

PROPOSED RENOVATIONS TO FACILITY FOR COMMONWEALTH CENTRE

FRANKLIN STREET
MARTINSVILLE, VIRGINIA

PROJECT OWNER & CONSULTANT

APPLICANT/DEVELOPER

COMMONWEALTH BOULEVARD ASSOCIATES, LLC.
P.O. BOX 4991
MARTINSVILLE, VIRGINIA
TEL. 276-656-3250
CONTACT: TOM MIZE

LAND OWNER

COMMONWEALTH BOULEVARD ASSOCIATES, LLC.
P.O. BOX 4991
MARTINSVILLE, VIRGINIA
TEL. 276-656-3250

ENGINEER

CLARK EDEN, P.E.
EDEN & ASSOCIATES, P.C.
1049 BROOKDALE STREET, SUITE B
MARTINSVILLE, VIRGINIA 24112
TEL: (276)632-6231
FAX: (276)632-3648

ZONING - B2

THIS PROPERTY IS NOT LOCATED IN FLOOD ZONE A OR B AS PER THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

AGENCY CONTACT LIST

CABLE

ADELPHIA
390 COMMONWEALTH BLVD. MARTINSVILLE, VA. 24112
MR. MICHAEL LOVE 276-634-4325

TELEPHONE

SPRINT
127 E. CHURCH STREET, MARTINSVILLE, VA. 24112
MR. DON KENDRICK 276-666-4293

WATER

MARTINSVILLE PUBLIC WORKS DEPARTMENT
CITY HALL 55 W. CHURCH STREET
MARTINSVILLE, VIRGINIA
MR. JOHN DYKES 276-403-5155

SANITARY SEWER

MARTINSVILLE PUBLIC WORKS DEPARTMENT
CITY HALL 55 W. CHURCH STREET
MARTINSVILLE, VIRGINIA
MR. JOHN DYKES 276-403-5155

ELECTRIC

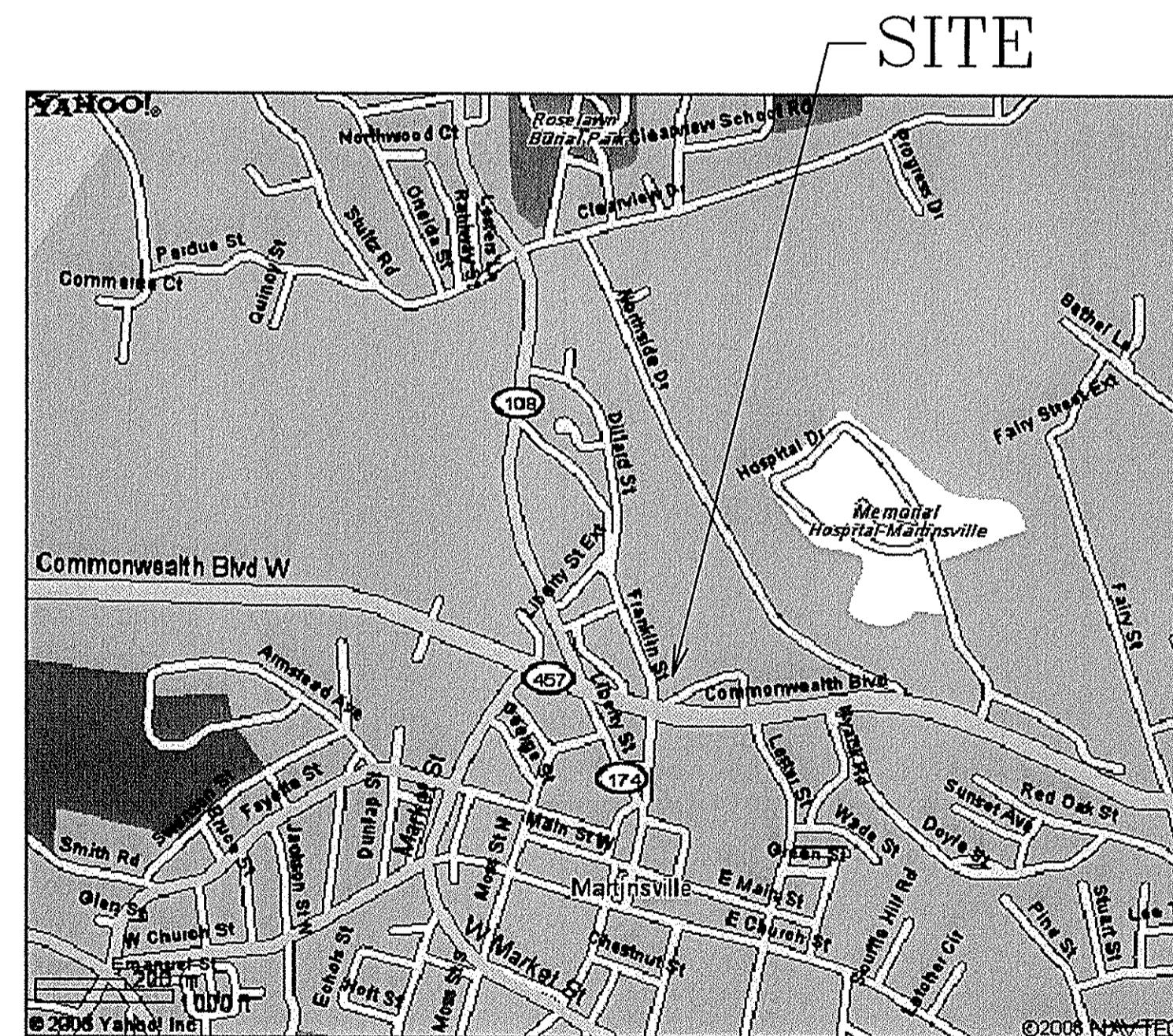
MARTINSVILLE ELECTRIC DEPARTMENT
CITY HALL 55 W. CHURCH STREET
MARTINSVILLE, VIRGINIA
MR. PAUL ROOP 276-403-5183

BUILDING DEPARTMENT

MARTINSVILLE BUILDING INSPECTION
CITY HALL 55 W. CHURCH STREET
MARTINSVILLE, VIRGINIA
MR. FRED GORDON 276-656-5173

FIRE MARSHALL

MARTINSVILLE FIRE MARSHALL
CITY HALL 55 W. CHURCH STREET
MARTINSVILLE, VIRGINIA
276-656-5199



VICINITY MAP

PREPARED BY:



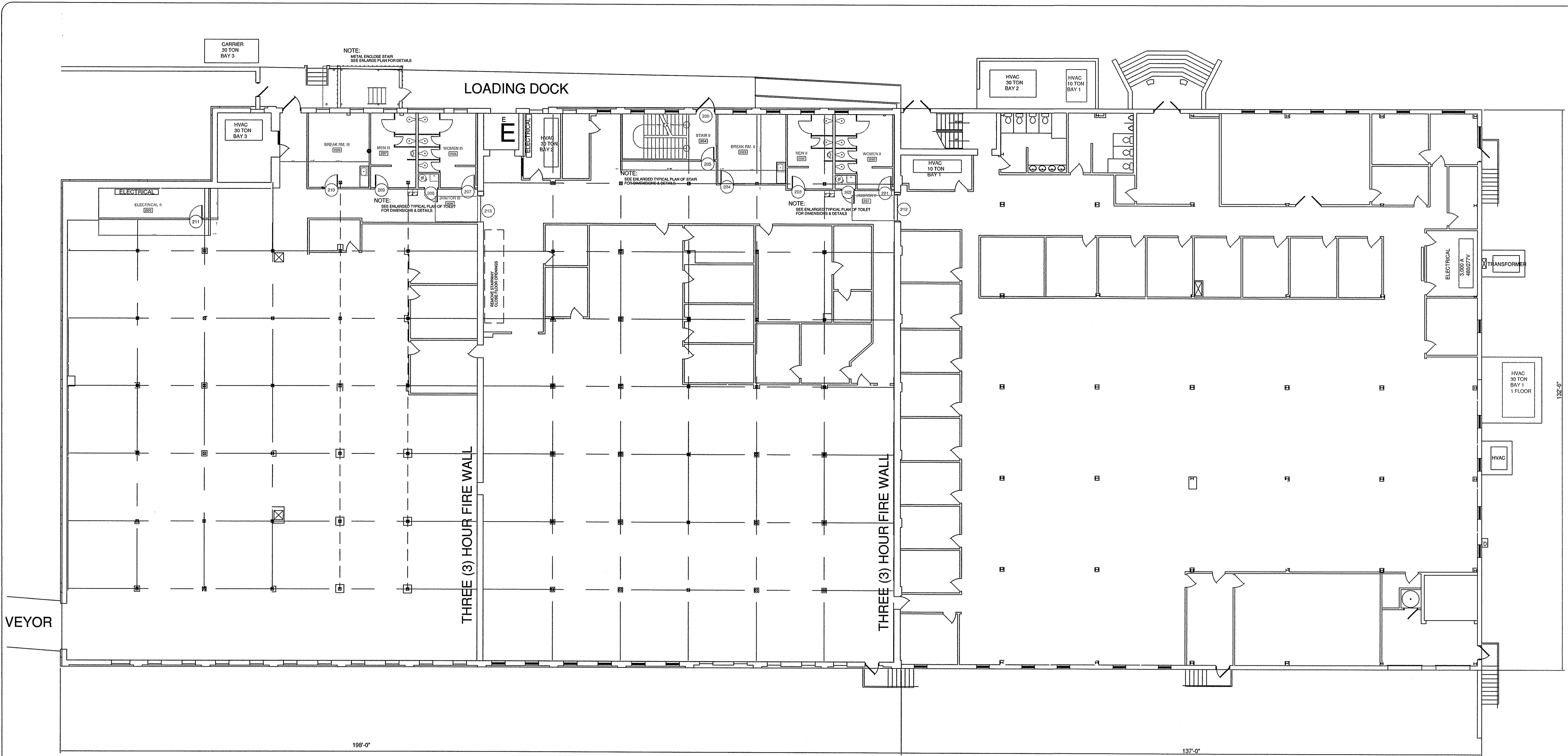
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PROJECT DESCRIPTION:	RENOVATE BUILDING TO OFFICE	GOVERNING CODES:	2003 IBC	2003 IECC	2003 NEC	LOCAL AMENDMENTS
BUILDING DATA:						
BUILDING AREA (SQ. FT.):	43,789 SQ. FT. PER FLOOR					
BUILDING HEIGHT:	4 STORY @ 42' HEIGHT					
OCCUPANCY TYPE:	BUSINESS B					
ALLOWABLE AREA (SQ.FT.):	FOUR (4) STORIES 19,000 SF FOR IIIB CONSTRUCTION					
OCCUPANT LOAD:	OFFICE AREA 18,153 SF / 100 = 182 MAX. 182 IN LARGEST AREA					
CONSTRUCTION TYPE:	TYPE IIIB / HT					
FIRE REQUIREMENTS:	AUTOMATIC SPRINKLER SYSTEM 3 HOUR SEPARATION BETWEEN SECTIONS					
NUMBER OF EXITS PROVIDED:	2 EACH SECTION AT 35" EACH					
NUMBER OF EXITS REQUIRED:	2 (118 OCCUPANTS x 0.2" PER PERSON = 23.6") PER A.D.A. REQUIREMENTS - EACH EXIT TO BE 32" OR GREATER EXIT ACCESS - MAXIMUM TRAVEL DISTANCE ALLOWED = 250 FT. EXIT CORRIDORS TO BE ONE (1) HOUR FIRE RATED EXIT SIGNAGE TO COMPLY WITH IBC 1003.2.10					



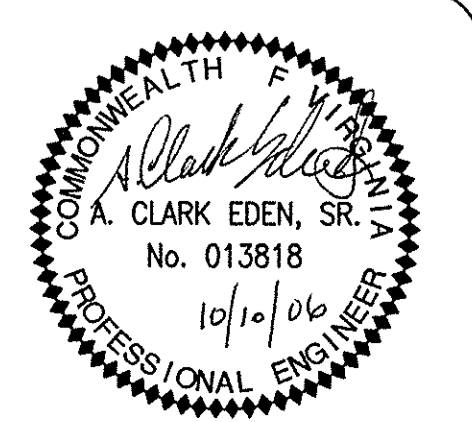
FIRST FLOOR PLAN

SCALE 3/32" = 1'-0"

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1	FIRST ISSUE	10/10/06

PROPOSED FIRST FLOOR PLAN

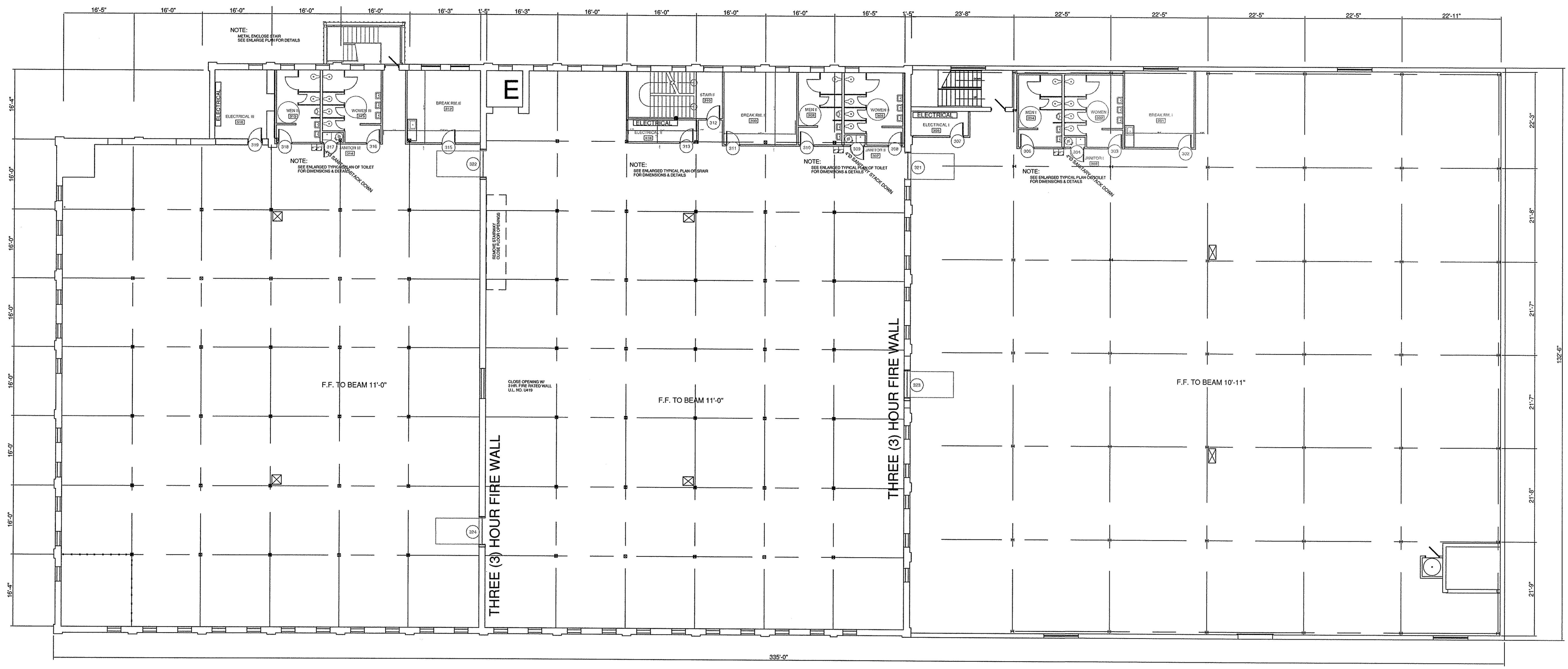
COMMONWEALTH CENTRE

FRANKLIN STREET

MARTINSVILLE, VIRGINIA


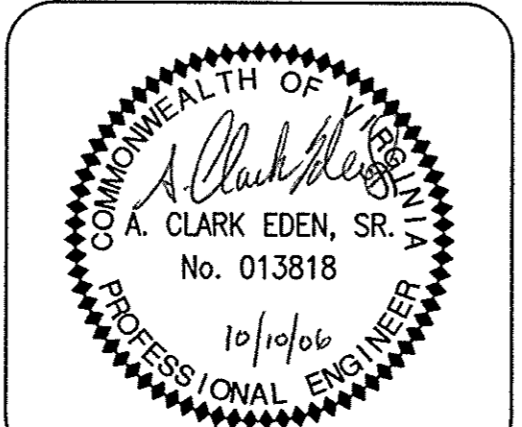
SHEET NO.

A-1



SECOND FLOOR PLAN
SCALE 3/32" = 1'-0"

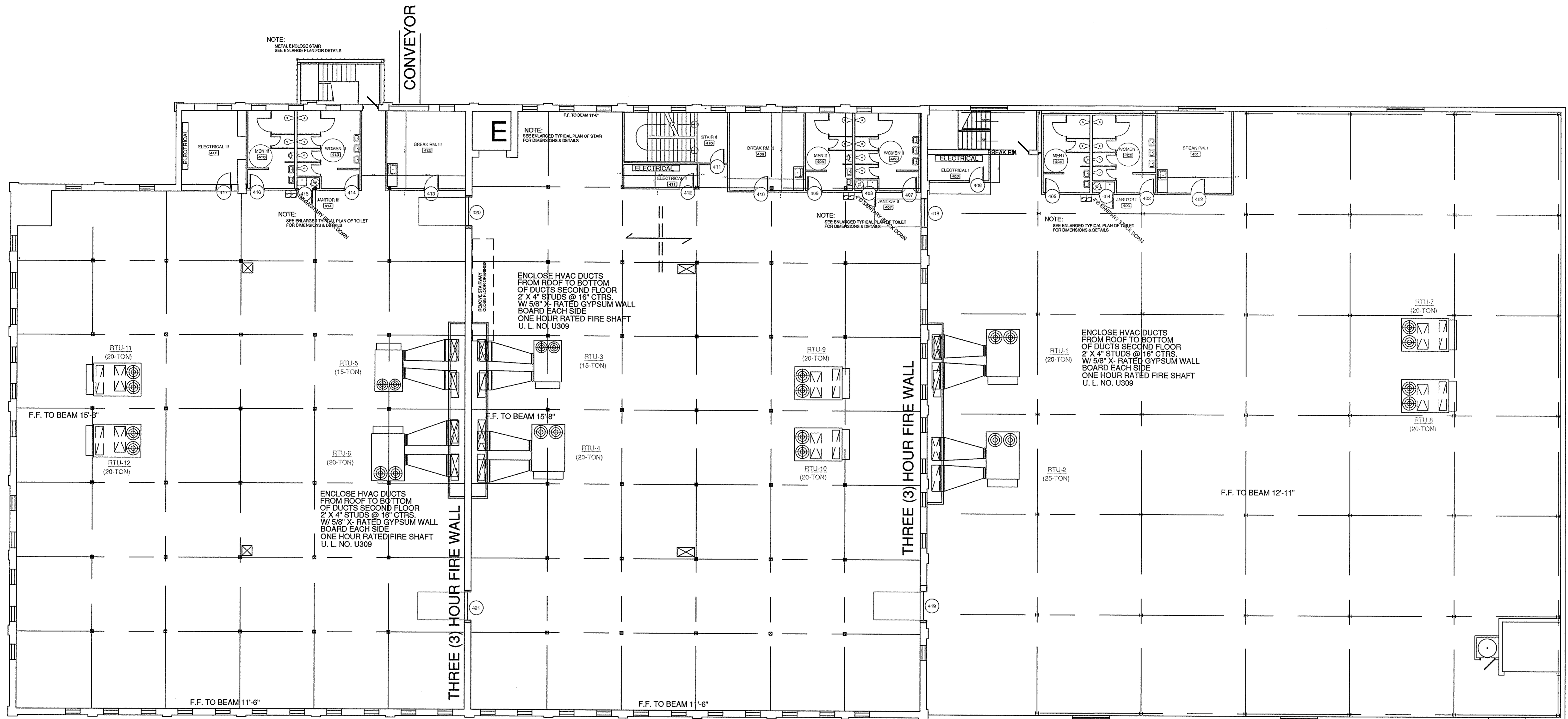
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PROPOSED SECOND FLOOR PLAN
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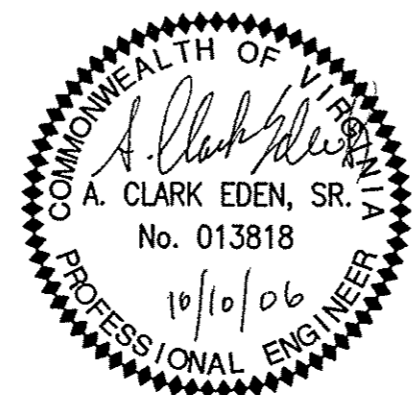
SHEET NO.
A-2



THIRD FLOOR PLAN
SCALE 3/32" = 1'-0"

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PROPOSED THIRD FLOOR PLAN

COMMONWEALTH CENTRE

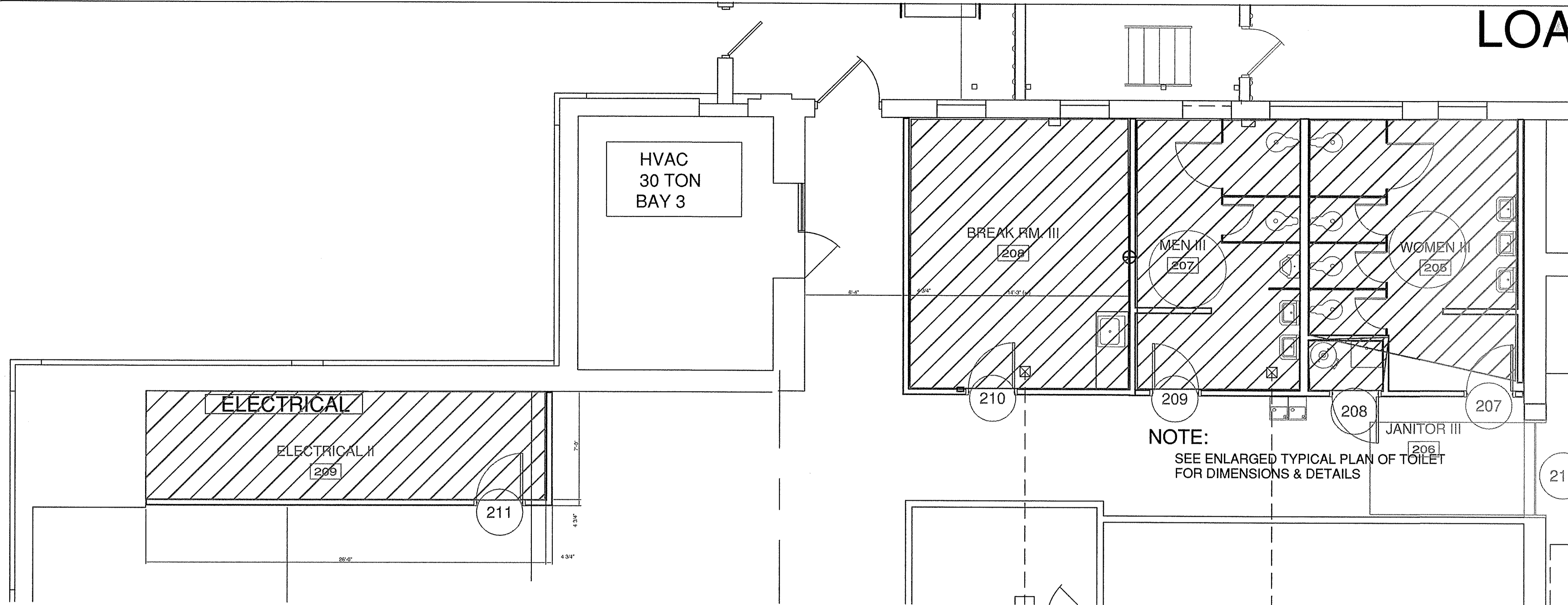
FRANKLIN STREET

MARTINSVILLE, VIRGINIA

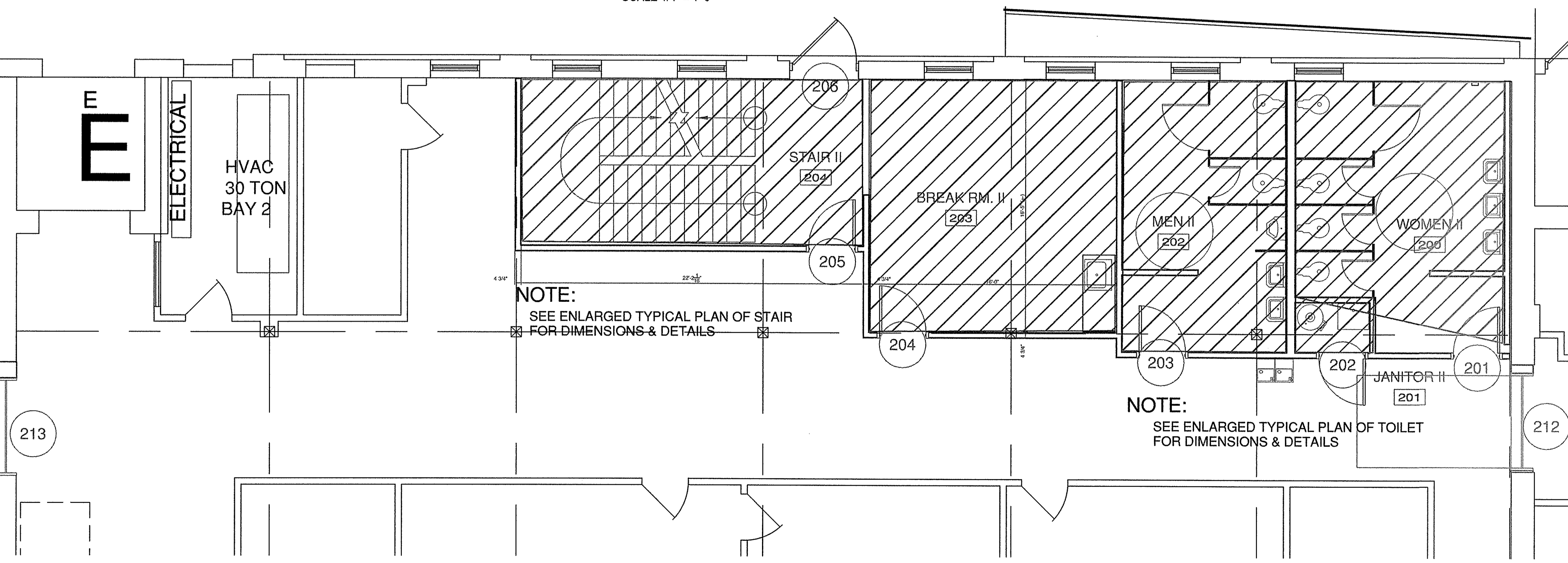
SHEET NO.

A-3

LOA



PART PLAN FIRST FLOOR BAY 3
SCALE 1/4" = 1'-0"

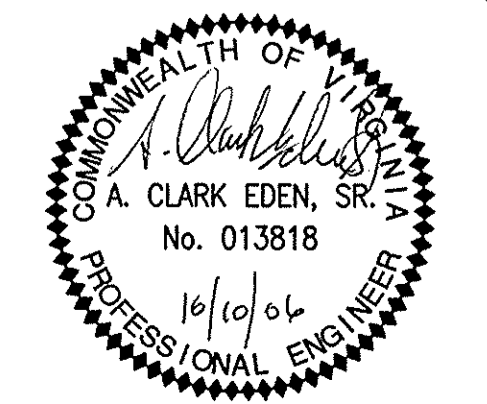


PART PLAN FIRST FLOOR BAY 2
SCALE 1/4" = 1'-0"

ROOM NAME	FLOOR	Base Mat'l	WALLS	WAINSCOT	CEILING		NOTES	Room Number
					MATL	HEIGHT		
WOMEN II	CERAMIC TILE	CERAMIC	ALL	-	ACC. TILE	9'-0"	--	200
JANITOR II	VCT	VINYL	PAINTED G.W.B.	-	ACC. TILE	9'-0"	--	201
MEN II	CERAMIC TILE	CERAMIC	PAINTED G.W.B.	-	ACC. TILE	9'-0"	--	202
BREAK RM. II	VCT	VINYL	PAINTED G.W.B.	-	ACC. TILE	9'-0"	--	203
WOMEN III	CERAMIC TILE	CERAMIC	PAINTED G.W.B.	-	ACC. TILE	9'-0"	--	204
JANITOR III	VCT	VINYL	PAINTED G.W.B.	-	ACC. TILE	9'-0"	--	205
MEN III	CERAMIC TILE	CERAMIC	PAINTED G.W.B.	-	ACC. TILE	9'-0"	--	206
BREAK RM. III	VCT	VINYL	PAINTED G.W.B.	-	ACC. TILE	9'-0"	--	207
ELECTRICAL II	VCT	VINYL	PAINTED G.W.B.	-	ACC. TILE	9'-0"	--	208
					ACC. TILE	9'-0"	--	209

NOTES:
 ALL NEW WALLS (EXCEPT WHERE NOTED) TO BE 2" X 4" WOOD STUDS AT 16" CENTERS WITH 5/8" GYPSUM WALL BOARD EACH SIDE. EXTEND WALL TO BOTTOM OF FLOOR ABOVE. CAULK JOINTS AT FLOOR & CEILING. INSULATE WALLS WITH 3 1/2" FIBERGLASS INSULATION. ALL CORRIDOR AND STAIR WALLS TO BE ONE (1) HOUR FIRE RATED U.L. NO. U308 USE CEMENTATIONOUS "GREEN BOARD" FOR FIRST FOUR (4) FEET OF WALL FROM FLOOR IN RESTROOMS

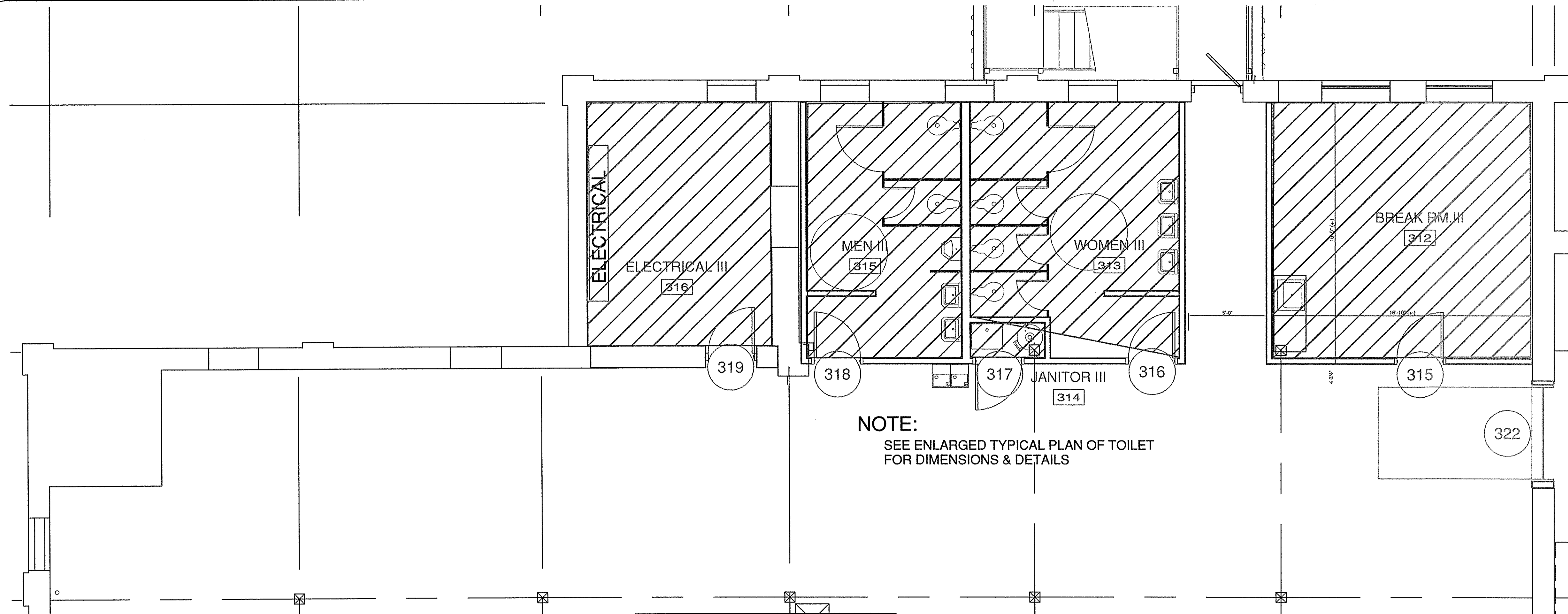
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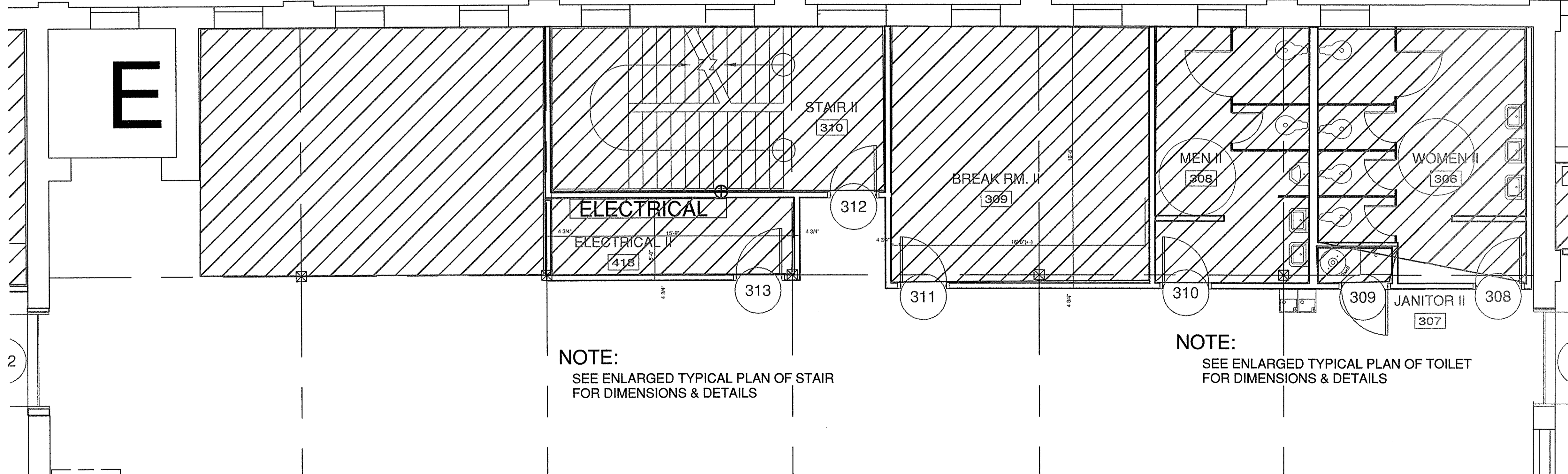
ENLARGED FIRST FLOOR PLANS
COMMONWEALTH CENTRE
 FRANKLIN STREET
 MARTINSVILLE, VIRGINIA

SHEET NO.
A-4



PART PLAN SECOND FLOOR BAY3
SCALE 1/4" = 1'-0"

NOTE:
SEE ENLARGED TYPICAL PLAN OF TOILET
FOR DIMENSIONS & DETAILS



PART PLAN SECOND FLOOR BAY2
SCALE 1/4" = 1'-0"

NOTE:
SEE ENLARGED TYPICAL PLAN OF STAIR
FOR DIMENSIONS & DETAILS

NOTE:
SEE ENLARGED TYPICAL PLAN OF TOILET
FOR DIMENSIONS & DETAILS

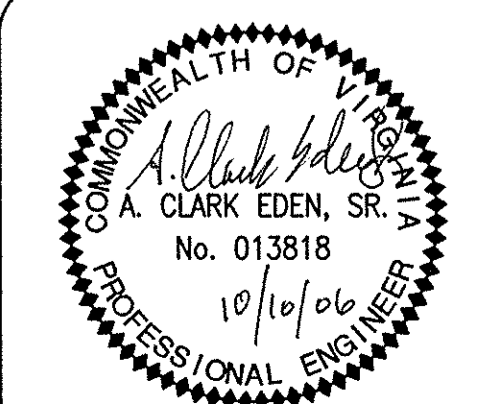
SECOND FLOOR ROOM FINISH SCHEDULE

ROOM NAME	FLOOR	Base Mat'l	WALLS	WAINSCOT	CEILING		NOTES	Room Number
					MATL	HEIGHT		
HVAC I	VCT	VINYL	ALL	PAINTED GWB	ACC. TILE	9'-0"		300
BREAK RM. I	VCT	VINYL	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		301
WOMEN I	CERAMIC	CERAMIC	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		302
JANITOR I	VCT	VINYL	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		303
MEN I	CERAMIC	CERAMIC	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		304
ELECTRICAL I	VCT	VINYL	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		305
WOMEN II	CERAMIC	CERAMIC	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		306
JANITOR II	VCT	VINYL	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		307
MEN II	CERAMIC	CERAMIC	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		308
BREAK RM. II	VCT	VINYL	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		309
STAIR II	VCT/RUBBER	VINYL	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		310
HVAC II	VCT	VINYL	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		311
BREAK RM. III	VCT	VINYL	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		312
WOMEN III	CERAMIC	CERAMIC	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		313
JANITOR III	VCT	VINYL	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		314
MEN III	CERAMIC	CERAMIC	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		315
ELECTRICAL III	VCT	VINYL	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		316
HVAC III	VCT	VINYL	PAINTED GWB	PAINTED GWB	ACC. TILE	9'-0"		317

NOTES:
ALL NEW WALLS (EXCEPT WHERE NOTED) TO BE 2" x 4" WOOD STUDS AT 16" CENTERS WITH 5/8" GYPSUM WALL BOARD EACH SIDE. EXTEND WALL TO BOTTOM OF FLOOR ABOVE. CAULK JOINTS AT FLOOR & CEILING. INSULATE WALLS WITH 3 1/2" FIBERGLASS INSULATION. ALL CORRIDOR AND STAIR WALLS TO BE ONE (1) HOUR FIRE RATED U.L. NO. U309 USE CEMENTAIOUS "GREEN BOARD" FOR FIRST FOUR (4) FEET OF WALL FROM FLOOR IN RESTROOM

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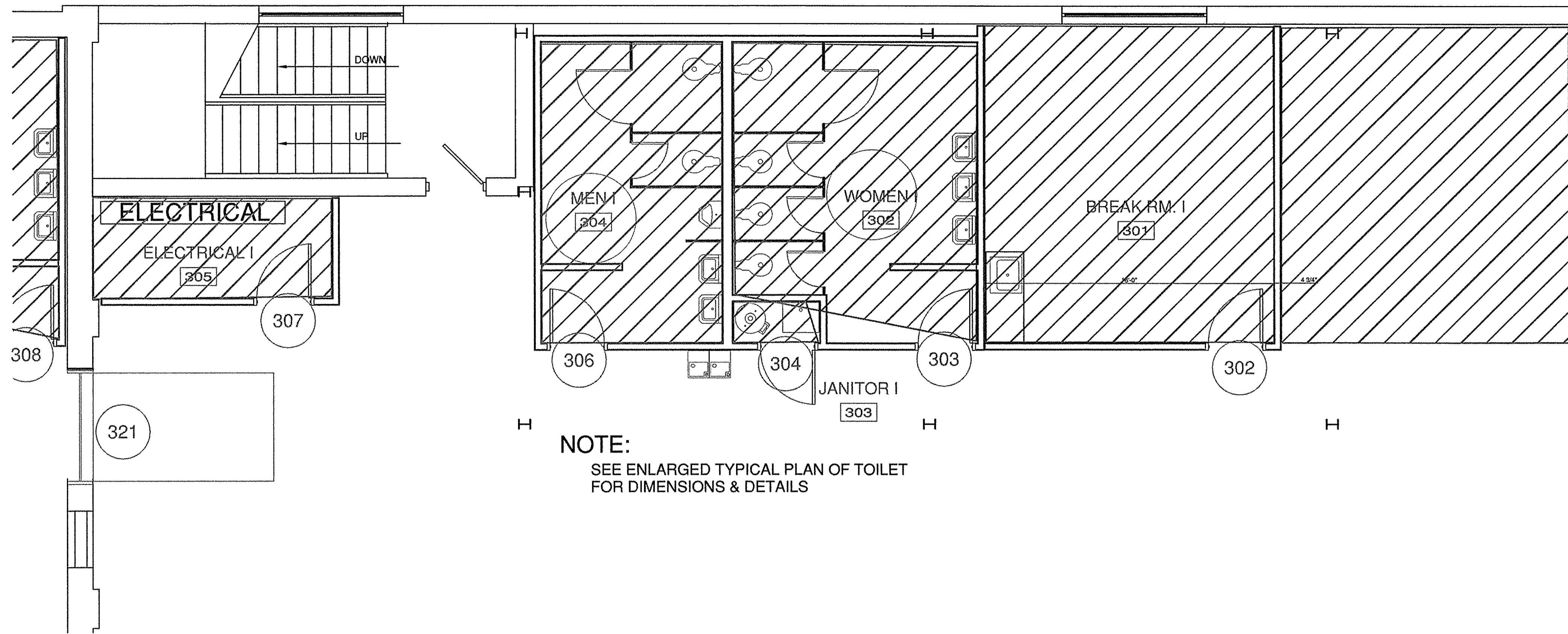
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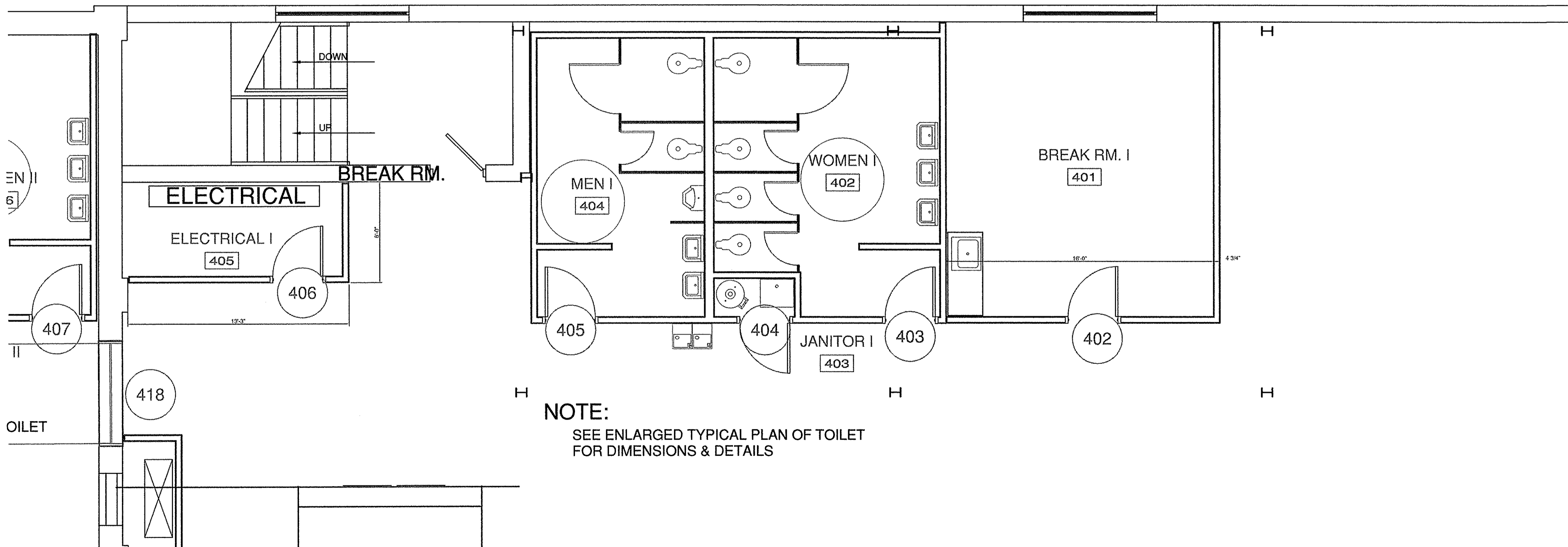
ENLARGED SECOND FLOOR PLANS
COMMONWEALTH CENTRE
FRANKLIN STREET
MARTINSVILLE, VIRGINIA

SHEET NO.
A-5



NOTE:
SEE ENLARGED TYPICAL PLAN OF TOILET
FOR DIMENSIONS & DETAILS

PART PLAN SECOND FLOOR BAY1
SCALE 1/4" = 1'-0"



NOTE:
SEE ENLARGED TYPICAL PLAN OF TOILET
FOR DIMENSIONS & DETAILS

PART PLAN THIRD FLOOR BAY1
SCALE 1/4" = 1'-0"

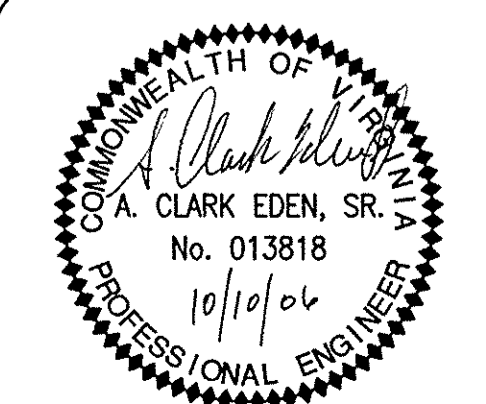
THIRD FLOOR ROOM FINISH SCHEDULE

ROOM NAME	FLOOR	Base Mat'l	WALLS	WAINSCOT	CEILING		NOTES	Room Number
					MATL	HEIGHT		
BREAK RM. I	VCT	VINYL	PAINTED GWB		ACC. TILE	9'-0"	--	401
WOMEN I	CERAMIC	CERAMIC	PAINTED GWB		ACC. TILE	9'-0"	--	402
JANITOR I	VCT	VINYL	PAINTED GWB		ACC. TILE	9'-0"	--	403
MEN I	CERAMIC	CERAMIC	PAINTED GWB		ACC. TILE	9'-0"	--	404
ELECTRICAL I	VCT	VINYL	PAINTED GWB		ACC. TILE	9'-0"	--	405
WOMEN II	CERAMIC	CERAMIC	PAINTED GWB		ACC. TILE	9'-0"	--	406
JANITOR II	VCT	VINYL	PAINTED GWB		ACC. TILE	9'-0"	--	407
MEN II	CERAMIC	CERAMIC	PAINTED GWB		ACC. TILE	9'-0"	--	408
BREAK RM. II	VCT	VINYL	PAINTED GWB		ACC. TILE	9'-0"	--	409
STAIR II	VCT & RUBBER	VINYL	PAINTED GWB		ACC. TILE	9'-0"	--	410
BREAK RM. III	VCT	VINYL	PAINTED GWB		ACC. TILE	9'-0"	--	411
WOMEN III	CERAMIC	CERAMIC	PAINTED GWB		ACC. TILE	9'-0"	--	412
JANITOR III	VCT	VINYL	PAINTED GWB		ACC. TILE	9'-0"	--	413
MEN III	CERAMIC	CERAMIC	PAINTED GWB		ACC. TILE	9'-0"	--	414
ELECTRICAL III	VCT	VINYL	PAINTED GWB		ACC. TILE	9'-0"	--	415
					ACC. TILE	9'-0"	--	416

NOTES:
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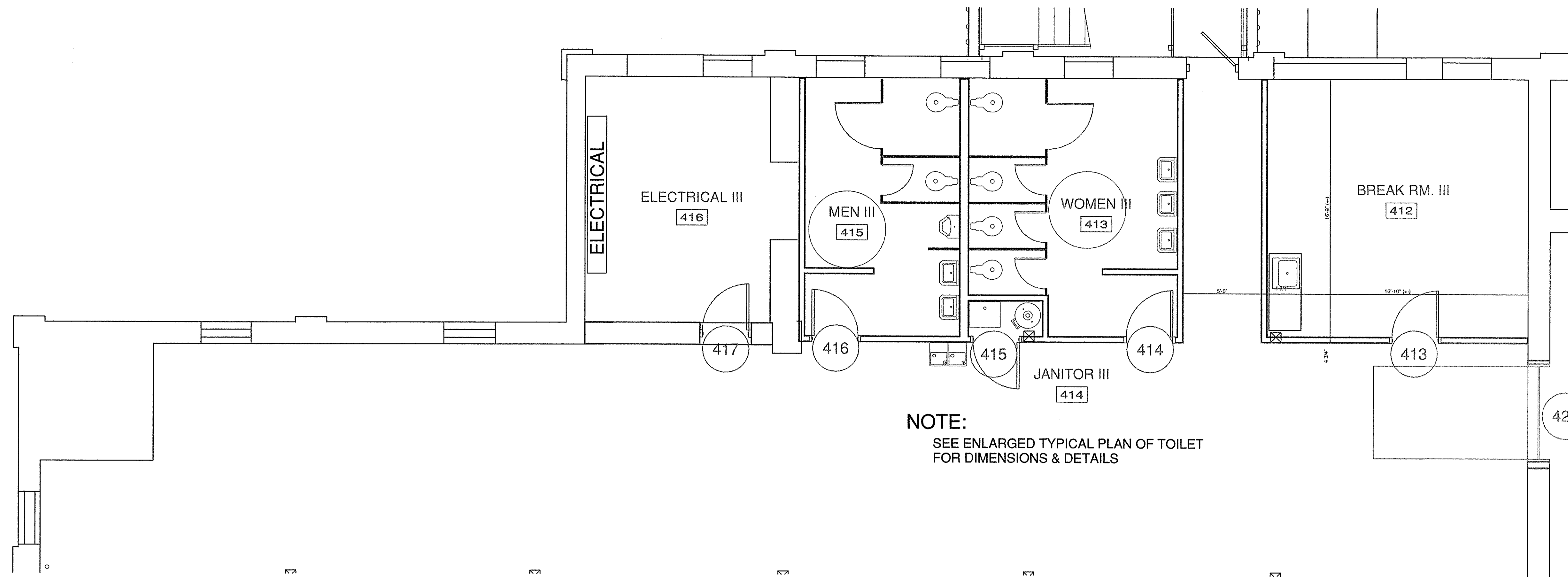
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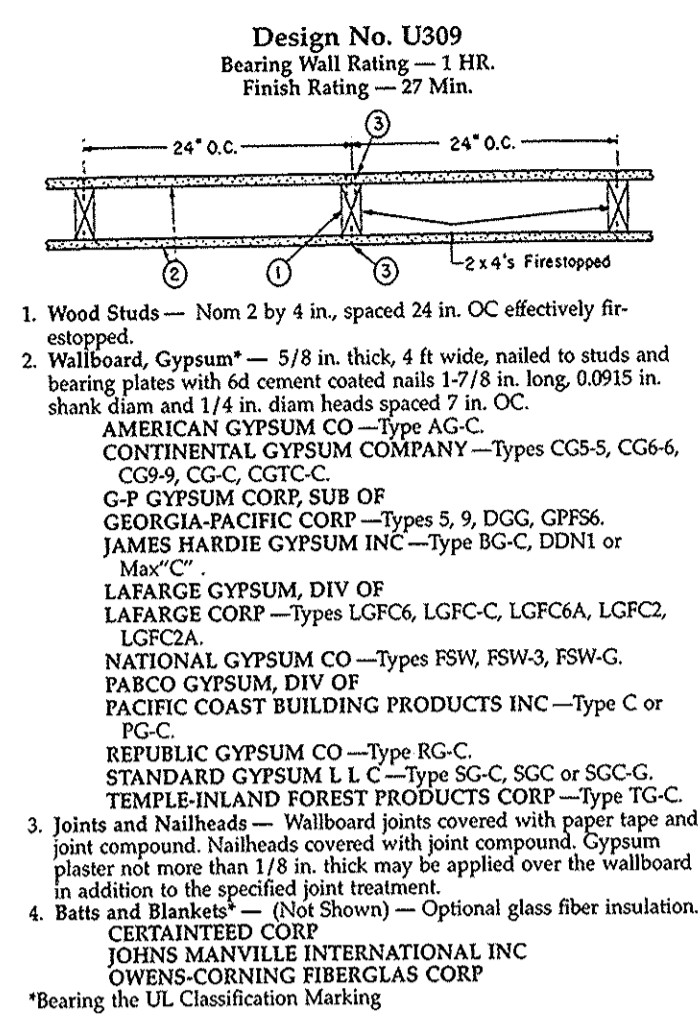
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ENLARGED SECOND & THIRD FLOOR PLANS
COMMONWEALTH CENTRE
FRANKLIN STREET
MARTINSVILLE, VIRGINIA

