BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

REPLACEMENT SCHOOL

500 COMPASS DRIVE
MIDDLE RIVER, MARYLAND 21220

PSCP # 03.057.17 LP

ARA-209-17

MEP

BID SET - 11/10/2016

ARCHITECT
MURPHY & DITTENHAFER ARCHITECTS
805 N. CHARLES STREET
BALTIMORE, MARYLAND 21201
TEL. 410.625.4823

MECHANICAL/ELECTRICAL/PLUMBING ENGINEER
JAMES POSEY ASSOCIATES, INC.
3112 LORD BALTIMORE DRIVE
WINDSOR MILL, MARYLAND 21244
TEL. 410.265.6100

STRUCTURAL ENGINEER
CARROLL ENGINEERING, INC.
215 SCHILLING CIRCLE, SUITE #102
HUNT VALLEY, MARYLAND 21031
TEL. 410.785.7423

CIVIL ENGINEER/LANDSCAPE ARCHITECT
SITE RESOURCES, INC.
14315 JARRETTSVILLE PIKE
PHOENIX, MARYLAND 21131
TEL. 410.683.3388

GEOTECHNICAL ENGINEER
DW KOZERA, INC.
1408 BARE HILLS ROAD, SUITE 200
BALTIMORE, MARYLAND 21209
TEL. 410.823.1060

LAND SURVEYING
GERHOLD CROSS & ETZEL, INC.
320 E. TOWSONTOWN BLVD, SUITE 100
TOWSON, MARYLAND 21286
TEL. 410.823.4470

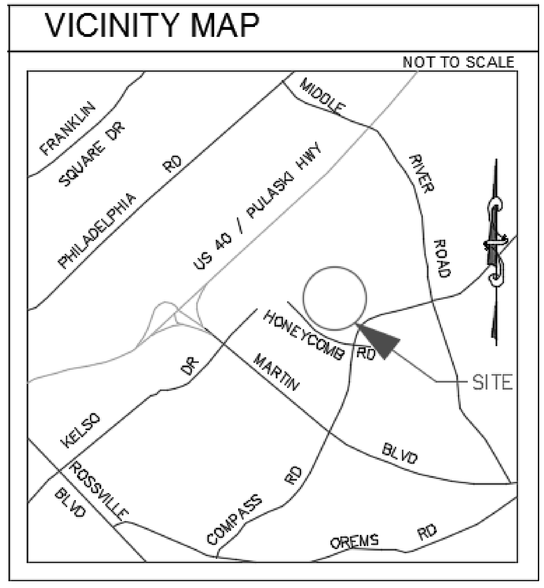
TRAFFIC CONSULTANT
THE TRAFFIC GROUP, LLC
9900 FRANKLIN SQUARE DRIVE, SUITE H
BALTIMORE, MARYLAND 21236
TEL. 410.931.6600

ENVIRONMENTAL CONSULTANT
ARIA ENVIRONMENTAL, INC.
5292 ENTERPRISE STREET, SUITE B
SYKESVILLE, MARYLAND 21784
TEL. 410.549.5774

FOOD SERVICE CONSULTANT
NYIKOS ASSOCIATES, INC.
18219-A FLOWER HILL WAY
GAITHERSBURG, MARYLAND 20879
TEL. 240.683.9530

COST ESTIMATOR
FORELLA GROUP, LLC
9495 SILVER KING COURT, #A
FAIRFAX, VIRGINIA 22031
TEL. 240.683.9530

AERIAL MAP
NOT TO SCALE



ARCHITECT'S STAMP

I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NUMBER

EXPIRATION DATE

ARCHITECTURAL REGISTRATION BOARD 6607-A RICHARD MURPHY DITTENHAFER, JR. STATE OF MARYLAND

BALTIMORE COUNTY PUBLIC SCHOOLS
VICTORY VILLA ELEMENTARY SCHOOL
500 COMPASS ROAD, MIDDLE RIVER, MD 21220

Murphy & Dittenhafer ARCHITECTS

Mark	Date	Description
	09/13/2016	95% MC SUBMISSION
	09/30/2016	PERMIT SET
	11/10/2016	BID SET

ARCHITECTURAL REGISTRATION BOARD 6607-A RICHARD MURPHY DITTENHAFER, JR. STATE OF MARYLAND

PROJECT NO:	15123
DRAWN BY:	Author
CHECKED BY:	Checker

COVER SHEET

SHEET
CS-1

DRAWING LIST	
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DRAWING LIST	
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ABBREVIATIONS

ACT	ACOUSTICAL CEILING TILE
A/C	AIR CONDITIONING
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
A.B.E.	ABOVE BENCHMARK ELEVATION
A.H.U.	AIR HANDLING UNIT
ALUM	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
@	AT
B.C.	BASE CABINET
BD.	BOARD
BITUM.	BITUMINOUS
BLDG.	BUILDING
BLK.	BLOCK
BLKD.	BULKHEAD
BLKG	BLOCKING
C	CENTER LINE
C.B.	CHALK BOARD
CL.	CLOSET
CLG.	CEILING
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC.	CONCRETE
CONT.	CONTINUOUS
C.J.	CONTROL JOINT
CPT.	CARPET
C.T.	CERAMIC TILE
D.	DEEP
DEMO	DEMOLITION
D.F.	DRINKING FOUNTAIN
DIM.	DIMENSION
DN.	DOWN
DTL	DETAIL
DIA	DIAMETER
DS	DOWN SPOUT
DWG.	DRAWING
E.J.	EXPANSION JOINT
EL.	ELEVATOR
ELEC.	ELEC.
ELEV.	ELEVATION
ETC.	ETCETERA
E.T.R.	EXISTING TO REMAIN
EQUIP.	EQUIPMENT
EXIST.	EXISTING
EXT	EXTERIOR
F.E.C.	FIRE EXTINGUISHER CABINET
F.D.	FLOOR DRAIN
F.F.E.	FINISH FLOOR ELEVATION
FIN	FINISH
FL. OR	FLOOR
FLR.	FACE OF MASONRY
FOM	FOOT, FEET
FT.	FIELD VERIFY WITH
F.V.W.A.	ARCHITECT
GA	GAUGE
GALV	GALVANIZED
GYP. BD.	GYPSUM BOARD
GSF	GROSS SQUARE FEET
GWB	GYPSUM WALL BOARD
H OR HT	HEIGHT
HC	HANDICAPPED
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
HR	HOUR
HVAC	HEATING/VENTILATION, AIR CONDITIONING
IN	INCH
INSUL.	INSULATION
INT.	INTERIOR
JAN.	JANITOR
JT	JOINT
L	LENGTH
LAV.	LAVATORY
L.H.	LEFT HAND
MACH.	MACHINE
MAT'L	MATERIAL
MAX.	MAXIMUM
M.E.	MATCH EXISTING
MECH.	MECHANICAL
MEP	MECHANICAL/ELECTRICAL/ PLUMBING
MIN.	MINIMUM
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
MTD	MOUNTED
MTL.	METAL
NO. OR #	NUMBER
NOM.	NOMINAL
N.I.C.	NOT IN CONTRACT
NSF	NET SQUARE FEET
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OPNG.	OPENING
P-LAM	PLASTIC LAMINATE
PLYWD	PLYWOOD
P.T.	PORCELAIN TILE
PTD.	PAINTED
REF.	REFRIGERATOR
REINF.	REINFORCED
REQ'D	REQUIRED
R.H.	RIGHT HAND
RM.	ROOM
SF	SQUARE FEET
S.G.T.	STRUCTURAL GLAZED TILE
SHT.	SHEET
SIM.	SIMILAR
S.O.G.	SLAB ON GRADE
SNT.	SEALANT
SPEC.	SPECIFICATION
STD.	STANDARD
STL.	STEEL
S.S.	STAINLESS STEEL
STOR.	STORAGE
STRUCT.	STRUCTURE
SQ	SQUARE
SUSP.	SUSPENDED
T & G	TONGUE & GROOVE
TEMP	TEMPORARY
TH.	THICK
T.O.S.	TOP OF SLAB
T.O.J.	TOP OF JOIST
TLT.	TOILET
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
V.C.T.	VINYL COMPOSITION TILE
VERT	VERTICAL
V.I.F.	VERIFY IN FIELD
V.I.F.W.A.	VERIFY IN FIELD WITH ARCHITECT
W/	WITH
W.	WIDTH
W.B.	WALL BOARD
W.C.	WATER CLOSET
WD.	WOOD
	WITHOUT

SYMBOLS

DRAWING #
SHEET #

ELEVATION
DRAWING #
SHEET #

DETAIL
DRAWING #
SHEET #

INTERIOR ELEVATIONS
DRAWING #
SHEET #

WALL TYPE (SEE WALL SCHEDULE)

XX WINDOW TYPE (SEE WINDOW SCHEDULE)

DOOR NUMBER (SEE DOOR SCHEDULE)

NEW SUSP. A.C.T. CEILING & GRID

NEW SUSP. GYP. BD. CEILING OR BULKHEAD

EXISTING DOOR TO BE REMOVED

EXISTING DOOR

NEW DOOR

COMPACTED SUBGRADE

CONCRETE

C.M.U.

ROUGH WOOD

PLYWOOD

FINISHED WOOD

RIGID INSULATION

BRICK

EXISTING WALLS TO BE REMOVED

NEW PARTITION

EXISTING WALLS TO REMAIN

BALTIMORE COUNTY PUBLIC SCHOOLS
VICTORY VILLA ELEMENTARY SCHOOL
500 COMPASS ROAD, MIDDLE RIVER, MD 21220

Murphy & Dittenhafer ARCHITECTS
239 West Padonia Road, Timonium, MD 21093 (410) 252-4270 FAX: 252-4281
410-252-4270 FAX: 252-4281 Baltimore Area 410-561-7270 FAX: 561-7271

Mark	Date	Description
	06/31/2016	90% A/C SUBMISSION
	09/30/2016	PERMIT SET
	11/15/2016	BID SET

ARCHITECTURAL REGISTRATION 6607-A
PAMELA WOOD DITTENHAFER, REGISTERED
STATE OF MARYLAND

PROJECT NO:	15123
DRAWN BY:	Author
CHECKED BY:	Checker

SHEET LIST

SHEET
CS-2

BUILDING CODE STUDY DATA

PROJECT NAME AND LOCATION

NAME	VICTORY VILLA ELEMENTARY SCHOOL
STREET ADDRESS	500 COMPASS ROAD
COUNTY	BALTIMORE
CITY, STATE	MIDDLE RIVER, MD

PROJECT DESCRIPTION: NEW ELEMENTARY SCHOOL, TWO-STORY

APPLICABLE CODES

Building Code:	INTERNATIONAL BUILDING CODE 2015
Fire Code:	NFPA 101 LIFE SAFETY CODE 2012 (With 2015 State Fire Protection Amendments)
Accessibility:	AMERICANS WITH DISABILITY ACT ACCESSIBILITY GUIDELINES (ADAAG) AND MARYLAND ACCESSIBILITY CODE (COMAR.05.02.02 REV. 20002)

BUILDING USE AND CONSTRUCTION CLASSIFICATIONS:

VICTORY VILLA ELEMENTARY SCHOOL CONSISTS OF TWO (2) BUILDINGS SEPARATED BY A 2 HOUR FIRE BARRIER. THE TOTAL FOOTPRINT OF BOTH BUILDINGS COMBINED = 62,762.83 GSF (FIRST FLOOR ONLY).

I. CLASSROOM / LOBBY BUILDING

		2015 I BC CODE	2015 FIRE CODE
USE GROUP:	**E EDUCATIONAL**	305.1	6.1.3

BUILDING AREA:

FIRST FLOOR:	40,221.83 GSF
SECOND FLOOR	35,115.68 GSF
TOTAL	75,337.51 GSF

PROPOSED TYPE OF CONSTRUCTION: IBC TYPE IIB

ALLOWABLE BUILDING HEIGHT: 75' (IBC TABLE 504.3)
3 STORIES (TABLE 504.4)

ACTUAL BUILDING HEIGHT: 28' (34' North Side)

ALLOWABLE BUILDING AREA:

Occupancy E, Type IIB, Multi-story w/ sprinkler system (IBC TABLE 506.2.) = 43,500 GSF

Actual Footprint: 40,222 GSF

IBC 506.3 Frontage Increase
Total Perimeter: 770 LF. Accessible by Fire Truck: 530 LF (69%)
Bus Loop = 30'. Parking lot behind kindergarten area = 25'-6"
Equation 5-2: If = [F/P – 0.25] W/30 = [530/770– 0.25] 27/30 =[.688-0.25] 0.8 = .438 x 0.9 =.394

506.2.3 Single Occupancy Multistory Buildings: Equation 5-2: Aa = [At + (NS x If)] X Sa = [43,500 + (14,500 x .394) x 2 = [43,500 + 5,713] x 2 = [49,213] x 2 = 98,426 GSF. Maximum per floor = 49,213.

TWO-STORY COMMUNICATING SPACE (with Monumental Stair):

NFPA 8.6.6 – Permits the use of unenclosed vertical floor openings, called "communicating spaces". 1 hour fire-rated separation is not required when an automatic fire suppression system and smoke barrier are provided. Smoke barrier can consist of storefront doors on hold-open on the second floor containing the monumental stair lobby.

The monumental is not a convenience opening but is part of a communicating space with all of its safety requirements and also has access to two (2) protected fire exit stairs in accordance with 14.2.4.2 and 14.2.5.3.1.

IBC SECTION 712.1.9 the unenclosed two-story opening meets the 7 requirements and as such is not considered an atrium subject to the requirements of Section 404 of the IBC.

Calculated Occupancy Count: For Egress and Plumbing Fixture Count Purposes

IBC 2015: Type of Area / Occupant Count:

First Floor:
Pre-K: 54 Occ x 3 + 53 Occ x 2 = 268.
K: 54 Occupants x 5 = 270
RR: 40 Occupants = 40
1st Gr: 40 Occupants x 5 = 200
Maker's Space: 40 Occupants
Digital Learning: 40 Occupants
Video/Control/Storage: 15 Occupants
Offices: 4,738 GSF/100 = 47 occupants
Library (Reading Rooms): 2,572 NSF/50 net = 51 Occupants
Library (Stacks): 773 GSF/100 = 8 Occupants
Total First Floor: 817

Second Floor:
Classrooms:
37 Occupants x 15 = 555
40 Occupants x 4 = 160
41 Occupants x 1 = 41
Art Room: 52 Occupants
Fac Wrk Rm: 4 Occupants
Spec Ed / ESOL: 39 Occupants x 2 = 78
Total Second Floor: 890

Stair Egress Calculations:

EDUCATION WING:
Classrooms - First Floor:
817 Occupants

Classrooms – Second Floor:
890 Occupants

Per IBC 1005.3.1 Stairways: Calculate stair width capacity based on one floor at a time
Per IBC 1005.3.1 Stairways Exception 1 for Sprinklers 890 Occupants x 0.2 = 178" egress with required. Exit Stair ST1-B = 88". Exit Stair ST2-B = 77.5". Monumental Stair is 101.5". Per IBC 1012.9 Intermediate handrails must be provided within 30" of reach.

National Standard Plumbing Code Fixture Count – IPC 2015 Table 401
Business- Fist Floor:
Faculty/Staff: Offices 47 Occupants/2 = 23 Male & 23 Female.
Required Fixtures: Male (1WC/1 Lav); Female: (1WC/1 Lav).
Education - Fist Floor:
817 – 47 = 770/2 = 385M and 385F
Required Fixtures: Male: (7WC/7 Lav); Female (7WC/7 Lav).
Education - Second Floor:
946/2 = 473M and 473F
Required Fixtures: Male: (9WC/9 Lav); Female (9WC/9 Lav).

Total:
Drinking Fountains = 817/100 = 8; 946/100=9.
Service Sinks = 1 Per Floor = 2.

II. GYM/CAFETERIA/FOOD SERVICE BUILDING

		2015 I BC CODE	2015 FIRE CODE
USE GROUP:	**E EDUCATIONAL**	305.1	6.1.3

BUILDING AREA:

FIRST FLOOR:	22,541 GSF
TOTAL	22,541 GSF

PROPOSED TYPE OF CONSTRUCTION: IBC TYPE IIB

ALLOWABLE BUILDING HEIGHT: 75' (IBC TABLE 504.3)
3 STORIES (TABLE 504.4)

ACTUAL BUILDING HEIGHT: 28' (Gymnasium)

ALLOWABLE BUILDING AREA:

Occupancy E, Type IIB, Single-story w/ sprinkler system (IBC TABLE 506.2.) = 58,00 GSF

Actual Footprint: 22,541 GSF

IBC 506.3 Frontage Increase
Total Perimeter: 530 LF. Accessible by Fire Truck: 497 LF (93%)
Parent Drop-off and loop on east side of building = 24'. Parking lot behind Gym/Cafe wing = 28'. Parking

Equation 5-2: If = [F/P – 0.25] W/30 = [497/530– 0.25] 24/30 =[.93-0.25] 0.8 = .687 x 0.8 =.549

506.2.3 Single Occupancy Multistory Buildings: Equation 5-2: Aa = [At + (NS x If)] X Sa = [43,500 + (14,500 x .549) x 2 = [43,500 + 7,969] x 2 = [51,469] x 1 = 51,469GSFMaximum per floor.

Calculated Occupancy Count: For Egress Purposes

IBC 2015: Type of Area / Occupant Count:

First Floor:
Cafeteria: 3,250 NSF/15 net = 217 Occupants
Platform: 882 NSF/15 Net = 59 Occupants
Gymnasium: 4,066 NSF/7 net = 580 Occupants
Community Room: 1,355/20 = 68 Occupants
Parks & Rec: 1,976 GSF/100 net = 20 Occupants
Kitchen: 2,400 GSF/200 = 24 Occupants
Total First Floor: 968

Total Gym/Café/Food Service Building: 968/2= 484 M/484 F

National Standard Plumbing Code Fixture Count – IPC 2015 Table 401
Use Group E Education: In accordance with IBC 2015 Commentary for sections 303.1.3 and 305.1. An Assembly in an Educational Use Group below the 12th grade and is associated with the E Use Group is not considered a Separate Occupancy. Therefore the plumbing fixtures provided for the faculty and student occupants do not need to be duplicated in the Gym/Café/Food Service Building.
in the Classroom/Lobby Building. However we recognize the logic of providing fixtures adjacent to the Gymnasium and Cafeteria.

III. CODE REQUIREMENTS COMMON TO BOTH BUILDINGS

FIRE RATING REQUIREMENTS- STRUCTURAL ELEMENTS/ EGGRESS COMPONENTS

	Rating Required	2015 IBC Code	2015 Fire Code
Exterior Bearing Walls	0	TABLE 601, TABLE 602	TABLE A.8.2.1.2
Exterior Non-Bearing Walls	0	TABLE 602	TABLE A.8.2.1.2
Building Separation – Fire Barrier Walls	2	TABLE 706.4	TABLE A.8.2.1.2
Interior Bearing Walls	0	TABLE 601	TABLE A.8.2.1.2
Floor/ Ceiling Assemblies	0	TABLE 601	TABLE A.8.2.1.2
Roof/ Ceiling Assemblies	0	TABLE 601	TABLE A.8.2.1.2
Columns	0	TABLE 601	TABLE A.8.2.1.2
Beams	0	TABLE 601	TABLE A.8.2.1.2
Egress Corridors	Smoke Partitions	TABLE 1020.1 = 0 w/ Sprinklers	7.1.3.1, 14.3.6
Shafts (Stairs)	1	1023.2	7.1.3.2.1
Shafts Other than Stairs	1	713.4	8.6.5
Elevator Shafts	2		8.3.4.2
Corridor Doors	0	716.5.3, Table 1020.1	14.3.6
Smoke Barrier	1	709.3	8.5
Smoke Partitions	0	710.3	8.4, 14.3.7, 14.3.6 (2)(a)
Smoke Barrier Doors	20 MIN.	710.5.2, 716.5.3	8.5

ASSEMBLY OCCUPANCY LOADS AND EGRESS REQUIREMENTS – CLASSROOM/LOBBY BUILDING

Location	Area SF	SF/Person	Occupant Load	Eqress Width Required	Egress Width Provided	Number of Exits Required	Number of Exits Provided
ART ROOM	1046	20 Net	52	10.4"	60"	2	2
LIBRARY	4083	50 Net	82	16.3"	120"	2	3

ASSEMBLY OCCUPANCY LOADS AND EGRESS REQUIREMENTS – GYM/CAFETERIA/FOOD SERVICE BUILDING

Location	Area SF	SF/Person	Occupant Load	Eqress Width Required	Egress Width Provided	Number of Exits Required	Number of Exits Provided
GYMNASIUM	4066	7 Net	580	116"	156"	2	3
CAFETERIA	3250 + (882 stage)	15 Net	217 + 59 = 276	55"	180"	2	3
MUSIC- VOCAL	830	20 Net	41	8"	36"	1	1
MUSIC-INSTRUMENTAL	830	20 Net	41	8"	60"	1	1
COMMUNITY ROOM	1355	20 Net	68	13.6"	30"+30"=60"	2	2

FIRE PROTECTION SYSTEM REQUIREMENTS

System Type	Required?	2015 IBC Code	2015 Fire Code
Automatic Sprinklers	YES	903.2.3	9.7
Fire Alarm System	YES	907.2.3	9.6,14.3.4

TRAVEL DISTANCE TO EXITS

	2015 IBC Code	2015 Fire Code
Maximum Length of Travel in Fully Sprinklered Building	250' (Table 1017.2)	200' (14.2.6.3)
Maximum Length Common Path of Travel in Fully Sprinklered Building	75' (Table 1006.2.1)	100' (14.2.5.3.1)
Spaces with One Means of Egress, Maximum Travel Distance to an Exit Access Door	75' (Table 1006.2.1)	75' (14.2.5.5 (2))
Dead End Corridor	50'	

MINIMUM CORRIDOR WIDTH REQUIREMENTS

Width	2015 IBC Code	2015 Fire Code
6 FT., EXIT CORRIDOR	Table 1020.2	14-2.3.2
44 IN., CLR. STAIR WIDTH	1011.2	7.2.2.2.1.2, 7.3.4

PANIC HARDWARE
Per IBC Code 1010.1.10 & NFPA 7.2.1.7, 14.2.2.2.2
ALL DOORS SERVING MORE THAN 50 & AT SMOKE BARRIER DOORS

EMERGENCY LIGHTING REQUIREMENTS
Per IBC Code 1008 & NFPA 7.9, 14.2.9
ALL MEANS OF EGRESS

INTERIOR FINISH REQUIREMENTS
Per IBC Table 803.11 & NFPA 14.3.3.2, 14.3.3.3

EGRESS WIDTH REQUIREMENTS

Width	2015 IBC Code	2015 Fire Code
Egress width at stairs	.3" / occ. (1005.3.1) Exception1 - Sprinklers	
Egress width at doors and corridors	.15"/OCC. (1005.3.2, Exception 1)	.2"/OCC.(TABLE 7.3.3.1)

NUMBER OF REMOTE EXITS REQUIRED

By Room	2015 IBC Code	2012 Fire Code
Rooms Less Than 50 Occupants	1 Exit (Table 1006.2.1)	_
Rooms with 50 - 500 Occupants	2 Exits (1006.2.1)	_
Rooms with 501 - 1000 Occupants	3 Exits (1006.2.1.1)	_
By Story		
1 - 500 Occupants	2 Exits (Table 1006.3.1)	2 Exits, 14.2.4
501 - 1000 Occupants	3 Exits (Table 1006.3.1)	3 Exits, 7.4.1.2
More than 1000 Occupants	4 Exits (Table 1006.3.1)	4 Exits, 7.4.1.2

REMOTENESS OF EXITS

Life Safety A.7.5.1.3.3 - 1/3 the Length of Maximum Room Diagonal (Credit for Sprinklered Building)
IBC 1007.1.1 Exception 2 - 1/3 the Length of Maximum Room Diagonal (Credit for Sprinklered Building)

MAXIMUM DEAD END DISTANCES

	2015 IBC Code	2015 Fire Code
	50 FT. (1020.4) Exception 2	50 FT. (14.2.5.2)

NOTES

1.
2. All fire separation walls shall comply with Section 708.4 of the 2015 IBC Code. They shall extend from the top of the fire resistance rated floor/ ceiling assembly below to the underside of the floor or roof slab or deck above and shall be securely attached thereto. In the case of the 2 hour fire barrier between the two (2) buildings per IBC 706.6.1 "Stepped Buildings". Along the 2 Hour Fire Barrier between the two buildings the fire barrier needs to extend a least 30" above the lower roof.
3. All fire walls shall comply with Section 706 of the 2015 IBC Code.
4. Elevator shaft to be (2) hour rated - UL# U906.
5. Exterior walls indicated to provide (1) hour rating (UL# U906) - At stairs and fire walls where exterior walls form an angle less than 180 degrees, the exterior wall shall be rated at stairs per L.S. 7.2.2.5.2, and at fire walls per IBC 1023.7.
6. Stair enclosures are (1) hour rated.
7. Refer to 1/8" plans & coord. w/ MEP drawings for chases thru floor shown thus enclosure wall around these floor opn'gs. shall be (1) hour rated & shall extend from floor tight to deck above - pack w/ safing insulation rating shall be as follows:
   CMU - U.L. #U906
   Gyp. Bd. - Gypsum Assoc. assembly WP1110
8. Refer to sheet A-3.4 for wall termination details at rated walls.
9. Refer to the Door Schedule for doors with closers required.
10. All rated walls and partitions shall be permanently identified with signs or stenciling as follows:

1 CODE SUMMARY
1" = 40'-0"

BALTIMORE COUNTY PUBLIC SCHOOLS
VICTORY VILLA ELEMENTARY SCHOOL
500 COMPASS ROAD, MIDDLE RIVER, MD 21220

Murphy & Dittenhafer ARCHITECTS
239 West Padonia Road, Timonium, MD 21093
410-825-4220 Fax: 410-825-4413 Baltimore 21201

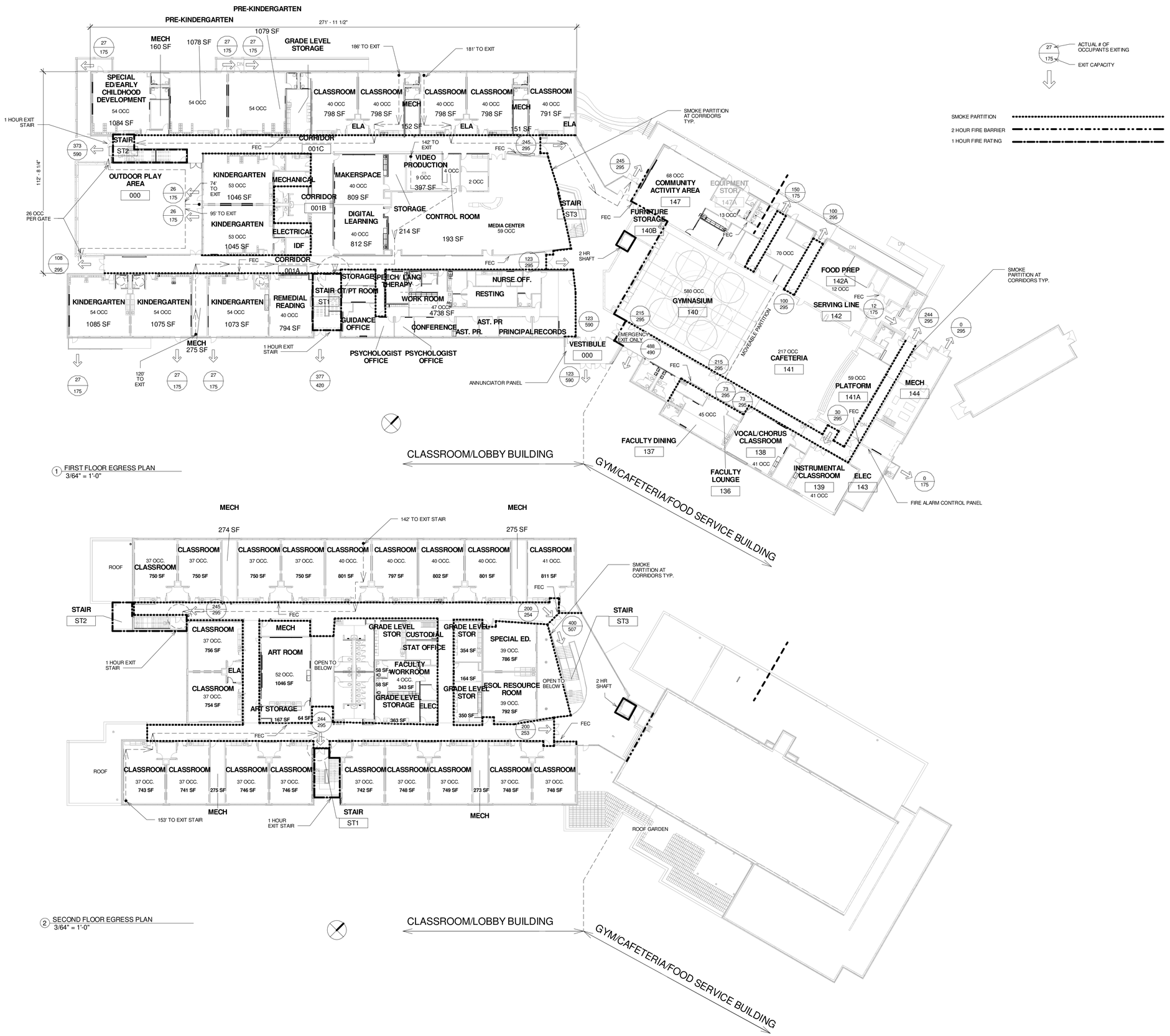
Mark	Date	Description
	08/31/2016	95% MC SUBMISSION
	09/30/2016	PERMIT SET
	11/10/2016	BID SET

ARCHITECTURAL REGISTRATION 6607-A MURPHY & DITTENHAFER, P.A. STATE OF MARYLAND

PROJECT NO: 15123
DRAWN BY: Author
CHECKED BY: Checker

CODE SUMMARY

SHEET
CS-3



1 FIRST FLOOR EGRESS PLAN
3/64" = 1'-0"

2 SECOND FLOOR EGRESS PLAN
3/64" = 1'-0"

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

500 COMPASS ROAD, MIDDLE RIVER, MD 21220

Murphy & Dittenhafer ARCHITECTS
229 West Main Street, Suite A Westminster, MD 21157 410-857-4800 Fax 410-857-4801
Annapolis Office: 410-267-8877 Fax 410-267-8878

Mark	Date	Description
	08/30/2016	90% MC SUBMISSION
	09/30/2016	PERMIT SET
	11/10/2016	BID SET

ARCHITECTURAL REGISTRATION 6607-A PAUL WOOD DITTENHAFER, JR. STATE OF MARYLAND

PROJECT NO:	15123
DRAWN BY:	Author
CHECKED BY:	Checker

EGRESS PLANS

SHEET
CS-4

BUILDING DESIGN CRITERIA

INTERIOR:	SUMMER	76°F / 50% RH
	WINTER	70°F
EXTERIOR:	SUMMER	95°F DB / 78°F WB
	WINTER	0°F
INTERIOR LOAD:		LIGHTING DENSITIES - IN ACCORDANCE WITH 2015 - INTERNATIONAL ENERGY CONSERVATION CODE
		MISCELLANEOUS - 75 WATTS/COMPUTER
VENTILATION LOAD:		IN ACCORDANCE WITH INTERNATIONAL MECHANICAL CODE (IMC) 2015 VENTILATION REQUIREMENTS
PEOPLE DENSITY:		BASED ON ARCHITECTURAL FURNISHING PLANS
WALL "U" COEFFICIENT:		0.050 BTU/(HR)(SQ. FT.)(DEG. F)
ROOF "U" COEFFICIENT:		0.037 BTU/(HR)(SQ. FT.)(DEG. F)
COMPOSITE GLAZING "U" COEFFICIENT:		0.41 BTU/(HR)(SQ. FT.)(DEG. F)
GLASS SHADING COEFFICIENT:		0.29
TOTAL BUILDING HEATING LOAD:		3483 MBH
TOTAL BUILDING COOLING LOAD:		2778 MBH
MAXIMUM NATURAL GAS CONSUMPTION:		4600 CFH

MECHANICAL SYMBOLS AND ABBREVIATIONS

- SOIL, WASTE, OR SANITARY PIPE
- STORM WATER PIPE
- GI — GREASE INTERCEPTOR PIPING
- FOUNDATION DRAIN TILE
- CD — CONDENSATE DRAIN PIPE
- VENT PIPE
- DOMESTIC COLD WATER PIPE
- DOMESTIC HOT WATER PIPE
- DOMESTIC HOT WATER RETURN PIPE
- T — DOMESTIC TEMPERED WATER PIPE
- S — SPRINKLER SUPPLY PIPE
- F — FIRE LINE PIPE
- G — GAS PIPE
- CS — CHILLED WATER SUPPLY PIPE
- CR — CHILLED WATER RETURN PIPE
- CHS — CHILLED/HEATING SUPPLY PIPE
- CHR — CHILLED/HEATING RETURN PIPE
- HS — HEATING WATER SUPPLY PIPE
- HR — HEATING WATER RETURN PIPE
- CO — CLEANOUT
- BACK WATER VALVE
- FLOOR DRAIN
- ROOF DRAIN
- WALL HYDRANT
- HOSE BIBB
- FIRE DEPARTMENT CONNECTION (SIAMESE)
- SPRINKLER HEAD
- PIPE CAP OR PLUG
- UNION
- FLANGED PIPE CONNECTION
- PIPE ANCHOR
- PIPE GUIDE
- FLEXIBLE CONNECTION (PIPING)
- EXPANSION JOINT
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- FLOW DIRECTION ARROW
- STRAINER
- SHUT-OFF VALVE
- VALVE IN VERTICAL PIPE
- VALVE WITH MONITORING SWITCH
- BALANCING VALVE
- GLOBE VALVE
- 2-WAY AUTOMATIC TEMPERATURE CONTROL (ATC) VALVE
- 3-WAY AUTOMATIC TEMPERATURE CONTROL (ATC) VALVE
- PRESSURE REDUCING VALVE
- 30 PSI — PRESSURE RELIEF VALVE (NUMERALS INDICATE SETTING)
- GAUGE COCK
- VACUUM BREAKER
- 0°-100° F — THERMOMETER (NUMERALS INDICATE GRADUATION RANGE)
- 5-60 PSI — PRESSURE GAUGE (NUMERALS INDICATE GRADUATION RANGE)
- F 20 GPM — FLOW METER FITTING (METER WHERE NOTED) (NUMERALS INDICATE FLOW REQUIRED)
- AIR VENT (AAV WHERE NOTED)
- FS — FLOW SWITCH
- CHECK VALVE; (ARROWHEAD INDICATES DIRECTION OF FLOW)
- BACKFLOW PREVENTER
- WATER HAMMER ARRESTER

- 18"x12" — DUCT (SIZE IN INCHES, FIRST FIGURE SIDE SHOWN)
- SUPPLY OR OUTDOOR AIR DUCT SECTION
- RETURN OR EXHAUST AIR DUCT SECTION
- ACOUSTICALLY LINED DUCT; A/L (DIMENSIONS SHOWN ARE SHEET METAL SIZE)
- AUTOMATIC TEMPERATURE CONTROL (ATC) DAMPER
- MANUAL VOLUME DAMPER
- FIRE DAMPER
- F/S — FIRE/SMOKE DAMPER
- S — SMOKE DAMPER
- SD — SMOKE DETECTOR
- AIR DEVICE WITH 2'x2' LAY-IN PANEL
- SQUARE TO ROUND TRANSITION
- D — INCLINED DROP IN DIRECTION OF ARROW
- R — INCLINED RISE IN DIRECTION OF ARROW
- FLEXIBLE CONNECTION (DUCTWORK)
- ROUND FLEXIBLE DUCT
- ROUND STRAIGHT DUCT TAP FITTING WITH MANUAL VOLUME DAMPER CONNECTING TO RECTANGULAR DUCT
- ROUND CONICAL DUCT TAP FITTING WITH MANUAL VOLUME DAMPER CONNECTING TO RECTANGULAR DUCT
- ROUND CONICAL DUCT TAP FITTING CONNECTING TO RECTANGULAR DUCT
- RECTANGULAR 45 DEGREE DUCT TAP FITTING
- A — SOUND ATTENUATOR. LETTER DESIGNATES SPECIFIC UNIT. SEE SCHEDULE.
- INDICATES CONTINUATION ON SANITARY RISER DIAGRAM (X DENOTES RISER DIAGRAM)
- INDICATES PIPING DIAGRAM
- 3/9 — DETAIL OR DIAGRAM NO. 3 SHOWN ON DRAWING NO. 9
- 3/7/9 — SECTION NO. 3 FROM DRAWING NO. 7 SHOWN ON DRAWING NO. 9 (ARROW DENOTES SECTION)
- SPS — STATIC PRESSURE SENSOR
- E — EMERGENCY FAN DISCONNECT SWITCH
- T — TEMPERATURE SENSOR (OR WALL MOUNTED VRF OR DSS CONROLLER)
- H — HUMIDITY SENSOR
- CO_2 — CO_2 (CARBON DIOXIDE SENSOR)
- POINT OF CONNECTION, NEW TO EXISTING
- 1 — SYMBOL FOR SPECIFIC NOTE. NOTE APPLIES TO DRAWING ON WHICH IT OCCURS.
- CO — CARBON MONOXIDE SENSOR

ø	INDICATES DIAMETER
□	INDICATES SQUARE FOOT
A/D	ACCESS DOOR
A/L	ACOUSTICALLY LINED
A	COMPRESSED AIR PIPE
AAV	AUTOMATIC AIR VENT
ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
APD	AIR PRESSURE DROP
ASSOC	ASSOCIATED
ATC	AUTOMATIC TEMPERATURE CONTROL
AWT	AVERAGE WATER TEMPERATURE
BDD	BACKDRAFT DAMPER
BLDG	BUILDING
BLW	BELOW
BTM	BOTTOM
BTUH	BRITISH THERMAL UNITS PER HOUR
BV	BALANCING VALVE
BWV	BACK WATER VALVE
CA	CONDITIONED OUTDOOR AIR
CD	CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
CHR	CHILLED/HEATING RETURN PIPE
CHS	CHILLED/HEATING SUPPLY PIPE
CI	CAST IRON
CLG	CEILING
CO	CLEANOUT
CONC	CONCRETE
CONN	CONNECT, CONNECTION
CONT'N	CONTINUATION
CR	CHILLED WATER RETURN PIPE
CS	CHILLED WATER SUPPLY PIPE
CV	CHECK VALVE
CW	DOMESTIC COLD WATER PIPE
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DESG	DESIGNATION
DF	DRINKING FOUNTAIN
DHC	DUCT HEATING COIL
DIA	DIAMETER
DW	DOUBLE WALL
DWG	DRAWING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EJ	EXPANSION JOINT
ELEC	ELECTRIC
ELEV	ELEVATION OR ELEVATOR
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
ETR	EXISTING TO REMAIN
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
EXH	EXHAUST
EXP	EXPANSION
F/D	FIRE DAMPER
F/S	FIRE/SMOKE DAMPER
F	FAHRENHEIT OR FIRE LINE PIPE
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FHC	FIRE HOSE CABINET
FHV	FIRE HOSE VALVE
FL	FLOOR
FLA	FULL LOAD AMPERES
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPS	FEET PER SECOND
FT	FEET
FT HD	FEET OF HEAD
FU	FIXTURE UNITS
G	GAS PIPE
GALV	GALVANIZED
GI	GREASE INTERCEPTOR
GPM	GALLONS PER MINUTE
GR	GRILLE
HB	HOSE BIBB
HP	HORSEPOWER
HR	HEATING WATER RETURN PIPE
HS	HEATING WATER SUPPLY PIPE
HW	DOMESTIC HOT WATER PIPE
HWR	DOMESTIC HOT WATER RETURN PIPE
IN	INCH, INCHES
INV	INVERT
LAT	LEAVING AIR TEMPERATURE
LB(S)	POUND(S)
LDB	LEAVING DRY BULB
LF	LINEAR FEET
LRA	LOCKED ROTOR AMPERES
LSD	LINEAR SLOT DIFFUSER
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU'S PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MECH	MECHANICAL
MF/D	MOTORIZED FIRE DAMPER
MFR	MANUFACTURER
MIN	MINIMUM
MOP	MAXIMUM OVERCURRENT PROTECTION
MTD	MOUNTED
MVD	MANUAL VOLUME DAMPER
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
OAI	OUTDOOR AIR INTAKE
OA	OUTDOOR AIR
OC	ON CENTER
OED	OPEN END DUCT WITH 1/2" FRAMED WIRE MESH SCREEN
OFD	OVERFLOW DRAIN
PC	PUMPED CONDENSATE PIPE
PD	PRESSURE DROP
PR	PRESSURE RELIEF
PRG	PRESSURE RELIEF GRILLE
PRV	PRESSURE RELIEF VALVE
PSIG	POUNDS PER SQUARE INCH GAUGE
PSI	POUNDS PER SQUARE INCH
PUH	PROPELLER UNIT HEATER
RA	RETURN AIR
RD	ROOF DRAIN
REG	REGISTER
REQ'D	REQUIRED
RF	RETURN FAN
RG	RETURN GRILLE
RL	REFRIGERANT LIQUID
RLA	RUNNING LOAD AMPERES
RPM	REVOLUTIONS PER MINUTE
RR	RETURN REGISTER
RS	REFRIGERANT SUCTION
RX	REMOVE EXISTING
S/D	SMOKE DAMPER
S/S	STAINLESS STEEL
S/M	SHEET METAL
S	SPRINKLER SUPPLY PIPE
SA	SUPPLY AIR
SAN	SANITARY
SD	SUPPLY DIFFUSER
SF	SUPPLY FAN OR SQUARE FEET
SG	SUPPLY GRILLE
SP	STATIC PRESSURE
SPD	STATIC PRESSURE DROP
SPEC	SPECIFICATION
SR	SUPPLY REGISTER
SST	SATURATED SUCTION TEMPERATURE
STL	STEEL
SQ	SQUARE
SW	STORM WATER PIPE
TEMP	TEMPERATURE
TG	TRANSFER GRILLE
TSP	TOTAL STATIC PRESSURE
TW	DOMESTIC TEMPERED WATER PIPE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VACUUM PIPE
VP	VENT PIPE
VTR	VENT THRU ROOF
W/	WITH
W/O	WITHOUT
WB	WET BULB
WC	WATER COLUMN
WH	WALL HYDRANT

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer Architects
226 West Market Street, York, Pennsylvania 17401
717-848-9827 voice 717-843-2481 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/03/2016	BID SET

STATE OF MARYLAND — PATRICK K. GRIFFIN — 33996 — PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33996, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	MC
CHECKED BY:	DKG

SYMBOLS AND ABBREVIATIONS

SHEET

M0.01

GENERAL NOTES:

A. UNDERGROUND ELECTRICAL CONDUIT: PROVIDE SIZES INDICATED ON SITE PLAN. WHERE SIZE IN NOT INDICATED, PROVIDE 1" CONDUIT.

- UNDER ROADS AND RETAINING WALLS: PROVIDE CONDUIT IN CONCRETE-ENCASED DUCTBANK.
- UNDER SIDEWALKS AND UNPAVED SURFACES: PROVIDE DIRECT-BURIED CONDUIT.

SPECIFIC NOTES:

1. PROVIDE 1" DIRECTLY BURIED CONDUIT WITH (1) CAT-6 DATA CABLE.
2. MOUNT FIXTURE 30'-0" ABOVE GRADE.
3. SEE DETAIL 10/E5.05 FOR LIGHTING CONTROL REQUIREMENTS.

SITE PLAN - MECHANICAL AND ELECTRICAL

SCALE: 1"=30'-0"

NORTH

30 15 0 30 60

SCALE: 1" = 30'-0"

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
engineering your vision
Mechanical & Electrical
Consulting Engineers
3102 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-265-9100
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
228 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-3448 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
1	11/15/2018	BID SET

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	BMM
CHECKED BY:	MPS

SITE PLAN - MECHANICAL & ELECTRICAL

SHEET

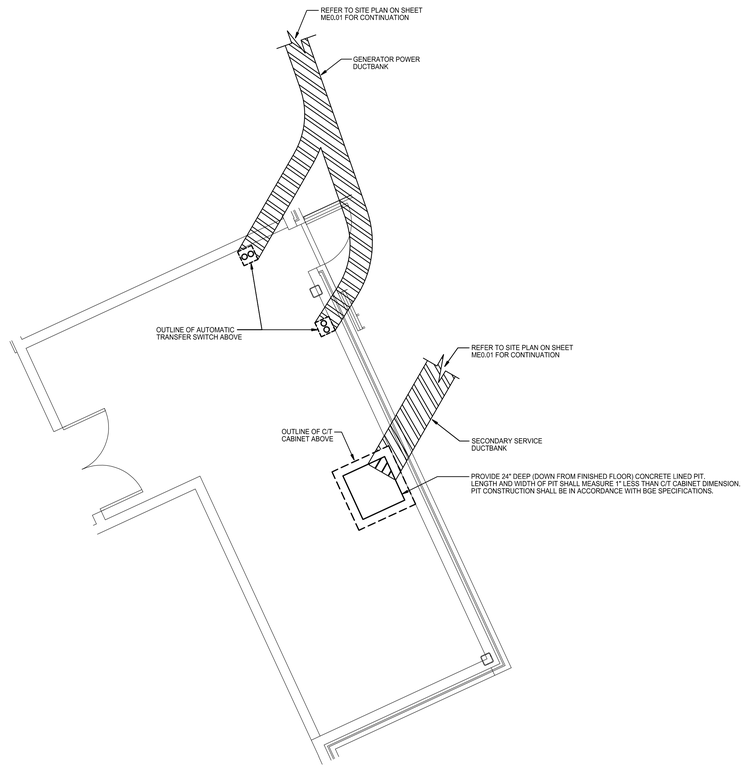
ME0.01

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

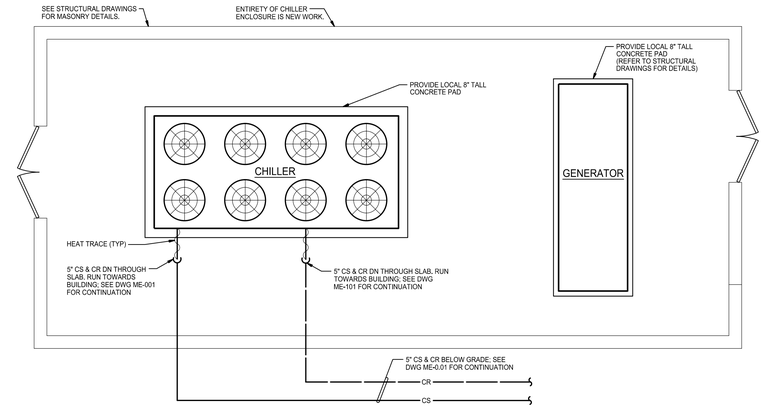
B. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

C. VERIFY INVERTS OF ETR SW IN THIS AREA. COORDINATE NEW CS & CR WITH ETR SW.



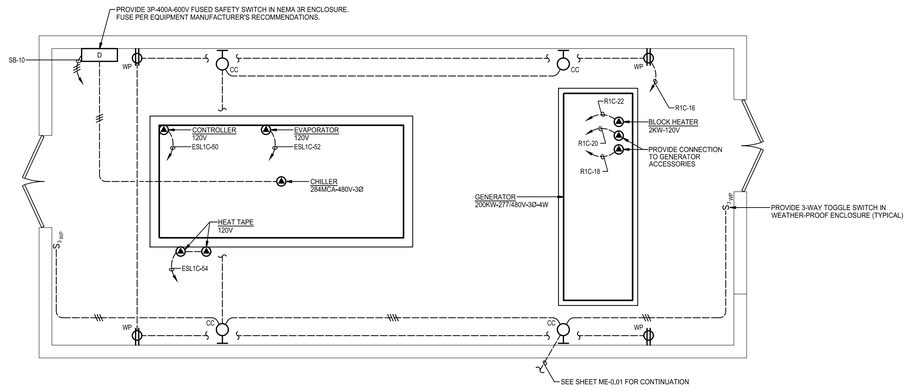
A ME0.02 PART FLOOR PLAN
CONDUITS BELOW ELECTRICAL ROOM
SCALE: 1/4" = 1'-0"

NORTH



B ME0.02 PART PLAN - EXTERIOR EQUIPMENT ENCLOSURE
MECHANICAL
SCALE: 1/4" = 1'-0"

NORTH



C ME0.02 PART PLAN - EXTERIOR EQUIPMENT ENCLOSURE
ELECTRICAL
SCALE: 1/4" = 1'-0"

NORTH

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

BALTIMORE COUNTY PUBLIC SCHOOLS
VICTORY VILLA ELEMENTARY SCHOOL
MIDDLE RIVER, MD

James Posey Associates
engineering your vision
Mechanical & Electrical
Consulting Engineers
3102 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-9830
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax
230 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-3449 fax

Mark	Date	Description
1	11/13/2015	BIDT-ADD1

STATE OF MARYLAND · MICHAEL PATRICK MURPHY · REGISTERED · 33986 · PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	BMM
CHECKED BY:	MPS

PART PLAN - MECHANICAL & ELECTRICAL

SHEET
ME0.02

SPECIFIC NOTES:

1. 6"x6" SD: 120 CFM.
2. 36"x20" CA UP.
3. 32"x20" EA UP.

GENERAL NOTES:

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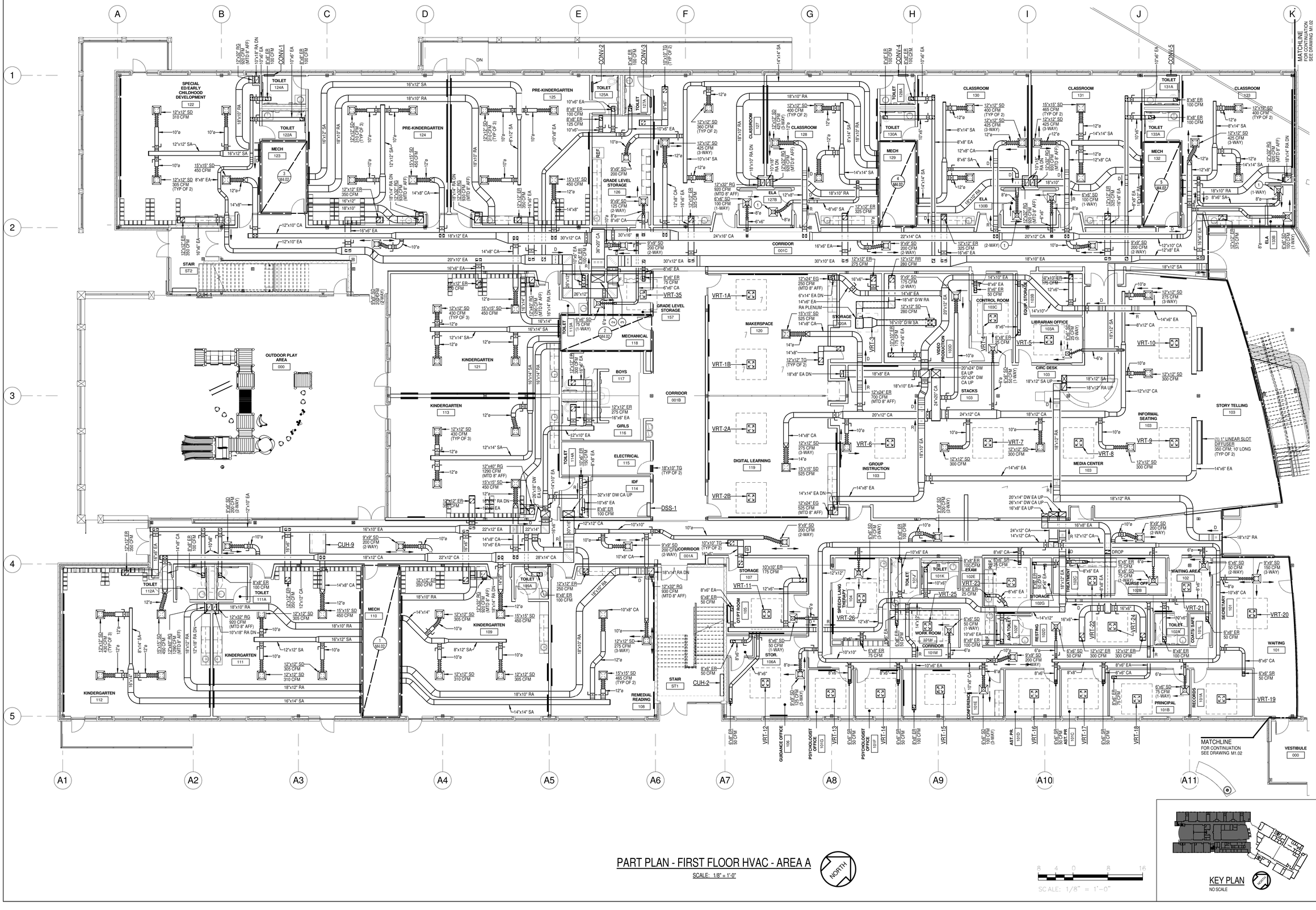

PART PLAN - FIRST FLOOR HVAC - AREA A

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN

NO SCALE

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VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
Baltimore, MD 21244
tel 410-265-0300
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
229 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-3469 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
PATRICK K. GRIFFIN
33996
PROFESSIONAL ENGINEER

Professional Certification. I HAVE SAFELY that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33996, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	MC
CHECKED BY:	DKG

PART PLAN - FIRST FLOOR - AREA A

SHEET

M1.01

GENERAL NOTES:

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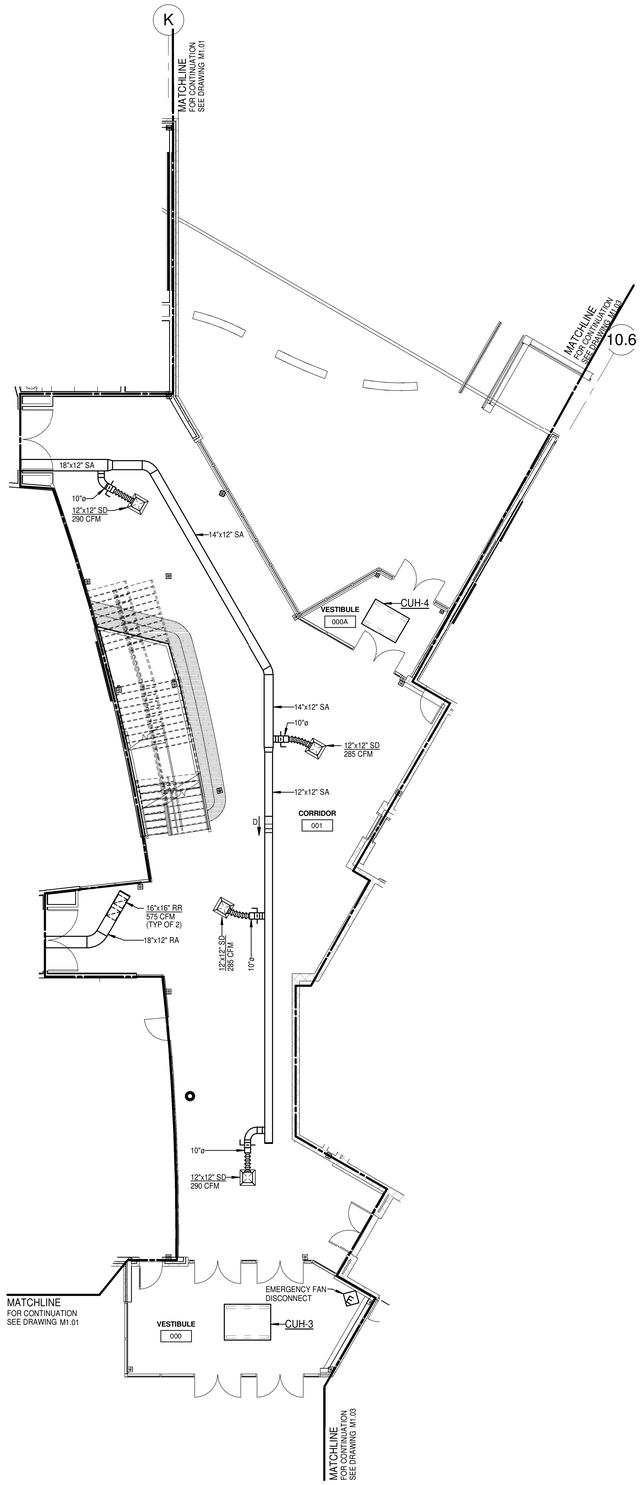


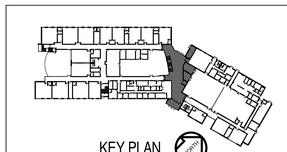
PART PLAN - FIRST FLOOR HVAC - AREA B

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"



KEY PLAN
NO SCALE

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MIDDLE RIVER, MD

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Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Cockeysville, Maryland Drive
Baltimore, MD 21244
tel 410-965-9300
fax 410-298-9830
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Murphy & Dittenhafer
ARCHITECTS
17401
449 fax
229 West Market Street, York, Pennsylvania
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803 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
DAVID PATRICK KELLY
73986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 33986, Expiration date: 01-10-2017.

PROJECT NO:	6535-15
DRAWN BY:	MC
CHECKED BY:	DKG

PART PLAN - FIRST FLOOR - AREA B

SHEET
M1.02

GENERAL NOTES:

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B. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

SPECIFIC NOTES:

1. 20"x14" DW SA UP TRANSITION TO FULL SIZE UNIT CONNECTION UP TO RTU-2.

10.6
10.9
10.11
10.13
MATCH LINE FOR CONTINUATION SEE DRAWING M1.02
COMMUNITY ACTIVITY AREA 147
EQUIPMENT STOR. 147A
CORRIDOR 105
GIRLS 135
BOYS 136
TOILET 135A
TOILET 136A
OFFICE 139
REF.
CLASSROOM 137A
EQUIP. STORAGE 145C
PE OUTDOOR STORAGE 152
MDF 153
DSS-2
PE-INST. 146D
PE-INST. 146E
FURNITURE STORAGE 146B
PE LARGE EQUIP. STORAGE 146A
ELEVATOR
GYMNASIUM 140
OFFICE 138
FOOD PREP 145A
SERVING LINE 145
NON FOOD STORAGE 145B
DRY FOOD STORAGE 145C
SOAP STOR. 145D
KITCHEN HOOD
DSS-5
PERSONNEL 142E
CUSTODIAL SUPPORT 142
DSS-3
CAMMASH 142C
TOILET 142A
TOILET 142B
CAFETERIA 141
DSS-7
BUILDING SERVICES OFFICE 146
FACILITY LOUNGE 136
FACILITY DINING 137
INSTRUMENTAL CLASSROOM 139
VOCAL/CHORUS CLASSROOM 138
INSTRUM. STORAGE 138A
MISC. 138C
PLATFORM 141A
MECH. 144
BUILDING SUPPORT & OUTSIDE STORAGE 155
ELEC. 143
DSS-6
CORRIDOR 100
CORRIDOR 101
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SPECIFIC NOTES:

1. 6"x6" SD: 100 CFM (1-WAY).
2. 6"x6" SD: 120 CFM (1-WAY).
3. 14"x40" DW CA AND 18"x40" DW CA UP TRANSITION TO 32"x40" DW CA UP TO DOAS-1.
4. 12"x40" DW EA AND 18"x40" DW EA UP TRANSITION TO 30"x40" DW EA UP TO DOAS-1.
5. (2) 16"x14" DW RA AND 20"x14" DW RA UP TRANSITION TO 52"x14" DW RA UP TO AHU-1.
6. 14"x26" DW SA AND 14"x20" DW SA UP TRANSITION TO 14"x46" DW SA UP TO AHU-1.
7. 26"x14" DW CA AND 20"x14" DW EA UP TO DOAS-3 AND DN THRU FLOOR.
8. 16"x8" EA DN THRU FLOOR.
9. 14"x40" DW CA AND 18"x40" DW CA UP TRANSITION TO 32"x40" DW CA UP TO DOAS-2.
10. 20"x40" DW EA AND 12"x40" DW EA UP TRANSITION TO 32"x40" DW EA UP TO DOAS-2.
11. 32"x18" DW CA UP TO DOAS-2 AND DN THRU FLOOR.
12. 18"x26" DW EA UP TO DOAS-2 AND DN THRU FLOOR.
13. 10"x16" EA UP TO GOOSENECK ON ROOF.

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSIONS. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATIONS OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

PART PLAN - SECOND FLOOR HVAC - AREA A

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN
NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
1 Olympic Place - Suite 204
Baltimore, MD 21244
tel 410-265-0300
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer Architects
226 West Market Street, York, Pennsylvania 17401
717-848-8677 voice 717-843-3469 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/13/2014	BID SET

STATE OF MARYLAND
PATRICK SHANE
DITTENHAFER
33996
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33996, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	MC
CHECKED BY:	DKG

PART PLAN - SECOND FLOOR HVAC - AREA A

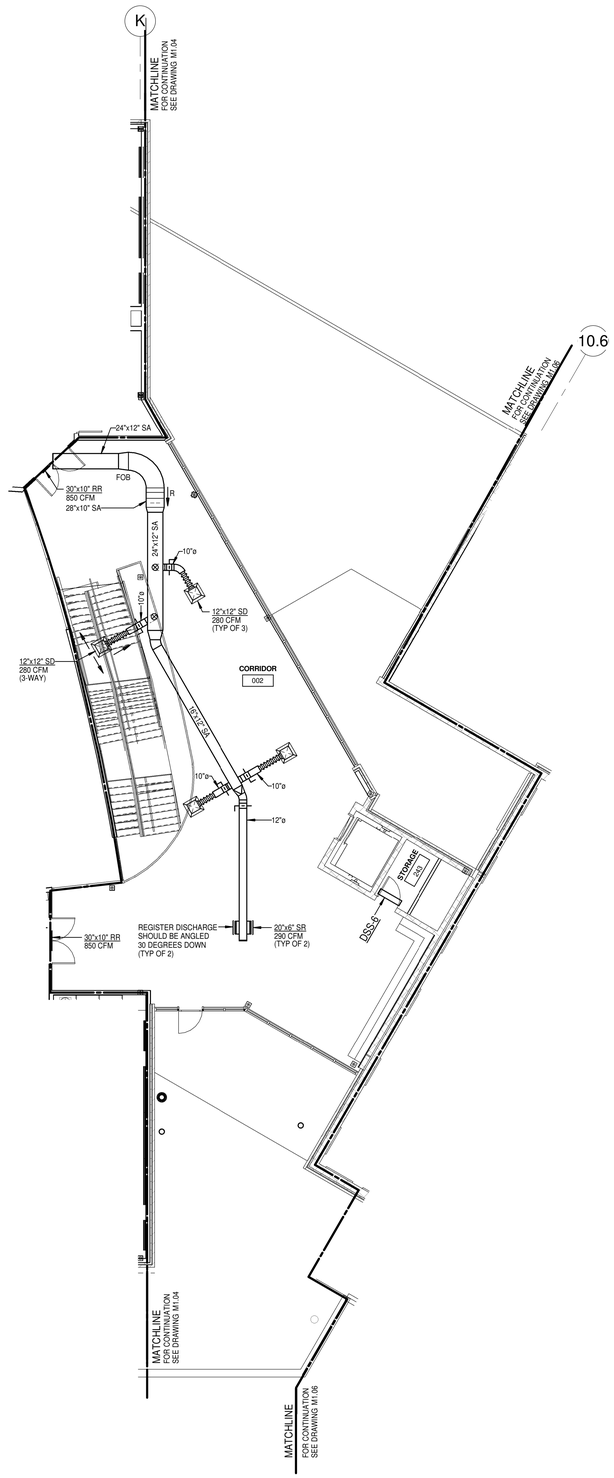
SHEET

M1.04

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSIONS. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATIONS OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.



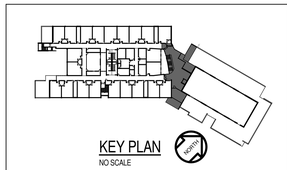
PART PLAN - SECOND FLOOR HVAC - AREA B

SCALE: 1/8" = 1'-0"

NORTH

0 4 8 16

SCALE: 1/8" = 1'-0"



KEY PLAN

NO SCALE

NORTH

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Court Square Office Park - Drive
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-9820
Jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
200 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-3449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/13/2015	BID SET

STATE OF MARYLAND
DAVID PATRICK KANE
33986
PROFESSIONAL ENGINEER

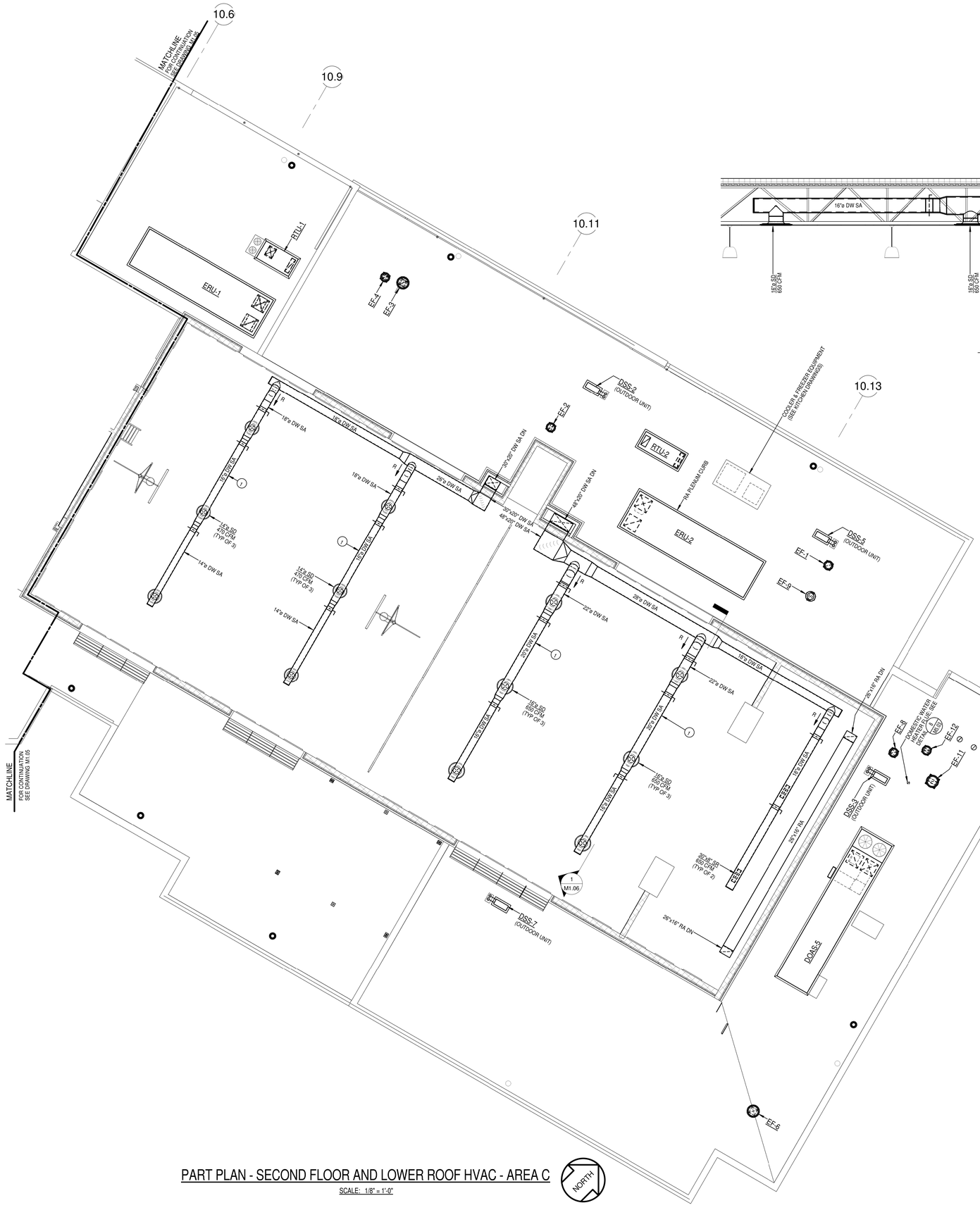
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date: 01-16-2017.

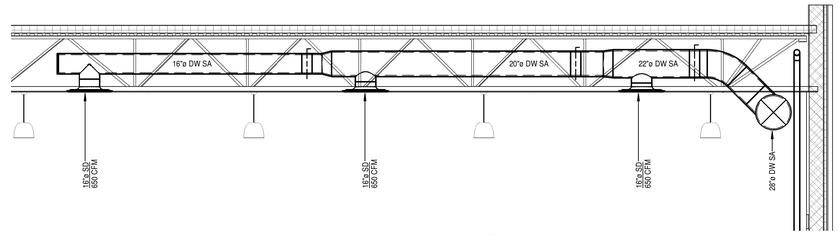
PROJECT NO:	6535-15
DRAWN BY:	MC
CHECKED BY:	DKG

PART PLAN - SECOND FLOOR HVAC - AREA B

SHEET

M1.05





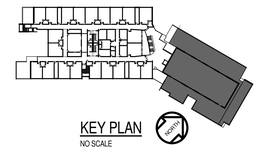
SECTION 1/M1.06

SCALE: 1/4" = 1'-0"

PART PLAN - SECOND FLOOR AND LOWER ROOF HVAC - AREA C

SCALE: 1/8" = 1'-0"

SCALE: 1/8" = 1'-0"



KEY PLAN
NO SCALE

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSIONS. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATIONS OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

SPECIFIC NOTES:

(1) ROUTE DUCTWORK BETWEEN JOISTS; SEE SECTION 1/M1.06

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
1 Olympia Park Drive
Baltimore, MD 21244
tel 410-265-0300
fax 410-298-9810
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
229 West Market Street, York, Pennsylvania 17401
717-848-6627 voice 717-843-2449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4623 voice 410-625-4674 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
PATRICK K. GRIFFIN
33998
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 33998, Expiration date: 07-16-2017.

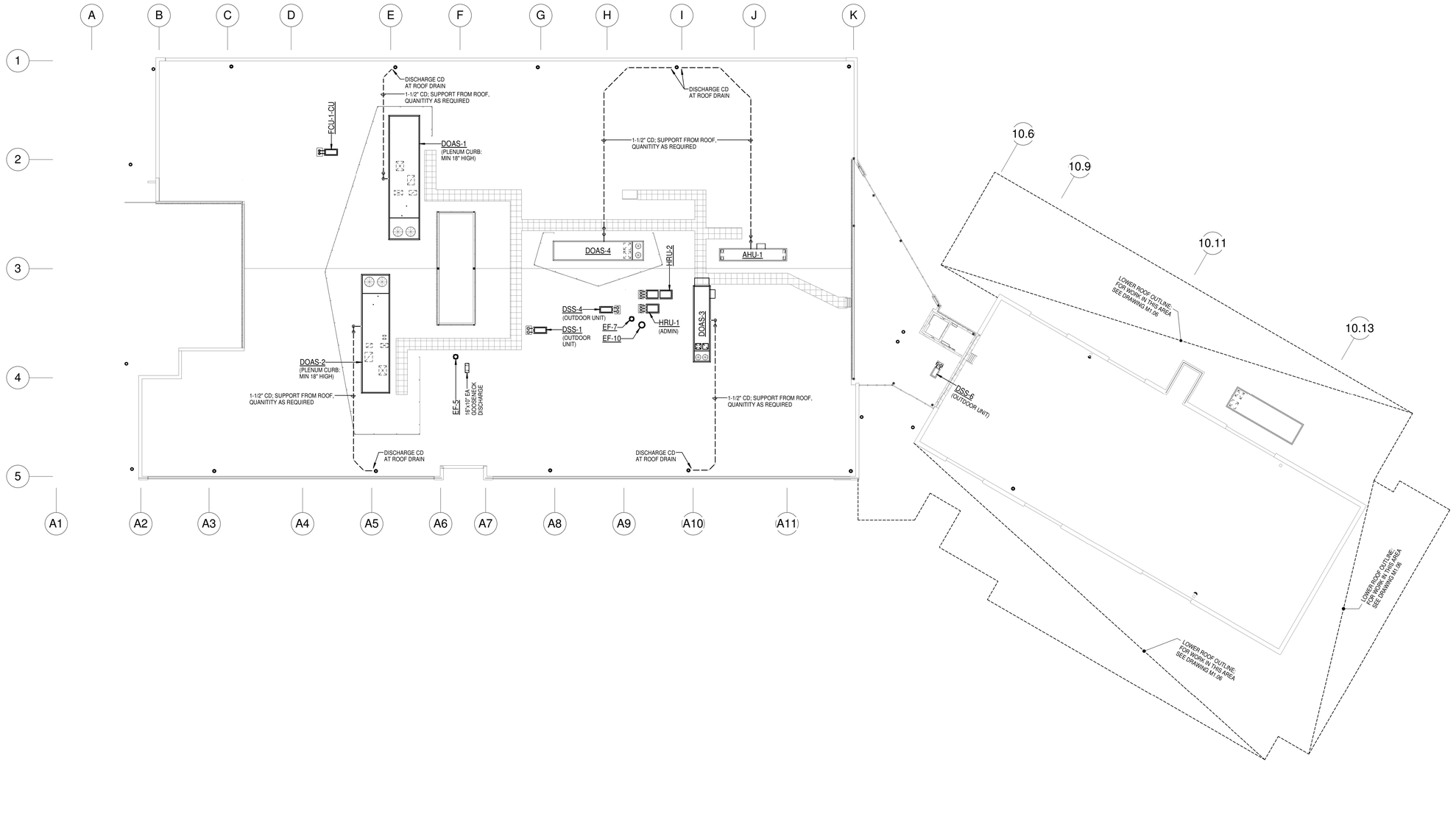
PROJECT NO:	6535-15
DRAWN BY:	MC
CHECKED BY:	DKG

PART PLAN - SECOND FLOOR HVAC - AREA C

SHEET
M1.06

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSIONS. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATIONS OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.



UPPER ROOF PLAN

SCALE: 1/16" = 1'-0"

NORTH

16 8 0 16 32

SCALE: 1/16" = 1'-0"

KEY PLAN
NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
Court Square Building, 200 E. Pratt Street, Baltimore, MD 21202
tel 410-625-0100
fax 410-625-0820
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
801 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax
229 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-2449 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
MICHAEL CHRISTOPHER
33986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 33986, Expiration date: 01-10-2017.

PROJECT NO:	6535-15
DRAWN BY:	MC
CHECKED BY:	DKG

UPPER ROOF PLAN

SHEET
M1.07

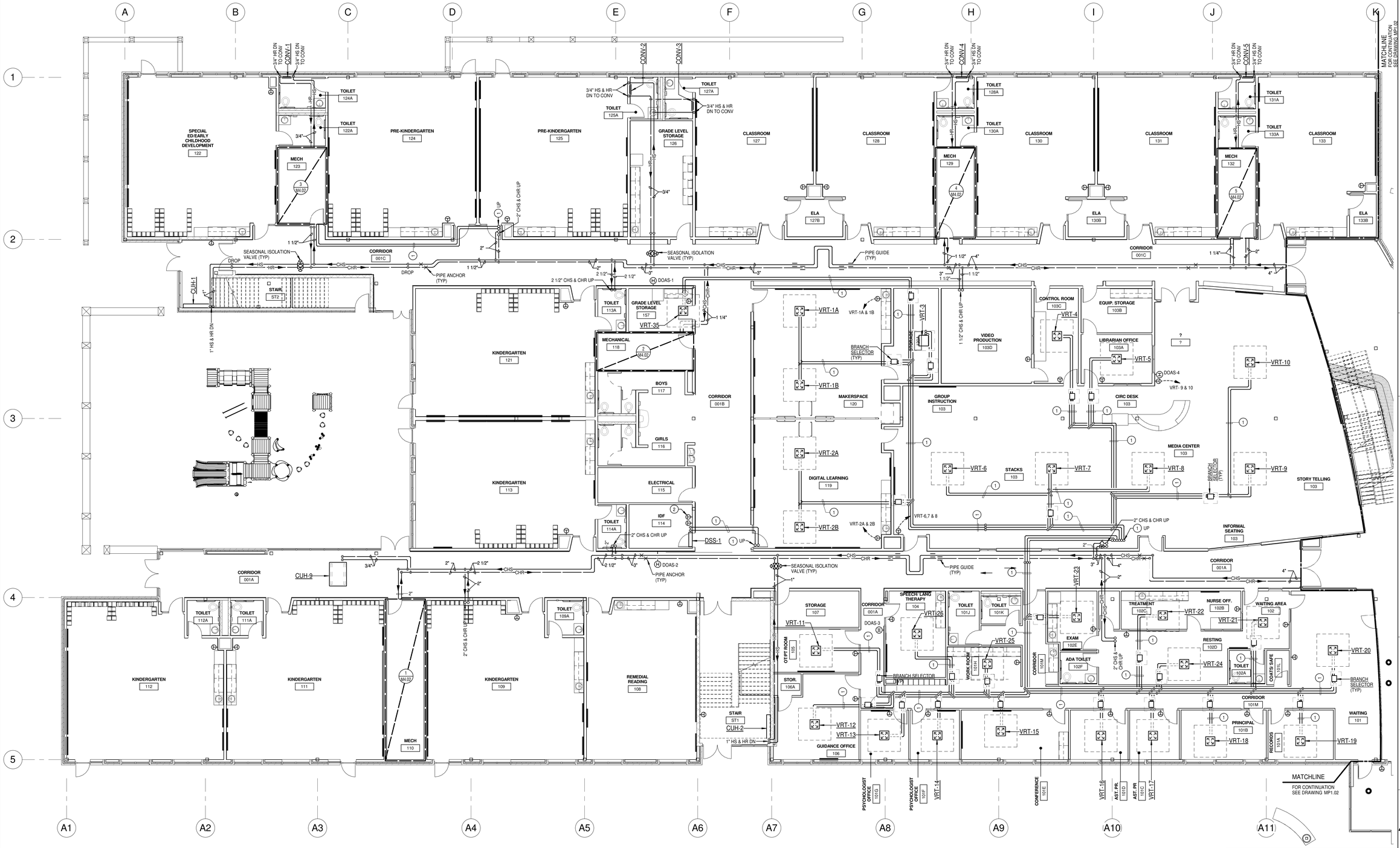
SPECIFIC NOTES:

1. REFRIGERANT PIPING. SIZE, NUMBER AND CONFIGURATION PER MANUFACTURER'S RECOMMENDATIONS.
2. BAS TEMPERATURE SENSOR FOR MONITORING ALARM.

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSIONS. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATIONS OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.



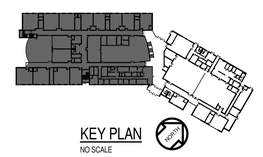
PART PLAN - FIRST FLOOR PIPING - AREA A

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"



KEY PLAN

NO SCALE

NORTH

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-5820
jamesposey.com

Murphy & Dittenhafer Architects
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax
226 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-3481 fax

Mark	Date	Description
1	11/13/2016	BID SET

STATE OF MARYLAND
SCOTT PATRICK LAWRENCE
33996
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33996, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

PART PLAN - FIRST FLOOR PIPING - AREA A

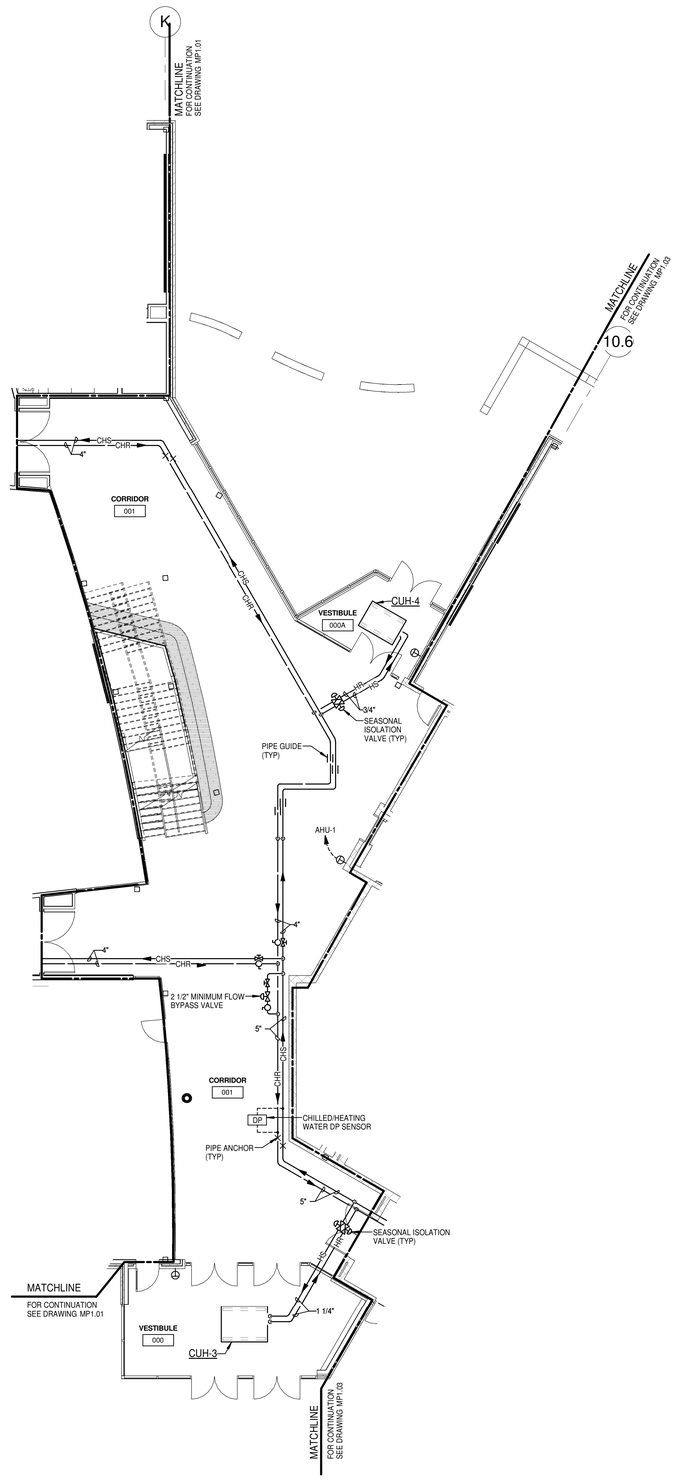
SHEET

MP1.01

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSIONS. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATIONS OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.



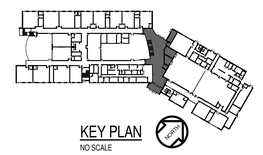
PART PLAN - FIRST FLOOR PIPING - AREA B

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"



KEY PLAN
NO SCALE

NORTH

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Baltimore, MD 21244
tel 410-265-9300
fax 410-298-9820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax
228 West Market Street, York, Pennsylvania 17401
717-848-8877 voice 717-843-2449 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
JAMES F. KIRRICK
23986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 23986, Expiration date: 01-10-2017.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

PART PLAN - FIRST FLOOR PIPING - AREA B

SHEET

MP1.02

SPECIFIC NOTES:

1. REFRIGERANT PIPING. SIZE, NUMBER AND CONFIGURATION PER MANUFACTURER'S RECOMMENDATIONS.
2. BAS TEMPERATURE SENSOR FOR MONITORING/ALARM.

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSIONS. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATIONS OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

PART PLAN - FIRST FLOOR PIPING - AREA C

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN
NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Suite 200, 1 Olympic Place Drive
Baltimore, MD 21224
tel 410-295-6300
fax 410-295-6301
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
229 West Market Street, York, Pennsylvania 17401
717-843-8627 voice 717-843-3449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
1	11/19/2016	BID SET

STATE OF MARYLAND
JARRICK
KOPPENHAVER
37986
REGISTERED PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 23986, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

PART PLAN - FIRST FLOOR PIPING - AREA C

SHEET

MP1.03

SPECIFIC NOTES:

1. REFRIGERANT PIPING. SIZE, NUMBER AND CONFIGURATION PER MANUFACTURER'S RECOMMENDATIONS.

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSIONS. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATIONS OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

PART PLAN - SECOND FLOOR PIPING - AREA A

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN

NO SCALE

NORTH

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Baltimore County Office Drive
Baltimore, MD 21244
tel 410-265-0100
fax 410-298-9820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
235 West Market Street, York, Pennsylvania 17401
717-848-9827 voice 717-843-2449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/13/2015	BID SET

STATE OF MARYLAND
DAVID K. PATRICK GRIFFITH
33986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

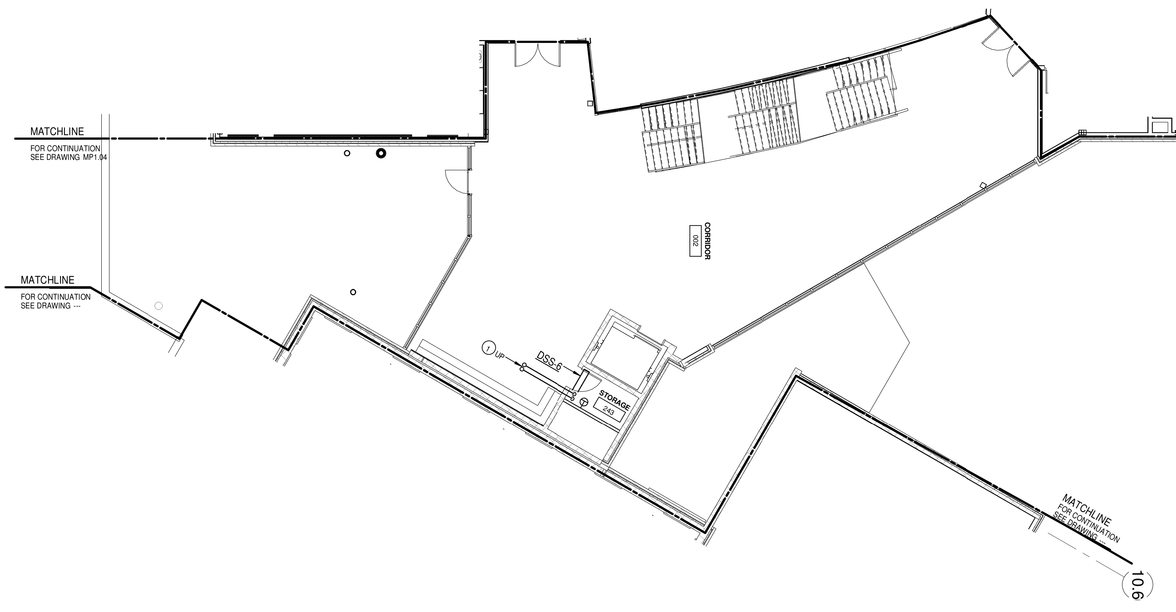
PART PLAN - SECOND FLOOR PIPING - AREA A

SHEET

MP1.04

PART PLAN - SECOND FLOOR PIPING - AREA B

SCALE: 1/8" = 1'-0"



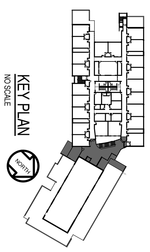
NORTH

SCALE: 1/8" = 1'-0"

8 4 0 8 16

KEY PLAN

NO SCALE



SPECIFIC NOTES:

1. REFRIGERANT PIPING. SIZE, NUMBER AND CONFIGURATION PER MANUFACTURER'S RECOMMENDATIONS.

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS IS BASED ON GENERAL FIELD OBSERVATIONS AND MAY NOT BE ALL-INCLUSIVE. CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE TO DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATIONS OR PERFORMANCE OF WORK. SHOULD CONDITIONS BE ENCOUNTERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

Mark	Date	Description
1	11/10/2016	BID SET

PROJECT NO: 6535-15
DRAWN BY: JFL
CHECKED BY: DKG

PART PLAN - SECOND FLOOR PIPING AREA B

SHEET MP1.05

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 36836, Expiration date: 04/15/2017.

