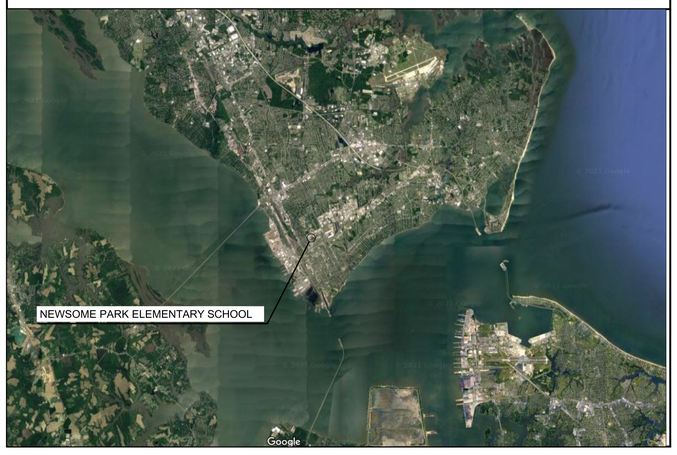
HVAC REPLACEMENT

NEWSOME PARK ELEMENTARY SCHOOL

NEWPORT NEWS PUBLIC SCHOOLS

BID ITEM NO. 023-0-2022/SB
STATE PROJECT NO. 117-112-00-101
THOMPSON CONSULTING ENGINEERS PROJECT NO. 21-059

AREA MAP



NEWPORT NEWS PUBLIC SCHOOLS
Communities Committed to Learning

VICINITY MAP

BUILDING CODE SUMMARY

- CURRENT BUILDING CODE: VIRGINIA UNIFORM STATEWIDE BUILDING CODE 2018 EDITION.
- CURRENT BUILDING CODE: VIRGINIA EXISTING BUILDING CODE 2018 EDITION.
- TOTAL GROSS FLOOR AREA: 89,560.
- USE GROUP CLASSIFICATION: EDUCATION GROUP E.
- CONSTRUCTION TYPE: TYPE 2B, NON COMBUSTIBLE.

DRAWING INDEX

SHEET NO.	DRAWING TITLES
T0.1	TITLE SHEET
G0.1	GENERAL SITE PLAN
A3.1	WALL SECTIONS AND DETAILS
A5.1	ROOF DETAILS
S0.1	GENERAL NOTES
S1.1	PARTIAL ROOF FRAMING PLAN - AREA 'B'
S1.2	PARTIAL ROOF FRAMING PLAN - AREA 'D'
CP1.1	REFLECTED CEILING PLAN - AREA 'A' - DEMOLITION AND NEW WORK
CP1.2	REFLECTED CEILING PLAN - AREA 'B' - DEMOLITION AND NEW WORK
CP1.3	REFLECTED CEILING PLAN - AREA 'C' - DEMOLITION AND NEW WORK
CP1.4	REFLECTED CEILING PLAN - AREA 'D' - DEMOLITION AND NEW WORK
M0.1	MECHANICAL GENERAL NOTES, LEGEND, AND ABBREVIATIONS
M0.2	MECHANICAL SCHEDULES
M0.3	MECHANICAL SCHEDULES
M0.4	VENTILATION CALCULATIONS
M0.5	VENTILATION CALCULATIONS
MD1.1	PARTIAL FLOOR PLAN - AREA 'A' - MECHANICAL - DEMOLITION
MD1.2	PARTIAL FLOOR PLAN - AREA 'B' - MECHANICAL - DEMOLITION
MD1.3	PARTIAL FLOOR PLAN - AREA 'C' - MECHANICAL - DEMOLITION
MD1.4	PARTIAL FLOOR PLAN - AREA 'D' - MECHANICAL - DEMOLITION

DRAWING INDEX

SHEET NO.	DRAWING TITLES
M1.1	PARTIAL FLOOR PLAN - AREA 'A' - MECHANICAL - NEW WORK
M1.2	PARTIAL FLOOR PLAN - AREA 'B' - MECHANICAL - NEW WORK
M1.3	PARTIAL FLOOR PLAN - AREA 'C' - MECHANICAL - NEW WORK
M1.4	PARTIAL FLOOR PLAN - AREA 'D' - MECHANICAL - NEW WORK
M2.1	PARTIAL ROOF PLAN - AREA 'A' - MECHANICAL - NEW WORK
M2.2	PARTIAL ROOF PLAN - AREA 'B' - MECHANICAL - NEW WORK
M2.3	PARTIAL ROOF PLAN - AREA 'C' - MECHANICAL - NEW WORK
M2.4	PARTIAL ROOF PLAN - AREA 'D' - MECHANICAL - NEW WORK
M3.1	MECHANICAL DETAILS
M3.2	MECHANICAL DETAILS
M4.1	AUTOMATIC TEMPERATURE CONTROLS
M4.2	AUTOMATIC TEMPERATURE CONTROLS
M4.3	AUTOMATIC TEMPERATURE CONTROLS
M4.4	AUTOMATIC TEMPERATURE CONTROLS
M4.5	AUTOMATIC TEMPERATURE CONTROLS
M4.6	AUTOMATIC TEMPERATURE CONTROLS
M5.1	MECHANICAL DETAILS
M5.2	MECHANICAL DETAILS
E0.1	ELECTRICAL LEGEND, ABBREVIATIONS, AND NOTES
E0.2	PARTIAL FLOOR PLAN AND SCHEDULES
ED1.1	FLOOR PLAN – AREA 'A' – LIGHTING & AUXILIARY SYSTEMS - DEMOLITION & NEW WORK
ED1.2	FLOOR PLAN – AREA 'B' – LIGHTING & AUXILIARY SYSTEMS - DEMOLITION & NEW WORK
ED1.3	FLOOR PLAN – AREA 'C'– LIGHTING - DEMOLITION AND NEW WORK
ED1.4	FLOOR PLAN – AREA 'D'– LIGHTING - DEMOLITION AND NEW WORK
ED2.1	FLOOR PLAN – AREA 'A'– POWER - DEMOLITION

DRAWING INDEX

SHEET NO.	DRAWING TITLES
ED2.2	FLOOR PLAN – AREA 'B' – POWER - DEMOLITION
ED2.3	FLOOR PLAN – AREA 'C' – POWER - DEMOLITION
ED2.4	FLOOR PLAN – AREA 'D' – POWER - DEMOLITION
ED3.1	FLOOR PLAN – AREA 'A' – AUXILIARY SYSTEMS – DEMOLITION
ED3.2	FLOOR PLAN – AREA 'B' – AUXILIARY SYSTEMS – DEMOLITION
ED3.3	FLOOR PLAN – AREA 'C' – AUXILIARY SYSTEMS – DEMOLITION
ED3.4	FLOOR PLAN – AREA 'D' – AUXILIARY SYSTEMS – DEMOLITION
E1.1	FLOOR PLAN – AREA 'A' – POWER – NEW WORK
E1.2	FLOOR PLAN – AREA 'B' – POWER – NEW WORK
E1.3	FLOOR PLAN – AREA 'C' – POWER – NEW WORK
E1.4	FLOOR PLAN – AREA 'D' – POWER – NEW WORK
E2.1	ROOF PLAN – AREA 'A' – POWER – NEW WORK
E2.2	ROOF PLAN – AREA 'B' – POWER – NEW WORK
E2.3	ROOF PLAN – AREA 'C' – POWER – NEW WORK
E2.4	ROOF PLAN – AREA 'D' – POWER – NEW WORK
E3.1	FLOOR PLAN – AREA 'A' – AUXILIARY SYSTEMS – NEW WORK
E3.2	FLOOR PLAN – AREA 'B' – AUXILIARY SYSTEMS – NEW WORK
E3.3	FLOOR PLAN – AREA 'C' – AUXILIARY SYSTEMS – NEW WORK
E3.4	FLOOR PLAN – AREA 'D' – AUXILIARY SYSTEMS – NEW WORK
E4.1	PANELBOARD SCHEDULES
E4.2	PARTIAL POWER RISER DIAGRAM - DEMOLITION & NEW WORK NOTES AND SCHEDULES

COMMONWEALTH OF VIRGINIA
KEVIN D. ALLEN
Lic. No. 023349
04-19-2022
PROFESSIONAL ENGINEER

THOMPSON
Consulting Engineers
22 ENTERPRISE PARKWAY HAMPTON, VA 23666
TELEPHONE: (757) 599-6455 PROJECT NUMBER

HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS
VIRGINIA
TITLE SHEET

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: GJA
DRAWN BY: SLS
CHECKED BY: KDA

T0.1

DATE: 04/19/2022

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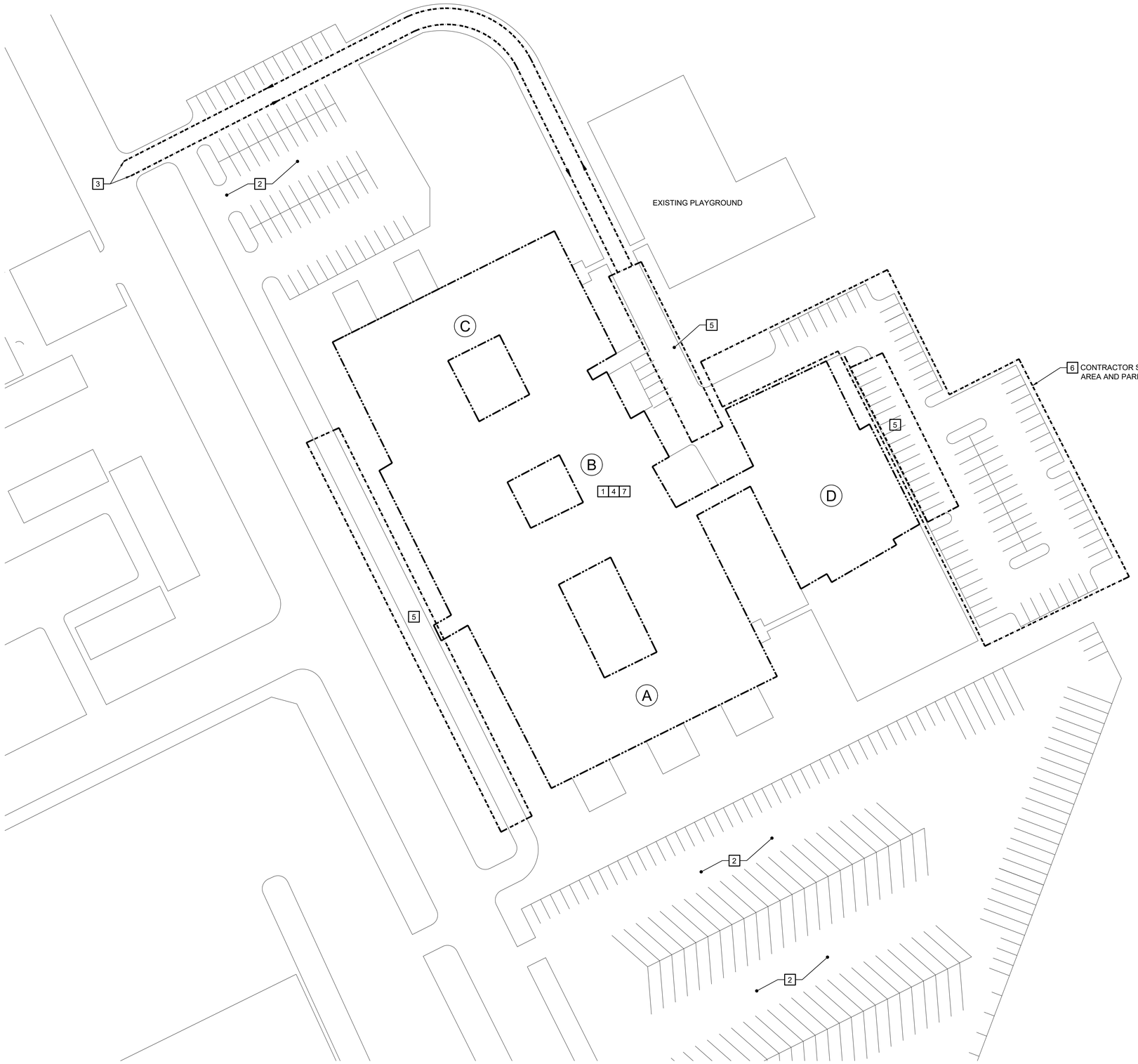

SITE PLAN NOTES (THIS SHEET ONLY) ☐	
NO.	DESCRIPTION
1	CONTRACTOR SHALL BE GRANTED ACCESS TO THE LIMITS OF CONSTRUCTION MONDAY THROUGH FRIDAY 7:00 AM TO 4:00 PM DURING THE CONSTRUCTION PERIOD. ACCESS TO THE BUILDING AFTER NORMAL WORKING HOURS SHALL BE ALLOWED WITH OWNER'S (NNPS) PRIOR APPROVAL AND COORDINATION.
2	STAFF PARKING, NO CONTRACTOR PARKING PERMITTED OUTSIDE DESIGNATED AREA.
3	KEEP DRIVEWAYS AND ENTRANCES SERVING THE PREMISES CLEAR AND AVAILABLE TO THE OWNER, THE OWNER'S EMPLOYEES, TEACHERS AND STAFF AND EMERGENCY VEHICLES AT ALL TIMES.
4	REFER TO THE PROJECT MANUAL SPECIFICATION SECTION 018000 "CODE OF CONDUCT" FOR ADMINISTRATIVE AND PROCEDURAL REQUIREMENTS WHILE WORKING ON SCHOOL PREMISES. REFER TO OTHER PROJECT MANUAL SPECIFICATION SECTIONS FOR ADDITIONAL REQUIREMENTS.
5	RECOMMENDED CRANE LOCATION. CONTRACTOR SHALL COORDINATE ACTUAL CRANE LOCATION WITH WORK REQUIRED. CONTRACTOR SHALL BE RESPONSIBLE TO ALL DAMAGE TO SOD, ACCESS ROAD, AND REPAIR SITE TO PRECONSTRUCTION CONDITIONS.
6	CONTRACTOR SHALL USE AREA AS INDICATED FOR PARKING AND STAGING OF EQUIPMENT/MATERIALS. ALL OTHER PARKING AREAS SHALL NOT BE USED WITHOUT OWNER'S PRIOR APPROVAL.
7	ANY POWER OUTAGES SHALL ONLY TAKE PLACE DURING WEEKEND HOURS AND MUST BE COORDINATED WITH OWNER AT LEAST 7 DAYS PRIOR TO SCHEDULED OUTAGE.

N

GENERAL SITE PLAN
NOT TO SCALE

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COMMONWEALTH OF VIRGINIA
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04-19-2022
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA

GENERAL SITE PLAN

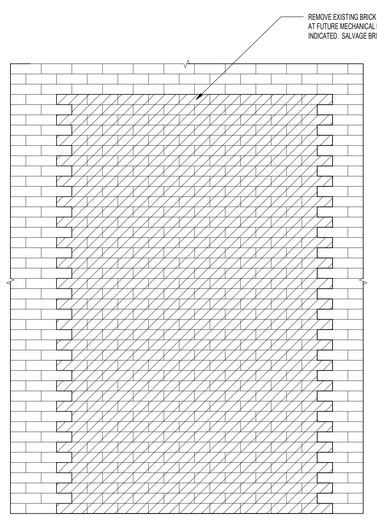
REVISIONS

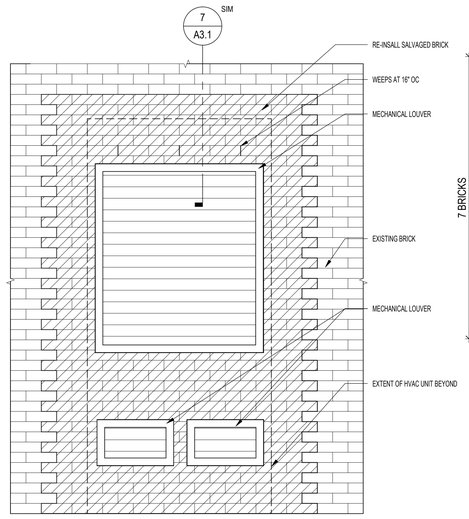
MARK	DESCRIPTION	DATE

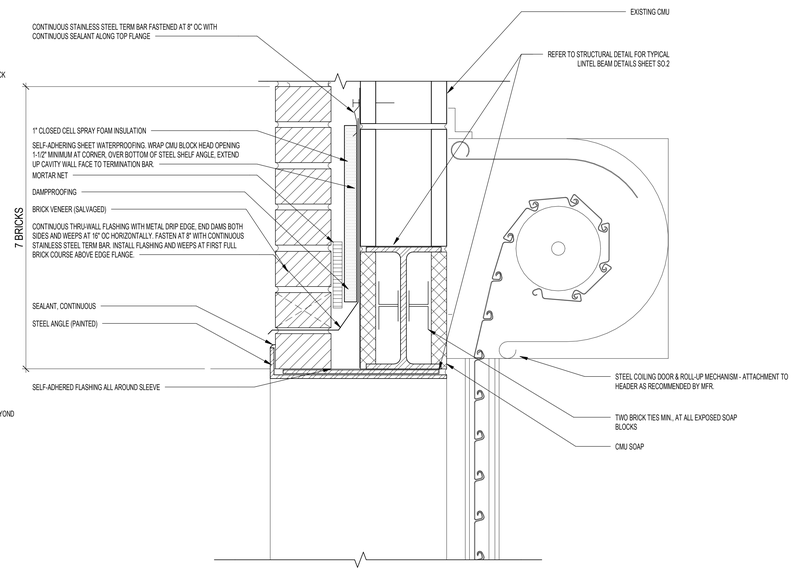
COMM. NO: 21-059
DESIGNED BY: GJA
DRAWN BY: SLS
CHECKED BY: KDA

G0.1

DATE: 04/19/2022



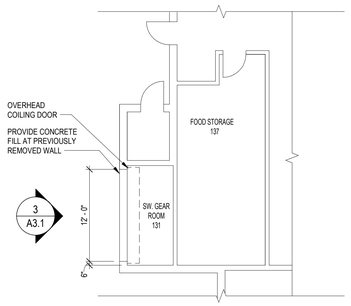




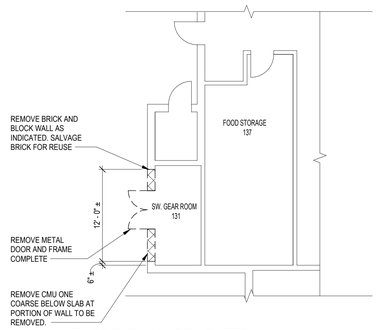
9 TYPICAL ELEVATION @ MECHANICAL UNITS - DEMOLITION
3/4" = 1'-0"

8 TYPICAL ELEVATION @ MECHANICAL UNITS - NEW WORK
3/4" = 1'-0"

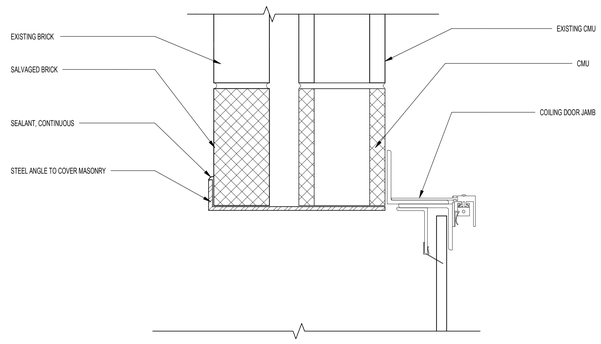
7 OVERHEAD COILING DOOR - HEAD
3" = 1'-0"



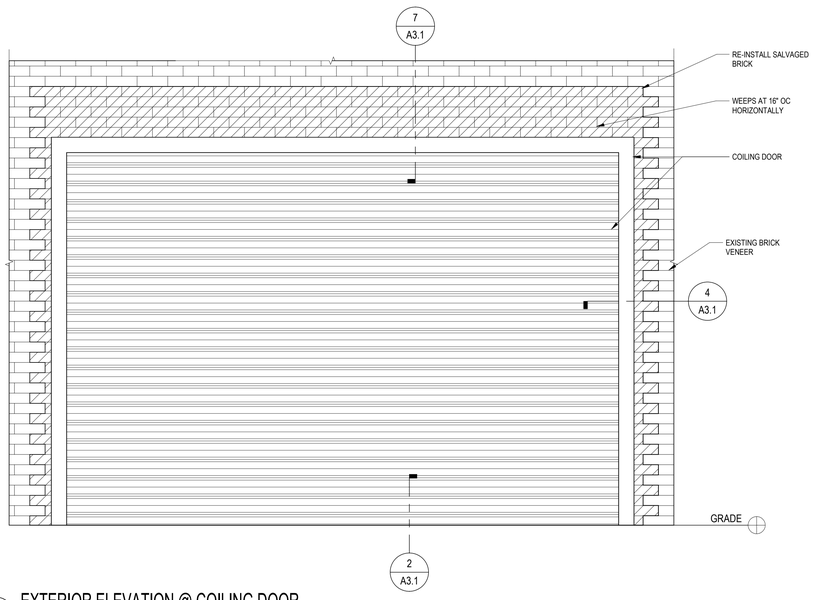
6 FLOOR PLAN - NEW WORK
1/8" = 1'-0"



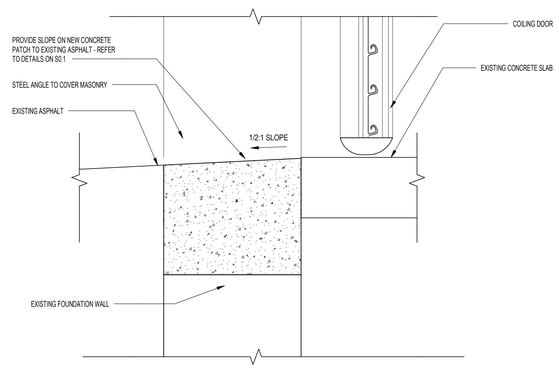
5 FLOOR PLAN - DEMOLITION
1/8" = 1'-0"



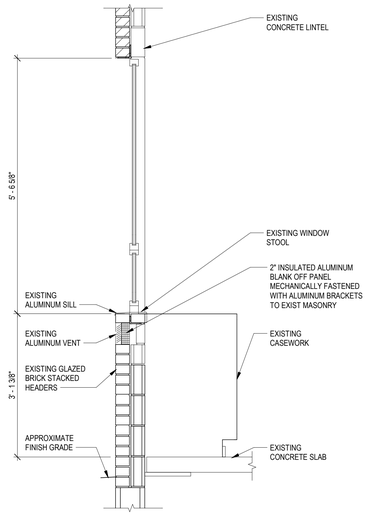
4 OVERHEAD COILING DOOR - JAMB
3" = 1'-0"



3 EXTERIOR ELEVATION @ COILING DOOR
3/4" = 1'-0"



2 OVERHEAD COILING DOOR - SILL
3" = 1'-0"



1 WALL SECTION - NEW WORK
3/4" = 1'-0"

GENERAL NOTES

1. ALL EXISTING MATERIALS TO REMAIN WHICH ARE DAMAGED OR OTHERWISE DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE PATCHED AND REPAIRED TO MATCH EXISTING ADJACENT MATERIALS SO THAT REPAIR IS IMPERCEPTIBLE.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND NOTIFY ARCHITECT OF ALL DISCREPANCIES. ALL WORK REQUIRING MEASURING TO BE DONE ACCORDING TO FIGURES ON DRAWINGS, NOT SCALED FROM DRAWINGS.
3. ON ALL ARCHITECTURAL SHEETS, ALL MATERIALS ARE NEW UNLESS SPECIFICALLY NOTED AS EXISTING TO REMAIN. ALL MATERIALS NOTED AS EXISTING SHALL REMAIN UNLESS SPECIFICALLY NOTED TO BE DEMOLISHED.DEMOLISHED MATERIALS ARE REPRESENTED BY DASHED LINES ON DEMOLITION PLANS.
4. DURING BIDDING IF DISCREPANCIES OR CONFLICTS BETWEEN DRAWINGS AND OTHER DRAWINGS OR SPECIFICATIONS ARE FOUND, THESE DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENSION OF THE ARCHITECT. WHERE A CONFLICT IS PRESENT IN DRAWINGS AND/OR SPECIFICATIONS, RESOLVE WITH ARCHITECT OR BID THE MOST STRINGENT, EXPENSIVE CONDITION.
5. DISCREPANCIES OR CONFLICTS BETWEEN ACTUAL CONDITIONS AND DRAWINGS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT. CONTRACTOR T SUBMIT SPECIFIC DISCREPANCY FOR ARCHITECT REVIEW, PRIOR TO COMMENCING WITH THE WORK IN QUESTION.
6. ALL WORK TO CONFORM TO LOCAL CODES, ORDINANCES AND REQUIREMENTS.
7. FIRE STOP ALL FLOORS, WALLS AND CEILINGS AS REQUIRED BY APPLICABLE CODE.
8. ALL PENETRATIONS OF FIRE RATED FLOORS, WALLS AND CEILINGS TO BE SEALED WITH APPROVED MATERIALS TO THE FULL THICKNESS OF THE CONSTRUCTION ELEMENTS BEING PENETRATED.
9. EXTERIOR DIMENSIONS ARE TO FACE OF EXTERIOR MATERIAL UNLESS OTHERWISE NOTED. INTERIOR DIMENSIONS ARE TO FACE OF MATERIAL UNLESS OTHERWISE NOTED.
10. ALL WOOD BLOCKING IN EXTERIOR WALLS TO BE MOISTURE RESISTANT TREATED IN ACCORDANCE WITH SPECIFICATIONS.
11. INSTALL SEALANT AT EXTERIOR SIDE OF ALL JOINTS, SEAMS, CONNECTIONS OR OPENINGS WHICH WOULD ALLOW WATER OR AIR INFILTRATION EXCEPT AS NOTED OTHERWISE. SEALANT COLOR TO MATCH ARCHITECT'S COLOR SAMPLE. SEALANT COLOR REQUIRES ARCHITECT'S APPROVAL.
12. DRAWINGS ARE INTENDED FOR PROPER PLACEMENT OF ALL TRADES' WORK. ALL CONCERNS, SPACE LIMITATION CONFLICTS, OR STRUCTURAL CONFLICTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT, PRIOR TO COMMENCING WITH THE WORK IN QUESTION.
13. THE GENERAL CONTRACTOR SHALL VERIFY AND COORDINATE, WITH ALL TRADES, THE SIZES AND LOCATIONS OF ALL OPENINGS FOR MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT, EQUIPMENT PADS, OR BASES AS WELL AS POWER, WATER AND DRAIN INSTALLATIONS BEFORE PROCEEDING WITH WORK. CONTRACTOR SHALL PROVIDE COORDINATION.
14. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE AND LOCATE ELECTRICAL, DATA AND PHONE RECEPTACLES, SWITCHES, ETC. TO AVOID CONFLICTS WITH CASEWORK, DOORS AND OTHER TRADES. COORDINATE ALL PLUMBING, ELECTRICAL, COMMUNICATION AND MECHANICAL WORK WITH CASEWORK AND FINISHES.
15. ALL PENETRATIONS THROUGH SOUND OR FIRE RATED WALLS SHALL BE PATCHED AND SEALED TO MEET THE REQUIRED ACOUSTICAL RATING OR FIRE RATING. ALL PIPE PENETRATIONS THROUGH CMU WALLS SHALL BE CORE DRILLED FOR A NEAT APPEARANCE, WHETHER EXPOSED OR CONCEALED ABOVE CEILINGS. ALL DUCT PENETRATIONS THROUGH CMU WALLS SHALL BE NEATLY CUT OPENINGS FREE OF OVERCUTS OR BREAKS IN THE CMU BLOCK. SEAL AS REQUIRED. WHEN DUCT OPENINGS EXCEED 16", SEE STRUCTURAL DRAWINGS FOR REQUIRED LINTEL INSTALLATION.
16. REMOVAL OF EXISTING SUSPENDED ACOUSTICAL PANEL CEILING SHALL INCLUDE THE REMOVAL OF ALL ELECTRICA, MECHANICAL AND/OR FIRE SAFETY ITEMS INCLUDING BUT NOT LIMITED TO LIGHT FIXTURES, AIR DIFUSSERS AND RETURNS, EXIT SIGNS, SMOKE DETECTORS AND STROBE LIGHTS. SEE MECHANICAL, ELECTRICAL AND PLUMBING.
17. EXPOSED STRUCTURAL STEEL, (JOISTS, BEAMS, CLIPS, GIRDERS, COLUMNS, POSTS, ANGLES, BRACING, ETC) MUST BE GALVANIZED. SEE STRUCTURAL DRAWINGS FOR REQUIREMENTS.
18. ALL MECHANICAL, ELECTRICAL AND ROOFING WORK OCCURING ON ROOF MUST MEET THE OWNER'S ROOF PRODUCT EXISTING WARRANTY. ALL DETAILS MUST MEET MANUFACTURER'S APPROVAL.

COMMONWEALTH OF VIRGINIA
DANIEL P. COSTELLO
No. 013704
April 21 2022
ARCHITECT

THOMPSON
Consulting Engineers
22 ENTERPRISE PARKWAY HAMPTON, VA 23666
TELEPHONE: (757) 599-4433 PROJECT NUMBER 20-083

HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS, VIRGINIA

FLOOR PLAN, WALL SECTIONS AND DETAILS

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 1407-J
DESIGNED BY: F. FRENCH
DRAWN BY: S. FEAGINS
CHECKED BY: D. COSTELLO

A3.1

DATE: 4/25/2022

WALLER TODD & SADLER
A WOOLPERT COMPANY
1909 CYPRESS AVENUE
VIRGINIA BEACH, VA 23451
(757) 417 - 0140

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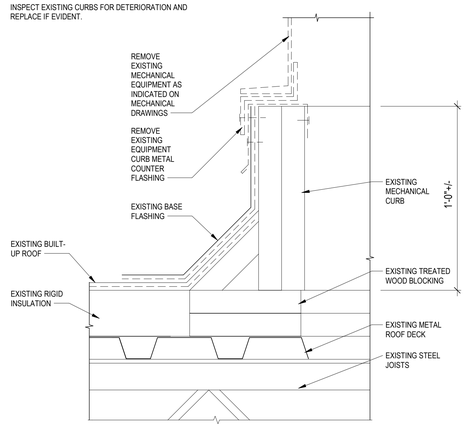
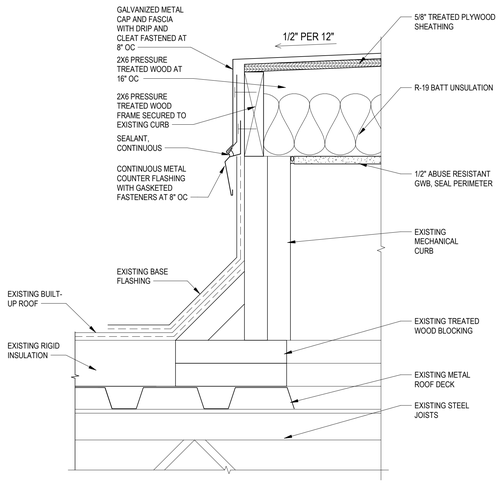
NOTE: FILL ALL REMOVED FASTENER HOLES EXPOSED FROM METAL FLASHING REMOVAL PRIOR TO NEW WORK WITH SBS COMPATIBLE ROOFING CUT-OFF MASTIC

INSPECT EXISTING CURBS FOR DETERIORATION AND REPLACE IF EVIDENT.



DEMOLITION

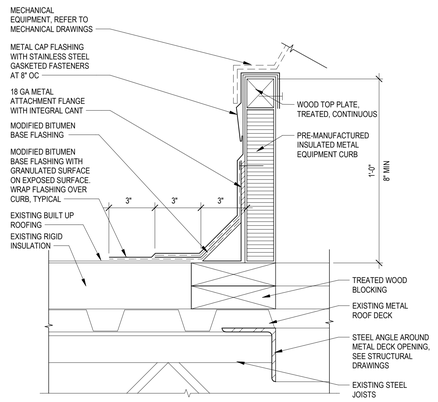


NEW WORK

TYPICAL MECHANICAL ROOF CURB CAP

3"=1'-0"

NOTE: Existing Warranty: A 20-year roof warranty for roof membrane, insulation, flashings, roof edge, and fascia is assumed to be in effect. All work on the roof under this project must be accepted by the roofing system warrantor as having no-impact upon the roofing warranty. Existing warranty and manufacturer to be verified by NNPS.



TYPICAL MECHANICAL ROOF CURB

3"=1'-0"

1. ALL EXISTING MATERIALS TO REMAIN WHICH ARE DAMAGED OR OTHERWISE DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE PATCHED AND REPAIRED TO MATCH EXISTING ADJACENT MATERIALS SO THAT REPAIR IS IMPERCEPTIBLE.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND NOTIFY ARCHITECT OF ALL DISCREPANCIES. ALL WORK REQUIRING MEASURING TO BE DONE ACCORDING TO FIGURES ON DRAWINGS, NOT SCALED FROM DRAWINGS.
3. ON ALL ARCHITECTURAL SHEETS, ALL MATERIALS ARE NEW UNLESS SPECIFICALLY NOTED AS EXISTING TO REMAIN. ALL MATERIALS NOTED AS EXISTING SHALL REMAIN UNLESS SPECIFICALLY NOTED TO BE DEMOLISHED.DEMOLISHED MATERIALS ARE REPRESENTED BY DASHED LINES ON DEMOLITION PLANS.
4. DURING BIDDING IF DISCREPANCIES OR CONFLICTS BETWEEN DRAWINGS AND OTHER DRAWINGS OR SPECIFICATIONS ARE FOUND, THESE DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENSION OF THE ARCHITECT. WHERE A CONFLICT IS PRESENT IN DRAWINGS AND/OR SPECIFICATIONS, RESOLVE WITH ARCHITECT OR BID THE MOST STRINGENT, EXPENSIVE CONDITION.
5. DISCREPANCIES OR CONFLICTS BETWEEN ACTUAL CONDITIONS AND DRAWINGS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT. CONTRACTOR T SUBMIT SPECIFIC DISCREPANCY FOR ARCHITECT REVIEW, PRIOR TO COMMENCING WITH THE WORK IN QUESTION.
6. ALL WORK TO CONFORM TO LOCAL CODES, ORDINANCES AND REQUIREMENTS.
7. FIRE STOP ALL FLOORS, WALLS AND CEILINGS AS REQUIRED BY APPLICABLE CODE.
8. ALL PENETRATIONS OF FIRE RATED FLOORS, WALLS AND CEILINGS TO BE SEALED WITH APPROVED MATERIALS TO THE FULL THICKNESS OF THE CONSTRUCTION ELEMENTS BEING PENETRATED.
9. EXTERIOR DIMENSIONS ARE TO FACE OF EXTERIOR MATERIAL UNLESS OTHERWISE NOTED. INTERIOR DIMENSIONS ARE TO FACE OF MATERIAL UNLESS OTHERWISE NOTED.
10. ALL WOOD BLOCKING IN EXTERIOR WALLS TO BE MOISTURE RESISTANT TREATED IN ACCORDANCE WITH SPECIFICATIONS.
11. INSTALL SEALANT AT EXTERIOR SIDE OF ALL JOINTS, SEAMS, CONNECTIONS OR OPENINGS WHICH WOULD ALLOW WATER OR AIR INFILTRATION EXCEPT AS NOTED OTHERWISE. SEALANT COLOR TO MATCH ARCHITECT'S COLOR SAMPLE. SEALANT COLOR REQUIRES ARCHITECT'S APPROVAL.
12. DRAWINGS ARE INTENDED FOR PROPER PLACEMENT OF ALL TRADES' WORK. ALL CONCERNS, SPACE LIMITATION CONFLICTS, OR STRUCTURAL CONFLICTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT, PRIOR TO COMMENCING WITH THE WORK IN QUESTION.
13. THE GENERAL CONTRACTOR SHALL VERIFY AND COORDINATE, WITH ALL TRADES, THE SIZES AND LOCATIONS OF ALL OPENINGS FOR MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT, EQUIPMENT PADS, OR BASES AS WELL AS POWER, WATER AND DRAIN INSTALLATIONS BEFORE PROCEEDING WITH WORK. CONTRACTOR SHALL PROVIDE COORDINATION.
14. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE AND LOCATE ELECTRICAL, DATA AND PHONE RECEPTACLES, SWITCHES, ETC. TO AVOID CONFLICTS WITH CASEWORK, DOORS AND OTHER TRADES. COORDINATE ALL PLUMBING, ELECTRICAL, COMMUNICATION AND MECHANICAL WORK WITH CASEWORK AND FINISHES.
15. ALL PENETRATIONS THROUGH SOUND OR FIRE RATED WALLS SHALL BE PATCHED AND SEALED TO MEET THE REQUIRED ACOUSTICAL RATING OR FIRE RATING. ALL PIPE PENETRATIONS THROUGH CMU WALLS SHALL BE CORE DRILLED FOR A NEAT APPEARANCE, WHETHER EXPOSED OR CONCEALED ABOVE CEILINGS. ALL DUCT PENETRATIONS THROUGH CMU WALLS SHALL BE NEATLY CUT OPENINGS FREE OF OVERCUTS OR BREAKS IN THE CMU BLOCK. SEAL AS REQUIRED. WHEN DUCT OPENINGS EXCEED 16", SEE STRUCTURAL DRAWINGS FOR REQUIRED LINTEL INSTALLATION.
16. REMOVAL OF EXISTING SUSPENDED ACOUSTICAL PANEL CEILING SHALL INCLUDE THE REMOVAL OF ALL ELECTRICA, MECHANICAL AND/OR FIRE SAFETY ITEMS INCLUDING BUT NOT LIMITED TO LIGHT FIXTURES, AIR DIFUSSERS AND RETURNS, EXIT SIGNS, SMOKE DETECTORS AND STROBE LIGHTS. SEE MECHANICAL, ELECTRICAL AND PLUMBING.
17. EXPOSED STRUCTURAL STEEL, (JOISTS, BEAMS, CLIPS, GIRDERS, COLUMNS, POSTS, ANGLES, BRACING, ETC) MUST BE GALVANIZED. SEE STRUCTURAL DRAWINGS FOR REQUIREMENTS.
18. ALL MECHANICAL, ELECTRICAL AND ROOFING WORK OCCURING ON ROOF MUST MEET THE OWNER'S ROOF PRODUCT EXISTING WARRANTY. ALL DETAILS MUST MEET MANUFACTURER'S APPROVAL.

WOOLPERT
ARCHITECTURE | ENGINEERING | GEOSPATIAL

COMMONWEALTH OF VIRGINIA
DANIEL P. COSTELLO
No. 013704
April 21 2022
ARCHITECT

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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS, VIRGINIA
ROOF DETAILS

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 1407-J
DESIGNED BY: F. French
DRAWN BY: B. Sharon
CHECKED BY: D. Costello

A5.1N

NEWSOME

DATE: 4/25/2022

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GENERAL NOTES:

1. ALL ITEMS SHOWN ON THIS DRAWING ARE NEW CONSTRUCTION, UNLESS OTHERWISE NOTED AS EXISTING.
2. THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION AND ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
3. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
4. THE CONTRACTOR SHALL VERIFY THE REQUIREMENTS OF OTHER TRADES AS TO SLEEVES, ANCHORS, CHASES, INSERTS, HANGERS, HOLES, ETC. TO BE PLACED IN THE STRUCTURAL WORK.
5. THE STRUCTURE WAS DESIGNED IN ACCORDANCE WITH THE 2015 EDITION OF THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE (VUSBC). THE FOLLOWING LOADS, IN ADDITION TO THE DEAD LOADS OF THE PERMANENT MATERIALS AND CONSTRUCTION, WERE USED:

   GROUND SNOW LOAD : 15 PSF
   ROOF LOAD : 20 PSF
   GROUND FLOOR : 100 PSF
   ULTIMATE DESIGN WIND SPEED (3 SECOND GUST) : 120 MPH
   RISK CATEGORY : III
   EXPOSURE CATEGORY : C
6. CONTRACTOR SHALL PROTECT EXISTING BUILDING ELEMENTS TO REMAIN. ANY DAMAGE DONE SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
7. IN ACCORDANCE WITH THE VUSBC, SPECIAL INSPECTIONS WILL BE REQUIRED FOR THIS PROJECT UNDER THE "HAMPTON ROADS REGIONAL SPECIAL INSPECTION GUIDELINES AND PROCEDURES". SPECIAL INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE "SCHEDULE OF SPECIAL INSPECTIONS". THE CONTRACTOR SHALL NOTIFY THE SPECIAL INSPECTOR AT LEAST 24 HOURS IN ADVANCE FOR WORK THAT WILL REQUIRE INSPECTION OR TESTING.

DESIGN CODES AND GOVERNING STANDARDS:

1. 2015 EDITION OF THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE (VUSBC).
2. 2015 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).
3. 2015 EDITION OF THE INTERNATIONAL EXISTING BUILDING CODE (IEBC).
4. 2010 EDITION OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS/STRUCTURAL ENGINEERS INSTITUTE (ASCE/SEI): ASCE/SEI 7-10, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES".
5. 2010 EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC): AISC 360-10, "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
6. 2011 EDITION OF THE AMERICAN WELDING SOCIETY (AWS), D1.1 "STRUCTURAL WELDING CODE - STEEL", D1.3 "STRUCTURAL WELDING CODE - SHEET STEEL" AND D1.4 "STRUCTURAL WELDING CODE - REINFORCING STEEL".

STRUCTURAL STEEL NOTES:

1. ALL STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
   A. W-SHAPES - ASTM A992 GRADE 50
   B. MISCELLANEOUS SHAPES, ANGLES, PLATES AND BARS - ASTM A36
   C. PIPE - ASTM A53, GRADE B.
   D. HSS SHAPES - ASTM A500 GRADE B
   E. BOLTS - ASTM F3125
   F. NUTS - ASTM A563
   G. WASHERS - F436
   H. WELDING ELECTRODES - E70XX
2. DESIGN, FABRICATION, ERECTION AND ALL OTHER STRUCTURAL STEEL WORK SHALL CONFORM TO THE FOURTEENTH EDITION OF THE MANUAL OF STEEL CONSTRUCTION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
3. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1, "STRUCTURAL WELDING CODE - STEEL". WELD ELECTRODES SHALL BE E70XX.
4. BOLTS SHALL BE TIGHTENED TO THE "SNUG TIGHT" CONDITION, UNLESS OTHERWISE NOTED.
5. ALL HOLES AND CUTS REQUIRED IN STRUCTURAL STEEL MEMBERS SHALL BE SHOWN ON THE SHOP DRAWINGS AND SHALL BE MADE IN THE SHOP. NO HOLES SHALL BE CUT IN THE FIELD WITHOUT THE APPROVAL OF THE ENGINEER. TORCH CUTTING IS NOT PERMITTED.
6. ALL STRUCTURAL STEEL, EXCEPT MEMBERS INDICATED TO BE GALVANIZED, SHALL BE SHOP PRIMED. DO NOT PRIME OR PAINT STRUCTURAL STEEL SURFACES RECEIVING SPRAYED FIRE-RESISTIVE MATERIALS. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXTENTS OF SPRAYED FIRE RESISTIVE MATERIALS.

