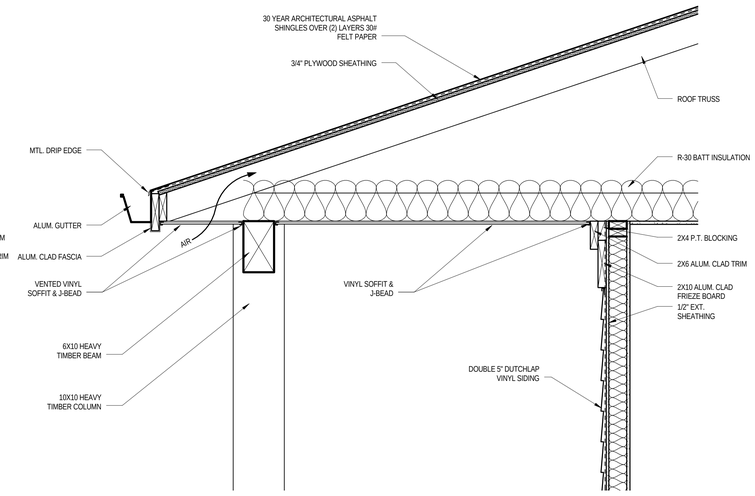


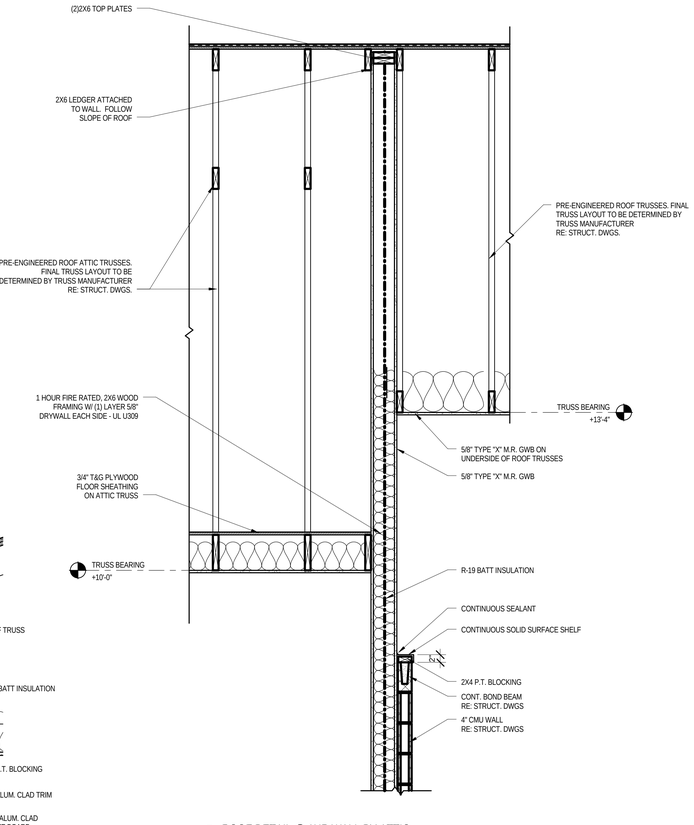
6 TILED SHOWER ELEVATIONS
3/8" = 1'-0"



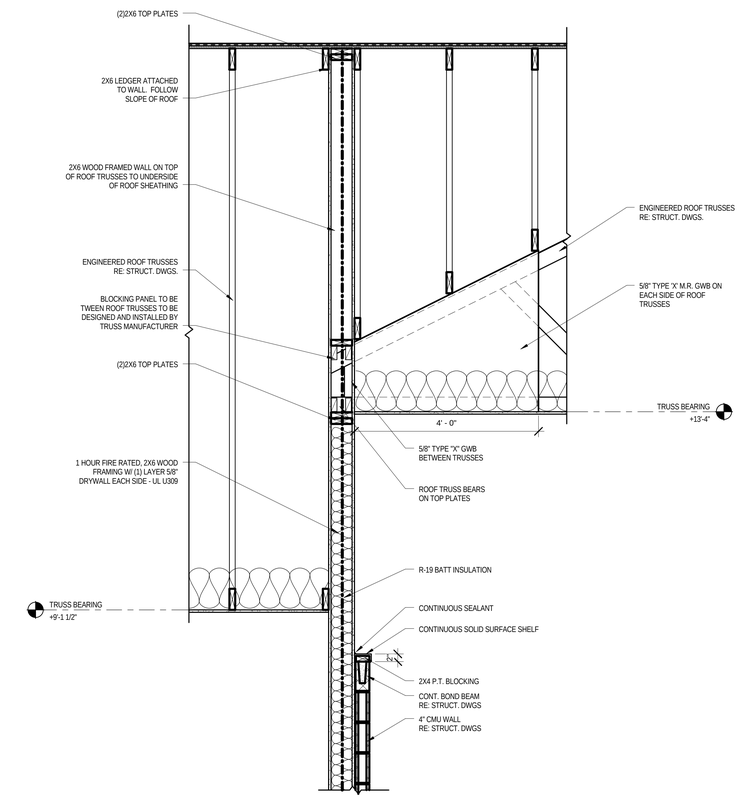
5 ELEVATION @ DOOR ALCOVE
3/8" = 1'-0"