STATE OF MARYLAND — JAMES F. LEBRON — 36836 — PROFESSIONAL ENGINEER

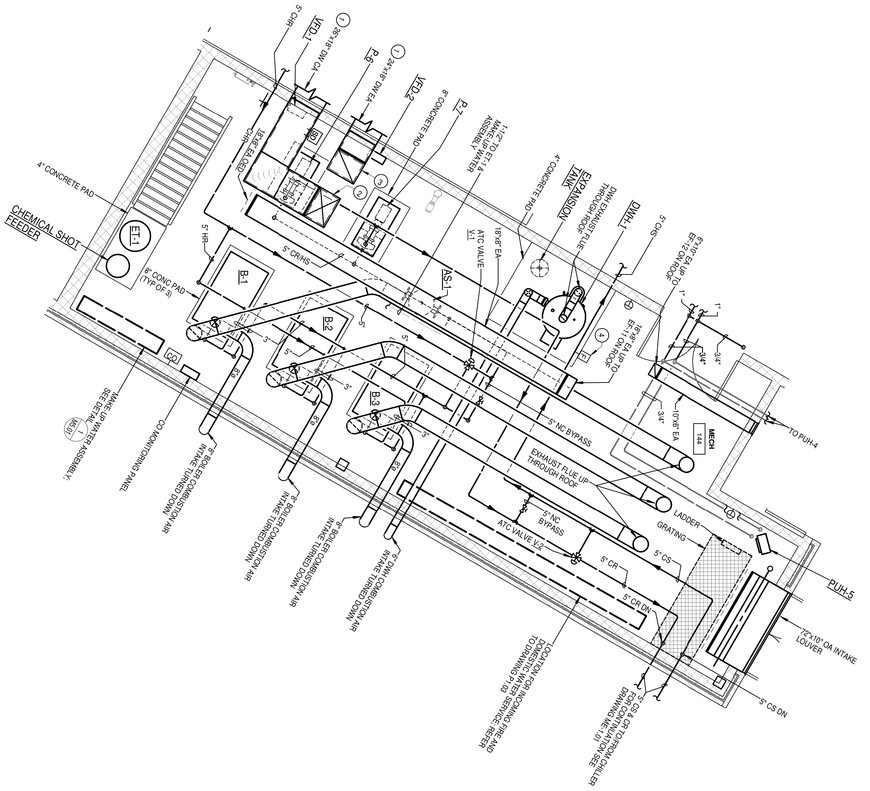
Murphy & Dittenhafer ARCHITECTS
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax
226 West Market Street, York, Pennsylvania 17401
717-848-8627 voice 717-843-2449 fax

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
3112 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-9820
jamesposey.com

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD


4" CONCRETE PAD
CHEMICAL SHOT FEEDER
CT-1
4" CONC PAD (1 OF 3)
5" HR
5" CR/HS
P-1
P-2
P-3
P-4
P-5
P-6
P-7
6" CONCRETE PAD
1-1/2" DI STEAM MAKE-UP WATER ASSEMBLY
EXPANSION TANK
DWG EXHAUST FLUE THROUGH ROOF
HP-1
HP-2
HP-3
HP-4
HP-5
HP-6
HP-7
HP-8
HP-9
HP-10
HP-11
HP-12
HP-13
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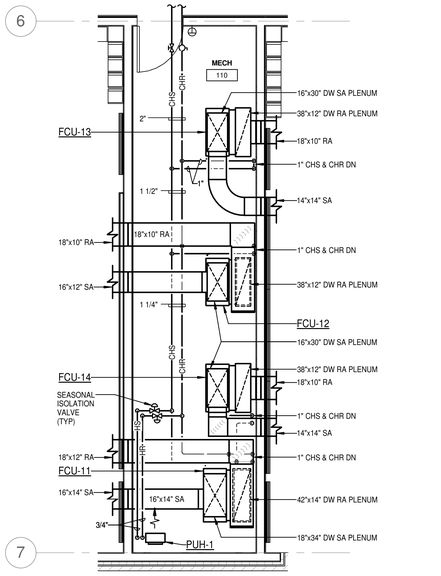
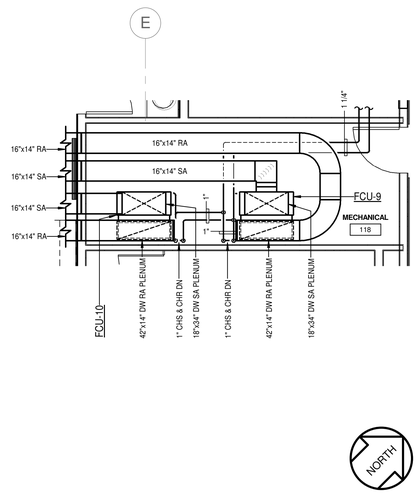


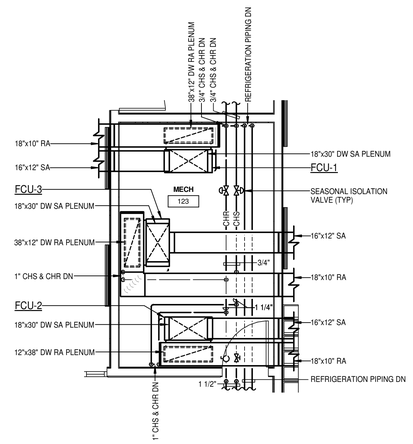
1 M4.02 PART PLAN - MECHANICAL CLOSET 110

SCALE: 1/4" = 1'-0"



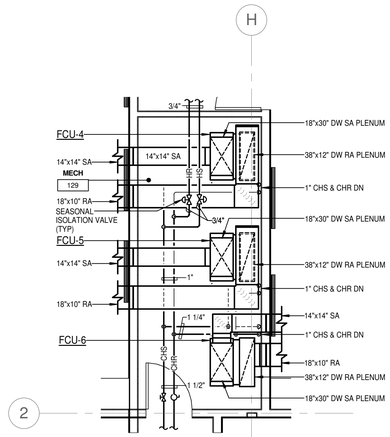
2 M4.02 PART PLAN - MECHANICAL CLOSET 118

SCALE: 1/4" = 1'-0"



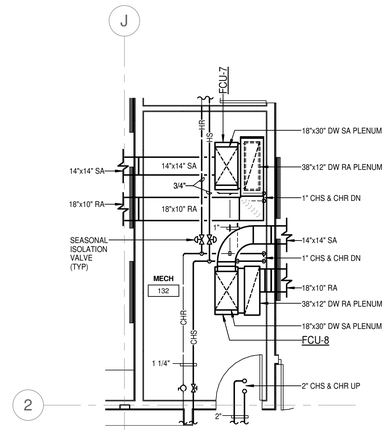
3 M4.02 PART PLAN - MECHANICAL CLOSET 123

SCALE: 1/4" = 1'-0"



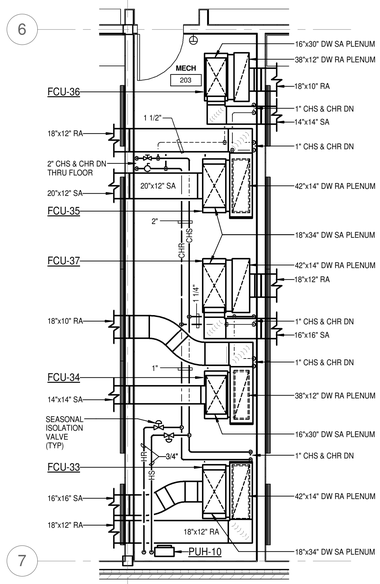
4 M4.02 PART PLAN - MECHANICAL CLOSET 129

SCALE: 1/4" = 1'-0"



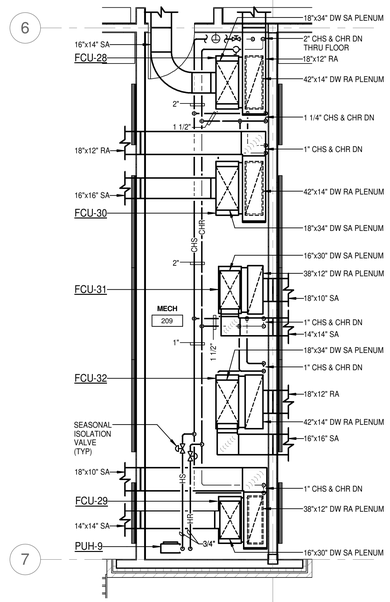
5 M4.02 PART PLAN - MECHANICAL CLOSET 132

SCALE: 1/4" = 1'-0"



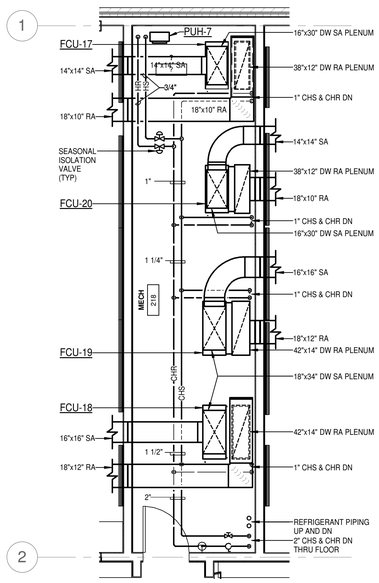
6 M4.02 PART PLAN - MECHANICAL CLOSET 203

SCALE: 1/4" = 1'-0"



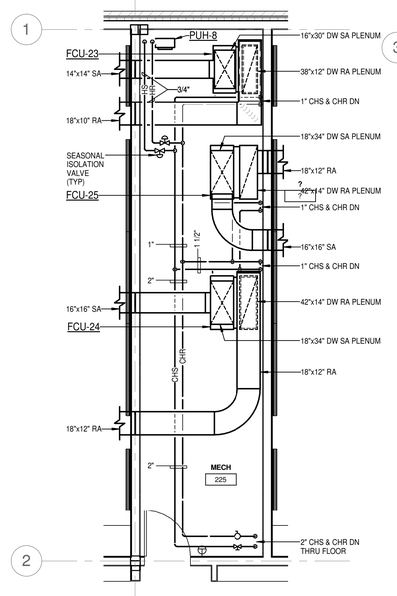
7 M4.02 PART PLAN - MECHANICAL CLOSET 209

SCALE: 1/4" = 1'-0"



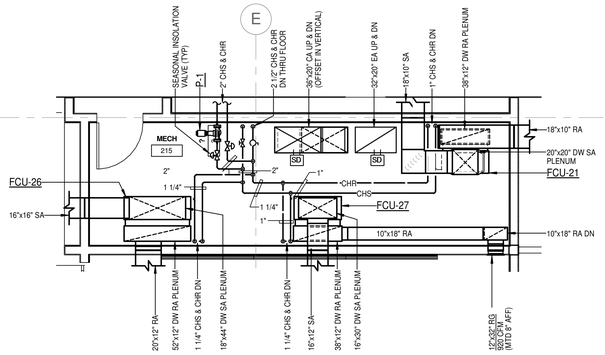
8 M4.02 PART PLAN - MECHANICAL CLOSET 218

SCALE: 1/4" = 1'-0"



9 M4.02 PART PLAN - MECHANICAL CLOSET 225

SCALE: 1/4" = 1'-0"



10 M4.02 PART PLAN - MECHANICAL CLOSET 215

SCALE: 1/4" = 1'-0"

GENERAL NOTES:

A. CONTRACTOR SHALL INSTALL ALL EQUIPMENT, DEVICES, DUCTWORK, CONTROLS, ETC IN ONE MECHANICAL ROOM, SELECTED BY OWNER, FOR MOCK-UP PRIOR TO INSTALLATION OF OTHER FAN COIL UNITS. CONTRACTOR SHALL OBTAIN APPROVAL FROM OWNER BEFORE CONTINUING WITH INSTALLATION OF VERTICAL FAN COIL UNITS IN OTHER LOCATIONS.

B. CONTRACTOR SHALL MAINTAIN MIN 3'-0" SERVICE CORRIDOR BETWEEN UNITS.

C. CONTRACTOR SHALL MAINTAIN REQUIRED CLEARANCES AT ALL DISCONNECTS AND WALL-MOUNTED ELECTRICAL DEVICES PER NEC.

D. COORDINATE EXACT LOCATION OF ATC PANEL WITH OWNER PRIOR TO INSTALLATION.

E. INSTALL VERTICAL FAN COIL UNITS TO MAINTAIN FULL ACCESS TO FRONT AND SIDE OF UNIT. MAINTAIN CLEARANCES FOR FILTER REMOVAL. FOR ADDITIONAL REQUIREMENTS SEE DETAIL 4/M5.02

F. ALL VALVES TO BE LOCATED MAXIMUM 7'-0" ABOVE FLOOR.

G. SEE PLUMBING DRAWINGS FOR PLUMBING REQUIREMENTS.

H. PROVIDE ONE-INCH LINING THICKNESS FOR ALL DOUBLE-WALL DUCTWORK CONSTRUCTION UNLESS OTHERWISE NOTED ON PLAN.

4 2 0 4 8

SCALE: 1/4" = 1'-0"

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Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Suite 200 - 1829 Reisterstown Road
Baltimore, MD 21208
tel 410-356-6000
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
235 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-3449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
-	11/13/2015	BID SET

STATE OF MARYLAND
DAVID K. PATRICK GRAY
33986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 33986, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	MC
CHECKED BY:	DKG

PART PLANS

SHEET

M4.02

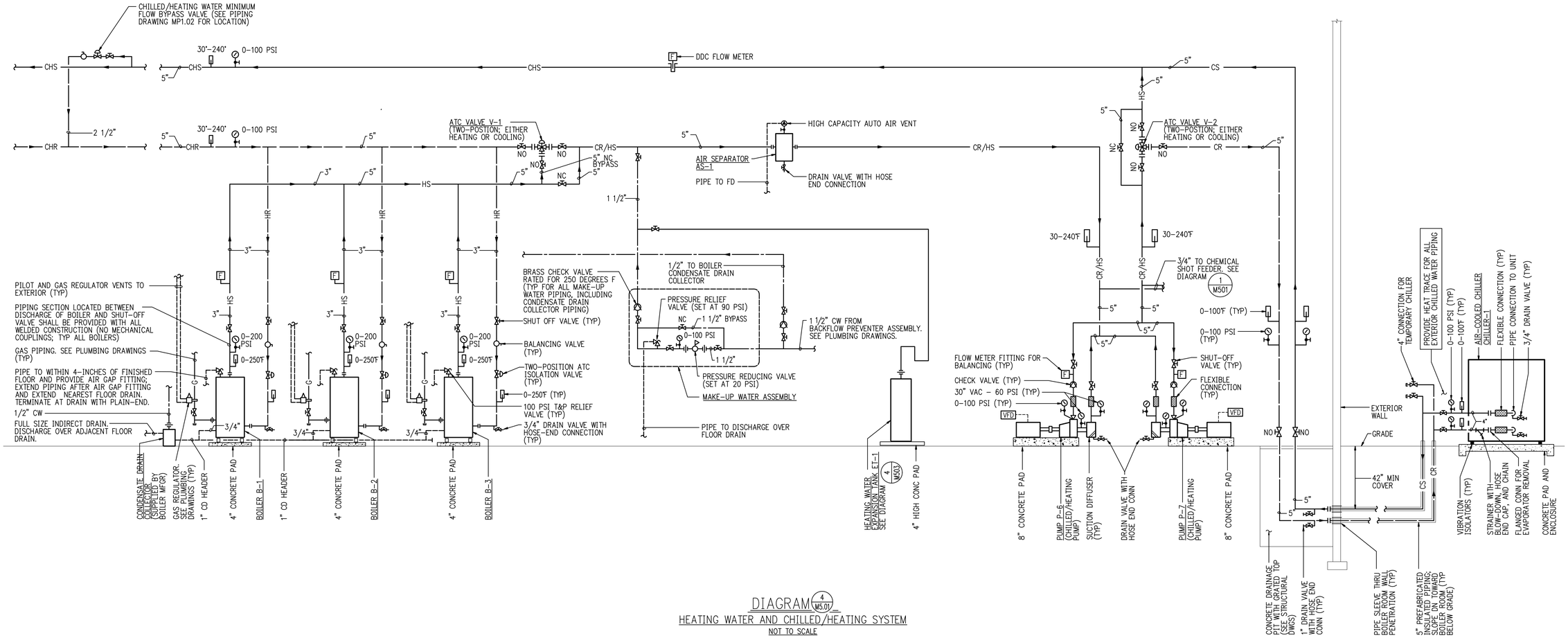


DIAGRAM 4/M5.01
HEATING WATER AND CHILLED/HEATING SYSTEM
NOT TO SCALE

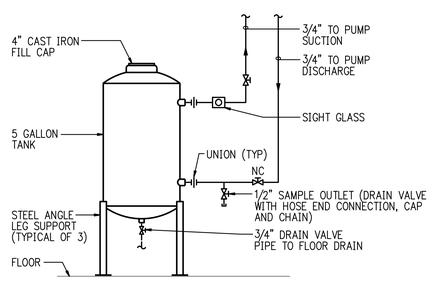
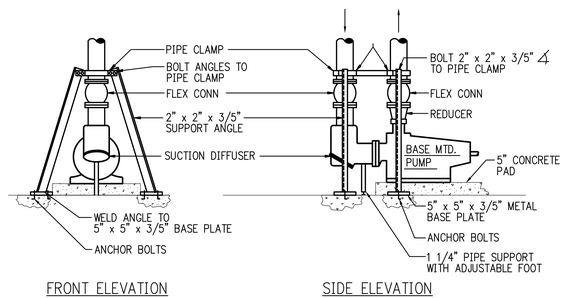
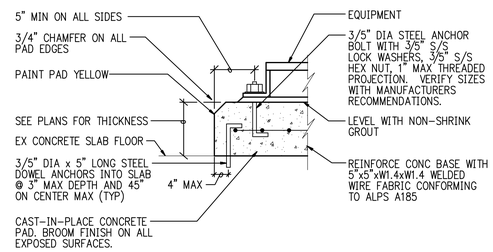


DIAGRAM 1/M5.01
CHEMICAL SHOT FEEDER
NOT TO SCALE



DETAIL 2/M5.01
PIPE SUPPORTS FOR BASE MOUNTED PUMPS
NOT TO SCALE



DETAIL 3/M5.01
TYPICAL CONCRETE HOUSEKEEPING PAD
NOT TO SCALE

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Mechanical & Electrical Consulting Engineers
3102 Lord Baltimore Drive Baltimore, MD 21244
tel 410-955-6100 fax 410-298-0820 jposeyassoc.com

Murphy & Dittenhafer Architects
800 North Charles Street, Baltimore, Maryland 21201 410-625-4823 voice 410-625-4674 fax
228 West Market Street, York, Pennsylvania 17401 717-848-8627 voice 717-843-3449 fax

Mark	Date	Description
1	01/15/2016	BID SET

STATE OF MARYLAND · JOHN PATRICK SWEENEY · 33986 · PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

MECHANICAL DETAILS & DIAGRAMS

SHEET
M5.01

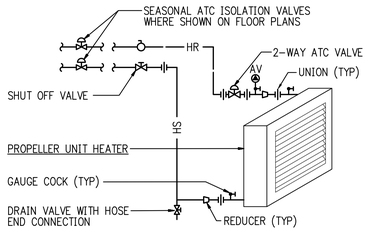


DIAGRAM 1/M5.02
TYPICAL PIPING CONNECTIONS TO PROPELLER UNIT HEATER
NOT TO SCALE

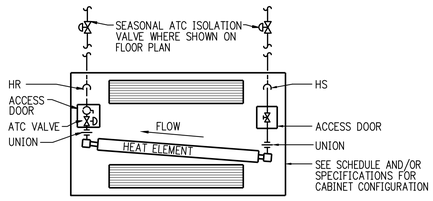
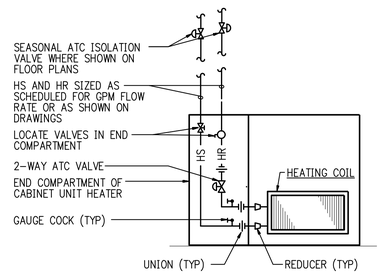
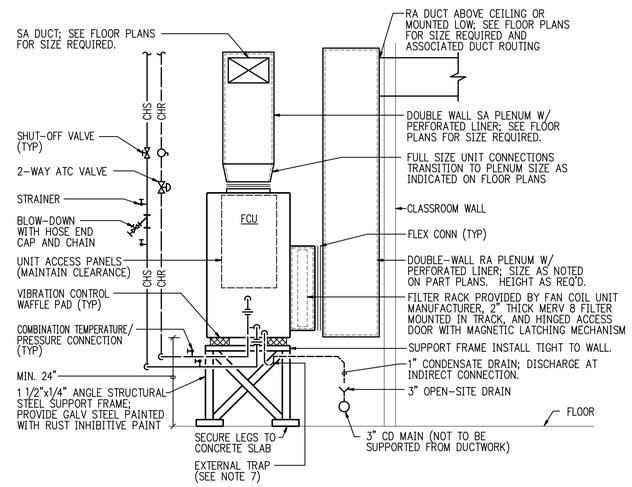


DIAGRAM 2/M5.02
TYPICAL PIPING CONNECTIONS TO CONVECTORS
NOT TO SCALE



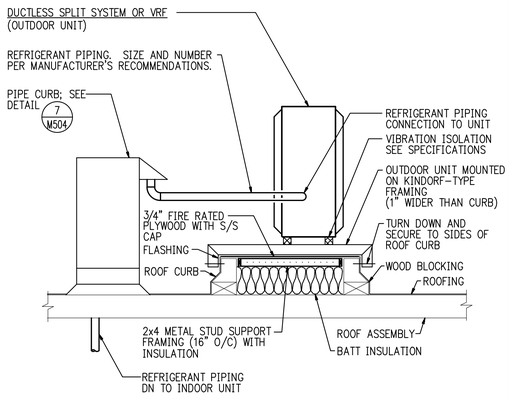
DETAIL 3/M5.02
TYPICAL PIPING CONNECTIONS TO CABINET UNIT HEATER
NOT TO SCALE



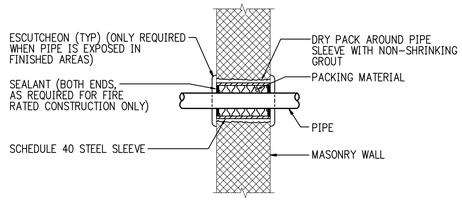
NOTES:

1. ALL VALVES IN MECHANICAL CLOSETS SHALL BE LOCATED MAXIMUM 7'-0" ABOVE FLOOR.
2. SEE PART PLANS FOR UNIT CONFIGURATION; RIGHT RETURN AS DETAILED.
3. INSTALL FAN COIL UNITS TO MAINTAIN ACCESS AT FRONT AND SIDE OF UNIT.
4. SEE NOTES ON FAN COIL UNIT SCHEDULE FOR ADDITIONAL REQUIREMENTS.
5. ANGLE SUPPORT FRAME SHALL HAVE DOWN TURNED ANGLES ON ALL FOUR SIDES.
6. CONTRACTOR SHALL PROVIDE MOCK-UP OF MECHANICAL CLOSET AND OBTAIN APPROVAL FROM ARCHITECT PRIOR TO INSTALLATION OF OTHER UNITS.
7. EXTERNAL CONDENSATE DRAIN TRAP SHALL BE OMITTED ON FAN COIL UNITS THAT ARE INTERNALLY TRAPPED.
8. SEE PART PLANS AND GENERAL NOTES ON DRAWINGS M4.02 FOR ADDITIONAL INFORMATION CONCERNING UNIT INSTALLATION REQUIREMENTS.

DIAGRAM 4/M5.02
TYPICAL VERTICAL CLOSET TYPE FAN COIL UNITS
NOT TO SCALE



DETAIL 5/M5.02
DUCTLESS SPLIT SYSTEM OUTDOOR UNIT AND VRF AIR COOLED CONDENSING UNIT INSTALLATION
NOT TO SCALE

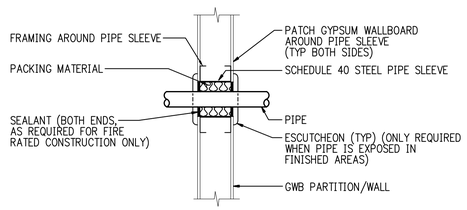


NOTES:

THIS DETAIL APPLIES TO BOTH INSULATED AND NON-INSULATED PIPE.

FOR FIRE RATED CONSTRUCTION PROVIDE APPROPRIATE APPROVED THROUGH-PENETRATION FIRESTOP ASSEMBLY TO MAINTAIN THE FIRE RATING OF THE WALL ASSEMBLY.

DETAIL 6/M5.02
PIPE THROUGH INTERIOR MASONRY WALL
NOT TO SCALE

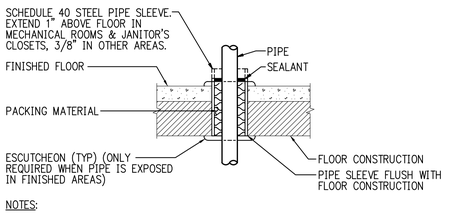


NOTES:

THIS DETAIL APPLIES TO BOTH INSULATED AND NON-INSULATED PIPE.

FOR FIRE RATED CONSTRUCTION PROVIDE APPROPRIATE APPROVED THROUGH-PENETRATION FIRESTOP ASSEMBLY TO MAINTAIN THE FIRE RATING OF THE WALL ASSEMBLY.

DETAIL 7/M5.02
PIPE THROUGH INTERIOR METAL/WOOD STUD GWB PARTITION OR WALL
NOT TO SCALE

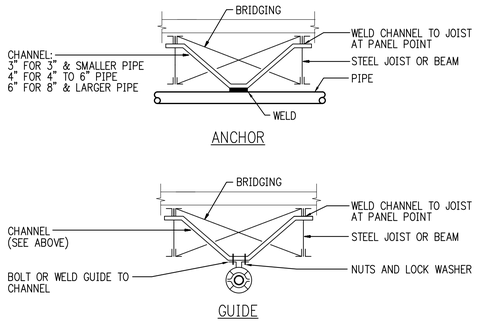


NOTES:

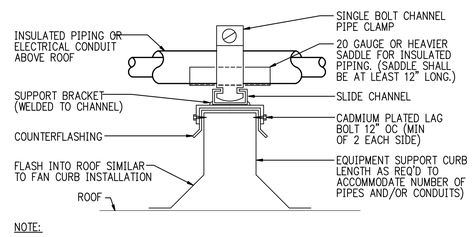
THIS DETAIL APPLIES TO BOTH INSULATED AND NON-INSULATED PIPE.

FOR FIRE RATED CONSTRUCTION, PROVIDE APPROPRIATE APPROVED THROUGH-PENETRATION FIRESTOP ASSEMBLY TO MAINTAIN THE FIRE RATING OF THE FLOOR ASSEMBLY.

DETAIL 8/M5.02
PIPE THROUGH FLOOR
NOT TO SCALE



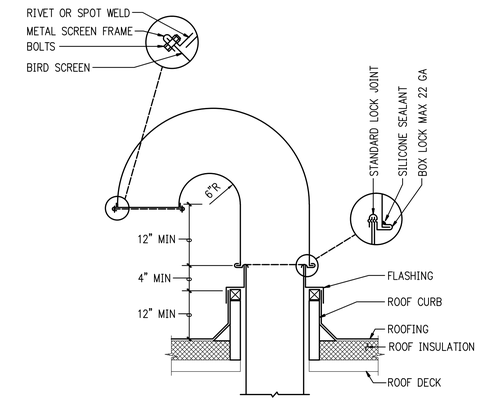
DETAIL 9/M5.02
PIPE ANCHOR AND GUIDE FROM BAR JOIST
NOT TO SCALE



NOTE:

ALL SUPPORT MEMBERS SHALL BE GALVANIZED STEEL AND ALL WELDS SHALL BE COATED WITH ZINC RICH PAINT.

DETAIL 10/M5.02
CONDUIT OR PIPE SUPPORT ABOVE ROOF
NOT TO SCALE



DETAIL 11/M5.02
GOOSENECK THRU ROOF
NOT TO SCALE

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226 West Market Street, York, Pennsylvania 17401
717-848-8627 voice 717-843-2449 fax
800 North Charles Street, Baltimore, Maryland 21201
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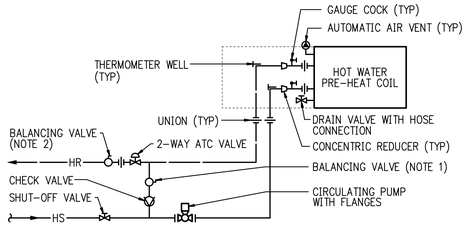
PATRICK KEITH SHEFFER
REG. NO. 33986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

DETAILS & DIAGRAMS

SHEET
M5.02



NOTES:

LOCATE UNIONS AND PIPING SO THAT COILS AND FILTERS MAY BE REMOVED FROM UNITS OR DUCTS WITHOUT INTERFERENCE. LOCATE PIPING THAT IS BELOW TOP OF UNIT CASING WITHIN COIL PULL AREA SO THAT ADJACENT ACCESS DOORS ARE NOT BLOCKED AND CAN OPEN AT LEAST 90 DEGREES.

VALVES AND ACCESSORIES SHALL BE LINE SIZE, NOT COIL CONNECTION SIZE.

PIPE COIL TO PRODUCE WATER/AIR COUNTERFLOW. SEE MANUFACTURER'S PIPING RECOMMENDATIONS.

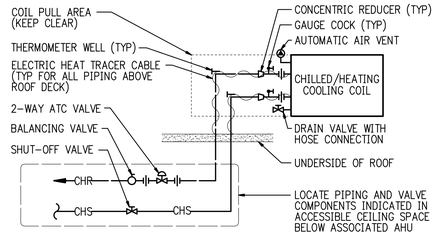
INCREASE PIPE ONE SIZE FOR LENGTH OF SOCKET FOR THERMOMETER WELLS IN PIPING LESS THAN 3" IN DIAMETER. PROVIDE REDUCERS AS NEEDED.

SIZE PIPING FROM PIPE CONNECTION SCHEDULE WHERE PIPE SIZING IS NOT SHOWN ON PLAN.

BALANCING NOTES:

1. BALANCE TO 80% DESIGN FLOW WITH CIRCULATOR RUNNING AND ATC VALVE CLOSED.
2. BALANCE TO DESIGN FLOW WITH CIRCULATOR RUNNING AND ATC VALVE FULL OPEN.

DIAGRAM 1/M5.03
TYPICAL PIPING CONNECTIONS TO HOT WATER COILS WITH CIRCULATOR & 2-WAY VALVE CONTROL IN DEDICATED OUTDOOR AIR HANDLING UNITS (DOAS-1 THROUGH DOAS-5)
NOT TO SCALE



NOTES:

LOCATE UNIONS AND PIPING SO THAT COILS AND FILTERS MAY BE REMOVED FROM UNITS OR DUCTS WITHOUT INTERFERENCE. LOCATE PIPING THAT IS BELOW TOP OF UNIT CASING WITHIN COIL PULL AREA SO THAT ADJACENT ACCESS DOORS ARE NOT BLOCKED AND CAN OPEN AT LEAST 90 DEGREES.

VALVES AND ACCESSORIES SHALL BE LINE SIZE, NOT COIL CONNECTION SIZE.

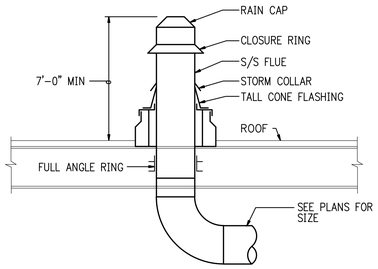
PIPE COIL TO PRODUCE WATER/AIR COUNTERFLOW. SEE MANUFACTURER'S PIPING RECOMMENDATIONS.

INCREASE PIPE ONE SIZE FOR LENGTH OF SOCKET FOR THERMOMETER WELLS IN PIPING LESS THAN 3" IN DIAMETER. PROVIDE REDUCERS AS NEEDED.

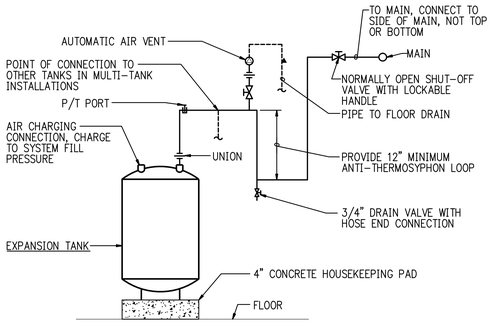
SIZE PIPING FROM PIPE CONNECTION SCHEDULE WHERE PIPE SIZING IS NOT SHOWN ON PLAN.

FOR UNITS WITH MULTIPLE COILS, PROVIDE ADDITIONAL SHUT-OFF VALVE, BALANCING VALVE, GAUGE COCKS, AND THERMOMETER WELLS AT EACH COIL CONNECTION.

DIAGRAM 2/M5.03
TYPICAL PIPING CONNECTIONS TO CHILLED/HEATING WATER COILS WITH 2-WAY VALVE CONTROL IN ENERGY RECOVERY UNITS AND AIR HANDLING UNITS (ERU-1 AND 2; AHU-1)
NOT TO SCALE



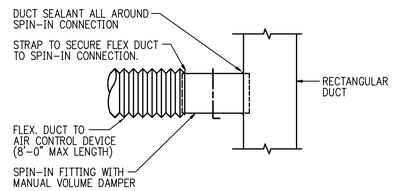
DETAIL 8/M5.03
BOILER FLUE TERMINATIONS
NOT TO SCALE



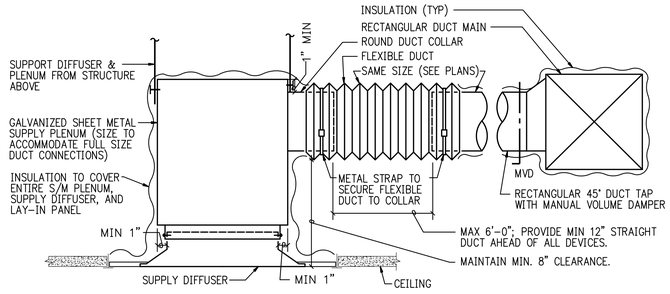
NOTES: FOR HEATING ONLY SYSTEMS, DO NOT INSULATE TANK OR PIPING BETWEEN EXPANSION TANK AND MAIN.

SIZE PIPING BETWEEN EXPANSION TANK AND MAIN PER THE TANK MANUFACTURER'S RECOMMENDATIONS, BUT NOT LESS THAN THE EXPANSION TANK CONNECTION SIZE OR SIZES INDICATED ON OTHER PLANS AND DIAGRAMS.

DIAGRAM 4/M5.03
FLOOR MOUNTED EXPANSION TANK
NOT TO SCALE



DETAIL 5/M5.03
SPIN-IN TO FLEXIBLE DUCT CONNECTION
NOT TO SCALE



DETAIL 6/M5.03
TYPICAL FLEXIBLE CONNECTION TO SQUARE NECK DIFFUSER
NOT TO SCALE

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Mark	Date	Description
1	11/10/2016	BIDT SET

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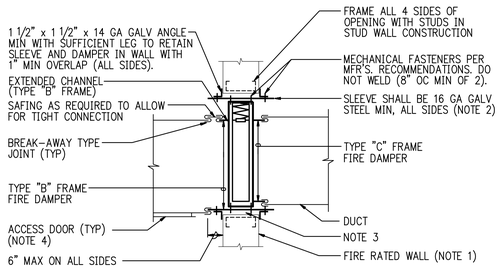
JAMES PATRICK LAFFERTY
PROFESSIONAL ENGINEER
23986

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 23986, Expiration date: 01-15-2017.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

DETAILS & DIAGRAMS

SHEET
M5.03



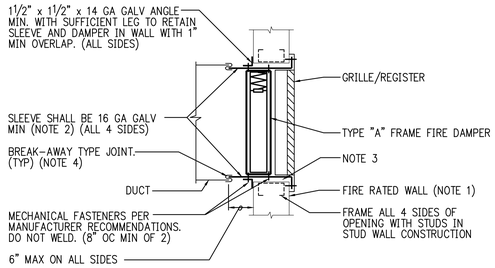
SUPPLY AIR & OUTSIDE AIR SHALL BE TYPE "C" FRAME
(ILLUSTRATED ON RIGHT SIDE CONNECTION TO DAMPER)

RETURN AIR & EXHAUST AIR SHALL BE TYPE "B" FRAME
(ILLUSTRATED ON LEFT SIDE CONNECTION TO DAMPER)

NOTES:

1. FIRE DAMPERS ARE AN INTEGRAL PART OF THE FIRE RATED PARTITION.
2. DAMPERS LARGER THAN 36"W OR 24"H SHALL HAVE 14 GA GALV SLEEVES.
3. OPENING IN WALL SHALL BE WITHIN MFG RECOMMENDATIONS FOR MIN AND MAX CLEARANCE.
4. PROVIDE ACCESS DOOR FOR EACH PANEL OF MULTI-PANEL FIRE DAMPER INSTALLATION.

DETAIL 1/W5.04
TYPICAL FIRE DAMPER INSTALLATION IN WALL
NOT TO SCALE

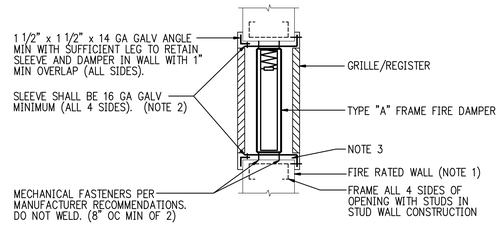


BEHIND GRILLE/REGISTER SHALL BE TYPE "A" FRAME

NOTES:

1. FIRE DAMPERS ARE AN INTEGRAL PART OF THE FIRE RATED PARTITION.
2. DAMPERS LARGER THAN 36"W OR 24"H SHALL HAVE 14 GA GALV SLEEVES.
3. OPENING IN WALL SHALL BE WITHIN MANUFACTURER RECOMMENDATIONS FOR MINIMUM AND MAXIMUM CLEARANCE.
4. BREAK-AWAY TYPE JOINT SHALL BE UL 555 AND SMACNA APPROVED FOR DUCT-SLEEVE CONNECTION. DO NOT PROVIDE RIGID CONNECTION UNLESS OTHERWISE REQUIRED.

DETAIL 2/W5.04
FIRE DAMPER INSTALLATION
BEHIND WALL MOUNTED GRILLE/REGISTER
NOT TO SCALE

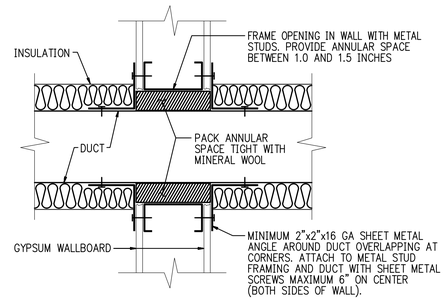


BETWEEN GRILLE/REGISTER SHALL BE TYPE "A" FRAME

NOTES:

1. FIRE DAMPERS ARE AN INTEGRAL PART OF THE FIRE RATED PARTITION.
2. DAMPERS LARGER THAN 36"W OR 24"H SHALL HAVE 14 GA GALV SLEEVES.
3. OPENING IN WALL SHALL BE WITHIN MANUFACTURER RECOMMENDATIONS FOR MINIMUM AND MAXIMUM CLEARANCE.

DETAIL 3/W5.04
FIRE DAMPER INSTALLATION BETWEEN
WALL MOUNTED GRILLE/REGISTER
NOT TO SCALE



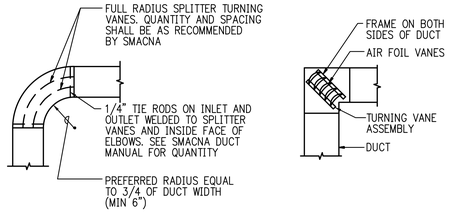
NOTE: THIS DETAIL IS A MINIMUM REQUIREMENT. CONTRACTOR SHALL VERIFY THAT LOCAL AUTHORITIES HAVING JURISDICTION ACCEPT THIS CONSTRUCTION, OR MAKE THE REQUIRED REVISIONS WHERE REQUIREMENTS ARE MORE STRINGENT.

DETAIL 4/W5.04
DUCT PENETRATION THROUGH STUD WALL
WITHOUT FIRE DAMPER
NOT TO SCALE

NOTE: THIS DETAIL IS A MINIMUM REQUIREMENT. CONTRACTOR SHALL VERIFY THAT LOCAL AUTHORITIES HAVING JURISDICTION ACCEPT THIS CONSTRUCTION, OR MAKE THE REQUIRED REVISIONS WHERE REQUIREMENTS ARE MORE STRINGENT.

DETAIL 5/W5.04
DUCT PENETRATION THROUGH MASONRY OR CONCRETE WALL
WITHOUT FIRE DAMPER
NOT TO SCALE

SUPPLY OUTLET LOCATED
AT END OF RUN



RADIUS TYPE ELBOW SQUARE TYPE ELBOW

DETAIL 6/W5.04
TYPICAL DUCT DETAILS
NOT TO SCALE

DETAIL 7/W5.04
PIPE PENETRATION THROUGH ROOF
NOT TO SCALE

STANDARD CURBS PLENUM CURBS

DETAIL 8/W5.04
TYPICAL ACOUSTICAL TREATMENT BELOW DEDICATED OUTDOOR AIR SYSTEM UNITS (DOAS)
ROOFTOP UNITS (RTU), AND ENERGY RECOVERY UNITS (ERU)
NOT TO SCALE

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MIDDLE RIVER, MD

James Posey Associates
Engineering your vision
Mechanical & Electrical
Consulting Engineers
3122 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-265-6500
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax
228 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-2449 fax

Mark	Date	Description
1	11/10/2016	BIDDING SET

STATE OF MARYLAND
JAMES PATRICK SHEEHAN
33986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date: 07-15-2017.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

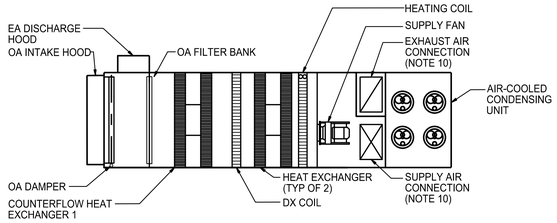
DETAILS & DIAGRAMS

SHEET
M5.04

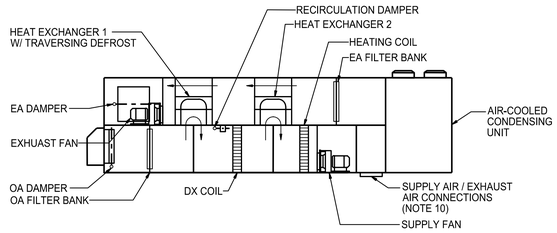
DEDICATED OUTDOOR AIR SYSTEM SCHEDULE (WITH DX COOLING AND HOT WATER HEATING)

UNIT NO	AREAS SERVED	SUPPLY FAN WITH VFD									EXHAUST FAN WITH VFD									DX COOLING COIL						HEATING COIL							ELECTRICAL					
		MIN FILTER AREA (SF)	CFM	ESP (IN WC)	TSP (IN WC)	FAN TYPE	DRIVE	WHEEL DIA (IN)	MAX RPM	MOTOR HP	MIN FILTER AREA (SF)	CFM	ESP (IN WC)	TSP (IN WC)	FAN TYPE	DRIVE	WHEEL DIA (IN)	MAX RPM	MOTOR HP	TOTAL MBH	SENSIBLE MBH	EDB (F)	EWB (F)	LDB (F)	LWB (F)	MBH	GPM	EDB (F)	LDB (F)	EWT (F)	LWT (F)	WPD (IN WC)	VOLTAGE/ PHASE	MCA	MOP	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	MAX OPERATING WEIGHT (LBS)
DOAS-1	WEST CLASSROOMS	24.0	11,575	1.0	6.9	PLENUM	DIRECT	27	1,825	25	24.0	10,050	1.0	3.5	PLENUM	DIRECT	24.5	1,625	10	709	254	73.1	72.0	53.0	52.8	290	28.5	52.8	76	120	99.3	5	480V-3ø	182	200	497	113	115	30,000
DOAS-2	EAST CLASSROOMS	24.0	10,400	1.0	5.8	PLENUM	DIRECT	27	1,725	15	24.0	9,450	1.0	3.4	PLENUM	DIRECT	24.5	1,625	10	590	212	73.7	72.2	54.8	54.6	231	23.0	54.8	75.4	120	99.6	5	480V-3ø	141	150	497	113	115	30,000
DOAS-3	ADMIN	4.0	1,675	1.0	5.1	PLENUM	DIRECT	12.4	3,675	3	4.0	1,225	1.0	2.4	PLENUM	DIRECT	12.4	2,650	1	112	42	72.7	51.9	51.9	51.7	55	5.5	46.1	76.8	120	98.9	5	480V-3ø	40	50	317	65	77	12,000
DOAS-4	MEDIA CENTER	8.0	3,050	0.75	4.2	PLENUM	DIRECT	13.98	3,275	5	8.0	2,875	0.75	2.5	PLENUM	DIRECT	15.75	2,250	3	173	59	71.7	71.5	53.9	53.7	61	6.0	57.2	75.9	120	99.0	10	480V-3ø	57	80	377	77	89	17,000
DOAS-5	MUSIC CLASSROOMS	8.0	2,375	0.75	4.3	PLENUM	DIRECT	12.4	3,725	5	8.0	2,150	0.75	2.5	PLENUM	DIRECT	12.4	3,175	2	132	44	72.0	71.7	54.9	54.7	51	5.0	55.9	76.1	120	99.0	5	480V-3ø	43	60	365	65	89	15,000

UNIT NO	HEAT EXCHANGER - 1																HEAT EXCHANGER - 2																AIR-COOLED CONDENSING UNIT (NOTE 5)				MANUFACTURER / MODEL	NOTES
	EFFECTIVENESS		WINTER OA				WINTER EXHAUST				SUMMER OA				SUMMER EXHAUST				EFFECTIVENESS		WINTER OA				WINTER EXHAUST				SUMMER OA				SUMMER EXHAUST									
	SUMMER	WINTER	CFM	EAT (F) DB	LAT (F) DB	APD (IN WC)	CFM	EAT (F) DB / WB	LAT (F) DB	APD (IN WC)	CFM	EAT (F) DB / WB	LAT (F) DB / WB	APD (IN WC)	CFM	EAT (F) DB / WB	LAT (F) DB	APD (IN WC)	SUMMER	WINTER	CFM	EAT (F) DB	LAT (F) DB	APD (IN WC)	CFM	EAT (F) DB / WB	LAT (F) DB	APD (IN WC)	CFM	EAT (F) DB / WB	LAT (F) DB / WB	APD (IN WC)	CFM	EAT (F) DB / WB	LAT (F) DB	APD (IN WC)	TONS	REFRIG TYPE	COMP TYPE	STAGES		
DOAS-1	71.5	66.2	11,575	0	25.2	1.18	9,950	38.1/33.8	14.8	0.75	11,575	95/78	73.1/72.0	1.36	10,050	59.4/56.7	84.9	0.82	71	74	11,575	25.2	52.8	1.26	10,050	70.0/49.9	38.1	0.80	11,575	53.0/52.8	66.4/58.1	1.27	10,050	75/62.5	59.4	0.82	60	R410A	SCROLL	MODULATING	MUNTERS WPP-12	1,2,3,4,5,6,7,8,9,10
DOAS-2	69.8	68.2	10,400	0	27.6	0.98	9,550	40.5/35.1	16	0.70	10,400	95/78	73.7/72.2	1,13	9,450	61.7/57.6	84.9	0.77	66	73	10,400	27.6	54.8	1.05	9,450	70.0/49.9	40.5	0.75	10,400	54.8/54.6	67.0/59.3	0.88	9,450	75/62..5	61.7	0.77	45	R410A	SCROLL	MODULATING	MUNTERS WPP-12	1,2,3,4,5,6,7,8,9,10
DOAS-3	73.4	62.1	1,675	0	21.1	0.69	1,225	35.9/32.5	13.6	0.32	1,675	95/78	75.3/72.7	0.8	1,225	58.1/56.2	85.2	0.36	73	73	1,675	21.1	46.1	0.58	1,225	70.0/50.0	35.9	0.35	1,675	51.9/51.7	64.3/56.7	0.77	1,225	75/62.5	58.1	0.36	10	R410A	SCROLL	MODULATING	MUNTERS WPP-02	1,2,3,4,5,6,7,8,9,10
DOAS-4	72.6	72.7	3,050	0	29.7	0.6	2,875	40.9/35.4	15,2	0.44	3,050	95/78	71.7/71.5	0.68	2,875	60.6/57..2	85.6	0.48	68	75	3,050	29.7	57.2	0.64	2,875	70.0/50.0	40.9	0.47	3,050	53.9/53.7	67.5/59.0	0.54	2,875	75/62.5	60.6	0.48	15	R410A	SCROLL	MODULATING	MUNTERS WPR-04	1,2,3,4,5,6,7,8,9,10
DOAS-5	73.5	71.3	2,375	0	28.0	0.69	2,150	39.2/34.4	14.5	0.48	2,375	95/78	72.0/71.7	0.79	2,150	60.3/57.1	85.8	0.53	73	76	2,375	28	55.9	0.74	2,150	70.0/50,0	39.3	0.51	2,375	54.9/54.7	68.2/59.8	0.77	2,150	75/62.5	60.3	0.52	11.5	R410A	SCROLL	MODULATING	MUNTERS WPP-03	1,2,3,4,5,6,7,8,9,10



COMPONENT DIAGRAM – PLAN VIEW
DOAS-1,2,3,4 AND 5
NOT TO SCALE



COMPONENT DIAGRAM – ELEVATION VIEW
DOAS-1,2,3,4 AND 5
NOT TO SCALE

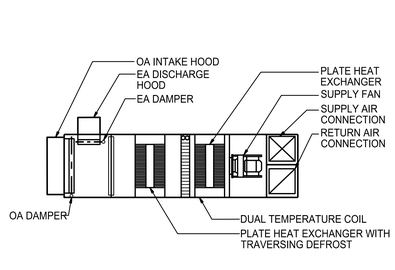
NOTES:

1. PROVIDE REMOTE DISCONNECT SWITCHES (WITH PHASE PROTECTION) IN LIEU OF INTEGRAL DEVICES.
2. PROVIDE FULL SIZE PLENUM TYPE ROOF CURB. MIN HEIGHT 24"
3. UNIT COMPLETE WITH 2" (MERV 8) EXHAUST AIR FILTER AND 2" (MERV 8) / 4" (MERV 13) OUTDOOR AIR FILTERS; TSP BASED ON MIDLIFE FILTER CONDITIONS.
4. UNIT SHALL BE PAINTED IN FACTORY; OPTIONAL UNIT COLOR AS SELECTED BY ARCHITECT.
5. PROVIDE MINIMUM ONE DIGITAL SCROLL OR VARIABLE SPEED TYPE COMPRESSOR.
6. PROVIDE VFD FOR SUPPLY AND EXHAUST FANS; MOUNT ALL VFDS IN CONTROL PANEL TO ALLOW ACCESS FOR SERVICE; DO NOT MOUNT DRIVE ADJACENT TO FAN.
7. DISPLAY PANEL SHALL BE MOUNTED IN MAIN CONTROL PANEL.
8. UNIT SHALL BE FURNISHED COMPLETE WITH PACKAGED CONTROLS; SEE SPECIFICATIONS FOR DESCRIPTION OF OPERATION AND COORDINATION WITH ATC REQUIREMENTS.
9. PROVIDE DX COOLING COIL (WITH INTEGRAL AIR COOLED CONDENSING UNIT) AND SEPARATE HEATING WATER COIL.
10. COORDINATE LOCATION (LEFT OR RIGHT) OF SUPPLY AND EXHAUST AIR CONNECTIONS WITH ROOF PLAN (DWG M1.06 AND M1.07)

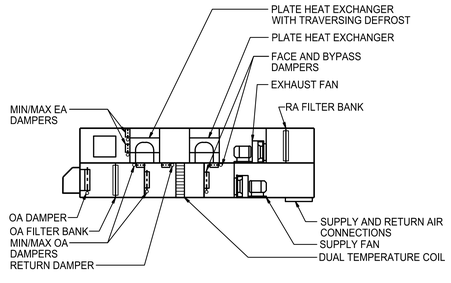
ENERGY RECOVERY UNIT SCHEDULE

DESIG	AREA SERVED	MODEL NO. (MUNTERS)	OUTDOOR AIR CFM	RETURN FAN								SUPPLY FAN								DUAL TEMPERATURE COIL														NOTES
																						COOLING DUTY						HEATING DUTY						
				CFM	MIN FILTER AREA (SF)	FAN TYPE	EXT SP (IN)	TOTAL SP (IN)	WHEEL DIA (IN)	RPM (MAX)	MOTOR HP (MIN)	CFM	MIN FILTER AREA (SF)	FAN TYPE	EXT SP (IN)	TOTAL SP (IN)	WHEEL DIA (IN)	RPM (MAX)	MOTOR HP (MIN)	GPM	PD (FT)	TOTAL MBH	SENSIBLE MBH	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	EWT (°F)	LWT (°F) (APPROX)	MBH (MIN)	EDB (°F)	LDB (°F) (MAX)	EWT (°F)	LWT (°F) (APPROX)	
ERU-1	GYMNASIUM	WPP-04	1725/1350	2625	8	PLN	0.75	2.00	13.98	2550	2	3125	8	PLN	0.75	3.19	18.25	1950	3	19.5	15	117	46	67.2	65.9	53.6	53.6	44	56	84	56.8	81	120	64	1,2,3,4,5,6,7,8,9
ERU-2	CAFETERIA	WPP-06	3075 / 775	5200	12	PLN	0.75	2.70	18.25	2005	5	5300	12	PLN	0.75	3.74	22.25	1875	7.5	32.5	15	200	77	67.0	65.9	53.6	53.6	44	56	111	60	79	120	64	1,2,3,4,5,6,7,8,9

UNIT NO	COUNTERFLOW EXCHANGER - 1																COUNTERFLOW EXCHANGER - 2																ELECTRICAL			GENERAL			
	EFFECTIVENESS		WINTER OA				WINTER EXHAUST				SUMMER OA				SUMMER EXHAUST				EFFECTIVENESS	SUMMER SA				SUMMER RA												
	SUMMER	WINTER	CFM	EAT (F) DB	LAT (F) DB	APD (IN WC)	CFM	EAT (F) DB / WB	LAT (F) DB	APD (IN WC)	CFM	EAT (F) DB / WB	LAT (F) DB / WB	APD (IN WC)	CFM	EAT (F) DB / WB	LAT (F) DB	APD (IN WC)	SUMMER	CFM	EAT (F) DB / WB	LAT (F) DB / WB	APD (IN WC)	CFM	EAT (F) DB / WB	LAT (F) DB	APD (IN WC)	CFM	EAT (F) DB / WB	LAT (F) DB	APD (IN WC)	VOLTAGE / PHASE	MCA	MOP	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	MAX OPERATING WEIGHT (LBS)
ERU-1	84.2	79.5	1,725	0	45.0	0.22	1,225	71.3/50.6	14.6	0.10	1,725	95.0/78.0	73,7/72.3	0.25	1,225	59.2/56.7	89.3	0.11	76	3,125	53.9/53.9	68.2/59.4	0.69	2,625	76.3/63.0	59.2	0.41	480V-3ø	17	20	317	77	89	14000
ERU-2	74	72.1	3,075	0	51.6	0.33	2,975	71,5/50,7	21.8	0.26	3,075	95.0/78.0	71,5/71,3	0.36	2,975	60,7/57,3	86.1	0.27	69	5,300	53,9/53,9	69.4/59,8	0.94	5,200	76.5/63,1	60,7	0.74	480V-3ø	27	35	317	89	89	15000



COMPONENT DIAGRAM – PLAN VIEW
ERU-1 AND 2
NOT TO SCALE



COMPONENT DIAGRAM – ELEVATION VIEW
ERU-1 AND 2
NOT TO SCALE

NOTES:

1. PROVIDE REMOTE DISCONNECT SWITCHES (WITH PHASE PROTECTION) IN LIEU OF INTEGRAL DEVICES.
2. PROVIDE FULL SIZE ROOF CURB.
3. UNIT COMPLETE WITH 2" (MERV 8) EXHAUST AIR FILTER AND 2" (MERV 8) / 4" (MERV 13) OUTDOOR AIR FILTERS; TSP BASED ON MIDLIFE FILTER CONDITIONS.
4. UNIT SHALL BE PAINTED IN FACTORY; OPTIONAL UNIT COLOR AS SELECTED BY ARCHITECT.
5. OA VALUES ARE MIN/MAX SETPOINTS UNDER CO2 RESET. SEE ATC DRAWINGS FOR ADDITIONAL INFORMATION.
6. PROVIDE VFD FOR SUPPLY AND EXHAUST FANS; MOUNT ALL VFDS IN CONTROL PANEL TO ALLOW ACCESS FOR SERVICE; DO NOT MOUNT DRIVE ADJACENT TO FAN.
7. DISPLAY PANEL SHALL BE MOUNTED IN MAIN CONTROL PANEL.
8. UNIT SHALL BE FURNISHED COMPLETE WITH PACKAGED CONTROLS; SEE SPECIFICATIONS FOR DESCRIPTION OF OPERATION AND COORDINATION WITH ATC REQUIREMENTS.
9. PROVIDE DUAL TEMPERATURE COOLING/HEATING COIL.

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tel 410-265-6100
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Murphy & Dittenhafer ARCHITECTS
226 West Market Street, York, Pennsylvania 17401
717-848-9827 voice 717-843-3448 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4623 voice 410-625-4674 fax

Mark	Date	Description
-	11/10/2021	BIDS SET

STATE OF MARYLAND
JOHN FRANCIS PATRICK GILBERT
REGISTERED
PROFESSIONAL ENGINEER
33986

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 33986, Expiration date: 07-16-2023.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

SCHEDULES

SHEET
M6.01

PUMP SCHEDULE

DESIG	SERVICE	GPM	FT HD	SIZE (IN)	HP	VOLTAGE / PHASE	RPM	MFR'S MODEL NO	NOTES
P-1	DOAS-1	30	10	2"x2"	1/8	120V-1ø	3250	TACO IL0012	
P-2	DOAS-2	25	10	2"x2"	1/8	120V-1ø	3250	TACO IL0012	
P-3	DOAS-3	6	10	1"x1"	1/35	120V-1ø	3250	TACO IL005	
P-4	DOAS-4	6	10	1"x1"	1/35	120V-1ø	3250	TACO IL005	
P-5	DOAS-5	5	10	1"x1"	1/35	120V-1ø	3250	TACO IL005	
P-6	HEATING/CHILLED WATER	350	115	3"x2.5"	20	480V-3ø	3500	TACO FI2507	1,2
P-7	HEATING/CHILLED WATER	350	115	3"x2.5"	20	480V-3ø	3500	TACO FI2507	1,2

NOTES:

1. MOTORS SHALL BE SUITABLE FOR USE WITH VARIABLE FREQUENCY DRIVE CONTROLLERS
2. DESIGN FLOW RATE INCLUDES SYSTEM DIVERSITY DURING HEATING OPERATION.

ROOF TOP UNIT SCHEDULE

DESIG	AREA SERVED	MODEL NO. (AAON)	OUTDOOR AIR (CFM)	SUPPLY FAN						POWER EXHAUST FAN						DX COOLING COIL								GAS HEATING SECTION					ELECTRICAL			GENERAL				NOTES
				CFM	EXT SP (IN)	TOTAL SP (IN)	WHEEL DIA (IN)	RPM (MAX)	MOTOR HP (MIN)	CFM	EXT SP (IN)	TOTAL SP (IN)	WHEEL DIA (IN)	RPM (MAX)	MOTOR HP (MIN)	TOTAL MBH	SENSIBLE MBH	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	ROWS	FPI	EAT (°F)	TEMP RISE (°F)	GAS INPUT (MBH)	TOTAL OUTPUT (MBH)	TYPE OF CONTROL	MCA	MOP	VOLTAGE /PHASE	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	MAX OPERATING WEIGHT (LBS)	
RTU-1	COMMUNITY	RQ-006	500 / 375	1500	0.9	1.98	18.5	2200	2	200	0.3	0.47	16	1760	1	68	46	81.7	68	52.7	52.5	4	14	46.7	50	100	70	MODULATING	20	30	480V/3ø	82.5	44.25	50.5	1200	1,2,3,4,5,6,7,8
RTU-2	FOOD SERVICE	RQ-003	325	1200	0.75	1.59	18.5	1550	1	-	-	-	-	-	-	24	18	80.4	66.9	57.2	57.2	2	14	48.3	37	60	48	MODULATING	12	15	480V/3ø	82.5	44.25	50.5	1200	1,2,3,4,5,8

NOTES:

1. PROVIDE UNIT WITH MANUFACTURERS PACKAGED CONTROLS; SEE SPECIFICATIONS FOR DESCRIPTION OF OPERATION AND COORDINATION WITH ATC REQUIREMENTS
2. PROVIDE SINGLE POINT POWER CONNECTION AT THE UNIT CONTROL PANEL
3. PROVIDE FACTORY-INSTALLED VARIABLE FREQUENCY DRIVE FOR SUPPLY FAN AND EXHAUST FAN (RTU-1). MOUNT ALL VFDS IN CONTROL PANEL TO ALLOW ACCESS FOR SERVICE; DO NOT MOUNT ADJACENT TO FAN
4. DX COOLING CAPACITY SELECTED AT 95 F AMBIENT
5. PROVIDE MINIMUM ONE DIGITAL SCROLL OR VARIABLE SPEED TYPE COMPRESSOR.
6. UNIT COMPLETE WITH FACTORY MOUNTED ECONOMIZER CONTROLS AND DEMAND CONTROL VENTILATION
7. MULTIPLE OA VALUES DENOTE MIN/MAX SETPOINTS UNDER CO2 RESET
8. PROVIDE UNIT WITH EITHER DIGITAL SCROLL OR HOT GAS BYPASS COMPRESSOR CONTROL.

AIR HANDLING UNIT SCHEDULE

DESIG	AREA SERVED	COMPONENTS (LISTED IN DIRECTION OF AIR FLOW)	MODEL NO. (DAIKIN)	OUTDOOR AIR CFM	FL1	FL2	SUPPLY FAN						RETURN FAN					
					FACE AREA (SF) (MIN)	FACE AREA (SF) (MIN)	CFM	EXT SP (IN)	TOTAL SP (IN)	WHEEL DIA (IN)	RPM (MAX)	MOTOR HP (MIN)	CFM	EXT SP (IN)	TOTAL SP (IN)	WHEEL DIA (IN)	RPM (MAX)	MOTOR HP (MIN)
AHU-1	CORRIDOR 001/002	RF/MB/FL1/FL2/CHC/SF/DP	OAH007GDGM	600	12.6	6.3	2850	0.75	2.73	14	3909	3	2850	0.75	0.85	12.38	4000	1.5

DESIG	DUAL TEMPERATURE COIL														GENERAL				NOTES
	GPM	PD (FT)	COOLING DUTY							HEATING DUTY					LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	MAX OPERATING WEIGHT (LBS)	
			TOTAL COOLING MBH	SENSIBLE COOLING MBH	EDB (°F)	EWB (°F)	LDB (°F) (MAX)	LWB (°F)	EWT (°F)	LWT (°F) (APPROX)	HEATING MBH (MIN)	EDB (°F)	LDB (°F) (MAX)	EWT (°F)	LWT (°F) (APPROX)					
AHU-1	24.5	10	120	80	79.3	66.6	52.7	52.4	44	54	150	55.4	104.4	120	91.8	278	74	42	4000	1,2,3

COMPONENTS

MB - MIXING BOX SECTION

FL1 - PRE-FILTER SECTION

FL2 - FINAL FILTER SECTION

CHC - COOLING/HEATING COIL SECTION

SF - SUPPLY FAN SECTION

DP - SUPPLY DISCHARGE PLENUM

RF - RETURN FAN SECTION

NOTES:

1. PROVIDE VFD FOR SUPPLY AND RETURN FANS.
2. PROVIDE FULL SIZE ROOF CURB AND 24" (MIN) EXTERNAL PIPE CABINET.
3. UNIT COMPLETE WITH 2" (MERV 8) PRE FILTER AND 4" (MERV 13) FINAL FILTER; TSP BASED ON MIDLIFE FILTER CONDITIONS.

FAN SCHEDULE

DESIG	AREA SERVED	DUTY	CFM	SP (IN WC)	FAN RPM (APPROX)	HP (WATTS)	SONES	WHEEL DIA (IN)	FAN TYPE	DRIVE	MFR'S NO. (TWIN CITY)	ELECTRICAL	CONTROL	NOTES
EF-1	FOOD PREP STORAGE AREAS/TOILETS	EXHAUST	400	0.5	1525	1/4	8	10.9	ROOF DOWNBLAST	DIRECT	DCRD 085BE	120V-1Ø	A	1,2,3,5
EF-2	PE OUTDOOR STORAGE 152	EXHAUST	350	0.4	1350	1/4	7	10.9	ROOF DOWNBLAST	DIRECT	DCRD 085BE	120V-1Ø	D	1,2,3,5
EF-3	LAV 150 / LAV 151	EXHAUST	300	0.4	1300	1/4	6	10.9	ROOF DOWNBLAST	DIRECT	DCRD 085BE	120V-1Ø	A	1,2,3,5
EF-4	EQUIPMENT STOR 147A	EXHAUST	150	0.3	1550	1/4	6	8.0	ROOF DOWNBLAST	DIRECT	DCRD 060BE	120V-1Ø	D	1,2,3,5
EF-5	ELECTRICAL 115	EXHAUST	150	0.3	1550	1/4	6	8.0	ROOF DOWNBLAST	DIRECT	DCRD 060BE	120V-1Ø	B	1,2,3,5
EF-6	ELECTRICAL 143	EXHAUST	550	0.3	1600	1/4	9	10.9	ROOF DOWNBLAST	DIRECT	DCRD 085BE	120V-1Ø	D	1,2,3,5
EF-7	ELECTRICAL 235	EXHAUST	150	0.3	1550	1/4	6	8.0	ROOF DOWNBLAST	DIRECT	DCRD 060BE	120V-1Ø	B	1,2,3,5
EF-8	BUILDING SUPPORT OUTSIDE STOR 155	EXHAUST	300	0.3	1650	1/4	7	8.0	ROOF DOWNBLAST	DIRECT	DCRD 080BE	120V-1Ø	D	1,2,3,5
EF-9	KITCHEN HOOD	EXHAUST	750	0.3	1425	1/4	7	11.2	ROOF UPBLAST	DIRECT	DCRU 093BE	120V-1Ø	C	4,5
EF-10	HEALTH SUITE	EXHAUST	600	0.5	1475	1/4	8	10.9	ROOF DOWNBLAST	DIRECT	DCRD 095BE	120V-1Ø	E	1,2,3,5
EF-11	MECHANICAL ROOM	EXHAUST	1500	0.4	830	1/4	8	17.9	ROOF DOWNBLAST	DIRECT	DCRD 170B	120V-1Ø	D	1,2,3
EF-12	CAN WASH	EXHAUST	150	0.3	1550	1/4	6	8.0	ROOF DOWNBLAST	DIRECT	DCRD 060BE	120V-1Ø	D	1,2,3,5

NOTES:

1. PROVIDE UNIT MOUNTED DISCONNECT SWITCH
2. PROVIDE ALUMINUM BACKDRAFT DAMPER LOCATED AT FAN INLET
3. PROVIDE SOLID SPEED FAN CONTROLLER AT FAN
4. FAN SHALL BE UL RATED FOR GREASE EXHAUST APPLICATIONS
5. PROVIDE UNIT WITH ELECTRONICALLY COMMUTATED (EC) MOTOR

CONTROLS:

A. OCCUPIED/UNOCCUPIED CONTROL INTERLOCK WITH DESIGNATED UNIT.
B. TEMPERATURE SENSOR CONTROL.
C. LOCAL SWITCH WITH PILOT LIGHT.
D. TEMPERATURE SENSOR CONTROL WITH COMPANION DAMPER.
E. LOCAL 0-3 HR SPRING WOUND TIMER SWITCH

FAN COIL UNIT SCHEDULE

DESIG	AREA SERVED	UNIT TYPE	CFM	ESP (IN WC)	FAN SPEED	DUAL TEMPERATURE COIL									MAXIMUM UNIT DIMENSION			ELECTRICAL				MFR'S MODEL NO. (IEC)	NOTES
						COIL ROWS	GPM	PD (FT)	COOLING DUTY					HEATING DUTY			LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	FLA	MCA	MFS	VOLTAGE/ PHASE		
									SENS MBH	TOTAL MBH	EAT (°F) (WB/DB)	EWT (°F)	LWT (°F)	MBH	EAT (°F)	EWT (°F)								
FCU-1	SPECIAL ED 122	VERTICAL	1030	0.4	MEDIUM	4/1	1.5	3	17.1	23.3	62.5/75	DX		8.0	70	120	32	18	34	3.4	-	-	277V/1PH	VEY10	1,2
FCU-2	PRE-KINDERGARTEN 124	VERTICAL	930	0.4	MEDIUM	3	5.5	10	15.6	21.8	62.5/75	44	52	6.1	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-3	PRE-KINDERGARTEN 125	VERTICAL	930	0.4	MEDIUM	3	5.5	10	15.6	21.8	62.5/75	44	52	6.1	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-4	1ST GRADE CLASSROOM 126	VERTICAL	920	0.4	MEDIUM	4	6.5	10	17.7	24.7	62.5/75	44	52	5.4	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-5	1ST GRADE CLASSROOM 128	VERTICAL	920	0.4	MEDIUM	4	5.5	10	16.3	23.3	62.5/75	44	53	4.9	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-6	1ST GRADE CLASSROOM 130	VERTICAL	920	0.4	MEDIUM	4	5.5	10	16.3	23.3	62.5/75	44	53	4.9	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-7	1ST GRADE CLASSROOM 131	VERTICAL	930	0.4	MEDIUM	3	4	10	14.2	20.4	62.5/75	44	54	4.7	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-8	1ST GRADE CLASSROOM 133	VERTICAL	920	0.4	MEDIUM	4	5.5	10	16.6	23.6	62.5/75	44	53	6.6	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-9	KINDERGARTEN 121	VERTICAL	1290	0.4	MEDIUM	3	5.5	10	20.4	26.6	62.5/75	44	54	7.8	70	120	42	18	34	3.7	4.2	15	277V/1PH	VEY14	1
FCU-10	KINDERGARTEN 113	VERTICAL	1290	0.4	MEDIUM	3	5.5	10	20.4	26.6	62.5/75	44	54	7.8	70	120	42	18	34	3.7	4.2	15	277V/1PH	VEY14	1
FCU-11	KINDERGARTEN 112	VERTICAL	1290	0.4	MEDIUM	3	5.5	10	19.0	25.2	62.5/75	44	54	9.3	70	120	42	18	34	3.7	4.2	15	277V/1PH	VEY14	1
FCU-12	KINDERGARTEN 111	VERTICAL	920	0.4	MEDIUM	4	5	10	16.8	23.0	62.5/75	44	54	6.5	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-13	KINDERGARTEN 109	VERTICAL	920	0.4	MEDIUM	4	5	10	16.8	23.0	62.5/75	44	54	6.5	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-14	REMEDIAL READING 108	VERTICAL	930	0.4	MEDIUM	3	4	10	14.6	20.8	62.5/75	44	54	4.9	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-15	VOCAL/CHORUS CLASSROOM 138	VERTICAL	1200	0.4	MEDIUM	6	7.5	10	25.0	37.0	62.5/75	44	54	6.4	70	120	42	18	34	3.7	4.2	15	277V/1PH	VEY14	1
FCU-16	INSTRUMENTAL CLASSROOM 139	VERTICAL	1340	0.4	MEDIUM	6	8.5	10	29.5	41.5	62.5/75	44	54	9.2	70	120	47	18	34	3.7	4.2	15	277V/1PH	VEY16	1
FCU-17	CLASSROOM 216	VERTICAL	920	0.4	MEDIUM	4	5.5	10	17.6	23.8	62.5/75	44	53	7.8	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-18	CLASSROOM 217	VERTICAL	1290	0.4	MEDIUM	3	5.5	10	19.6	26.6	62.5/75	44	54	5.9	70	120	42	18	34	3.7	4.2	15	277V/1PH	VEY14	1
FCU-19	CLASSROOM 219	VERTICAL	1290	0.4	MEDIUM	3	5.5	10	19.9	26.9	62.5/75	44	54	6.1	70	120	42	18	34	3.7	4.2	15	277V/1PH	VEY14	1
FCU-20	CLASSROOM 220	VERTICAL	920	0.4	MEDIUM	4	5.5	10	17.5	23.7	62.5/75	44	53	5.9	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-21	CLASSROOM 221	VERTICAL	920	0.4	MEDIUM	4	5.5	10	17.7	23.9	62.5/75	44	53	6.0	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-22	CLASSROOM 222	VERTICAL	1290	0.4	MEDIUM	3	6.5	10	20.1	27.1	62.5/75	44	53	6.2	70	120	42	18	34	3.7	4.2	15	277V/1PH	VEY14	1
FCU-23	CLASSROOM 223	VERTICAL	920	0.4	MEDIUM	4	6.5	10	18.2	24.4	62.5/75	44	52	6.4	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-24	CLASSROOM 224	VERTICAL	1290	0.4	MEDIUM	3	6.5	10	20.6	27.6	62.5/75	44	53	6.5	70	120	42	18	34	3.7	4.2	15	277V/1PH	VEY14	1
FCU-25	CLASSROOM 226	VERTICAL	1290	0.4	MEDIUM	3	6.5	10	20.4	27.4	62.5/75	44	53	8.5	70	120	42	18	34	3.7	4.2	15	277V/1PH	VEY14	1
FCU-26	CLASSROOM 213	VERTICAL	1420	0.4	MEDIUM	4	8.5	10	31.1	37.3	62.5/75	44	53	10.6	70	120	52	18	34	3.7	4.2	15	277V/1PH	VEY18	1
FCU-27	ART ROOM 214	VERTICAL	920	0.4	MEDIUM	4	5.5	10	16.7	24.1	62.5/75	44	53	2.1	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-28	CLASSROOM 212	VERTICAL	1260	0.4	MEDIUM	4	8.5	10	27.9	34.0	62.5/75	44	52	10.4	70	120	42	18	34	3.7	4.2	15	277V/1PH	VEY14	1
FCU-29	CLASSROOM 211	VERTICAL	920	0.4	MEDIUM	4	6.5	10	18.1	24.3	62.5/75	44	52	8.3	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-30	CLASSROOM 210	VERTICAL	1290	0.4	MEDIUM	3	6.5	10	20.5	27.5	62.5/75	44	53	6.0	70	120	42	18	34	3.7	4.2	15	277V/1PH	VEY14	1
FCU-31	CLASSROOM 208	VERTICAL	920	0.4	MEDIUM	4	6.5	10	18.2	24.4	62.5/75	44	52	5.8	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-32	CLASSROOM 207	VERTICAL	1290	0.4	MEDIUM	3	6.5	10	20.3	27.3	62.5/75	44	53	6.1	70	120	42	18	34	3.7	4.2	15	277V/1PH	VEY14	1
FCU-33	CLASSROOM 206	VERTICAL	1290	0.4	MEDIUM	3	6.5	10	20.3	27.3	62.5/75	44	53	6.1	70	120	42	18	34	3.7	4.2	15	277V/1PH	VEY14	1
FCU-34	CLASSROOM 205	VERTICAL	920	0.4	MEDIUM	4	6.5	10	18.2	24.4	62.5/75	44	52	5.8	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-35	CLASSROOM 204	VERTICAL	1290	0.4	MEDIUM	3	6.5	10	20.6	27.6	62.5/75	44	53	6.0	70	120	42	18	34	3.7	4.2	15	277V/1PH	VEY14	1
FCU-36	CLASSROOM 202	VERTICAL	920	0.4	MEDIUM	4	5.5	10	17.7	23.9	62.5/75	44	53	7.2	70	120	37	18	34	2.7	3	15	277V/1PH	VEY12	1
FCU-37	CLASSROOM 201	VERTICAL	1290	0.4	MEDIUM	3	6.5	10	20.6	27.6	62.5/75	44	53	6.0	70	120	42	18	34	3.7	4.2	15	277V/1PH	VEY14	1
FCU-38	FACULTY DINING 137 / LOUNGE 136	CONSOLE	425	0.0	MEDIUM	3	2	10	6.6	7.6	62.5/75	44	54	2.5	70	120	51	9	25	0.69	-	-	277V/1PH	FXC04	1
FCU-39	FACULTY DINING 137 / LOUNGE 137	CONSOLE	425	0.0	MEDIUM	3	2	10	6.6	7.6	62.5/75	44	54	2.5	70	120	51	9	25	0.69	-	-	277V/1PH	FXC04	1
FCU-40	INSTRUM. STORAGE 139A	CONSOLE	430	0.00	MEDIUM	2	1.5	10	5.1	6.6	62.5/75	44	54	1.5	70	120	51	9	25	0.8	-	-	277V/1PH	FXC04	1

NOTES

1. PROVIDE UNIT WITH EC FAN MOTOR
2. PROVIDE CONDENSING UNIT (FCU-1-CU) EQUAL TO YORK CZH036 WITH 2-STAGE OR DIGITAL SCROLL COMPERSSOR; TOTAL COOLING CAPACITY 2 TONS; SENSIBLE COOLING CAPACITY 1.5 TONS; MINIMUM EFFICIENCY 18 SEER; REFRIGERANT R-410A; AMBIENT TEMPERATURE 95 F; MCA 21.8; MOP 35; 208V-1ø

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
3122 Lord Baltimore Drive Baltimore, MD 21244
tel 410-265-6100 fax 410-298-0820 jamesposey.com

Murphy & Dittenhafer Architects
226 West Market Street, York, Pennsylvania 17401 717-848-9827 voice 717-843-3449 fax
800 North Charles Street, Baltimore, Maryland 21201 410-625-4623 voice 410-625-4674 fax

Mark	Date	Description
-	11/12/2015	BIDDING SET

STATE OF MARYLAND
JOHN PATRICK GILLESPIE
33986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 33986, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

SCHEDULES

SHEET

M6.02

MISCELLANEOUS EQUIPMENT SCHEDULE

ITEM	DESCRIPTION/CAPACITY	MANUFACTURER AND MODEL NO.	NOTES
CONDENSING BOILERS BOILER-1, 2 AND 3	NATURAL GAS FIRED CONDENSING BOILER 1500 MBH INPUT; 1400 MBH MIN OUTPUT 175 GPM; 140 F LWT; 28.5 DEGREE DELTA (SYSTEM AVERAGE) ELECTRICAL - SINGLE POINT POWER CONNECTION 20 AMPS, 120V-1ø MIN 7" W.C. NATURAL GAS PROVIDE WITH MANUFACTURERS INTAKE AND EXHAUST MUFFLERS, CONENSATE DRAIN KIT, FLEXIBLE CONNECTORS, AND MODULATION CONTROL PANEL/SYSTEM. PROVIDE GAS REGULATORS FOR 2.0 PSI SERVICE	FULTON MODEL EDR-1500	-
AIR COOLED CHILLER CHILLER-1	AIR COOLED SCROLL CHILLER NOMINAL CAPACITY: 130 TONS RATED CAPACITY: 125.6 TONS MIN EFFICIENCY: 10.2 EER EVAPORATOR EWT: 54.1 F LWT: 44 F FLOW: 300 GPM MAX PRESSURE DROP: 15 FT H2O CONDENSER AMBIENT TEMPERATURE: 95 F FAN DIAMETER: 30" FAN MOTOR HORSEPOWER: 2 MINIMUM DESIGN AMBIENT TEMPERATURE: 35 F PROVIDE UNIT WITH FACTORY INSTALLED ACCOUSTICAL COMPRESSOR WRAPS DIMENSIONS: 192"L x 88"W x 99"H ELECTRICAL - MAIN POWER CONNECTION 480V-3ø, 327.8 MCA, 400MOP CONTROLS/HEAT TAPE POWER CONNECTION 20 AMPS, 120V-1ø	DAIKIN AGZ130E	-
AIR SEPARATOR AS-1	SERVING BUILDING CHILLED/HEATING WATER SYSTEM. TANGENTIAL TYPE AIR SEPARATOR. 5-INCH INLET / OUTLET PIPE SIZE. 5FT MAX WPD.	TACO ACT05	-
EXPANSION TANK ET-1	VERTICAL DIAPHRAGM TYPE FULL ACCEPTANCE EXPANSION / COMPRESSION TANK SERVING DUAL TEMEPRATURE HEATING/COOLING SYSTEM. 79 GALLON TANK VOLUME AT 20 PSI INITIAL CHARGE AND 125 PSI MAXIMUM SYSTEM PRESSURE. TANK SHALL CARRY ASME LABEL.	TACO MODEL CA-300	-

UNIT HEATER SCHEDULE

DESIG	AREA SERVED	TYPE	CFM STD AIR	MBH	EDB (°F)	LDB (°F)	GPM AT 120°F EWT	PD (FT HD)	CABINET SIZE			HP (WATT)	VOLTAGE /PHASE	MFR'S MODEL NO. (AIRTHERM)	NOTES
									LENGTH (IN)	HEIGHT (IN)	DEPTH (IN)				
CUH-1	STAIR ST2-A	CAB/FR	1040	37.5	60	105	4	5	66	25	9.5	1@1/10 1@1/15	120V-1ø	RWI-1130-10	1,3
CUH-2	STAIR ST1-A	CAB/FR	845	32.5	60	100	4	5	61	25	9.5	1@1/10 1@1/15	120V-1ø	RWI-1130-08	1,3
CUH-3	VETIBULE 000	C/FR	1210	50	60	84	10	10	73	56.125	9.5	1/10	120V-1ø	RC-1200-12	1,3
CUH-4	VESTIBULE 000A	CAB/FR	845	30	60	110	3	5	61	44.125	9.5	1@1/10 1@1/15	120V-1ø	RC-1200-08	1,3
CUH-5	CORRIDOR 006	CAB/FR	265	11	60	116	1	5	35	25	9.5	1/15	120V-1ø	RWI-1130-02	2,3
CUH-6	CORRIDOR 007	CAB/FR	495	21	60	113	2	5	59	25	9.5	1/10	120V-1ø	RWI-1130-06	2,3
CUH-7	CORRIDOR 005	CAB/FR	845	29.5	60	110	3	5	61	25	9.5	1@1/10 1@1/15	120V-1ø	RC-1200-08	1,3
CUH-8	CORRIDOR 005	C/FR	1210	50	60	100	10	6	73	56.125	9.5	1/10	120V-1ø	RC-1200-12	1,3
CUH-9	CORRIDOR 001A	CAB/FR	845	30	60	110	3	5	61	44.125	9.5	1@1/10 1@1/15	120V-1ø	RC-1200-08	1,3
PUH-1	MECH 110	PROP(H)	210	3	60	76	1	5	18	16	9.5	(16)	120V-1ø	HA-108A	1
PUH-2	EQUIPMENT STOR 147A	PROP(H)	210	3	60	76	1	5	18	16	9.5	(16)	120V-1ø	HA-108A	1
PUH-3	PE OUTDOOR STORAGE 152	PROP(H)	210	3	60	76	1	5	18	16	9.5	(16)	120V-1ø	HA-108A	1
PUH-4	CAN WASH 154	PROP(H)	210	3	60	76	1	5	18	16	9.5	(16)	120V-1ø	HA-108A	1
PUH-5	MECH 144	PROP(H)	420	7.5	60	78	2	5	18	16	9.5	(16)	120V-1ø	HA-118A	1
PUH-6	BLDG SUPPORT OUTSIDE STOR 155	PROP(H)	420	5	60	76	2	5	18	16	9.5	(16)	120V-1ø	HA-118A	2
PUH-7	MECH 218	PROP(H)	210	3	60	76	1	5	18	16	9.5	(16)	120V-1ø	HA-108A	1
PUH-8	MECH 255	PROP(H)	210	3	60	76	1	5	18	16	9.5	(16)	120V-1ø	HA-108A	1
PUH-9	MECH 209	PROP(H)	210	3	60	76	1	5	18	16	9.5	(16)	120V-1ø	HA-108A	1
PUH-10	MECH 203	PROP(H)	210	3	60	76	1	5	18	16	9.5	(16)	120V-1ø	HA-108A	1
PUH-11	MECH 229	PROP(H)	420	7.5	60	78	2	5	18	16	9.5	(16)	120V-1ø	HA-118A	1
PUH-12	NON FOOD STORAGE 142B	PROP(H)	210	3	60	76	1	5	18	16	9.5	(16)	120V-1ø	HA-108A	1

TYPES

CAB/FR - CABINET, FULLY RECESSED

C/FR - CEILING MOUNTED, FULLR RECESSED

PROP(H) - PROPELLER, HORIZONTAL

NOTES:

1. UNIT SELECTED AT HIGH FAN SPEED
2. UNIT SELECTED AT LOW FAN SPEED
3. UNIT SELECTED WITH HIGH CAPACITY TWO ROW COIL

DUCTLESS SPLIT SYSTEM UNIT SCHEDULE

DESIG	AREA SERVED	INDOOR UNIT						OUTDOOR UNIT							MODEL NO.'S (MITSUBISHI)		NOTES
		CFM	COOLING CAPACITY TOTAL MBH	HEATING CAPACITY MBH	MCA	MOP	VOLTAGE/ PHASE	REFRIG TYPE	TOTAL CAPACITY (MBH)	EAT (°F)	MCA	MOP	VOLTAGE/ PHASE	SEER	INDOOR	OUTDOOR	
DSS-1	IDF 114	425	18	-	1	15	208V-1ø	R-410A	18	95	13	20	208V-1ø	15.3	PKA-A18	PUY-A18	1,2,3,5,6
DSS-2	MDF 153	920	34.2	-	1	15	208V-1ø	R-410A	34.2	95	25	40	208V-1ø	14	PKA-A36	PUY-A36	1,2,3,5,6
DSS-3	CUSTODIAL SUPPORT 145	640	18	13	1	15	208V-1ø	R-410A	18	95	13	20	208V-1ø	14.2	PLA-A18	PUZ-A18	1,2,4,5,6
DSS-4	IDF 233	425	18	-	1	15	208V-1ø	R-410A	18	95	13	20	208V-1ø	15.3	PKA-A18	PUY-A18	1,2,3,5,6
DSS-5	DRY FOOD STORAGE 142C	640	18	13	1	15	208V-1ø	R-410A	18	95	13	20	208V-1ø	14.2	PLA-A18	PUZ-A18	1,2,4,5,6
DSS-6	ELEVATOR CONTROL 238	425	18	-	1	15	208V-1ø	R-410A	18	95	13	20	208V-1ø	15.3	PKA-A18	PUY-A18	1,2,3,5,6
DSS-7	BUILDING SERVICES OFFICE 146	640	18	13	1	15	208V-1ø	R-410A	18	95	13	20	208V-1ø	14.2	PLA-A18	PUZ-A18	1,2,4,5,6

NOTES:

1. INDOOR UNIT AIRFLOW BASED ON HIGH SPEED UNIT OPERATION.
2. PROVIDE LOW AMBIENT COOLING OPERATION DOWN TO 0 DEGREES F.
3. COOLING ONLY TYPE SYSTEM.
4. HEAT PUMP TYPE SYSTEM.
5. ELECTRICAL POWER CONNECTIONS FOR THE BASIS OF DESIGN UNIT REQUIRE THE INDOOR UNIT TO BE WIRED THRU THE OUTDOOR UNIT. OTHER MANUFATURERS MAY REQUIRE SEPARATE POWER CONNECTIONS, WHICH THE CONTRACTOR SHALL PROVIDE AS REQUIRED.
6. PROVIDE WITH MANUFACTURER'S STANDARD THROWAWAY FILTER RACK.