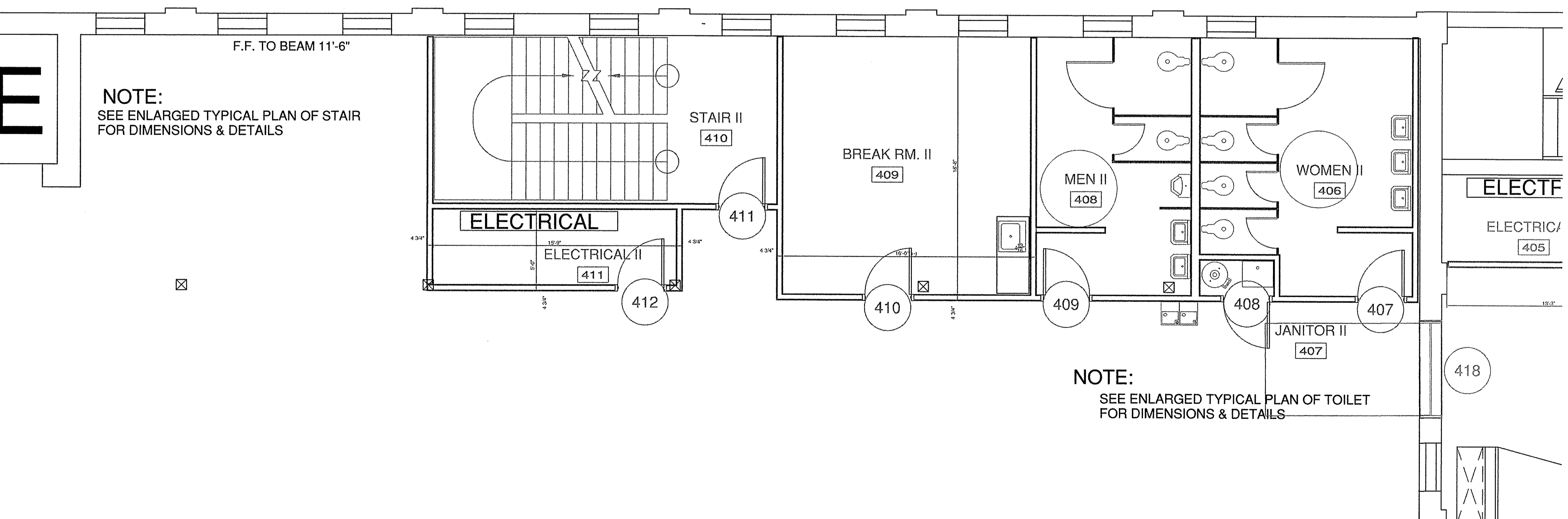
SHEET NO.
A-6



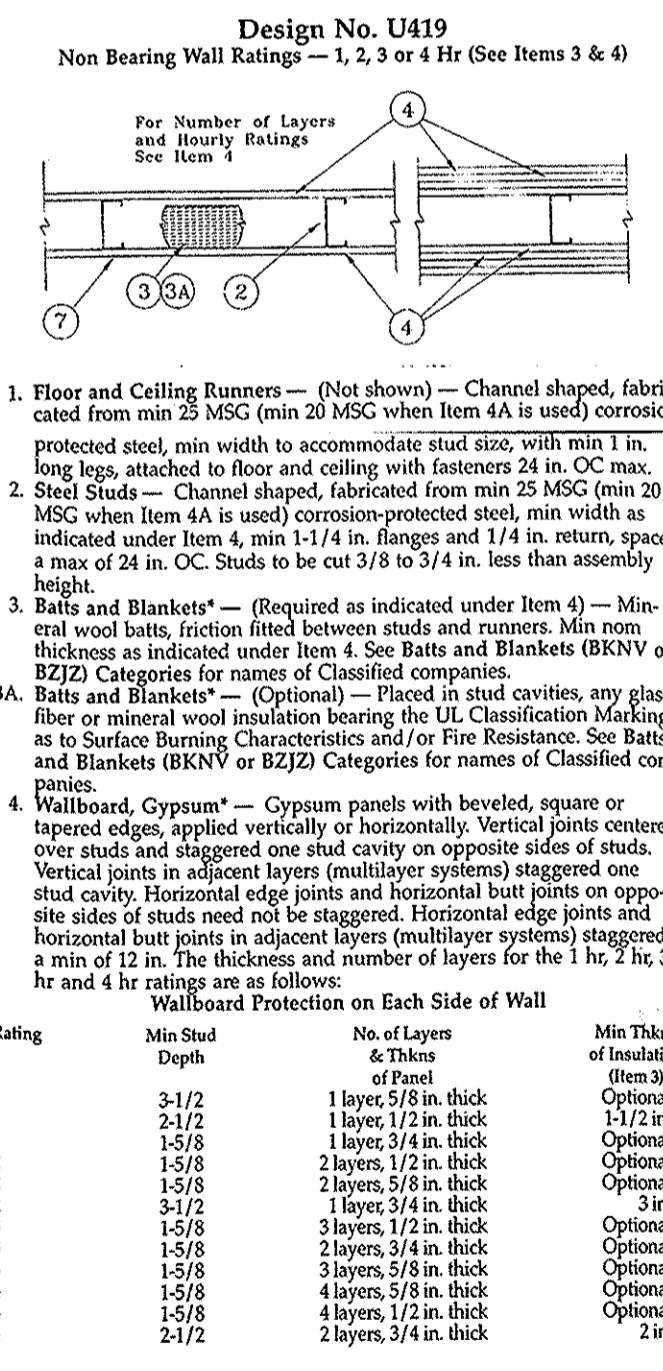
PART PLAN THIRD FLOOR BAY 3
SCALE 1/4" = 1'-0"



NOTE:
SEE ENLARGED TYPICAL PLAN OF TOILET
FOR DIMENSIONS & DETAILS



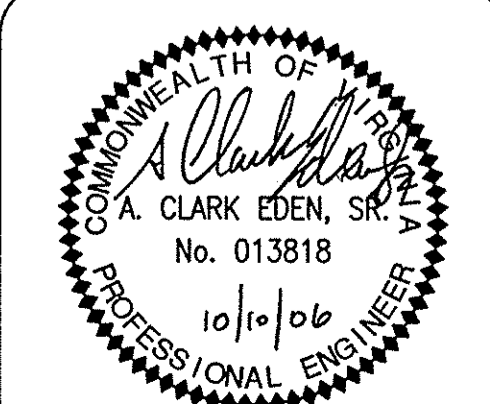
PART PLAN THIRD FLOOR BAY 2
SCALE 1/4" = 1'-0"



- Design No. U419**
Non Bearing Wall Ratings - 1, 2, 3 or 4 HR (See Items 3 & 4)
- Floor and Ceiling Runners - (Not shown) - Channel shaped, fabricated from min 25 MSG (min 20 MSG when Item 4A is used) corrosion-protected steel, min width to accommodate stud size with min 1 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.
 - Steel Studs - Channel shaped, fabricated from min 25 MSG (min 20 MSG when Item 4A is used) corrosion-protected steel, min width as indicated under Item 4, min 1-1/4 in. flanges and 1/4 in. return, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
 - Batts and Blankets - (Required as indicated under Item 4) - Mineral wool batts, friction fitted between studs and runners. Min non thickness as indicated under Item 4. See Batts and Blankets (BRNV or BZJ) Categories for names of Classified companies.
 - Batts and Blankets - (Optional) - Placed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See Batts and Blankets (BRNV or BZJ) Categories for names of Classified companies.
 - Wallboard, Gypsum - Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Horizontal butt joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:
- | Rating | Min Stud Depth | No. of Layers & Thickness of Panel | Min Thickness of Insulation (Item 3) |
|--------|----------------|------------------------------------|--------------------------------------|
| 1 | 3 1/2 | 1 layer 5/8 in. thick | Optional |
| 1 | 2 1/2 | 1 layer 1/2 in. thick | 1 1/2 in. |
| 1 | 1 5/8 | 1 layer 3/4 in. thick | Optional |
| 2 | 1 5/8 | 2 layers 1/2 in. thick | Optional |
| 2 | 1 5/8 | 2 layers 3/8 in. thick | Optional |
| 2 | 3 1/2 | 1 layer 3/4 in. thick | 3 in. |
| 3 | 1 5/8 | 3 layers 1/2 in. thick | Optional |
| 3 | 1 5/8 | 2 layers 3/4 in. thick | Optional |
| 3 | 1 5/8 | 3 layers 5/8 in. thick | Optional |
| 3 | 1 5/8 | 4 layers 3/8 in. thick | Optional |
| 3 | 1 5/8 | 4 layers 1/2 in. thick | Optional |
| 4 | 2 1/2 | 2 layers 3/4 in. thick | 2 in. |
- Wallboard Protection on Each Side of Wall
 - Furring Channels - (Optional, not shown, for single or double layer systems) - Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 steel screws. Not for use with Item 4A.
 - Joint Type and Compound - Vinyl or casing, dry or premixed joint compound applied in two coats to joints and screw heads of outer layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer panels.
 - Siding, Brick or Stucco - (Optional, not shown) - Aluminum, vinyl or steel siding, brick veneer or stucco, meeting the requirements of local code agencies, installed over gypsum panels. Brick veneer attached to studs with corrugated metal wall fasteners attached to each stud with steel screws, not more than each sixth course of brick.
 - Caulking and Sealant - (Optional, not shown) - A bead of acoustical sealant applied around the partition perimeter for sound control.
- UNITED STATES GYPSUM CO - Type AS
*Bearing the UL Classification Marking

NOTE:
SEE ENLARGED TYPICAL PLAN OF TOILET
FOR DIMENSIONS & DETAILS

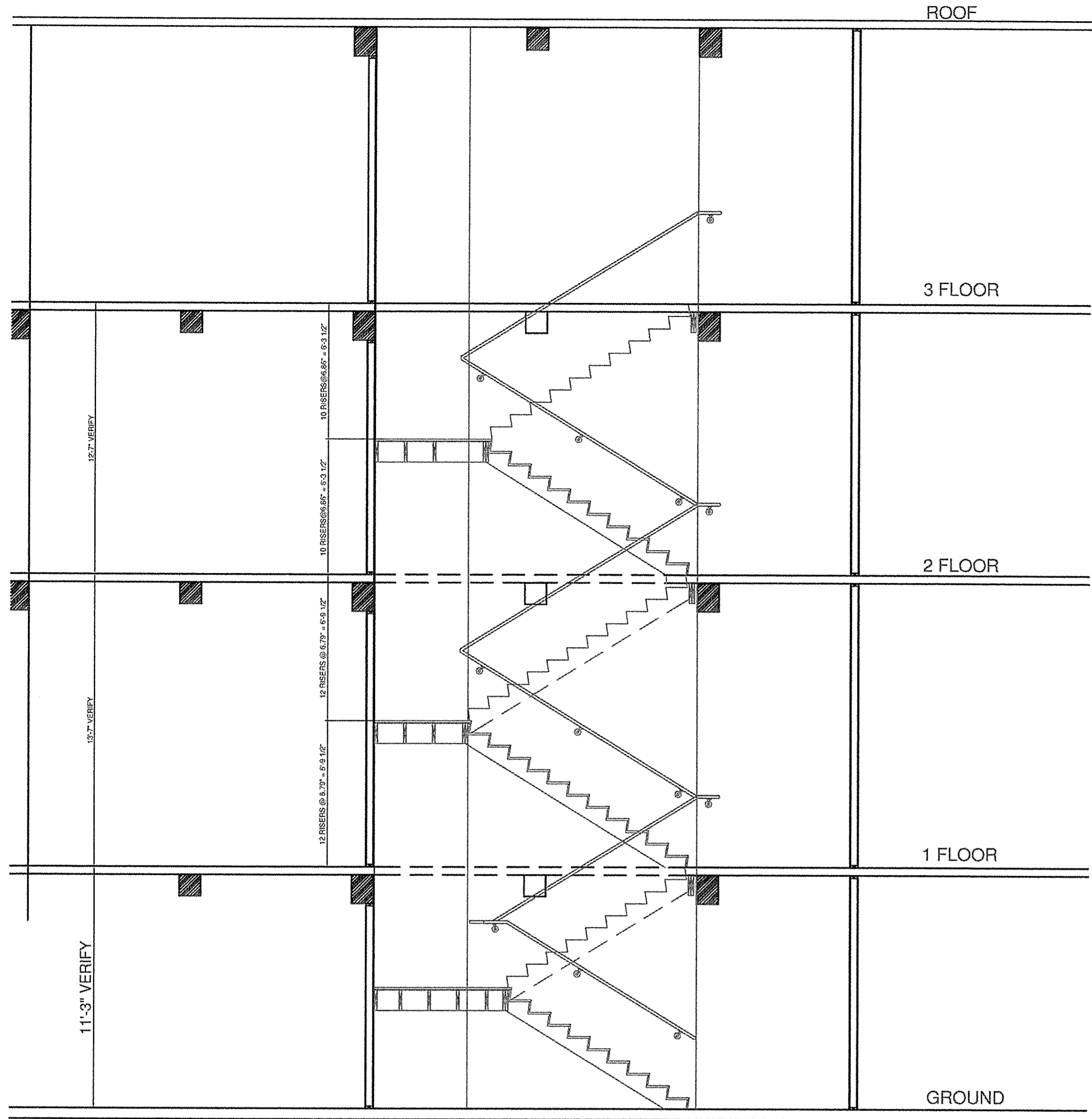
EDEN & ASSOCIATES, P.C.
1049 BROOKDALE STREET SUITE B
MARTINSVILLE, VIRGINIA 24112
VOICE 276-632-6231
FAX 276-632-3648



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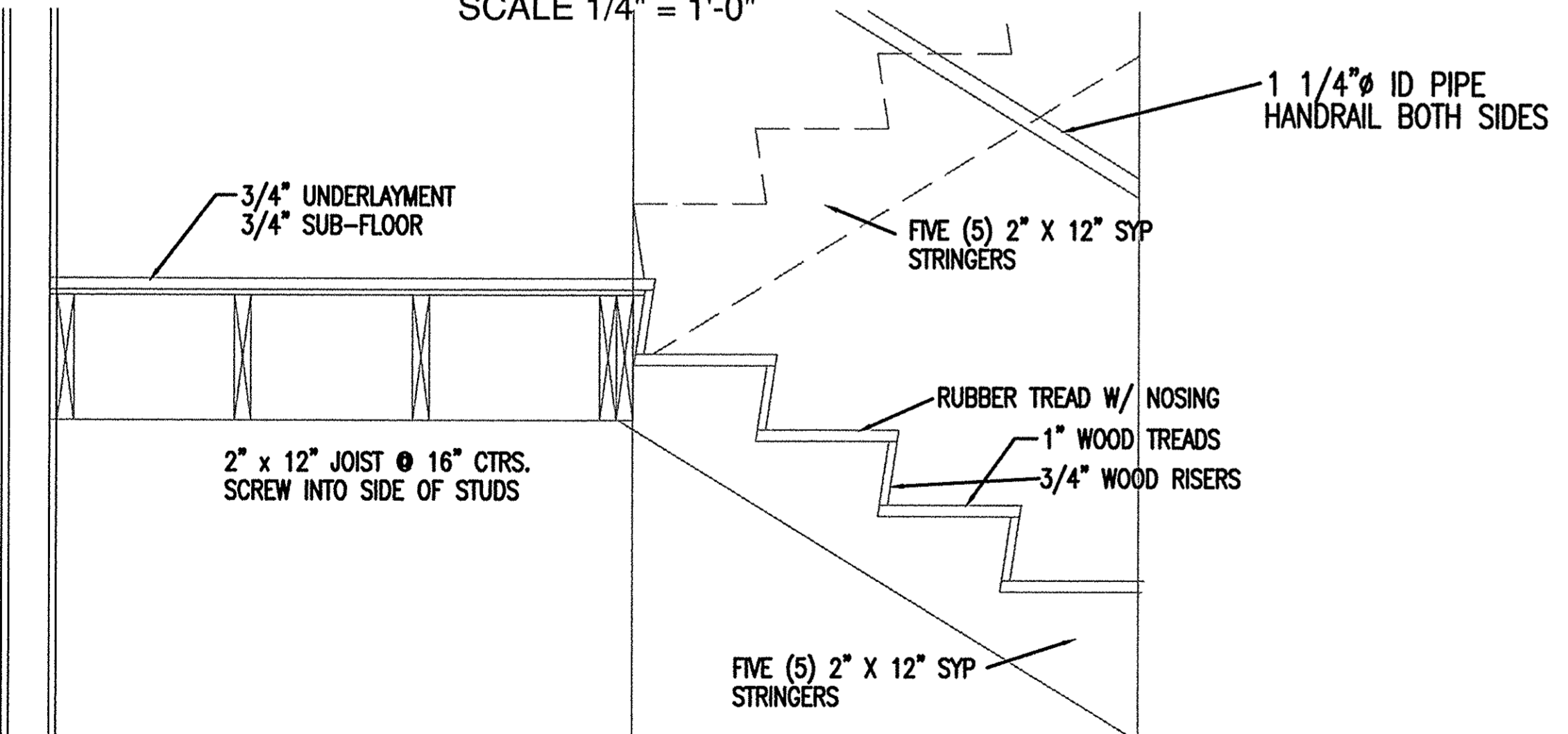
ENLARGED THIRD FLOOR PLANS
COMMONWEALTH CENTRE
FRANKLIN STREET
MARTINSVILLE, VIRGINIA

SHEET NO. **A-7**



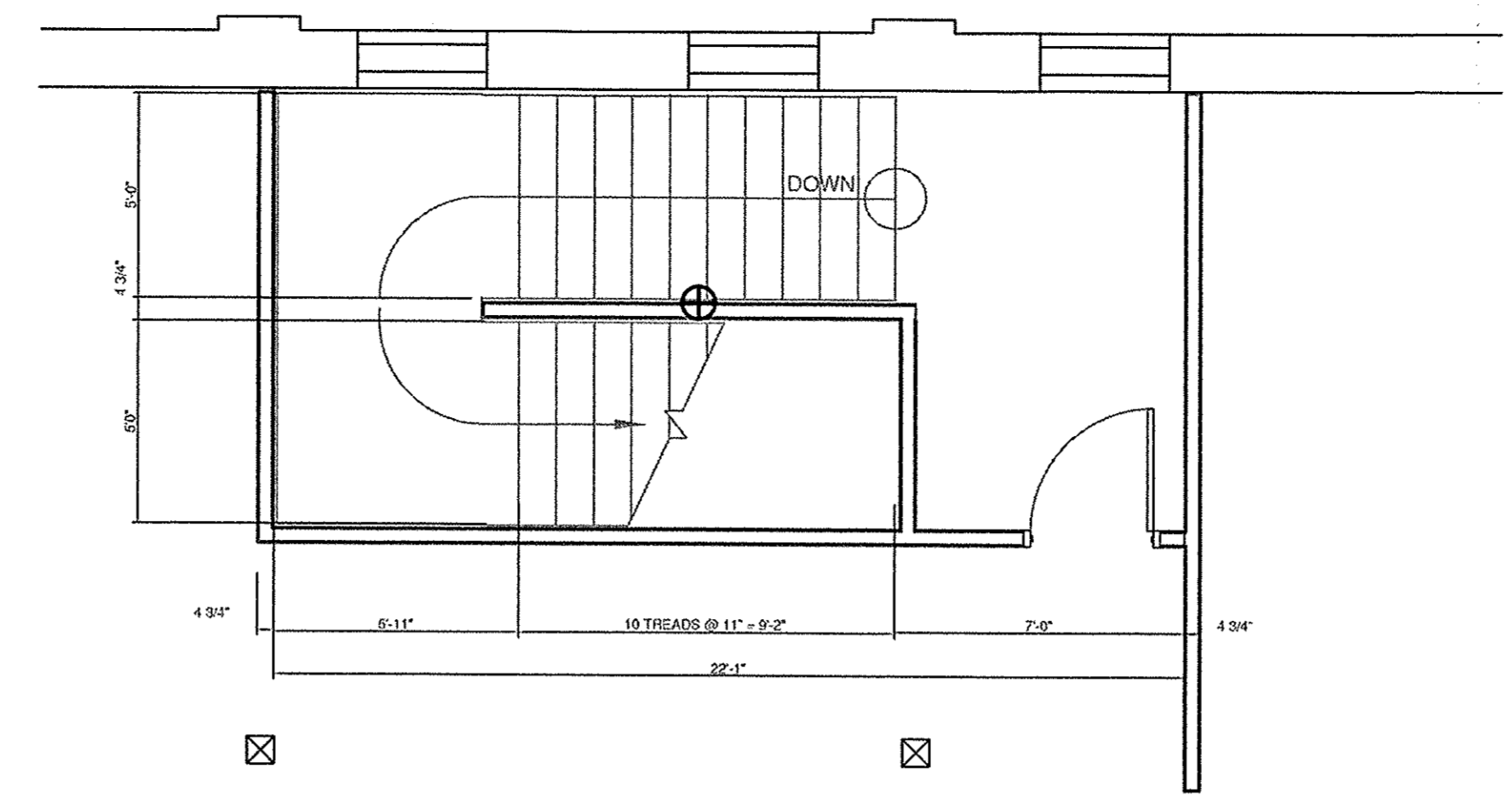
REAR STAIRWAY SECTION

SCALE 1/4" = 1'-0"



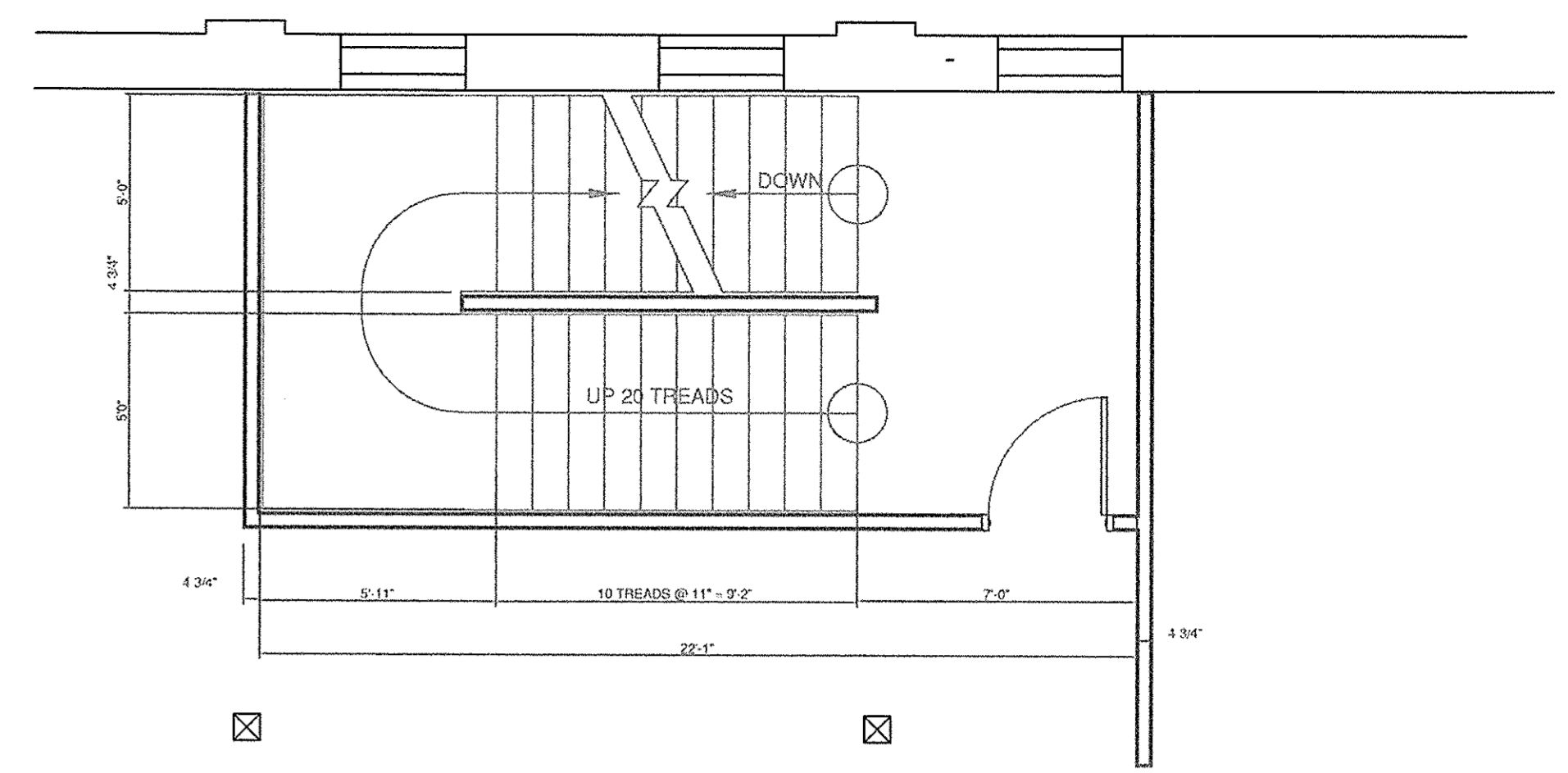
STAIR SECTION AT LANDINGS

SCALE 1" = 1'-0"



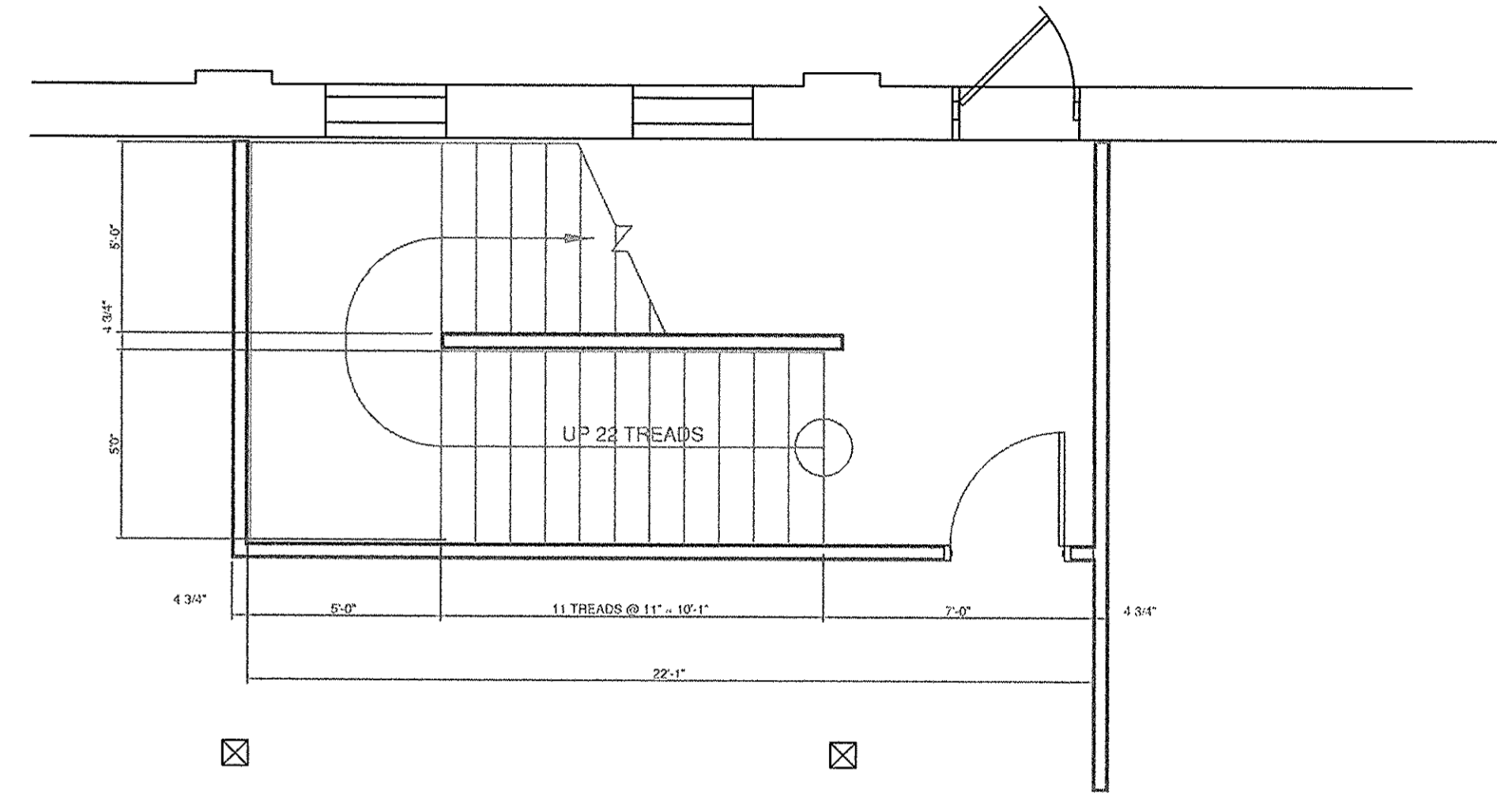
THIRD FLOOR STAIRWAY PLAN

SCALE 1/4" = 1'-0"



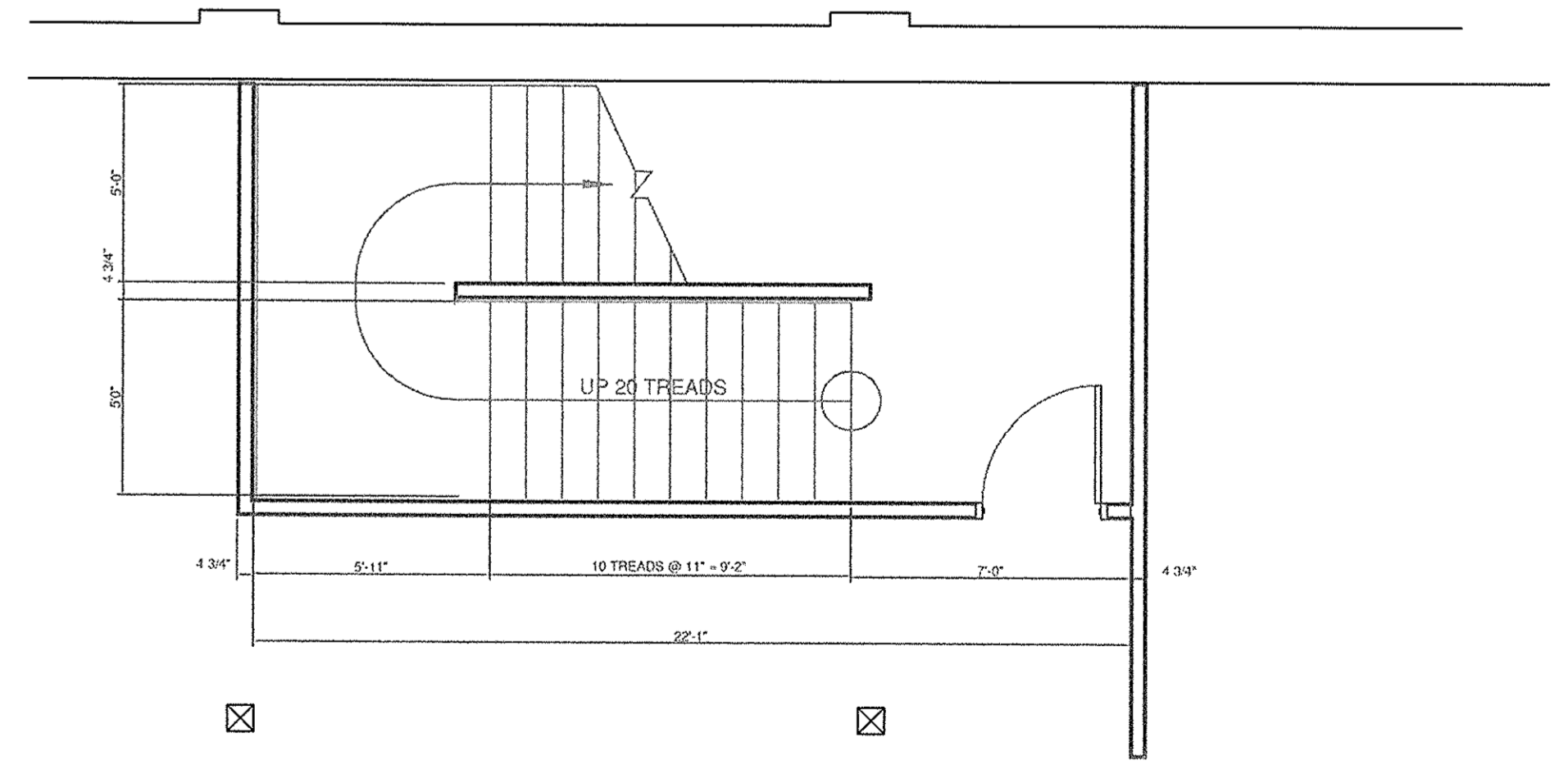
SECOND FLOOR STAIRWAY PLAN

SCALE 1/4" = 1'-0"



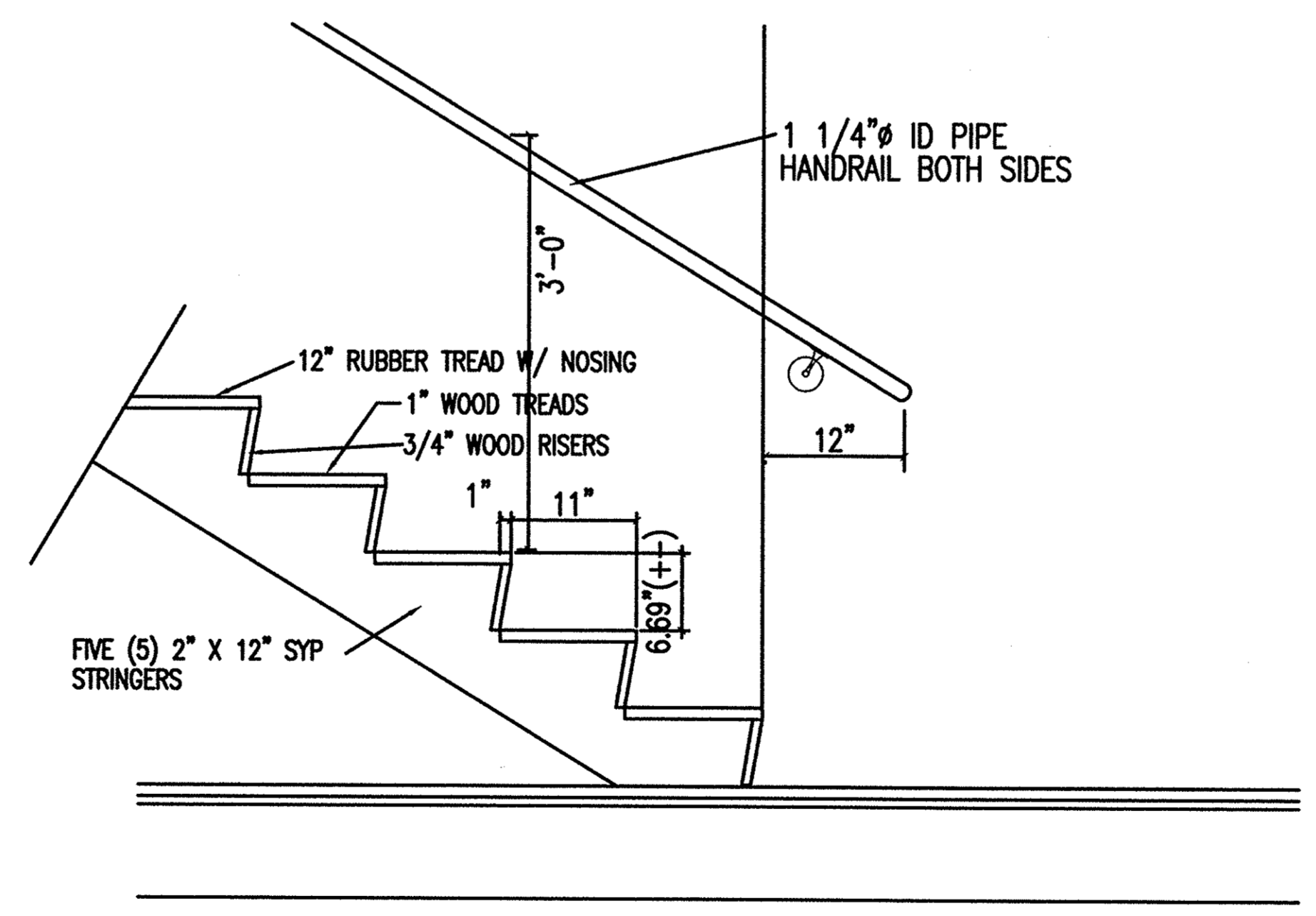
FIRST FLOOR STAIRWAY PLAN

SCALE 1/4" = 1'-0"



GROUND FLOOR STAIRWAY PLAN

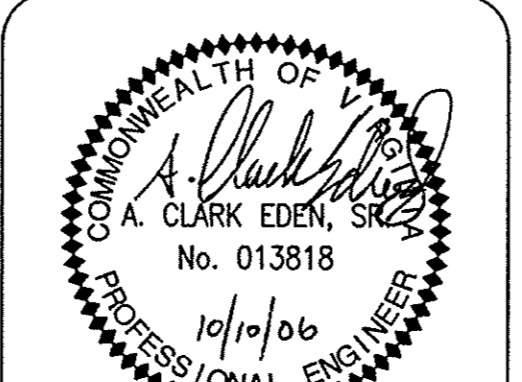
SCALE 1/4" = 1'-0"



STAIR SECTION AT FLOOR LEVEL

SCALE 1" = 1'-0"

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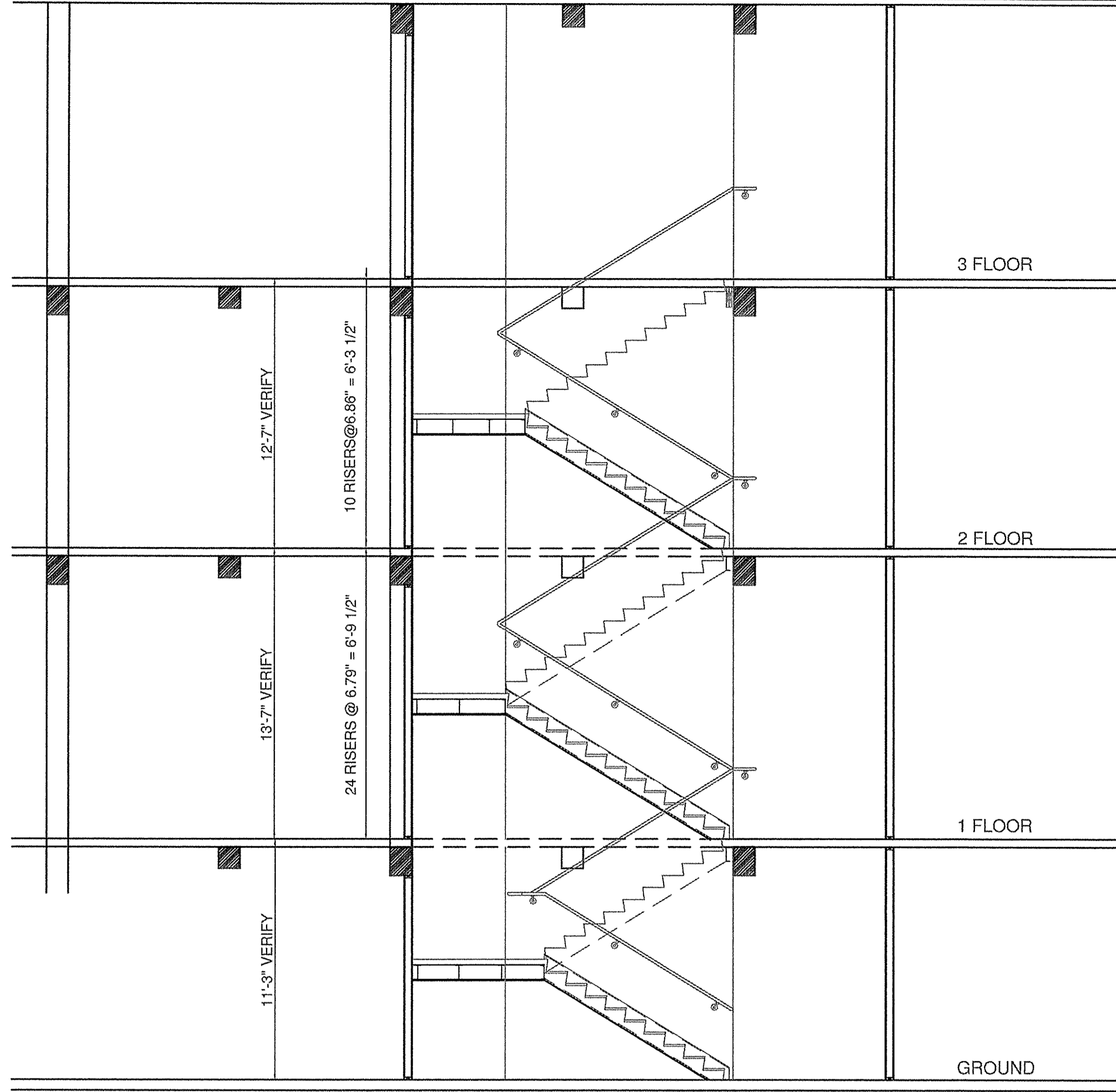
REV.	DESCRIPTION	DATE
1	FIRST ISSUE	10/10/06

REAR STAIRWAY PLAN & DETAILS

COMMONWEALTH CENTRE

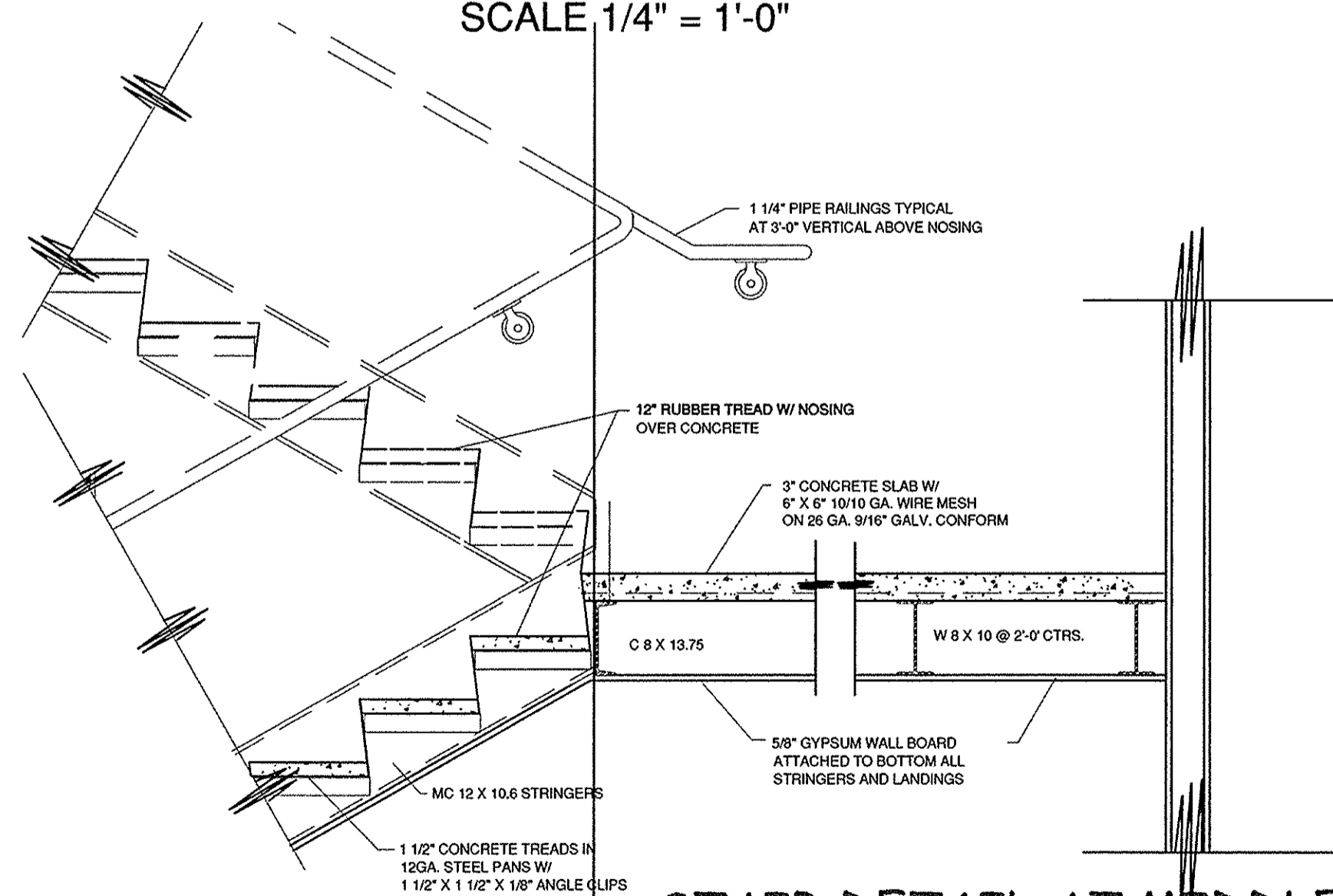
FRANKLIN STREET
 MARTINSVILLE, VIRGINIA

SHEET NO.
A-8



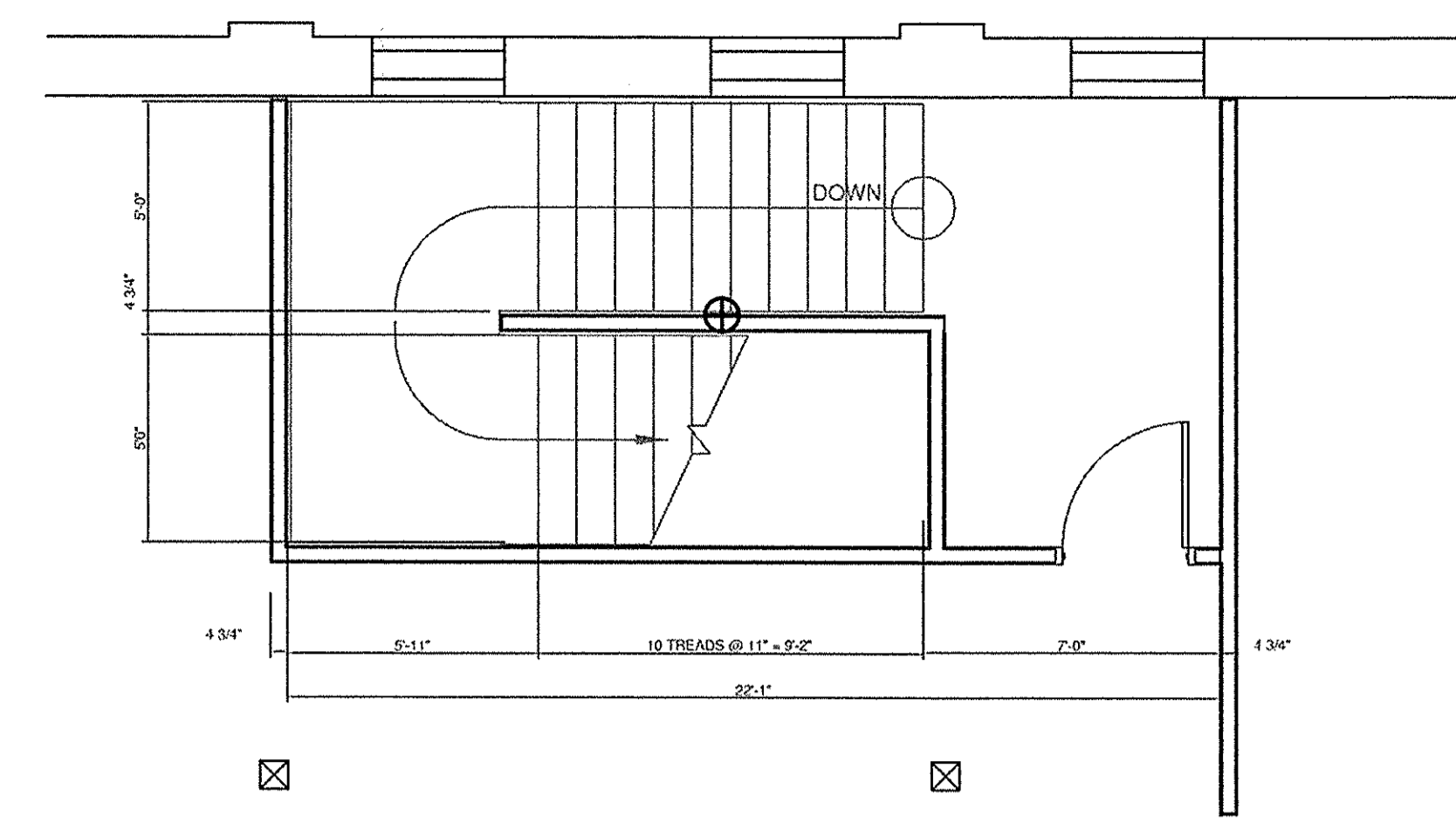
REAR STAIRWAY SECTION

SCALE 1/4" = 1'-0"



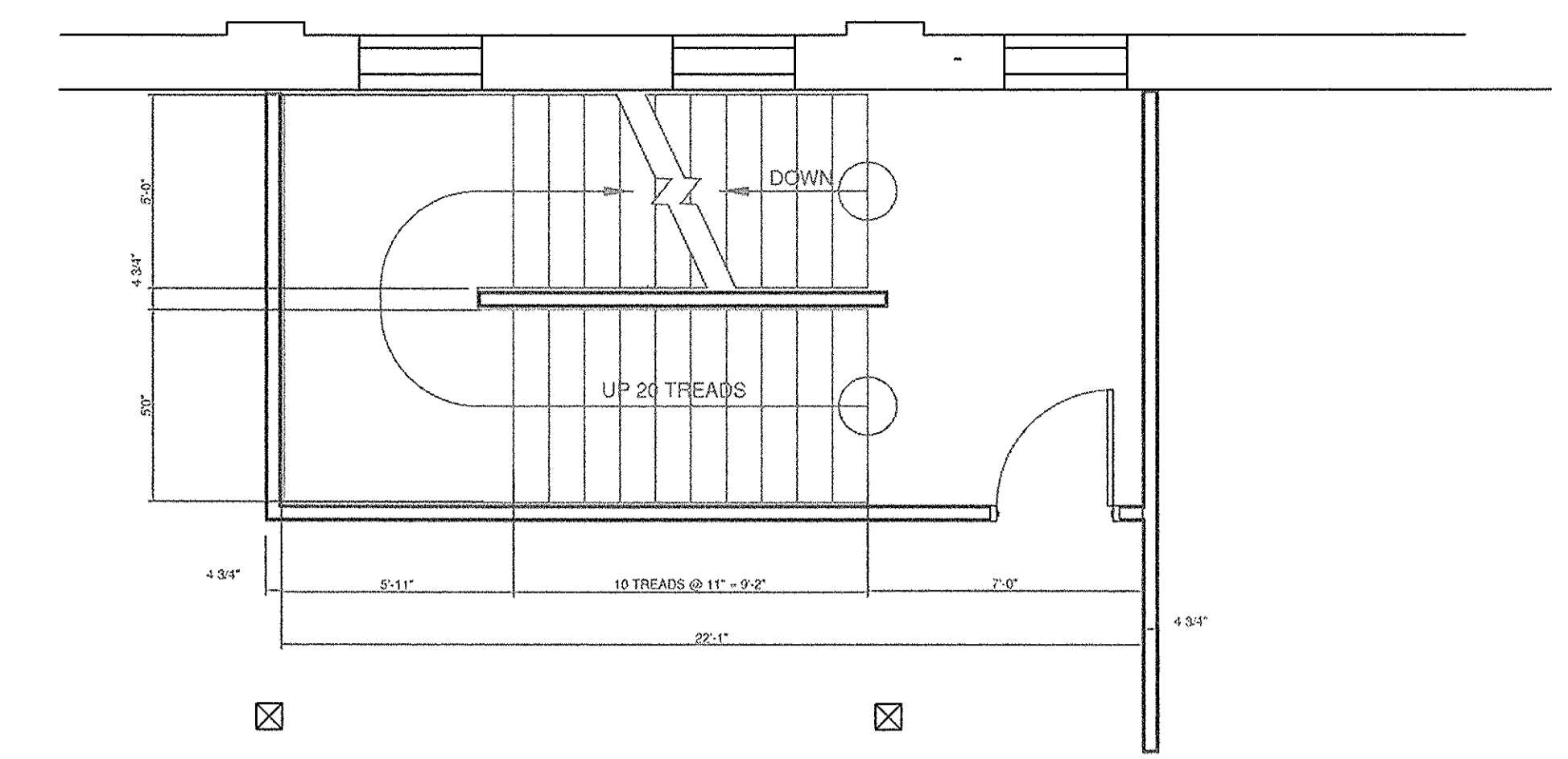
STAIR DETAIL AT MIDDLE LANDING

SCALE 3/4" = 1'-0"