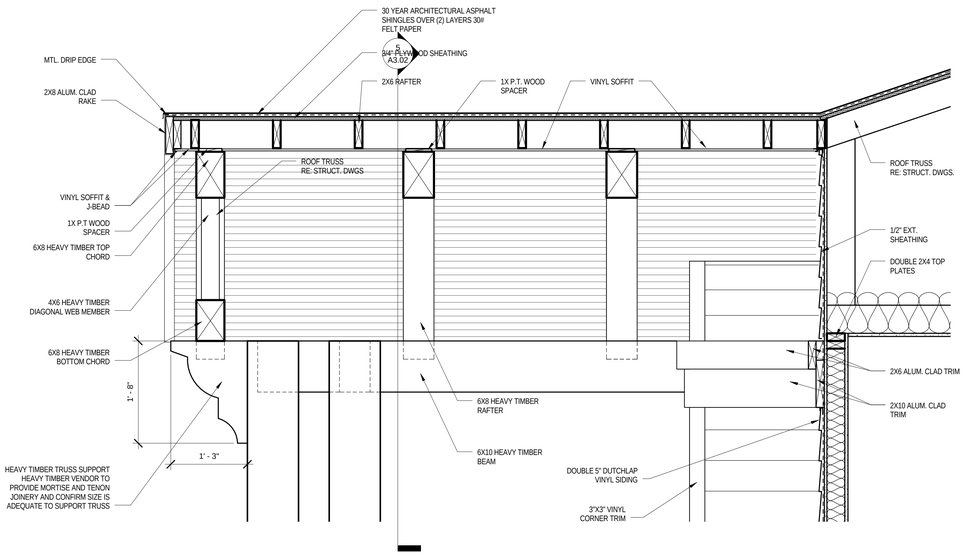
4 ROOF DETAIL @ PORCH OVERHANG
1" = 1'-0"



2 ROOF DETAIL @ 1HR WALL BY ATTIC
3/4" = 1'-0"



1 ROOF DETAIL @ 1HR WALL
3/4" = 1'-0"



3 ROOF DETAIL @ ENTRANCE
1" = 1'-0"

Earl Architects

Earl Architects, LLC
301 N. Main Street
Greenville, SC 29601
864 271 7555

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WALL SECTIONS AND DETAILS

A3.02

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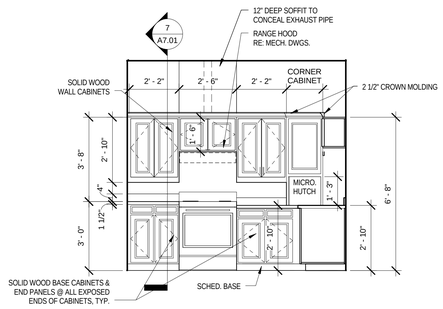
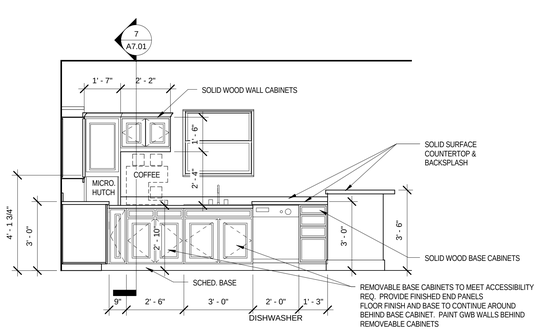
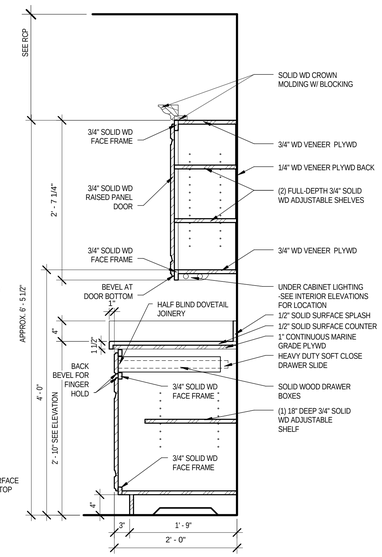
1 FIRST FLOOR PLAN
1/8" = 1'-0"