ELECTRIC CEILING HEATER SCHEDULE

DESIG	AREA SERVED	CFM	KW	VOLTAGE/ PHASE	TYPE	MFR'S MODEL NO. (QMARK)	NOTE
ECH-1	LAV 150	300	4	277V-1ø	CLG/FR	CDF-542	1,2,3
ECH-2	LAV 151	300	4	277v-1ø	CLG/FR	CDF-542	1,2,3
ECH-3	TOILET 142F	300	2	277v-1ø	CLG/FR	CDF-542	1,2,3

NOTE:

1. PROVIDE RECESS TRIM KIT
2. PROVIDE INTEGRAL DISCONNET SWITCH
3. PROVIDE UNIT WITH INTEGRAL THERMOSTAT

TYPE

CLG/FR: CEILING, FULLY RECESSED

CONVECTOR SCHEDULE

DESIG	AREA SERVED	MBH	MODEL (AIRTHERM)	CABINET SIZE			RECESS DEPTH	GPM (120°F EWT)	NOTE
				LENGTH (IN)	HEIGHT (IN)	DEPTH (IN)			
CONV-1	TOILET 124A	1	SR-A 424	28	24	4.25	2"	0.5	
CONV-2	TOILET 125A	1	SR-A 424	28	24	4.25	2"	0.5	
CONV-3	TOILET 127A	1	SR-A 424	28	24	4.25	2"	0.5	
CONV-4	TOILET 128A	1	SR-A 424	28	24	4.25	2"	0.5	
CONV-5	TOILET 131A	1	SR-A 424	28	24	4.25	2"	0.5	
CONV-6	TOILET 134	1.5	SR-A 424	40	24	4.25	2"	0.5	
CONV-7	TOILET 136B	1.5	SR-A 424	40	24	4.25	2"	0.5	
CONV-8	TOILET 135	1	SR-A 424	28	24	4.25	2"	0.5	

NOTE:

TYPE:

SR-A - SEMI-RECESSED CABINET

HVAC DUCT CONSTRUCTION SCHEDULE

DUCT PRESSURE CLASS REQUIREMENTS

SYSTEM	SMACNA DUCT PRESSURE CLASS (INCHES WC)							SPECIFIC NOTES
	SUPPLY	RETURN		EXHAUST		OUTSIDE AIR		
	DISCHARGE	DISCHARGE	SUCTION	DISCHARGE	SUCTION	DISCHARGE	SUCTION	
DOAS-1, 2, 3, 4 & 5	2.0	-	-	-	2.0	-	-	-
RTU-1 & 2	2.0	-	2.0	-	-	-	-	-
ERU-1 & 2	2.0	-	2.0	-	-	-	-	-
AHU-1	2.0	-	2.0	-	-	-	-	-
EXHAUST FANS (EF)	-	-	-	2.0	2.0	-	-	-
FAN COIL UNITS (FCU)	2.0	-	2.0	-	-	-	-	-

GENERAL:

A. MIXED AIR DUCTS (RA & OA) AND INLET PLENUMS SHALL BE CONSTRUCTED SAME AS RETURN DUCTS.

B. PRESSURE RELIEF AND TRANSFER DUCT SHALL BE CONSTRUCTED PER SMACNA 1.0 INCH PRESSURE CLASS.

C. PROVIDE DUCT JOINT TYPES WHICH ASSURE COMPLIANCE WITH THE ASSOCIATED LEAKAGE FACTOR SCHEDULED BELOW.

D. PERFORM DUCT PRESSURE TESTING FOR ALL DUCT SYSTEMS.

MINIMUM RECTANGULAR DUCT CONSTRUCTION REQUIREMENTS

2.0 INCHES WC STATIC (POSITIVE OR NEGATIVE)			3.0 INCHES WC STATIC (POSITIVE OR NEGATIVE)			4.0 INCHES WC STATIC (POSITIVE)		
DUCT DIMENSION (INCHES)	MINIMUM STEEL GAGE	MAXIMUM REINFORCEMENT SPACING (FEET)	DUCT DIMENSION (INCHES)	MINIMUM STEEL GAGE	MAXIMUM REINFORCEMENT SPACING (FEET)	DUCT DIMENSION (INCHES)	MINIMUM STEEL GAGE	MAXIMUM REINFORCEMENT SPACING (FEET)
12 DOWN	24	NONE	18-DOWN	24	5.0	18-DOWN	24	5.0
13-30	24	5.0	19-28	22	5.0	19-28	22	5.0
31-36	22	5.0	29-48	22	2.5	29-42	22	2.5
37-48	20	5.0	49-72	20	2.5	43-60	20	2.5
49-84	20	2.5	73-84	18	2.5	61-72	18	2.5
85-UP	18	2.5	85-UP	16	2.5	73-UP	16	2.5

DUCT AIR LEAKAGE REQUIREMENTS

PRESSURE	LEAKAGE CLASS	TEST PRESSURE (INCHES WC)	LEAKAGE FACTOR (NOTE 1)
2.0	6	2.0	10
3.0	6	3.0	13

GENERAL:

* THE LEAKAGE REQUIREMENTS SCHEDULE ABOVE ARE FOR STANDARD HVAC APPLICATIONS. FOR DUCT SYSTEMS REQUIRING JOINTS, THE LEAKAGE FACTOR SHALL BE 0.
* PROVIDE JOINT TYPES AND SEALING METHODS AS REQUIRED TO COMPLY WITH THE LEAKAGE FACTOR INDICATED ON THIS SHCEDULE.
* UNLESS OTHERWISE NOTED ABOVE, LEAK TEST ALL DUCTS. LEAKAGE RATE SHALL NOT EXCEED LEAKAGE FACTORS INDICATED ON THIS SCHEDULE FOR THE APPLICABLE PRESSURE CLASSES.

NOTES:

1. SMACNA SEAL CLASS DESCRIPTIONS:
   A - SEAL ALL TRANSVERSE JOINTS LOGITUDINAL SEAMS AND DUCT WALL PENETRATIONS
   B - SEAL ALL TRANSVERSE JOINTS AND LONGITUDINAL SEAMS.
2. DUCT LEAKAGE FACTOR (CFM/100 SQ. FT OF DUCT SURFACE AREA). MAXIMUM LEAKAGE RATE AT TEST PRESSURE.

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
3102 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-265-0100
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer Architects
229 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-2448 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
1	11/10/2016	BIDDING SET

STATE OF MARYLAND
DAVID K. GRIMES
No. 33986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 33986, Expiration date: 07-07-2017.

PROJECT NO: 6535-15
DRAWN BY: JFL
CHECKED BY: DKG

SCHEDULES

SHEET
M6.03

VARIABLE REFRIGERANT TERMINAL UNIT SCHEDULE (VRT)

UNIT DESIG	AREA SERVED	CFM	ESP	COOLING MIN SENS MBH	COOLING MIN TOTAL MBH	EAT (DB/RH)	HEATING CAPACITY MBH	EAT (WINTER)	MCA	MOP (AMPS)	VOLTAGE / PHASE	REFRIG. TYPE	MODEL NO. (DAIKIN AC)	WATER-COOLED CONDENSING UNIT CONNECTION	NOTES
VRT-1A	MAKERS SPACE 120	390	0	7.3	10.4	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ15MVJU9	HRU-2	1,2,3
VRT-1B	MAKERS SPACE 120	330	0	7.3	10.4	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ12MVJU9	HRU-2	1,2,3
VRT-2A	DIGITAL LEARNING 119	390	0	9.3	11.8	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ15MVJU9	HRU-2	1,2,3
VRT-2B	DIGITAL LEARNING 119	390	0	9.3	11.8	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ15MVJU9	HRU-2	1,2,3
VRT-3	VIDEO PRODUCTION 103D	280	0	5.3	6.1	75 / 50%	0.5	70	0.9	15	208V-1ø	R-410A	FXDQ07MVJU	HRU-2	2,3
VRT-4	CONTROL ROOM 103C	320	0	6.0	6.4	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ09MVJU9	HRU-2	1,2,3
VRT-5	LIBRARIAN OFFICE 103A	320	0	1.1	1.3	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-2	1,2,3
VRT-6	MEDIA CENTER	490	0	11.2	15.0	75 / 50%	0.5	70	0.9	15	208V-1ø	R-410A	FXZQ18MVJU9	HRU-2	1,2,3
VRT-7	MEDIA CENTER	490	0	11.2	15.0	75 / 50%	0.5	70	0.9	15	208V-1ø	R-410A	FXZQ18MVJU9	HRU-2	1,2,3
VRT-8	MEDIA CENTER	390	0	9.2	12.5	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ15MVJU9	HRU-2	1,2,3
VRT-9	MEDIA CENTER	390	0	9.2	12.5	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ15MVJU9	HRU-2	1,2,3
VRT-10	MEDIA CENTER	390	0	9.2	12.5	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ15MVJU9	HRU-2	1,2,3
VRT-11	OT/PT ROOM 105	320	0	1.1	1.3	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-1	1,2,3
VRT-12	GUIDANCE OFFICE 106	330	0	6.9	9.5	75 / 50%	2.5	70	0.8	15	208V-1ø	R-410A	FXZQ12MVJU9	HRU-1	1,2,3
VRT-13	PSYCHOLOGIST OFFICE 101G	320	0	3.0	3.6	75 / 50%	1.5	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-1	1,2,3
VRT-14	PSYCHOLOGIST OFFICE 101F	320	0	3.0	3.6	75 / 50%	1.5	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-1	1,2,3
VRT-15	CONFERENCE 101E	390	0	7.7	10.1	75 / 50%	2.2	70	0.8	15	208V-1ø	R-410A	FXZQ15MVJU9	HRU-1	1,2,3
VRT-16	AST. PR. 101D	320	0	3.0	3.6	75 / 50%	1.5	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-1	1,2,3
VRT-17	AST. PR. 101C	320	0	2.3	2.9	75 / 50%	1.1	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-1	1,2,3
VRT-18	PRINCIPAL 101B	320	0	5.7	7.1	75 / 50%	2.4	70	0.8	15	208V-1ø	R-410A	FXZQ09MVJU9	HRU-1	1,2,3
VRT-19	RECORDS 101A	320	0	1.8	1.8	75 / 50%	1.7	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-1	1,2,3
VRT-20	WAITING/SECRETARY 101	390	0	7.6	10.3	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ15MVJU9	HRU-1	1,2,3
VRT-21	WAITING AREA 102	320	0	1.6	2.0	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-1	1,2,3
VRT-22	NURSE OFF 102B / TREATMENT 102C	320	0	2.5	3.3	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-1	1,2,3
VRT-23	EXAM 102E	320	0	1.3	1.7	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-1	1,2,3
VRT-24	RESTING 102D	320	0	1.7	2.5	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-1	1,2,3
VRT-25	WORKROOM 101H	320	0	3.5	4.3	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-1	1,2,3
VRT-26	SPEECH/LANG THERAPY 104	320	0	3.2	4.6	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-1	1,2,3
VRT-27	GRADE LEVEL STOR 230	320	0	4.6	5.4	75 / 50%	0.7	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-2	1,2,3
VRT-28	FACULTY WORKROOM 232	490	0	11.0	14.2	75 / 50%	0.7	70	0.9	15	208V-1ø	R-410A	FXZQ18MVJU9	HRU-2	1,2,3
VRT-29	GRADE LEVEL STOR 236	320	0	4.6	5.4	75 / 50%	0.7	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-2	1,2,3
VRT-30	GRADE LEVEL STOR 228	320	0	4.6	5.4	75 / 50%	0.7	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-2	1,2,3
VRT-31	GRADE LEVEL STOR 234	320	0	4.6	5.4	75 / 50%	0.7	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-2	1,2,3
VRT-32	SPECIAL ED 227	490	0	10.6	14.4	75 / 50%	1.5	70	0.9	15	208V-1ø	R-410A	FXZQ18MVJU9	HRU-2	1,2,3
VRT-33	ESOL RESOURCE ROOM 237	490	0	10.6	14.4	75 / 50%	1.5	70	0.9	15	208V-1ø	R-410A	FXZQ18MVJU9	HRU-2	1,2,3
VRT-34	CUSTODIAL 231	320	0	1.6	1.8	75 / 50%	0.5	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-2	1,2,3
VRT-35	GRADE LEVEL STOR 157	320	0	3.0	3.8	75 / 50%	0.3	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-2	1,2,3
VRT-36	STAFF OFFICE 231	320	0	4.1	4.5	75 / 50%	2.0	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-2	1,2,3
VRT-37	OFFICE 234	320	0	4.1	4.5	75 / 50%	2.0	70	0.8	15	208V-1ø	R-410A	FXZQ07MVJU9	HRU-2	1,2,3

NOTES

1. RECESSED, CEILING-MOUNTED UNIT COMPLETE WITH INTEGRAL CONDENSATE PUMP, WASHABLE FILTER, INTEGRAL CEILING PANEL, AND REMOTE SENSOR KIT.
2. PROVIDE BRANCH SELECTOR UNITS AS INDICATED ON MECHANICAL PLANS FOR INDEPENDENT, SIMULTANEOUS HEATING AND COOLING OPERATION OF EACH ZONE.
3. ENTIRE SYSTEM (INCLUDING REFRIGERANT PIPING) SHALL BE INSTALLED BY A CERTIFIED MANUFACTURER'S REPRESENTATIVE.

AIR COOLED VARIABLE REFRIGERANT CONDENSING UNIT SCHEDULE

DESIG	UNITS SERVED	SYSTEM NOMINAL COOLING CAPACITY (MBH)	SYSTEM FULL LOAD EER	SYSTEM NOMINAL HEATING CAPACTIY (MBH)	SYSTEM FULL LOAD COP (@ 17 F)	REFRIGERANT	MODEL NO. (DAIKIN AC)	VOLTAGE/ PHASE	MCA (PER UNIT)	MOP (PER UNIT)	NOTES
HRU-1	ADMIN AREAS	112	13.9	83	2.54	R-410A	REYQ120TYDN	480V-3ø	21.1	25	1,2,3
HRU-2	MEDIA CENTER	214	12.5	158	2.45	R-410A	REYQ216TYDN	480V-3ø	21.1/21.1	25/25	1,2,3,4

NOTES:

1. PROVIDE VARIABLE REFRIGERANT FLOW OPERATION, INCLUDING MANUFACTUER'S BRANCH PIPING KIT, CONTROLLERS, PANELS, ACCESSORIES, AND COMPLETE PACKAGED CONTROL SYSTEM. SYSTEM SHALL BE CAPABLE OF CONTROL AND MONITORING INTERFACE WITH BUILDING DDC SYSTEM.
2. COOLING CAPACITY SELECTED AT 95 F OUTDOOR DRY BULB TEMPERATURE.
3. HEATING CAPACITY SELECTED AT 0 F OUTDOOR AIR TEMPERATURE.
4. SYSTEM IS COMPRISED OF TWO UNITS. SEE DIAGRAM 5/M-5.02 FOR PIPING AND MOUNTING REQUIREMENTS.

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
3102 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-955-6100
fax 410-298-0820
jposeyassoc.com

Murphy & Dittenhafer Architects
226 West Market Street, York, Pennsylvania 17401
717-848-6827 voice 717-843-2449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/17/2015	BID SET

STATE OF MARYLAND — JOSEPH PATRICK LEONARD — 33986 — PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 33986, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

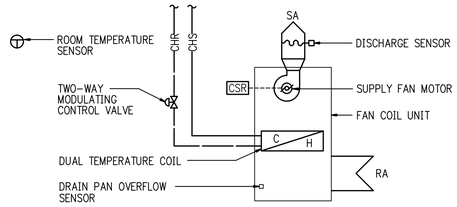
SCHEDULES

SHEET

M6.04

ATC SYSTEM GENERAL NOTES

1. THE ATC SYSTEM SHALL USE AN ETHERNET OR WEB BASED COMMUNICATION SYSTEM WITH REMOTE DESKTOP/NOTEBOOK CONNECTION TO THE SERVER. AN ETHERNET CONNECTION SHALL BE INSTALLED AT THE SCHOOL AND ACTIVATED TO ALLOW THIS COMMUNICATION. A DELL DESKTOP SHALL BE PROVIDED AT THE SCHOOL WITH THE SYSTEM SOFTWARE LOADED. THE SOFTWARE SHALL ALSO BE LOADED ON THE COMPUTER AT THE CENTRAL REPORTING STATION AT THE BCPS PULASKI FACILITY. THE SOFTWARE SHALL BE LOADED ON THE NOTEBOOKS FOR THE BUILDING AUTOMATION TECHNICIANS. ONE LICENSE SHALL BE INCLUDED IN THE COST OF THE BUILDING AUTOMATION SYSTEM. THE SYSTEM SHALL BE WEB BASED AND INTERNET CAPABLE WITH REMOTE ACCESS CAPABILITY. PROVIDE A COPY OF THE SYSTEM SOFTWARE FOR FUTURE INSTALLATION SHOULD THE PROGRAM FAIL AND NEED TO BE REINSTALLED AT THE BCPS PULASKI FACILITY.
2. UNLESS OTHERWISE INDICATED, OCCUPIED HEATING SETPOINT SHALL BE 70 DEGREES F. OCCUPIED COOLING SETPOINTS SHALL BE 76 DEGREES F. UNOCCUPIED HEATING SETPOINTS SHALL BE 55 DEGREES F.
3. UNLESS OTHERWISE INDICATED, PROVIDE DDC CONTROLS.
4. POINT SCHEDULES INCLUDE LINES FOR DEVICE TYPES WHICH MAY HAVE MULTIPLE OCCURRENCES FOR A SINGLE UNIT. SEE PLANS FOR QUANTITIES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND WIRING ALL CONTROL EQUIPMENT SUPPLIED WITH HVAC SYSTEMS AND COMPONENTS AND FOR PROVIDING POWER CIRCUITS FOR THESE CONTROL SYSTEMS. CONTRACTOR SHALL ALSO PROVIDE ANY ANCILLARY COMPONENTS INCLUDING BUT NOT LIMITED TO SWITCHES, RELAYS, WIRING, AND CONDUIT TO ACCOMPLISH INTENDED CONTROL FUNCTIONS AND/OR CONTROL SEQUENCE NOTED IN THE SPECIFICATIONS.
6. FUNCTION OF CONTROLS SHALL BE RESTORED TO NORMAL OPERATION WHEN SAFETIES ARE RESET OR WHEN POWER IS RESTORED AFTER AN OUTAGE. FREEZESTAT TRIPPING SHALL REQUIRE RESET AT THE UNIT. EMERGENCY FAN DISCONNECT TRIPPING SHALL BE RESET WHEN THE DISCONNECT SWITCH IS RESET. SMOKE DETECTOR TRIPPING SHALL BE RESET WHEN THE ALARM IS NO LONGER PRESENT IN THE FIRE ALARM SYSTEM.
7. ALL SETPOINTS SHALL BE ADJUSTABLE.
8. WHERE VALVE POSITION AND DAMPER POSITION ARE INDICATED, HARDWARE FEEDBACK IS REQUIRED. A CALCULATION OF ANTICIPATED POSITION IS NOT ACCEPTABLE.
9. WHERE EMERGENCY SWITCH POINT IS INDICATED, A SOFTWARE INPUT IS REQUIRED MONITORING THE EMERGENCY FAN DISCONNECT SWITCH STATUS SO THAT A SYSTEM USER WOULD BE ABLE TO DIAGNOSE THE CAUSE OF THE SHUT DOWN.
10. WHERE SMOKE DETECTOR POINT IS INDICATED, HARD WIRING OF SHUT DOWN IS REQUIRED AS INDICATED ABOVE. ADDITIONALLY, A SOFTWARE INPUT IS REQUIRED MONITORING THE SMOKE DETECTOR STATUS SO THAT A SYSTEM USER WOULD BE ABLE TO DIAGNOSE THE CAUSE OF THE SHUT DOWN.
11. AUTOMATIC TEMPERATURE CONTROL SYSTEM INTERFACES WITH PACKAGED UNIT CONTROLS VIA A BACNET COMMUNICATION PROTOCOL. POINT SCHEDULES INDICATE SOME POINTS REQUIRED TO PASS BETWEEN AUTOMATIC TEMPERATURE CONTROL SYSTEM AND PACKAGED CONTROLS TO MAKE THE SEQUENCE OF OPERATION FUNCTION. PROVIDE GRAPHICS AFFILIATED WITH THESE POINTS. IN ADDITION TO THOSE POINTS LISTED IN THE POINT SCHEDULE, PROVIDE COMMUNICATION OF ALL POINTS AVAILABLE FROM THE PACKAGED CONTROL WHETHER LISTED OR NOT. THESE POINTS DO NOT REQUIRE GRAPHICS, BUT ARE REQUIRED TO BE ABLE TO BE OBSERVED, TRENDED, AND (WHERE APPLICABLE TO SET POINTS) ALTERED BY THE AUTOMATIC TEMPERATURE CONTROL SYSTEM. THESE POINTS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE STATUS OF SPECIFIC ALARMS, FAN CFM, OA CFM, VFD SPEEDS, FIXED AND CALCULATED SET POINTS. PROVIDE LOGICAL POINT NAMES FOR THESE POINTS SO THEY CAN BE IDENTIFIED.



TYPICAL VERTICAL TWO-PIPE (CHILLED/HEATING WATER) FAN COIL UNIT

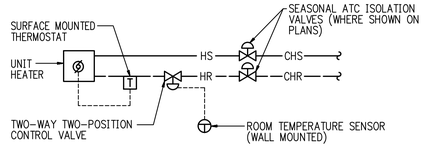
A. FAN COIL UNIT OPERATION IS CONTROLLED BY THE RESPECTIVE ZONE OCCUPIED-UNOCCUPIED SCHEDULING AND SHALL BE ENERGIZED/ DEENERGIZED THROUGH THE DDC SYSTEM.

B. DISCHARGE TEMPERATURE SENSOR SHALL SEND SIGNAL TO THE DDC SYSTEM FOR MONITORING.

C. OCCUPIED CYCLE:
   1. THE UNIT SUPPLY FAN MOTOR SHALL BE ENERGIZED AND RUN CONTINUOUSLY.
   2. WHENEVER THE TWO-PIPE SYSTEM IS INDEXED TO HEATING, THE COIL CONTROL VALVE SHALL MODULATE THE MAINTAIN THE HEATING SETPOINT OF THE ROOM TEMPERATURE SENSOR.
   3. WHENEVER THE TWO-PIPE SYSTEM IS INDEXED TO COOLING, THE COIL CONTROL VALVE SHALL MODULATE THE MAINTAIN THE COOLING SETPOINT OF THE ROOM TEMPERATURE SENSOR.

D. UNOCCUPIED CYCLE:
   1. FAN COIL UNIT SUPPLY FAN SHALL BE PLACED UNDER CONTROL OF THE UNOCCUPIED HEATING SETPOINT OF THE ROOM SENSOR WHICH SHALL CYCLE THE SUPPLY FAN, MODULATE THE COIL CONTROL VALVE TO MAINTAIN THE ROOM SENSORS UNOCCUPIED HEATING SETPOINT.

E. SAFETY CONTROLS:
   1. IF THE DRAIN PAN OVERFLOW SENSOR SENSES WATER, THE SUPPLY FAN SHALL BE DEENERGIZED, COMPRESSOR OPERATION SHALL BE DEENERGIZED, CONTROL VALVE SHALL CLOSE, AND AN ALARM STATING THE SPECIFIC ALARM CONDITION (INCLUDING FAN COIL UNIT NUMBER) SHALL BE SENT TO THE DDC SYSTEM.
   2. FAILURE OF ROOM TEMPERATURE SENSOR SHALL DEENERGIZE THE ASSOCIATED FAN COIL UNIT AND INITIATE AN ALARM TO THE DDC SYSTEM.
   3. WHENEVER THE LIMITATIONS ARE EXCEEDED BY ANY CURRENT SENSING RELAY, SUPPLY FAN SHALL BE DEENERGIZED AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.

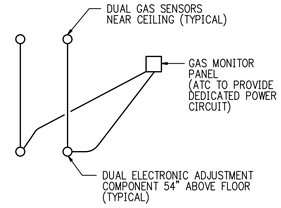


CABINET AND PROPELLER UNIT HEATER

(TYP ALL PUH & CUH)

A. GENERAL
   1. WHENEVER THE BUILDING TWO-PIPE SYSTEM IS INDEXED TO HEATING, THE ATC ISOLATION VALVES SHALL BE OPEN.
   2. WHENEVER THE BUILDING TWO-PIPE SYSTEM IS INDEXED TO COOLING, THE ATC ISOLATION VALVES SHALL BE CLOSED.

B. OPERATION: HEATING MODE
   1. ON A FALL IN TEMPERATURE BELOW THE ROOM SENSOR SETPOINT, THE CONTROL VALVE SHALL OPEN TO THE UNIT HEATER.
   2. ON A RISE IN PIPE TEMPERATURE, ABOVE THE SETPOINT OF THE SURFACE MOUNTED THERMOSTAT, THE UNIT HEATER FAN MOTOR SHALL BE ENERGIZED.
   3. THE ABOVE SEQUENCE SHALL REVERSE UPON A RISE IN ROOM TEMPERATURE OR A FALL IN PIPE TEMPERATURE.



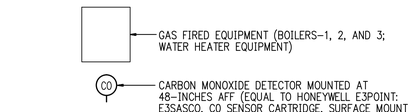
COMBUSTIBLE GAS DETECTOR SYSTEM

(LOCATED WITHIN BOILER ROOM)

A. OPERATION
   1. IF NATURAL GAS IS DETECTED BY SENSORS IN BOILER ROOM, THE GAS MONITOR PANEL SHALL SEND AN ALARM SIGNAL TO THE DDC SYSTEM AND SOUND A LOCAL ALARM IN THE BOILER ROOM AND IN THE HALLWAY OUTSIDE OF THE BOILER ROOM.
   2. AN ADDITIONAL ALARM CONDITION SHALL BE PROVIDED THROUGH THE DDC FOR A GENERAL SYSTEM FAULT CONDITION (FAILED SENSOR, CONTROLLER FAULT, OR LOSS OF POWER).

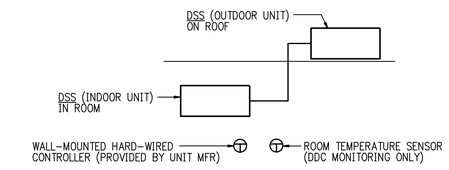
ATC SYMBOLS AND ABBREVIATIONS

	ROOM TEMPERATURE SENSOR
	FAN
	PUMP
	PATH OF AIRFLOW
	DAMPER AND DAMPER OPERATOR; (OA) OUTSIDE AIR, (RA) RETURN AIR, (EA) EXHAUST AIR, (PR) PRESSURE RELIEF
S	SMOKE DAMPER AND DAMPER OPERATOR
	AIR INSERTION TEMPERATURE SENSOR
F	FREEZESTAT
	3-WAY CONTROL VALVE
	2-WAY CONTROL VALVE
H	HUMIDITY SENSOR
P	PRESSURE SENSOR
	IMMERSION TEMPERATURE SENSOR
	OUTDOOR AIR INSERTION TEMPERATURE SENSOR WITH SUN SHIELD
T	SURFACE MOUNTED TEMPERATURE SENSOR
D	DIFFERENTIAL PRESSURE SWITCH
	MOTOR
H/C	D/X: DIRECT EXPANSION, H/C: HEATING COIL, C/C: COOLING COIL, P/C: PREHEAT COIL, C/H: CHILLED/HEATING COIL
E	EMERGENCY FAN DISCONNECT SWITCH
SD	AIR DUCT SMOKE DETECTOR
SPS	DUCT STATIC PRESSURE SENSOR, (HL) HIGH LIMIT, (LL) LOW LIMIT
CSR	CURRENT SENSING RELAY
CO_2	CARBON DIOXIDE SENSOR
ACCU	AIR-COOLED CONDENSING UNIT
AHU	AIR HANDLING UNIT
DOAS	DEDICATED OUTDOOR AIR SYSTEM
EA	EXHAUST AIR
EF	EXHAUST FAN
ERU	ENERGY RECOVERY UNIT
FCU	FAN COIL UNIT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTDOOR AIR
PR	PRESSURE RELIEF
RA	RETURN AIR
RF	RETURN FAN
SA	SUPPLY AIR
SF	SUPPLY FAN
UV	UNIT VENTILATOR
VRT	VARIABLE REFRIGERANT TERMINAL



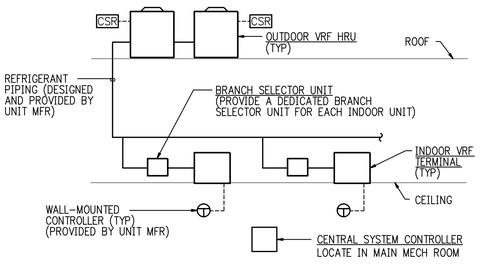
CARBON MONOXIDE DETECTION AND WARNING EQUIPMENT

A. OPERATION:
   1. UPON SENSING ALARM LEVEL (ADJUSTABLE) OF CARBON MONOXIDE WITHIN SPACE, DETECTOR SHALL SOUND LOCAL ALARM AND SEND ALARM SIGNAL TO DDC.



DUCTLESS SPLIT SYSTEM UNITS

THE DUCTLESS SPLIT AIR CONDITIONING OR HEAT PUMP SYSTEMS ARE TO BE SUPPLIED WITH ALL NECESSARY CONTROLS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND WIRING ALL CONTROL EQUIPMENT SUPPLIED WITH SYSTEM. CONTRACTOR SHALL ALSO PROVIDE ANY SWITCHES AND RELAYS TO ACCOMPLISH THE CONTROL SEQUENCE NOTED IN THE SPECIFICATIONS.



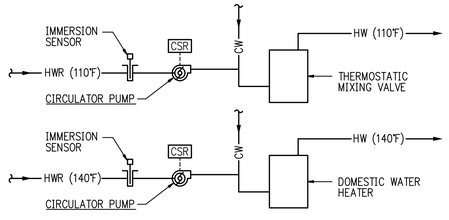
VARIABLE REFRIGERANT SYSTEMS

A. SYSTEM MODE OF OPERATION ("OCCUPIED" OR "UNOCCUPIED") SHALL BE CONTROLLED THROUGH THE DDC SYSTEM'S RESPECTIVE ZONE OCCUPIED/UNOCCUPIED TIME SCHEDULING CONTROL PROGRAM.

B. INTEGRATION WITH THE MANUFACTURER'S CENTRAL CONTROLLER (OR CONTROLLERS) SHALL BE ACCOMPLISHED THROUGH BACNET PROTOCOL. BACNET INTEGRATION FOR BASIS-OF-DESIGN MANUFACTURER IS NOT "PLUG-AND-PLAY" AND WILL REQUIRE BOTH MAPPING OF CONTROL POINTS AND DEVELOPING DDC/EMS CONTROL PROGRAMMING. DDC/EMS CONTRACTOR SHALL BE RESPONSIBLE FOR MAPPING OF BACNET CONTROL POINTS, DEVELOPING REQUIRED CONTROL PROGRAMMING, AND PROVIDING ANY SWITCHES, RELAYS, AND WIRING FOR ACCOMPLISHING THE MANUFACTURER'S REQUIRED SEQUENCE OF OPERATION. DDC/EMS CONTRACTOR SHALL BE CERTIFIED FOR INTEGRATION THROUGH ATTENDANCE AT THE APPROVED VRF SYSTEM MANUFACTURER'S CONTROLS INTEGRATION CLASSROOM TRAINING SESSIONS.

C. OCCUPIED CYCLE:
   1. VR SYSTEM SHALL BE INDEXED TO THE "OCCUPIED" MODE OF OPERATION THROUGH THE DDC/EMS SYSTEM'S TIME SCHEDULING PROGRAM AND OPERATE CONTINUOUSLY DURING THE OCCUPIED CYCLE UNDER IT'S PACKAGED CONTROLS FOR MAINTAINING THE ASSOCIATED OCCUPIED HEATING AND COOLING TEMPERATURE SETPOINTS.

D. UNOCCUPIED CYCLE:
   1. VR SYSTEM SHALL BE INDEXED TO THE "UNOCCUPIED" MODE OF OPERATION THROUGH THE DDC/EMS SYSTEM'S TIME SCHEDULING PROGRAM AND CYCLE DURING THE UNOCCUPIED CYCLE UNDER IT'S PACKAGED CONTROLS FOR MAINTAINING THE ASSOCIATED UNOCCUPIED HEATING AND COOLING TEMPERATURE SETPOINTS.



DOMESTIC HOT WATER CIRCULATOR PUMPS

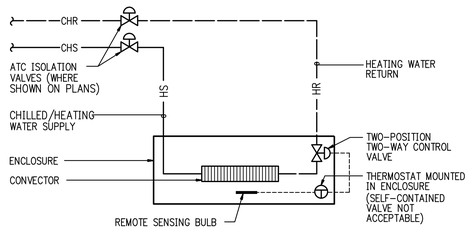
(BOTH 110°F AND 140°F LOOPS)

A. OCCUPIED CYCLE
   1. WHEN THE CIRCULATOR PUMPS ASSOCIATED CONTROL ZONE IS INDEXED TO OCCUPIED, CIRCULATOR PUMP SHALL BE ENABLED FOR OPERATION. ONCE ENABLED, THE CIRCULATOR PUMP SHALL OPERATE AS FOLLOWS:

      110 F HOT WATER LOOP PUMP:
      a. CIRCULATOR PUMP SHALL BE ENERGIZED WHEN HEATING WATER RETURN TEMPERATURE FALLS BELOW 100 DEGREES F.
      b. CIRCULATOR PUMP SHALL BE DEENERGIZED WHEN HEATING WATER RETURN TEMPERATURE RISES ABOVE 105 DEGREES F.

      140 F HOT WATER LOOP PUMP:
      a. CIRCULATOR PUMP SHALL BE ENERGIZED WHEN HEATING WATER RETURN TEMPERATURE FALLS BELOW 130 DEGREES F.
      b. CIRCULATOR PUMP SHALL BE DEENERGIZED WHEN HEATING WATER RETURN TEMPERATURE RISES ABOVE 135 DEGREES F.

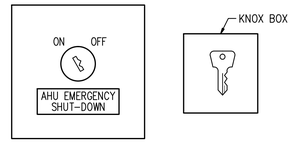
B. UNOCCUPIED CYCLE
   1. WHEN THE CIRCULATOR PUMPS ASSOCIATED CONTROL ZONE IS INDEXED TO UNOCCUPIED, THE CIRCULATOR PUMP SHALL REMAIN ENERGIZED.



CONVECTOR

A. GENERAL:
   1. WHENEVER THE BUILDING TWO-PIPE SYSTEM IS INDEXED TO HEATING, THE ATC ISOLATION VALVES SHALL BE OPEN.
   2. WHENEVER THE BUILDING TWO-PIPE SYSTEM IS INDEXED TO COOLING, THE ATC ISOLATION VALVES SHALL BE CLOSED.

B. OPERATION:
   1. ON A FALL IN TEMPERATURE BELOW THE UNIT MOUNTED THERMOSTAT SETPOINT, THE CONTROL VALVE SHALL OPEN.
   2. ON A RISE IN TEMPERATURE ABOVE THE UNIT MOUNTED THERMOSTAT SETPOINT, THE CONTROL VALVE SHALL CLOSE.



NOTE:

PROVIDE A SINGLE SWITCH TO SHUT DOWN ALL EQUIPMENT INDICATED WITH (E) IN THE CONTROL SEQUENCE

EMERGENCY FAN DISCONNECT SWITCH DETAIL

MOUNT NEXT TO FIRE ALARM PANEL IN MAIN VESTIBULE

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering your vision
Mechanical & Electrical Consulting Engineers
3102 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-265-6500
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
229 West Market Street, York, Pennsylvania 17401
717-848-9827 voice 717-843-2449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/10/2016	BIDS SET

STATE OF MARYLAND · JAMES KEVIN PATRICK GRIFFIN · 33986 · PROFESSIONAL ENGINEER

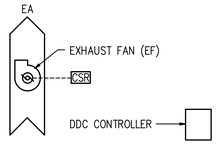
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

ATC SEQUENCES

SHEET

M7.01



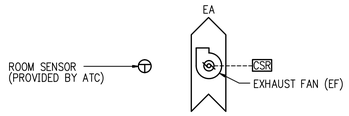
EXHAUST FAN WITH OCCUPIED/UNOCCUPIED CONTROL
(FAN SCHEDULE SEQUENCE A)

A. OPERATION – OCCUPIED

1. WHENEVER THE SYSTEM IS IN "OCCUPIED" MODE, EF SHALL RUN CONTINUOUSLY.

B. OPERATION – UNOCCUPIED

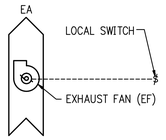
1. EF SHALL BE DEENERGIZED WHENEVER THE SYSTEM IS IN "UNOCCUPIED" MODE.



EXHAUST FAN WITH ROOM THERMOSTAT CONTROL
(FAN SCHEDULE SEQUENCE B)

A. OPERATION

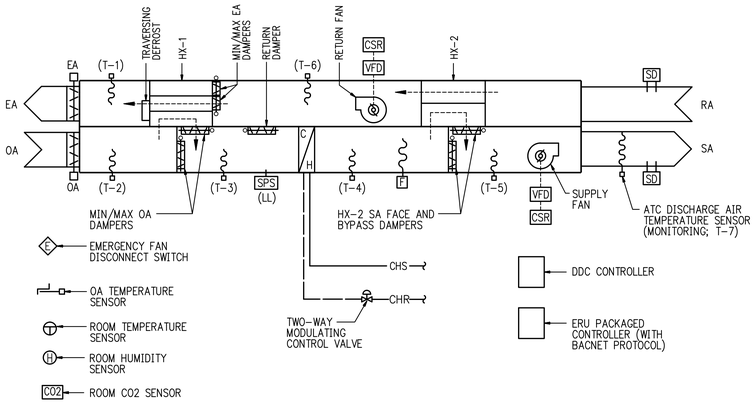
1. ON A RISE IN TEMPERATURE ABOVE THE SETPOINT OF THE ROOM TEMPERATURE SENSOR (80 DEGREES F), EXHAUST FAN MOTOR SHALL BE ENERGIZED.
2. EXHAUST FAN MOTOR SHALL BE DEENERGIZED ONCE THE SPACE TEMPERATURE FALLS BELOW THE SETPOINT OF THE ROOM TEMPERATURE SENSOR.



EXHAUST FAN WITH LOCAL SWITCH
(FAN SCHEDULE SEQUENCES C AND E)

A. OPERATION

1. FAN SHALL START WHEN SWITCH IS SET TO ON.
2. FAN SHALL STOP WHEN SWITCH IS SET TO OFF.



ENERGY RECOVERY UNITS
(ERU-1 AND ERU-2)

A. PROVIDE CONTROL INTERFACE WITH UNIT'S PACKAGED DDC CONTROLS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND WIRING ALL CONTROL EQUIPMENT SUPPLIED WITH SYSTEM. CONTRACTOR SHALL ALSO PROVIDE ANY SWITCHES AND RELAYS TO ACCOMPLISH THE CONTROL SEQUENCE AS NOTED BELOW AND IN SPECIFICATION SECTION 23 7200.

B. WARM-UP, OCCUPIED, AND UNOCCUPIED MODES OF OPERATION SHALL BE INITIATED BY INPUT SIGNALS FROM THE DDC SYSTEM.

C. UNITS PACKAGED DIRECT DIGITAL CONTROLLERS SHALL PROVIDE TEMPERATURE, HUMIDITY, AND VENTILATION CONTROL FUNCTIONS INDICATED WITHIN THE SPECIFICATIONS.

D. WARM-UP CYCLE:

1. WHEN THE ROOM TEMPERATURE IS BELOW THE ROOM TEMPERATURE SENSOR'S OCCUPIED HEATING SETPOINT, OPTIMUM START FUNCTION OF THE DDC SYSTEM SHALL INDEXED THE UNIT TO THE WARM-UP MODE OF OPERATION.
2. UNIT SHALL BE ENERGIZED THROUGH THE DDC SYSTEM AND OPERATE UNDER IT'S PACKAGED CONTROLS FOR THE WARM-UP MODE OF OPERATION.

E. OCCUPIED CYCLE:

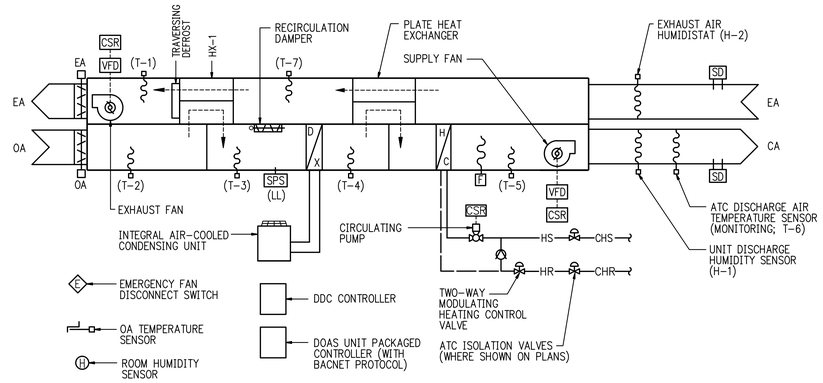
1. UNIT SHALL BE INDEXED TO THE OCCUPIED MODE OF OPERATION THROUGH THE DDC SYSTEM.
2. UNIT SHALL BE ENERGIZED THROUGH THE DDC SYSTEM AND OPERATE UNDER IT'S PACKAGED CONTROLS FOR THE OCCUPIED MODE OF OPERATION.

F. UNOCCUPIED CYCLE:

1. UNIT SHALL BE INDEXED TO THE UNOCCUPIED MODE OF OPERATION THROUGH THE DDC SYSTEM AND OPERATE UNDER IT'S PACKAGED CONTROLS FOR THE UNOCCUPIED MODE OF OPERATION, INCLUDING UNOCCUPIED ROOM TEMPERATURE CONTROL.

G. SAFETY AND EMERGENCY CONTROLS:

1. WHENEVER THE EMERGENCY FAN DISCONNECT SWITCH IS THROWN OR LIMITATIONS ARE EXCEEDED BY AN AIR DUCT SMOKE DETECTOR, THE UNIT SHALL BE DEENERGIZED AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.



DEDICATED OUTDOOR AIR UNITS
(DOAS-1 THRU DOAS-5)

A. GENERAL:

1. WHENEVER THE BUILDINGS TWO-PIPE SYSTEM IS INDEXED TO HEATING, THE HEATING COIL ATC ISOLATION VALVES SHALL BE OPEN.
2. WHENEVER THE BUILDINGS TWO-PIPE SYSTEM IS INDEXED TO COOLING, THE HEATING COIL ATC ISOLATION VALVES SHALL BE CLOSED.

B. PROVIDE CONTROL INTERFACE WITH UNIT'S PACKAGED DDC CONTROLS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND WIRING ALL CONTROL EQUIPMENT SUPPLIED WITH SYSTEM. CONTRACTOR SHALL ALSO PROVIDE ANY SWITCHES AND RELAYS TO ACCOMPLISH THE CONTROL SEQUENCE AS NOTED BELOW AND IN SPECIFICATION SECTION 23 7200.

C. WARM-UP, OCCUPIED, AND UNOCCUPIED MODES OF OPERATION SHALL BE INITIATED BY INPUT SIGNALS FROM THE DDC SYSTEM.

D. UNITS PACKAGED DIRECT DIGITAL CONTROLLERS SHALL PROVIDE TEMPERATURE AND HUMIDITY CONTROL FUNCTIONS INDICATED WITHIN THE SPECIFICATIONS.

E. THE HEATING COIL CIRCULATING PUMP SHALL ENERGIZE WHENEVER OA TEMP IS BELOW 40 DEGREES F OR A DEMAND FOR HEAT IS REQUIRED. DEENERGIZE ABOVE 45 DEGREES F AND NO DEMAND FOR HEATING COIL OPERATION.

F. WARM-UP CYCLE:

1. UNIT SHALL BE DEENERGIZED THROUGHOUT THE WARM-UP CYCLE OF OPERATION.

G. OCCUPIED CYCLE:

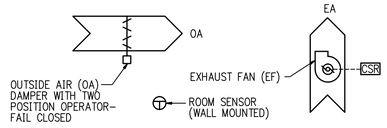
1. UNIT SHALL BE INDEXED TO THE OCCUPIED MODE OF OPERATION THROUGH THE DDC SYSTEM.
2. UNIT SHALL BE ENERGIZED THROUGH THE DDC SYSTEM AND OPERATE UNDER IT'S PACKAGED CONTROLS FOR THE OCCUPIED MODE OF OPERATION.

H. UNOCCUPIED CYCLE:

1. UNIT SHALL BE INDEXED TO THE UNOCCUPIED MODE OF OPERATION THROUGH THE DDC SYSTEM.
2. UNIT SHALL BE DEENERGIZED THROUGH THE DDC SYSTEM AND OPERATE UNDER IT'S PACKAGED CONTROLS FOR THE UNOCCUPIED MODE OF OPERATION, UNLESS A CALL FOR UNOCCUPIED DEHUMIDIFICATION IS REQUIRED.
3. ON A RISE IN HUMIDITY ABOVE THE ROOM HUMIDITY SENSORS SETPOINT (60% RH; ADJUSTABLE), UNIT SHALL BE TEMPORARILY ENERGIZED THROUGH THE DDC SYSTEM AND OPERATE UNDER IT'S PACKAGED CONTROLS FOR UNOCCUPIED DEHUMIDIFICATION.

I. SAFETY AND EMERGENCY CONTROLS:

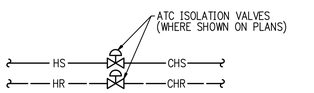
1. WHENEVER THE EMERGENCY FAN DISCONNECT SWITCH IS THROWN OR LIMITATIONS ARE EXCEEDED BY AN AIR DUCT SMOKE DETECTOR, THE UNIT SHALL BE DEENERGIZED AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.



EXHAUST FAN WITH ROOM TEMPERATURE SENSOR CONTROL (WITH COMPANION DAMPER)
(FAN SCHEDULE SEQUENCE D)

A. OPERATION

1. ON A RISE IN TEMPERATURE ABOVE THE ROOM SENSOR SETPOINT, THE OA DAMPER SHALL OPEN.
2. A FURTHER RISE IN ROOM TEMPERATURE, AFTER THE OA DAMPER HAS BEEN OPENED, SHALL ENERGIZE THE EF MOTOR.
3. SEQUENCE SHALL REVERSE UPON A FALL IN TEMPERATURE AS SENSED BY THE ROOM SENSOR.
4. FOR A SINGLE EXHAUST FAN CONTROLLED BY MULTIPLE ROOM TEMPERATURE SENSORS, OPERATION AS DESCRIBED ABOVE SHALL BE BASED ON ROOM SENSOR WITH THE GREATEST DEMAND.



SEASONAL ATC ISOLATION VALVES

A. GENERAL

1. WHENEVER THE TWO-PIPE SYSTEM IS INDEXED TO HEATING, THE ATC ISOLATION VALVES SHALL BE OPEN.
2. WHENEVER THE TWO-PIPE SYSTEM IS INDEXED TO COOLING, THE ATC ISOLATION VALVES SHALL BE CLOSED.

A. GENERAL:

1. ENERGIZING THE CHILLED/HEATING WATER SYSTEM SHALL BE ACCOMPLISHED THROUGH A SIGNAL FROM THE DDC SYSTEM.
2. CHILLED/HEATING SYSTEM SHALL BE ENERGIZED WHEN ANY ZONE IS OPERATING IN THE WARM-UP, OCCUPIED, OR MAINTENANCE CYCLE, OR WHEN ANY ZONE REQUIRES HEATING DURING THE UNOCCUPIED MODE.

B. CHILLED/HEATING WATER PUMP OPERATION:

1. WHEN THE CHILLED/HEATING WATER SYSTEM IS ENERGIZED THROUGH THE DDC SYSTEM, LEAD CHILLED/HEATING WATER PUMP (P-6 OR P-7) SHALL BE ENERGIZED AND RUN CONTINUOUSLY.
2. LEAD PUMP VFD SHALL MODULATE ITS PUMP MOTOR SPEED TO MAINTAIN THE SETPOINT OF THE DIFFERENTIAL PRESSURE SENSOR, BASED ON A 5 MINUTE AVERAGE (ADJUSTABLE) SYSTEM READING.
3. UPON LOSS OF FLOW THROUGH THE LEAD PUMP FOR MORE THAN 10 SECONDS (ADJUSTABLE) AS SENSED BY ITS CURRENT SENSING RELAY, THE LAG PUMP SHALL BE ENERGIZED AND CONTROLLED BY SEQUENCE. AN ALARM MESSAGE SHALL BE SENT TO THE DDC SYSTEM.
4. UPON AN INVALID SIGNAL FROM THE DIFFERENTIAL PRESSURE SENSOR, THE LEAD PUMP SHALL OPERATE AT MAXIMUM PRESET SPEED. RESET SHALL BE AUTOMATIC UPON CORRECTION OF FAILURE.
5. ALTERNATE LEAD AND LAG PUMP OPERATION EVERY 30 DAYS. LEAD PUMP SHALL BE SELECTED BASED ON THE PUMPING SYSTEM WITH THE FEWEST HOURS OF OPERATION, AS DETERMINED THROUGH THE DDC SYSTEMS RUNTIME REGISTER.
6. BOTH LEAD AND LAG CHILLED/HEATING WATER PUMPS SHALL BE DEENERGIZED WHEN THE CHILLED/HEATING WATER SYSTEM IS DEENERGIZED.
7. SETPOINT OF PRESSURE DIFFERENTIAL SENSOR SHALL BE ESTABLISHED DURING BALANCING. SENSOR SHALL BE CALIBRATED WITH INPUT BY BALANCING CONTRACTOR.

C. "HEATING MODE" OPERATION:

1. WHEN "HEATING MODE" OPERATION IS INITIATED BY DDC SYSTEM, THE FOLLOWING SHALL OCCUR PRIOR TO ENERGIZING THE BOILER SYSTEM:
   a. ATC VALVE V-1 SHALL BE POSITIONED TO PROVIDE FULL FLOW THROUGH THE BOILERS THROUGHOUT THE HEATING MODE OF OPERATION.
   b. ATC VALVE V-2 SHALL BE POSITIONED TO PROVIDE FULL FLOW AROUND THE CHILLER THROUGHOUT THE HEATING MODE OF OPERATION.
2. ONCE ALL VALVES ARE PROVEN TO THEIR CORRECT HEATING MODE POSITION, HEATING MODE OPERATION SHALL BE ENABLED.
3. BOILER SYSTEMS SHALL BE ENABLED DURING HEATING MODE OF OPERATION. BOILER SYSTEM OPERATION SHALL BE ENABLED THROUGH A HARD-WIRED INTERFACE WITH THE BOILER SEQUENCING PANEL. PROVIDE ALL WIRING, DEVICES AND ACCESSORIES TO INTERLOCK BOILERS AND HEATING WATER ISOLATION VALVES WITH BOILER SEQUENCING PANEL.
4. BOILER CONTROL SEQUENCING PANEL SHALL SEQUENCE, MODULATE, AND STAGE BOILERS TO MAINTAIN A HEATING SUPPLY TEMPERATURE (ADJUSTABLE) BASED ON OUTDOOR AIR TEMPERATURE. BOILER SEQUENCING PANEL SHALL ALSO CONTROL THE POSITION OF HEATING WATER ISOLATION VALVES (VALVE IS POSITIONED OPEN WHEN IT'S ASSOCIATED BOILER IS CALLED TO OPERATION AND CLOSED WHEN IT'S ASSOCIATED BOILER IS DEENERGIZED). HEATING WATER SUPPLY TEMPERATURE SHALL BE RESET BASED ON A SLIDING SCALE, RESIDE WITHIN THE BOILER SEQUENCING PANEL, AND OPERATE AT THE FOLLOWING CONDITIONS:

   25° F OUTDOORS AND BELOW = 140° F LWT
   60° F OUTDOORS AND ABOVE = 80° F LWT

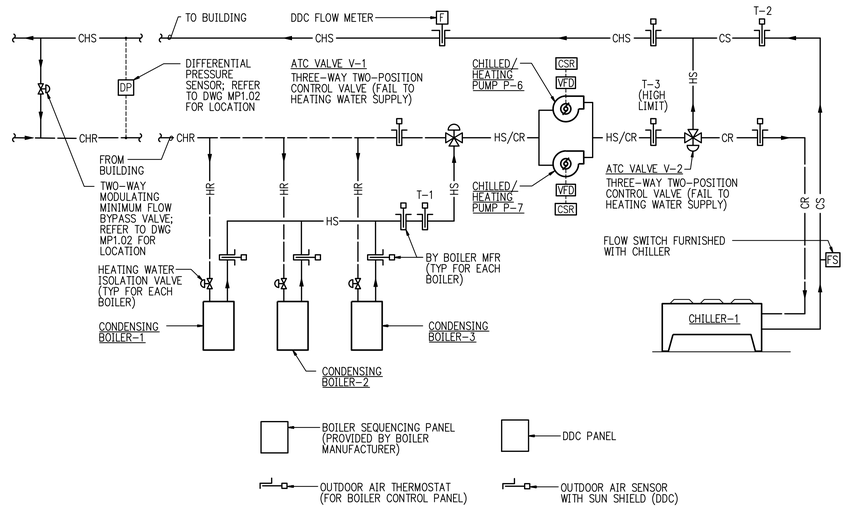
5. DDC SYSTEM SHALL MONITOR HEATING WATER SUPPLY TEMPERATURE FROM EACH BOILER, HEATING WATER SUPPLY TEMPERATURE TO THE BUILDING, HEATING WATER RETURN TO THE BOILER SYSTEM, AND BOILER FAILURE ALARMS GENERATED BY THE BOILER CONTROL PANEL.
6. OPERATION OF CHILLER SHALL BE LOCKED-OUT WHEN THE TWO-PIPE SYSTEM IS OPERATING IN THE HEATING MODE.

D. "COOLING MODE" OPERATION:

1. WHEN "COOLING MODE" OPERATION IS INITIATED BY DDC SYSTEM, THE FOLLOWING SHALL OCCUR PRIOR TO ENERGIZING THE CHILLER:
   a. ATC VALVE V-1 SHALL BE POSITIONED TO PROVIDE FULL FLOW AROUND THE BOILERS THROUGHOUT THE COOLING MODE OF OPERATION.
   b. ATC VALVE V-2 SHALL BE POSITIONED TO PROVIDE FULL FLOW THROUGH THE CHILLER THROUGHOUT THE COOING MODE OF OPERATION.
2. ONCE ALL VALVES ARE PROVEN TO BE IN THEIR CORRECT COOLING MODE POSITION AND CHILLED/HEATING WATER RETURN TEMPERATURE FALLS BELOW 85 DEGREES F (ADJUSTABLE), AS SENSED TEMPERATURE SENSOR T-3, CHILLER OPERATION SHALL BE ENABLED.
3. CHILLER SHALL OPERATE UNDER IT'S PACKAGED CONTROLS TO MAINTAIN THE CHILLED WATER SUPPLY TEMPERATURE SENSOR SETPOINT OF 44 DEGREES F (ADJUSTABLE), AS SENSED BY IMMERSION TEMPERATURE SENSOR T-2.
4. DDC SYSTEM SHALL MONITOR THE ALARMS GENERATED BY THE CHILLER'S CONTROLLER AND BE CAPABLE OF ADJUSTING CHILLED WATER SUPPLY SETPOINTS THROUGH THE DDC SYSTEM.

E. CHILLED/HEATING WATER MINIMUM FLOW BYPASS VALE AND DDC FLOW METER OPERATION:

1. UPON A FALL IN CHILLED/HEATING WATER FLOW BELOW THE DDC FLOW METER SETPOINT (195 GPM DURING COOLING MODE OPERATION AND 55 GPM DURING HEATING MODE OPERATION), TWO-WAY BYPASS VALVE SHALL MODULATE TO MAINTAIN THE CHILLED/HEATING WATER FLOW METER SETPOINT.



CHILLED/HEATING WATER SYSTEM

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
3122 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-955-6100
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer Architects
226 West Market Street, York, Pennsylvania 17401
717-848-6827 voice 717-854-3449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/21/2025	BIDS SET

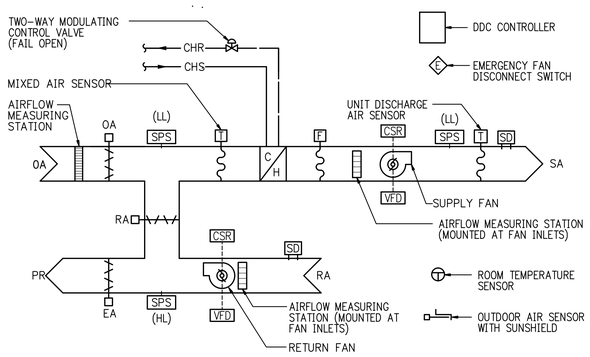
STATE OF MARYLAND
JOHN PATRICK KELLEHER
33986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that those documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 33986, Expiration date: 07-16-2027.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

ATC SEQUENCES

SHEET
M7.02



SINGLE-ZONE VARIABLE AIR VOLUME AIR HANDLING UNIT
(AHU-1)

A. UNIT IS CONTROLLED BY RESPECTIVE ZONE OCCUPIED-UNOCCUPIED SCHEDULE.

B. WARM-UP CYCLE:

1. WHEN INDEXED TO "OCCUPIED" BY THE TIME SCHEDULE, THE OPTIMUM START FUNCTION OF THE DDC CONTROLLER SHALL PLACE THE SYSTEM IN MORNING WARM-UP MODE. THE OPTIMUM START SHALL PROVIDE SPACE TEMPERATURE WITHIN 1 DEGREES F OF THE HEATING SETPOINT BY THE OCCUPIED TIME. IF ADEQUATE SPACE TEMPERATURE IS NOT ACHIEVED BY THE OCCUPIED TIME, AN ALARM SHALL BE GENERATED.
2. THE UNIT SUPPLY AND RETURN AIR FANS SHALL BE ENERGIZED. THE SUPPLY AIR VOLUME SETPOINT SHALL BE SET EQUAL TO THE DESIGN RETURN AIR VOLUME. THE RETURN AIR CFM DIFFERENTIAL SHALL BE SET TO ZERO. OA AND EA DAMPERS SHALL BE CLOSED AND RA DAMPER SHALL BE OPEN.
3. COMPANION EXHAUST FANS SHALL BE DEENERGIZED THROUGHOUT THE WARM-UP CYCLE.
4. THE CHILLED/HEATING WATER COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE OCCUPIED HEATING SETPOINT OF THE ROOM TEMPERATURE SENSOR.
5. ONCE THE OCCUPIED TEMPERATURE SETPOINT IS REACHED, THE UNIT SHALL REMAIN IN THE WARM-UP CYCLE (NO VENTILATION) UNTIL INDEXED TO THE OCCUPIED CYCLE THROUGH THE DDC SYSTEM.

C. OCCUPIED CYCLE:

1. SUPPLY AND RETURN FAN MOTORS SHALL REMAIN ENERGIZED AND RUN CONTINUOUSLY. SA AND RA FAN AIRFLOW DIFFERENTIAL SHALL BE SET TO OCCUPIED VALUE.
2. COMPANION EXHAUST FANS SHALL BE ENERGIZED.
3. MINIMUM OA VENTILATION AIR CONTROL:
   a. OUTSIDE AIR DAMPER SHALL OPEN TO IT'S MINIMUM POSITION. RA AND EA DAMPERS SHALL MODULATE IN OPPOSITION TO MAINTAIN THE MINIMUM OUTSIDE AIRFLOW SETPOINT, AS MEASURED BY THE MINIMUM OA AIRFLOW STATION.
   b. THIS CONTROL SHALL OCCUR ACROSS ALL MODES OF OCCUPIED OPERATION, EXCEPT FOR ECONOMIZER OPERATION.
4. FAN MOTOR CONTROL:
   a. WHEN ENERGIZED, THE SUPPLY FAN MOTOR VFD SHALL MODULATE BETWEEN ITS MINIMUM AND MAXIMUM SPEED TO MAINTAIN THE COOLING SETPOINT OF THE ROOM TEMPERATURE SENSOR. MINIMUM SUPPLY AIR VFD SPEED SHALL BE SET 60 PERCENT OF MAXIMUM DESIGN AIRFLOW VFD SPEED, AS DETERMINED DURING AIRFLOW BALANCING.
   b. WHEN THE SUPPLY FAN VFD IS OPERATING AT IT'S MINIMUM SPEED AND THE UNIT DISCHARGE TEMPERATURE RISES ABOVE AN ADJUSTABLE HIGH LIMIT TEMPERATURE (85 DEGREES F; ADJUSTABLE), OPERATING SPEED OF SUPPLY FAN VFD SHALL INCREASED TOWARDS IT'S MAXIMUM SPEED SETPOINT. ONCE SUPPLY FAN VFD SPEED HAS REACHED IT'S MAXIMUM SETPOINT, UNIT DISCHARGE TEMPERATURE SHALL BE PERMITTED TO INCREASE ABOVE THE HIGH LIMIT DISCHARGE TEMPERATURE SETPOINT.
   c. THE RETURN FAN MOTOR SPEED SHALL MODULATE TO MAINTAIN A CONSTANT CFM DIFFERENTIAL BETWEEN SA AND RA FANS, AS DETERMINED BY THEIR ASSOCIATED AIRFLOW MEASURING STATIONS.
5. CHILLED/HEATING COIL CONTROL:
   a. WHEN THE BUILDING'S TWO-PIPE SYSTEM IS OPERATING IN THE HEATING MODE, THE CHILLED/ HEATING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE ROOM TEMPERATURE SENSORS HEATING SETPOINT.
   b. WHEN THE BUILDING'S TWO-PIPE SYSTEM IS OPERATING IN THE COOLING MODE, THE CHILLED/ HEATING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE ROOM TEMPERATURE SENSORS COOLING SETPOINT.
6. ECONOMIZER CONTROL:
   a. WHEN THE OA TEMPERATURE FALLS BELOW 60 DEGREES F (ADJUSTABLE), ECONOMIZER OPERATION SHALL BE ENABLED.
   b. THE OA DAMPER SHALL MODULATE TOWARDS OPEN TO MAINTAIN THE ROOM TEMPERATURE SENSORS COOLING SETPOINT, SUBJECT TO A LOW LIMIT MIXED AIR TEMPERATURE OF 45 DEGREES F.
   c. RA DAMPER SHALL MODULATE IN OPPOSITION WITH THE OA DAMPER. EA DAMPER SHALL MODULATE IN OPPOSITION WITH THE RA DAMPER.

D. UNOCCUPIED CYCLE:

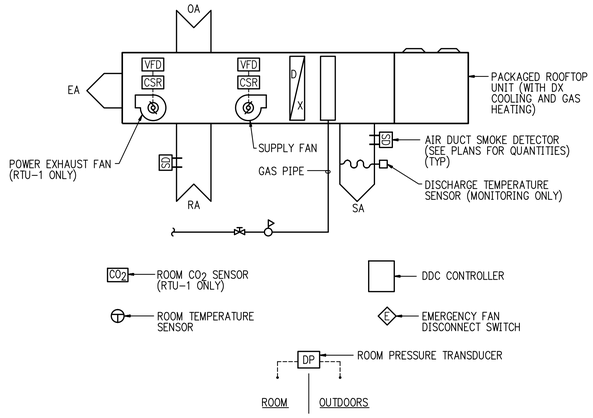
1. THE OA AND EA DAMPERS SHALL CLOSE AND THE RA DAMPER SHALL OPEN THROUGHOUT THE UNOCCUPIED CYCLE.
2. COMPANION EXHAUST FANS SHALL BE DEENERGIZED THROUGHOUT THE UNOCCUPIED CYCLE.
3. THE SUPPLY FAN, RETURN FAN, AND CHILLED/HEATING COIL CONTROL VALVE SHALL CYCLE AND MODULATE TO MAINTAIN THE UNOCCUPIED HEATING SETPOINT OF THE ROOM TEMPERATURE SENSOR.
4. THE SUPPLY AIR VOLUME SETPOINT SHALL BE SET EQUAL TO THE DESIGN RETURN AIR VOLUME DURING THE UNOCCUPIED MODE. THE RETURN AIR CFM DIFFERENTIAL SHALL BE SET TO ZERO.

E. MAINTENANCE CYCLE:

1. UNIT SHALL FUNCTION AS DESCRIBED IN THE OCCUPIED CYCLE, WITH THE FOLLOWING MODIFICATIONS:
   a. COMPANION EXHAUST FANS SHALL BE DEENERGIZED THROUGHOUT THE MAINTENANCE CYCLE.
   b. THE OA AND EA DAMPERS SHALL CLOSE AND THE RA DAMPER SHALL OPEN THROUGHOUT THE MAINTENANCE CYCLE.
   c. ECONOMIZER OPERATION SHALL BE LOCKED-OUT DURING THE MAINTENANCE CYCLE.

F. SAFETY AND EMERGENCY CONTROL:

1. WHENEVER THE EMERGENCY FAN DISCONNECT SWITCH IS THROWN OR THE LIMITATIONS ARE EXCEEDED BY ANY AIR DUCT SMOKE DETECTOR, FREEZESTAT, FAN CURRENT SENSING RELAY, OR STATIC PRESSURE SENSOR, THE SUPPLY FAN AND RETURN FAN SHALL BE DEENERGIZED, THE OA AND EA DAMPERS SHALL CLOSE, AND THE RA DAMPER SHALL OPEN.
2. SAFETY AND EMERGENCY CONTROLS SHALL FUNCTION ON BOTH OCCUPIED AND UNOCCUPIED CYCLE.



PACKAGED ROOFTOP UNIT (SINGLE-ZONE VAV CONTROL)
(RTU-1 AND RTU-2)

A. GENERAL:

1. THE CONTROLS CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND WIRING ALL CONTROL EQUIPMENT SUPPLIED WITH ROOFTOP UNIT SYSTEM. PROVIDE ANY SWITCHES AND RELAYS REQUIRED TO ACCOMPLISH THE MANUFACTURERS PACKAGED CONTROL SEQUENCE OF OPERATION AND THOSE ITEMS INDICATED BELOW.
2. PROVIDE CONTROL INTERLOCK BETWEEN THE DDC SYSTEM, ROOFTOP UNIT'S PACKAGED CONTROLS, DDC UNIT CONTROLLER, AND ALL OTHER CONTROL DEVICES INDICATED AND/OR REQUIRED FOR UNIT OPERATION AND DDC/EMS MONITORING.
3. MANUFACTURER'S MICROPROCESSOR CONTROLLER SHALL PROVIDE ALL UNIT TEMPERATURE AND HUMIDITY CONTROL FUNCTIONS, INCLUDING BUT NOT LIMITED TO SUPPLY FAN SPEED, DAMPER, ECONOMIZER, POWER EXHAUST, DEMAND CONTROL VENTILATION, AND COMPRESSOR OPERATION.
4. DDC SYSTEM SHALL ENERGIZE/DEENERGIZE UNIT OPERATION, INDEX UNIT TO WARM-UP/OCCUPIED/ UNOCCUPIED MODES OF OPERATION, MONITOR SUPPLY FAN OPERATION VIA A CURRENT SENSING RELAY, REPORT GENERAL ALARM CONDITIONS, AND MONITOR UNIT DISCHARGE AIR TEMPERATURE AND SPACE RELATIVE HUMIDITY.

B. WARM-UP CYCLE:

1. ROOFTOP UNIT SHALL BE INDEXED TO THE WARM-UP MODE OF OPERATION THROUGH THE OPTIMUM START CONTROL FUNCTION. UNIT SHALL BE ENERGIZED THROUGH A SIGNAL FROM THE DDC SYSTEM AND OPERATE UNDER IT'S PACKAGED CONTROLS TO MAINTAIN THE ROOM TEMPERATURE SENSOR SETPOINT.

C. OCCUPIED CYCLE:

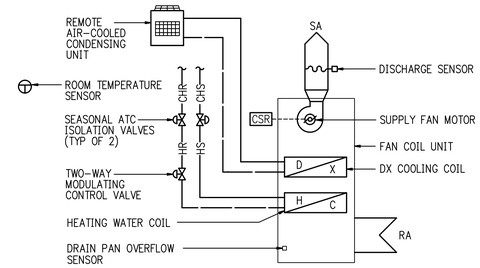
1. ROOFTOP UNIT SHALL BE INDEXED TO THE OCCUPIED MODE OF OPERATION. UNIT SHALL BE ENERGIZED THROUGH A SIGNAL FROM THE DDC SYSTEM AND OPERATE UNDER IT'S PACKAGED CONTROLS TO MAINTAIN THE ROOM TEMPERATURE SENSOR, RETURN AIR HUMIDISTAT, AND ROOM CO2 SENSOR SETPOINTS.

D. UNOCCUPIED CYCLE:

1. ROOFTOP UNIT SHALL BE INDEXED TO THE UNOCCUPIED MODE OF OPERATION AND DEENERGIZED THROUGH THE DDC SYSTEM.
2. WHENEVER THE SPACE TEMPERATURE FALLS BELOW THE ROOM TEMPERATURE SENSORS UNOCCUPIED HEATING SETPOINT OR ABOVE THE ROOM TEMPERATURE SENSORS UNOCCUPIED COOLING SETPOINT, ROOFTOP UNIT SHALL BE TEMPORARILY ENERGIZED THROUGH THE DDC SYSTEM AND OPERATE UNDER ITS PACKAGED CONTROLS, WITH THE OA DAMPER CLOSED AT ALL TIMES.
3. ONCE THE SPACE TEMPERATURE RISES ABOVE ROOM TEMPERATURE SENSORS UNOCCUPIED HEATING SETPOINT, OR FALLS BELOW THE ROOM TEMPERATURE SENSORS UNOCCUPIED COOLING SETPOINT, ROOFTOP UNIT OPERATION SHALL BE DEENERGIZED THROUGH THE DDC SYSTEM.

E. SAFETY CONTROLS:

1. WHENEVER THE EMERGENCY FAN DISCONNECT SWITCH IS THROWN OR THE LIMITATIONS OF ANY AIR DUCT SMOKE DETECTOR ARE EXCEEDED, THE UNIT SHALL BE DEENERGIZED AND AN ALARM MESSAGE STATING SPECIFIC ALARM CONDITION SENT TO THE DDC SYSTEM.



VERTICAL DX AND HEATING WATER FAN COIL UNIT

A. FAN COIL UNIT OPERATION IS CONTROLLED BY THE RESPECTIVE ZONE OCCUPIED-UNOCCUPIED SCHEDULING AND SHALL BE ENERGIZED/ DEENERGIZED THROUGH THE DDC SYSTEM.

B. DISCHARGE TEMPERATURE SENSOR SHALL SEND SIGNAL TO THE DDC SYSTEM FOR MONITORING.

C. SEASONAL ATC ISOLATION VALVE OPERATION:

1. WHENEVER THE BUILDING'S TWO-PIPE SYSTEM IS INDEXED TO HEATING MODE, THE ATC ISOLATION VALVES SHALL BE OPEN.
2. WHENEVER THE BUILDING'S TWO-PIPE SYSTEM IS INDEXED TO COOLING MODE, THE ATC ISOLATION VALVES SHALL BE CLOSED.

D. OCCUPIED CYCLE:

1. THE UNIT SUPPLY FAN MOTOR SHALL BE ENERGIZED AND RUN CONTINUOUSLY.
2. WITH THE TWO-PIPE SYSTEM IN HEATING MODE:
   a. HEATING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE HEATING SETPOINT OF THE ROOM TEMPERATURE SENSOR.
   b. REMOTE AIR-COOLED CONDENSING UNIT SHALL BE DEENERGIZED THROUGHOUT THE OCCUPIED HEATING CYCLE, UNLESS THE ROOM TEMPERATURE RISES ABOVE THE ROOM TEMPERATURE SENSORS COOLING SETPOINT.
   c. ONCE THE ROOM TEMPERATURE RISES ABOVE THE SENSORS COOLING SETPOINT, AIR-COOLED CONDENSING UNIT SHALL BE CYCLED AND STAGED TO MAINTAIN THE COOLING SETPOINT OF THE ROOM TEMPERATURE SENSOR. COORDINATE WITH THE APPROVED AIR-COOLED CONDENSING UNIT MANUFACTURER FOR ALL NECESSARY CONTROLS AND COMPONENTS REQUIRED FOR PROPER OPERATION AND CONTROL OF THEIR EQUIPMENT.
3. WHEN THE TWO-PIPE SYSTEM IN COOLING MODE:
   a. AIR-COOLED CONDENSING UNIT SHALL BE CYCLED AND STAGED TO MAINTAIN THE COOLING SETPOINT OF THE ROOM TEMPERATURE SENSOR. COORDINATE WITH THE APPROVED AIR-COOLED CONDENSING UNIT MANUFACTURER FOR ALL NECESSARY CONTROLS AND COMPONENTS REQUIRED FOR PROPER OPERATION AND CONTROL OF THEIR EQUIPMENT.
   b. HEATING COIL CONTROL VALVE SHALL BE CLOSED THROUGHOUT THE OCCUPIED COOLING CYCLE.

E. UNOCCUPIED CYCLE:

1. SUPPLY FAN MOTOR SHALL CYCLE AND HEATING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE UNOCCUPIED HEATING SETPOINT OF THE ROOM TEMPERATURE SENSOR.
2. REMOTE AIR-COOLED CONDENSING UNIT SHALL BE DEENERGIZED THROUGHOUT THE UNOCCUPIED HEATING CYCLE.

F. SAFETY CONTROLS:

1. IF THE DRAIN PAN OVERFLOW SENSOR SENSES WATER, THE SUPPLY FAN SHALL BE DEENERGIZED, COMPRESSOR OPERATION SHALL BE DEENERGIZED, CONTROL VALVE SHALL CLOSE, AIR-COOLED CONDENSING UNIT SHALL BE DEENERGIZED, AND AN ALARM STATING THE SPECIFIC ALARM CONDITION (INCLUDING FAN COIL UNIT NUMBER) SHALL BE SENT TO THE DDC SYSTEM.
2. FAILURE OF ROOM TEMPERATURE SENSOR SHALL DEENERGIZE THE ASSOCIATED FAN COIL UNIT AND INITIATE AN ALARM TO THE DDC SYSTEM.
3. WHENEVER THE LIMITATIONS ARE EXCEEDED BY ANY CURRENT SENSING RELAY, SUPPLY FAN SHALL BE DEENERGIZED AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
4. UPON LOSS OF FAN OPERATION, AIR-COOLED CONDENSING UNIT SHALL BE DEENERGIZED.

AUTO OCCUPIED-UNOCCIPIED CONTROL SCHEDULE

ZONE	AREA SERVED	EQUIPMENT
1	ADMINISTRATION AREA	DOAS-3, HRU-1, VRT-11 THROUGH VRT-26
2	MEDIA CENTER	DOAS-4, HRU-2, VRT-1A THROUGH VRT-10
3	NORTH CLASSROOMS - AREA A	DOAS-1, FCU-1 THROUGH 10, FCU-17 THROUGH 27
4	SOUTH CLASSROOMS - AREA A	DOAS-2, FCU-11 THROUGH 14, FCU-28 THROUGH 37
5	EAST CLASSROOMS & FACULTY	DOAS-5, FCU-15, 16, 38 & 39
6	GYMNASIUM	ERU-1
7	CAFETERIA	ERU-2
8	COMMUNITY CENTER	RTU-1, EF-3
9	FOOD PREPARATION	RTU-2, EF-1

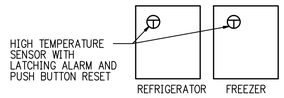
GENERAL NOTE:

1. EACH ZONE SHALL HAVE SEPARATE TIME SCHEDULING THRU DDC SYSTEM

AUTO-OCCUPIED-UNOCCUPIED CONTROL SCHEDULE

OPERATION:

1. EACH ZONE SHALL HAVE AN AUTO-OCCUPIED-UNOCCUPIED-MAINTENANCE SCHEDULE. ZONES ARE DEFINED IN THE SCHEDULE ABOVE.
2. WHEN INDEXED TO "AUTO" THE EQUIPMENT SERVED BY THE CONTROL ZONE WILL FUNCTION EITHER ON THE "OCCUPIED" CYCLE "UNOCCUPIED" CYCLE OR "MAINTENANCE" CYCLE AS DETERMINED BY BUILDING AUTOMATION SYSTEM.
3. WHEN INDEXED TO "OCCUPIED" THE EQUIPMENT SERVED BY THE CONTROL ZONE SHALL FUNCTION ON THE "OCCUPIED" CYCLE.
4. WHEN INDEXED TO "UNOCCUPIED" THE EQUIPMENT SERVED BY THE CONTROL ZONE SHALL FUNCTION ON THE UNOCCUPIED CYCLE.
5. THE MAINTENANCE CYCLE IS INTENDED TO ALLOW MAINTENANCE OVERRIDE OF THE UNOCCUPIED CYCLE WITHOUT INTRODUCING VENTILATION, AS BUILDING OCCUPANTS ARE NOT PRESENT WITHIN THE FACILITY. WHEN INDEXED TO "MAINTENANCE" THE EQUIPMENT SERVED BY THE CONTROL ZONE SHALL FUNCTION ON THE "MAINTENANCE" CYCLE. FOR EQUIPMENT WITHOUT A "MAINTENANCE" CYCLE WRITTEN IN THE SEQUENCE, FOLLOW THE FOLLOWING PROTOCOL.



HIGH TEMPERATURE REFRIGERATOR/FREEZER ALARM

A. OPERATION

1. WHENEVER THE SETPOINT OF THE HIGH TEMPERATURE SENSOR IN THE REFRIGERATOR OR THE FREEZER IS EXCEEDED, THE ALARM REPORTING DEVICE OF THE DDC SYSTEM SHALL BE ACTIVATED. SETPOINTS SHALL BE DETERMINED IN COOPERATION WITH SCHOOL FOOD SERVICE PERSONNEL. LOCAL ALARM SHALL ALSO SOUND IN THE KITCHEN.
2. ALARMS SHALL BE PROVIDED WITH AN ADJUSTABLE ACTIVATION TIME DELAY TO AVOID ACCIDENTAL ACTIVATION DURING LOADING AND UNLOADING OF CONTENTS. INITIAL TIME DELAY SHALL BE 30 MINUTES (ADJUSTABLE).
3. ALARM SHALL BE A LATCHING ALARM WHICH SHALL REQUIRE MANUAL RESET AT THE FREEZER OR REFRIGERATOR VIA A PUSH BUTTON.
4. ALARM REPORTING DEVICE SHALL NOTIFY SCHOOL PERSONNEL OF CONDITION.

BALTIMORE COUNTY PUBLIC SCHOOLS
VICTORY VILLA ELEMENTARY SCHOOL
MIDDLE RIVER, MD

James Posey Associates
Engineering your vision
Mechanical & Electrical Consultants
3122 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-9820
jamesposey.com

Murphy & Dittenhafer Architects
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax
236 West Market Street, York, Pennsylvania 17401
717-846-8627 voice 717-843-3449 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
DOUGLAS PATRICK KNEBEL
33986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date: 01-16-2017.