TEMPORARY SHORING NOTES:

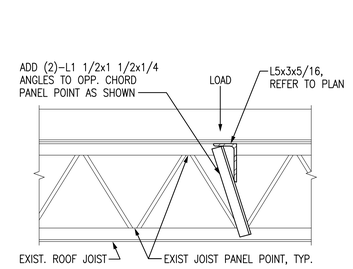
1. THE CMU WALL PENETRATION OPENINGS INDICATED IN THE CONTRACT DRAWINGS WILL REQUIRE TEMPORARY SHORING.
2. THE DESIGN OF TEMPORARY SHORING IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF VIRGINIA, TO PREPARE THE TEMPORARY SHORING DESIGN.
3. THE CONTRACTOR'S SHORING ENGINEER SHALL SUBMIT SIGNED AND SEALED SHORING DRAWINGS AND CALCULATIONS FOR APPROVAL. THE SHORING DRAWINGS SHALL BE APPROVED BY THE ENGINEER OF RECORD PRIOR TO UNDERTAKING ANY DEMOLITION ACTIVITY.
4. THE CONTRACTOR'S SHORING ENGINEER SHALL ENSURE THAT ALL EXISTING STRUCTURAL ELEMENTS ARE NOT OVERLOADED.
5. THE CONTRACTOR SHALL COORDINATE THE TEMPORARY SHORING WITH ALL OF THE OTHER DISCIPLINES AND WORK REQUIRED.

MASONRY NOTES:

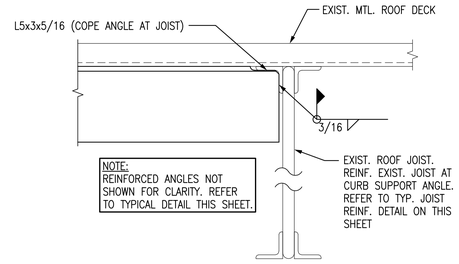
1. ALL MASONRY CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 530, "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" AND ACI 530.1, "SPECIFICATIONS FOR MASONRY STRUCTURES".
2. ALL CONCRETE MASONRY UNITS SHALL BE IN ACCORDANCE WITH ASTM C-90 "SPECIFICATIONS FOR HOLLOW LOAD-BEARING UNITS" AND SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF (f'_M) 1,900 PSI.
3. ALL MORTAR FOR USE IN ENGINEERED MASONRY BEARING WALLS SHALL BE IN ACCORDANCE WITH ASTM C-270 TYPE "S" MORTAR.
4. ALL REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A615, GRADE 60 DEFORMED BARS, UNLESS OTHERWISE NOTED. ALL REINFORCING STEEL MARKED CONTINUOUS (CONT.) SHALL BE LAPPED 48 BAR DIAMETERS AT SPLICES, UNLESS OTHERWISE NOTED. FULLY GROUT ALL REINFORCING CELLS, BOND BEAMS AND LINTELS.

ABBREVIATIONS

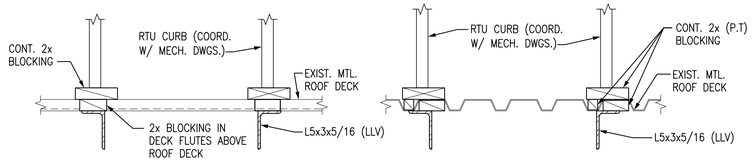
ADDIT.	ADDITIONAL	GA.	GAGE
ARCH.	ARCHITECTURAL	GALV.	GALVANIZED
BLDG.	BUILDING	HORIZ.	HORIZONTAL
B.O.	BOTTOM OF	KSI	KIPS PER SQUARE INCH
BOTT.	BOTTOM	LLH	LONG LEG HORIZONTAL
BRG.	BEARING	LLV	LONG LEG VERTICAL
CL.	CENTERLINE	L.W.	LONG WAY
CLR.	CLEAR	MANUF.	MANUFACTURER
CMU	CONCRETE MASONRY UNIT	MAS.	MASONRY
COL.	COLUMN	MAX.	MAXIMUM
CONC.	CONCRETE	MIN.	MINIMUM
CONN.	CONNECT/CONNECTION	MECH.	MECHANICAL
CONT.	CONTINUE/CONTINUOUS	MTL.	METAL
COORD.	COORDINATE	o/c	ON CENTER
DBL.	DOUBLE	OPNG.	OPENING
DEMO.	DEMOLISH/DEMOLITION	OPP.	OPPOSITE
DIA.	DIAMETER	PEJ	PREMOLDED EXPANSION JOINT
DIAG.	DIAGONAL	PSF	POUNDS PER SQUARE FOOT
DWGS.	DRAWINGS	PSI	POUNDS PER SQUARE INCH
EA.	EACH	REINF.	REINFORCED/REINFORCING
E.F.	EACH FACE	REQ'D.	REQUIRED
E.W.	EACH WAY	RTU	ROOF TOP UNIT
ELEV.	ELEVATION	SECT.	SECTION
EMBED.	EMBEDDED/EMBEDMENT	SIM.	SIMILAR
EQ.	EQUAL/EQUALLY	STD.	STANDARD
EXIST.	EXISTING	STRUCT.	STRUCTURAL
F.F.	FINISHED FLOOR	THK.	THICK
FLR.	FLOOR	T.O.	TOP OF
FNDN.	FOUNDATION	TYP.	TYPICAL
FTG.	FOOTING	U.O.N.	UNLESS OTHERWISE NOTED
F.V.	FIELD VERIFY	VERT.	VERTICAL
		WWR	WELDED WIRE REINFORCING



TYPICAL JOIST REINFORCING DETAIL
NOT TO SCALE



TYPICAL DECK SUPPORT ANGLE CONNECTION DETAIL
NOT TO SCALE



TYPICAL DECK SUPPORT DETAILS
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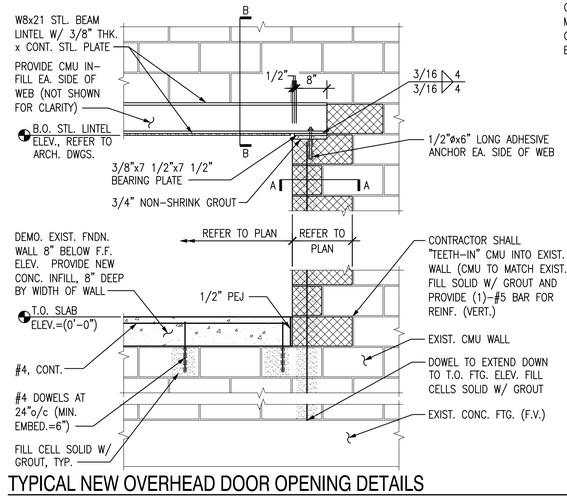
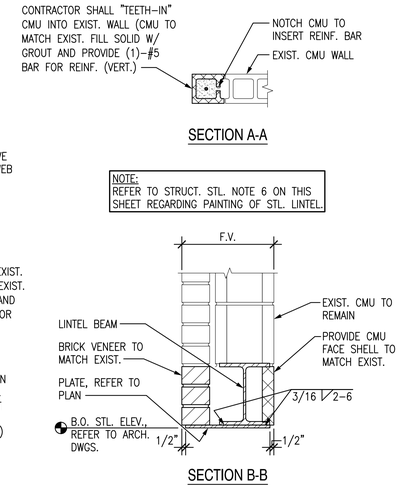


TYPICAL NEW OVERHEAD DOOR OPENING DETAILS
NOT TO SCALE



SECTION A-A

NOTE: REFER TO STRUCT. STL. NOTE 6 ON THIS SHEET REGARDING PAINTING OF STL. LINTEL.

SECTION B-B

MARCOS FREEMAN
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04-25-2022
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA

GENERAL NOTES

REVISIONS

MARK	DESCRIPTION	DATE

MCPHERSON DESIGN GROUP
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COMM. NO: 21-059
DESIGNED BY: MF
DRAWN BY: JAK
CHECKED BY: MF

S0.1

DATE: 04/25/2022

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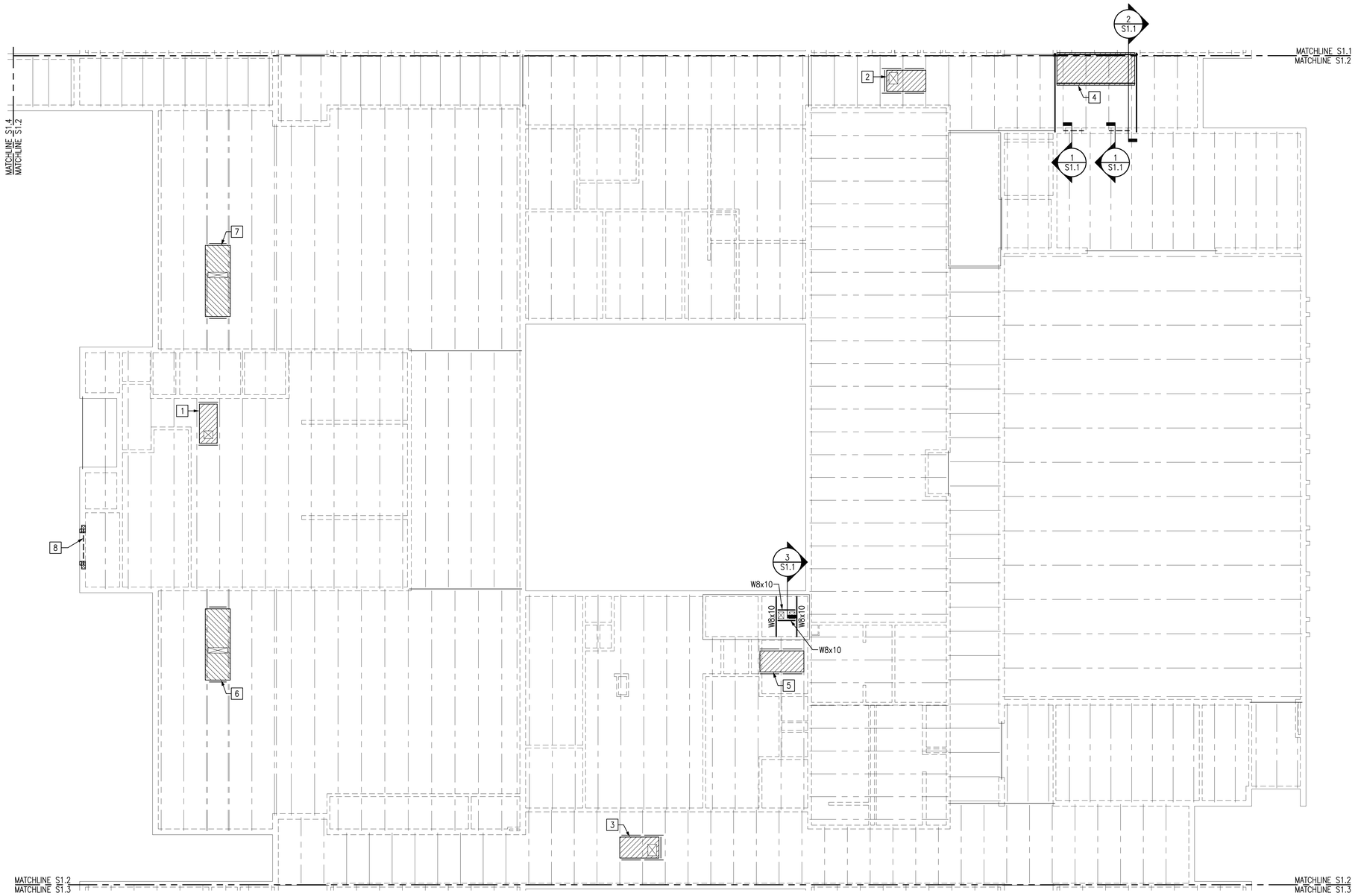


PARTIAL ROOF FRAMING PLAN - AREA 'B'

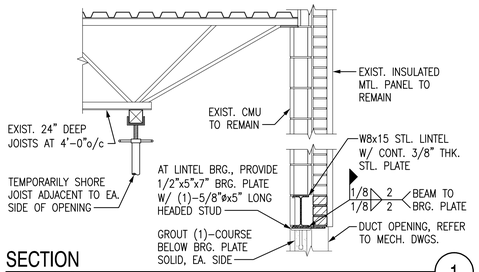
1/8" = 1'-0"

PLAN NOTES:

1. REFER TO MECHANICAL DRAWINGS FOR DEMOLITION NOT NOTED.
2. CONTRACTOR SHALL COORDINATE DIMENSIONS NOT NOTED WITH ACTUAL FIELD CONDITIONS.
3. PROVIDE L5x3x5/16 AROUND ALL FOUR SIDES OF MECHANICAL CURB. REFER TO TYPICAL ROOF OPENING DETAIL AND TYPICAL ANGLE CONNECTION DETAIL ON SHEET S0.1 FOR ADDITIONAL INFORMATION.
4. REINFORCE EXISTING STEEL JOISTS WITH L1 1/2x1 1/2x1/4 AT L5x3x5/16 LOCATIONS. REFER TO TYPICAL JOIST REINFORCING DETAIL ON SHEET S0.1.

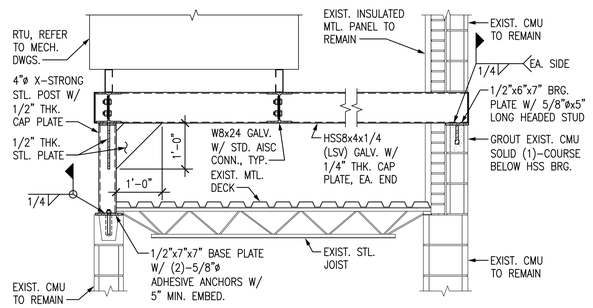
KEY NOTES:

1. KMAU-1, WEIGHT = 685 LBS.
2. DOAS-1, WEIGHT = 1,300 LBS.
3. DOAS-2, WEIGHT = 1,300 LBS.
4. RTU-1, WEIGHT = 4,483 LBS.
5. RTU-2, WEIGHT = 1,300 LBS.
6. RTU-6, WEIGHT = 3,500 LBS. PLACE RTU PARALLEL AND ABOVE EXISTING DOUBLE JOISTS.
7. RTU-7, WEIGHT = 3,500 LBS. PLACE RTU PARALLEL AND ABOVE EXISTING DOUBLE JOISTS.
8. NEW OVERHEAD DOOR OPENING, REFER TO TYPICAL NEW OVERHEAD DOOR OPENING DETAILS ON SHEET S0.1.



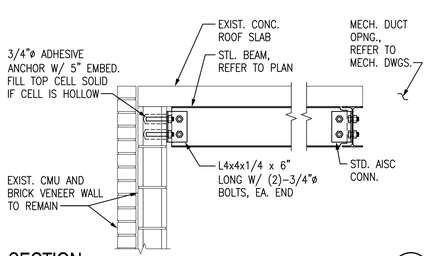
SECTION 1

3/4" = 1'-0" S1.1



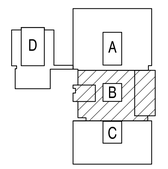
SECTION 2

3/4" = 1'-0" S1.1



SECTION 3

1" = 1'-0" S1.1



KEY PLAN

NOT TO SCALE

NOTE:
IF THIS DRAWING IS A REDUCTION, GRAPHIC SCALE MUST BE USED.

GRAPHIC SCALE:

1/8" = 1'-0" 10' 5' 0' 10' 20'

3/4" = 1'-0" 0 6" 1' 2' 3' 4' 5'

1" = 1'-0" 1' 6" 0' 1' 3'

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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRIGINA

PARTIAL ROOF FRAMING PLAN - AREA 'B'

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: MF
DRAWN BY: JAK
CHECKED BY: MF

S1.1

DATE: 04/25/2022

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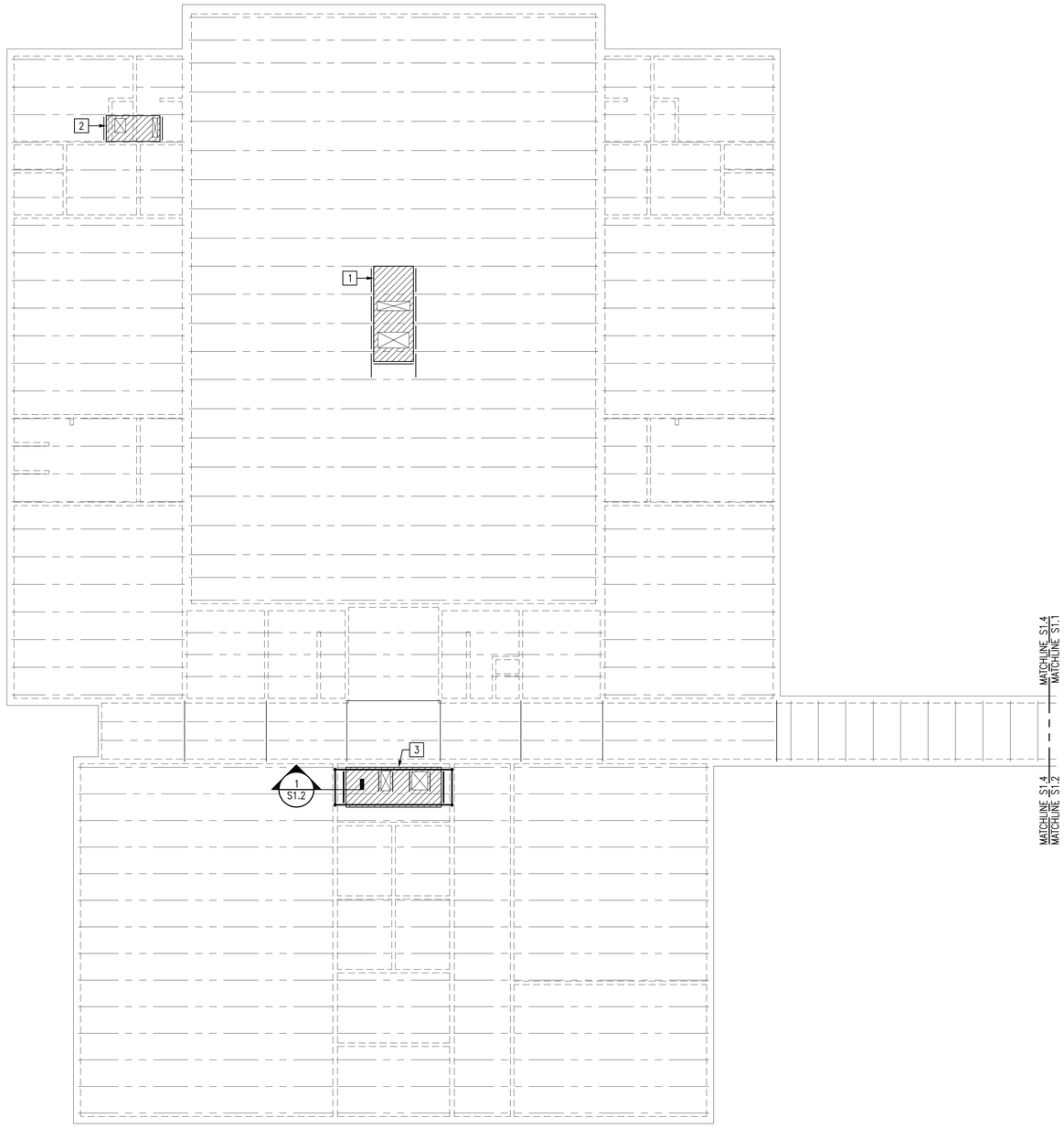
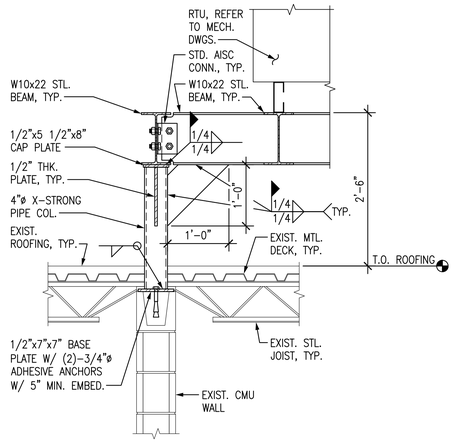


PARTIAL ROOF FRAMING PLAN - AREA 'D'
1/8" = 1'-0"



SECTION
1" = 1'-0"
1
S1.2

PLAN NOTES:

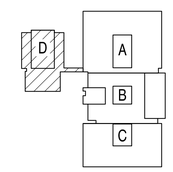
1. REFER TO MECHANICAL DRAWINGS FOR DEMOLITION NOT NOTED.
2. CONTRACTOR SHALL COORDINATE DIMENSIONS NOT NOTED WITH ACTUAL FIELD CONDITIONS.
3. PROVIDE L5x3x5/16 AROUND ALL FOUR SIDES OF MECHANICAL CURB. REFER TO TYPICAL ROOF OPENING DETAIL AND TYPICAL ANGLE CONNECTION DETAIL ON SHEET S0.1 FOR ADDITIONAL INFORMATION.
4. REINFORCE EXISTING STEEL JOISTS WITH L1 1/2x1 1/2x1/4 AT L5x3x5/16 LOCATIONS. REFER TO TYPICAL JOIST REINFORCING DETAIL ON SHEET S0.1.

KEY NOTES:

1 RTU-3, WEIGHT = 5,100 LBS.

2 RTU-4, WEIGHT = 1,300 LBS.

3 RTU-5, WEIGHT = 4,553 LBS. PROVIDE L5x3x5/16 AROUND DUCT PENETRATION OPENINGS THROUGH THE ROOF DECK. REFER TO TYPICAL DECK SUPPORT DETAILS ON SHEET S0.1.



KEY PLAN
NOT TO SCALE

NOTE:
IF THIS DRAWING IS A REDUCTION, GRAPHIC SCALE MUST BE USED.

GRAPHIC SCALE:

1/8" = 1'-0" 10' 5' 0' 10' 20'

1" = 1'-0" 1' 6" 0' 1' 3'

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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRIGINA

PARTIAL ROOF FRAMING PLAN - AREA 'D'

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: MF
DRAWN BY: JAK
CHECKED BY: MF

S1.2

DATE: 04/25/2022

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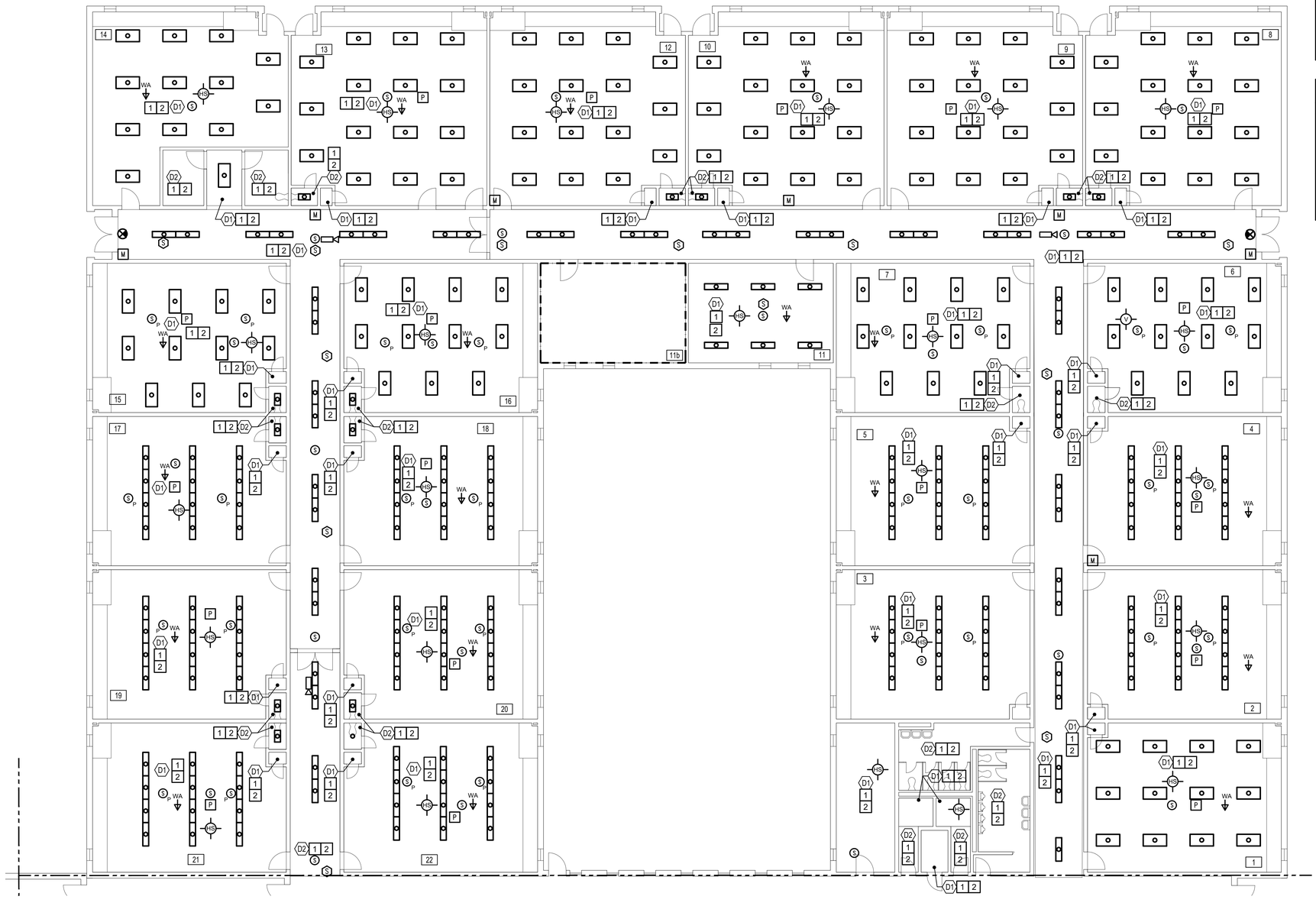


DEMOLITION NOTES ⬡	
NO.	DESCRIPTION
D1	CAREFULLY REMOVE CEILING GRID AND CEILING TILES AS SHOWN.
D2	CAREFULLY REMOVE PLASTER OR DRYWALL CEILING AS SHOWN.

NEW WORK NOTES ☐	
NO.	DESCRIPTION
1	AFTER INSTALLATION OF NEW WORK, INSTALL NEW CEILING TILES, NEW GRID AND LIGHT FIXTURES RETAINED FROM DEMOLITION. LIGHT FIXTURES SHALL BE RESTORED TO THEIR PRE-CONSTRUCTION CONDITION.
2	PROVIDE NEW 24" x 24" ACOUSTICAL TILE CEILING TILE AND GRID. THE CEILING SYSTEM SHALL BE INSTALLED AT THE SAME ELEVATION AS EXISTING CEILING AND IN ACCORDANCE WITH SPECIFICATIONS.

REFLECTED CEILING PLAN - FIRST FLOOR - AREA 'A' - DEMOLITION AND NEW WORK

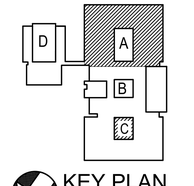
SCALE: 1/8" = 1'-0"

GENERAL DEMOLITION NOTES: (SHEET CP1.1 THRU CP1.4)

1. THE CONTRACTORS SHALL FIELD VERIFY ALL REFLECTED CEILING GRID ELEVATIONS, ORIENTATIONS, AND POSITIONS. REFLECTED CEILING GRID MAY VARY FROM THAT SHOWN ON THIS DRAWING. INVENTORY ALL ACOUSTIC CEILING TILES BEFORE DEMOLITION.
2. CONTRACTOR SHALL STORE AND PROTECT ALL REMOVED CEILING TILES . REPLACE ALL CRACKED, BROKEN, AND WATER STAINED TILES WITH NEW OR SALVAGED.
3. THE CONTRACTOR SHALL STORE AND PROTECT ALL REMOVED CEILING GRID FOR RE-INSTALLATION WHERE INDICATED.
4. IMPROPERLY STORED AND HANDLED MATERIALS SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
5. DURING DEMOLITION, SORT TILES REMOVED BY APPEARANCE AND CONDITION. UPON REINSTALLATION, PROVIDE TILES OF LIKE APPEARANCE TO PRESENT A UNIFORM CEILING FINISH.
6. CONTRACTOR SHALL COORDINATE EXACT QUANTITY AND LOCATION OF CEILING TILES, GRID, AND ELECTRICAL FIXTURES TO BE REMOVED WITH NEW WORK. REFER TO ELECTRICAL SHEETS FOR FIXTURES REQUIRING REMOVAL.

LEGEND: (SHEET CP1.1 THRU CP1.4)

- CEILING GRID AND 24x 24" ACOUSTIC CEILING TILE TO REMAIN.
- EXTENT OF CEILING GRID AND ACOUSTIC CEILING TILE REMOVAL (DEMOLITION). EXTENT OF CEILING GRID AND ACOUSTIC TILE REINSTALLATION (NEW WORK).
- EXTENT OF PLASTER CEILING AND BULKHEAD REMOVAL (DEMOLITION). EXTENT OF NEW CEILING GRID AND TILE INSTALLATION (NEW WORK)
- EXTENT OF PLASTER CEILING AND BULKHEAD REMOVAL (DEMOLITION). EXTENT OF NEW CEILING GRID AND MOISTURE RESISTANT TILE INSTALLATION (NEW WORK)
- PLASTER CEILING TO REMAIN
- EXTENT OF AREA WITH NO CEILING, STRUCTURE IS EXPOSED
- 2' x 4' RECESSED LIGHT FIXTURES
- 1' x 4' RECESSED LIGHT FIXTURES
- 2' x 2' RECESSED LIGHT FIXTURE
- SUPPLY AIR DIFFUSER
- RETURN AIR GRILLE
- CEILING MOUNTED AUDIO/VISUAL DEVICE.
- CEILING MOUNTED SPEAKER.
- PROJECTOR SPEAKER.
- CEILING MOUNTED WIRELESS ACCESS DATA OUTLET.
- CEILING MOUNTED PROJECTOR.
- CEILING MOUNTED DUAL FACE CLOCK.



KEY PLAN
NOT TO SCALE

COMMONWEALTH OF VIRGINIA
KEVIN D. ALLEN
Lic. No. 023349
04-19-2022
PROFESSIONAL ENGINEER

THOMPSON
Consulting Engineers
22 ENTERPRISE PARKWAY HAMPTON, VA 23666
TELEPHONE: (757) 599-6433 PROJECT NUMBER:

HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
REFLECTED CEILING PLAN - AREA 'A' - DEMOLITION AND NEW WORK

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	GJA
DRAWN BY:	SLS
CHECKED BY:	KDA

CP1.1

DATE: 04/19/2022

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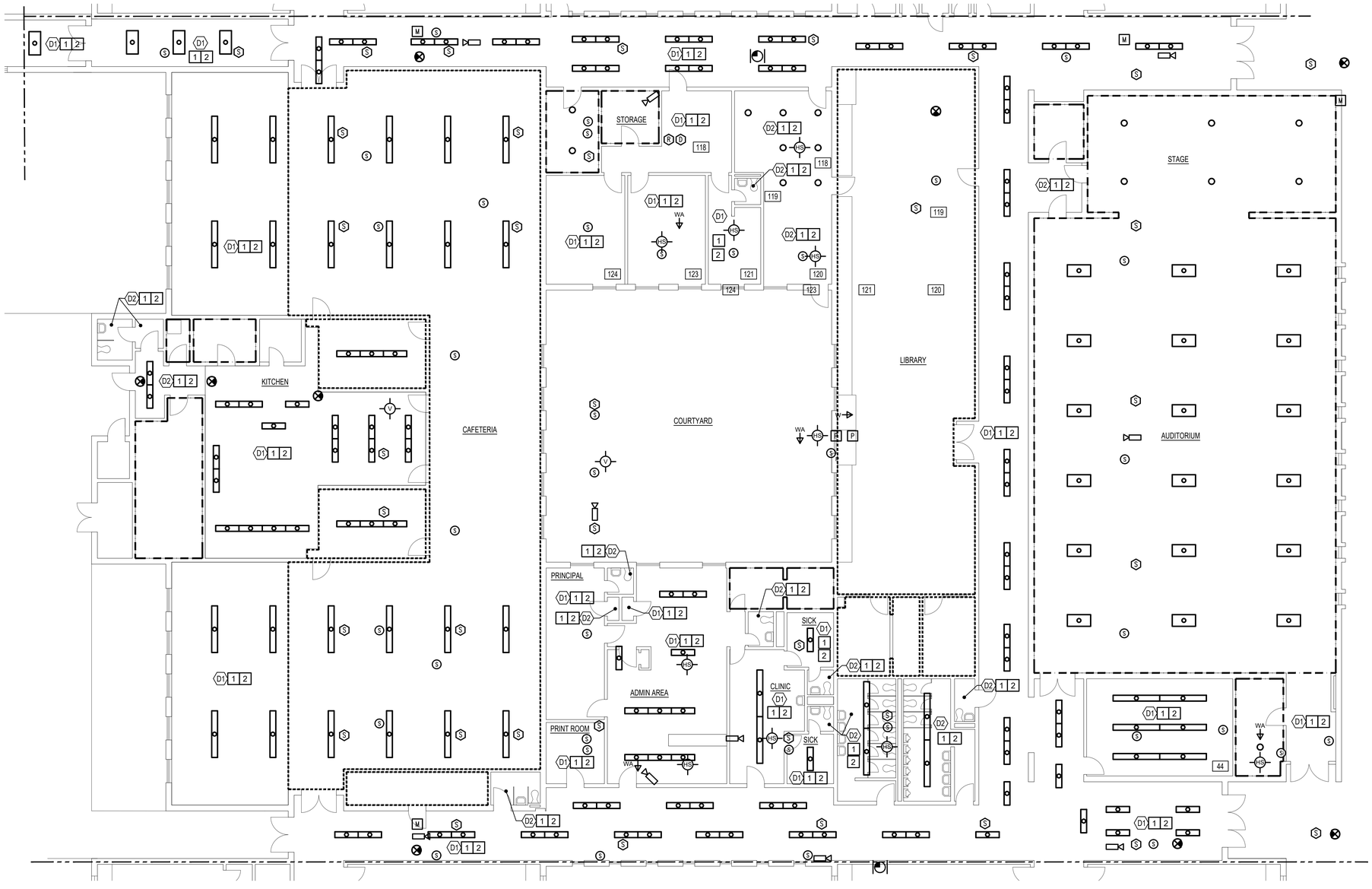
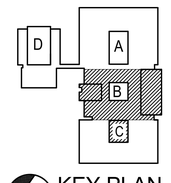


REFLECTED CEILING PLAN - FIRST FLOOR - AREA 'B' - DEMOLITION AND NEW WORK

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



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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS
VIRGINIA

REFLECTED CEILING PLAN - AREA 'B' - DEMOLITION AND NEW WORK

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
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DRAWN BY: SLS
CHECKED BY: KDA

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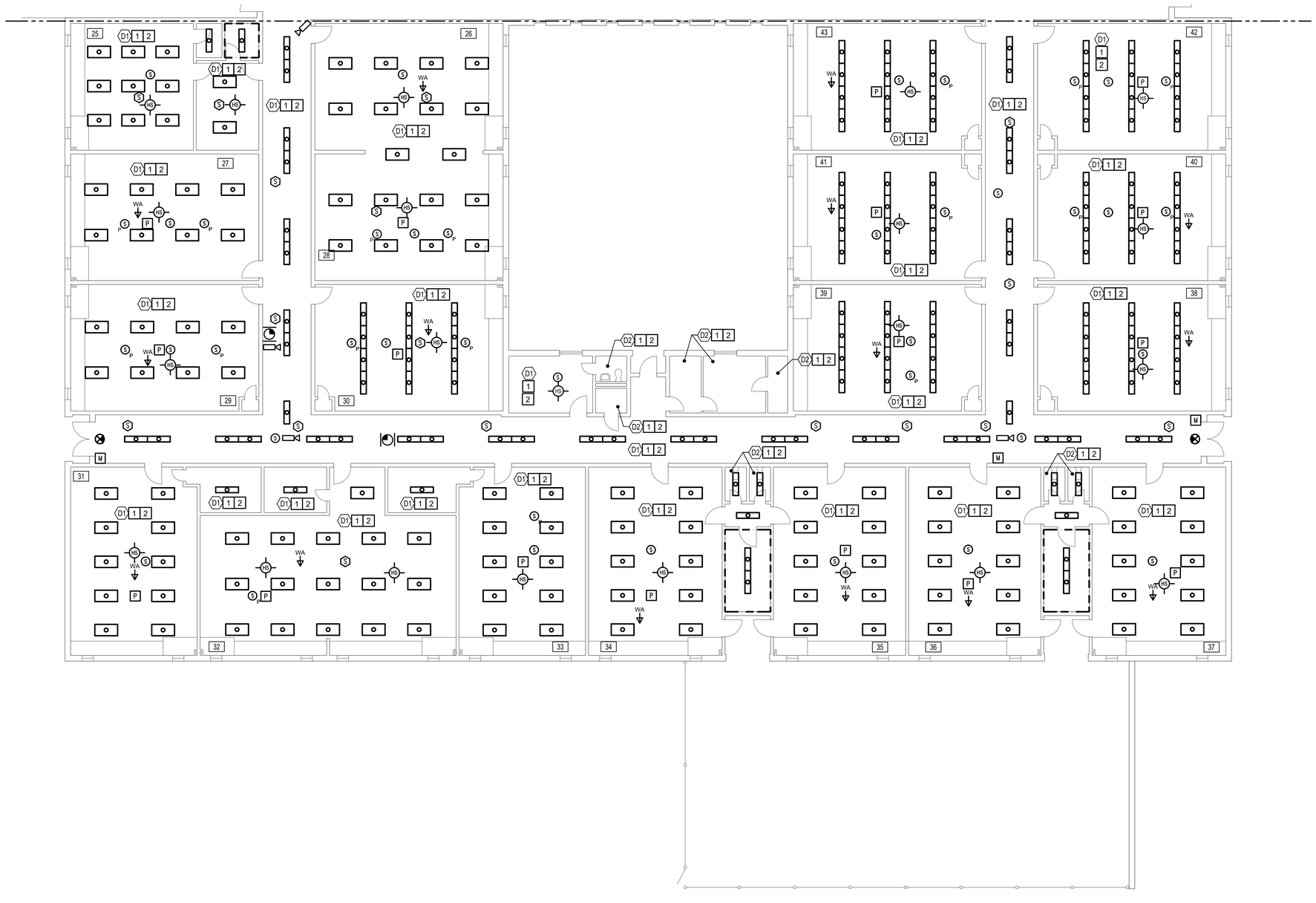
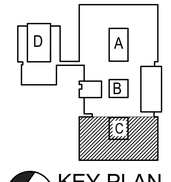


REFLECTED CEILING PLAN - FIRST FLOOR - AREA 'C' - DEMOLITION AND NEW WORK

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



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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS
VIRGINIA

REFLECTED CEILING PLAN - AREA 'C' - DEMOLITION AND NEW WORK

REVISIONS

MARK	DESCRIPTION	DATE

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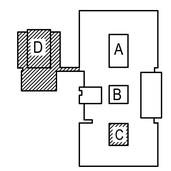
DATE: 04/19/2022

REFLECTED CEILING PLAN - FIRST FLOOR - AREA 'D' - DEMOLITION AND NEW WORK

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



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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA

REFLECTED CEILING PLAN - AREA 'D' - DEMOLITION AND NEW WORK

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	GJA
DRAWN BY:	SLS
CHECKED BY:	KDA

CP1.4

DATE: 04/19/2022

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GENERAL DEMOLITION NOTES

1. WHERE EQUIPMENT IS INDICATED TO BE REMOVED, IT SHALL MEAN COMPLETE REMOVAL OF EQUIPMENT, INCLUDING CURBS, SUPPORTS, GUYS, ANCHORS, BRACKETS, CONTROLS AND INCIDENTAL ITEMS CONNECTED OR FASTENED TO EQUIPMENT. OWNER MAINTAINS THE OWNERSHIP OF ALL ITEMS TAGGED OR IDENTIFIED.
2. WHERE PIPING IS INDICATED TO BE REMOVED, IT SHALL MEAN COMPLETE REMOVAL OF PIPING, INCLUDING VALVES, FITTINGS, INSULATION, SUPPORTS, HANGERS, BRACKETS, CONTROLS AND INCIDENTAL ITEMS CONNECTED OR FASTENED TO THE PIPING. PIPING IS DIAGRAMMATIC AND INDICATES THE GENERAL EXTENT OF WORK. NO ATTEMPT IS MADE TO SHOW EVERY ELL, TEE, OFFSET, FITTING AND VALVE. REMOVE PIPING AS INDICATED AND SPECIFIED.
3. WHERE DUCTWORK IS INDICATED TO BE REMOVED, IT SHALL MEAN COMPLETE REMOVAL OF DUCTWORK, INCLUDING FITTINGS, INSULATION, SUPPORTS, BRACKETS, CONTROLS AND INCIDENTAL ITEMS CONNECTED OR FASTENED TO THE DUCTWORK. DUCTWORK IS DIAGRAMMATIC AND INDICATES THE GENERAL EXTENT OF WORK. NO ATTEMPT IS MADE TO SHOW EVERY ELL, TEE, OFFSET AND FITTING. REMOVE DUCTWORK AS INDICATED AND SPECIFIED.
4. REFER TO REFLECTED CEILING PLANS FOR DEMOLITION AND NEW WORK RELATED TO CEILINGS.
5. REFER TO ARCHITECTURAL DRAWINGS FOR REWORKING OF WALLS AND ROOF WHERE REMOVAL OF HVAC EQUIPMENT OCCURS.
6. REFER TO STRUCTURAL DRAWINGS FOR STRUCTURAL WORK REQUIRED FOR INSTALLATION OF ROOF MOUNTED HVAC EQUIPMENT.
7. CONTRACTOR SHALL RECLAIM AND DISPOSE OF ALL REFRIGERANT IN ACCORDANCE WITH ALL STATE AND LOCAL CODES PRIOR TO REMOVING THE EXISTING UNIT.