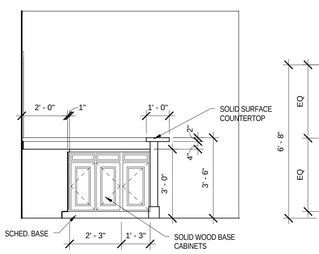
2 KITCHEN - SOUTH ELEVATION
3/8" = 1'-0"



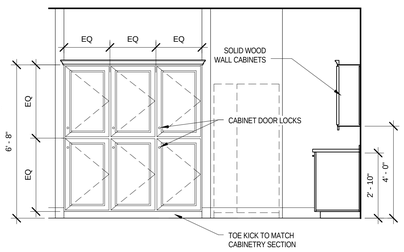
3 KITCHEN - WEST ELEVATION
3/8" = 1'-0"



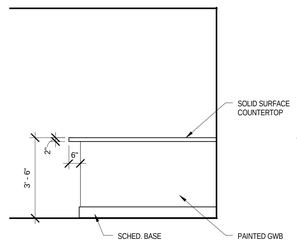
7 MILLWORK SECTION @ BASE & WALL CABINET
1" = 1'-0"



4 KITCHEN - NORTH ELEVATION
3/8" = 1'-0"

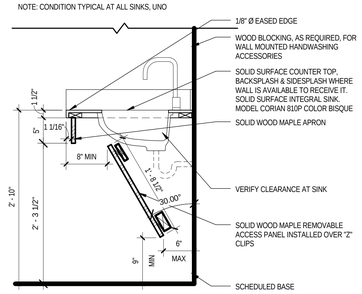


5 KITCHEN - EAST ELEVATION
3/8" = 1'-0"



6 KITCHEN - SOUTH ISLAND ELEVATION
3/8" = 1'-0"

NOTE: CONDITION TYPICAL AT ALL SINKS, UNO



TYP CASEWORK SECTION:
ACCESSIBLE SINK CONDITION WITH REMOVABLE ACCESS PANEL

9 MILLWORK SECTION @ SINK
1" = 1'-0"

8 RESTROOM/SHOWER ROOM - WEST ELEVATION - WOMEN 107, MEN 112 O.H.
3/8" = 1'-0"

10 RADIO CABINET - EAST ELEVATION
3/8" = 1'-0"

*USE CONFIGURATION SHOWN IN BEDROOM 2 & 4, BEDROOM 1 & 3 TO HAVE ALL HANGING RODS AT 5'-4" AFF

11 BEDROOM CABINET ELEVATION
3/8" = 1'-0"

GENERAL NOTES - RCP

A) ALL CEILING HEIGHTS ARE AT UNDERSIDE OF ROOF TRUSS (+9'-1 1/2") UNLESS NOTED OTHERWISE.
B) LIGHT FIXTURES TO BE LOCATED PER RCP. NOTIFY ARCHITECT OF ANY CONFLICTS WITH GRILLES, DIFFUSERS, LIGHTS, SPRINKLER HEADS, ETC. NOT SHOWN ON THESE PLANS AS DESIGNED BY MECHANICAL AND ELECTRICAL ENGINEERS .
C) ALL CEILINGS SHALL BE PAINTED GYPSUM BOARD UNLESS NOTED OTHERWISE
D) ALL VERTICAL SURFACES OF GYP. BD SOFFITS ARE TO BE PAINTED TO MATCH ADJACENT WALLS, U.N.O.
E) AN UNDERLAY OF THE FLOOR PLAN IS SHOWN FOR GRAPHIC PURPOSES ONLY.
F) COORDINATE LOCATION OF RECESSED LIGHTS WITH ROOF TRUSSES. NOTIFY ARCHITECT OF ANY CONFLICTS WITH ROOF TRUSSES.