PROJECT NO: 6535-15
DRAWN BY: JFL
CHECKED BY: DKG

ATC SEQUENCES

SHEET
M7.03

DDC - INPUT/OUTPUT POINT SCHEDULE

SYSTEM APPARATUS OR AREA POINT DESCRIPTION	INPUT TO DDC: ANALOG: TEMPERATURE	PRESSURE	CFM	GPM	RELATIVE HUMIDITY	POSITION	CO2 DIFFERENTIAL	SPEED	INPUT TO DDC: BINARY: STATUS	CURRENT SENSING RELAY	SMOKE DETECTORS	FREEZESTAT	EMERGENCY SWITCH	FILTER DP	END SWITCH	LOCAL SWITCH ACTIVATION	DIFFERENTIAL-PRESSURE SWITCH	SELECTION SWITCH	ALARM	OUTPUT FROM DDC: ANALOG: SETPOINT ADJUSTMENT	POSITION	HUMIDITY	OUTPUT FROM DDC: BINARY: OFF/ON	OPEN-CLOSE	HEATING-COOLING	SYSTEM FEATURES: ALARMS: FAILURE	HIGH ANALOG	LOW ANALOG	HIGH BINARY	FAULT (GENERAL)	SYSTEM FEATURES: PROGRAMS: TIME SCHEDULING (OCC/UNOCC)	LEAD/LAG	MORNING WARM UP (OPTIMUM START)	GENERAL: COLOR GRAPHICS	INTERFACE W/ EQUIPMENT CONTROLS	SUPPLEMENTARY NOTES
DOMESTIC + KITCHEN H/W SYSTEMS																																X			BOTH 110 F AND 140 F SYSTEMS
HW CIRCULATOR PUMP									X	X														X												TYP OF 2
INSERTION TEMPERATURE SENSOR	X																			X																
ENERGY RECOVERY UNIT											X	X	X																			X		X			ERU-1 AND 2
UNIT ENABLE/DISABLE																								X													
MODE (WARM-UP/OCC/UNOCC)																																X		X			
SUPPLY FAN									X	X																											MONITORING ONLY
RETURN FAN									X	X																											MONITORING ONLY
GENERAL UNIT ALARM																			X											X						MONITORING AND ALARM ONLY
ROOM TEMPERATURE SENSOR	X																			X							X	X								
ROOM HUMIDITY SENSOR					X															X							X									
ROOM CO2 SENSOR							X													X							X									MONITORING ONLY
DISCHARGE TEMPERATURE SENSOR	X																																			MONITORING ONLY
DISCHARGE HUMIDITY SENSOR					X																															MONITORING ONLY
INTERFACE W/ PACKAGED CONTROLS																																		X		VIA BACNET PROTOCOL
SINGLE ZONE VAV AHU											X	X	X																			X		X			AHU-1
OA AIRFLOW MEASURING STATION			X																	X								X						X		
RA AIRFLOW MEASURING STATION			X																	X														X		
SA AIRFLOW MEASURING STATION			X																	X														X		
OA, RA, AND EA DAMPERS						X															X																
CHILLED/HEATING COIL CONTROL VALVE						X															X																
MIXED AIR SENSOR	X																			X								X	X								
UNIT DISCHARGE SENSOR	X																																				
SUPPLY FAN									X	X													X														
SUPPLY FAN VFD								X	X										X	X			X														
RETURN FAN									X	X													X														
RETURN FAN VFD								X	X										X	X			X														
LL STATIC PRESSURE SENSORS		X																										X								
HL STATIC PRESSURE SENSORS		X																										X								
ROOM TEMPERATURE SENSOR	X																			X								X	X							
SZVAV PACKAGED ROOFTOP UNIT											X		X																			X		X			RTU-1 AND RTU-2
DISCHARGE AIR TEMPERATURE	X																			X								X	X							DDC MONITORING AND ALARM ONLY
SUPPLY FAN OPERATION										X																		X								DDC MONITORING AND ALARM ONLY
EXHAUST FAN OPERATION										X																		X								DDC MONITORING AND ALARM ONLY
ROOM TEMPERATURE SENSOR	X																			X								X	X							
ROOM CO2 SENSOR							X													X								X								RTU-1 ONLY

NOTES:

DDC - INPUT/OUTPUT POINT SCHEDULE

SYSTEM APPARATUS OR AREA POINT DESCRIPTION	INPUT TO DDC: ANALOG: TEMPERATURE	PRESSURE	CFM	GPM	RELATIVE HUMIDITY	POSITION	CO2 DIFFERENTIAL	SPEED	INPUT TO DDC: BINARY: STATUS	CURRENT SENSING RELAY	SMOKE DETECTORS	FREEZESTAT	EMERGENCY SWITCH	FILTER DP	END SWITCH	LOCAL SWITCH ACTIVATION	DIFFERENTIAL-PRESSURE SWITCH	SELECTION SWITCH	ALARM	OUTPUT FROM DDC: ANALOG: SETPOINT ADJUSTMENT	POSITION	HUMIDITY	OUTPUT FROM DDC: BINARY: OFF/ON	OPEN-CLOSE	HEATING-COOLING	SYSTEM FEATURES: ALARMS: FAILURE	HIGH ANALOG	LOW ANALOG	HIGH BINARY	FAULT (GENERAL)	SYSTEM FEATURES: PROGRAMS: TIME SCHEDULING (OCC/UNOCC)	LEAD/LAG	MORNING WARM UP (OPTIMUM START)	GENERAL: COLOR GRAPHICS	INTERFACE W/ EQUIPMENT CONTROLS	SUPPLEMENTARY NOTES
GLOBAL POINTS																																					
OA TEMPERATURE	X																																				
EMERGENCY FAN DISCONNECT													X																								
CHILLED/HEATING WATER SYSTEM																								X								X					
BOILER SEQUENCING PANEL									X															X			X							X			
BOILER DISCHARGE SENSOR	X																											X								
CHILLED/HEATING WATER PUMP									X	X														X								X				P-6 AND P-7
CHILLED/HEATING WATER PUMP VFD								X	X										X					X								X				SERVING P-6 AND P-7
HS SENSOR (T-1)	X																			X								X								
HS/CR SENSOR (T-3)	X																			X							X									
CS SENSOR (T-2)	X																			X							X									
ADDITIONAL TEMP SENSORS	X																																			MONITORING ONLY
DDC FLOW METER				X																X								X								
MINIMUM FLOW BYPASS VALVE						X									X						X															
CHILLED/HEATING DP SENSOR		X																		X								X								
THREE-WAY ATC VALVE V-1															X									X												
THREE-WAY ATC VALVE V-2															X									X												
AIR-COOLED CHILLER									X															X			X							X			CHILLER-1
TWO-PIPE VERTICAL FCU																																X		X			
SUPPLY FAN									X	X														X													
ROOM TEMPERATURE SENSOR	X																			X								X	X							
CHILLED/HEATING CONTROL VALVE																					X																
DISCHARGE TEMP SENSOR	X																																				MONITORING ONLY
DRAIN PAN OVERFLOW																			X												X					
HEATING WATER / DX VERTICAL FCU																																X		X			
SUPPLY FAN									X	X														X													
ROOM TEMPERATURE SENSOR	X																			X								X	X							
SEASONAL ISOLATION VALVES															X									X												
HEATING WATER CONTROL VALVE																					X																
AIR-COOLED CONDENSING UNIT									X															X			X										
DISCHARGE TEMP SENSOR	X																																				MONITORING ONLY
DRAIN PAN OVERFLOW																			X												X					
VRF SYSTEMS																																		X			
CENTRAL SYSTEM CONTROLLER																								X								X		X			VIA BACNET PROTOCOL
ROOM TEMPERATURE	X																			X								X	X							VIA BACNET PROTOCOL
ELEVATOR SUMP PUMP									X										X												X			X	X		
HIGH TEMP REFRIG/FREEZER ALARM	X																											X						X		
DUCTLESS SPLIT SYSTEMS																																		X			
ROOM TEMPERATURE SENSOR	X																											X	X							MONITOR AND ALARM ONLY
CARBON MONOXIDE ALARM									X										X												X				X		
COMBUSTIBLE GAS ALARM									X										X												X				X		
UNIT HEATERS																																			X		BOTH CUH AND PUH
ROOM TEMPERATURE SENSOR	X																			X								X	X							
SEASONAL ISOLATION VALVES															X									X												
HEATING WATER CONTROL VALVE																					X																
CONVECTORS																																			X		
SEASONAL ISOLATION VALVES															X									X												
HEATING WATER CONTROL VALVE																					X																
EF WITH OCC/UNOCC CONTROL																																X			X		FAN SEQUENCE "A"
EXHAUST FAN									X	X														X													
EF WITH TEMP SENSOR																																			X		FAN SEQUENCE "B"
EXHAUST FAN									X	X														X													
ROOM TEMPERATURE SENSOR	X																			X								X								
EF WITH TEMP SENSOR & OA DAMPER																																			X		FAN SEQUENCE "D"
EXHAUST FAN									X	X														X													
ROOM TEMPERATURE SENSOR	X																			X								X	X							
OA DAMPER															X									X												
SEASONAL ATC ISOLATION VALVES															X									X												
DEDICATED OUTDOOR AIR UNIT											X		X											X										X			DOAS-1 THRU DOAS-5
UNIT ENABLE/DISABLE																								X													
MODE (OCC/UNOCC)																																X					
SUPPLY FAN									X	X																											MONITORING ONLY
EXHAUST FAN									X	X																											MONITORING ONLY
GENERAL UNIT ALARM																			X												X					MONITORING AND ALARM ONLY
DISCHARGE TEMPERATURE SENSOR	X																																				MONITORING ONLY
DISCHARGE HUMIDITY SENSOR					X																																MONITORING ONLY
ROOM HUMIDITY SENSOR					X															X								X								
INTERFACE W/ PACKAGED CONTROLS																																			X		VIA BACNET PROTOCOL
SEASONAL ISOLATION VALVES															X									X												
HEATING WATER CIRC PUMP									X	X														X			X										

NOTES:

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
3122 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-955-6100
fax 410-298-0820
jposeyassoc.com

Murphy & Dittenhafer Architects
229 West Market Street, York, Pennsylvania 17401
717-846-8627 voice 717-854-3449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
1	11/15/2016	BIDS SET

STATE OF MARYLAND — DAVID KEITH GRIGGS — 33986 — PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

ATC SEQUENCES

SHEET

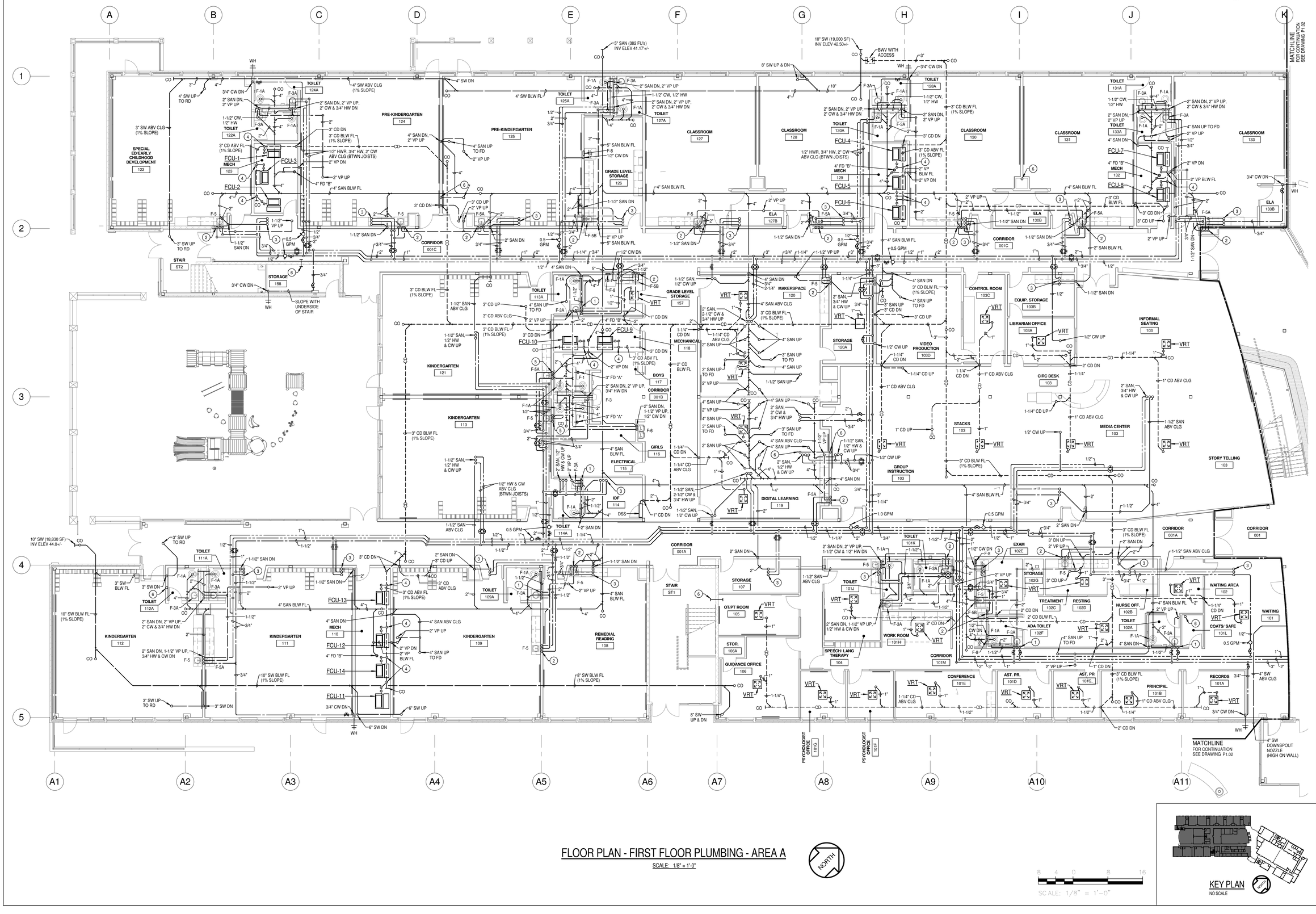
M7.04

GENERAL NOTES:

A. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

SPECIFIC NOTES:

1. 2" SAN DN, 2" VP UP, 1-1/2" CW & 1/2" HW DN
2. 2" SAN DN, 1-1/2" VP UP, 1/2" HW & CW DN
3. 1-1/2" SAN, 1/2" HW & CW UP
4. 1" CD DN; DISCHARGE OVER 3" OPEN SITE DRAIN; SEE DIAGRAM (1/M502)
5. 2" SAN DN, 2" VP UP, 1/2" HW & CW DN
6. 4" RADON VENT; SEE DETAIL (3/P501)



FLOOR PLAN - FIRST FLOOR PLUMBING - AREA A

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN

NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Baltimore, MD 21244
tel 410-265-6500
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
239 West Market Street, York, Pennsylvania 17401
717-843-8627 voice 717-843-2469 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
MICHAEL PATRICK SHERIDAN
73986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 23986, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	TOG
CHECKED BY:	MPS

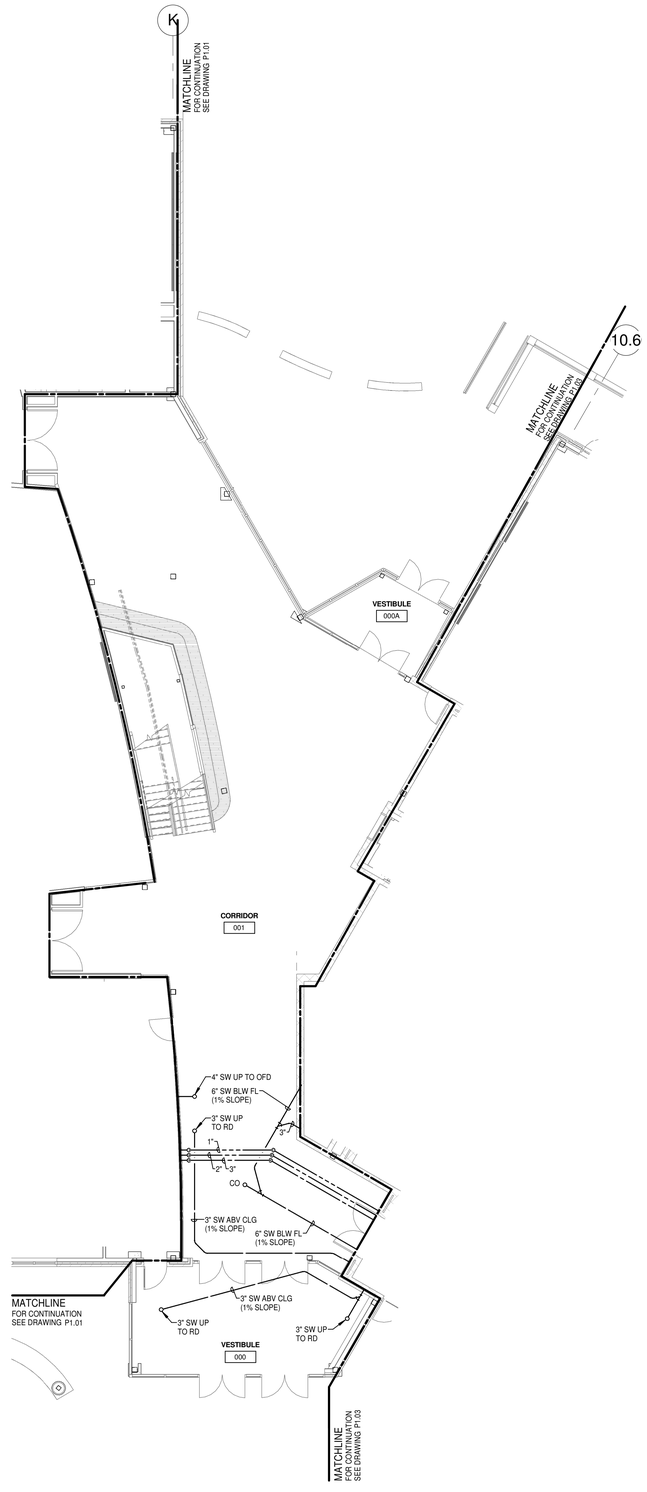
PART PLAN - FIRST FLOOR - AREA A

SHEET

P1.01

GENERAL NOTES:

A. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.



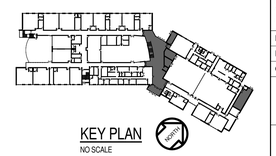
FLOOR PLAN - FIRST FLOOR PLUMBING - AREA B

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"



KEY PLAN

NO SCALE

NORTH

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Cockeysville Corporate Drive
Baltimore, MD 21224
tel 410-296-6300
fax 410-296-5820
Jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
226 West Market Street York, Pennsylvania 17401
717-848-9827 voice 717-843-3489 fax
800 North Charles Street Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
SCOTT PATRICK GUNN
33996
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33996, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	TOG
CHECKED BY:	MPS

PART PLAN - FIRST FLOOR - AREA B

SHEET

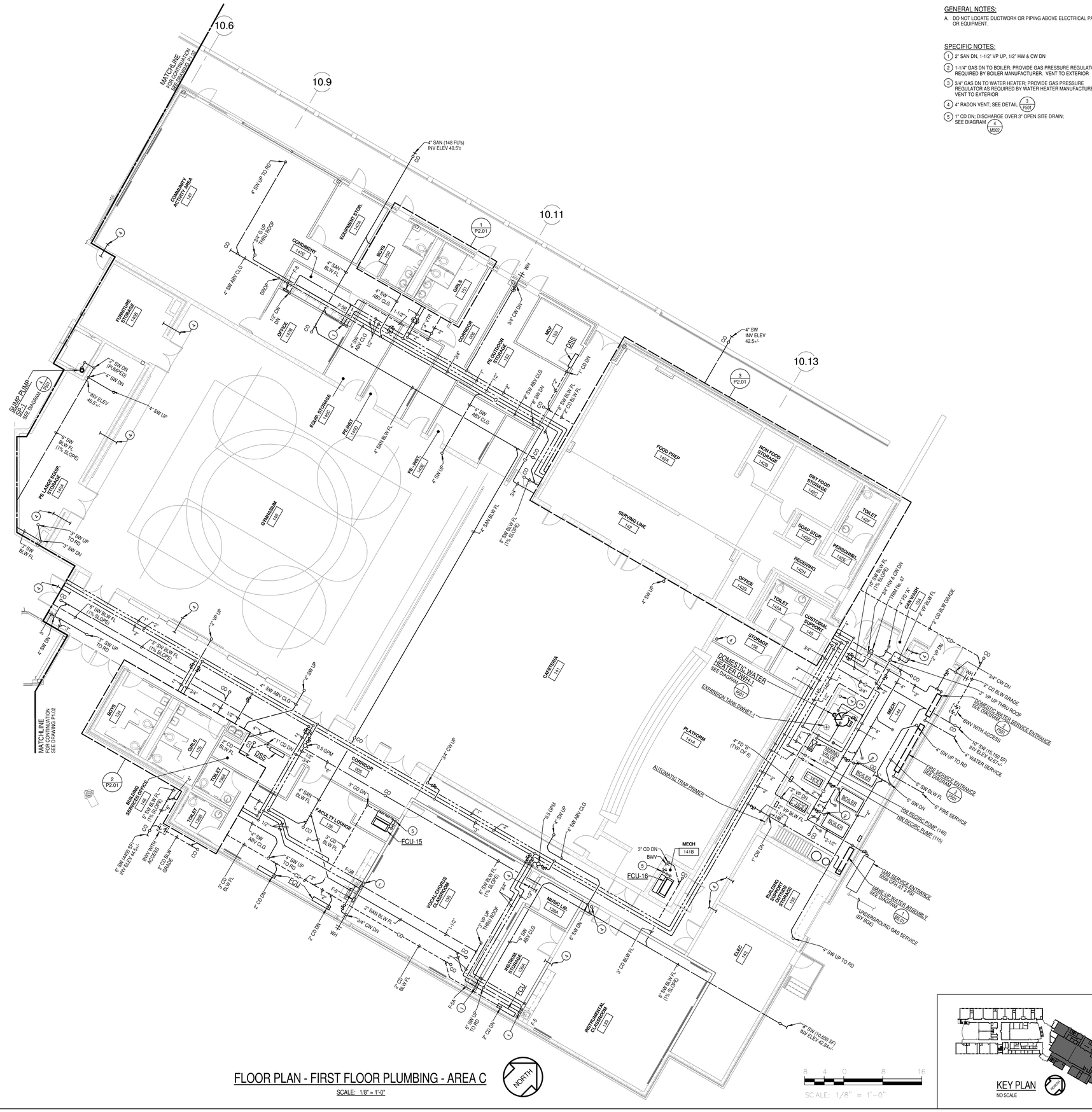
P1.02

GENERAL NOTES:

A. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

SPECIFIC NOTES:

1. 2" SAN DN, 1-1/2" VP UP, 1/2" HW & CW DN
2. 1-1/4" GAS DN TO BOILER; PROVIDE GAS PRESSURE REGULATOR AS REQUIRED BY BOILER MANUFACTURER. VENT TO EXTERIOR
3. 3/4" GAS DN TO WATER HEATER; PROVIDE GAS PRESSURE REGULATOR AS REQUIRED BY WATER HEATER MANUFACTURER. VENT TO EXTERIOR
4. 4" RADON VENT; SEE DETAIL 1/PS01
5. 1" CD DN; DISCHARGE OVER 3" OPEN SITE DRAIN; SEE DIAGRAM 4/MS02



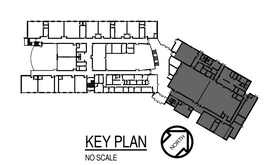
FLOOR PLAN - FIRST FLOOR PLUMBING - AREA C

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"



KEY PLAN

NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS
VICTORY VILLA ELEMENTARY SCHOOL
MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
1 Loveton Circle - Suite 1
Sparks, MD 21152
tel 410-316-9100
fax 410-316-9101
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
200 West Market Street, York, Pennsylvania 17401
717-848-8677 voice
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice
410-625-4674 fax

Mark	Date	Description
1	11/13/2015	BID SET

STATE OF MARYLAND
MATTHEW PATRICK SHEA
33986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	TOG
CHECKED BY:	MPS

PART PLAN - FIRST FLOOR - AREA C

SHEET

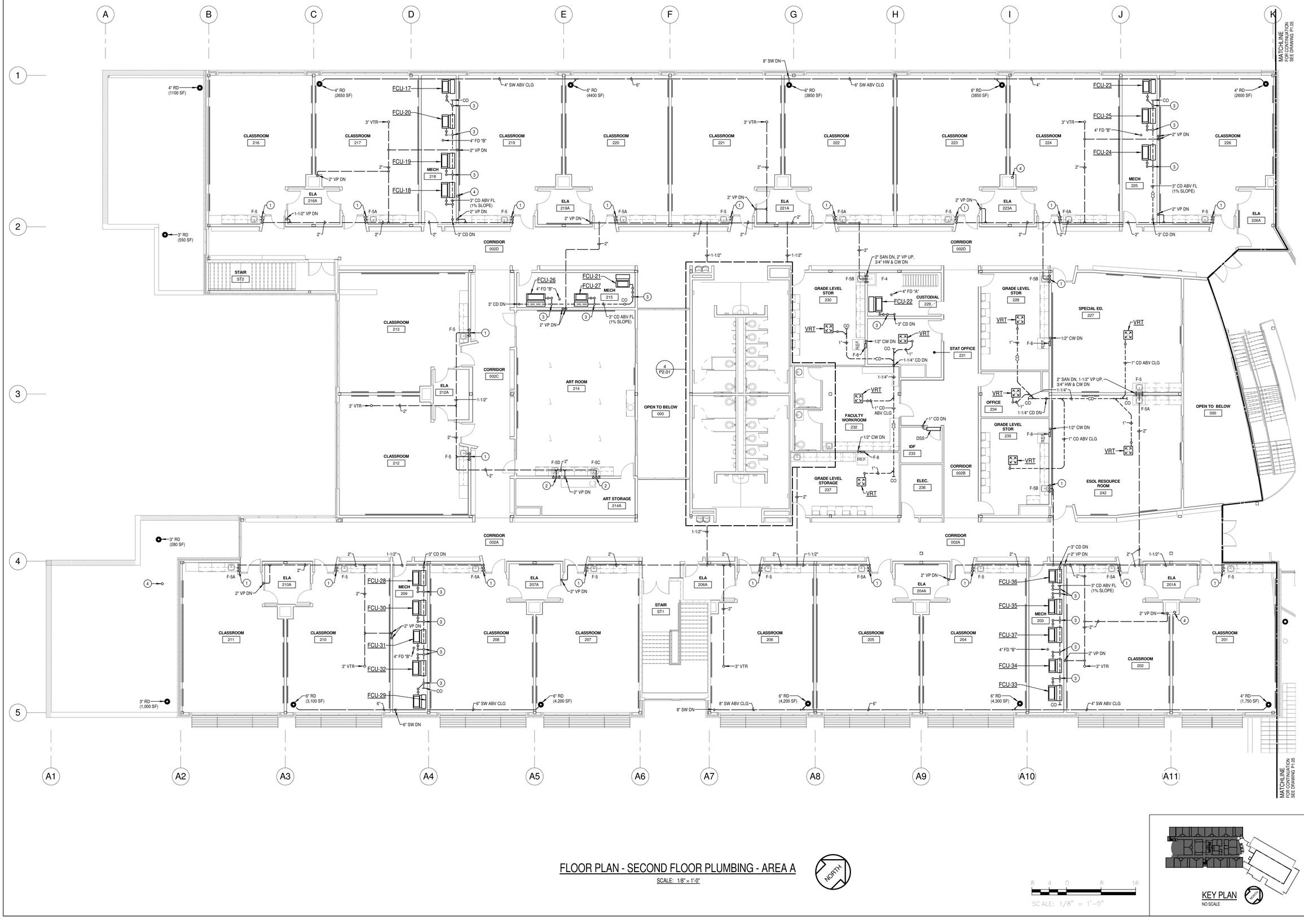
P1.03

GENERAL NOTES:

A. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

SPECIFIC NOTES:

1. 1-1/2" SAN DN, 1-1/2" VP UP, 1/2" HW & CW DN
2. 2" SAN DN, 1-1/2" VP UP, 1/2" HW & CW DN
3. 1" CD DN; DISCHARGE OVER 3" OPEN SITE DRAIN; SEE DIAGRAM 1/M502
4. 4" RADON VENT; SEE DETAIL 3/P501



FLOOR PLAN - SECOND FLOOR PLUMBING - AREA A

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN
NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
Baltimore, MD 21244
tel 410-265-0100
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
229 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-3449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/16/2016	BID SET

STATE OF MARYLAND — MICHAEL PATRICK SCHEIBLE — 33986 — PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 33986, Expiration date: 01-15-2017.

PROJECT NO:	6535-15
DRAWN BY:	TOG
CHECKED BY:	MPS

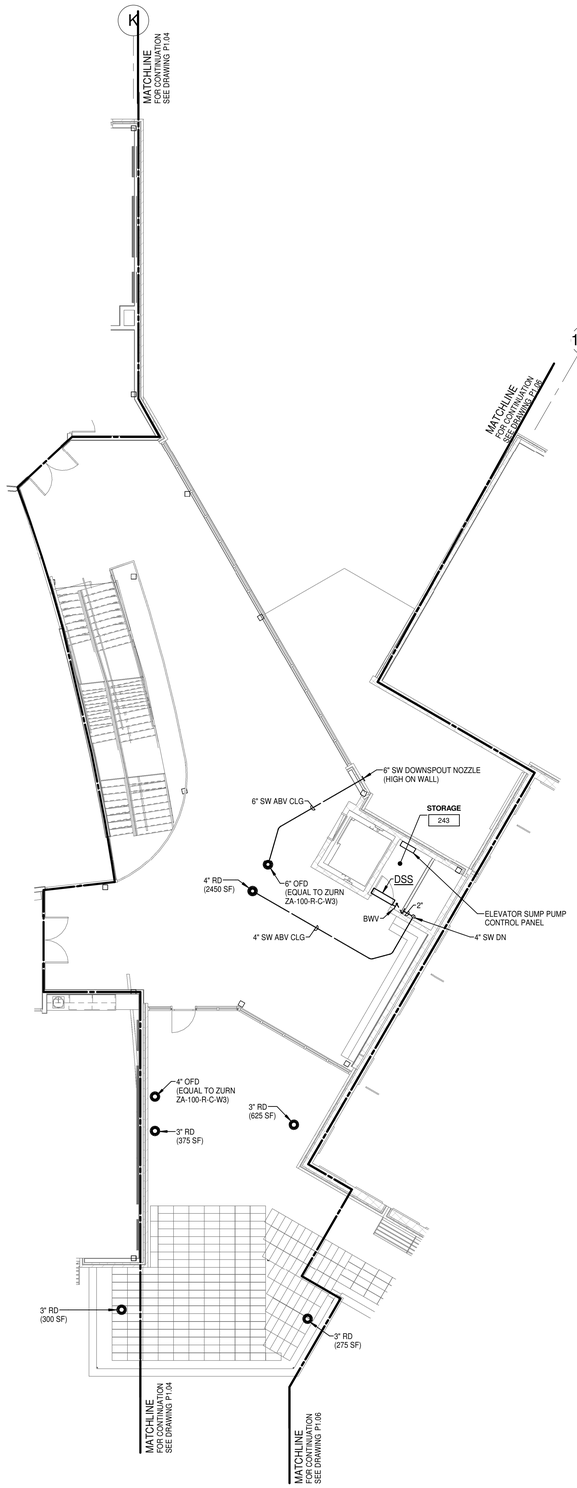
PART PLAN - SECOND FLOOR - AREA A

SHEET

P1.04

GENERAL NOTES:

A. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.



FLOOR PLAN - SECOND FLOOR PLUMBING - AREA B

SCALE: 1/8" = 1'-0"

NORTH

0 4 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN
NO SCALE

NORTH

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Cockeysville Corporate Drive
Baltimore, MD 21224
tel 410-795-9100
fax 410-296-5820
Jamesposey.com

Murphy & Dittenhafer Architects
238 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-2449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
-	11/13/2016	BID SET

STATE OF MARYLAND
PATRICK GRIFFIN
33986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that the plans, specifications or reports or other documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 33986, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
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PART PLAN - SECOND FLOOR - AREA B

SHEET

P1.05

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
3112 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-9820
jamesposey.com

Murphy & Dittenhafer Architects
200 North Charles Street, Baltimore, Maryland 21201
410-625-4824 fax
410-625-4820 voice
256 West Market Street, York, Pennsylvania 17401
717-843-8627 voice 717-843-2449 fax

Mark	Date	Description
1	11/10/2016	BID SET

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 39886, EXPIRATION DATE 07-10-2017

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PROJECT NO:	6535-15
DRAWN BY:	TOG
CHECKED BY:	MPS

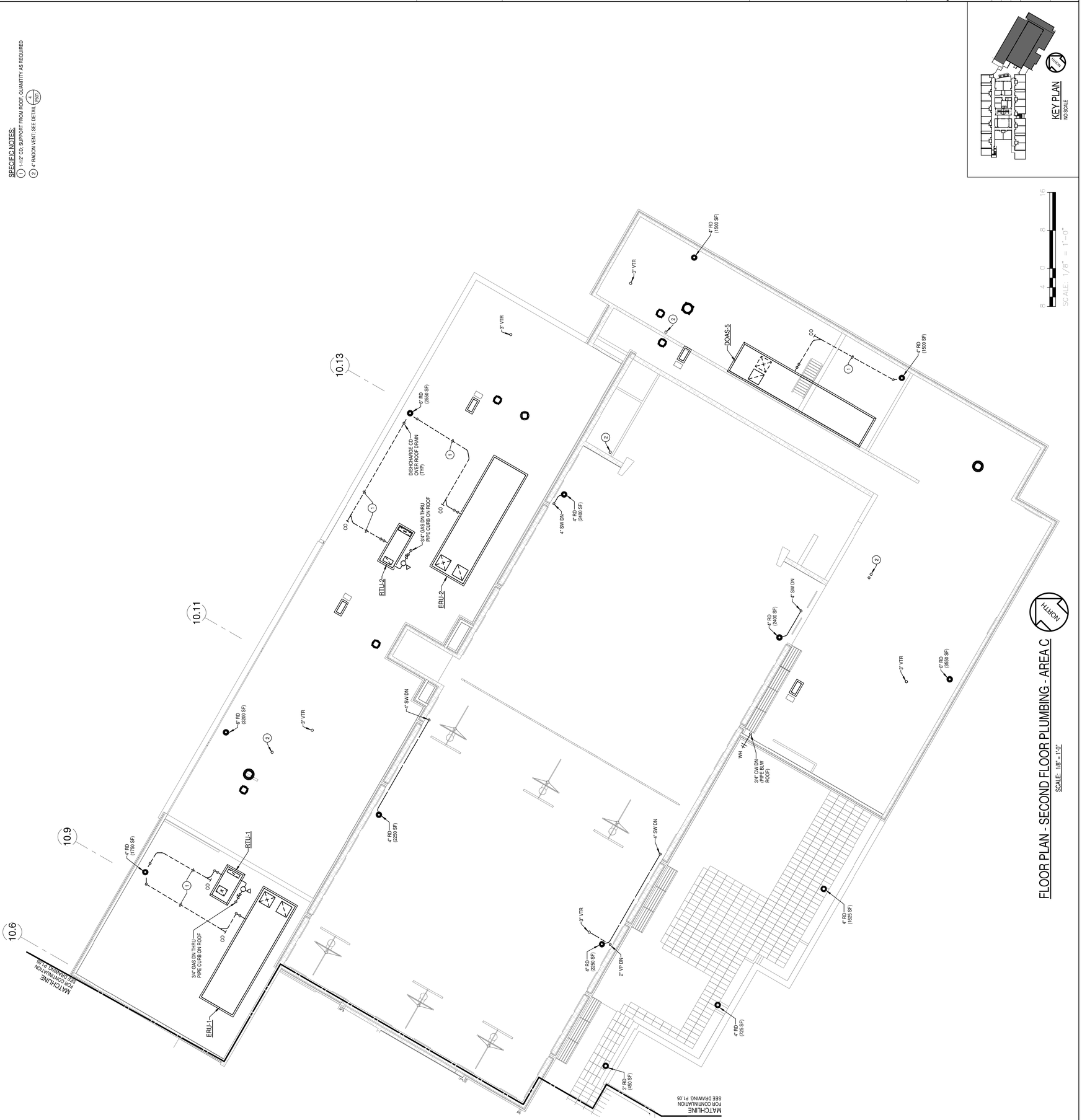
PART PLAN - SECOND FLOOR - AREA C

SHEET P1.06

SPECIFIC NOTES:

1. 1-1/2" CD; SUPPORT FROM ROOF. QUANTITY AS REQUIRED
2. 4" RADON VENT. SEE DETAIL 4/P07

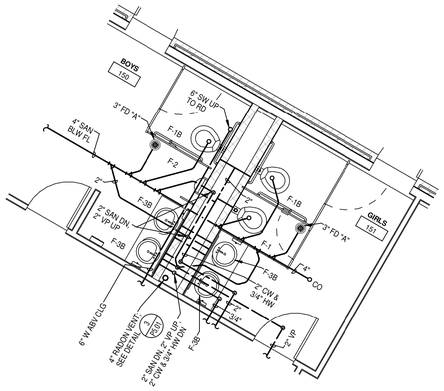
KEY PLAN
NO SCALE



SCALE: 1/8" = 1'-0"

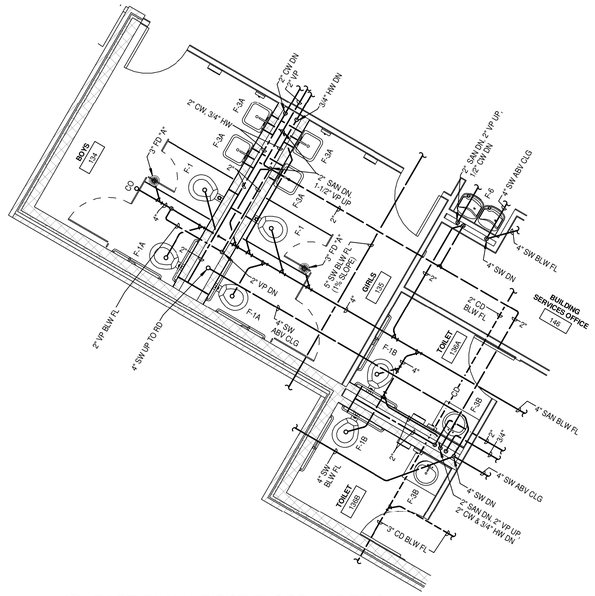
FLOOR PLAN - SECOND FLOOR PLUMBING - AREA C

SCALE: 1/8" = 1'-0"



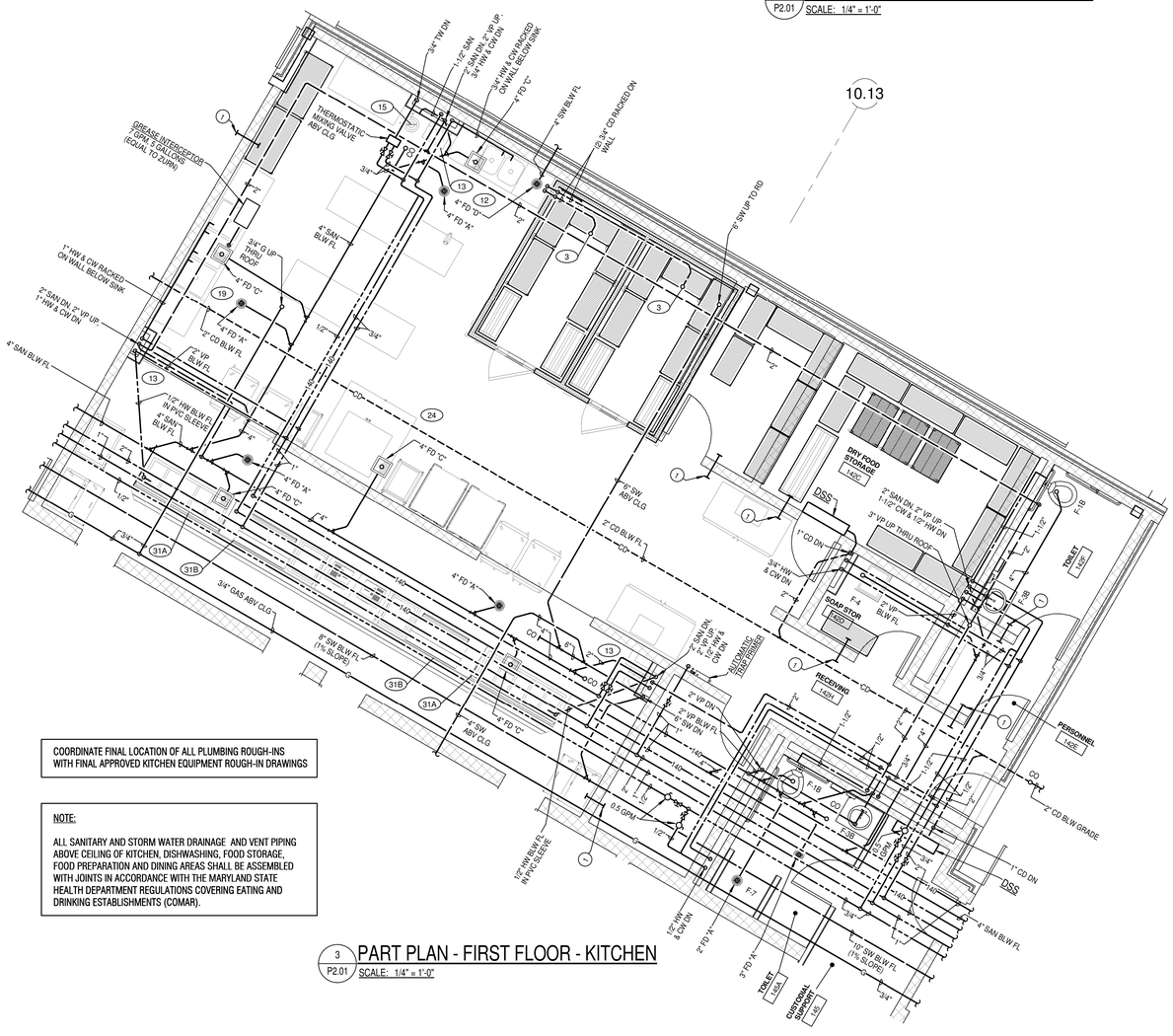
1 P2.01 PART PLAN - FIRST FLOOR - AREA C

SCALE: 1/4" = 1'-0"



2 P2.01 PART PLAN - FIRST FLOOR - AREA C

SCALE: 1/4" = 1'-0"



3 P2.01 PART PLAN - FIRST FLOOR - KITCHEN

SCALE: 1/4" = 1'-0"

COORDINATE FINAL LOCATION OF ALL PLUMBING ROUGH-INS WITH FINAL APPROVED KITCHEN EQUIPMENT ROUGH-IN DRAWINGS

NOTE:

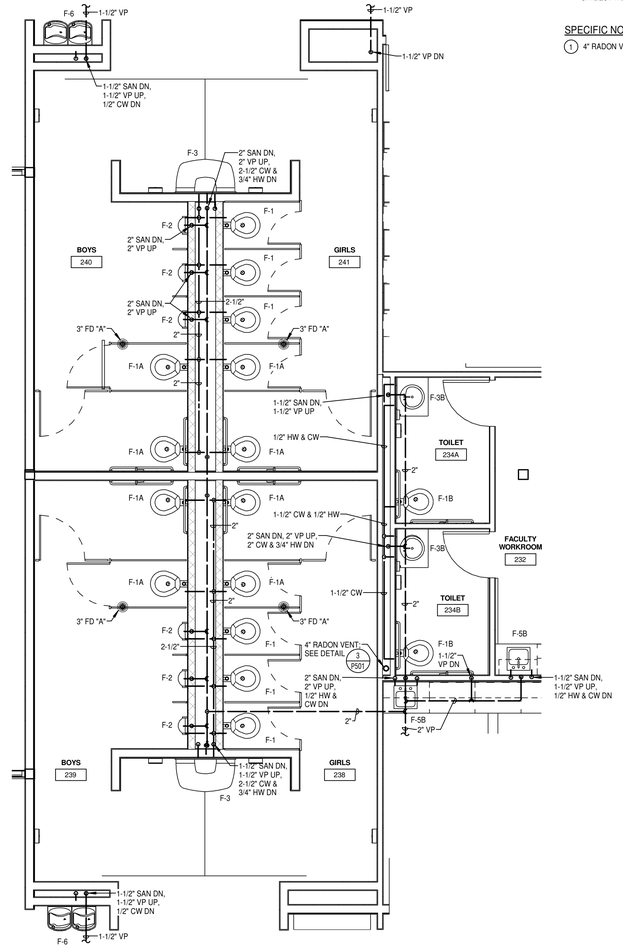
ALL SANITARY AND STORM WATER DRAINAGE AND VENT PIPING ABOVE CEILING OF KITCHEN, DISHWASHING, FOOD STORAGE, FOOD PREPARATION AND DINING AREAS SHALL BE ASSEMBLED WITH JOINTS IN ACCORDANCE WITH THE MARYLAND STATE HEALTH DEPARTMENT REGULATIONS COVERING EATING AND DRINKING ESTABLISHMENTS (COMAR).

KITCHEN EQUIPMENT ROUGH-IN SCHEDULE

DESG	TYPE OF FIXTURE	CW	HW	GAS	WASTE	NOTES
4	BLOWER COIL	-	-	-	3/4"	2
12	PREP SINK	1/2"	1/2"	-	(2) 1-1/2"	1,2
13	HAND SINK	1/2"	1/2"	-	1-1/2"	1,3
15	EYEWASH STATION	1/2"	1/2"	-	1-1/2"	1,4
19	POT SINK	3/4"	3/4"	-	(3) 2"	1,2
24	EXHAUST CANOPY	-	-	-	3/4"	2
31A	HOT FOOD COUNTER	-	1/2"	-	3/4"	2
31B	FROST TOP COUNTER	-	-	-	3/4"	2

NOTES:

1. PROVIDE SHUT-OFF STOPS IN SUPPLIES TO EQUIPMENT.
2. EXTEND EACH WASTE PIPE TO DISCHARGE INDIVIDUALLY OVER FLOOR DRAIN OR FLOOR SINK WITH AIR GAP.
3. PROVIDE ASSE 1070 MIXING VALVE
4. PROVIDE WITH MANUFACTURER'S RECOMMENDED THERMOSTATIC MIXING VALVE



4 P2.01 PART PLAN - SECOND FLOOR - AREA A

SCALE: 1/4" = 1'-0"

GENERAL NOTES:

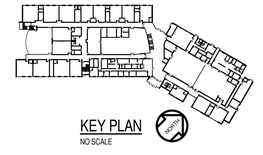
A. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

SPECIFIC NOTES:

1 4" RADON VENT; SEE DETAIL 3 P501

4 2 0 4 8

SCALE: 1/4" = 1'-0"



KEY PLAN

NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Baltimore, MD 21244
tel 410-265-0300
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
900 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax
226 West Market Street, York, Pennsylvania 17401
717-848-5827 voice 717-843-3449 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
SEAN PATRICK P. MCGUIRE
33996
PROFESSIONAL ENGINEER

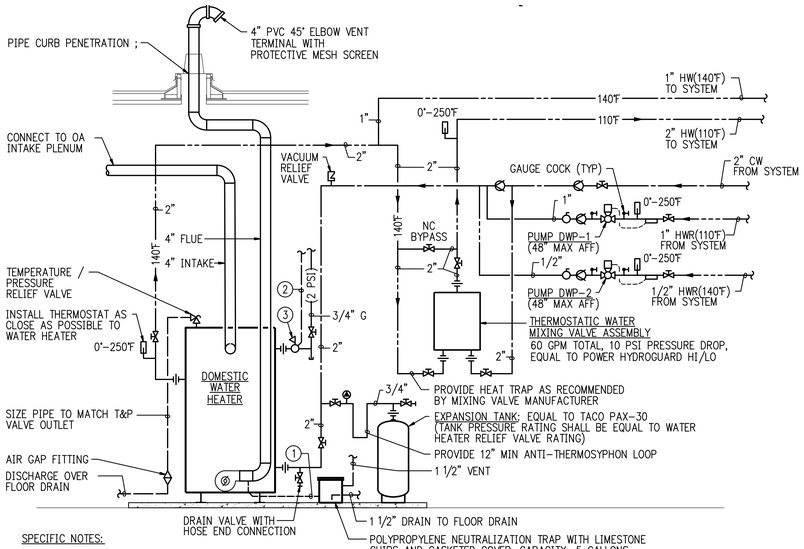
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33996, Expiration date 07-19-2017.

PROJECT NO:	6535-15
DRAWN BY:	TOG
CHECKED BY:	MPS

PART PLANS

SHEET

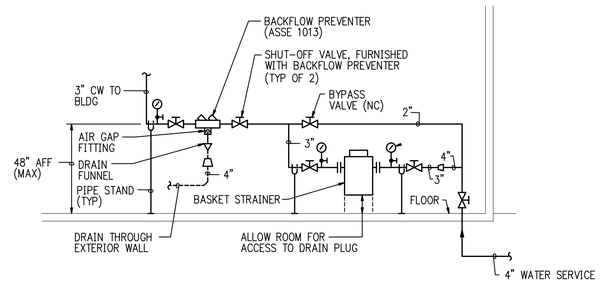
P2.01



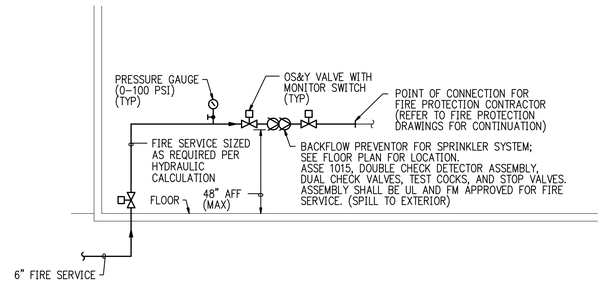
SPECIFIC NOTES:

1. 1 1/2" PVC CD; SLOPE CONDENSATE DRAIN PIPING MINIMUM 1/4" PER FOOT IN DIRECTION OF NEUTRALIZATION TRAP.
2. GAS VENT TO EXTERIOR; SEE FLOOR PLANS FOR CONFIGURATION.
3. GAS PRESSURE REGULATING VALVE; 2 PSIG INLET PRESSURE, 12" WC MAX / 6" WC MIN OUTLET; SIZE PER WATER HEATER GAS INPUT.

DIAGRAM 1/P5.01
DOMESTIC HOT WATER SYSTEM
NOT TO SCALE

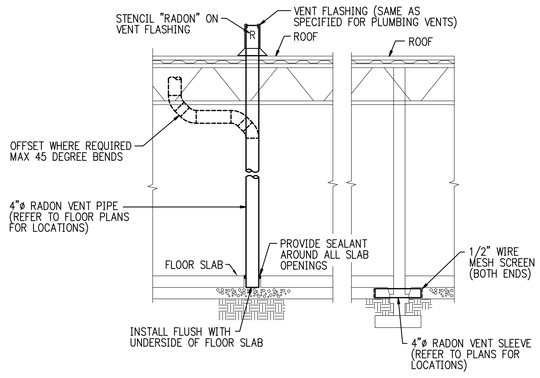


DOMESTIC WATER SERVICE

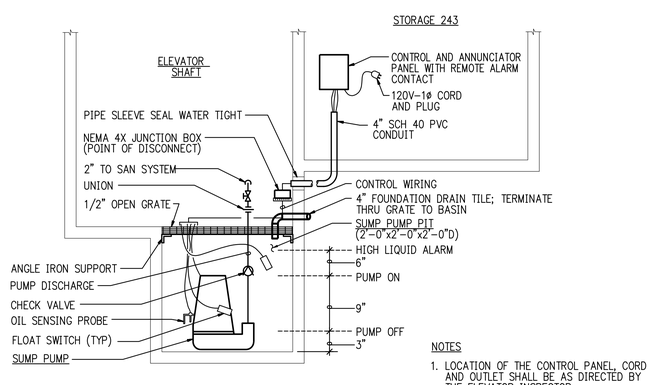


FIRE SERVICE

DIAGRAM 2/P5.07
WATER ENTRANCES
NOT TO SCALE



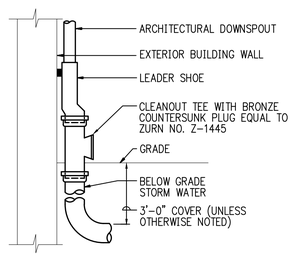
DETAIL 3/P5.01
RADON VENT INSTALLATION
NOT TO SCALE



NOTES

1. LOCATION OF THE CONTROL PANEL, CORD AND OUTLET SHALL BE AS DIRECTED BY THE ELEVATOR INSPECTOR.
2. CONNECT SUMP PUMP CONTROL PANEL TO BUILDING AUTOMATION SYSTEM.

DIAGRAM 4/P5.01
ELEVATOR SHAFT SUMP PUMP SP-1
NOT TO SCALE



DETAIL 5/P5.01
EXTERIOR DOWNSPOUT TO UNDERGROUND STORM WATER CONNECTION
NOT TO SCALE

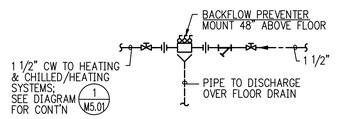
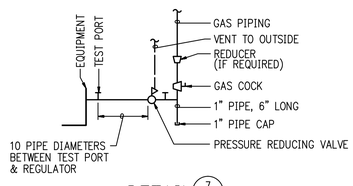
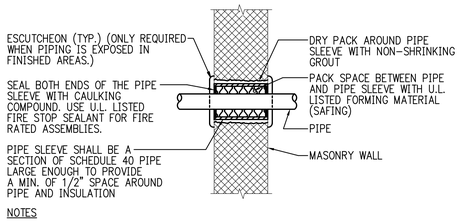


DIAGRAM 6/P5.01
BACKFLOW PREVENTER ASSEMBLY
NOT TO SCALE



DETAIL 7/P5.01
GAS DIRT LEG
NOT TO SCALE

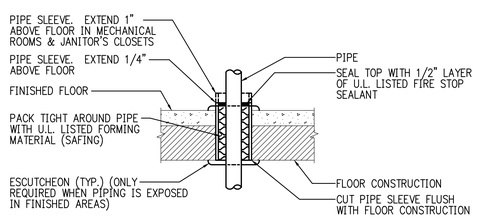


NOTES

THIS DETAIL APPLIES TO BOTH INSULATED AND NON-INSULATED PIPE.

THIS DETAIL IS THE MINIMUM REQUIREMENT. INSTALLATION MUST BE IN ACCORDANCE WITH INSTRUCTIONS BY MANUFACTURER OF FIRE STOP SEALANT.

DETAIL 8/P5.01
PIPE THROUGH INTERIOR MASONRY WALL
NOT TO SCALE



NOTES

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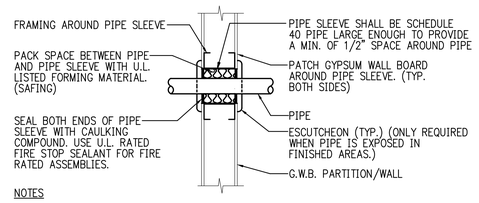
DETAIL 9/P5.01
PIPE THRU FLOOR
NOT TO SCALE



NOTES

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THIS DETAIL IS THE MINIMUM REQUIREMENT. INSTALLATION MUST BE IN ACCORDANCE WITH INSTRUCTIONS BY MANUFACTURER OF FIRE STOP SEALANT.

DETAIL 10/P5.01
PIPE THRU INTERIOR STUD G.W.B. PARTITION OR WALL
NOT TO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS
VICTORY VILLA ELEMENTARY SCHOOL
MIDDLE RIVER, MD

James Posey Associates
Engineering your vision
Mechanical & Electrical Consulting Engineers
3122 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-265-6500
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
239 West Market Street, York, Pennsylvania 17401
717-848-6627 voice 717-843-2449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4623 voice 410-625-4674 fax

Mark	Date	Description
1	11/10/2016	BIDDING

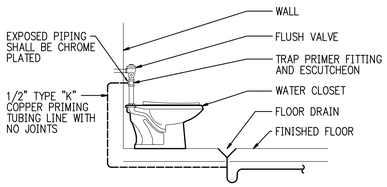
STATE OF MARYLAND
PATRICK SHEEHAN
33986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

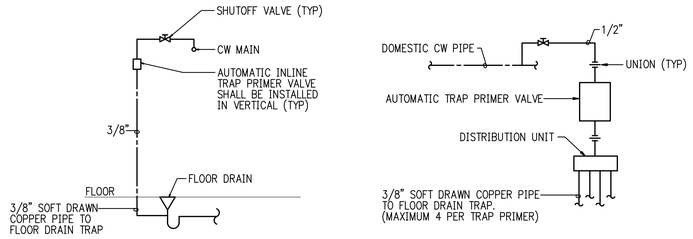
PLUMBING DETAILS & DIAGRAMS

SHEET
P5.01



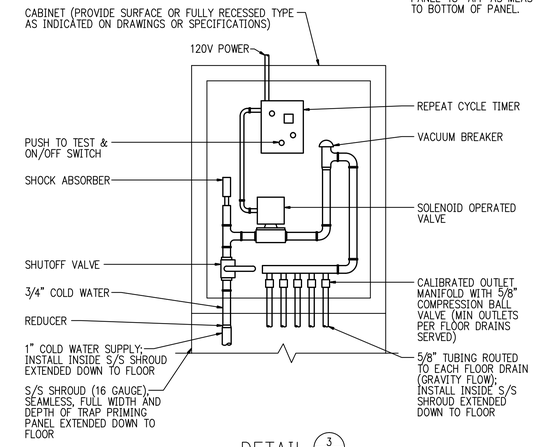
NOTE:
ONE PRIMER FOR EACH FLOOR DRAIN

DETAIL 1/P5.02
FLOOR DRAIN TRAP PRIMER
FROM WATERCLOSET FLUSH VALVE
NOT TO SCALE

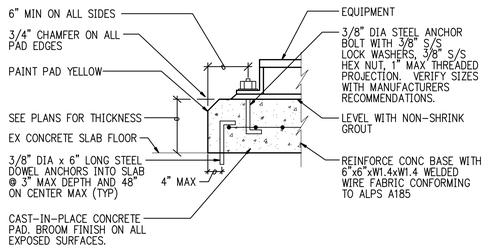


NOTE:
1. TYPICAL FOR FLOOR DRAINS NOTED ON PLANS.

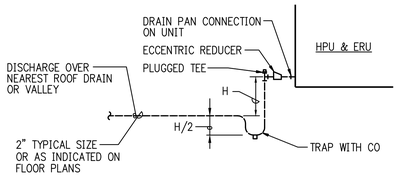
DIAGRAM 2/P5.02
TRAP PRIMER VALVE ASSEMBLY
NOT TO SCALE



DETAIL 3/P5.02
AUTOMATIC TRAP PRIMING SYSTEM
NOT TO SCALE

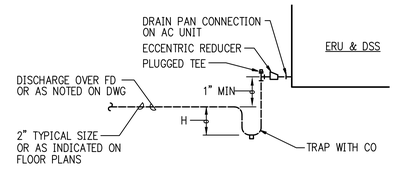


DETAIL 4/P5.02
TYPICAL CONCRETE HOUSEKEEPING PAD
NOT TO SCALE



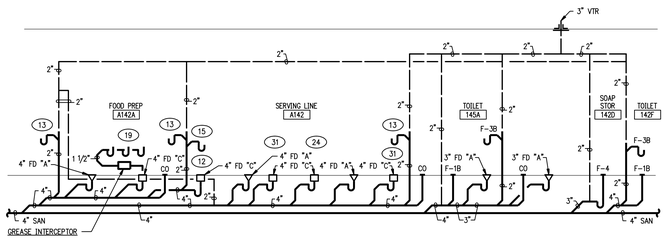
NOTES:
H=TOTAL SP OF UNIT FAN + 1/2" (SEE HPU & ERU UNIT SCHEDULE ON MECHANICAL DWGS)

DETAIL 5/P5.02
TYPICAL CONDENSATE PIPE CONNECTION
TO DRAW THRU AC UNITS
NOT TO SCALE

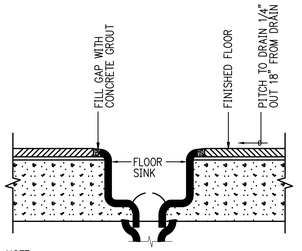


NOTES:
H=TOTAL SP OF UNIT FAN + 2" (SEE UNIT ERU & DSS SCHEDULE ON MECHANICAL DWGS)

DETAIL 6/P5.02
TYPICAL CONDENSATE PIPE CONNECTION
TO BLOW THRU AC UNITS
NOT TO SCALE



DETAIL 7/P5.02
SANITARY RISER DIAGRAM "KITCHEN"
NOT TO SCALE



NOTE:
TOP OF RIM SHALL BE FLUSH WITH FINISHED FLOOR UNLESS DIRECTED OTHERWISE BY AUTHORITY HAVING JURISDICTION.

DETAIL 8/P5.02
FLOOR SINK MOUNTING
NOT TO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS
VICTORY VILLA ELEMENTARY SCHOOL
MIDDLE RIVER, MD

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Mark	Date	Description
1	11/10/2015	BIDDING

STATE OF MARYLAND
JAMES PATRICK KELLY
REGISTERED
PROFESSIONAL ENGINEER
33986

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 33986, Expiration date: 09-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

PLUMBING DETAILS & DIAGRAMS

SHEET
P5.02

PLUMBING SYMBOLS AND ABBREVIATIONS

SOIL, WASTE, OR SANITARY PIPE; SAN
GI — GREASE INTERCEPTOR SANITARY PIPE; GI SAN
STORM WATER PIPE; SW
FOUNDATION DRAIN TILE
CD — CONDENSATE DRAIN PIPE; CD
W — WELL WATER; W
VENT PIPE; VP
DOMESTIC COLD WATER PIPE; CW
DOMESTIC HOT WATER PIPE; HW
DOMESTIC HOT WATER RETURN PIPE; HWR
T — DOMESTIC TEMPERED WATER PIPE; TW
CO — CLEANOUT; CO
BACK WATER VALVE; BWV
FLOOR DRAIN, FD
ROOF DRAIN; RD
WALL HYDRANT; WH
HOSE BIBB; HB
FIRE DEPARTMENT CONNECTION (SIAMESE); FDC
E — PIPE CAP OR PLUG
UNION
FLANGED PIPE CONNECTION
PIPE ANCHOR
PIPE GUIDE
FLEXIBLE CONNECTION (PIPING)
CONCENTRIC REDUCER
ECCENTRIC REDUCER
FLOW DIRECTION ARROW
STRAINER
SHUT-OFF VALVE
VALVE IN VERTICAL PIPE
INDICATING TYPE SHUT-OFF VALVE WITH MONITORING SWITCH
BALANCING VALVE; BV
CHECK VALVE; CV (ARROWHEAD INDICATES DIRECTION OF FLOW)
BACKFLOW PREVENTER
WATER HAMMER ARRESTER
3/9 — DETAIL OR DIAGRAM NO. 3 SHOWN ON DRAWING NO. 9
3/7/9 — SECTION NO. 3 FROM DRAWING NO. 7 SHOWN ON DRAWING NO. 9 (ARROW DENOTES SECTION)

ø	INDICATES DIAMETER
☐	INDICATES SQUARE FOOT
AAV	AUTOMATIC AIR VENT
AC	AIR CONDITIONING
A/D	ACCESS DOOR
ABV	ABOVE
ADA	AMERICANS WITH DISABILITIES
AHU	AIR HANDLING UNIT
AFF	ABOVE FINISHED FLOOR
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASSE	AMERICAN SOCIETY OF SANITARY EGINEERS
BLDG	BUILDING
BTM	BOTTOM
BLW	BELOW
CD	CONDENSATE DRAIN
CI	CAST IRON
CLG	CEILING
CO	CLEANOUT
CONC	CONCRETE
CONN	CONNECT, CONNECTION
CONT'N	CONTINUATION
D	DEPTH
DESIG	DESIGNATION
DIA	DIAMETER
DN	DOWN
DSS	DUCTLESS SPLIT SYSTEM
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
ELEV	ELEVATION, ELEVATOR
ERU	ENERGY RECOVERY UNIT
ET	EXPANSION TANK
F	FIXTURE
FU	FIXTURE UNITS
FD	FLOOR DRAIN
FDA	FOOD AND DRUG ADMINISTRATION
FDC	FIRE DEPARTMENT CONNECTION
FHV	FIRE HOSE VALVE
FL	FLOOR
FT	FEET
FT HD	FEET OF HEAD
FU	FIXTURE UNIT
GALV	GALVANIZED
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
H	HEIGHT
HP	HORSEPOWER
HPU	HEAT PUMP UNIT
IN	INCH, INCHES
INV	INVERT
KW	KILOWATT
MFR	MANUFACTURER
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
MTD	MOUNTED
NC	NORMALLY CLOSED
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NO	NORMALLY OPEN
NSF	NATIONAL SANITIATION FOUNDATION
OC	ON CENTER
OFD	OVERFLOW DRAIN
PD	PRESSURE DROP
PH	PHASE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PVC	POLYVINYL CHLORIDE PIPING
RD	ROOF DRAIN
REQ'D	REQUIRED
RPM	REVOLUTIONS PER MINUTE
SCH	SCHEDULE
SPEC	SPECIFICATION
SP	STATIC PRESSURE
STL	STEEL
S/S	STAINLESS STEEL
TYP	TYPICAL
TDH	TOTAL DYNAMIC HEAD
TW	TEMPERED WATER
U.L.	UNDERWRITER'S LABORATORY
V	VOLT
VFD	VARIABLE FREQUENCY DRIVE
VRT	VARIABLE REFRIGERANT TERMINAL
VTR	VENT THRU ROOF
W/	WITH
W/O	WITH OUT
WH	WALL HYDRANT

PUMP SCHEDULE

DESIG	SERVICE	TEMP	GPM	FT HD	SIZE (IN)	HP	VOLTAGE	RPM	MANUFACTURER'S MODEL NO (TACO)	NOTES
DWP-1	DOMESTIC HOT WATER RECIRC	120	12	35	1 1/2"	1/2	208V-3ø	1750	MODEL 1615	1,2
DWP-2	DOMESTIC HOT WATER RECIRC	140	2	15	3/4"	1/40	120V-1ø	3250	MODEL 006	1,2

NOTES:
1. ALL BRONZE CONSTRUCTION WITH CAST BRONZE IMPELLER.
2. NSF 61 ANNEX G COMPLIANT.

DRAIN SCHEDULE

DESIG.	TYPE	MANUFACTURER'S NO.	AREA SERVED	NOTES (X)
FD-A	FLOOR	ZURN ZN-415	TOILET ROOMS	6" "B" STRAINER (1,2)
FD-B	FLOOR	ZURN ZN-415	MECHANICAL ROOM	6" "I" STRAINER (1)
FD-C	SINK	ZURN Z-1901	KITCHEN	12"x12" (1,4)
FD-D	FLOOR	ZURN ZN-415	KITCHEN	6" "I" STRAINER (1,5)

NOTES:
1. PROVIDE 1/2" TRAP PRIMER CONNECTION.
2. PROVIDE VANDALPROOF SECURED TOP STRAINER.
3. PROVIDE 1/2 GRATE.
4. PROVIDE FULL GRATE.
5. PROVIDE WITH BACKWATER VALVE

PLUMBING FIXTURE ROUGH-IN SCHEDULE

DESIG.	TYPE OF FIXTURE	MOUNTING	CHILD ADA	STUDENT ADA	ADULT ADA	FLOW RATES	OPERATION		ROUGH-IN CONNECTIONS					NOTES
							MANUAL	SENSOR	CW	HW	TW	SAN	VP	
F-1	WATER CLOSET	FLOOR				1.1/1.6	•		1 1/4"	–	–	4"		1
F-1A	WATER CLOSET	FLOOR		•		1.1/1.6	•		1 1/4"	–	–	4"		1
F-1B	WATER CLOSET	FLOOR			•	1.1/1.6	•		1 1/4"	–	–	4"		1
F-2	URINAL	WALL				0.125	•		1"	–	–	2"		
F-3	LAVATORY	WALL				0.5	•		1/2"	1/2"	–	1 1/2"		2,4
F-3A	LAVATORY	WALL		•		0.5	•		1/2"	1/2"	–	1 1/2"		2,4
F-3B	LAVATORY	WALL			•	0.5	•		1/2"	1/2"	–	1 1/2"		2,4
F-4	MOP SINK	FLOOR				2.2	•		3/4"	3/4"	–	3"		
F-5	CLASSROOM SINK (RIGHT SIDE BUBBLER)	COUNTER		•		0.5	•		1/2"	1/2"	–	1 1/2"		2,3,4
F-5A	CLASSROOM SINK (LEFT SIDE BUBBLER)	COUNTER		•		0.5	•		1/2"	1/2"	–	1 1/2"		2,3,4
F-5B	SINK	COUNTER				0.5	•		1/2"	1/2"	–	1 1/2"		2
F-5C	ART ROOM SINK	COUNTER				1.5	•		1/2"	1/2"	–	1 1/2"		4,5
F-5D	ART ROOM SINK (ADA)	COUNTER			•	1.5	•		1/2"	1/2"	–	1 1/2"		4,5
F-6	BI-LEVEL WATER FOUNTAIN (ADA)	WALL				0.5	•		1/2"	–	–	1 1/2"		
F-7	SHOWER (ADA)								1/2"	1/2"	–	FD		
F-8	ICE MAKER SUPPLY BOX	WALL				–			1/2"	–	–	–		

NOTES:
1. ROUGH-IN FOR WATER SERVICE TO ADA WATER CLOSETS SHALL BE ON THE ON THE WIDE SIDE OF THE STALL.
2. ALL TRAPS SHALL BE THREADED CAST BRASS WITH CLEANOUT PLUG.
3. LAVATORY AND/OR CLASSROOM SINKS SERVING PRE-K AND KINDERGARTEN SHALL BE SUPPLIED TEMPERED WATER THROUGH A THERMOSTATIC WATER TEMPERATURE CONTROLLER (ASSE 1070); SET AT 95°F.
4. LAVATORY AND/OR CLASSROOM SINK SHALL BE SUPPLIED TEMPERED WATER THROUGH A THERMOSTATIC WATER TEMPERATURE CONTROLLER (ASSE 1070); SET AT 105°F.
5. SINK WASTE DRAINS TO FLOOR MOUNTED SOLIDS INTERCEPTOR.
6. SINK LOCATED IN FACULTY DINING SHALL HAVE A TAILPIECE WITH DISHWASHER FITTING.

MISCELLANEOUS EQUIPMENT SCHEDULE

ITEM	DESCRIPTION/CAPACITY	MANUFACTURERS MODEL NO.	NOTES
DOMESTIC WATER HEATER DWH-1	130 GALLON STORAGE TANK; 450 GALLON PER HOUR RECOVERY AT 100° F TEMPERATURE RISE, 399 MBTU/HER NATURAL GAS BURNER; (2) 1/3 HP MOTOR, 120V-1ø, 120V-1ø CONTROLS.	PVI CONQUEST 40L130A-GCL	
EXPANSION TANK DHWET-1 (DOMESTIC HOT WATER SYSTEM)	DIAPHRAGM TYPE TANK, 8 GALLON TANK VOLUME, 5 GALLON ACCEPTANCE VOLUME. 12 INCHES DIAMETER X 24.75 INCHES HIGH, 150 PSI, ASME, FDA APPROVED, NSF 61 ANNEX G COMPLIANT.	TACO MODEL PAX-30	FACTORY PRECHARGED AT 40 PSI. OPERATING PRESSURE 70 PSI
ELEVATOR SHAFT SUMP PUMP SP-1	PACKAGED ELEVATOR SUMP PUMP SYSTEM WITH 0.5 HP, 120V, 3600 RPM, 50 GPM AT 19 FT HD. PROVIDE SHUT-OFF VALVE AND CHECK VALVE IN PUMP DISCHARGE. PROVIDE SIMPLEX CONTROL PANEL.	OIL MINDER SYSTEM MODEL SE-50 STANCOR INC.	ON STANBY POWER

BUILDING DESIGN CRITERIA

PLUMBING FIXTURE UNITS:	530 FU'S
MAXIMUM DOMESTIC WATER:	127 GPM
DOMESTIC HOT WATER LOAD: (BTUH INPUT AT MAX DELTA T)	450 GPH 399 BTUH
SLOPE OF SANITARY BUILDING MAIN: (UNLESS OTHERWISE NOTED ON PLANS)	2%
SLOPE OF STORM BUILDING MAIN: (UNLESS OTHERWISE NOTED ON PLANS)	2%

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Mark	Date	Description
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STATE OF MARYLAND — JAMES PATRICK FLEMING — 73986 — REGISTERED PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 73986, Expiration date: 07-15-2017.

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DRAWN BY: JFL
CHECKED BY: DKG

PLUMBING SCHEDULES

SHEET
P6.01

GENERAL NOTES:

A. LOCATIONS OF END OF SYSTEM TEST DRAIN SHALL BE SHOWN ON THE SPRINKLER SYSTEM SHOP DRAWINGS. THESE LOCATIONS SHALL BE SUBJECT TO APPROVAL BY THE ARCHITECT.

B. DO NOT LOCATE PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

C. REFER TO DRAWING M0.01 FOR SYMBOLS AND ABBREVIATIONS.

D. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES AND HEIGHTS.

SPECIFIC NOTES:

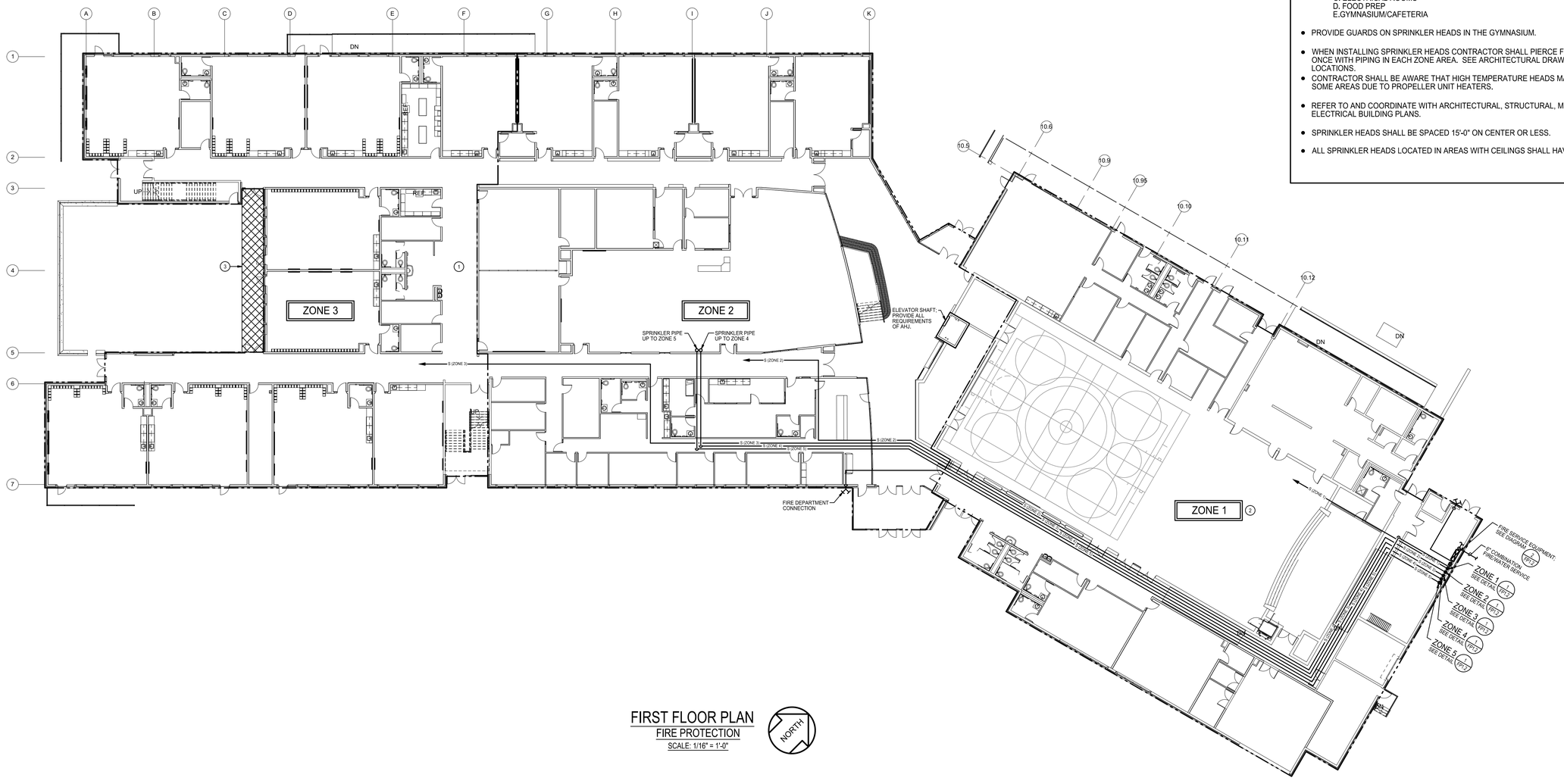
1. SKYLIGHT: SPRINKLER PIPING AND HEADS TO BE LOCATED SO AS NOT TO INTERFERE WITH VIEW THROUGH GLASS. SUPPORT METHOD FOR PIPING SHALL BE AS RECOMMENDED BY SKYLIGHT MANUFACTURER.
2. EXPOSED STRUCTURE IN THIS AREA. PIPING AND HEAD LOCATIONS SHALL BE CLOSELY COORDINATED WITH STRUCTURAL STEEL, LIGHTING AND MECHANICAL WORK. PIPING SHALL SLOPE WITH, AND RUN PARALLEL TO THE STRUCTURAL STEEL.
3. SOFFIT ABOVE (+/- 460 SQ FT). PROVIDE FIRE PROTECTION PER THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION (AHJ).

SPRINKLER SYSTEM DESIGN CRITERIA

- A FIRE FLOW TEST IS TO BE SCHEDULED WITH THE CITY OF BALTIMORE, DEPARTMENT OF PUBLIC WORKS - BUREAU OF WATER & WASTE WATER, ENGINEERING DIVISION (410-396-0239), TEST NO. 305796 ON 06/14/2016 AT FIRE HYDRANTS LOCATED AT INTERSECTION OF COMPASS RD AT RADIAL COURT. THE FOLLOWING WAS RECORDED AT THE FLOW HYDRANT LOCATED AT (18 PSI WITH 2,307 GPM FLOWING AND A CORRECTED FLOW OF 1,914 GPM). THE FOLLOWING WAS RECORDED AT THE RESIDUAL HYDRANT LOCATED AT (70 PSI STATIC/51 PSI RESIDUAL), BASED ON THIS DATA IT WAS CALCULATED THAT THE THEORETICAL FLOW AT A 20 PSI RESIDUAL PRESSURE DROP IN THE MAIN IS 2,320 GPM. IT SHALL BE NOTED THAT THE EXISTING TEST FIRE HYDRANTS ARE LOCATED APPROXIMATELY 150 FEET FROM THE SCHOOL SITE AND THIS DATA IS INCLUDED FOR INFORMATIONAL PURPOSES ONLY. THE PROPOSED HYDRAULICALLY DESIGNED SYSTEM SHALL BE BASED ON A NEW FIRE FLOW TEST TO BE PROVIDED BY THE CONTRACTOR AND PERFORMED BY THE CITY OF BALTIMORE, DEPARTMENT OF PUBLIC WORKS - BUREAU OF WATER & WASTE WATER, ENGINEERING DIVISION. THE NEW TEST SHALL BE PERFORMED ON EXISTING FIRE HYDRANTS LOCATED AT SAME LOCATION. CONTRACTOR SHALL PAY FOR ALL COSTS ASSOCIATED WITH THE FIRE FLOW TEST.

BUILDING FIRE PROTECTION DESIGN REQUIREMENTS

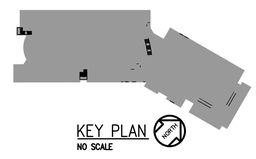
- THE ENTIRE BUILDING SHALL BE PROVIDED WITH A COMPLETE AUTOMATIC FIRE PROTECTION SYSTEM INCLUDING SPRINKLERS AND ACCESSORIES IN ACCORDANCE WITH PROVISIONS SET FORTH IN NFPA 13, AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE ENTIRE BUILDING SHALL BE SPRINKLERED. THE PIPING ARRANGEMENT, HEAD LOCATIONS AND SIZING SHALL BE BY THE CONTRACTOR IN ACCORDANCE WITH NFPA PAMPHLET NO. 13, AND SUIT SPRINKLER ZONES AND PIPING AS SHOWN ON THE CONTRACT DRAWINGS.
- HYDRAULIC CALCULATIONS SHALL BE BASED ON A MINIMUM FLOW FOR THE MOST HYDRAULICALLY DEMANDING AREA IN ACCORDANCE WITH NFPA 13.
- ALL AREAS SHALL BE CLASSIFIED AS LIGHT HAZARD EXCEPT THE FOLLOWING WHICH SHALL BE CLASSIFIED AS ORDINARY HAZARD UNLESS OTHERWISE DESIGNATED BY AUTHORITIES HAVING JURISDICTION, OR AS INDICATED ON PLANS.
  - A. STORAGE ROOMS
  - B. MECHANICAL ROOMS
  - C. ELECTRICAL ROOMS
  - D. FOOD PREP
  - E.GYMNASIUM/CAFETERIA
- PROVIDE GUARDS ON SPRINKLER HEADS IN THE GYMNASIUM.
- WHEN INSTALLING SPRINKLER HEADS CONTRACTOR SHALL PIERCE FIRE WALLS ONLY ONCE WITH PIPING IN EACH ZONE AREA. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS.
- CONTRACTOR SHALL BE AWARE THAT HIGH TEMPERATURE HEADS MAY BE REQUIRED IN SOME AREAS DUE TO PROPELLER UNIT HEATERS.
- REFER TO AND COORDINATE WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL BUILDING PLANS.
- SPRINKLER HEADS SHALL BE SPACED 15'-0" ON CENTER OR LESS.
- ALL SPRINKLER HEADS LOCATED IN AREAS WITH CEILINGS SHALL HAVE WHITE FINISH.



FIRST FLOOR PLAN
FIRE PROTECTION
SCALE: 1/16" = 1'-0"

NORTH

16 8 0 16 32
SCALE: 1/16" = 1'-0"



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VICTORY VILLA ELEMENTARY SCHOOL
MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
3102 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-265-0100
fax 410-298-9830
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
226 West Market Street, York, Pennsylvania 17401
717-848-5627 voice 717-843-3489 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4623 voice 410-625-4674 fax

Mark	Date	Description
1	11/10/2016	BIDS SET

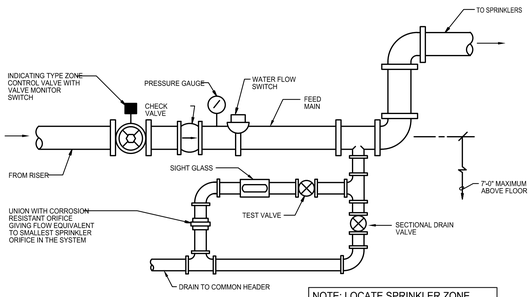
STATE OF MARYLAND
JAMES PATRICK FREEMAN
33986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date: 01-16-2017.

PROJECT NO:	6535-15
DRAWN BY:	JFL
CHECKED BY:	DKG

FIRST FLOOR PLAN
FIRE PROTECTION

SHEET
FP1.01



NOTE: LOCATE SPRINKLER ZONE VALVING ASSEMBLY CLOSE TO WALL. ASSEMBLY SHOWN HORIZONTAL, INSTALL IN VERTICAL.

DETAIL 1/FP1.02
TYPICAL SPRINKLER ZONE VALVE PIPING ARRANGEMENT
NOT TO SCALE

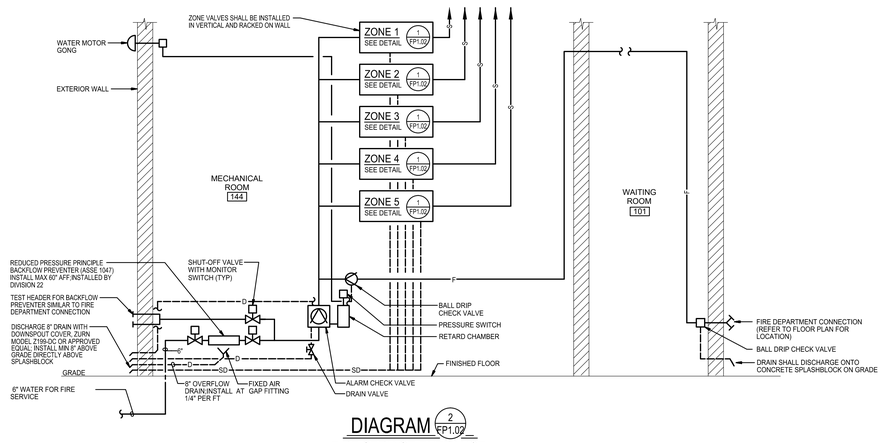
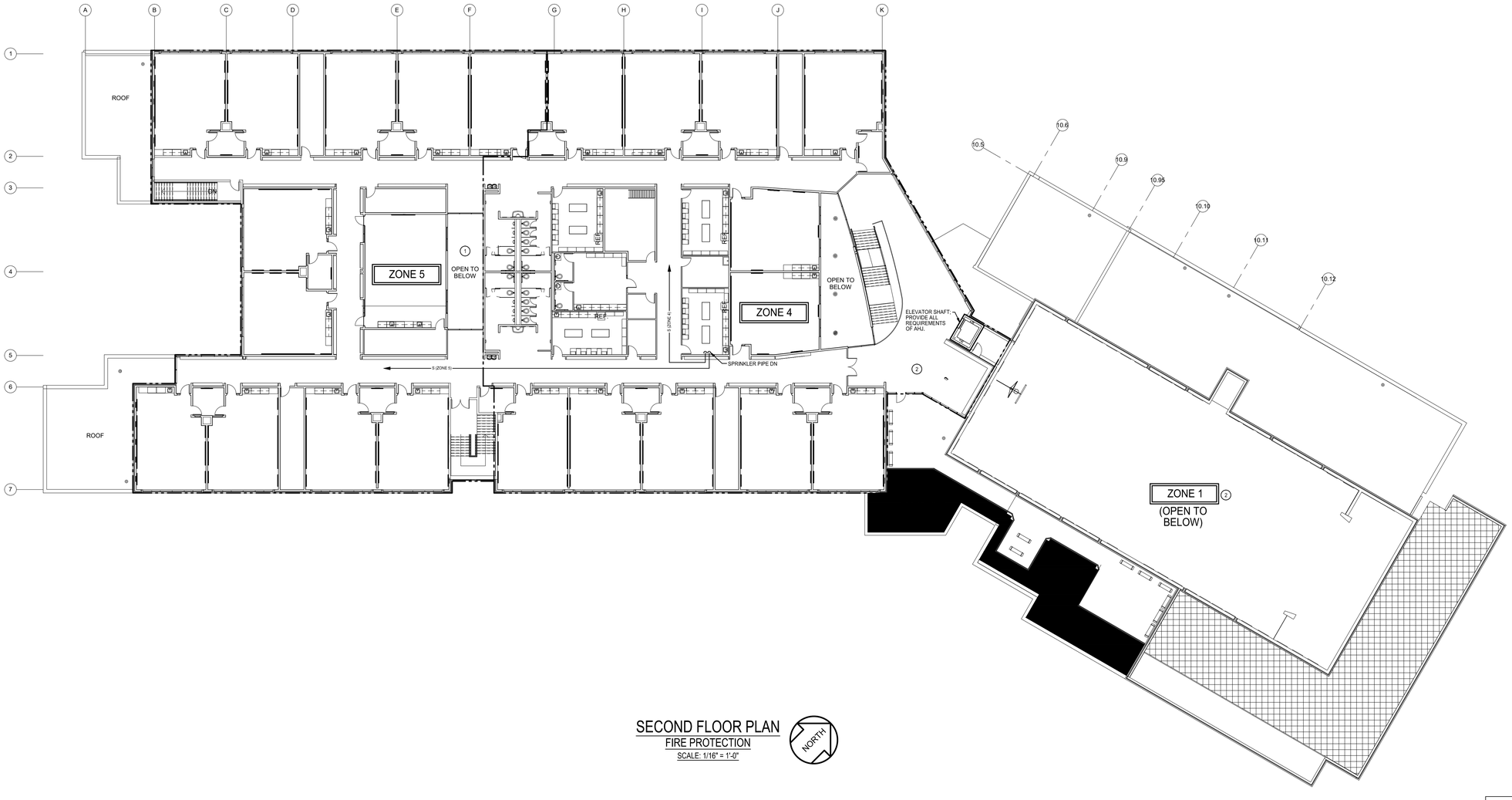
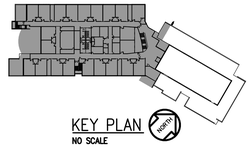


DIAGRAM 2/FP1.02
FIRE SERVICE ENTRANCE
NOT TO SCALE



SECOND FLOOR PLAN
FIRE PROTECTION
SCALE: 1/16" = 1'-0"

16 8 0 16 32
SCALE: 1/16" = 1'-0"



KEY PLAN
NO SCALE

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B. DO NOT LOCATE PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

C. REFER TO DRAWING M0.01 FOR SYMBOLS AND ABBREVIATIONS.

D. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES AND HEIGHTS.

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Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
JAMES FLEMING PATRICK
33986
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date: 01-16-2017.

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CHECKED BY:	DKG

SECOND FLOOR PLAN
FIRE PROTECTION

SHEET
FP1.02

ELECTRICAL SYMBOLS AND ABBREVIATIONS

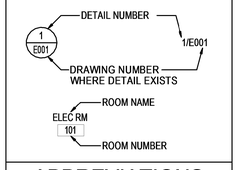
GENERAL

A. REFER TO ARCHITECTURAL ELEVATIONS FOR ADDITIONAL MOUNTING HEIGHT INFORMATION.

B. MOUNTING HEIGHTS ARE TO TOP OF WIRING DEVICES UNLESS OTHERWISE INDICATED.

C. MOUNTING HEIGHTS ARE TO BOTTOM OF LIGHTING FIXTURES UNLESS OTHERWISE INDICATED.

D. REFER TO WIRING PANEL SCHEDULES ON E6.00-SERIES SHEETS FOR PANELBOARD, FEEDER, BRANCH CIRCUIT, AND CIRCUIT BREAKER INFORMATION.



ABBREVIATIONS

A, AMP	AMPERE
AF	ABOVE FLOOR
AHU	AIR HANDLING UNIT
AIC	AMPERES INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BCPS	BALTIMORE COUNTY PUBLIC SCHOOLS
BS	BRANCH SELECTOR
C	CONDUIT
CB	CIRCUIT BREAKER
CT	CURRENT TRANSFORMER
CUH	CABINET UNIT HEATER
DISC	DISCONNECT
DOAS	DEDICATED OUTDOOR AIR SYSTEM
DSS	DUCTLESS SPLIT SYSTEM
DWH	DOMESTIC WATER HEATER
EC	EMPTY CONDUIT
ECH	ELECTRIC CONVECTOR
EF	EXHAUST FAN
ELEV	ELEVATOR
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
FA	FIRE ALARM
FAA	FIRE ALARM ANNUNCIATOR
FABP	FIRE ALARM BOOSTER PANEL
FACP	FIRE ALARM CONTROL PANEL
FCU	FAN COIL UNIT
FLA	FULL LOAD AMPERES
F/S	FIRE/SMOKE (DAMPERS)
FTN	FOUNTAIN
G, GND	GROUND, GFCI
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
H	"HOT" ENERGIZED CONDUCTOR
HP	HORSEPOWER
IBGB	INTERSYSTEM BONDING TERMINATION GROUNDING BUSBAR
IDF	INTERMEDIATE DISTRIBUTION FRAME
IT	INFORMATION TECHNOLOGY
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERES
KW	KILOWATT
K-13	K-RATED TRANSFORMER
LED	LIGHT EMITTING DIODE
LSI	LONG SHORT INSTANTANEOUS
LTG	LIGHTING
MAX	MAXIMUM
MC	METAL CLAD (CABLE)
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MCP	MOTOR CIRCUIT PROTECTOR
MDF	MAIN DISTRIBUTION FRAME
MEC	MECHANICAL
MFS	MAXIMUM FUSE SIZE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MOP	MAXIMUM OVERCURRENT PROTECTION
N	"NEUTRAL" GROUNDING CONDUCTOR
N.C.	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
N.O.	NORMALLY OPEN
P	POLE, POLES OR PUMP
PA	PUBLIC ADDRESS
PNL	PANEL
PSI	POUNDS PER SQUARE INCH
PUH	PROPELLER UNIT HEATER
PVC	POLYVINYL CHLORIDE
REC	RECEPTACLE
REFRIG	REFRIGERATOR
RGS	RIGID GALVANIZED STEEL
RM	ROOM
RTU	ROOFTOP UNIT
SPD	SURGE PROTECTIVE DEVICE
STOR	STORAGE
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TYP	TYPICAL
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT, VOLTS
VFD	VARIABLE FREQUENCY DRIVE
VRT	VARIABLE FLOW TERMINAL
W	WATTS/WIRE, WIRES
WAP	WIRELESS ACCESS POINT
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER
Ø	PHASE
&	AND

WIRING

- DUCTBANK, SIZE AND TYPE AS INDICATED.
- CONDUIT AND WIRING. CONDUIT SHALL BE RUN CONCEALED IN WALL CONSTRUCTION OR CEILING SPACE. CONDUIT MAY BE RUN EXPOSED IN SUPPORT SPACES WITH OPEN CEILINGS, SUCH AS MECHANICAL AND ELECTRICAL ROOMS, OR WHERE CONCEALMENT IS NOT FEASIBLE.
- EM — CONDUIT AND WIRING AS DESCRIBED ABOVE SERVED FROM EMERGENCY POWER SOURCE.
- CONDUIT AND WIRING IN OR BELOW FLOOR CONSTRUCTION. FOR EXTERIOR APPLICATIONS, UNDERGROUND CONDUIT AND WIRING.
- HOMERUN TO PANELBOARD. NUMBER OR ARROWS INDICATES NUMBER OF CIRCUITS UNLESS OTHERWISE NOTED. NUMBER OF HASH MARKS INDICATES NUMBER OF PHASE AND NEUTRAL CONDUCTORS PLUS GROUND UNLESS OTHERWISE NOTED. WHERE NO HASH MARKS APPEAR, TWO (2) CONDUCTORS PLUS GROUND ARE IMPLIED. PROVIDE GROUND CONDUCTOR WITH FEEDERS AND BRANCH CIRCUITS. REFER TO PANEL SCHEDULES FOR CONDUCTOR QUANTITY, CONDUCTOR SIZE, AND CONDUIT SIZE UNLESS OTHERWISE NOTED.
- CONDUIT CONTINUED.
- CONDUIT DOWN.
- CONDUIT UP.
- CONDUIT SLEEVE, SIZE AS INDICATED, THROUGH WALL CONSTRUCTION WITH INSULATED END BUSHINGS AND PULL ROPE. PROVIDE FIRE STOPPING MATERIAL AROUND PENETRATION.
- J — JUNCTION BOX WITH BLANK COVER PLATE, WALL OR CEILING MOUNTED AS INDICATED.
- PULLBOX, SIZE AS INDICATED.
- H — HANDHOLE, SEE DETAIL 7/E5.06 FOR ADDITIONAL INFORMATION.
- GROUNDING TERMINATION POINT. PROVIDE EQUIPMENT GROUNDING CONDUCTORS AND GROUNDING ELECTRODE CONDUCTORS IN COMPLIANCE WITH NATIONAL ELECTRICAL CODE REQUIREMENTS.
- G — GROUNDING BUSBAR ASSEMBLY. SEE DETAIL 2/E5.02 FOR ADDITIONAL INFORMATION.
- PLYWOOD MOUNTING BOARD, 4"W x 8'H x 3/4" THICK, UNLESS OTHERWISE NOTED.
- CABLE TRAY, MOUNTED 6" ABOVE ACCESSIBLE CEILING OR 9'-0" ABOVE FLOOR IN SPACES WITHOUT CEILINGS, UNLESS OTHERWISE NOTED.