GENERAL NOTES

1. CONTRACTOR SHALL VISIT JOB SITE TO DETERMINE EXTENT OF WORK INVOLVED PRIOR TO BIDDING THE PROJECT.
2. THE MECHANICAL SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH THE 2018 VIRGINIA UNIFORM STATEWIDE BUILDING CODE.
3. COORDINATE LOCATION OF ALL DUCTWORK, SUPPLY AND RETURN DEVICES, EXHAUST FANS, THERMOSTATS AND OTHER WALL OR CEILING MOUNTED EQUIPMENT WITH REFLECTED PLANS, LIGHT FIXTURES, AND ACCESSORIES INSTALLED BY OTHER TRADES SO AS TO PRESENT A NEAT AND ATTRACTIVE INSTALLATION THROUGHOUT THE BUILDING.
4. COORDINATE ALL OUTSIDE AIR LOUVERS, AIR INTAKES AND RELIEF OUTLETS, SIZE AND LOCATION, WITH ARCHITECTURAL DRAWINGS.
5. ALL PIPING, VALVES, DUCTWORK, ETC., SHALL BE CONCEALED UNLESS OTHERWISE NOTED.
6. PIPING ARRANGEMENTS ARE DIAGRAMMATIC.
7. PIPING PASSING THROUGH WATERPROOF MEMBRANES SHALL BE MADE WATERTIGHT.
8. ARRANGE PIPING AND DUCTWORK PARTICULARLY ABOVE CEILING AS REQUIRED TO CLEAR STRUCTURE, CONDUIT, LIGHTS, ETC., ALLOWING SPACE FOR HANGERS, INSULATION, ETC.
9. SEAL AROUND AND MAKE AIRTIGHT ALL DUCTS AND PIPES PENETRATING INSULATED WALLS.
10. DUCT DIMENSIONS MAY BE MODIFIED AS APPROVED BY ENGINEER.
11. DUCT SIZES SHOWN ARE INSIDE FREE AREA DIMENSIONS.
12. MAINTAIN PROPER CLEARANCES PER ELECTRICAL CODE ON ALL EQUIPMENT. COORDINATE WITH ALL TRADES TO ENSURE CLEARANCES ARE NOT OBSTRUCTED.
13. INSTALL ALL WALL MOUNTED NON-ADJUSTABLE SENSORS AT 5'-0" FROM FINISHED FLOOR TO TOP OF SENSOR. ADJUSTABLE DEVICE SHALL BE INSTALLED 4'-0" ABOVE FINISHED FLOOR.
14. ALL ROUND BRANCH DUCTS TO DIFFUSERS SHALL MATCH NECK SIZES SHOWN ON SCHEDULE, UNLESS OTHERWISE NOTED.
15. ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE SIZED TO HAVE A MINIMUM FREE AREA OF 70% AND MEET PERFORMANCE CRITERIA SCHEDULED.

ABBREVIATIONS

%	PERCENT
ø	DIAMETER
ΔT	CHANGE OF TEMPERATURE
AAV	AUTOMATIC AIR VENT
ACU-X	AIR CONDITIONING UNIT DESIGNATION
AD	ACCESS DOOR
ADS	AIR/DIRT ELIMINATOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU-x	AIR HANDLING UNIT DESIGNATION
AMP	AMPERE
APD	AIR PRESSURE DROP
APPROX	APPROXIMATE
AS	AIR SEPARATOR
ATC	AUTOMATIC TEMPERATURE CONTROLS
AUX	AUXILIARY
B-x	BOILER DESIGNATION
BFP	BACKFLOW PREVENTER
BT	BUFFER TANK
BTU/H	BRITISH THERMAL UNITS PER HOUR
BV	BALANCING VALVE
C-x	CHILLER DESIGNATION
CAP	CAPACITY
CD	CONTROL DAMPER
CF	CHEMICAL FEEDER
CFM	CUBIC FEET PER MINUTE
CLG	COOLING
COP	CLEANOUT PLUG
COP	COEFFICIENT OF PERFORMANCE
COMP	COMPRESSOR
CO	CARBON MONOXIDE
CR	CONDENSER WATER RETURN
CS	CONDENSER WATER SUPPLY
CT-x	COOLING TOWER DESIGNATION
CU-x	CONDENSING UNIT DESIGNATION
CUH-x	CABINET UNIT HEATER DESIGNATION
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
D	CONDENSATE DRAIN
DB	DRY BULB
db	DECIBELS
DDC	DIRECT DIGITAL CONTROL
DHC-x	DUCT HEATING COIL DESIGNATION
DIA	DIAMETER
DN	DOWN
DP	DIFFERENTIAL PRESSURE
DTR	DUAL TEMPERATURE RETURN
DTS	DUAL TEMPERATURE SUPPLY
DX	DIRECT EXPANSION
EA	EACH
EA	ENTERING AIR
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EF-x	EXHAUST FAN DESIGNATION
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EWT	ENTERING WATER TEMPERATURE
°F	DEGREES FAHRENHEIT
FA	FREE AREA
FCU-x	FAN COIL UNIT DESIGNATION
FD	FLOOR DRAIN
FD	FIRE DAMPER
FF-x	FLY FAN DESIGNATION
FLA	FULL LOAD AMPS
FPM	FEET PER MINUTE
FSD	FIRE SMOKE DAMPER
FT	FEET
GPM	GALLONS PER MINUTE
H	HEIGHT
H	HUMIDISTAT
HX-x	HEAT EXCHANGER DESIGNATION
HP	HORSEPOWER
HTG	HEATING
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
IN	INCH/INCHES
IU-x	INDOOR (SPLIT SYSTEM A/C) UNIT DESIGNATION
kA	KILO AMPS
KW	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LF	LINEAR FOOT
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	1000 BRITISH THERMAL UNITS PER HOUR
MCA	MINIMUM CIRCUIT AMPS
MFS	MAXIMUM FUSE SIZE
MIN	MINIMUM
MOCP	MAXIMUM OVER CURRENT PROTECTION
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NO	NUMBER
NO	NORMALLY OPEN
OA	OUTSIDE AIR
OU-x	OUTDOOR (SPLIT SYSTEM A/C) UNIT DESIGNATION
ΔP	PRESSURE DIFFERENTIAL
P-x	PUMP DESIGNATION
PH	PHASE
PSIG	POUNDS PER SQUARE INCH GAUGE
PRESS	PRESSURE
PT	PRESSURE TEST PORT
QTY	QUANTITY
RA	RETURN AIR
RACU-x	ROOFTOP AIR CONDITIONING UNIT DESIGNATION
RD	ROOF DRAIN
RH	RELIEF HOOD
RL	REFRIGERANT LIQUID
RLA	RUN LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
SA	SUPPLY AIR
SCCR	SHORT CIRCUIT CURRENT RATING
SD	SMOKE DETECTOR
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SENS	SENSIBLE
SF	SQUARE FEET
SF-x	SUPPLY FAN DESIGNATION
T	THERMOSTAT OR TEMPERATURE SENSOR
TEMP	TEMPORARY
TYP	TYPICAL
UH-x	UNIT HEATER DESIGNATION
UV	UNIT VENTILATION
V	VOLTS
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
W	WATTS
W	WIDTH
WB	WET BULB
WC	WATER COLUMN
WG	WATER GAUGE
WH	WATER HEATER
WPD	WATER PRESSURE DROP
WSHP	WATER SOURCE HEAT PUMP DESIGNATION

LEGEND

- CD — CONTROL DAMPER
- FD — FIRE DAMPER
- VOLUME DAMPER
- SD — SMOKE DETECTOR LOCATION
- XXX — BALANCE EXISTING AIR TERMINAL TO CFM INDICATED
- A CFM — DIFFUSER, REGISTER, AND GRILLE, CFM AS INDICATED
- H — HUMIDITY SENSOR
- T XX — THERMOSTAT OR TEMPERATURE SENSOR, CONTROLLING UNIT AS INDICATED
- T — THERMOSTAT OR TEMPERATURE SENSOR
- AD — DUCT ACCESS DOOR
- SUPPLY AIR DEVICE WITH FLEXIBLE DUCT
- 90° DUCT ELBOW - TURNED DOWN
- DUCT ELBOW WITH TURNING VANES
- DUCT SECTION - RETURN/EXHAUST
- DUCT SECTION - SUPPLY
- DUCTWORK TURNING DOWN
- 90° DUCT ELBOW - TURNED UP
- RETURN OR EXHAUST AIR DEVICE
- 90° DUCT ELBOW - TURNED UP
- 90° DUCT ELBOW - TURNED DOWN
- SIDEWALL GRILLE OR REGISTER
- TRANSFER DUCT ABOVE CEILING, SIZE AS INDICATED
- TRANSFER GRILLE, SIZE AS INDICATED
- DUCT TRANSITION
- SQUARE TO ROUND DUCT TRANSITION
- ROOF MOUNTED EXHAUST FAN
- CEILING MOUNTED EXHAUST FAN
- SUPPLY AIR DEVICE
- RETURN AIR DEVICE
- SUPPLY AIR DEVICE
- 90° DUCT ELBOW - TURNED DOWN - RETURN
- 90° DUCT ELBOW - TURNED DOWN - SUPPLY
- 90° DUCT ELBOW - TURNED UP - RETURN
- 90° DUCT ELBOW - TURNED UP - SUPPLY
- VFD — VARIABLE FREQUENCY DRIVE PANEL
- ø — ROUND DUCT
- DIRECTION OF AIRFLOW
- POINT OF CONNECTION FOR NEW WORK
- REMOVE EXISTING TO THIS POINT
- D1 — DEMOLITION NOTE
- (X"/X") — EXISTING SIZES AS INDICATED
- 1 — NEW WORK NOTE
- 1 / MXXX — ENLARGED PLAN; NUMBER "1" SEE SHEET MXXX
- A / MXXX — SECTION; LETTER "A" SEE SHEET MXXX
- EXISTING TO REMAIN
- NEW WORK
- EXISTING TO BE REMOVED
- BRAIDED FLEXIBLE CONNECTION
- FLANGE CONNECTION
- INLINE PUMP
- LIFT CHECK VALVE
- PG — PRESSURE GAUGE
- PT — PRESSURE/TEMPERATURE TEST PORT
- STRAINER, Y-TYPE, WITH BLOWDOWN VALVE
- T — THERMOMETER
- THREADED UNION
- DIRECTION OF FLOW IN PIPE
- HEAT TRACE TAPE
- PIPE DOWN
- PIPE TEE DOWN
- PIPE TEE UP
- PIPE UP
- PIPE BELOW GRADE OR HIDDEN
- CWR — CHILLED WATER RETURN PIPING
- CWS — CHILLED WATER SUPPLY PIPING
- CR — CONDENSER WATER RETURN PIPING
- CS — CONDENSER WATER SUPPLY PIPING
- D — DRAIN PIPING
- D — DRAIN PIPING BELOW GRADE (D)
- EXISTING PIPING BELOW OR HIDDEN
- G — GAS PIPING
- EXISTING DOMESTIC WATER PIPING (CW)
- HWR — HOT WATER RETURN PIPING
- HWS — HOT WATER SUPPLY PIPING
- NEW PIPING
- PIPING TO BE REMOVED
- RL — REFRIGERANT LIQUID PIPING
- RS — REFRIGERANT SUCTION PIPING
- DIRECTION OF PITCH FOR PIPING OR DUCTWORK
- PIPE SLEEVE
- PT — AUTOMATIC FLOW CONTROL VALVE
- TWO-WAY CONTROL VALVE
- THREE-WAY CONTROL VALVE
- AAV — AUTOMATIC AIR VENT
- BALL VALVE
- BFP — BACKFLOW PREVENTER
- DP — DIFFERENTIAL PRESSURE SENSOR
- BUTTERFLY VALVE
- BV — BALANCING VALVE
- CHECK VALVE
- GAS PRESSURE REGULATOR
- GAS SHUT-OFF VALVE
- GATE VALVE
- PRESSURE RELIEF AND PRESSURE REDUCING VALVE
- SAFETY RELIEF VALVE
- BV — VENTURI BALANCING VALVE
- FS — VENTURI FLOWSTATION

ASBESTOS DISCLOSURE STATEMENT

AN ASBESTOS INSPECTION WAS PERFORMED AND ASBESTOS-CONTAINING MATERIALS WERE FOUND AS INDICATED IN SECTION 019100 "ASBESTOS INSPECTION REPORTS" INCLUDED IN THE PROJECT SPECIFICATIONS. ABESTOS-CONTAINING MATERIAL FOUND IN AREAS OF NEW CONSTRUCTION SHALL BE REMOVED PRIOR TO ANY OTHER WORK BEING PERFORMED. CONTACT NEWPORT NEWS PUBLIC SCHOOL SYSTEM UPON DISCOVERY OF ADDITIONAL AREAS CONTAINING ASBESTOS MATERIAL. ASBESTOS ABATEMENT SHALL BE HANDLED BY NEWPORT NEWS PUBLIC SCHOOL SYSTEM. PLEASE ALLOW A MINIMUM OF 3 DAYS TO COMPLETE ASBESTOS ABATEMENT.

LEAD PAINT PROVISION

NNPS'S UNDERSTANDING OF LEAD PAINT ISSUES WHICH MAY ARISE DURING THE PROJECT IS THAT PROPERLY TRAINED CONTRACTORS AND SUBCONTRACTORS SHOULD BE ABLE TO SAFELY PERFORM WORK EVEN IF LEAD PAINT MAY BE PRESENT AT SOME LOCATIONS. NNPS WILL PROVIDE TESTING FOR LEAD BASED PAINT USING AN X-RAY FLUORESCENCE (XRF) SPECTRUM ANALYZER. THE CONTRACTOR AND ITS SUB-CONTRACTORS SHALL CONDUCT ANY FURTHER TESTING NECESSARY TO BE IN COMPLIANCE WITH THE OSHA LEAD IN CONSTRUCTION STANDARD CONSISTENT WITH 29 CFR 1926.62. IT IS NOT CURRENTLY ANTICIPATED THAT THE WORK WILL REQUIRE APPLICATION OF THE EPA RENOVATE REPAIR AND PAINT (RRP) RULE FOR PRE-1978 CHILD OCCUPIED FACILITIES. HOWEVER, IF, FOLLOWING COMPLETION OF DESIGN, IT IS DETERMINED THAT THE SCOPE OF WORK AT ANY OF THE SITES WILL RESULT IN APPLICATION OF THE RRP RULE, THE CONTRACTOR AND ITS SUBCONTRACTORS WILL PROMPTLY COMPLY WITH THE REQUIREMENTS OF RRP WHERE SUCH REQUIREMENTS ARE APPLICABLE. NO PROHIBITED WORK PRACTICES, AS DEFINED IN RRP, WILL BE USED WHEN DISTURBING ANY PAINTED SURFACE WITH DETECTABLE LEAD USING AN XRF SPECTRUM ANALYZER AND THE OSHA LEAD IN CONSTRUCTION STANDARD SHALL APPLY. NNPS AND THE CONTRACTOR SHALL AGREE THAT THERE IS NO PRESENT BELIEF THAT THERE WILL BE A NEED TO ABATE LEAD PAINT DURING THE PROJECT. IF LEAD ABATEMENT BECOMES A REQUIREMENT, NNPS AND THE CONTRACTOR SHALL DETERMINE THE APPROPRIATE COURSE OF ACTION WHICH MAY INCLUDE ABATEMENT OR REMOVAL OF AN AREA FROM THE SCOPE OF SERVICES.

CONTRACTOR SHALL PROVIDE TEMPORARY COOLING, AT NO COST TO NEWPORT NEWS PUBLIC SCHOOLS IF PERMANENT COOLING IS NOT RELIABLY OPERATIONAL AFTER AUGUST 15, 2022. PORTABLE COOLING UNITS SHALL BE PROVIDED AS REQUIRED TO MAINTAIN A STABLE 74 DEG. F +/- 2 DEG. F. THROUGHOUT THE BUILDING. CONTRACTOR SHALL ALSO PROVIDE GENERATORS TO POWER THE TEMPORARY COOLING UNITS IF THE BUILDING POWER IS NOT SUFFICIENT.

COMMONWEALTH OF VIRGINIA
KEVIN D. ALLEN
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA

LEGEND, ABBREVIATIONS AND GENERAL NOTES

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
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100% OUTSIDE AIR VENTILATION UNIT SCHEDULE

UNIT NO.	SUPPLY FAN				DX COOLING COIL DATA						NATURAL GAS HEATING PERFORMANCE				HOT GAS REHEAT COIL			ELECTRICAL				UNIT WEIGHT (LBS)	SELECTION BASED ON "GREENHECK"	REMARKS
	CFM	ESP (IN.)	HP	RPM	TOTAL (MBH)	SENS (MBH)	EAT DB(°F)	EAT WB(°F)	LAT DB(°F)	LAT WB(°F)	EAT (°F)	LAT (°F)	INPUT MBH	OUTPUT MBH	MBH	EAT DB(F°)	LAT DB(F°)	V	PH	MCA	MOCP			
DOAS-1	975	1.0	1/2	1488	85.1	44.2	95.0	78.0	53.0	52.8	12.0	88.0	100.0	80.0	37.8	53.0	88.0	460	3	13.5	20.0	1,113	RV-10-7I-C	①②③
DOAS-2	700	1.0	1/2	1337	64.1	32.9	95.0	78.0	51.4	51.1	12.0	91.4	75.0	60.0	29.6	51.4	89.5	460	3	12.9	20.0	1,072	RV-10-5I-B	①②③

REMARKS:
① PROVIDE WITH UNIT MOUNTED VARIABLE FREQUENCY DRIVE FOR SUPPLY FAN.
② HOT GAS REHEAT DISCHARGE TEMPERATURE SHALL BE 72°F (ADJ.).
③ PROVIDE WITH INVERTER SCROLL COMPRESSOR.

EXHAUST FAN SCHEDULE

UNIT NO.	TYPE	ARRANGEMENT	WHEEL	DRIVE	CFM	ESP (IN. WC)	FAN (RPM)	MOTOR DATA			CONTROL METHOD	MAX. SONES	SELECTION BASED ON "GREENHECK"	REMARKS
								HP (W)	V	PH				
EF-1	POWER ROOF VENTILATOR	DOWNBLAST	BACKWARD INCLINED CENTRIFUGAL	DIRECT	250	0.25	1478	1/15	115	1	DDC	4.1	G-070-VG	①②④
EF-2	POWER ROOF VENTILATOR	DOWNBLAST	BACKWARD INCLINED CENTRIFUGAL	DIRECT	200	0.25	1363	1/15	115	1	DDC	3.1	G-070-VG	①②④
EF-3	POWER ROOF VENTILATOR	DOWNBLAST	BACKWARD INCLINED CENTRIFUGAL	DIRECT	400	0.25	1185	1/10	115	1	DDC	4.8	G-090-VG	①②④
EF-4	POWER ROOF VENTILATOR	DOWNBLAST	BACKWARD INCLINED CENTRIFUGAL	DIRECT	1075	0.25	768	1/4	115	1	DDC	5.9	G-140-VG	①②④
EF-5	CEILING CABINET	INLINE	FORWARD CURVED CENTRIFUGAL	DIRECT	85	0.30	950	(17)	115	1	SWITCH	0.7	SP-A110L	①②③⑤
EF-6,9 THRU 14	CEILING CABINET	INLINE	FORWARD CURVED CENTRIFUGAL	DIRECT	85	0.30	950	(8)	115	1	DDC	2.7	SP-B110	①②③
EF-7	CEILING CABINET	INLINE	FORWARD CURVED CENTRIFUGAL	DIRECT	85	0.30	950	(17)	115	1	SWITCH	0.7	SP-A110L	①②③⑤
EF-8	POWER ROOF VENTILATOR	DOWNBLAST	BACKWARD INCLINED CENTRIFUGAL	DIRECT	1250	0.25	837	1/4	115	1	DDC	6.5	G-140-VG	①②④
EF-15	POWER ROOF VENTILATOR	DOWNBLAST	BACKWARD INCLINED CENTRIFUGAL	DIRECT	250	0.25	1478	1/15	115	1	DDC	4.1	G-070-VG	①②④
EF-16	CEILING CABINET	INLINE	FORWARD CURVED CENTRIFUGAL	DIRECT	85	0.30	950	(8)	115	1	DDC	2.7	SP-B110	①②③
EF-17	POWER ROOF VENTILATOR	DOWNBLAST	BACKWARD INCLINED CENTRIFUGAL	DIRECT	570	0.25	1445	1/10	115	1	DDC	6.5	G-090-VG	①②④
EF-18	POWER ROOF VENTILATOR	DOWNBLAST	BACKWARD INCLINED CENTRIFUGAL	DIRECT	625	0.25	1536	1/10	115	1	DDC	7.3	G-090-VG	①②④

REMARKS:
① PROVIDE FACTORY MOUNTED AND WIRED DISCONNECT SWITCH.
② PROVIDE WITH BACKDRAFT DAMPER.
③ PROVIDE FACTORY MOUNTED SOLID STATE SPEED CONTROLLER.
④ PROVIDE WITH EC MOTOR.
⑤ PROVIDE WITH LIGHT GRILL.

SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE

UNIT NO.	INDOOR UNIT							NOMINAL CAPACITY	OUTDOOR UNIT								REMARKS
	CFM	EAT DB (°F)	EAT WB (°F)	SELECTION BASED ON "DAIKIN"	ELECTRICAL FLA	ELECTRICAL V	ELECTRICAL PH	CLG/HTG (MBH)	UNIT NO.	EER (MIN.)	SELECTION BASED ON "DAIKIN"	ELECTRICAL MOCP	ELECTRICAL MCA	ELECTRICAL V	ELECTRICAL PH	OPERATING WEIGHT (LBS)	
HP-A	440	80.0	67.0	FDMQ15RVJU	0.87	208	1	14.4/18.0	CU-A	12.7	RX15RMVJUA	15	9.7	208	1	97	①
HP-B	475	80.0	67.0	FCQ24TAVJU	0.70	208	1	24.0/27.0	CU-B	12.0	RZQ24TAVJUA	20	16.5	208	1	172	①
HP-C	2000	80.0	67.0	ASPT61D14	19.6	208	1	57.3/59.0	CU-C	11.5	DZ14SA0601	60	34.3	208	1	277	①
HP-D	1180	80.0	67.0	ASPT47D14	13.0	208	1	34.8/32.6	CU-D	12.5	DZ14SA0364	20	14.1	208	1	232	①

REMARKS:
① COOLING CAPACITY RATED AT 47°F DB.

PACKAGED ROOFTOP SINGLE ZONE VAV AIR CONDITIONING UNIT SCHEDULE

UNIT NO.	AREA SERVED	SUPPLY FAN DATA						EXHAUST FAN DATA				DX COOLING COIL PERFORMANCE DATA							EER	REFRIGERANT TYPE	HOT GAS REHEAT DATA		NATURAL GAS HEATING PERFORMANCE				ELECTRICAL				UNIT WEIGHT (LBS.)	SELECTION BASED ON "GREENHECK"	REMARKS
		CFM	OA CFM	ESP (IN)	HP	RPM	RAD. SOUND POWER (dBA)	CFM	ESP (IN)	HP	RPM	TOTAL(MBH)	SENS(MBH)	EAT (°F)DB	EAT (°F)WB	LAT (°F)DB	LAT (°F)WB	NO. OF COMPRESSORS			TOTAL (MBH)	LAT(°F) DB	EAT (°F)	LAT (°F)	INPUT MBH	OUTPUT MBH	V	PH	MCA	MOCP			
RTU-1	AUDITORIUM	5900	1500	1.0	5	1579	70	5900	0.5	3	1229	260.3	177.1	80.1	67.0	52.8	52.5	2	11.0	R-410A	136.6	74.2	56.7	94.4	300.0	240.0	460	3	50.6	60	4483	RV-45-20I-J	①②③④⑤⑥⑦⑧⑨⑩⑪
RTU-3	GYMNASIUM	8500	2000	1.0	10	2000	82	8500	0.5	7.5	1754	372.9	245.1	81.2	68.4	55.0	54.6	2	9.8	R-410A	194.6	76.2	57.9	101.5	500.0	400.0	460	3	91.4	110	4789	RV-45-30I-N	①②③④⑤⑥⑦⑧⑨⑩⑪
RTU-4	ART	1625	625	1.0	1	2023	72	-	-	-	-	83.6	52.8	83.3	69.6	53.2	53.2	1	11.0	R-410A	42.4	76.9	48.9	94.5	100.0	80.0	460	3	14.2	20	1121	RV-10-7I-C	①②③⑤⑥⑦⑧⑨⑩⑪⑫
RTU-6	CAFE	2050	2050	1.0	1.5	1413	66	2050	0.5	1	1039	188.8	98.5	95.0	78.0	51.4	51.4	2	10.8	R-410A	68.7	82.5	15.0	87.3	200.0	160.0	460	3	31.1	40	3190	RV-25-15I-G	①②③④⑤⑥⑦⑧⑨⑩⑪
RTU-7	CAFE	2050	2050	1.0	1.5	1413	66	2050	0.5	1	1039	188.8	98.5	95.0	78.0	51.4	51.4	2	10.8	R-410A	68.7	82.5	15.0	87.3	200.0	160.0	460	3	31.1	40	3190	RV-25-15I-G	①②③④⑤⑥⑦⑧⑨⑩⑪

REMARKS:
① ELECTRICAL REQUIREMENTS ARE BASED ON SINGLE POINT POWER CONNECTION. PROVIDE NON-POWERED UNIT MOUNTED GFI RECEPTACLE.
② UNIT WEIGHT DOES NOT INCLUDE ROOF CURB, AND ACOUSTICAL SYSTEM.
③ EXHAUST FAN CFM CALCULATED TO MAINTAIN 0.1CFM/SF POSITIVE PRESSURE.
④ PROVIDE UNIT WITH 0-100% ECONOMIZER CAPABILITIES
⑤ PROVIDE WITH ROOF CURB.
⑥ PROVIDE ISOLATION RAIL SYSTEM IN ACCORDANCE WITH SPECIFICATION 230900 2.08A AND DETAIL ON DRAWING M4.3.
⑦ PROVIDE WITH CONDENSATE OVERFLOW PROTECTION SWITCH
⑧ PROVIDE WITH PHASE FAILURE MONITOR AND BROWN OUT PROTECTION.
⑨ PROVIDE WITH DOOR HOLD OPEN LATCHES ON ALL ACCESS DOORS.
⑩ PROVIDE WITH BIPOLAR IONIZATION AIR PURIFICATION SYSTEM. REFER TO SPECIFICATION 230500 2.9.B FOR REQUIREMENTS.
⑪ PROVIDE WITH 65 kA SCCR.
⑫ PROVIDE WITH BAROMETRIC RELIEF.

PACKAGED ROOFTOP VAV AIR CONDITIONING UNIT SCHEDULE

UNIT NO.	AREA SERVED	SUPPLY FAN DATA						EXHAUST FAN DATA				DX COOLING COIL PERFORMANCE DATA							EER	REFRIGERANT TYPE	NATURAL GAS HEATING PERFORMANCE				ELECTRICAL				UNIT WEIGHT (LBS.)	SELECTION BASED ON "GREENHECK"	REMARKS
		CFM	OA CFM	ESP (IN)	HP	RPM	RAD. SOUND POWER (dBA)	CFM	ESP (IN)	HP	RPM	TOTAL(MBH)	SENS(MBH)	EAT (°F)DB	EAT (°F)WB	LAT (°F)DB	LAT (°F)WB	NO. OF COMPRESSORS			EAT (°F)	LAT (°F)	INPUT MBH	OUTPUT MBH	V	PH	MCA	MOCP			
RTU-2	ADMIN	2000	200	1.75	2	2381	75	-	-	-	-	67.7	52.1	77.0	64.3	52.9	52.8	1	11.0	R-410A	66.0	93.8	75.0	60.0	460	3	15.1	20	1088	RV-10-6I-B	①②③⑤⑥⑦⑧⑨⑩⑪
RTU-5	PEEP/MUSIC	6475	2035	1.5	7.5	1724	78	6475	0.5	5	1342	326.6	204.9	82.0	69.0	53.2	52.9	2	10.1	R-410A	53.1	98.9	400.0	320.0	460	3	80.4	110	4553	RV-45-25I-M	①②③④⑤⑥⑦⑧⑨⑩⑪

REMARKS:
① ELECTRICAL REQUIREMENTS ARE BASED ON SINGLE POINT POWER CONNECTION. PROVIDE NON-POWERED UNIT MOUNTED GFI RECEPTACLE.
② UNIT WEIGHT DOES NOT INCLUDE ROOF CURB, AND ACOUSTICAL SYSTEM.
③ EXHAUST FAN CFM CALCULATED TO MAINTAIN 0.1CFM/SF POSITIVE PRESSURE.
④ PROVIDE UNIT WITH 0-100% ECONOMIZER CAPABILITIES
⑤ PROVIDE WITH ROOF CURB.
⑥ PROVIDE ISOLATION RAIL SYSTEM IN ACCORDANCE WITH SPECIFICATION 230900 2.08A AND DETAIL ON DRAWING M4.3.
⑦ PROVIDE WITH CONDENSATE OVERFLOW PROTECTION SWITCH
⑧ PROVIDE WITH PHASE FAILURE MONITOR AND BROWN OUT PROTECTION.
⑨ PROVIDE WITH DOOR HOLD OPEN LATCHES ON ALL ACCESS DOORS.
⑩ PROVIDE WITH BIPOLAR IONIZATION AIR PURIFICATION SYSTEM. REFER TO SPECIFICATION 230500 2.9.B FOR REQUIREMENTS.
⑪ PROVIDE WITH 65 kA SCCR.

GAS DEMAND

USE	CF/HR
MECHANICAL HEATING	
ROOFTOP UNIT (RTU-1)	300
ROOFTOP UNIT (RTU-2)	75
ROOFTOP UNIT (RTU-3)	500
ROOFTOP UNIT (RTU-4)	100
ROOFTOP UNIT (RTU-5)	400
ROOFTOP UNIT (RTU-6)	200
ROOFTOP UNIT (RTU-7)	200
KITCHEN MAKE UP AIR UNIT (KMAU-1)	2000
DEDICATED OA UNIT (DOAS-1)	100
DEDICATED OA UNIT (DOAS-2)	75
TOTAL	3950

NOTE: SEE SHEET M2.4 FOR LOCATION OF EXISTING GAS METER AND SERVICE.

ELECTRIC UNIT HEATER SCHEDULE

MARK	STYLE	CFM	CAPACITY (MBH)	ELECTRIC HEATING COIL KW	ELECTRIC HEATING COIL V	ELECTRIC HEATING COIL PH	AMPS	SELECTION BASED ON "MARKEL"	REMARKS
UH-A	HORIZONTAL DISCHARGE	400	17.1	5.0	480	3	6.1	P3P5105CA1N	①②③

REMARKS:
① PROVIDE WITH WALL BRACKET AND FITTINGS, MODEL A5100.
② PROVIDE WITH DISCONNECT SWITCH.
③ DDC PROVIDED LOW VOLTAGE THERMOSTAT.

ELECTRIC CABINET UNIT HEATER SCHEDULE

MARK	STYLE	CFM	CAPACITY (MBH)	ELECTRIC HEATING COIL KW	ELECTRIC HEATING COIL V	ELECTRIC HEATING COIL PH	AMPS	SELECTION BASED ON "MARKEL"	REMARKS
CUH-A	HORIZONTAL RECESSED	500	34.1	10	480	3	15.4	6346D104833B30D0F	①②③
CUH-B	HORIZONTAL RECESSED	250	17.1	5.0	480	3	7.8	6333D054833B30D0F	①②③
CUH-C	HORIZONTAL RECESSED	500	34.1	10	480	3	15.4	6346D104833B30D0F	②③④

REMARKS:
① PROVIDE WITH BOTTOM STAMPED INLET AND OUTLET LOUVERS.
② PROVIDE WITH DISCONNECT SWITCH AND FAN SPEED SWITCH.
③ PROVIDE WITH WALL MOUNTED THERMOSTAT BY AUTOMATIC TEMPERATURE CONTROLS CONTRACTOR.
④ PROVIDE WITH BOTTOM STAMPED INLET AND HORIZONTAL DUCT COLLAR CONNECTIONS

COMMONWEALTH OF VIRGINIA
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04-19-2022
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
MECHANICAL SCHEDULES

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: GJA
DRAWN BY: SLS
CHECKED BY: KDA

M0.2

DATE: 04/19/2022

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VERTICAL CLASSROOM UNIT VENTILATOR HEAT PUMP SCHEDULE

MARK	FAN DATA				DX COOLING COIL DATA		HEATING DATA @ 47.0°F				MODULATING HOT GAS REHEAT			ENERGY WHEEL SUPPLY AIR DATA							ENERGY WHEEL RA DATA				ELECTRICAL SERVICE					UNIT WEIGHT (LBS)	SELECTION BASED ON "BARD"	REMARKS
	TOTAL CFM	OA CFM	HP	ESP (IN. WC)	TOTAL MBH	SENS. MBH	EAT (°F) DB	LAT (°F) DB	CAPACITY (MBH)	COP	EAT (°F)	LAT (°F)	CAPACITY (MBH)	COOLING					HEATING		COOLING		HEATING		ELECTRIC HEAT KW	V	PH	MCA	MOCP			
														OA CFM	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	EAT	LAT	EAT DB (°F)	EAT WB (°F)	EAT DB (°F)	EAT WB (°F)								
UV-A	1150	450	1/3	N/A	35.0	27.0	65.7	80.8	32.8	3.7	55.8	75.0	21.8	450	95.0	78.0	78.9	66.9	15.0	65.7	77.0	66.0	68.0	54.1	15.0	460	3	26	30	1261	I36H1DC15RNXXXX	1 2 3 4
UV-B	1300	450	1/2	0.3	41.4	32.1	66.2	83.7	38.5	3.7	56.1	78.0	30.7	450	95.0	78.0	79.4	66.2	15.0	66.0	77.0	66.0	68.0	54.1	15.0	460	3	28	30	1323	I42H1DC15RNXXXX	1 2 3 4

REMARKS:
1. PROVIDE WITH BIPOLAR IONIZATION AIR PURIFICATION SYSTEM MODEL GPS-FC. REFER TO SPECIFICATION 230500 2.9.B FOR REQUIREMENTS. A 24-VOLT STEP DOWN TRANSFORMER SHALL BE PROVIDED BY THE UNIT MANUFACTURER. THE ENGINEERED VENTILATION SYSTEM WILL PREVENT THE MAXIMUM CONCENTRATION OF CONTAMINANTS FROM EXCEEDING THAT OBTAINABLE BY THE RATE OF OUTDOOR AIR VENTILATION DETERMINED IN ACCORDANCE WITH SECTION 403.3 OF ASHRAE STANDARD 62.1 - 2015. THE MECHANICAL CONTRACTOR SHALL WIRE FROM THE UNIT MANUFACTURER - PROVIDED TRANSFORMER TO THE BIPOLAR IONIZATION POWER SUPPLY.
2. INTEGRAL COMPONENTS INCLUDING CONTROL TRANSFORMERS AND DEVICES SHALL BE FACTORY LOCATED CLEAR OF EQUIPMENT PIPING CONNECTIONS.
3. PROVIDE WITH INTEGRAL DISCONNECT SWITCH WITH LOCKED COVER PLATE. MANUFACTURER SHALL PROVIDE 12 KEYS TO OWNER.
4. PROVIDE WITH CONTROL WIRING TERMINAL STRIP. REFER TO CONTROL DIAGRAMS FOR MORE DETAILS.

SHUT OFF VAV BOX SCHEDULE

UNIT NO.	INLET VALVE					ELECTRIC HEATING COIL						SELECTION BASED ON "PRICE"	NC RAD.	NC DISCH.	REMARKS
	MAX. CFM	MIN. CFM	HEATING CFM	SIZE (DIA)	APD (IN.)	EAT (°F)	LAT (°F)	KW	AMPS	VOLTS	PH				
VAV-1-1	640	200	640	7	0.5	55.0	87.1	6.5	10.7	480	3	SDV5	21	28	1 2 3
VAV-1-2	860	200	860	8	0.5	55.0	86.2	8.5	13.9	480	3	SDV5	28	33	1 2 3
VAV-1-3	500	125	500	7	0.5	55.0	89.8	5.5	9.0	480	3	SDV5	23	30	1 2 3
VAV-5-1	675	200	675	7	0.5	55.0	85.4	6.5	10.7	480	3	SDV5	28	31	1 2 3
VAV-5-2	1350	405	1350	10	0.5	55.0	85.4	13.0	21.3	480	3	SDV5	23	29	1 2 3
VAV-5-3	1000	300	1000	8	0.5	55.0	86.6	10.0	16.4	480	3	SDV5	27	31	1 2 3
VAV-5-4	1150	345	1150	9	0.5	55.0	88.0	12.0	19.7	480	3	SDV5	27	31	1 2 3
VAV-5-5	1300	390	1300	9	0.5	55.0	86.6	13.0	21.3	480	3	SDV5	23	29	1 2 3
VAV-5-6	1000	300	1000	8	0.5	55.0	86.6	10.0	16.4	480	3	SDV5	27	31	1 2 3

REMARKS:
1. SHUT OFF BOX INCLUDES 0.35' OF DOWNSTREAM ESP FOR NC RATINGS.
2. PROVIDE WITH 1" FOIL FACED INSULATION.
3. PROVIDE 2 STAGE MERCURY CONTACT WITH PULSE WIDTH MODULATION.

KITCHEN HOOD SUPPLY PLENUM SCHEDULE

UNIT NO.	POS.	MODEL	SIZE (IN.)			INSULATED	DAMPER(S)	TOTAL CFM	COLLARS					
			L	W	H				TYPE	MOUNTING	QTY	W	L	CFM	S.P.
KH-1	FRONT	PSP	186"	16"	6"	NO	NO	2726	MAKE UP AIR	FACTORY	4	12"	28"	681	0.176"
KH-2	FRONT	PSP	186"	16"	6"	NO	NO	2726	MAKE UP AIR	FACTORY	4	12"	28"	681	0.176"

KITCHEN HOOD EXHAUST FAN SCHEDULE

UNIT INFORMATION	FAN INFORMATION					ELECTRICAL			UNIT WEIGHT (LBS)	SELECTION BASED ON "CAPTIVEAIRE"	REMARKS
UNIT NO.	VOLUME (CFM)	ESP (IN.)	FAN RPM	HP	SONES	V	PH	FLA			
KEF-1	6816	1.5	1093	5	25	460	3	6.8	301	DU240HFA	1 2

REMARKS:
1. PROVIDE WITH VARIABLE FREQUENCY DRIVE.
2. PROVIDE WITH HINGED ADAPTER CURB BASE.

KITCHEN HOOD MAKE-UP AIR UNIT SCHEDULE

UNIT NO.	BLOWER MODEL	HOUSING MODEL	CFM	ESP (IN.)	RPM	MOTOR HP	HEAT COIL PERFORMANCE					WEIGHT (LBS)	SELECTION BASED ON "CAPTIVEAIRE"	REMARKS
							INPUT (MBH)	OUTPUT (MBH)	EAT (°F)	LAT (°F)	FUEL SOURCE			
KMAU-1	20MF-2-M0D	A2-D.500	5452	0.4	1914	5	328.8	302.5	20.0	72.0	NATURAL GAS	685	A2-D.500-20D	1 2 3 4 5 6 7 8 9

REMARKS:
1. PROVIDE WITH AC INTERLOCK RELAY - 24VAC COIL.
2. PROVIDE WITH MOTORIZED BACKDRAFT DAMPER.
3. PROVIDE WITH VARIABLE FREQUENCY DRIVE.
4. UNIT WEIGHT DOES NOT INCLUDE ROOF CURB.
5. PROVIDE WITH 14" HIGH ROOF CURB.
6. PROVIDE WITH GAS HEAT.
7. UNIT HEAT DISCHARGE TEMPERATURE SET POINT SHALL BE 70°F (ADJUSTABLE).
8. PROVIDE WITH DYNAMIC OPERATION DEMAND CONTROLLED VENTILATION.
9. PROVIDE WITH SEACOAST CORROSION COATING ON CONDENSER COIL.

KITCHEN HOOD SCHEDULE

UNIT NO.	HOOD DIMENSIONS			HOOD MATERIAL	HOOD TEMP RATING	EXHAUST				TOTAL WEIGHT (LBS)	LIGHTING DETAILS		GREASE FILTRATION				UTILITY CABINET					SELECTION BASED ON "CAPTIVEAIRE"	REMARKS
	LENGTH	WIDTH	HEIGHT			TOTAL CFM	COLLARS				FIXTURE TYPE	QTY	TYPE / MODEL MATERIAL	QTY	SIZE (IN.)		LOCATION	SIZE	FIRE SYSTEM		ELECTRICAL MODEL		
							DIA	CFM	S.P.						L	H			TYPE	SIZE			
KH-1	14'-6"	4'-6"	2'-0"	430 SS WHERE EXPOSED	600 (°F)	3408	14" (2)	1704	0.9"	984	RECESSED ROUND	6	CAPTRATE SOLO STAINLESS STEEL	10	16	16	LEFT	12"x54"x24"	ANSUL R102	3.0	DCV-1111	5424 ND-2-PSP-F	1 2 3 4
KH-2	14'-6"	4'-6"	2'-0"	430 SS WHERE EXPOSED	600 (°F)	3408	14" (2)	1704	0.9"	904	RECESSED ROUND	6	CAPTRATE SOLO STAINLESS STEEL	10	16	16	RIGHT	12"x54"x24"	-	-	-	5424 ND-2-PSP-F	1 2 3 4

REMARKS:
1. BACK INTEGRAL AIR SPACE 3" WIDE.
2. PROVIDE WITH WALL MOUNTED SWITCH.
3. PROVIDE FACTORY MOUNTED EXHAUST COLLARS.
4. PROVIDE WITH HEAT SENSORS AND INTERLOCK WITH EXHAUST FAN VFD.

GRILLE, REGISTER & DIFFUSER SCHEDULE

MARK	NECK SIZE	DESCRIPTION	MATERIAL	FINISH	VOLUME DAMPER	SHAPE	MAXIMUM ΔP	MAXIMUM NC	SELECTION BASED ON "PRICE"	REMARKS
A	6"ø	LOUVERED FACE ADJUSTABLE CEILING DIFFUSER	STEEL	WHITE	NO	SQUARE	0.1"	25	SCDA	1 2
B	8"ø	LOUVERED FACE ADJUSTABLE CEILING DIFFUSER	STEEL	WHITE	NO	SQUARE	0.1"	25	SCDA	1 2
C	10"ø	LOUVERED FACE ADJUSTABLE CEILING DIFFUSER	STEEL	WHITE	NO	SQUARE	0.1"	25	SCDA	1 3
D	12"ø	LOUVERED FACE ADJUSTABLE CEILING DIFFUSER	STEEL	WHITE	NO	SQUARE	0.1"	25	SCDA	1 3
E	12"ø	CONE DIFFUSER	ALUMINUM	WHITE	NO	ROUND	0.02"	18	RCDA	
F	30" x 6"	DRUM DIFFUSER	STEEL	WHITE	YES	RECTANGULAR	0.1"	16	HCD	4
G	8" x 6"	SIDEWALL SUPPLY GRILLE	STEEL	WHITE	YES	RECTANGULAR	0.1"	25	530	
H	18" x 6"	DRUM DIFFUSER	STEEL	WHITE	YES	RECTANGULAR	0.1"	16	HCD	4
V	8" x 6"	SIDEWALL RETURN GRILLE 45° DEFLECTION, 3/4" SPACING	STEEL	WHITE	NO	SQUARE	0.1"	25	530	
W	22" x 22"	CEILING RETURN OR EXHAUST GRILLE 45° DEFLECTION, 3/4" SPACING	STEEL	WHITE	NO	SQUARE	0.1"	25	530	1
X	18" x 18"	CEILING RETURN OR EXHAUST GRILLE 45° DEFLECTION, 3/4" SPACING	STEEL	WHITE	NO	SQUARE	0.1"	25	530	1
Z	8" x 8"	CEILING RETURN OR EXHAUST GRILLE 45° DEFLECTION, 3/4" SPACING	STEEL	WHITE	NO	SQUARE	0.1"	25	530	1

REMARKS:
1. REFER TO ARCHITECT'S REFLECTED CEILING PLAN FOR CEILING TYPES. FOR ACOUSTIC CEILING, PROVIDE WITH 24" x 24" PANEL SUITABLE FOR MOUNTING IN LAY-IN GRID. FOR GYPSUM BOARD CEILING, PROVIDE WITH SMALL FACE AND SURFACE MOUNT FRAME.
2. PROVIDE 3-CONE, 12" x 12" FACE MOUNTED IN 2' x 2' METAL PANEL.
3. PROVIDE 4-CONE, 24" x 24" FACE MOUNTED IN 2' x 2' METAL PANEL.
4. PROVIDE WITH MOUNTING KIT FOR SPIRAL DUCT.