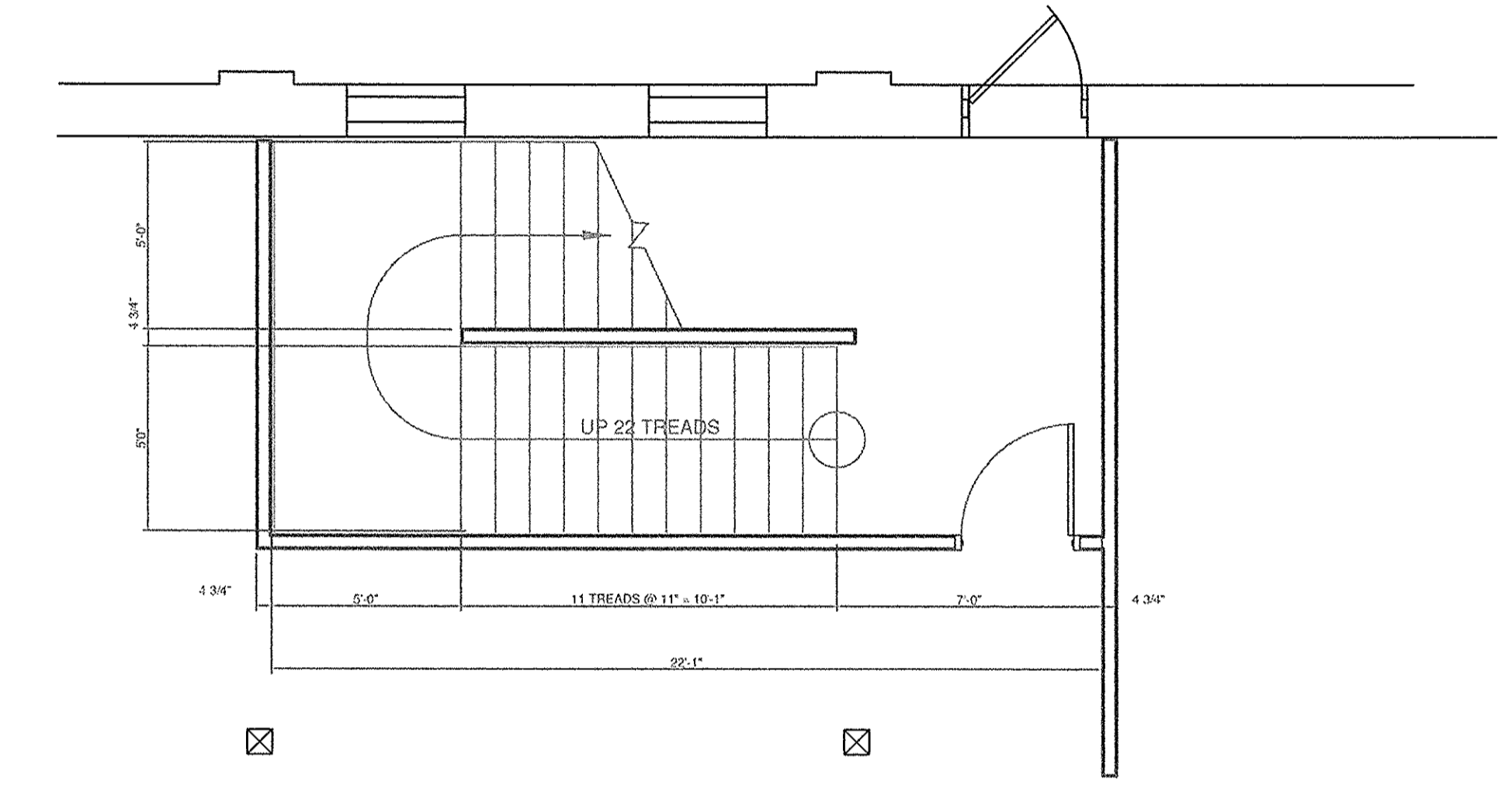
THIRD FLOOR STAIRWAY PLAN

SCALE 1/4" = 1'-0"



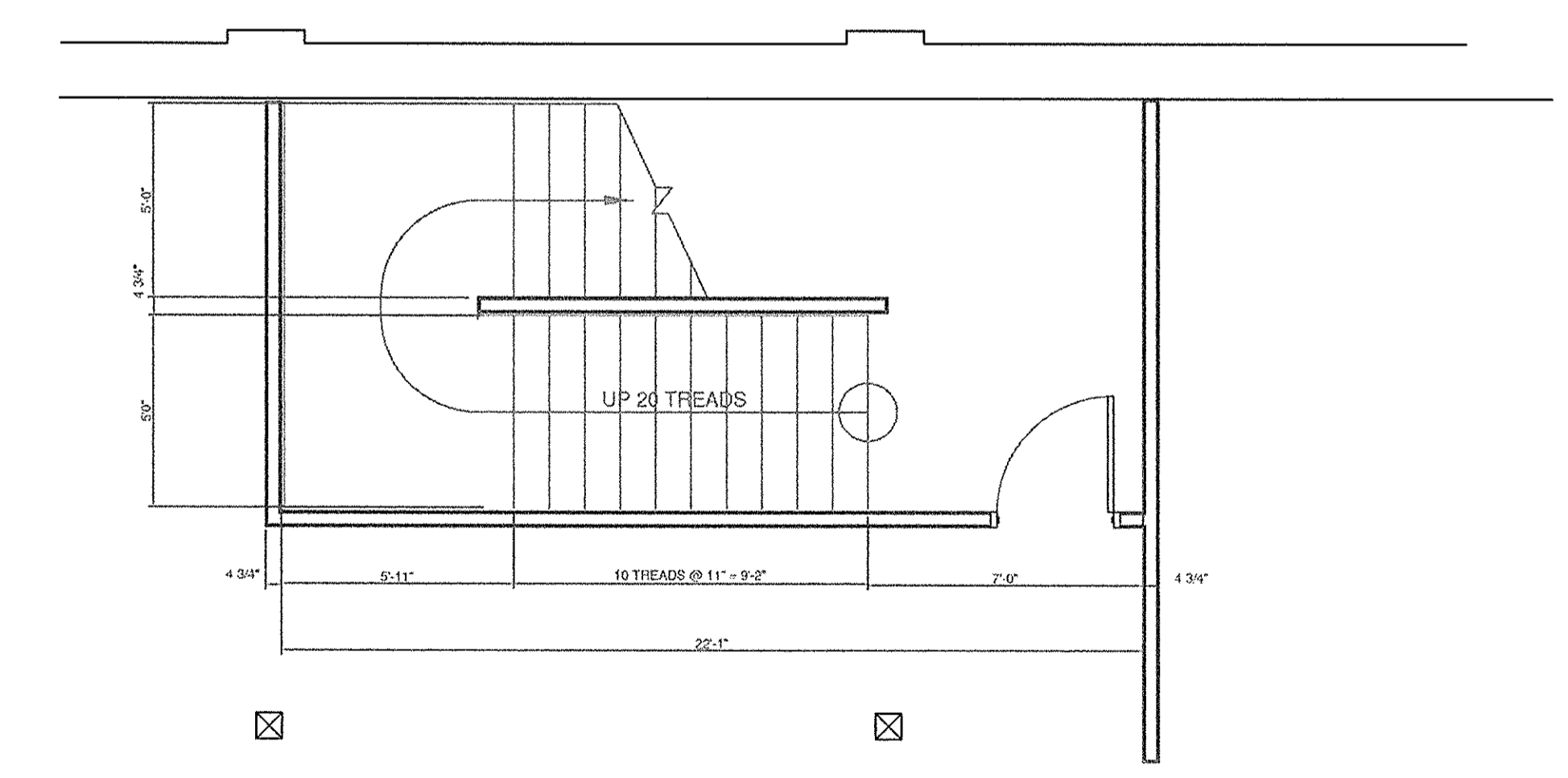
SECOND FLOOR STAIRWAY PLAN

SCALE 1/4" = 1'-0"



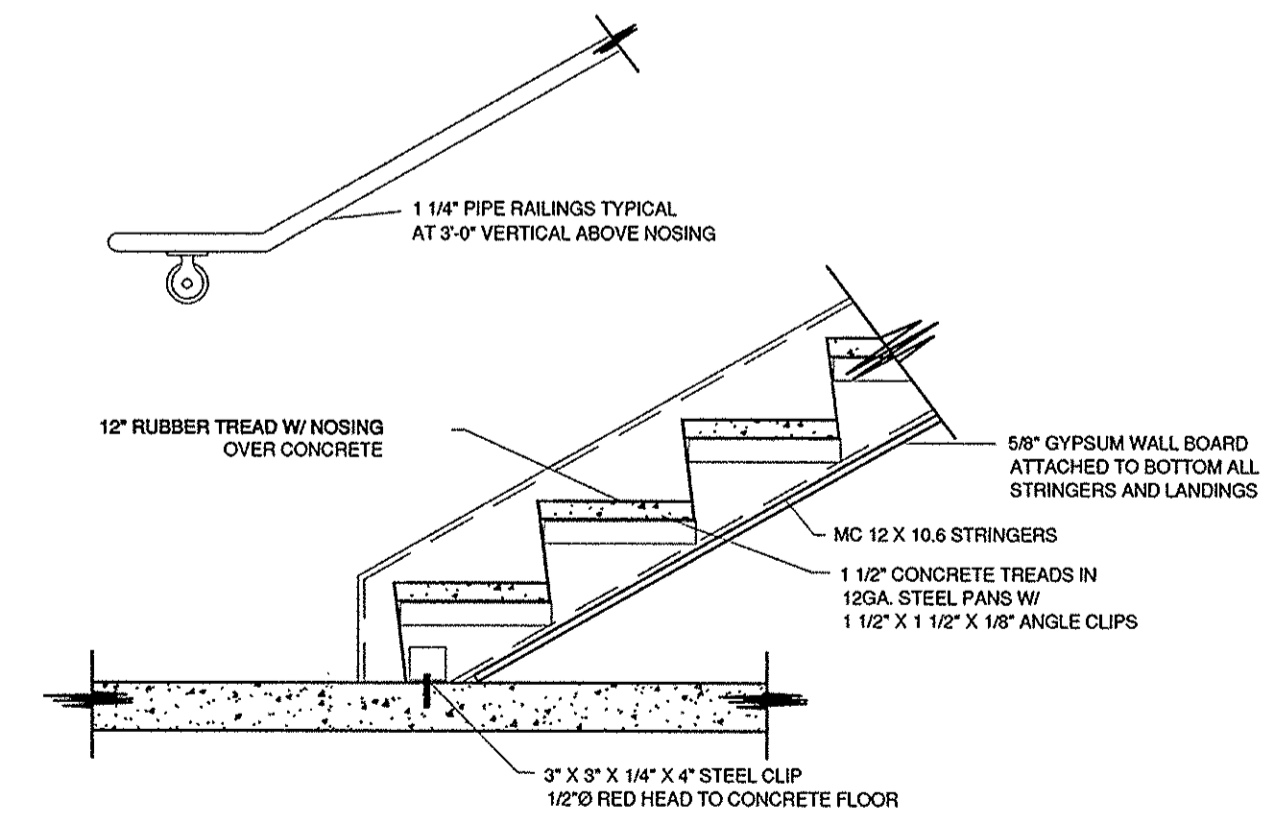
FIRST FLOOR STAIRWAY PLAN

SCALE 1/4" = 1'-0"



GROUND FLOOR STAIRWAY PLAN

SCALE 1/4" = 1'-0"



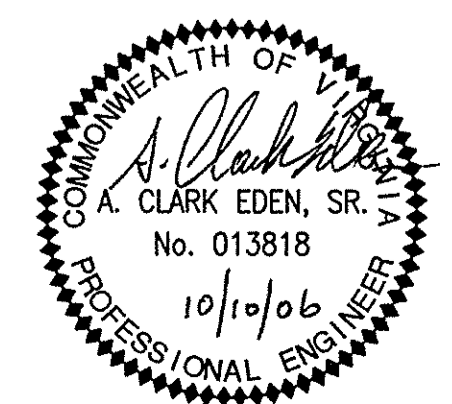
STAIR DETAIL AT GROUND FLOOR

SCALE 3/4" = 1'-0"

STAIRWAY ALTERNATE

EDEN & ASSOCIATES, P.C.

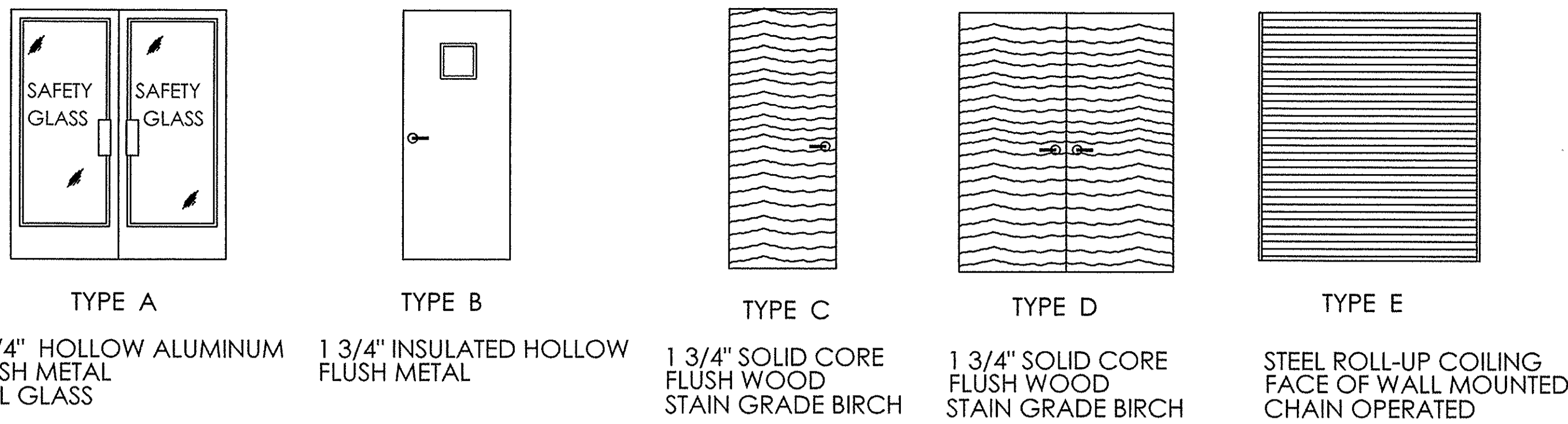
1049 BROOKDALE STREET SUITE B
MARTINSVILLE, VIRGINIA 24112
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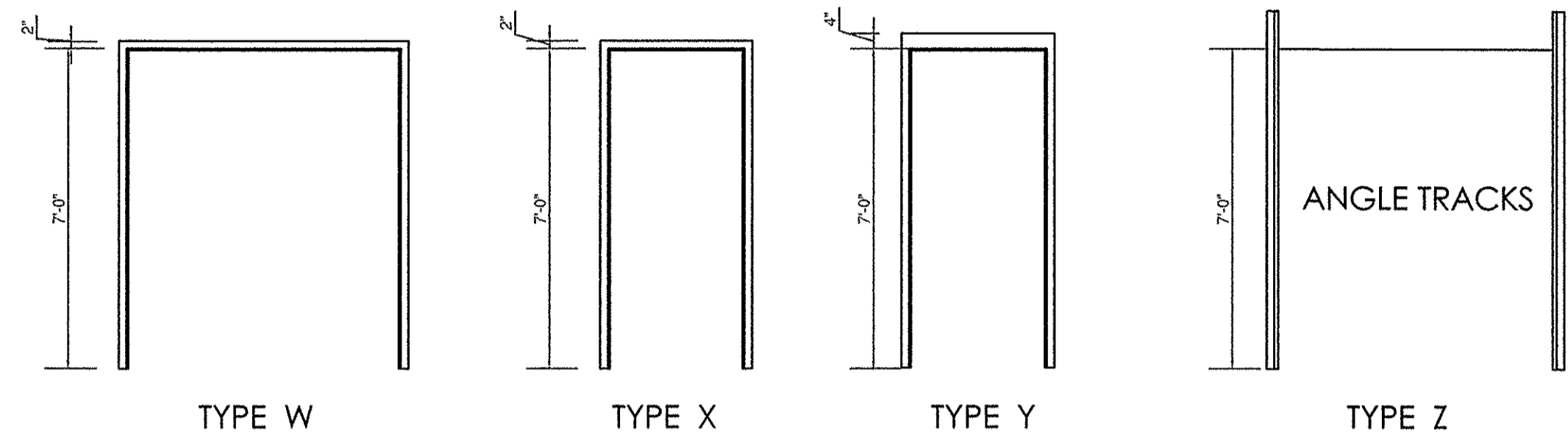
REV.	DESCRIPTION	DATE
	FIRST ISSUE	10/10/06

ALTERNATE REAR STAIRWAY PLAN & DETAILS
COMMONWEALTH CENTRE
FRANKLIN STREET
MARTINSVILLE, VIRGINIA

SHEET NO.
A-8.1



DOOR TYPES ELEVATIONS



FRAME TYPES ELEVATIONS

HARDWARE SET NO. 1

- HINGES THREE (3) STANLEY NO. FBB 179 4 1/2" X 4 1/2" FINISH 652
- EXIT DEVICES PRECISION HARDWARE 2108 X 4908 X 36" FINISH 628
- RIM CYLINDERS FALCON 951 FINISH 626
- CLOSER ONE (1) NORTON 8501 FINISH 689
- WEATHER STRIPPING (1) PEMKO NO. 316AV 36 X 84 FINISH 673
- THRESHOLD PEMKO 181AV-36" FINISH 673
- DOOR SWEEP ONE (1) PEMKO NO. 307AV-36" FINISH 673

HARDWARE SET NO. 2

- HINGES THREE (3) STANLEY NO. FBB 179 4 1/2" X 4 1/2" FINISH 652
- LOCKSET FALCON NO. B371D STORE ROOM FINISH 626
- CLOSER ONE (1) NORTON NO. P8501 BF FINISH 689

HARDWARE SET NO. 3

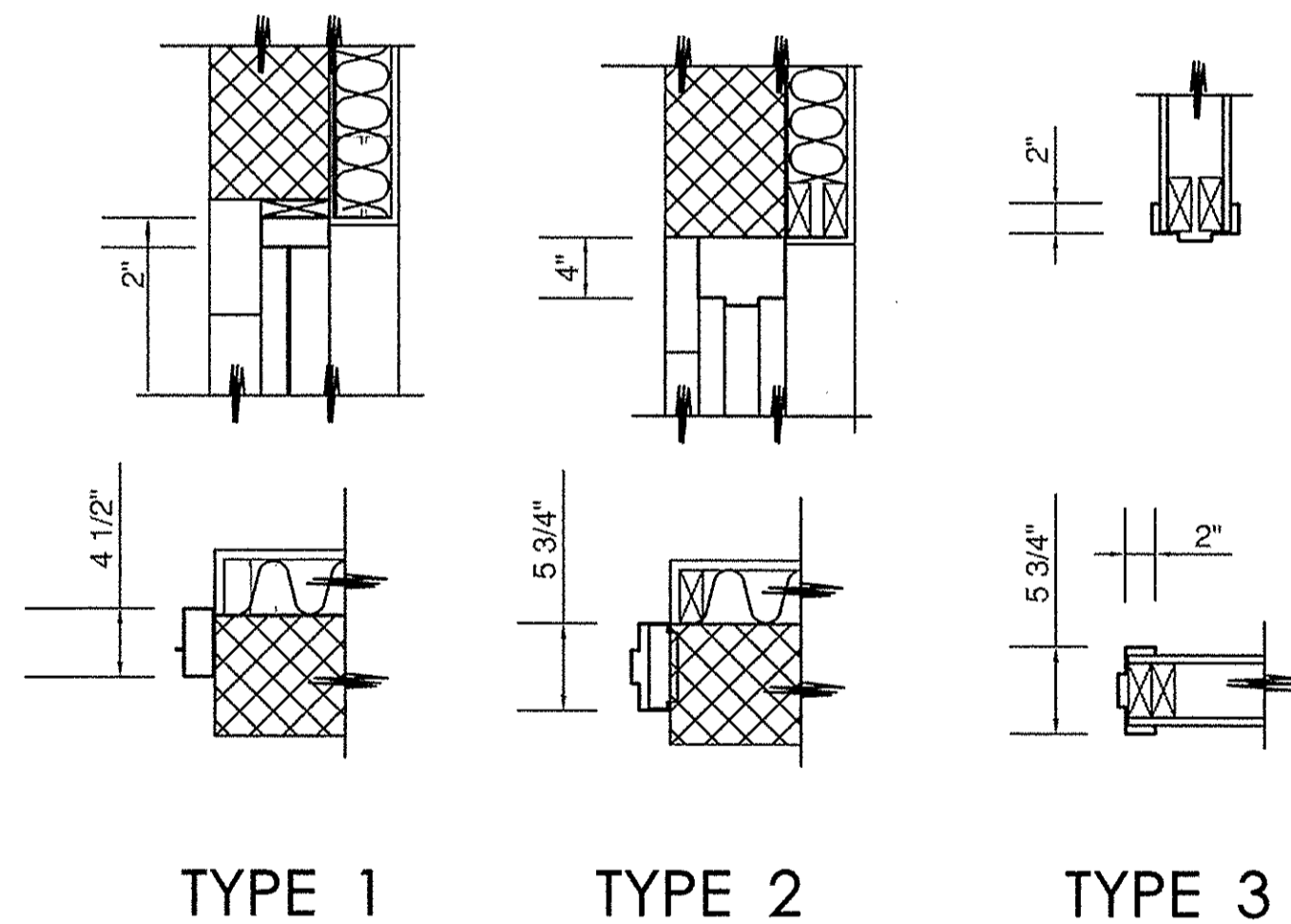
- HINGES FOUR (4) STANLEY NO. FBB179 4 1/2" X 4 1/2" FINISH 652
- LOCKSET FALCON NO. B511D PASSAGE FINISH 626
- CLOSER ONE (1) NORTON NO. P8501 BF FINISH 689
- KICKPLATE ONE (1) ROCKWOOD NO. 8 X 34 050 FINISH 630

HARDWARE SET NO. 4

- HINGES THREE (3) STANLEY NO. FBB 179 4 1/2" X 4 1/2" FINISH 652
- EXIT DEVICES PRECISION HARDWARE 2108 X 4908 X 36" FINISH 628
- RIM CYLINDERS FALCON 951 FINISH 626
- CLOSER ONE (1) NORTON 8501 FINISH 689

OTHER ACCEPTABLE SUPPLIERS

- HINGES BY STANLEY, HAGER, OR MCKINNEY
- LOCKSETS BY FALCON B, SCHLAGE AL, OR SARGENT 6500
- EXIT BY PRECISION 1100, VON DUPRIN 98 SERIES, OR SARGENT 8700
- CLOSERS BY NIRTIN 8501, YALE 3501, OR CORBIN RUSSWIN DC2200
- MISCELLANEOUS BY ROCKWOOD, IVES, OR LINDSTROM
- WEATHER PRODUCTS BY PEMKO, OR NATION GUARD



FRAME TYPES SECTIONS

DOOR AND FRAME SCHEDULE											
MARK	DOOR SIZE			MATL	GLAZING	EL	FRAME	FIRE RATING LABEL	HARDWARE		NOTES
	WD	HGT	THK				DETAIL		SET NO		
100	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	4		--

DOOR AND FRAME SCHEDULE

MARK	DOOR SIZE			MATL	GLAZING	EL	FRAME	FIRE RATING LABEL	HARDWARE		NOTES
	WD	HGT	THK				DETAIL		SET NO		
402	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
403	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
404	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	2		--
405	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
406	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	2		--
407	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
408	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	2		--
409	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
410	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
411	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	4		--
412	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	2		--
413	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
414	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
415	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	2		--
416	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
417	3'-0"	7'-0"	1 3/4"	WD	--	C	Y/2	20 MIN.	2		--
418	6'-0"	7'-0"	1"	MT.	--	E	Z/4	3 HR.	--		--
419	6'-0"	7'-0"	1"	MT.	--	E	Z/4	3 HR.	--		--
420	6'-0"	7'-0"	1"	MT.	--	E	Z/4	3 HR.	--		--
421	6'-0"	7'-0"	1"	MT.	--	E	Z/4	3 HR.	--		--

DOOR AND FRAME SCHEDULE

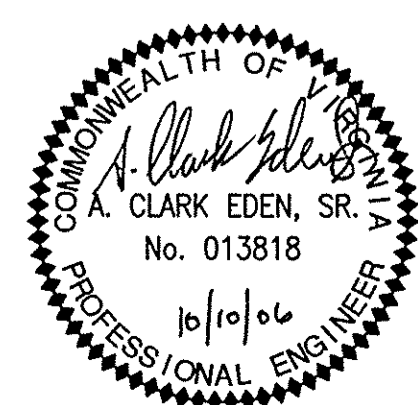
MARK	DOOR SIZE			MATL	GLAZING	EL	FRAME	FIRE RATING LABEL	HARDWARE		NOTES
	WD	HGT	THK				DETAIL		SET NO		
302	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
303	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
304	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	2		--
306	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
307	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	2		--
308	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
309	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	2		--
310	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
311	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
312	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	4		--
313	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	2		--
315	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
316	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
317	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	2		--
318	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
319	3'-0"	7'-0"	1 3/4"	WD	--	C	Y/2	20 MIN.	2		--
321	6'-0"	7'-0"	1"	MT.	--	E	Z/4	3 HR.	--		--
322	6'-0"	7'-0"	1"	MT.	--	E	Z/4	3 HR.	--		--
323	6'-0"	7'-0"	1"	MT.	--	E	Z/4	3 HR.	--		--
324	6'-0"	7'-0"	1"	MT.	--	E	Z/4	3 HR.	--		--

DOOR AND FRAME SCHEDULE

MARK	DOOR SIZE			MATL	GLAZING	EL	FRAME	FIRE RATING LABEL	HARDWARE		NOTES
	WD	HGT	THK				DETAIL		SET NO		
201	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
202	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	2		--
203	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
204	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
205	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	4		--
206	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	1		--
207	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
208	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	2		--
209	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
210	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	3		--
211	3'-0"	7'-0"	1 3/4"	WD	--	C	X/3	20 MIN.	2		--
212	6'-0"	7'-0"	1"	MT.	--	E	Z/4	3 HR.	--		--
213	6'-0"	7'-0"	1"	MT.	--	E	Z/4	3 HR.	--		--

EDEN & ASSOCIATES, P.C.

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DOOR & HARDWARE SCHEDULES

COMMONWEALTH CENTRE

FRANKLIN STREET

MARTINSVILLE, VIRGINIA

SHEET NO.

A-10

BEARING PLATE
8" X 12" X 1/2" P
TWO (2) 1/2"Ø X
8" LONG LAG BOLTS
TYPICAL EA.

REMOVE EXISTING COOLING TOWER
REWORK EXISTING STEEL SUPPORTS
TO SUPPORT NEW RTU

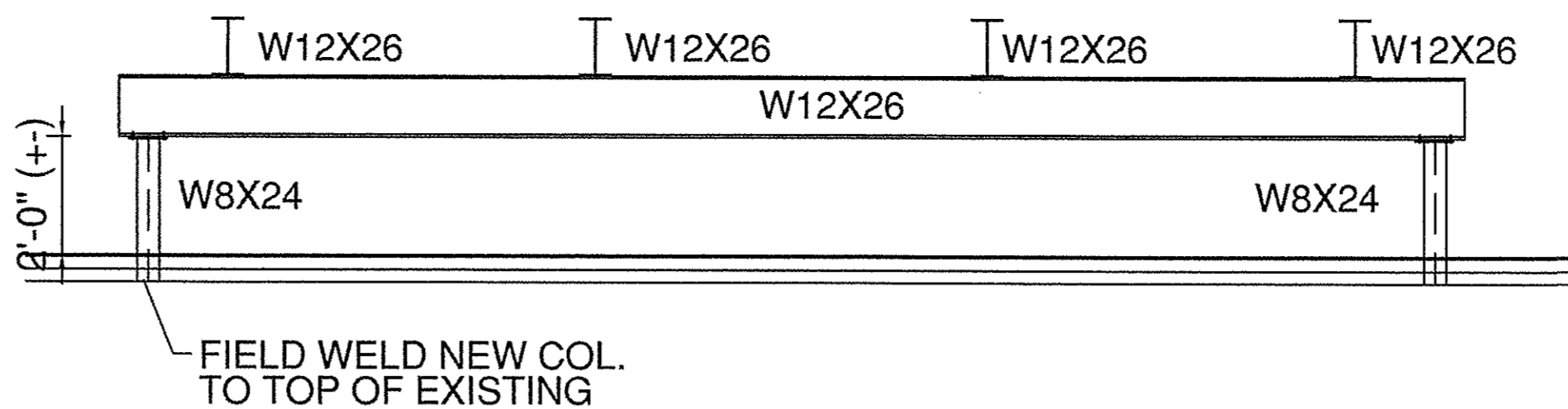
FIELD WELD TO
EXISTING COL. EXISTING

BEARING PLATE
8" X 12" X 1/2" P
TWO (2) 1/2"Ø X
8" LONG LAG BOLTS
TYPICAL EA.

PARAPET WALL ABOVE ROOF

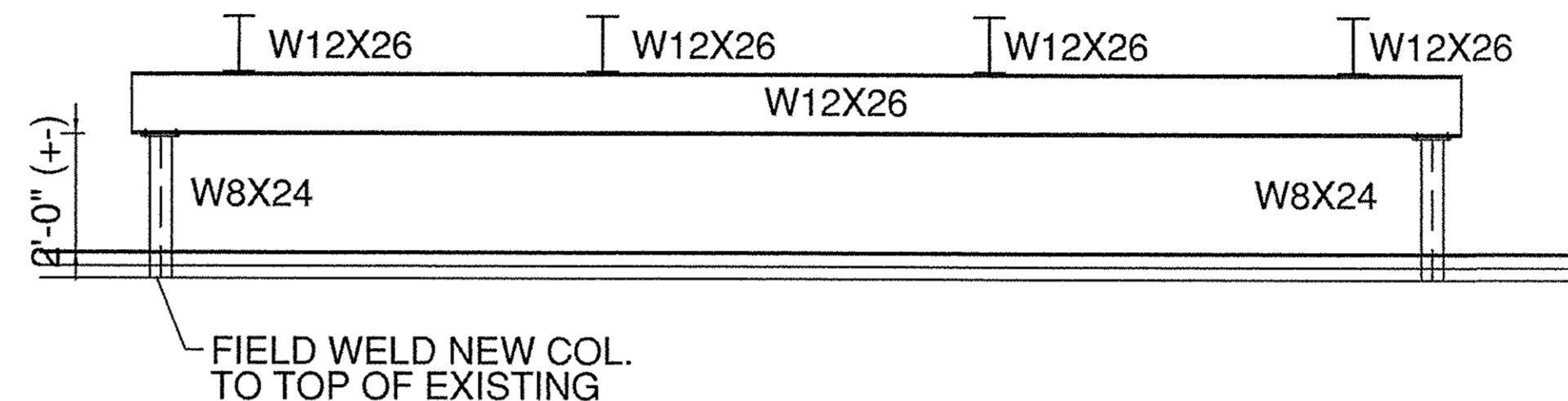
HVAC SUPPORT RACK ON ROOF RTU-1 & RTU-2

SCALE 1/4" = 1'-0"



HVAC SUPPORT RACK SECTION RTU-2

SCALE 3/8" = 1'-0"

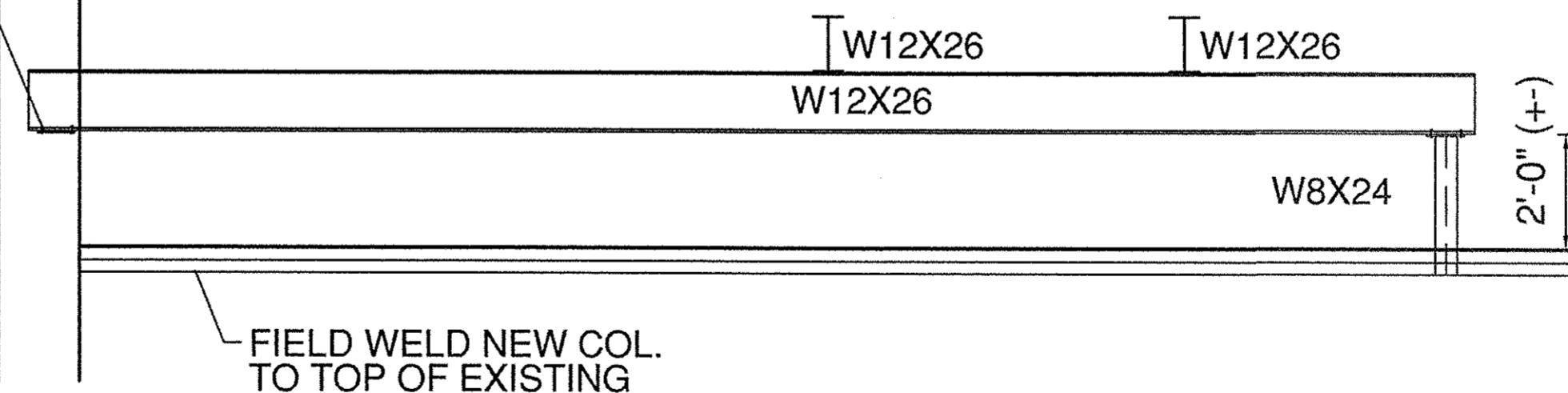


HVAC SUPPORT RACK SECTION RTU-2

SCALE 3/8" = 1'-0"

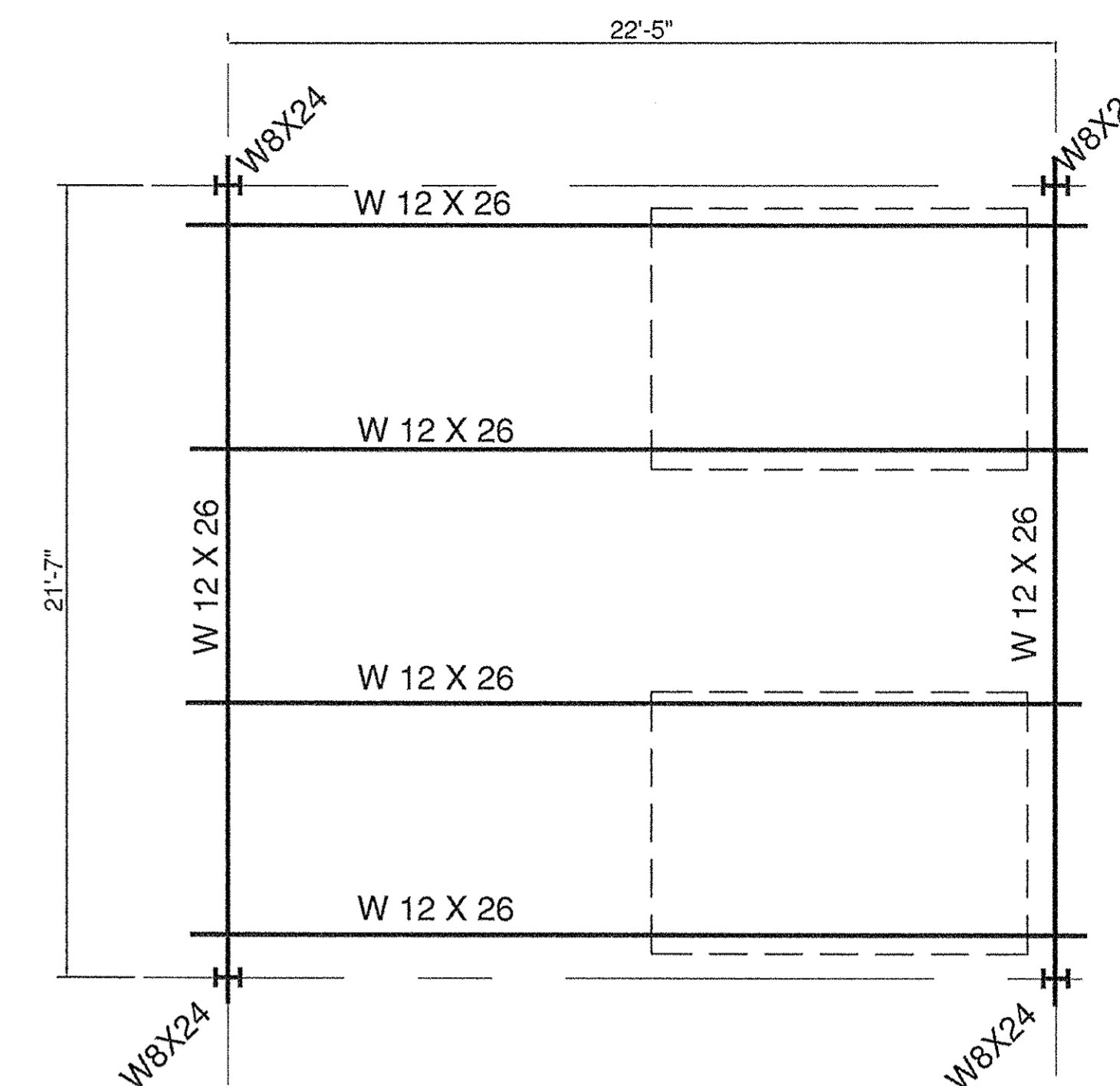
BEARING PLATE
8" X 12" X 1/2" P
TWO (2) 1/2"Ø X
8" LONG LAG BOLTS
TYPICAL EA.

SUPPORT STEEL MAY BE RAISED
TO MATCH EXISTING COOLING TOWER
SUPPORT STEEL (+58" (+/-) A.F.R.



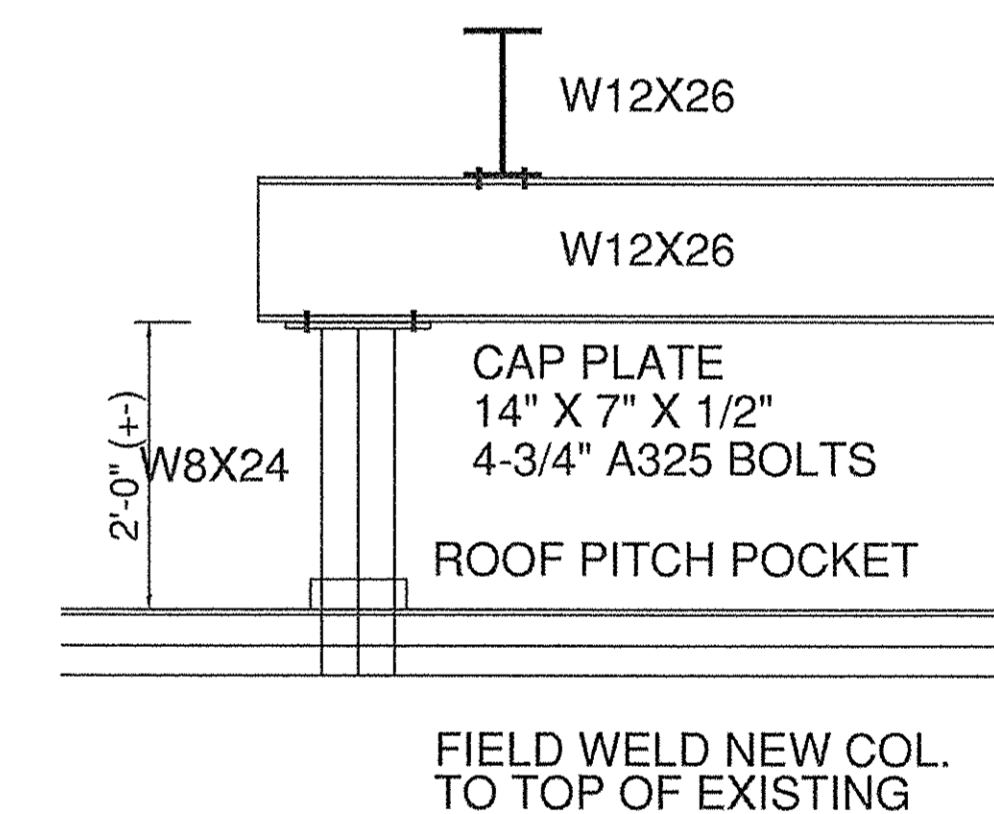
HVAC SUPPORT RACK SECTION BAY ONE (1)

SCALE 3/8" = 1'-0"



HVAC SUPPORT RACK ON ROOF RTU-7 & RTU-8

SCALE 3/16" = 1'-0"



COL. DETAIL STEEL

SCALE 3/4" = 1'-0"

NOTES:

CONTRACTOR TO VISIT SITE AND
VERIFY CONDITIONS AND DIMENSIONS
BEFORE FABRICATION OF STEEL
SUPPORTS.

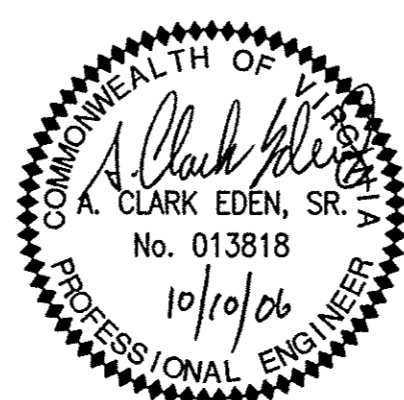
VERIFY LOCATIONS OF BEAMS UNDER
RTU WITH HVAC CONTRACTOR BEFORE
INSTALLING.

INSTALLER MAY FIELD WELD RTU BEAMS
TO SUPPORT BEAMS OFF COLUMNS.

ALL EXPOSED STEEL TO BE PAINTED
AT END OF INSTALLATION.

EDEN & ASSOCIATES, P.C.

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ROOF TOP HVAC SUPPORT RACKS

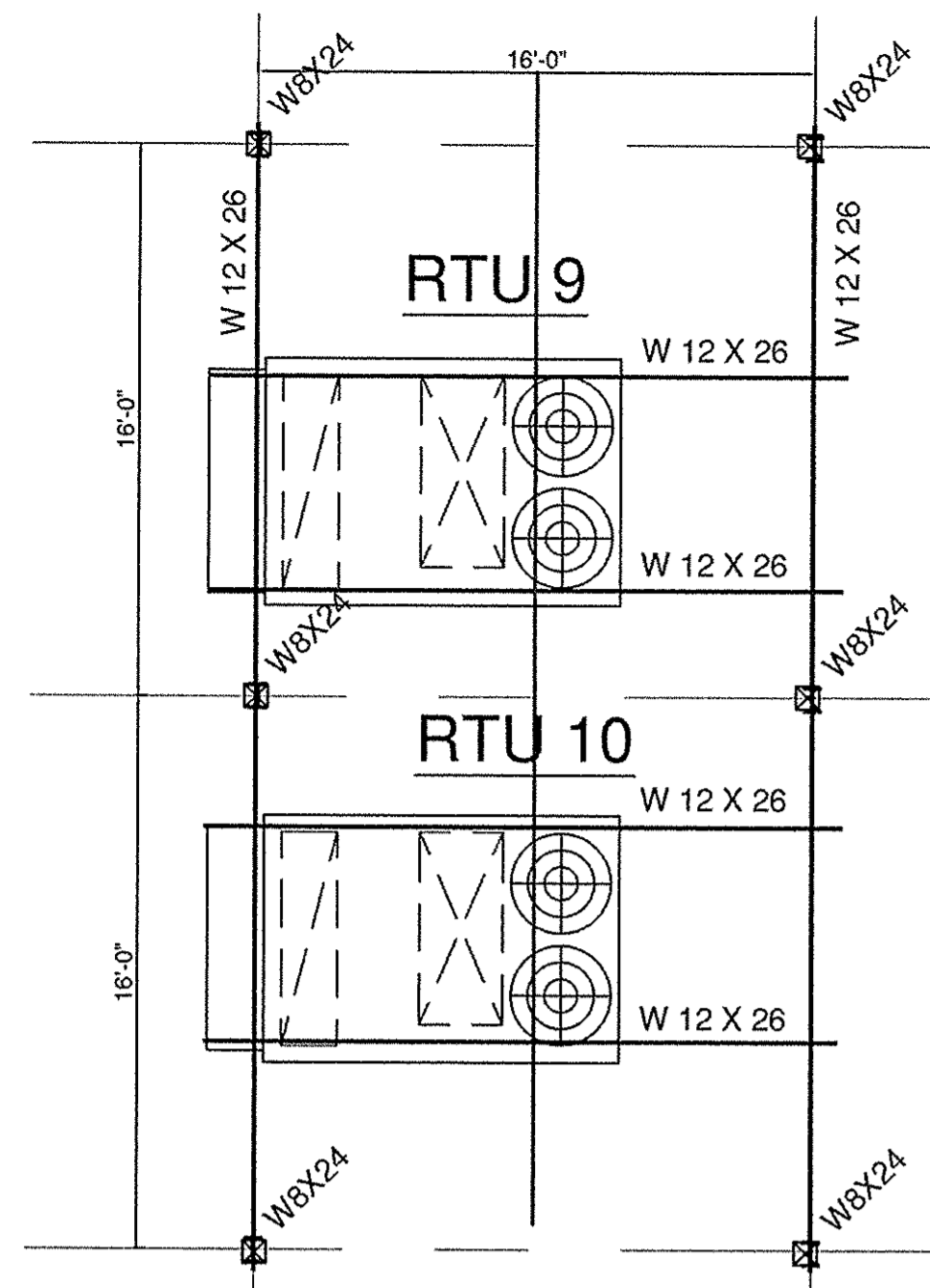
COMMONWEALTH CENTRE

FRANKLIN STREET

MARTINSVILLE, VIRGINIA

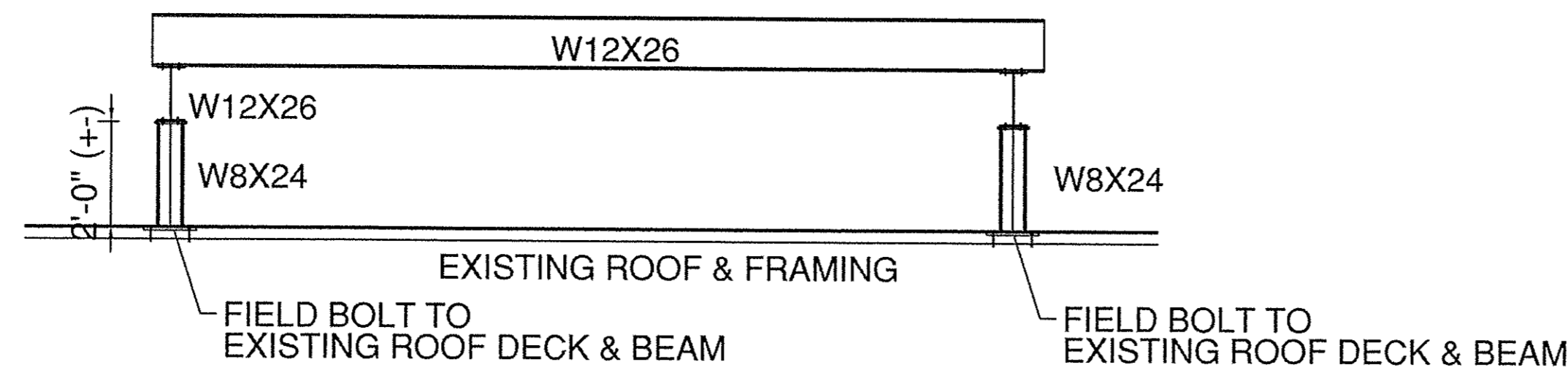
SHEET NO.

S-1



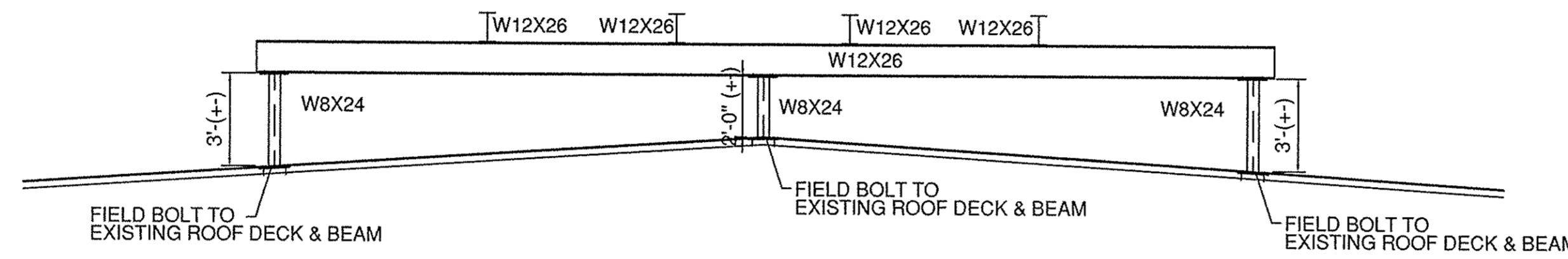
HVAC SUPPORT RACK ON ROOF
RTU-9 & RTU-10, RTU-11 & RTU-12

SCALE 3/16" = 1'-0"



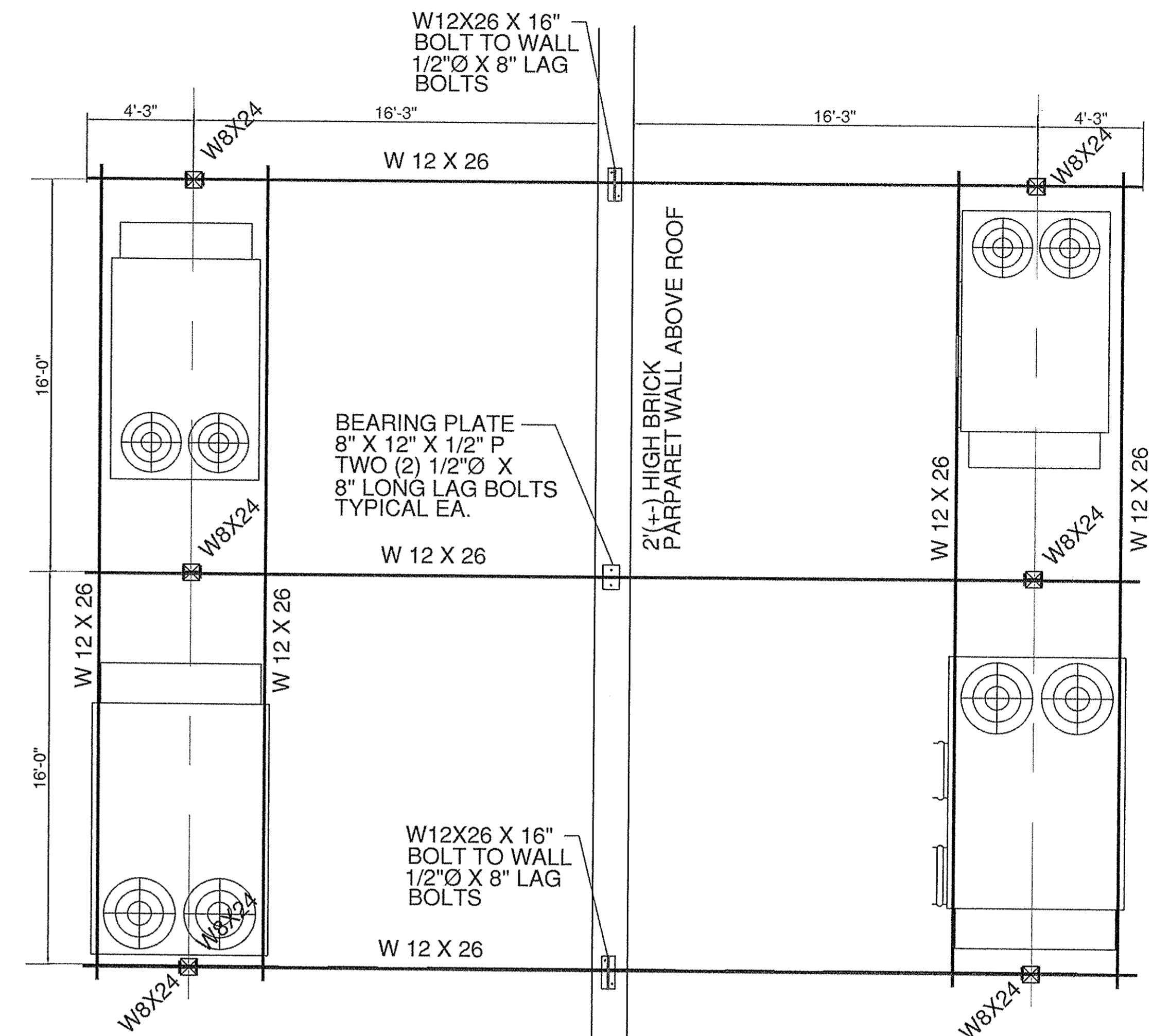
HVAC SUPPORT RACK ELEVATION
RTU-9 & RTU-10, RTU-11 & RTU-12

SCALE 3/8" = 1'-0"



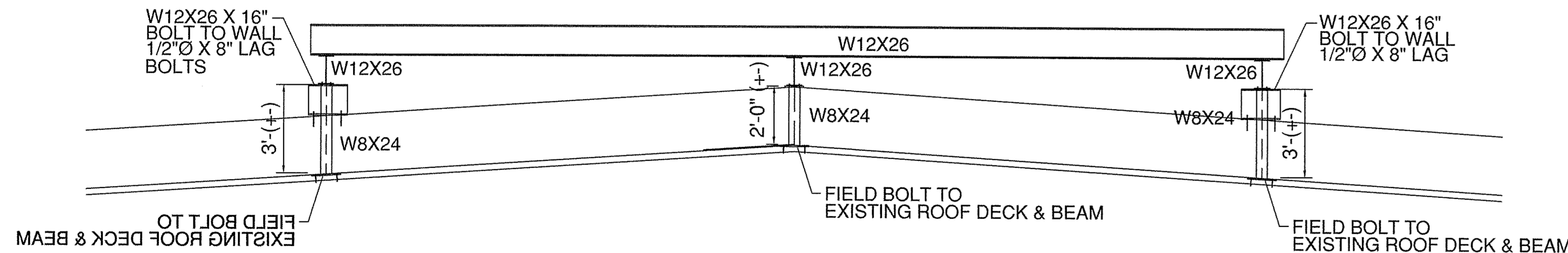
HVAC SUPPORT RACK ELEVATION
RTU-9 & RTU-10, RTU-11 & RTU-12

SCALE 1/4" = 1'-0"



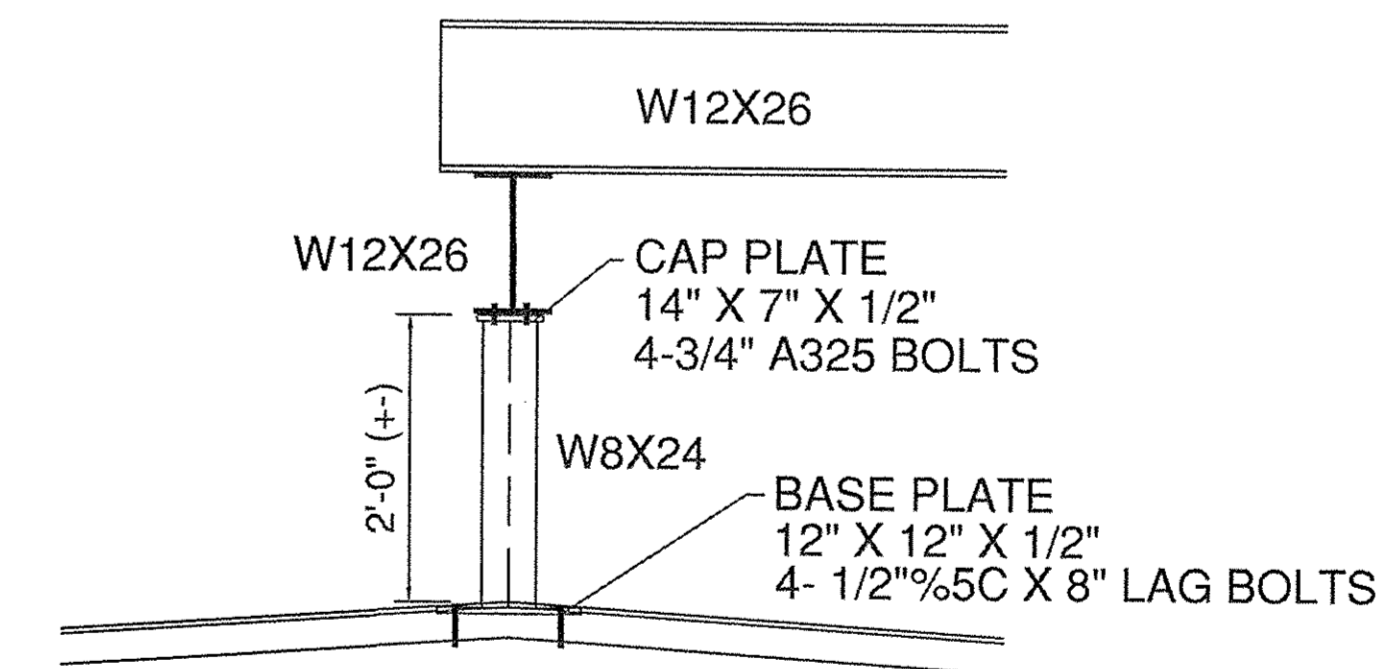
HVAC SUPPORT RACK ON ROOF
RTU-3 & RTU-4, RTU-5 & RTU-6

SCALE 1/4" = 1'-0"



HVAC SUPPORT RACK ELEVATION
RTU-3 & RTU-4, RTU-5 & RTU-6

SCALE 3/8" = 1'-0"



COL. DETAIL WOOD

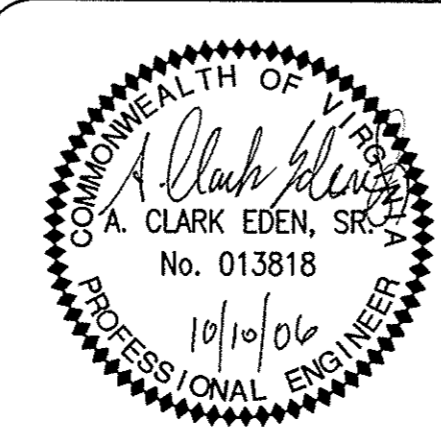
SCALE 3/4" = 1'-0"

NOTES:

- CONTRACTOR TO VISIT SITE AND VERIFY CONDITIONS AND DIMENSIONS BEFORE FABRICATION OF STEEL SUPPORTS.
- VERIFY LOCATIONS OF BEAMS UNDER RTU WITH HVAC CONTRACTOR BEFORE INSTALLING.
- INSTALLER MAY FIELD WELD RTU BEAMS TO SUPPORT BEAMS OFF COLUMNS.
- ALL EXPOSED STEEL TO BE PAINTED AT END OF INSTALLATION.