PANELBOARD NAMING SEQUENCE

R2B

BUILDING AREA (REFER TO KEY PLANS)

A	AREA A
B	AREA B
C	AREA C

FLOOR DESIGNATION

1	FIRST FLOOR
2	SECOND FLOOR

TYPE DESIGNATION

C	COMPUTER - 120/208V
DP	DISTRIBUTION - 277/480V
ELH	EMERGENCY POWER - 277/480V
ELL	EMERGENCY POWER - 120/208V
ESH	STAND-BY POWER - 277/480V
ESL	STAND-BY POWER - 120/208V
K	KITCHEN EQUIPMENT - 120/208V
MH	MECHANICAL EQUIPMENT - 277/480V
ML	MECHANICAL EQUIPMENT - 120/208V
PR	PARKS & RECREATION AREA - 120/208V
R	RECEPTACLE/GENERAL PURPOSE - 120/208V
S	STAGE AREA - 120/208V

FIRE ALARM

- FIRE ALARM FLASHING INDICATING STROBE LIGHT, MOUNTED ON RECESSED OUTLET BOX 96" ABOVE FLOOR TO TOP OF BOX. NUMBER REPRESENTS CANDELA RATING. WHERE NO CANDELA RATING INDICATED, PROVIDE 15 CANDELA STROBE LIGHT.
- FIRE ALARM FLASHING INDICATING STROBE LIGHT, CEILING MOUNTED. NUMBER REPRESENTS CANDELA RATING. WHERE NO CANDELA RATING INDICATED, PROVIDE 15 CANDELA STROBE LIGHT.
- FIRE ALARM COMBINATION SPEAKER WITH FLASHING INDICATING STROBE LIGHT, MOUNTED ON RECESSED OUTLET BOX 96" ABOVE FLOOR TO TOP OF BOX. NUMBER REPRESENTS CANDELA RATING. WHERE NO CANDELA RATING INDICATED, PROVIDE 15 CANDELA STROBE LIGHT.
- FIRE ALARM COMBINATION SPEAKER WITH FLASHING INDICATING STROBE LIGHT, CEILING MOUNTED. NUMBER REPRESENTS CANDELA RATING. WHERE NO CANDELA RATING INDICATED, PROVIDE 15 CANDELA STROBE LIGHT.
- F — FIRE ALARM SYSTEM SPEAKER, CEILING MOUNTED ON RECESSED OUTLET BOX.
- S — FIRE ALARM SYSTEM SMOKE DETECTOR, CEILING MOUNTED.
- H — FIRE ALARM SYSTEM HEAT DETECTOR, CEILING MOUNTED.
- FIRE ALARM SYSTEM DUCT SMOKE DETECTOR WITH "CONCEALED DETECTOR INDICATING AND TEST STATION" IN ACCESSIBLE LOCATION.
- D — FIRE ALARM SYSTEM DUCT SMOKE DETECTOR WITH AUXILIARY CONTACTS FOR CONTROLLING FIRE/SMOKE DAMPER. SEE DETAIL 2/E5.03 FOR ADDITIONAL INFORMATION.
- F — FIRE ALARM SYSTEM MANUAL PULL STATION WITH FALSE ALARM PROTECTOR, RECESS MOUNTED 40" ABOVE FLOOR.
- V/M — SPRINKLER SYSTEM VALVE MONITOR SWITCH WITH DEDICATED FIRE ALARM SYSTEM MONITORING MODULE.
- F/S — SPRINKLER SYSTEM FLOW SWITCH WITH DEDICATED FIRE ALARM SYSTEM MONITORING MODULE.
- CM — FIRE ALARM SYSTEM CONTROL MODULE.
- MM — FIRE ALARM SYSTEM MONITORING MODULE.
- RM — FIRE ALARM SYSTEM RELAY MODULE.
- FIRE ALARM SYSTEM MAGNETIC DOOR HOLDER.

VIDEO INTERCOM

- DR — VIDEO INTERCOM SYSTEM DOOR CONTROL RELAY MODULE.
- IR — VIDEO INTERCOM SYSTEM REMOTE DOOR STATION.
- MS — VIDEO INTERCOM SYSTEM MASTER STATION.
- SMS — VIDEO INTERCOM SYSTEM SUB-MASTER STATION.

REFER TO VIDEO INTERCOM DETAILS AND DIAGRAMS ON SHEET E5.08 FOR ADDITIONAL INFORMATION.

LIGHTING FIXTURES

- EXTERIOR POLE MOUNTED LIGHTING FIXTURE, SINGLE HEAD, TYPE AS INDICATED.
- EXTERIOR POLE MOUNTED LIGHTING FIXTURE, DUAL HEAD, TYPE AS INDICATED.
- WALL OUTLET AND LIGHTING FIXTURE, TYPE AS DESIGNATED.
- WALL OUTLET AND LINEAR LIGHTING FIXTURE, TYPE AS DESIGNATED.
- CEILING OUTLET AND RECESSED CAN LIGHTING FIXTURE, TYPE AS DESIGNATED.
- CEILING OUTLET AND RECESSED LINEAR LIGHTING FIXTURE, TYPE AS DESIGNATED.
- CEILING OUTLET AND RECESSED 2x4 LIGHTING FIXTURE, TYPE AS DESIGNATED.
- CEILING OUTLET AND SUSPENDED LIGHTING FIXTURE, TYPE AS DESIGNATED.
- J — CEILING OUTLET AND TRACK LIGHTING FLOODLIGHT, TYPE AS DESIGNATED.
- ANY OF THE ABOVE FIXTURES ON EMERGENCY LIGHTING CIRCUIT, TYPE AS DESIGNATED.
- B — EMERGENCY BATTERY LIGHTING UNIT, WALL MOUNTED 7'-6" ABOVE FLOOR, UNLESS OTHERWISE NOTED. CIRCUIT TO UNIT SHALL BE UNSWITCHED.
- WALL MOUNTED EXIT SIGN, WITH OR WITHOUT DIRECTIONAL ARROWS, AS INDICATED. MOUNT FIXTURE 7'-6" ABOVE FLOOR OR 6" ABOVE DOOR, UNLESS OTHERWISE NOTED. SHADED AREA INDICATES STENCIL FACE, TYPE AS DESIGNATED.
- CEILING MOUNTED EXIT SIGN, WITH OR WITHOUT DIRECTIONAL ARROWS, AS INDICATED. SHADED AREA INDICATES STENCIL FACE, TYPE AS DESIGNATED.
- ANY OF THE ABOVE LIGHTING FIXTURES. UPPERCASE LETTER INDICATES FIXTURE TYPE DESIGNATION, LOWERCASE LETTER INDICATES LIGHTING CONTROL ZONE.

LIGHTING CONTROLS

- L — LIGHTING CONTROL SYSTEM ROOM CONTROLLER CONNECTED TO NORMAL POWER SOURCE WITH 0-10V DIMMING CONTROL. SURFACE MOUNT TO WALL ABOVE DOOR IN ACCESSIBLE CEILING SPACE, UNLESS OTHERWISE NOTED.
- E — LIGHTING CONTROL SYSTEM ROOM CONTROLLER CONNECTED TO EMERGENCY POWER SOURCE WITH 0-10V DIMMING CONTROL. SURFACE MOUNT TO WALL ABOVE DOOR IN ACCESSIBLE CEILING SPACE, UNLESS OTHERWISE NOTED.
- TC — LIGHTING CONTROL SYSTEM ASTRONOMIC TIME SWITCH, RECESS MOUNTED 48" ABOVE FLOOR UNLESS OTHERWISE NOTED.
- EII — LIGHTING CONTROL SYSTEM EMERGENCY LIGHTING INTERFACE DEVICE.
- L — LIGHTING CONTROL SYSTEM OCCUPANCY SENSOR, CEILING MOUNTED.
- WG L H — LIGHTING CONTROL SYSTEM HIGH BAY-TYPE OCCUPANCY SENSOR, CEILING MOUNTED. "WG" DENOTES OCCUPANCY SENSOR WITH WIRE GUARD.
- S_{L1} — LIGHTING CONTROL SYSTEM WALL STATION, RECESS MOUNTED 48" ABOVE FLOOR UNLESS OTHERWISE NOTED. NUMBER INDICATES SWITCH TYPE.

  REFER TO LIGHTING CONTROL SYSTEM DIAGRAMS AND DETAILS ON SHEETS E5.04 AND E5.05 FOR ADDITIONAL INFORMATION REGARDING THE ITEMS ABOVE.
- S — LINE VOLTAGE, SINGLE-POLE TOGGLE SWITCH, RECESS MOUNTED 48" ABOVE FLOOR, UNLESS OTHERWISE NOTED.
- S_3 — LINE VOLTAGE, THREE-WAY TOGGLE SWITCH, RECESS MOUNTED 48" ABOVE FLOOR, UNLESS OTHERWISE NOTED.
- S_D — LINE VOLTAGE, DIMMER SWITCH, RECESS MOUNTED 48" ABOVE FLOOR, UNLESS OTHERWISE NOTED.
- LINE VOLTAGE, OCCUPANCY SENSOR SWITCH, RECESSED WALL MOUNTED 48" ABOVE FLOOR, UNLESS OTHERWISE NOTED.

ACCESS CONTROL

- CR — ACCESS CONTROL SYSTEM CARD READER.
- DM — ACCESS CONTROL SYSTEM DOOR CONTROL INTERFACE UNIT.
- EH — LOCATION OF ELECTRIC POWER TRANSFER / ELECTRIC HINGE. REFER TO DETAILS 10/E5.06 AND 11/E5.06 FOR ADDITIONAL INFORMATION.

REFER TO SECURITY SYSTEM DETAILS AND DIAGRAMS ON SHEET E5.08 FOR ADDITIONAL INFORMATION.

VIDEO SURVEILLANCE

- CAMERA (FIXED POSITION TYPE): PROVIDE CAMERA, ONE (1) CATEGORY 6 CABLE, AND ONE (1) 3/4" CONDUIT.
- PTZ — CAMERA (PAN/TILT/ZOOM TYPE): PROVIDE CAMERA, ONE (1) CATEGORY 6 CABLE, AND ONE (1) 3/4" CONDUIT.
- $V_{VSS(X)}$ — WALL OUTLET AND MONITOR: 1-GANG OUTLET BOX (2-1/8" DEEP MINIMUM), RECESS MOUNTED 96" ABOVE FLOOR, UNLESS OTHERWISE NOTED, WITH ONE (1) 3/4" CONDUIT, ONE (1) RJ45 MODULAR JACK, ONE (1) CATEGORY 6 CABLE, AND 1-GANG FACEPLATE. SUBSCRIPT (X) DENOTES MONITOR SIZE.
- HR — VIDEO SURVEILLANCE SYSTEM HDMI EXTENDER REMOTE UNIT.

VIDEO SURVEILLANCE SYSTEM CABLES SHALL EXTEND FROM OUTLET BOX TO NEAREST VIDEO SURVEILLANCE SYSTEM EQUIPMENT RACK IN CONDUIT WITH NO MORE THAN TWO (2) 90-DEGREE BENDS BETWEEN PULL-POINTS. REFER TO VIDEO SURVEILLANCE SYSTEM RISER DIAGRAM ON SHEET E5.08 FOR ADDITIONAL INFORMATION.

MASTER CLOCK

- C — SINGLE-SIDED CLOCK: DIGITAL, WIRED, WALL MOUNTED 12'-0" ABOVE FLOOR TO BOTTOM OF CLOCK, UNLESS OTHERWISE NOTED.
- D C — DOUBLE-SIDED CLOCK: DIGITAL, WIRED, WALL MOUNTED 12'-0" ABOVE FLOOR TO BOTTOM OF CLOCK, UNLESS OTHERWISE NOTED.

LIGHTNING PROTECTION

THE CONTRACTOR IS RESPONSIBLE FOR PROVISION OF THE FOLLOWING SYSTEMS :

1. LIGHTNING PROTECTION FOR STRUCTURES (SPECIFICATION SECTION 26 4113)

POWER

- ELECTRIC PANELBOARD (277/480V). SURFACE OR RECESSED MOUNTED AS INDICATED.
- ELECTRIC PANELBOARD (120/208V), SURFACE OR RECESSED MOUNTED AS INDICATED.
- BOX OR CABINET AS NOTED, SIZE AS REQUIRED. SURFACE OR RECESSED MOUNTED AS INDICATED.
- T — TRANSFORMER. SIZE, TYPE, AND MOUNTING AS INDICATED.
- SPD — SURGE PROTECTIVE DEVICE, MOUNT EXTERNAL TO EQUIPMENT SERVED PER MANUFACTURER'S RECOMMENDATIONS.
- CB — ENCLOSED CIRCUIT BREAKER, MOUNTED 72" ABOVE FLOOR TO TOP OF DEVICE ON WALL OR ADJACENT TO EQUIPMENT ON STRUCTURAL CHANNEL SUPPORT, UNLESS OTHERWISE NOTED.
- D — SAFETY SWITCH, RATED FULL HORSEPOWER AS REQUIRED, MOUNTED 48" ABOVE FLOOR ON WALL OR ADJACENT EQUIPMENT ON STRUCTURAL CHANNEL SUPPORT, UNLESS OTHERWISE NOTED.
- A A — HARD-WIRED CONNECTION TO EQUIPMENT, CEILING OR WALL MOUNTED, AS INDICATED.
- D — CONNECTION TO FIRE/SMOKE DAMPER. SEE DETAIL 2/E5.3 FOR ADDITIONAL INFORMATION.
- HARD WIRED CONNECTION TO MOTOR, AS INDICATED.
- S_M — MANUAL MOTOR STARTER SWITCH WITH OVERLOAD PROTECTION, MOUNTED 48" ABOVE FLOOR TO TOP OF BOX ON WALL OR ADJACENT EQUIPMENT, UNLESS OTHERWISE NOTED.
- M — MAGNETIC MOTOR STARTER, RATED FULL HORSEPOWER AS REQUIRED. MOUNTED 72" ABOVE FLOOR ON WALL OR ADJACENT EQUIPMENT ON STRUCTURAL CHANNEL SUPPORT, UNLESS OTHERWISE NOTED.
- M D — COMBINATION MOTOR STARTER-DISCONNECT, CIRCUIT BREAKER OR FUSED TYPE AS INDICATED, RATED FULL HORSEPOWER AS REQUIRED. MOUNTED 72" ABOVE FLOOR ON WALL OR ADJACENT EQUIPMENT ON STRUCTURAL CHANNEL SUPPORT, UNLESS OTHERWISE NOTED.
- VFD — VARIABLE FREQUENCY DRIVE, AS INDICATED, MOUNTED ON WALL OR ADJACENT TO EQUIPMENT ON STRUCTURAL CHANNEL SUPPORT, UNLESS OTHERWISE NOTED.
- EMERGENCY SHUTOFF SWITCH WITH YELLOW HOUSING, MUSHROOM-STYLE PLUNGER, MOMENTARY CONTACT, CUSTOM LABEL, AND PROTECTIVE COVER. RECESS MOUNTED 48" ABOVE FLOOR, UNLESS OTHERWISE NOTED. COORDINATE EXACT LOCATION WITH STATE BOILER INSPECTOR. SEE DETAILS 4/E5.07 AND 5/E5.07 FOR ADDITIONAL INFORMATION.
- 2P-3W-20A-125V DUPLEX GROUNDING-TYPE CONVENIENCE RECEPTACLE, NEMA CONFIGURATION 5-20R, RECESSED MOUNTED 18" ABOVE FLOOR, UNLESS OTHERWISE NOTED.
- T — 2P-3W-20A-125V DUPLEX GROUNDING-TYPE CONVENIENCE RECEPTACLE, NEMA CONFIGURATION 5-20R, RECESSED MOUNTED IN TOE SPACE OF CASEWORK, UNLESS OTHERWISE NOTED. COORDINATE LOCATION IN CASEWORK WITH ARCHITECTURAL DRAWINGS.
- 2P-3W-20A-125V DUPLEX GROUNDING-TYPE CONVENIENCE RECEPTACLE, NEMA CONFIGURATION 5-20R, RECESSED MOUNTED 48" ABOVE FLOOR OR 8" ABOVE COUNTER, UNLESS OTHERWISE NOTED.
- 2P-3W-20A-125V QUADRUPLEX (DOUBLE DUPLEX) GROUNDING-TYPE CONVENIENCE RECEPTACLE, NEMA CONFIGURATION 5-20R, RECESSED MOUNTED 18" ABOVE FLOOR, UNLESS OTHERWISE NOTED.
- 2P-3W-20A-125V QUADRUPLEX (DOUBLE DUPLEX) GROUNDING-TYPE CONVENIENCE RECEPTACLE, NEMA CONFIGURATION 5-20R, RECESSED MOUNTED 48" ABOVE FLOOR OR 8" ABOVE COUNTER, UNLESS OTHERWISE NOTED.
- 2P-3W-20A-125V DUPLEX GROUNDING TYPE RECEPTACLE, NEMA CONFIGURATION 5-20R, ON DEDICATED COMPUTER POWER CIRCUIT, RECESSED MOUNTED 18" ABOVE FLOOR, UNLESS OTHERWISE NOTED.
- E — 2P-3W-20A-125V DUPLEX GROUNDING-TYPE RECEPTACLE, NEMA CONFIGURATION 5-20R, ON DEDICATED COMPUTER POWER CIRCUIT, RECESSED MOUNTED IN TEACHER'S WARDROBE.
- TV — 2P-3W-20A-125V DUPLEX GROUNDING-TYPE RECEPTACLE, NEMA CONFIGURATION 5-20R, FOR FLAT PANEL DISPLAY ON DEDICATED COMPUTER POWER CIRCUIT, RECESSED MOUNTED 96" ABOVE FLOOR, UNLESS OTHERWISE NOTED.
- H — 2P-3W-20A-125V DUPLEX GROUNDING-TYPE RECEPTACLE, NEMA CONFIGURATION 5-20R, ON DEDICATED COMPUTER POWER CIRCUIT, RECESSED MOUNTED IN CEILING TILE ABOVE PROJECTOR LOCATION, UNLESS OTHERWISE NOTED.
- 2P-3W-20A-125V QUADRUPLEX (DOUBLE DUPLEX) GROUNDING-TYPE RECEPTACLE, NEMA CONFIGURATION 5-20R, ON DEDICATED COMPUTER POWER CIRCUIT, RECESSED MOUNTED 18" ABOVE FLOOR, UNLESS OTHERWISE NOTED.
- 2P-3W-20A-125V DUPLEX GROUNDING-TYPE RECEPTACLE, NEMA CONFIGURATION 5-20R, ON STAND-BY POWER CIRCUIT, RECESSED MOUNTED 18" ABOVE FLOOR, UNLESS OTHERWISE NOTED.
- 2P-3W-20A-125V DUPLEX GROUNDING-TYPE RECEPTACLE, NEMA CONFIGURATION 5-20R, ON STAND-BY POWER CIRCUIT, RECESSED MOUNTED 48" ABOVE FLOOR OR 8" ABOVE COUNTER, UNLESS OTHERWISE NOTED.
- 2P-3W-20A-125V QUADRUPLEX (DOUBLE DUPLEX) GROUNDING-TYPE RECEPTACLE, NEMA CONFIGURATION 5-20R, ON STAND-BY POWER CIRCUIT, RECESSED MOUNTED 18" ABOVE FLOOR, UNLESS OTHERWISE NOTED.
- G — ANY OF THE ABOVE RECEPTACLE DEVICES WITH GROUND FAULT CIRCUIT INTERRUPTER PROTECTION.
- WP — ANY OF THE ABOVE RECEPTACLE DEVICES WITH WEATHER-RESISTANT RECEPTACLE CONSTRUCTION, GROUND FAULT CIRCUIT INTERRUPTER FUNCTION, AND WEATHER-PROTECTIVE IN-USE COVER.
- SPECIAL PURPOSE, GROUNDING-TYPE RECEPTACLE, RECESS MOUNTED 18" ABOVE FLOOR, UNLESS OTHERWISE NOTED. REFER TO DRAWINGS FOR SPECIFIC RATING INFORMATION AND NEMA CONFIGURATION.
- SPECIAL PURPOSE, GROUNDING-TYPE RECEPTACLE, RECESS MOUNTED IN CEILING TILE, UNLESS OTHERWISE NOTED. REFER TO DRAWINGS FOR SPECIFIC RATING INFORMATION AND NEMA CONFIGURATION.
- 2P-3W-20A-125V DUPLEX GROUNDING-TYPE RECEPTACLE FOR CEILING MOUNTED PROJECTOR, NEMA CONFIGURATION 5-20R, RECESS MOUNTED IN CEILING TILE, UNLESS OTHERWISE NOTED . PROVIDE SIX-FEET OF TYPE MC CABLE, NEATLY COILED, FROM PROJECTOR RECEPTACLE TO JUNCTION BOX IN CEILING SPACE ABOVE.

COMBINATION POWER AND SYSTEMS

- FB — COMBINATION POWER, VOICE/DATA, AUDIO/VIDEO FLOORBOX. MOUNTED FLUSH IN FLOOR PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. SEE DETAIL 2/E5.07 FOR POWER AND SYSTEM DEVICE REQUIREMENTS AND ADDITIONAL INFORMATION.

INTRUSION DETECTION

- K — KEYPAD (REMOTE ARMING STATION): PROVIDE 2-GANG OUTLET BOX (MINIMUM 2-1/8" DEEP) RECESS MOUNTED 48" ABOVE FLOOR, UNLESS OTHERWISE NOTED.
- DC — DOOR CONTACT, RECESSED IN DOOR FRAME.
- D — MOTION SENSOR, WALL MOUNTED 96" ABOVE FLOOR, UNLESS OTHERWISE NOTED. DL DENOTES TIME DELAY.
- SS — INTRUSION DETECTION SYSTEM SIREN.

REFER TO SECURITY SYSTEM DETAILS AND DIAGRAMS ON SHEET E5.08 FOR ADDITIONAL INFORMATION.

VOICE COMMUNICATIONS

- WALL MOUNTED VOICE OUTLET (1 VOICE), RECESS MOUNTED 18" ABOVE FLOOR OR 8" ABOVE COUNTER, UNLESS OTHERWISE NOTED. PROVIDE 1-GANG OUTLET BOX (2-1/8" DEEP MINIMUM) WITH (1) CATEGORY 6 VOICE CABLE, (1) RJ-45 VOICE JACK, (1) 1-1/4" CONDUIT, AND FACEPLATE.
- 2 — WALL MOUNTED VOICE OUTLET (2 VOICE), RECESS MOUNTED 18" ABOVE FLOOR OR 8" ABOVE COUNTER, UNLESS OTHERWISE NOTED. PROVIDE 1-GANG OUTLET BOX (2-1/8" DEEP MINIMUM) WITH (2) CATEGORY 6 VOICE CABLES, (2) RJ-45 VOICE JACKS, (1) 1-1/4" CONDUIT, AND FACEPLATE.

VOICE SYSTEM CABLES SHALL EXTEND FROM OUTLET BOX TO NEAREST VOICE SYSTEM EQUIPMENT RACK VIA CONDUIT AND J-HOOKS. VOICE SYSTEM CONDUITS SHALL EXTEND FROM OUTLET OR JUNCTION BOX TO ACCESSIBLE CEILING SPACE WITH NO MORE THAN TWO (2) 90-DEGREE BENDS BETWEEN PULL-POINTS. PROVIDE INSULATED CONDUIT END BUSHINGS.

DATA COMMUNICATIONS

- WALL MOUNTED DATA OUTLET (1 DATA), RECESS MOUNTED 18" ABOVE FLOOR OR 8" ABOVE COUNTER, UNLESS OTHERWISE NOTED. PROVIDE 1-GANG OUTLET BOX (2-1/8" DEEP MINIMUM) WITH (1) CATEGORY 6 DATA CABLE, (1) RJ-45 DATA JACK, (1) 1-1/4" CONDUIT, AND FACEPLATE.
- 2 — WALL MOUNTED DATA OUTLET (2 DATA), RECESS MOUNTED 18" ABOVE FLOOR OR 8" ABOVE COUNTER, UNLESS OTHERWISE NOTED. PROVIDE 1-GANG OUTLET BOX (2-1/8" DEEP MINIMUM) WITH (2) CATEGORY 6 DATA CABLES, (2) RJ-45 DATA JACKS, (1) 1-1/4" CONDUIT, AND FACEPLATE.
- TV — WALL MOUNTED DATA OUTLET (FLAT PANEL DISPLAY), RECESS MOUNTED 96" ABOVE FLOOR, UNLESS OTHERWISE NOTED. PROVIDE 1-GANG OUTLET BOX (2-1/8" DEEP MINIMUM) WITH (2) CATEGORY 6 DATA CABLES, (2) RJ-45 DATA JACKS, (1) 1-1/4" CONDUIT, AND FACEPLATE.
- S — WALL MOUNTED STUDENT DATA OUTLET (4 DATA), RECESS MOUNTED 18" ABOVE FLOOR OR 8" ABOVE COUNTER, UNLESS OTHERWISE NOTED. PROVIDE 1-GANG OUTLET BOX (2-1/8" DEEP MINIMUM) WITH (4) CATEGORY 6 DATA CABLES, (4) RJ-45 DATA JACKS, (1) 1-1/4" CONDUIT, AND FACEPLATE.
- WAP — WALL MOUNTED WIRELESS ACCESS POINT, RECESS MOUNTED 120" ABOVE FLOOR, UNLESS OTHERWISE NOTED. PROVIDE 1-GANG OUTLET BOX (2-1/8" DEEP MINIMUM) WITH (2) CATEGORY 6 DATA CABLES, (2) RJ-45 DATA JACKS, (1) 1-1/4" CONDUIT, AND FACEPLATE.
- WAP — CEILING WIRELESS ACCESS POINT. PROVIDE (2) CATEGORY 6 DATA CABLES TERMINATED IN (2) RJ-45 DATA JACKS ABOVE ACCESSIBLE CEILING. PROVIDE 12' SERVICE LOOPS NEATLY COILED ON J-HOOKS.

  E WAP — EXTERIOR WIRELESS ACCESS POINT. PROVIDE 1-GANG OUTLET BOX (2-1/8" DEEP MINIMUM) WITH (2) CATEGORY 6 DATA CABLES TERMINATED IN (2) RJ-45 DATA JACKS, (1) 1-1/4" CONDUIT, AND FACEPLATE. COORDINATE EXACT MOUNTING HEIGHT AND LOCATIONS WITH ARCHITECT IN FIELD.

DATA SYSTEM CABLES SHALL EXTEND FROM OUTLET BOX TO NEAREST DATA SYSTEM EQUIPMENT RACK VIA CONDUIT AND J-HOOKS. DATA SYSTEM CONDUITS SHALL EXTEND FROM OUTLET OR JUNCTION BOX TO ACCESSIBLE CEILING SPACE WITH NO MORE THAN TWO (2) 90-DEGREE BENDS BETWEEN PULL-POINTS. PROVIDE INSULATED CONDUIT END BUSHINGS.

COMBINATION VOICE/DATA

- C — WALL MOUNTED CLERICAL OUTLET (2 DATA, 1 VOICE), RECESS MOUNTED 18" ABOVE FLOOR, UNLESS OTHERWISE NOTED. PROVIDE 1-GANG OUTLET BOX (2-1/8" DEEP MINIMUM) WITH (2) CATEGORY 6 DATA CABLE, (2) RJ-45 DATA JACKS, (1) CATEGORY 6 VOICE CABLE, (1) RJ-45 VOICE JACK, (1) 1-1/4" CONDUIT, AND FACEPLATE.

  T — WALL MOUNTED TEACHER OUTLET (2 DATA, 1 VOICE), RECESS MOUNTED 18" ABOVE FLOOR, UNLESS OTHERWISE NOTED. PROVIDE 1-GANG OUTLET BOX (2-1/8" DEEP MINIMUM) WITH (2) CATEGORY 6 DATA CABLES, (2) RJ-45 DATA JACKS, (1) CATEGORY 6 VOICE CABLE, (1) RJ-45 VOICE JACK, (1) 1-1/4" CONDUIT, AND FACEPLATE.

AUDIO/VIDEO

- L — LOW PROJECTOR OUTLET, RECESS MOUNTED 18" ABOVE FLOOR, UNLESS OTHERWISE NOTED. PROVIDE 2-GANG OUTLET BOX (2-1/8" DEEP MINIMUM) AND WALL PLATE EQUAL TO LEGRAND CATALOG #2212-60115-001 WITH ADDITIONAL OUTLET INSERTS FOR (1) RJ-45 DATA JACK, (1) HDMI CONNECTOR, (1) USB STYLE "B" CONNECTOR, (1) SVGA 15-PIN CONNECTOR, AND (1) 3.5 mm STEREO JACK IN KEYSTONE OPENINGS.

  H — HIGH PROJECTOR OUTLET, RECESS MOUNTED 114" ABOVE FLOOR, UNLESS OTHERWISE NOTED. PROVIDE 2-GANG OUTLET BOX (2-1/8" DEEP MINIMUM) AND WALL PLATE EQUAL TO LEGRAND CATALOG #2212-60115-001 WITH ADDITIONAL OUTLET INSERTS FOR (2) RJ-45 DATA JACKS, (1) HDMI CONNECTOR, AND (1) USB STYLE "B" CONNECTOR, (1) SVGA 15-PIN CONNECTOR, AND (1) 3.5 mm STEREO JACK IN KEYSTONE OPENINGS.

REFER TO DETAILS ON SHEET E5.08 FOR ADDITIONAL INFORMATION.

INTERCOM/PUBLIC ADDRESS

- S — PUBLIC ADDRESS SYSTEM INTERIOR SPEAKER, WALL MOUNTED 7'-6" ABOVE FLOOR, UNLESS OTHERWISE NOTED. "WG" DESIGNATION DENOTES SPEAKER WITH WIRE-GUARD.
- P S — PUBLIC ADDRESS SYSTEM INTERIOR HIGH PERFORM

COORDINATE EXACT LOCATION WITH WHITEBOARDS PRIOR TO INSTALLATION (TYPICAL FOR ALL CLASSROOMS)

SPECIFIC NOTES:

1. CONTINUE CIRCUIT UP TO FIXTURES ABOVE. SEE SHEET EL1.04 FOR CONTINUATION.
2. COORDINATE EXACT LOCATION WITH ARCHITECT.
3. SEE DETAIL 10/E5.05 FOR LIGHTING CONTROL REQUIREMENTS.
4. FOR EXTERIOR LIGHTING CONTROL. SEE DETAIL 10/E5.05.

MATCHLINE
FOR CONTINUATION SEE DRAWING EL1.02

1 EL1.01 PART PLAN - FIRST FLOOR - AREA A - LIGHTING
SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16
SCALE: 1/8" = 1'-0"

KEY PLAN
NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS
VICTORY VILLA ELEMENTARY SCHOOL
MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
Baltimore, Maryland 21244
tel 410-265-5100
fax 410-298-9820
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
229 West Market Street, York, Pennsylvania 17401
717-848-8877 voice 717-843-2449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/18/2016	BID SET

STATE OF MARYLAND — JOHN L. GARDNER — No. 24851 — PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 24851, Expiration date: 12-24-2016.

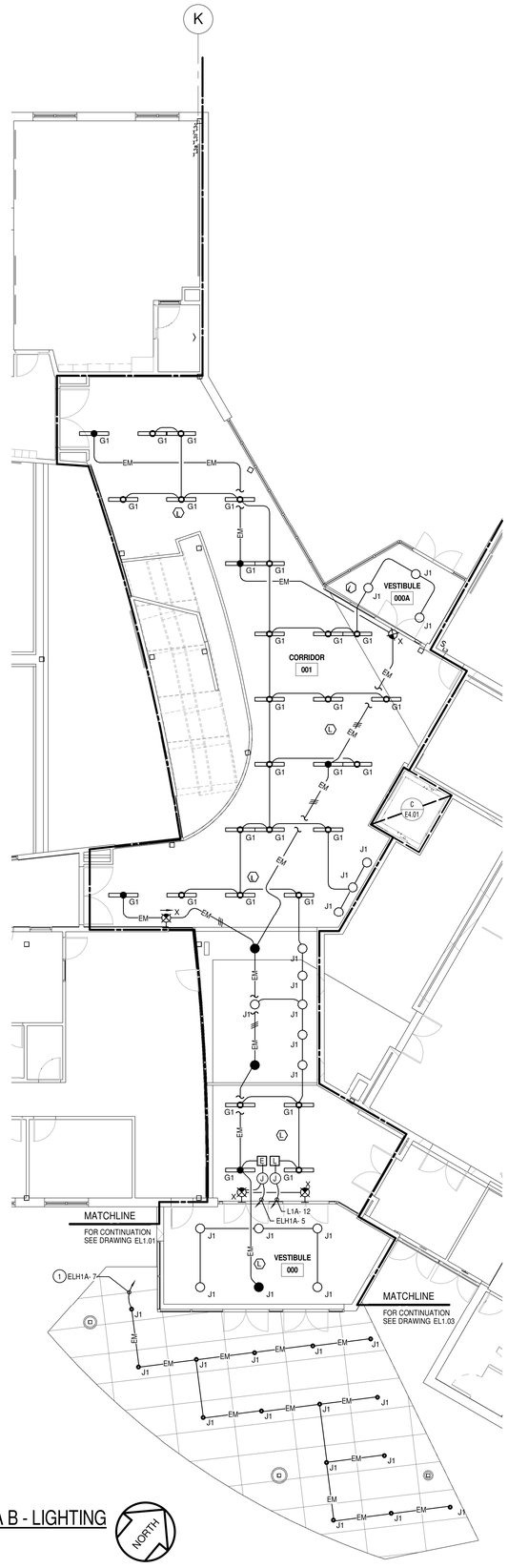
PROJECT NO:	6535-15
DRAWN BY:	JLG
CHECKED BY:	BMM

PART PLAN - FIRST FLOOR - AREA A - LIGHTING

SHEET
EL1.01

Lighting Control Scheme Schedule - FIRST FLOOR - AREA A		
Name	Number	Lighting Control Scheme
CORRIDOR	001A	L4
CORRIDOR	001B	L4
CORRIDOR	001C	L4
WAITING	101	L5
SECRETARY	101	L5
RECORDS	101A	L6
PRINCIPAL	101B	L6
AST. PR	101C	L6
AST. PR.	101D	L6
CONFERENCE	101E	L6
PSYCHOLOGIST OFFICE	101F	L6
PSYCHOLOGIST OFFICE	101G	L6
WORK ROOM	101H	L5
TOILET	101J	L2
TOILET	101K	L2
COATS/ SAFE	101L	L2
CORRIDOR	101M	L4
WAITING AREA	102	L5
TOILET	102A	L2
NURSE OFF.	102B	L6
TREATMENT	102C	L5
RESTING	102D	L9
EXAM	102E	L6
ADA TOILET	102F	L2
STORAGE	102G	L2
GROUP INSTRUCTION	103	L3
STACKS	103	L3
MEDIA CENTER	103	L11
INFORMAL SEATING	103	L3
STORY TELLING	103	L3
CIRC DESK	103	L3
LIBRARIAN OFFICE	103A	L6
EQUIP. STORAGE	103B	L7
CONTROL ROOM	103C	L6
VIDEO PRODUCTION	103D	L3
SPEECH/ LANG THERAPY	104	L6
OT/PT ROOM	105	L6
GUIDANCE OFFICE	106	L6
STOR.	106A	L2
STORAGE	107	L7
REMEDIAL READING	108	L3
KINDERGARTEN	109	L3
TOILET	109A	L2
MECH	110	L1
KINDERGARTEN	111	L3
TOILET	111A	L2
KINDERGARTEN	112	L3
TOILET	112A	L2
KINDERGARTEN	113	L3
TOILET	113A	L2
IDF	114	L1
TOILET	114A	L2
ELECTRICAL	115	L1
GIRLS	116	L4
BOYS	117	L4
MECHANICAL	118	L1
DIGITAL LEARNING	119	L3
MAKERSPACE	120	L3
STORAGE	120A	L7
KINDERGARTEN	121	L3
SPECIAL ED/EARLY CHILDHOOD DEVELOPMENT	122	L3
TOILET	122A	L2
MECH	123	L1
PRE-KINDERGARTEN	124	L3
TOILET	124A	L2
PRE-KINDERGARTEN	125	L3
TOILET	125A	L2
GRADE LEVEL STORAGE	126	L5
CLASSROOM	127	L3
TOILET	127A	L2
ELA	127B	L6
CLASSROOM	128	L3
TOILET	128A	L2
MECH	129	L1
CLASSROOM	130	L3
TOILET	130A	L2
ELA	130B	L6
CLASSROOM	131	L3
TOILET	131A	L2
MECH	132	L1
CLASSROOM	133	L3
TOILET	133A	L2
ELA	133B	L6
CONDIMENT	147E	L5
GRADE LEVEL STORAGE	157	L5
STAIR-1	ST1-1	L4
STAIR	ST2	L4

Lighting Control Scheme Schedule - FIRST FLOOR - AREA B		
Name	Number	Lighting Control Scheme
VESTIBULE	000	L4
VESTIBULE	000A	L4
CORRIDOR	001	L4
ELEVATOR PIT	181	L1



SPECIFIC NOTES:

1 SEE DETAIL 11/E-505 FOR LIGHTING CONTROL REQUIREMENTS

1 / EL1.02 PART PLAN - FIRST FLOOR - AREA B - LIGHTING

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN
NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Courtyard at Oxford Square, 3 Bethel Drive
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer Architects
226 West Market Street, York, Pennsylvania 17401
717-843-9827 voice 717-843-9449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/17/2016	BID SET

STATE OF MARYLAND
JOHN L. MAGEE
No. 22861
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 22861, Expiration date: 02-24-2018.

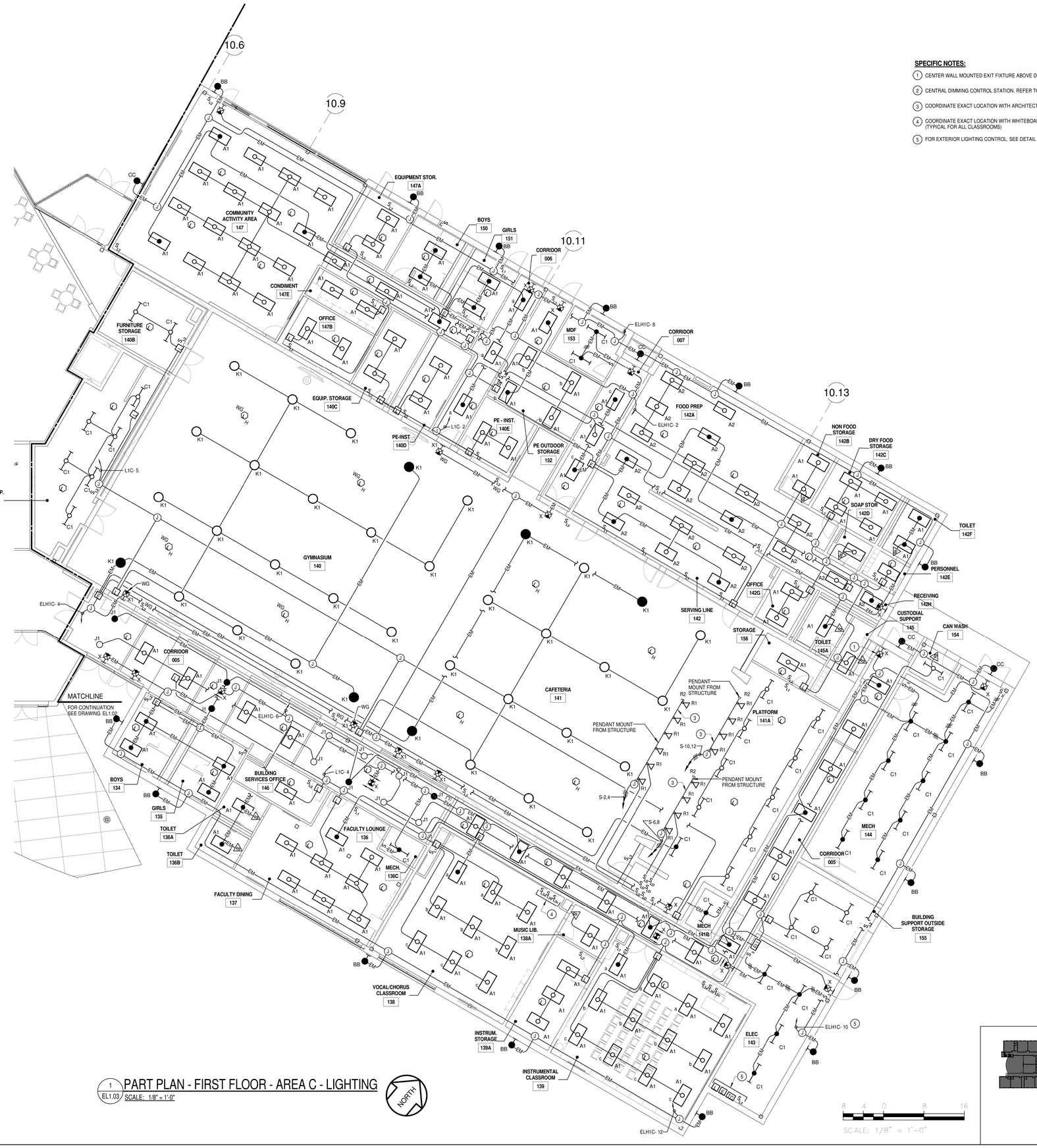
PROJECT NO:	6535-15
DRAWN BY:	JLG
CHECKED BY:	BMM

PART PLAN - FIRST FLOOR - AREA B - LIGHTING

SHEET

EL1.02

Lighting Control Scheme Schedule - FIRST FLOOR - AREA C		
Name	Number	Lighting Control Scheme
CORRIDOR	005	L4
CORRIDOR	006	L4
CORRIDOR	007	L4
BOYS	134	L4
GIRLS	135	L4
FACULTY LOUNGE	136	L5
TOILET	136A	L2
TOILET	136B	L2
MECH.	136C	L1
FACULTY DINING	137	L5
VOCAL/CHORUS CLASSROOM	138	L3
MUSIC LIB.	138A	L2
INSTRUMENTAL CLASSROOM	139	L3
INSTRUM. STORAGE	139A	L7
GYMNASIUM	140	L6
PE LARGE EQUIP. STORAGE	140A	L7
FURNITURE STORAGE	140B	L7
EQUIP. STORAGE	140C	L7
PE-INST	140D	L6
PE - INST.	140E	L6
CAFETERIA	141	L6
PLATFORM	141A	L8
MECH	141B	L1
SERVING LINE	142	L5
FOOD PREP	142A	L5
NON FOOD STORAGE	142B	L2
DRY FOOD STORAGE	142C	L7
SOAP STOR	142D	L2
PERSONNEL	142E	L6
TOILET	142F	L2
OFFICE	142G	L6
RECEIVING	142H	L5
CUSTODIAL SUPPORT	145	L2
TOILET	145A	L2
BUILDING SERVICES OFFICE	146	L6
COMMUNITY ACTIVITY AREA	147	L6
EQUIPMENT STOR.	147A	L7
OFFICE	147B	L7
BOYS	150	L4
GIRLS	151	L4
PE OUTDOOR STORAGE	152	L7
MDF	153	L1
CAN WASH	154	L2
BUILDING SUPPORT OUTSIDE STORAGE	155	L7



SPECIFIC NOTES:

1. CENTER WALL MOUNTED EXIT FIXTURE ABOVE DOOR.
2. CENTRAL DIMMING CONTROL STATION. REFER TO ELEVATION 1/E-507
3. COORDINATE EXACT LOCATION WITH ARCHITECT.
4. COORDINATE EXACT LOCATION WITH WHITEBOARDS PRIOR TO INSTALLATION (TYPICAL FOR ALL CLASSROOMS)
5. FOR EXTERIOR LIGHTING CONTROL. SEE DETAIL 10/E5.05.

1 EL1.03 PART PLAN - FIRST FLOOR - AREA C - LIGHTING

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN

NO SCALE

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MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Cockeysville, Maryland
Baltimore, MD 21244
tel 410-296-6300
fax 410-296-6820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
228 West Market Street, York, Pennsylvania 17401
717-848-6827 voice 717-843-2469 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
JOHN L. McGRORY
No. 22057
PROFESSIONAL ENGINEER

Professional Certification. I HEREBY certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 24861, Expiration date: 02-24-2018.

PROJECT NO:	6535-15
DRAWN BY:	JLG
CHECKED BY:	BMM

PART PLAN - FIRST FLOOR - AREA C - LIGHTING

SHEET

EL1.03

SPECIFIC NOTES:

1. SEE EL-101 FOR CONTINUATION.
2. PROVIDE HIGH BAY OCCUPANCY SENSORS

COORDINATE EXACT LOCATION WITH WHITEBOARDS PRIOR TO INSTALLATION (TYPICAL FOR ALL CLASSROOMS)

MATCHLINE
FOR CONTINUATION SEE DRAWING EL1.05

1 EL1.04 PART PLAN - SECOND FLOOR - AREA A - LIGHTING
SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16
SCALE: 1/8" = 1'-0"

KEY PLAN
NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS
VICTORY VILLA ELEMENTARY SCHOOL
MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
1 Olympic Place - Towson Office Park
Baltimore, MD 21204
tel 410-296-6300
fax 410-296-4820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
226 West Market Street, York, Pennsylvania 17401
717-848-9827 voice 717-854-3449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/12/2018	BID SET

STATE OF MARYLAND
BRIAN M. MAJOR
No. 22861
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 22861, Expiration date: 02-24-2018.

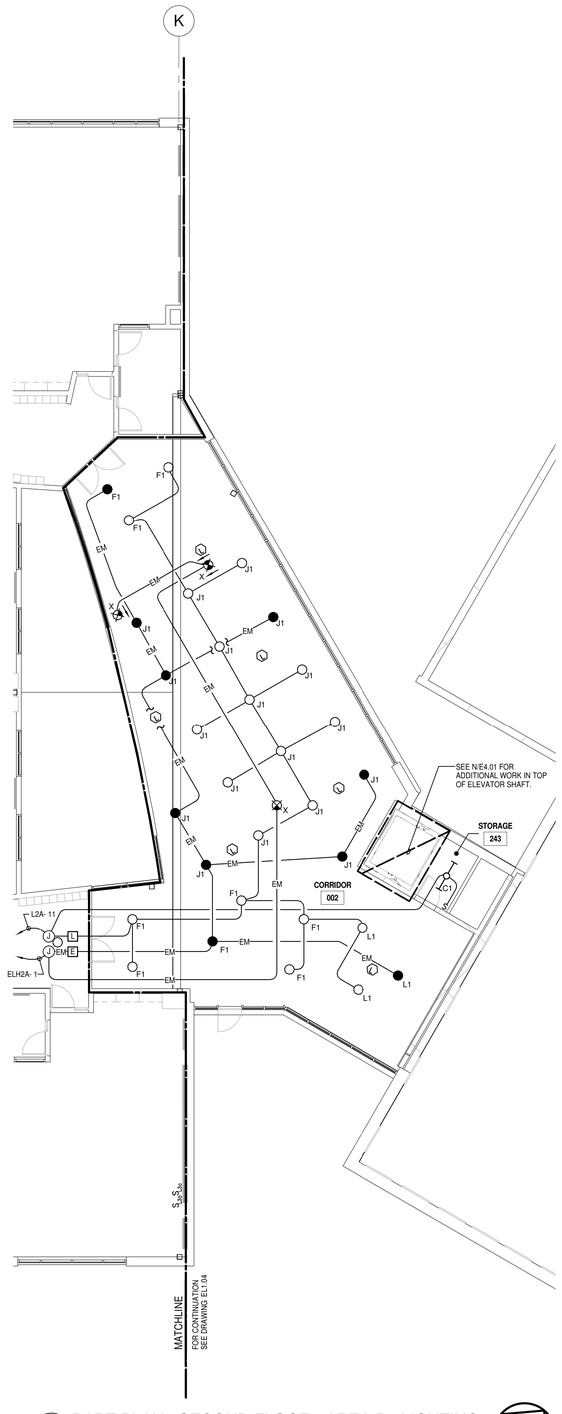
PROJECT NO:	6535-15
DRAWN BY:	JLG
CHECKED BY:	BMM

PART PLAN - SECOND FLOOR - AREA A - LIGHTING

SHEET
EL1.04

Lighting Control Scheme Schedule - SECOND FLOOR - AREA A		
Name	Number	Lighting Control Scheme
OPEN TO BELOW	000	L3
CORRIDOR	002B	L4
CORRIDOR	002C	L4
CORRIDOR	002D	L4
CLASSROOM	201	L3
ELA	201A	L6
CLASSROOM	202	L3
MECH	203	L1
CLASSROOM	204	L3
ELA	204A	L6
CLASSROOM	205	L3
CLASSROOM	206	L3
ELA	206A	L6
CLASSROOM	207	L3
ELA	207A	L6
CLASSROOM	208	L3
MECH	209	L1
CLASSROOM	210	L3
ELA	210A	L6
CLASSROOM	211	L3
CLASSROOM	212	L3
ELA	212A	L6
CLASSROOM	213	L3
ART ROOM	214	L3
ART STORAGE	214A	L7
MECH	215	L1
CLASSROOM	216	L3
ELA	216A	L6
CLASSROOM	217	L3
MECH	218	L1
CLASSROOM	219	L3
ELA	219A	L6
CLASSROOM	220	L3
CLASSROOM	221	L3
ELA	221A	L6
CLASSROOM	222	L3
CLASSROOM	223	L3
ELA	223A	L6
CLASSROOM	224	L3
MECH	225	L1
CLASSROOM	226	L3
ELA	226A	L6
SPECIAL ED.	227	L3
GRADE LEVEL STOR	228	L5
CUSTODIAL	229	L1
GRADE LEVEL STOR	230	L5
STAT OFFICE	231	L6
FACULTY WORKROOM	232	L5
IDF	233	L1
OFFICE	234	L6
TOILET	234A	L2
TOILET	234B	L2
GRADE LEVEL STOR	235	L5
ELEC.	236	L1
GRADE LEVEL STORAGE	237	L5
GIRLS	238	L4
BOYS	239	L4
BOYS	240	L4
GIRLS	241	L4
ESOL RESOURCE ROOM	242	L3
STAIR-2	ST1-2	L4
STAIR	ST2	L4

Lighting Control Scheme Schedule - SECOND FLOOR - AREA B		
Name	Number	Lighting Control Scheme
CORRIDOR	002	L10
STORAGE	243	L1
ELEVATOR SHAFT		L1



1 EL1.05 PART PLAN - SECOND FLOOR - AREA B - LIGHTING

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN

NO SCALE

NORTH

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Corporate Park - 3 - Suite 3 - Drive
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-9820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
226 West Market Street, York, Pennsylvania 17401
717-848-5827 voice 717-843-3449 fax
900 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
JACK J. MATOUSEK
No. 24881
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 24881, Expiration date: 02-24-2018.

PROJECT NO:	6535-15
DRAWN BY:	JLG
CHECKED BY:	BMM

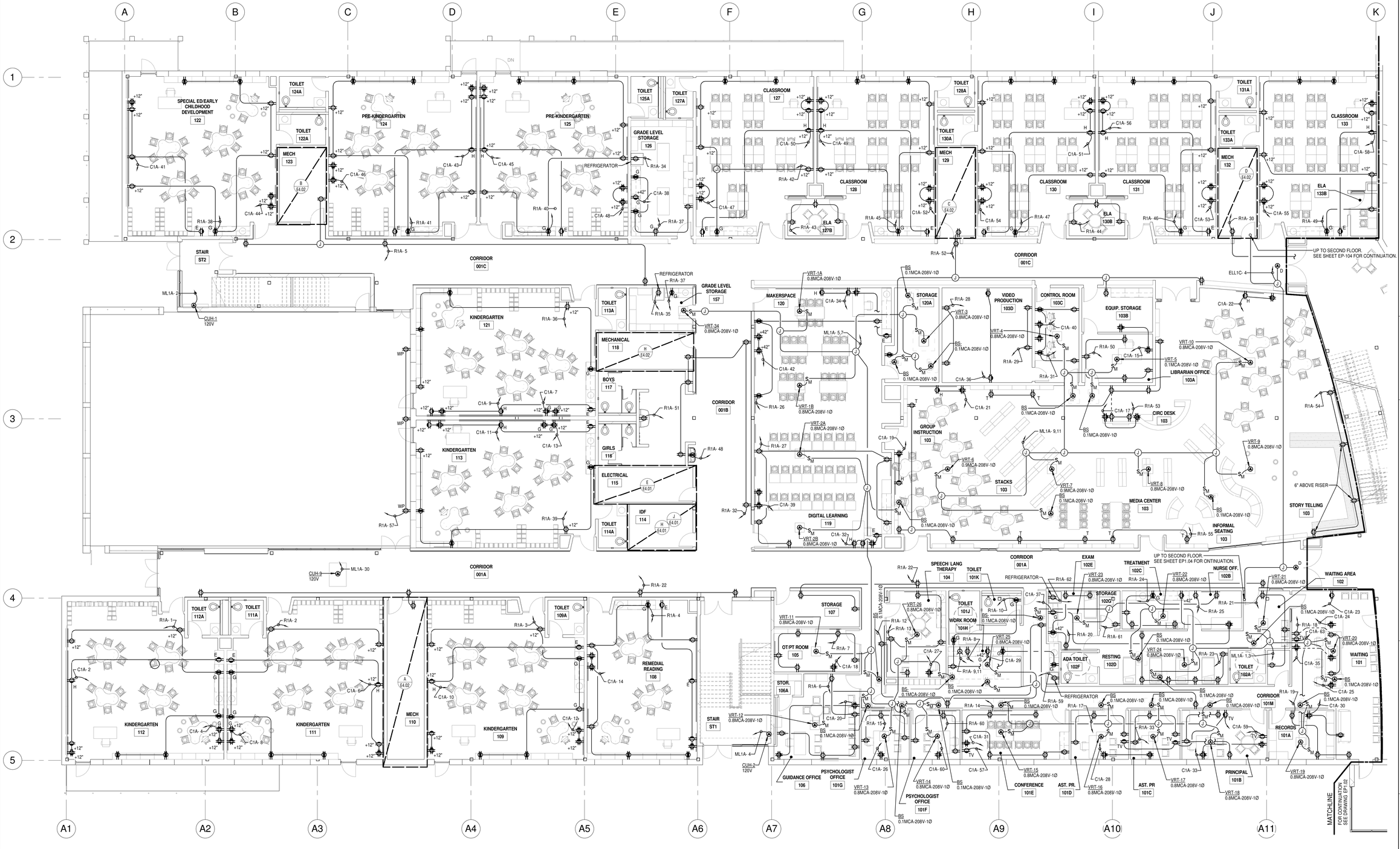
PART PLAN - SECOND FLOOR - AREA B - LIGHTING

SHEET

EL1.05

SPECIFIC NOTES:

1. PROVIDE NEMA L5-30R RECEPTACLE. MOUNT ON CABLE TRAY AT THE TOP OF THE DATA RACK
2. PROVIDE NEMA L6-30 RECEPTACLE. MOUNT ON CABLE TRAY AT TOP OF DATA RACK.
3. PROVIDE QUADRUPLEX NEMA 5-20R RECEPTACLE. MOUNT ON CABLE TRAY.
4. PROVIDE 2P-30A-240V FUSED SAFETY DISCONNECTING SWITCH IN NEMA 1 ENCLOSURE. FUSE PER MANUFACTURER'S RECOMMENDATIONS.



1 EP1.01 PART PLAN - FIRST FLOOR AREA A - POWER

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN
NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
Baltimore, MD 21244
tel 410-265-0300
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
226 West Market Street, York, Pennsylvania 17401
717-848-9827 voice 717-843-2449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/13/2016	BID SET

STATE OF MARYLAND
BRIAN M. MCCARTHY
No. 24861
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 24861. Expiration date: 02-24-2018.

PROJECT NO:	6535-15
DRAWN BY:	EJS
CHECKED BY:	BMM

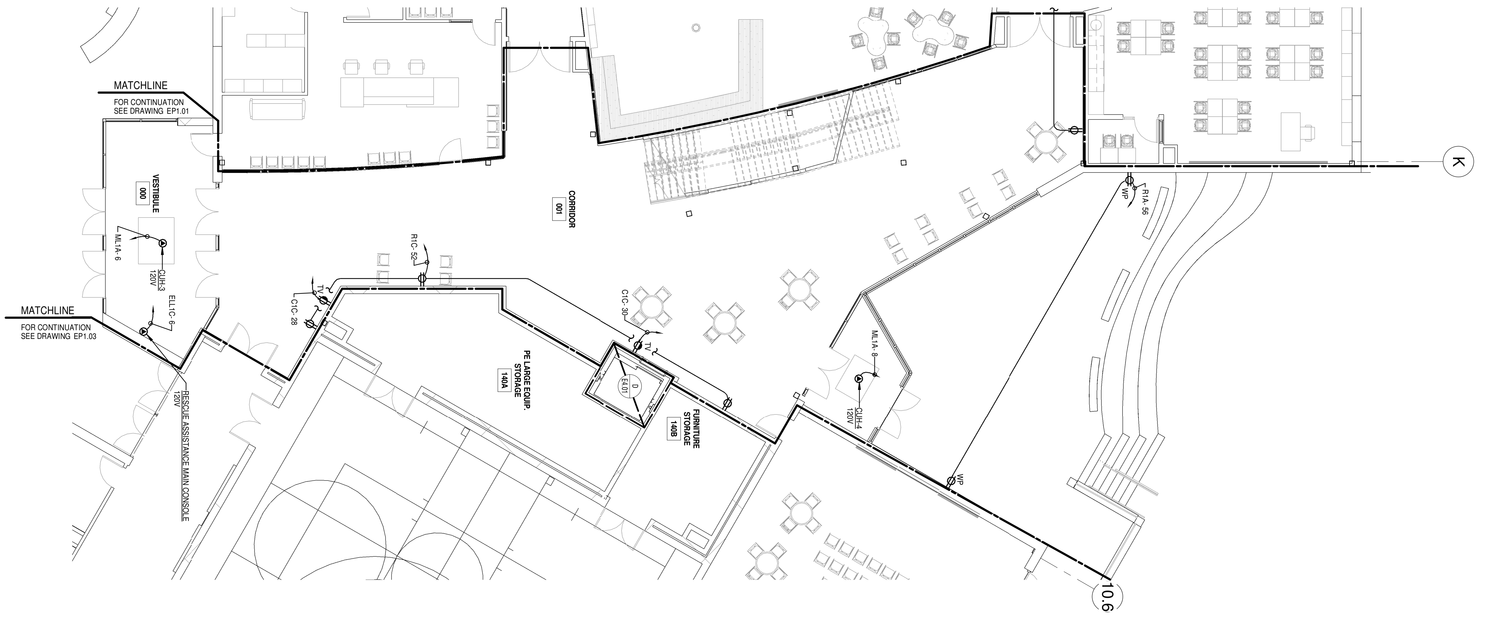
PART PLAN - FIRST FLOOR - AREA A - POWER

SHEET

EP1.01

1 EP1.02 PART PLAN - FIRST FLOOR AREA B - POWER

SCALE: 1/8" = 1'-0"



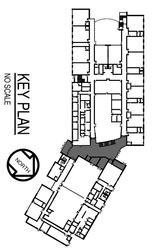
NORTH

SCALE: 1/8" = 1'-0"

8 4 0 8 16

KEY PLAN

NO SCALE



Mark	Date	Description
1	11/10/2016	BID SET

PART PLAN - FIRST FLOOR AREA B - POWER

SHEET EP1.02

PROJECT NO: 6535-15

DRAWN BY: EJS

CHECKED BY: BMM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 26862, Expiration date: 9/19/2018.

STATE OF MARYLAND BRIAN M. MURPHY PROFESSIONAL ENGINEER

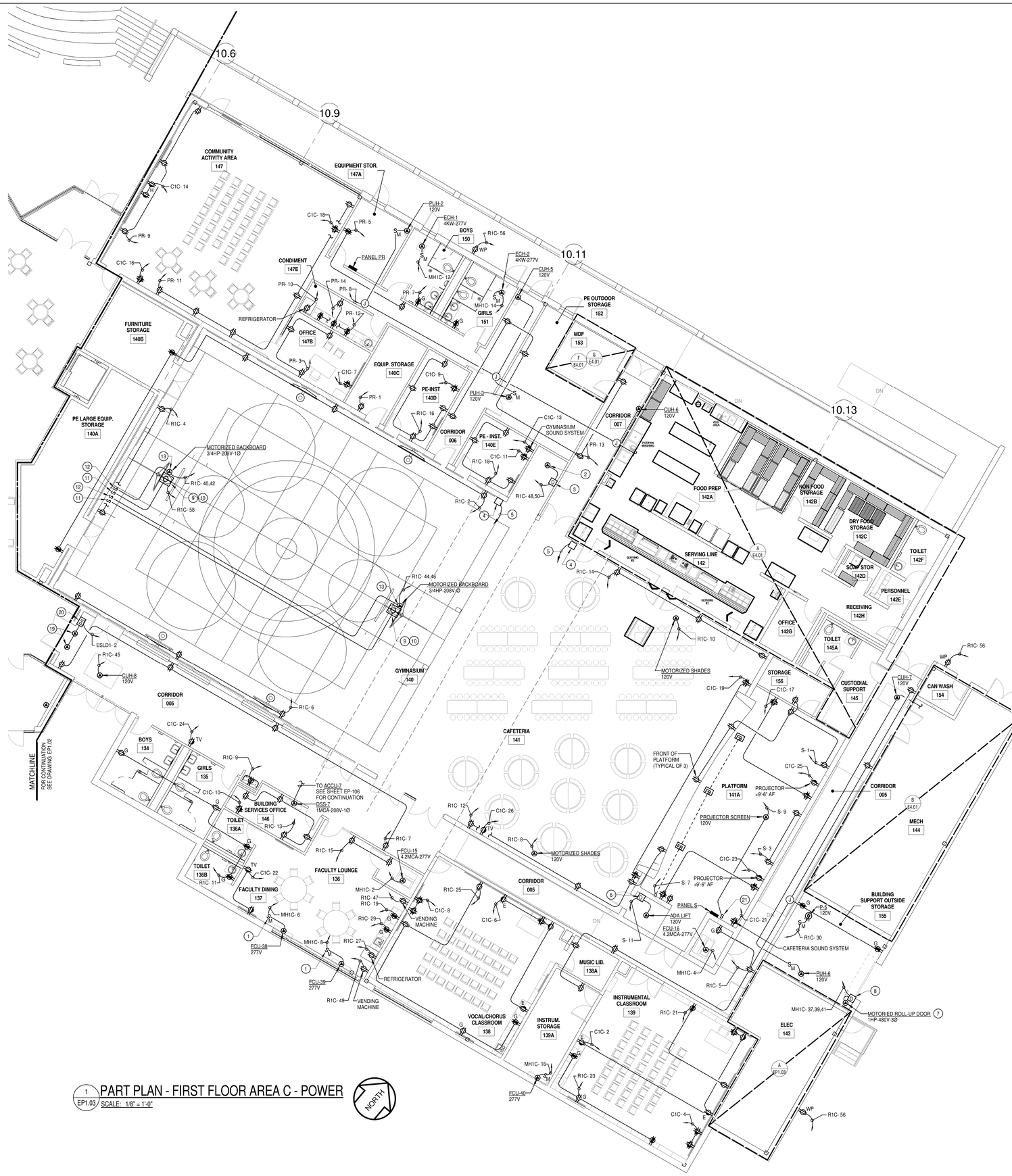
Murphy & Dittenhafer ARCHITECTS
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax
226 West Market Street, York, Pennsylvania 17401
717-848-8627 voice 717-843-2449 fax

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
3112 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-9820
jamesposey.com

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD



1 EP1.03 PART PLAN - FIRST FLOOR AREA C - POWER

SCALE: 1/8" = 1'-0"

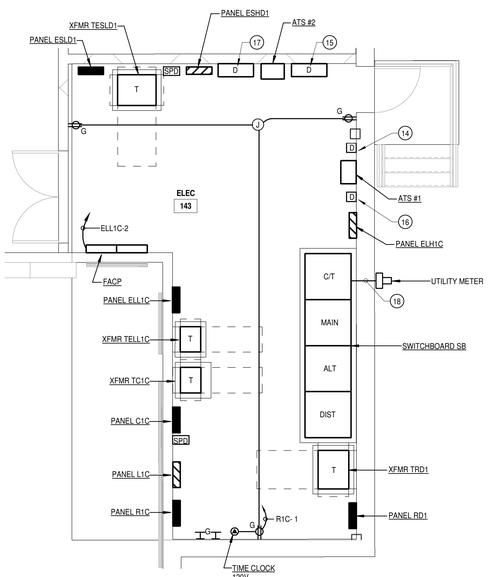
NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

SPECIFIC NOTES:

1. INSTALL MANUAL MOTOR STARTER ABOVE ACCESSIBLE CEILING.
2. MOTORIZED PARTITION: 3/4HP-208V-1Ø. INSTALL INTERLOCK SWITCHES, FURNISHED BY EQUIPMENT MANUFACTURER, PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. COORDINATE EXACT LOCATION WITH ARCHITECT IN FIELD.
3. PROVIDE 2P-30A-208V NON-FUSED SAFETY SWITCH IN NEMA 1 ENCLOSURE. COORDINATE EXACT LOCATION WITH PARTITION MANUFACTURER AND ARCHITECT IN FIELD.
4. PARTITION CONTROLLER: FURNISHED BY EQUIPMENT MANUFACTURER, INSTALLED BY CONTRACTOR.
5. PROVIDE WIRING TO MOTORIZED PARTITION PER PARTITION MANUFACTURER'S RECOMMENDATIONS.
6. PROVIDE 2P-30A-240V NON-FUSED SAFETY SWITCH IN NEMA 1 ENCLOSURE. COORDINATE EXACT MOUNTING LOCATION WITH ARCHITECT AND EQUIPMENT MANUFACTURER IN FIELD.
7. SEE DETAIL 3/E5.07 FOR CONNECTIONS.
8. PROVIDE 3P-30A-600V NON-FUSED SAFETY SWITCH IN NEMA 1 ENCLOSURE. COORDINATE EXACT MOUNTING LOCATION WITH ARCHITECT AND EQUIPMENT MANUFACTURER IN FIELD.
9. PROVIDE TWIST-LOCK RECEPTACLE TO MATCH PLUG PROVIDED BY BACKBOARD MANUFACTURER. LOCATE WITHIN 3'-0" OF WINCH.
10. UTILIZE BRANCH CIRCUIT INDICATED SERVING MOTORIZED BACKBOARD TO MOTORIZED POWER GOAL HEIGHT ADJUSTER. PROVIDE 2#12+# 12G-3/4"C AND CONNECT TO MOTORIZED GOAL HEIGHT ADJUSTER.
11. PROVIDE 1-GANG OUTLET BOX FOR GOAL HEIGHT ADJUSTER CONTROLLER. CONTROLLER SHALL BE FURNISHED BY BACKBOARD SUPPLIER. PROVIDE 3#12+#12G-3/4"C FROM GOAL HEIGHT ADJUSTERS CONTROLLER TO MOTORIZED GOAL HEIGHT ADJUSTER. MAKE CONNECTIONS AS REQUIRED FOR A COMPLETE INSTALLATION.
12. PROVIDE 3#12+#12G-3/4"C FROM EACH MOTORIZED BACKBOARD TO CONTROLLER. CONTROLLER SHALL BE FURNISHED BY BACKBOARD SUPPLIER AND INSTALLED AND WIRED BY CONTRACTOR. MAKE CONNECTIONS AS REQUIRED FOR A COMPLETE INSTALLATION.
13. MOUNT CONTROLLERS FOR MOTORIZED BACKBOARD AND GOAL HEIGHT ADJUSTER IN ENCLOSURE.
14. PROVIDE 3P-100A-600V NON-FUSED SAFETY SWITCH IN NEMA 1 ENCLOUSE FOR EMERGENCY FEEDER FROM GENERATOR.
15. PROVIDE 3P-400A-600V NON-FUSED SAFETY SWITCH IN NEMA 1 ENCLOSURE FOR OPTIONAL STAND-BY FEEDER FROM GENERATOR.
16. PROVIDE 3P-100A-600V FUSED SAFETY SWITCH IN NEMA 1 ENCLOSURE. FUSE WITH (3) 100A CLASS J CURRENT LIMITING FUSES.
17. PROVIDE 3P-400A-600V FUSED SAFETY SWITCH IN NEMA 1 ENCLOSURE. FUSE WITH (3) 225A CLASS J CURRENT LIMITING FUSES.
18. PROVIDE 1-1/4" EMPTY CONDUIT WITH PULL ROPE FOR CONNECTION TO UTILITY METER (PROVIDED BY UTILITY COMPANY).
19. CONNECT TO ELECTROMECHANICAL DOOR CLOSER (PROVIDED UNDER DIVISION 08)
20. PROVIDE POWER SUPPLY AND CONNECT TO ELECTROMECHANICAL DOOR CLOSER - HOLDER (PROVIDED UNDER DIVISION 08) AT DOOR INDICATED. COORDINATE WITH ELECTROMECHANICAL DOOR CLOSER - HOLDER MANUFACTURER FOR POWER SUPPLY TO BE PROVIDED.
21. PROVIDE RAISE-LOWER SWITCH FOR PROJECTOR SCREEN, RECESS MOUNTED 48" ABOVE FLOOR, PER PROJECTOR SCREEN MANUFACTURER'S RECOMMENDATIONS. COORDINATE EXACT LOCATION WITH ARCHITECT IN FIELD.



3 EP1.03 PART PLAN - ELEC 143

SCALE: 1/4" = 1'-0"

NORTH

KEY PLAN

NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-9820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
229 West Market Street, York, Pennsylvania 17401
717-848-9577 voice 717-843-2449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4623 voice 410-625-4674 fax

Mark	Date	Description
1	11/16/2016	BID SET

STATE OF MARYLAND — ERIC J. SCHUMACHER — No. 24861 — PROFESSIONAL ENGINEER

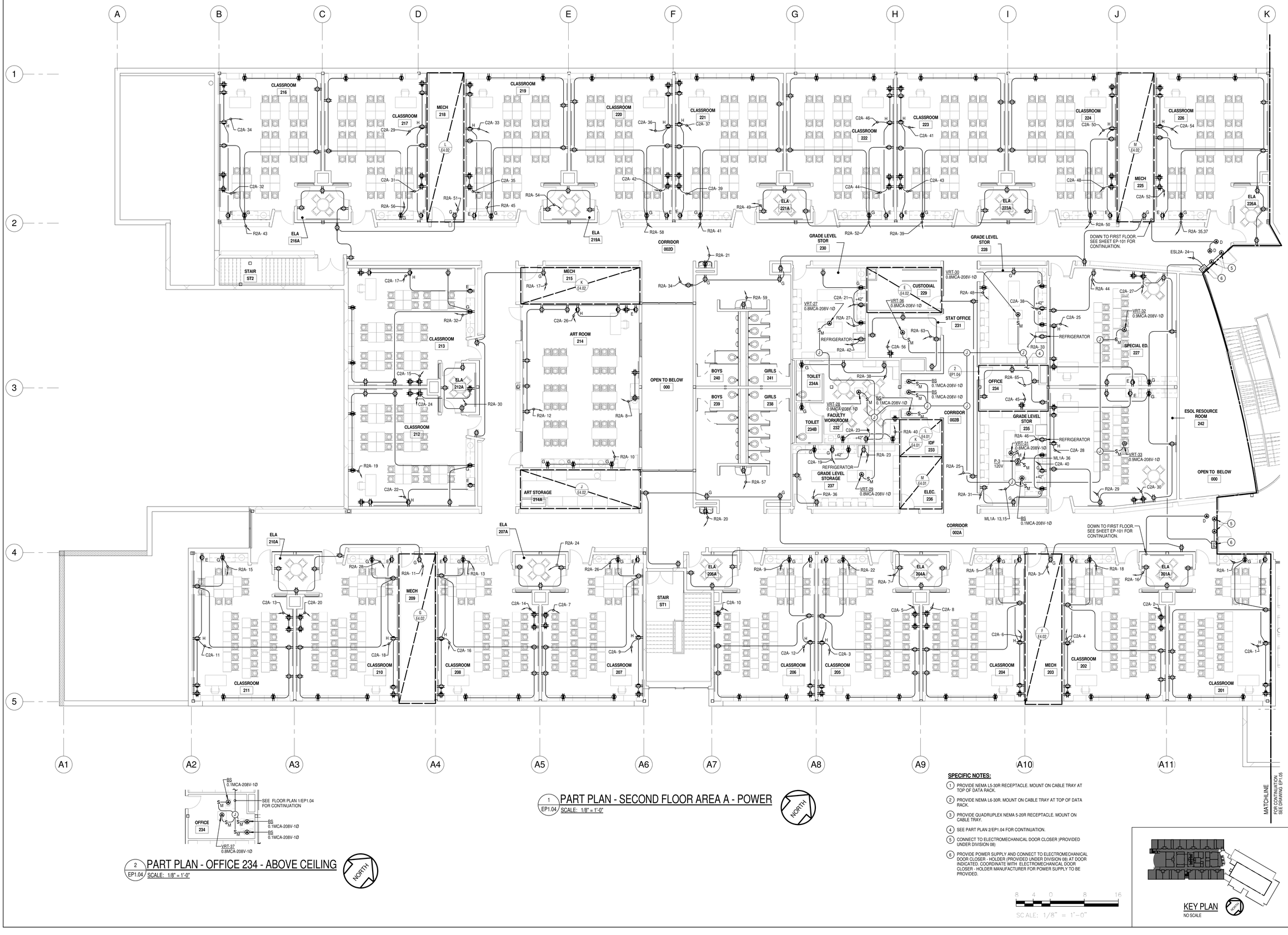
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 24861, Expiration date: 02-24-2018.

PROJECT NO:	6535-15
DRAWN BY:	EJS
CHECKED BY:	BMM

PART PLAN - FIRST FLOOR - AREA C - POWER

SHEET

EP1.03



1 EP1.04 PART PLAN - SECOND FLOOR AREA A - POWER

SCALE: 1/8" = 1'-0"

NORTH

2 EP1.04 PART PLAN - OFFICE 234 - ABOVE CEILING

SCALE: 1/8" = 1'-0"

NORTH

SPECIFIC NOTES:

1. PROVIDE NEMA L5-30R RECEPTACLE. MOUNT ON CABLE TRAY AT TOP OF DATA RACK.
2. PROVIDE NEMA L6-30R. MOUNT ON CABLE TRAY AT TOP OF DATA RACK.
3. PROVIDE QUADRUPLEX NEMA 5-20R RECEPTACLE. MOUNT ON CABLE TRAY.
4. SEE PART PLAN 2/EP1.04 FOR CONTINUATION.
5. CONNECT TO ELECTROMECHANICAL DOOR CLOSER)PROVIDED UNDER DIVISION 08)
6. PROVIDE POWER SUPPLY AND CONNECT TO ELECTROMECHANICAL DOOR CLOSER - HOLDER (PROVIDED UNDER DIVISION 08) AT DOOR INDICATED. COORDINATE WITH ELECTROMECHANICAL DOOR CLOSER - HOLDER MANUFACTURER FOR POWER SUPPLY TO BE PROVIDED.

8 4 0 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN

NO SCALE

NORTH

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
1 Olympic Place Drive Baltimore, MD 21244
tel 410-265-0100
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer Architects
226 West Market Street, York, Pennsylvania 17401
717-848-9827 voice 717-843-2469 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/12/2015	BID SET

STATE OF MARYLAND — BRIAN M. MURPHY — No. 24951 — PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 24951, Expiration date: 02-24-2016.

PROJECT NO:	6535-15
DRAWN BY:	EJS
CHECKED BY:	BMM

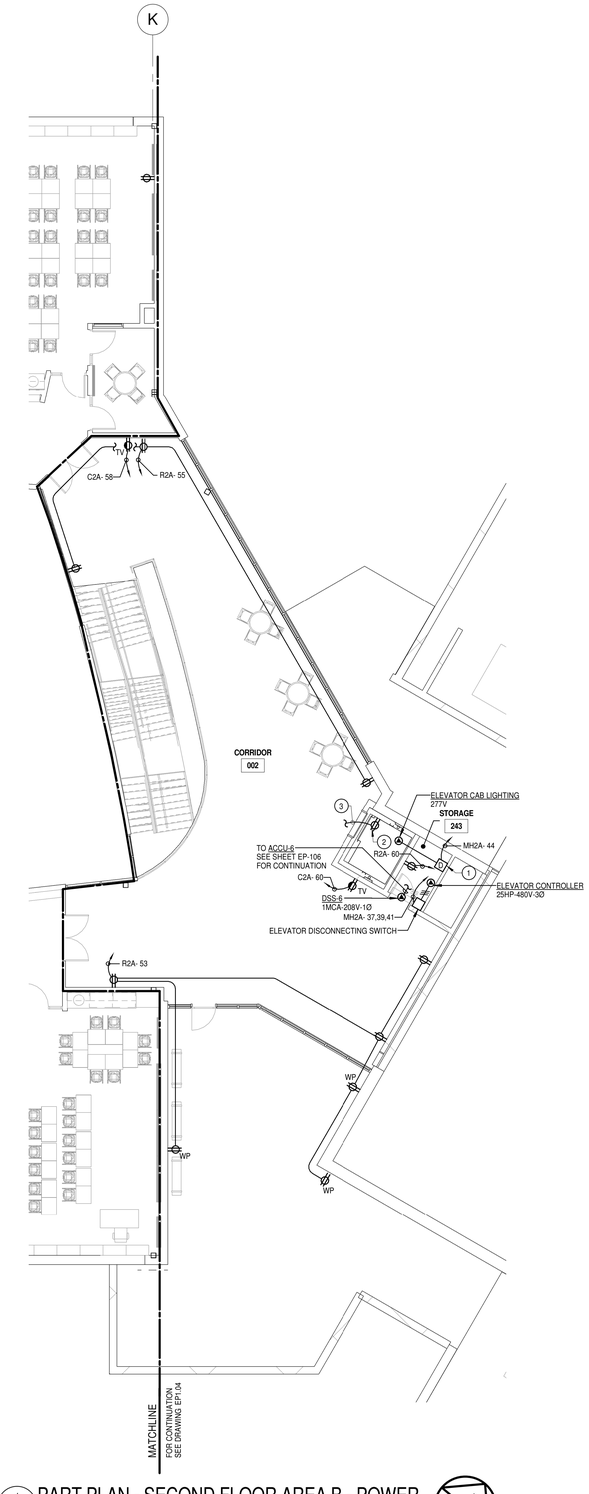
PART PLAN - SECOND FLOOR - AREA A - POWER

SHEET

EP1.04

SPECIFIC NOTES:

1. PROVIDE 2P-30A-600V NON-FUSED SAFETY SWITCH IN NEMA 1 ENCLOSURE FOR ELEVATOR CAB.
2. MOUNT AT TOP OF ELEVATOR SHAFT.
3. CONNECT TO LIGHTING CIRCUIT IN ELEVATOR SHAFT AHEAD OF LOCAL SWITCH.



1 EP1.05 PART PLAN - SECOND FLOOR AREA B - POWER

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN
NO SCALE

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VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Cockeysville Corporate Drive
Baltimore, MD 21224
tel 410-795-0100
fax 410-296-5820
Jamesposey.com

Murphy & Dittenhafer ARCHITECTS
229 West Market Street, York, Pennsylvania 17401
717-848-6627 voice 717-843-2449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4623 voice 410-625-4674 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
BRIAN M. MAROHN
No. 24851
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 24851, Expiration date: 12-24-2016.

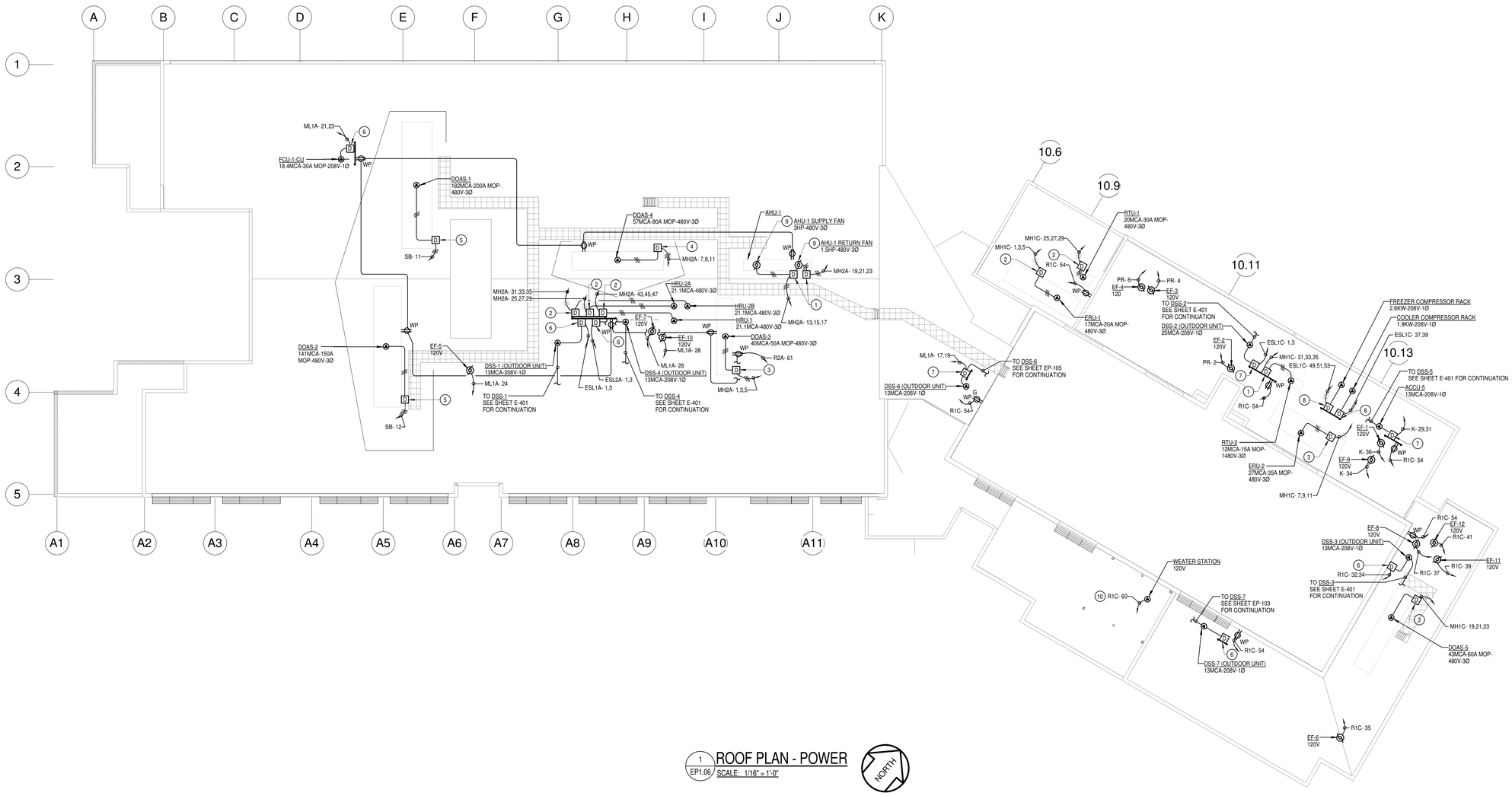
PROJECT NO:	6535-15
DRAWN BY:	EJS
CHECKED BY:	BMM

PART PLAN - SECOND FLOOR - AREA B - POWER

SHEET
EP1.05

SPECIFIC NOTES:

1. PROVIDE 3P-30A-600V NON-FUSED SAFETY SWITCH IN NEMA 3R ENCLOSURE. PROVIDE STEEL CHANNEL MOUNTING SUPPORTS.
2. PROVIDE 3P-30A-600V FUSED SAFETY SWITCH IN NEMA 3R ENCLOSURE. FUSE PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE STEEL CHANNEL MOUNTING SUPPORTS.
3. PROVIDE 3P-60A-600V FUSED SAFETY SWITCH IN NEMA 3R ENCLOSURE. FUSE PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE STEEL CHANNEL MOUNTING SUPPORTS.
4. PROVIDE 3P-100A-600V FUSED SAFETY SWITCH IN NEMA 3R ENCLOSURE. FUSE PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE STEEL CHANNEL MOUNTING SUPPORTS.
5. PROVIDE 3P-200A-600V FUSED SAFETY SWITCH IN NEMA 3R ENCLOSURE. FUSE PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE STEEL CHANNEL MOUNTING SUPPORTS.
6. PROVIDE 2P-30A-240V NON-FUSED SAFETY SWITCH IN NEMA 3R ENCLOSURE. PROVIDE STEEL CHANNEL MOUNTING SUPPORTS.
7. PROVIDE 2P-60A-240V NON-FUSED SAFETY SWITCH IN NEMA 3R ENCLOSURE. PROVIDE STEEL CHANNEL MOUNTING SUPPORTS.
8. FUSED SAFETY SWITCH PROVIDED BY OTHERS. INSTALL EQUIPMENT ON STEEL CHANNEL MOUNTING SUPPORTS.
9. CONNECT TO FAN VIA VFD PROIDED WITH UNIT.
10. SEE DETAIL 6/E5.07 FOR ADDITIONAL INFORMATION.



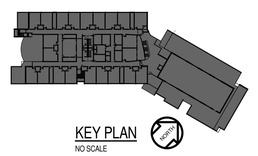
1 EP1.06 ROOF PLAN - POWER

SCALE: 1/16" = 1'-0"

NORTH

16 8 0 16 32

SCALE: 1/16" = 1'-0"



BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
1 Olympic Place Drive
Baltimore, MD 21244
tel 410-265-6500
fax 410-298-5820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
229 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-3469 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
BRIAN M. MARCUS
No. 24861
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 24861, Expiration date: 02-24-2018.