DUCTLESS SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE

MARK	CFM	INDOOR UNIT								CAPACITY		MARK	OUTDOOR UNIT								REMARKS
		EAT		SELECTION BASED ON "MITSUBISHI"	ELECTRICAL					COOLING (MBH)	HEATING (MBH)		EAT		SELECTION BASED ON "MITSUBISHI"	ELECTRICAL				OPERATING WEIGHT (LBS)	
		DB(°F)	WB(°F)		MCA	FLA	V	PH					DB(°F)	WB(°F)		MCA	MOCP	V	PH		
HP-E	320	80.0	67.0	PKA-A12HA7	1.0	0.33	208	1		12.0	18.0	CU-E	95.0	78.0	PUZ-A12NKA7	11	15	208	1	93	1 2 3 4 5 6 7

REMARKS:
1. WALL MOUNTED INDOOR HEAT PUMP UNIT.
2. MOUNT INDOOR UNIT 7'-6" AFF TO BOTTOM OF UNIT.
3. PROVIDE WITH WALL MOUNTED WIRED CONTROLLER.
4. POWER & CONTROL WIRING TO INDOOR UNIT SHALL BE SERVED FROM OUTDOOR UNIT. WIRING BETWEEN UNITS BY DIV 23.
5. CAPACITIES BASED ON 95°F DB / 78°F WB SUMMER, 47°F WINTER AMBIENT CONDITIONS. PROVIDE WITH LOW AMBIENT CONTROLS FOR OPERATIONS DOWN TO 0°F.
6. PROVIDE WITH INTEGRAL CONDENSATE PUMP.
7. PROVIDE INDOOR UNIT WITH 14/3 CONDUCTOR AND 3-POLE DISCONNECT SWITCH BY UNIT MANUFACTURER.

COMMONWEALTH OF VIRGINIA
KEVIN D. ALLEN
Lic. No. 023349
04-19-2022
PROFESSIONAL ENGINEER

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TELEPHONE: (757) 599-4433 PROJECT NUMBER:

HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
MECHANICAL SCHEDULES

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: GJA
DRAWN BY: SLS
CHECKED BY: KDA

M0.3

DATE: 04/19/2022

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RTU-4 VENTILATION CALCULATION

Based on VMC 2018 - 403

	As	sqft	1041
System Population	Ps	people	13.94
Sum of Zone Population	sum of Pz	people	13.94
Occupant Diversity	D		1.00
Uncorrected outdoor air intake	Vou	cfm	292.58
System primary airflow	Vps	cfm	487.50
Average outdoor air fraction	Xs		0.6

Condition Analyzed	Heating
Method to determine Ev	Appendix A
Minimum Evz	0.93
Critical Zone	118 - Art Room
System Ventilation Efficiency	0.93
Outdoor air intake flow required	315
Outdoor air intake flow provided	650

3250 30.0%

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
Zone Number	Zone Name	Occupancy Category	Area	Default Population	Zone Population	People Outdoor Air Rate	Area Outdoor Air Rate	Occupancy Breathing Zone Airflow	Area Breathing Zone Airflow	Breathing Zone Airflow	Zone Air Distribution Effectiveness	Zone Outdoor Airflow	Zone Discharge Airflow	Zone Primary Airflow	Primary Outdoor Air Fraction	Zone Secondary Recirculation Fraction	Zone Primary Air Fraction	Supply Air Fraction	Mixed Air Fraction	Outdoor Air Fraction	Zone Ventilation Efficiency
			Az sqft	Yes/No	Pz people	Rp cfm/person	Ra cfm/sqft	Pz * Rp cfm	Az * Ra cfm	Vbz cfm	Ez	Voz cfm	Vdz cfm	Vpz cfm	Zpz	Er	Ep	Fa	Ep	Fc	Evz
118	Art Room	Art classroom	672	Yes	13.4	10	0.18	134.40	120.96	255.36	0.8	319.20	1260	378	0.84	1.00	0.30	1.00	0.30	1.00	0.93
119	Art Storage	Storage	210	Yes	0.0	0	0.12	0.00	25.20	25.20	0.8	31.50	175	53	0.60	1.00	0.30	1.00	0.30	1.00	1.00
120	Corridor	Corridor	60	Yes	0.0	0	0.06	0.00	3.60	3.60	0.8	4.50	65	20	0.23	1.00	0.30	1.00	0.30	1.00	1.11
121	Art Office	Office	99	Yes	0.5	5	0.06	2.48	5.94	8.42	0.8	10.52	125	38	0.28	1.00	0.30	1.00	0.30	1.00	1.10

SINGLE ZONE VENTILATION CALCULATION

Based on VMC 2018 - 403

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
System Number	System Name	Condition Analyzed	Occupancy Category	Area	Default Population	Zone Population	People Outdoor Air Rate	Area Outdoor Air Rate	Occupancy Breathing Zone Airflow	Area Breathing Zone Airflow	Breathing Zone Airflow	Zone Air Distribution Effectiveness	Zone Outdoor Airflow	Outdoor Air Intake Flow Provided
				Az sqft	Yes/No	Pz people	Rp cfm/person	Ra cfm/sqft	Pz * Rp cfm	Az * Ra cfm	Vbz cfm	Ez	Voz cfm	cfm
RTU-1	AUDITORIUM	Heating	Multi-purpose assembly	3969	No	175.00	5	0.06	875.00	238.14	1113.14	0.8	1391.43	1500
RTU-3	GYMNASIUM	Heating	Gym	4853	Yes	0.00	0	0.3	0.00	1455.90	1455.90	0.8	1819.88	2000
RTU-6 & 7	CAFETERIA	Heating	Cafeteria	2799.68	No	150.00	7.5	0.18	1125.00	503.94	1628.94	0.8	2036.18	2050

RTU-5 VENTILATION CALCULATION

Based on VMC 2018 - 403

	As	sqft	5359
System Population	Ps	people	81.14
Sum of Zone Population	sum of Pz	people	81.14
Occupant Diversity	D		1.00
Uncorrected outdoor air intake	Vou	cfm	1218.16
System primary airflow	Vps	cfm	1923.27
Average outdoor air fraction	Xs		0.63

Condition Analyzed	Heating
Method to determine Ev	Appendix A
Minimum Evz	0.65
Critical Zone	105 - Corridor
System Ventilation Efficiency	0.65
Outdoor air intake flow required	1862
Outdoor air intake flow provided	2035

6100 30.0%

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
Zone Number	Zone Name	Occupancy Category	Area	Default Population	Zone Population	People Outdoor Air Rate	Area Outdoor Air Rate	Occupancy Breathing Zone Airflow	Area Breathing Zone Airflow	Breathing Zone Airflow	Zone Air Distribution Effectiveness	Zone Outdoor Airflow	Zone Discharge Airflow	Zone Primary Airflow	Primary Outdoor Air Fraction	Zone Secondary Recirculation Fraction	Zone Primary Air Fraction	Supply Air Fraction	Mixed Air Fraction	Outdoor Air Fraction	Zone Ventilation Efficiency
			Az sqft	Yes/No	Pz people	Rp cfm/person	Ra cfm/sqft	Pz * Rp cfm	Az * Ra cfm	Vbz cfm	Ez	Voz cfm	Vdz cfm	Vpz cfm	Zpz	Er	Ep	Fa	Ep	Fc	Evz
101	Gym storage	Storage	139	Yes	0.0	0	0.12	0.00	16.68	16.68	0.8	20.85	125	38	0.55	1.00	0.30	1.00	0.30	1.00	1.02
104	Gym storage	Storage	139	Yes	0.0	0	0.12	0.00	16.68	16.68	0.8	20.85	125	38	0.55	1.00	0.30	1.00	0.30	1.00	1.02
105	Corridor	Corridor	901	Yes	0.0	0	0.06	0.00	54.06	54.06	0.8	67.58	125	40	1.70	1.00	0.32	1.00	0.31	1.00	0.65
106	PEEP	Classroom 9+	1404	No	26.0	10	0.12	260.00	168.48	428.48	0.8	535.60	2000	600	0.89	1.00	0.30	1.00	0.30	1.00	0.92
107	Corridor	Corridor	374	Yes	0.0	0	0.06	0.00	22.44	22.44	0.8	28.05	350	105	0.27	1.00	0.30	1.00	0.30	1.00	1.11
109	Office	Office	77	Yes	0.4	5	0.06	1.93	4.62	6.55	0.8	8.18	100	30	0.27	2.00	0.30	1.70	0.30	1.14	1.06
110	Office	Office	77	Yes	0.4	5	0.06	1.93	4.62	6.55	0.8	8.18	100	30	0.27	3.00	0.30	2.40	0.30	1.28	1.04
111	Office	Office	77	Yes	0.4	5	0.06	1.93	4.62	6.55	0.8	8.18	100	30	0.27	4.00	0.30	3.10	0.30	1.42	1.02
112	Office	Office	77	Yes	0.4	5	0.06	1.93	4.62	6.55	0.8	8.18	100	30	0.27	5.00	0.30	3.80	0.30	1.56	1.02
113	Office	Office	160	Yes	0.8	5	0.06	4.00	9.60	13.60	0.8	17.00	150	45	0.38	6.00	0.30	4.50	0.30	1.70	1.00
114	Office	Office	160	Yes	0.8	5	0.06	4.00	9.60	13.60	0.8	17.00	175	53	0.32	7.00	0.30	5.20	0.30	1.84	1.00
115	Corridor	Corridor	403	Yes	0.0	0	0.06	0.00	24.18	24.18	0.8	30.23	350	105	0.29	8.00	0.30	5.90	0.30	1.98	1.00
116	Music Classroom	Music room	853	No	26.0	10	0.06	260.00	51.18	311.18	0.8	388.98	1300	390	1.00	9.00	0.30	6.60	0.30	2.12	0.93
117	Music Classroom	Music room	518	No	26.0	10	0.06	260.00	31.08	291.08	0.8	363.85	1000	390	0.93	10.00	0.39	6.49	0.39	2.09	0.92

COMMONWEALTH OF VIRGINIA
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS
VIRGINIA
VENTILATION CALCULATIONS

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	GJA
DRAWN BY:	SLS
CHECKED BY:	KDA

M0.4

DATE: 04/19/2022

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SINGLE ZONE VENTILATION CALCULATION

Based on VMC 2015 - 403

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
System Number	System Name	Condition Analyzed	Occupancy Category	Area	Default Population	Zone Population	People Outdoor Air Rate	Area Outdoor Air Rate	Occupancy Breathing Zone Airflow	Area Breathing Zone Airflow	Breathing Zone Airflow	Zone Air Distribution Effectiveness	Zone Outdoor Airflow	Outdoor Air Intake Flow Provided
				Az sqft	Yes/No	Pz people	Rp cfm/person	Ra cfm/sqft	Pz * Rp cfm	Az * Ra cfm	Vbz cfm	Ez	Voz cfm	cfm
UV-A	Classroom	Heating	Classroom 5-8	1058.45	No	25.00	10	0.12	250.00	127.01	377.01	1	377.01	450

	As	sqft	1485.14
System Population	Ps	people	10.43
Sum of Zone Population	sum of Pz	people	10.43
Occupant Diversity	D		1.00
Uncorrected outdoor air intake	Vou	cfm	147.54
System primary airflow	Vps	cfm	508.50
Average outdoor air fraction	Xs		0.29

Condition Analyzed	Heating
Method to determine Ev	Appendix A
Minimum Evz	0.86
Critical Zone	105 - Clinic Sick Room
System Ventilation Efficiency	0.86
Outdoor air intake flow required	172
Outdoor air intake flow provided	200

1695 30.0%

RTU-2 VENTILATION CALCULATION

Based on VMC 2018 - 403

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
Zone Number	Zone Name	Occupancy Category	Area	Default Population	Zone Population	People Outdoor Air Rate	Area Outdoor Air Rate	Occupancy Breathing Zone Airflow	Area Breathing Zone Airflow	Breathing Zone Airflow	Zone Air Distribution Effectiveness	Zone Outdoor Airflow	Zone Discharge Airflow	Zone Primary Airflow	Primary Outdoor Air Fraction	Zone Secondary Recirculation Fraction	Zone Primary Air Fraction	Supply Air Fraction	Mixed Air Fraction	Outdoor Air Fraction	Zone Ventilation Efficiency
			Az sqft	Yes/No	Pz people	Rp cfm/person	Ra cfm/sqft	Pz * Rp cfm	Az * Ra cfm	Vbz cfm	Ez	Voz cfm	Vdz cfm	Vpz cfm	Zpz	Er	Ep	Fa	Ep	Fc	Evz
101	Princ Office	Office	260	Yes	1.3	5	0.06	6.50	15.60	22.10	0.8	27.63	490	147	0.19	1.00	0.30	1.00	0.30	1.00	1.03
102	Print Room	Storage	105	Yes	0.0	0	0.12	0.00	12.60	12.60	0.8	15.75	150	45	0.35	1.00	0.30	1.00	0.30	1.00	0.98
103	Admin Office	Office	728.74	Yes	3.6	5	0.06	18.22	43.72	61.94	0.8	77.43	575	173	0.45	1.00	0.30	1.00	0.30	1.00	0.95
104	Clinic	Office	250.4	Yes	1.3	5	0.06	6.26	15.02	21.28	0.8	26.61	310	93	0.29	1.00	0.30	1.00	0.30	1.00	1.00
105	Clinic Sick Room	Day room	74	Yes	2.2	5	0.06	11.10	4.44	15.54	0.8	19.43	85	26	0.76	1.00	0.30	1.00	0.30	1.00	0.86
106	Clinic Sick Room	Day room	67	Yes	2.0	5	0.06	10.05	4.02	14.07	0.8	17.59	85	26	0.69	2.00	0.30	1.70	0.30	1.14	0.91

COMMONWEALTH OF VIRGINIA
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS
VIRGINIA
VENTILATION CALCULATIONS

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: GJA
DRAWN BY: SLS
CHECKED BY: KDA

M0.5

DATE: 04/19/2022

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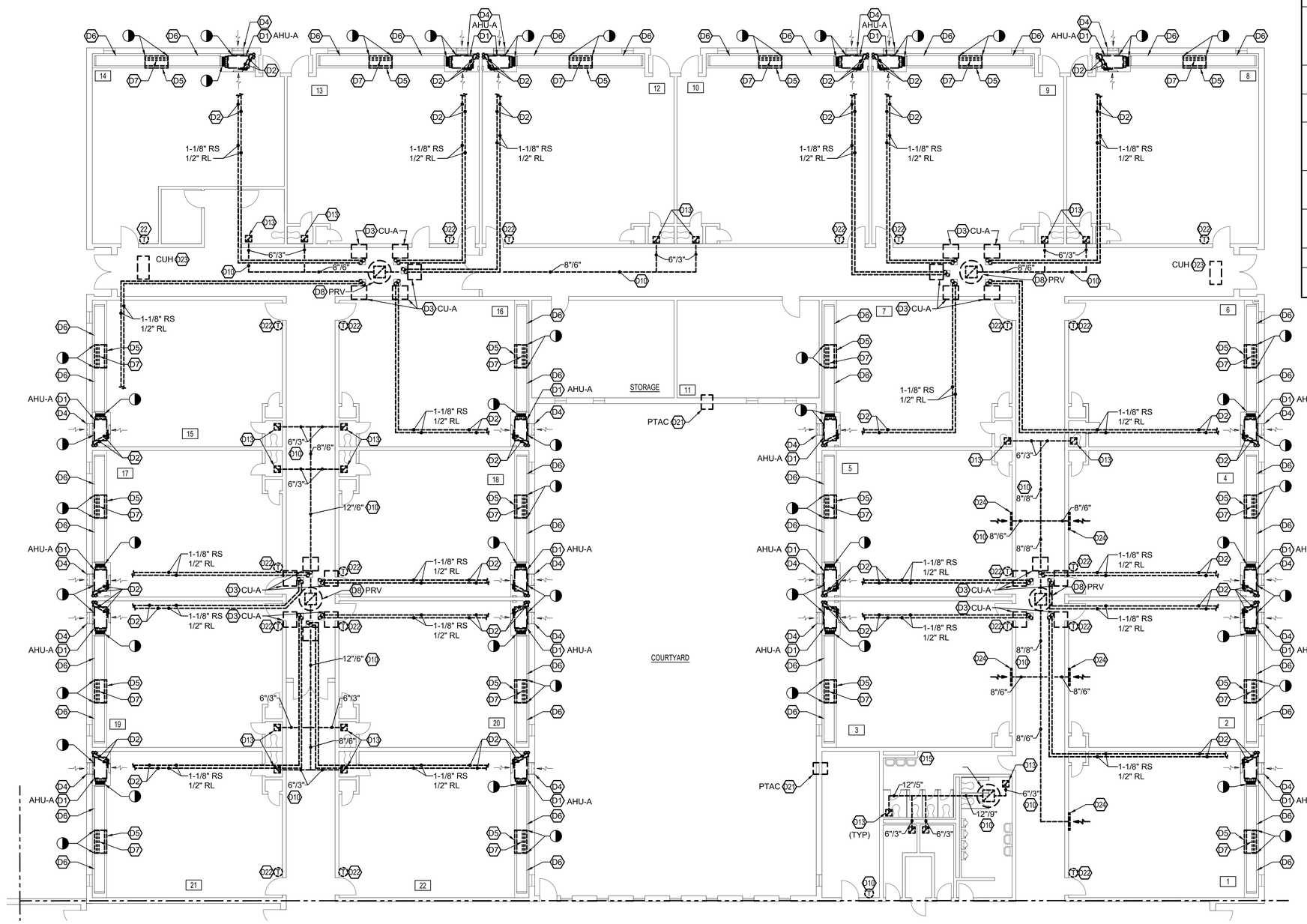
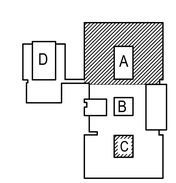
DEMOLITION NOTES ⬡	
NO.	DESCRIPTION
D1	REMOVE SPLIT SYSTEM AIR HANDLING UNIT.
D2	REMOVE REFRIGERANT PIPING FROM AIR HANDLING UNIT TO CONDENSING UNIT ON ROOF. SEAL PENETRATION THROUGH ROOF WATERTIGHT.
D3	REMOVE CONDENSING UNIT ON ROOF COMPLETE, INCLUDING ALL ASSOCIATED WIRING CONTROLS AND SUPPORTS.
D4	EXTERIOR LOUVER TO REMAIN, REMOVE OUTSIDE AIR DUCTWORK COMPLETE. SEAL OPENING WATERTIGHT DURING CONSTRUCTION, REFER TO NEW WORK SHEETS FOR ADDITIONAL INFORMATION.
D5	REMOVE CASEWORK AND CONCEALED DUCTWORK TO EXTENTS SHOWN. COORDINATE WIDTH OF REMOVED CASEWORK WITH NEW MECHANICAL UNITS. REFER TO NEW WORK SHEETS FOR ADDITIONAL INFORMATION.
D6	CONCEALED DUCTWORK TO REMAIN. CAP ABANDONED OPEN END OF DUCTWORK.
D7	CUT AND REMOVE EXISTING DIFFUSER WHERE CASEWORK IS REMOVED.
D8	REMOVE PRESSURE RELIEF FAN ON ROOF COMPLETELY, INCLUDING ALL ASSOCIATED DUCTWORK, WIRING AND CONTROLS. EXISTING ROOF CURB TO REMAIN. CLOSE ROOF OPENING WATERTIGHT DURING CONSTRUCTION.
D10	REMOVE DUCTWORK TO EXTENT SHOWN. REMOVE ALL ASSOCIATED SUPPORTS.
D13	REMOVE RETURN/EXHAUST GRILLE AND ASSOCIATED DUCTWORK COMPLETE.
D15	REMOVE EXHAUST FAN ON ROOF COMPLETE INCLUDING ALL ASSOCIATED CONTROLS AND WIRING. ROOF CURB TO REMAIN, CLOSE OPENING WEATHER TIGHT DURING CONSTRUCTION.
D21	REMOVE PTAC COMPLETE, REFER TO ARCHITECTURAL DETAILS FOR WINDOW OR EXTERIOR WALL REPAIR REQUIRED.
D22	REMOVE EXISTING THERMOSTAT, INCLUDING ALL WIRING FROM SOURCE TO TERMINATION. DO NOT LEAVE WIRING ABANDONED IN PLENUM.
D23	REMOVE CABINET UNIT HEATER COMPLETE..
D24	REMOVE SIDEWALL GRILLE, INFILL OPENING WITH CMU BLOCK. PATCH TO MATCH EXISTING CONSTRUCTION.



PARTIAL FLOOR PLAN - AREA 'A' - MECHANICAL - DEMOLITION
SCALE: 1/8" = 1'-0"



KEY PLAN
NOT TO SCALE

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COMMONWEALTH OF VIRGINIA
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA

PARTIAL FLOOR PLAN - AREA 'A' - MECHANICAL - DEMOLITION

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	GJA
DRAWN BY:	SLS
CHECKED BY:	KDA

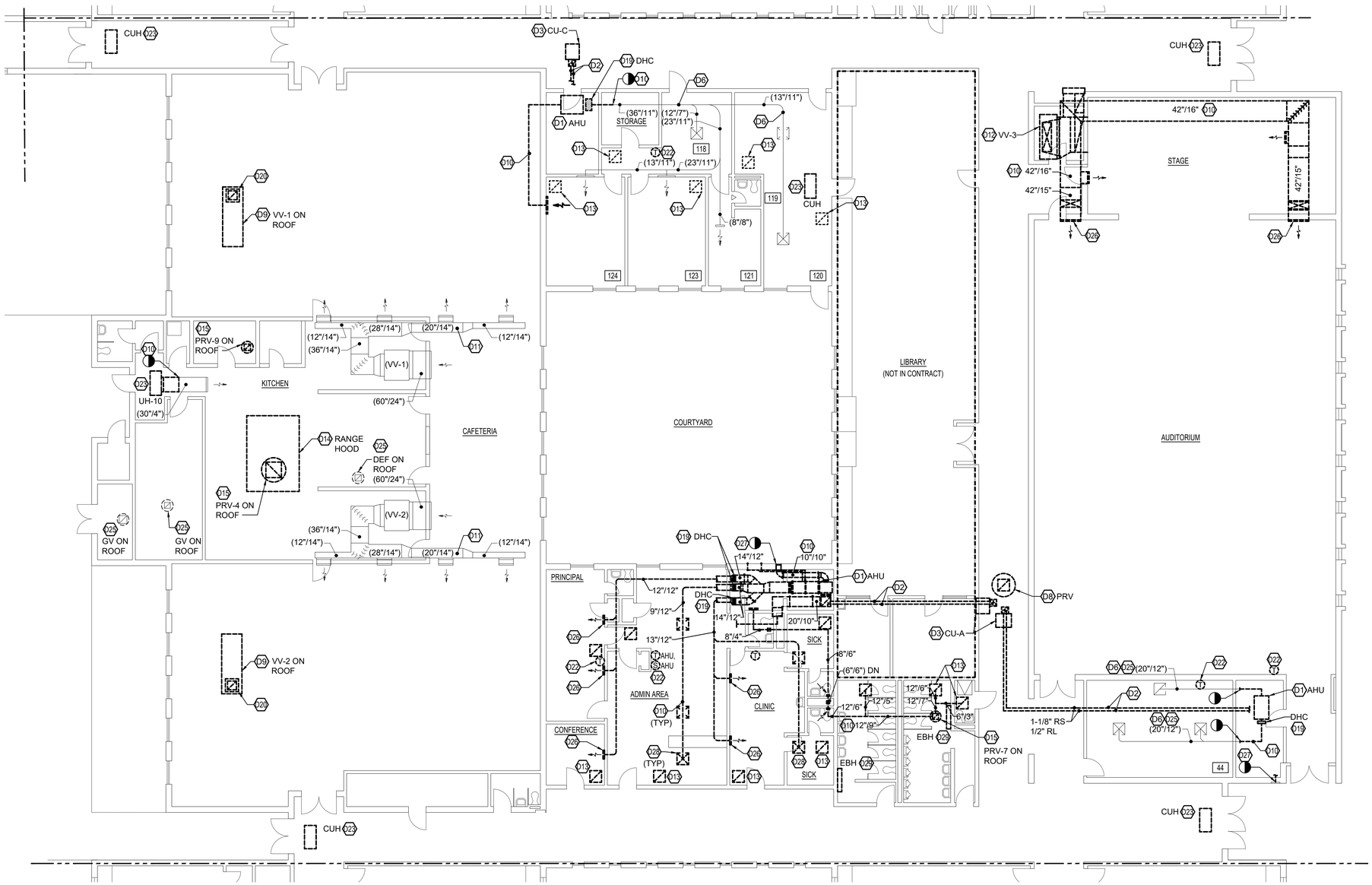
MD1.1

DATE: 04/19/2022

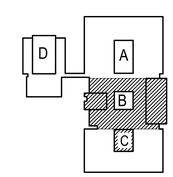
DEMOLITION NOTES	
NO.	DESCRIPTION
D1	REMOVE SPLIT SYSTEM AIR HANDLING UNIT.
D2	REMOVE REFRIGERANT PIPING FROM AIR HANDLING UNIT TO CONDENSING UNIT ON ROOF. SEAL PENETRATION THROUGH ROOF WATERTIGHT.
D3	REMOVE CONDENSING UNIT ON ROOF COMPLETE, INCLUDING ALL ASSOCIATED WIRING CONTROLS AND SUPPORTS.
D6	CONCEALED DUCTWORK TO REMAIN. CAP ABANDONED OPEN END OF DUCTWORK.
D8	REMOVE PRESSURE RELIEF FAN ON ROOF COMPLETELY, INCLUDING ALL ASSOCIATED DUCTWORK, WIRING AND CONTROLS. EXISTING ROOF CURB TO REMAIN. CLOSE ROOF OPENING WATERTIGHT DURING CONSTRUCTION.
D9	REMOVE VOLUME VENTILATOR ON ROOF COMPLETE, INCLUDING CONTROLS, ACCESSORIES AND WIRING. ROOF CURB TO REMAIN.
D10	REMOVE DUCTWORK TO EXTENT SHOWN. REMOVE ALL ASSOCIATED SUPPORTS.

DEMOLITION NOTES	
NO.	DESCRIPTION
D11	EXISTING DUCTWORK TO REMAIN. THOROUGHLY CLEAN ALL EXISTING DUCTWORK IN ACCORDANCE WITH THE SPECIFICATIONS.
D12	REMOVE HORIZONTAL CONCEALED VOLUME VENTILATOR COMPLETE, INCLUDING CONTROLS, ACCESSORIES, WIRING, AND SUPPORTS.
D13	REMOVE RETURN GRILLE AND ASSOCIATED DUCTWORK COMPLETE.
D14	REMOVE KITCHEN HOOD COMPLETE, INCLUDING ALL ASSOCIATED CONTROLS, ANSUL FIRE SUPPRESSION SYSTEM, ASSOCIATED TANK, SUPPORTS AND WIRING.
D15	REMOVE EXHAUST FAN ON ROOF COMPLETE INCLUDING ALL ASSOCIATED CONTROLS AND WIRING. ROOF CURB TO REMAIN. CLOSE OPENING WEATHER TIGHT DURING CONSTRUCTION.

DEMOLITION NOTES	
NO.	DESCRIPTION
D19	REMOVE DUCT HEATING COIL COMPLETE, INCLUDING ALL ASSOCIATED WIRING AND SUPPORTS.
D20	REMOVE CONCENTRIC DIFFUSER AND ALL ASSOCIATED DUCTWORK
D22	REMOVE EXISTING THERMOSTAT, INCLUDING ALL WIRING FROM SOURCE TO TERMINATION. DO NOT LEAVE WIRING ABANDONED IN PLENUM.
D23	REMOVE CABINET UNIT HEATER COMPLETE.
D25	EXISTING TO REMAIN.
D26	REMOVE SIDEWALL REGISTER. ENLARGE OPENING FOR NEW PENETRATION, COORDINATE WITH NEW WORK PLANS.
D28	REMOVE DIFFUSER COMPLETE.
D29	REMOVE ELECTRICAL BASEBOARD HEATER COMPLETE, PAINT, PATCH AND REPAIR WALL AND FLOOR TO MATCH EXISTING CONSTRUCTION.



PARTIAL FLOOR PLAN - AREA 'B' - MECHANICAL - DEMOLITION
SCALE: 1/8" = 1'-0"



KEY PLAN
NOT TO SCALE

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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
PARTIAL FLOOR PLAN - AREA 'B' - MECHANICAL - DEMOLITION

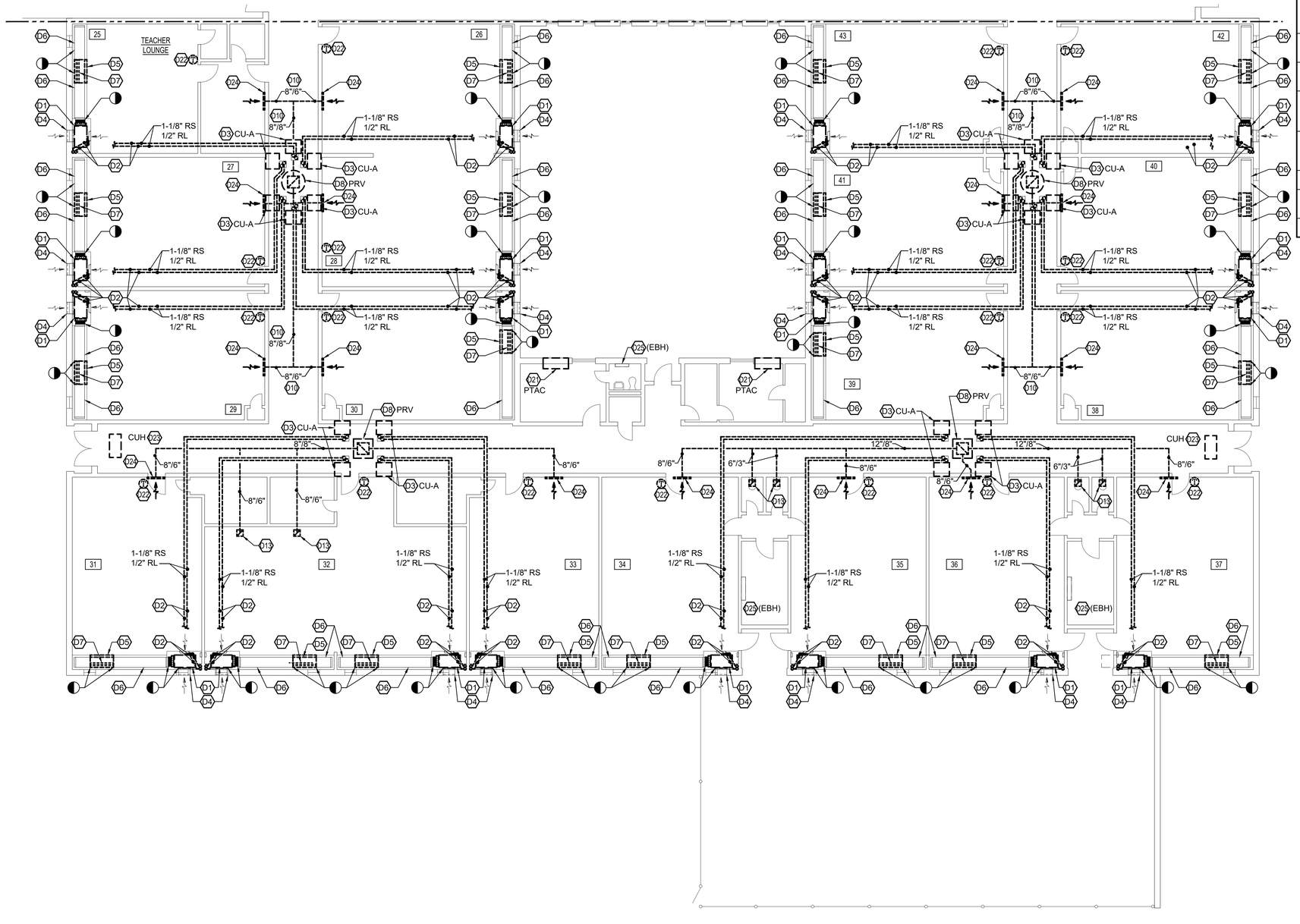
REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	GJA
DRAWN BY:	SLS
CHECKED BY:	KDA

MD1.2

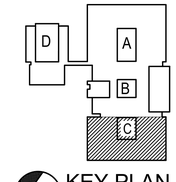
DATE: 04/19/2022



PARTIAL FLOOR PLAN - AREA 'C' - MECHANICAL - DEMOLITION

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

DEMOLITION NOTES	
NO.	DESCRIPTION
D1	REMOVE SPLIT SYSTEM AIR HANDLING UNIT.
D2	REMOVE REFRIGERANT PIPING FROM AIR HANDLING UNIT TO CONDENSING UNIT ON ROOF. SEAL PENETRATION THROUGH ROOF WATERTIGHT.
D3	REMOVE CONDENSING UNIT ON ROOF COMPLETE, INCLUDING ALL ASSOCIATED WIRING CONTROLS AND SUPPORTS.
D4	EXTERIOR LOUVER TO REMAIN, REMOVE OUTSIDE AIR DUCTWORK COMPLETE. SEAL OPENING WATERTIGHT DURING CONSTRUCTION, REFER TO NEW WORK SHEETS FOR ADDITIONAL INFORMATION.
D5	REMOVE CASEWORK AND CONCEALED DUCTWORK TO EXTENTS SHOWN. COORDINATE WIDTH OF REMOVED CASEWORK WITH NEW MECHANICAL UNITS. REFER TO NEW WORK SHEETS FOR ADDITIONAL INFORMATION.
D6	CONCEALED DUCTWORK TO REMAIN. CAP ABANDONED OPEN END OF DUCTWORK.
D7	CUT AND REMOVE EXISTING DIFFUSER WHERE CASEWORK IS REMOVED.
D8	REMOVE PRESSURE RELIEF FAN ON ROOF COMPLETELY, INCLUDING ALL ASSOCIATED DUCTWORK, WIRING AND CONTROLS. EXISTING ROOF CURB TO REMAIN. CLOSE ROOF OPENING WATERTIGHT DURING CONSTRUCTION.
D10	REMOVE DUCTWORK TO EXTENT SHOWN. REMOVE ALL ASSOCIATED SUPPORTS.
D13	REMOVE RETURN/EXHAUST GRILLE AND ASSOCIATED DUCTWORK COMPLETE.
D21	REMOVE PTAC COMPLETE, REFER TO ARCHITECTURAL DETAILS FOR WINDOW OR EXTERIOR WALL REPAIR REQUIRED.
D22	REMOVE EXISTING THERMOSTAT, INCLUDING ALL WIRING FROM SOURCE TO TERMINATION. DO NOT LEAVE WIRING ABANDONED IN PLENUM.
D23	REMOVE CABINET UNIT HEATER COMPLETE.
D24	REMOVE SIDEWALL GRILLE, INFILL OPENING WITH CMU BLOCK. PATCH TO MATCH EXISTING CONSTRUCTION.
D25	EXISTING TO REMAIN.



KEY PLAN
NOT TO SCALE

COMMONWEALTH OF VIRGINIA
KEVIN D. ALLEN
Lic. No. 023349
04-19-2022
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
PARTIAL FLOOR PLAN - AREA 'C' - MECHANICAL - DEMOLITION

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	GJA
DRAWN BY:	SLS
CHECKED BY:	KDA

MD1.3

DATE: 04/19/2022

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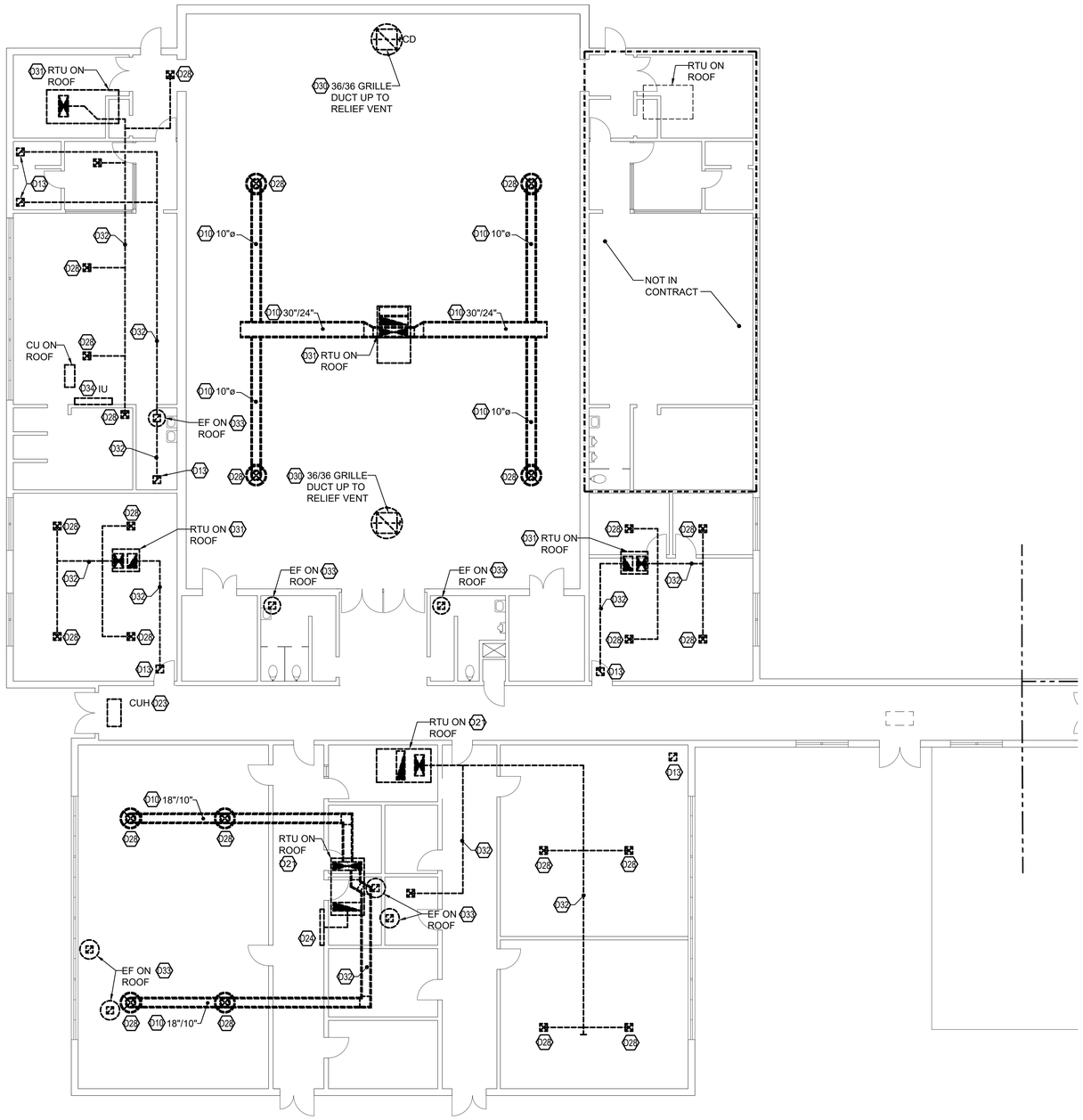
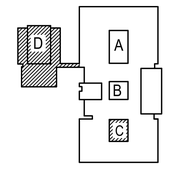


PARTIAL FLOOR PLAN - AREA 'D' - MECHANICAL - DEMOLITION

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

DEMOLITION NOTES ⬡	
NO.	DESCRIPTION
D10	REMOVE DUCTWORK TO EXTENT SHOWN. REMOVE ALL ASSOCIATED SUPPORTS.
D13	REMOVE RETURN/EXHAUST GRILLE AND ASSOCIATED DUCTWORK COMPLETE.
D21	REMOVE ROOFTOP AIR CONDITIONING UNIT COMPLETE INCLUDING ALL ASSOCIATED CONTROLS, AND CONDENSATE DRAIN PIPING AND ASSOCIATED SUPPORTS. ROOF CURB TO REMAIN.
D23	REMOVE CABINET UNIT HEATER COMPLETE.
D24	REMOVE SIDEWALL GRILLE, INFILL OPENING WITH CMU BLOCK. PATCH TO MATCH EXISTING CONSTRUCTION.
D28	REMOVE DIFFUSER COMPLETE.
D30	REMOVE RELIEF VENT ON ROOF, INCLUDING CONTROL DAMPER AND ALL ASSOCIATED WIRING. ROOF CURB TO REMAIN. CAP EXISTING ROOF CURB WEATHER TIGHT.
D31	REMOVE PACKAGED ROOFTOP UNIT COMPLETE, INCLUDING CONTROLS, ACCESSORIES, WIRING, AND ROOF CURB.
D32	CONTRACTOR SHALL FIELD VERIFY AND REMOVE ALL DUCTWORK ABOVE CEILING.
D33	REMOVE EXHAUST FAN ON ROOF COMPLETE INCLUDING ALL ASSOCIATED CONTROLS AND WIRING. ROOF CURB TO REMAIN. CAP EXISTING ROOF CURB WEATHER TIGHT.
D34	REMOVE DUCTLESS SPLIT SYSTEM INCLUDING INDOOR UNIT, CONDENSING UNIT ON ROOF, CONTROLS, WIRING, REFRIGERANT PIPING AND CONDENSATE PUMP.
D35	EXISTING ROOFTOP UNIT TO REMAIN. CONTROLS CONTRACTOR SHALL INTEGRATE EXISTING UNIT WITH NEW DDC SYSTEM.