EDEN & ASSOCIATES, P.C.

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REV.	DESCRIPTION	DATE
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ROOF TOP HVAC SUPPORT RACKS

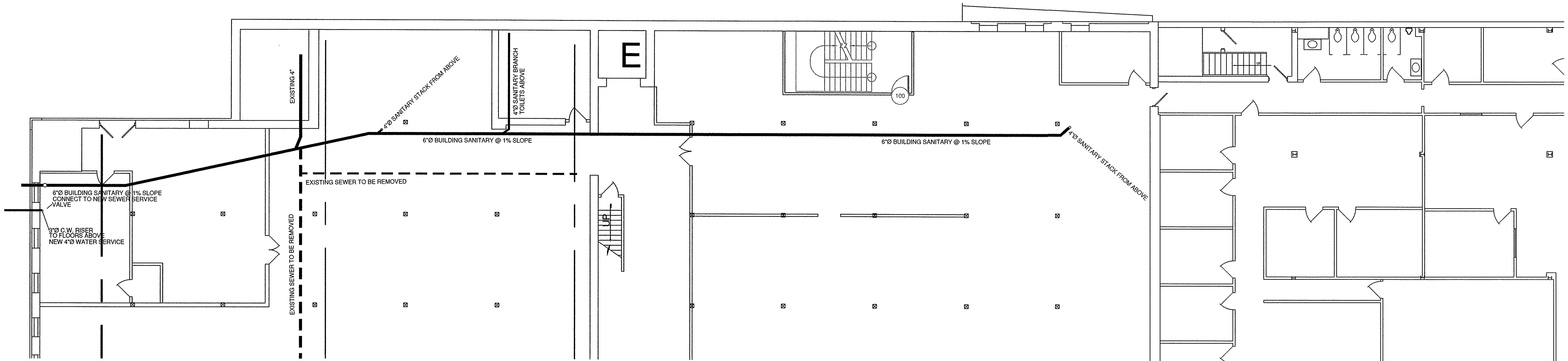
COMMONWEALTH CENTRE

FRANKLIN STREET

MARTINSVILLE, VIRGINIA

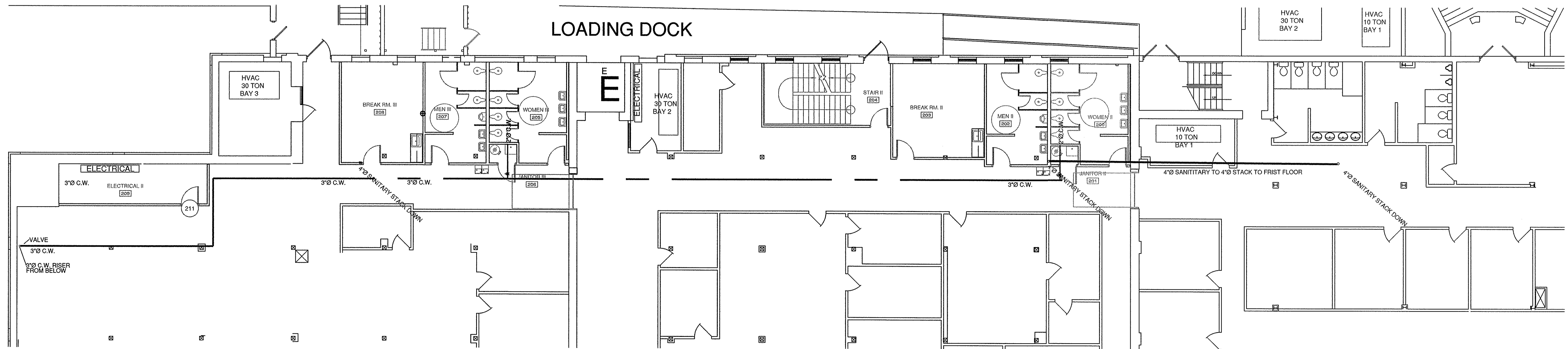
SHEET NO.

S-2



BASEMENT FLOOR PLUMBING PLAN

SCALE 1/8" = 1'-0"

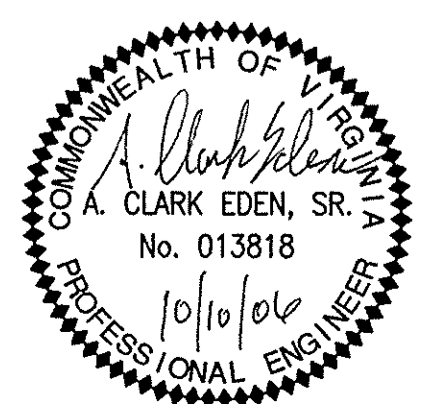


FIRST FLOOR PLUMBING PLAN

SCALE 1/8" = 1'-0"

EDEN & ASSOCIATES, P.C.

1049 BROOKDALE STREET SUITE B
MARTINSVILLE, VIRGINIA 24112
VOICE 276-632-6231
FAX. 276-632-3648



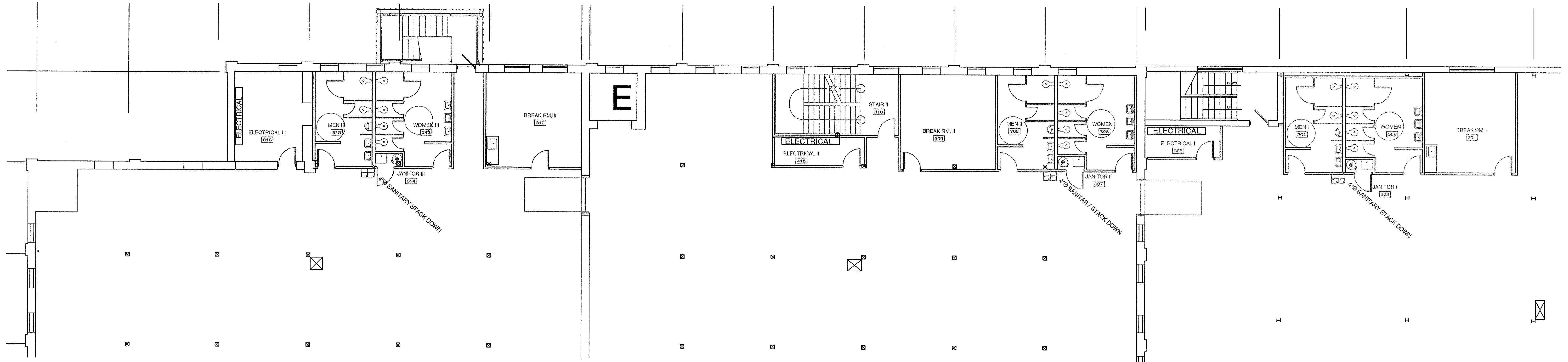
REV.	DESCRIPTION	DATE
1	FIRST ISSUE	10/10/06

BUILDING PLUMBING LAYOUTS

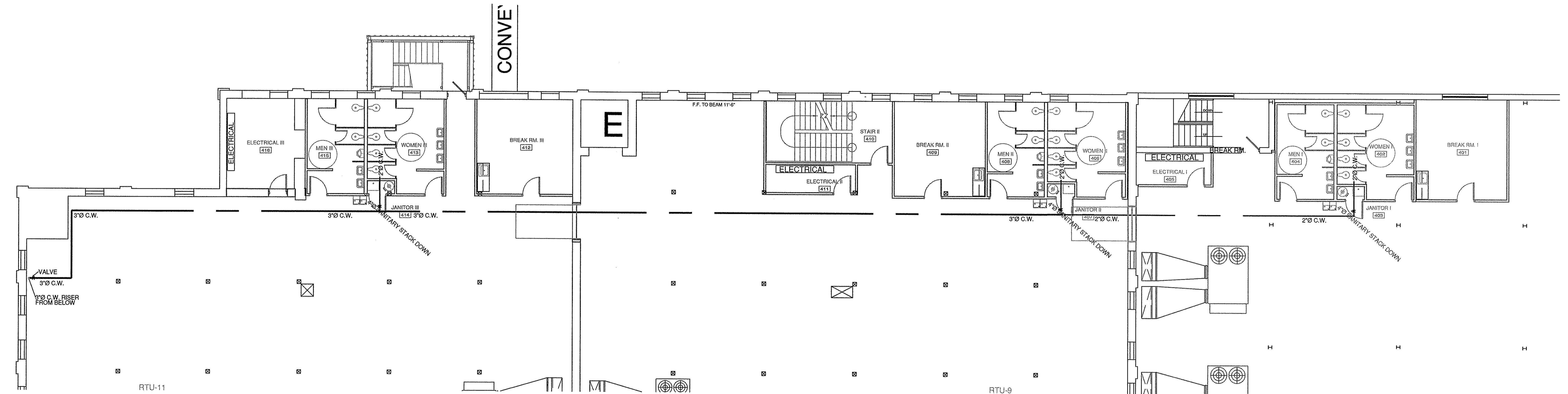
COMMONWEALTH CENTRE

FRANKLIN STREET
MARTINSVILLE, VIRGINIA

SHEET NO.
P-1



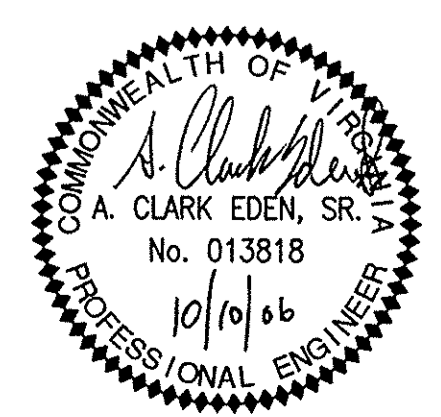
SECOND FLOOR PLUMBING PLAN]
SCALE 1/8" = 1'-0"



THIRD FLOOR PLUMBING PLAN]
SCALE 1/8" = 1'-0"

EDEN & ASSOCIATES, P.C.

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REV.	DESCRIPTION	DATE
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BUILDING PLUMBING LAYOUTS

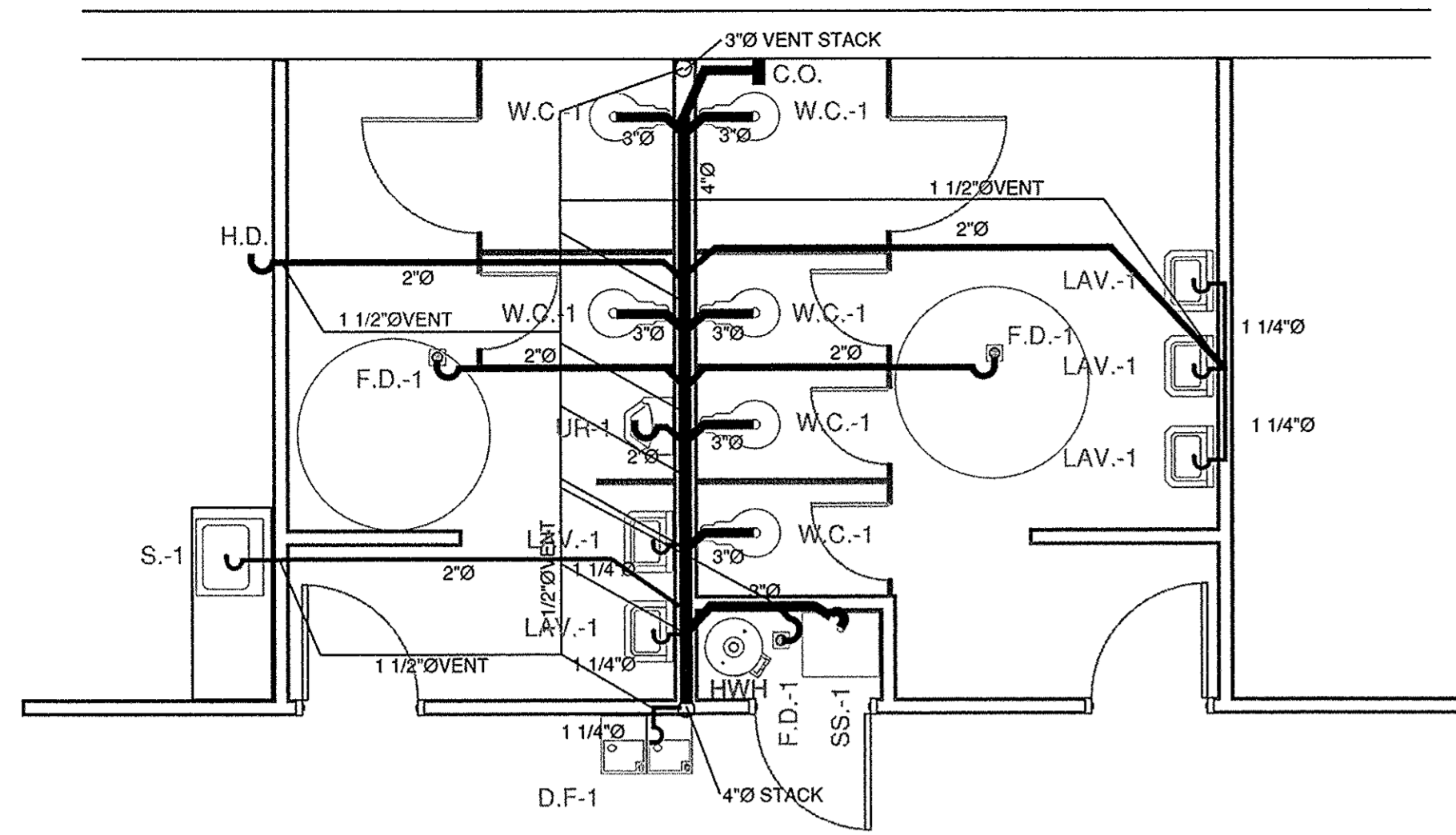
COMMONWEALTH CENTRE

FRANKLIN STREET

MARTINSVILLE, VIRGINIA

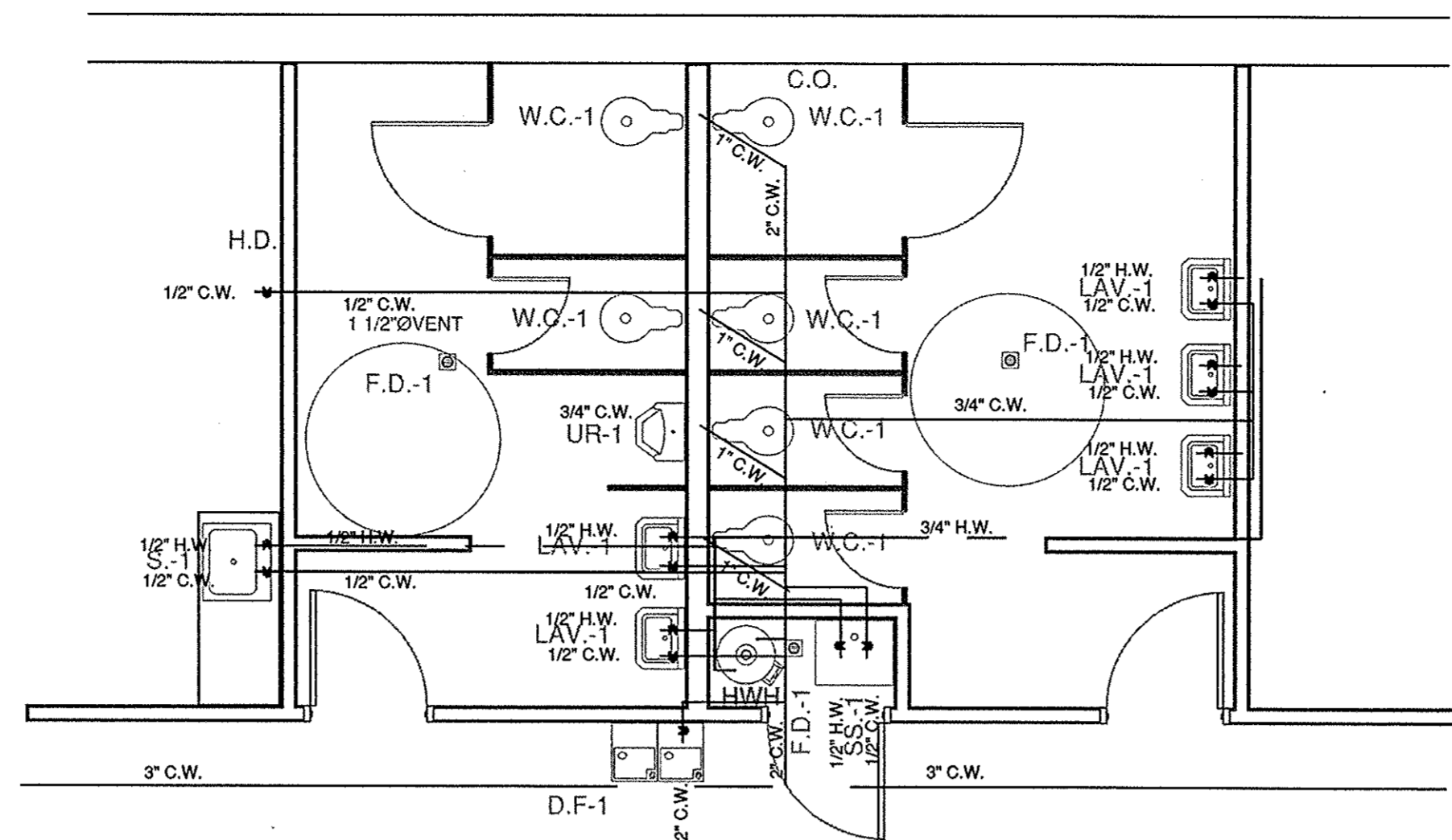
SHEET NO.

P-2



TYPICAL TOILET SANITARY LAYOUT

SCALE 1/4" = 1'-0"



TYPICAL TOILET WATER LAYOUT

SCALE 1/4" = 1'-0"

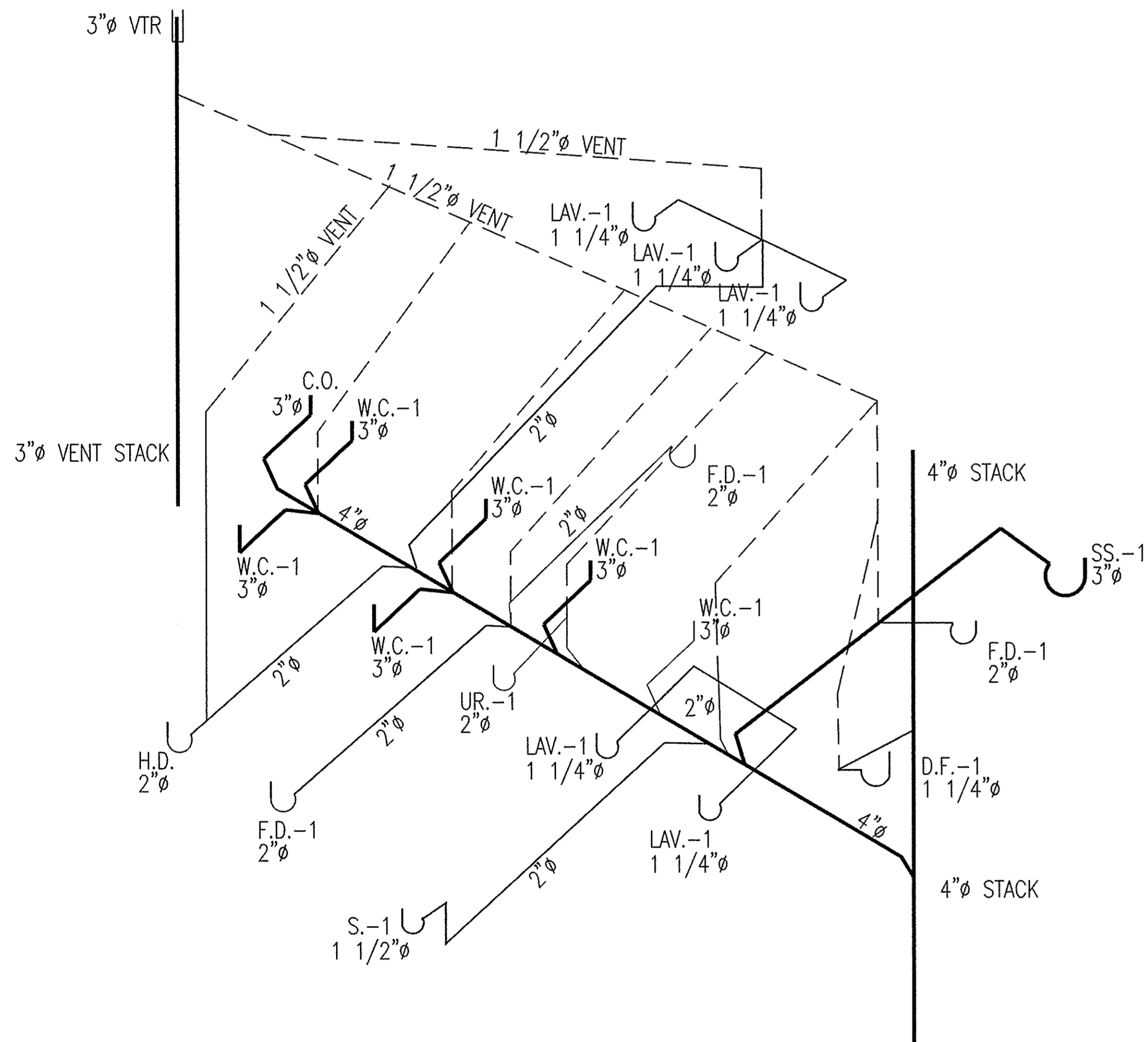
PLUMBING NOTES

ALL PLUMBING WORK TO BE DONE PER INTERNATIONAL PLUMBING CODE, VIRGINIA STATE AND HENRY COUNTY PLUMBING CODES
 ALL DRAINAGE AND VENT PIPING TO BE SCH. 40 PVC-DWV
 ALL INTERIOR DRAINAGE PIPING TO SLOPE MIN. 1/4" PER FT.
 ALL WATER PIPING TO BE COPPER TYPE L HARD COPPER OR PLASTIC.
 INSULATE ALL WATER PIPE
 WHERE QUICK CLOSING WATER VALVES ARE INSTALLED, WATER HAMMER ARRESTERS ARE TO BE INSTALLED.
 BUILDING WATER SERVICE TO BE 1 1/2" PIPE WITH 1" METER CONNECT TO H.C.P.S.A. WATER MAIN. INSTALL 1 1/2" WATTS BACK FLOW NEAR SERVICE ENTRANCE WITH CUT OFF VALVE.

PLUMBING FIXTURE SCHEDULE

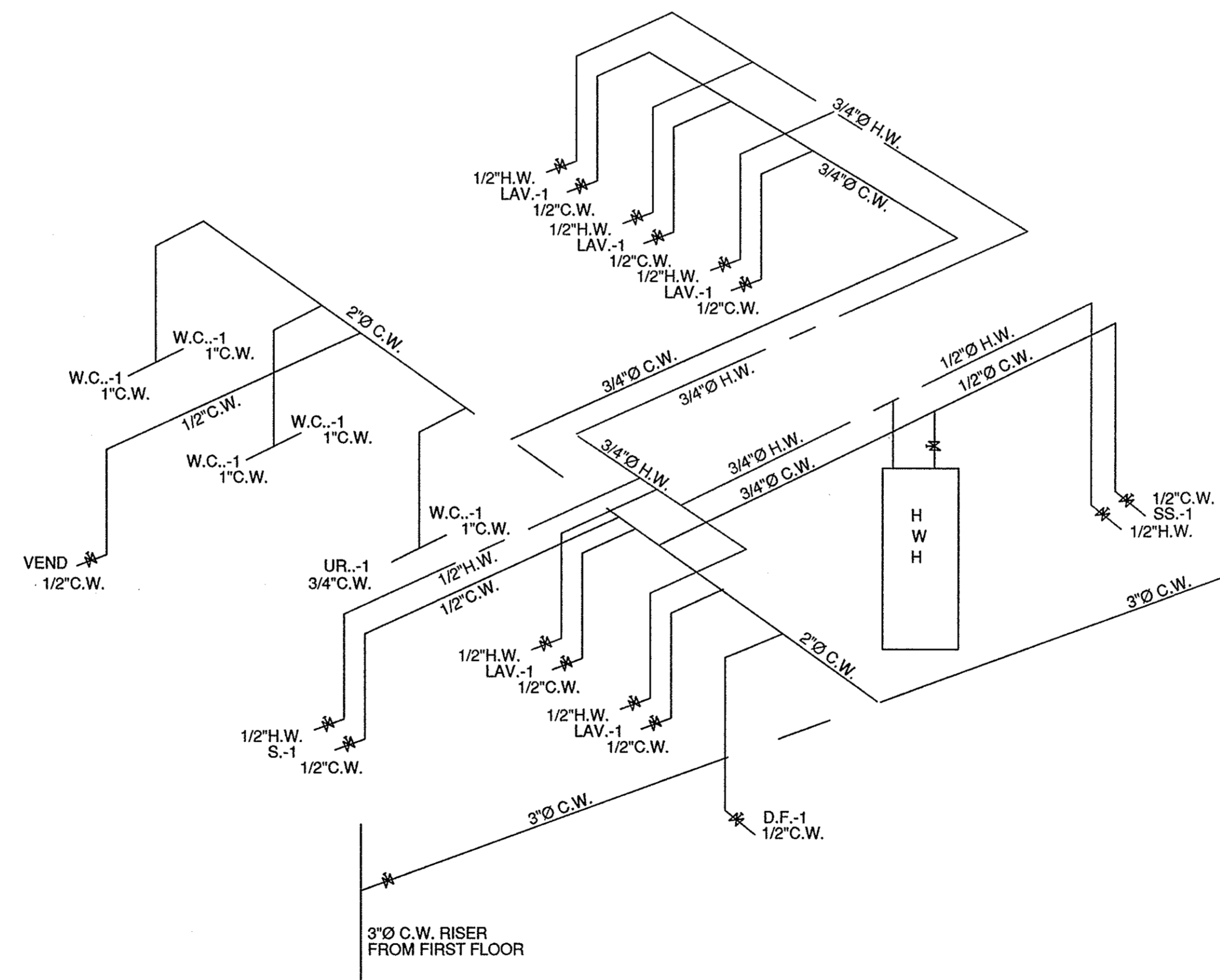
PLUMBING FIXTURES AS SHOWN BELOW OR AS SELECTED BY OWNER

- WC-1** WATER CLOSET AMERICAN STANDARD MADERA 3043.102 ADA 17" H ELONGATED WITH SLOAN NO. 111 FLUSH VALVE CHURCH nNO. 9500C OPEN FRONT SEAT, AND 1" Ø SUPPLY
- SS-1** SERVICE SINK CRANE MODEL NO. MSB-2424 MOLDED STONE FLOOR MOP SINK 10" HIGH W/ 3"Ø DRAIN PIPE, MODEL 830-AA FAUCETS AND 1/2"Ø C.W. & H.W. SUPPLY
- LAV-1** LAVATORY CRANE MODEL NO. 1412V HARWICH 24" X 21" LAVATORY WITH 4" CENTER SET LEVER HANDLE FAUCET, 1 1/4" Ø P TRAP, 3/8" Ø HOT AND COLD WATER SUPPLY AND STOP LAVATORIES TO HAVE LAV GUARD #102 P TRAP AND SUPPLY VALVES WRAP AROUND COVERS.
- HWH** HOT WATER HEATER STATE MODEL NO. CPE 40 20RTA 40 GAL. 4,500/4,500 W 277V. W/ PRESSURE/ TEMPERATURE RELIEF VALVE, 3/4" CONNECTIONS
- DF** OASIS MODEL NO. P8AMSL HIGH/LOW HANDICAPPED WATER COOLER 7.8 GPH 115V 5 AMP. WITH 1/2" COLD WATER SUPPLY AND STOP 1 1/4" P TRAP
- S-1** ELKAY MODEL NO. DLR222210 STAINLESS STEEL SINK WITH LK4101 FAUCET W/ SPRAY 1 1/4" Ø P TRAP, 3/8" Ø HOT AND COLD WATER SUPPLY AND STOP



TYPICAL TOILET SANITARY RISER

NOT TO SCALE

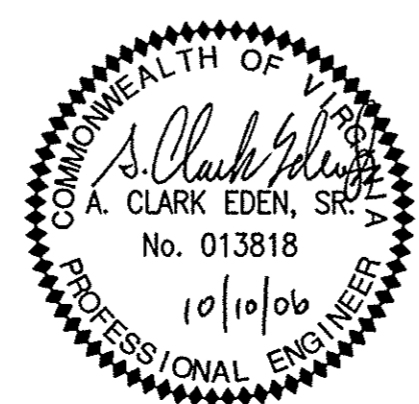


TYPICAL TOILET WATER RISER

NOT TO SCALE

EDEN & ASSOCIATES, P.C.

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TOILET ROOM PLUMBING LAYOUTS

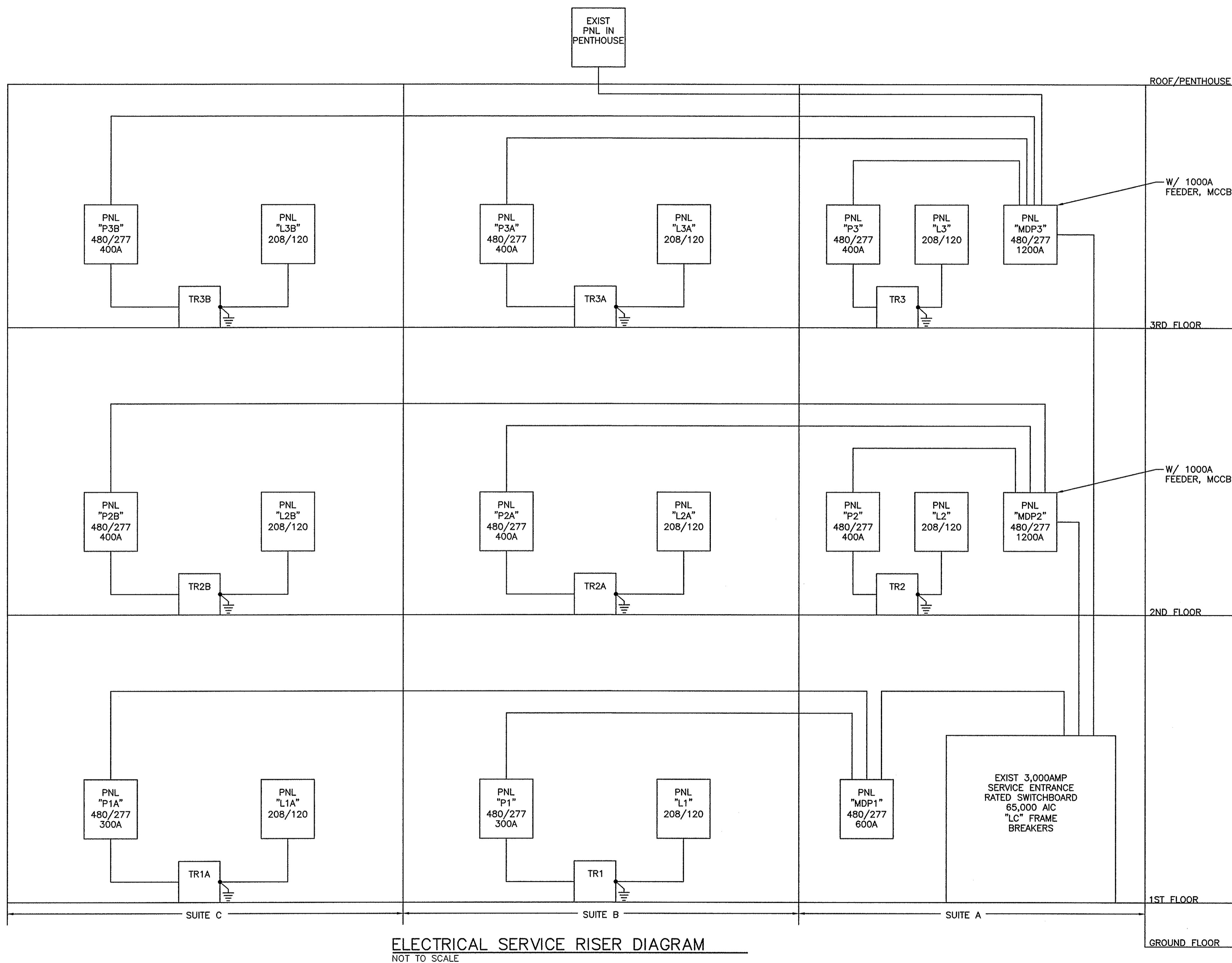
COMMONWEALTH CENTRE

FRANKLIN STREET

MARTINSVILLE, VIRGINIA

SHEET NO.

P-3



ELECTRICAL SERVICE RISER DIAGRAM
NOT TO SCALE

LEGEND:

- 480/277V PANELBOARD
- 208/120V PANELBOARD
- DRY TRANSFORMER
- GROUND CONNECTION

ABBREVIATIONS:

- A AMP
- C CONDUIT
- EGC EQUIPMENT GROUNDING CONDUCTOR
- EXIST EXISTING
- PH PHASE
- PNL PANEL
- SE SERVICE ENTRANCE
- TBD TO BE DEMOLISHED
- V VOLTS
- W WIRE OR WITH
- XFMR TRANSFORMER

EXISTING SWITCHBOARD "SWBD" SCHEDULE

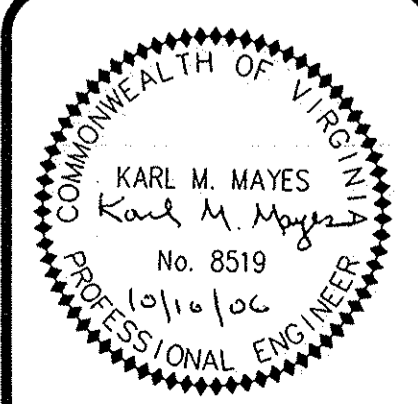
SPACE CIRCUIT NO.	LOAD DESCRIPTION	KVA	CONN AMPERES			POLE	OVERCURRENT DEVICE RATING FRAME / SENSOR	OVERCURRENT DEVICE SETTING				DEVICE MOUNTING	FEEDER CIRCUIT			
			ØA	ØB	ØC			LONG TIME	SHORT TIME	INSTANT	PICKUP		TIME	PHASE	NEUTRAL	EGC
1	EXISTING MAIN BREAKER					3	3,000	3,000								EXISTING TO REMAIN
2	SPACE - 14" - NEW "MDP2"	791.2				3	1,000	1,000					GROUP	Ø#500	Ø#500	Ø#10 3 - 3 1/2"
3	3RD FLOOR, REVISE TO "MDP1"	150.0				3	600	600					GROUP	Ø#350	Ø#350	Ø#1 2 - 3"
4	SPARE					3	400	400					GROUP			
5	EXISTING CORPORATE OFFICES					3	600	600					GROUP			EXISTING TO REMAIN
6	PENTHOUSE REV TO SPARE					3	600	600					GROUP			REMOVE FROM BREAKER & CAP
7	EXISTING BASEMENT					3	600	600					GROUP			EXISTING TO REMAIN
8	SPACE - 21" NEW "MDP3"	781.0				3	1,000	1,000					GROUP	Ø#500	Ø#500	Ø#10 3 - 3 1/2"
9	SPACE - 5"												GROUP			
10	EXISTING LOAD					3	60	60					GROUP			EXISTING TO REMAIN
11	EXISTING LOAD					3	200	200					GROUP			EXISTING TO REMAIN
12	EXISTING LOAD					3	100	100					GROUP			EXISTING TO REMAIN
13	EXISTING LOAD					3	200	200					GROUP			EXISTING TO REMAIN
14	SPACE - 5"												GROUP			
15	EXISTING LOAD					3	100	100					GROUP			EXISTING TO REMAIN
16	SPACE 15"												GROUP			

* NEW CIRCUIT BREAKER TO BE INSTALLED WITHIN EXISTING SPACE, PROVIDE PROVISIONS REQUIRED TO INSTALL NEW CIRCUIT BREAKERS INDICATED.

POWER TRANSFORMER SCHEDULE

DESIGNATION	TYPE	NUMBER PHASES	KVA	MINIMUM IMPEDENCE IN %	VOLTAGE		LOAD CIRCUIT DATA			REMARKS
					PRIMARY	SECONDARY	WIRE NUMBER & SIZE	CONDUIT NO. & SIZE	EGC	
TR1	DRY	3	75	5.75	480	208/120	3#250	1#250	1#3	2 1/2"
TR1A	DRY	3	75	5.75	480	208/120	3#250	1#250	1#3	2 1/2"
TR2	DRY	3	75	5.75	480	208/120	3#250	1#250	1#3	2 1/2"
TR2A	DRY	3	75	5.75	480	208/120	3#250	1#250	1#3	2 1/2"
TR2B	DRY	3	75	5.75	480	208/120	3#250	1#250	1#3	2 1/2"
TR3	DRY	3	75	5.75	480	208/120	3#250	1#250	1#3	2 1/2"
TR3A	DRY	3	75	5.75	480	208/120	3#250	1#250	1#3	2 1/2"
TR3B	DRY	3	75	5.75	480	208/120	3#250	1#250	1#3	2 1/2"

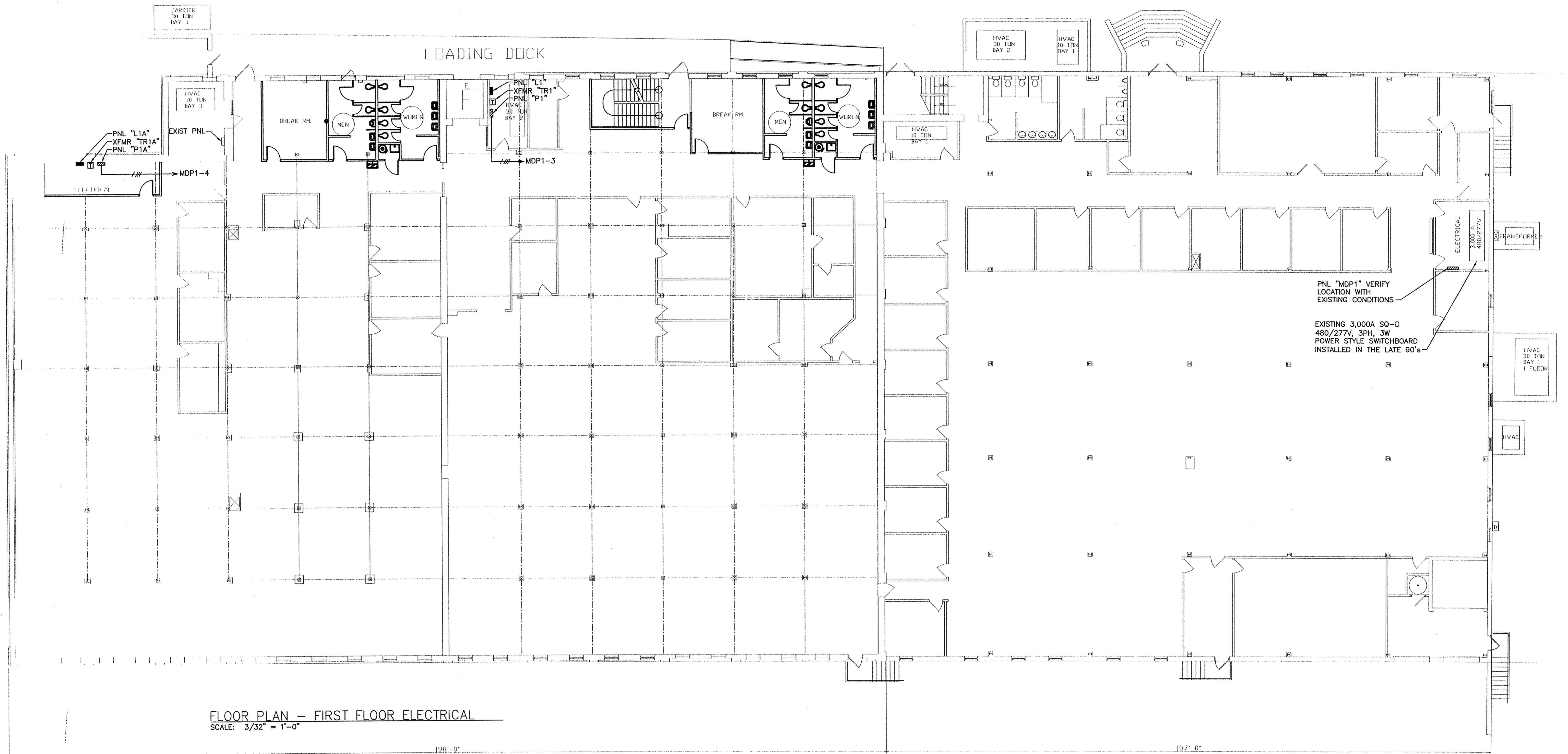
MAYES ENGINEERING, INC.
P.O. BOX 4468
LYNCHBURG, VIRGINIA
TEL (434) 239-1616
FAX (434) 239-6164



REV.	DESCRIPTION	DATE
0	FIRST ISSUE	9/15/06

ELECTRICAL SERVICE RISER DIAGRAM & SWITCHBOARD & POWER TRANSFORMER SCHEDULES
COMMONWEALTH CENTRE
FRANKLIN STREET
MARTINSVILLE, VIRGINIA

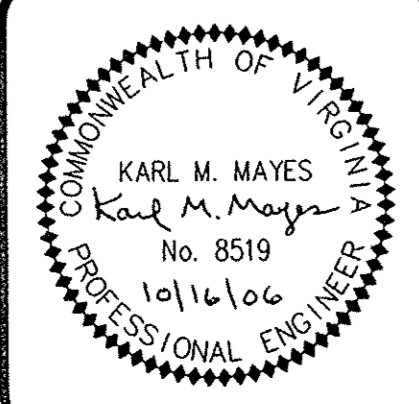
SHEET NO.
E1



FLOOR PLAN - FIRST FLOOR ELECTRICAL
 SCALE: 3/32" = 1'-0"

MAYES ENGINEERING, INC.

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 LYNCHBURG, VIRGINIA
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REV.	DESCRIPTION	DATE

FLOOR PLAN - FIRST FLOOR ELECTRICAL
COMMONWEALTH CENTRE
 FRANKLIN STREET
 MARTINSVILLE, VIRGINIA

SHEET NO.

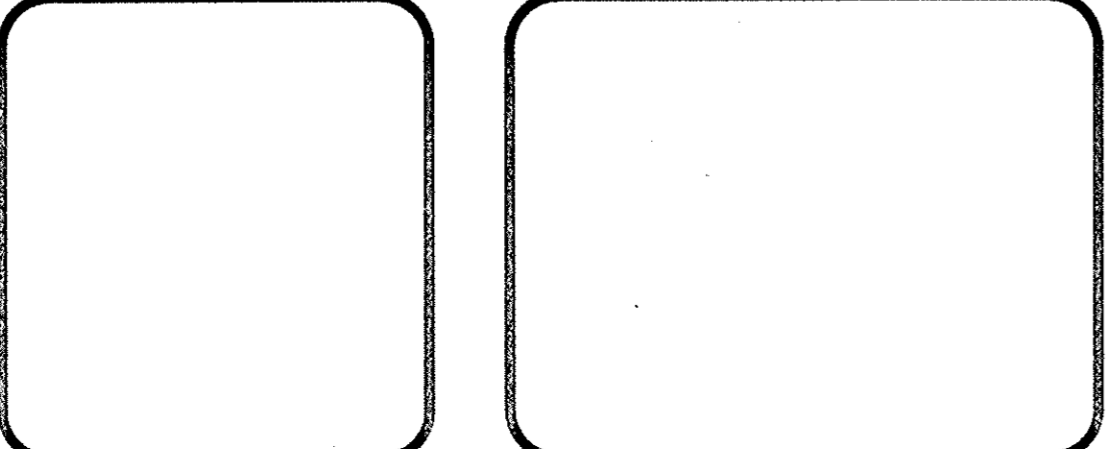
E2



FLOOR PLAN - SECOND FLOOR ELECTRICAL
 SCALE: 3/32" = 1'-0"

MAYES ENGINEERING, INC.