PROJECT NO:	6535-15
DRAWN BY:	EJS
CHECKED BY:	BMM

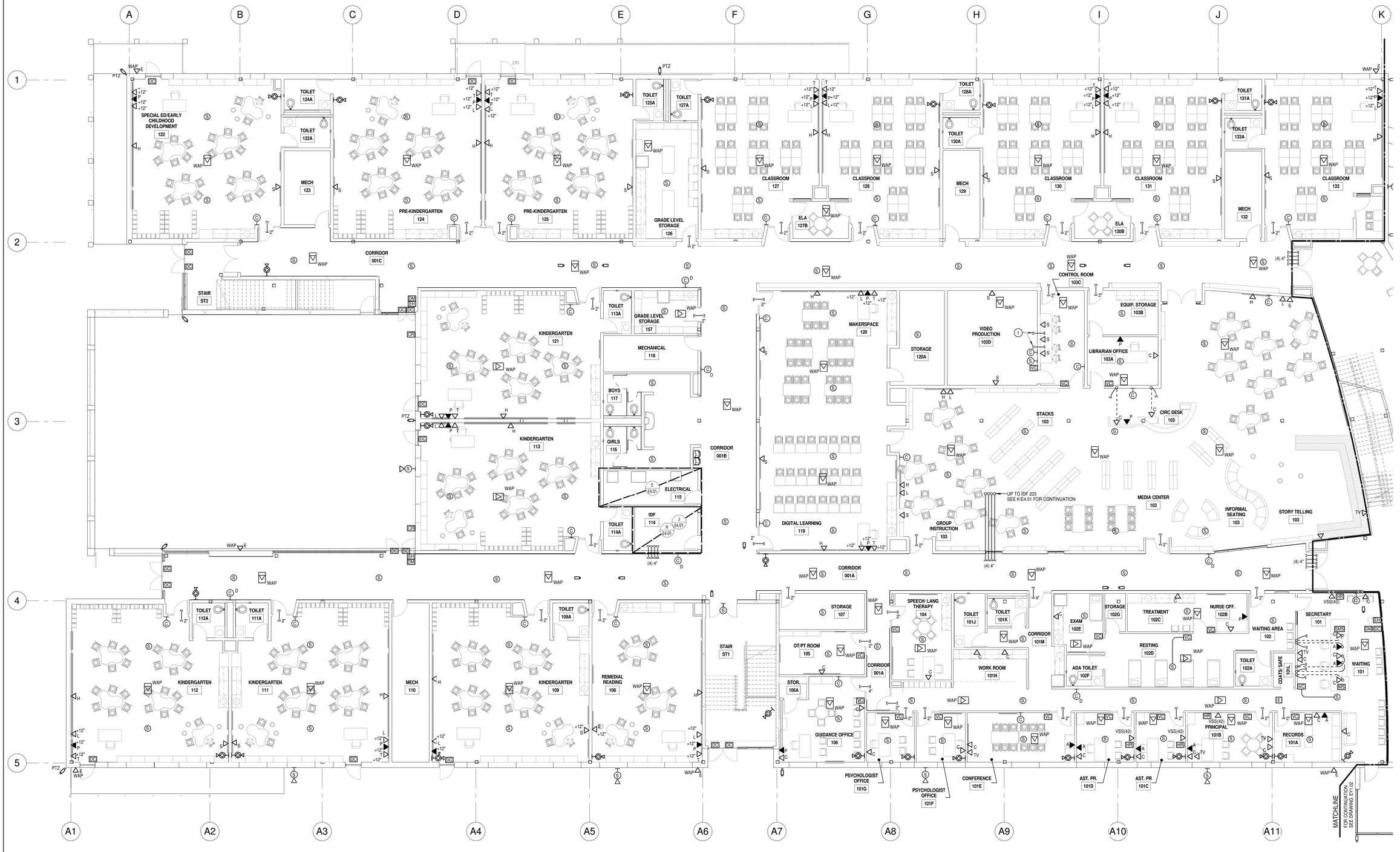
ROOF PLAN - POWER

SHEET

EP1.06

SPECIFIC NOTES:

1. PROVIDE 4" EZ PATH SLEEVES.



1 EY1.01 PART PLAN - FIRST FLOOR - AREA A - SYSTEMS

SCALE: 1/8" = 1'-0"

NORTH

0 4 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN
NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Baltimore, MD 21244
tel 410-265-0300
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
228 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-3449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
-	11/13/2015	BID SET

STATE OF MARYLAND
BRIAN M. MAHY
No. 24861
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 24861, Expiration date: 02.24.2016.

PROJECT NO:	6535-15
DRAWN BY:	EJS
CHECKED BY:	BMM

PART PLAN - FIRST FLOOR - AREA A - SYSTEMS

SHEET

EY1.01

1 EY1.02 PART PLAN - FIRST FLOOR - AREA B - SYSTEMS

SCALE: 1/8" = 1'-0"

SCALE: 1/8" = 1'-0"

KEY PLAN
NO SCALE

Mark	Date	Description
1	11/10/2016	BID SET

EY1.02

PART PLAN - FIRST FLOOR - AREA B - SYSTEMS
SHEET

PROJECT NO: 6535-15
DRAWN BY: EJS
CHECKED BY: BMM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 25431, Expiration Date: 06/30/2018

STATE OF MARYLAND
BRIAN M. MURPHY
No. 25431
PROFESSIONAL ENGINEER

Murphy & Dittenhafer
ARCHITECTS
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax
226 West Market Street, York, Pennsylvania 17401
717-848-8627 voice 717-843-2449 fax

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
3112 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-9820
jamesposey.com

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

SPECIFIC NOTES:

1. PROVIDE (1) 3/4" AUDIO VISUAL CONDUIT AND (1) 3/4" VOICE/DATA CONDUIT. ROUTE CONDUITS FROM FLOORBOX BELOW STAGE TO AUDIO VISUAL AND VOICE/DATA OUTLETS AT 9'-6" ABOVE STAGE.

1 / EY1.03 PART PLAN - FIRST FLOOR - AREA C - SYSTEMS

SCALE: 1/8" = 1'-0"

NORTH

KEY PLAN
NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Cromwell Valley Park Drive
Baltimore, MD 21204
tel 410-296-6300
fax 410-296-6820
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
238 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-2449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
-	11/10/2016	BID SET

STATE OF MARYLAND
BRIAN M. MARCH
No. 24861
PROFESSIONAL ENGINEER

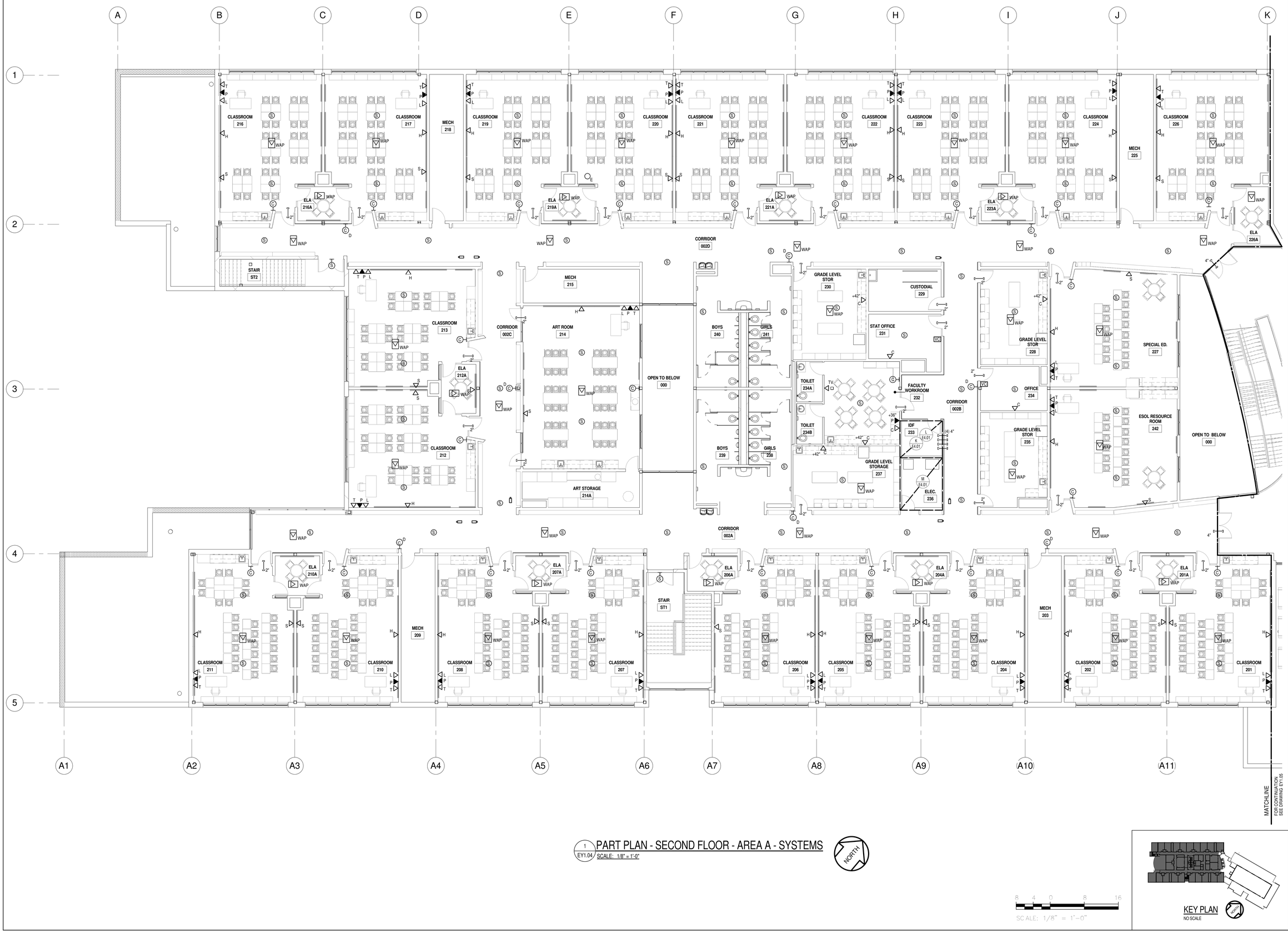
Professional Certification. I hereby certify that the plans, specifications or reports or other documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 24861, Expiration date: 02-24-2018.

PROJECT NO:	6535-15
DRAWN BY:	EJS
CHECKED BY:	BMM

PART PLAN - FIRST FLOOR - AREA C - SYSTEMS

SHEET

EY1.03



1 EY1.04 PART PLAN - SECOND FLOOR - AREA A - SYSTEMS

SCALE: 1/8" = 1'-0"

NORTH

SCALE: 1/8" = 1'-0"

KEY PLAN

NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS

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MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
1 Olympia City Boulevard, Suite 200
Baltimore, MD 21224
tel 410-276-5100
fax 410-276-5101
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
235 West Market Street, York, Pennsylvania 17401
717-848-8677 voice 717-843-2449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/13/2015	BID SET

STATE OF MARYLAND
BRIAN M. MARCH
No. 24861
PROFESSIONAL ENGINEER

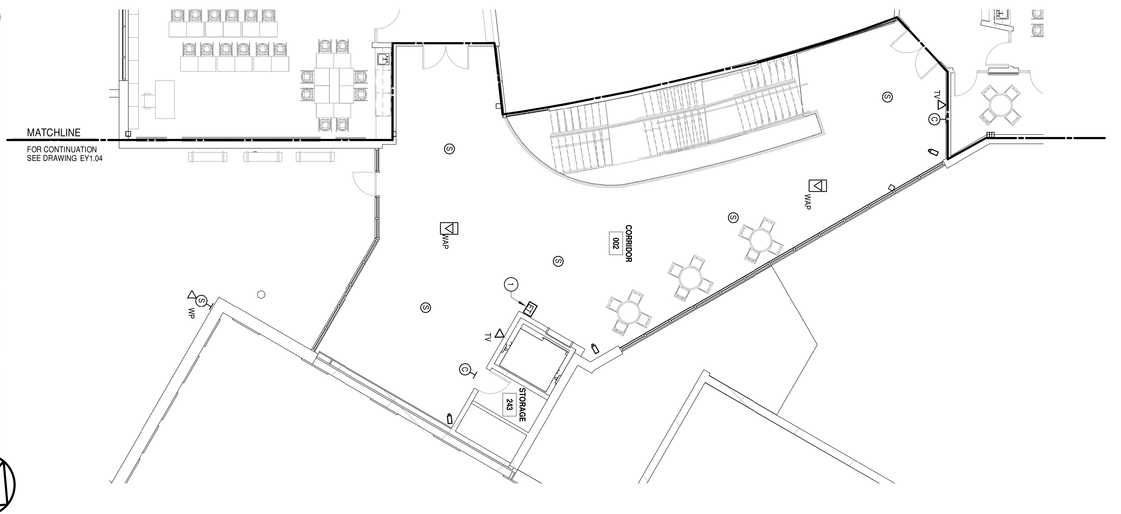
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 24861, Expiration date: 07-24-2016.

PROJECT NO:	6535-15
DRAWN BY:	EJS
CHECKED BY:	BMM

PART PLAN - SECOND FLOOR - AREA A - SYSTEMS

SHEET

EY1.04



1 EY1.05 SCALE: 1/8" = 1'-0"

PART PLAN - SECOND FLOOR - AREA B - SYSTEMS

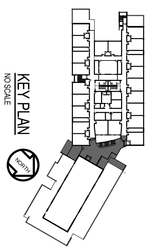
SCALE: 1/8" = 1'-0"

0 4 8 16

SPECIFIC NOTES:

1. COORDINATE EXACT LOCATION OF RESCUE ASSISTANCE EMERGENCY TELEPHONE WITH ARCHITECT IN FIELD.

KEY PLAN
NO SCALE



Mark	Date	Description
1	11/10/2016	BID SET

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 19631, Expiration date: 09/10/2018.

STATE OF MARYLAND
BRIAN M. MURPHY
No. 19631
PROFESSIONAL ENGINEER

PROJECT NO: 6535-15
DRAWN BY: EJS
CHECKED BY: BMM

SHEET
EY1.05

Murphy & Dittenhafer
ARCHITECTS
800 North Charles Street, Baltimore, Maryland 21201
410-625-4623 voice 410-625-4674 fax
226 West Market Street, York, Pennsylvania 17401
717-848-8627 voice 717-843-2449 fax

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
3112 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-9820
jamesposey.com

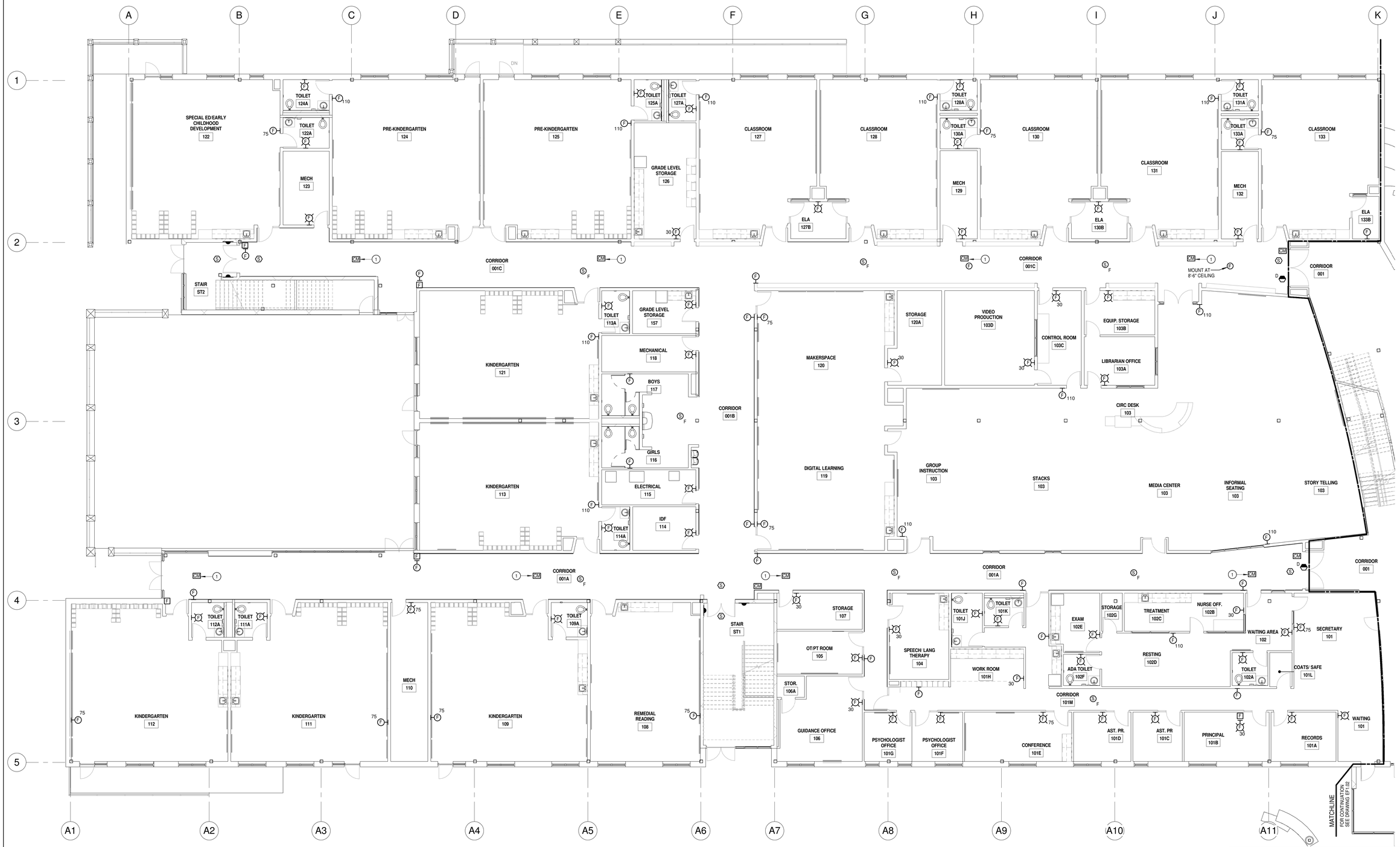
BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

SPECIFIC NOTES:

1. CONNECT TO LIGHTING RELAY ROOM CONTROLLER LOCATED ABOVE CEILING IN CORRIDOR THAT CONTROLS LIGHTING IN RESPECTIVE SPACE. COORDINATE EXACT LOCATION WITH LIGHTING PLANS.



1 EF1.01 PART PLAN - FIRST FLOOR PLAN AREA A - FIRE ALARM

SCALE: 1/8" = 1'-0"

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN

NO SCALE

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MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Baltimore, MD 21244
tel 410-265-0100
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
238 West Market Street, York, Pennsylvania 17401
717-843-8627 voice 717-843-2469 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4623 voice 410-625-4674 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
PAUL J. MARCH
No. 23881
PROFESSIONAL ENGINEER

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PROJECT NO:	6535-15
DRAWN BY:	BMM
CHECKED BY:	PJM

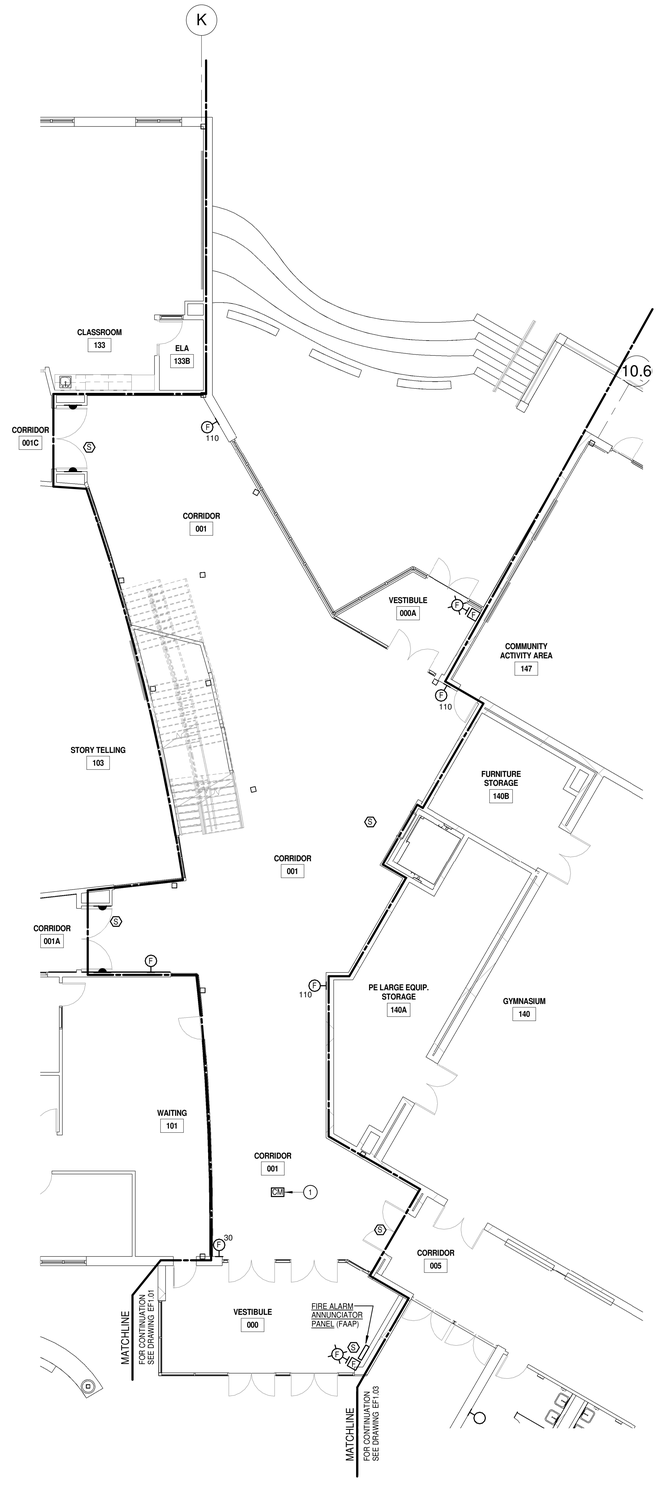
PART PLAN - FIRST FLOOR - AREA A - FIRE ALARM

SHEET

EF1.01

SPECIFIC NOTES:

1. CONNECT TO LIGHTING RELAY ROOM CONTROLLER LOCATED ABOVE CEILING IN CORRIDOR THAT CONTROLS LIGHTING IN RESPECTIVE SPACE. COORDINATE EXACT LOCATION WITH LIGHTING PLANS.



1 EF1.02 PART PLAN - FIRST FLOOR PLAN AREA B - FIRE ALARM

SCALE: 1/8" = 1'-0"

NORTH

0 4 8 16

SCALE: 1/8" = 1'-0"

KEY PLAN
NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Cockeysville Corporate Drive
Baltimore, MD 21224
tel 410-795-6100
fax 410-298-9820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
228 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-3449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
1	11/13/2015	BID SET

STATE OF MARYLAND
PATRICK J. MARCHESANI
No. 24861
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 24861, Expiration date: 02-24-2016.

PROJECT NO:	6535-15
DRAWN BY:	BMM
CHECKED BY:	PJM

PART PLAN - FIRST FLOOR - AREA B - FIRE ALARM

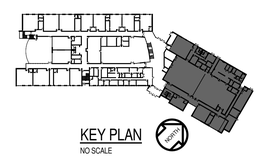
SHEET
EF1.02

SPECIFIC NOTES:

1. CONNECT TO LIGHTING RELAY ROOM CONTROLLER LOCATED ABOVE CEILING IN CORRIDOR THAT CONTROLS LIGHTING IN RESPECTIVE SPACE. COORDINATE EXACT LOCATION WITH LIGHTING PLANS.
2. PROVIDE FIRE ALARM CONTROL MODULE AND CONNECT TO ELECTROMECHANICAL CLOSER - HOLDER (PROVIDED UNDER DIVISION 08).
3. PROVIDE 135-DEGREE HEAT DETECTOR WITHIN 18" OF EACH SPRINKLER HEAD IN ELEVATOR PIT.

1 EF1.03 PART PLAN - FIRST FLOOR PLAN AREA C - FIRE ALARM
SCALE: 1/8" = 1'-0"

SCALE: 1/8" = 1'-0"



KEY PLAN
NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS
VICTORY VILLA ELEMENTARY SCHOOL
MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
1 Olympia Plaza, Olympia Drive
Baltimore, MD 21244
tel 410-265-5100
fax 410-298-9820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
226 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-2469 fax
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410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
1	11/13/2015	BID SET

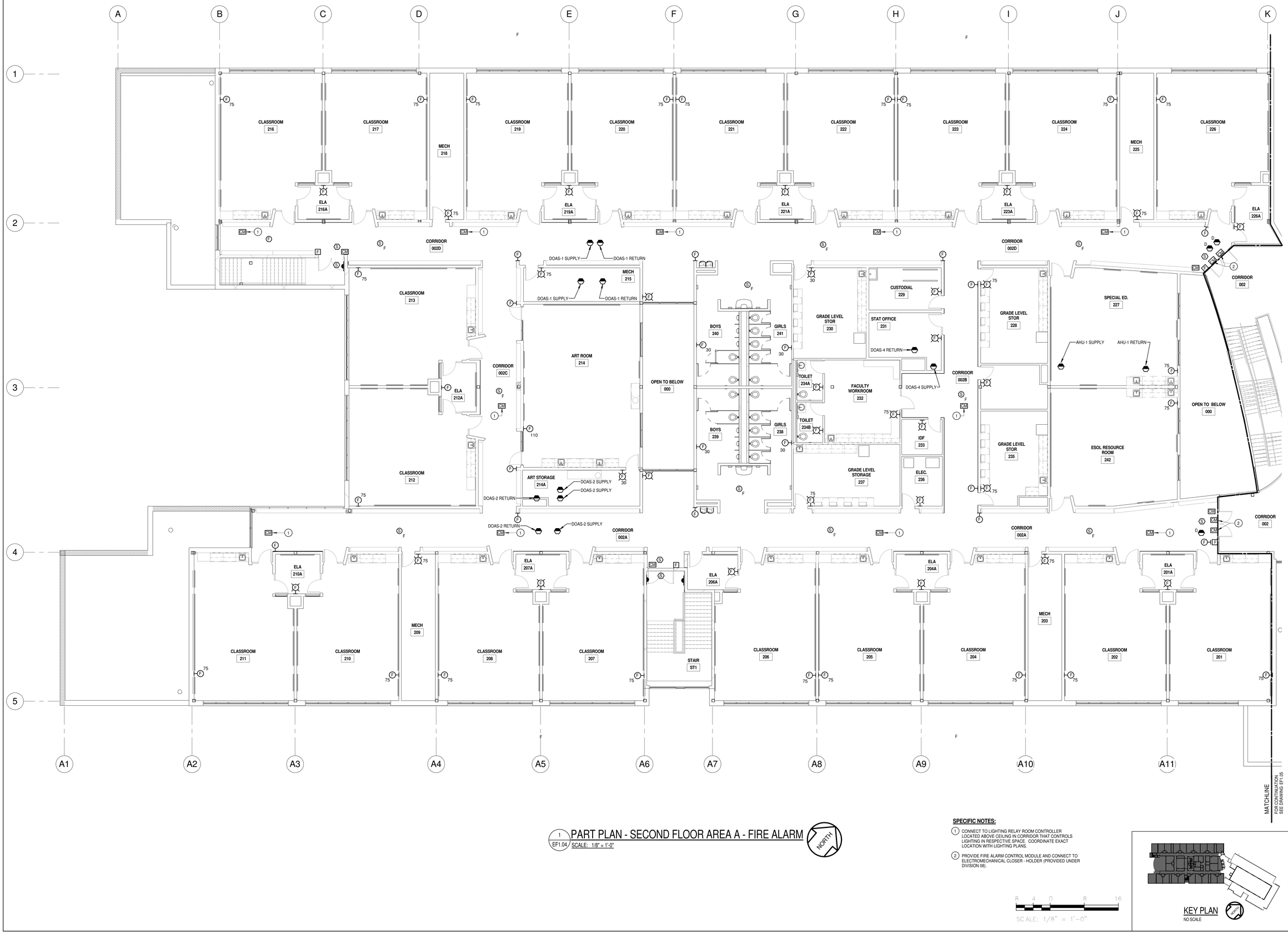
STATE OF MARYLAND
PATRICK J. MARCH
No. 24861
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 24861, Expiration date: 02-24-2016.

PROJECT NO:	6535-15
DRAWN BY:	BMM
CHECKED BY:	PJM

PART PLAN - FIRST FLOOR - AREA C - FIRE ALARM

SHEET
EF1.03



1 EF1.04 PART PLAN - SECOND FLOOR AREA A - FIRE ALARM

SCALE: 1/8" = 1'-0"

NORTH

SPECIFIC NOTES:

1. CONNECT TO LIGHTING RELAY ROOM CONTROLLER LOCATED ABOVE CEILING IN CORRIDOR THAT CONTROLS LIGHTING IN RESPECTIVE SPACE. COORDINATE EXACT LOCATION WITH LIGHTING PLANS.
2. PROVIDE FIRE ALARM CONTROL MODULE AND CONNECT TO ELECTROMECHANICAL CLOSER - HOLDER (PROVIDED UNDER DIVISION 08).

8 4 0 8 16

SCALE: 1/8" = 1'-0"

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MIDDLE RIVER, MD

James Posey Associates
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Mechanical & Electrical
Consulting Engineers
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tel 410-265-6500
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Murphy & Dittenhafer
ARCHITECTS
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410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
PAUL J. MURPHY
No. 22511
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 24861, Expiration date: 02-04-2018.

PROJECT NO:	6535-15
DRAWN BY:	BMM
CHECKED BY:	PJM

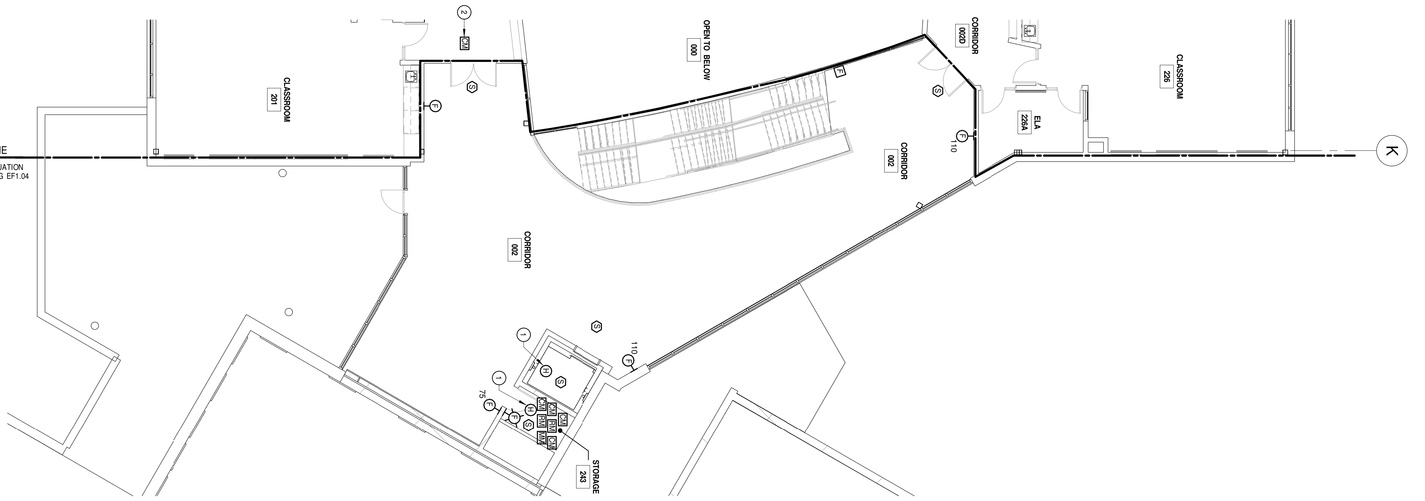
PART PLAN - SECOND FLOOR - AREA A - FIRE ALM.

SHEET

EF1.04

PART PLAN - SECOND FLOOR AREA B - FIRE ALARM

1 / EF1.05 — SCALE: 1/8" = 1'-0"



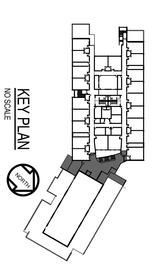
SCALE: 1/8" = 1'-0"

8 4 0 8 16

SPECIFIC NOTES:

1. PROVIDE ADDRESSABLE HEAT DETECTOR WITHIN 18" OF EACH SPRINKLER HEAD AT TOP OF ELEVATOR SHAFT IN ELEVATOR CONTROL ROOM.
2. CONNECT TO LIGHTING RELAY ROOM CONTROLLER LOCATED ABOVE CEILING IN CORRIDOR THAT CONTROLS LIGHTING IN ADJACENT SPACES. COORDINATE EXACT LOCATION WITH LIGHTING PLANS.

KEY PLAN
NO SCALE



Mark	Date	Description
1	11/10/2016	BID SET

Preliminary Construction Documents (AIA A201) have been prepared for this project. Any changes made to these documents without the written permission of Murphy & Dittenhafer Architects will relieve Murphy & Dittenhafer Architects of all responsibility for the use of these documents for any purpose whatsoever.

STATE OF MARYLAND — PROFESSIONAL ENGINEER

PROJECT NO: 6535-15
DRAWN BY: BMM
CHECKED BY: PJM

PART PLAN - SECOND FLOOR - AREA B - FIRE ALM.
SHEET
EF1.05

Murphy & Dittenhafer ARCHITECTS
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax
226 West Market Street, York, Pennsylvania 17401
717-848-8627 voice 717-843-2449 fax

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
3112 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-265-6100
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jamesposey.com

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VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

SCHEDULE OF VARIABLE FREQUENCY DRIVES

DRIVE DESIGNATION	EQUIPMENT SERVED	DRIVE LOCATION	MOTOR CHARACTERISTICS HP	FLA	VOLTAGE / PHASE	DRIVE TYPE	ENCLOSURE TYPE	BYPASS YES / NO	BYPASS STARTER	NOTES
VFD-1	PUMP P-6	MECH ROOM 144	20	26	480V-3ø	6-PULSE	NEMA / UL TYPE 1	YES	ATL	--
VFD-2	PUMP P-7	MECH ROOM 144	20	26	480V-3ø	6-PULSE	NEMA / UL TYPE 1	YES	ATL	--

VARIABLE FREQUENCY DRIVE GENERAL NOTES:

A. VFD DIMENSIONS SHALL NOT EXCEED THE EQUIPMENT FOOTPRINT ALLOCATED. PROVIDE COMPACT DRIVE ASSEMBLIES.

B. MOTOR RATINGS INDICATE NOMINAL HORSEPOWER (HP) AND MINIMUM FULL LOAD AMPERES (FLA).

C. ABBREVIATIONS: ATL - ACROSS THE LINE; RV - REDUCED VOLTAGE

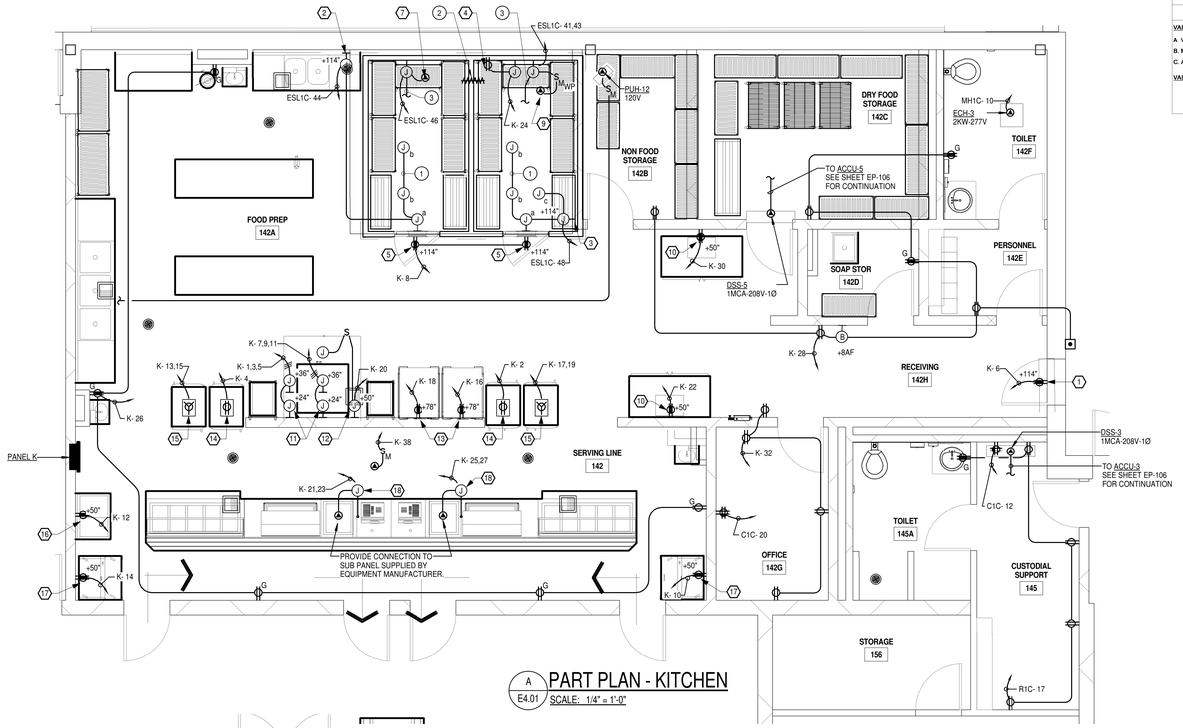
VARIABLE FREQUENCY DRIVE SPECIFIC NOTES:

SPECIFIC NOTES:

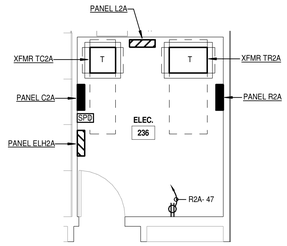
1. INSTALL CONDUIT ABOVE WALK-IN CEILING. SEE DETAIL ON KITCHEN ROUGH-IN DRAWINGS.
2. PROVIDE CONNECTION TO HEAT TAPE APPLIED TO FREEZER COIL DRAIN LINE WHERE EXPOSED.
3. PROVIDE CAT-5 CABLE IN 1" CONDUIT TO OFFICE.
4. PROVIDE COMBINATION NEMA SIZE 0 MOTOR STARTER AND 3P-30A-600V FUSED SATEY SWITCH IN NEMA 1 ENCLOSURE. FUSE PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
5. PROVIDE QUADRUPLEX (DOUBLE DUPLEX) RECEPTACLE. MOUNT ON CABLE TRAY AT TOP OF EQUIPMENT RACK.
6. PROVIDE NEMA L5-30R RECEPTACLE. MOUNT ON CABLE TRAY AT TOP OF EQUIPMENT RACK.
7. PROVIDE NEMA L6-20 RECEPTACLE. MOUNT ON CABLE TRAY AT TOP OF EQUIPMENT RACK.
8. PROVIDE NEMA L6-30 RECEPTACLE. MOUNT ON CABLE TRAY AT TOP OF EQUIPMENT RACK.'
9. PROVIDE 2#12+#12G-3/4"C BETWEEN ELEVATOR PIT LIGHTING AND RECEPTACLE.
10. PROVIDE 2P-30A-240V NON-FUSED SAFETY SWITCH WITH OPEN LOCK CAPABILITY IN NEMA TYPE 12 ENCLOSURE.
11. PROVIDE 2#12+#12G-3/4"C TO EMERGENCY SHUT-OFF SWITCH. CONNECT PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.

GENERAL NOTES:

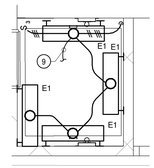
1. REFER TO ELECTRICAL SCHEDULE ON DRAWING K1.04 FOR ADDITIONAL INFORMATION ON KITCHEN EQUIPMENT.



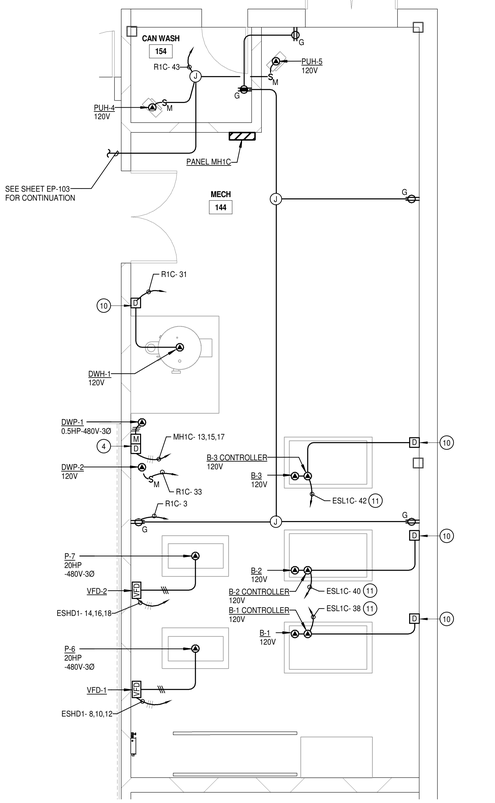
A E4.01 PART PLAN - KITCHEN
SCALE: 1/4" = 1'-0"



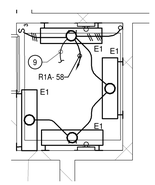
M E4.01 PART PLAN - ELEC. 236
SCALE: 1/4" = 1'-0"



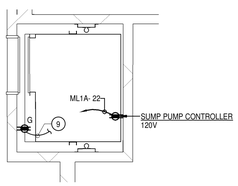
N E4.01 PART PLAN - ELEVATOR TOP OF SHAFT- LIGHTING
SCALE: 1/4" = 1'-0"



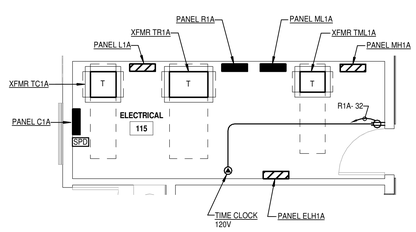
B E4.01 PART PLAN - MECH 144
SCALE: 1/4" = 1'-0"



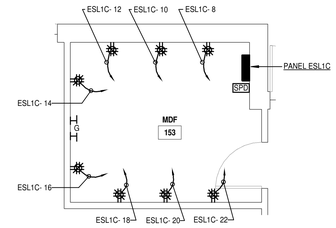
C E4.01 PART PLAN - ELEVATOR PIT - LIGHTING
SCALE: 1/4" = 1'-0"



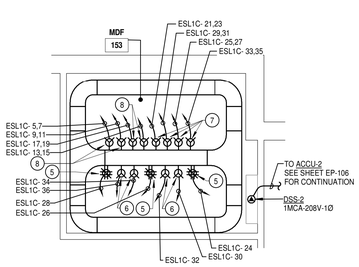
D E4.01 PART PLAN - ELEVATOR PIT - POWER
SCALE: 1/4" = 1'-0"



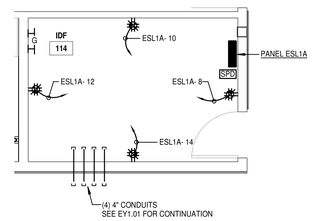
E E4.01 PART PLAN - ELEC 115
SCALE: 1/4" = 1'-0"



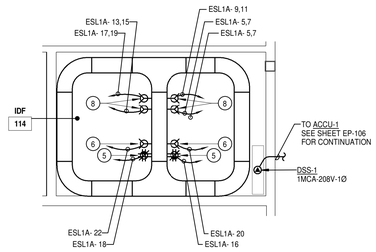
F E4.01 PART PLAN - MDF 153 (LOWER PART)
SCALE: 1/4" = 1'-0"



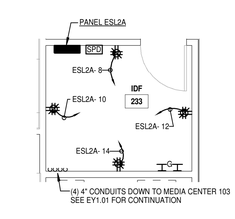
G E4.01 PART PLAN - MDF 153 (UPPER PART)
SCALE: 1/4" = 1'-0"



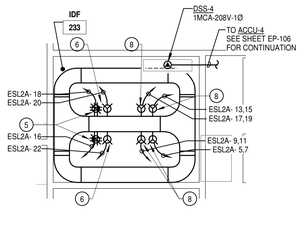
H E4.01 PART PLAN - IDF 114 (LOWER)
SCALE: 1/4" = 1'-0"



J E4.01 PART PLAN - IDF 114 (UPPER)
SCALE: 1/4" = 1'-0"



K E4.01 PART PLAN - IDF 233 (LOWER PART)
SCALE: 1/4" = 1'-0"



L E4.01 PART PLAN - IDF 233 (UPPER PART)
SCALE: 1/4" = 1'-0"

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

BALTIMORE COUNTY PUBLIC SCHOOLS
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James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
2 Hillsmere Shores Drive Baltimore, MD 21234
tel 410-265-0100
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
238 West Market Street, York, Pennsylvania 17401 717-848-8627 voice 717-843-2489 fax
800 North Charles Street, Baltimore, Maryland 21201 410-625-4823 voice 410-625-4974 fax

Mark	Date	Description
-	11/13/2015	BID SET

STATE OF MARYLAND
ERICK V. MARCO
No. 23881
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 23881, Expiration date: 02-24-2018.

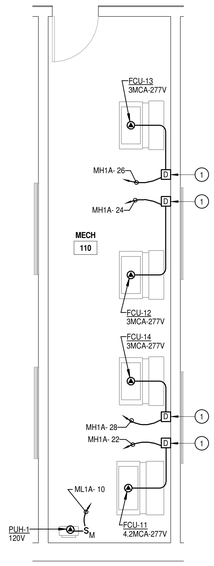
PROJECT NO:	6535-15
DRAWN BY:	EJS
CHECKED BY:	BMM

ENLARGED PLANS

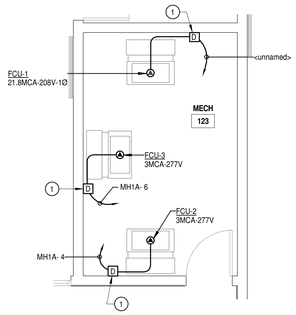
SHEET
E4.01

SPECIFIC NOTES:

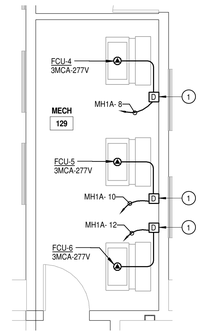
(1) PROVIDE 2P-30A-600V FUSED SAFETY SWITCH IN NEMA 1 ENCLOSURE. FUSE PER MANUFACTURER'S RECOMMENDATIONS.



A E4.02 PART PLAN - MECH 110
SCALE: 1/4" = 1'-0"



B E4.02 PART PLAN - MECH 123
SCALE: 1/4" = 1'-0"



C E4.02 PART PLAN - MECH 129
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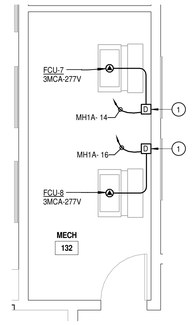

D E4.02 PART PLAN - MECH 132
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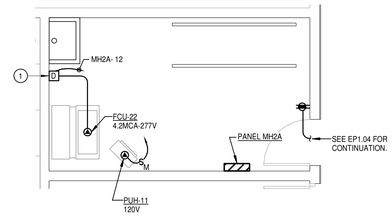
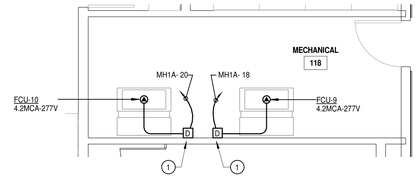
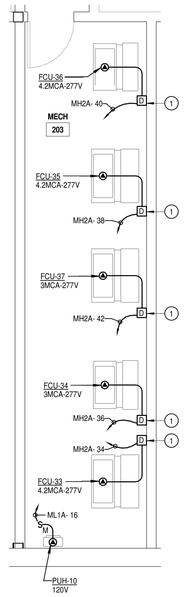


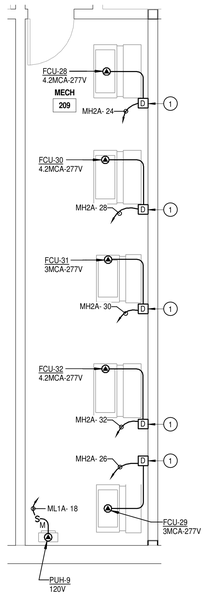
E E4.02 PART PLAN - CUSTODIAL 229
SCALE: 1/4" = 1'-0"



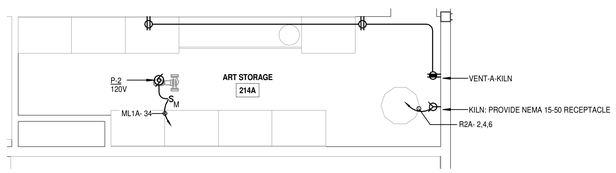
H E4.02 PART PLAN - MECH 118
SCALE: 1/4" = 1'-0"



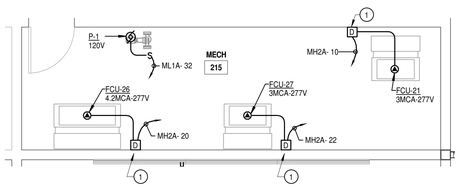
F E4.02 PART PLAN - MECH 203
SCALE: 1/4" = 1'-0"



G E4.02 PART PLAN - MECH 209
SCALE: 1/4" = 1'-0"



J E4.02 PART PLAN - ART STORAGE 214A
SCALE: 1/4" = 1'-0"



K E4.02 PART PLAN - MECH 215
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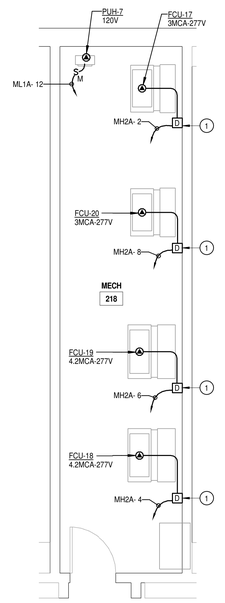

L E4.02 PART PLAN - MECH 218
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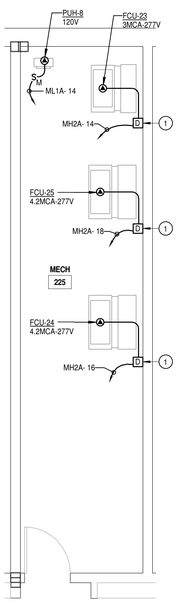

M E4.02 PART PLAN - MECH 225
SCALE: 1/4" = 1'-0"

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

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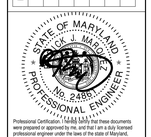
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Cockeysville, Maryland 21030-2284
Baltimore, MD 21244
tel 410-561-6100
fax 410-628-9820
jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
238 West Market Street, York, Pennsylvania 17401
717-848-8627 voice 717-843-2449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4974 fax

Mark	Date	Description
-	11/15/2016	BID SET



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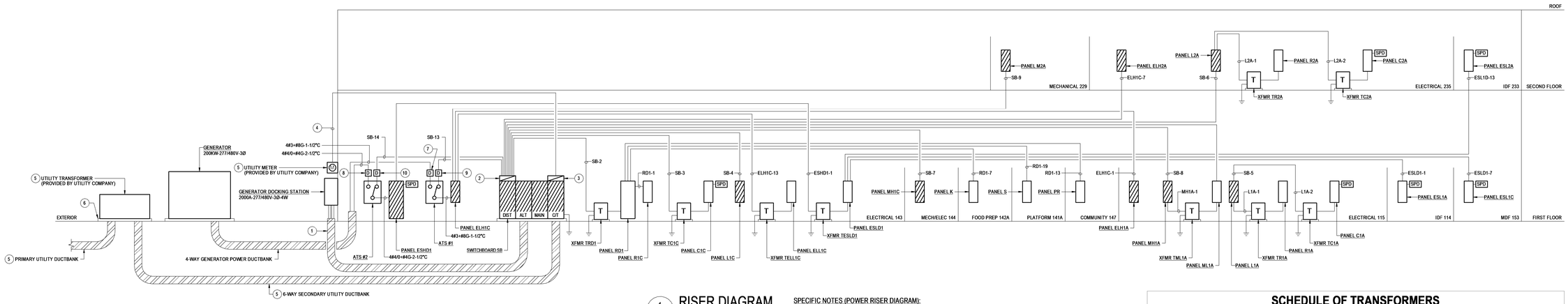
PROJECT NO:	6535-15
DRAWN BY:	BMM
CHECKED BY:	BMM

MECHANICAL ROOMS

SHEET
E4.02



1 E5.01 **RISER DIAGRAM**
POWER DISTRIBUTION
NOT TO SCALE

SPECIFIC NOTES (POWER RISER DIAGRAM):

1. PROVIDE 6-WAY PORTABLE GENERATOR DUCTBANK WITH (5 SETS) 4#500KCMIL+#250KCMIL GROUND.
2. PROVIDE 48"W x 48"D x 12"H PULLBOX ABOVE SWITCHBOARD C/T SECTION.
3. PROVIDE 48"W x 48"D x 12"H PULLBOX ABOVE SWITCHBOARD DISTRIBUTION SECTION.
4. PROVIDE 1-1/4" EMPTY CONDUIT WITH PULL ROPE FOR CONNECTION TO UTILITY METER (BY UTILITY COMPANY).
5. COORDINATE WITH THE UTILITY COMPANY FOR INSTALLATION OF PRIMARY SERVICE FEEDERS, UTILITY TRANSFORMER, SECONDARY SERVICE FEEDERS, AND UTILITY METER.
6. PROVIDE UTILITY TRANSFORMER PAD. COORDINATE WITH UTILITY COMPANY FOR REQUIREMENTS.
7. PROVIDE 3P-100A-600V NON-FUSED SAFETY SWITCH IN NEMA 1 ENCLOSURE.
8. PROVIDE 3P-400A-600V NON-FUSED SAFETY SWITCH IN NEMA 1 ENCLOSURE.
9. PROVIDE 3P-100A-600V FUSED SAFETY SWITCH IN NEMA 12 ENCLOSURE. PROVIDE (3) 100A CLASS J CURRENT LIMITING FUSES.
10. PROVIDE 3P-400A-600V FUSED SAFETY SWITCH IN NEMA 12 ENCLOSURE. PROVIDE (3) 225A CLASS J CURRENT LIMITING FUSES.

SCHEDULE OF TRANSFORMERS

TRANSFORMER		LOCATION	PRIMARY FEEDER	SECONDARY TAP WIRING & CONDUIT (NOTE A)	GROUNDING ELECTRODE CONDUCTOR	EQUIPMENT SERVED	XFMR TYPE	NOTES
DESIGNATION	KVA							
TELL1C	15	ELEC 143	ELH1C-13	4 #8 + #8 G - 1" C	#8	PANEL ELL1C	STD	1
TESLD1	112.5	ELEC 143	ESHD1-1	(2 SETS) 5 #3/0 + #1/0 G - 2-1/2" C	#1/0	PANEL ESLD1	K-13	1
TC1C	30	ELEC 143	SB-3	3 #2 + #2/0 N + #8 G - 1-1/2" C	#8	PANEL C1C	K-13	1
TC1A	45	ELEC 115	L1A-1	5 #2/0 + #4 G - 2" C	#4	PANEL C1A	K-13	1
TC2A	45	ELEC 235	L2A-1	5 #2/0 + #4 G - 2" C	#4	PANEL C2A	K-13	1
TML1A	30	ELEC 115	MH1A-1	4 #3 + #8 G - 1-1/2" C	#8	PANEL ML1A	STD	1
TRD1	112.5	ELEC 143	SB-2	4 #500 KCMIL + #1/0 G - 4" C	#1/0	PANEL RD1	STD	1
TR1A	75	ELEC 115	L1A-2	4 #250 KCMIL + #2 G - 3" C	#2	PANEL R1A	STD	1
TR2A	75	ELEC 235	L2A-2	4 #250 KCMIL + #2 G - 3" C	#2	PANEL R2A	STD	1

TRANSFORMER GENERAL NOTES:

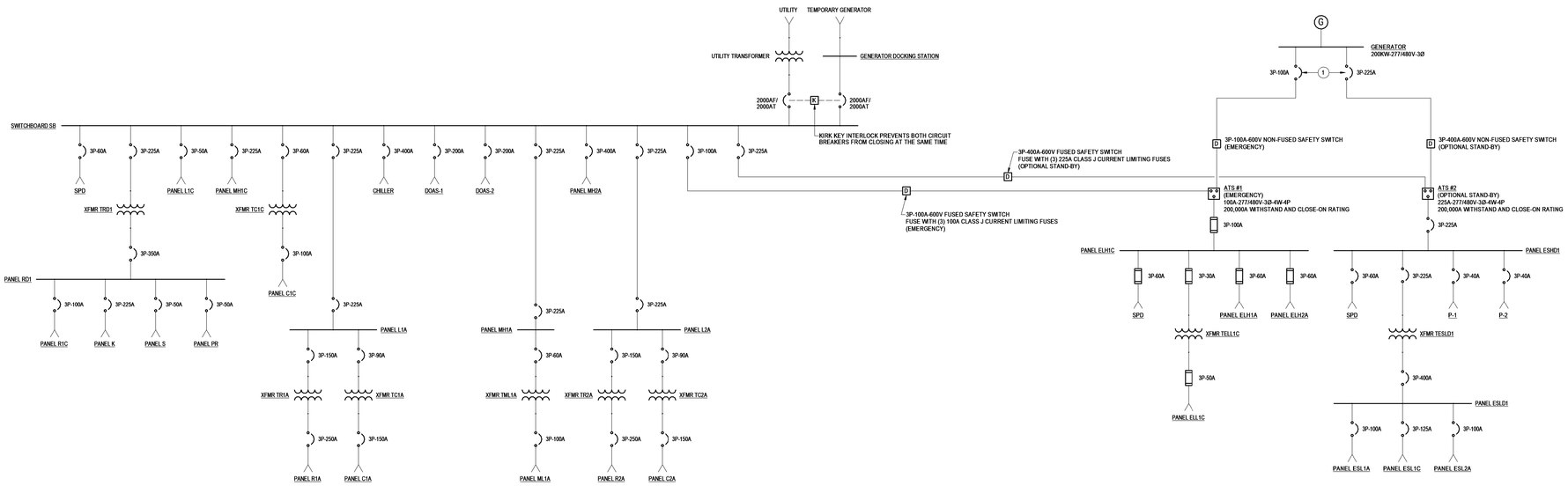
A. TRANSFORMER SECONDARY TAP: CONDUCTORS INDICATED REFLECT PHASE, NEUTRAL (IN WYE-CONFIGURATION), AND SUPPLY-SIDE BONDING JUMPER (SSBJ) IN ACCORDANCE WITH NEC ARTICLES 450, 240.21, AND 250.30.

B. TRANSFORMER SHALL HAVE 480-VOLT, 3-PHASE, DELTA PRIMARY AND 120/208-VOLT, 3-PHASE, WYE SECONDARY.

C. TRANSFORMER TYPES: STANDARD DOE 2016 ENERGY EFFICIENT TRANSFORMER (STD); ELECTROSTICALLY SHIELDED, K-RATED TRANSFORMER (K-13).

TRANSFORMER SPECIFIC NOTES:

1. PROVIDE EQUIPMENT ON CONDRETE HOUSEKEEPING PAD.



2 E5.01 **ONE-LINE DIAGRAM**
POWER DISTRIBUTION
NOT TO SCALE

SPECIFIC NOTES (ONE-LINE DIAGRAM):

1. PROVIDE ELECTRONIC TRIP-TYPE CIRCUIT BREAKER.

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James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
Cromwell Valley Park Drive
Baltimore, MD 21204
tel 410-296-6300
fax 410-296-6882
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
229 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-2448 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
1	11/30/2016	BID SET

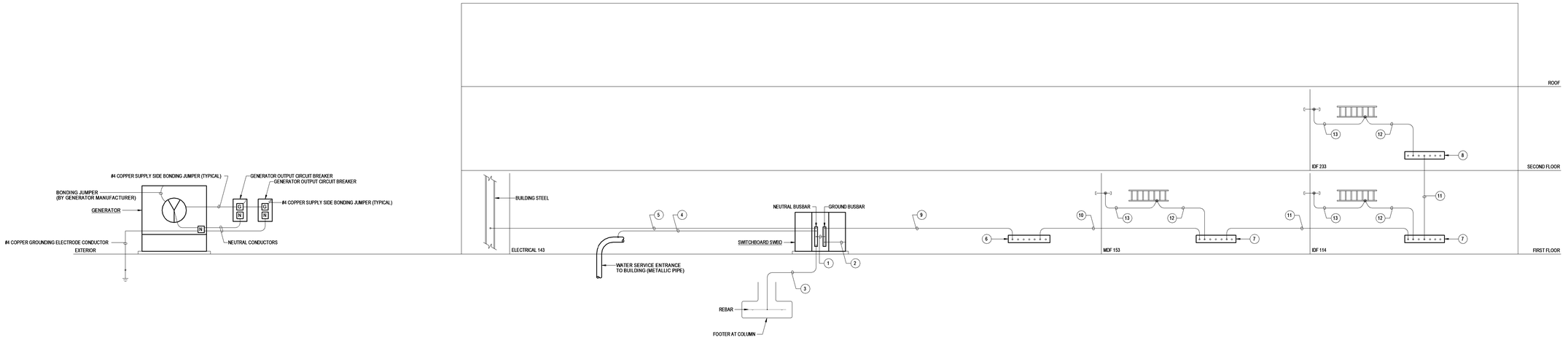
STATE OF MARYLAND
BRIAN MARCUS
No. 24861
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 24861, Expiration date: 02-24-2018.

PROJECT NO:	6535-15
DRAWN BY:	BMM
CHECKED BY:	BMM

RISER DIAGRAM - POWER DISTRIBUTION

SHEET
E5.01

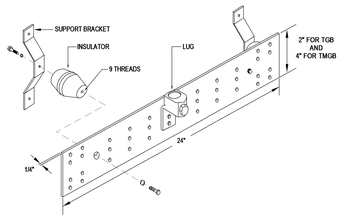


1 E5.02 **RISER DIAGRAM GROUNDING**

SCALE: NOT TO SCALE

SPECIFIC NOTES (GROUNDING RISER):

1. PROVIDE MAIN BONDING JUMPER BETWEEN THE SWITCHBOARD NEUTRAL BUSBAR AND THE SWITCHBOARD GROUND BUSBAR PER THE REQUIREMENTS OF ARTICLE 250.28 OF THE NATIONAL ELECTRICAL CODE.
2. PROVIDE MAIN BONDING JUMPER BETWEEN THE SWITCHBOARD GROUND BUSBAR AND THE SWITCHBOARD ENCLOSURE PER THE REQUIREMENTS OF ARTICLE 250.8(A)(2) OF THE NATIONAL ELECTRICAL CODE.
3. PROVIDE #3/0 GROUNDING ELECTRODE CONDUCTOR BETWEEN THE SWITCHBOARD NEUTRAL BUSBAR AND REBAR IN BUILDING FOOTER PER THE REQUIREMENTS OF ARTICLE 250.66(B) OF THE NATIONAL ELECTRICAL CODE.
4. PROVIDE #3/0 GROUNDING ELECTRODE CONDUCTOR BETWEEN THE SWITCHBOARD NEUTRAL BUSBAR IN SWITCHBOARD AND THE WATER SERVICE (METALLIC PIPE) PER THE REQUIREMENTS OF ARTICLE 250.52(A)(1) OF THE NATIONAL ELECTRICAL CODE.
5. PROVIDE #3/0 GROUNDING ELECTRODE CONDUCTOR BETWEEN THE SWITCHBOARD NEUTRAL BUSBAR AND THE NEAREST VERTICAL, STRUCTURAL STEEL COLUMN PER THE REQUIREMENTS OF ARTICLE 250.52(A)(2) OF THE NATIONAL ELECTRICAL CODE.
6. INTERSYSTEM BONDING TERMINATION (ISBT). MOUNT HORIZONTALLY 18" ABOVE FLOOR AS INDICATED IN DETAIL 1/E5.6.
7. TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB). MOUNT HORIZONTALLY 18" ABOVE FLOOR AS INDICATED IN DETAIL 1/E5.6.
8. TELECOMMUNICATIONS BRANCH GROUNDING BUSBAR (TGB). MOUNT HORIZONTALLY 18" ABOVE FLOOR AS INDICATED IN DETAIL 1/E5.6.
9. PROVIDE #6 SYSTEM BONDING CONDUCTOR BETWEEN SWITCHBOARD GROUND BUSBAR AND INTERSYSTEM BONDING TERMINATION (ISBT).
10. PROVIDE #1/0 INSULATED COPPER TELECOMMUNICATIONS BONDING BACKBONE (TBB) BETWEEN TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB) AND INTERSYSTEM BONDING TERMINATION (ISBT).
11. PROVIDE #1/0 INSULATED COPPER BONDING CONDUCTOR INSULATED COPPER TELECOMMUNICATIONS BONDING BACKBONE (TBB) BETWEEN TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB) AND TELECOMMUNICATIONS BRANCH GROUNDING BUSBAR (TGB).
12. PROVIDE #6 BARE COPPER CONDUCTOR. BOND CABLE TRAY TO TELECOMM GROUNDING BUSBAR.
13. PROVIDE #6 BARE COPPER CONDUCTOR. BOND ALL METALLIC RACEWAYS AND SLEEVES EXITING CLOSET TO TELECOMM GROUNDING BUSBAR.



BUSBAR DETAIL NOTES:

1. TELECOMMUNICATIONS GROUNDING BUSBAR (TGB) SHALL BE HARGER BICSI PATTERN TGB KIT, PART NO. TGB114224TGBKT, OR APPROVED EQUAL. ALL CONNECTIONS TO TGB SHALL BE EXOTHERMIC WELD OR 2-LUG CONNECTOR.
2. INTERSYSTEM BONDING TERMINATION GROUNDING BUSBAR (IBGB) AND TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB) SHALL BE HARGER BICSI PATTERN TGB KIT, PART NO. TGB114224TMGBKT, OR APPROVED EQUAL. ALL CONNECTIONS TO TMGB SHALL BE EXOTHERMIC WELD OR 2-LUG CONNECTOR.

SYMBOL:

2 E5.02 **DETAIL GROUNDING BUSBAR ASSEMBLY**

SCALE: NOT TO SCALE

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James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Court House Square, 3rd Floor
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
238 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-3449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
BRIAN M. MARCO
No. 24861
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that the technical documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 24861, Expiration date: 02-24-2018.

PROJECT NO:	6535-15
DRAWN BY:	BMM
CHECKED BY:	BMM

RISER DIAGRAM - GROUNDING

SHEET

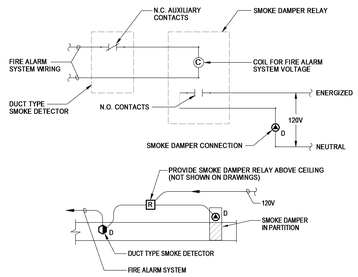
E5.02

FIRE ALARM SEQUENCE OF OPERATION MATRIX

INITIATION DEVICE ACTION:	CORRESPONDING SYSTEM ACTION: ACTIVATE AUDIBLE ALARM SIGNAL	ACTIVATE VISIBLE ALARM SIGNAL	ACTIVATE AUDIBLE TROUBLE SIGNAL	ACTIVATE VISIBLE TROUBLE SIGNAL	ACTIVATE AUDIBLE SUPERVISORY SIGNAL	ACTIVATE VISIBLE SUPERVISORY SIGNAL	DISPLAY ADDRESSABLE ZONE INDICATOR	TRANSMIT ALARM SIGNAL TO FACP	TRANSMIT TROUBLE SIGNAL TO FACP	TRANSMIT SUPERVISORY SIGNAL TO FACP	ACTIVATE ELEVATOR RECALL	SEND SIGNAL TO ELEVATOR SHUNT TRIP CONTROLLER	TRANSMIT SIGNAL TO MONITORING SERVICE *	SEND SIGNAL TO EMERGENCY LIGHTING ROOM CONTROLLERS
MANUAL PULL STATION	○	○					○		○					○	○
SMOKE DETECTOR	○	○					○		○				○	○	○
SPRINKLER VALVE MONITOR					○	○	○			○				○	
SPRINKLER FLOW SWITCH			○	○			○		○					○	
ELEV. LOBBY SMOKE DETECTOR, FIRST FLOOR	○	○					○		○			○		○	○
ELEV. LOBBY SMOKE DETECTOR, SECOND FLOOR	○	○					○		○			○		○	○
FIRE ALARM AC POWER FAILURE			○	○						○				○	
FIRE ALARM SYSTEM LOW BATTERY			○	○						○				○	
OPEN CIRCUIT			○	○						○				○	
GROUND FAULT			○	○						○				○	
NOTIFICATION APPLIANCE SHORT CIRCUIT			○	○						○				○	
HEAT DETECTOR	○	○					○						○	○	

NOTES:

* COMMUNICATE VIA AUTODIALER



OPERATION: PROVIDE 120 VOLT POWER CIRCUIT THROUGH RELAY CONTROLLED BY SMOKE DETECTORS NORMALLY CLOSED CONTACTS. SMOKE DETECTOR GOES INTO ALARM - CONTACTS OPEN - DAMPER CLOSES ON LOSS OF POWER. SMOKE DETECTOR IS RESET AT FACP AND DAMPER OPENS (POWER ON).

2 / E5.03 **DIAGRAM**
SMOKE DETECTOR AT SMOKE DAMPER
SCALE: NOT TO SCALE

FIRST FLOOR

SECOND FLOOR

RED LED	MANUAL PULL STATION
	AREA SMOKE DETECTOR
AMBER LED	DUCT TYPE SMOKE DETECTOR
RED LED	SPRINKLER FLOW SWITCH
	SPRINKLER VALVE TAMPER SWITCH
AMBER LED	MAIN VALVE TAMPER SWITCH
AMBER LED	GENERATOR ALARM
RED LED	GENERATOR RUNNING
RED LED	HEAT DETECTOR (ELEVATOR)
RED LED	PORTABLE CLASSROOMS

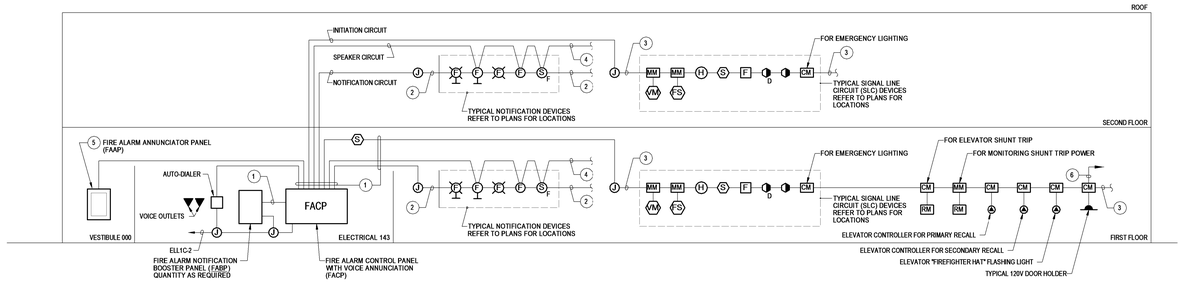
AMBER LED	SUPERVISORY
RED LED	ALARM
AMBER LED	TROUBLE
GREEN LED	POWER ON

SILENT | LAMP TEST | EMERGENCY FAN DISCONNECT SWITCH

ALARM

NORTH

VICTORY VILLA Elementary School
500 COMPASS ROAD
Baltimore, Maryland 21220



1 / E5.03 **RISER DIAGRAM**
POWER DISTRIBUTION
SCALE: NOT TO SCALE

SPECIFIC NOTES (FIRE ALARM RISER):

1. PROVIDE FIRE ALARM WIRING IN EMT CONDUIT. WIRING SHOWN IS DIAGRAMMATIC. PROVIDE WIRING AS RECOMMENDED BY FIRE ALARM SYSTEM MANUFACTURER. PROVIDE QUANTITIES AS REQUIRED TO SERVE DEVICES INDICATED ON DRAWINGS.
2. PROVIDE FIRE ALARM WIRING (MC CABLE) TO ADDITIONAL NOTIFICATION DEVICES. REFER TO PLANS FOR LOCATIONS ON EACH FLOOR.
3. PROVIDE FIRE ALARM WIRING (MC CABLE) TO ADDITIONAL SIGNAL LINE CIRCUIT (SLC) DEVICES. REFER TO PLANS FOR LOCATIONS ON EACH FLOOR.
4. PROVIDE FIRE ALARM WIRING (MC CABLE) TO ADDITIONAL SPEAKER DEVICES. REFER TO PLANS FOR LOCATIONS ON EACH FLOOR.
5. FIRE ALARM ANNUNCIATOR WITH GRAPHIC DISPLAY.
6. PROVIDE 2#12+#12G-3/4"C TO NEAREST RECEPTACLE CIRCUIT SERVING CORRIDOR FOR 120V POWER TO MAGNETIC DOOR HOLDERS.

3 / E5.03 **DIAGRAM**
FIRE ALARM ANNUNCIATOR GRAPHIC DISPLAY
NOT TO SCALE

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James Posey Associates
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Mechanical & Electrical Consulting Engineers
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800 North Charles Street, Baltimore, Maryland 21201 410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
-	11/13/2014	BID SET

STATE OF MARYLAND — PATRICK J. MAHONEY — No. 24861 — PROFESSIONAL ENGINEER

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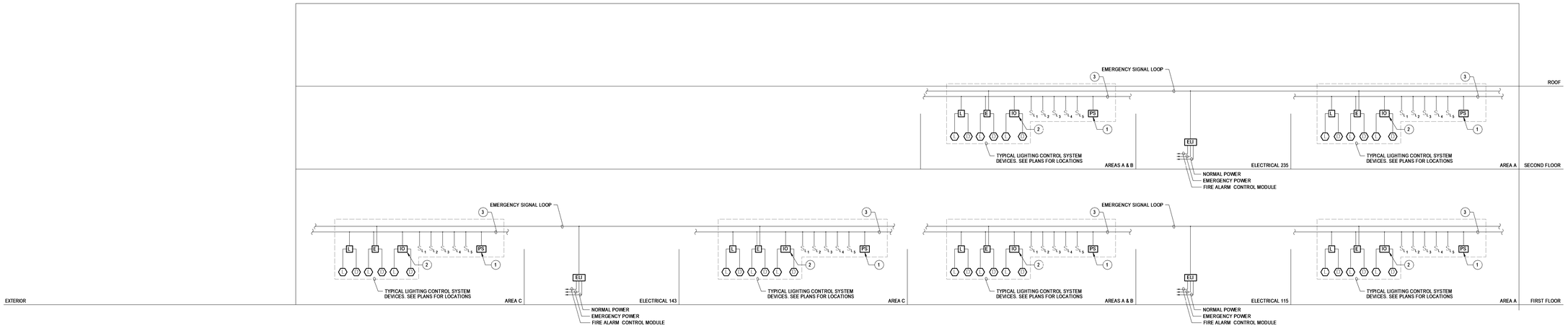
PROJECT NO:	6535-15
DRAWN BY:	BMM
CHECKED BY:	PJM

RISER DIAGRAM - FIRE ALARM

SHEET
E5.03



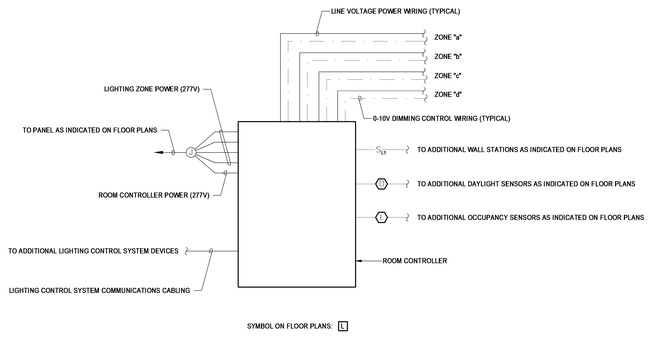
1 E5.04 RISER DIAGRAM
LIGHTING CONTROL SYSTEM
SCALE: NOT TO SCALE

GENERAL NOTES (LIGHTING CONTROL SYSTEM RISER DIAGRAM):

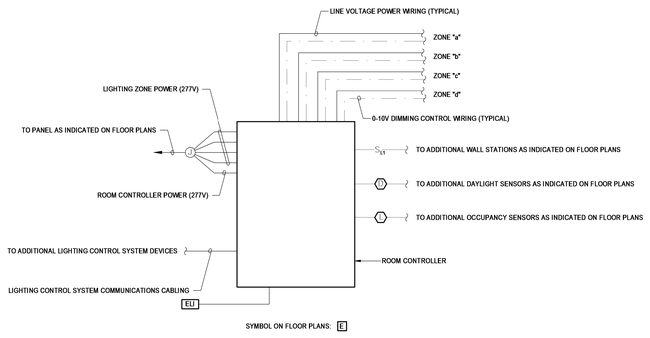
A. RISER DIAGRAM SHOWS THE GENERAL LIGHTING CONTROL SYSTEM COMPONENTS AND WIRING CONNECTIONS. REFER TO FLOOR PLANS FOR LIGHTING CONTROL SYSTEM DEVICE LOCATIONS AND QUANTITIES. PROVIDE ADDITIONAL NETWORK COMPONENTS AS REQUIRED PER THE LIGHTING CONTROL SYSTEM MANUFACTURER'S INSTALLATION INSTRUCTIONS.

SPECIFIC NOTES (LIGHTING CONTROL SYSTEM RISER DIAGRAM):

1. LIGHTING CONTROL SYSTEM POWER SUPPLY: NOT INDICATED ON FLOOR PLANS, PROVIDE PER LIGHTING CONTROL SYSTEM MANUFACTURER'S RECOMMENDATIONS.
2. LIGHTING CONTROL SYSTEM SENSOR INPUT/OUTPUT DEVICE. NOT INDICATED ON FLOOR PLANS, PROVIDE PER LIGHTING CONTROL SYSTEM MANUFACTURER'S RECOMMENDATIONS.
3. PROVIDE LIGHTING CONTROL SYSTEM COMMUNICATIONS CABLING BETWEEN NETWORK COMPONENTS PER LIGHTING CONTROL SYSTEM MANUFACTURER'S RECOMMENDATIONS. CONNECT ALL LIGHTING CONTROL SYSTEM DEVICES TO FORM A BUILDING-WIDE NETWORK.



2 E5.04 LIGHTING CONTROL SYSTEM WIRING DIAGRAM
ROOM CONTROLLER CONNECTED TO NORMAL POWER SOURCE
NOT TO SCALE



3 E5.04 LIGHTING CONTROL SYSTEM WIRING DIAGRAM
ROOM CONTROLLER CONNECTED TO EMERGENCY POWER SOURCE
NOT TO SCALE

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VICTORY VILLA ELEMENTARY SCHOOL
MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
Cockeysville, Maryland 21030
Baltimore, MD 21244
tel 410-965-0300
fax 410-298-9820
Jamesposey.com

Murphy & Dittenhafer
ARCHITECTS
238 West Market Street, York, Pennsylvania 17401
717-848-8627 voice 717-843-3449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/13/2018	BID SET

STATE OF MARYLAND
BRIAN M. MARCUS
No. 24861
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 24861, Expiration date: 02-24-2018.

PROJECT NO:	6535-15
DRAWN BY:	JLG
CHECKED BY:	BMM

RISER DIAGRAM - LIGHTING CONTROL SYSTEM

SHEET
E5.04

SWITCH TYPE: S S_3

CONTROL SCHEME APPLIES TO THE FOLLOWING SPACES:

MECH/ELEC ROOMS
TELECOM ROOM
ELEVATOR HOISTWAY

OPERATIONAL SEQUENCE:

A. SPACE SHALL REQUIRE MANUAL ACTIVATION OF LIGHTING FIXTURES THROUGH LOCAL LINE VOLTAGE TOGGLE SWITCH.
B. LOCAL LINE VOLTAGE TOGGLE SWITCH SHALL CONTROL ALL LIGHTING FIXTURES IN THE SPACE. LOCAL LINE VOLTAGE TOGGLE SWITCH SHALL PROVIDE ON AND OFF FUNCTIONALITY.

1 E5.05 LIGHTING CONTROL SCHEME "L1"
LIGHTING CONTROL SYSTEM SEQUENCE OF OPERATION
SCALE: NOT TO SCALE

SWITCH TYPE:

CONTROL SCHEME APPLIES TO THE FOLLOWING SPACES:

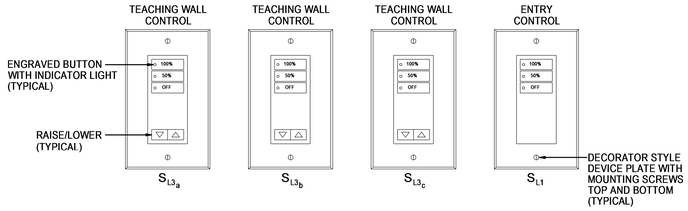
SMALL STORAGE SPACES
SINGLE-OCCUPANT RESTROOMS
CUSTODIAN CLOSETS
CLOSETS

OPERATIONAL SEQUENCE:

A. SPACE SHALL REQUIRE MANUAL ACTIVATION OF FIXTURES THROUGH LOCAL OCCUPANCY SENSOR WALL SWITCH.
B. LOCAL OCCUPANCY SENSOR WALL SWITCH SHALL CONTROL ALL FIXTURES IN THE SPACE. LOCAL OCCUPANCY SENSOR WALL SWITCH SHALL PROVIDE ON AND OFF FUNCTIONALITY.
C. WHEN OCCUPANCY IS NOT DETECTED FOR 15 MINUTES, ALL LIGHTING FIXTURES SHALL TURN OFF.

2 E5.05 LIGHTING CONTROL SCHEME "L2"
LIGHTING CONTROL SYSTEM SEQUENCE OF OPERATION
SCALE: NOT TO SCALE

SWITCH TYPES:



CONTROL SCHEME APPLIES TO THE FOLLOWING SPACES:

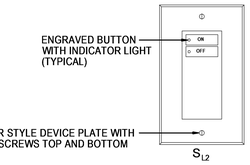
CLASSROOMS
MAKERS SPACE
DIGITAL LEARNING

OPERATIONAL SEQUENCE:

A. SPACE SHALL REQUIRE MANUAL ACTIVATION OF LIGHTING FIXTURES THROUGH LOCAL CONTROL STATION.
B. LOCAL CONTROL STATIONS SHALL PROVIDE THE FOLLOWING FUNCTIONALITY:
   1. ENTRY CONTROL
      a. 100%: ALL LIGHTING FIXTURES SHALL TURN ON TO 100% LIGHT OUTPUT.
      b. 50%: ALL LIGHTING FIXTURES SHALL TURN ON TO 50% LIGHT OUTPUT.
      c. OFF: ALL FIXTURES SHALL TURN OFF.
   2. TEACHING WALL CONTROL (TYPICAL FOR ZONES "a", "b", AND "c")
      a. 100%: ALL LIGHTING FIXTURES IN ZONE "a" SHALL TURN ON TO 100% LIGHT OUTPUT.
      b. 50%: ALL LIGHTING FIXTURES IN ZONE "a" SHALL TURN ON TO 50% LIGHT OUTPUT.
      c. OFF: ALL LIGHTING FIXTURES SHALL IN ZONE "a" SHALL TURN OFF.
      d. MANUAL RAISE/LOWER ALL LIGHTING FIXTURES IN ZONE "a".
C. WHEN OCCUPANCY IS NOT DETECTED FOR 15 MINUTES, ALL LIGHTING FIXTURES SHALL TURN OFF.

3 E5.05 LIGHTING CONTROL SCHEME "L3"
LIGHTING CONTROL SYSTEM SEQUENCE OF OPERATION
SCALE: NOT TO SCALE

SWITCH TYPE:



CONTROL SCHEME APPLIES TO THE FOLLOWING SPACES:

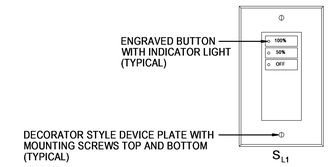
CORRIDORS
STAIRS
VESTIBULE
MULTI-OCCUPANT RESTROOM

OPERATIONAL SEQUENCE:

A. WHEN OCCUPANCY IS DETECTED, ALL LIGHTING FIXTURES SHALL AUTOMATICALLY TURN ON TO FULL LIGHT OUTPUT.
B. REMOTE OVERRIDE CONTROL STATION SHALL CONTROL ALL LIGHTING FIXTURES IN THE SPACE. LOCATE CONTROL STATION IN NEAREST ELECTRICAL ROOM OR JANITOR'S CLOSET. LOCAL CONTROL STATION SHALL PROVIDE THE FOLLOWING FUNCTIONALITY:
   1. ON: ALL LIGHTING FIXTURES SHALL TURN ON TO 100% LIGHT OUTPUT.
   2. OFF: ALL LIGHTING FIXTURES SHALL SHALL TURN OFF.
C. WHEN OCCUPANCY IS NOT DETECTED FOR 15 MINUTES, ALL LIGHTING FIXTURES SHALL TURN OFF.
D. UPON SIGNAL FROM THE FIRE ALARM CONTROL PANEL, ALL LIGHTING FIXTURES SHALL TURN ON TO FULL LIGHT OUTPUT.

4 E5.05 LIGHTING CONTROL SCHEME "L4"
LIGHTING CONTROL SYSTEM SEQUENCE OF OPERATION
SCALE: NOT TO SCALE

SWITCH TYPE:



CONTROL SCHEME APPLIES TO THE FOLLOWING SPACES:

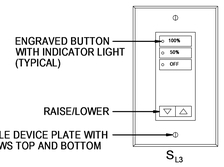
FRONT OFFICE SUITE
GRADE LEVEL STORAGE
WORKROOM
FACULTY LOUNGE

OPERATIONAL SEQUENCE:

A. SPACE SHALL REQUIRE MANUAL ACTIVATION OF LIGHTING FIXTURES THROUGH LOCAL CONTROL STATION.
B. LOCAL CONTROL STATION SHALL CONTROL ALL LIGHTING FIXTURES IN THE SPACE. LOCAL CONTROL STATION SHALL PROVIDE THE FOLLOWING FUNCTIONALITY:
   1. 100%: ALL LIGHTING FIXTURES SHALL TURN ON TO 100% LIGHT OUTPUT.
   2. 50%: ALL LIGHTING FIXTURES SHALL TURN ON TO 50% LIGHT OUTPUT.
   3. OFF: ALL LIGHTING FIXTURES SHALL SHALL TURN OFF.
C. WHEN OCCUPANCY IS NOT DETECTED FOR 15 MINUTES, ALL LIGHTING FIXTURES SHALL TURN OFF.

5 E5.05 LIGHTING CONTROL SCHEME "L5"
LIGHTING CONTROL SYSTEM SEQUENCE OF OPERATION
SCALE: NOT TO SCALE

SWITCH TYPES:



CONTROL SCHEME APPLIES TO THE FOLLOWING SPACES:

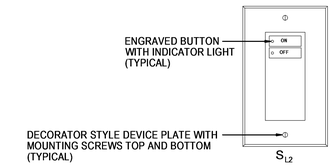
CONFERENCE ROOMS
PRIVATE OFFICES
SUPPORT SPACES
CAFETERIA
GYMNASIUM
ELA CLASSROOMS
COMMUNITY ACTIVITY ROOM

OPERATIONAL SEQUENCE:

A. SPACE SHALL REQUIRE MANUAL ACTIVATION OF LIGHTING FIXTURES THROUGH LOCAL CONTROL STATION.
B. LOCAL CONTROL STATION SHALL CONTROL ALL LIGHTING FIXTURES IN THE SPACE. LOCAL CONTROL STATION SHALL PROVIDE THE FOLLOWING FUNCTIONALITY:
   1. 100%: ALL LIGHTING FIXTURES SHALL TURN ON TO 100% LIGHT OUTPUT.
   2. 50%: ALL LIGHTING FIXTURES SHALL TURN ON TO 50% LIGHT OUTPUT.
   3. OFF: ALL LIGHTING FIXTURES SHALL SHALL TURN OFF.
   4. MANUAL RAISE/LOWER ALL LIGHTING FIXTURES.
C. WHEN OCCUPANCY IS NOT DETECTED FOR 15 MINUTES, ALL LIGHTING FIXTURES SHALL TURN OFF.