KEY PLAN
NOT TO SCALE

COMMONWEALTH OF VIRGINIA
KEVIN D. ALLEN
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04-19-2022
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS
VIRGINIA
PARTIAL FLOOR PLAN - AREA 'D' - MECHANICAL - DEMOLITION

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	GJA
DRAWN BY:	SLS
CHECKED BY:	KDA

MD1.4

DATE: 04/19/2022

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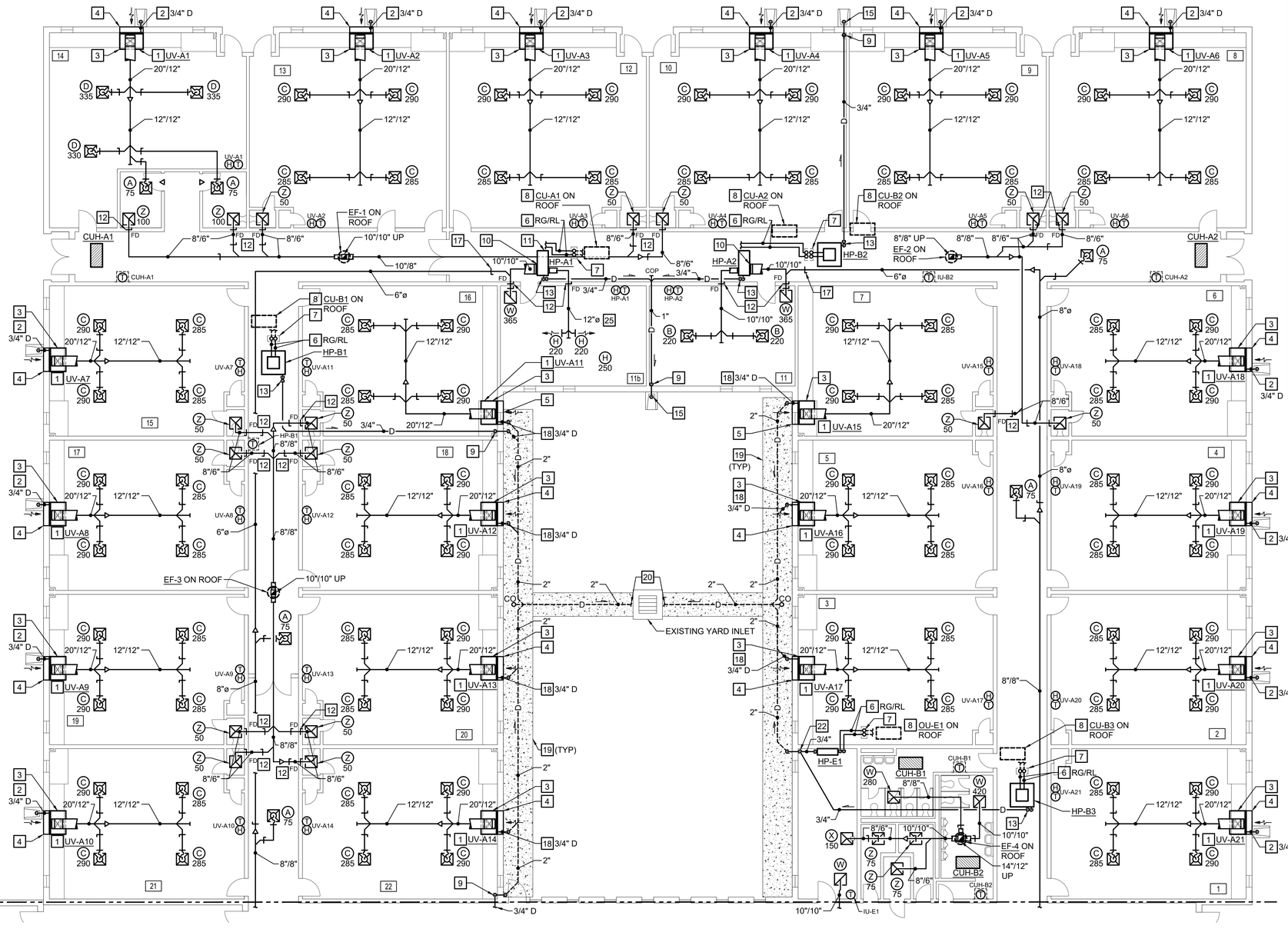
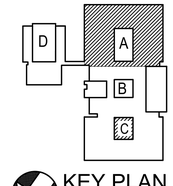


PARTIAL FLOOR PLAN - AREA 'A' - MECHANICAL - NEW WORK

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

NEW WORK NOTES ☐	
NO.	DESCRIPTION
1	PROVIDE VERTICAL AIR COOLED UNIT VENTILATOR HEAT PUMP.
2	ROUTE CONDENSATE DRAIN THROUGH EXTERIOR WALL, TERMINAL WITH 90 DEGREE ELBOW. DISCHARGE ON SPLASH BLOCK.
3	REFER THE ARCHITECTURAL DRAWING FOR CASEWORK MODIFICATIONS ADJACENT TO NEW MECHANICAL UNIT.
4	PROVIDE NEW EXTERIOR WALL PENETRATION. REFER TO ARCHITECTURAL DRAWINGS FOR COORDINATION.
5	INSTALL LOUVER WHERE EXTERIOR WINDOW IS REMOVED. ENLARGE OPENING FOR NEW PENETRATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR COORDINATION.
6	SIZE REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7	REFRIGERANT PIPING UP TO ROOF. REFER TO "PIPE PENETRATION THROUGH ROOF DETAIL" ON SHEET M3.1.
8	CONDENSING UNIT INSTALLED ON NEW EQUIPMENT RAILS, REFER TO CONDENSING UNIT MOUNTING DETAIL ON SHEET M3.2.
9	PROVIDE "VULCAN" PIPE CHASE OVER CONDENSATE PIPING FROM CEILING TO TOP OF CASEWORK. CONCEAL CONDENSATE PIPING WITHIN CASEWORK.
10	MAINTAIN CLEAR ACCESS IN FRONT OF FILTER RACK AND ACCESS PANELS, DUCTWORK AND SUPPORT SHALL NOT INTERFERE WITH ACCESS.
11	REFER TO "HORIZONTAL SPLIT SYSTEM HEAT PUMP(DUCTED RETURN) INSTALLATION DETAIL" ON SHEET M3.1.
12	INSTALL 2-HR FIRE DAMPER AT RATED PENETRATION. PROTECT ALL PENETRATION THROUGH CORRIDOR WALL WITH UL LISTED FIRESTOP.
13	REFER TO "COIL CONDENSATE TRAP" DETAILS ON DRAWING M3.1.
15	PENETRATE EXTERIOR WALL 18" AFG. TERMINAL WITH 90 DEGREE ELBOW. DISCHARGE ON SPLASH BLOCK.
17	BALANCE VOLUME DAMPER TO 75 CFM.
18	ROUTE CONDENSATE DRAIN THROUGH EXTERIOR WALL, TRANSITION COPPER PIPING BELOW GRADE. ROUTE PIPING TO EXISTING YARD INLET.
19	SAWCUT EXISTING CONCRETE COURTYARD AS REQUIRED TO INSTALL NEW CONDENSATE DRAIN. POUR NEW CONCRETE TO MATCH EXISTING.
22	PROVIDE "VULCAN" PIPE CHASE OVER CONDENSATE PIPING FROM CEILING TO FINISHED FLOOR.
25	PROVIDE DOUBLE WALL DUCTWORK WITH 2" FIBERGLASS INSULATION ENCAPSULATED BETWEEN SOLID INNER WALL. REFER TO SPECIFICATION 230500 FOR DUCTWORK REQUIREMENTS.



KEY PLAN
NOT TO SCALE

COMMONWEALTH OF VIRGINIA
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Lic. No. 023349
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS
VIRGINIA
PARTIAL FLOOR PLAN - AREA 'A' - MECHANICAL - NEW WORK

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: GJA
DRAWN BY: SLS
CHECKED BY: KDA

M1.1

DATE: 04/19/2022

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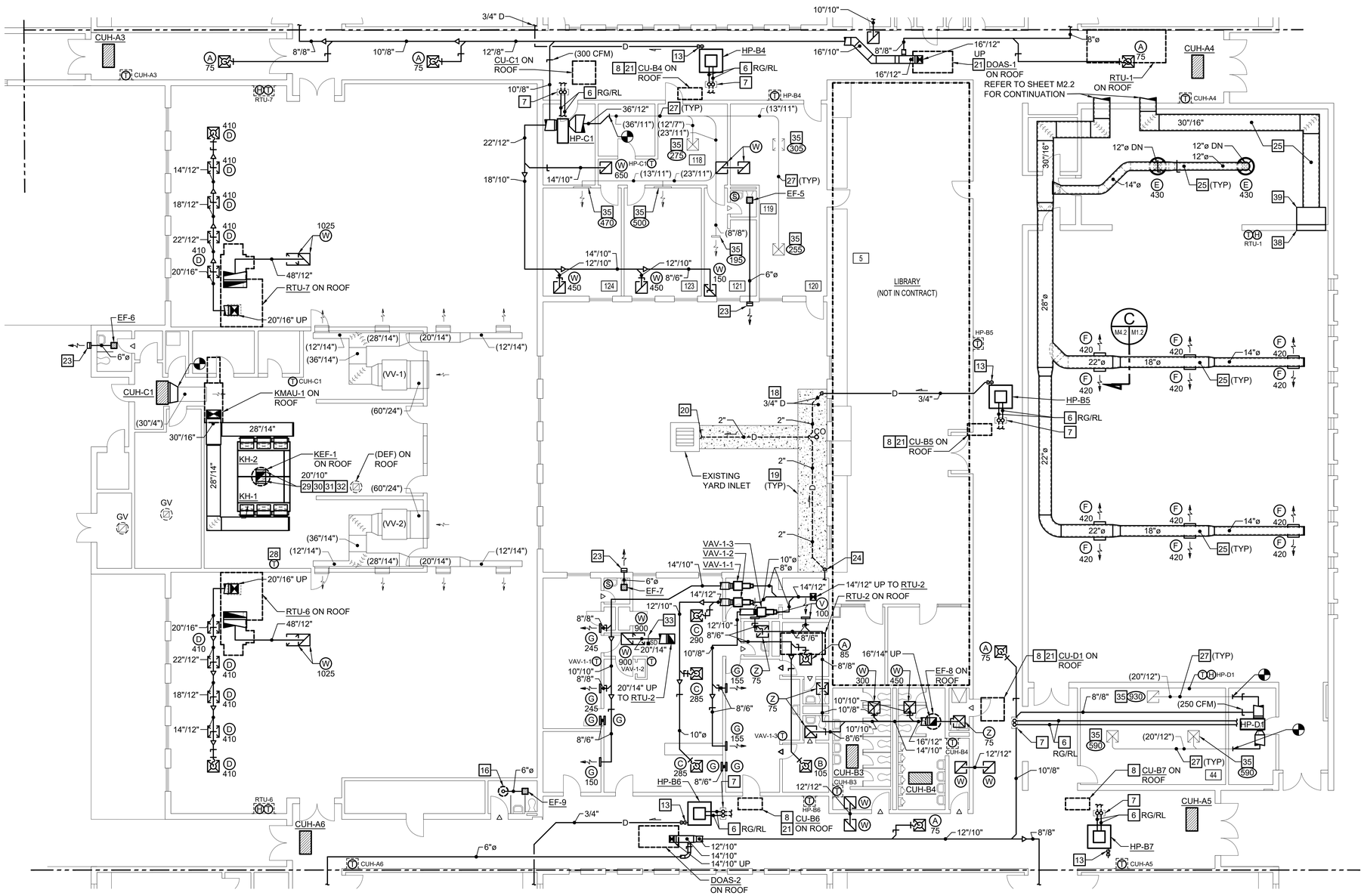
NEW WORK NOTES ☐	
NO.	DESCRIPTION
6	SIZE REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7	REFRIGERANT PIPING UP TO ROOF. REFER TO "PIPE PENETRATION THROUGH ROOF DETAIL" ON SHEET M3.1.
8	CONDENSING UNIT INSTALLED ON NEW EQUIPMENT RAILS, REFER TO CONDENSING UNIT MOUNTING DETAIL ON SHEET M3.2.
13	REFER TO "COIL CONDENSATE TRAP" DETAILS ON DRAWING M3.1.
16	PROVIDE OUTSIDE AIR INTAKE, INSTALL ON NEW 12" HIGH ROOF CURB. GREENHECK, MODEL GRSI.
18	ROUTE CONDENSATE DRAIN THROUGH EXTERIOR WALL, TRANSITION COPPER PIPING TO PVC BELOW GRADE. ROUTE PIPING TO EXISTING YARD INLET.
19	SAWCUT EXISTING CONCRETE COURTYARD AS REQUIRED TO INSTALL NEW CONDENSATE DRAIN. POUR NEW CONCRETE TO MATCH EXISTING.

NEW WORK NOTES ☐	
NO.	DESCRIPTION
20	CONNECT CONDENSATE DRAIN TO EXISTING YARD INLET.
21	MAINTAIN 10'-0" CLEARANCE FROM EDGE OF ROOF.
23	6" EXHAUST WITH EXTERIOR WALL CAP. "SEIHO" MODEL RCC OR EQUAL. SEAL EXTERIOR WALL PENETRATION WATERTIGHT, WALL PENETRATION SHALL BE CONCEALED BEHIND WALL CAP.
24	ROUTE CONDENSATE DRAIN UP TO ROOF. ATTACHED TO VERTICAL SURFACE EVERY 4'-0".
25	PROVIDE DOUBLE WALL DUCTWORK WITH 2" FIBERGLASS INSULATION ENCAPSULATED BETWEEN SOLID INNER WALL. REFER TO SPECIFICATION 230500 FOR DUCTWORK REQUIREMENTS.
27	CLEAN ALL EXISTING DUCTWORK TO BE REUSED OF DIRT AND DEBRIS IN ACCORDANCE WITH SPECIFICATIONS. CONTRACTOR SHALL WIPE AND CLEAN DIFFUSERS.
28	KITCHEN HOOD ROOM THERMOSTAT PROVIDED BY HOOD MANUFACTURER, INSTALLED BY DIVISION 23 CONTRACTOR.

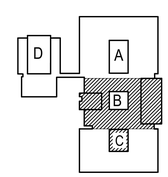
NEW WORK NOTES ☐	
NO.	DESCRIPTION
29	SLOPE ALL HORIZONTAL KITCHEN HOOD EXHAUST DUCTWORK TOWARDS THE KITCHEN HOOD AND MAKE CONNECTIONS TO THE KITCHEN HOOD VERTICALLY. ALL DUCTWORK SERVING THE KITCHEN HOOD SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALL THE REQUIREMENTS WITHIN THE INTERNATIONAL MECHANICAL CODE 2018, SECTION 506 PERTAINING TO GREASE DUCTS. DUCTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF UL 1978.
30	PROVIDE 2-HR FIRE RATED DUCT WRAP FOR ALL KITCHEN HOOD EXHAUST DUCTWORK IN ACCORDANCE TO IBC-2018. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. REFER TO SPECIFICATIONS 230700 FOR FURTHER INFORMATION.
31	KITCHEN HOOD EXHAUST FAN SHALL BE INSTALLED USING A HINGED BASE FOR SERVICE CONVENIENCE IN ACCORDANCE WITH SECTION 506.5.3 OF THE VIRGINIA MECHANICAL CODE. INSTALL NEW FAN ON EXISTING ROOF CURB.
32	REFER TO KITCHEN EXHAUST FAN AND KITCHEN MAKE UP AIR UNIT DETAILS ON SHEET M5.1 AND M5.2.

NEW WORK NOTES ☐	
NO.	DESCRIPTION
33	DUCT MOUNTED SMOKE DETECTOR FURNISHED BY DIVISION 26, INSTALLED BY DIVISION 23. INTERLOCK SMOKE DETECTOR(S) WITH THE FIRE ALARM SYSTEM IN ACCORDANCE WITH SECTION 606.4.1 OF THE VIRGINIA MECHANICAL CODE. REFER TO ELECTRICAL DRAWINGS FOR FURTHER INFORMATION.
35	BALANCE EXISTING DIFFUSER/GRILLE TO CFM INDICATED.
38	RETURN AIR LOUVER. 5'-0" x 3'-0" WITH AT LEAST 6.49 SF OF FREE AREA. "GREENHECK" MODEL EHH-401 OR APPROVED EQUAL, WITH STATIONARY LOUVER BLADES. BLADES SHALL BE HEAVY GAUGE EXTRUDED ALUMINUM. LOUVER SHALL BE OF SINGLE PIECE CONSTRUCTION (3540 CFM MAXIMUM). COLOR SELECTION BY OWNER.
39	5'-0" X 3'-0" X 2'-0" PLENUM BOX SERVING LOUVER.



PARTIAL FLOOR PLAN - AREA 'B' - MECHANICAL - NEW WORK

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



KEY PLAN
NOT TO SCALE

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COMMONWEALTH OF VIRGINIA
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NEWPORT NEWS VIRGINIA
PARTIAL FLOOR PLAN - AREA 'B' - MECHANICAL - NEW WORK

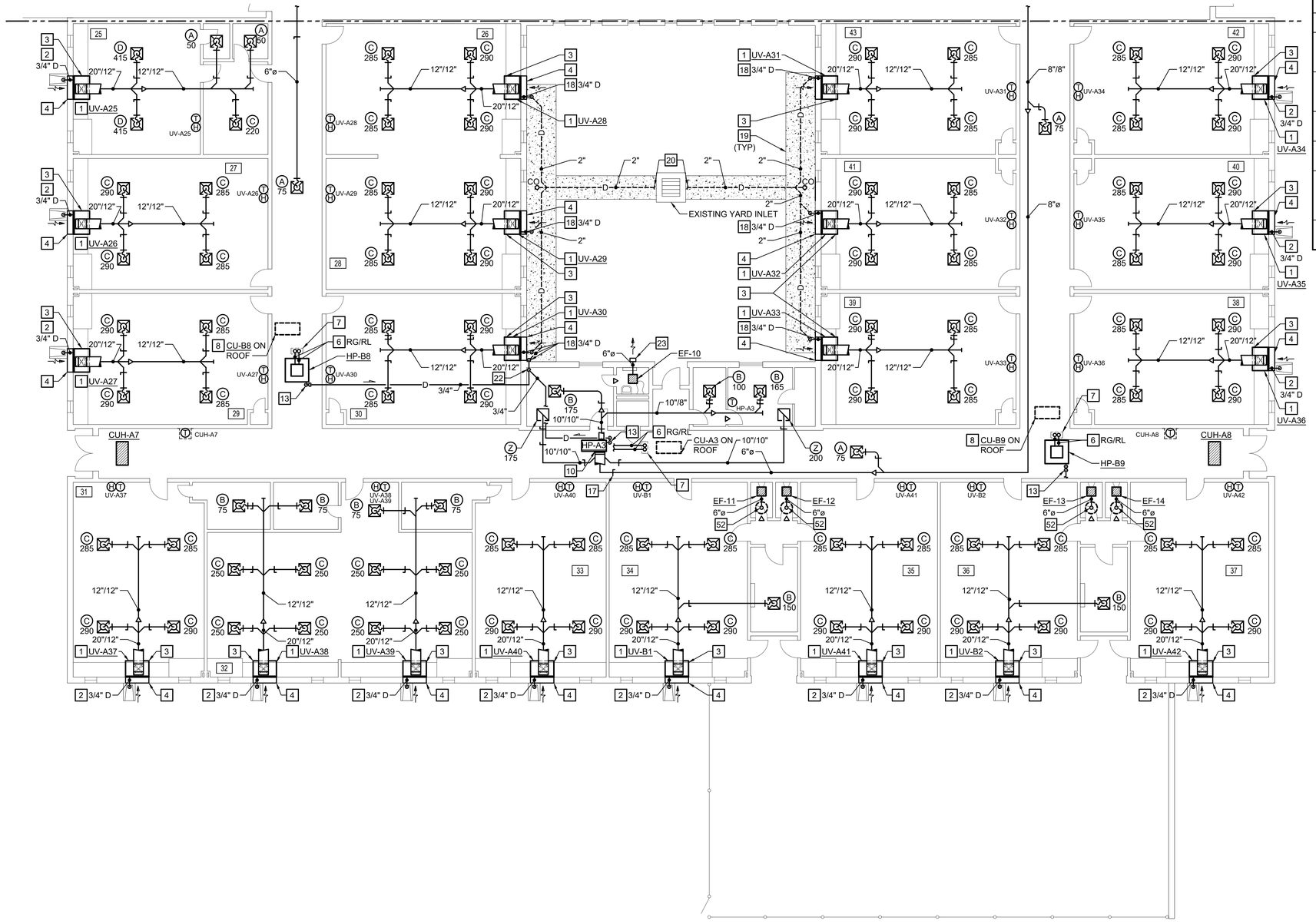
REVISIONS		
MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: GJA
DRAWN BY: SLS
CHECKED BY: KDA

M1.2

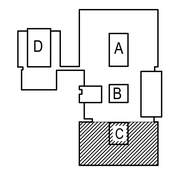
DATE: 04/19/2022

NEW WORK NOTES ☐	
NO.	DESCRIPTION
1	PROVIDE VERTICAL AIR COOLED UNIT VENTILATOR HEAT PUMP.
2	ROUTE CONDENSATE DRAIN THROUGH EXTERIOR WALL, TERMINAL WITH 90 DEGREE ELBOW. DISCHARGE ON SPLASH BLOCK.
3	REFER THE ARCHITECTURAL DRAWING FOR CASEWORK MODIFICATIONS ADJACENT TO NEW MECHANICAL UNIT.
4	PROVIDE NEW EXTERIOR WALL PENETRATION. REFER TO ARCHITECTURAL DRAWINGS FOR COORDINATION.
6	SIZE REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7	REFRIGERANT PIPING UP TO ROOF. REFER TO "PIPE PENETRATION THROUGH ROOF DETAIL" ON SHEET M3.1.
8	CONDENSING UNIT INSTALLED ON NEW EQUIPMENT RAILS, REFER TO CONDENSING UNIT MOUNTING DETAIL ON SHEET M3.2.
10	MAINTAIN CLEAR ACCESS IN FRONT OF FILTER RACK AND ACCESS PANELS, DUCTWORK AND SUPPORT SHALL NOT INTERFERE WITH ACCESS.
13	REFER TO "COIL CONDENSATE TRAP" DETAILS ON DRAWING M3.1.
17	BALANCE VOLUME DAMPER TO 75 CFM.
18	ROUTE CONDENSATE DRAIN THROUGH EXTERIOR WALL, TRANSITION COPPER PIPING TO PVC BELOW GRADE. ROUTE PIPING TO EXISTING YARD INLET.
19	SAWCUT EXISTING CONCRETE COURTYARD AS REQUIRED TO INSTALL NEW CONDENSATE DRAIN. POUR NEW CONCRETE TO MATCH EXISTING.
20	CONNECT CONDENSATE DRAIN TO EXISTING YARD INLET.
22	PROVIDE "VULCAN" PIPE CHASE OVER CONDENSATE PIPING FROM CEILING FINISHED FLOOR.
23	6" EXHAUST WITH EXTERIOR WALL CAP. "SEIHO" MODEL RCC OR EQUAL. SEAL EXTERIOR WALL PENETRATION WATERTIGHT, WALL PENETRATION SHALL BE CONCEALED BEHIND WALL CAP.
52	PROVIDE RELIEF VENT ON ROOF, INSTALL ON NEW 12" HIGH ROOF CURB. GREENHECK, MODEL GRSF.



PARTIAL FLOOR PLAN - AREA 'C' - MECHANICAL - NEW WORK

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



KEY PLAN
NOT TO SCALE

COMMONWEALTH OF VIRGINIA
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS
VIRGINIA
PARTIAL FLOOR PLAN - AREA 'C' - MECHANICAL - NEW WORK

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: GJA
DRAWN BY: JAR
CHECKED BY: KDA

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DATE: 04/19/2022

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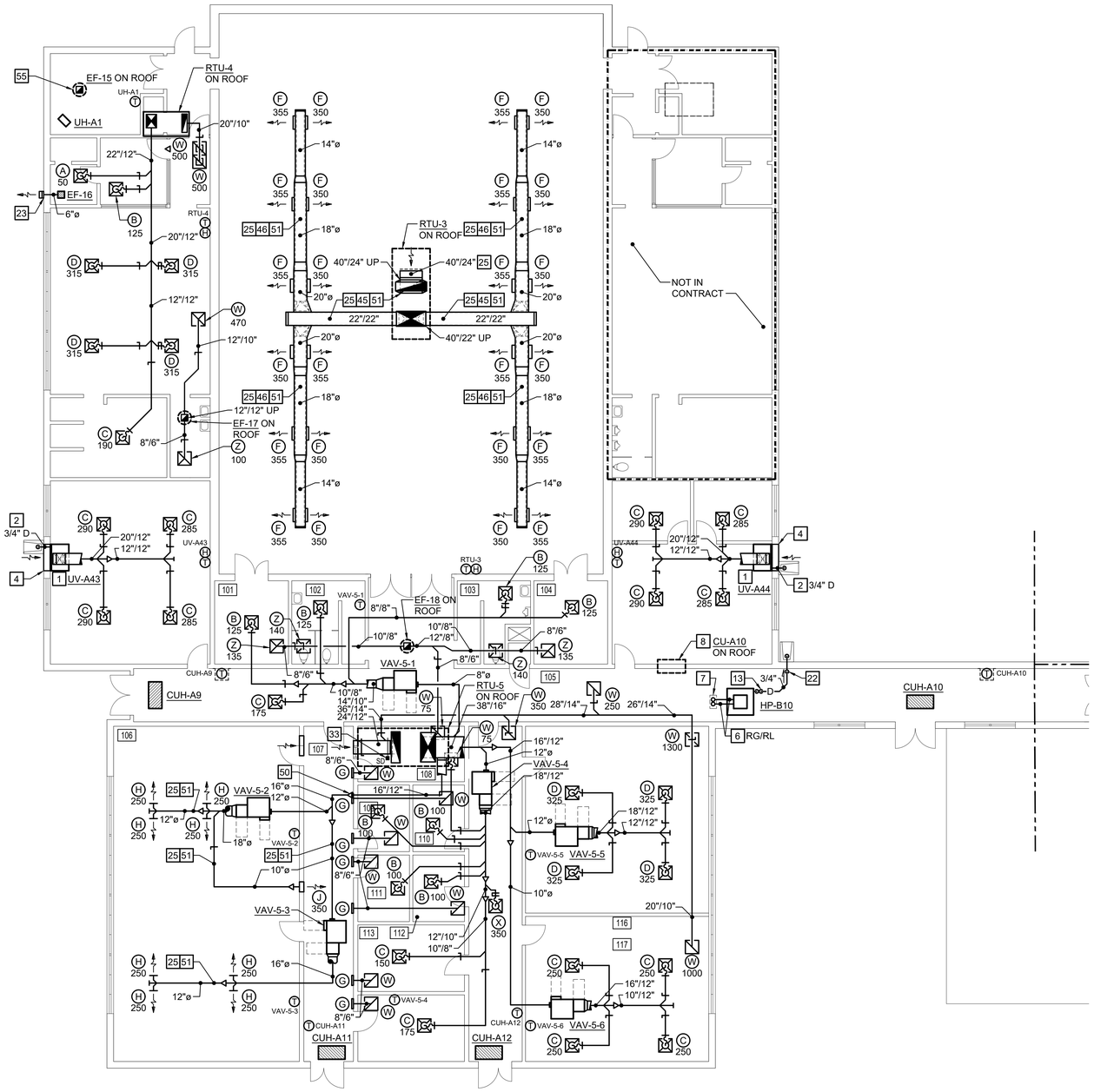
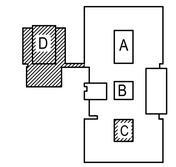


PARTIAL FLOOR PLAN - AREA 'D' - MECHANICAL - NEW WORK

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

NEW WORK NOTES ☐	
NO.	DESCRIPTION
1	PROVIDE VERTICAL STACK AIR COOLED UNIT VENTILATOR HEAT PUMP.
2	ROUTE CONDENSATE DRAIN THROUGH EXTERIOR WALL, TERMINAL WITH 90 DEGREE ELBOW. DISCHARGE ON SPLASH BLOCK.
4	PROVIDE NEW EXTERIOR WALL PENETRATION. REFER TO ARCHITECTURAL DRAWINGS FOR COORDINATION.
6	SIZE REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7	REFRIGERANT PIPING UP TO ROOF. REFER TO "PIPE PENETRATION THROUGH ROOF DETAIL" ON SHEET M3.1.
8	CONDENSING UNIT INSTALLED ON NEW EQUIPMENT RAILS, REFER TO CONDENSING UNIT MOUNTING DETAIL ON SHEET M3.2.
13	REFER TO "COIL CONDENSATE TRAP" DETAILS ON DRAWING M3.1.
22	PROVIDE "VULCAN" PIPE CHASE OVER CONDENSATE PIPING FROM CEILING FINISHED FLOOR.
23	6" EXHAUST WITH EXTERIOR WALL CAP. "SEIHO" MODEL RCC OR EQUAL. SEAL EXTERIOR WALL PENETRATION WATERTIGHT, WALL PENETRATION SHALL BE CONCEALED BEHIND WALL CAP.
25	PROVIDE DOUBLE WALL DUCTWORK WITH 2" FIBERGLASS INSULATION ENCAPSULATED BETWEEN SOLID INNER WALL. REFER TO SPECIFICATION 230500 FOR DUCTWORK REQUIREMENTS.
33	DUCT MOUNTED SMOKE DETECTOR FURNISHED BY DIVISION 26, INSTALLED BY DIVISION 23. INTERLOCK SMOKE DETECTOR(S) WITH THE FIRE ALARM SYSTEM IN ACCORDANCE WITH SECTION 606.4.1 OF THE VIRGINIA MECHANICAL CODE. REFER TO ELECTRICAL DRAWINGS FOR FURTHER INFORMATION.
45	ROUTE DUCTWORK AS HIGH AS POSSIBLE IN JOIST BAY.
46	ROUTE DUCTWORK THRU JOIST WEBBING.
50	EXTENT OF DOUBLE WALL DUCTWORK.
51	PAINT ALL EXPOSED DUCTWORK, COLOR SELECTED BY OWNER.
55	TERMINATE BELOW ROOF DECK WITH WIRE MECH SCREEN.



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REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	GJA
DRAWN BY:	SLS
CHECKED BY:	KDA

M1.4

DATE: 04/19/2022

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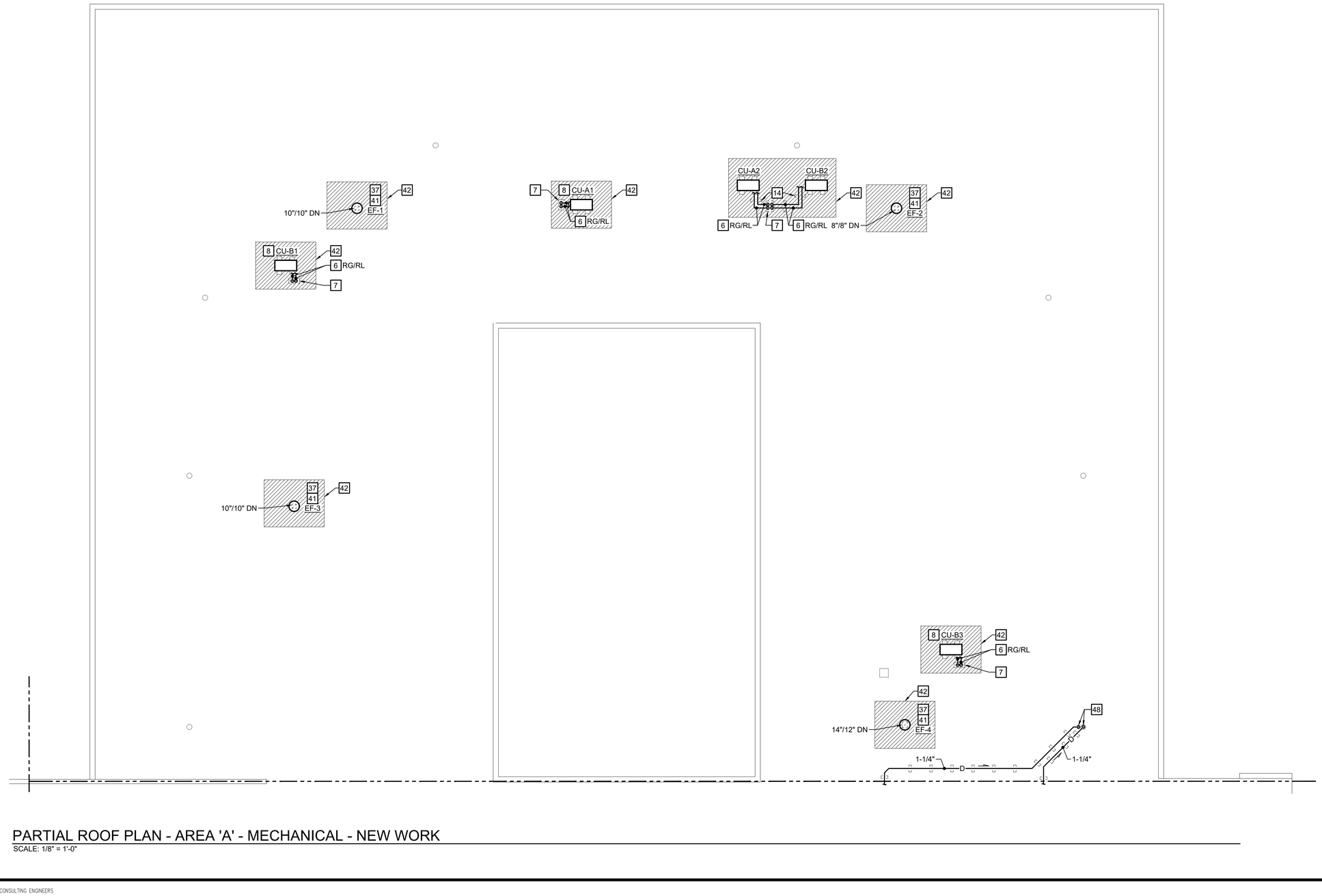
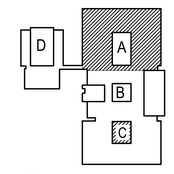
NEW WORK NOTES ☐	
NO.	DESCRIPTION
6	SIZE REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7	REFRIGERANT PIPING UP TO ROOF. REFER TO "PIPE PENETRATION THROUGH ROOF DETAIL" ON SHEET M3.1.
8	CONDENSING UNIT INSTALLED ON NEW EQUIPMENT RAILS, REFER TO CONDENSING UNIT MOUNTING DETAIL ON SHEET M3.2.
14	REFER TO PIPE SUPPORT DETAIL ON DRAWING M3.2.
37	PROVIDE NEW 12" HIGH ROOF CURB.
41	REFER TO ROOF EXHAUST FAN DETAIL ON SHEET M3.2.
42	APPROXIMATE AREA OF ROOF REPAIR REQUIRED. CONTRACTOR SHALL REPAIR ROOF TO MATCH EXISTING CONSTRUCTION. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL DETAILS.
48	ROUTE CONDENSATE PIPING TO ROOF DRAIN.



PARTIAL ROOF PLAN - AREA 'A' - MECHANICAL - NEW WORK
SCALE: 1/8" = 1'-0"



KEY PLAN
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NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
PARTIAL ROOF PLAN - AREA 'A' - MECHANICAL - NEW WORK

REVISIONS

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COMM. NO:	21-059
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DRAWN BY:	SLS
CHECKED BY:	KDA

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DATE: 04/19/2022

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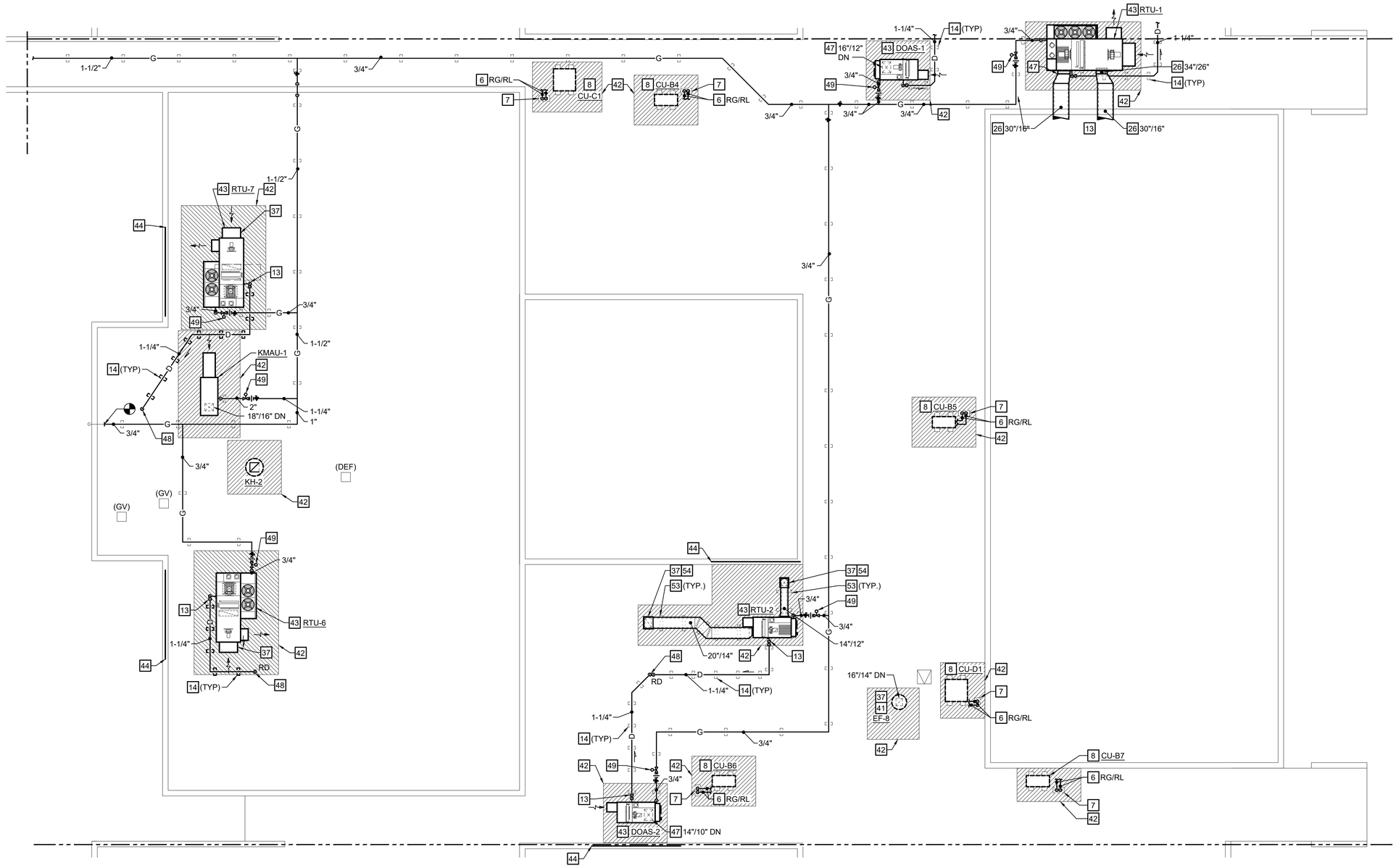
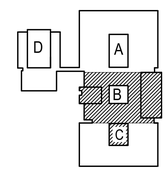
NEW WORK NOTES ☐	
NO.	DESCRIPTION
6	SIZE REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7	REFRIGERANT PIPING UP TO ROOF. REFER TO "PIPE PENETRATION THROUGH ROOF DETAIL" ON SHEET M3.1.
8	CONDENSING UNIT INSTALLED ON NEW EQUIPMENT RAILS, REFER TO CONDENSING UNIT MOUNTING DETAIL ON SHEET M3.2.
13	REFER TO "COIL CONDENSATE TRAP" DETAILS ON DRAWING M3.1.
14	REFER TO PIPE SUPPORT DETAIL ON DRAWING M3.2.
26	PROVIDE DOUBLE WALL DUCTWORK WITH 3" FIBERGLASS INSULATION ENCAPSULATED BETWEEN SOLID INNER WALL FOR ALL DUCTWORK INSTALLED OUTDOORS OR AS INDICATED. REFER TO SPECIFICATION 230500 FOR DUCTWORK REQUIREMENTS. REFER TO SPECIFICATION 230700 FOR WEATHER PROOF COATING DETAILS.
37	PROVIDE NEW 12" HIGH ROOF CURB.
41	REFER TO ROOF EXHAUST FAN DETAIL ON SHEET M3.2.