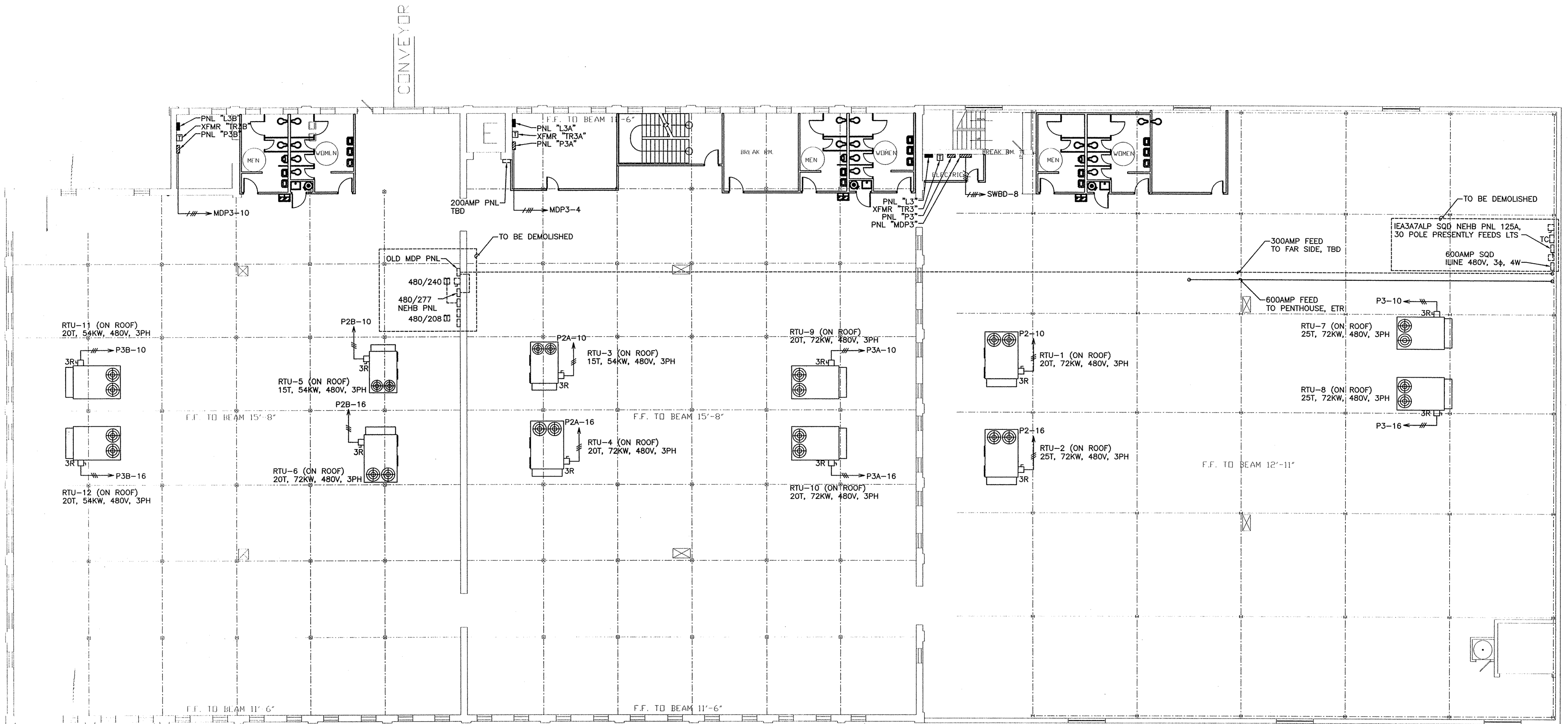
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REV.	DESCRIPTION	DATE

FLOOR PLAN - SECOND FLOOR ELECTRICAL
COMMONWEALTH CENTRE
 FRANKLIN STREET
 MARTINSVILLE, VIRGINIA

SHEET NO.
E3



FLOOR PLAN - THIRD FLOOR ELECTRICAL
 SCALE: 3/32" = 1'-0"

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REV.	DESCRIPTION	DATE

FLOOR PLAN - THIRD FLOOR ELECTRICAL
COMMONWEALTH CENTRE
 FRANKLIN STREET
 MARTINSVILLE, VIRGINIA

SHEET NO.
E4

PANEL "L1" SCHEDULE PHASE TO PHASE VOLTS: 208
 PHASE TO NEUT. VOLTS: 120
 PANELBOARD CHARACTERISTICS:
 VOLTS: 208/120
 PHASES: 3
 WIRES: 4
 SOLID NEUTRAL GROUND BAR
 225AMP MAIN CIRCUIT BREAKER
 MINIMUM SHORT CIRCUIT RATING: 10,000 RMS SYM AMPS

CIR. NO.	POLE NO.	DESCRIPTION	LOAD TYPE	CONN. KVA	CONN. AMPS			BREAKER	NO. & WIRE SIZE			COND. SIZE
					A	B	C		P	AT	PHASE	
1	1	SPARE										
3	3	SPARE										
5	5	SPARE										
7	7	SPARE										
9	9	SPARE										
11	11	SPARE										
13	13	SPARE										
15	15	SPARE										
17	17	SPARE										
19	19	SPARE										
21	21	SPARE										
23	23	SPARE										
25	25	SPARE										
27	27	SPARE										
29	29	SPARE										
31	31	SPARE										
33	33	SPARE										
35	35	SPARE										
37	37	SPARE										
39	39	SPARE										
41	41	SPARE										
2	2											
4	4											
6	6											
8	8											
10	10											
12	12											
14	14											
16	16											
18	18											
20	20											
22	22											
24	24											
26	26											
28	28											
30	30											
32	32											
34	34											
36	36											
38	38											
40	40											
42	42	TOTALS										

PANEL "L2" SCHEDULE PHASE TO PHASE VOLTS: 208
 PHASE TO NEUT. VOLTS: 120
 PANELBOARD CHARACTERISTICS:
 VOLTS: 208/120
 PHASES: 3
 WIRES: 4
 SOLID NEUTRAL GROUND BAR
 225AMP MAIN CIRCUIT BREAKER
 MINIMUM SHORT CIRCUIT RATING: 10,000 RMS SYM AMPS

CIR. NO.	POLE NO.	DESCRIPTION	LOAD TYPE	CONN. KVA	CONN. AMPS			BREAKER	NO. & WIRE SIZE			COND. SIZE
					A	B	C		P	AT	PHASE	
1	1	SPARE										
3	3	SPARE										
5	5	SPARE										
7	7	SPARE										
9	9	SPARE										
11	11	SPARE										
13	13	SPARE										
15	15	SPARE										
17	17	SPARE										
19	19	SPARE										
21	21	SPARE										
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25	25	SPARE										
27	27	SPARE										
29	29	SPARE										
31	31	SPARE										
33	33	SPARE										
35	35	SPARE										
37	37	SPARE										
39	39	SPARE										
41	41	SPARE										
2	2											
4	4											
6	6											
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38	38											
40	40											
42	42	TOTALS										

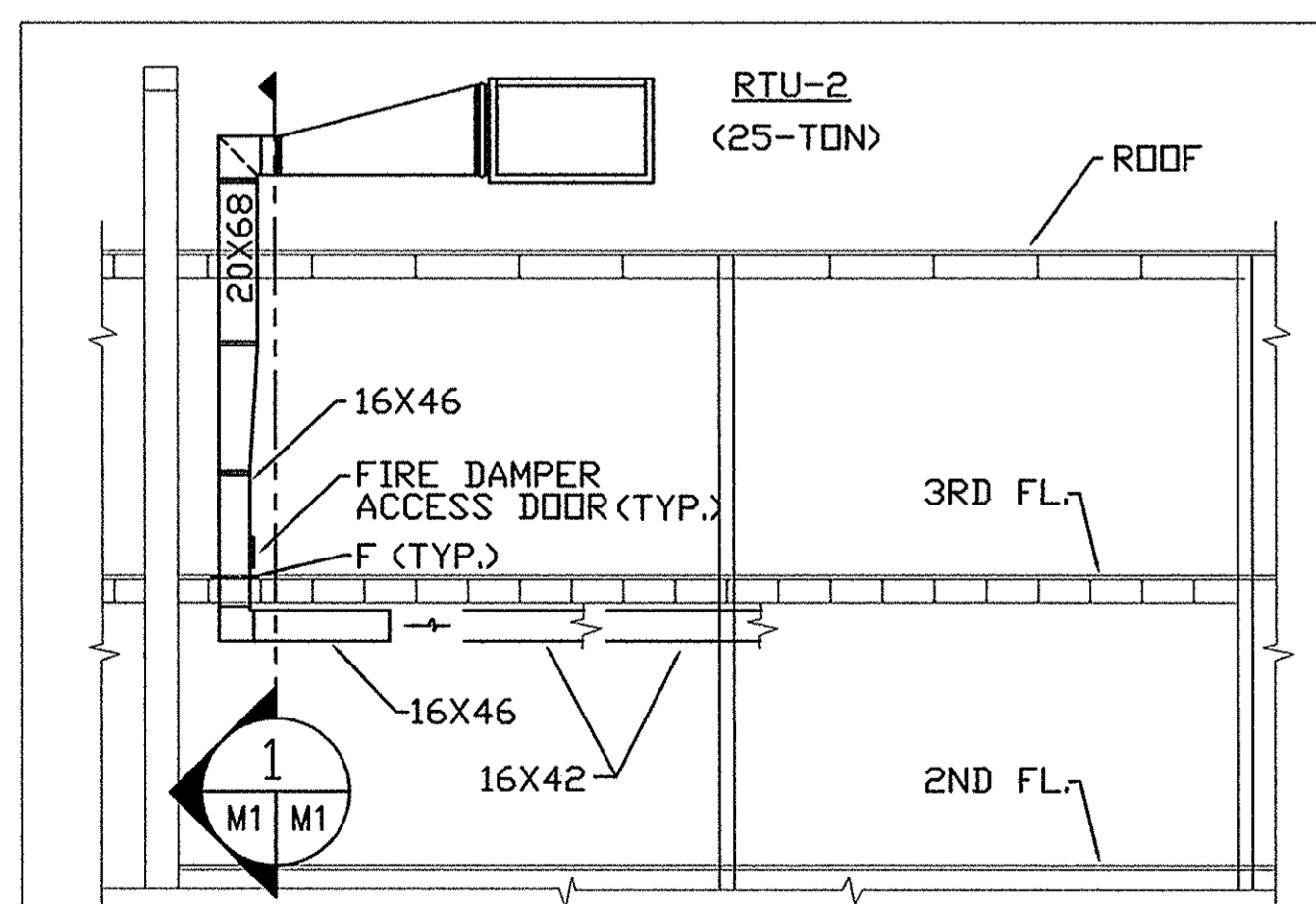
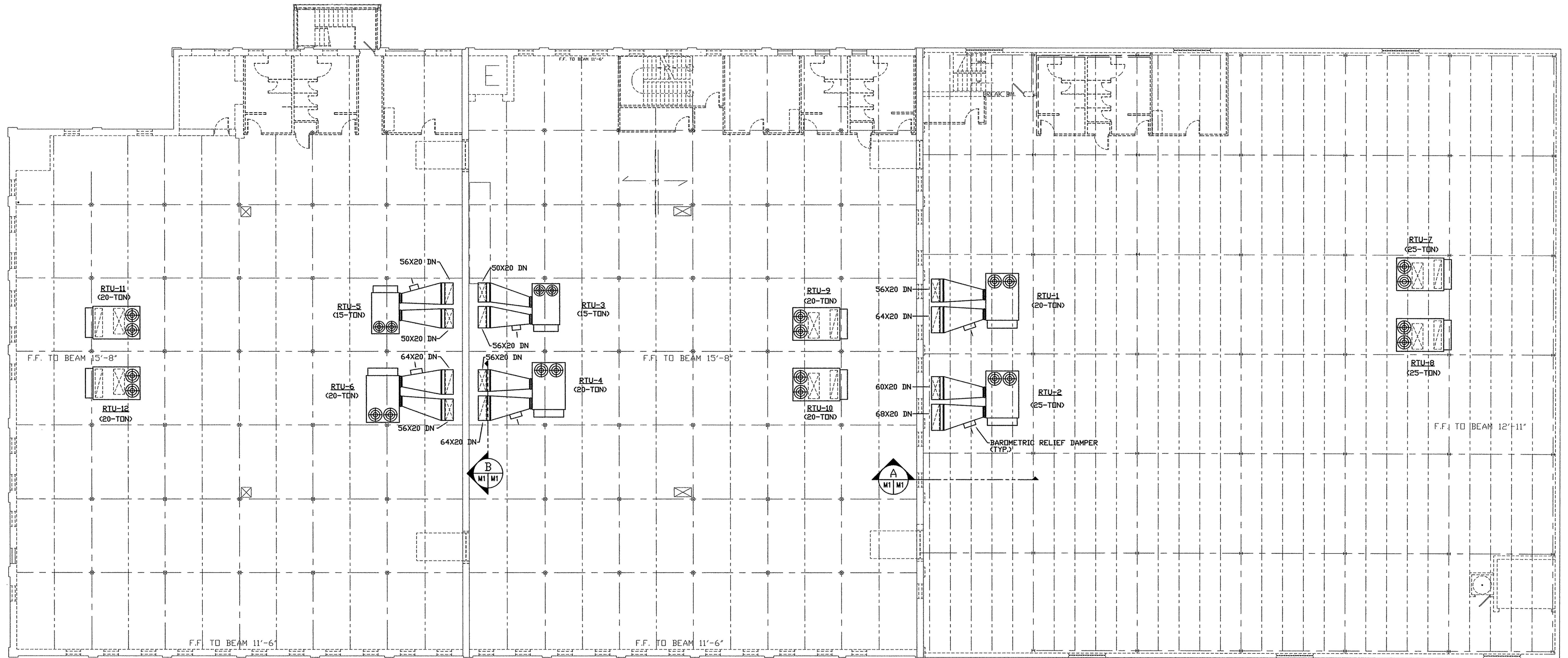
PANEL "L2A" SCHEDULE PHASE TO PHASE VOLTS: 208
 PHASE TO NEUT. VOLTS: 120
 PANELBOARD CHARACTERISTICS:
 VOLTS: 208/120
 PHASES: 3
 WIRES: 4
 SOLID NEUTRAL GROUND BAR
 225AMP MAIN CIRCUIT BREAKER
 MINIMUM SHORT CIRCUIT RATING: 10,000 RMS SYM AMPS

CIR. NO.	POLE NO.	DESCRIPTION	LOAD TYPE	CONN. KVA	CONN. AMPS			BREAKER	NO. & WIRE SIZE			COND. SIZE
					A	B	C		P	AT	PHASE	
1	1	SPARE										
3	3	SPARE										
5	5	SPARE										
7	7	SPARE										
9	9	SPARE										
11	11	SPARE										
13	13	SPARE										
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42	42	TOTALS										

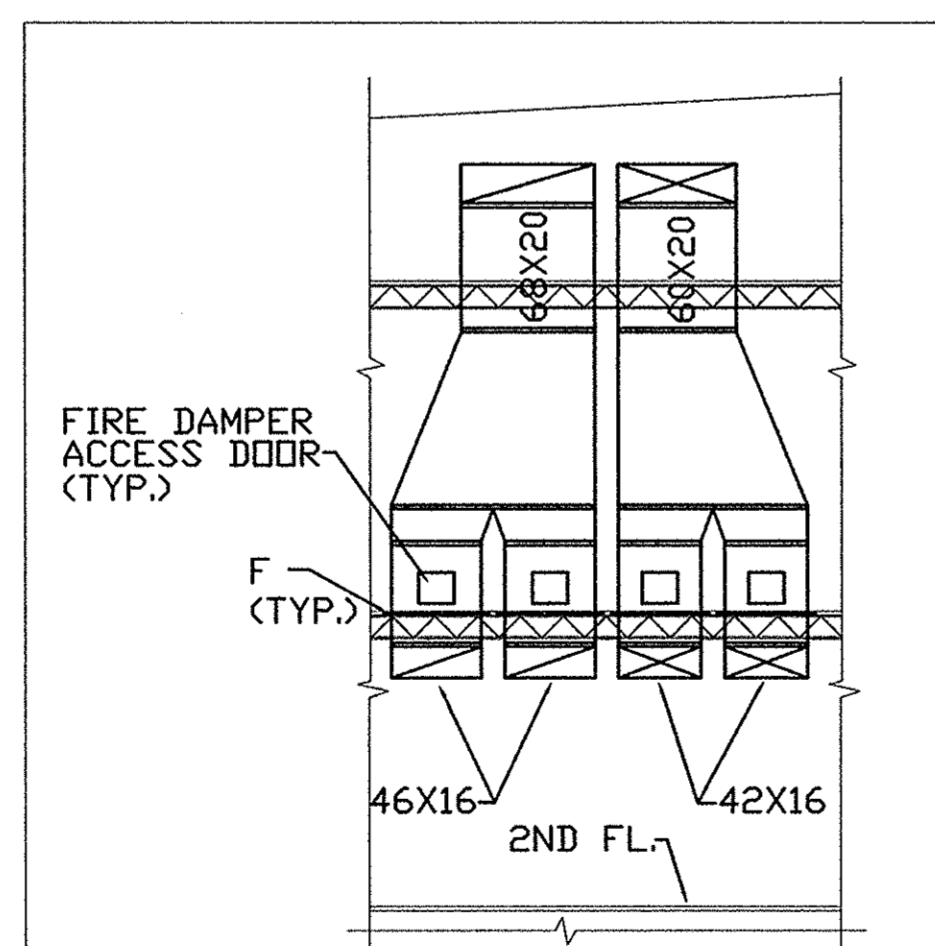
PANEL "L2B" SCHEDULE PHASE TO PHASE VOLTS: 208
 PHASE TO NEUT. VOLTS: 120
 PANELBOARD CHARACTERISTICS:
 VOLTS: 208/120
 PHASES: 3
 WIRES: 4
 SOLID NEUTRAL GROUND BAR
 225AMP MAIN CIRCUIT BREAKER
 MINIMUM SHORT CIRCUIT RATING: 10,000 RMS SYM AMPS

CIR. NO.	POLE NO.	DESCRIPTION	LOAD TYPE	CONN. KVA	CONN. AMPS			BREAKER	NO. & WIRE SIZE			COND. SIZE
					A	B	C		P	AT	PHASE	
1	1	SPARE										
3	3	SPARE										
5	5	SPARE										
7	7	SPARE										
9	9	SPARE										
11	11	SPARE										
13	13	SPARE										
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32	32											
34	34											
36	36											
38	38											
40	40											
42	42	TOTALS										

PANEL "L1A" SCHEDULE PHASE TO PHASE VOLTS: 208
 PHASE TO NEUT. VOLTS: 120
 PANELBOARD CHARACTERISTICS:
 VOLTS: 208/120

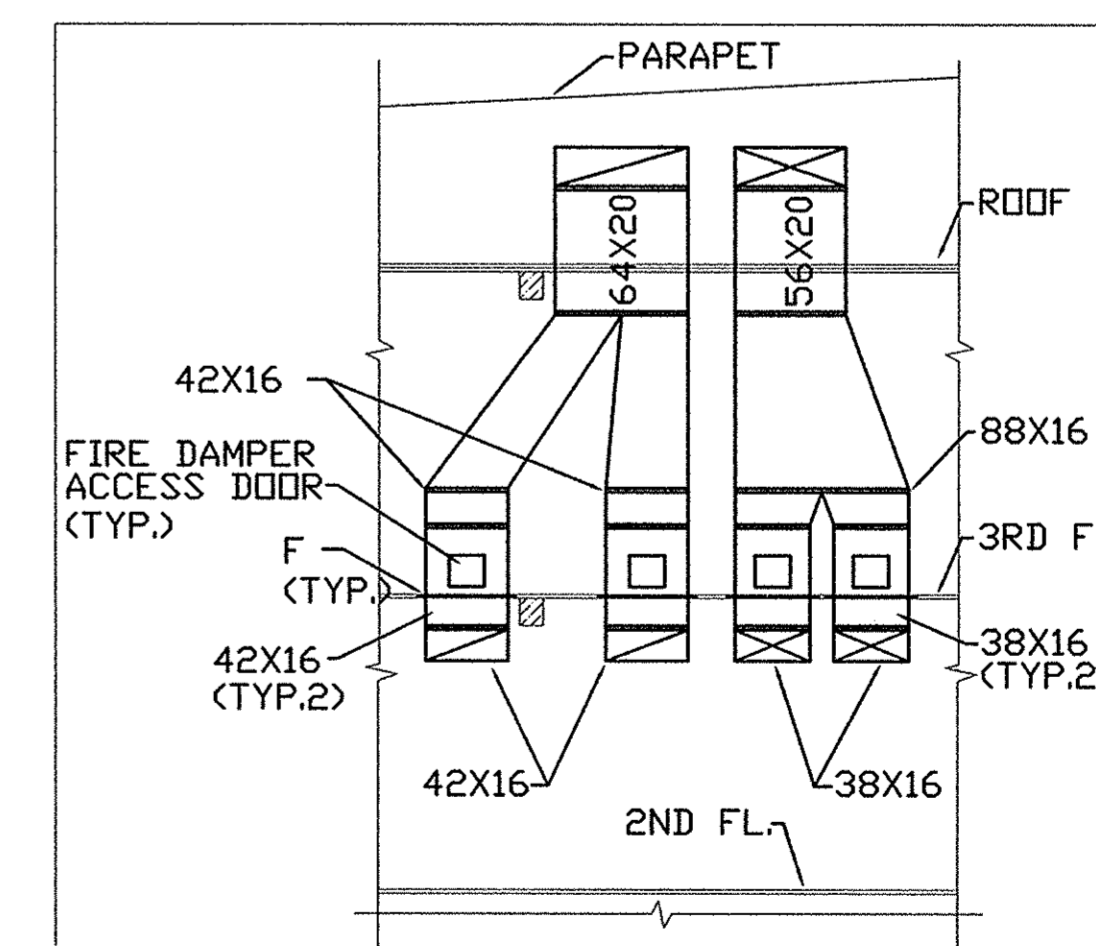


SECTION "A"-MECHANICAL
SCALE 1/8" = 1'-0"



SECTION "1"-MECHANICAL
SCALE 1/8" = 1'-0"

ROOF PLAN
SCALE 3/32" = 1'-0"



SECTION "B"-MECHANICAL
SCALE 1/8" = 1'-0"

EDEN & ASSOCIATES, P.C.

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REV.	DESCRIPTION	DATE
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MECHANICAL ROOF PLAN

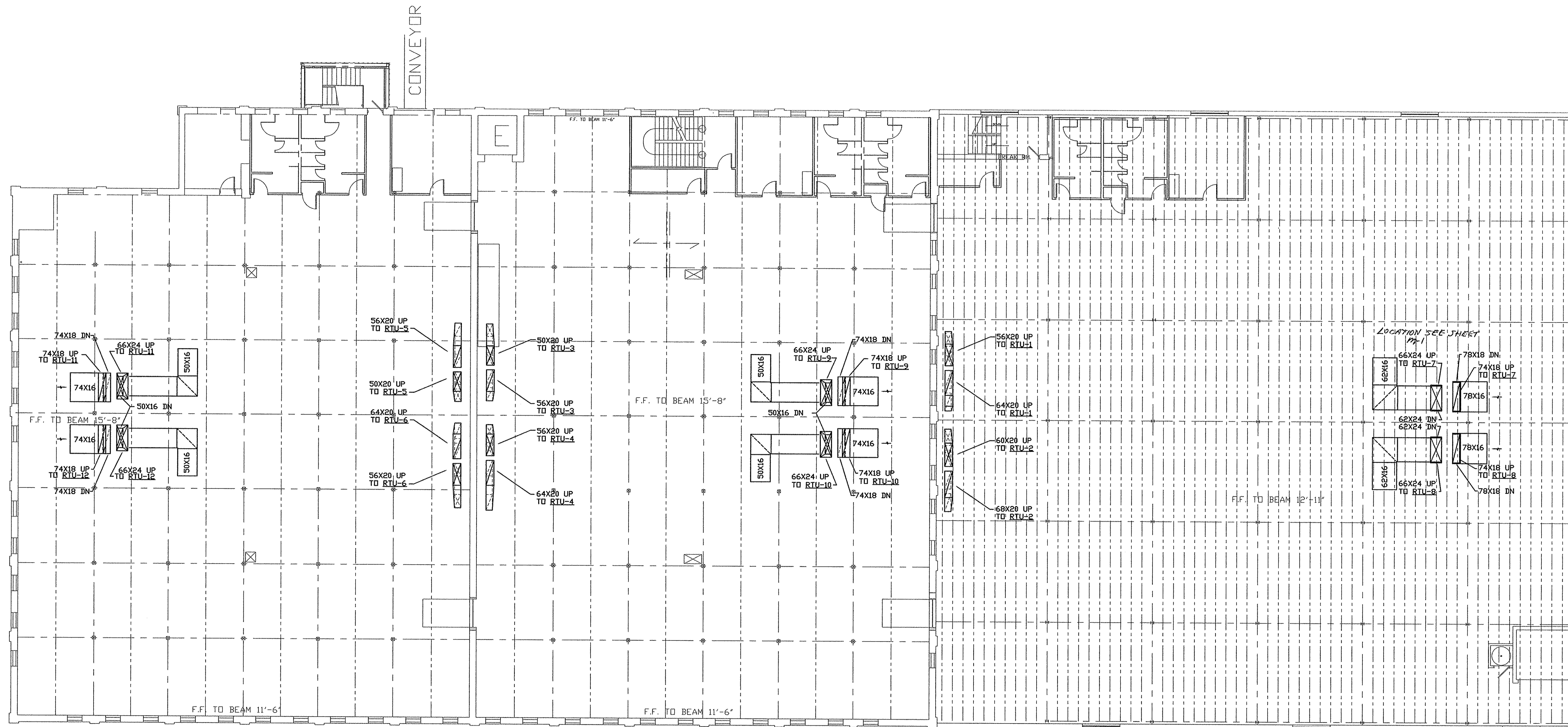
COMMONWEALTH CENTRE

FRANKLIN STREET

MARTINSVILLE, VIRGINIA

SHEET NO.

M-1



THIRD FLOOR PLAN
SCALE 3/32" = 1'-0"

EDEN & ASSOCIATES, P.C.

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MECHANICAL THIRD FLOOR PLAN

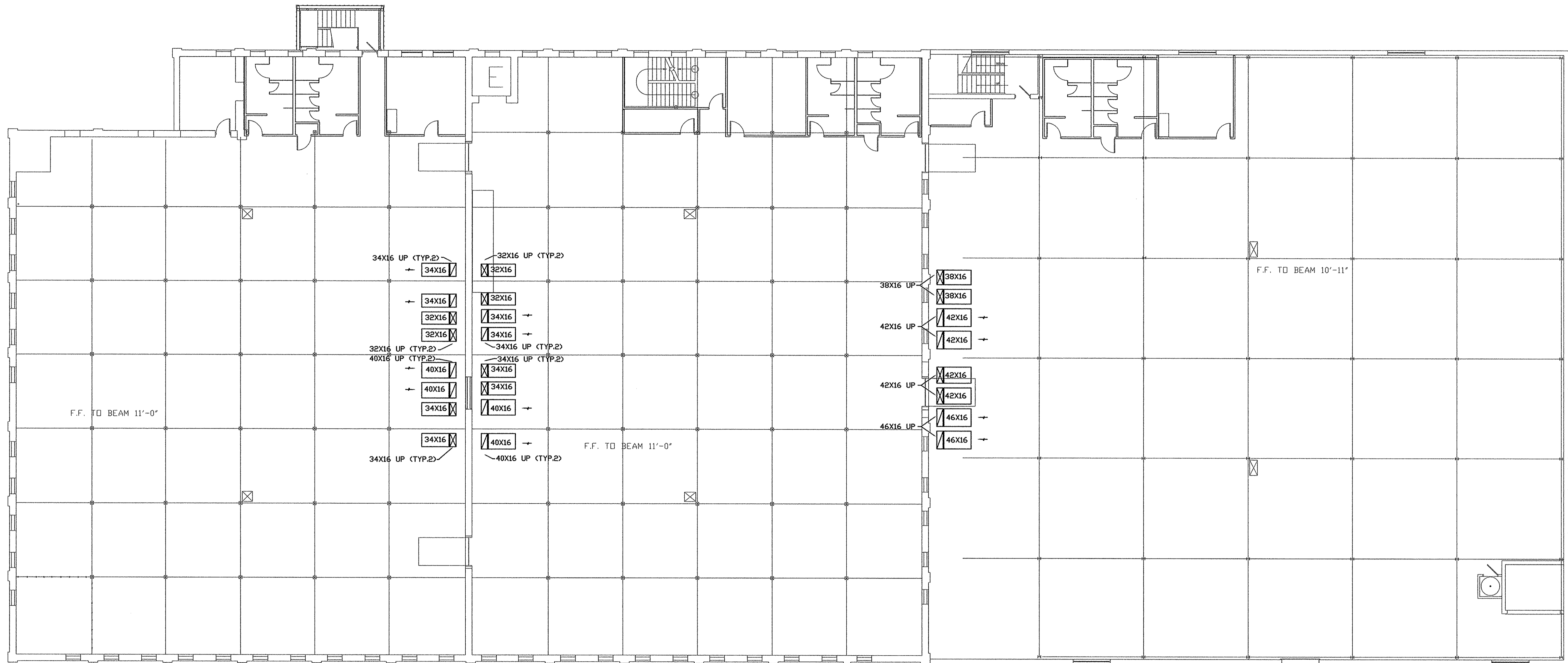
COMMONWEALTH CENTRE

FRANKLIN STREET

MARTINSVILLE, VIRGINIA

SHEET NO.

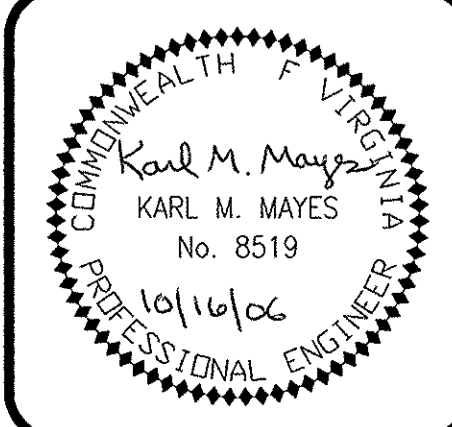
M-2



SECOND FLOOR PLAN
SCALE 3/32" = 1'-0"

EDEN & ASSOCIATES, P.C.

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REV.	DESCRIPTION	DATE
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MECHANICAL SECOND FLOOR PLAN

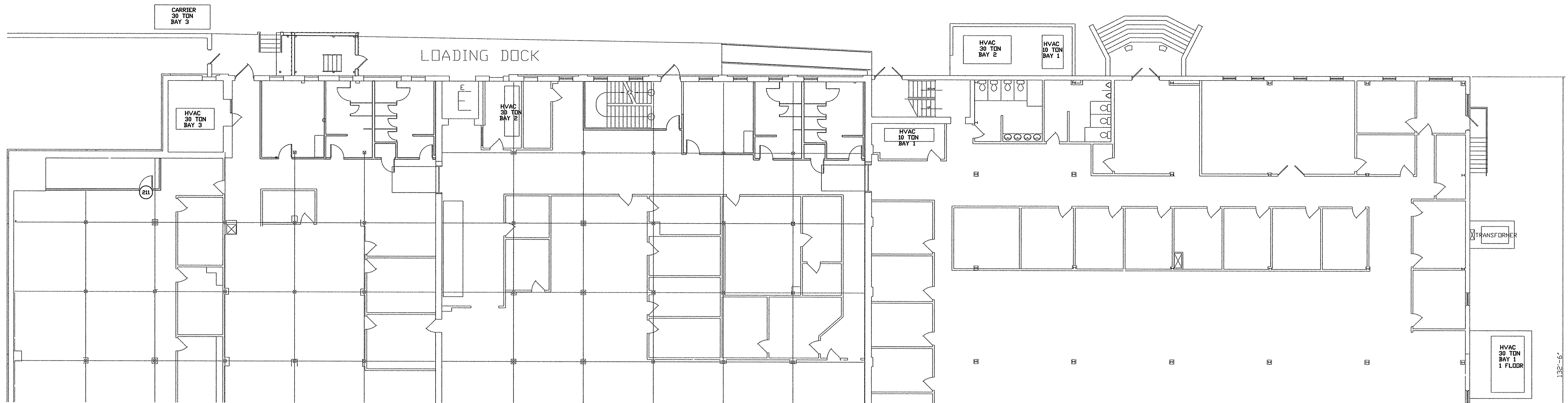
COMMONWEALTH CENTRE

FRANKLIN STREET

MARTINSVILLE, VIRGINIA

SHEET NO.

M-3



FIRST FLOOR PARTIAL PLAN
 SCALE 3/32" = 1'-0"

NOTES-CONTROLS RENOVATION

1. EXTENT OF THE WORK: BIDDER SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, CONTROLS, & DEVICES NEEDED TO PROVIDE A COMPLETE SYSTEM TESTED AND OPERATING AS SHOWN ON PLANS AND AS SPECIFIED.
2. COORDINATION: THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE BUILDING STRUCTURE AND WORK OF THE OTHER CONTRACTORS & INSTALLERS. THE CONTRACTOR SHALL INFORM OR SUPPLY THE OTHER TRADES WITH ALL APPLICABLE INFORMATION CONCERNING LOCATIONS AND SIZES OF ALL OPENINGS & CLEARANCES NEEDED FOR ALL EQPT, PIPING, & ACCESSORIES SO AS NOT TO HOLD UP BUILDING CONSTRUCTION.
3. COMPLIANCE: ALL WORK & MATERIALS SHALL CONFORM TO ALL APPLICABLE CODES, APPLICABLE PROVISIONS OF LATEST EDITION OF NATIONAL FIRE PROTECTION ASSOCIATION, LOCAL UTILITY REGULATIONS, GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION, LOCAL CODES AND MANUFACTURERS' WRITTEN INSTRUCTIONS.
4. SUBMITTALS: SUBMIT DRAWINGS AND PRODUCT INFORMATION WHICH INCLUDE COMPLETE SUBMITTALS OF ASSOCIATED SYSTEMS, PRODUCTS, AND ACCESSORIES IN ONE COMPLETE SUBMITTAL.
5. DRAWINGS: THESE DRAWINGS ARE ILLUSTRATIVE AND ONLY SHOW THE OVERALL ARRANGEMENT OF SYSTEMS AND WORK. IT IS NOT THE INTENT OF THE DRAWINGS TO INCLUDE EVERY ASPECT OF CONSTRUCTION.
6. ACCESS: LOCATE ALL EQUIPMENT, CONTROLS & DAMPERS IN POSITIONS W/ EASY ACCESS FOR SERVICE & ADJUSTMENT.
7. CLEANING MECHANICAL SYSTEMS SHALL BE PROVIDED FREE OF ALL DIRT AND FOREIGN MATERIALS. FURNISH TEMPORARY FILTERS FOR ANY EQUIPMENT OPERATED DURING CONSTRUCTION. SEAL OPENINGS IN THE EQUIPMENT, DUCTWORK AND PIPING UNTIL THEY ARE INSTALLED. REMOVE ALL UNUSED MATERIAL AND WASTE FROM THE JOB SITE RESULTING FROM THE INSTALLATION OF MECHANICAL SYSTEMS.
8. CONTROL WIRING: CONTROL WIRING FOR MECHANICAL EQUIPMENT SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR. ALL WIRING SHALL COMPLY WITH ALL APPLICABLE CODES, STANDARDS, REGULATIONS, & ELECTRICAL SPECIFICATIONS. CONTROL INSTALLATION TO BE DONE BY FIRM EXPERIENCED IN THE TYPE OF CONTROLS SPECIFIED AND SHOW PROOF OF PREVIOUS SUCCESSFUL INSTALLATIONS OF ANY CONTROL TYPES SPECIFIED IF REQUESTED.
9. SYSTEM NOISE: SYSTEMS SHALL FUNCTION WITHOUT ABNORMAL OR EXCESSIVE NOISE AND/OR VIBRATION.
10. TESTING & BALANCING THE COMPLETE HVAC SYSTEM SHALL BE TESTED, BALANCED & ADJUSTED BY A NEBB-CERTIFIED BALANCING FIRM WITH A MINIMUM OF THREE YEARS EXPERIENCE. A REPORT SHALL BE GIVEN TO THE PROJECT ENGINEER UPON COMPLETION OF WORK.
11. OPERATION & MAINTENANCE INSTRUCTIONS: PROVIDE THE OWNER WITH 2 COMPLETE SETS OF OPERATIONS AND MAINTENANCE INSTRUCTIONS FOR THE EQUIPMENT AND SYSTEMS PROVIDED. MANUALS PROVIDED WITH THE EQUIPMENT SHALL BE LEFT WITH THE EQUIPMENT. A COPY OF THESE DOCUMENTS SHALL BE INCLUDED WITH THE SETS GIVEN TO THE OWNER.
12. SYSTEM INSTRUCTION: THE MECHANICAL CONTRACTOR SHALL PROVIDE THE OWNER WITH UP TO 6 HOURS OF OPERATION & MAINTENANCE INSTRUCTION FOR ALL SYSTEMS PROVIDED BY THE MECHANICAL CONTRACTOR. THIS INSTRUCTION SHOULD BE LIMITED TO THE SAME WORK DAY.
13. GUARANTEED EQUIPMENT, MATERIALS, AND LABOR REQUIRED BY THESE DRAWINGS AND SPECIFICATIONS SHALL BE GUARANTEED TO BE FREE FROM DEFECTIVE MATERIALS FOR ONE (1) YEAR AFTER FINAL ACCEPTANCE OF THE PROJECT UNLESS SPECIFIED FOR A LONGER PERIOD IN OTHER PORTIONS OF THESE SPECIFICATIONS. DEFECTIVE MATERIALS OR WORKMANSHIP OCCURRING DURING THIS PERIOD SHALL BE CORRECTED AT NO ADDITIONAL COST. ANY GUARANTEE GIVEN BY THE MANUFACTURERS SHALL BE HONORED BY THE MANUFACTURER, MANUFACTURERS' REPRESENTATIVE, & INSTALLER FOR THE PERIOD STATED IN THE MANUFACTURERS' LITERATURE.
14. EXISTING HVAC UNITS FOR BAY 2 AND BAY 3 FIRST FLOOR SHALL HAVE THEIR PNEUMATIC CONTROLS REMOVED AND ELECTRONIC CONTROL SYSTEMS INSTALLED:
 - A. BAY 2--HVAC UNIT:
 - OUTDOOR UNIT: CARRIER 38AK-034-600
S/N 1993F41543
 - INDOOR UNIT: 460 VOLT, 3 PHASE, 50LRA
CARRIER 40RR034-007
S/N 0793F33944
 - THIS UNIT SHALL BE CONTROLLED BY A 7-DAY PROGRAMMABLE PROPORTIONAL DDC CONTROLLER WITH 2-STEP COOLING CONTROLS AND AN ANALOG 0-10 VDC OUTPUT FOR HEATING TO CONTROL A STEP CONTROLLER IN THE ELECTRIC DUCT HEATING COIL. TRANE MODEL NO. MP-541.
THE EXISTING OUTDOOR AIR DAMPER IN THE WALL SHALL BE CONTROLLED BY A STAND ALONE CO2 MODULATING SENSOR, WITH THE SENSOR LOCATED IN THE SPACE.
THE EXISTING BY-PASS DAMPER SHALL BE CONTROLLED BY A STAND ALONE ELECTRONIC STATIC PRESSURE CONTROLLER LOCATED ON THE SUPPLY DUCT IN THE MECH. RM.
 - B. BAY 3--HVAC UNIT:
 - OUTDOOR UNIT: CARRIER 38AK-034-600
S/N 0792F86960
 - INDOOR UNIT: 460 VOLT, 3 PHASE, 50LRA
CARRIER 40RR034-007
S/N 0892F86923
 - THIS UNIT SHALL BE CONTROLLED BY A 7-DAY PROGRAMMABLE PROPORTIONAL DDC CONTROLLER WITH 2-STEP COOLING CONTROLS AND AN ANALOG 0-10 VDC OUTPUT FOR HEATING TO CONTROL A STEP CONTROLLER IN THE ELECTRIC DUCT HEATING COIL. TRANE MODEL NO. MP-541.
THE EXISTING OUTDOOR AIR DAMPER IN THE WALL SHALL BE CONTROLLED BY A STAND ALONE CO2 MODULATING SENSOR, WITH THE SENSOR LOCATED IN THE SPACE.
THE EXISTING BY-PASS DAMPER SHALL BE CLOSED AND NOT USED.
- BOTH BAY 2 & 3 UNITS SHALL HAVE AN INTERLOCK TO VERIFY THAT THE RESPECTIVE AIR HANDLING UNIT FANS ARE OPERATING BEFORE THEIR CONDENSERS & COMPRESSORS CAN OPERATE. PROVIDE 110 VOLT POWER FROM NEAREST ELECTRICAL PANEL IN EACH AREA.

EDEN & ASSOCIATES, P.C.

1049 BROOKDALE STREET SUITE B
 MARTINSVILLE, VIRGINIA 24112
 VOICE 5276-632-6231
 FAX. 276-632-3648



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MECHANICAL FIRST FLOOR PARTIAL PLAN, NOTES

COMMONWEALTH CENTRE

FRANKLIN STREET

MARTINSVILLE, VIRGINIA

SHEET NO.

M-4

GENERAL NOTES:

- EXTENT OF THE WORK: BIDDER SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, CONTROLS, & DEVICES NEEDED TO PROVIDE A COMPLETE SYSTEM TESTED AND OPERATING AS SHOWN ON PLANS AND AS SPECIFIED.
- COORDINATION: THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE BUILDING STRUCTURE AND WORK OF THE OTHER CONTRACTORS & INSTALLERS. THE CONTRACTOR SHALL INFORM OR SUPPLY THE OTHER TRADES WITH ALL APPLICABLE INFORMATION CONCERNING LOCATIONS AND SIZES OF ALL OPENINGS & CLEARANCES NEEDED FOR ALL EQPT, PIPING, & ACCESSORIES SO AS NOT TO HOLD UP BUILDING CONSTRUCTION.
- COMPLIANCE: ALL WORK & MATERIALS SHALL CONFORM TO ALL APPLICABLE CODES, APPLICABLE PROVISIONS OF LATEST EDITION OF NATIONAL FIRE PROTECTION ASSOCIATION, LOCAL UTILITY REGULATIONS, GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION, LOCAL CODES AND MANUFACTURERS' WRITTEN INSTRUCTIONS.
- SUBMITTALS: SUBMIT DRAWINGS AND PRODUCT INFORMATION WHICH INCLUDE COMPLETE SUBMITTALS OF ASSOCIATED SYSTEMS, PRODUCTS, AND ACCESSORIES IN ONE COMPLETE SUBMITTAL.
- DRAWINGS: THESE DRAWINGS ARE ILLUSTRATIVE AND ONLY SHOW THE OVERALL ARRANGEMENT OF SYSTEMS AND WORK. IT IS NOT THE INTENT OF THE DRAWINGS TO INCLUDE EVERY ASPECT OF CONSTRUCTION.
- ACCESS: LOCATE ALL EQUIPMENT, CONTROLS & DAMPERS IN POSITIONS W/ EASY ACCESS FOR SERVICE & ADJUSTMENT.
- CLEANING: MECHANICAL SYSTEMS SHALL BE PROVIDED FREE OF ALL DIRT AND FOREIGN MATERIALS. FURNISH TEMPORARY FILTERS FOR ANY EQUIPMENT OPERATED DURING CONSTRUCTION. SEAL OPENINGS IN THE EQUIPMENT, DUCTWORK AND PIPING UNTIL THEY ARE INSTALLED. REMOVE ALL UNUSED MATERIAL AND WASTE FROM THE JOB SITE RESULTING FROM THE INSTALLATION OF MECHANICAL SYSTEMS.
- CONTROL WIRING: CONTROL WIRING FOR MECHANICAL EQUIPMENT SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR. ALL WIRING SHALL COMPLY WITH ALL APPLICABLE CODES, STANDARDS, REGULATIONS, & ELECTRICAL SPECIFICATIONS. CONTROL INSTALLATION TO BE DONE BY FIRM EXPERIENCED IN THE TYPE OF CONTROLS SPECIFIED AND SHOW PROOF OF PREVIOUS SUCCESSFUL INSTALLATIONS OF ANY CONTROL TYPES SPECIFIED IF REQUESTED.
- SYSTEM NOISE: SYSTEMS SHALL FUNCTION WITHOUT ABNORMAL OR EXCESSIVE NOISE AND/OR VIBRATION.
- TESTING & BALANCING: THE COMPLETE HVAC SYSTEM SHALL BE TESTED, BALANCED & ADJUSTED BY A NEBB-CERTIFIED BALANCING FIRM WITH A MINIMUM OF THREE YEARS EXPERIENCE. A REPORT SHALL BE GIVEN TO THE PROJECT ENGINEER UPON COMPLETION OF WORK.
- OPERATION & MAINTENANCE INSTRUCTIONS: PROVIDE THE OWNER WITH 2 COMPLETE SETS OF OPERATIONS AND MAINTENANCE INSTRUCTIONS FOR THE EQUIPMENT AND SYSTEMS PROVIDED. MANUALS PROVIDED WITH THE EQUIPMENT SHALL BE LEFT WITH THE EQUIPMENT. A COPY OF THESE DOCUMENTS SHALL BE INCLUDED WITH THE SETS GIVEN TO THE OWNER.
- SYSTEM INSTRUCTION: THE MECHANICAL CONTRACTOR SHALL PROVIDE THE OWNER WITH UP TO 6 HOURS OF OPERATION & MAINTENANCE INSTRUCTION FOR ALL SYSTEMS PROVIDED BY THE MECHANICAL CONTRACTOR. THIS INSTRUCTION SHOULD BE LIMITED TO THE SAME WORK DAY.
- GUARANTEE: EQUIPMENT, MATERIALS, AND LABOR REQUIRED BY THESE DRAWINGS AND SPECIFICATIONS SHALL BE GUARANTEED TO BE FREE FROM DEFECTIVE MATERIALS FOR ONE (1) YEAR AFTER FINAL ACCEPTANCE OF THE PROJECT UNLESS SPECIFIED FOR A LONGER PERIOD IN OTHER PORTIONS OF THESE SPECIFICATIONS. DEFECTIVE MATERIALS OR WORKMANSHIP OCCURRING DURING THIS PERIOD SHALL BE CORRECTED AT NO ADDITIONAL COST. ANY GUARANTEE GIVEN BY THE MANUFACTURERS SHALL BE HONORED (BY THE MANUFACTURER, MANUFACTURERS' REPRESENTATIVE, & INSTALLER) FOR THE PERIOD STATED IN THE MANUFACTURERS' LITERATURE.
- SQUARE & RECTANGULAR DUCTWORK:
 - GENERAL - DUCTWORK SHALL BE ZINC-COATED SHEET STEEL OR ALUMINUM, CONSTRUCTED AND INSTALLED AS RECOMMENDED BY THE LATEST EDITION OF SMACNA.
 - DUCT CLEARANCE SHALL BE ESTABLISHED AT THE JOB SITE BEFORE ANY DUCTS ARE FABRICATED.
 - MANUAL VOLUME CONTROL DAMPERS SHALL HAVE ACCESSIBLE OPERATING MECHANISM.
 - ANY DAMPERS IN SQUARE DUCT OVER 12" TO BE MANUFACTURED PARALLEL OR OPPOSED BLADE, COMPLETE W/ HAND QUADRANTS.
 - TURNING VANES SHALL BE PROVIDED IN ALL SQUARE ELBOWS. DOUBLE THICKNESS VANES TO BE PROVIDED IN DUCTWORK OVER 14".
 - PROVIDE FLEXIBLE DUCT CONNECTION BETWEEN THE SUPPLY AND RETURN DUCTS FROM AIR HANDLING EQUIPMENT.
 - ROUND DUCT TAKEOFFS IN SUPPLY ARE TO BE MADE WITH SIDE TAKEOFFS ONLY. NO SPIN-INS OR STAB-INS PERMITTED.
 - ALL CONTROL DAMPERS TO BE LOW LEAKAGE, PARALLEL OR OPPOSED BLADE, SPRING RETURN SHUT, W/ 24V ACTUATORS.
- ROUND DUCTWORK IS TO BE FACTORY MADE SPIRAL SINGLE WALL, AND HAVE SPIRAL LOCK SEAMS AS MANUFACTURED BY EASTERN SHEETMETAL, FOREMOST, OR SEMCO.
- SUPPORT DUCTWORK BY SUSPENDING FROM OVERHEAD STRUCTURE.
- SCHEDULE LISTED EQUIPMENT, CONTROLS, SYSTEMS, ACCESSORIES & AIR DEVICES: ANY OF THE ABOVE SPECIFIED ON THE HVAC SCHEDULE MAY BE SUBSTITUTED W/ APPROVED EQUALS PROVIDED THAT ALL IS EQUAL OR BETTER IN EVERY ASPECT. ANY SUBSTITUTED DEVICE MUST HAVE EQUAL OR BETTER PERFORMANCE / EFFICIENCY AND BE CERTIFIED BY THE ARI AND/OR ANY OTHER APPLICABLE STANDARDS. ANY CHANGE REQUIRED BY SUBSTITUTIONS SUCH AS BUT NOT LIMITED TO ELECTRICAL WIRING & ACCESSORIES, SPACE REQUIREMENTS, & ORIENTATION IS TO BE THE HVAC CONTRACTOR'S RESPONSIBILITY.

GENERAL NOTES: (CONT'D)

- FIRE DAMPERS: PROVIDE AND INSTALL 1-1/2 HOUR RATED UL FIRE RESISTANCE CLASSIFIED FIRE DAMPERS, WHERE SHOWN. ALL FIRE DAMPER CONSTRUCTION & INSTALLATION SHALL COMPLY WITH ALL APPLICABLE CODES & STANDARDS AND MUST ALSO CONFORM TO THE REQUIREMENTS OF UL 555. DAMPERS SHALL BE DYNAMIC TYPE AS MANUFACTURED BY RUSKIN OR EQUAL W/ SLEEVE & MOUNTING ANGLES. DAMPERS SHALL BE "STYLE B" W/ FIRE CURTAIN OUTSIDE OF THE AIR STREAM TO PREVENT EXCESSIVE PRESSURE DROP. PROVIDE & INSTALL ACCESS DOORS AT ALL FIRE DAMPERS.
- INSULATION & SEALANT:
 - THE FINISHED DUCT SYSTEM SHALL MEET THE REQUIREMENTS OF NFPA 90A & 90B. ALL MATERIALS USED SHALL NOT HAVE A COMPOSITE FLAME SPREAD RATING OF OVER 25 AND A SMOKE DEVELOPED RATING EXCEEDING 50.
 - DUCT WRAP INSULATION SHALL MEET THE REQUIREMENTS OF ASTM C 1290, TYPE III, TO MAXIMUM SERVICE TEMPERATURE OF 250°F. FACING MATERIAL SHALL MEET THE REQUIREMENTS OF ASTM C 1136, TYPE II, WHEN SURFACE BURNING CHARACTERISTICS ARE DETERMINED IN ACCORDANCE WITH ASTM 84 WITH THE FOIL SURFACE OF THE MATERIAL EXPOSED TO THE FLAME AS IT IS IN THE FINAL COMPOSITE.
 - ALL RETURN DUCTS SHALL BE INSULATED WITH 1" THK ACOUSTICAL DUCT LINER FROM RETURN DUCT ENTRANCE TO 2 FT. PAST FIRST ELBOW.
 - ALL CONCEALED LOW PRESSURE SUPPLY, RETURN, & RELIEF DUCTWORK SHALL BE INSULATED W/ 2" THICK DUCT WRAP INSULATION WITH 1 LB. DENSITY AND KRAFT PAPER VAPOR BARRIER RETARDER WITH A 2" MIN. STAPLING & TAPING ON ONE EDGE. ALL JOINTS SHALL BE SEALED W/ PRESSURE SENSITIVE TAPE MATCHING THE INSULATION FACING.
 - ALL INTERIOR EXPOSED RECTANGULAR DUCTWORK SHALL BE INSULATED WITH 2" DUCT BOARD W/ ALL-SERVICE JACKET, SHALL BE FINISHED W/ CLOTH JACKET; AND PAINTED THE COLOR SPECIFIED BY THE ARCHITECT.
 - ALL DUCTWORK IS TO BE SEALED WITH A WATER BASED SEALANT MEETING APPROPRIATE UL LISTINGS & ASTM REQUIREMENTS.
- CONTROL SYSTEMS: CONTROL INSTALLATION TO BE DONE BY FIRM EXPERIENCED IN THE INSTALLATION & START-UP OF CONTROLS SPECIFIED. CONTRACTOR SHALL SHOW PROOF OF PREVIOUS SUCCESSFUL INSTALLATIONS OF CONTROL TYPES SHOWN ON THESE DRAWINGS IF REQUESTED. HVAC CONTROL WIRING NOT TO EXCEED 24V, ANY HVAC RELATED WIRING OVER 24V TO BE DONE BY ELECTRICAL CONTRACTOR. ALL WIRING & ACCESSORIES TO BE INSTALLED IN ACCORDANCE WITH NEC & THE ELECTRICAL SPECIFICATIONS FOR THIS JOB.
- SUPPLY AIR FLEX. DUCT & ROUND DUCT SIZE SHALL MATCH THAT OF ASSOCIATED CEILING DIFFUSER NECK.
- FLEX DUCT RUNDOUT SHALL NOT EXCEED 8 FT. IN LENGTH.
- INSTALL DUCT ACCESS DOOR IN CLOSE PROXIMITY TO ALL 90° ELBOWS.
- DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSIONS.
- SEQUENCES OF OPERATION:
 - ROOFTOP UNITS:
 - SUPPLY FAN CONTROL: DDC CONTROLLER STARTS FAN TO RUN CONTINUOUSLY DURING OCCUPIED PERIODS. DDC CONTROLLER CYCLES FAN DURING UNOCCUPIED PERIODS.
 - OUTSIDE AIR DAMPER: DDC CONTROLLER CAUSES OUTSIDE AIR DAMPER TO MOVE TO 10% OF SCHEDULED MAXIMUM OUTSIDE AIR QUANTITY SETTING DURING OCCUPIED HOURS WHILE FAN IS OPERATING; AND TO MOVE TO FULL OPEN POSITION WHEN O.A. CONDITIONS ALLOW ECONOMIZER OPERATION BASED ON DIFFERENTIAL ENTHALPY. DURING UNOCCUPIED HOURS THE DAMPER SHALL BE CLOSED.
 - ENERGY CONSERVATION: UNIT-MOUNTED CO2 SENSOR, UPON DETECTING CO2 CONTENT IN SPACE IN EXCESS OF 9,000 PPM, OVERRIDES DDC CONTROLLER'S CONTROL OF OUTSIDE AIR DAMPER POSITION AND CAUSES OUTSIDE AIR DAMPER TO MOVE TO 100% OF SCHEDULED MAXIMUM OUTSIDE AIR QUANTITY SETTING WHEN FAN IS OPERATING. UPON SENSING CO2 CONTENT OF LESS THAN 9,000 PPM, CO2 SENSOR DEACTIVATES AND CONTROL OF OUTSIDE AIR DAMPER POSITION RETURNS TO DDC CONTROLLER.
 - SMOKE CONTROL: SMOKE DETECTOR, LOCATED IN RETURN OF UNIT, SIGNALS ALARM AND STOPS FAN WHEN PRODUCTS OF COMBUSTION ARE DETECTED IN AIRSTREAM.
 - COOLING MODE: DURING OCCUPIED HOURS, WHEN FAN IS RUNNING, SPACE-MOUNTED TEMPERATURE SENSOR ACTIVATES COOLING SYSTEM WHEN SPACE TEMPERATURE EXCEEDS 76°F; AND DEACTIVATES COOLING SYSTEM WHEN SPACE TEMPERATURE FALLS BELOW 73°F. DURING UNOCCUPIED HOURS, WITH FAN RUNNING, ZONE SENSOR ACTIVATES COOLING SYSTEM WHEN SPACE TEMPERATURE EXCEEDS 82°F; AND DEACTIVATES COOLING SYSTEM WHEN SPACE TEMPERATURE FALLS BELOW 79°F.
 - HEATING MODE:
 - PACKAGE ROOFTOP HEAT PUMP (RTU-1, RTU-3 THRU RTU-6; RTU-9 THRU RTU-12): DURING OCCUPIED HOURS, WITH FAN RUNNING, DDC CONTROLLER ACTIVATES HEAT PUMP WHEN SPACE TEMPERATURE FALLS BELOW 70°F; AND SHUTS OFF HEAT PUMP WHEN SPACE TEMPERATURE EXCEEDS 73°F. DURING UNOCCUPIED HOURS, WITH FAN RUNNING, DDC CONTROLLER ACTIVATES HEAT PUMP WHEN SPACE TEMPERATURE FALLS BELOW 65°F; AND DEACTIVATES HEAT PUMP WHEN SPACE TEMPERATURE REACHES 68°F. DURING OCCUPIED AND UNOCCUPIED HOURS, THE DDC CONTROLLER LOCKS OUT THE ELECTRIC RESISTANCE HEATER WHEN THE OUTSIDE AIR TEMPERATURE IS GREATER THAN 50°F.
 - PACKAGE ROOFTOP STRAIGHT COOLING/HEATING (RTU-2, RTU-7 & RTU-8): DURING OCCUPIED HOURS, WITH FAN RUNNING, DDC CONTROLLER ACTIVATES ELECTRIC RESISTANCE HEATER WHEN SPACE TEMPERATURE FALLS BELOW 70°F; AND DEACTIVATES HEATER WHEN SPACE TEMPERATURE EXCEEDS 73°F. DURING UNOCCUPIED HOURS, WITH FAN RUNNING, DDC CONTROLLER ACTIVATES HEATER WHEN SPACE TEMPERATURE FALLS BELOW 65°F; AND DEACTIVATES HEATER WHEN SPACE TEMPERATURE EXCEEDS 68°F.
 - PROGRAMMABLE THERMOSTAT: EACH RTU SHALL HAVE A WALL-MTD 7-DAY PROGRAMMABLE THERMOSTAT.