KEYNOTES - RCP

01 PAINTED MOISTURE RESISTANT GYPSUM BOARD
02 ATTIC ACCESS ABOVE SHOWN DASHED. COORDINATE LOCATION WITH TRUSS LAYOUT AND MECHANICAL EQUIP. ABOVE. PROVIDE ACCESS DOOR LADDER.
03 3" BEADBOARD STYLE VINYL SOFFIT.
04 6" VENTILATED VINYL SOFFIT; ALL SOFFIT PANELS TO BE VENTILATED.
05 SOFFIT ABOVE LOCKERS
06 H.T. ROOF RAFTERS
07 H.T. TRUSS
08 BREAK METAL H-TRIM TO TRANSITION FROM HORIZONTAL TO SLOPED SOFFIT. COLOR TO MATCH SOFFIT.
09 COORDINATE DIMENSION OF SOFFIT ABOVE CABINET TO CONCEAL HOOD EXHAUST.
10 COORDINATE SOFFIT HEIGHT WITH CABINETRY.

LIGHTING LEGEND - RCP

- 1'-0" X 4'-0" FLANGE MOUNTED FLOURESCENT LIGHT FIXTURE W/ ACRYLIC LENS
- 1'-0" X 4'-0" 2-LAMP STRIP LIGHTS
- FLOURESCENT HIGH BAY LIGHT
- 3'-0" - WALL MOUNTED FLOURESCENT LIGHT
- RECESSED INCANDESCENT LAMP

GENERAL NOTES - INTERIOR ELEVATIONS

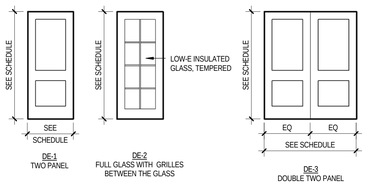
A) ALL COUNTERS TO BE 2'-1" DEEP SOLID SURFACE UNLESS NOTED OTHERWISE. ALL BASE & WALL CABINETS TO BE STAIN GRADE MAPLE UNLESS NOTED OTHERWISE.
B) ALL CABINETRY SHALL BE CONFIGURED AS SHOWN ON ELEVATIONS. SEE SPECIFICATIONS FOR FURTHER DESCRIPTION OF MILLWORK REQUIREMENTS.
C) THE MILLWORK CONTRACTOR SHALL INSPECT ALL SUBSTRATES PRIOR TO INSTALLATION OF CABINETRY. IF NOT ADEQUATELY LEVEL, PLUMB, OR OTHERWISE NOT SUITABLE TO MAINTAIN REVEAL AND SCRIBE TOLERANCES OF 1/8", THE ARCHITECT IS TO BE NOTIFIED PRIOR TO INSTALLATION OF CABINETRY. THE GENERAL CONTRACTOR IS TO CORRECT ALL UNEVEN, UNLEVEL, OR OUT-OF-PLUMB SUBSTRATES TO THE MILLWORK CONTRACTOR'S SATISFACTION.
D) ALL EQUIPMENT & FURNISHINGS SHOWN IS FOR GRAPHIC PURPOSES ONLY. CONTRACTOR TO PROVIDE APPLIANCES PER SCHEDULE ON SHEET A1.01. CONTRACTOR TO COORDINATE ALL REQUIRED APPLIANCE CLEARANCES AND OPENINGS WITH CABINETRY.
E) SCHEDULED BASE SHALL BE RUN BEHIND ALL EQUIPMENT LOCATIONS.
F) ADJUSTABLE SHELVING SHALL BE PROVIDED AS FOLLOWS UNO:
-12" & 15" HIGH WALL CABINETS SHALL HAVE NO SHELVES
-24" HIGH WALL CABINETS SHALL HAVE (1) ADJ. FULL-DEPTH SHELF
-30" & 36" HIGH WALL CABINETS SHALL HAVE (2) ADJ. FULL-DEPTH SHELVES
-BASE CABINETS SHALL HAVE (1) ADJ. 18" DEEP SHELF
G) GROMMETS TO BE 2" DIAMETER AND SHALL BE LOCATED & INSTALLED IN THE FIELD. GROMMETS SHALL BE PROVIDED AS NECESSARY WHERE BELOW COUNTER OUTLETS ARE LOCATED. REFER TO ELECTRICAL AND COMMUNICATIONS DRAWINGS FOR ADDITIONAL OUTLET INFORMATION.
H) ALL WALL CABINETS SHALL BE 1'-0" DEEP CLEAR INSIDE DIMENSION UNLESS NOTED OTHERWISE.
J) ALL OUTSIDE CORNERS OF COUNTERTOPS SHALL HAVE 2" RADIUS.
K) ALL EXPOSED ENDS AND END PANELS SHALL BE FINISHED.
L) ALL SCRIBES AND FILLERS SHALL BE SHOWN ON SHOP DRAWINGS, 1" MAX WIDTH.
M) WOOD GRAIN PLASTIC LAMINATE ON CABINETS, DRAWERS, END PANELS, ETC. SHALL RUN IN THE VERTICAL DIRECTION.
N) ALL MILLWORK SHALL BE FINISHED WITH A MATCHING ENCLOSURE PANEL UNLESS NOTED OTHERWISE.
P) CENTER POWER AND DATA OUTLETS BELOW COUNTERS WHERE KNEE SPACES OCCUR, UNO.
Q) ALL SOLID SURFACE COUNTERS SHALL HAVE 1/8" EASED EDGES, TYP.
R) PROVIDE DETAILED SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