NEW WORK NOTES ☐	
NO.	DESCRIPTION
42	APPROXIMATE AREA OF ROOF REPAIR REQUIRED. CONTRACTOR SHALL REPAIR ROOF TO MATCH EXISTING CONSTRUCTION. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL DETAILS.
43	REFER TO ROOFTOP MOUNTING DETAIL ON SHEET M3.2.
44	PROVIDE NON-PENETRATING SAFETY RAIL SYSTEM, "KEE SAFETY" MODEL KEEGUARD OR APPROVED EQUAL. RAIL SYSTEM SHALL BE AT LEAST 16'-0" LONG AND 3'-6" TALL.
47	TRANSITION TO UNIT CONNECTION, PROVIDE FLEXIBLE DUCT CONNECTION.
48	ROUTE CONDENSATE PIPING TO ROOF DRAIN.
49	GAS PRESSURE REGULATOR @ 5 PSI TO 10" W.C.
53	REFER TO ROOF MOUNTED DUCT SUPPORT DETAILS ON DRAWING MX.X.
54	DUCTWORK DOWN THROUGH ROOF. REFER TO "DUCT THRU ROOF DETAIL" ON SHEET MX.X



PARTIAL ROOF PLAN - AREA 'B' - MECHANICAL - NEW WORK

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



KEY PLAN
NOT TO SCALE

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COMMONWEALTH OF VIRGINIA
KEVIN D. ALLEN
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04-19-2022
PROFESSIONAL ENGINEER

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TELEPHONE: (757) 599-4433 PROJECT NUMBER:

HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
PARTIAL ROOF PLAN - AREA 'B' - MECHANICAL - NEW WORK

REVISIONS

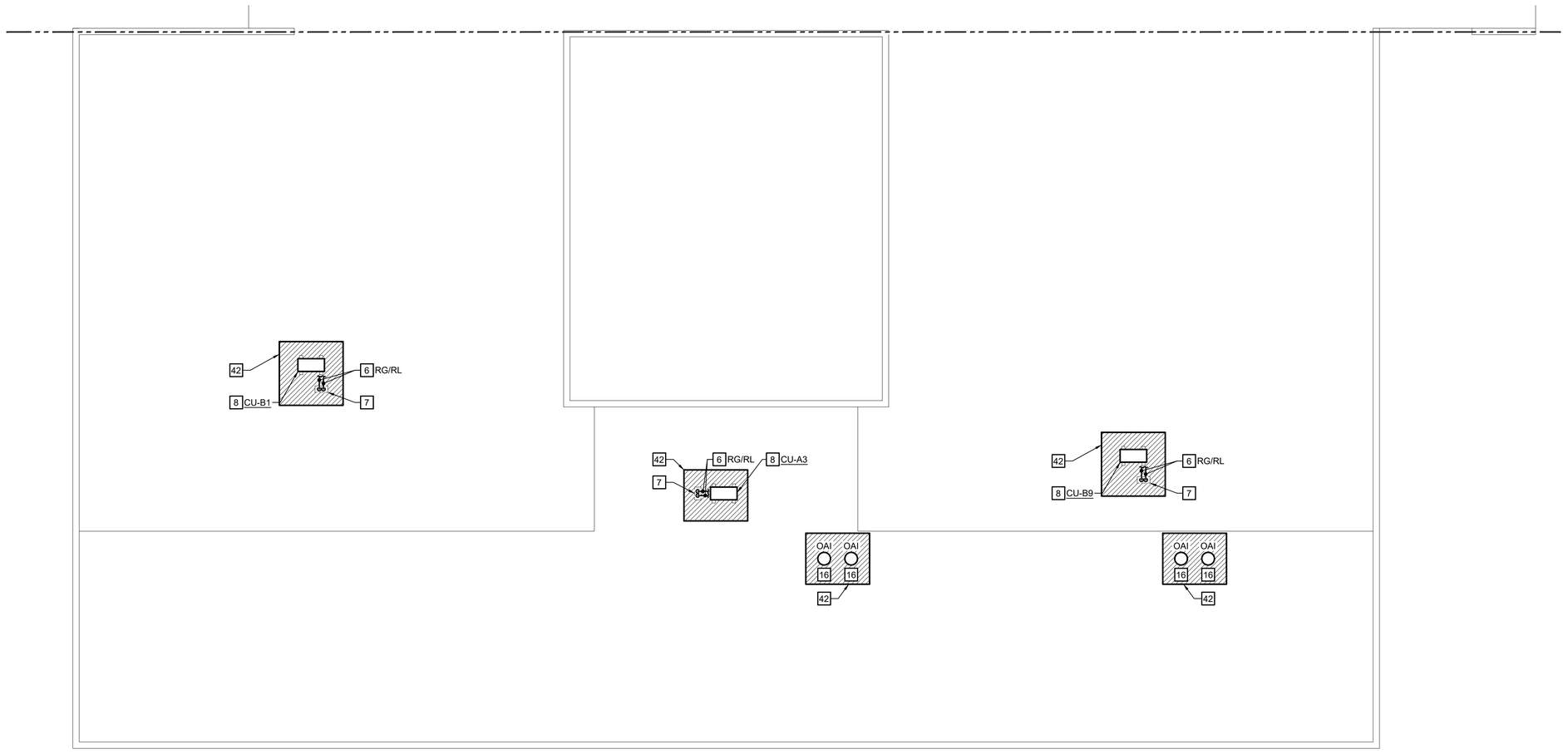
MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	GJA
DRAWN BY:	SLS
CHECKED BY:	KDA

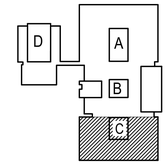
M2.2

DATE: 04/19/2022

NEW WORK NOTES ☐	
NO.	DESCRIPTION
6	SIZE REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7	REFRIGERANT PIPING UP TO ROOF. REFER TO "PIPE PENETRATION THROUGH ROOF DETAIL" ON SHEET M3.1.
8	CONDENSING UNIT INSTALLED ON NEW EQUIPMENT RAILS,REFER TO CONDENSING UNIT MOUNTING DETAIL ON SHEET M3.2.
16	PROVIDE OUTSIDE AIR INTAKE, INSTALL ON NEW 12" HIGH ROOF CURB. GREENHECK, MODEL GRSI.
42	APPROXIMATE AREA OF ROOF REPAIR REQUIRED. CONTRACTOR SHALL REPAIR ROOF TO MATCH EXISTING CONSTRUCTION. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL DETAILS.



PARTIAL ROOF PLAN - AREA 'C' - MECHANICAL - NEW WORK
SCALE: 1/8" = 1'-0"



KEY PLAN
NOT TO SCALE

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HVAC REPLACEMENT
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NEWPORT NEWS
VIRGINIA
PARTIAL ROOF PLAN - AREA 'C' - MECHANICAL - NEW WORK

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	GJA
DRAWN BY:	JAR
CHECKED BY:	KDA

M2.3

DATE: 04/19/2022

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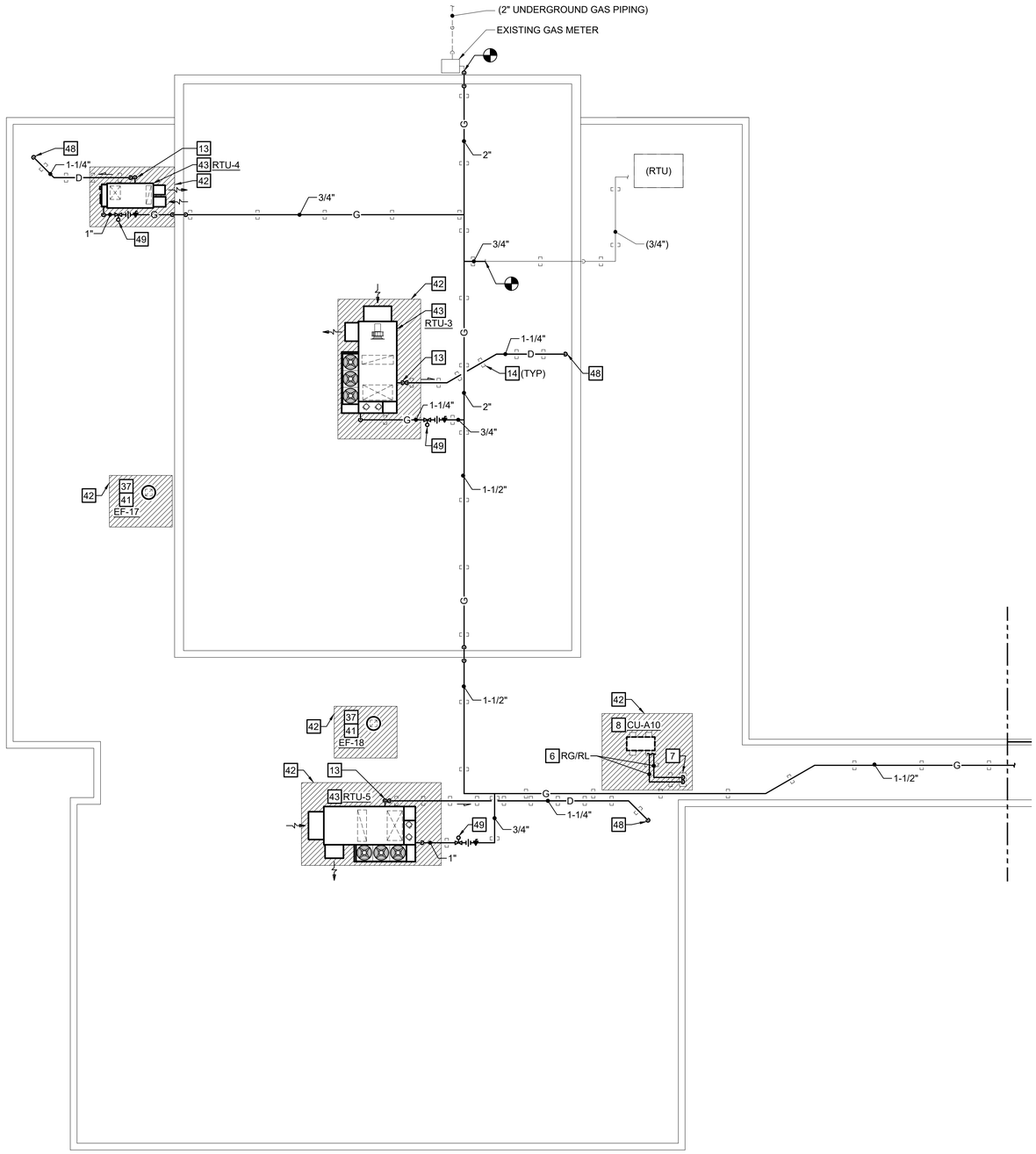
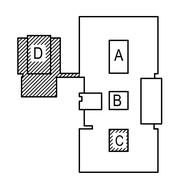
NEW WORK NOTES ☐	
NO.	DESCRIPTION
6	SIZE REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7	REFRIGERANT PIPING UP TO ROOF. REFER TO "PIPE PENETRATION THROUGH ROOF DETAIL" ON SHEET M3.1.
8	CONDENSING UNIT INSTALLED ON NEW EQUIPMENT RAILS, REFER TO CONDENSING UNIT MOUNTING DETAIL ON SHEET M3.2.
13	REFER TO "COIL CONDENSATE TRAP" DETAILS ON DRAWING M3.1.
14	REFER TO PIPE SUPPORT DETAIL ON DRAWING M3.2.
37	PROVIDE NEW 12" HIGH ROOF CURB.
41	REFER TO ROOF EXHAUST FAN DETAIL ON SHEET M3.2.
42	APPROXIMATE AREA OF ROOF REPAIR REQUIRED. CONTRACTOR SHALL REPAIR ROOF TO MATCH EXISTING CONSTRUCTION. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL DETAILS.
43	REFER TO ROOFTOP MOUNTING DETAIL ON SHEET M3.2.
48	ROUTE CONDENSATE PIPING TO ROOF DRAIN.
49	GAS PRESSURE REGULATOR @ 5 PSI TO 10" W.C.



PARTIAL ROOF PLAN - AREA 'D' - MECHANICAL - NEW WORK

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



KEY PLAN
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PARTIAL ROOF PLAN - AREA 'D' - MECHANICAL - NEW WORK

REVISIONS

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DRAWN BY:	SLS
CHECKED BY:	KDA

M2.4

DATE: 04/19/2022

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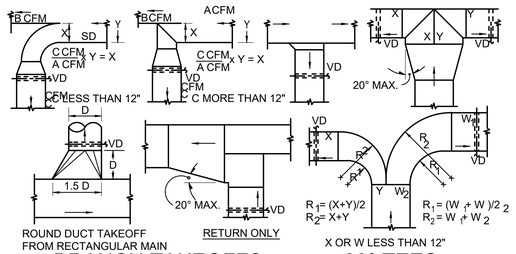
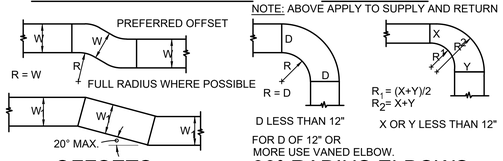


BRANCH TAKEOFFS

90° TEES

NOTE: ABOVE APPLY TO SUPPLY AND RETURN



OFFSETS

90° RADIUS ELBOWS

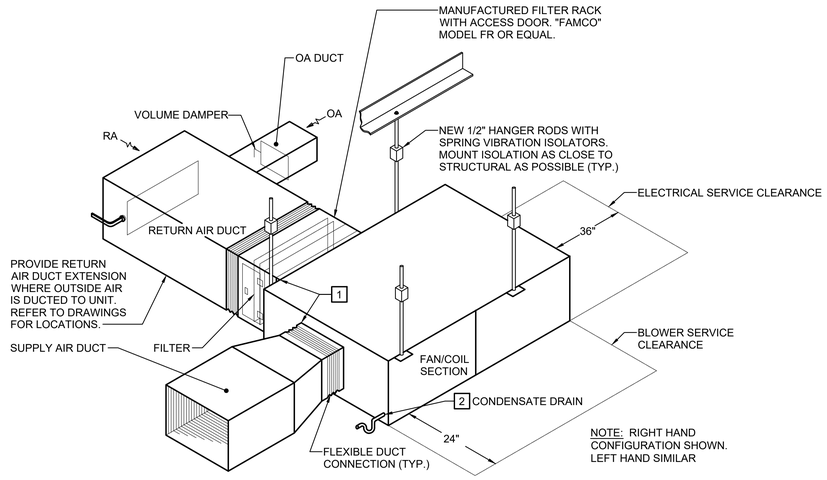
DUCTWORK CONSTRUCTION REQUIREMENTS

SYSTEM	PRESSURE CLASS	SEAL CLASS
MED PRESSURE SUPPLY AIR	+2.5" WG	CLASS A
LOW VELOCITY SUPPLY AIR	+1.0" WG	CLASS B
RETURN AIR	-1.0" WG	CLASS B
EXHAUST AIR	-1.0" WG	CLASS B
TRANSFER AIR	N/A	NOT REQUIRED

NOTE:
1. CONSTRUCT ALL DUCTWORK IN ACCORDANCE WITH "SMACNA" HVAC DUCT CONSTRUCTION STANDARDS.
2. PROVIDE VOLUME DAMPERS FOR EACH BRANCH DUCT.
3. ALL RECTANGULAR AND MITERED ELBOWS SHALL BE PROVIDED WITH TURNING VANES.

LOW VELOCITY DUCTWORK FITTING DETAILS

NOT TO SCALE



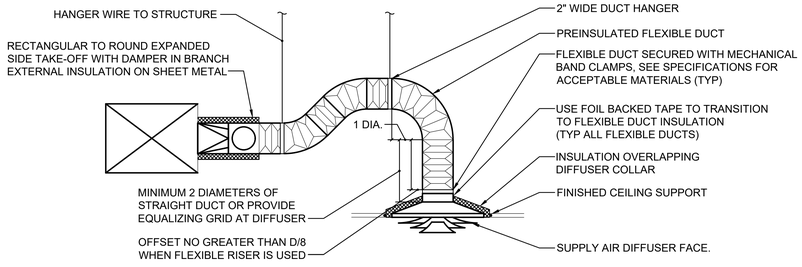
NOTES: (THIS DETAIL ONLY)

1 PROVIDE FLANGED JOINTS WITH GASKET AT ALL DUCT CONNECTIONS TO THE HEAT PUMP. SMACNA T-25a OR T-256.

2 COORDINATE WITH OTHER TRADES TO PERMIT THE UNIT TO BE REMOVED EASILY WITH ONLY DISCONNECTION OF THE DUCT FLANGES, REFRIGERANT PIPING, AND POWER.

HORIZONTAL SPLIT SYSTEM HEAT PUMP (DUCTED RETURN) INSTALLATION DETAIL

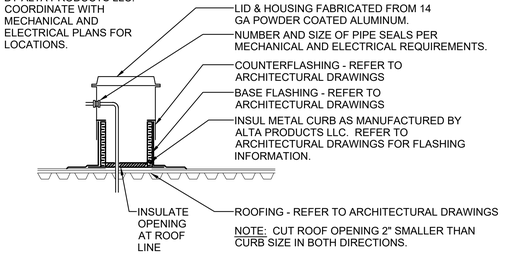
NOT TO SCALE



TYPICAL CEILING DIFFUSER INSTALLATION DETAIL

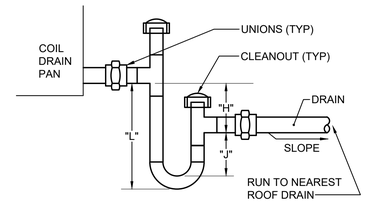
NOT TO SCALE

NOTE:
PIPE CHASE HOUSING AND INSULATED CURB AS MANUFACTURED BY ALTA PRODUCTS LLC. COORDINATE WITH MECHANICAL AND ELECTRICAL PLANS FOR LOCATIONS.



PIPE PENETRATION THROUGH ROOF DETAIL

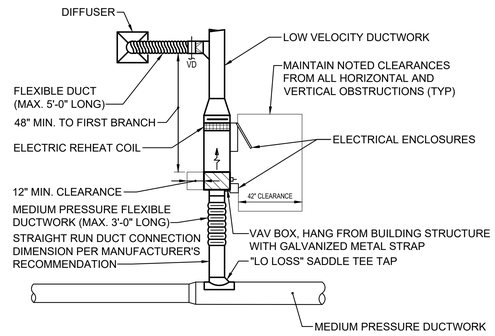
NOT TO SCALE



NOTES:
1. "H" = (1" FOR EACH 1" OF MAXIMUM NEGATIVE STATIC PRESSURE) + 1".
2. "J" = HALF OF H.
3. "L" = H + J + PIPE DIAMETER + INSULATION.
4. SIZE TRAP IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

COIL CONDENSATE TRAP DETAIL

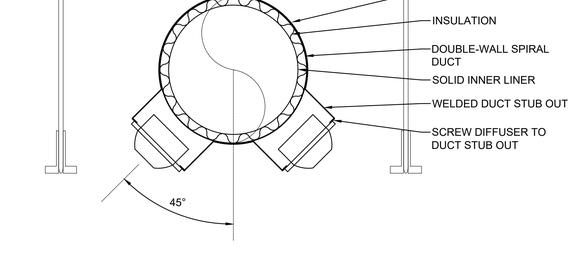
NOT TO SCALE (NEGATIVE PRESSURE)



NOTE: EXTERNALLY INSULATE HOT WATER RE-HEAT COIL AND COIL PIPING CONNECTIONS TO PREVENT CONDENSATION ON PIPING AND U-BENDS WHEN CONTROL VALVE IS CLOSED.

TYPICAL SHUT-OFF VAV BOX (WITH ELECTRIC RE-HEAT COIL) INSTALLATION DETAIL

NOT TO SCALE



EXTERIOR WALL PIPE PENETRATION DETAIL

NOT TO SCALE

A DUCT SUPPORT SECTION

M1.2/M3.1 SCALE: 1" = 1'-0"

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TELEPHONE: (757) 599-6433 PROJECT NUMBER:

HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA

MECHANICAL DETAILS

REVISIONS

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CHECKED BY: KDA

M3.1

DATE: 04/19/2022

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NEW WORK NOTES: (THIS SHEET ONLY)

1. PROVIDE "GLOBAL PLASMA SOLUTIONS" MODEL "GPS-IMOD" BIPOLAR IONIZATION GENERATOR FOR RTU'S. IMOD SHALL BE MOUNTED UPSTREAM OF THE COOLING COIL AT THE TOP OF THE FINNED SURFACE AREA OF THE COIL. REFER TO FIGURE 1 FOR EXAMPLE. PROVIDE SUFFICIENT QUANTITY OF 6" IMOD SECTIONS TO MATCH THE WIDTH OF THE COOLING COIL. VERIFY THAT ALL MODULAR SECTIONS OF THE IMOD ARE ATTACHED SNUGLY TOGETHER IN ACCORDANCE WITH FIGURE 2.

2. PROVIDE "GLOBAL PLASMA SOLUTIONS" 15 WATT POWER SUPPLY WITH MULTI-VOLTAGE INPUT FOR EACH ROOFTOP UNIT. WIRE POWER SUPPLY TO IMOD UTILIZING 6'-0" FLEXIBLE POWER CABLE PROVIDED WITH IMOD. MOUNT POWER SUPPLY ON INSIDE OF ROOFTOP UNIT CABINET AND CONNECT TO UNIT POWER.

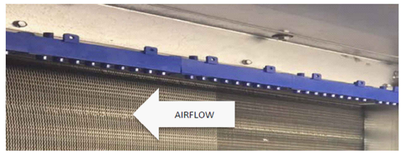


FIGURE 1: BI DEVICE MOUNTING LOCATION

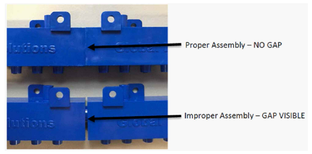
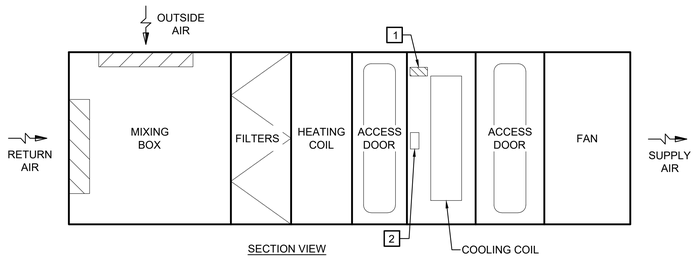
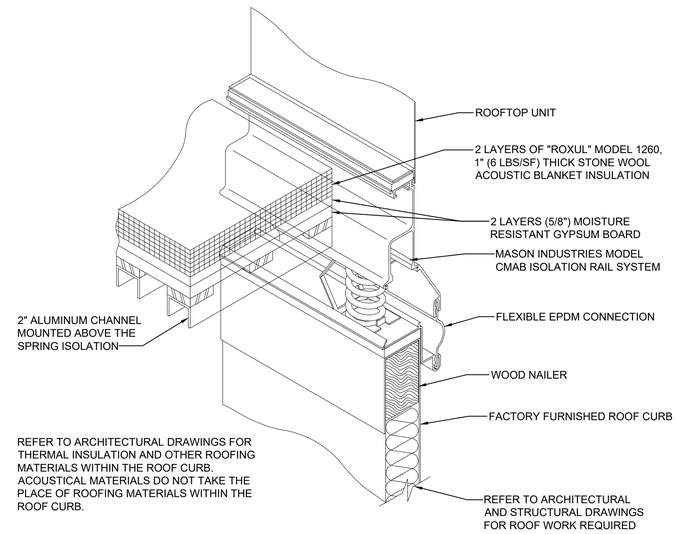


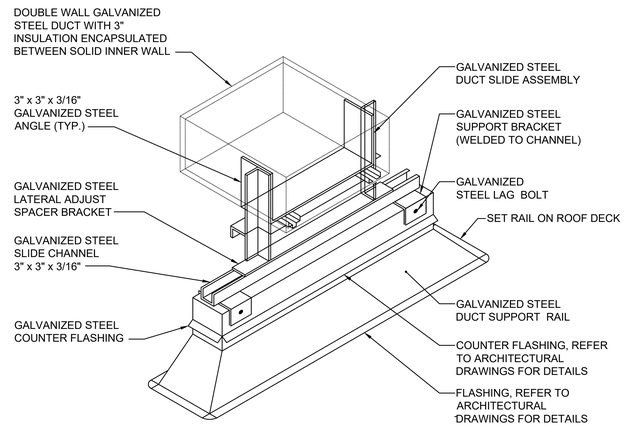
FIGURE 2: BI DEVICE MODULE ASSEMBLY



ROOFTOP UNIT BIPOLAR IONIZATION INSTALLATION DIAGRAM
NOT TO SCALE



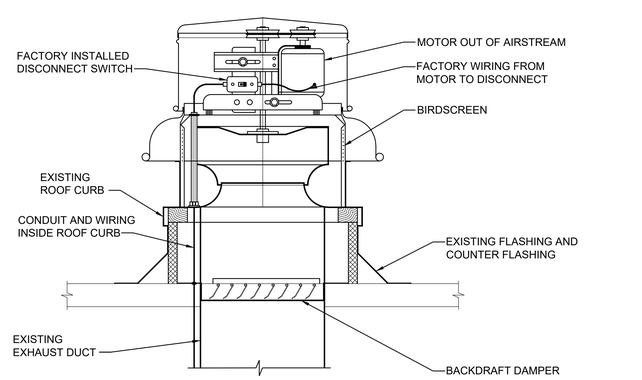
ROOFTOP UNIT MOUNTING DETAIL
NOT TO SCALE



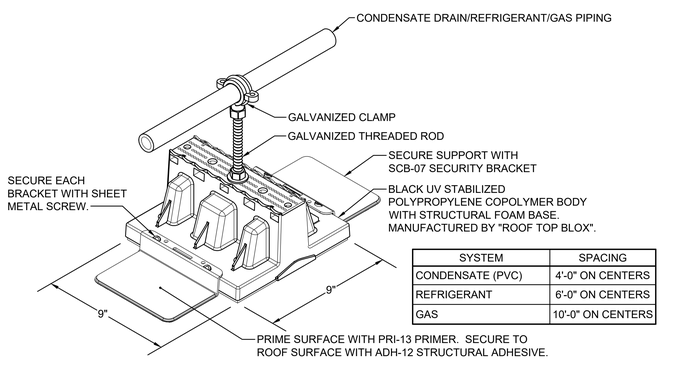
NOTE: DUCT SUPPORTS SHALL BE SPACED A MAXIMUM OF 4'-0" APART

TYPICAL ROOF MOUNTED DUCT SUPPORT DETAIL
NOT TO SCALE

ROOF MOUNTED CONDENSING UNIT SUPPORT DETAIL
NOT TO SCALE



ROOF EXHAUST FAN DETAIL
NOT TO SCALE



SYSTEM	SPACING
CONDENSATE (PVC)	4'-0" ON CENTERS
REFRIGERANT	6'-0" ON CENTERS
GAS	10'-0" ON CENTERS

PIPING SUPPORT DETAIL
NOT TO SCALE

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NEWSOME PARK ELEMENTARY SCHOOL
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MECHANICAL DETAILS

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COMM. NO: 21-059
DESIGNED BY: GJA
DRAWN BY: SLS
CHECKED BY: KDA

M3.2

DATE: 04/19/2022

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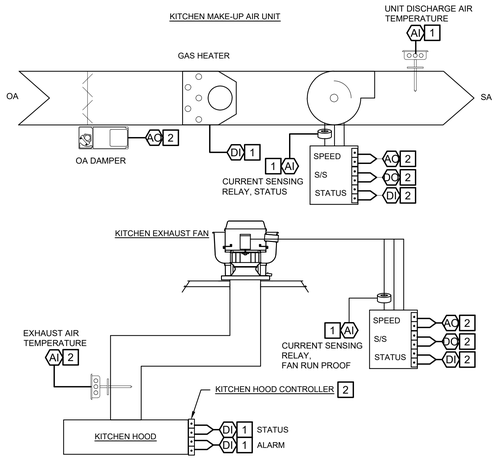
DDC LEGEND

- AI — ANALOG INPUT HARDWARE POINT
- AO — ANALOG OUTPUT HARDWARE POINT
- AV — ANALOG VALUE SOFTWARE POINT
- BI — BINARY INPUT HARDWARE POINT
- BO — BINARY OUTPUT HARDWARE POINT
- BV — BINARY VALUE SOFTWARE POINT
- DI — DIGITAL INPUT HARDWARE POINT
- DO — DIGITAL OUTPUT HARDWARE POINT

ABBREVIATIONS

AF	AIR FLOW MONITOR
CR	CONDENSER RETURN PIPING
CS	CONDENSER SUPPLY PIPING
CSR	CURRENT SENSING RELAY
DX	DIRECT EXPANSION
HG	HOT GAS
HX	HEAT EXCHANGER
RA	RETURN AIR
SA	SUPPLY AIR
SF	SUPPLY FAN
S/S	START/STOP



1 DDC CONTRACTOR PROVIDED HARDWARE AND POINT

2 HOOD MANUFACTURER PROVIDED AND CONTROLLED POINT

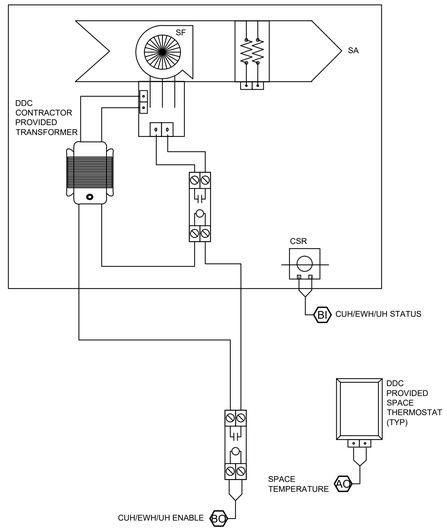
KITCHEN VENTILATION SYSTEM CONTROLS DIAGRAM

NOT TO SCALE

KITCHEN VENTILATION SYSTEM
SEQUENCE OF OPERATION

A. REFER TO SECTION 230500, KITCHEN VENTILATION SYSTEM. SEQUENCES SHALL BE INTEGRAL TO THE UNIT MOUNTED CONTROLS PROVIDED WITH THE KITCHEN HOOD, KITCHEN EXHAUST FAN AND MAKE-UP AIR UNIT.
B. THE DDC SYSTEM SHALL MONITOR THE MAKE-UP AIR AND EXHAUST FAN FOR STATUS (CURRENT SENSING RELAY) AND ALARMING. IF THE DEVICES GO INTO ALARM, IT SHALL SEND AN ALARM TO THE WORKSTATION. THE UNIT HOOD MANUFACTURER SHALL PROVIDE A UNIT MOUNTED CONTROLLER.
C. REFER TO THE ATTACHED INPUT/OUTPUT SUMMARY SHEET FOR THE DDC SYSTEM POINT REQUIREMENTS.

KITCHEN VENTILATION SYSTEM	Hardware Points				Software Points				
POINT NAME	AI	AO	DI	DO	AV	DV	TREND	ALARM	SHOW ON GRAPHIC
KMAU SUPPLY AIR TEMP	X						X	X	X
KMAU SUPPLY FAN	X						X	X	X
EXHAUST FAN	X						X	X	X
KMAU GAS HEAT			X				X	X	X



ELECTRIC UNIT HEATER/CABINET UNIT HEATER

NOT TO SCALE (UH-A, CUH-A, & CUH-B)

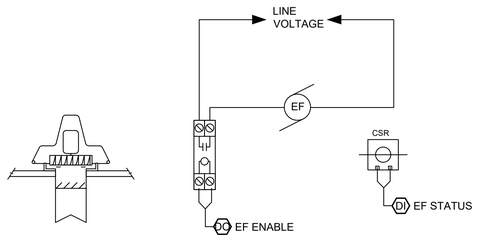
UNIT HEATERS	Hardware Points				Software Points				
POINT NAME	AI	AO	BI	BO	AV	BV	TREND	ALARM	SHOW ON GRAPHIC
ENABLE/DISABLE				X			X	X	X
FAN STATUS			X				X	X	X

UNIT HEATERS

A. UNIT HEATERS SHALL BE CONTROLLED BY INTEGRAL THERMOSTATS PROVIDED BY THE UNIT MANUFACTURER. ON A FALL IN SPACE TEMPERATURE BELOW SETPOINT, THE FAN SHALL BE STARTED AND THE ELECTRIC HEAT SHALL BE ENERGIZED. ON A RISE IN SPACE TEMPERATURE, THE ELECTRIC HEAT SHALL BE DE-ENERGIZED. THE ATC CONTRACTOR SHALL ENABLE THE DEVICE WHEN OUTSIDE AIR FALLS BELOW 55°F (ADJUSTABLE).

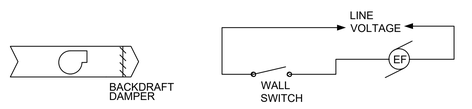
ELECTRIC CABINET UNIT HEATER

A. CABINET UNIT HEATERS SHALL BE CONTROLLED BY THERMOSTATS PROVIDED BY THE DDC CONTRACTOR. ON A FALL IN SPACE TEMPERATURE BELOW SETPOINT, THE FAN SHALL BE STARTED AND THE UNITS SHALL BE CONTROLLED BY AN INTEGRAL THERMOSTAT. ON A RISE IN SPACE TEMPERATURE, THE ELECTRIC HEAT SHALL BE DE-ENERGIZED. THE INITIAL SETPOINT SHALL BE 65°F. THE ATC CONTRACTOR SHALL ENABLE THE DEVICE WHEN OUTSIDE AIR FALLS BELOW 55°F (ADJUSTABLE).



EF-1, 2, 3, 4, 8, 15, 17 & 18 DIAGRAM

NOT TO SCALE



EF-5, 6, 9 THRU 14, & 16 DIAGRAM

NOT TO SCALE

EXHAUST FAN DIAGRAMS

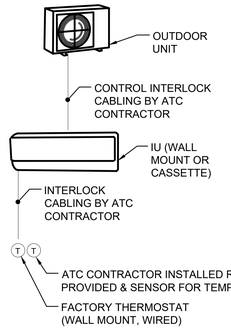
NOT TO SCALE

GENERAL EXHAUST FANS

1. THE DDC SYSTEM SHALL START AND STOP THE DDC CONTROLLED EXHAUST AIR FANS BASED ON A USER-DEFINED SCHEDULE. THE DDC SYSTEM SHALL MONITOR COMMAND AND RUN STATUS INDICATIONS AND TRANSMIT AN ALARM TO THE DDC OPERATOR'S WORKSTATION ANYTIME THE FAN'S COMMANDED STATE DOES NOT MATCH THE RUN STATUS INDICATION.

MISCELLANEOUS	Hardware Points				Software Points				
POINT NAME	AI	AO	BI	BO	AV	BV	TREND	ALARM	SHOW ON GRAPHIC
EXHAUST FANS									X
ENABLE/DISABLE				X			X		X
STATUS			X				X	X	X

MISCELLANEOUS	Hardware Points				Software Points				
POINT NAME	AI	AO	BI	BO	AV	BV	TREND	ALARM	SHOW ON GRAPHIC
ROOMS WITH DUCTLESS SPLIT SYSTEMS				X					
SPACE TEMPERATURE	X						X	X	X



IU/OU DIAGRAM

(HP-E/CU-E ONLY)

DUCTLESS SPLIT SYSTEM INDOOR UNIT

A. THE UNIT WILL OPERATE IN HEATING OR COOLING MODE AS CONTROLLED BY IT'S WALL MOUNTED THERMOSTAT PROVIDED WITH THE UNIT. A SPACE TEMPERATURE SENSOR MONITORED BY DDC SHALL ALARM ANYTIME SPACE TEMPERATURE RISES ABOVE 85°F OR DROPS BELOW 60°F FOR A PERIOD GREATER THAN 5 MINUTES.

B. IF IU HAS BACnet, THE ATC SENSOR CAN BE ELIMINATED.

COMMONWEALTH OF VIRGINIA
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04-19-2022
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22 ENTERPRISE PARKWAY HAMPTON, VA 23666
TELEPHONE: (757) 599-4433 PROJECT NUMBER:

HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS
VIRGINIA
AUTOMATIC TEMPERATURE CONTROLS

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: GJA
DRAWN BY: SLS
CHECKED BY: KDA

M4.1

DATE: 04/19/2022

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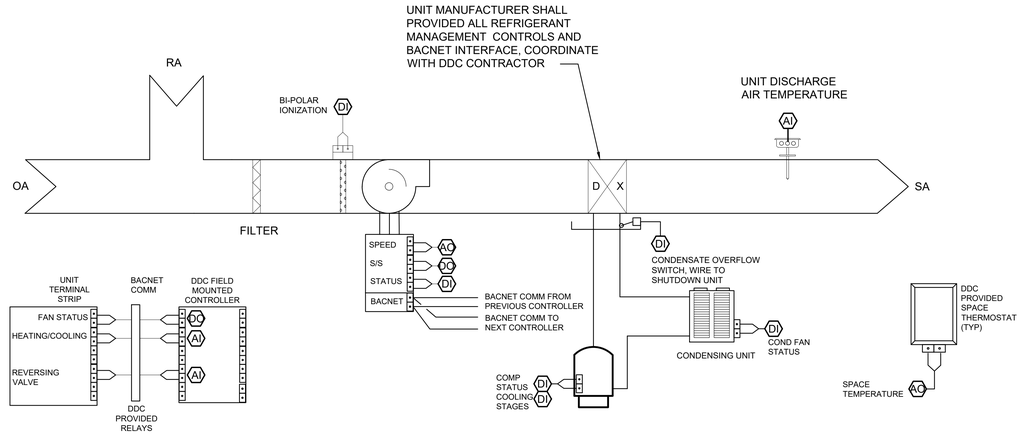


SPLIT SYSTEM HEAT PUMP UNIT DDC CONTROLS DIAGRAM (HP-A THRU D AND CU-A THRU D)

NOT TO SCALE

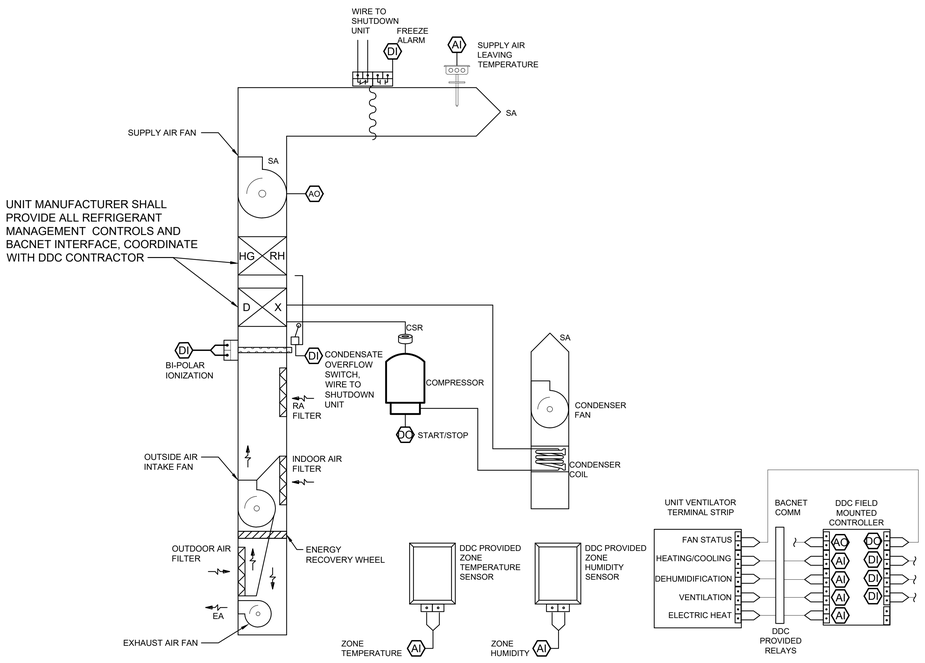
SYSTEM POINT LIST

SYSTEM POINT DESCRIPTION	ANALOG INPUTS: GRAPHIC	TEMPERATURE	PRESSURE	RH	KW	GPM	CFM	PPM	STAGE	PERCENT RLA	ION COUNT	ANALOG OUTPUTS: DDC	4-20mA	0-10 VDC	FEEDBACK	SETPOINT ADJ.	DIGITAL INPUTS: STATUS	FILTER STATUS	ALARM	STATUS OPN/CLSD	FAULT TRIP	DIGITAL OUTPUTS: START/STOP	ON/OFF/AUTO	ENABLE/DISABLE	OPEN/CLOSE	SYSTEM FEATURES — ALARMS: HIGH ANALOG	LOW ANALOG	BINARY	PROOF	SENSOR FAIL	FLOW FAIL	COMM. FAIL	DIAGNOSTICS	PROGRAMS: TIME SCHEDULING	OPT. START/STOP	DEMAND LIMITING	RESET	EVENT PROGRAM	DDC	ALARM	MAINT. WK. ORD.	RUN TIME	EXP. MESSAGE	SET BACK/SET UP	NIGHT PURGE	TENANT BILLING	CHILLER SEQUENCE	TOTALIZING	TIMED OVERRIDE	TREND	NOTES
SPLIT SYSTEM A/C UNITS																																																	
Space	X	X														X	X									X	X		X																		X	1
Supply Fan	X																X																															
Compressor	X																X		X					X																									
Discharge Air	X	X																								X	X		X																			
Condenser Fan	X															X										X	X		X																			
Reversing Valve	X																X		X						X			X																			
Condensate Overflow	X																		X									X																			
Bi-Polar Ionization	X																X																															

GENERAL NOTES: 1. COMPRESSOR SHALL ALARM ON HIGH/LOW PRESSURE CUTOUT.

AIR HANDLING UNITS SEQUENCE OF OPERATION

1. THE DDC CONTROLLER SHALL ENABLE AND DISABLE THE HP AND CU, CONTROL AND MONITOR ALL POINTS OF CONTROL DESCRIBED HEREIN THROUGH THE UNIT MOUNTED TERMINAL STRIP. THE DDC SYSTEM SHALL COORDINATE WITH THE UNIT MANUFACTURER TERMINAL STRIP TO ACHIEVE THE FOLLOWING SEQUENCE OF OPERATION.
2. THE FOLLOWING SEQUENCE OF OPERATION SHALL BE ACCOMPLISHED BY THE DDC CONTROLS.
3. SUPPLY FAN CONTROL: ANY TIME THE DDC SYSTEM DETERMINES THAT THE SUPPLY AIR FAN SHOULD RUN, THE SYSTEM SHALL START THE FAN. THE FAN SHALL RUN CONTINUOUSLY WHEN OCCUPIED. WHEN THE SUPPLY FAN STATUS INDICATES THAT THE FAN HAS STARTED, THE APPROPRIATE CONTROL MODE SHALL BE ENABLED.
4. MORNING WARM - UP: THE DDC SHALL INDEX THE UNIT FOR MORNING WARM-UP AT AN OPTIMUM TIME TO HAVE THE ZONE UP TO THE OCCUPIED MODE TEMPERATURE BY THE OCCUPIED OPERATION TIME.
5. OCCUPIED MODE: THE DDC SYSTEM SHALL MONITOR THE SPACE TEMPERATURE AND CONTROL THE UNITS IN THE OCCUPIED MODE. WHENEVER THE UNIT IS INDEXED TO THE OCCUPIED MODE, THE DDC SHALL ENABLE THE SUPPLY FAN AND STAGE THE COMPRESSOR AS NECESSARY TO MAINTAIN THE ZONE TEMPERATURE SETPOINT.
6. OCCUPIED COOLING MODE: IF AT ANY TIME THE SPACE TEMPERATURE FALLS BELOW THE COOLING SETPOINT, THE DDC SYSTEM SHALL ENERGIZE AND MODULATE THE COMPRESSOR AS NECESSARY TO MAINTAIN ZONE TEMPERATURE SETPOINT AT ALL TIMES AS COMMUNICATED BY THE DDC SYSTEM (INITIALLY SET TO 74°F COOLING, ADJUSTABLE).
7. OCCUPIED HEATING MODE: IF AT ANY TIME THE SPACE TEMPERATURE FALLS BELOW THE HEATING SETPOINT, THE DDC SYSTEM SHALL MODULATE THE REVERSING VALVE TO THE HEATING PPOSITION AND STAGE THE COMPRESSOR AS NECESSARY TO MAINTAIN ZONE TEMPERATURE SETPOINT AT ALL TIMES AS COMMUNICATED BY THE DDC SYSTEM (INITIALLY SET TO 70°F HEATING, ADJUSTABLE).
8. BIPOLAR IONIZATION: THE BIPOLAR GENERATOR SHALL BE POWERED BY A CONTROL TRANSFORMER PROVIDED WITH THE UNIT BY THE UNIT MANUFACTURER. THE ION GENERATOR SHALL CYCLE ON AND OFF WITH THE SUPPLY FAN. THE BAS SHALL ENABLE/DISABLE THE ION GENERATOR, MONITOR FOR FAULTS STATUS, AND SEND AN ALARM TO THE OWNER'S WORKSTATION IF A FAULT IS DETECTED.



VERTICAL CLASSROOM UNIT VENTILATOR DIAGRAM

(UV-A & B)

VERTICAL UNIT VENTILATOR SEQUENCE OF OPERATION

A. THE DDC SYSTEM SHALL MONITOR, ENABLE, AND CONTROL ALL POINTS AS SHOWN IN THE POINTS LIST. THE DATA POINTS SHOWN IN THE POINTS LIST BELOW ARE THE MINIMUM TO BE DISPLAYED ON THE USER INTERFACE GRAPHICS.