DESIGNATION	PACKAGED ROOFTOP UNITS											
	RTU-1 (HEAT PUMP)	RTU-2	RTU-3 (HEAT PUMP)	RTU-4 (HEAT PUMP)	RTU-5 (HEAT PUMP)	RTU-6 (HEAT PUMP)	RTU-7	RTU-8	RTU-9 (HEAT PUMP)	RTU-10 (HEAT PUMP)	RTU-11 (HEAT PUMP)	RTU-12 (HEAT PUMP)
MANUFACTURER	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE
AREA SERVED	2ND FL. BAY 1-EAST	2ND FL. BAY 1-WEST	2ND FL. BAY 2-EAST	2ND FL. BAY 2-WEST	2ND FL. BAY 3-EAST	2ND FL. BAY 3-WEST	2ND FL. BAY 1-EAST	2ND FL. BAY 1-WEST	2ND FL. BAY 2-EAST	2ND FL. BAY 2-WEST	2ND FL. BAY 3-EAST	2ND FL. BAY 3-WEST
MODEL NO.	WCH240B4	TCH300B4	WCH180B4	WCH240B4	WCH180B4	WCH240B4	TCD300B4	TCD300B4	WCD240B4	WCD240B4	WCD240B4	WCD240B4
VOLT/PHASE/HZ *	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60
DRIVE	BELT	BELT	BELT	BELT	BELT	BELT	BELT	BELT	BELT	BELT	BELT	BELT
CFM	8,900	9,300	6,900	9,700	6,800	9,700	10,600	7,100	8,700	7,100	8,900	8,900
HP	7-1/2	7-1/2	5	7-1/2	5	7-1/2	7-1/2	7-1/2	7-1/2	7-1/2	7-1/2	7-1/2
EXTERNAL S.P.-IN. W.G.	1-1/2	1-1/4	1-1/2	1-1/2	1-1/2	1-1/2	3/4	3/4	3/4	3/4	3/4	3/4
COOLING CAPACITIES												
E.A.T.-F DB/WB	76.4/65.1	78.2/64.9	78.4/65.0	77.8/64.6	78.4/65.10	77.7/64.5	78.2/64.9	77.7/64.6	78.3/65.0	77.5/64.4	78.3/65.0	77.5/64.4
L.A.T.-F DB/WB	60.9/57.4	59.4/55.8	62.4/57.2	56.0/55.9	62.3/57.2	59.2/56.0	59.5/55.9	59.2/55.6	59.7/56.3	60.2/56.5	58.8/55.6	60.4/56.6
TOTAL CAP'Y.- MBH	214.0	259.7	167.1	210.9	167.4	210.7	259.8	258.3	210.0	210.6	203.7	211.1
SENSIBLE CAP'Y.- MBH	173.3	194.4	121.9	165.3	121.5	167.1	194.8	193.7	163.0	167.2	154.4	168.8
MIN. OUTSIDE AIR- CFM	2,040	1,960	1,540	1,460	1,540	1,460	2,040	1,960	1,540	1,460	1,540	1,460
HEATING CAPACITIES												
HEATING E.A.T.-F DB	61.5	N/A	61.8	64.1	61.6	64.3	N/A	N/A	62.2	65.1	62.2	65.3
HEATING L.A.T.-F DB	75.2	N/A	76.2	79.1	76.2	79.1	N/A	N/A	77.5	79.3	78.9	79.2
TOTAL CAP'Y.- MBH	110.3	N/A	88.4	109.6	88.4	109.5	N/A	N/A	110.8	109.9	110.8	109.9
ELEC. RESISTANCE- HEATER												
TOTAL CAPACITY, KW	72.0 (2-STAGE)	72.0 (2-STAGE)	54.0 (2-STAGE)	72.0 (2-STAGE)	54.0 (2-STAGE)	72.0 (2-STAGE)	72.0 (2-STAGE)	72.0 (2-STAGE)	72.0 (2-STAGE)	72.0 (2-STAGE)	54.0 (2-STAGE)	54.0 (2-STAGE)
CAP'Y./KW, STAGE-1/STAGE-2	36.0/36.0	36.0/36.0	27.0/27.0	36.0/36.0	27.0/27.0	36.0/36.0	36.0/36.0	36.0/36.0	36.0/36.0	36.0/36.0	27.0/27.0	27.0/27.0
VOLT/PHASE/HZ *	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60
FILTER SIZE	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"

REMARKS:
 SINGLE-POINT POWER CONNECTION; FACTORY-INSTALLED ELECTRIC DISCONNECT; STANDARD DDC CONTROLLER; INTEGRATED ECONOMIZER W/ DIFFERENTIAL ENTHALPY CONTROL; PROVIDE CO2 SENSOR FOR FIELD INSTALLATION IN RTU RETURN SECTION FOR 3-POSITION MOTORIZED OUTSIDE AIR DAMPER CONTROL. PROVIDE W/ SMOKE DETECTOR INSTALLED IN RETURN. PROVIDE TWELVE (12) WALL-MTD 7-DAY PROGRAMMABLE THERMOSTATS. PROVIDE W/ ACCESS DOORS ON BOTH SIDES OF RTU. PROVIDE BAROMETRIC RELIEF DAMPER FOR FIELD INSTALLATION IN RETURN DUCT OF THOSE RTU'S W/ SIDE DUCT CONNECTIONS (THYCURB MODEL TR5BRH027B FOR 20-TON & 25-TON RTU'S).

* VERIFY VOLTAGE WITH ELECTRICAL DRAWINGS

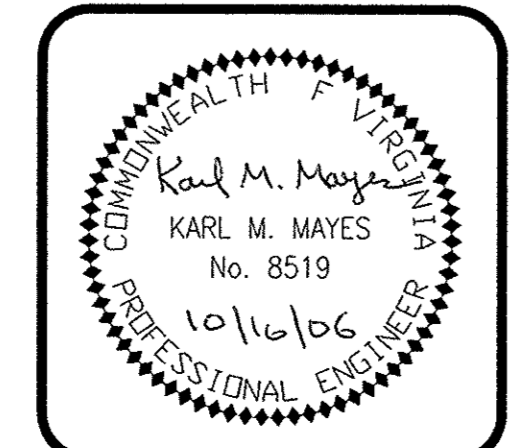
ABBREVIATIONS:

- AD ACCESS DOOR
- AFF ABOVE FINISHED FLOOR
- BOD BOTTOM OF DUCT
- DN DOWN
- EL ELEVATION
- F FIRE DAMPER

LEGEND:

- NEW-TO-EXISTING CONN. PT.
- SUPPLY DUCT SECTION
- RETURN, EXHAUST OR OUTSIDE AIR DUCT SECTION
- DUCT SIZE, INCHES, FIRST DIM. IS SIDE SHOWN
- FIRE DAMPER
- SQUARE ELBOW WITH MULTIPLE TURNING VANES
- ELBOW TURNING UP
- ELBOW TURNING DOWN
- ACCESS DOOR SIDE OR BOTTOM OF DUCT
- INLET OR OUTLET "MARK"/CFM
- NEW DUCT
- NEW DUCT HIDDEN
- DUCTLINER

EDEN & ASSOCIATES, P.C.
 1049 BROOKDALE STREET SUITE B
 MARTINSVILLE, VIRGINIA 24112
 VOICE 5276-632-6231
 FAX. 276-632-3648



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MECHANICAL ABBREVIATIONS, LEGEND, NOTES & SCHEDULES

COMMONWEALTH CENTRE

FRANKLIN STREET
 MARTINSVILLE, VIRGINIA

SHEET NO.
M-5

DIVISION 1: GENERAL REQUIREMENTS

- 1.1 CONTRACTORS FOR THIS PROJECT HAVE BEEN SELECTED FOR THEIR SPECIAL KNOWLEDGE AND EXPERIENCE IN THIS TYPE OF BUILDING CONSTRUCTION. THE DRAWINGS AND SPECIFICATIONS HAVE BEEN PREPARED AS COMPLETELY AS POSSIBLE. THEY ARE NOT FULLY DETAILED IN ALL RESPECTS, BUT ARE COMPLETE ENOUGH FOR AN EXPERT CONTRACTOR TO PRICE AND CONSTRUCT.
- 1.2 THE CONTRACTORS PERFORMING THE SITEWORK, STRUCTURAL, PLUMBING, MECHANICAL AND ELECTRICAL PORTIONS OF THE WORK ARE HEREWIT ESPECIALLY CAUTIONED THAT THEIR WORK INCLUDES THE DESIGN AND CONSTRUCTION OF ALL SYSTEMS REQUIRED TO FURNISH AND INSTALL ALL EQUIPMENT, MATERIALS, LABOR AND ANY OTHER ITEMS REQUIRED TO DELIVER TO THE OWNER THE SYSTEMS COMPLETE AND OPERABLE IN ALL RESPECTS.
- 1.3 WHEN THE DRAWINGS AND SPECIFICATIONS DO NOT COVER PARTICULAR ITEMS, THE SUBCONTRACTOR SHALL ASK THE GENERAL CONTRACTOR FOR THE METHOD AND INTENT OF PERFORMING THIS WORK. IN ABSENCE OF INQUIRIES, IT WILL BE ASSUMED THE SUBCONTRACTOR HAS INCLUDED A CONTINGENCY FACTOR FOR ALL NECESSARY ITEMS TO PROVIDE A COMPLETE SYSTEM AND IN STRICT ACCORDANCE WITH ALL CODE REQUIREMENTS.
- 1.4 DRAWINGS AND SPECIFICATIONS
 - 1.4.1 DRAWINGS AND SPECIFICATIONS ARE COMPLIMENTARY AND WHAT IS CALLED FOR BY ONE SHALL BE AS BINDING AS IF CALLED FOR BY BOTH. SHOULD THE DRAWINGS, SPECIFICATIONS AND/OR OTHER INSTRUCTIONS BE CONTRADICTIONARY IN ANY PARTICULAR, OR SHOULD THERE BE APPARENT ERRORS IN EITHER, OR SHOULD THERE BE ANY DOUBT AS TO THE MEANING OF EITHER, THE CONTRACTOR SHALL REFER THE MATTER TO THE OWNER WHOSE DECISION THEREON SHALL BE CONCLUSIVE.
 - 1.4.2 FOR CLARENCE OF REFERENCE, THE SPECIFICATIONS ARE SEPARATED IN DIVISIONS EACH BEARING A TITLE. OTHER DIVISIONS AND TITLES MAY APPEAR THROUGHOUT THE CONTRACT DOCUMENTS. SUCH FACTS SHALL NOT BE DEEMED TO BE NOR SHALL THEY BE THE BASIS FOR ANY REQUEST THAT THE OWNER MAKE A DESIGNATION AS TO THE LIMITS OF ANY PHASE OF THE PROJECT, OR AS TO WHAT TRADE SHALL PERFORM ANCE PART THEREOF.
 - 1.4.3 THE CONTRACTOR SHALL KEEP ONE (1) COPY OF ALL DRAWINGS AND SPECIFICATIONS AT THE SITE, IN GOOD ORDER, AVAILABLE TO THE OWNER.
- 1.5 ALL WORK SHALL COMPLY WITH ALL LOCAL CODES WHICH ARE CURRENTLY IN EFFECT. IN ADDITION, ALL WORK SHALL COMPLY WITH APPLICABLE PORTIONS OF VIRGINIA UNIFORM STATEWIDE BUILDING CODE (VUSBC 2003), N.E.C., AND OTHER CODES AND STANDARDS.
- 1.6 THE CONTRACTOR SHALL PERFORM AND FURNISH ALL LABOR, SUPERVISION, SERVICES, MATERIALS, EQUIPMENT, TOOLS, FUELS, SCAFFOLDS, TRANSPORTATION, MATERIALS STORAGE, INSURANCE AND ALL OTHER ITEMS NECESSARY TO COMPLETE WORK IDENTIFIED. THE WORK SHALL BE PERFORMED IN A GOOD AND WORKMANLY MANNER STRICTLY IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, CONSISTING OF THE CONTRACT AND THE DRAWINGS, SPECIFICATIONS AND ALL SUBSEQUENTLY AND DULY ISSUED MODIFICATIONS THERETO.
 - 1.6.1 BUILDING PERMITS SHALL BE APPLIED FOR AND OBTAINED BY THE GENERAL CONTRACTOR. ALL COST ASSOCIATED WITH BUILDING PERMITS SHALL BE PAID BY THE OWNER. THE CONTRACTOR SHALL NOTIFY OWNER OF COST OF BUILDING PERMIT.
 - 1.6.2 MECHANICAL AND ELECTRICAL SUBCONTRACTORS ARE RESPONSIBLE FOR SECURING AND PAYING FOR MECHANICAL AND ELECTRICAL BUILDING PERMITS, WHEN REQUIRED.
 - 1.6.3 ALL COST ASSOCIATED WITH CONTRACTOR BUSINESS LICENSE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND HIS SUBCONTRACTORS.
 - 1.6.4 CONTRACTOR SHALL CONNECT ANY TEMPORARY WATER SERVICE TO THE PROPOSED WATER SERVICE. CONTRACTOR SHALL ARRANGE AND PAY FOR THE INSTALLATION OF ANY TEMPORARY PIPING, BACK FLOW PREVENTER, HOSES AND OTHER EQUIPMENT NEEDED TO SUPPLY ALL WATER USED DURING CONSTRUCTION OF THE PROJECT.
 - 1.6.5 THE OWNER SHALL PAY FOR ALL WATER AND SEWER CONNECTION FEES AND AVAILABILITY FEES
 - 1.6.6 ALL EQUIPMENT AND CONNECTION TO PROPOSED ELECTRIC SERVICE REQUIRED FOR TEMPORARY LIGHTING AND POWER IN CONNECTION WITH THE WORK OF THE GENERAL CONTRACTOR SUBCONTRACTOR SHALL BE PROVIDED AND PAID FOR BY THE GENERAL CONTRACTOR.
- 1.7 THE CONTRACTOR SHALL PROMPTLY NOTIFY THE DESIGNER OF ALL ERRORS, OMISSIONS, OR DISCREPANCIES UNTIL INSTRUCTIONS ARE GIVEN BY THE DESIGNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ERRONEOUSLY INSTALLED AFTER NOTICE AND PRIOR TO RECEIVING SAID INSTRUCTIONS.
- 1.8 THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS AT THE PROJECT SITE AND MAKE MINOR ADJUSTMENTS AS MAY BE NECESSARY.
- 1.9 THE CONTRACTOR'S SUPERINTENDENT SHALL GIVE SPECIAL ATTENTION TO ALL PHASES OF WORK NEARING COMPLETION AND SHALL REMAIN ON THE JOB IN ACTIVE CONTROL UNTIL ALL PHASES OF THE WORK HAVE BEEN COMPLETED, TESTED, CLEANED AND ACCEPTED BY THE OWNER OR HIS REPRESENTATIVE.
- 1.10 THE CONTRACTOR SHALL PROVIDE TEMPORARY BARRICADES AND OTHER PROTECTION REQUIRED BY LOCAL AUTHORITIES AND AS REQUIRED TO PROTECT THE SAFETY OF PERSONS ON THE PROJECT SITE.
- 1.11 THE CONTRACTOR SHALL PROVIDE, PAY FOR AND MAINTAIN SUITABLE TOILET FACILITIES FOR THE USE OF THE WORKMEN AT ALL TIMES, INCLUDING SUITABLE ENCLOSURES AROUND TEMPORARY LATRINES. TEMPORARY TOILET FACILITIES SHALL BE REMOVED WHEN NO LONGER REQUIRED, AND THE DAMAGE CAUSED TO THE SURROUNDING AREA SHALL BE REPAIRED.
- 1.12 SUBSTITUTIONS: NO SUBSTITUTIONS OR VARIATIONS FROM THE SPECIFICATIONS AND DRAWINGS, OTHER THAN THOSE WHICH ARE APPROVED BY THE OWNER, WILL BE PERMITTED AFTER THE AGREEMENT IS SIGNED, EXCEPT THAT WHERE "OR EQUAL" IS USED, THE CONTRACTOR SHALL HAVE THE RIGHT, AFTER ENTERING INTO THE AGREEMENT, TO REQUEST THE OWNER'S APPROVAL OF A SUBSTITUTE MATERIAL GENERALLY CONSIDERED TO BE EQUAL TO THAT NAMED IN THE SPECIFICATIONS AND/OR DRAWINGS. REQUESTS FOR APPROVAL OF ANY SUBSTITUTE MUST BE SUBMITTED TO THE OWNER, TOGETHER WITH ALL NECESSARY SUPPORTING DATA. THE OWNER SHALL BE THE SOLE JUDGE OF THE SUITABILITY, ACCEPTABILITY AND EQUALITY OF THE SUBSTITUTE MATERIAL AND MAY ACCEPT OR REJECT THE SAME. IF THE SUBSTITUTION OF ANY MATERIAL OR EQUIPMENT INCREASES COSTS IN ANY WAY, THESE COSTS SHALL BE BORNE BY THE CONTRACTOR.
- 1.13 ASSIGNMENT: THE CONTRACTOR SHALL NOT ASSIGN THIS CONTRACT, OR ANY MONIES DUE OR TO BECOME DUE HEREUNDER, OR SUBCONTRACT ANY SUBSTANTIAL PART OF THE WORK WITHOUT PRIOR WRITTEN CONSENT OF THE OWNER; THE CONTRACTOR SHALL NOT BE RELIEVED OF ITS DUTIES AND OBLIGATIONS HEREUNDER BY ANY ASSIGNMENT OR SUBCONTRACT AND SHALL BE AND REMAIN AS FULLY RESPONSIBLE AS LIABLE FOR THE ACTS AND OMISSIONS OF ITS ASSIGNEES AND SUBCONTRACTORS, AND ALL PERSONS DIRECTLY OR INDIRECTLY EMPLOYEES BY THEM, AS SUBCONTRACTOR IS FOR ITS OWN ACTS AND OMISSIONS AND THOSE OF ITS AGENTS, SERVANTS AND EMPLOYEES.
- 1.14 COMPLIANCE: THE CONTRACTOR SHALL, AT ITS OWN EXPENSE, OBTAIN ALL NECESSARY LICENSES PERTAINING TO THE WORK AND COMPLY WITH ALL STATUTES, ORDINANCES, RULES, REGULATIONS, AND ORDERS OF ANY GOVERNMENTAL OR QUASI-GOVERNMENTAL AUTHORITY HAVING JURISDICTION OVER THE WORK OR THE PERFORMANCE THEREOF, INCLUDING, BUT NOT LIMITED TO, THOSE RELATING TO SAFETY, WAGES, DISCRIMINATION, AND EQUAL OPPORTUNITY. THE CONTRACTOR SHALL PROMPTLY CORRECT ANY VIOLATIONS OF SUCH STATUTES, ORDINANCES, RULES, REGULATIONS, AND ORDERS COMMITTED BY THE CONTRACTOR. THE CONTRACTOR SHALL RECEIVE AND RESPOND TO, AND SHALL DEFEND INDEMNIFY AND SAVE HARMLESS THE OWNER AND ITS AGENTS, SERVANTS AND EMPLOYEES FROM AND AGAINST ANY LOSS, LIABILITY OR EXPENSE ARISING FROM, ANY SUCH VIOLATIONS AND ANY CITATIONS, ASSESSMENTS, FINES OR PENALTIES RESULTING THEREFROM.
- 1.15 SAFETY: THE CONTRACTOR AGREES THAT THE PREVENTION OF ACCIDENTS TO WORKMEN AND ANY PERSONS ENGAGED UPON OR IN THE VICINITY OF THE WORK IS ITS RESPONSIBILITY. THE CONTRACTOR SHALL ESTABLISH AND IMPLEMENT SAFETY MEASURES, POLICIES, STANDARDS CONFORMING TO THIS REQUIRED OR RECOMMENDED BY GOVERNMENTAL AUTHORITIES HAVING JURISDICTION AND BY THE OWNER, INCLUDING, BUT NOT LIMITED TO ANY REQUIREMENTS IMPOSED BY THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL COMPLY WITH THE REASONABLE RECOMMENDATIONS OF INSURANCE COMPANIES HAVING AN INTEREST IN THE PROJECT, AND SHALL STOP ANY PART OF THE WORK WHICH THE OWNER DEEMS UNSAFE UNTIL CORRECTIVE MEASURES SATISFACTORY

- TO THE OWNER SHALL HAVE BEEN TAKEN. THE OWNER'S FAILURE TO STOP THE CONTRACTOR'S UNSAFE PRACTICES SHALL NOT RELIEVE THE CONTRACTOR OF ITS RESPONSIBILITY THEREOF.
- 1.16.1 THE CONTRACTOR SHALL MAINTAIN PHYSICAL CONDITIONS AND EMPLOYEE PERFORMANCE ON THE PROJECT SITE DURING THE CONSTRUCTION TO CONFORM WITH ALL LOCAL AND FEDERAL LAWS, RULES AND REGULATIONS INCLUDING THOSE COVERED BY THE OCCUPATIONAL SAFETY AND HEALTH ACT - CURRENT EDITION.
- 1.17 CLEANING UP: THE CONTRACTOR SHALL, AT ITS OWN EXPENSE:
 - 1.17.1 KEEP THE PREMISES AT ALL TIMES FREE FROM WASTE MATERIALS, PACKAGING AND OTHER DEBRIS ACCUMULATED IN EACH AREA, SWEEP AND OTHERWISE MAKE THE WORK AND ITS IMMEDIATE VICINITY "BROOM-CLEAN".
 - .1 THE CONTRACTOR SHALL CLEAN CONSTRUCTION AREAS AT THE END OF EACH WORKING DAY.
 - 1.17.2 REMOVAL OF ITS TOOLS, EQUIPMENT, SCAFFOLDS, TEMPORARY STRUCTURES AND SURPLUS MATERIALS AS DIRECTED BY THE OWNER AND AT THE COMPLETION OF THE WORK; AND
 - 1.17.3 AT FINAL INSPECTION, CLEAN AND PREPARE THE WORK FOR ACCEPTANCE OF THE OWNER.
- 1.18 QUALITY: THE CONTRACTOR SHALL PROVIDE QUALITY MATERIALS AND WORKMANSHIP CONFORMING TO THE CONTRACT REQUIREMENTS AND GOOD INDUSTRY PRACTICES. THE CONTRACTOR SHALL PROVIDE PROPER FACILITIES AND OPPORTUNITY AT ALL TIMES FOR THE INSPECTION OF THE WORK BY THE OWNER AND ITS REPRESENTATIVES. THE CONTRACTOR SHALL, AFTER RECEIVING NOTICE OF FROM THE OWNER, PROCEED TO TAKE DOWN AND REMOVE PROMPTLY ALL PORTIONS OF THE WORK WHICH THE OWNER SHALL HAVE CONDEMNED AS UNSOUND, IMPROPER, OR IN ANY WAY FAILING TO CONFORM TO THE CONTRACT DOCUMENTS AND SHALL REPLACE THE SAME WITH PROPER AND SATISFACTORY WORK AND MAKE GOOD ALL WORK DAMAGED OR DESTROYED.
- 1.19 ALLOWANCES: SPECIFIED ALLOWANCES SHALL BE ACTUAL COST BASED ON SUPPLIERS INVOICE PRICE TO THE CONTRACTOR.
- 1.20 LIENS: THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND SAVE HARMLESS THE OWNER FROM ANY LIEN OR CLAIM OF LIEN FILED OR MAINTAINED BY ANY LABORER, MATERIALMAN, SUBCONTRACTOR, OR OTHER PERSON DIRECTLY OR INDIRECTLY ACTING FOR, THROUGH, OR UNDER THE CONTRACTOR, AGAINST THE PROJECT OR ANY PART THEREOF OR ANY INTEREST THEREIN OR AGAINST ANY MONEYS DUE OR BECOME DUE FROM THE OWNER TO THE CONTRACTOR.
- 1.21 DAMAGE: THE OWNER SHALL NOT BE LIABLE OR RESPONSIBLE FOR LOSS OR DAMAGE TO THE EQUIPMENT, TOOLS, FACILITIES, OR OTHER PERSONAL PROPERTY OWNED, RENTED, OR USED BY THE CONTRACTOR, OR ANYONE EXPLODE BY THE CONTRACTOR, IN THE PERFORMANCE OF THE WORK AND THE CONTRACTOR SHALL MAINTAIN SUCH INSURANCE AND TAKE SUCH PROTECTIVE ACTION AS IT DEEMS DESIRABLE WITH RESPECT TO SUCH PROPERTY. THE OWNER SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS OR DAMAGE TO THE WORK, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTION OR RESTORATION OF ANY SUCH LOSS OR DAMAGE TO THE OPERATIONS TO THE CONTRACTOR, OR IT SUBCONTRACTORS, AGENTS, SERVANTS, OR EMPLOYEE THEREUNDER. THE CONTRACTOR SHALL TAKE REASONABLE PRECAUTIONS TO PROTECT THE WORK FROM LOSS OR DAMAGE PRIOR TO ACCEPTANCE BY THE OWNER.
- 1.22 GUARANTEES: THE CONTRACTOR WARRANTS AND GUARANTEES THE WORK TO THE FULL EXTENT PROVIDED FOR IN THE CONTRACT DOCUMENTS. WITHOUT LIMITING THE FOREGOING OR ANOTHER ABILITY OR OBLIGATION WITH RESPECT TO THE WORK, THE CONTRACTOR SHALL, AT ITS EXPENSE AND BY REASON OF ITS EXPRESS WARRANTY, MAKE GOOD AN FAULTY, DEFECTIVE, OR IMPROPER PARTS OF THE WORK DISCOVERED WITHIN ONE (1) YEAR, RULES OTHERWISE SPECIFIED BY THE MANUFACTURER, FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT. COPIES OF ALL MANUFACTURER'S WARRANTIES SHALL BE PROVIDED TO THE OWNER.
- 1.23 PERFORMANCE: THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE OWNER BEFORE THE ARRIVAL OF FORCES OR DELIVERY OF MATERIALS AND EQUIPMENT OF THE PROJECT SITE, BEFORE ANY SUBSTANTIAL CHANGE IN ITS FORCES, AND GENRE LEAVING THE PROJECT SITE FOR ANY REASON.
- 1.24 SHIP DRAINS, PRODUCT DATA AND SAMPLES:
 - 1.24.1 THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING FOUR (4) SHOP DRAWINGS (AS INDICATED HEREIN) WATER REVIEWING, TO THE DESIGNER FOR REVIEW AND RETURN TO THE CONTRACTOR FOR DISTRIBUTION.
- 1.25 CATALOG NUMBERS AN MANUFACTURER'S PRODUCTS, INDICATED ON THE DRAWINGS ARE FOR STANDARDS OF QUALITY AND DESIGN ONLY. "OR EQUAL" SUBSTITUTION APPROVALS MUST BE OBTAINED BY THE CONTRACTOR FROM THE OWNER BEFORE USE OR INSTALLATION.
- 1.26 INSURANCE:
 - 1.26.1 WORKER'S COMPENSATION INSURANCE:
 - .1 THE CONTRACTOR SHALL SECURE AND KEEP IN EFFECT SUCH INSURANCE AS WILL PROTECT HIM FROM CLAIMS UNDER ALL WORKER'S COMPENSATION LAWS, INCLUDING OCCUPATION DISEASE.
 - .2 CERTIFICATES OF SUCH INSURANCE SHALL BE FILED BY THE CONTRACTOR WITH THE OWNER AND SHALL BE SUBJECT TO THE OWNERS APPROVAL AS TO CARRIER AND ADEQUACY PRIOR TO COMMENCEMENT OF WORK.
 - .3 THE CONTRACTOR SHALL ASCERTAIN THAT ALL SUBCONTRACTORS SECURE AND KEEP IN EFFECT SIMILAR INSURANCE COVERING THEIR EMPLOYEES.
 - 1.26.3 LIABILITY INSURANCE:
 - .1 THE CONTRACTOR SHALL PROTECT, INDEMNIFY AND SAVE OWNER HARMLESS FROM AND AGAINST ANY AND ALL CLAIMS, DEMANDS, ACTIONS, CAUSES OF ACTION, SUITS, JUDGMENTS, LIABILITY, EXPENSES INCLUDING ATTORNEY FEES, AND DAMAGES ARISING OR GROWING OUT OF ANY ACT, FAILURE TO ACT, OR NEGLIGENCE ON THE PART OF THE CONTRACTOR, HIS SUBCONTRACTORS, AGENTS OR EMPLOYEES OR IN A ANY MANNER GROWING OUT OF OR CONNECTED WITH THE PROJECT.
 - .2 THE CONTRACTOR SHALL MAINTAIN AND PAY FOR COMPREHENSIVE GENERAL LIABILITY INSURANCE, INCLUDING CONTRACTUAL LIABILITY AND COMPREHENSIVE AUTOMOBILE INSURANCE, IN COMPANY OR COMPANIES SATISFACTORY TO THE OWNER, AND FILE WITH THE OWNER CERTIFICATES OF SUCH INSURANCE WITH LIMITS OF AT LEAST THE FOLLOWING:
 - A. COMPREHENSIVE GENERAL LIABILITY INSURANCE:
 - BODILY INJURY AND PROPERTY - \$1,000,000 COMBINED SINGLE LIMIT
 - B. COMPREHENSIVE AUTOMOBILE LIABILITY INSURANCE:
 - BODILY INJURY - \$250,000 EACH PERSON
 - PROPERTY DAMAGE - \$500,000 EACH ACCIDENT
 - C. UMBRELLA LIABILITY INSURANCE:
 - PROJECTS OVER \$500,000 - \$5,000,000 AGGREGATE
 - PROJECTS OVER \$100,000 AND LESS THAN \$500,000 - \$2,000,000 AGGREGATE
 - PROJECT LESS THAN \$1000,000 - \$1,000,000 AGGREGATE
- 1.26.2 ALL PROJECTS - \$1,000,000 PER OCCURRENCE
- .3 THE INSURANCE CERTIFICATE MUST:
 - A. SHOW THAT THE CONTRACTUAL LIABILITY COVERAGE IS APPLICABLE TO THE AGREEMENT, AND MUST SET FORTH THE ADDRESS OF THE SITE TO WHICH SUCH PROVISION APPLIES.
 - B. SET FORTH IN FULL THE HOLD HARMLESS AGREEMENT SPECIFIED ABOVE.

- C. INCLUDE A PROVISION THAT THE OWNER WILL BE GIVEN THIRTY (30) DAYS WRITTEN NOTICE OF CANCELLATION, NON-RENEWAL OR MATERIAL CHANGES OF INSURANCE COVERAGE.
- .4 NO WORK SHALL BE PERFORMED UNDER THIS AGREEMENT UNLESS THE INSURANCE COVERAGE REQUIRED HERE UNDER SHALL BE IN FULL FORCE AND EFFECT. IF AT ANY TIME DURING THE PERFORMANCE OF THIS CONTRACT THE OWNER SHALL DEEM IT NECESSARY TO INCREASE THE LIMITS OF LIABILITY SET FORTH ABOVE THE OWNER SHALL NOTIFY THE CONTRACTOR OF THE NEW REQUIREMENTS AND THE CONTRACTOR SHALL WITHIN FIFTEEN (15) DAYS THEREAFTER FURNISH THE OWNER DUPLICATE COPIES OF A RIDER OR ENDORSEMENT IN COMPLIANCE WITH SUCH NEW REQUIREMENTS. THE OWNER SHALL PAY FOR THE COST THEREOF.
- .5 THE FACT THAT INSURANCE COVERAGES ARE REQUIRED AS SPECIFIED HEREIN SHALL NOT PREJUDICE IN ANY WAY THE OWNER'S CLAIM AGAINST THE CONTRACTOR FOR TOTAL INDEMNITY AGAINST ANY AND ALL LOSSES AS HEREINAFTER STATED.
- 1.27 APPLICATION FOR PAYMENT:
 - 1.27.1 THE CONTRACTOR'S APPLICATION FOR PAYMENT SHALL BE PREPARED AND PRESENTED TO THE OWNER ON "APPLICATION AND CERTIFICATE FOR PAYMENT" FORMS (AIA DOCUMENT G702 AND G703).
 - 1.27.2 AMOUNT PAYABLE MONTHLY IS TO BE NINETY-FIVE PERCENT (95%) OF AMOUNT OF WORK INCORPORATED IN THE BUILDING INCLUDING MATERIALS STORED ON THE PROJECT SITE ON THE FIRST DAY OF THE MONTH.
 - 1.27.3 FINAL PAYMENT: A FINAL PAYMENT, CONSISTING OF THE UNPAID BALANCE OF THE CONTRACT, SHALL BE MADE WITHIN THIRTY (30) DAYS AFTER THE LAST OF THE FOLLOWING TO OCCUR:
 - .1 COMPLETION OF THE WORK BY THE CONTRACTOR.
 - .2 ACCEPTANCE THEREOF BY THE OWNER.
 - .3 FURNISHING OF EVIDENCE SATISFACTORY TO THE OWNER THAT THERE ARE NO CLAIMS, OBLIGATIONS OR LIENS OUTSTANDING OR UNSATISFIED FOR LABOR, SERVICES, MATERIALS, EQUIPMENT, TAXES, OR OTHER ITEMS PERFORMED, FURNISHED OR INCURRED IN CONNECTION WITH THE WORK.
 - .4 DELIVERY OF ALL GUARANTEES, WARRANTIES, BONDS, INSTRUCTION MANUALS, AS-BUILT DRAWINGS AND SIMILAR ITEMS REQUIRED OF THE CONTRACTOR OR ITS SUPPLIERS OR SUBCONTRACTORS.
- 1.28 AS-BUILT DOCUMENTS: THE CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND SHOP DRAWINGS SHOWING CHANGES IN WORK FOR AS-BUILT PURPOSES. THESE DOCUMENTS SHALL BE TURNED OVER TO THE OWNER AT THE COMPLETION OF THE PROJECT.
- 1.29 PROJECT CLOSE-OUT REQUIREMENTS:
 - 1.29.1 INSPECTION PROCEDURES: UPON RECEIPT OF CONTRACTOR'S REQUEST, THE OWNER WILL EITHER PROCEED WITH FINAL INSPECTION, NOTING ANY ITEMS WHICH ARE TO BE CORRECTED OR COMPLETED.
 - 1.29.2 PROCEDURES AT FINAL ACCEPTANCE: UPON RECEIPT OF CONTRACTOR'S NOTICE THAT WORK HAS BEEN COMPLETED, INCLUDING PUNCH LIST ITEMS RESULTING FROM EARLIER INSPECTIONS, THE OWNER WILL ADVISE CONTRACTOR OF WORK NOT COMPLETED OR OBLIGATIONS NOT FULLFILLED AS REQUIRED FOR FINAL ACCEPTANCE. IF NECESSARY, PROCEDURE WILL BE REPEATED. FINAL PAYMENT WILL BE WITHHELD IF WORK IS NOT COMPLETED, CLEANED AND ACCEPTABLE FOR OCCUPANCY.
 - 1.29.3 FINAL CLEANING: AT CLOSE OUT TIME, CLEAN OR RECLEAN ENTIRE WORK TO NORMAL LEVEL FOR "FIRST CLASS" MAINTENANCE / CLOSING OF BUILDING PROJECTS OF A SIMILAR NATURE. REMOVE NON-PERMANENT PROTECTION AND LABELS, POLISH GLASS, CLEAN EXPOSED FINISHES, TOUCH UP MINOR FINISH DAMAGE, CLEAN OR REPLACE FILTERS OF MECHANICAL SYSTEMS, REMOVE DEBRIS AND BROOM-CLEAN NON-COATED SPACES, SANITIZE PLUMBING FACILITIES, CLEAN LIGHT FIXTURES AND REPLACE BURNED-OUT/ DIMMED LAMPS, SWEEP AND WASH PAVED AREAS, CLEAN-UP YARDS AND GROUNDS, AND PERFORM SIMILAR CLEANUP OPERATIONS NEEDED TO PRODUCE "CLEAN" CONDITION AS JUDGED BY OWNER. CLEANING SHALL BE SUITABLE FOR IMMEDIATE OCCUPANCY BY OWNER.
 - 1.29.4 AT TIME OF COMPLETION, CONTRACTOR SHALL FURNISH THE OWNER A LOOSE LEAF BOOK CONTAINING OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL MECHANICAL AND ELECTRICAL EQUIPMENT IN THE PROJECT ALONG WITH THE NAMES AND ADDRESSES OF THE APPLICABLE SUBCONTRACTORS AND SUPPLIERS.
- 1.30 ALTERATIONS:
 - 1.30.1 ALTERATIONS SHALL BE AS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL DO ALL NECESSARY DEMOLITION OR REMOVAL OF EXISTING WORK AS REQUIRED IN CONNECTION WITH THIS PROJECT, INCLUDING SHARING, BRACING, ETC., AND REMOVAL OF UNWANTED MATERIAL AND DEBRIS FROM THE PROJECT SITE. DEBRIS SHALL BE KEPT DAMP TO KEEP DOWN DUST.
 - 1.30.2 PORTIONS OF THE EXISTING STRUCTURE WHERE EXISTING WORK IS TO BE DEMOLISHED OR REMOVED, AND WHERE NEW WORK IS TO BE DONE, CONNECTIONS MADE, MATERIALS HANDLED, OR EQUIPMENT MOVED AND RELOCATED, SHALL BE TEMPORARILY PROTECTED. TEMPORARY PROTECTION SHALL BE SUCH THAT THE INTERIOR OF THE EXISTING STRUCTURE WILL AT TIMES BE PROTECTED FROM DUST AND WEATHER INCLEMENCY, AND INTERIOR HEAT CONSERVED. SUITABLE TEMPORARY DUST PROOF BARRIER PARTITIONS WITH HANG DOORS SHALL BE PROVIDED IN THE EXISTING STRUCTURE WHERE AND AS DIRECTED AND APPROVED BY THE OWNER'S REPRESENTATIVE. TEMPORARY OPENINGS IN WALL SHALL BE PROTECTED BY TEMPORARY PLYWOOD CLOSURES. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING STRUCTURE OR CONTENTS BY REASON OF THE INSUFFICIENCY OF SUCH PROTECTION.
 - 1.30.3 WHERE ALTERATIONS OCCUR, OR NEW AND OLD WORK JOIN, THE IMMEDIATE ADJACENT SURFACES, SHALL BE CUT, REMOVED, PATCHED, REPAIRED OR REFINISHED, AND LEFT IN AS GOOD A CONDITION AS EXISTING PRIOR TO THE COMMENCING OF THE WORK. THE MATERIALS AND WORKMANSHIP EMPLOYED IN THE ALTERATIONS INVOLVING NEW CONSTRUCTION, UNLESS OTHERWISE SHOWN OR SPECIFIED, SHALL CONFORM TO THAT OF THE ORIGINAL WORK. EACH CONTRACTOR SHALL PERFORM THAT PORTION OF THE ALTERATION WORK WHICH IS GENERALLY PERFORMED BY HIS TRADES AND SUBCONTRACTORS.
 - 1.30.4 WHERE REQUIRED BY THE DRAWINGS OR SPECIFICATIONS, CERTAIN MATERIALS AND EQUIPMENT SHALL BE RELOCATED AS SHOWN OR SPECIFIED. REFINISHING OF CERTAIN EXISTING SURFACES SHALL BE AS HEREINAFTER SPECIFIED. ALL RELOCATED MATERIALS AND EQUIPMENT SHALL BE REPAIRED AND REFINISHED AS NECESSARY TO LEAVE THE FINISHED WORK IN GOOD CONDITION.
 - 1.30.5 SALVAGED MATERIALS ACCRUING FROM THE WORK WRECKED OR REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS OR DRAWINGS TO REMAIN THE PROPERTY OF THE OWNER AND SHALL BE REMOVED BY HIM FROM THE PROJECT SITE. SALVAGED MATERIAL SPECIFIED OR NOTED ON THE DRAWINGS TO BE RETAINED BY THE OWNER, SHALL BE PROTECTED AND STORED ON PROJECT SITE WHERE DIRECTED.
- 1.30.6 SCHEDULING OF ALTERATIONS AND DEMOLITION WORK:
 - .1 BEFORE COMMENCING ANY ALTERATIONS, REMOVAL AND DEMOLITION WORK, THE CONTRACTOR SHALL PREPARE AND SUBMIT FOR APPROVAL BY THE OWNER'S REPRESENTATIVE A SCHEDULE SHOWING THE ORDER AND THE COMPLETION DATES OF THE VARIOUS PARTS OF THIS WORK. IN PREPARING THE SCHEDULE THE CONTRACTOR SHALL BE AWARE THAT THE BUILDING WILL REMAIN IN FULL OPERATION DURING THE ENTIRE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE REQUIRED PROTECTION TO ALLOW THIS TO OCCUR.
 - .2 BEFORE STARTING ANY WORK RELATING TO EXISTING UTILITIES (ELECTRICAL, SEWER, WATER, HEAT, AIR CONDITIONING, ETC.) THAT WILL TEMPORARILY DISCONTINUE OR DISRUPT SERVICE TO THE EXISTING BUILDING, THE CONTRACTOR WILL BE REQUIRED TO GIVE 24 HOURS NOTICE TO OWNER AN OBTAIN THEIR APPROVAL.

DIVISION 5: METALS

- 1.1 STRUCTURAL STEEL:
 - 1.1.1 STEEL COLUMN: SHALL MEET ASTM A36. ALL STEEL MEMBERS, EXCEPT IN CONNECTION MATERIAL AND SHELF ANGLES, SHALL BE FURNISHED IN ONE PIECE WITHOUT SPLICING, EXCEPT AS OTHERWISE NOTED OR APPROVED BY THE OWNER.
 - 1.1.2 SQUARE AND RECTANGULAR TUBING SHALL MEET ASTM A500 GRADE B. ROUND STEEL PIPE SHALL MEET ASTM A501. ALL OTHER STRUCTURAL STEEL SHALL MEET ASTM A36. ALL STEEL MEMBERS, EXCEPT IN CONNECTION MATERIAL AND SHELF ANGLES, SHALL BE FURNISHED IN ONE PIECE WITHOUT SPLICING, EXCEPT AS OTHERWISE NOTED OR APPROVED BY THE OWNER.
 - 1.1.3 ALL BEAMS, COLUMNS, ANGLES AND PLATES SHALL BE ASTM A36 (SUBMITTAL REQUIRED).
 - 1.1.4 STRUCTURAL PIPE COLUMNS SHALL BE ASTM A501 (SUBMITTAL REQUIRED).
 - 1.1.5 STRUCTURAL TUBE COLUMNS SHALL BE ASTM A500, GRADE B (SUBMITTAL REQUIRED).
 - 1.1.6 HIGH-STRENGTH BOLTS: ASTM A325.
 - 1.1.7 GROUT: "MASTER-FLO 715" (NON-METALLIC) GROUT AS MANUFACTURED BY THE MASTER BUILDERS COMPANY OR EQUAL.
 - 1.1.8 SHOP PAINT: ONE (1) COAT MANUFACTURER'S STANDARD PRIMER OR EQUAL.
- 2.2 STEEL BAR JOISTS:
 - 2.2.1 FURNISH, FABRICATE AND ERECT ALL STEEL JOISTS IN CONFORMANCE WITH THE STANDARD SPECIFICATION FOR OPEN-WEB STEEL JOISTS (K-SERIES) AS ADOPTED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
 - 2.2.2 PROVIDE EXTENDED ENDS, WHERE REQUIRED OR SHOWN, WITH A LOAD CARRYING CAPACITY AT LEAST TO THE LOADS SHOWN ON THE DRAWINGS.
 - 2.2.3 STEEL: SHALL CONFORM TO THE S.J.I. STANDARD SPECIFICATIONS.
 - 2.2.4 STRUCTURAL BOLTS: SHALL CONFORM TO ASTM A325.
 - 2.2.5 ANCHOR BOLTS: SHOLL CONFORM TO ASTM A307.
 - 2.2.6 STRUCTURAL WELDING: SHALL CONFORM TO THE CODE FOR WELDING IN BUILDING CONSTRUCTION, AWS D1.0.09, PUBLISHED BY THE AMERICAN WELDING SOCIETY.
 - 2.2.7 SHOP PAINT: ONE (1) COOT MANUFACTURER'S STANDARD PRIMER OR EQUAL.
 - 2.2.8 BRIDGING: SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS UNLESS OTHERWISE SHOWN ON DRAWINGS.
 - 2.2.9 SHOP PAINT: PAINT ALL STEEL JOISTS AND ACCESSORIES WITH ONE (1) COAT OF MANUFACTURER'S STANDARD PRIMER CONFORMING TO THE PERFORMANCE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
 - 2.2.10 SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
- 3.1 STEEL DECKING OVER STEEL BAR JOIST:
 - 3.1.1 STEEL ROOF DECK OVER STEEL BAR JOIST: SHALL BE INTERLOCKING RIB-TYPE PREFABRICATED SHEET STEEL UNITS; VULCRAFT TYPE 1.5B, 22GAUGE AND 1 1/2" DEEP, OR EQUAL.
 - 3.1.2 STEEL DECK OVER METAL TRUSSES: SHALL BE INTERLOCKING RIB-TYPE POINTED PREFABRICATED SHEET UNITS, VULCRAFT 1" DEEP AND 22 GOUGE. SEE STRUCTURAL DRAWINGS FOR LOCATIONS.
 - 3.1.3 STEEL DECK AND ACCESSORIES: SHALL BE THOROUGHLY CLEANED, THEN RECEIVE A PHOSPHATE TREATMENT FOLLOWED BY TWO (2) COATS OF BAKED-ON RUST-RESISTANT PRIMER IN STRICT ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
 - 3.1.4 MATERIALS AND DESIGN SHALL CONFORM TO THE REQUIREMENTS OF AISI SPECIFICATIONS FOR THE DESIGN OF LIGHT GAUGE COLD FORMED STEEL STRUCTURAL MEMBERS AND THE BASIC DESIGN SPECIFICATIONS FOR STEEL DECK CONSTRUCTION AS ADOPTED BY THE STEEL DECK INSTITUTE. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
- 4.1 MISCELLANEOUS METALS:
 - 4.1.1 MATERIALS:
 - .1 METAL SURFACES: FOR FABRICATION OF THE WORK IN THIS SECTION WHICH WILL BE EXPOSED TO VIEW, USE ONLY THOSE MATERIALS WHICH ARE SMOOTH AND FREE FROM SURFACE BLEMISHES INCLUDING PITTING, SEAM MARKS, ROLLER MARKS, ROLLED TRADE NAMES AND ROUGHNESS.
 - .2 STANDARDS: ALL MATERIALS SHALL COMPLY WITH:
 - STEEL PLATES, SHAPES AND BARS - ASTM A36
 - STEEL PLATES TO BE BENT OR COLD FORMED - ASTM A283, GRADE C
 - STEEL TUBING, HOT-FORMED, WELDED OR SEAMLESS - ASTM A501
 - STEEL BARS AND BAR-SIZE SHAPES - ASTM A306, GRADE 65 OR ASTM A36.
 - .3 SCREWS, NUTS, WASHERS, AND OTHER MISCELLANEOUS FASTENING DEVICES USED IN FABRICATION TO BE ALUMINUM, OR OTHER NON-CORROSIVE MATERIALS COMPATIBLE WITH FINISH MATERIAL AND OF SUFFICIENT STRENGTH TO PERFORM THE FUNCTIONS FOR WHICH THEY ARE USED. EXPOSED SCREWS TO BE SEMIRECESSED OVAL HEAD, PHILLIPS RECESS, NEATLY SPACED.
 - .4 SHOP PAINT: ONE (1) COAT MANUFACTURER'S STANDARD PRIMER OR EQUAL.
 - .5 SHOP PAINT: TNE-MEC #99-6, GREEN METAL PRIMER, OR STEEL STRUCTURES PAINTING COUNCIL PAINT #13.64, OR EQUAL.
 - 4.2 FRAMING MATERIALS:
 - 4.2.1 ALL LIGHTWEIGHT STEEL FRAMING MEMBERS AND FURRING CHANNELS SHALL BE 16 GAUGE MINIMUM FOR EXTERIOR BEARING WALLS AND 25 GAUGE MINIMUM FOR INTERIOR NON-BEARING PARTITIONS BASE STEEL AND SHALL BE MANUFACTURED FROM STEEL, MADE IN ACCORDANCE TO ASTM SPECIFICATION C645, MANUFACTURED BY DIETRICH, DALE/INCOR INDUSTRIES, OR EQUAL.
 - .1 SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

NOTE: PLAN AND SECTION INDICATES 3 5/8" AND 6" METAL STUDS FOR DIMENSIONING PURPOSES; CONTRACTOR, AT HIS OPTION, MAY USE EITHER 3 1/2" OR 3 5/8" METAL STUDS.

ROUGH CARPENTRY - SECTION 06100

- 1.0 LUMBER MATERIAL
 - A. ALL LUMBER SHALL BE IDENTIFIED BY OFFICIAL GRADE MARK.
 - B. ALL FRAMING LUMBER IN CONTACT WITH MASONRY, CONCRETE, DAMP WET SURFACES, THE GROUND, OR IN EXTERIOR LOCATIONS, SHALL BE PRESSURE TREATED FOR GROUND CONTACT. PROVIDE 15# FELT SLIP SHEET BETWEEN LUMBER AND MASONRY OR CONCRETE.
 - C. FASCIA, EXTERIOR TRIM WORK, AND MOLDINGS SHALL BE CLEAR HEART REDWOOD. FINGER JOINTED MATERIAL IS NOT ACCEPTABLE. NAIL WITH STAINLESS STEEL NAILS.
 - D. WALL FRAMING SHALL BE KILN DRIED, #2, SYP OR SPF
 - E. ROOF AND STRUCTURAL FRAMING SHALL BE KILN DRIED, #2, SYP ONLY.

1.1 PLYWOOD MATERIALS

- A. PLYWOOD SHALL BEAR OFFICIAL, GRADE MARKS OF THE AMERICAN PLYWOOD ASSOCIATION (APA).
- B. INSTALL EXTERIOR WALL SHEATHING WITH CONTINUOUS BLOCKING BEHIND ALL JOINTS.
- C. 15/32" APA, RATED SHEATHING, 32/16, EXPOSURE.
- D. 8D NAILS, AT 6" SPACING AT EDGES AND 12" AT INTERMEDIATES.
- E. ROOF SHEATHING SHALL BE:
 - .1 19/32" APA, RATED SHEATHING, 40/20, EXTERIOR, EXPOSURE 1.
 - .2 NAIL EDGES WITH 10D NAILS AT 6" SPACING, AND INTERMEDIATES AT 12"
 - .3 LEAVE GAPS AT ALL JOINTS: 1/4" AT PANEL EDGES, AND 1/16" AT ENDS.
 - .4 STAGGER BUTT JOINTS, AND USE PANEL CLIPS BETWEEN SPANS.
- 1.2 GENERAL
 - A. FASTENERS NOT NOTED ELSEWHERE SHALL CONFORM TO THE FOLLOWING:
 - .1 ALL EXTERIOR FASTENERS AND ACCESSORIES SHALL BE HOT DIP GALVANIZED
 - .2 BOLTS SHALL BE EQUIPPED WITH WASHERS AT NUT AND BOLT HEAD. EXTERIOR ITEMS TO BE HOT DIPPED GALVANIZED.
 - B. PROVIDE AND INSTALL PREFORMED GALVANIZED METAL STRAP ANCHORS AT THE FOLLOWING LOCATIONS:
 - 1. ANCHOR RAFTER OR TRUSSES TO TOP PLATE: MAX. SPACING 24" ON CENTER.
 - 2. ANCHOR TOP PLATES TO STUDS. MAX SPACING 4' ON CENTER.
 - 3. ANCHOR BASE PLATE & FOUNDATION TO STUDS. MAX. SPACING 4' ON CENTER.
 - 4. ALL FRAMING SHALL EXCEED THE MINIMUM STANDARDS OF IBC.
 - C. PROVIDE ALL NECESSARY WOODBUCKS, GROUNDS, BLOCKING AND STRIPPING AS NECESSARY FOR THE APPLICATION OF FINISHED SURFACES, DOOR, WINDOWS AND OTHER COMPONENTS, AND AS REQUIRED FOR A COMPLETE JOB.

WOODWORK- SECTION 06400

- 1.0 STANDARDS
 - A. ALL WORK SHALL BE IN ACCORDANCE WITH AWI CUSTOM GRADE, UNLESS NOTED OTHERWISE. PROVISIONS IN THE CONTRACT DOCUMENTS, WHICH ARE MORE STRINGENT, SHALL GOVERN.

WATERPROOFING - SECTION 07100

- 1.0 DAMPPROOFING MATERIALS
 - A. FOUNDATION WALL AND CAVITY WALL DAMPPROOFING COATING SHALL BE TYPE 3, ASPHALT EMULSION DAMPPROOFING
- 2.0 APPLICATION OF DAMPPROOFING
 - A. APPLY TWO COATS OF DAMPPROOFING TO EXTERIOR SURFACES OF ALL EXTERIOR BRICK AND CONCRETE FOUNDATION WALLS BELOW GRADE. COAT ALL STEEL BELOW GRADE.
 - B. EXTEND COATING FROM 4" BELOW FINISH GRADE TO OUTSIDE OF FOOTING.