6 E5.05 LIGHTING CONTROL SCHEME "L6"
LIGHTING CONTROL SYSTEM SEQUENCE OF OPERATION
SCALE: NOT TO SCALE

SWITCH TYPES:



CONTROL SCHEME APPLIES TO THE FOLLOWING SPACES:

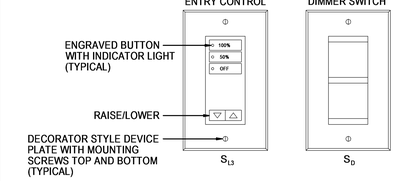
LARGE STORAGE SPACES
KILN ROOM

OPERATIONAL SEQUENCE:

A. SPACE SHALL REQUIRE MANUAL ACTIVATION OF LIGHTING FIXTURES THROUGH LOCAL CONTROL STATION.
B. LOCAL CONTROL STATION SHALL CONTROL ALL LIGHTING FIXTURES IN THE SPACE. LOCAL CONTROL STATION SHALL PROVIDE THE FOLLOWING FUNCTIONALITY:
   1. ON: ALL LIGHTING FIXTURES SHALL TURN ON TO 100% LIGHT OUTPUT.
   2. OFF: ALL LIGHTING FIXTURES SHALL SHALL TURN OFF.
C. WHEN OCCUPANCY IS NOT DETECTED FOR 15 MINUTES, ALL LIGHTING FIXTURES SHALL TURN OFF.

7 E5.05 LIGHTING CONTROL SCHEME "L7"
LIGHTING CONTROL SYSTEM SEQUENCE OF OPERATION
SCALE: NOT TO SCALE

SWITCH TYPE:



CONTROL SCHEME APPLIES TO THE FOLLOWING SPACES:

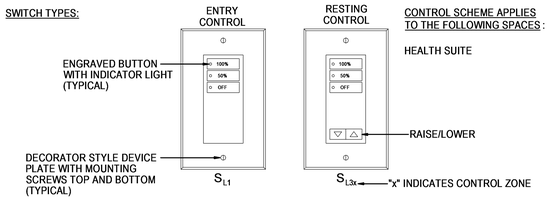
PLATFORM

OPERATIONAL SEQUENCE:

A. SPACE SHALL REQUIRE MANUAL ACTIVATION OF LIGHTING FIXTURES THROUGH LOCAL CONTROL STATION.
B. LOCAL CONTROL STATIONS SHALL PROVIDE THE FOLLOWING FUNCTIONALITY:
   1. PLATFORM ENTRY CONTROL
      a. 100%: ALL LIGHTING FIXTURES IN LIGHTING CONTROL ZONE 'c' SHALL TURN ON TO 100% LIGHT OUTPUT.
      b. 50%: ALL LIGHTING FIXTURES IN LIGHTING CONTROL ZONE 'c' SHALL TURN ON TO 50% LIGHT OUTPUT.
      c. OFF: ALL LIGHTING FIXTURES IN LIGHTING CONTROL ZONE 'd' SHALL TURN OFF.
      d. MANUAL RAISE/LOWER ALL LIGHTING FIXTURES.
   4. TRACK LIGHTING DIMMER SWITCH
      a. EACH SECTION OF TRACK LIGHTING SHALL BE CONTROLLED BY A SEPARATE LINE VOLTAGE DIMMER SWITCH. TRACK LIGHTING SHALL NOT BE AUTOMATICALLY CONTROLLED BY THE LIGHTING CONTROL SYSTEM.
C. WHEN OCCUPANCY IS NOT DETECTED FOR 15 MINUTES, ALL FIXTURES IN LIGHTING CONTROL ZONE 'd' SHALL TURN OFF.

8 E5.05 LIGHTING CONTROL SCHEME "L8"
LIGHTING CONTROL SYSTEM SEQUENCE OF OPERATION
SCALE: NOT TO SCALE

SWITCH TYPES:



CONTROL SCHEME APPLIES TO THE FOLLOWING SPACES:

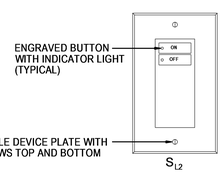
HEALTH SUITE

OPERATIONAL SEQUENCE:

A. SPACE SHALL REQUIRE MANUAL ACTIVATION OF LIGHTING FIXTURES THROUGH LOCAL CONTROL STATION.
B. LOCAL CONTROL STATIONS SHALL PROVIDE THE FOLLOWING FUNCTIONALITY:
   1. ENTRY CONTROL
      a. 100%: ALL LIGHTING FIXTURES SHALL TURN ON TO 100% LIGHT OUTPUT.
      b. 50%: ALL LIGHTING FIXTURES SHALL TURN ON TO 50% LIGHT OUTPUT.
      c. OFF: ALL LIGHTING FIXTURES SHALL TURN OFF.
   2. RESTING CONTROL (TYPICAL FOR ZONES "b", "c", AND "d")
      a. 100%: ALL LIGHTING FIXTURES IN ZONE "b" SHALL TURN ON TO 100% LIGHT OUTPUT.
      b. 50%: ALL LIGHTING FIXTURES IN ZONE "b" SHALL TURN ON TO 50% LIGHT OUTPUT.
      c. OFF: ALL LIGHTING FIXTURES IN ZONE "b" SHALL TURN OFF.
      d. MANUAL RAISE/LOWER ALL LIGHTING FIXTURES IN ZONE "b".
C. WHEN OCCUPANCY IS NOT DETECTED FOR 15 MINUTES, ALL LIGHTING FIXTURES SHALL TURN OFF.

9 E5.05 LIGHTING CONTROL SCHEME "L9"
LIGHTING CONTROL SYSTEM SEQUENCE OF OPERATION
SCALE: NOT TO SCALE

SWITCH TYPES:



CONTROL SCHEME APPLIES TO THE FOLLOWING SPACES:

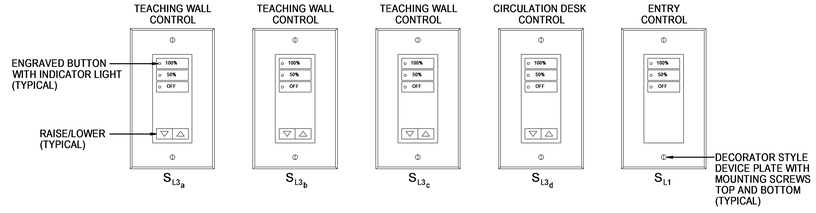
BUILDING EXTERIOR
PARKING LOT

OPERATIONAL SEQUENCE:

A. MORNING OPERATION (45 MINUTES BEFORE SUNRISE-45 MINUTES AFTER SUNRISE):
   1. LIGHTING FIXTURES SHALL AUTOMATICALLY SWITCH ON TO FULL LIGHT OUTPUT VIA LIGHTING CONTROL SYSTEM ASTRONOMIC TIME CLOCK.
B. DURING DAY OPERATION (45 MINUTES AFTER SUNRISE-45 MINUTES BEFORE SUNSET):
   1. LIGHTING FIXTURES SHALL AUTOMATICALLY SWITCH OFF VIA LIGHTING CONTROL SYSTEM ASTRONOMIC TIME CLOCK.
C. DURING EVENING OPERATION (45 MINUTES BEFORE SUNSET-12AM):
   1. LIGHTING FIXTURES SHALL AUTOMATICALLY SWITCH ON TO FULL LIGHT OUTPUT VIA LIGHTING CONTROL SYSTEM ASTRONOMIC TIME CLOCK.
D. DURING NIGHT OPERATION (12AM-45 MINUTES BEFORE SUNRISE):
   1. LIGHTING FIXTURES SHALL AUTOMATICALLY SWITCH OFF VIA LIGHTING CONTROL SYSTEM ASTRONOMIC TIME CLOCK.
E. OVERRIDE CONTROL STATION SHALL CONTROL ALL EXTERIOR LIGHTING FIXTURES FOR 2 HOURS. OVERRIDE CONTROL STATION SHALL PROVIDE THE FOLLOWING FUNCTIONALITY:
   1. ON: ALL LIGHTING FIXTURES SHALL TURN ON TO 100% LIGHT OUTPUT.
   2. OFF: ALL LIGHTING FIXTURES SHALL SHALL TURN OFF.

10 E5.05 LIGHTING CONTROL SCHEME "L10"
LIGHTING CONTROL SYSTEM SEQUENCE OF OPERATION
SCALE: NOT TO SCALE

SWITCH TYPES:



CONTROL SCHEME APPLIES TO THE FOLLOWING SPACES:

MEDIA CENTER

OPERATIONAL SEQUENCE:

A. SPACE SHALL REQUIRE MANUAL ACTIVATION OF LIGHTING FIXTURES THROUGH LOCAL CONTROL STATION.
B. LOCAL CONTROL STATIONS SHALL PROVIDE THE FOLLOWING FUNCTIONALITY:
   1. ENTRY CONTROL
      a. 100%: ALL LIGHTING FIXTURES SHALL TURN ON TO 100% LIGHT OUTPUT.
      b. 50%: ALL LIGHTING FIXTURES SHALL TURN ON TO 50% LIGHT OUTPUT.
      c. OFF: ALL FIXTURES SHALL TURN OFF.
   2. TEACHING WALL CONTROL (TYPICAL FOR ZONES "a", "b", "c", AND "d")
      a. 100%: ALL LIGHTING FIXTURES IN ZONE "a" SHALL TURN ON TO 100% LIGHT OUTPUT.
      b. 50%: ALL LIGHTING FIXTURES IN ZONE "a" SHALL TURN ON TO 50% LIGHT OUTPUT.
      c. OFF: ALL LIGHTING FIXTURES SHALL IN ZONE "a" SHALL TURN OFF.
      d. MANUAL RAISE/LOWER ALL LIGHTING FIXTURES IN ZONE "a".
C. WHEN OCCUPANCY IS NOT DETECTED FOR 15 MINUTES, ALL LIGHTING FIXTURES SHALL TURN OFF.

11 E5.05 LIGHTING CONTROL SCHEME "L11"
LIGHTING CONTROL SYSTEM SEQUENCE OF OPERATION
SCALE: NOT TO SCALE

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James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
Baltimore, MD 21244
tel 410-265-6500
fax 410-298-0820
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Murphy & Dittenhafer ARCHITECTS
238 West Market Street, York, Pennsylvania 17401
717-848-9827 voice 717-843-2469 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/13/2018	BID SET

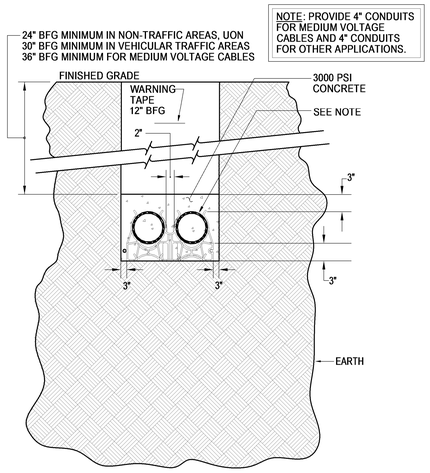
STATE OF MARYLAND
BRIAN M. MARCH
No. 24861
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 24861, Expiration date: 09.04.2018.

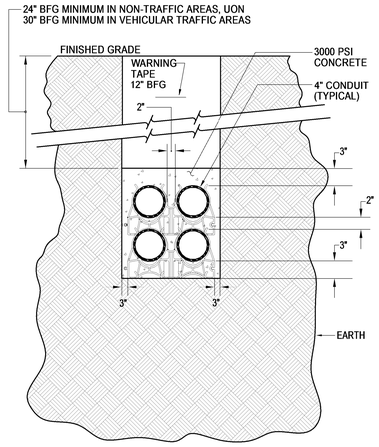
PROJECT NO:	6535-15
DRAWN BY:	JLG
CHECKED BY:	BMM

LIGHTING CONTROL DETAILS

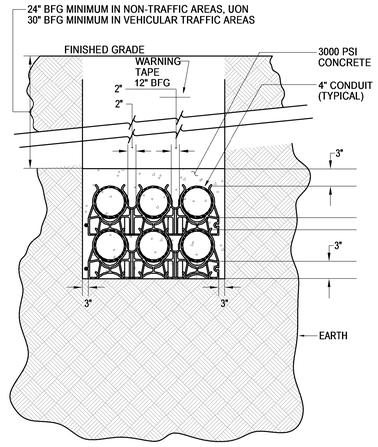
SHEET
E5.05



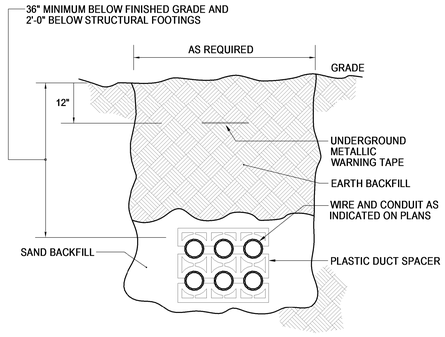
1 E5.06 **DETAIL**
2-WAY ELECTRICAL DUCTBANK
NOT TO SCALE



2 E5.06 **DETAIL**
4-WAY ELECTRICAL DUCTBANK
NOT TO SCALE

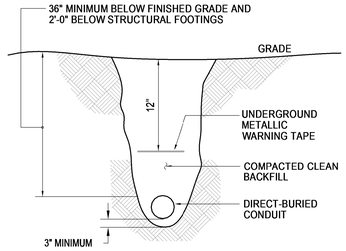


3 E5.06 **DETAIL**
6-WAY ELECTRICAL DUCTBANK
NOT TO SCALE

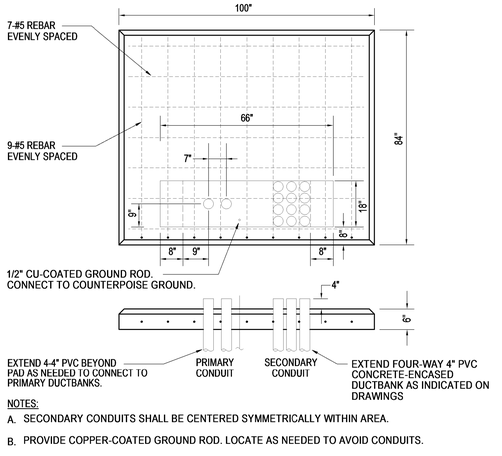


NOTE:
DETAIL IS REPRESENTATIVE OF LOCATIONS WHERE MULTIPLE DIRECT BURIED CONDUITS ARE RUN TOGETHER IN SAME TRENCH. ADJUST SPACER CONFIGURATION AS REQUIRED.

4 E5.06 **DETAIL**
MULTIPLE DIRECT-BURIED CONDUITS
NOT TO SCALE

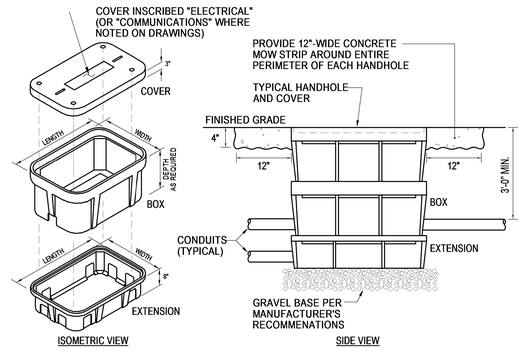


5 E5.06 **DETAIL**
DIRECT-BURIED CONDUIT
NOT TO SCALE



NOTES:
A. SECONDARY CONDUITS SHALL BE CENTERED SYMMETRICALLY WITHIN AREA.
B. PROVIDE COPPER-COATED GROUND ROD. LOCATE AS NEEDED TO AVOID CONDUITS.

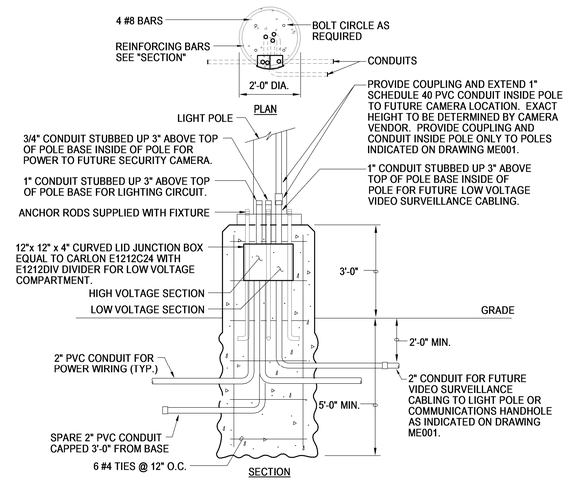
6 E5.06 **DETAIL**
UTILITY TRANSFORMER FOUNDATION PAD
NOT TO SCALE



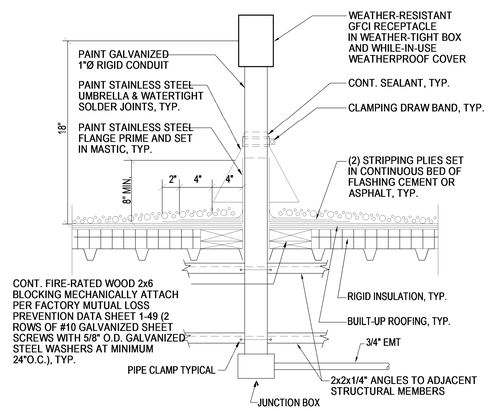
ELECTRICAL OR COMMUNICATIONS HANDHOLE:
PROVIDE PRECAST POLYMER CONCRETE HANDHOLE AND COVER, MINIMUM ANSI/SCTE 77 TIER 22 LOADING, WITH THE FOLLOWING DIMENSIONS:

- H1 HANDHOLE TYPE 1: 30" WIDE x 48" LONG BOX, OPEN BOTTOM.
- H2 HANDHOLE TYPE 2: 11" WIDE x 18" LONG BOX, OPEN BOTTOM.
- H3 HANDHOLE TYPE 3: 13" WIDE x 24" LONG BOX, OPEN BOTTOM.

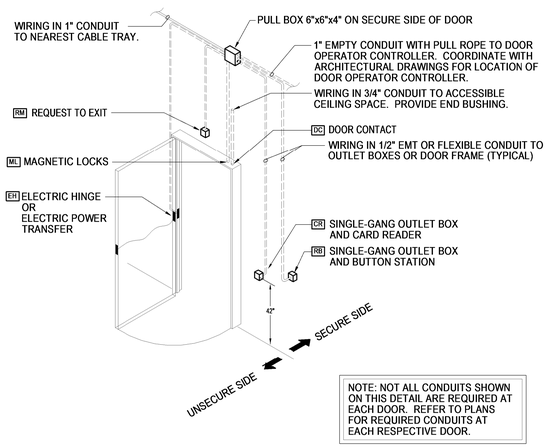
7 E5.06 **DETAIL**
HANHOLE AND HANDHOLE COVER
NOT TO SCALE



8 E5.06 **DETAIL**
TYPICAL POLE BASE
NOT TO SCALE

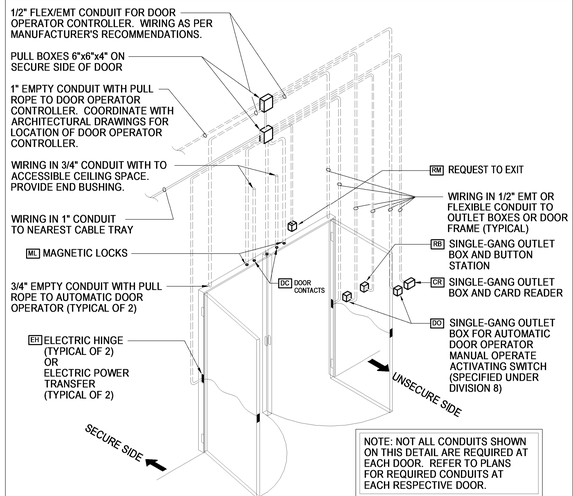


9 E5.06 **DETAIL**
DEVICE BOX INSTALLATION OF ROOF
NOT TO SCALE



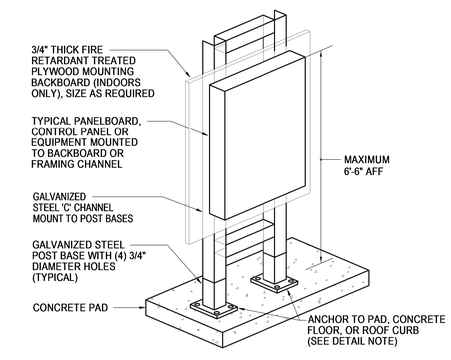
NOTE: NOT ALL CONDUITS SHOWN ON THIS DETAIL ARE REQUIRED AT EACH DOOR. REFER TO PLANS FOR REQUIRED CONDUITS AT EACH RESPECTIVE DOOR.

10 E5.06 **DETAIL**
TYPICAL SINGLE DOOR ACCESS CONTROL CONDUIT PROVISIONS
NOT TO SCALE



NOTE: NOT ALL CONDUITS SHOWN ON THIS DETAIL ARE REQUIRED AT EACH DOOR. REFER TO PLANS FOR REQUIRED CONDUITS AT EACH RESPECTIVE DOOR.

11 E5.06 **DETAIL**
TYPICAL DOUBLE DOOR ACCESS CONTROL CONDUIT PROVISIONS
NOT TO SCALE



DETAIL NOTE: 1/2" DIAMETER GALVANIZED STEEL ALL-THREAD ADHESIVE ANCHOR WITH GALVANIZED STEEL FLAT WASHER, LOCK WASHER AND HEXAGON NUT; EMBEDMENT TO BE 4" MINIMUM (TYPICAL OF 4 PER BASE). CHANNEL, POST BASES, AND HARDWARE SHALL BE CORROSION-RESISTANT.

12 E5.06 **DETAIL**
FREE-STANDING SUPPORTS
NOT TO SCALE

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VICTORY VILLA ELEMENTARY SCHOOL
MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
1 Olympic Place Towson, Maryland 21204
Baltimore, MD 21244
tel 410-296-6300
fax 410-296-6882
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
238 West Market Street, York, Pennsylvania 17401 717-848-8677 voice
800 North Charles Street, Baltimore, Maryland 21201 410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
-	11/10/2016	BID SET

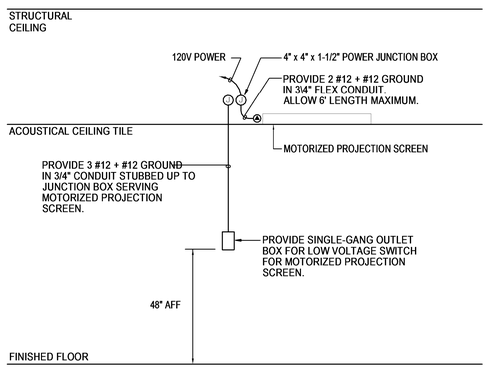
STATE OF MARYLAND — BRIAN M. MARCH — No. 23881 — PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 23881, Expiration date: 02-24-2018.

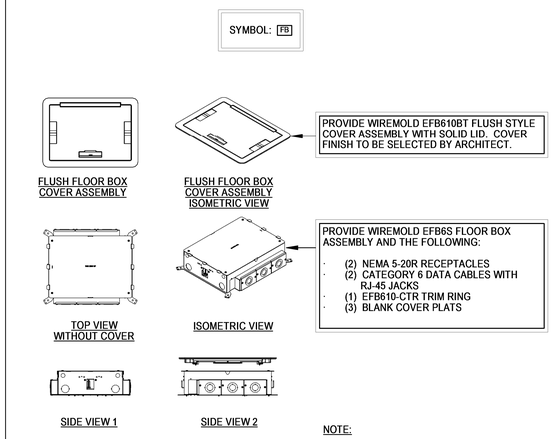
PROJECT NO:	6535-15
DRAWN BY:	BMM
CHECKED BY:	BMM

DETAILS & DIAGRAMS

SHEET
E5.06



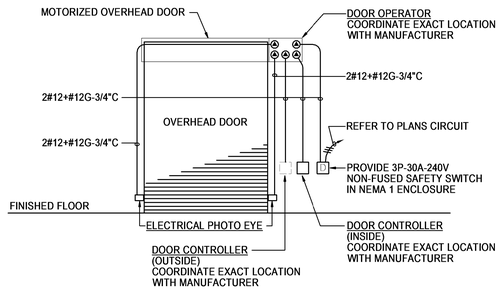
1 / E5.07 **ELEVATION**
CENTRAL DIMMING CONTROL STATION
NOT TO SCALE



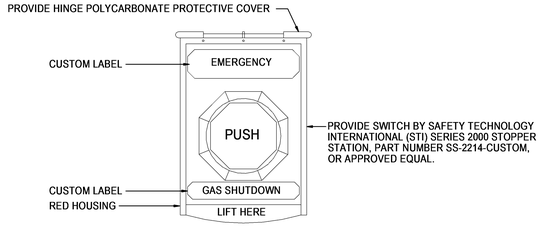
NOTE:

A. FLOOR BOX DEVICE ASSEMBLIES SHALL BE FULLY RECESSED IN WOOD FLOOR. COVERS SHALL BE FLUSH MOUNTED IN FINISHED FLOOR.

2 / E5.07 **DETAIL**
FLOOR BOX FOR POWER AND COMMUNICATIONS
NOT TO SCALE



3 / E5.07 **DETAIL**
MOTORIZED OVERHEAD DOOR
NOT TO SCALE



4 / E5.07 **DETAIL**
EMERGENCY SHUTOFF SWITCH
NOT TO SCALE

SEQUENCE OF OPERATION:

UPON EMERGENCY CONDITION, DEPRESSION OF PUSHBUTTON STATION SHALL ACTIVATE SHUNT-TRIP COIL IN PANELBOARD AND OPEN CIRCUIT BREAKER. TO RESET, MANUALLY CHANGE CIRCUIT BREAKER TO THE "ON" POSITION.

5 / E5.07 **DIAGRAM**
BOILER EMERGENCY SHUTDOWN
NOT TO SCALE

GENERAL NOTES:

A. NOT ALL WEATHER SENSORS SHOWN. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

B. OUTDOOR CABLES THAT DO NOT PENETRATE ROOF ARE NOT SHOWN.

C. CONNECT WEATHER STATION COMPONENTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

SPECIFIC NOTES (POWER RISER DIAGRAM):

1. CAMERA POWER CABLES. CONNECT TO CAMERA POWER SUPPLY.
2. CAMERA ETHERNET CABLE. CONNECT TO BUILDING NETWORK.
3. PROVIDE SHELF AS NEEDED TO SUPPORT WEATHER SENSOR NETWORK INTERFACE. MOUNT 78" ABOVE FLOOR.

6 / E5.07 **DETAIL**
WEATHER STATION
NOT TO SCALE

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MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
Cockeysville, Maryland 21030
Baltimore, MD 21244
tel 410-965-0300
fax 410-298-9820
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
229 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-2449 fax
809 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax

Mark	Date	Description
1	11/19/2014	BID SET

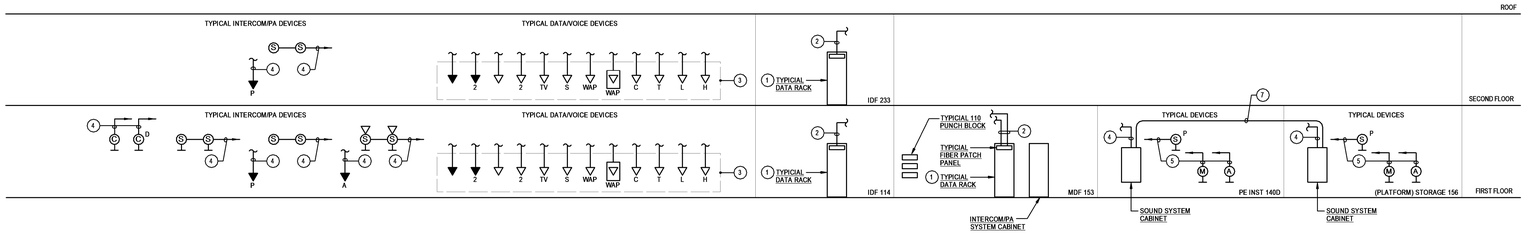
STATE OF MARYLAND — CHRISTOPHER L. MURPHY — No. 24881 — PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 24881, Expiration date: 07-09-2015.

PROJECT NO:	6535-15
DRAWN BY:	Author
CHECKED BY:	Checker

DETAILS & DIAGRAMS

SHEET
E5.07



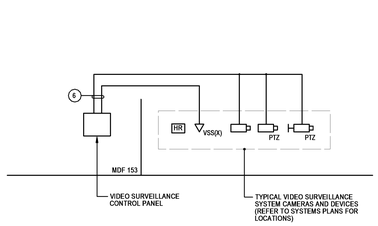
1 E5.08 DIAGRAM
DATA/VOICE COMMUNICATIONS AND INTERCOM/PUBLIC ADDRESS SYSTEMS
NOT TO SCALE

GENERAL NOTES:

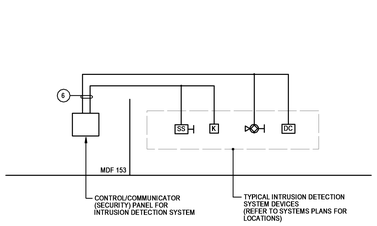
A. WIRING DIAGRAM IS REPRESENTATIVE OF TYPICAL SYSTEM CONFIGURATION. COMPONENTS AND WIRING METHODS MAY DEVIATE BASED ON MANUFACTURER. PROVIDE CONTROL WIRING AND COMPONENTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

SPECIFIC NOTES:

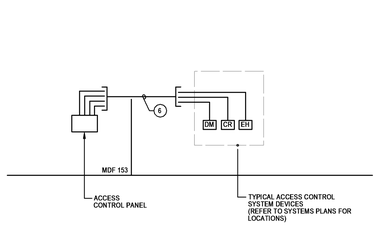
1. PROVIDE NUMBER OF DATA RACKS INDICATED ON PLANS.
2. PROVIDE FIBER OPTIC BACKBONE CABLING FROM FIBER PATCH PANEL IN MDF ROOM 153 TO EACH FIBER PATCH PANEL IN TELECOMMUNICATIONS ROOMS WITH DATA RACKS AS INDICATED.
3. TYPICAL DATA AND/OR VOICE OUTLETS. PROVIDE CATEGORY 6 CABLING FOR EACH JACK FROM OUTLET TO NEAREST MDF OR IDF DATA RACK. REFER TO PLANS FOR LOCATION OF OUTLETS.
4. TO INTERCOMMUNICATIONS/PUBLIC ADDRESS SYSTEM CABINET.
5. TO SOUND SYSTEM CABINET IN CONDUIT.
6. PROVIDE PLENUM RATED WIRING FOR CARD ACCESS CONTROL, INTRUSION DETECTION, AND VIDEO SURVEILLANCE SYSTEMS AS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE QUANTITIES AS REQUIRED TO SERVE DEVICES INDICATED ON DRAWINGS.
7. PROVIDE HARDWARE AND INTERCONNECTIONS BETWEEN SOUND SYSTEM CABINETS IN ORDER TO FUNCTION BOTH AS TWO SEPARATE SYSTEMS AND AS ON COMPLETE SYSTEM.



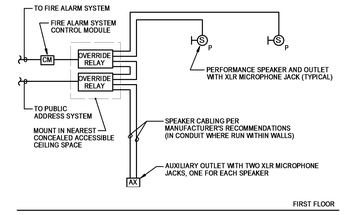
2 E5.08 DIAGRAM
VIDEO SURVEILLANCE SYSTEM
NOT TO SCALE



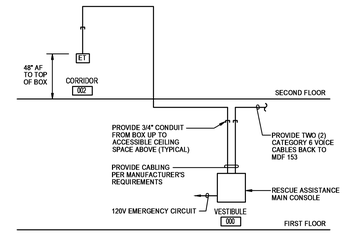
3 E5.08 DIAGRAM
INTRUSION DETECTION SYSTEM
NOT TO SCALE



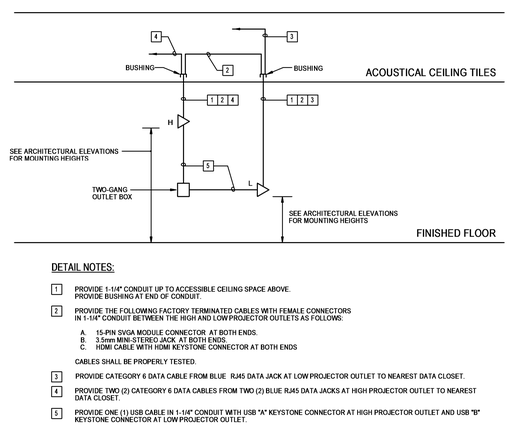
4 E5.08 DIAGRAM
ACCESS CONTROL SYSTEM
NOT TO SCALE



9 E5.08 DIAGRAM
MUSIC ROOM SOUND REINFORCEMENT SYSTEM
NOT TO SCALE



10 E5.08 DIAGRAM
RESCUE ASSISTANCE SYSTEM RISER
NOT TO SCALE

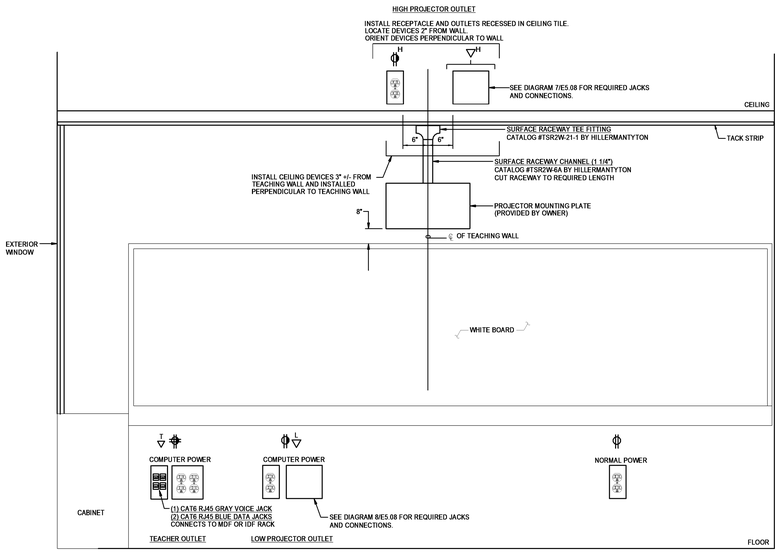


DETAIL NOTES:

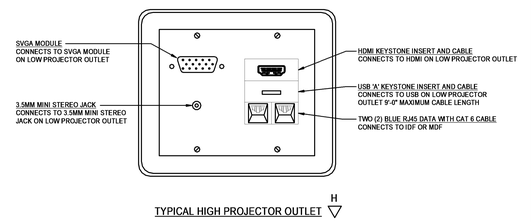
1. PROVIDE 1-1/4" CONDUIT UP TO ACCESSIBLE CEILING SPACE ABOVE. PROVIDE BUSHING AT END OF CONDUIT.
2. PROVIDE THE FOLLOWING FACTORY TERMINATED CABLES WITH FEMALE CONNECTORS IN 1-1/4" CONDUIT BETWEEN THE HIGH AND LOW PROJECTOR OUTLETS AS FOLLOWS:
   - A. 15-PIN SVGA MODULE CONNECTOR AT BOTH ENDS.
   - B. 3.5mm MINI-STEREO JACK AT BOTH ENDS.
   - C. HDMI CABLE WITH HDMI KEYSTONE CONNECTOR AT BOTH ENDS

   CABLES SHALL BE PROPERLY TESTED.
3. PROVIDE CATEGORY 6 DATA CABLE FROM BLUE RJ45 DATA JACK AT LOW PROJECTOR OUTLET TO NEAREST DATA CLOSET.
4. PROVIDE TWO (2) CATEGORY 6 DATA CABLES FROM TWO (2) BLUE RJ45 DATA JACKS AT HIGH PROJECTOR OUTLET TO NEAREST DATA CLOSET.
5. PROVIDE ONE (1) USB CABLE IN 1-1/4" CONDUIT WITH USB "A" KEYSTONE CONNECTOR AT HIGH PROJECTOR OUTLET AND USB "B" KEYSTONE CONNECTOR AT LOW PROJECTOR OUTLET.

5 E5.08 DIAGRAM
HIGH/LOW PROJECTOR CONNECTIONS
NOT TO SCALE

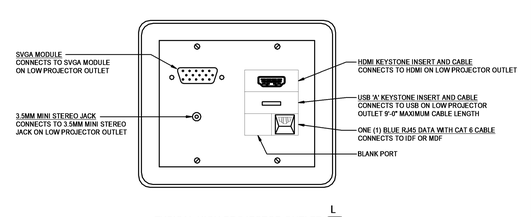


6 E5.08 DIAGRAM
TEACHING WALL OUTLET LOCATIONS
NOT TO SCALE



TYPICAL HIGH PROJECTOR OUTLET H

7 E5.08 DIAGRAM
HIGH PROJECTOR CONNECTIONS
NOT TO SCALE



TYPICAL HIGH PROJECTOR OUTLET L

8 E5.08 DIAGRAM
LOW PROJECTOR CONNECTIONS
NOT TO SCALE

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MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
1310 Dulaney Valley Road
Baltimore, MD 21204
tel 410-296-6300
fax 410-296-6820
jamesposey.com

Murphy & Dittenhafer ARCHITECTS
17601
717-843-3469 fax
717-848-8827 voice
229 West Market Street, York, Pennsylvania
410-825-4823 voice 410-825-4874 fax
800 North Charles Street, Baltimore, Maryland 21201

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND — PAUL J. MARCH — No. 24861 — PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No. 24861, Expiration date: 02-24-2018.

PROJECT NO:	6535-15
DRAWN BY:	BMM
CHECKED BY:	PJM

SYSTEMS DETAILS

SHEET
E5.08

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE	DESCRIPTION	LAMP	MANUFACTURER	CATALOG NO.	VOLT	MOUNTING	NOTES
A1	2'x4' LED TROFFER WITH STEEL HOUSING, WHITE REFLECTOR FINISH, 0.156" THICK PRISMATIC LENS, AND INTEGRAL 0-10V DIMMING DRIVER	3500K LED 5,450 LUMENS 110 LM/W	COLUMBIA	LCAT24-35HLG-EDU	277	RECESSED, GRID	–
			COOPER/METALUX	24CZ-LD4-55-UNV-L835-CD-1			
			LITHONIA	2VTL4 60L ADP EZ1 LP835			
A2	2X4', SEALED AND GASKETED, LED TROFFER WITH STEEL HOUSING, WHITE REFLECTOR FINISH, ACRYLIC LENS, AND INTEGRAL 0-10V DIMMING DRIVER	3500K LED 5,450 LUMENS 110 LM/W	COLUMBIA	LJT24-35HLG-FSA19-EDU-G2	277	RECESSED, HARD CEILNIG	–
			COOPER/METALUX	24GR-LD456A19/156-UNV-L835-CD1-D2			
			KENALL	CSEFL24-45L35K-DCC-1-DV-SF-SH-T-2			
B1	2'x2' LED TROFFER WITH STEEL HOUSING, WHITE REFLECTOR FINISH, 0.156" THICK PRISMATIC LENS, AND INTEGRAL 0-10V DIMMING DRIVER	3500K LED 3,200 LUMENS 90 LM/W	COLUMBIA	LJT22- 35ML-G-FSA19-ED	277	RECESSED, HARD CEILNIG	–
			COOPER/METALUX	22GR-LD4-32-A19/156-UNV-L835-CD1			
			LITHONIA	2TL2-33L-FW-A19-EZ1-LP835			
C1	4' LED INDUSTRIAL STRIP LIGHT WITH APERTURED REFLECTOR, PAINTED WHITE HOUSING, AND INTEGRAL 0-10V DIMMING DRIVER	3500K LED 5,000 LUMENS 115 LM/W	COLUMBIA	LLT14-35LWG-FS-A19F-EU	277	PENDANT, 10'-0" ABOVE FLOOR	–
			COOPER/METALUX	14GR-LD4-20-A19/156-UNV-L835-CD1			
			LITHONIA	TL4-20L-A19-EZ1-LP835			
D1	NOMINAL 4' LED WALL BRACKET WITH INTEGRAL 0-10V DIMMING DRIVER	3500K LED 4,000 LUMENS 105 LM/W	LITHONIA	WL4-40L-SLD-LP835-DIM	277	WALL, 7'-6" ABOVE FLOOR	–
			LUMINAIRE	TSL9-450W-3500K-SD-120-277-CP-WHT-NO			
			H.E. WILLIAMS	WMA-3-L40/835-AF-DIM-UNV			
E1	4' LONG VAPORTIGHT LED WALL BRACKET, FULLY ENCLOSED AND GASKETED, UL LISTED FOR WET LOCATION, WALL MOUNTED WITH 0-10V DRIVER	3500K LED 5,000 LUMENS 115 LM/W	COLUMBIA	LXEM4- 35ML-DFA-EU	120	WALL, 6'-0" ABOVE FLOOR	–
			COOPER/METALUX	4VT2-LD4-6DR-UNV-L835-CD1-WL			
			LITHONIA	VAP 6000LM FST MD MVOLT GZ10 35K 80CRI			
F1	16" LED LOW BAY FIXTURE, WHITE ACRYLIC HOUSING,	3500K LED 6,000 LUMENS 96LM/W	VANTAGE LIGHTING	PGVBLED16-60 35K WHT ZDM	277	PENDANT, 10'-0" ABOVE FLOOR	–
			HUBBELL	LBS-35K-WA16-LO-U-CD-WH-N			
			DELRAY	IL7306-W35-2-D1			
G1	NOMINAL 6" WIDE, CONTINUOUS, LINEAR LED FIXTURE COMPATABLE WITH ARMSTRONG TECHZONE CEILING SYSTEMSWITH DIFFUSE LENS, MATTE WHITE FINISH, AND INTEGRAL 0-10V DIMMING DRIVER	3500K LED 300 LM/FT 300 LM/W	LITECONTROL	6L NG D XX SOF C1 35 D030 D10 1C UNV	277	RECESSED, GRID	–
			SE'LUX	L13-1A20-35-LW-SG-XX-WH-UNV-DIM			
			PINNACLE	EV6A-35-XX-GS-UNV-1C-W			
G2	NOMINAL 6" WIDE, CONTINUOUS, LINEAR LED FIXTURE COMPATABLE WITH ARMSTRONG TECHZONE CEILING SYSTEMSWITH DIFFUSE LENS, MATTE WHITE FINISH, AND INTEGRAL 0-10V DIMMING DRIVER	3500K LED 1,000 LM/FT 100 LM/W	LITECONTROL	6L NG D 4' 04 SOF C1 35 D100 D10 1C UNV	277	RECESSED, GRID	–
			SE'LUX	L13-2A30-35-LW-SG-XX-WH-UNV-DIM			
			PINNACLE	EV6A-35HO-XX-GS-UNV-1C-W			
H1	ARCHITECTURAL, CONTINUOUS LENGTH, LED WALL BRACKET WITH INTEGRAL 0-10V DIMMING DRIVER	3500K LED 5,000 LUMENS 100 LM/W	AXIS	PWWLED-B3-MF-500-8035-S-S#-AP-UNV-D-1	277	WALL, 7'-6" ABOVE FLOOR	–
			H.E. WILLIAMS	LXWW-4-L12/835-S-A-DIM--UNV			
			FOCAL POINT	LC66-SQ-3000L-35K-DN-CD-WH			
J1	6" DIAMETER LED DOWNLIGHT, SEMISPECULAR CLEAR REFLECTOR, WHITE TRIM, 0-10V DIMMING, 45-50 DEGREE CUTOFF, 80 CRI MIN	3500KLED 1000 LUMENS MIN 70 LM/W MIN	PRESCOLITE	LF6LEDG4-6LFLED5G4-35K-WT	277	RECESSED, GRID OR HARD CEILING	–
			PORTFOLIO	LD6A-10-DED10-ERMEA-10-8-35-ELM1-H-WF			
			GOTHAM	EVO-35/10-6AR-MD-LSS-277-EZ10-TRW			
K1	HIGH-BAY LED INDUSTRIAL FIXTURE WITH WIRE GUARD, CLEAR ACRYLIC LENS, 6' CORD AND 20A 277V TWIST-LOCK PLUG, 4000-4100 °K COLOR TEMPERATURE	23,000 LUMENS MIN 108 LM/W	DIALLIGHT	HEGRC4PD-SNG	277	STEM MOUNTED	3
			SPEC GRADE	HBF 150W PENDENT 150 23612LM STD WH WG DIM CL			
			COOPER/METALUX	SSLED-LD1-24-W-UNV-L840-CD-1-MP/SHK-PC6/277			
L1	6" LED DOWNLIGHT, SQUARE CLEAR REFLECTOR, WHITE TRIM, 0-10V DIMMING, 80 CRI MIN	3,000 LUMENS MIN 78 LM/W	PRESCOLITE	LF6SQLED8G4-6SQLED8G4 35K WH CL	277	RECESSED, GRID	–
			PHILIPS LIGHTOLIER	C6X6L35 DL 35K CL W			
			GOTHAM	EVO-SQ-35/30-6AR-LD-MVOLT			
R1	8" THEATRICAL FRESNEL, MANUAL FOCUS ADJUSTMENT, INTEGRAL COLOR FRAME CLIPS, ADJUSTABLE YOKE WITH C-CLAMP FOR PIPE MOUNTING, SAFETY CABLE, 4-WAY BARN DOORS, COLOR FRAME WITH 1 SET OF GELS (RED, BLUE, GREEN)	300W QUARTZ	ALTMAN	1KAF-MBP-510-6-BD-4	120	PIPE	4
R2	TRACK LIGHTING, 2-CIRCUIT, 8-FOOT SECTIONS	—	PRESCOLITE	AKT8-WH	120	SURFACE	–
			LITHONIA	L2T8-WH			
			HALO	L642-P			
R3	2.5" THEATRICAL FRESNEL, DIE-CAST ALUMINUM CONSTRUCTION, YOKE WITH C-CLAMP FOR TRACK/PIPE MOUNTING, GEL MEDIA FRAME, THREE-PLANE STAINLESS-STEEL BLADE ASSEMBLY	3000K LED 515 LUMENS 39 LM/W	ETC LIGHTING	4M50L-1-T	120	PIPE	4
X	AC ONLY EXIT SIGN, WHITE HOUSING, GREEN STENCIL	LED	DUAL LITE	LX-U-G-W	277	AS INDICATED	–
			LITHONIA	LQM-S-W-3-G-277			
			SURE LITES	LPX-6			
X1	AC ONLY EXIT SIGN, WHITE HOUSING, GREEN STENCIL WITH STEEL WIRE GUARD	LED	DUAL LITE	LX-U-G-W WITH WGLX WIRE GUARD	277	WALL, 7'-6" ABOVE FLOOR	–
			LITHONIA	LQM-S-W-3-G-277-ELAWG			
			SURE LITES	LPX-6-WG10			
Y	THERMOPLASTIC LED EMERGENCY BATTERY LIGHT, WITH SELF-DIAGNOSTIC,	LED	DUAL-LITE	EV2I	277	WALL	–
			LITHONIA	ELM2-LED-SD			
			COOPER/SURE-LITES	LEMSD			
AA	EXTERIOR LED WALL SCONCE, CAST ALUMINUM HOUSING, GASKETED CLEAR GLASS LENS, TYPE III DISTRIBUTION, FULL CUTOFF, SILVER FINISH, UL WET LOCATION	4000K LED 9,100 LUMENS MIN	KIM	WD18 D3-E35-120L-4k-277	277	WALL	1
BB	EXTERIOR LED WALL SCONCE, CAST ALUMINUM HOUSING, GASKETED CLEAR GLASS LENS, TYPE III DISTRIBUTION, FULL CUTOFF, SILVER FINISH, UL WET LOCATION	4000K LED 5,000 LUMENS MIN	KIM	WD14D3-E35-60L-4k-277	277	WALL	1
CC	EXTERIOR 16" WIDE x 9" DEEP TRAPEIZOIDAL LED WALL PACK, FULL CUTOFF, CLEAR GLASS LENS, CAST ALUMINUM HOUSING, SILVER FINISH, UL WET LOCATION	4000K LED 1,600 LUMENS MIN	HUBBELL	TRP-30L-4K-035-3-U	277	WALL	1
			GARDCO	101-MT-226TRF-UNV-NP			
			COOPER / MCGRAW EDISON	IST-52CF-E1-2S-GM			
DD	EXTERIOR 18" WIDE x 32" LONG POLE LED FIXTURE. TYPE IV DISTRIBUTION. NATURAL ALUMINUM PAINT FINISH, U IP66 RATED	4000K LED 14,500 LUMENS MIN	GARDCO	GL18-1-4-160LA-481A-NW-UNV-NP	277	POLE 25'-0" ABOVE GRADE	–
			KIM	1SA-ALT4P35-120L-4K-277-PS			
			COOPER / MCGRAW EDISON	GLEON-AF-1-LED-E1-T4FT-DP			
DD1	EXTERIOR 18" WIDE x 32" LONG POLE LED FIXTURE. TYPE IV DISTRIBUTION WITH INTERNAL SHEILD. NATURAL ALUMINUM PAINT FINISH, U IP66 RATED	4000K LED 9000 LUMENS MIN	GARDCO	GL18-1-4-105LA-487G-NW-UNV-NP-IS	277	POLE 25'-0" ABOVE GRADE	–
			KIM	1SA-ALT4P35-96L-4K-277-PS			
			COOPER / MCGRAW EDISON	GLEON-AF-1-LED-E1-T4FT-DP			
DD2	EXTERIOR 18" WIDE x 32" LONG DOUBLE HEAD POLE LED FIXTURE. TWO FIXTURE HEADS AT 180°, TYPE IV DISTRIBUTION WITH INTERNAL SHEILD. NATURAL ALUMINUM PAINT FINISH, U IP66 RATED	4000K LED 29,000 LUMENS MIN	GARDCO	GL18-2-4-160LA-481A-NW-UNV-NP	277	POLE 25'-0" ABOVE GRADE	–
			KIM	1SA-ALT4P35-120L-4K-277-PS			
			COOPER / MCGRAW EDISON	GLEON-AF-2-LED-E1-T4FT-DP			
DD3	EXTERIOR 18" WIDE x 32" LONG POLE LED FIXTURE. TYPE II DISTRIBUTION. NATURAL ALUMINUM PAINT FINISH, U IP66 RATED	4000K LED 11,000 LUMENS MIN	GARDCO	GL18-1-2-105LA-487G-NW-UNV-NP	277	POLE 25'-0" ABOVE GRADE	–
			KIM	1SA-ALT2P35-96L-4K-277-PS			
			COOPER / MCGRAW EDISON	GLEON-AF-1-LED-E1-T2-DP			

GENERAL NOTES:

A. TAMPER-RESISTANT/TAMPER-PROOF HARDWARE IS PROHIBITED.

B. INTERIOR LIGHTING FIXTURES SHALL BE PROVIDED WITH 3500K COLOR TEMPERATURE, WITHIN +/- 100K, AND WITHIN THREE MACADAM ELLIPSES. CRI SHALL BE 85 OR GREATER, UNLESS OTHERWISE NOTED IN SCHEDULE ABOVE.

C. VERIFY CEILING CONSTRUCTION IN ALL AREAS WITH WITH ARCHITECTURAL DRAWINGS. PROVIDE ALL REQUIRED MOUNTING FRAMES AND ASSOCIATED HARDWARE AS REQUIRED FOR A COMPLETE INSTALLATION, SUITABLE FOR THE CEILING TYPE.

SPECIFIC NOTES:

1. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECTURAL ELEVATIONS.

2. PROVIDE FEED KIT AND OTHER ACCESSORIES AS NEEDED FOR A COMPLETE INSTALLATION.

3. INSTALL BOTTOM OF FIXTURE FLUSH WITH BOTTOM OF STEEL JOISTS.

4. NO SUBSTITUTIONS. PROVIDE FIXTURE OF MANUFACTURER AND CATALOG NUMBER AS LISTED.

BALTIMORE COUNTY PUBLIC SCHOOLS

VICTORY VILLA ELEMENTARY SCHOOL

MIDDLE RIVER, MD

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
Courtyard Centre, 1 Park Drive, Suite 400
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-0820
jamesposey.com

Murphy & Dittenhafer Architects
226 West Market Street, York, Pennsylvania 17401
717-848-9827 voice 717-843-3449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
1	11/10/2016	BID SET

STATE OF MARYLAND
BRIAN M. MAGEE
No. 22861
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 24861, Expiration date: 02-24-2018.

PROJECT NO: 6535-15
DRAWN BY: JLG
CHECKED BY: BMM

LIGHTING FIXTURE SCHEDULE

SHEET
E6.01

WIRING SCHEDULE SWITCHBOARD SB

480/277 VOLTS — **2000 AMP MAIN BUS** — **3 PHASE 4 WIRE** — **2000 AMP MAIN BREAKER** — **65,000 AIC RATING**

FEEDER	EQUIPMENT SERVED	FEEDER SIZE	FRAME	POLE	AMP	A	B	C	NOTES
1	SURGE PROTECTIVE DEVICE	4 #6 + #6 G	100 A	3	60 A	0.0	0.0	0.0	
2	PANEL RD1 (VIA XFMR TRD1)	3 #4/0 + #4 G - 2-1/2" C	250 A	3	225 A	39.9	32.4	37.6	3
3	PANEL C1C (VIA XFMR TC1C)	3 #6 + #10 G - 1" C	100 A	3	60 A	4.8	3.7	4.2	3
4	PANEL L1C	4 #8 + #10 G - 3/4" C	100 A	3	50 A	2.9	2.9	3.1	3
5	PANEL L1A	4 #4/0 + #4 G - 2-1/2" C	250 A	3	125 A	38.0	36.2	30.3	3
6	PANEL L2A	4 #4/0 + #4 G - 2-1/2" C	250 A	3	125 A	41.3	38.7	33.3	3
7	PANEL MH1C	4 #4/0 + #4 G - 2-1/2" C	250 A	3	225 A	39.1	37.1	37.9	3
8	PANEL MH1A	4 #4/0 + #4 G - 2-1/2" C	250 A	3	225 A	10.9	10.4	10.2	3
9	PANEL MH2A	4 #500 KCMIL + #3 G - 4" C	400 A	3	400 A	61.3	62.5	61.5	3
10	CHILLER	3 #500 KCMIL + #3 G - 4" C	400 A	3	400 A	78.6	78.6	78.6	2
11	DOAS-1	3 #500 KCMIL + #3 G - 4" C	250 A	3	200 A	50.4	50.4	50.4	2
12	DOAS-2	3 #350 KCMIL + #3 G - 4" C	250 A	3	150 A	39.1	39.1	39.1	2
13	PANEL ELH1C (VIA ATS #1)	4 #3 + #8 G - 1-1/4" C	100 A	3	100 A	5.9	4.4	3.9	3
14	PANEL ESD1 (VIA ATS #2)	4 #4/0 + #4 G - 2-1/2" C	250 A	3	225 A	62.1	55.0	54.3	3
15	SPARE	--	100 A	3	100 A	0.0	0.0	0.0	
16	SPARE	--	250 A	3	250 A	0.0	0.0	0.0	
17	SPARE	--	400 A	3	400 A	0.0	0.0	0.0	
18	SPACE & BUS PROVISIONS	--	250 A	3	0 A	0.0	0.0	0.0	
19	SPACE & BUS PROVISIONS	--	250 A	3	0 A	0.0	0.0	0.0	
20	SPACE & BUS PROVISIONS	--	400 A	3	0 A	0.0	0.0	0.0	
						474.2	451.3	444.4	

CONNECTED LOAD = 1368.9 kVA

DEMAND LOAD = 1183.2 kVA — LOCATION ELEC 143

SWITCHBOARD NOTES:

1. MAIN CIRCUIT BREAKERS: PROVIDE TWO 100% RATED CIRCUIT BREAKERS, ELECTRONIC TRIP WITH LSIG ADJUSTABLE TRIP SETTINGS SERVING THE MAIN BUS. CIRCUIT BREAKERS SHALL BE DESIGNATED AS FOLLOWS: #1 - MAIN CIRCUIT BREAKER; #2 - ALTERNATE CIRCUIT BREAKER. BOTH MAIN CIRCUIT BREAKERS SHALL BE KEY INTERLOCKED TO PREVENT SIMULTANEOUS CLOSURE OF BOTH CIRCUIT BREAKERS.
2. DISTRIBUTION CIRCUIT BREAKERS: PROVIDE 100% RATED ELECTRONIC TRIP-TYPE CIRCUIT BREAKER WITH LSI ADJUSTABLE TRIP SETTINGS.
3. DISTRIBUTION CIRCUIT BREAKERS: PROVIDE 80% RATED ELECTRONIC TRIP-TYPE CIRCUIT BREAKER WITH LSI ADJUSTABLE TRIP SETTINGS.
4. DISTRIBUTION CIRCUIT BREAKERS: PROVIDE 80% RATED STANDARD MOLDED CASE-TYPE CIRCUIT BREAKER.

WIRING PANEL SCHEDULE C1A

120/208 VOLTS — **3 PHASE 4 WIRE** — **225 AMP MAINS** — **SURFACE**

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1		4#8+ #8G-1"C			0.0 0.9			20 A	1	#8-3/4"C	REC - KINDERGARTEN 112	2
3	SURGE PROTECTIVE DEVICE		3	30 A		0.0 0.7		20 A	1	#8-3/4"C	REC - KINDERGARTEN 112	4
5							0.0 0.9	20 A	1	#10-3/4"C	REC - KINDERGARTEN 111	6
7	REC - KINDERGARTEN 121	#12-3/4"C	1	20 A	0.7 0.7			20 A	1	#8-3/4"C	REC - KINDERGARTEN 111	8
9	REC - KINDERGARTEN 121	#12-3/4"C	1	20 A		0.9 0.9		20 A	1	#10-3/4"C	REC - KINDERGARTEN 109	10
11	REC - KINDERGARTEN 113	#12-3/4"C	1	20 A			0.9 0.7	20 A	1	#10-3/4"C	REC - KINDERGARTEN 109	12
13	REC - KINDERGARTEN 113	#12-3/4"C	1	20 A	0.7 0.7			20 A	1	#12-3/4"C	REC - REMEDIAL READING 108	14
15	REC - LIBRARIAN OFFICE 103A	#8-3/4"C	1	20 A		0.7 0.9		20 A	1	#12-3/4"C	REC - REMEDIAL READING 108	16
17	REC - CIRC DESK 103	#8-3/4"C	1	20 A			0.7 0.4	20 A	1	#10-3/4"C	REC - Room 107, 105	18
19	REC - GROUP INSTRUCTION...	#10-3/4"C	1	20 A	0.5 0.7			20 A	1	#12-3/4"C	REC - GUIDANCE OFFICE 106	20
21	REC - GROUP INSTRUCTION...	#10-3/4"C	1	20 A		0.5 0.5		20 A	1	#8-3/4"C	REC - STUDENT COMPUTER...	22
23	REC SECRETARY 101	#8-3/4"C	1	20 A			0.2 0.4	20 A	1	#8-3/4"C	REC - WAITING 101	24
25	REC - WAITING 101	#8-3/4"C	1	20 A	0.4 0.4			20 A	1	#10-3/4"C	REC - Room 101G, 101F	26
27	REC - Room 104	#10-3/4"C	1	20 A		0.4 0.7		20 A	1	#12-3/4"C	REC - Room 101D, 101C	28
29	REC - Room 101H	#10-3/4"C	1	20 A			0.2 0.5	20 A	1	#8-3/4"C	REC - Room 101A, 101	30
31	REC - CONFERENCE 101E	#10-3/4"C	1	20 A	0.4 0.9			20 A	1	#12-3/4"C	REC - DIGITAL LEARNING 119	32
33	REC - PRINCIPAL 101B	#8-3/4"C	1	20 A		0.7 0.9		20 A	1	#10-3/4"C	REC - MAKERS SPACE 120	34
35	REC - WAITING 101	#8-3/4"C	1	20 A			0.7 0.4	20 A	1	#10-3/4"C	REC VIDEO PRODUCTION...	36
37	REC - Room 102E, 102C, 102B	#10-3/4"C	1	20 A	0.7 0.2			20 A	1	#10-3/4"C	REC - GRADE LEVEL...	38
39	REC - DIGITAL LEARNING 119	#12-3/4"C	1	20 A		0.7 0.7		20 A	1	#10-3/4"C	REC - CONTROL ROOM 103C	40
41	REC - SPECIAL ED/EARLY...	#12-3/4"C	1	20 A			0.9 0.7	20 A	1	#12-3/4"C	REC - MAKERS SPACE 120	42
43	REC - PRE-KINDERGARTEN...	#10-3/4"C	1	20 A	0.9 0.7			20 A	1	#12-3/4"C	REC - SPECIAL ED/EARLY...	44
45	REC - PRE-KINDERGARTEN...	#10-3/4"C	1	20 A		0.9 0.7		20 A	1	#10-3/4"C	REC - PRE-KINDERGARTEN...	46
47	REC - CLASSROOM 127	#10-3/4"C	1	20 A			0.7 0.7	20 A	1	#10-3/4"C	REC - PRE-KINDERGARTEN...	48
49	REC - CLASSROOM 128	#10-3/4"C	1	20 A	0.9 0.9			20 A	1	#10-3/4"C	REC - CLASSROOM 127	50
51	REC - CLASSROOM 130	#8-3/4"C	1	20 A		0.9 0.7		20 A	1	#10-3/4"C	REC - CLASSROOM 128	52
53	REC - CLASSROOM 131	#8-3/4"C	1	20 A			0.7 0.7	20 A	1	#8-3/4"C	REC - CLASSROOM 130	54
55	REC - CLASSROOM 133	#8-3/4"C	1	20 A	0.7 0.9			20 A	1	#8-3/4"C	REC - CLASSROOM 131	56
57	TV - CONFERENCE 101E	#10-3/4"C	1	20 A		0.5 0.9		20 A	1	#8-3/4"C	REC - CLASSROOM 133	58
59	TV - PRINCIPAL 101B	#8-3/4"C	1	20 A			0.2 0.4	20 A	1	#10-3/4"C	REC - PSYCH. OFFICE 101F	60
61	REC PRINCIPAL 101B	#8-3/4"C	1	20 A	0.5 0.0			20 A	1	--	SPARE	62
63	TV - SECRETARY 101	#12-3/4"C	1	20 A		0.5 0.0		20 A	1	--	SPARE	64
65	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	66
67	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	68
69	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	70
71	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	72
73	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	74
75	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	76
77	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	78
79	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	80
81	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	82
83	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	84
					13.5	14.5	11.0					

CONNECTED LOAD = 39.0 kVA

DEMAND LOAD = 24.5 kVA

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

MAIN BREAKER 150 AMPS

LOCATION ELECTRICAL 115

NOTES:

WIRING PANEL SCHEDULE C1C

120/208 VOLTS — **3 PHASE 4 WIRE** — **100 AMP MAINS** — **SURFACE**

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1		4#8+ #8G-1"C			0.0 0.9			20 A	1	#12-3/4"C	REC - INST. CLASSROOM 139	2
3	SURGE PROTECTIVE DEVICE		3	30 A		0.0 0.7		20 A	1	#12-3/4"C	REC - INST. CLASSROOM 139	4
5							0.0 0.9	20 A	1	#10-3/4"C	REC - VOCAL CLASSROOM...	6
7	REC - OFFICE 147B	#8-3/4"C	1	20 A	0.4 0.7			20 A	1	#10-3/4"C	REC - VOCAL/CHORUS 138	8
9	REC - PE - INST. 148	#8-3/4"C	1	20 A		0.4 0.4		20 A	1	#8-3/4"C	REC - BSO 146	10
11	REC - PE - INST. 140D	#8-3/4"C	1	20 A			0.4 0.4	20 A	1	#12-3/4"C	REC - CUST. SUPPORT 145	12
13	REC - GYM SOUND SYSTEM	#8-3/4"C	1	20 A	0.4 0.4			20 A	1	#8-3/4"C	REC - COMM. ACTIVITY 147	14
15	REC - PLATFORM 141A	#12-3/4"C	1	20 A		0.7 0.4		20 A	1	#8-3/4"C	REC - COMM ACTIVITY AREA...	16
17	REC - PLATFORM 141A	#10-3/4"C	1	20 A			0.7 0.4	20 A	1	#8-3/4"C	REC - COMM ACTIVITY AREA...	18
19	REC - CAFETERIA 141	#12-3/4"C	1	20 A	0.7 0.4			20 A	1	#12-3/4"C	REC - OFFICE 142G	20
21	REC - CAFE SOUND SYSTEM	#12-3/4"C	1	20 A		0.4 0.4		20 A	1	#8-3/4"C	REC - FACULTY LOUNGE 136	22
23	PROJECTOR - PLATFORM...	#12-3/4"C	1	20 A			0.5 0.5	20 A	1	#8-3/4"C	TV - CORRIDOR 005	24
25	PROJECTOR - PLATFORM...	#12-3/4"C	1	20 A	0.5 0.5			20 A	1	#10-3/4"C	TV - CAFETERIA 141	26
27	SPARE	--	1	20 A		0.0 0.5		20 A	1	#8-3/4"C	TV - INFORMAL SEAT 103	28
29	SPARE	--	1	20 A			0.0 0.5	20 A	1	#8-3/4"C	TV - INFORMAL SEAT 103	30
31	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	32
33	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	34
35	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	36
37	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	38
39	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	40
41	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	42
					4.8	3.7	4.2					

CONNECTED LOAD = 12.7 kVA

DEMAND LOAD = 11.4 kVA

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

MAIN BREAKER 100 AMPS

LOCATION ELEC 143

NOTES:

WIRING PANEL SCHEDULE C2A

120/208 VOLTS — **3 PHASE 4 WIRE** — **225 AMP MAINS** — **SURFACE**

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	REC - CLASSROOM 201	#10-3/4"C	1	20 A	0.9 0.7			20 A	1	#10-3/4"C	REC - CLASSROOM 202	2
3	REC - CLASSROOM 205	#12-3/4"C	1	20 A		0.9 0.9		20 A	1	#12-3/4"C	REC - CLASSROOM 202	4
5	REC - CLASSROOM 205	#12-3/4"C	1	20 A			0.7 0.9	20 A	1	#12-3/4"C	REC - CLASSROOM 204	6
7	REC - CLASSROOM 207	#10-3/4"C	1	20 A	0.7 0.7			20 A	1	#12-3/4"C	REC - CLASSROOM 204	8
9	REC - CLASSROOM 207	#10-3/4"C	1	20 A		0.9 0.7		20 A	1	#10-3/4"C	REC - CLASSROOM 206	10
11	REC - CLASSROOM 211	#8-3/4"C	1	20 A			0.9 0.9	20 A	1	#12-3/4"C	REC - CLASSROOM 206	12
13	REC - CLASSROOM 211	#8-3/4"C	1	20 A	0.7 0.7			20 A	1	#10-3/4"C	REC - CLASSROOM 208	14
15	REC - CLASSROOM 213	#8-3/4"C	1	20 A		0.7 0.9		20 A	1	#8-3/4"C	REC - CLASSROOM 208	16
17	REC - CLASSROOM 213	#8-3/4"C	1	20 A			0.9 0.9	20 A	1	#8-3/4"C	REC - CLASSROOM 210	18
19	REC - GRADE LEVEL...	#12-3/4"C	1	20 A	0.2 0.7			20 A	1	#8-3/4"C	REC - CLASSROOM 210	20
21	REC - GRADE LEVEL STOR...	#12-3/4"C	1	20 A		0.2 0.9		20 A	1	#8-3/4"C	REC - CLASSROOM 212	22
23	REC - FACULTY WORKROOM...	#12-3/4"C	1	20 A			0.5 1.1	20 A	1	#8-3/4"C	REC - ROOM 212, 212A	24
25	REC - SPECIAL ED. 227	#12-3/4"C	1	20 A	0.9 0.9			20 A	1	#10-3/4"C	REC - ART ROOM 214	26
27	REC - SPECIAL ED. 227	#10-3/4"C	1	20 A		0.7 0.9		20 A	1	#12-3/4"C	REC - ESOL RESOURCE...	28
29	REC - CLASSROOM 217	#8-3/4"C	1	20 A			0.9 0.7	20 A	1	#10-3/4"C	REC - ESOL RESOURCE...	30
31	REC - CLASSROOM 217	#8-3/4"C	1	20 A	0.7 0.7			20 A	1	#8-3/4"C	REC - CLASSROOM 216	32
33	REC - CLASSROOM 219	#8-3/4"C	1	20 A		0.9 0.9		20 A	1	#8-3/4"C	REC - CLASSROOM 216	34
35	REC - CLASSROOM 219	#8-3/4"C	1	20 A			0.7 0.9	20 A	1	#8-3/4"C	REC - CLASSROOM 220	36
37	REC - CLASSROOM 221	#12-3/4"C	1	20 A	0.9 0.2			20 A	1	#12-3/4"C	REC - GRADE LEVEL STOR...	38
39	REC - CLASSROOM 221	#12-3/4"C	1	20 A		0.7 0.2		20 A	1	#12-3/4"C	REC - ROOM 231, 234	40
41	REC - CLASSROOM 223	#10-3/4"C	1	20 A			0.9 0.7	20 A	1	#8-3/4"C	REC - CLASSROOM 220	42
43	REC - CLASSROOM 223	#10-3/4"C	1	20 A	0.7 0.7			20 A	1	#10-3/4"C	REC - CLASSROOM 222	44
45	REC - OFFICE 234	#12-3/4"C	1	20 A		0.4 0.9		20 A	1	#10-3/4"C	REC - CLASSROOM 222	46
47	SPARE	--	1	20 A			0.0 0.7	20 A	1	#10-3/4"C	REC - CLASSROOM 224	48
49	SPARE	--	1	20 A	0.0 0.9			20 A	1	#10-3/4"C	REC - CLASSROOM 224	50
51	SPARE	--	1	20 A		0.0 0.7		20 A	1	#10-3/4"C	REC - ROOM 226A, 226	52
53	SPARE	--	1	20 A			0.0 0.9	20 A	1	#10-3/4"C	REC - CLASSROOM 226	54
55	SPARE	--	1	20 A	0.0 0.4			20 A	1	#12-3/4"C	REC - STAT OFFICE 231	56
57	SPARE	--	1	20 A		0.0 0.5		20 A	1	#10-3/4"C	TV - CORRIDOR 002	58
59	SPARE	--	1	20 A			0.0 0.5	20 A	1	#10-3/4"C	TV - CORRIDOR 002	60
61	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	62
63	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	64
65	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	66
67	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	68
69	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	70
71	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	72
73	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	74
75	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	76
77	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	78
79	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	80
81	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	82
83	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	84
					12.4	12.9	13.8					

CONNECTED LOAD = 39.2 kVA

DEMAND LOAD = 24.6 kVA

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

MAIN BREAKER 150 AMPS

LOCATION ELEC. 236

NOTES:

WIRING PANEL SCHEDULE ELH1A

480/277 VOLTS — **3 PHASE 4 WIRE** — **125 AMP MAINS** — **SURFACE**

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	LTG - CENTER	#12-3/4" ...	1	20 A	0.9 0.0			20 A	1	--	SPARE	2
3	LTG - NORTH	#12-3/4" ...	1	20 A		1.1 0.0		20 A	1	--	SPARE	4
5	LTG - SOUTH	#12-3/4" ...	1	20 A			1.4 0.0	20 A	1	--	SPARE	6
7	LTG - EXTERIOR - SOUTH	#12-3/4" ...	1	20 A	0.9 0.0			20 A	1	--	SPARE	8
9	LTG - EXTERIOR - MIDDLE	#12-3/4" C	1	20 A		0.6 0.0		20 A	1	--	SPARE	10
11	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	12
13	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	14
15	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	16
17	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	18
					1.8	1.6	1.4					

CONNECTED LOAD = 4.9 kVA

DEMAND LOAD = 4.9 kVA

MIN AIC RATING = 18,000 AMPS SYMMETRICAL

MAIN FUSED DISCONNECT 60 AMPS

LOCATION ELECTRICAL 115

NOTES:
1. PROVIDE FUSE-TYPE PANELBOARD.
2. PROVIDE INTEGRAL SURGE PROTECTIVE DEVICE.

WIRING PANEL SCHEDULE ELH1C

480/277 VOLTS — **3 PHASE 4 WIRE** — **250 AMP MAINS** — **SURFACE**

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1		4#4+ #8G-1-1/4"C			1.8 0.9			20 A	1	#12-3/4"C	LTG NORTHEAST	2
3	PANEL ELH1A		3	60 A		1.6 0.6		20 A	1	#12-3/4"C	LTG MIDDLE	4
5							1.4 0.9	20 A	1	#12-3/4"C	LTG SOUTHEAST	6
7		4#4+ #8G-1-1/4"C			1.7 0.5			20 A	1	#10-3/4"C	LTG NORTHEAST EXTERIOR	8
9	PANEL ELH2A		3	60 A		1.0 0.3		20 A	1	#12-3/4"C	LTG MIDDLE EXTERIOR	10
11							0.8 0.3	20 A	1	#12-3/4"C	LTG SOUTHEAST EXTERIOR	12
13		3#10+ #10G-3/4"C			1.0 0.0			20 A	1	--	SPARE	14
15	PAENL ELL1C (VIA XFMR TELL1C)		3	30 A		0.9 0.0		20 A	1	--	SPARE	16
17							0.5 0.0	20 A	1	--	SPARE	18
19	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	20
21	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	22
23	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	24
					5.9	4.4	3.9					

CONNECTED LOAD = 13.3 kVA

DEMAND LOAD = 13.3 kVA

MIN AIC RATING = 18,000 AMPS SYMMETRICAL

MAIN FUSED DISCONNECT 100 AMPS

LOCATION ELEC 143

NOTES:
1. PROVIDE FUSE-TYPE PANELBOARD.
2. PROVIDE INTEGRAL SURGE PROTECTIVE DEVICE.

WIRING PANEL SCHEDULE ELH2A

480/277 VOLTS — **3 PHASE 4 WIRE** — **125 AMP MAINS** — **SURFACE**

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	LTG AREA A - TOP	#12-3/4"C	1	20 A	1.0 0.0			20 A	1	--	SPARE	2
3	LTG AREA A - CENTER	#12-3/4"C	1	20 A		1.0 0.0		20 A	1	--	SPARE	4
5	LTG AREA A - BOTTOM	#12-3/4"C	1	20 A			0.8 0.0	20 A	1	--	SPARE	6
7	LTG - EXTERIOR - NORTH	#10-3/4"C	1	20 A	0.6 0.0			20 A	1	--	SPARE	8
9	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	10
11	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	12
13	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	14
15	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	16
17	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	18
					1.7	1.0	0.8					

CONNECTED LOAD = 3.5 kVA

DEMAND LOAD = 3.5 kVA

MIN AIC RATING = 18,000 AMPS SYMMETRICAL

MAIN FUSED DISCONNECT 60 AMPS

LOCATION ELEC. 236

NOTES:
1. PROVIDE FUSE-TYPE PANELBOARD.
2. PROVIDE INTEGRAL SURGE PROTECTIVE DEVICE.

WIRING PANEL SCHEDULE ELL1C

120/208 VOLTS — **3 PHASE 4 WIRE** — **250 AMP MAINS** — **SURFACE**

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	SPARE	--	1	20 A	0.0 1.0			20 A	1	#12-3/4"C	FACP	2
3	SPARE	--	1	20 A		0.0 0.9		20 A	1	#10-3/4"C	FIRE ALARM SMOKE...	4
5	SPARE	--	1	20 A			0.0 0.5	20 A	1	#8-3/4"C	RESCUE ASST. TELEPHONE	6
7	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	8
9	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	10
11	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	12
13	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	14
15	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	16
17	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	18
19	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	20
21	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	22
23	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	24
					1.0	0.9	0.5					

CONNECTED LOAD = 1.4 kVA

DEMAND LOAD = 1.4 kVA

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

MAIN FUSED DISCONNECT 50 AMPS

LOCATION ELEC 143

NOTES:
1. PROVIDE FUSE-TYPE PANELBOARD.
2. PROVIDE INTEGRAL SURGE PROTECTIVE DEVICE.

WIRING PANEL SCHEDULE ESHD1

480/277 VOLTS — **3 PHASE 4 WIRE** — **225 AMP MAINS** — **SURFACE**

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1		3#4/0+ #4G-2-1/2"C			47.8 0.0							2
3	PANEL ESLD1 (VIA XFMR TESLD1)		3	225 A		40.7 0.0		60 A	3	--	SURGE PROTECTIVE DEVICE	4
5							40.0 0.0					6
7	SPACE & PROVISION	--	--	--	0.0 7.2			70 A	3	3#6+ #8G-3/4"C	P-6 (25 HP)	8
9	SPACE & PROVISION	--	--	--		0.0 7.2						10
11	SPACE & PROVISION	--	--	--			0.0 7.2					12
13	SPACE & PROVISION	--	--	--	0.0 7.2			70 A	3	3#6+

WIRING PANEL SCHEDULE ESL1A

120/208 VOLTS — 3 PHASE 4 WIRE — 100 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	ACCU-1 & DSS-1	2#12+#12G -3/4"C	2	20 A	1.5 0.0							2
3						1.5 0.0		30 A	3	4#8+ #8G-1"C	SURGE PROTECTIVE DEVICE	4
5	REC - RACK (L6-30)	2#10+#10G -3/4"C	2	20 A			2.5 0.0					6
7					2.5 0.4			20 A	1	#12-3/4"C	REC IDF 114	8
9	REC - RACK (L6-30)	2#10+#10G -3/4"C	2	20 A		2.5 0.4		20 A	1	#12-3/4"C	REC IDF 114	10
11							2.5 0.4	20 A	1	#12-3/4"C	REC IDF 114	12
13	REC - RACK (L6-30)	2#10+#10G -3/4"C	2	20 A	2.5 0.4			20 A	1	#12-3/4"C	REC IDF 114	14
15						2.5 0.4		20 A	1	#12-3/4"C	REC - RACK (QUAD)	16
17	REC - RACK (L6-30)	2#10+#10G -3/4"C	2	20 A			2.5 0.4	20 A	1	#12-3/4"C	REC - RACK (QUAD)	18
19					2.5 2.9			20 A	1	#10-3/4"C	REC - RACK (L5-30)	20
21	SPARE	--	2	20 A		0.0 2.9		20 A	1	#10-3/4"C	REC - RACK (L5-30)	22
23							0.0 0.0	20 A	1	--	SPARE	24
25	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	26
27	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	28
29	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	30
31	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	32
33	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	34
35	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	36
37	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	38
39	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	40
41	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	42
					12.5	10.1	8.2					

CONNECTED LOAD = 30.8 KVA — MAIN BREAKER 100 AMPS

DEMAND LOAD = 21.9 KVA — LOCATION IDF.114

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

NOTES:

WIRING PANEL SCHEDULE ESL1C

120/208 VOLTS — 3 PHASE 4 WIRE — 225 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	ACCU-2 & DSS-2	2#8+#10G -3/4"C	2	40 A	2.7 0.0							2
3						2.7 0.0		30 A	3	4#8+ #8G-1"C	SURGE PROTECTIVE DEVICE	4
5	REC - RACK (L6-30)	2#10+#10G -3/4"C	2	30 A			2.5 0.0					6
7					2.5 0.4			20 A	1	#12-3/4"C	REC MDF 153	8
9	REC - RACK (L6-30)	2#10+#10G -3/4"C	2	30 A		2.5 0.4		20 A	1	#12-3/4"C	REC MDF 153	10
11							2.5 0.4	20 A	1	#12-3/4"C	REC MDF 153	12
13	REC - RACK (L6-30)	2#10+#10G -3/4"C	2	30 A	2.5 0.4			20 A	1	#12-3/4"C	REC MDF 153	14
15						2.5 0.4		20 A	1	#12-3/4"C	REC MDF 153	16
17	REC - RACK (L6-30)	2#10+#10G -3/4"C	2	30 A			2.5 0.4	20 A	1	#12-3/4"C	REC MDF 153	18
19					2.5 0.4			20 A	1	#12-3/4"C	REC MDF 153	20
21	REC - RACK (L6-20)	2#12+#12G -3/4"C	2	20 A		1.7 0.4		20 A	1	#12-3/4"C	REC MDF 153	22
23							1.7 0.4	20 A	1	#12-3/4"C	REC - RACK (QUAD)	24
25	REC - RACK (L6-20)	2#12+#12G -3/4"C	2	20 A	1.7 0.4			20 A	1	#12-3/4"C	REC - RACK (QUAD)	26
27						1.7 0.4		20 A	1	#12-3/4"C	REC - RACK (QUAD)	28
29	REC - RACK (L6-20)	2#12+#12G -3/4"C	2	20 A			1.7 2.9	30 A	1	#10-3/4"C	REC - RACK (L5-30)	30
31					1.7 2.9			30 A	1	#10-3/4"C	REC - RACK (L5-30)	32
33	REC - RACK (L6-20)	2#12+#12G -3/4"C	2	20 A		1.7 2.9		30 A	1	#10-3/4"C	REC - RACK (L5-30)	34
35							1.7 2.9	30 A	1	#10-3/4"C	REC - RACK (L5-30)	36
37	COOLER COMPRESSOR RACK	2#12+#12G -3/4"C	2	15 A	1.0 0.5			20 A	1	#12-3/4"C	B-1	38
39						1.0 0.5		20 A	1	#12-3/4"C	B-2	40
41	FREEZER BLOWER COIL	2#12+#12G -3/4"C	2	15 A			1.1 0.5	20 A	1	#12-3/4"C	B-3	42
43					1.1 0.2			20 A	1	#12-3/4"C	LTG - WALK-IN COOLER	44
45	SPARE	--	1	20 A		0.0 0.3		20 A	1	#12-3/4"C	COOLER BLOWER COIL	46
47	SPARE	--	1	20 A			0.0 0.5	20 A	1	#12-3/4"C	LTG - WALK-IN FREEZER	48
49	FREEZER COMPRESSOR RACK	3#12+ #12G-3/4"C	3	20 A	1.5 0.6			20 A	1	#8-3/4"C	CHILLER CONTROLLER	50
51						1.5 0.5		20 A	1	#8-3/4"C	CHILLER EVAPORATOR	52
53							1.5 0.5	20 A	1	#8-3/4"C	CHILLER HEAT TAPE *NOTE 1*	54
55	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	56
57	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	58
59	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	60
61	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	62
63	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	64
65	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	66
67	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	68
69	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	70
71	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	72
73	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	74
75	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	76
77	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	78
79	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	80
81	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	82
83	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	84
					22.5	20.6	23.2					

CONNECTED LOAD = 66.3 KVA — MAIN BREAKER 200 AMPS

DEMAND LOAD = 47.1 KVA — LOCATION MDF 153

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

NOTES:
1. PROVIDE GFCI-TYPE CIRCUIT BREAKER.

WIRING PANEL SCHEDULE ESL2A

120/208 VOLTS — 3 PHASE 4 WIRE — 100 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	ACCU-4 & DSS-4	2#12+#12G -3/4"C	2	20 A	1.5 0.0							2
3						1.5 0.0		30 A	3	4#8+ #8G-1"C	SURGE PROTECTIVE DEVICE	4
5	REC - RACK (L6-30)	2#10+#10G -3/4"C	2	30 A			2.5 0.0					6
7					2.5 0.4			20 A	1	#12-3/4"C	REC IDF 233	8
9	REC - RACK (L6-30)	2#10+#10G -3/4"C	2	30 A		2.5 0.4		20 A	1	#12-3/4"C	REC IDF 233	10
11							2.5 0.4	20 A	1	#12-3/4"C	REC IDF 233	12
13	REC - RACK (L6-30)	2#10+#10G -3/4"C	2	30 A	2.5 0.4			20 A	1	#12-3/4"C	REC IDF 233	14
15						2.5 0.4		20 A	1	#12-3/4"C	REC - RACK (QUAD)	16
17	REC - RACK (L6-30)	2#10+#10G -3/4"C	2	30 A			2.5 0.4	20 A	1	#12-3/4"C	REC - RACK (QUAD)	18
19					2.5 2.9			30 A	1	#10-3/4"C	REC - RACK (L5-30)	20
21	SPARE	--	2	20 A		0.0 2.9		30 A	1	#10-3/4"C	REC - RACK (L5-30)	22
23							0.0 0.4	20 A	1	#12-3/4"C	AUTOMATIC DOOR CLOSER	24
25	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	26
27	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	28
29	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	30
31	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	32
33	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	34
35	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	36
37	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	38
39	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	40
41	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	42
					12.5	10.1	8.6					

CONNECTED LOAD = 31.2 KVA — MAIN BREAKER 100 AMPS

DEMAND LOAD = 22.3 KVA — LOCATION IDF 233

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

NOTES:

WIRING PANEL SCHEDULE K

120/208 VOLTS — 3 PHASE 4 WIRE — 225 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1		3#8+ #10G-3/4"C	3	50 A	7.3 0.2			20 A	1	#12-3/4"C	REFRIGERATOR *NOTE 1*	2
3	CONVECTION OVEN					7.3 0.2		20 A	1	#12-3/4"C	REFRIGERATOR *NOTE 1*	4
5							7.3 0.2	20 A	1	#12-3/4"C	REC - FLY FAN *NOTE 1*	6
7		3#8+ #10G-3/4"C	3	50 A	7.3 0.4			20 A	1	#12-3/4"C	REC - AIR SCREEN *NOTE 1*	8
9	CONVECTION OVEN					7.3 0.2		20 A	1	#12-3/4"C	REC - RM 142 *NOTE 1*	10
11							7.3 0.2	20 A	1	#12-3/4"C	REC - RM 142 *NOTE 1*	12
13	PASS-THROUGH WARMING CABINET	2#12+#12G -3/4"C	2	15 A	0.1 0.2			20 A	1	#12-3/4"C	REC - RM 142 *NOTE 1*	14
15						0.1 0.2		20 A	1	#12-3/4"C	REC - RM 142A *NOTE 1*	16
17	PASS-THROUGH WARMING CABINET	2#12+#12G -3/4"C	2	15 A			0.1 0.2	20 A	1	#12-3/4"C	REC - RM 142A *NOTE 1*	18
19					0.1 0.4			20 A	1	#12-3/4"C	REC - RM 142A *NOTE 1*	20
21	ICE CREAM DISPLAY	2#12+#12G -3/4"C	2	15 A		0.5 0.2		20 A	1	#12-3/4"C	REC - RM 142A *NOTE 1*	22
23							0.5 0.2	20 A	1	#12-3/4"C	REC - RM 142A *NOTE 1*	24
25	ICE CREAM DISPLAY	2#12+#12G -3/4"C	2	15 A	0.5 0.9			20 A	1	#12-3/4"C	REC - RM 142A *NOTE 1*	26
27						0.5 1.2		20 A	1	#12-3/4"C	REC - RECEIV. 142H *NOTE 1*	28
29	DSS-5	2#12+#12G -3/4"C	2	20 A			1.5 0.2	20 A	1	#12-3/4"C	REC - RECEIV. 142H *NOTE 1*	30
31					1.5 0.7			20 A	1	#12-3/4"C	REC - OFFICE 142G *NOTE 1*	32
33	SPARE	--	2	20 A		0.0 0.2		15 A	1	#12-3/4"C	EF-9	34
35							0.0 0.2	15 A	1	#12-3/4"C	EF-1	36
37	SPARE *NOTE 1*	--	1	20 A	0.0 0.6			15 A	1	#12-3/4"C	P-8	38
39	SPARE *NOTE 1*	--	1	20 A		0.0 0.0		20 A	1	--	SPARE *NOTE 1*	40
41	SPARE *NOTE 1*	--	1	20 A			0.0 0.0	20 A	1	--	SPARE *NOTE 1*	42
43	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE *NOTE 1*	44
45	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE *NOTE 1*	46
47	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE *NOTE 1*	48
49	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	50
51	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	52
53	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	54
55	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	56
57	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	58
59	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	60
					20.1	17.8	17.8					

CONNECTED LOAD = 55.7 KVA — MAIN BREAKER 225 AMPS

DEMAND LOAD = 53.5 KVA — LOCATION SERVING LINE 142

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

NOTES:
1. PROVIDE GFCI TYPE CIRCUIT BREAKER.