B. SUPPLY FAN CONTROL: ANY TIME THE DDC SYSTEM DETERMINES THAT THE SUPPLY AIR FAN SHOULD RUN, THE SYSTEM SHALL START THE FAN. THE FAN SHALL RUN CONTINUOUSLY IN OCCUPIED MODE. WHEN THE SUPPLY FAN STATUS INDICATES THAT THE FAN HAS STARTED, THE APPROPRIATE CONTROL MODE SHALL BE ENABLED.

C. MORNING WARM - UP: THE DDC SHALL INDEX THE UNIT FOR MORNING WARM-UP AT AN OPTIMUM TIME TO HAVE THE ZONE UP TO THE OCCUPIED MODE TEMPERATURE BY THE OCCUPIED OPERATION TIME.

D. OCCUPIED MODE: THE DDC SYSTEM SHALL MONITOR THE SPACE TEMPERATURE AND CONTROL THE UNITS IN THE OCCUPIED MODE. WHENEVER THE UNIT IS INDEXED TO THE OCCUPIED MODE, THE DDC SHALL ENABLE THE SUPPLY FAN, ENABLE THE OUTSIDE AIR INTAKE FAN, ENERGY RECOVERY WHEEL, AND STAGE THE COMPRESSOR AND CONDENSER FANS AS NECESSARY TO MAINTAIN THE ZONE TEMPERATURE SETPOINT.

E. OCCUPIED COOLING MODE: IF AT ANY TIME THE SPACE TEMPERATURE FALLS BELOW THE COOLING SETPOINT, THE DDC SYSTEM SHALL ENERGIZE AND STAGE THE COMPRESSORS AS NECESSARY TO MAINTAIN ZONE TEMPERATURE SETPOINT AT ALL TIMES AS COMMUNICATED BY THE DDC SYSTEM (INITIALLY SET TO 74°F COOLING, ADJUSTABLE).

F. OCCUPIED HEATING MODE: IF AT ANY TIME THE SPACE TEMPERATURE FALLS BELOW THE HEATING SETPOINT, THE DDC SYSTEM SHALL OPEN TO REVERSING VALVE TO THE HEATING POSITION AND ENERGIZE THE COMPRESSOR AND CONDENSER FAN AS NECESSARY TO MAINTAIN ZONE TEMPERATURE SETPOINT AT ALL TIMES AS COMMUNICATED BY THE DDC SYSTEM (INITIALLY SET TO 70°F HEATING, ADJUSTABLE). ON A CONTINUED FALL IN SPACE TEMPERATURE, THE DDC SHALL ENABLE THE ELECTRIC HEAT TO MAINTAIN ZONE TEMPERATURE SETPOINT.

G. UNOCCUPIED MODE NIGHT SETBACK/SETUP: WHEN IN THE "UNOCCUPIED MODE", THE UNIT SHALL CYCLE THE FAN, DISABLE THE OUTSIDE AIR INTAKE FAN, MODULATE THE COMPRESSOR(S) AS NECESSARY TO MAINTAIN ZONE TEMPERATURE SETPOINT.

H. DEHUMIDIFICATION MODE: WHENEVER THE SPACE RELATIVE HUMIDITY RISES ABOVE THE SPACE SETPOINT, THE DDC SHALL INDEX THE COOLING SYSTEMS AND MODULATE THE HOT GAS REHEAT TO MAINTAIN A DISCHARGE AIR TEMPERATURE OF 72°F (ADJUSTABLE). THE DDC SHALL GIVE PREFERENCE TO THE SPACE TEMPERATURE AT ALL TIMES AND THE DEHUMIDIFICATION SEQUENCE SHALL NOT DROP THE SPACE TEMPERATURE BELOW SETPOINT.

I. ECONOMIZER MODE: ECONOMIZER SHALL BE ENABLED WHENEVER THE OUTSIDE AIR IS BELOW 55°F, THE COMPRESSOR SHALL DE-ENERGIZE, THE OUTSIDE AIR DAMPER SHALL FULLY OPEN AND THE OUTSIDE AIR SHALL BE USED FOR COOLING.

J. UNIT MALFUNCTION ALARM: THE DDC SHALL MONITOR THE STATUS OF THE UNIT AND WHENEVER THE UNIT IS SHUT DOWN ON ITS INTERNAL SAFETIES, THE DDC SHALL TRANSMIT A MALFUNCTION ALARM TO THE DDC SYSTEM'S OPERATOR WORKSTATION.

K. HIGH/LOW TEMPERATURE ALARM: WHENEVER THE SPACE TEMPERATURE RISES ABOVE OR FALLS BELOW THE SPACE TEMPERATURE SETPOINT, THE DDC SHALL TRANSMIT A HIGH/LOW TEMPERATURE ALARM TO THE DDC SYSTEM'S OPERATOR WORKSTATION.

L. SHUTDOWN: ANYTIME THE UNIT IS SHUT DOWN BY EITHER A COMMANDED STOP, SCHEDULE, OR SYSTEM SAFETY (INCLUDING CONDENSATE OVERFLOW), THE UNIT SHALL BE SET AS FOLLOWS: THE SUPPLY FAN AND UNIT COMPRESSOR SHALL BE OFF.

M. BIPOLAR IONIZATION: THE BIPOLAR GENERATOR SHALL BE POWERED BY A CONTROL TRANSFORMER PROVIDED WITH THE UNIT BY THE UNIT MANUFACTURER. THE ION GENERATOR SHALL CYCLE ON AND OFF WITH THE SUPPLY FAN. THE BAS SHALL ENABLE/DISABLE THE ION GENERATOR, MONITOR FOR FAULTS STATUS, AND SEND AN ALARM TO THE OWNER'S WORKSTATION IF A FAULT IS DETECTED.

SYSTEM POINT LIST

SYSTEM POINT DESCRIPTION	ANALOG INPUTS: GRAPHIC	TEMPERATURE	PRESSURE	RH	KW	GPM	CFM	PPM	STAGE	PERCENT RLA	ION COUNT	ANALOG OUTPUTS: DDC	4-20mA	0-10 VDC	FEEDBACK	SETPOINT ADJ.	DIGITAL INPUTS: STATUS	FILTER STATUS	ALARM	STATUS OPN/CLSD	FAULT TRIP	DIGITAL OUTPUTS: START/STOP	ON/OFF/AUTO	ENABLE/DISABLE	OPEN/CLOSE	SYSTEM FEATURES — ALARMS: HIGH ANALOG	LOW ANALOG	BINARY	PROOF	SENSOR FAIL	FLOW FAIL	COMM. FAIL	DIAGNOSTICS	PROGRAMS: TIME SCHEDULING	OPT. START/STOP	DEMAND LIMITING	RESET	EVENT PROGRAM	DDC	ALARM	MAINT. WK. ORD.	RUN TIME	EXP. MESSAGE	SET BACK/SET UP	NIGHT PURGE	TENANT BILLING	CHILLER SEQUENCE	TOTALIZING	TIMED OVERRIDE	TREND	NOTES
UV-A & B																																																	
Supply Air	X	X														X									X	X		X						X														
Supply Fan	X																X												X						X													
Space	X	X		X												X										X	X		X						X													X	
Compressor	X																X		X			X																		X								
Reversing Valve	X																X		X						X			X																			
Condenser Fan	X																X									X	X		X																			
Exhaust Fan	X																X									X	X		X																			
Outside Air Fan	X	X		X													X												X																			
Economizer	X																																							X								
Condensate Overflow	X																		X									X																			
Bi-Polar Ionization	X																X																															

GENERAL NOTES:

COMMONWEALTH OF VIRGINIA
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA

AUTOMATIC TEMPERATURE CONTROLS

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: GJA
DRAWN BY: SLS
CHECKED BY: KDA

M4.2

DATE: 04/19/2022

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PACKAGED ROOFTOP SINGLE ZONE VAV AIR CONDITIONING UNIT SEQUENCE OF OPERATION

1. THE FACTORY UNIT MOUNTED CONTROLLER SHALL CONTROL ALL FUNCTIONS OF THE UNIT. THE BUILDING AUTOMATION SYSTEM THROUGH A BACNET INTERFACE WITH THE UNIT'S FACTORY CONTROLLER SHALL PROVIDE ACCESS TO ALL CONTROL DATA AVAILABLE FROM THE UNIT'S FACTORY CONTROLLER. FIELD MOUNTED CONTROLLERS ARE NOT ACCEPTABLE AND ALL DATA FROM THE UNIT'S FACTORY CONTROLLER SHALL BE AVAILABLE TO THE BUILDING AUTOMATION SYSTEM'S TRIDIUM FRONT END. THE BAS SHALL BE ABLE TO CONTROL ALL SOFTWARE POINTS INDICATED IN THE GRAPHICAL USER INTERFACE MAIN SCREEN THROUGH THE FACTORY PROVIDED UNIT MOUNTED CONTROLLER'S BACNET INTERFACE. ALL POINTS AVAILABLE THROUGH THE UNIT'S BACNET INTERFACE SHALL BE ACCESSIBLE THROUGH THE GRAPHICAL USER INTERFACE FOR MONITORING UNIT'S FUNCTION AND PERFORMANCE.

A. OCCUPIED:

1. WHEN THE ROOFTOP UNIT IS INDEXED TO THE OCCUPIED MODE, THE SUPPLY AIR FAN SHALL BE ENABLED.

2. COOLING: ONCE THE SUPPLY AIR FAN OPERATION HAS BEEN ESTABLISHED AS SENSED BY ITS RESPECTIVE PROOF OF FLOW SWITCH, THE OUTSIDE AIR DAMPER SHALL OPEN TO ITS RESPECTIVE MINIMUM VENTILATION POSITION AND THE RETURN AIR DAMPER SHALL CLOSE PROPORTIONALLY. ON A RISE ABOVE THE PROGRAMMED SPACE COOLING TEMPERATURE SET POINT OF 74°F (ADJ.), THE UNIT SHALL BEGIN TO STAGE THE COMPRESSOR ON TO MAINTAIN THE COOLING SUPPLY AIR TEMPERATURE OF 55°F (ADJ.). ON A FALL BELOW THE PROGRAMMED SPACE TEMPERATURE SET POINT, THE REVERSE SHALL OCCUR.

3. HEATING: ONCE THE SUPPLY AIR FAN OPERATION HAS BEEN ESTABLISHED AS SENSED BY ITS RESPECTIVE PROOF OF FLOW SWITCH, THE OUTSIDE AIR DAMPER SHALL MODULATE TO ITS RESPECTIVE MINIMUM VENTILATION POSITION AND THE RETURN AIR DAMPER SHALL CLOSE PROPORTIONALLY. DISCHARGE AIR TEMPERATURE SHALL BE MONITORED BY A DUCT-MOUNTED TEMPERATURE SENSOR. SPACE TEMPERATURE SHALL BE CONTROLLED BY THE UNIT'S ASSOCIATED GAS FURNACE.

4. ON A RISE IN SPACE RELATIVE HUMIDITY ABOVE THE SPACE RELATIVE HUMIDITY SETPOINT OF 60% RH (ADJ.), IF AND ONLY IF THE SPACE TEMPERATURE SETPOINT IS SATISFIED, THE OUTSIDE AIR DAMPER SHALL MODULATE TO ITS MINIMUM POSITION (IF IN ECONOMIZER MODE), THE RETURN AIR DAMPER SHALL MODULATE PROPORTIONALLY OPEN AND THE DEHUMIDIFICATION CONTROL SEQUENCE OF OPERATION SHALL BE ENABLED. THE DX COOLING SHALL BE ENABLED AND CONTROLLED TO MAINTAIN THE SATURATION TEMPERATURE SETPOINT OF 53°F (ADJ.). ON A FALL BELOW THE SPACE RELATIVE HUMIDITY SETPOINT, THE REVERSE SHALL OCCUR. THE HOT GAS REHEAT SOLENOID VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.

5. WHEN THE OUTSIDE AIR TEMPERATURE IS 55°F (ADJ.) OR BELOW, AND THE SPACE TEMPERATURE IS ABOVE ITS RESPECTIVE PROGRAMMED COOLING TEMPERATURE SET POINT, THE COMPRESSOR SHALL BE DISABLED AND THE OUTSIDE AND RETURN AIR DAMPERS SHALL BE MODULATED OPEN AND CLOSED RESPECTIVELY TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE EXHAUST FAN, WHERE PROVIDED, SHALL BE ENERGIZED. ON A FALL BELOW THE SPACE TEMPERATURE SETPOINT, THE OUTSIDE AIR DAMPER SHALL MODULATE TO ITS MINIMUM POSITION AND THE RETURN AIR DAMPER SHALL MODULATE PROPORTIONALLY OPEN. WHEN THE OUTSIDE AIR TEMPERATURE RISES ABOVE 55°F, THE UNIT SHALL REVERT TO ITS COOLING AND/OR HEATING SEQUENCES AND THE EXHAUST FAN SHALL BE DE-ENERGIZED.

B. UNOCCUPIED:

1. WHEN THE ROOFTOP UNIT IS INDEXED TO THE UNOCCUPIED MODE, THE OUTSIDE AIR DAMPER SHALL MODULATE FULLY CLOSED, THE RETURN AIR DAMPER SHALL MODULATE FULLY OPEN AND THE SUPPLY AIR FAN SHALL BE DISABLED.

2. COOLING: ON A RISE ABOVE THE PROGRAMMED HIGH LIMIT SPACE TEMPERATURE SET POINT OF 80°F (ADJ.), THE SUPPLY AIR FAN SHALL BE ENABLED. AFTER THE SUPPLY AIR FAN OPERATION IS ESTABLISHED BY ITS RESPECTIVE CURRENT SENSING RELAY, THE DX COOLING SHALL BE ENABLED TO MAINTAIN THE SPACE TEMPERATURE SET POINT. ON A FALL BELOW THE UNOCCUPIED HIGH LIMIT SPACE TEMPERATURE SET POINT, DX COOLING SHALL BE DISABLED AND THE SUPPLY AIR FAN SHALL BE DISABLED.

3. HEATING: ON A FALL BELOW THE PROGRAMMED LOW LIMIT SPACE TEMPERATURE SET POINT OF 60°F (ADJ.), THE SUPPLY AIR FAN SHALL BE ENABLED. AFTER THE SUPPLY AIR FAN OPERATION IS ESTABLISHED BY ITS RESPECTIVE CURRENT SENSING RELAY, THE ASSOCIATED GAS FURNACE SHALL MODULATE TO MAINTAIN THE UNOCCUPIED LOW LIMIT TEMPERATURE SETPOINT. ON A RISE ABOVE THE UNOCCUPIED LOW LIMIT SPACE TEMPERATURE SET POINT, THE ASSOCIATED DUCT HEATING COILS SHALL BE DISABLED AND THE SUPPLY AIR FAN SHALL BE DISABLED.

4. DEHUMIDIFICATION: ON A RISE IN SPACE RELATIVE HUMIDITY ABOVE THE SPACE RELATIVE HUMIDITY SETPOINT OF 60% RH (ADJ.), IF AND ONLY IF THE SPACE TEMPERATURE SETPOINT IS SATISFIED, THE SUPPLY AIR FAN SHALL BE ENABLED. AFTER THE SUPPLY AIR FAN OPERATION IS ESTABLISHED BY ITS RESPECTIVE CURRENT SENSING RELAY, THE DX COOLING SHALL BE ENABLED AND CONTROLLED TO MAINTAIN THE SATURATION TEMPERATURE SETPOINT OF 53°F (ADJ.). THE HOT GAS REHEAT SOLENOID VALVE SHALL MODULATE TO MAINTAIN THE UNOCCUPIED SPACE TEMPERATURE SET POINT.

C. MORNING WARM-UP: ONCE THE DDC HAS COMMANDED THE UNIT FROM THE UNOCCUPIED MODE TO THE OCCUPIED MODE, IF THE RETURN AIR TEMPERATURE IS BELOW THE MORNING WARM-UP TEMPERATURE SET POINT OF 70°F (ADJ.), THE WARM-UP MODE SHALL BE INITIATED AND THE ASSOCIATED DUCT HEATING COIL SHALL BE ENABLED. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED DURING WARM-UP MODE. ON A RISE ABOVE THE MORNING WARM-UP TEMPERATURE SETPOINT, THE ASSOCIATED DUCT HEATING COIL SHALL BE DISABLED.

D. MORNING COOL-DOWN: ONCE THE DDC HAS COMMANDED THE UNIT FROM THE UNOCCUPIED MODE TO THE OCCUPIED MODE, IF THE RETURN AIR TEMPERATURE IS ABOVE THE MORNING COOL-DOWN TEMPERATURE SET POINT OF 74°F (ADJ.), THE COOL-DOWN MODE SHALL BE INITIATED AND THE DX COOLING SHALL BE ENABLED. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED DURING COOL-DOWN MODE. ON A FALL BELOW THE MORNING COOL-DOWN TEMPERATURE, THE DX COOLING SHALL BE DISABLED.

E. SINGLE ZONE VARIABLE AIR VOLUME: THE SUPPLY FAN SHALL OPERATE CONTINUOUSLY BETWEEN A SPECIFIED MINIMUM AND MAXIMUM SPEED. THE UNIT CONTROLLER SHALL MODULATE THE SUPPLY FAN BETWEEN THE MINIMUM AND MAXIMUM BASED ON HOW NEAR OR FAR THE SPACE TEMPERATURE IS AWAY FROM SETPOINT.

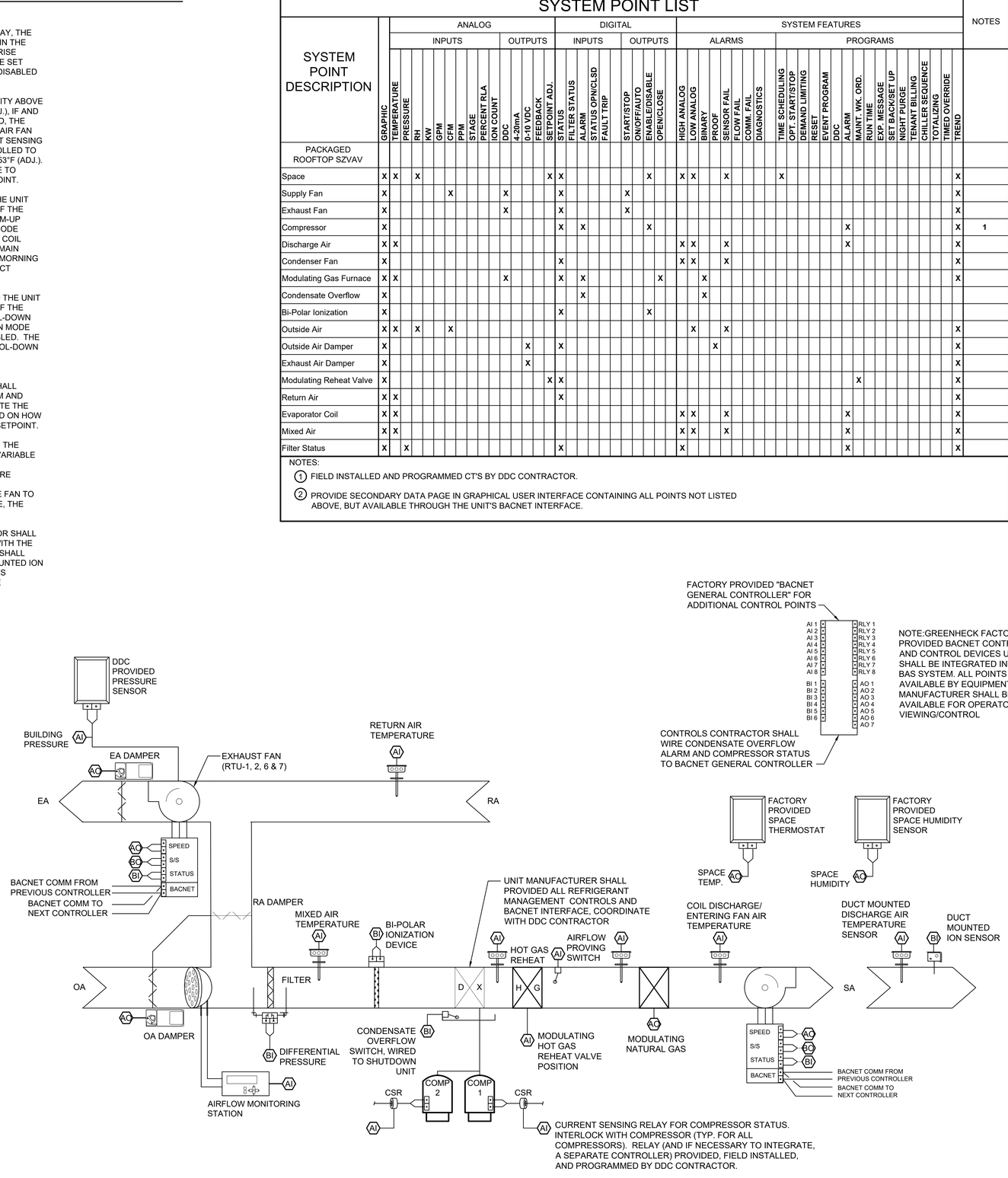
F. BUILDING PRESSURIZATION: ON A CALL FOR OCCUPANCY, THE UNIT CONTROLLER SHALL MODULATE THE EXHAUST FAN VARIABLE SPEED DRIVE, WHERE PROVIDED, TO MAINTAIN BUILDING PRESSURED AS SENSED BY THE LOCAL BUILDING PRESSURE SENSOR INSTALLED IN THE ZONE. ON A RISE IN BUILDING PRESSURE, THE UNIT CONTROLLER SHALL MODULATE THE FAN TO IT'S MAXIMUM SETTING. ON A FALL IN BUILDING PRESSURE, THE REVERSE SHALL OCCUR.

G. BIPOLAR IONIZATION: THE BIPOLAR IONIZATION GENERATOR SHALL BE POWERED BY A CONTROL TRANSFORMER PROVIDED WITH THE UNIT BY THE UNIT MANUFACTURER. THE ION GENERATOR SHALL CYCLE ON AND OFF WITH THE SUPPLY FAN. THE DUCT MOUNTED ION SENSOR SHALL COMMUNICATE AN ALARM TO THE OWNER'S WORKSTATION IF ION CONCENTRATION FALLS BELOW THE ACCEPTABLE THRESHOLD WHILE THE ION GENERATOR IS ENERGIZED.

SYSTEM POINT LIST

SYSTEM POINT DESCRIPTION	ANALOG INPUTS: GRAPHIC	TEMPERATURE	PRESSURE	RH	KW	GPM	CFM	PPM	STAGE	PERCENT RLA	ION COUNT	ANALOG OUTPUTS: DDC	4-20mA	0-10 VDC	FEEDBACK	SETPOINT ADJ.	DIGITAL INPUTS: STATUS	FILTER STATUS	ALARM	STATUS OPN/CLSD	FAULT TRIP	DIGITAL OUTPUTS: START/STOP	ON/OFF/AUTO	ENABLE/DISABLE	OPEN/CLOSE	SYSTEM FEATURES — ALARMS: HIGH ANALOG	LOW ANALOG	BINARY	PROOF	SENSOR FAIL	FLOW FAIL	COMM. FAIL	DIAGNOSTICS	PROGRAMS: TIME SCHEDULING	OPT. START/STOP	DEMAND LIMITING	RESET	EVENT PROGRAM	DDC	ALARM	MAINT. WK. ORD.	RUN TIME	EXP. MESSAGE	SET BACK/SET UP	NIGHT PURGE	TENANT BILLING	CHILLER SEQUENCE	TOTALIZING	TIMED OVERRIDE	TREND	NOTES
PACKAGED ROOFTOP SZVAV																																																		
Space	X	X		X												X	X							X			X	X		X					X													X	
Supply Fan	X						X					X					X					X																									X	
Exhaust Fan	X											X					X					X																									X	
Compressor	X																X		X					X																		X						X	1
Discharge Air	X	X																								X	X		X												X						X	
Condenser Fan	X																X									X	X		X																		X	
Modulating Gas Furnace	X	X										X					X		X						X			X																			X	
Condensate Overflow	X																		X									X																				
Bi-Polar Ionization	X																X								X																						
Outside Air	X	X		X		X																					X		X																		X	
Outside Air Damper	X													X			X																														X	
Exhaust Air Damper	X													X																																	X	
Modulating Reheat Valve	X															X	X																											X				X	
Return Air	X	X															X																															X	
Evaporator Coil	X	X																								X	X		X												X						X	
Mixed Air	X	X																								X	X		X												X						X	
Filter Status	X		X														X									X															X						X	

NOTES:
1. FIELD INSTALLED AND PROGRAMMED CT'S BY DDC CONTRACTOR.
2. PROVIDE SECONDARY DATA PAGE IN GRAPHICAL USER INTERFACE CONTAINING ALL POINTS NOT LISTED ABOVE, BUT AVAILABLE THROUGH THE UNIT'S BACNET INTERFACE.



PACKAGED ROOFTOP SINGLE ZONE VAV AIR CONDITIONING UNIT DDC CONTROLS DIAGRAM (RTU-1,3, 4, 6 & 7)

NOT TO SCALE

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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
AUTOMATIC TEMPERATURE CONTROLS

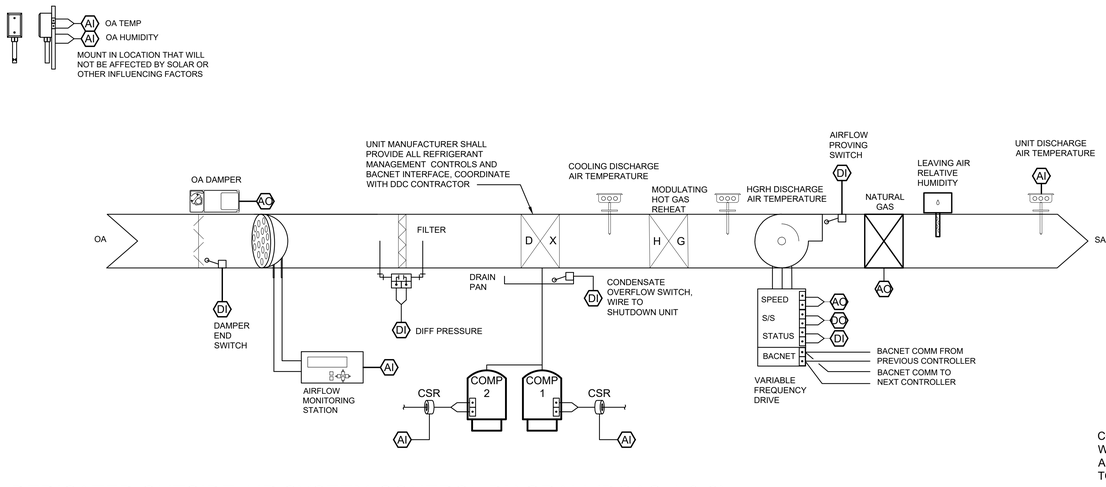
REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: GJA
DRAWN BY: SLS
CHECKED BY: KDA

M4.3

DATE: 04/19/2022



100% DEDICATED OUTSIDE AIR SYSTEM CONTROL DIAGRAM (DOAS-1 & 2)

NOT TO SCALE

100% DEDICATED OUTDOOR AIR SYSTEM:

1. THE FACTORY UNIT MOUNTED CONTROLLER SHALL CONTROL ALL FUNCTIONS OF THE UNIT. THE BUILDING AUTOMATION SYSTEM THROUGH A BACNET INTERFACE WITH THE UNIT'S FACTORY CONTROLLER SHALL PROVIDE ACCESS TO ALL CONTROL DATA AVAILABLE FROM THE UNIT'S FACTORY CONTROLLER. FIELD MOUNTED CONTROLLERS ARE NOT ACCEPTABLE AND ALL DATA FROM THE UNIT'S FACTORY CONTROLLER SHALL BE AVAILABLE TO THE BUILDING AUTOMATION SYSTEM'S TRIDIUM FRONT END. THE BAS SHALL BE ABLE TO CONTROL ALL SOFTWARE POINTS INDICATED IN THE GRAPHICAL USER INTERFACE MAIN SCREEN THROUGH THE FACTORY PROVIDED UNIT MOUNTED CONTROLLER'S BACNET INTERFACE. ALL POINTS AVAILABLE THROUGH THE UNIT'S BACNET INTERFACE SHALL BE ACCESSIBLE THROUGH THE GRAPHICAL USER INTERFACE FOR MONITORING UNIT'S FUNCTION AND PERFORMANCE.

2. THE FOLLOWING ITEMS SHALL BE ACCOMPLISHED THROUGH THE DDC SYSTEM.

   A. SCHEDULING OF THE UNIT: THE DDC SHALL SCHEDULE THE UNITS FOR THE OCCUPIED AND UNOCCUPIED MODES.
   B. UNIT DISCHARGE AIR TEMPERATURE SETPOINT.
   C. COOLING COIL DISCHARGE AIR TEMPERATURE SETPOINT.
   D. HOT GAS REHEAT COIL DISCHARGE AIR TEMPERATURE SETPOINT.

2. OCCUPIED MODE: THE DDC SHALL INDEX THE UNIT TO RUN BASED ON THE ADJUSTABLE OCCUPANCY SCHEDULE. WHENEVER THE BUILDING IS OCCUPIED, THE UNIT SHALL OPERATE CONTINUOUSLY. THE UNIT OUTSIDE AIR DAMPER SHALL BE FULLY OPEN, AN END SWITCH ON THE DAMPER SHALL PROVIDE POSITIVE PROOF. UPON POSITIVE PROOF, THE SUPPLY AIR FAN SHALL BE ENERGIZED. IF AT ANY TIME THE COOLING COIL DISCHARGE AIR TEMPERATURE FALLS BELOW THE HEATING SETPOINT, THE DDC CONTROL SYSTEM SHALL INDEX THE UNIT TO HEATING OPERATION TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT. SHOULD THE COOLING COIL DISCHARGE AIR TEMPERATURE RISE ABOVE THE COOLING SETPOINT, THE DDC CONTROLS SYSTEM SHALL INDEX THE UNIT TO THE COOLING OPERATION AND START THE COMPRESSOR TO MAINTAIN THE DISCHARGE AIR TEMPERATURE. THE SYSTEM SHALL STAGE THE HEATING AND COOLING SYSTEMS, SO AS TO MAINTAIN THE COOLING COIL DISCHARGE AIR TEMPERATURE SETPOINT AT ALL TIMES AS COMMUNICATED BY THE DDC SYSTEM (INITIALLY SET AT 72°F FOR HEATING AND 50°F FOR COOLING).

3. A COOLING COIL DISCHARGE AIR TEMPERATURE SENSOR AND DDC CONTROLLER SHALL MODULATE THE DX COOLING TO MAINTAIN AN ADJUSTABLE DISCHARGE TEMPERATURE OFF THE COOLING COIL. INITIAL COOLING COIL DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE 50°F. A HOT GAS REHEAT COIL DISCHARGE AIR TEMPERATURE SENSOR AND DDC CONTROLLER SHALL MODULATE THE HOT GAS REHEAT VALVE TO MAINTAIN AN ADJUSTABLE DISCHARGE TEMPERATURE OFF THE REHEAT COIL BASED ON THE MAKE UP AIR HANDLING UNIT (DOAS) COMPRESSOR STATUS. INITIAL UNIT DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE 72°F.

4. BOTH THE DX COOLING COIL AND REHEAT COIL TEMPERATURE SETPOINTS SHALL BE ADJUSTABLE THROUGH THE DDC SYSTEM.

5. UNOCCUPIED MODE: WHEN THE UNIT IS INDEXED TO THE UNOCCUPIED MODE, THE OUTSIDE AIR DAMPERS SHALL FULLY CLOSE AND THE UNIT SHALL BE DISABLED.

6. ALARMS:

   A. FREEZE PROTECTION: ANYTIME THE UNIT DISCHARGE AIR TEMPERATURE FALLS BELOW 35°F (ADJ) FOR 300 SECONDS (ADJ), THE UNIT MOUNTED CONTROLLER SHALL DISABLE THE UNIT AND SEND AN ALARM TO THE FRONTEND WORKSTATION.
   B. FILTERS: ON A RISE IN FILTER STATIC PRESSURE ABOVE A PREDETERMINED SETPOINT (ADJ), THE DDC CONTROLLER SHALL SEND AN ALARM TO THE FRONTEND WORKSTATION. STATIC PRESSURE SHALL BE SENSED BY A DIFFERENTIAL PRESSURE SWITCH ACROSS EACH FILTER BANK.
   C. SUPPLY AIR: THE UNIT MOUNTED CONTROLLER SHALL MONITOR THE SUPPLY FAN PROVING SWITCH. ANYTIME THE SUPPLY FAN PROVING SWITCH IS NOT ENGAGED FOR 30 SECONDS AFTER THE SUPPLY FAN HAS BEEN ENABLED, THE UNIT MOUNTED CONTROLLER SHALL DISABLE THE UNIT AND SEND AN ALARM TO THE FRONTEND WORKSTATION.
   D. DX ALARM: THE UNIT MOUNTED CONTROLLER SHALL MONITOR THE REFRIGERANT PRESSURE. ANYTIME A LOW REFRIGERANT PRESSURE IS SENSED, THE UNIT MOUNTED CONTROLLER SHALL SHUTDOWN THE COMPRESSOR AND SEND AND ALARM TO THE FRONTEND WORKSTATION. A LOW REFRIGERANT PRESSURE LOCKOUT SHALL BE AUTOMATICALLY RESET. ANYTIME A HIGH REFRIGERANT PRESSURE IS SENSED, THE UNIT MOUNTED CONTROLLER SHALL SHUTDOWN THE COMPRESSOR AND SEND AND ALARM TO THE FRONTEND WORKSTATION. A HIGH PRESSURE LOCKOUT SHALL REQUIRE A MANUAL RESET.

GRAPHICAL USER INTERFACE MAIN SCREEN

SYSTEM POINT DESCRIPTION	ANALOG INPUTS: GRAPHIC	TEMPERATURE	PRESSURE	RH	KW	GPM	CFM	PPM	STAGE	PERCENT RLA	ION COUNT	ANALOG OUTPUTS: DDC	4-20mA	0-10 VDC	FEEDBACK	SETPOINT ADJ.	DIGITAL INPUTS: STATUS	FILTER STATUS	ALARM	STATUS OPN/CLSD	FAULT TRIP	DIGITAL OUTPUTS: START/STOP	ON/OFF/AUTO	ENABLE/DISABLE	OPEN/CLOSE	SYSTEM FEATURES ALARMS: HIGH ANALOG	LOW ANALOG	BINARY	PROOF	SENSOR FAIL	FLOW FAIL	COMM. FAIL	DIAGNOSTICS	PROGRAMS: TIME SCHEDULING	OPT. START/STOP	DEMAND LIMITING	RESET	EVENT PROGRAM	DDC	ALARM	MAINT. WK. ORD.	RUN TIME	EXP. MESSAGE	SET BACK/SET UP	NIGHT PURGE	TENANT BILLING	CHILLER SEQUENCE	TOTALIZING	TIMED OVERRIDE	TREND	NOTES
DEDICATED OUTSIDE AIR SYSTEM																																																						
Unit Enable/Disable	X																							X												X	X				X										X		
Outside Air	X	X		X		X																X	X		X	X									X					X										X		2
Unit Discharge Air	X	X		X																		X	X		X										X					X										X		
HGRH Discharge Air	X	X		X												X						X	X		X										X					X										X		
Cooling Discharge Air	X	X		X												X						X	X		X										X					X										X		
Compressor	X											X		X			X				X							X												X										X		
Outside Air Damper	X													X	X						X								X											X										X		
Gas Heat	X											X				X																								X										X		
Supply Fan	X											X		X																										X										X		1
Filter Status	X		X																							X														X										X		
Supply Air Alarm	X	X																	X								X													X										X		
DX Alarm	X	X																							X		X													X										X		
Modulating HGRH	X											X					X		X								X													X										X		

GENERAL NOTES:
1. VFD PROVIDED BY UNIT MANUFACTURER.
2. OUTSIDE AIR TEMPERATURE SHALL BE A GLOBAL POINT.

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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
AUTOMATIC TEMPERATURE CONTROLS

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: GJA
DRAWN BY: SLS
CHECKED BY: KDA

M4.4

DATE: 04/19/2022

PACKAGED ROOFTOP VAV AIR CONDITIONING UNIT SEQUENCE OF OPERATION (RTU-2 & 5)