GENERAL HARDWARE NOTES:

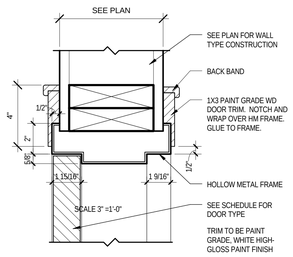
1. CONTRACTOR TO PROVIDE DELEGATED DESIGN DETAILED HARDWARE SCHEDULE.
2. CONTRACTOR TO COORDINATE WITH OWNER AND ARCHITECT TO DEVELOP DETAILED HARDWARE SCHEDULE.
3. PROVIDE HARDWARE ALLOWANCE OF $300 PER DOOR LEAF.

DOOR SCHEDULE

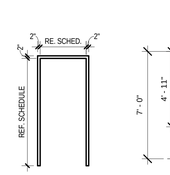
NUMBER	FROM ROOM	TO ROOM	DOOR SIZE (WIDTH X HEIGHT X THICKNESS)	DOOR ELEV.	DOOR MAT.	FRAME ELEV.	FRAME MAT.	HEAD	JAMB	FIRE RATING	Comments
101	CORRIDOR	OFFICE	3'-0" X 7'-0" X 1 3/4"	DE-1	SCWD	FE-1	WD	H-2	J-2		B.O.D. JELD-WEN MODEL 1022 MAPLE AUTHENTIC WOOD ALL PANEL INTERIOR DOOR
102	OFFICE	CORRIDOR	3'-0" X 7'-0" X 1 3/4"	DE-1	SCWD	FE-1	WD	H-2	J-2		B.O.D. JELD-WEN MODEL 1022 MAPLE AUTHENTIC WOOD ALL PANEL INTERIOR DOOR
103		CORRIDOR	3'-0" X 7'-0" X 1 3/4"	DE-2	FG	FE-1	ALWD	H-3	J-3		B.O.D. PELLA FIBERGLAS OUT-SWING ENTRY DOOR W/ ALUM-CLAD WOOD DOOR FRAME
104	BEDROOM 1	CORRIDOR	2'-10" X 7'-0" X 1 3/4"	DE-1	SCWD	FE-1	WD	H-2	J-2		B.O.D. JELD-WEN MODEL 1022 MAPLE AUTHENTIC WOOD ALL PANEL INTERIOR DOOR
105	CORRIDOR	BEDROOM 2	2'-10" X 7'-0" X 1 3/4"	DE-1	SCWD	FE-1	WD	H-2	J-2		B.O.D. JELD-WEN MODEL 1022 MAPLE AUTHENTIC WOOD ALL PANEL INTERIOR DOOR
107	CORRIDOR	WOMEN	3'-0" X 7'-0" X 1 3/4"	DE-1	SCWD	FE-1	WD	H-2	J-2		B.O.D. JELD-WEN MODEL 1022 MAPLE AUTHENTIC WOOD ALL PANEL INTERIOR DOOR
107A	WOMEN	SHOWER	3'-0" X 7'-0" X 1 3/4"	DE-1	SCWD	FE-1	WD	H-2	J-2		B.O.D. JELD-WEN MODEL 1022 MAPLE AUTHENTIC WOOD ALL PANEL INTERIOR DOOR
108	STORAGE	CORRIDOR	3'-0" X 7'-0" X 1 3/4"	DE-1	SCWD	FE-1	WD	H-2	J-2		B.O.D. JELD-WEN MODEL 1022 MAPLE AUTHENTIC WOOD ALL PANEL INTERIOR DOOR
110	LIVING		3'-0" X 7'-0" X 1 3/4"	DE-2	FG	FE-1	ALWD	H-3	J-3		B.O.D. PELLA FIBERGLAS OUT-SWING ENTRY DOOR W/ ALUM-CLAD WOOD DOOR FRAME
111	FURNACE	CORRIDOR	PR 2'-4" X 7'-0" X 1 3/4"	DE-3	SCWD	FE-1	WD	H-2	J-2		B.O.D. JELD-WEN MODEL 1022 MAPLE AUTHENTIC WOOD ALL PANEL INTERIOR DOOR
112	MEN	CORRIDOR	3'-0" X 7'-0" X 1 3/4"	DE-1	SCWD	FE-1	WD	H-2	J-2		B.O.D. JELD-WEN MODEL 1022 MAPLE AUTHENTIC WOOD ALL PANEL INTERIOR DOOR
112A	SHOWER	MEN	3'-0" X 7'-0" X 1 3/4"	DE-1	SCWD	FE-1	WD	H-2	J-2		B.O.D. JELD-WEN MODEL 1022 MAPLE AUTHENTIC WOOD ALL PANEL INTERIOR DOOR
113-1	LIVING	GYM	3'-0" X 7'-0" X 1 3/4"	DE-1	SCWD	FE-1	WD	H-2	J-2		B.O.D. JELD-WEN MODEL 1022 MAPLE AUTHENTIC WOOD ALL PANEL INTERIOR DOOR
113-2	GYM		3'-0" X 7'-0" X 1 3/4"	DE-2	FG	FE-1	ALWD	H-3	J-3		B.O.D. PELLA FIBERGLAS OUT-SWING ENTRY DOOR W/ ALUM-CLAD WOOD DOOR FRAME