WIRING PANEL SCHEDULE L1A

480/277 VOLTS — 3 PHASE 4 WIRE — 250 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	PANEL R1A (VIA XFMR TR1A)	3#3+ #8G-1-1/4"C	3	90 A	17.0 13.5							2
3						17.0 14.5		90 A	3	3#3+ #8G-1-1/4"C	PANEL C1A (VIA XFMR TC1A)	4
5							16.6 11.0					6
7	LTG - POLES *NOTE 1*	#8-3/4"C	1	20 A	0.6 3.9			20 A	1	#12-3/4"C	LTG - NORTH CLASSROOMS	8
9	LTG - POLES *NOTE 1*	#8-3/4"C	1	20 A		0.6 0.9		20 A	1	#12-3/4"C	LTG - CORRIDOR	10
11	SPARE	--	1	20 A			0.0 0.6	20 A	1	#10-3/4"C	LTG - 1st FL. AREA B	12
13	SPARE	--	1	20 A	0.0 3.0			20 A	1	#12-3/4"C	LTG - SOUTHWEST CLASS	14
15	SPARE	--	1	20 A		0.0 3.2		20 A	1	#12-3/4"C	LTG - MEDIA CENTER	16
17	SPARE	--	1	20 A			0.0 2.2	20 A	1	#12-3/4"C	LTG - SOUTHEAST OFFICES	18
19	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	20
21	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	22
23	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	24
25	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	26
27	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	28
29	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	30
					38.0	36.2	30.3					

CONNECTED LOAD = 104.5 KVA — MAIN BREAKER 125 AMPS

DEMAND LOAD = 66.4 KVA — LOCATION ELECTRICAL 115

MIN AIC RATING = 18,000 AMPS SYMMETRICAL

NOTES:
1. INSTALL CIRCUIT THROUGH ROOM CONTROLLER FOR EXTERIOR LIGHTING.

WIRING PANEL SCHEDULE L1C

480/277 VOLTS — 3 PHASE 4 WIRE — 100 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	LTG - POLES *NOTE 1*	#8-3/4"C	1	20 A	0.7 2.2			20 A	1	#12-3/4"C	LTG - NORTHEAST	2
3	LTG - POLES *NOTE 1*	#8-3/4"C	1	20 A		0.9 2.0		20 A	1	#12-3/4"C	LTG SOUTHEAST	4
5	LTG - GYM/CAFE/STOR.	#12-3/4"C	1	20 A			3.1 0.0	20 A	1	--	SPARE	6
7	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	8
9	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	10
11	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	12
13	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	14
15	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	16
17	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	18
					2.9	2.9	3.1					

CONNECTED LOAD = 8.9 KVA — MAIN LUG ONLY

DEMAND LOAD = 8.9 KVA — LOCATION ELEC 143

MIN AIC RATING = 18,000 AMPS SYMMETRICAL

NOTES:
1. INSTALL CIRCUIT THROUGH ROOM CONTROLLER FOR EXTERIOR LIGHTING.

WIRING PANEL SCHEDULE L2A

480/277 VOLTS — 3 PHASE 4 WIRE — 250 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	PANEL R2A (VIA XFMR TR2A)	3#1/0+ #6G-2"C	3	90 A	21.8 12.4							2
3						20.7 12.9		90 A	3	3#3+ #8G-1-1/4"C	PANEL C2A (VIA XFMR TC2A)	4
5							18.6 13.8					6
7	LTG MIDDLE	#10-3/4"C	1	20 A	3.3 3.8			20 A	1	#12-3/4"C	LTG NORTH CLASSROOMS	8
9	LTG - SOUTH CLASSROOMS	#12-3/4"C	1	20 A		3.8 1.3		20 A	1	#12-3/4"C	LTG CORRIDOR	10
11	LTG CORRIDOR 002	#12-3/4"C	1	20 A			0.9 0.0	20 A	1	--	SPARE	12
13	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	14
15	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	16
17	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	18
19	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	20
21	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	22
23	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	24
25	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	26
27	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	28
29	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	30
					41.3	38.7	33.3					

CONNECTED LOAD = 113.3 KVA — MAIN BREAKER 125 AMPS

DEMAND LOAD = 68.2 KVA — LOCATION ELEC. 236

MIN AIC RATING = 18,000 AMPS SYMMETRICAL

NOTES:

WIRING PANEL SCHEDULE MH1A

480/277 VOLTS — 3 PHASE 4 WIRE — 125 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	PANEL HL1A (VIA XFMR THL1A)	3#6+ #10G-1"C	3	60 A	7.2 0.0			15 A	1	#12-3/4"C	FCU-1	2
3						6.5 0.8		15 A	1	#12-3/4"C	FCU-2	4
5							6.6 0.8	15 A	1	#12-3/4"C	FCU-3	6
7	SPARE	--	1	20 A	0.0 0.8			15 A	1	#12-3/4"C	FCU-4	8
9	SPARE	--	1	20 A		0.0 0.2		15 A	1	#12-3/4"C	FCU-5	10
11	SPARE	--	1	20 A			0.0 0.8	15 A	1	#12-3/4"C	FCU-6	12
13	SPARE	--	1	20 A	0.0 0.8			15 A	1	#12-3/4"C	FCU-7	14
15	SPARE	--	1	20 A		0.0 0.8		15 A	1	#12-3/4"C	FCU-8	16
17	SPARE	--	1	20 A			0.0 1.2	15 A	1	#12-3/4"C	FCU-9	18
19	SPARE	--	1	20 A	0.0 1.2			15 A	1	#12-3/4"C	FCU-10	20
21	SPARE	--	1	20 A		0.0 1.2		15 A	1	#12-3/4"C	FCU-11	22
23	SPARE	--	1	20 A			0.0 0.8	15 A	1	#12-3/4"C	FCU-12	24
25	SPARE	--	1	20 A	0.0 0.8			15 A	1	#12-3/4"C	FCU-13	26
27	SPARE	--	1	20 A		0.0 0.8		15 A	1	#12-3/4"C	FCU-14	28
29	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	30
31	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	32
33	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	34
35	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	36
37	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	38
39	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	40
41	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	42
					10.9	10.4	10.2					

CONNECTED LOAD = 31.4 KVA — MAIN BREAKER 100 AMPS

DEMAND LOAD = 31.4 KVA — LOCATION ELECTRICAL 115

MIN AIC RATING = 18,000 AMPS SYMMETRICAL

NOTES:

WIRING PANEL SCHEDULE MH1C

480/277 VOLTS — 3 PHASE 4 WIRE — 250 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	ERU-1	3#12+ #12G-3/4"C	3	20 A	5.3 1.2			15 A	1	#12-3/4"C	FCU-15	2
3						5.3 1.2		15 A	1	#12-3/4"C	FCU-16	4
5							5.3 0.2	15 A	1	#12-3/4"C	FCU-38	6
7	ERU-2	3#8+ #10G-3/4"C	3	35 A	6.9 0.2			15 A	1	#12-3/4"C	FCU-39	8
9						6.9 2.0		20 A	1	#12-3/4"C	ECH-3	10
11							6.9 4.0	20 A	1	#12-3/4"C	ECH-1	12
13	DWP-1	3#12+ #12G-3/4"C	3	15 A	0.2 4.0			20 A	1	#12-3/4"C	ECH-2	14
15						0.2 0.2		20 A	1	#12-3/4"C	FCU-40	16
17							0.2 0.0	20 A	1	--	SPARE	18
19	DOAS-5	3#6+ #10G-1"C	3	60 A	11.9 0.0			20 A	1	--	SPARE	20
21						11.9 0.0		20 A	1	--	SPARE	22
23							11.9 0.0	20 A	1	--	SPARE	24
25	RTU-1	3#10+ #10G-3/4"C	3	30 A	5.5 0.0			20 A	1	--	SPARE	26
27						5.5 0.0		20 A	1	--	SPARE	28
29							5.5 0.0	20 A	1	--	SPARE	30
31	RTU-2	3#12+ #12G-3/4"C	3	15 A	3.3 0.0			20 A	1	--	SPARE	32
33						3.3 0.0		20 A	1	--	SPARE	34
35							3.3 0.0	20 A	1	--	SPARE	36
37					0.6 0.0			20 A	1	--	SPARE	38
39	ROLL-UP DOOR	3#12+ #12G-3/4"C	3	20 A		0.6 0.0		20 A	1	--	SPARE	40
41							0.6 0.0	20 A	1	--	SPARE	42
					39.1	37.1	37.9					

CONNECTED LOAD = 114.0 KVA — MAIN BREAKER 225 AMPS

DEMAND LOAD = 114.0 KVA — LOCATION MECH 144

MIN AIC RATING = 18,000 AMPS SYMMETRICAL

NOTES:

WIRING PANEL SCHEDULE MH2A

480/277 VOLTS — 3 PHASE 4 WIRE — 400 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	DOAS-3	3#6+ #10G-3/4"C	3	50 A	11.1 0.8			15 A	1	#12-3/4"C	FCU-17	2
3						11.1 1.2		15 A	1	#12-3/4"C	FCU-18	4
5							11.1 1.2	15 A	1	#12-3/4"C	FCU-19	6
7	DOAS-4	3#4+ #8G-1"C	3	80 A	15.8 0.2			15 A	1	#12-3/4"C	FCU-20	8
9						15.8 0.8		15 A	1	#12-3/4

WIRING PANEL SCHEDULE ML1A

120/208 VOLTS — 3 PHASE 4 WIRE — 100 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	VRT	2#12+#12G -3/4"C	2	15 A	1.0 0.9			15 A	1	#12-3/4"C	CUH-1	2
3						1.0 0.9		15 A	1	#12-3/4"C	CUH-2	4
5	VRT - MAKER SPACE 120	2#12+#12G -3/4"C	2	15 A			1.1 0.2	15 A	1	#12-3/4"C	CUH-3	6
7					1.1 0.2			15 A	1	#12-3/4"C	CUH-4	8
9	VRT - MEDIA CENTER	2#12+#12G -3/4"C	2	15 A		0.6 0.2		15 A	1	#12-3/4"C	PUH-1	10
11							0.6 0.2	15 A	1	#12-3/4"C	PUH-7	12
13	VRT - SECOND FLOOR	2#12+#12G -3/4"C	2	15 A	0.9 0.2			15 A	1	#12-3/4"C	PUH-8	14
15						0.9 0.2		15 A	1	#12-3/4"C	PUH-9	16
17	DSS-6	2#10+#10G -3/4"C	2	20 A			1.5 0.2	15 A	1	#12-3/4"C	PUH-10	18
19					1.5 0.2			15 A	1	#12-3/4"C	PUH-11	20
21	FCU-1-CU	2#8+#8G -3/4"C	2	20 A		1.9 0.2		20 A	1	#12-3/4"C	ELEVATOR SUMP PUMP	22
23							1.9 0.2	15 A	1	#10-3/4"C	EF-5	24
25	SPARE	--	2	15 A	0.0 0.2			20 A	1	#10-3/4"C	EF-7	26
27						0.0 0.2		20 A	1	#10-3/4"C	EF-10	28
29	SPARE	--	1	20 A			0.0 0.2	20 A	1	#12-3/4"C	CUH-9	30
31	SPARE	--	1	20 A	0.0 0.5			20 A	1	#10-3/4"C	P-1	32
33	SPARE	--	1	20 A		0.0 0.5		20 A	1	#10-3/4"C	P-2	34
35	SPARE	--	1	20 A			0.0 0.5	20 A	1	#12-3/4"C	P-3	36
37	SPARE	--	1	20 A	0.0 0.5			20 A	1	#10-3/4"C	P-4	38
39	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	40
41	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	42
43	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	44
45	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	46
47	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	48
49	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	50
51	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	52
53	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	54
55	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	56
57	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	58
59	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	60
					7.2	6.5	6.6					

CONNECTED LOAD = 20.3 KVA — MAIN BREAKER 100 AMPS

DEMAND LOAD = 20.3 KVA — LOCATION ELECTRICAL 115

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

NOTES:

WIRING PANEL SCHEDULE PR

120/208 VOLTS — 3 PHASE 4 WIRE — 100 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	REC EQUIP. STORAGE 140C	#12-3/4"C	1	20 A	0.2 0.2			15 A	1	#12-3/4"C	EF-2	2
3	REC OFFICE 147B	#12-3/4"C	1	20 A		0.5 0.2		15 A	1	#12-3/4"C	EF-3	4
5	REC EQUIPMENT STOR. 147A	#12-3/4"C	1	20 A			0.4 0.2	15 A	1	#12-3/4"C	EF-4	6
7	REC LAV 150	#12-3/4"C	1	20 A	0.4 0.8			15 A	1	#12-3/4"C	UNIT HEATERS	8
9	REC COMMUNITY ACTIV. 147	#12-3/4"C	1	20 A		0.5 0.2		20 A	1	#12-3/4"C	REFRIGERATOR	10
11	REC COMMUNITY ACTIV. 147	#12-3/4"C	1	20 A			0.9 0.4	20 A	1	#12-/4"C	REC - CONDIMENT 147E	12
13	REC CORRIDOR 007	#10-3/4"C	1	20 A	0.9 0.4			20 A	1	#12-3/4"C	REC - CONDIMENT 147E	14
15	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	16
17	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	18
19	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	20
21	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	22
23	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	24
25	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	26
27	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	28
29	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	30
					2.8	1.4	1.8					

CONNECTED LOAD = 6.0 KVA — MAIN BREAKER 50 AMPS

DEMAND LOAD = 6.0 KVA — LOCATION COMMUNITY ACTIVITY AREA 147

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

NOTES:

WIRING PANEL SCHEDULE R1A

120/208 VOLTS — 3 PHASE 4 WIRE — 225 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	REC KINDERGARTEN 112	#8-3/4"C	1	20 A	1.3 1.1			20 A	1	#10-3/4"C	REC KINDERGARTEN 111	2
3	REC KINDERGARTEN 109	#12-3/4"C	1	20 A		1.1 1.1		20 A	1	#12-3/4"C	REC REMEDIAL READING 108	4
5	REC ROOM 124A, 001C	#10-3/4"C	1	20 A			0.7 0.9	20 A	1	#10-3/4"C	REC GUIDANCE OFFICE 106	6
7	REC OT/PT ROOM 105	#10-3/4"C	1	20 A	0.9 0.2			20 A	1	#12-3/4"C	REC WORK ROOM 101H	8
9	REC WORK ROOM 101H	#10-3/4"C	2	20 A		0.1 0.9		20 A	1	#10-3/4"C	REC RM 101K,101J,101H,101M	10
11							0.1 0.7	20 A	1	#10-3/4"C	REC CORRIDOR 101M	12
13	REC SPEECH THERAPY 104	#10-3/4"C	1	20 A	0.7 1.1			20 A	1	#10-3/4"C	REC CONFERENCE 101E	14
15	REC ROOM 101G, 101F	#10-3/4"C	1	20 A		0.5 0.5		20 A	1	#8-3/4"C	REC PRINCIPAL 101B	16
17	REC ROOM 101D, 101C	#8-3/4"C	1	20 A			0.5 0.5	20 A	1	#8-3/4"C	REC SECRETARY 101	18
19	REC ROOM 101A, 101	#8-3/4"C	1	20 A	0.5 0.7			20 A	1	#10-3/4"C	REC EXAM 120E *NOTE 1*	20
21	REC ROOM 102A, 101L, 102	#8-3/4"C	1	20 A		0.5 1.6		20 A	1	#12-3/4"C	REC CORRIDOR 001A	22
23	REC RESTING 102D	#8-3/4"C	1	20 A			1.1 0.9	20 A	1	#12-3/4"C	REC ROOM 102C, 102B	24
25	REC NURSE OFF. 102B	#8-3/4"C	1	20 A	0.2 0.5			20 A	1	#12-3/4"C	REC ROOM 120, 120A	26
27	REC DIGITAL LEARNING 119	#12-3/4"C	1	20 A		0.9 0.4		20 A	1	#10-3/4"C	REC VIDEO PROD. 103D	28
29	REC VIDEO PROD. 103D	#10-3/4"C	1	20 A			0.4 0.4	20 A	1	#8-3/4"C	REC MECH 132	30
31	REC CONTROL ROOM 103C	#10-3/4"C	1	20 A	0.7 1.3			20 A	1	#12-3/4"C	REC ROOM 118, 001B, 115	32
33	REC AST. PR 101C	#8-3/4"C	1	20 A		0.5 1.0		20 A	1	#10-3/4"C	REC REFRIG ROOM 126	34
35	REFRIGERATOR - RM 157	#12-3/4"C	1	20 A			1.0 0.9	20 A	1	#12-3/4"C	REC KINDERGARTEN 121	36
37	REC ROOM126, 157	#10-3/4"C	1	20 A	0.9 1.1			20 A	1	#12-3/4"C	REC SPECIAL ED 122	38
39	REC KINDERGARTEN 113	#12-3/4"C	1	20 A		0.9 1.1		20 A	1	#12-3/4"C	REC PRE-KINDERGARTEN 125	40
41	REC PRE-KINDERGARTEN 124	#10-3/4"C	1	20 A			1.1 1.1	20 A	1	#10-3/4"C	REC 1ST GRADE CR 127	42
43	REC ELA 127B	#10-3/4"C	1	20 A	0.5 0.5			20 A	1	#8-3/4"C	REC ELA 130B	44
45	REC 1ST GRADE CR 128	#10-3/4"C	1	20 A		1.1 1.1		20 A	1	#8-3/4"C	REC 1ST GRADE CR 131	46
47	REC 1ST GRADE CR 130	#8-3/4"C	1	20 A			1.1 0.2	20 A	1	#12-3/4"C	REC EWC *NOTE 1*	48
49	REC ROOM 133, 133B	#8-3/4"C	1	20 A	1.3 0.7			20 A	1	#8-3/4"C	REC LIBRARIAN OFFICE 103A	50
51	REC WASH FTN. *NOTE 1*	#12-3/4"C	1	20 A		0.2 0.9		20 A	1	#10-3/4"C	REC CORRIDOR 001C	52
53	REC CIRC DESK 103	#8-3/4"C	1	20 A			1.3 0.7	20 A	1	#8-3/4"C	REC STORY TELLING 103	54
55	REC GROUP INSTRUCTION...	#10-3/4"C	1	20 A	1.3 0.4			20 A	1	#8-3/4"C	REC CORRIDOR 001	56
57	REC EXTERIOR	#10-3/4"C	1	20 A		0.5 0.6		20 A	1	#12-3/4"C	REC & LTG ELEVATOR PIT	58
59	REFRIGERATOR - RM 101M	#8-3/4"C	1	20 A			1.0 0.5	20 A	1	#10-3/4"C	REC PSYCH. OFFICE 101F	60
61	REC TOILET 102F & STOR....	#8-3/4"C	1	20 A	0.2 1.0			20 A	1	#8-3/4"C	REFRIGERATOR - RM 102E	62
63	LTG TRACK - VIDEO PROD.	#10-3/4"C	1	20 A		1.5 0.0		20 A	1	--	SPARE	64
65	LTG TRACK - VIDEO PROD.	#10-3/4"C	1	20 A			1.5 0.0	20 A	1	--	SPARE	66
67	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	68
69	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	70
71	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	72
73	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	74
75	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	76
77	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	78
79	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	80
81	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	82
83	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	84
					17.0	17.0	16.6					

CONNECTED LOAD = 50.6 KVA — MAIN BREAKER 150 AMPS

DEMAND LOAD = 32.0 KVA — LOCATION ELECTRICAL 115

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

NOTES:
1. PROVIDE GFCI-TYPE CIRCUIT BREAKER.

WIRING PANEL SCHEDULE R1C

120/208 VOLTS — 3 PHASE 4 WIRE — 225 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	REC ELEC 143	#12-3/4"C	1	20 A	0.7 0.9			20 A	1	#8-3/4"C	REC GYMNASIUM 140	2
3	REC MECH 144	#12-3/4"C	1	20 A		0.9 0.4		20 A	1	#8-3/4"C	REC GYMNASIUM 140	4
5	REC CORRIDOR 005	#12-3/4"C	1	20 A			1.6 0.5	20 A	1	#8-3/4"C	REC GYMNASIUM 140	6
7	REC CORRIDOR 005	#10-3/4"C	1	20 A	0.7 0.5			20 A	1	#10-3/4"C	MOTORIZED SHADES	8
9	REC EWC *NOTE 1*	#8-3/4"C	1	20 A		0.5 0.5		20 A	1	#10-3/4"C	MOTORIZED SHADES	10
11	REC TOILET 136C	#8-3/4"C	1	20 A			0.7 0.7	20 A	1	#10-3/4"C	REC CAFETERIA 141	12
13	REC BSO 146	#8-3/4"C	1	20 A	0.7 0.5			20 A	1	#10-3/4"C	REC CAFETERIA 141	14
15	REC FACULTY LOUNGE 136	#10-3/4"C	1	20 A		0.4 0.9		20 A	1	#8-3/4"C	REC PE INST. 148	16
17	REC CUST SUPPORT 145	#12-3/4"C	1	20 A			0.9 0.7	20 A	1	#8-3/4"C	REC PE INST. 140D	18
19	REC FACULTY 136 *NOTE 1*	#10-3/4"C	1	20 A	0.2 0.2			20 A	1	#8-3/4"C	REC EQUIP ENCLOSURE	20
21	REC INST. CLASSROOM 139	#12-3/4"C	1	20 A		0.4 0.5		20 A	1	#8-3/4"C	GENERATOR ACCESSORIES	22
23	REC INST. CLASSROOM 139	#12-3/4"C	1	20 A			0.5 5.0	20 A	1	#8-3/4"C	GENERATOR ACCESSORIES	24
25	REC VOCAL CLASSROOM 138	#10-3/4"C	1	20 A	0.7 2.0			30 A	1	#8-3/4"C	GEN BLOCK HEATER	26
27	REC FACULTY DINING 137	#10-3/4"C	1	20 A		1.0 0.5		20 A	1	#8-3/4"C	SCHOOL SIGN	28
29	REC FACULTY LOUNGE 136	#10-3/4"C	1	20 A			0.2 0.5	20 A	1	#12-3/4"C	P-5	30
31	DWH-1	#12-3/4"C	1	15 A	0.5 1.5			20 A	2	2#10+#10G -3/4"C	DSS-3	32
33	DWP-2	#12-3/4"C	1	15 A		0.2 1.5						34
35	EF-6	#12-3/4"C	1	15 A			0.2 1.5	20 A	2	2#10+#10G -3/4"C	DSS-7	36
37	EF-8	#12-3/4"C	1	15 A	0.2 1.5							38
39	EF-11	#12-3/4"C	1	15 A		0.2 0.7		20 A	2	2#10+#10G -3/4"C	MOTORIZED BACKBOARD	40
41	EF-12	#12-3/4"C	1	15 A			0.2 0.7					42
43	UNIT HEATERS	#12-3/4"C	1	15 A	0.6 0.7			20 A	2	2#10+#10G -3/4"C	MOTORIZED BACKBOARD	44
45	CUH-8	#12-3/4"C	1	20 A		0.2 0.7						46
47	VENDING - RM 136 *NOTE 1*	#10-3/4"C	1	20 A			0.2 0.8	20 A	2	2#10+#10G -3/4"C	MOTORIZED PARTITION	48
49	VENDING - RM 136 *NOTE 1*	#10-3/4"C	1	20 A	0.2 0.8							50
51	SPARE	--	1	20 A		0.0 0.5		20 A	1	#8-3/4"C	REC CORRIDOR 001	52
53	SPARE	--	1	20 A			0.0 1.1	20 A	1	#10-3/4"C	REC ROOF	54
55	SPARE	--	1	20 A	0.0 0.5			20 A	1	#10-3/4"C	REC EXTERIOR	56
57	SPARE	--	1	20 A		0.0 1.0		20 A	1	#10-3/4"C	GOAL HEIGHT ADJUSTOR	58
59	SPARE	--	1	20 A			0.0 0.5	20 A	1	#10-3/4"C	WEATHER STATION	60
61	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	62
63	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	64
65	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	66
67	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	68
69	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	70
71	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	72
73	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	74
75	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	76
77	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	78
79	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	80
81	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	82
83	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	84
					13.5	10.8	16.4					

CONNECTED LOAD = 40.7 KVA — MAIN LUG ONLY

DEMAND LOAD = 36.8 KVA — LOCATION ELEC 143

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

NOTES:
1. PROVIDE GFCI-TYPE CIRCUIT BREAKER.

WIRING PANEL SCHEDULE R2A

120/208 VOLTS — 3 PHASE 4 WIRE — 225 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	REC CLASSROOM 201	#10-3/4"C	1	20 A	1.1 3.8							2
3	REC ROOM 002A, 203	#12-3/4"C	1	20 A		1.1 3.8		40 A	3	3#8+ #10G- 3/4"C	KILN	4
5	REC CLASSROOM 204	#12-3/4"C	1	20 A			1.1 3.8					6
7	REC ROOM 204A, 206A	#12-3/4"C	1	20 A	1.1 0.7			20 A	1	#10-3/4"C	REC ART ROOM 214	8
9	REC CLASSROOM 206	#12-3/4"C	1	20 A		1.1 0.5		20 A	1	#10-3/4"C	REC ART ROOM 214	10
11	REC ROOM 209, 210A	#8-3/4"C	1	20 A			0.9 0.9	20 A	1	#10-3/4"C	REC ART ROOM 214	12
13	REC CLASSROOM 208	#8-3/4"C	1	20 A	1.1 0.5			20 A	1	#12-3/4"C	REC ART STORAGE 214A	14
15	REC CLASSROOM 211	#8-3/4"C	1	20 A		1.1 0.5		20 A	1	#10-3/4"C	REC ELA 201A	16
17	REC RM 215,002C,218,002A	#8-3/4"C	1	20 A			0.5 1.1	20 A	1	#12-3/4"C	REC CLASSROOM 202	18
19	REC CLASSROOM 212	#8-3/4"C	1	20 A	1.1 0.2			20 A	1	#10-3/4"C	REC EWC *NOTE 1*	20
21	REC EWC *NOTE 1*	#10-3/4"C	1	20 A		0.2 1.1		20 A	1	#12-3/4"C	REC CLASSROOM 205	22
23	REC REFRIG RM 236	#12-3/4"C	1	20 A			1.0 0.5	20 A	1	#10-3/4"C	REC ROOM 207A, 210A	24
25	REC ROOM 002B, 231	#12-3/4"C	1	20 A	0.5 1.1			20 A	1	#10-3/4"C	REC CLASSROOM 207	26
27	REC ROOM 229, 230	#12-3/4"C	1	20 A		0.5 1.1		20 A	1	#8-3/4"C	REC CLASSROOM 210	28
29	REC ESOL RESOURCE RM 237	#12-3/4"C	1	20 A			1.1 0.5	20 A	1	#8-3/4"C	REC ELA 212A	30
31	REC GRADE LEVEL STOR 234	#12-3/4"C	1	20 A	0.7 1.1			20 A	1	#8-3/4"C	REC CLASSROOM 213	32
33	REC REFRIG RM 228	#12-3/4"C	1	20 A		1.0 1.1		20 A	1	#12-3/4"C	REC RM 002A,225,240,241	34
35	REC CLASSROOM 226	#12-3/4"C	1	20 A			0.7 0.7	20 A	1	#12-3/4"C	REC GRADE LEVEL STOR. 236	36
37	REC ROOM 226, 226A, 002	#10-3/4"C	1	20 A	0.9 0.7			20 A	1	#12-3/4"C	REC ROOM 234A, 234B	38
39	REC CLASSROOM 223	#10-3/4"C	1	20 A		1.1 0.4		20 A	1	#12-3/4"C	REC FACULTY 232 *NOTE 1*	40
41	REC CLASSROOM 221	#10-3/4"C	1	20 A			1.1 1.0	20 A	1	#12-3/4"C	REC REFRIG ROOM 230	42
43	REC CLASSROOM 216	#8-3/4"C	1	20 A	1.1 1.1			20 A	1	#10-3/4"C	REC SPECIAL ED. 227	44
45	REC CLASSROOM 219	#8-3/4"C	1	20 A		1.1 1.0		20 A	1	#12-3/4"C	REC REFRIG ROOM 234	46
47	REC ELEC. 235	#12-3/4"C	1	20 A			0.2 0.7	20 A	1	#10-3/4"C	REC ROOM 228	48
49	REC ROOM 223A, 221A	#10-3/4"C	1	20 A	1.1 1.1			20 A	1	#10-3/4"C	REC CLASSROOM 224	50
51	REC ROOM 216A, 218	#8-3/4"C	1	20 A		1.1 1.1		20 A	1	#10-3/4"C	REC CLASSROOM 222	52
53	REC CORRIDOR 002	#10-3/4"C	1	20 A			1.1 0.5	20 A	1	#8-3/4"C	REC ELA 219A	54
55	REC CORRIDOR 002	#10-3/4"C	1	20 A	0.5 1.1			20 A	1	#8-3/4"C	REC CLASSROOM 217	56
57	REC WASH FTN. *NOTE 1*	#12-3/4"C	1	20 A		0.2 1.1		20 A	1	#8-3/4"C	REC CLASSROOM 220	58
59	REC WASH FTN. *NOTE 1*	#12-3/4"C	1	20 A			0.2 0.2	20 A	1	#10-3/4"C	REC ELEV. CONTROL 238	60
61	REC ROOF	#12-3/4"C	1	20 A	1.3 0.0			20 A	1	--	SPARE	62
63	REC STAT OFFICE 231	#12-3/4"C	1	20 A		0.7 0.0		20 A	1	--	SPARE	64
65	REC OFFICE 234	#12-3/4"C	1	20 A			0.7 0.0	20 A	1	--	SPARE	66
67	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	68
69	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	70
71	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	72
73	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	74
75	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	76
77	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	78
79	SPARE	--	1	20 A	0.0 0.0			20 A	1	--	SPARE	80
81	SPARE	--	1	20 A		0.0 0.0		20 A	1	--	SPARE	82
83	SPARE	--	1	20 A			0.0 0.0	20 A	1	--	SPARE	84
					21.8	20.7	18.6					

CONNECTED LOAD = 61.1 KVA — MAIN BREAKER 150 AMPS

DEMAND LOAD = 35.6 KVA — LOCATION ELEC. 236

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

NOTES:
1. PROVIDE GFCI-TYPE CIRCUIT BREAKER.

WIRING PANEL SCHEDULE RD1

120/208 VOLTS — 3 PHASE 4 WIRE — 400 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1		4#1/0+ #6G- 2"C	3	150 A	13.5 0.0			--	--	--	SPACE & PROVISION	2
3	PANEL R1C					10.8 0.0		--	--	--	SPACE & PROVISION	4
5							16.4 0.0	--	--	--	SPACE & PROVISION	6
7		4#4/0+ #4G- 2-1/2"C	3	225 A	20.1 0.0			--	--	--	SPACE & PROVISION	8
9	PANEL K					17.8 0.0		--	--	--	SPACE & PROVISION	10
11							17.8 0.0	--	--	--	SPACE & PROVISION	12
13		4#6+ #8G- 1"C	3	50 A	2.8 0.0			--	--	--	SPACE & PROVISION	14
15	PANEL PR					1.4 0.0		--	--	--	SPACE & PROVISION	16
17							1.8 0.0	--	--	--	SPACE & PROVISION	18
19		4#8+ #10G- 3/4"C	3	50 A	3.5 0.0			--	--	--	SPACE & PROVISION	20
21	PANEL S					2.4 0.0		--	--	--	SPACE & PROVISION	22
23							1.6 0.0	--	--	--	SPACE & PROVISION	24
25	SPACE & PROVISION	--	--	--	0.0 0.0			--	--	--	SPACE & PROVISION	26
27	SPACE & PROVISION	--	--	--		0.0 0.0		--	--	--	SPACE & PROVISION	28
29	SPACE & PROVISION	--	--	--			0.0 0.0	--	--	--	SPACE & PROVISION	30
					39.9	32.4	37.6					

CONNECTED LOAD = 109.9 KVA — MAIN BREAKER 350 AMPS

DEMAND LOAD = 97.4 KVA — LOCATION ELEC 143

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

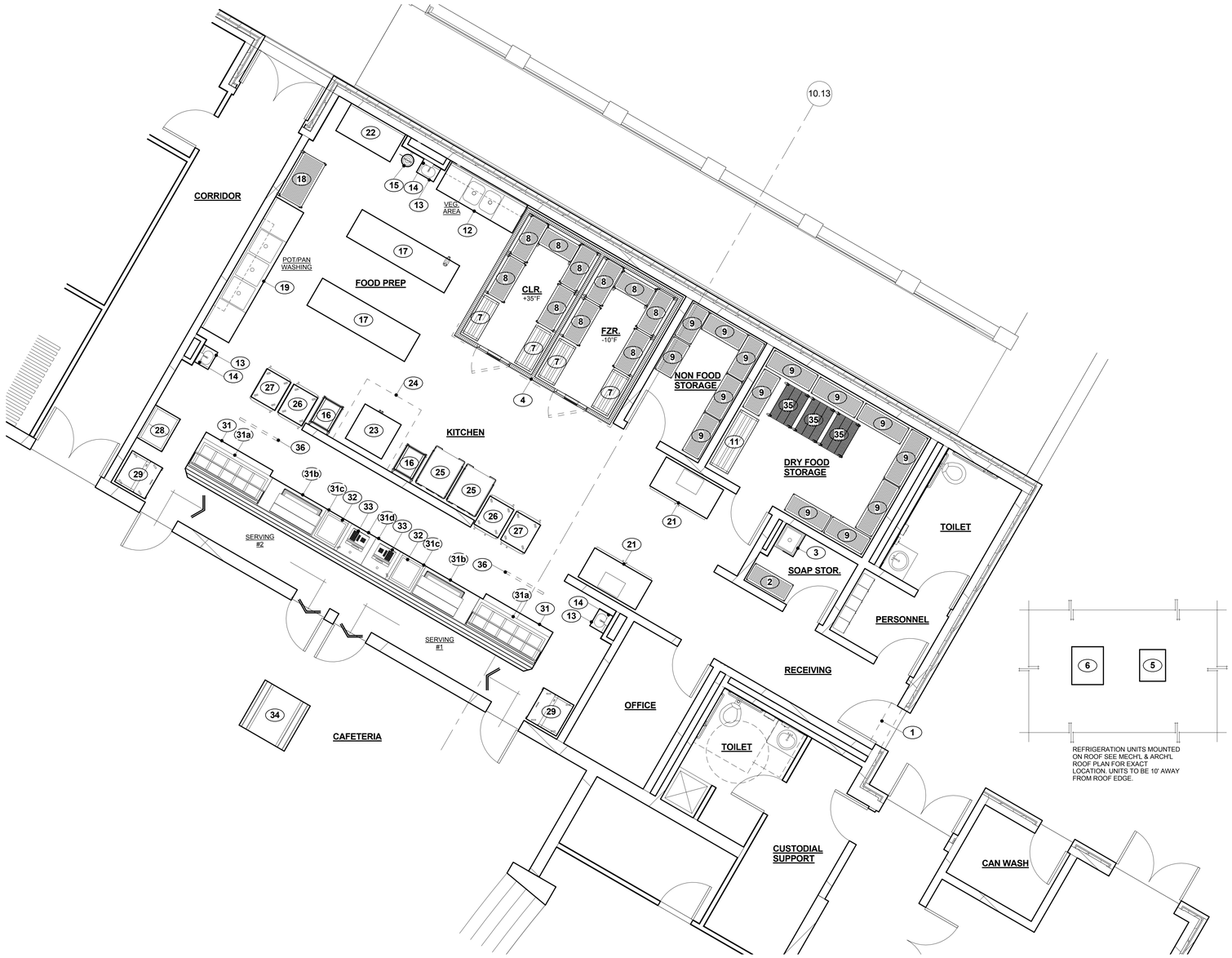
NOTES:

WIRING PANEL SCHEDULE S

120/208 VOLTS — 3 PHASE 4 WIRE — 100 AMP MAINS — SURFACE

CIR-CUIT	DESCRIPTION	WIRE/ CONDUIT	POLE	AMP	A	B	C	AMP	POLE	WIRE/ CONDUIT	DESCRIPTION	CIR-CUIT
1	REC - PLATFORM 141A	#10-3/4"C	1	20 A	0.9 0.9			20 A	1	#12-3/4"C	LTG TRACK - PLATFORM 141A	2
3	REC - PLATFORM 141A	#12-3/4"C	1	20 A		0.4 0.9		20 A	1	#12-3/4"C	LTG TRACK - PLATFORM 141A	4
5	REC - PLATFORM 141A	#12-3/4"C	1	20 A			0.2 0.6	20 A	1	#12-3/4"C	LTG TRACK - PLATFORM 141A	6
7	REC - PLATFORM 141A	#12-3/4"C	1	20 A	1.1 0.6			20 A	1	#12-3/4"C	LTG TRACK - PLATFORM 141A	8
9	PROJECTOR - PLATFORM...	#12-3/4"C	1	15 A		0.5 0.6		20 A	1	#12-3/4"C	LTG TRACK - PLATFORM 141A	10
11	ADA LIFT	#12-3/4"C	1	20 A			0.2 0.6	20 A	1	#12-3/4"C

NYIKOS ASSOCIATES, INC.
Foodservice Facilities Design/Consulting
18219-A Flower Hill Way ▮ Gaithersburg, MD 20879
Tel-(240)683-9530 ▮ Fax-(240)683-9532



KITCHEN EQUIPMENT PLAN

SCALE: 1/4"=1'-0"

EQUIPMENT SCHEDULE

ITEM	QTY.	DESCRIPTION	REMARKS
1	1	FLY FAN	
2	1	SHELVING	
3	1	MOP SINK	W/(6) WALL HANGERS
4	1	WALK-IN COOLER/FREEZER	W/REMOTE TEMP. MONITORING
5	1	COOLER REFRIGERATION SYSTEM	OUTDOOR-MOUNTED ON ROOF
6	1	FREEZER REFRIGERATION SYSTEM	OUTDOOR-MOUNTED ON ROOF
7	4	DUNNAGE RACK	
8	10	SHELVING, MOBILE	
9	14	SHELVING	
10	1	SPARE NUMBER	
11	1	DUNNAGE RACK	
12	1	PREP SINK	W/ OVERSHELF
13	3	HAND SINK	
14	3	SOAP & TOWEL DISPENSER	(N.I.K.E.C.) - SPECIFIED BY ARCHITECT
15	1	EYE WASH STATION	
16	2	PAN RACK CART, MOBILE	
17	2	WORKTABLE	W/MANUAL CAN OPENER
18	1	POT & PAN SHELVING, MOBILE	
19	1	POT WASHING SINK	W/ OVERSHELF
20	1	SPARE NUMBER	
21	2	BULK MILK COOLER, MOBILE	
22	1	WORKTABLE	
23	1	CONVECTION OVEN	DOUBLE-DECK
24	1	EXHAUST CANOPY	
25	2	HEATED TRANSPORT CABINET, MOBILE	
26	2	PASS-THRU REFRIGERATOR, MOBILE	
27	2	PASS-THRU WARMING CABINET, MOBILE	
28	1	ICE CREAM CABINET, MOBILE	
29	2	MILK COOLER, MOBILE	
30	1	SPARE NUMBER	
31	1	SERVING COUNTER	
31a	2	HOT FOOD COUNTER	
31b	2	FROST TOP COUNTER	
31c	2	SOLID TOP COUNTER	
31d	2	CASHIER STAND	
32	2	ICE CREAM DISPLAY MERCHANDISER	DROP-IN UNIT
33	2	CASH REGISTER	(N.I.C.) - FURNISHED BY OWNER
34	1	CONDIMENT COUNTER, MOBILE	
35	3	BREAKFAST CART, MOBILE	FURNISHED BY OWNER
36	2	SIGNAGE	(N.I.C.) - FURNISHED BY OWNER

(N.I.C.) - NOT IN CONTRACT.
(N.I.K.E.C.) - NOT IN KITCHEN EQUIPMENT CONTRACT.

GENERAL HEALTH DEPARTMENT NOTATIONS

1. ALL PIPING, CONDUIT, BX CABLE AND SIMILAR CONSTRUCTION WILL BE EITHER LOCATED INSIDE A WALL OR INSTALLED WITH A MINIMUM 3/4" SPACE FROM THE WALL OR SEALED TO THE WALL.
2. ALL DOORS TO THE OUTSIDE WILL BE SELF-CLOSING AND RODENT-PROOF.
3. A MINIMUM OF FIFTY (50) FOOT-CANDLES OF SHIELDED LIGHT WILL BE PROVIDED AT ALL WORK SURFACES, STORAGE AREAS, FOOD PREPARATION AREAS, UTENSIL WASHING AREAS, TOILET ROOMS, LOCKER ROOMS AND IN THE GARBAGE AND RUBBISH STORAGE AREAS.
4. ALL RESTROOM DOORS WILL BE SELF-CLOSING.
5. ALL RESTROOMS WILL BE EQUIPPED WITH MECHANICAL EXHAUST VENTILATION SIZED AT A MINIMUM RATE OF TWO (2) CUBIC FEET PER MINUTE PER SQUARE FOOT OF FLOOR AREA AND EXHAUSTING DIRECTLY TO THE OUTSIDE.
6. ALL FLOOR MOUNTED EQUIPMENT WILL BE PLACED ON NATIONAL SANITATION FOUNDATION (NSF) APPROVED SIX (6) INCH LEGS, OR THE EQUIVALENT, AND PROPERLY SPACED FROM ADJACENT EQUIPMENT OR WALLS; OR PLACED ON NSF APPROVED CASTERS, OR THE EQUIVALENT; OR PROPERLY SEALED TO ALL ADJACENT SURFACES.
7. ALL COUNTER MOUNTED FOODSERVICE EQUIPMENT WEIGHING IN EXCESS OF EIGHTY (80) POUNDS WILL BE MOUNTED ON NSF APPROVED FOUR (4) INCH HIGH LEGS.
8. ALL EXPOSED RAW WOOD WILL BE SEALED.
9. ALL ANNULAR OPENINGS IN CONSTRUCTION WILL BE SEALED TO WITHIN 1/32TH OF AN INCH.
10. ALL AISLES WILL BE A MINIMUM OF THIRTY-SIX (36) INCHES WIDE PER NATIONAL FIRE PROTECTION ASSOCIATION 101.
11. THE OUTSIDE STORAGE OF REFUSE WILL BE IN RODENT-PROOF CONTAINERS LOCATED ON A PAVED SURFACE.
12. ALL SINK INSTALLATIONS WILL BE EQUIPPED WITH HOT AND COLD RUNNING WATER THROUGH A MIXING VALVE OR COMBINATION FAUCET.
13. ALL PAINTING WILL BE WITH LEAD-FREE, NON-METALLIC ENAMEL PAINT OR A HIGH QUALITY VARNISH.
14. WASTE WATER FROM ALL APPLICABLE FOODSERVICE EQUIPMENT WILL BE INDIVIDUALLY PLUMBED TO AN OPEN SITE DRAIN WITH A MINIMUM ONE INCH AIR GAP.

THE USE OF SEALANTS IN FOOD SERVICE EQUIPMENT

1. ALL SEALANTS MUST BE LISTED AS APPROVED BY THE NATIONAL SANITATION FOUNDATION (NSF) UNDER 51.
2. SEALANTS SHALL BE USED ONLY ON STRUCTURALLY SOUND JOINTS AND SEAMS.
3. SEALANTS MAY BE USED TO FILL SPACES AND OPENINGS SUCH AS, BUT NOT LIMITED TO, BLIND RIVET HEADS AND SLOT AND PHILLIPS HEAD SCREWS.
4. OPENINGS AROUND SERVICE AND UTILITY LINES SHOULD BE CLOSED INSOFAR AS PRACTICAL BY:
   A. COLLARS AND GROMMETS.
   B. FLEXIBLE FORM GASKETS.

   SEALANTS MAY BE USED TO SEAL SERVICE AND UTILITY LINES TO WALL AND ADJACENT PIECES OF EQUIPMENT WHERE THE SPACING IS. CLOSED TO LESS THAN 1/8 OF INCH.
5. SEALANTS MAY NOT BE UTILIZED IN FOOD AND SPLASH CONTACT SURFACES, TO FILL OPEN SPACES, OR VOIDS WHICH RESULT DUE TO IMPROPER DESIGN OR FABRICATION. ANY OPENING IN EXCESS OF 1/8 INCH SHALL BE CONSIDERED EXCESSIVE AND MUST BE CLOSED USING PROPER FIELD JOINTS.

BALTIMORE COUNTY PUBLIC SCHOOLS
VICTORY VILLA ELEMENTARY SCHOOL
MIDDLE RIVER, MD

Murphy & Dittenhafer ARCHITECTS
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax
228 West Market Street, York, Pennsylvania 17401
717-848-8627 voice 717-843-2469 fax

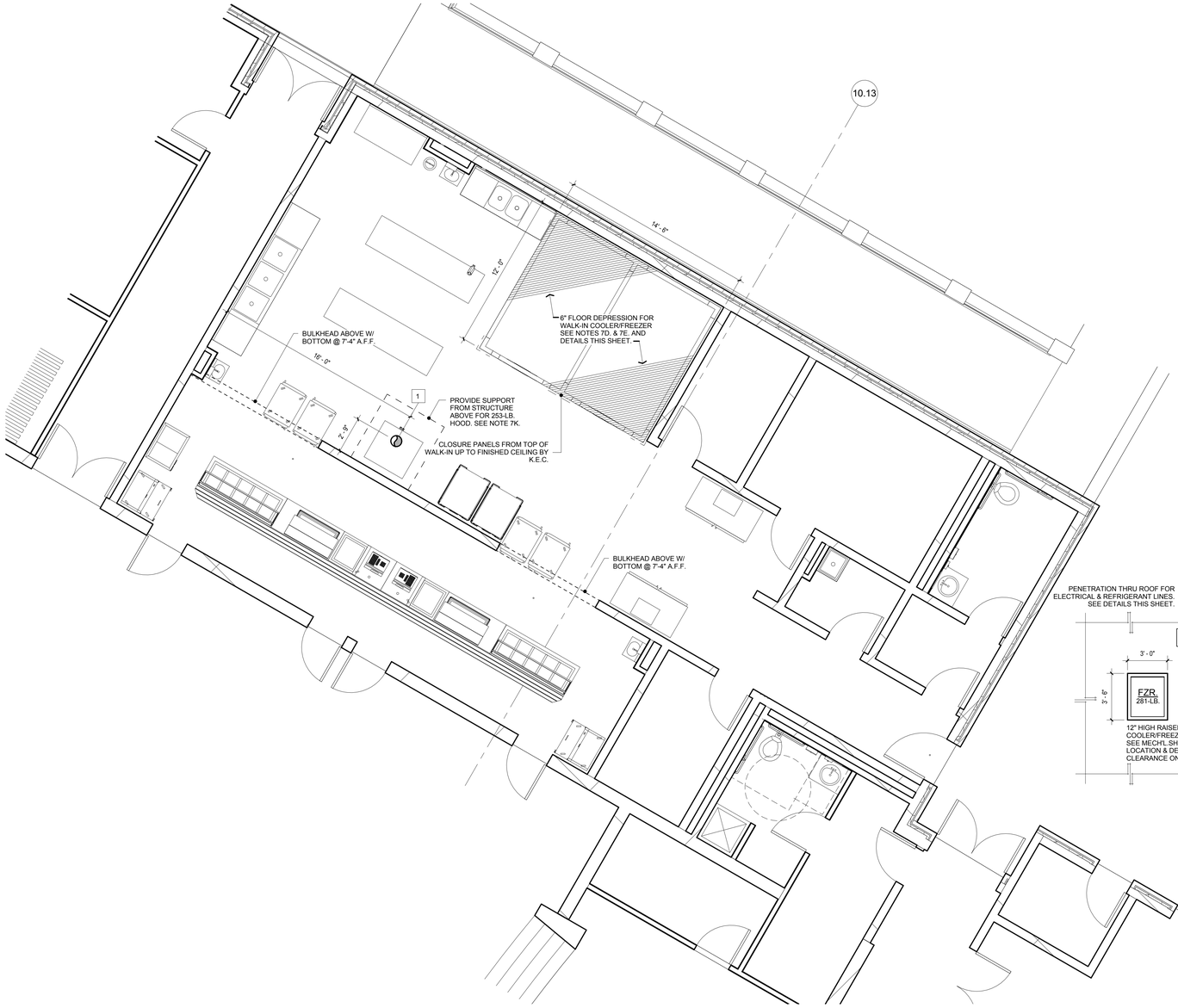
Mark	Date	Description
	05/26/2016	100% SCHEMATIC DESIGN SUBMISSION
	06/03/2016	100% DESIGN DEVELOPMENT SUBMISSION
	08/31/2016	95% A/C SUBMISSION
	9/30/2016	Permit Set
	11/10/2016	Bid Set

PROJECT NO:	15123
DRAWN BY:	Author
CHECKED BY:	Checker

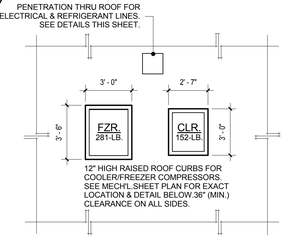
KITCHEN EQUIPMENT PLAN

SHEET
K1.01

NYIKOS ASSOCIATES, INC.
Foodservice Facilities Design/Consulting
18219-A Flower Hill Way ▮ Gaithersburg, MD 20879
Tel-(240)683-9530 ▮ Fax-(240)683-9532



KITCHEN EQUIPMENT PLAN
SCALE: 1/4"=1'-0"



VENTILATION SCHEDULE

NO.	C.F.M. SIZE	C.F.M. EXHAUST	SUPPLY	TOTAL C.F.M.	W.G.S.P. @ COLLAR	CONN. HGT. A.F.F.	DESCRIPTION
1	10" DIA.	750		750	-0.113"	9' - 6"	

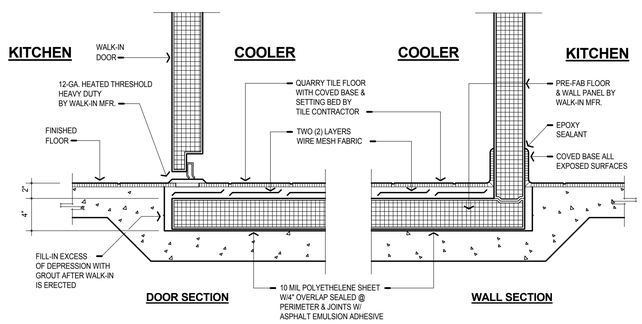
SEE SHEET K5.02 FOR FURTHER EXHAUST CANOPY DETAILS.

BUILDING CONDITIONS & VENTILATION SYMBOLS

- FLOOR DEPRESSION
- NON-COMBUSTIBLE WALL MATERIAL
- FINISHED WALL OPENING
- WALL BACKING
- EXHAUST DUCT/GRILL

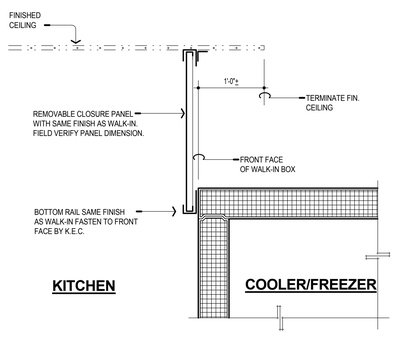
BUILDING CONDITIONS & VENTILATION NOTES:

1. ALL WORK INDICATED ON THIS PLAN AND IN THESE NOTES SHALL BE BY OTHER THAN THE KITCHEN EQUIPMENT CONTRACTOR, UNLESS NOTED "BY K.E.C."
2. WALLS, FLOORS AND CEILINGS IN KITCHEN, PREP, SERVICE, AND DISHWASHING AREAS, OR ANY OTHER LOCATION WHERE FOOD OR BEVERAGES ARE PREPARED, SHALL BE SMOOTH, EASILY-CLEANABLE, NON-ABSORBANT, AND DURABLE. WALLS AND CEILINGS SHALL BE LIGHT COLORED.
3. PARTITION WALLS BETWEEN KITCHEN AREAS AND PUBLIC AREAS SHALL BE CONTRUCTED FOR MAXIMUM SOUND CONTROL.
4. MINIMUM VENTILATION REQUIREMENTS:
   A. KITCHEN, SERVICE, PREP AND DISHWASHING AREAS: 4 TO 6 AIR CHANGES PER HOUR.
   B. STOREROOMS: 2 TO 3 AIR CHANGES PER HOUR.
   C. OFFICES: 4 AIR CHANGES PER HOUR. (RECOMMEND AIR CONDITIONING).
   D. REFRIGERATION CONDENSING UNITS: 750 C.F.M. PER H.P., SUPPLY AND EXHAUST.
   E. OTHER AREAS: AS REQUIRED BY CODES OR AS NOTED.
   F. VERIFY VENTILATION REQUIREMENTS SHOWN ARE IN COMPLIANCE WITH LOCAL CODES.
5. FINAL DUCT CONNECTIONS SHALL BE BY MECHANICAL CONTRACTOR, OR EQUIVALENT, UNLESS NOTED.
6. FLOOR LOADING CAPACITY SHALL BE A MINIMUM OF 100 LBS. PER SQUARE FOOT OR AS REQUIRED BY LOCAL CODES.
7. GENERAL CONTRACTOR (G.C.), OR EQUIVALENT SHALL:
   A. PROVIDE IN-WALL REINFORCING OR BACKING, AS REQUIRED, FOR WALL-MOUNTED EQUIPMENT; COORDINATE WITH K.E.C.
   B. SLOPE FLOOR TO FLOOR SINKS, FLOOR DRAINS, OR FLOOR TROUGHS.
   C. PROVIDE DOOR/WALL OPENINGS AND/OR PASSAGES TO ASSURE ACCESS FOR ALL KITCHEN EQUIPMENT. COORDINATE OPENING REQUIREMENTS WITH K.E.C.
   D. PROVIDE WALK-IN COOLER/FREEZER DEPRESSIONS, SMOOTH AND TRANSIT-LEVEL, WHERE DEPRESSIONS ARE REQUIRED. DEPTH AS NOTED.
   E. FILL EXCESS DEPRESSIONS AROUND WALK-IN COOLER/FREEZER WITH GROUT, FINISH FLOOR MATERIAL, AND COVED BASE, AFTER COOLER/FREEZER IS INSTALLED BY K.E.C.
   F. PROVIDE SOLID MASONRY CURBS WITH TROWEL-SMOOTH AND LEVEL FINISH.
   G. PROVIDE FIRE-RATED MATERIALS AND/OR INSULATION AS REQUIRED FOR EXHAUST DUCTS, VENT STACKS, ROOF/WALL PENETRATIONS, ETC. PER LOCAL CODES.
   H. PROVIDE FIRE-RATED PARTITIONS WHERE NOTED AROUND COOKING/HEAT PRODUCING EQUIPMENT PER LOCAL CODES.
   J. PROVIDE COVED-BASE MOLDING OR COVED INTEGRAL FLOOR MATERIALS AS REQUIRED AT ALL VERTICAL SURFACES OF KITCHEN FLOORS.
   K. PROVIDE 1/2" DIAMETER (MINIMUM) HANGER RODS FROM STRUCTURE ABOVE CEILING AS REQUIRED FOR VENTILATORS AND CEILING-MOUNTED EQUIPMENT, WHERE NOTED.

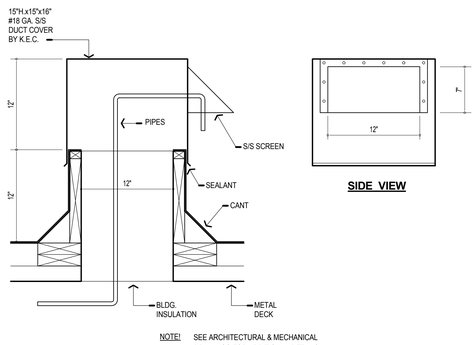


NOTE! SEE ARCHITECTURAL & STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS.

WALK-IN FLOOR DETAIL
SCALE: 1-1/2"=1'-0"

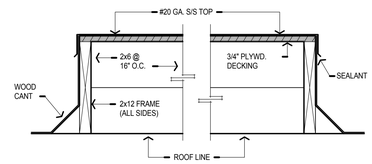


WALK-IN CLOSURE PANEL DETAIL
SCALE: 1-1/2"=1'-0"



NOTE! SEE ARCHITECTURAL & MECHANICAL DRAWINGS FOR ADDITIONAL DETAILS.

PIPE PENETRATION ENCLOSURE DETAIL
SCALE: 1-1/2"=1'-0"



NOTE!
– PLATFORM TO BE 12" HIGH & LEVEL IN BOTH DIRECTIONS
– PROVIDE SHEET METAL HAT SECTION W/WATER-TIGHT SOLDERED JOINTS
– BACK-FILL CURB OPENING W/HOT PITCH AFTER INSTALLATION

NOTE! SEE ARCHITECTURAL & MECHANICAL DRAWINGS FOR ADDITIONAL DETAILS.

ROOF CURB DETAIL
SCALE: 1-1/2"=1'-0"

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MIDDLE RIVER, MD

Murphy & Dittenhafer ARCHITECTS
226 West Market Street, York, Pennsylvania 17401
717-848-6827 voice 717-843-2489 fax
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	08/31/2016	95% C&C SUBMISSION
	9/30/2016	Permit Set
	11/10/2016	Bid Set

PROJECT NO:	15123
DRAWN BY:	Author
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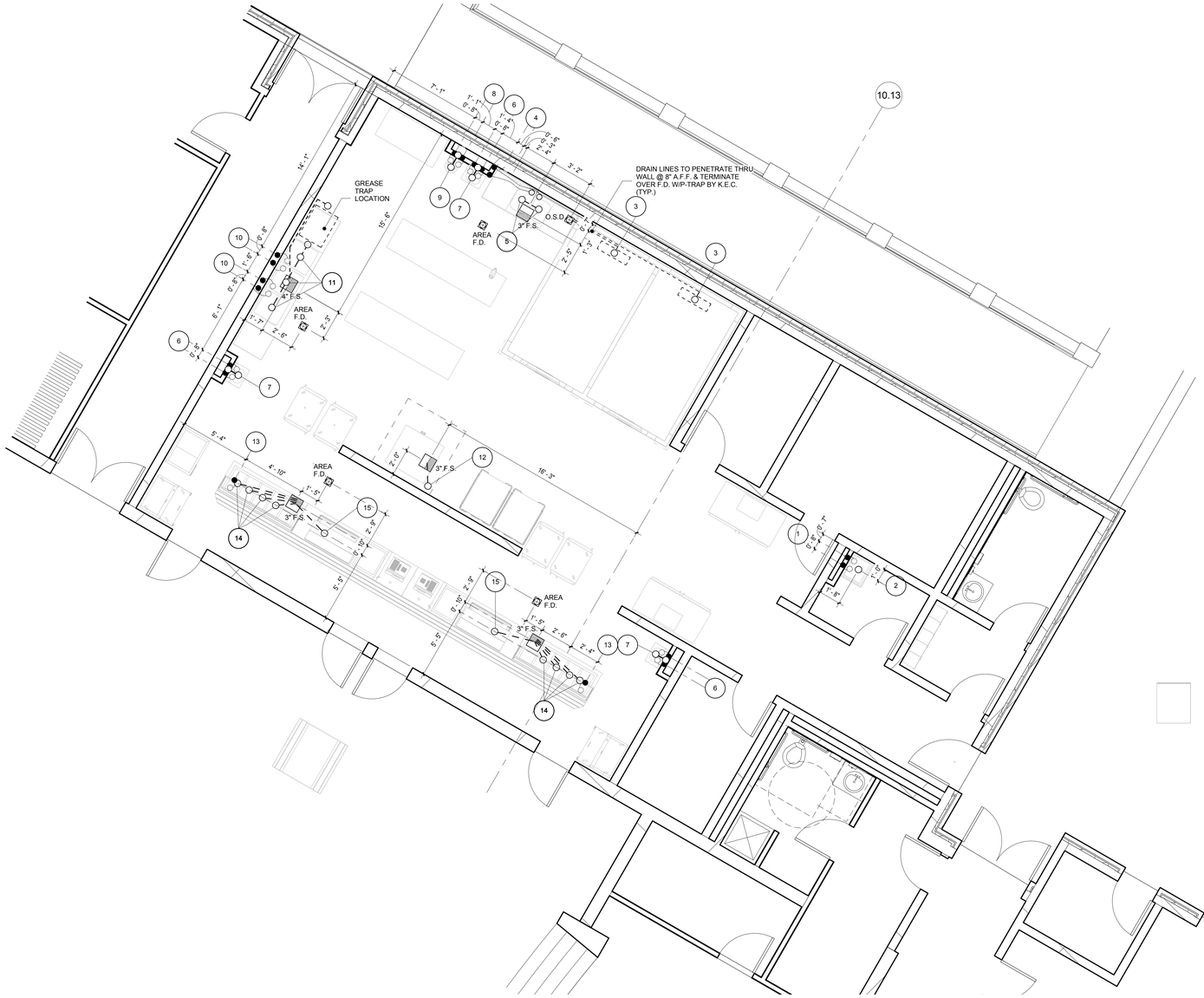
BUILDING CONDITIONS & VENTILATION PLAN

SHEET
K1.02

NYIKOS ASSOCIATES, INC.
Foodservice Facilities Design/Consulting
18219-A Flower Hill Way ■ Gaithersburg, MD 20879
Tel-(240)683-9530 ■ Fax-(240)683-9532



KITCHEN EQUIPMENT PLAN
SCALE: 1/4"=1'-0"

PLUMBING SCHEDULE

R.I. #	WATER HW	WATER CW	WASTE DIR	WASTE IND	R.I. HGT. A.F.F.	GPH @ 140 F.	CONN. SIZE	CONN. HEIGHT.	DESCRIPTION	EQ. #
1	1/2"	1/2"			36"				MOP SINK FAUCET	3
2			4"		STUB		4"	0"	MOP SINK DRAIN	3
3				3/4"			3/4"	7' - 0"	BLOWER COIL DRAIN	4
4	1/2"	1/2"			26"		1/2"	3' - 4"	PREP SINK FAUCET	12
5				1 1/2"	20"		1 1/2"	1' - 10"	PREP SINK DRAIN (2)	12
6	1/2"	1/2"			26"		1/2"	3' - 4"	HAND SINK FAUCET	13
7			1 1/2"		24"		1 1/2"	2' - 4"	HAND SINK DRAIN	13
8	1/2"	1/2"			26"		1/2"	3' - 4"	EYE WASH STATION FAUCET	15
9			1 1/2"		24"		1 1/2"	2' - 4"	EYE WASH ATATION DRAIN	15
10	3/4"	3/4"			15"		3/4"	3' - 4"	POT WASHING SINK FAUCET (2)	19
11				2"			2"	1' - 10"	POT WASHING SINK DRAIN (3)	19
12				3/4"			3/4"	10"	EXHAUST CANOPY DRAIN	24
13	1/2"				STUB		1/2"	2' - 10"	FILL FAUCET	31A
✳ 14				3/4"			3/4"	6"	HOT FOOD DRAIN	31A
15				3/4"			3/4"	6"	FROST TOP COUNTER DRAIN	31B

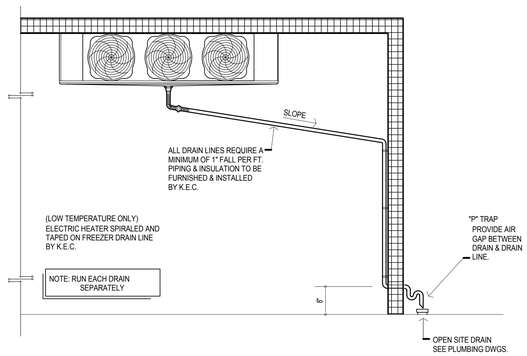
✳ SEE DRAIN VALVE DETAIL THIS SHEET.

PLUMBING SYMBOLS

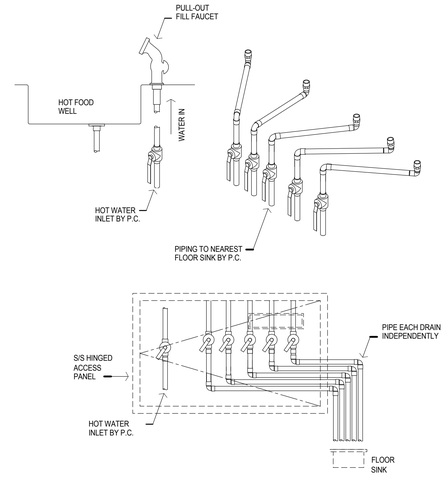
ABBREVIATION	SYMBOL	DESCRIPTION
H/CW		HOT/COLD WATER ROUGH-IN AND CONNECTION
W		WASTE ROUGH-IN AND CONNECTION
IW		INDIRECT WASTE
F.S.	3"	FLOOR SINK W/HALF GRATE (W/MIN. CONN. SIZE)
F.D.		FLOOR (AREA) DRAIN
O.S.D.		OPEN SITE DRAIN (STORM WATER)

PLUMBING NOTES:

1. ALL OUTLETS AND CONNECTIONS SHOWN RELATE TO FOODSERVICE FIXTURES AND EQUIPMENT ONLY. SEE ARCHITECTURAL/ENGINEERING PLANS FOR ADDITIONAL PLUMBING REQUIREMENTS.
2. THIS PLUMBING PLAN IS INTENDED TO SHOW ROUGH-IN LOCATIONS AND HEIGHTS, CONNECTION SIZES, POSITIONS, HEIGHTS AND LOAD REQUIREMENTS. DIMENSIONS SHOWN ARE FROM FINISHED FLOORS AND FINISHED WALLS. VERIFY WALL PARTITION LOCATIONS WITH ARCHITECTURAL DRAWINGS.
3. FINAL CONNECTIONS TO ALL EQUIPMENT SHALL BE BY PLUMBING CONTRACTOR INCLUDING REQUIRED MATERIALS SUCH AS, STOPS, MIXING VALVES, FILTERS, TRAPS, CHECK VALVES, PIPING, TUBING, ETC. TO ASSURE PROPER OPERATION ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODES.
4. PLUMBING CONTRACTOR (P.C.), OR EQUIVALENT, SHALL FURNISH AND INSTALL THE FOLLOWING:
   A. ALL WATER, WASTE, AND GAS SERVICE TO POINT OF ROUGH-IN AS SHOWN ON PLAN. ROUGH-IN OUTLETS TO STUB 4" OUT OF WALLS AT HEIGHT INDICATED FROM FINISHED FLOOR TO CENTERLINE OF OUTLET. FLOOR ROUGH-INS TO STUB UP 2" ABOVE FINISHED FLOOR OR CURBS. ALL FLOOR OPENINGS/PENETRATIONS ARE TO BE SEALED WATERTIGHT.
   B. PRESSURE REDUCING AND/OR REGULATING VALVES FOR DISHWASHERS, BOOSTER HEATERS, OR AS OTHERWISE NOTED IN ALL FOODSERVICE AREAS.
   C. ALL FLOOR SINKS, COMPLETE WITH TOP GRATES INDICATED, AND REMOVABLE SEDIMENT BUCKETS SET FLUSH WITH FINISH FLOOR, UNLESS NOTED.
   D. ALL WASTE LINES, DIRECT OR INDIRECT, EXCEPT AS NOTED. MINIMUM DIAMETER OF LINE SHALL BE AS INDICATED ON PLAN REGARDLESS OF CONNECTION SIZE, AND SHALL BE PITCHED DOWNWARD. MAINTAIN DRAIN LINES AS HIGH AS POSSIBLE ABOVE FLOOR FOR SANITATION AND AND CLEANING. ALL WASTE LINES SHALL HAVE ADEQUATE CLEAN-OUT PROVISIONS.
   E. INDIRECT WASTE LINES FOR WALK-IN COOLER/FREEZER BLOWER COILS SHALL BE PITCHED 1" PER FOOT OF HORIZONTAL RUN, AND TERMINATE WITH A P-TRAP OVER FLOOR SINK OR APPROVED RECEPTER WITH VACUUM BREAK AS REQUIED BY LOCAL CODE.
   F. ALL REQUIRED GREASE TRAPS, OUTSIDE THE BUILDING WHERE POSSIBLE; OTHERWISE BELOW OR SET FLUSH WITH FINISHED FLOOR.
   G. INSTALL FIRE CONTROL GAS SHUT-OFF VALVES AS SUPPLIED BY FIRE PROTECTION SYSTEM SUBCONTRACTOR PER LOCAL CODES. (IF GAS COOKING EQUIPMENT IS SPECIFIED.)
   H. ALL WASTE LINE FOR HOT & COLD FOOD COUNTER SHALL BE OF COPPER PIPE TO DISCHARGE INDIRECTLY TO THE NEAREST FLOOR SINK WITH 1" AIR GAP.
5. PLUMBING CONTRACTOR (P.C.), OR EQUIVALENT, SHALL INTERCONNECT DISHMACHINE WITH BOOSTER HEATER, AND WATER-TYPE VENTILATORS WITH CONTROL PANELS AS PER MANUFACTURER'S INSTRUCTIONS, WHEN APPLICABLE AND NOTED.
6. ALL VENT PIPES SHALL BE CONCEALED IN WALLS OR COLUMN CHASES. USE LOOP VENTS FOR ISLAND FIXTURES.
7. ALL EXPOSED PIPING AND FITTINGS IN KITCHEN AREAS SHALL BE CHROME-PLATED OR STAINLESS STEEL.
8. ALL LINES ROUTED THROUGH EQUIPMENT SHALL NOT INTERFERE WITH INTENDED USE OF, OR SERVICING OF, EQUIPMENT.



EVAPORATOR COIL DRAIN DETAIL
NO SCALE



DRAIN VALVE DETAIL
NO SCALE

BALTIMORE COUNTY PUBLIC SCHOOLS
VICTORY VILLA ELEMENTARY SCHOOL
MIDDLE RIVER, MD

Murphy & Dittenhafer ARCHITECTS
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax
230 West Market Street, York, Pennsylvania 17401
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Mark	Date	Description
	8/2/2016	100% SCHEMATIC DESIGN SUBMISSION
	9/6/2016	100% DESIGN DEVELOPMENT SUBMISSION
	9/8/2016	90% A&C SUBMISSION
	9/30/2016	Permit Set
	11/10/2016	Bid Set

PROJECT NO:	15123
DRAWN BY:	Author
CHECKED BY:	Checker

PLUMBING ROUGH-IN PLAN

SHEET
K1.03

NYIKOS ASSOCIATES, INC.
Foodservice Facilities Design/Consulting
18219-A Flower Hill Way ∎ Gaithersburg, MD 20879
Tel-(240)683-9530 ∎ Fax-(240)683-9532

KITCHEN EQUIPMENT PLAN
SCALE: 1/4"=1'-0"

ELECTRICAL SCHEDULE

R.I. #	HP	KW	AMP	VOLT	PH	R.I. HGT. A.F.F.	DESCRIPTION	EQ.NO.	E.C. TO PROVIDE: CORD & PLUG	RECEP.	DISC.	J.B.
1	1/2			120	1	114"	FLY FAN RECEP.	1		O		
2						114"	BRANCH TO:					O
2a.		.150		120	1		DOOR LIGHT, HEATER, ALARM	4				
2b.		32W(2)		120	1		LIGHT FIXTURE (2)	4				
3						114"	BRANCH TO:					O
3a.		.150		120	1		DOOR LIGHT, HEATER, ALARM	4				
3b.		32W(2)		120	1		LIGHT FIXTURE (2)	4				
3c.		.100		120	1		HEATED RELIEF PORT	4				
4		.150		120	1		DRAIN LINE HEAT TAPE RECEP.	4				
5			2.4	120	1	114"	AIR SCREEN RECEP.	4		O		
✳ 6			9.2	208	1	STUB	COOLER COMPRESSOR RACK	5				O
7			2.3	120	1	114"	COOLER BLOWER COIL	5				O
✳ 8			12.6	208	3	STUB	FREEZER COMPRESSOR RACK	6				O
9			10.3	208	1	114"	FREEZER BLOWER COIL	6				O
10			6.4	120	1	50"	BULK MILK COOLER RECEP.	21		O		
11		(2) 11.0		208	3	24"/36"	CONVECTION OVEN	23				O
12		36W		120	1	50"	EXHAUST CANOPY LIGHTS	24				O
13			12.0	120	1	78"	HEATED TRANSPORT CABINET RECEP.	25		O		
14			9.8	120	1	@CLG.	PASS-THRU REFRIGERATOR RECEP.	26		O		
15			6.3	208	1	@CLG.	PASS-THRU WARMING CABINET RECEP.	27		O		
16			6.0	120	1	50"	ICE CREAM CABINET RECEP.	28		O		
17			4.2	120	1	50"	MILK COOLER RECEP.	29		O		
18				120/208	1	STUB	SUB-PANEL TO BRANCH TO;					O
18a.			40.0	120/208	1		HOT FOOD COUNTER RECEP.	31a.		O		
18b.			8.0	120	1		FROST TOP COUNTER RECEP.	31b.		O		
18c.		1.0		120	1		SOLID TOP COUNTER RECEP.	31c.		O		
18d.			2.7	120	1		ICE CREAM DISPLAY MERCHANDISER RECEP.	32		O		
18e.			15.0(Cir.)	120	1		CASH REGISTER RECEP.	33		O		

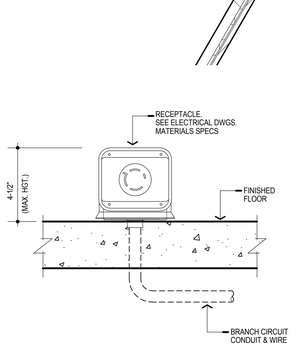
✳ ITEM FURNISHED WITH MAIN-FUSED DISCONNECT SWITCH.

ELECTRICAL SYMBOLS

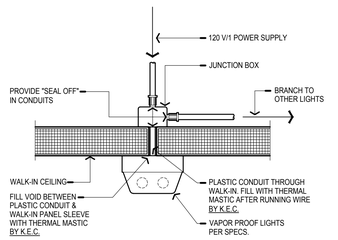
- JUNCTION BOX W/FINAL CONN. TO EQUIPMENT
- JUNCTION BOX (INSTALLED IN EQUIPMENT BY K.E.C. OR MFR.)
- DUPLEX CONVENIENCE OUTLET
- DUPLEX CONVENIENCE OUTLET (INSTALLED IN EQUIP. BY K.E.C. OR MFR.)
- POWER OUTLET, 1 PHASE
- CONDUIT STUB W/FINAL CONN. TO EQUIPMENT
- SWITCH
- SWITCH (INSTALLED IN EQUIP. BY K.E.C. OR MFR.)
- VAPOR PROOF LIGHT FIXTURE
- L.E.D. LIGHT FIXTURE
- D.F.A. DOWN FROM ABOVE

ELECTRICAL NOTES:

1. ELECTRICAL SYSTEM IS DESIGNED FOR 120/208 VOLT, 3-PH; 480 VOLT, 3-PH, 4-WIRE, 60 HERTZ.
2. ALL OUTLETS AND CONNECTIONS SHOWN RELATE TO FOODSERVICE FIXTURES AND EQUIPMENT ONLY. SEE ARCHITECTURAL/ENGINEERING PLANS FOR ADDITIONAL ELECTRICAL REQUIREMENTS.
3. THIS ELECTRICAL PLAN IS INTENDED TO SHOW ROUGH-IN OUTLET TYPES, HEIGHTS AND LOCATIONS, AND CONNECTION POSITIONS AND LOAD REQUIREMENTS. ALL DIMENSIONS SHOWN ARE FROM FINISHED WALLS AND FINISHED FLOORS. VERIFY FINISH WALL PARTITION LOCATIONS WITH ARCHITECTURAL DRAWINGS.
4. ALL ELECTRICAL WORK FOR FABRICATED FOODSERVICE EQUIPMENT SHALL BE COMPLETELY WIRED BY THE FABRICATION CONTRACTOR TO A COMMON JUNCTION BOX, PULL BOX, OR CONTROL PANEL ON THE EQUIPMENT IN AN ACCESSIBLE POSITION. FINAL CONNECTIONS TO EQUIPMENT JUNCTION BOX OR PULL BOX, AND ALL ELECTRICAL WORK FROM MAIN PANEL BOARDS SHALL BE BY THE ELECTRICAL CONTRACTOR.
5. FINAL CONNECTIONS TO ALL FOODSERVICE EQUIPMENT SHALL BE PERFORMED BY THE ELECTRICAL CONTRACTOR, INCLUDING MATERIALS.
6. PIPING, CONDUIT, AND SIMILAR CONSTRUCTION, LOCATED OUTSIDE A WALL, MUST BE INSTALLED SO THAT THERE IS A MINIMUM OF 3/4 INCH SPACE BETWEEN IT AND THE WALL.
7. ELECTRICAL CONTRACTOR (E.C.), OR EQUIVALENT, SHALL FURNISH AND INSTALL THE FOLLOWING:
   A. ALL JUNCTION BOXES, ELECTRICAL OUTLETS, COVER PLATES, SWITCHES, ETC. NOT BUILT INTO FIXTURES OR EQUIPMENT. ALL OUTLETS, JUNCTION BOXES, COVER PLATES, ETC. IN DISHROOMS OR AS INDICATED ON SCHEDULE SHALL BE MOISTURE-PROOF.
   B. ALL PLUGS AND CORDS AS NOTED ON SCHEDULE. ALL CORDS SHALL BE N.E.M.A. RATED AND U.L. APPROVED FOR MANUFACTURED AND FABRICATED EQUIPMENT.
   C. SHUNT-TRIP CIRCUIT BREAKERS OR DISCONNECTS FOR FIRE CONTROL SYSTEM SHUT-OFF OF FOODSERVICE EQUIPMENT BENEATH HOODS/VENTILATORS AS REQUIRED BY N.F.P.A.-96, LATEST EDITION, AND LOCAL CODES.
   D. DISCONNECTS OR OTHER DEVICES AS REQUIRED BY CODES.
8. WHEN APPLICABLE, ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT AND WIRING, INSTALL ELECTRICAL COMPONENTS (PROVIDED BY K.E.C.), AND INTERWIRE BETWEEN THE FOLLOWING:
   A. REMOTE REFRIGERATION SYSTEMS TO EVAPORATOR COILS.
   B. WALK-IN COOLER/FREEZER LIGHTS (RUN CONDUIT ABOVE COMPARTMENT CEILING).
   C. REMOTE WALK-IN COOLER/FREEZER ALARM SYSTEMS (WHEN USED).
   D. CONTROL PANELS TO WATER-TYPE VENTILATORS AND EXHAUST/SUPPLY FANS PER MANUFACTURER'S INSTRUCTIONS.
   E. KITCHEN EXHAUST HOODS/VENTILATORS TO FIRE CONTROL SYSTEM AND SHUT-OFFS.



FLOOR RECEPTACLE DETAIL
SCALE: NONE



1. ALL CONDUIT TO BE RUN ON EXTERIOR CEILING OF WALK-IN.
2. ALL PENETRATIONS THRU WALK-IN ARE TO BE SEALED WITH THERMAL MASTIC BY K.E.C.
3. LIGHT FIXTURES TO BE SHIPPED LOOSE & INSTALLED BY K.E.C. FINAL CONNECTION BY ELECTRICIAN.
4. FURNISH LOW TEMPERATURE BALLAST (-20 °F) INSIDE FREEZER COMPARTMENT.
5. NO METAL CONDUIT INSIDE WALK-IN BOX.

WALK-IN LIGHT INSTALLATION DETAIL
SCALE: NONE

BALTIMORE COUNTY PUBLIC SCHOOLS
VICTORY VILLA ELEMENTARY SCHOOL
MIDDLE RIVER, MD

Murphy & Dittenhafer ARCHITECTS
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4874 fax
228 West Market Street, York, Pennsylvania 17401
717-848-8827 voice 717-843-2469 fax

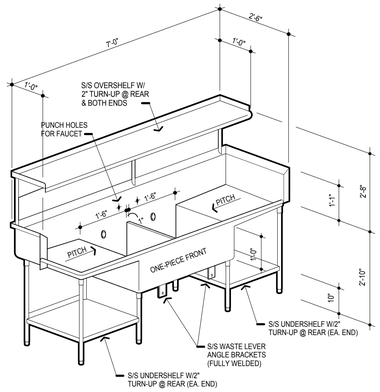
Mark	Date	Description
	05/29/2016	100% SCHEMATIC DESIGN SUBMISSION
	06/03/2016	100% DESIGN DEVELOPMENT SUBMISSION
	08/31/2016	95% A/C SUBMISSION
	9/30/2016	Permit Set
	11/10/2016	Bid Set

PROJECT NO:	15123
DRAWN BY:	Author
CHECKED BY:	Checker

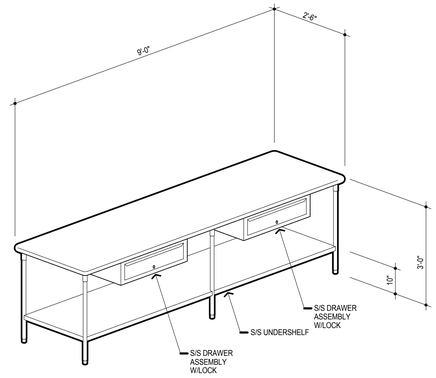
ELECTRICAL ROUGH-IN PLAN

SHEET
K1.04

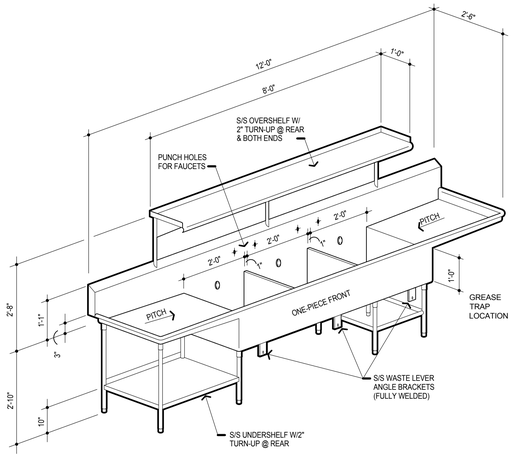
NYIKOS ASSOCIATES, INC.
Foodservice Facilities Design/Consulting
18219-A Flower Hill Way ▮ Gaithersburg, MD 20879
Tel-(240)683-9530 ▮ Fax-(240)683-9532



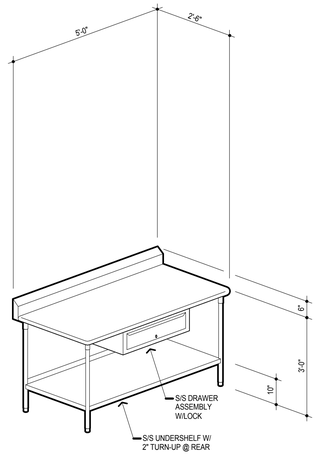
PREP SINK (12)



WORKTABLE (17)



POT WASHING SINK (19)



WORKTABLE (22)

BALTIMORE COUNTY PUBLIC SCHOOLS
VICTORY VILLA ELEMENTARY SCHOOL
MIDDLE RIVER, MD

Murphy & Dittenhafer ARCHITECTS
226 West Market Street, York, Pennsylvania 17401
717-848-9827 voice 717-843-3449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
	03/25/2016	100% SCHEMATIC DESIGN SUBMISSION
	06/03/2016	100% DESIGN DEVELOPMENT SUBMISSION
	08/31/2016	90% I-NC SUBMISSION
	9/30/2016	Permit Set
	11/10/2016	Bid Set

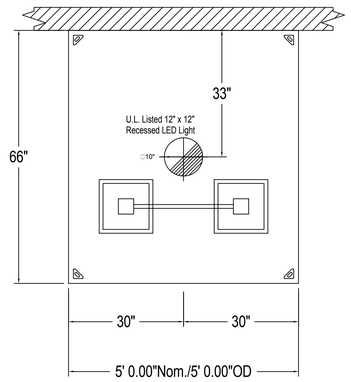
PROJECT NO: 15123
DRAWN BY: Author
CHECKED BY: Checker

FABRICATION DETAILS

SHEET
K5.01

ITEM 24

NYIKOS ASSOCIATES, INC.
Foodservice Facilities Design/Consulting
18219-A Flower Hill Way ▮ Gaithersburg, MD 20879
Tel-(240)683-9530 ▮ Fax-(240)683-9532



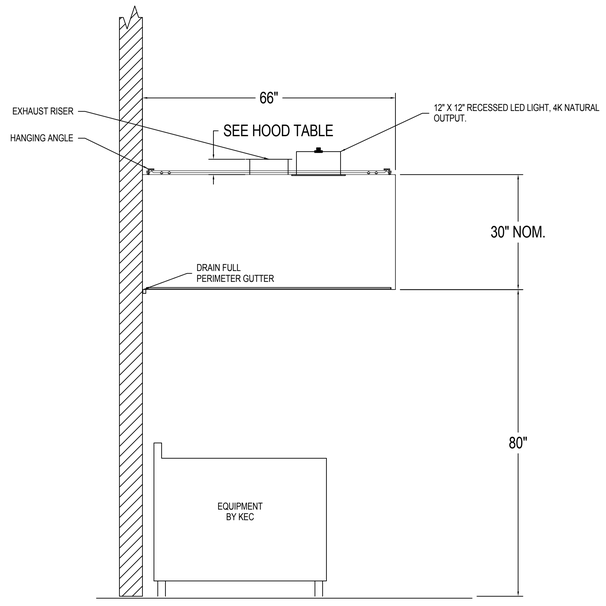
PLAN VIEW - Hood #1
5' 0.00" LONG 6630VHB-G

HOOD INFORMATION - Job#2763926

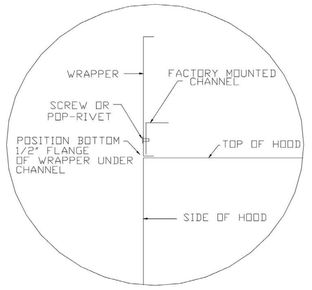
HOOD NO.	TAG	MODEL	LENGTH	MAX. COOKING TEMP.	EXHAUST PLENUM RISER(S) TOTAL EXH. CFM	WIDTH	LENG.	HEIGHT	DIA.	CFM	S.P.	HOOD CONSTRUCTION	HOOD CONFIG. END TO END	ROW
1		6630 VHB-G	5' 0.00"	700 Deg.	750			4"	10"	750	-0.113"	304 SS 100%	ALONE	ALONE

HOOD INFORMATION

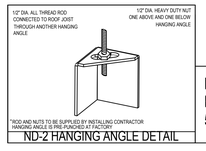
HOOD NO.	TAG	LIGHT(S) QTY.	TYPE	WIRE GUARD	FIRE SYSTEM PIPING	HOOD HANGING WGHT
1		2	12" x 12"	NO	NO	253 LBS



SECTION VIEW - MODEL 6630VHB-G
HOOD - #1



CLOSURE PANEL DETAILS



ND-2 HANGING ANGLE DETAIL

LED BULBS BY K.E.C.
BULBS MUST BE RATED FOR
5000K COLOR TEMPERATURE

CAPTIVE-AIRE HOOD ARE BUILT IN COMPLIANCE WITH:
ETL LISTED #3054804-001
ETL SANITATION LISTED
NFPA #96

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MIDDLE RIVER, MD

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717-848-5827 voice 717-843-2449 fax
800 North Charles Street, Baltimore, Maryland 21201
410-625-4823 voice 410-625-4674 fax

Mark	Date	Description
	03/02/2016	100% SCHEMATIC DESIGN SUBMISSION
	04/22/2016	100% DESIGN DEVELOPMENT SUBMISSION
	06/13/2016	95% MC SUBMISSION
	9/30/2016	Permit Set
	11/10/2016	Bid Set

PROJECT NO: 15123
DRAWN BY: Author
CHECKED BY: Checker

EXHAUST CANOPY DETAILS

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K5.02