BUILDING INSULATION - SECTION 07200

- 1.0 FIBERGLASS INSULATION
 - METAL BUILDING INSULATION TO BE REINFORCED VINYL FACED
- 1.1 INSULATION MATERIALS SHALL BE FLEXIBLE FIBERGLASS BATTS OR BLANKETS, WITH F525 VAPOR MEMBRANE HAVING A MINIMUM RATING AS DETERMINED BY LOCAL CONDITIONS OR OF R-30 (CEILING) AND R-11 OR R-19 (WALLS) AS DETERMINED BY MINWIA. MATERIAL SHALL CONFORM TO ASTM C665, TYPE I, CLASS A AND ASTM E84.
- 1.2 ALL INSULATION MATERIALS INCLUDING FACINGS, SUCH AS VAPOR BARRIERS OR BREATHER PAPERS SHALL HAVE A FLAME-SPEED RATING NOT TO EXCEED 25 AND A SMOKE DENSITY NOT TO EXCEED 450.
- 1.3 SAFING INSULATION SHALL BE U.S. GYPSUM CO. THERMAFIBER MINERAL FIBER, REGULAR COLOR, VAPOR RETARDING FOIL-FACED, WITH GALVANIZED STEEL SAFING CLIPS.
- 1.4 CUT AND FIT INSULATION MATERIALS AROUND PIPES, CONDUITS, OUTLET BOXES, ETC., AS NECESSARY TO MAINTAIN THE INTEGRITY OF THE INSULATION. WHERE PIPES ARE INSTALLED IN SPACES TO RECEIVE INSULATION, PLACE INSULATION BETWEEN EXTERIOR WALL AND THE PIPE, COMPRESSING INSULATION AS NECESSARY.
- 1.5 AT WALL AND CEILING AREAS INSTALL INSULATION BETWEEN FRAMING MEMBERS WITH FLANGES CONTINUOUSLY TIGHT AGAINST FRAMING MEMBERS AND ENDS TIGHTLY BUTTED.
- 1.6 INSTALL SAFING INSULATION OF PROPER SIZE ON SAFING CLIPS SPACE AS NEEDED, 24" O.C. MAXIMUM, IN SAFE-OF AREA BETWEEN WALLS AND SLABS, LEAVING NO VOIDS. COMPRESS AND INSTALL ON WIRE HANGERS IN ALL OPENINGS IN FLOOR SLABS TO COMPLETELY SEAL GROUND TELEPHONE CABLE, DUCTS, PIPES, CONDUITS OR OTHER UTILITIES. WHERE INDICATED, AND IF APPLICABLE, INSTALL AT TOP OF STUD WALLS TERMINATING AT METAL DECKING.
- 2.0 BATT INSULATION
 - A. ACCEPTABLE MANUFACTURERS: JOHNS MANVILLE APPROVED EQUAL.
 - B. INSULATION LEFT EXPOSED IN PLENUMS, CEILINGS, AND SOFFITS OR NOT COVERED BY SUBSEQUENT CONSTRUCTION: FRK FOIL-FACED FIBERGLASS BATTS HAVING A PERM RATING OF 0.10 MAXIMUM; FLAME SPREAD OF 25 OR LESS WHEN TESTED IN ACCORD WITH ASTM E84-98.
 - C. INSULATION COVERED BY SUBSEQUENT CONSTRUCTION: FIBERGLASS BATTS, SCRIM FOIL-FACED HAVING A PERM RATING OF 0.50 MAXIMUM FOR WALLS; UNFACED BATTS FOR CEILINGS AND SOFFITS, WIDTH EQUAL TO FRAMING SPACING.
 - D. R-VALUES:
 - WALLS: R-19 OR R13 @ 2 X 4 BEARING WALL CONSTRUCTION
 - ROOF/CEILINGS AND SOFFITS: R-30

CAULKING AND SEALANTS - SECTION 07900

- 1.0 PRODUCTS
 - A. ACRYLIC SEALANT AT INTERIOR DOOR AND WINDOW PERIMETERS, SMALL PENETRATIONS AND JOINING OF MATERIALS.
 - B. SILICONE SEALANT AT GLAZING AND SMALL FINISHED MATERIAL JOINTS AND CRACKS SUCH AS PLASTIC LAMINATE JOINTS.
 - C. NON-SAG POLYURETHANE SEALANT SHALL BE USED AT EXTERIOR LOCATIONS, INTERIOR WALL EXPANSION AND CONTROL JOINTS AND WHERE MECHANICAL PIPING PASSES THROUGH WALLS. COI OR SH-1 MATCH

MEMBER

EDÉN & ASSOCIATES, P.C.
 1049 BROOKDALE STREET SUITE B
 MARTINSVILLE, VIRGINIA 24112
 VOICE 276-632-6231
 FAX 276-632-3648

COMMONWEALTH OF VIRGINIA
 PROFESSIONAL ENGINEER
 No. 013818

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SPECIFICATIONS FOR
COMMONWEALTH CENTRE
 MARTINSVILLE, VIRGINIA
 FRANKLIN STREET

SHEET NO.
SP-1

- D. SELF-LEVELING POLYURETHANE SEALANT AT JOINTS IN FLOORING, TILE & PAVEMENTS.
- E. NON-SAG POLYURETHANE PAVEMENT SEALANT AT VERTICAL CURB JOINTS.
- 2.0 APPLICATION
- A. INSTALL MANUFACTURER'S PRIMER ON ALL SURFACES TO RECEIVE SEALANT. SANDBLAST IF REQUIRED FOR ADHESION.
- B. CAULK ALL JOINTS AROUND OPENING FRAMES, EXPANSION JOINTS AND OTHER JOINTS. PREVENT LEAKING, AND AIR INFILTRATION.
- C. DEPTH OF SEALANT IN A JOINT SHALL BE NOT LESS THAN JOINT WIDTH OR 1/4", WHICHEVER IS GREATER. USE BACKER RODS.
- D. INSTALL SEALANT WITH BACKER ROD, AT ALL EXPANSION JOINT AND BETWEEN DISSIMILAR MATERIALS ON THE EXTERIOR.

HOLLOW METAL DOORS & FRAMES - SECTION 08100

- 1.0 FLUSH DOORS
- A. DOORS SHALL BE 18-GAUGE, SOUND-DEADENED AND INSULATED.
1. DOOR TOPS AND BOTTOMS SHALL BE CLOSED AND TOPS OF EXTERIOR DOORS SHALL BE FLUSH AND SEALED.
2. DOORS SHALL BE FULLY WELDED SEAMLESS.
- B. LABELED DOORS SHALL BEAR UNDERWRITERS LABORATORIES (UL) LABEL.
- C. ALL EXTERIOR DOORS SHALL BE GALVANIZED.
- 1.1 DOOR FRAMES
- A. EXTERIOR FRAMES SHALL BE 14 GAUGE, GALVANIZED.
- B. INTERIOR FRAMES SHALL BE 16 GAUGE.
- C. MITER HEADS AND JAMBS TO A HAIRLINE JOINT, FULLY AND CONTINUOUSLY WELD AND GRIND SMOOTH.
- 1.2 HOLLOW METAL DOOR FRAMES: SHALL BE SERIES 400, 16 GAUGE STEEL BY AMWELD OR STEELCRAFT OR EQUAL. JAMBS SHALL BE CONSTRUCTED TO SET ON FINISHED FLOOR. THERMAL PLASTIC RUBBER MUTES SHALL BE SHIPPED ATTACHED TO LOCK JAMB.
- A. FRAME SHALL BE FULLY MORTISED AND REINFORCED TO RECEIVE STANDARD WEIGHT HINGES AND LOCK STRIKES. NO WELDED-ON HINGES SHALL BE ALLOWED.
- B. HOLLOW METAL FRAMES SHALL BE BONDERIZED AND RECEIVE ONE (1) SHOP COAT OF BAKED-ON SYNTHETIC PRIMER.
- C. FIRE-RATED HOLLOW METAL FRAMES SHALL BEAR THE UL LABEL DESIGNATING THE APPROPRIATE RATING FOR CLASS OF OPENING AS INDICATED ON THE DRAWINGS.
- D. KNOCK-DOWN FRAMES ARE NOT ACCEPTABLE.
- E. OTHER HOLLOW METAL FRAMES: PROVIDE 16 GAUGE STEEL FRAME FOR WINDOWS AS INDICATED ON THE DRAWINGS, BY AMWELD, STEELCRAFT OR EQUAL.
- 1.3 METAL INSULATED DOORS: SHALL BE FLUSH AMWELD 1500 SERIES OR STEELCRAFT, PROVIDE LABEL AND DESIGN TYPE "F" (FLUSH), OR "N2" (VIEW GLASS), AS INDICATED ON THE DRAWINGS, OR EQUAL. 1 3/4" STEEL DOOR WITH FACE SHEETS OF NO. 18 GAUGE COLD ROLLED, LEVELED SHEET STEEL, WITH FULL INSULATION CORE FILLER.
- A. DOOR SHALL BE MORTISED AND REINFORCED FOR HINGES, LOCKSET, EXIT DEVICE AND CLOSER TO ALLOW FIELD APPLICATION.
- B. DOORS SHALL BE CHEMICALLY WASHED, RINSED, AND DRIED PRIOR TO RECEIVING ONE (1) PRIMER COAT OF AMWELD PRIMER.
- C. COORDINATE DOOR LENGTH WITH HANDICAPPED THRESHOLD REQUIREMENTS.
- 2.0 WOOD DOORS: SHALL BE 1 3/4" FLUSH SOLID CORE WITH 1/8" HARDWOOD VENEERED FACES AS MANUFACTURED BY MOHAWK FLUSH DOOR, INC. OR EQUAL.
- A. ALL WOOD DOORS SHALL MEET OR EXCEED NWDA INDUSTRY STANDARD 1.S.1 AND THE REQUIREMENTS OF AWI 1300 QUALITY STANDARDS FOR PREMIUM GRADE DOORS.
- B. CORE SHALL BE PARTICLE CORE WITH AVERAGE DENSITY OF 28 TO 32 LBS. PER CUBIC FOOT.
- C. FIRE-RATED DOORS: SHALL BE CLASS C 3/4-HOUR DOORS, OR 1/3-HOUR DOORS AND BEARING THE UL LABEL DESIGNATING THIS RATING.
- D. CROSS BANDS SHALL HAVE 1/16" THICK FIRE RETARDANT CROSS BANDS. THE CORE, CROSS BANDS AND FACE VENEERS SHALL BE BONDED WITH TYPE 1 ADHESIVE PER CS-35 AS AMENDED.
- E. THE WOOD SPECIES SHALL BE FREE FROM DEFECT AND BE OF SELECT GRAIN PATTERNING AND COLORATION SUITED FOR STAINING.
- F. CUTOUTS FOR LIGHTS AND LOUVERS:
1. EDGE OF OPENING SHALL BE NO NEARER THAN 6" TO ANY EDGE OR TOP OF THE DOOR, AND NO NEARER THAN 6" ABOVE THE BOTTOM OF THE DOOR, WHERE KICKPLATES OCCUR, BOTTOM OF OPENING SHALL BE 2" ABOVE KICKPLATE.
2. THERE SHALL NOT BE LESS THAN 6" BETWEEN ANY LIGHT AND/OR LOUVER, CUTOUTS FOR LOCKS, CLOSURES, OR OTHER HARDWARE CUTOUTS.
3. NO SINGLE CUTOUT AREA (LOUVER AREA OR GLASS AREA) SHALL EXCEED 40% OF THE AREA OF THE DOOR AND NEITHER SHALL THE CUTOUT EXCEED ONE-HALF THE HEIGHT OF THE DOOR.
- G. DELIVERY: ALL DOORS SHALL BE INDIVIDUALLY PROTECTED DURING TRANSIT BY POLYETHYLENE BAG, STORAGE, AND HANDLING TO PREVENT DETERIORATION, DAMAGE, AND SOILING.

FINISH HARDWARE - SECTION 08700

- 1.0 MATERIALS
- A. PROVIDE NON-REMOVABLE PINS FOR HINGES ON OUT-SWINGING, EXTERIOR DOORS; ALL OTHERS SHALL HAVE NON-RISING PINS.
- B. INSTALL WEATHERSTRIPPING ON ALL EXTERIOR DOORS.
- C. INSTALL HARDWARE AS SHOWN ON PLANS.
- 2.0 MOUNTING
- A. MOUNT HARDWARE AS FOLLOWS, UNLESS OTHERWISE REQUIRED BY CODE:
1. LOCK & LATCH SETS: KNOBS AND/OR LEVERS CENTERED 36" ABOVE FLOOR.
2. DOOR PULLS: PULLS CENTERED 38" ABOVE FLOOR (EXCEPT WHEN A COMPONENT OF PANIC EXIT HARDWARE); ALSO CENTERED 2-3/4" FROM EDGE OF DOOR, UNLESS STYLE DIMENSION NECESSITATES ANOTHER LOCATION.
3. PUSH PLATES: CENTERED 42" ABOVE FLOOR.

PAINTING - SECTION 09900

- 1.0 PRIMING
- A. ALL HOLLOW METAL FRAMES SHALL RECEIVE ONE FIELD PRIME COAT.
- B. PAINT ALL EXPOSED SURFACES, UNLESS FACTORY FINISHED OR NOTED OTHERWISE.
- 2.0 EXTERIOR METALS
- A. EXTERIOR FERROUS METAL: ONE PRIMER COAT, TWO FINISH COATS.
- B. EXTERIOR GALVANIZED METAL: ONE PRIMER COAT, TWO FINISH COATS.
- 3.0 INTERIOR METALS
- A. INTERIOR FERROUS METAL: (TOLL-O-FECT); ONE PRIMER COAT, TWO FINISH COATS.
- B. INTERIOR GALVANIZED METAL: ONE PRIMER COAT, TWO FINISH COATS.
- 4.0 GYPSUM BOARD
- A. INTERIOR: (TOLL-O-FECT); ONE PRIMER COAT, TWO FINISH COATS.
- B. EXTERIOR: (ENAMEL COATED); ONE COAT PRIMER, TWO FINISH COATS.
- 5.0 MASONRY
- A. SHERWIN WILLIAMS LOXON COATINGS
- .1 INTERIOR: PRIME WITH BLOCK FILL, TWO FINISH COATS
- .2 EXTERIOR: PRIME WITH BLOCK FILL, TWO FINISH COATS

MISCELLANEOUS SPECIALTIES - SECTION 10050

- 1.0 TOILET ACCESSORIES
- A. MIRRORS: PROVIDE 1 PER LAVATORY. MOUNT 40" FLOOR TO BOTTOM OF MIRROR.
- B. PAPER TOWEL DISPENSERS: PROVIDE 1 PER LAVATORY. MOUNT 42" FLOOR TO BOTTOM OF UNIT OR ADD EXCELERATOR ELECTRIC HAND DRYER.
- C. TOILET PAPER DISPENSERS: PROVIDE 1 PER TOILET. MOUNT 24" ABOVE FLOOR.
- D. PIPE PROTECTORS: CONTRIACTOR SHALL PROVIDE AND INSTALL ONE PEA TRAP AND TWO ANGLE VALVE PROTECTORS AT EACH LAVATORY. PROTECTORS SHALL BE FULLY MOLDED CLOSED CELL VINYL-TRUEBRO, HANDI-LAV-GUARD INSULATION KIT (MODEL #102). COLOR TO BE WHITE.
- E. STAINLESS STEEL COATHOOK: INSIDE EACH TOILET STALL DOOR.
- 1.1 ACCESSIBLE GRAB BARS
- A. ALL STAINLESS STEEL, 1-1/2" DIAMETER, ROUGH FINISH. MOUNT TOILET GRAB BARS 34" ABOVE FINISH FLOOR, OR AS OTHERWISE REQUIRED BY CODE.
- 1.2 FIRE EXTINGUISHER CABINETS
- A. SEMI RECESSED FIRE EXTINGUISHER CABINETS. TRIM AND DOOR SHALL BE STAINLESS STEEL FINISH.
- B. FIRE EXTINGUISHERS FOR INSTALLATION IN CABINETS WILL BE FURNISHED BY OWNER.
- 1.3 TOILET PARTITIONS
- A. DOORS AND SCREENS SHALL BE 1" THICK, SOLID, HIGH DENSITY, POLYMER RESIN PLASTIC. "PLOY-MAR-HD", BY SANTANA PRODUCTS OR APPROVED EQUAL.
- B. HOMOGENOUS COLOR WITH "PLASTIC-GLAZED 280" PROTECTIVE FINISH.
- C. OVERHEAD BRACED AND FLOOR MOUNTED. POST SHOES AND ALL FASTENERS OF TYPE 304 STAINLESS STEEL, SATIN FINISHED.
- D. DOORS SHALL HAVE HEAVY DUTY STAINLESS STEEL SLIDE LATCHES WITH THEFT PROOF SCREWS, EMERGENCY RELEASE FEATURE. USE THREE HINGES PER DOOR.

DIVISION 13 - SPECIAL CONSTRUCTION

SECTION 13120 - METAL BUILDING SYSTEMS

- PART 1 - GENERAL
- 1.1 SUMMARY:
- 1.1.1 THIS SECTION INCLUDES METAL BUILDINGS OF THE NOMINAL LENGTH, WIDTH, EAVE HEIGHT, AND ROOF PITCH INDICATED COMPONENTS.
- 1.1.2 WORK NOT INCLUDED: THE FOLLOWING ARE NOT INCLUDED IN THE METAL BUILDING SYSTEMS WORK:
- .1 DOORS AND WINDOWS.
- .2 FINISH HARDWARE.
- .3 FOUNDATIONS AND FLOOR SLABS.
- 1.2 SYSTEM PERFORMANCE REQUIREMENTS:
- 1.2.1 THE STANDING SEAM ROOF SYSTEM SHALL BE UL APPROVED FOR CLASS 1 -90 WIND SECUREMENT.
- 1.3 SUBMITTALS:
- 1.3.1 PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT INFORMATION, SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FOR BUILDING COMPONENTS AND ACCESSORIES.
- 1.4 QUALITY ASSURANCE:
- 1.4.1 DESIGN CRITERIA:
- .1 GENERAL: COMPLY WITH THE IBC & VIRGINIA UNIFORM STATEWIDE BUILDING CODE, 2003 EDITION.
- .2 STRUCTURAL STEEL: COMPLY WITH REQUIREMENTS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTIONS (AISC) "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" FOR DESIGN REQUIREMENTS AND ALLOWABLE STRESSES.
- .3 LIGHT GAGE STEEL: COMPLY WITH REQUIREMENTS OF THE AMERICAN IRON AND STEEL INSTITUTES (AISI) "SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS" AND "DESIGN OF LIGHT GAGE STEEL DIAPHRAGMS" FOR DESIGN REQUIREMENTS AND ALLOWABLE STRESSES.
- .4 WELDED CONNECTIONS: COMPLY WITH REQUIREMENTS OF THE AMERICAN WELDING SOCIETY'S (AWS) "STANDARD CODE FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION" FOR WELDING PROCEDURES.

1.4.2 DESIGN LOADS:

- .1 DEAD LOAD: ACTUAL WEIGHT.
- .2 ROOF LIVE LOAD: 20 P.S.F. (DO NOT REDUCE).
- .3 COLLATERAL ROOF LOAD: 5 P.S.F.
- .4 WIND LOAD: BASIC WIND SPEED OF 90 M.P.H., EXPOSURE C.
- .5 SEISMIC: ZONE 1.
- 1.4.3 MANUFACTURER'S QUALIFICATIONS: PROVIDE PRE-ENGINEERED METAL BUILDINGS AS PRODUCED BY A MANUFACTURER WITH NOT LESS THAN 5 YEARS SUCCESSFUL EXPERIENCE IN THE FABRICATION OF PRE-ENGINEERED METAL BUILDINGS OF THE TYPE AND QUALITY REQUIRED.
- 1.4.4 ERECTOR'S QUALIFICATIONS: PRE-ENGINEERED BUILDING SHALL BE ERECTED BY A FIRM THAT HAS NOT LESS THAN 5 YEARS SUCCESSFUL EXPERIENCE IN THE ERECTION OF PRE-ENGINEERED BUILDINGS SIMILAR TO THOSE REQUIRED FOR THIS PROJECT, AND HAS BEEN LICENSED BY THE MANUFACTURER OF THE BUILDING SYSTEM.
- 1.4.5 GUARANTEE/WARRANTY:
- .1 THE METAL BUILDING AND ALL COMPONENT PARTS THEREOF SHALL BE WARRANTED AGAINST FAILURE DUE TO DEFECTIVE MATERIAL OR WORKMANSHIP FOR A PERIOD OF ONE YEAR. FURNISH A WRITTEN TWENTY-YEAR MANUFACTURER'S WARRANTY FOR ROOF COVERING AND A WRITTEN TEN-YEAR MANUFACTURER'S WARRANTY FOR WALL COVERING.
- .2 FURNISH A WRITTEN TWENTY-YEAR MANUFACTURER'S WARRANTY FOR WALL COVERING AND A WRITTEN TEN-YEAR MANUFACTURER'S WARRANTY FOR WALL COVERING.

PART 2 - PRODUCTS

- 2.1 MATERIALS:
- 2.1.1 HOT-ROLLED STRUCTURAL STEEL SHAPES: COMPLY WITH ASTM A36 OR A529.
- 2.1.2 STEEL TUBING OR PIPE: COMPLY WITH ASTM A500, GRADE B, ASTM A501, OR ASTM A53.
- 2.1.3 STEEL MEMBERS FABRICATED FROM PLATE OR BAR STOCK: PROVIDE 42,000-PSI MINIMUM YIELD STRENGTH. COMPLY WITH ASTM A528, ASTM A570, OR ASTM A572.
- 2.1.4 STEEL MEMBERS FABRICATED BY COLD FORMING: COMPLY WITH ASTM A607, GRADE 50.
- 2.1.5 COLD-ROLLED CARBON STEEL SHEET: COMPLY WITH REQUIREMENTS OF ASTM A 368 OR ASTM A 568.
- 2.1.6 HOT-ROLLED CARBON STEEL SHEET: COMPLY WITH REQUIREMENTS OF ASTM A 568 OR ASTM 569.
- 2.1.7 STRUCTURAL QUALITY ZINC-COATED (GALVANIZED) STEEL SHEET: COMPLY WITH ASTM A448 WITH G90 COATING COMPLYING WITH ASTM A 525. GRADE TO SUIT MANUFACTURER'S STANDARDS.
- 2.1.8 COMMERCIAL QUALITY ZINC-COATED (GALVANIZED) STEEL SHEET: COMPLY WITH ASTM A 526 WITH G90 COATING COMPLYING WITH ASTM A 525.
- 2.1.9 BOLTS FOR STRUCTURAL FRAMING: COMPLY WITH ASTM A307 OR A325 AS NECESSARY FOR DESIGN LOADS AND CONNECTION DETAILS.
- 2.1.10 THERMAL INSULATION: GLASS FIBER BLANKET INSULATION, COMPLYING WITH ASTM C 991, OF 0.5 LB. PER CU. FT. DENSITY, THICKNESS AS INDICATED, WITH UL FLAME SPREAD CLASSIFICATION OF 25 OR LESS, AND 2" WIDE CONTINUOUS VAPOR TIGHT EDGE TABS.
- .1 6" VAPOR BARRIER: REINFORCED VINYL
- .2 USE 4" THICK INSULATION AT ALL ROOFS AND WALLS UNLESS SPECIFICALLY NOTED OTHERWISE.
- 2.1.11 PAINT AND COATING MATERIALS: COMPLY WITH PERFORMANCE REQUIREMENTS OF THE FEDERAL SPECIFICATIONS INDICATED. UNLESS SPECIFICALLY INDICATED OTHERWISE, COMPLIANCE WITH COMPOSITIONAL REQUIREMENTS OF THE FEDERAL SPECIFICATIONS INDICATED IS NOT REQUIRED.
- .1 SHOP PRIMER FOR FERROUS METAL: FAST-CURING, LEAD-FREE, "UNIVERSAL" PRIMER, SELECTED BY THE MANUFACTURER FOR RESISTANCE TO NORMAL ATMOSPHERIC CORROSION, COMPATIBILITY WITH FINISH PAINT SYSTEMS AND CAPABILITY TO PROVIDE A SOUND FOUNDATION FOR FIELD-APPLIED TOPCOATS DESPITE PROLONGED EXPOSURE. COMPLY WITH FS TT-P-645.
- .2 SHOP PRIMER FOR GALVANIZED METAL SURFACES: ZINC-DUST-ZINC OXIDE PRIMER AS SELECTED BY THE MANUFACTURER FOR COMPATIBILITY WITH SUBSTRATE. COMPLY WITH FTT-P-641.
- 2.2 STRUCTURAL FRAMING:
- 2.2.1 RIGID FRAMES OR JOIST GIRDERS: PROVIDE FACTORY-WELDED, SHOP-PAINTED, BUILT-UP "I-BEAM" SHAPE OR OPEN WEB TYPE FRAMES CONSISTING OF TAPERED OR PARALLEL FLANGE BEAMS. FURNISH WITH ATTACHMENT PLATES, BEARING PLATES AND SPLICE MEMBERS. FACTORY DRILL FRAMES OR JOIST GIRDERS FOR FIELD-BOLTED ASSEMBLY.
- .1 PROVIDE LENGTH OF SPAN AND SPACING OF FRAMES INDICATED. SLIGHT VARIATIONS IN LENGTH OF SPAN AND FRAME SPACING MAY BE ACCEPTABLE IF NECESSARY TO MEET MANUFACTURER'S STANDARD.
- 2.2.2 PRIMARY ENDWALL FRAMING: PROVIDE THE FOLLOWING PRIMARY END WALL-FRAMING MEMBERS FABRICATED FOR FIELD-BOLTED ASSEMBLY.
- .1 ENDWALL COLUMNS: MANUFACTURER'S STANDARD SHOP-PAINTED, BUILT-UP FACTORY-WELDED "I" SHAPE OR COLD-FORMED "C" SECTIONS FABRICATED FROM 14-GAGE (0.0747") STEEL.
- .2 ENDWALL BEAMS: MANUFACTURER'S STANDARD SHOP-PAINTED "C" SHAPE ROLL-FORMED SECTIONS FABRICATED FROM 16-GAGE (0.0598") STEEL.
- 2.2.3 SECONDARY FRAMING: PROVIDE THE FOLLOWING SECONDARY FRAMING MEMBERS:
- .1 ROOF PURLINS: MANUFACTURER'S STANDARD OPEN WEB JOISTS.
- .2 SIDEWALL AND ENDWALL GIRTS: "C" OR "Z" SHAPED SECTIONS FABRICATED FROM SHOP PAINTED ROLL-FORMED STEEL. PURLIN SPACERS SHALL BE FABRICATED FROM COLD-FORMED GALVANIZED STEEL SECTIONS.
- .3 EAVE STRUTS: UNEQUAL FLANGE "C" SHAPED SECTIONS FORMED TO PROVIDE ADEQUATE BACKUP FOR BOTH WALL AND ROOF PANELS. FABRICATE FROM SHOP-PAINTED ROLL-FORMED STEEL.
- .4 FLANGE AND SAG BRACING: ANGLES FABRICATED FROM SHOP-PAINTED ROLL-FORMED STEEL.
- .5 BASE OR SILL ANGLES: FABRICATE FROM 14-GAGE (0.0747") COLD-FORMED GALVANIZED STEEL SECTIONS.
- .6 SECONDARY END WALL STRUCTURAL MEMBERS, EXCEPT COLUMNS AND BEAMS, SHALL BE THE MANUFACTURER'S STANDARD SECTIONS FABRICATED FROM COLD-FORMED GALVANIZED STEEL.
- 2.2.4 BOLTS: PROVIDE SHOP PAINTED BOLTS EXCEPT WHEN STRUCTURAL FRAMING COMPONENTS ARE IN DIRECT CONTACT WITH ROOFING AND SIDING PANELS. PROVIDE ZINC-PLATED OR CADMIUM-PLATED BOLTS WHEN STRUCTURAL FRAMING COMPONENTS ARE IN DIRECT CONTACT WITH ROOFING AND SIDING PANELS.
- 2.2.5 SHOP PAINTING: CLEAN SURFACES TO BE PRIMED OF LOOSE MILL SCALE, RUST, DIRT, OIL, GREASE, AND OTHER MATTER PRECLUDING PAINT BOND. FOLLOW PROCEDURES OF SSPC-SP3 FOR POWER-TOOL CLEANING, SSPC-SP7 FOR BRUSH-OFF BLAST CLEANING, AND SSPC-SPI FOR SOLVENT CLEANING.

- .1 PRIME STRUCTURAL STEEL PRIMARY AND SECONDARY FRAMING MEMBERS WITH THE MANUFACTURER'S STANDARD RUST-INHIBITIVE PRIMER.
- .2 PRIME GALVANIZED MEMBERS, AFTER PHOSPHORIC ACID PRETREATMENT WITH MANUFACTURER'S STANDARD ZINC DUST-ZINC OXIDE PRIMER.
- 2.3 ROOFING AND SIDING PANELS:
- 2.3.1 FACE SHEETS: FABRICATE WALL PANEL SHEETS TO THE PROFILE OR CONFIGURATION INDICATED FROM 26-GAGE (0.0179"), STRUCTURAL QUALITY, GRADE C, ZINC-COATED STEEL SHEETS.
- 2.3.2 STANDING SEAM ROOF PANELS: MANUFACTURER'S STANDARD FACTORY-FORMED STANDING SEAM ROOF PANEL SYSTEM DESIGNED FOR MECHANICAL ATTACHMENT OF PANELS TO ROOF PURLINS USING A CONCEALED CLIP. FORM PANELS OF 24-GA. "GALVALUME".
- .1 CLIPS: PROVIDE 16-GA. (0.0598 ") PANEL CLIPS.
- .2 CLEATS: FACTORY CAULKED, MECHANICALLY SEAMED CLEATS FORMED FROM 24 GA. (0.0239"), GRADE C, ZINC COATED STEEL SHEETS.
- 2.3.3 FASTENERS: SELF-TAPPING SCREWS, BOLTS, NUTS, SELF-LOCKING RIVETS, SELF-LOCKING BOLTS, END-WELDED STUDS, AND OTHER SUITABLE FASTENERS DESIGNED TO WITHSTAND DESIGN LOADS.
- .1 PROVIDE METAL-BACKED NEOPRENE WASHERS UNDER HEADS OF FASTENERS BEARING ON WEATHER SIDE OF PANELS.
- .2 USE ALUMINUM OR STAINLESS STEEL FASTENERS FOR EXTERIOR APPLICATION AND GALVANIZED OR CADMIUM-PLATED FASTENERS FOR INTERIOR APPLICATIONS.
- .3 LOCATE AND SPACE FASTENERS IN TRUE VERTICAL AND HORIZONTAL ALIGNMENT. USE PROPER TOOLS TO OBTAIN CONTROLLED UNIFORM COMPRESSION FOR POSITIVE SEAL WITHOUT RUPTURE OF NEOPRENE WASHER.
- .4 PROVIDE FASTENERS WITH HEADS MATCHING COLOR OF SIDING SHEETS BY MEANS OF PLASTIC CAPS OR FACTORY-APPLIED COATING.
- 2.3.4 ACCESSORIES: PROVIDE THE FOLLOWING SHEET METAL ACCESSORIES FACTORY FORMED OF THE SAME MATERIAL IN THE SAME FINISH AS THE ROOF AND WALL PANELS.
- GUTTERS AND DOWN SPOUTS. FLASHINGS. CLOSERS. FILLERS. METAL EXPANSION JOINTS. RIDGE COVERS. FASCIAS.
- 2.3.5 FLEXIBLE CLOSURE STRIPS: CLOSED-CELL, EXPANDED CELLULAR RUBBER, SELF-EXTINGUISHING FLEXIBLE CLOSURE STRIPS, CUT OR PREMOLD TO MATCH CORRUGATION CONFIGURATION OF ROOFING AND SIDING SHEETS. PROVIDE CLOSURE STRIPS WHERE INDICATED OR NECESSARY TO ENSURE WEATHER TIGHT CONSTRUCTION.
- 2.3.6 SEALING TAPE: PRESSURE SENSITIVE 100 PERCENT SOLIDS GRAY POLYISOBUTYLENE COMPOUND SEALING TAPE WITH RELEASE PAPER BACKING. PROVIDE PERMANENTLY ELASTIC, NON-SAG, NONTXIC, NONSTAINING TAPE 1/2" WIDE AND 1/8" THICK.
- 2.3.7 JOINT SEALANT: ONE-PART ELASTOMERIC POLYURETHANE, POLYSULFIDE OR SILICONE RUBBER SEALANT AS RECOMMENDED BY THE BUILDING MANUFACTURER.
- 2.3.8 BAKED ENAMEL FINISH: PROVIDE THE MANUFACTURER'S STANDARD SHOP-APPLIED BAKED ENAMEL FINISH TO GALVANIZED STEEL WALL PANELS, AND RELATED TRIM AND ACCESSORY ELEMENTS. FOR SIDING, APPLY FINISH COAT ON EXTERIOR FACINGS AND MANUFACTURER'S STANDARD WASH COAT ON REVERSE FACE.
- .1 CLEAN GALVANIZED STEEL WITH AN ALKALINE COMPOUND, THEN TREAT WITH A ZINC PHOSPHATE CONVERSION COATING, AND SEAL WITH A CHROMIC ACID RINSE.
- 2.4 SHEET METAL ACCESSORIES:
- 2.4.1 GENERAL: PROVIDE COATED STEEL SHEET METAL ACCESSORIES WITH COATED STEEL ROOFING AND SIDING PANELS.
- 2.4.2 GUTTERS: FORM 8 FOOT LONG SECTIONS. COMPLETE WITH END PIECES, OUTLET TUBES AND OTHER SPECIAL PIECES AS REQUIRED. SIZE IN ACCORDANCE WITH SMACNA. JOIN SECTIONS WITH RIVETED AND SOLDERED OR SEALED JOINTS. PROVIDE EXPANSION-TYPE SLIP JOINT AT CENTER OF RUNS. FURNISH GUTTER SUPPORTS SPACED AT 38" O.C., CONSTRUCTED OF SAME METAL AS GUTTERS. FINISH TO MATCH ROOF FASCIA AND RAKE.
- 2.4.3 DOWNSPOUTS: FORM IN 10-FOOT LONG SECTIONS, COMPLETE WITH ELBOWS AND OFFSETS. JOIN SECTIONS WITH 1-1/2" TELESCOPING JOINTS. PROVIDE FASTENERS, DESIGNED TO SECURELY HOLD DOWN SPOUTS 1" AWAY FROM WALLS; LOCATE FASTENERS AT TOP AND BOTTOM AND AT APPROXIMATELY 5 FEET ON CENTER IN BETWEEN. FINISH TO MATCH WALL PANELS.
- 2.4.4 WALL LOUVERS: PROVIDE LOUVERS OF THE SIZE AND DESIGN INDICATED, OF 18-GA. (0.0478 ") STEEL. FOLD OR BEAD BLADES AT EDGES. SET AT AN ANGLE THAT EXCLUDES DRIVING RAINS, AND SECURE TO FRAMES BY RIVETING OR WELDING. FINISH TO BE MANUFACTURER'S STANDARD ALUMINUM FINISH.
- .1 PROVIDE VERTICAL MULLIONS FOR LOUVERS 4 FT. AND MORE IN WIDTH WITH ONE MULLION FOR EACH 4 FT. OF WIDTH.
- .2 PROVIDE FLANGES ON INTERIOR FACE OF FRAMES WHERE AIR INTAKE OR EXHAUST LOUVERS ARE INDICATED TO BE CONNECTED WITH MECHANICALLY OPERATED DAMPERS OR METAL DUCTWORK.
- .3 PROVIDE 1/2" X 1/2" GALVANIZED STEEL MESH BIRD SCREENS IN REWIREABLE FRAMES ON EXTERIOR FACE OF LOUVERS. SECURE WITH CLIPS TO ENSURE EASE OF REMOVAL FOR CLEANING AND REWIRING. FABRICATE SCREENS AND FRAMES OF SAME TYPE METAL AS LOUVERS.
- 2.5 FABRICATION:
- 2.5.1 GENERAL: DESIGN PREFABRICATED COMPONENTS AND NECESSARY FIELD CONNECTIONS REQUIRED FOR ERECTION TO PERMIT EASY ASSEMBLY AND DISASSEMBLY.
- .1 FABRICATE COMPONENTS IN SUCH A MANNER THAT ONCE ASSEMBLED, THEY MAY BE DISASSEMBLED, REPACKAGED AND REASSEMBLED WITH A MINIMUM AMOUNT OF LABOR.
- .2 CLEARLY AND LEGIBLY MARK EACH PIECE AND PART OF THE ASSEMBLY TO CORRESPOND WITH PREVIOUSLY PREPARED ERECTION DRAWINGS, DIAGRAMS AND INSTRUCTION MANUALS.
- 2.5.2 STRUCTURAL FRAMING: SHOP-FABRICATE FRAMING COMPONENTS TO INDICATED SIZE AND SECTION COMPLETE WITH BASE PLATES, BEARING PLATES AND OTHER PLATES REQUIRED FOR ERECTION, WELDED IN PLACE. PROVIDE HOLES FOR ANCHORING OR CONNECTIONS SHOP-DRILLED OR PUNCHED TO TEMPLATE DIMENSIONS.
- .1 SHOP CONNECTIONS: PROVIDE POWER RIVETED, BOLTED OR WELDED SHOP CONNECTIONS.
- .2 FIELD CONNECTIONS: PROVIDE BOLTED FIELD CONNECTIONS.
- PART 3 - EXECUTION
- 3.1 ERECTION:
- 3.1.1 FRAMING: ERECT STRUCTURAL FRAMING TRUE TO LINE, LEVEL AND PLUMB, RIGID AND SECURE. LEVEL BASE PLATES TO A TRUE EVEN PLANE WITH FULL BEARING TO SUPPORTING STRUCTURES, SET WITH DOUBLE-NUTTED ANCHOR BOLTS. IF REQUIRED, USE A NON-SHRINKING GROUT TO OBTAIN UNIFORM BEARING AND TO MAINTAIN A LEVEL BASE LINE ELEVATION. MOIST CURE GROUT FOR NOT LESS THAN 7 DAYS AFTER PLACEMENT.

- 3.1.2 PURLINS AND GIRTS: PROVIDE RAKE OR GABLE PURLINS WITH TIGHT FITTING CLOSURE CHANNELS AND FASCIAS. LOCATE AND SPACE WALL GIRTS TO SUIT DOOR AND WINDOW ARRANGEMENTS AND HEIGHTS. SECURE PURLINS AND GIRTS TO STRUCTURAL FRAMING AND HOLD RIGIDLY TO A STRAIGHT LINE BY SAG RODS.
- 3.1.3 FRAMED OPENINGS: PROVIDE SHAPES OF PROPER DESIGN AND SIZE TO REINFORCE OPENINGS AND TO CARRY LOADS AND VIBRATIONS IMPOSED, INCLUDING EQUIPMENT FURNISHED UNDER MECHANICAL OR ELECTRICAL WORK. SECURELY ATTACH TO BUILDING STRUCTURAL FRAME.
- 3.2 ROOFING AND SIDING:
- 3.2.1 GENERAL: ARRANGE AND NEST SIDELAP JOINTS TO THAT PREVAILING WINDS BLOW OVER, NOT INTO, LAPPED JOINTS. LAP RIBBED OR FLUTED SHEETS ONE FULL RIB CORRUGATION. APPLY PANELS AND ASSOCIATED ITEMS FOR NEAT AND WEATHER TIGHT ENCLOSURE. AVOID "PANEL CREEP" OR APPLICATION NOT TRUE TO LINE. PROTECT FACTORY FINISHES FROM DAMAGE.
- .1 FIELD CUTTING OF EXTERIOR PANELS BY TORCH IS NOT PERMITTED.
- .2 PROVIDE WEATHER SEAL UNDER RIDGE CAP. FLASH AND SEAL ROOF PANELS AT EAVE AND RAKE WITH RUBBER, NEOPRENE OR OTHER CLOSURES TO EXCLUDE WEATHER.
- 3.2.2 STANDING SEAM ROOF PANEL SYSTEM: FASTEN ROOF PANELS TO PURLINS WITH CONCEALED CLIP IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- .1 INSTALL CLIPS AT EACH SUPPORT USING SELF-DRILLING FASTENERS.
- .2 AT END LAPS OF PANELS INSTALL TAPE CAULK BETWEEN PANELS.
- .3 INSTALL FACTORY-CAULKED CLEATS AT STANDING SEAM JOINTS. MACHINE SEAM CLEATS TO THE PANELS TO PROVIDE A WEATHER TIGHT JOINT.
- 3.2.3 WALL SHEETS: APPLY ELASTOMERIC SEALANT CONTINUOUSLY BETWEEN METAL BASE CHANNEL (SILL ANGLE) AND CONCRETE AND ELSEWHERE AS NECESSARY FOR WATERPROOFING. HANDLE AND APPLY SEALANT AND BACKUP IN ACCORDANCE WITH THE SEALANT MANUFACTURER'S RECOMMENDATIONS.
- .1 ALIGN BOTTOM OF WALL PANELS AND FASTEN PANELS WITH BLIND RIVETS, BOLTS OR SELF-TAPPING SCREWS. FASTEN FLASHINGS, TRIM AROUND OPENINGS, AND SIMILAR ELEMENTS WITH SELF-TAPPING SCREWS. WHEN BUILDING HEIGHT REQUIRES TWO ROWS OF PANELS AT GABLE ENDS, ALIGN LAP OF GABLE PANELS OVER WALL PANELS AT EAVE HEIGHT.
- .2 INSTALL SCREW FASTENERS WITH POWER TOOLS HAVING CONTROLLED TORQUE ADJUSTED TO COMPRESS NEOPRENE WASHER TIGHTLY WITHOUT DAMAGE TO WASHER, SCREW THREADS, OR PANELS. INSTALL SCREWS IN PREDRILLED HOLES.
- 3.2.4 SHEET METAL ACCESSORIES: INSTALL GUTTERS, DOWNSPOUTS, VENTILATORS, LOUVERS, AND OTHER SHEET METAL ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS FOR POSITIVE ANCHORAGE TO BUILDING AND WEATHER TIGHT MOUNTING. ADJUST OPERATING MECHANISM FOR PRECISE OPERATION.
- 3.2.5 THERMAL INSULATION: INSTALL INSULATION CONCURRENTLY WITH INSTALLATION OF SIDING AND ROOF PANELS IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED DIRECTIONS. INSTALL BLANKETS STRAIGHT AND TRUE IN ONE-PIECE LENGTHS WITH BOTH SETS OF TABS SEALED TO PROVIDE A COMPLETE VAPOR BARRIER. LOCATE INSULATION ON THE UNDERSIDE OF ROOF SHEETS, EXTENDING ACROSS THE TOP FLANGE OF PURLIN MEMBERS AND HELD TAUT AND SNUG TO ROOFING PANELS.
- 3.2.6 CLEANING AND TOUCH-UP: CLEAN COMPONENT SURFACES OF MATTER THAT COULD PRECLUDE PAINT BOND. TOUCH UP ABRASIONS, MARKS, SKIPS OR OTHER DEFECTS TO SHOP-PRIMED SURFACES WITH SAME TYPE MATERIAL AS SHOP PRIMER.

SECTION 15000 - PLUMBING AND PIPING

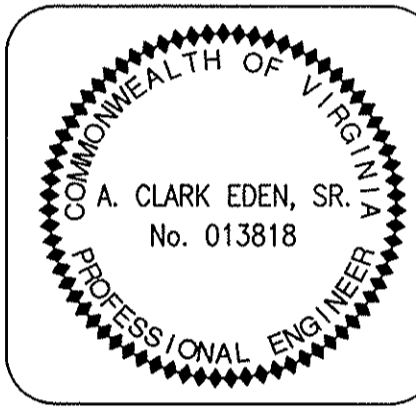
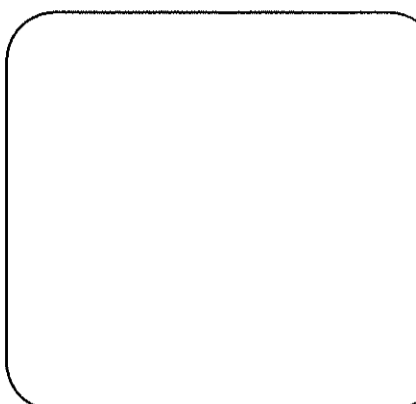
1. ALL PIPING SHALL BE CONCEALED UNLESS OTHERWISE NOTED. EXPOSING OF ANY PIPING MUST HAVE APPROVAL OF THE ARCHITECT.
2. PROVIDE BRANCH LINE SHUT-OFF VALVES ON DOMESTIC WATER PIPING TO EACH PLUMBING FIXTURE.
3. THE PLUMBING AND PIPING SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL STATE AND LOCAL PLUMBING CODES. THE PLUMBING AND PIPING CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY FOR ALL FEES, AND ARRANGE FOR ALL INSPECTIONS FOR HIS WORK. AT THE COMPLETION OF THE PROJECT, THE PLUMBING CONTRACTOR SHALL FURNISH THE OWNER WITH CERTIFICATES OF FINAL INSPECTIONS AND APPROVALS.
4. PIPING SHALL BE AS FOLLOWS:
- A) SANITARY AND VENT PIPING:
- 1) ALL 2" AND LARGER WASTE AND VENT PIPING ABOVE GROUND SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE WITH NO-HUB FITTINGS OR SCHEDULE 40 PVC FITTINGS WHERE LOCAL CODE PERMITS.
- 2) ALL 1 1/2" AND SMALLER WASTE AND VENT PIPING ABOVE GROUND SHALL BE GALVANIZED STEEL WITH THREADED BLACK CAST DRAINAGE FITTINGS OR SCHEDULE 40 PVC WHERE LOCAL CODE PERMITS.
- 3) ALL WASTE PIPING BELOW GRADE SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE WITH COMPRESSION TYPE FITTINGS, OR SCHEDULE 40 PVC WHERE LOCAL CODE PERMITS.
- B) STORM WATER AND RAIN CONDUCTOR PIPING:
- ALL STORM WATER PIPING SHALL BE SERVICE WEIGHT CAST IRON, WITH NO-HUB FITTINGS, GALVANIZED STEEL, WITH THREADED BLACK CAST IRON FITTINGS, OR SCHEDULE 40 PVC FITTINGS LOCAL CODE PERMITS.
- C) DOMESTIC WATER PIPING:
- 1) ALL ABOVE GROUND DOMESTIC WATER PIPING SHALL BE TYPE "L" HARD DRAWN COPPER TUBING WITH WROUGHT COPPER OR CAST RED BRONZE FITTINGS. ALL SOLDERED FITTINGS SHALL BE MADE WITH SIL-FOS SOLDER OR AN APPROVED NON-TOXIC SOLDER.
- 2) ALL UNDERGROUND PIPING SHALL BE TYPE "K" COPPER. PIPE FITTINGS ARE NOT ALLOWED BELOW FLOOR SLAB.
- D) GAS PIPING:
- GAS PIPING SHALL BE SCHEDULE 40, BLACK STEEL WITH THREADED OR WELDED FITTINGS AS REQUIRED. PROVIDE SHUT-OFF COCKS ON ALL OUTLETS WHERE SHOWN. WRAP ALL UNDERGROUND PIPING WITH "3-M SCOTCH WRAP" OR "TAPECOAT" PIPE WRAP.
- VALVES SHALL NOT BE LOCATED IN ANY AIR PLENUM. PORTIONS OF A GAS PIPING SYSTEM INSTALLED IN CONCEALED LOCATIONS SHALL NOT HAVE UNIONS, TUBE FITTINGS, OR RUNNING THREADS.
- E) REFRIGERATION PIPING:
- ALL REFRIGERANT PIPING SHALL BE TYPE "L" HARD DRAWN COPPER TUBING WITH SILVER SOLDERED WROUGHT OR CAST PRESSURE FITTINGS. PIPING SHALL BE FACTORY CLEANED AND PROVIDED WITH END CAPS TO PREVENT AND CONTAMINATION OF THE INSIDE

MEMBER ICC INTERNATIONAL CONSTRUCTION CONTRACTORS ASSOCIATION

EDEN & ASSOCIATES, P.C.

1049 BROOKDALE STREET SUITE B MARTINSVILLE, VIRGINIA 24112

VOICE 276-632-6231 FAX: 276-632-3648



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COMMONWEALTH CENTRE

MARTINSVILLE, VIRGINIA

FRANKLIN STREET

SHEET NO.

SP-2

5. PIPING INSULATION:

- A) DOMESTIC HOT AND COLD WATER PIPING SHALL BE INSULATED WITH MINIMUM 1" THICK FIBERGLAS INSULATION, WITH A FIRE RETARDANT JACKET, HAVING AN AVERAGE THERMAL CONDUCTIVITY NOT EXCEEDING .22 BTU IN. PER SQ. FT. PER DEGREE F PER HOUR AT A MEAN TEMPERATURE OF 100 DEGREES F. COLD WATER PIPING INSULATION SHALL BE PROVIDED WITH A VAPOR BARRIER.
 - B) REFRIGERANT PIPING AND FITTINGS SHALL BE INSULATED WITH A MINIMUM 1/2" THICK FLEXIBLE POLYETHYLENE THERMAL INSULATION WITH A BUILT IN VAPOR BARRIER.
 - C) ABOVE GROUND STORM PIPING AND RAIN CONDUCTORS AND FITTINGS (HORIZONTAL PIPING ONLY) SHALL BE INSULATED WITH A MINIMUM 1/2" THICK FIBERGLASS INSULATION WITH A VAPOR BARRIER.
 - D) PIPE INSULATION SHALL HAVE A FLAME SPREAD AND SMOKE DENSITY RATING NOT EXCEEDING 25/50, AS TESTED PER ASTM STANDARD E-84.
6. PIPING SHALL BE SUPPORTED FROM HANGERS AT AN ADEQUATE DISTANCE WITH SUPPORTING HANGER RODS FASTENED TO THE BUILDING FRAMING WHENEVER POSSIBLE.
7. ISOLATE PIPING AND EQUIPMENT FROM THE BUILDING STRUCTURE WITH INSULATING HANGERS AND FITTINGS AS REQUIRED TO PREVENT GALVANIC CORROSION OF THE BUILDING PIPING SYSTEMS.
8. DOMESTIC WATER HEATERS SHALL BE EQUIPPED WITH A.S.M.E. RATED TEMPERATURE AND PRESSURE RELIEF VALVES.
9. ALL SERVICES SHALL BE PROPERLY SLEEVED WHEN ROUTED THROUGH FLOORS AND WALLS. CONTRACTOR TO PROVIDE FIRE RESISTANT ROPE PACKING FOR ALL PIPES PENETRATING FIRE RATED WALLS. CONTRACTOR SHALL OBTAIN A COPY OF THE ARCHITECTURAL DRAWINGS TO IDENTIFY FIRE RATED WALLS. CONTRACTOR SHALL PROVIDE A WEATHER-PROOF SEAL FOR PIPING PENETRATING EXTERIOR WALLS AND SHALL PROVIDE A WATER TIGHT SEAL, SIMILAR TO "LINK SEAL", FOR ALL PIPING PENETRATING BASEMENT WALLS.
10. FURNISH AND INSTALL ISOLATION VALVES AT ALL SERVICE POINTS OR EQUIPMENT CONNECTIONS. PROVIDE VACUUM BREAKERS AND ANTI-SYPHON FITTINGS ON WATER PIPING SYSTEMS BEFORE EQUIPMENT CONNECTIONS, AND AT ALL HOSE END SPIGOTS AND HOSE CONNECTIONS, ETC. INSTALL REDUCED PRESSURE BACKFLOW PREVENTERS ON ALL MAKE-UP WATER LINES TO MECHANICAL EQUIPMENT AND ON BUILDING DOMESTIC WATER SERVICE WHERE LOCAL CODE REQUIRESTHE INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH LOCAL CODES AND/OR AUTHORITIES FOR THE PROTECTION OF THE WATER SUPPLY SYSTEM.

11. CONTRACTOR SHALL COMPLETELY TAG AND LABEL ALL VALVES AND PROVIDE A COMPLETE VALVE CHART INDICATING LOCATION, FUNCTION AND EQUIPMENT SERVED.

12. ALL WALL HYDRANTS LOCATED ON THE EXTERIOR OF THE BUILDING SHALL BE NON-FREEZE TYPE SIMILAR TO ZURN MODEL Z-1300. WALL HYDRANT SHALL BE ENCASED FLUSH WALL HYDRANT, WITH BRONZE CASING, ALL INTERNAL PARTS AND NON-TURNING OPERATING ROD WITH FREE FLOATING COMPRESSION CLOSURE VALVE. BOX FACE AND HINGED COVER SHALL BE ZURN NICKEL-BRONZE COMPLETE WITH OPERATING KEY LOCK. PROVIDE WITH INTEGRAL BACKFLOW PREVENTER.

13. FLOOR DRAINS SHALL BE SIMILAR TO THE FOLLOWING:

- A) KITCHEN, MECHANICAL ROOMS, AND TOILET ROOMS: ZURN MODELZLN-415 FLOOR DRAIN, DURA COATED CAST IRON BODY WITH BOTTOM OUTLET, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE TYPE "B" NICKEL BRONZE STRAINER.
- B) KITCHEN FLOOR SINKS: SLOANE MODEL 4712 FLOOR SINK, 12" X 12" PVC FLOOR SINK, LOOSE-SET HALF GRATE, AND ALUMINUM ANTI-SPLASH INTERIOR DOME STRAINER.
- C) TRENCH DRAIN: SMITH #9818 WHITE PVC DRAIN LENGTH TO MATCH EQUIPMENT NEEDS.

14. THE PLUMBING AND PIPING CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER PITCH OF PIPE FOR DRAINAGE AND AIR VENTING OF PIPING SYSTEMS AND SHALL PROVIDE DRAINS TO RECEIVE THE PIPING SYSTEMS CONTENTS OF INDIRECT WASTE AND CONDENSATE DRAINAGE FROM ALL MECHANICAL DRAINS.

15. THE PLUMBING AND PIPING CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND PROVIDE ROUGH-INS FOR ALL EQUIPMENT FURNISHED BY OTHER CONTRACTORS. AFTER ALL EQUIPMENT HAS BEEN INSTALLED BY OTHER CONTRACTORS, THE PLUMBING AND PIPING CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS AND SHALL INCLUDE IN HIS BASE BID ALL VALVES, UNIONS, COUPLINGS, VACUUM BREAKERS, ETC., THAT ARE REQUIRED TO MAKE FINAL CONNECTIONS.