114	CORRIDOR	BEDROOM 3	2'-10" X 7'-0" X 1 3/4"	DE-1	SCWD	FE-1	WD	H-2	J-2		B.O.D. JELD-WEN MODEL 1022 MAPLE AUTHENTIC WOOD ALL PANEL INTERIOR DOOR
115	BEDROOM 4	CORRIDOR	2'-10" X 7'-0" X 1 3/4"	DE-1	SCWD	FE-1	WD	H-2	J-2		B.O.D. JELD-WEN MODEL 1022 MAPLE AUTHENTIC WOOD ALL PANEL INTERIOR DOOR
120-1		APPARATUS BAY	3'-0" X 7'-0" X 1 3/4"	DE-2	FG	FE-1	ALWD	H-3	J-3		B.O.D. PELLA FIBERGLAS OUT-SWING ENTRY DOOR W/ ALUM-CLAD WOOD DOOR FRAME
120-2	CORRIDOR	APPARATUS BAY	3'-0" x 7'-0" x 1 3/4"	DE-1	SCWD	FE-1	HM	H-1	J-1		B.O.D. JELD-WEN SOLID MINERAL CORE MOLDED WOOD COMPOSITE FIRE RATED INTERIOR DOOR, MODEL CAMBRIDGE
120-3	APPARATUS BAY	JANITOR	PR 2'-6" X 7'-0" X 1 3/4"	DE-3	SCWD	FE-1	HM	H-1	J-1		B.O.D. JELD-WEN SOLID MINERAL CORE MOLDED WOOD COMPOSITE FIRE RATED INTERIOR DOOR, MODEL CAMBRIDGE
120-4	UTILITY	APPARATUS BAY	PR 2'-6" X 7'-0" X 1 3/4"	DE-3	SCWD	FE-1	HM	H-1	J-1		B.O.D. JELD-WEN SOLID MINERAL CORE MOLDED WOOD COMPOSITE FIRE RATED INTERIOR DOOR, MODEL CAMBRIDGE
120-5	APPARATUS BAY	FURNACE	3'-0" x 7'-0" x 1 3/4"	DE-1	SCWD	FE-1	HM	H-1	J-1		B.O.D. JELD-WEN SOLID MINERAL CORE MOLDED WOOD COMPOSITE FIRE RATED INTERIOR DOOR, MODEL CAMBRIDGE
120-6	CORRIDOR	APPARATUS BAY	3'-0" x 7'-0" x 1 3/4"	DE-1	SCWD	FE-1	HM	H-1	J-1		B.O.D. JELD-WEN SOLID MINERAL CORE MOLDED WOOD COMPOSITE FIRE RATED INTERIOR DOOR, MODEL CAMBRIDGE
120-7	APPARATUS BAY		3'-0" X 7'-0" X 1 3/4"	DE-2	FG	FE-1	ALWD	H-3	J-3		B.O.D. PELLA FIBERGLAS OUT-SWING ENTRY DOOR W/ ALUM-CLAD WOOD DOOR FRAME
121-1	APPARATUS BAY	EMERGENCY OPERATIONS CENTER	3'-0" x 7'-0" x 1 3/4"	DE-1	SCWD	FE-1	HM	H-1	J-1		B.O.D. JELD-WEN SOLID MINERAL CORE MOLDED WOOD COMPOSITE FIRE RATED INTERIOR DOOR, MODEL CAMBRIDGE
121-2	ELEC / IT	EMERGENCY OPERATIONS CENTER	3'-0" X 7'-0" X 1 3/4"	DE-1	SCWD	FE-1	WD	H-1	J-1		B.O.D. JELD-WEN MODEL 1022 MAPLE AUTHENTIC WOOD ALL PANEL INTERIOR DOOR
121-3	EMERGENCY OPERATIONS CENTER		3'-0" X 7'-0" X 1 3/4"	DE-2	FG	FE-1	ALWD	H-3	J-3		B.O.D. PELLA FIBERGLAS OUT-SWING ENTRY DOOR W/ ALUM-CLAD WOOD DOOR FRAME
121-4	EMERGENCY OPERATIONS CENTER		3'-0" X 7'-0" X 1 3/4"	DE-2	FG	FE-1	ALWD	H-3	J-3		B.O.D. PELLA FIBERGLAS OUT-SWING ENTRY DOOR W/ ALUM-CLAD WOOD DOOR FRAME
123	EMERGENCY OPERATIONS CENTER	TOILET	3'-0" X 7'-0" X 1 3/4"	DE-1	SCWD	FE-1	WD	H-2	J-2		B.O.D. JELD-WEN MODEL 1022 MAPLE AUTHENTIC WOOD ALL PANEL INTERIOR DOOR
124	RISER		3'-0" X 7'-0" X 1 3/4"	DE-1	FG	FE-1	ALWD	H-3	J-3		B.O.D. PELLA FIBERGLAS OUT-SWING ENTRY DOOR W/ ALUM-CLAD WOOD DOOR FRAME