16. THE PLUMBING AND PIPING CONTRACTOR SHALL OBTAIN OTHER TRADES DRAWINGS AND COORDINATE HIS WORK WITH THE TOTAL PROJECT AS IT RELATES TO ALL TRADES AND VISIT THE PROJECT SITE PRIOR TO SUBMITTING HIS BID TO FAMILIARIZE HIMSELF WITH THE ACTUAL PROJECT CONDITIONS AND TO CHECK FOR ANY INTERFERENCES BETWEEN HIS SCOPE OF WORK AND THAT OF THE OTHER TRADES, AND/OR ANY APPARENT VIOLATIONS OF LOCAL OR STATE BUILDING CODES, LAWS, ORDINANCES, AND REGULATIONS. IF ANY INTERFERENCES OR VIOLATIONS APPEAR AND DEPARTURE FROM THE INITIAL DESIGN INTENT OF THE CONSTRUCTION BID DOCUMENTS IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO ENTERING INTO A CONTRACT WITH THE OWNER. FAILURE TO PROVIDE THE ARCHITECT WITH THE AFOREMENTIONED NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE INTENT OF THE CONSTRUCTION BID DOCUMENTS WITH NO ADDITIONAL COSTS BEING INCURRED BY THE OWNER.

17. THE CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT FURNISHED BY THIS CONTRACTOR WITH THE ELECTRICAL CONTRACTOR.

18. FURNISH AND INSTALL FOR ALL "PHYSICALLY HANDICAPPED" LAV(S) A BRADLEY MODEL #222 MIXING VALVE WITH CHECK-STOP-STRAINER AND TEMPERED WATER PIPING CONNECTIONS. SET VALVE FOR A MAXIMUM OF 120 DEGREES F. PROVIDE RECESSED WALL CABINET WITH PRIMER COATED FINISH FOR FIELD PAINTING.

19. THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION OF ANY OF THE FOLLOWING EQUIPMENT:
- A. PLUMBING FIXTURES
 - B. DOMESTIC WATER HEATER
 - C. DOMESTIC HOT WATER RECIRC. PUMP
 - D. FLOOR DRAINS, CLEANOUTS, ETC.

20. THE CONTRACTOR SHALL GUARANTEE ALL WORK INSTALLED UNDER THIS CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF THE BUILDING BY THE OWNER, AND SHOULD DEFECTS OCCUR WITHIN THIS PERIOD, REPAIR AND/OR REPLACE DEFECTIVE ITEMS AND ANY RESULTING FROM FAILURE OF THESE ITEMS, AT NO EXPENSE TO THE OWNER.

21. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF HIS EQUIPMENT AND WORK WITH OTHER BUILDING TRADES TO AVOID ANY INTERFERENCES BETWEEN HIS WORK AND THE WORK OF THE OTHER TRADES.

22. ANY CUTTING AND/OR PATCHING, THAT MAY BE REQUIRED FOR THE INSTALLATION OF THE PLUMBING AND PIPING SYSTEMS, SHALL BE PERFORMED BY THE ARCHITECTURAL TRADES AND PAID FOR BY THIS CONTRACTOR. NO CUTTING OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT WRITTEN APPROVAL OF THE ARCHITECT BEING OBTAINED.

23. WATER HAMMER ARRESTORS OR 15" HIGH AIR CHAMBERS SHALL BE INSTALLED ON BOTH COLD AND HOT WATER LINES. INSTALL IN AN UPRIGHT POSITION AT ALL QUICK CLOSING VALVES, SOLENOIDS, AND PLUMBING FIXTURES. MANUFACTURED WATER HAMMER ARRESTORS SHALL BE

SMITH NO. 3000 SERIES "HYDROTROLS", JOSAM, ZURN, OR AS APPROVED BY THE ARCHITECT, LOCATED, SIZED, AND INSTALLED IN ACCORDANCE WITH PLUMBING AND DRAINAGE INSTITUTE STANDARD NO. WH201.

24. A SEPARATE REFRIGERATION CONTRACTOR SHALL INSTALL COOLER AND FREEZER REFRIGERATION SYSTEMS. COMPRESSORS, COILS, CONTROLS, WATER AND/OR AIR COOLED CONDENSING UNITS, AND VALVES SHALL BE FURNISHED BY THE REFRIGERATION EQUIPMENT SUPPLIER. THIS CONTRACTOR SHALL INCLUDE PROVIDING NECESSARY FITTINGS, CHARGING SYSTEM WITH REFRIGERANT, INSULATION, AND CONNECTIONS TO COMPRESSORS AND COILS.

25. THE CONTRACTOR SHALL COORDINATE HIS ROUGH-IN WORK WITH THE DIMENSIONED DRAWINGS FURNISHED BY THE FOOD SERVICE EQUIPMENT CONTRACTOR.

26. FURNISH AND INSTALL EXPANSION JOINTS, GUIDES, AND ANCHORS, EXPANSION LOOPS, AND/OR SWING JOINTS AS REQUIRED TO PROPERLY TAKE UP EXPANSION IN THE DOMESTIC AND HEATING HOT WATER SUPPLY AND RETURN PIPING. EXPANSION JOINTS SHALL BE SIZED FOR A TEMPERATURE VARIATION OF 120 DEGREES F. IN DOMESTIC WATER PIPING AND 180 DEGREES F. IN HEATING HOT WATER PIPING, UNLESS OTHERWISE INDICATED ON THE PLANS. SPACING SHALL NOT EXCEED 100 FEET ON STRAIGHT RUNS OF DOMESTIC WATER PIPING AND HEATING HOT WATER PIPING.

EXPANSION JOINTS SHALL BE A PACKLESS BELLOW TYPE, FLEXONICS MODEL HB, GUIDES SHALL BE FLEXONICS MODEL PG, AND ANCHORS SHALL BE FLEXONICS MODEL AC, OR AS APPROVED BY THE ARCHITECT. ALL PIPE EXPANSION COMPONENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SECTION 15060 - MECHANICAL NOTES

1. PROVIDE MATERIALS AND EQUIPMENT AND EXECUTE THE WORK, INCLUDING ALL TESTING AND INSPECTIONS, IN COMPLIANCE WITH THE APPLICABLE PROVISIONS OF FEDERAL, STATE AND LOCAL GOVERNMENT LAWS, ORDINANCES, REFERENCED CODES AND STANDARDS CURRENT AS OF THE ISSUE DATE OF THESE DRAWINGS INCLUDING THE GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS CONSTITUTE MINIMUM REQUIREMENTS. ALL MORE STRINGENT REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL MODIFY, SUPPLEMENT AND SUPERSEDE APPLICABLE PORTIONS OF GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS.

2. CONTRACTOR SHALL PRESENT CERTIFICATE TO THE OWNER THAT ALL APPLICABLE BUILDING PERMITS HAVE BEEN SECURED PRIOR TO STARTING ANY WORK, AND PROVIDE THE OWNER WITH ALL REQUIRED CERTIFICATES OF FINAL APPROVAL FROM THE GOVERNING JURISDICTIONS AT COMPLETION OF THE WORK. PROVIDE ALL SHOP DRAWINGS AS REQUIRED IN FOLLOWING SECTIONS.

3. MAKE ALL CONNECTIONS TO EXISTING SYSTEMS DURING DESIGNATED PERIODS UPON APPROVAL OF THE OWNER AND AT NO INCREASE IN CONTRACT SUM.

4. EXISTING FACILITIES:

A. DO NOT INTERRUPT EXISTING UTILITIES UTILIZED BY THE OWNER, EXCEPT AS SPECIFIED OR WHEN APPROVED IN WRITING AND THEN ONLY AFTER TEMPORARY UTILITY SERVICES HAVE BEEN APPROVED AND PROVIDED. INTERRUPTIONS MUST BE SCHEDULED TO SUIT THE OWNER'S REQUIREMENTS.

B. VERIFY ALL EXISTING WORK, WHERE EXISTING CONNECTIONS ARE PARTIAL, PROVIDE ALL NECESSARY MATERIALS, LABOR AND EQUIPMENT REQUIRED TO MODIFY EXISTING WORK. IN ADDITION, MAINTAIN INTEGRITY OF THE EXISTING SYSTEMS. RECTIFY ANY CONTAMINATION, DEGRADATION OF CLEANLINESS OR DAMAGE TO THE EXISTING SYSTEMS TO THE SATISFACTION OF THE OWNER. PROVIDE ALL WORK SO REQUIRED AT NO INCREASE IN THE CONTRACTOR'S ORIGINAL PROPOSAL.

5. COORDINATE EXACT LOCATION OF CONSTRUCTION TO PRECLUDE ANY INTERFERENCES BETWEEN PIPING, WIRING, LIGHTING FIXTURES, DUCTWORK, BUILDING EQUIPMENT, PROCESS EQUIPMENT AND OTHER CONSTRUCTION.

6. PROVIDE LABOR, INCLUDING FIELD ERECTION AND SUPERVISION, MATERIALS, EQUIPMENT AND ANCILLARIES, AND COORDINATE, PROCURE, FABRICATE, DELIVER, ERECT OR INSTALL, INTERFACE WITH EXISTING WORK, START, DEBUG AND TEST ALL SYSTEMS AS NECESSARY TO PROVIDE THE OWNER WITH A COMPLETE, OPERATING FACILITY IN CONFORMANCE WITH THE CONSTRUCTION BID DOCUMENTS.

7. ALL CUTTING AND PATCHING THAT MAY BE NECESSARY FOR THE INSTALLATION OF THE MECHANICAL CONTRACTOR'S WORK SHALL BE PERFORMED AND REPAIRED BY THE TRADE WHO NORMALLY PERFORMS THAT WORK AND PAID FOR BY THE MECHANICAL CONTRACTOR. NO CUTTING OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT BEING PREVIOUSLY OBTAINED.

8. THE MECHANICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING HIS BID TO FAMILIARIZE HIMSELF WITH THE ACTUAL PROJECT CONDITIONS AND TO CHECK FOR ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF THE OTHER TRADES, AND/OR ANY APPARENT VIOLATIONS OF LOCAL OR STATE CODES, LAWS, ORDINANCES AND REGULATIONS. SHOULD ANY VIOLATIONS OR INTERFERENCES APPEAR AND DEPARTURE FROM THE DESIGN INTENT OF THE CONTRACT DOCUMENTS IS REQUIRED, THE THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND/OR OWNER. FAILURE TO PROVIDE THE ARCHITECT AND/OR OWNER WITH THE AFOREMENTIONED NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE INTENT OF THE CONTRACT DOCUMENTS WITH NO ADDITIONAL EXPENSES BEING INCURRED BY THE OWNER.

SECTION 15060 - FIRE PROTECTION SYSTEM

1. CONDITIONS: INSTALLATION OF SYSTEM MODIFICATIONS TO ACCOMMODATE NEW FINISHED SPACES SHALL BE ACCOMPLISHED BY A CONTRACTOR WHO IS DULY LICENSED AND ACCREDITED IN THE INSTALLATION OF AUTOMATIC SPRINKLER SYSTEMS AND FIRE PROTECTION EQUIPMENT FOR THE PAST THREE YEARS.

2. AUTHORITIES HAVING JURISDICTION:

- A. THE FIRE PROTECTION SYSTEM SHALL MEET ALL APPLICABLE RULES AND REGULATIONS OF THE AUTHORITIES HAVING JURISDICTION LISTED BELOW:
 - 1. LOCAL BUILDING INSPECTOR
 - 2. LOCAL FIRE MARSHALL
 - 3. INSURING AGENT

3. CODES, STANDARDS, AND REGULATIONS:

- A. MATERIAL, EQUIPMENT, AND INSTALLATION SHALL BE IN COMPLIANCE WITH, BUT NOT LIMITED TO, THE FOLLOWING CODES AND STANDARDS:
 - 1. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
 - A. NFPA PAMPHLET 13 - INSTALLATION SPRINKLER SYSTEMS
 - B. NFPA PAMPHLET 24 - PRIVATE FIRE SERVICE MAINS
 - 2. AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)
 - 3. AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI)
 - 4. LOCAL UTILITY COMPANY RULES AND REGULATIONS.
 - 5. RULES AND REGULATIONS OF THE BOARD OF HEALTH, COMMONWEALTH OF VIRGINIA
 - 6. VIRGINIA UNIFORM STATEWIDE BUILDING CODE.
 - 7. RETURN AIR PLENUM NOTE: ALL MATERIAL LOCATED IN THE RETURN AIR PLENUMS SHALL MEET THE REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE, SECTION 602.2.1.

4. DESCRIPTION OF WORK:

- A. THE WORK TO BE PERFORMED UNDER THIS SECTION OF THE SPECIFICATIONS COMPRISES THE FURNISHING OF ALL LABOR AND MATERIALS AND THE COMPLETION OF ALL WORK OF THIS SECTION AS SHOWN ON THE DRAWINGS AND/OR HEREIN SPECIFIED. IN GENERAL, THE WORK INCLUDED UNDER THIS SECTION CONSISTS OF, BUT IS NOT LIMITED TO, THE FOLLOWING:
 - 1. THE CONTRACTOR SHALL OBTAIN FROM LOCAL AUTHORITY OR PERFORM A FLOW TEST ON THE CITY WATER SYSTEM TO OBTAIN THE INFORMATION REQUIRED FOR HYDRAULIC CALCULATION.
 - 2. SPRINKLER SYSTEM LAYOUTS, HYDRAULIC DESIGN, RISERS, SPRINKLER, WATER FLOW SWITCHES, VALVES, FIRE DEPARTMENT CONNECTIONS, ALL INTERIOR PIPING, ALL EXTERIOR PIPING, AND ALL OTHER COMPONENTS INDICATED AND/OR REQUIRED TO ACCOMMODATE NEW FINISHED AREAS.
 - 3. SUBMIT FOR REVIEW AND COMMENTS BY THE OWNER'S REPRESENTATIVE, A SEPIA OF THE REFLECTED CEILING PLAN SHOWING THE PROPOSED

LOCATIONS OF SPRINKLER HEADS WITH RESPECT TO CEILING, LIGHTS, DIFFUSERS, CEILING GRID, FRAMING MEMBERS, ETC. THE SPRINKLER HEADS SHALL BE CENTERED WITHIN THE CEILING GRID.

4. PREPARE WORKING PLANS

A. A HYDRAULIC DESIGNED WET PIPE SPRINKLER SYSTEM FOR COMPLETE PROTECTION OF THE BUILDING.

B. THE SPRINKLERS SYSTEM SHALL BE ORDINARY HAZARD DESIGNED TO PROVIDE 0.10 GPM/SQ. FT. OVER 1500 SQ. FT. PLUS 10.0 GPM HOSE ALLOWANCE. THE SYSTEM SHALL BE WET USING 165 DEG. F. SPRINKLER HEADS AND COVER NO MORE THAN 225 SQ. FT. PER HEAD.

C. THE SPRINKLER SYSTEM FOR STORAGE SPACE AND MECHANICAL ROOMS SHALL BE ORDINARY HAZARD 1 DESIGNED TO PROVIDE 0.15 GPM/SQ. FT. OVER 1500 SQ. FT. THE SYSTEM SHALL BE WET USING 165 DEG. F. SPRINKLER HEADS AND COVER NO MORE THAN 130 SQ. FT. PER HEAD.

D. DATA ON THESE WORKING PLANS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

REQUIREMENTS LISTED IN NFPA 13 - SPRINKLER SYSTEMS, SIZE OF ALL PIPING; METHOD OF ANCHORING OR HANGING PIPE LINES; LOCATION AND TYPE OF VALVES; POSITION, TYPE, AND TEMPERATURE RATINGS OF SPRINKLER HEADS; MATERIAL AND EQUIPMENT LIST INDICATING MANUFACTURER'S NAMES AND TYPES; STRUCTURAL, MECHANICAL, ELECTRICAL, AND ARCHITECTURAL COORDINATING INFORMATION; AND THE VARIOUS OTHER ITEMS PERTINENT TO THE COMPLETE INSTALLATION OF THE SYSTEM IN ACCORDANCE WITH NFPA 13.

E. WORKING PLANS (SHOP DRAWINGS) SHALL BE SUBMITTED TO THE AUTHORITIES HAVING JURISDICTION FOR APPROVAL. TWO COPIES OF THE APPROVED SHOP DRAWINGS SHALL THEN BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR THEIR REVIEW.

F. COORDINATE THE SPRINKLER SYSTEM WITH OTHER PIPES, DUCTS, LIGHTS, CONDUIT, STRUCTURAL SYSTEMS, CEILING SUPPORTS, AND FRAMING BEFORE INSTALLATION. THERE SHALL BE MUTUAL AGREEMENT AMONG ALL OF THE TRADES AS TO THE LOCATION OF EACH TRADE'S MATERIALS TO BE INSTALLED. IN THE EVENT THAT THE CONTRACTOR SHOULD PROCEED TO INSTALL HIS MATERIAL WITHOUT PROPERLY COORDINATING WITH THE OTHER TRADES, ALL AND ANY CONFLICTING WORK SHALL BE REMOVED AND REINSTALLED AT THE CONTRACTOR'S OWN EXPENSE. THE REINSTALLED WORK SHALL BE AT THE DIRECTION AND APPROVAL OF TH AUTHORITY HAVING JURISDICTION.

5. SUBMITTALS:

A. CONTRACTOR SHALL SUBMIT MANUFACTURER'S LITERATURE AND DATA, DRAWINGS, HYDRAULIC CALCULATIONS AND VERIFICATION OF WATER TEST DATA TO THE AUTHORITIES HAVING JURISDICTION FOR APPROVAL. TWO COPIES OF THE APPROVED SUBMITTAL SHALL THEN BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR THEIR RECORDS.

1. MANUFACTURER'S LITERATURE AND DATA: SUBMIT THE FOLLOWING AS ONE PACKAGE WITH LAYOUT DRAWINGS AND CALCULATIONS:

- A. PIPING
- B. VALVES
- C. FLOW SWITCHES
- D. SPRINKLER HEADS
- E. SUPERVISORY SWITCHES
- F. WATER MOTOR ALARM
- G. FIRE DEPARTMENT CONNECTION
- H. BACKFLOW PREVENTER
- I. ALARM VALVE
- J. JOCKEY PUMP
- K. DRY PIPE VALVE
- L. DRY PIPE PANEL
- M. TEST CONNECTIONS
- N. CHECK VALVES
- O. DRAIN VALVES
- P. PRESSURE GAUGES
- Q. AIR COMPRESSOR

2. COMPLETE LAYOUT DRAWINGS OF SPRINKLER SYSTEM.

3. HYDRAULIC CALCULATIONS.

6. PIPING:

A. INTERIOR: FERROUS PIPING (WELDED AND SEAMLESS) WITHIN THE BUILDING SHALL BE OF THE MATERIALS LISTED IN NFPA 13 - SPRINKLER SYSTEM AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION. PLASTIC PIPING WILL NOT BE AN ACCEPTABLE PIPING MATERIAL. CHANGES IN DIRECTION OF PIPING SHALL BE MADE WITH FITTINGS. ALL MATERIALS AND INSTALLATION SHALL BE SUITABLE FOR MINIMUM WORKING PRESSURE OF 175 PSI OR AS SPECIFIED HEREINAFTER FOR TESTS.

B. EXTERIOR: EXTERIOR PIPING SHALL COMPLY WITH AWWA STANDARDS IN NFPA 24 - PRIVATE FIRE SERVICE MAINS AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION. ALL FERROUS METAL PIPE SHALL BE LINED, STEEL PIPE SHALL BE COATED AND WRAPPED WITH HOISTS FIELD-COATED AND WRAPPED AFTER ASSEMBLY, GALVANIZED PIPE IS NOT ACCEPTABLE. ALL MATERIALS AND INSTALLATION SHALL BE SUITABLE FOR MINIMUM WORKING PRESSURE OF 175 PSI OR AS SPECIFIED HEREINAFTER FOR TESTS.

7. VALVES:

A. PROVIDE IDENTIFICATION SIGN (ENAMEL ON METAL) TO ALL VALVES IN ACCORDANCE WITH NFPA NO. 13.

1. GATE VALVES:

- A. 2" AND SMALLER, SHALL HAVE APPROVAL RATING OF 175 PSI WWP OR GREATER WITH BODY AND BONNET MADE FROM CAST BROZE ALLOY ASTM B-62. VALVE SHALL BE OF OS&Y DESIGN WITH THREADED ENDS. VALVE SHALL BE UNDERWRITERS LABORATORIES LISTED, FACTORY MUTUAL APPROVED AND IN COMPLIANCE WITH MSS-SP 80. PROVIDE WITH ELECTRICAL SUPERVISORY CONTACTS.

B. 3" AND LARGER, SHALL HAVE APPROVAL RATING OF 175 PSI WWP OR GREATER, IRON BODY WITH BRONZE TRIM OR WITH RESILIENT RUBBER ENCAPSULATED WEDGE. BODY AND BONNET SHALL BE OF CAST IRON ALLOY ASTM A-128 CLASS B WITH OS&Y TYPE BONNET. IF THE RESILIENT WEDGE DESIGN, INTERIOR OF VALVE SHALL BE EPOXY-COATED. VALVE STEM SHALL BE PRE-GROOVED FOR USE WITH SUPERVISORY SWITCH. ENDS SHALL BE FLANGED CLASS 125 OR I.P.S. GROOVED. VALVES SHALL BE UNDERWRITERS LABORATORIES LISTED, FACTORY MUTUAL APPROVED AND IN COMPLIANCE WITH MSS-SP 70. PROVIDE WITH ELECTRICAL SUPERVISORY CONTACTS.

2. CHECK: (TYPE: WET PIPE ALARM CHECK VALVE) UNDERWRITERS' LABORATORIES, INC. OR FACTORY MUTUAL; RESEARCH CORPORATION APPROVED, 175 PSIG WWP, SHALL COMPLETE WITH STANDARD ACCESSORIES AND TRIM NECESSARY TO GIVE AN ALARM AND SHALL INCLUDE PRESSURE GAUGES, RETARD CHAMBER, TESTING PROVISIONS AND ALL NECESSARY INTERCOMPONENT PIPING, FITTINGS, AND VALVES. PILOT VALVE AND CLAPPER SHALL HAVE INDIVIDUAL ELASTOMER SEATS. PROVIDE WITH WATER MOTOR AND GONG FOR MECHANICAL ALARM.

3. CHECK VALVES: 2 1/2" AND LARGER, SHALL HAVE APPROVAL RATING OF 175 PSI WWP OR GREATER WITH BRONZE TRIM AND RUBBER METAL SEATING. BODY SHALL BE OF CAST IRON ALLOY ASTM A-128 CLASS B. ENDS SHALL BE FLANGED OR WATER FLOW RISE WITH CLASS 125/150 FLANGES. VALVES SHALL BE UNDERWRITERS LABORATORIES LISTED, FACTORY MUTUAL APPROVED AND WHERE APPLICABLE IN COMPLIANCE WITH MSS-SP 71.

- 4. POST INDICATOR AND VALVE: 4" AND LARGER, SHALL HAVE APPROVAL RATING OF 175 PSI WWP OR GREATER WITH BRONZE TRIM OR WITH RESILIENT RUBBER ENCAPSULATED WEDGE. BODY AND BONNET SHALL BE OF CAST IRON ALLOY ASTM A-128 CLASS B WITH BONNET INCORPORATING INDICATOR POST MOUNTING FLANGE. IF RESILIENT WEDGE DESIGN, INTERIOR OF VALVE SHALL BE EPOXY-COATED. ENDS SHALL BE FLANGED CLASS 125 OR MECHANICAL JOINT. UPRIGHT INDICATOR POST SHALL BE ADJUSTABLE FOR BURY DEPTH REQUIRED. VALVES AND POSTS SHALL BE UNDERWRITERS LABORATORIES LISTED AND FACTORY MUTUAL APPROVED. WHERE APPLICABLE, VALVES SHALL BE IN COMPLIANCE WITH MSS-SP 70. POST SHALL

INDICATE IF VALVE IS "OPEN" OR "SHUT" AND SHALL HAVE OPERATING WRENCH WITH LOCKING STAPLE. POST SHALL BE CAST IRON, WITH ALL WORKING PARTS COMPLETELY ENCLOSED. PROVIDE COMPLETE WITH SUPERVISORY SWITCH.

5. BUTTERFLY VALVES: 2 1/2" AND LARGER, SHALL HAVE APPROVAL RATING OF 175 PSI WWP OR GREATER. VALVE SHALL HAVE GEAROPERATOR WITH HANDWHEEL AND RAISED POSITION INDICATOR AND TWO INTERNAL SUPERVISORY SWITCHES. BODIES SHALL BE FROM CAST DUCTILE ASTM A395 OR A538 AND STEMS SHALL BE 400 SERIES STAINLESS STEEL. VALVES SHALL BE WAFER STYLE FOR INSTALLATION BETWEEN CLASS 125/150 FLANGES OR I.P.S. GROOVED. VALVES SHALL BE UNDERWRITERS LABORATORIES LISTED, FACTORY MUTUAL APPROVED AND IN COMPLIANCE WITH MSS-SP 67.

6. TRIM AND DRAIN VALVES (2" AND SMALLER):

A. BALL VALVES: SHALL HAVE APPROVAL RATING OF 175 PSI WWP OR GREATER. VALVE SHALL HAVE TFE SEATS, THREADED ENDS, BLOW OUT PROOF STEM AND LEVER HANDLE. VALVE SHALL BE UNDERWRITERS LABORATORIES LISTED AND FACTORY MUTUAL APPROVED FOR TRIM AND DRAIN SERVICE AND IN COMPLIANCE WITH MSS-SP 110.

B. GLOBE VALVES: SHALL HAVE APPROVAL RATING OF 175 PSI WWP OR GREATER. VALVE SHALL HAVE RUBBER SEAT DISC AND THREADED ENDS. VALVES SHALL BE UNDERWRITERS LABORATORIES LISTED FOR TRIM AND DRAIN SERVICE.

C. CHECK VALVES: SHALL BE RATED 175 PSI OR GREATER. VALVES SHALL HAVE RUBBER SEAT DISCS AND THREADED ENDS. VALVE SHALL BE OF Y-PATTERN HORIZONTAL SWING-TYPE. VALVE SHALL BE IN COMPLIANCE WITH MSS-SP 80.

8. SELF-CONTAINED TEST AND DRAIN ASSEMBLY:

A. DUCTILE IRON BODY WITH BRONZE "DRAIN" AND "TEST" VALVE BONNETS. ACRYLIC SIGHT GLASS FOR VIEWING TEST FLOW. VALVUS SIZED ORIFICE INSERTS TO SIMULATE FLOW THROUGH 17/32 INCH, 1/2 INCH, 7/16 INCH, AND 3/8 INCH DIAMETER SPRINKLER HEADS, 1-1/4" FEMALE THREADED OUTLETS FOR PLAIN END PIPE (END PREPARATION TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION), ALARM TEST MODULE MUST BE UL LISTED OF FM APPROVED IN ACCORDANCE WITH NFPA 13 FOR THE SPECIFIED SERVICE.

B. UL LISTED, BRONZE BODY, WITH CHROME PLATED BRONZE BALL, BRASS STERN, STEEL HANDLE, TEFLON SEAT AND SITE GLASSES. PROVIDE VALVE WITH THREE POSITION INDICATOR PLATE (OFF, TEST AND DRAIN), 1/4 - INCH TAPPING FOR PRESSURE GAUGE AND VARIOUS SIZED ORIFICE INSERTS TO SIMULATE FLOW THROUGH 3/8 INCH, 7/16 INCH, 1/2 INCH AND 17/32 INCH DIAMETER SPRINKLER HEADS.

9. SPRINKLERS:

A. UNDERWRITERS' LABORATORIES, INC. APPROVED, AUTOMATIC, FUSIBLE LINK TYPE, HAVING TEMPERATURE RATINGS SUITABLE FOR INSTALLATION. SPRINKLERS SHALL BE UPRIGHT, PENDENT SIDEWALL OR RECESSED. PENDENT AND SIDEWALL SHALL HAVE CHROME FINISH, UPRIGHT SHALL BE BRASS.

B. INSTALL GUARDS OVER SPRINKLER HEADS WHERE SUBJECT TO MECHANICAL INJURY OR INSTALLED IN MECHANICAL AREAS.

C. INSTALL HIGH TEMPERATURE HEADS WHERE NECESSARY BECAUSE OF HEATERS, DUCT OPENINGS, ETC, OR WHERE INSTALLED IN ATTIC SPACES.

D. PROVIDE A NON-COMBUSTIBLE WATER SHIELD BESIDE SPRINKLER HEADS ADJACENT TO ELECTRICAL SERVICE EQUIPMENT IN MECHANICAL OR ELECTRICAL ROOMS. STANDARD SPRINKLERS TO BE INSTALLED IN THE ATTIC AND ALL ORDINARU HAZARDS AREAS. QUICK RESPONSE SPRINKLERS TO BE INSTALLED IN ALL LIGHT HAZARDS.

10. SPRINKLER CABINET: COMPLETE WITH SPRINKLERS AND SPECIAL WRENCHES IN ACCORDANCE WITH NFPA NO. 13.

11. FLOW SWITCHES: SWITCH SHALL BE OF THE VANE TYPE WITH ADJUSTABLE PNEUMATIC RETARD DEVICE, ARRANGED TO MAKE ON WATER FLOW AND BREAK WHEN FLOW CEASES. WATER FLOW SWITCH SHALL BE SUITABLE FOR CONNECTING FIRE ALARM SYSTEM AS PROVIDED BY OWNER. FLOW SWITCH WITH GATE VALVE UP-STREAM, SHALL BE PROVIDED ON EACH FLOOR ZONE IN THE BRANCH MAIN AREA OF ALL SPRINKLERS.

12. BACKFLOW PREVENTER: PROVIDE A DOUBLE CHECK-VALVE ASSEMBLY (ASSE 1015; CSA B84.5), COMPLETE WITH GATE VALVES AND TEST COOKS. LOCATE ASSEMBLY IN FIRE SYSTEM WATER LINE IMMEDIATELY INSIDE BUILDING BEFORE ANY TAKEOFFS.

13. SIAMESE CONNECTIONS: CONNECTIONS SHALL BE FLUSH TYPED, POLISHED BRASS FINISH AND PLATE LABELED "AUTO-SPKR." SNAP-ON OR THREADED CONNECTIONS SHALL BE AS REQUIRED BY THE LOCAL FIRE DEPARTMENT, WITH BRASS CAP AND CHAIN. AN APPROVED CHECK VALVE AND 3/4 INCH BALL DRIP SHALL BE PROVIDED FOR EACH SIAMESE CONNECTION.

14. FIRE EXTINGUISHERS: FIRE EXTINGUISHERS WILL BE FURNISHED AND INSTALLED AS INDICATED ON ARCHITECTURAL DRAWINGS.

15. TEST PIPES AND DRAINS: INSPECTORS TEST PIPES AND CONNECTIONS SHALL BE INSTALLED AS REQUIRED AND SHALL BE INSTALLED SO THAT THE FLOW OF WATER WILL BE VISIBLE. SYSTEM PIPING SHALL BE PROPERLY GRADED TO PROVIDE FOR COMPLETE DRAINAGE. DRAIN PIPES SHALL BE PROVIDED WITH APPROVED VALVES AND SHALL BE RUN TO AN ACCESSIBLE PLACE FOR DISCHARGE. AUXILIARY DRAIN PIPES SHALL BE PROVIDED IF REQUIRED AT ANY LOW POINTS IN THE SYSTEMS. SYSTEM, AUXILIARY, TEST, AND WATER MOTOR ALARM DRAIN LINES SHALL BE PROVIDED WITH VALVES AND PIPED TO DISCHARGE OVER APPROVED DRAINS OR TO DISCHARGE THROUGH EXTERIOR WALLS NOT MORE THAN 6 INCHES ABOVE GRADE. DRAIN POINTS SHALL BE VISIBLE FROM THE DRAIN VALVES, AND SHALL BE LOCATED SO THAT THEY ARE FREE FROM THE POSSIBILITY OF CAUSING WATER DAMAGE TO PERSONS OR PROPERTY.

16. WET SYSTEM: INSTALL ALARM CHECK VALVE ADD WATER FLOW SWITCH ON RISER. INSTALL PRESSURE INDICATING GAUGES AND DRAIN IN ALARM CHECK VALVE. PROVIDE FIRE DEPARTMENT CONNECTION AND CHECK VALVE WITH BALL DRIP. PROVIDE WATER MOTOR ALARM. PROVIDE TAMPER SWITCHES ON GATE VALVES.

17. WATERFLOW ALARM AND VALVE SUPERVISORY SYSTEM: ALL WIRING, CONDUIT, ETC., REQUIRED FOR CONNECTION OF ALARM CHECK VALVES, SUPERVISORY VALVES INCLUDING PIV, DRY PIPE VALVE AND ELECTRIC FLOW ALARM SWITCHES TO THE AUTOMATIC DIAL OUT SYSTEM TO BE FURNISHED AND INSTALLED BY THE SPRINKLER CONTRACTOR. ALL WIRING SHALL BE INSTALLED IN CONDUIT AS SPECIFIED IN SECTION 16110.

18. INTENT OF DRAWINGS:

- A. IT IS NOT THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO PROVIDE A COMPLETE DETAILED DESCRIPTION OF APPARATUS, MATERIAL, EQUIPMENT, ETC., WHICH IS REQUIRED TO INSTALL A FIRE PROTECTION SYSTEM OR TO COMPLY WITH LOCAL BUILDING DEPARTMENT REQUIREMENTS. THE SPRINKLER CONTRACTOR SHALL PREPARE DRAWINGS SHOWING ALL MATERIAL, EQUIPMENT, AND SIZES REQUIRED TO INSTALL THE SYSTEM WHICH MEETS THE APPROVAL OF THE AUTHORITIES HAVING JURISDICTION FOR THE COMPLETED PROJECT, OR THEIR DESIGNATED REPRESENTATIVES. PIPING LAYOUT THAT MAY BE SHOWN ON DRAWINGS IS A SUGGESTED PIPE ROUTE FOR THE SYSTEM AND IS NOT CONSIDERED AS ABSOLUTE. CONTRACTOR SHALL SUBMIT HIS LAYOUT TO THE AFOREMENTIONED AUTHORITIES FOR THEIR APPROVAL. CONTRACTOR'S LAYOUT SHALL FIT THE DESIGN OF THE BUILDING, AND UNDER NO CIRCUMSTANCES WILL THE BUILDING DESIGN BE MODIFIED TO FIT THE CONTRACTOR'S LAYOUT.

B. ALL MATERIAL AND METHODS SHALL BE IN ACCORDANCE WITH APPLICABLE CODES, REGULATIONS, AND/OR ORDINANCES AND SHALL MEET THE APPROVAL OF THE LOCAL INSPECTION AUTHORITY HAVING JURISDICTION. THE LATEST EDITION OF THE NATIONAL FIRE PROTECTION ASSOCIATION'S PAMPHLET NO. 1 SHALL BE THE MINIMUM REQUIREMENT FO ALL WORK. ALL MATERIALS UNDER THIS SECTION OF THE SPECIFICATIONS SHALL BE LISTED BY TE UNDERWRITERS' LABORATORIES, INC., AS APPROVED FOR FIRE PROTECTION INSTALLATION.

C. THE SPRINKLER SYSTEMS SHALL BE DESIGNED IN ACCORDANCE WITH NFPA NO. 123.

D. CHECK WITH LOCAL WATER AUTHORITIES TO VERIFY STATIC PRESSURE, WATER FLOW, RESIDUAL PRESSURE SPECIFIED, AND DURATION TIME AVAILABLE AT BASE OF RISER OF WATER SUPPLY FOR THE PROPOSED SPRINKLER SYSTEM. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF WATER DATA OR PERFORMING A FLOW TEST ON THE MAIN TO VERIFY WATER FLOW DATA.

E. WET PIPE SPRINKLER SYSTEMS SHALL NOT BE INSTALLED IN LOCATIONS SUBJECT

TO FREEZING OR UNHEATED ATTIC SPACES OR SPACES EXTERIOR TO BUILDING INSULATION.

19. SUPERVISORY SWITCHES: FOR ALL SHUT-OFF VALVES AND EACH SPRINKLER ZONE CONTROL VALVE, PROVIDE A SUPERVISORY SWITCH.

20. FLOW ALARM SWITCH: PROVIDE IN SPRINKLER LINES WHERE NOTED. INSTALL WATER FLOW SWITCH AND ADJACENT VALVES EASILY ACCESSIBLE. LOCATE FLOW SWITCH MINIMUM OF 12 INCHES FROM A FITTING THAT CHANGES THE DIRECTION.

21. TESTING:

A. GENERAL: CONTRACTOR SHALL PROVIDE ALL INSTRUMENTS, MATERIALS, AND LABOR REQUIRED FOR THE FOLLOWING:

- B. CLEANING:
 - 1. REMOVE TRASH, PLASTER, DUST, PAINT SPOTS AND ALL FOREIGN MATTER FROM INSIDE AND OUTSIDE OF ALL EQUIPMENT.
 - 2. THE CONTRACTOR SHALL CHECK EACH LENGTH OF PIPE BEFORE IT IS PUT IN PLACE TO MAKE CERTAIN THERE IS NOT FOREIGN MATERIAL (STONES, SAND, ETC.) IN THE SYSTEMS.

C. TESTING:

- 1. GENERAL - TESTS SHALL BE MADE IN THE PRESENCE OF OR AS OTHERWISE DIRECTED BY THE OWNER'S REPRESENTATIVE AND/OR AUTHORITIES HAVING JURISDICTION, WHO SHALL BE GIVEN FIVE (5) DAYS NOTICE BY THE CONTRACTOR OF HIS READINESS TO PERFORM TESTS, AS REQUIRED BY THE NFPA. ANY LEAKS THAT DEVELOP DURING THE TESTS SHALL BE REPAIRED BY REMAINING THE JOINT OR REPLACING PIPE AND FITTINGS. NO PIPING SHALL BE CONCEALED UNTIL IT HAS BEEN TESTED, WITH RESULTS ACCEPTABLE TO THE OWNER'S REPRESENTATIVE AND/OR AUTHORITIES HAVING JURISDICTION.

ARROWS SHALL BE PROVIDED AS INDICATED ON THE DRAWINGS. UNITS SHALL BE EQUIPPED WITH TWO 80,000 HOUR RATED LAMP LIFE. DOORS SHALL LATCH WITHOUT THE USE OF TOOLS. MOUNTING SHALL BE AS INDICATED ON THE DRAWINGS. SELF CONTAINED BATTERY OPERATED EXIT LIGHTS SHALL INCLUDE ALL APPLICABLE REQUIREMENTS AS LISTED IN NOTE #20 (EMERGENCY LIGHTING UNITS).

20. EMERGENCY LIGHTING UNITS:

A. FURNISH AND INSTALL EMERGENCY LIGHTING IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF N.E.C. PROVIDE A MINIMUM OF 1 FOOT CANDLE (FC), MAINTAINED, ALONG ALL PATHS OF EGRESS FROM THE BUILDING. VERIFY SPACING AND LOCATION REQUIREMENTS WITH THE EMERGENCY LIGHTING MANUFACTURE. COORDINATE ALL PATHS OF EGRESS IN THE BUILDING WITH THE ARCHITECTURAL PLANS. REFER TO THE LIGHTING FIXTURE SCHEDULE, INDICATED ON THE ELECTRICAL PLANS, FOR THE TYPE OF FIXTURE AND DESCRIPTION OF ALL EMERGENCY LIGHTING FIXTURES TO BE USED FOR THIS PROJECT.

21. THE ELECTRICAL CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO FAMILIARIZE HIMSELF WITH THE ACTUAL PROJECT CONDITIONS AND TO VERIFY THE SCOPE OF WORK FOR ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF THE OTHER TRADES, AND/OR ANY APPARENT VIOLATIONS OF LOCAL AND STATE CODES, LAWS, ORDINANCES, AND REGULATIONS. IF ANY INTERFERENCES OR VIOLATIONS APPEAR AND DEPARTURE FROM THE DESIGN INTENT OF THE BID DOCUMENTS IS ENTERING INTO CONTRACT WITH THE OWNER. FAILURE TO PROVIDE THE ARCHITECT WITH THE AFOREMENTIONED NOTIFICATION WILL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE DESIGN INTENT OF THE BID DOCUMENTS WITH NO ADDITIONAL EXPENSES ("EXTRAS") BEING INCURRED BY THE OWNER, ARCHITECT, OR ENGINEER.

22. FORTY-EIGHT HOURS BEFORE ANY EXCAVATING WORK IS STARTED, RELATIVE TO ELECTRICAL WORK, CONTACT MISS "UTILITY" (TOLL FREE), AT (800)552-7001.

23. ALL CABINETS, MOTOR FRAMES, STARTERS, CONDUIT SYSTEMS, PANELS, ETC., SHALL BE THOROUGHLY GROUNDED IN ACCORDANCE WITH THE N.E.C. SECTIONS 250-23 (A); 250-81; 250-83; & 250-94.

24. UNLESS OTHERWISE NOTED ON THE PLANS, ALL DISCONNECT SWITCHES SHALL BE 250 VOLT OR 600 VOLT RATED, HEAVY DUTY TYPE, INDOOR USE, AND NEMA 3R FOR OUTDOOR USE. G.E., WESTINGHOUSE, OR SQUARE D. ALL DISCONNECT SWITCHES SERVING MOTORS SHALL BE HORSEPOWER RATED.

25. SINGLE PHASE MOTOR STARTERS SHALL HAVE MANUAL TOGGLE SWITCH WITH THERMAL OVERLOADS, SURFACE OR FLUSH MOUNTED AS REQUIRED, ALLEN-BRADLEY NO. 712.

26. THREE PHASE MOTOR STARTERS SHALL BE COMPLETE WITH OVERLOADS, CONTROL TRANSFORMER, AND TWO AUXILIARY CONTACTS, SURFACE OR FLUSH MOUNTED AS REQUIRED, ALLEN-BRADLEY TYPE SCO COMPLETE WITH ENCLOSURE.

27. ALL PANELBOARDS, DISTRIBUTION PANELS, POWER PANELS, AND SWITCHBOARDS SHALL HAVE COPPER BUS OF THE RATING INDICATED ON THE DRAWINGS. DISTRIBUTION PANELS, POWER PANELS, AND SWITCHBOARDS UTILIZED FOR THE BUILDING SERVICE ENTRANCE EQUIPMENT SHALL BE LABELED AS FOLLOWS:

AS FOLLOWS: "SUITABLE FOR USE AS SERVICE EQUIPMENT".

28. THE ELECTRICAL CONTRACTOR SHALL VERIFY EXACT ELECTRIC AND TELEPHONE UTILITY COMPANY(S) SERVICE POINT(S) AND PRIMARY SERVICE CONDUIT(S), ROUTING SIZE(S), AND LENGTH(S) WITH THE UTILITY COMPANY(S) SERVICE PLANNER(S), PRIOR TO SUBMITTING A BID FOR THE ELECTRICAL WORK IN THIS PROJECT. ALSO VERIFY AND INCLUDE ALL UTILITY COMPANY(S) COST(S) IN THE BID FOR THIS WORK.

29. THE ELECTRICAL CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION OF ANY OF THE FOLLOWING EQUIPMENT:

- A. LIGHTING FIXTURES
- B. DISTRIBUTION AND/OR POWER PANELBOARDS
- C. LIGHTING AND/OR RECEPTACLE PANELBOARDS
- D. STARTERS AND/OR DISCONNECT SWITCHES

NOTE: REVIEW OF THE SHOP DRAWINGS DOES NOT RELIEVE THE ELECTRICAL CONTRACTOR OF HIS RESPONSIBILITY TO CONFORM TO THE CONTRACT DOCUMENTS AND APPLICABLE CODES.

30. THE ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL WORK INSTALLED PER THIS CONTRACT TO BE FREE FROM ALL DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF THE BUILDING BY THE OWNER, AND SHOULD DEFECTS OCCUR WITHIN THIS PERIOD, REPAIR AND/OR REPLACE DEFECTIVE ITEMS, AT NO EXPENSE TO THE OWNER.

31. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATIONS OF HIS EQUIPMENT AND WORK WITH THE OTHER BUILDING TRADES TO AVOID ANY INTERFERENCES BETWEEN HIS WORK AND THE WORK OF THE OTHER BUILDING TRADES.

32. ANY CUTTING AND/OR PATCHING, THAT MAY BE REQUIRED FOR THE INSTALLATION OF THE ELECTRICAL SYSTEM, SHALL BE PERFORMED BY THE ELECTRICAL CONTRACTOR. NO CUTTING OF THE BUILDING STRUCTURAL SYSTEM SHALL BE DONE WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT BEING PREVIOUSLY OBTAINED.

33. SWITCHGEAR, UNIT SUBSTATIONS, MOTOR CONTROLS, PANELBOARDS, ETC., SHALL BE IDENTIFIED WITH MANUFACTURES NAMEPLATE, SHOP ORDER, WHERE APPLICABLE ON COMPOSITE ASSEMBLIES, AND DESIGNATIONS USED ON THE DRAWINGS. NAMEPLATES FOR THIS PURPOSE SHALL BE LAMINATED PHENOLIC PLASTIC BEVELED EDGED, BLACK WITH ENGRAVED WHITE LETTERS. EXCEPT WHERE IMPRACTICAL LETTERS, AND NUMERALS SHALL BE A MINIMUM OF 1" HIGH. NAMEPLATES SHALL BE MECHANICALLY SECURED. DYMO OR PRESSURE SENSITIVE NOT ACCEPTABLE. PANEL DIRECTORIES SHALL BE NEATLY TYPED SHOWING EQUIPMENT SERVED AND LOCATION FOR EACH BREAKER OR SWITCH.

34. ALL CIRCUITS AND EQUIPMENT ARE TO BE TESTED UPON COMPLETION OF WORK AND FINAL TESTS, WHEN REQUESTED, SHALL BE MADE IN THE EQUIPMENT NOT PROPERLY OPERATIVE AND/OR CONNECTED SHALL BE REPLACED, REPAIRED, AND RETESTED WITHOUT ADDITIONAL EXPENSE TO THE OWNER.

35. UPON COMPLETION OF THE PROJECT, ALL ENCLOSURES SHALL BE LEFT FREE OF REFUSE AND THE EXTERIOR FREE OF DIRT AND PAINT SPLATTER.

36. LIGHTING AND APPLIANCE PANELBOARDS:

A. LIGHTING AND RECEPTACLES PANELBOARDS SHALL BE DEAD- FRONT TYPE WITH FLUSH, SURFACE-MOUNTED, OR COLUMN-MOUNTED STEEL CABINETS AS REQUIRED AND AN INTERIOR ASSEMBLY OF BUS BAR, SUPPORTS, AND CIRCUIT BREAKERS. PANELBOARDS FOR COLUMN MOUNTING SHALL BE PROVIDED COMPLETE WITH CABLE DUCT AND PULL BOX WITH NEUTRAL TERMINALS. TRIMS SHALL HAVE HINGED AND LOCABLE DOORS WITH GLASS OR HEAVY PLASTIC COVERED CIRCUIT DIRECTORIES SUITABLE FOR IDENTIFYING THE MAXIMUM NUMBER OF PANELBOARD BREAKERS. ALL LOCKS SHALL BE TUMBLER TYPE AND BE KEY ALIKE. HINGES SHALL BE PIANO TYPE AND SUPPORT AT LEAST 5% OF THE DOOR LENGTH. BOXES SHALL BE GALVANIZED AND FRONT ASSEMBLY, INCLUDING CABLE DUCT AND PULL BOX SHALL BE PAINTED WITH A PRIMER AND A FINISH COAT OF MANUFACTURE'S STANDARD FINISH. ALL FLUSH MOUNTED PANELS SHALL BE APPROXIMATELY 5-3/4" DEEP AND 20" WIDE. PANELBOARDS SHALL HAVE 3 PHASE, 4 WIRE SOLID NEUTRAL MAINS OF INDICATED CAPACITIES WITH MAIN CIRCUIT BREAKERS SIZED AS INDICATED.

B. CIRCUIT BREAKERS SHALL BE MOLDED PLASTIC CASE TYPE AC RATED, QUICK-MAKE QUICK-BREAK, WITH TRIP FREE OPERATING HANDLE, POSITION INDICATOR, AND THERMAL-MAGNETIC TRIP DEVICE. TWO-AND THREE-POLE BREAKERS SHALL HAVE A COMMON OPERATING HANDLE AND COMMON TRIP MECHANISM. TRIP RATING SHALL BE AS INDICATED ON THE DRAWINGS AND A MINIMUM INTERRUPTING CAPACITY SHALL BE 7500 AMPS SYMMETRICAL AT 120 VOLTS. ALL BREAKERS SHALL BE BOLTED ON TYPE, UNLESS OTHERWISE INDICATED. ALL 20 AMP CIRCUIT BREAKERS SHALL BE RATED FOR SWITCHING DUTY.

C. LOCK-ON DEVICES SHALL BE PROVIDED FOR ALL BRANCH CIRCUITS FEEDING EXIT LIGHTING, SWITCHED NIGHT LIGHTING, FIRE ALARM AND SIGNAL SYSTEMS, AND EMERGENCY LIGHTING.

D. PANELBOARDS SHALL HAVE SOLDERLESS CONNECTORS THROUGHOUT AND SHALL BE GENERAL ELECTRIC, ITE, SQUARE D OR WESTINGHOUSE.

37. DEMOLITION WORK:

A. AS SHOWN ON PLANS, CERTAIN AREAS IN THE EXISTING BUILDING SHALL BE MODIFIED TO SUIT THE NEW REQUIREMENTS.

B. WORK IN THE AREA SHALL INCLUDE THE DISCONNECTION, REMOVAL, RELOCATION, AND RECONNECTION COMPLETE IN ALL RESPECTS OF ALL ITEMS SHOWN ON PLANS AND/OR OTHERWISE REQUIRED TO SUIT THE DESIGN INTENT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE PROJECT SITE TO CORRECTLY ASCERTAIN THE SCOPE OF SERVICES AND TO INCLUDE ALL PERTINENT COSTS IN HIS BASE BID. NO EXTRAS WILL BE ALLOWED.

C. ALL ELECTRICAL WORK INTERFERING WITH AND REQUIRING MODIFICATION FOR THE NEW REQUIREMENTS SHALL BE DISCONNECTED, REMOVED, AND/OR REROUTED TO SUIT THE FINAL INSTALLATION.

D. RELOCATE AND REROUTE EQUIPMENT DEVICES AND WIRING AS REQUIRED IN DEMOLITION AREAS.

E. ALL EQUIPMENT AND WIRING NOT IN RENOVATION AREAS BUT AFFECTED BY WORK IN RENOVATION AREAS SHALL BE RECONNECTED AS REQUIRED IN DEMOLITION AREAS.

F. ABANDONED AND INACTIVE CONDUITS, WIRE, DEVICES, EQUIPMENT, ETC. SHALL BE REMOVED IN THEIR ENTIRETY. IN ADDITION TO THESE ITEMS, THIS CONTRACTOR SHALL REMOVE ALL ITEMS AS INDICATED ON THE PLANS, OR AS REQUIRED TO CLEAN UP THE ENTIRE AREA OF UNUSED, ABANDONED, OR INACTIVE MATERIAL. CONDUIT AND WIRING FEEDING DEVICES AND EQUIPMENT TO BE REMOVED SHALL ALSO BE REMOVED UP TO THE NEXT ACTIVE PULLBOX, JUNCTION BOX, OR PANEL. HANGERS, MESSENGER CABLE, BRACKETS, ETC. SUPPORTING ITEMS TO BE REMOVED SHALL BE UNFASTENED AND REMOVED. OPEN HOLES IN DUCTS, PANELS, AND KNOCKOUTS SHALL BE CLOSED WITH SUITABLE SNAP PLUGS OR FILLER PLATED.

G. THE CONTRACTOR SHALL REMOVE AND DELIVER TO A PLACE DESIGNATED BY THE OWNER ALL EXISTING ELECTRICAL EQUIPMENT NO LONGER INTENDED FOR USE. THIS EQUIPMENT REMAINS THE PROPERTY OF THE OWNER.

H. ANY EQUIPMENT, DEVICES, MATERIALS, ETC. THE OWNER ELECTS NOT TO RETAIN SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR OFF THE OWNER'S PREMISES.

I. CONTRACTOR SHALL RE-WIRE ALL EXISTING ELECTRICAL EQUIPMENT TO NEW LIGHTING PANELS. FIELD VERIFY PRIOR TO SUBMITTING HIS BID.

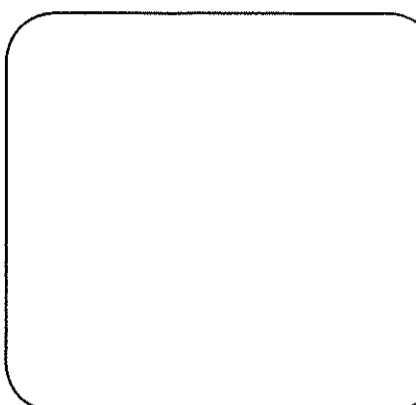
38. CONTRACTOR TO PROVIDE CONDUIT AND WIRING FOR PHONES WITHIN FIRST TEN (10) DAYS OF CONSTRUCTION. PHONE TO BE MOUNTED ON TEMPORARY BOARD OR A CELLULAR PHONE MAYBE USED IF GOOD RECEPTION IS AVAILABLE AT THE SITE.

39. FLOOR OUTLET TO BE HUBBEL WATER TIGHT ADJUSTABLE BOX WITH HEAVY DUTY RECEPTACLE AND HUBBLE FLUSH DUPLEX BRUSHED ALUMINUM DUAL SCREW CAP COVER.

MEMBER ICC INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS

EDEN & ASSOCIATES, P.C.

1049 BROOKDALE STREET SUITE B
MARTINSVILLE, VIRGINIA 24112
VOICE 276-632-6231
FAX: 276-632-3648



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COMMONWEALTH CENTRE

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MARTINSVILLE, VIRGINIA

SHEET NO.

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