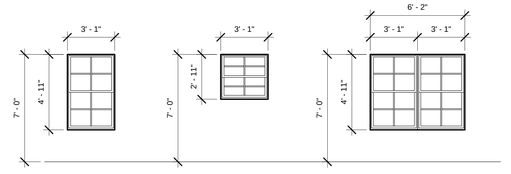
DOOR ELEVATIONS
SCALE 1/4" =1'-0"



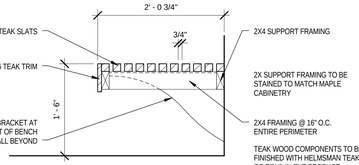
DOOR/JAMB DETAILS



DOOR FRAME ELEVATIONS
SCALE 1/4" =1'-0"



WINDOW ELEVATIONS
SCALE 1/4" =1'-0"



12 MILLWORK SECTION @ BENCH
1" = 1'-0"

Earl Architects

Earl Architects, LLC
301 N. Main Street
Greenville, SC 29601
864 271 7555

Consultant

DUNCAN CHAPEL FIRE DISTRICT STATION 2

NEW FACILITY GREENVILLE, SC

Keyplan

Professional Seal

STATE OF SOUTH CAROLINA EARL ARCHITECTS, LLC GREENVILLE, SC 100021 REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA RICHARD M. EARL GREENVILLE, SC 10021 REGISTERED ARCHITECT

Issued for Permit

Revision

RCP, INTERIOR ELEVATIONS, DOOR SCHEDULE, DOOR & WINDOW ELEVATIONS

A7.01

In Charge	RRE
Drawn By	DMR
Checked By	SJM
Project Number	1033.00.00
Date	11/18/2014