1. THE FACTORY UNIT MOUNTED CONTROLLER SHALL CONTROL ALL FUNCTIONS OF THE UNIT. THE BUILDING AUTOMATION SYSTEM THROUGH A BACNET INTERFACE WITH THE UNIT'S FACTORY CONTROLLER SHALL PROVIDE ACCESS TO ALL CONTROL DATA AVAILABLE FROM THE UNIT'S FACTORY CONTROLLER. FIELD MOUNTED CONTROLLERS ARE NOT ACCEPTABLE AND ALL DATA FROM THE UNIT'S FACTORY CONTROLLER SHALL BE AVAILABLE TO THE BUILDING AUTOMATION SYSTEM'S TRIDIUM FRONT END. THE BAS SHALL BE ABLE TO CONTROL ALL SOFTWARE POINTS INDICATED IN THE GRAPHICAL USER INTERFACE MAIN SCREEN THROUGH THE FACTORY PROVIDED UNIT MOUNTED CONTROLLER'S BACNET INTERFACE. ALL POINTS AVAILABLE THROUGH THE UNIT'S BACNET INTERFACE SHALL BE ACCESSIBLE THROUGH THE GRAPHICAL USER INTERFACE FOR MONITORING UNIT'S FUNCTION AND PERFORMANCE.
2. OCCUPIED MODE: DURING OCCUPIED PERIODS, THE SUPPLY FAN SHALL RUN CONTINUOUSLY AND THE OUTSIDE AIR DAMPER SHALL OPEN TO MAINTAIN CURRENT AIRFLOW SETPOINT. THE ROOFTOP UNIT CONTROLLER SHALL CONTROL THE SUPPLY FAN VFD TO MAINTAIN THE CURRENT DUCT STATIC PRESSURE SETPOINT (ADJ.). THE COMPRESSORS, GAS HEAT, AND OA DAMPER (IF AIRSIDE ECONOMIZING IN ENABLED) SHALL CYCLE/MODULATE TO MAINTAIN DISCHARGE AIR TEMPERATURE AT SETPOINT (ADJ.).
3. UNOCCUPIED MODE: WHEN THE SPACE TEMPERATURE IS BELOW THE UNOCCUPIED HEATING SETPOINT OF 60.0 DEG. F (ADJ.) THE SUPPLY FAN VARIABLE FREQUENCY DRIVE (VFD) SHALL OPERATE AS NECESSARY TO MAINTAIN DUCT STATIC PRESSURE SETPOINT (ADJ.), THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED, THE RETURN AIR DAMPER SHALL BE FULLY OPEN, AND THE GAS HEAT SHALL BE ENABLED. WHEN THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED HEATING SETPOINT OF 60.0 DEG. F (ADJ.) PLUS THE UNOCCUPIED DIFFERENTIAL OF 4.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL STOP AND THE GAS HEAT SHALL BE DISABLED.
4. WHEN THE SPACE TEMPERATURE IS ABOVE THE UNOCCUPIED COOLING SETPOINT OF 85.0 DEG. F (ADJ.) THE SUPPLY FAN VARIABLE FREQUENCY DRIVE (VFD) SHALL OPERATE AS NECESSARY TO MAINTAIN DUCT STATIC PRESSURE SETPOINT (ADJ.), THE OUTSIDE AIR DAMPER SHALL OPEN IF ECONOMIZING IS ENABLED AND REMAIN CLOSED IF ECONOMIZING IS DISABLED AND THE DX COOLING SHALL BE ENABLED. WHEN THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED COOLING SETPOINT OF 85.0 DEG. F (ADJ.) MINUS THE UNOCCUPIED DIFFERENTIAL OF 4.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL STOP, THE DX COOLING SHALL BE DISABLED AND THE OUTSIDE AIR DAMPER SHALL CLOSE.
5. OPTIMAL START: THE BAS SHALL MONITOR THE SCHEDULED OCCUPIED TIME, OCCUPIED SPACE SETPOINTS AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL START OCCURS.
6. MORNING WARM-UP MODE: DURING OPTIMAL START, IF THE AVERAGE SPACE TEMPERATURE IS BELOW THE OCCUPIED HEATING SETPOINT A MORNING WARM-UP MODE SHALL BE ACTIVATED. WHEN MORNING WARM-UP IS INITIATED THE UNIT SHALL ENABLE THE HEATING AND SUPPLY FAN. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED. WHEN THE AVERAGE SPACE TEMPERATURE REACHES THE OCCUPIED HEATING SETPOINT (ADJ.), THE UNIT SHALL TRANSITION TO THE OCCUPIED MODE.
7. PRE-COOL MODE: DURING OPTIMAL START, IF THE AVERAGE SPACE TEMPERATURE IS ABOVE THE OCCUPIED COOLING SETPOINT, PRE-COOL MODE SHALL BE ACTIVATED. WHEN PRE-COOL IS INITIATED THE UNIT SHALL ENABLE THE FAN AND COOLING OR ECONOMIZER. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED, UNLESS ECONOMIZING. WHEN THE AVERAGE SPACE TEMPERATURE REACHES OCCUPIED COOLING SETPOINT (ADJ.), THE UNIT SHALL TRANSITION TO THE OCCUPIED MODE.
8. OPTIMAL STOP: THE BAS SHALL MONITOR THE SCHEDULED UNOCCUPIED TIME, OCCUPIED SETPOINTS AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL STOP OCCURS. WHEN THE OPTIMAL STOP MODE IS ACTIVE THE UNIT CONTROLLER SHALL MAINTAIN THE SPACE TEMPERATURE TO THE SPACE TEMPERATURE OFFSET SETPOINT.
9. COOLING MODE: THE UNIT CONTROLLER SHALL USE THE DISCHARGE AIR TEMPERATURE SENSOR AND DISCHARGE AIR TEMPERATURE COOLING SETPOINT TO DETERMINE WHEN TO INITIATE REQUESTS FOR COOLING. DISCHARGE AIR SETPOINT SHALL BE MAINTAINED BY MODULATING THE ECONOMIZER OR STAGING THE DX COOLING AS REQUIRED TO MAINTAIN THE DISCHARGE AIR SETPOINT.
10. HEATING MODE: THE UNIT CONTROLLER SHALL USE THE DISCHARGE AIR TEMPERATURE SETPOINT AND DISCHARGE AIR TEMPERATURE SENSOR TO DETERMINE WHEN TO INITIATE REQUEST FOR HEATING. WHEN THE DISCHARGE AIR TEMPERATURE FALLS 10.0 DEG. F BELOW THE DISCHARGE AIR TEMPERATURE SETPOINT, THE HEATING WILL MODULATE TO MAINTAIN THE SUPPLY AIR TEMPERATURE TO SETPOINT.
11. SUPPLY AIR TEMPERATURE RESET CONTROL: THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET TO THE OPTIMAL SETPOINT COMMUNICATED BY THE BAS. THE BAS SHALL RESET THE SUPPLY AIR TEMPERATURE SETPOINT BASED ON THE CURRENT OUTSIDE AIR TEMPERATURE, BUT SHALL OVERRIDE THIS RESET FUNCTION AND RETURN THE SUPPLY AIR TEMPERATURE SETPOINT TO 55.0 DEG. F (ADJ.) IF MORE THAN TWO (ADJ.) ZONES BEGIN TO OVERHEAT. ALSO, THE BAS SHALL OVERRIDE THIS RESET FUNCTION WHENEVER OUTDOOR DEW POINT IS HIGHER THAN 60.0 DEG. F (ADJ.) OR INDOOR HUMIDITY IS HIGHER THAN 60% RH (ADJ.). IF THE SUPPLY AIR TEMPERATURE DROPS BELOW THE MINIMUM LIMIT, A LOW TEMPERATURE ALARM SHALL BE ANNUNCIATED AND THE UNIT SHALL SHUT DOWN. IF THE SUPPLY AIR TEMPERATURE RISES ABOVE THE MAXIMUM LIMIT, A HIGH TEMPERATURE ALARM SHALL BE ANNUNCIATED.
12. REFERENCE DRY BULB: OUTSIDE AIR (OA) TEMPERATURE SHALL COMPARED WITH A REFERENCE DRY BULB SETPOINT. THE ECONOMIZER SHALL ENABLE WHEN THE OA TEMPERATURE IS LESS THAN REFERENCE DRY BULB SETPOINT. THE ECONOMIZER SHALL BE DISABLED WHEN OA TEMPERATURE IS GREATER THAN REFERENCE DRY BULB SETPOINT + 5.0 DEG. F.
13. ECONOMIZER: THE SUPPLY AIR SENSOR SHALL MEASURE THE DRY BULB TEMPERATURE OF THE AIR LEAVING THE EVAPORATOR COIL WHILE ECONOMIZING. WHEN ECONOMIZING IS ENABLED AND THE UNIT IS OPERATING IN THE COOLING MODE, THE ECONOMIZER DAMPER SHALL BE MODULATED BETWEEN ITS MINIMUM POSITION AND 100% TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT. THE ECONOMIZER DAMPER SHALL MODULATE TOWARD MINIMUM POSITION IN THE EVENT THE MIXED AIR TEMPERATURE FALLS BELOW THE LOW LIMIT TEMPERATURE SETTING. COMPRESSORS SHALL BE DELAYED FROM OPERATING UNTIL THE ECONOMIZER HAS OPENED TO 100%.
14. VENTILATION CONTROL: WHEN IN THE OCCUPIED MODE, THE FLOW-MEASURING STATION SHALL MODULATE THE OUTSIDE AIR DAMPER TO MAINTAIN THE CURRENT VENTILATION AIRFLOW SETPOINT. THE VENTILATION AIRFLOW SETPOINT SHALL BE RESET TO THE OPTIMAL VENTILATION SETPOINT COMMUNICATED BY THE BAS. THE BAS SHALL RESET THE VENTILATION SETPOINT BASED ON THE CURRENT VENTILATION NEEDS OF THE VAV TERMINALS.
15. SUPPLY FAN: THE SUPPLY FAN SHALL BE ENABLED WHILE IN THE OCCUPIED MODE AND CYCLED ON DURING THE UNOCCUPIED MODE. A DIFFERENTIAL PRESSURE SWITCH SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FAN. IF THE SWITCH DOES NOT OPEN WITHIN 40 SECONDS AFTER A REQUEST FOR FANOPERATION A FAN FAILURE ALARM SHALL BE ANNUNCIATED AT THE BAS, THE UNIT SHALL STOP, REQUIRING A MANUAL RESET.
16. SUPPLY DUCT STATIC PRESSURE CONTROL: THE DUCT STATIC PRESSURE SETPOINT SHALL BE RESET TO THE OPTIMAL SETPOINT COMMUNICATED BY THE BAS. THE BAS SHALL RESET THE DUCT STATIC PRESSURE SETPOINT BASED ON THE POSITION OF THE FURTHEST OPEN VAV DAMPER. THE SUPPLY DUCT STATIC PRESSURE SENSOR SHALL ALSO ACT AS A HIGH DUCT STATIC PRESSURE SAFETY AND SHALL SHUT DOWN THE UNIT IN THE EVENT THAT THE DUCT STATIC PRESSURE REACHES 3.00 INCHES OF W.C. (ADJ.). A MANUAL RESET SHALL BE REQUIRED TO RE-START THE UNIT.
17. BUILDING PRESSURE CONTROL (RTU-5): THE UNIT CONTROLLER SHALL OPERATE TO MAINTAIN A 10% DIFFERENTIAL AS MEASURED BY THE UNIT'S AIRFLOW MONITORING STATION ON THE OUTSIDE AIR INTAKE. ON A CALL FOR ECONOMIZER OPERATION, THE UNIT'S EXHAUST FAN SHALL MODULATE TO MAINTAIN A 10% DIFFERENTIAL AS MEASURED BY THE UNIT'S AIRFLOW MONITORING STATION ON THE OUTSIDE AIR INTAKE.
18. EXHAUST FAN STATUS: A DIFFERENTIAL PRESSURE SWITCH SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FAN. IF THE SWITCH IS DETECTED TO BE OPEN FOR 40 CONSECUTIVE SECONDS AFTER A REQUEST FOR EXHAUST FAN OPERATION A FAN FAILURE ALARM SHALL BE ANNUNCIATED AT THE BAS AND THE EXHAUST FAN SHALL STOP. A MANUAL RESET SHALL BE REQUIRED.
19. FILTER STATUS: A DIFFERENTIAL PRESSURE SWITCH SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FILTER WHEN THE FAN IS RUNNING. IF THE SWITCH CLOSES FOR 2 MINUTES AFTER A REQUEST FOR FAN OPERATION A DIRTY FILTER ALARM SHALL BE ANNUNCIATED AT THE BAS.
20. COMBUSTION DETECTION: ON DETECTION OF PRODUCTS OF COMBUSTION, THE SMOKE DETECTOR (PROVIDED BY OTHERS) WILL DE-ENERGIZE THE SUPPLY AIR FAN, EXHAUST AIR FANS, AND CLOSE THE UNITS OUTSIDE AIR DAMPERS.
21. CONDENSATE OVERFLOW PROTECTION: ON DETECTION OF AN OVERFLOW OF CONDENSATE AS MEASURED BY THE CONDENSATE DRAIN PAN FLOAT SWITCH, THE UNIT WILL DE-ENERGIZE, THE OUTDOOR AIR DAMPER SHALL FULLY CLOSE, AND A CONDENSATE OVERFLOW ALARM SHALL BE ANNUNCIATED AT THE BAS.
22. BIPOLAR IONIZATION: THE BIPOLAR IONIZATION GENERATOR SHALL BE POWERED BY A CONTROL TRANSFORMER PROVIDED WITH THE UNIT BY THE UNIT MANUFACTURER. THE ION GENERATOR SHALL CYCLE ON AND OFF WITH THE SUPPLY FAN. THE DUCT MOUNTED ION SENSOR SHALL COMMUNICATE AN ALARM TO THE OWNER'S WORKSTATION IF ION CONCENTRATION FALLS BELOW THE ACCEPTABLE THRESHOLD WHILE THE ION GENERATOR IS ENERGIZED.

SYSTEM POINT LIST

ANALOG (GRAPHIC; INPUTS; OUTPUTS)

SYSTEM POINT DESCRIPTION	GRAPHIC	INPUTS: TEMPERATURE	PRESSURE	RH	KW	GPM	CFM	PPM	STAGE	PERCENT RLA	ION COUNT	OUTPUTS: DDC	4-20mA	0-10 VDC	FEEDBACK	SETPOINT ADJ.
PACKAGED ROOFTOP VAV																
Space	X															X
Supply Fan	X						X					X				
Exhaust Fan	X											X				
Compressor	X															
Discharge Air	X	X														
Condenser Fan	X															
Modulating Gas Furnace	X	X										X				
Condensate Overflow	X															
Bi-Polar Ionization	X										X					
Outside Air	X	X		X			X									
Outside Air Damper	X													X		
Exhaust Air Damper	X													X		
Return Air	X	X														
Evaporator Coil	X	X														
Mixed Air	X	X														
Filter Status	X		X													
Smoke Detector	X															

DIGITAL (INPUTS; OUTPUTS)

SYSTEM POINT DESCRIPTION	INPUTS: STATUS	FILTER STATUS	ALARM	STATUS OPN/CLSD	FAULT TRIP	OUTPUTS: START/STOP	ON/OFF/AUTO	ENABLE/DISABLE	OPEN/CLOSE
PACKAGED ROOFTOP VAV									
Space	X							X	
Supply Fan	X					X			
Exhaust Fan	X					X			
Compressor	X		X					X	
Discharge Air									
Condenser Fan	X								
Modulating Gas Furnace	X		X						X
Condensate Overflow			X						
Bi-Polar Ionization	X							X	
Outside Air									
Outside Air Damper	X								
Exhaust Air Damper									
Return Air	X								
Evaporator Coil									
Mixed Air									
Filter Status	X								
Smoke Detector	X		X						

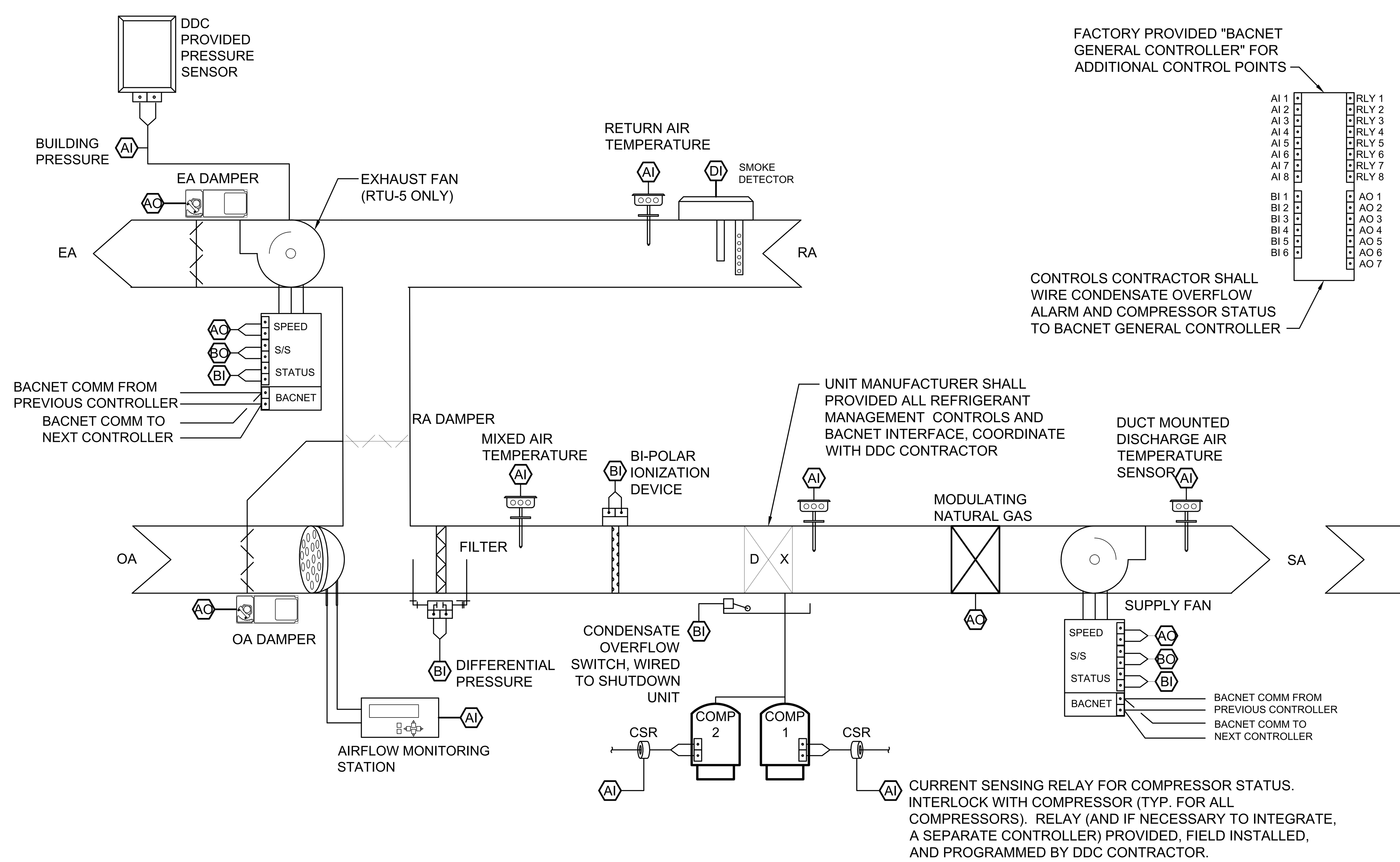
SYSTEM FEATURES (ALARMS; PROGRAMS) and NOTES

SYSTEM POINT DESCRIPTION	ALARMS: HIGH ANALOG	LOW ANALOG	BINARY	PROOF	SENSOR FAIL	FLOW FAIL	COMM. FAIL	DIAGNOSTICS	PROGRAMS: TIME SCHEDULING	OPT. START/STOP	DEMAND LIMITING	RESET	EVENT PROGRAM	DDC	ALARM	MAINT. WK. ORD.	RUN TIME	EXP. MESSAGE	SET BACK/SET UP	NIGHT PURGE	TENANT BILLING	CHILLER SEQUENCE	TOTALIZING	TIMED OVERRIDE	TREND	NOTES
PACKAGED ROOFTOP VAV																										
Space	X	X			X				X																X	
Supply Fan																									X	
Exhaust Fan																									X	
Compressor															X										X	1
Discharge Air	X	X			X										X										X	
Condenser Fan	X	X			X																				X	
Modulating Gas Furnace			X																						X	
Condensate Overflow			X																							
Bi-Polar Ionization																										
Outside Air		X			X																				X	
Outside Air Damper				X																					X	
Exhaust Air Damper																									X	
Return Air																									X	
Evaporator Coil	X	X			X										X										X	
Mixed Air	X	X			X										X										X	
Filter Status	X														X										X	
Smoke Detector															X											

NOTES:

(1) FIELD INSTALLED AND PROGRAMMED CT'S BY DDC CONTRACTOR.

(2) PROVIDE SECONDARY DATA PAGE IN GRAPHICAL USER INTERFACE CONTAINING ALL POINTS NOT LISTED ABOVE, BUT AVAILABLE THROUGH THE UNIT'S BACNET INTERFACE.



NOTE:GREENHECK FACTORY PROVIDED BACNET CONTROLLER AND CONTROL DEVICES UNIT SHALL BE INTEGRATED INTO THE BAS SYSTEM. ALL POINTS MADE AVAILABLE BY EQUIPMENT MANUFACTURER SHALL BE MADE AVAILABLE FOR OPERATOR VIEWING/CONTROL

PACKAGED ROOFTOP VAV AIR CONDITIONING UNIT DDC CONTROLS DIAGRAM (RTU-2 & 5)

NOT TO SCALE

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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS
VIRGINIA
AUTOMATIC TEMPERATURE CONTROLS

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: GJA
DRAWN BY: SLS
CHECKED BY: KDA

M4.5

DATE: 04/19/2022

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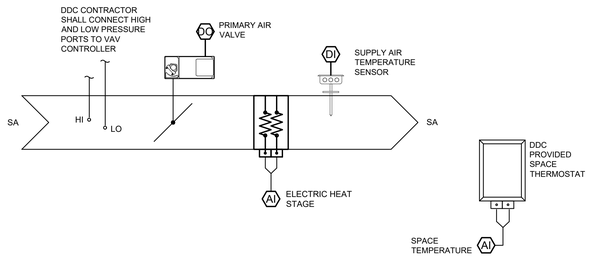

SINGLE DUCT SHUT OFF BOX WITH ELECTRIC REHEAT CONTROL DIAGRAM

NOT TO SCALE

C. SINGLE DUCT VAV BOX WITH ELECTRIC RE-HEAT

1. BUILDING AUTOMATION SYSTEM INTERFACE:

   a. THE BUILDING AUTOMATION SYSTEM (BAS) SHALL SEND THE CONTROLLER OCCUPIED AND UNOCCUPIED COMMANDS. THE BAS SHALL ALSO SEND A HEAT/COOL MODE, PRIORITY SHUTDOWN COMMANDS, SPACE TEMPERATURE AND/OR SPACE TEMPERATURE SETPOINT. IF COMMUNICATION IS LOST WITH THE BAS, THE VAV CONTROLLER SHALL OPERATE USING ITS LOCAL SETPOINTS.

2. OCCUPANCY MODE:

   a. THE OCCUPANCY MODE SHALL BE COMMUNICATED OR HARDWIRED TO THE VAV VIA A BINARY INPUT. VALID OCCUPANCY MODES FOR THE VAV SHALL BE:

3. OCCUPIED:

   a. NORMAL OPERATING MODE FOR OCCUPIED SPACES OR DAYTIME OPERATION. WHEN THE UNIT IS IN THE OCCUPIED MODE THE VAV SHALL MAINTAIN THE SPACE TEMPERATURE AT THE ACTIVE OCCUPIED HEATING OR COOLING SETPOINT. APPLICABLE VENTILATION AND AIRFLOW SETPOINTS SHALL BE ENFORCED. THE OCCUPIED MODE SHALL BE THE DEFAULT MODE OF THE VAV.

4. HEAT/COOL MODE:

   a. THE HEAT/COOL MODE SHALL BE SET BY A COMMUNICATED VALUE OR AUTOMATICALLY BY THE VAV. IN STANDALONE OR AUTO MODE THE VAV SHALL COMPARE THE PRIMARY AIR TEMPERATURE WITH THE CONFIGURED AUTO CHANGEOVER SETPOINT TO DETERMINE IF THE AIR IS "HOT" OR "COLD". HEATING MODE SHALL COMMAND THE VAV TO HEAT ONLY; IT IMPLIES THE PRIMARY AIR TEMPERATURE IS HOT. COOLING MODE SHALL COMMAND THE VAV TO COOL ONLY; IT IMPLIES THE PRIMARY AIR TEMPERATURE IS COLD.

5. HEAT/COOL SETPOINT:

   a. THE SPACE TEMPERATURE SETPOINT SHALL BE DETERMINED EITHER BY A LOCAL SETPOINT, THE VAV DEFAULT SETPOINT OR A COMMUNICATED VALUE. THE VAV SHALL USE THE LOCALLY STORED DEFAULT SETPOINTS WHEN NEITHER A LOCAL SETPOINT NOR COMMUNICATED SETPOINT IS PRESENT. IF BOTH A LOCAL SETPOINT AND COMMUNICATED SETPOINT EXIST, THE VAV SHALL USE THE COMMUNICATED VALUE.

6. COOLING MODE:

   a. WHEN THE UNIT IS IN COOLING MODE, THE VAV CONTROLLER SHALL MAINTAIN THE SPACE TEMPERATURE AT THE ACTIVE COOLING SETPOINT BY MODULATING THE AIRFLOW BETWEEN THE ACTIVE COOLING MINIMUM AIRFLOW SETPOINT TO THE MAXIMUM COOLING AIRFLOW SETPOINT. BASED ON THE VAV CONTROLLER OCCUPANCY MODE, THE ACTIVE COOLING SETPOINT SHALL BE ONE OF THE FOLLOWING:

SETPOINT	DEFAULT VALUE
OCCUPIED COOLING SETPOINT	74.0 DEG. F
UNOCCUPIED COOLING SETPOINT	85.0 DEG. F
OCCUPIED STANDBY COOLING SETPOINT	78.0 DEG. F
OCCUPIED MIN COOLING AIRFLOW SETPOINT	SEE VAV SCHEDULE
OCCUPIED MAX COOLING AIRFLOW SETPOINT	SEE VAV SCHEDULE

   b. THE VAV SHALL USE THE MEASURED SPACE TEMPERATURE AND THE ACTIVE COOLING SETPOINT TO DETERMINE THE REQUESTED COOLING CAPACITY OF THE UNIT. THE OUTPUTS WILL BE CONTROLLED BASED ON THE UNIT CONFIGURATION AND THE REQUESTED COOLING CAPACITY.

7. HEATING MODE:

   a. WHEN THE UNIT IS IN HEATING MODE, THE VAV CONTROLLER SHALL MAINTAIN THE SPACE TEMPERATURE AT THE ACTIVE HEATING SETPOINT BY MODULATING THE AIRFLOW BETWEEN THE ACTIVE HEATING MINIMUM AIRFLOW SETPOINT TO THE MAXIMUM HEATING AIRFLOW SETPOINT. BASED ON THE VAV CONTROLLER OCCUPANCY MODE, THE ACTIVE HEATING SETPOINT SHALL BE ONE OF THE FOLLOWING:

SETPOINT	DEFAULT VALUE
OCCUPIED HEATING SETPOINT	71.0 DEG. F
UNOCCUPIED HEATING SETPOINT	60.0 DEG. F
OCCUPIED STANDBY HEATING SETPOINT	67.0 DEG. F
OCCUPIED MIN HEATING AIRFLOW SETPOINT	SEE VAV SCHEDULE
OCCUPIED MAX HEATING AIRFLOW SETPOINT	SEE VAV SCHEDULE

   b. THE VAV CONTROLLER SHALL USE THE MEASURED SPACE TEMPERATURE AND THE ACTIVE HEATING SETPOINT TO DETERMINE THE REQUESTED HEATING CAPACITY OF THE UNIT. THE OUTPUTS WILL BE CONTROLLED BASED ON THE UNIT CONFIGURATION AND THE REQUESTED HEATING CAPACITY.

8. REHEAT CONTROL:

   a. REHEAT SHALL ONLY BE ALLOWED WHEN THE PRIMARY AIR TEMPERATURE IS 5.0 DEG. F BELOW THE CONFIGURED REHEAT ENABLE SETPOINT OF 70.0 DEG. F (ADJ.). THE REHEAT SHALL BE ENABLED WHEN THE SPACE TEMPERATURE DROPS BELOW THE ACTIVE COOLING SETPOINT AND THE AIRFLOW IS AT THE MINIMUM COOLING AIRFLOW SETPOINT. DURING REHEAT THE VAV SHALL OPERATE AT ITS MINIMUM HEATING AIRFLOW SETPOINT AND ENERGIZE THE HEAT AS FOLLOWS:
   b. ELECTRIC REHEAT: IF THE SPACE TEMPERATURE IS BELOW THE HEATING SETPOINT THE ELECTRIC RESISTANCE REHEAT COIL SHALL STAGE AS REQUIRED TO MAINTAIN THE ACTIVE HEATING SETPOINT.

9. SPACE SENSOR FAILURE:

   a. IF THERE IS A FAULT WITH THE OPERATION OF THE ZONE SENSOR AN ALARM SHALL BE ANNUNCIATED AT THE BAS. SPACE SENSOR FAILURE SHALL CAUSE THE VAV TO DRIVE THE DAMPER TO MINIMUM AIR FLOW IF THE VAV IS IN THE OCCUPIED MODE, OR DRIVE IT CLOSED IF THE VAV IS IN THE UNOCCUPIED MODE.

SYSTEM POINT LIST

SYSTEM POINT DESCRIPTION	ANALOG INPUTS: GRAPHIC	TEMPERATURE	PRESSURE	RH	KW	GPM	CFM	PPM	STAGE	PERCENT RLA	ION COUNT	ANALOG OUTPUTS: DDC	4-20mA	0-10 VDC	FEEDBACK	SETPOINT ADJ.	DIGITAL INPUTS: STATUS	FILTER STATUS	ALARM	STATUS OPN/CLSD	FAULT TRIP	DIGITAL OUTPUTS: START/STOP	ON/OFF/AUTO	ENABLE/DISABLE	OPEN/CLOSE	SYSTEM FEATURES — ALARMS: HIGH ANALOG	LOW ANALOG	BINARY	PROOF	SENSOR FAIL	FLOW FAIL	COMM. FAIL	DIAGNOSTICS	PROGRAMS: TIME SCHEDULING	OPT. START/STOP	DEMAND LIMITING	RESET	EVENT PROGRAM	DDC	ALARM	MAINT. WK. ORD.	RUN TIME	EXP. MESSAGE	SET BACK/SET UP	NIGHT PURGE	TENANT BILLING	CHILLER SEQUENCE	TOTALIZING	TIMED OVERRIDE	TREND	NOTES
PACKAGED ROOFTOP SZVAV																																																				
Space	X	X														X	X								X	X			X				X															X	
Supply Air	X	X															X																															X	
Electric Heat	X											X					X		X						X			X																			X	
Primary Air	X	X					X						X				X		X																													X	

NOTES:
1. THE GRAPHICS SHALL INCLUDE THE SETPOINT DISPLAY FOR EACH CONTROLLED OR MONITORED VARIABLE.

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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS
VIRGINIA
AUTOMATIC TEMPERATURE CONTROLS

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: GJA
DRAWN BY: SLS
CHECKED BY: KDA

M4.6

DATE: 04/19/2022

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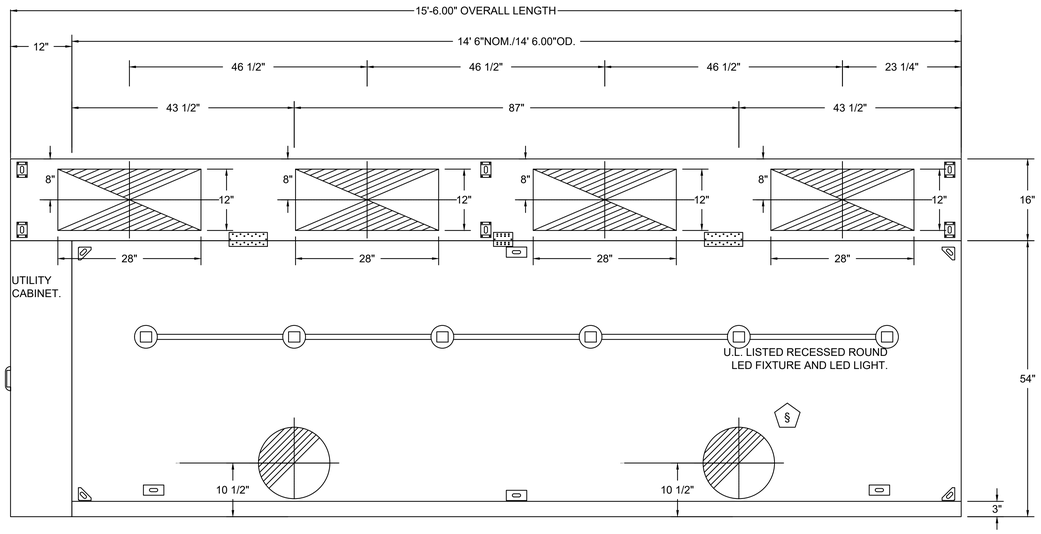
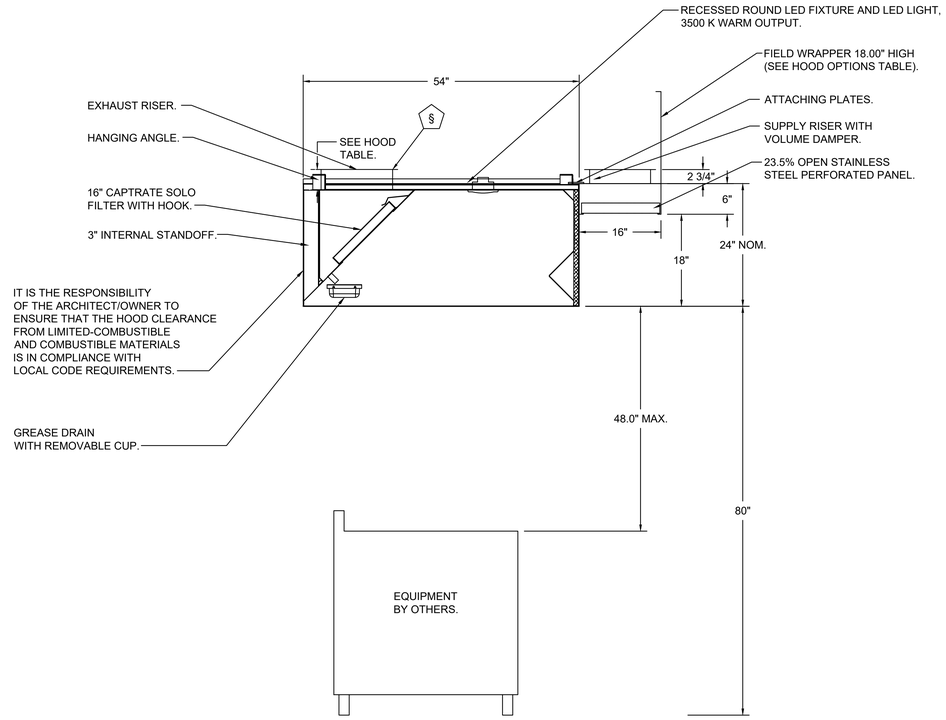


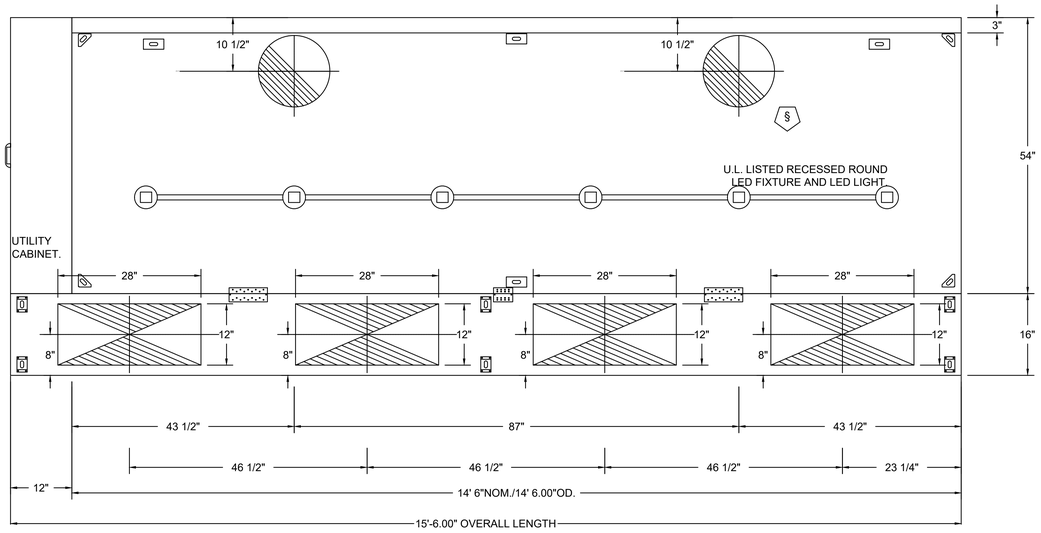
PLAN VIEW KH-1

NOT TO SCALE



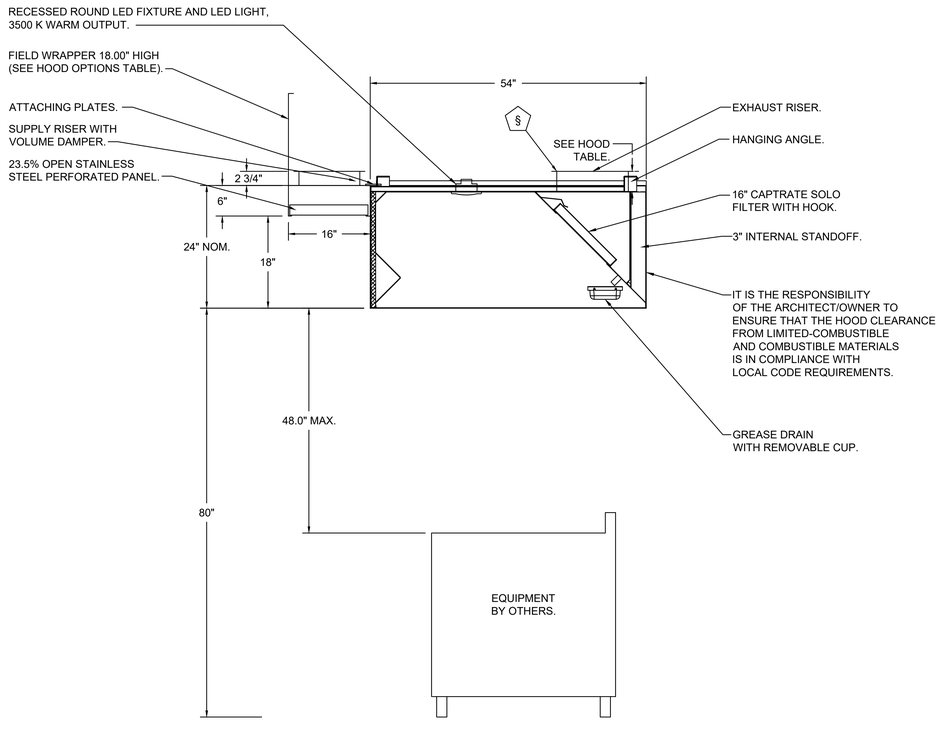
SECTION VIEW KH-1

NOT TO SCALE



PLAN VIEW KH-2

NOT TO SCALE



SECTION VIEW KH-2

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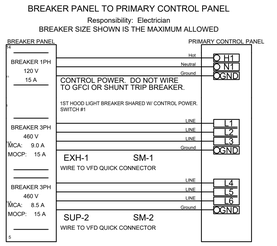
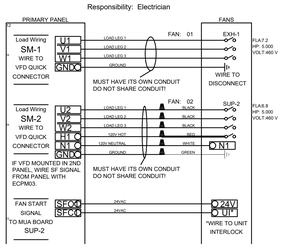
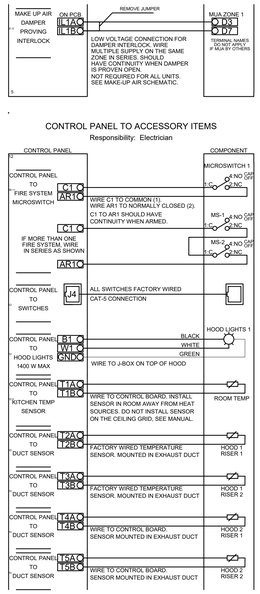
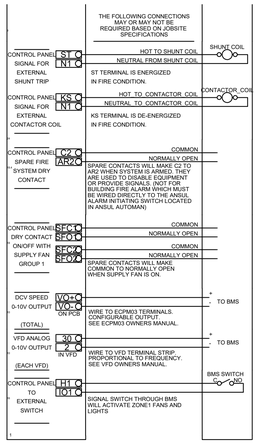




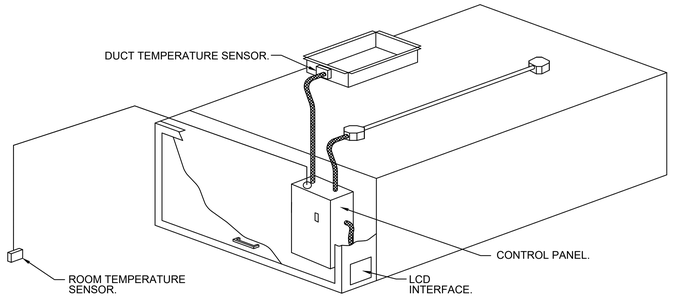




KITCHEN HOOD WIRING DIAGRAM

DEMAND CONTROL VENTILATION HOOD CONTROL PANEL SPECIFICATIONS:

- CONTROLS SHALL BE LISTED BY ETL (UL 508A) AND SHALL COMPLY WITH DEMAND VENTILATION SYSTEM TURNDOWN REQUIREMENTS OUTLINED IN IECC 403.2.8 (2015).
- THE CONTROL ENCLOSURE SHALL BE NEMA 1 RATED AND LISTED FOR INSTALLATION INSIDE OF THE EXHAUST HOOD UTILITY CABINET. THE CONTROL ENCLOSURE MAY BE CONSTRUCTED OF STAINLESS STEEL OR PAINTED STEEL.
- TEMPERATURE PROBE(S) LOCATED IN THE EXHAUST DUCT RISER(S) SHALL BE CONSTRUCTED OF STAINLESS STEEL.
- A DIGITAL CONTROLLER SHALL BE PROVIDED TO ACTIVATE THE HOOD EXHAUST FANS DYNAMICALLY BASED ON A FIXED DIFFERENTIAL BETWEEN THE AMBIENT AND DUCT TEMPERATURES SENSORS. THIS FUNCTION SHALL MEET THE REQUIREMENTS OF IMC 507.1.1.
- A DIGITAL CONTROLLER SHALL PROVIDE ADJUSTABLE HYSTERESIS SETTINGS TO PREVENT CYCLING OF THE FANS AFTER THE COOKING APPLIANCES HAVE BEEN TURNED OFF AND/OR THE HEAT IN THE EXHAUST SYSTEM IS REDUCED.
- A DIGITAL CONTROLLER SHALL PROVIDE AN ADJUSTABLE MINIMUM FAN RUN-TIME SETTING TO PREVENT FAN CYCLING.
- VARIABLE FREQUENCY DRIVES (VFDS) SHALL BE PROVIDED FOR FANS AS REQUIRED. THE DIGITAL CONTROLLER SHALL MODULATE THE VFDS BETWEEN A MINIMUM SETPOINT AND A MAXIMUM SETPOINT ON DEMAND. THE DUCT TEMPERATURE SENSOR INPUT(S) TO THE DIGITAL CONTROLLER SHALL BE USED TO CALCULATE THE SPEED REFERENCE SIGNAL.
- THE VFD SPEED RANGE OF OPERATION SHALL BE FROM 0% TO 100% FOR THE SYSTEM, WITH THE ACTUAL MINIMUM SPEED SET AS REQUIRED TO MEET MINIMUM VENTILATION REQUIREMENTS.
- AN INTERNAL ALGORITHM TO THE DIGITAL CONTROLLER SHALL MODULATE SUPPLY FAN VFD SPEED PROPORTIONAL TO ALL EXHAUST FANS THAT ARE LOCATED IN THE SAME FAN GROUP AS THE SUPPLY FAN.
- THE SYSTEM SHALL OPERATE IN PREP MODE DURING LIGHT COOKING LOAD OR COOL DOWN MODE WHEN SUFFICIENT HEAT REMAINS UNDERNEATH THE HOOD SYSTEM AFTER COOKING OPERATIONS HAVE COMPLETED. OPERATION DURING EITHER OF THESE PERIODS WILL DISABLE THE SUPPLY FANS AND PROVIDE AN EXHAUST FAN SPEED THAT IS EQUAL TO THE MINIMUM VENTILATION REQUIREMENT.
- A DIGITAL CONTROLLER SHALL DISABLE THE SUPPLY FAN(S), ACTIVATE THE EXHAUST FAN(S), ACTIVATE THE APPLIANCE SHUNT TRIP, AND DISABLE AN ELECTRIC GAS VALVE AUTOMATICALLY WHEN FIRE CONDITION IS DETECTED ON A COVERED HOOD.
- A DIGITAL CONTROLLER SHALL ALLOW FOR EXTERNAL BMS FAN CONTROL VIA DRY CONTACT (EXTERNAL CONTROL SHALL NOT OVERRIDE FAN OPERATION LOGIC AS REQUIRED BY CODE).
- AN LCD INTERFACE SHALL BE PROVIDED WITH THE FOLLOWING FEATURES:
  A. ON/OFF PUSH BUTTON FAN & LIGHT SWITCH ACTIVATION.
  B. INTEGRATED GAS VALVE RESET FOR ELECTRONIC GAS VALVES (NO RESET RELAY REQUIRED).
  C. VFD FAULT DISPLAY WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  D. DUCT TEMPERATURE SENSOR FAILURE DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  E. MIS-WIRED DUCT TEMPERATURE SENSOR DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  F. A SINGLE LOW VOLTAGE CAT-5 RJ45 WIRING CONNECTION.
  G. AN ENERGY SAVINGS INDICATOR THAT UTILIZES MEASURED KWH FROM THE VFDS.



TYPICAL HOOD CONTROL PANEL INSTALLATION

SEQUENCE OF OPERATIONS:

THE HOOD CONTROL PANEL IS CAPABLE OF OPERATING IN ONE OR MORE OF THE FOLLOWING STATES AT ANY GIVEN TIME:

- AUTOMATIC: THE SYSTEM OPERATES BASED ON THE DIFFERENTIAL BETWEEN ROOM TEMPERATURE AND THE TEMPERATURE AT THE HOOD CAVITY OR EXHAUST DUCT COLLAR. FANS ACTIVATE AT A CONFIGURABLE TEMPERATURE DIFFERENTIAL THRESHOLD. DEPENDING ON THE JOB CONFIGURATION EACH FAN ZONE CAN BE CONFIGURED AS STATIC OR DYNAMIC. THESE TERMS REFER TO WHETHER A VARIABLE MOTOR (SUCH AS EC MOTORS OR VFD DRIVEN MOTORS) MODULATE WITH TEMPERATURE. IF THE PANEL IS EQUIPPED WITH VARIABLE SPEED FANS AND THE ZONE IS DEFINED AS "DYNAMIC", THESE WILL MODULATE WITHIN A USER-DEFINED RANGE BASED ON THE TEMPERATURE DIFFERENTIAL. PANELS EQUIPPED WITH VARIABLE SPEED FANS AND A FAN ZONE DEFINED AS "STATIC", FANS WILL RUN AT A SET SPEED CALCULATED FOR THE DRIVE. DEMAND CONTROL VENTILATION SYSTEMS ARE CAPABLE OF MODULATING EXHAUST AND MAKE UP AIR FAN SPEEDS PER THE REQUIREMENTS OUTLINED IN IECC 403.2.8.
- MANUAL: THE SYSTEM OPERATES BASED ON HUMAN INPUT FROM AN HMI.
- SCHEDULE: A WEEKLY SCHEDULE CAN BE SET TO RUN FANS FOR A SPECIFIED PERIOD THROUGHOUT THE DAY. THERE ARE THREE OCCUPIED TIMES PER DAY TO ALLOW FOR THE USER TO SET UP A TIME THAT IS SUITABLE TO THEIR NEEDS. ANY TIME THAT IS WITHIN THE DEFINED OCCUPIED TIME, THE SYSTEM WILL RUN AT MODULATION MODE AND FOLLOW THE FAN PROCEDURE ALGORITHM BASED ON TEMPERATURE DURING THIS TIME. DURING UNOCCUPIED TIME, THE SYSTEM WILL HAVE AN EXTRA OFFSET TO PREVENT UNINTENDED ACTIVATION OF THE SYSTEM DURING A TIME WHERE THE SYSTEM IS NOT BEING OCCUPIED.
- OTHER: THE SYSTEM OPERATES BASED ON THE INPUT FROM AN EXTERNAL SOURCE (DDC, BMS OR HARD-WIRED INTERLOCK).
- FIRE: UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE EXHAUST FAN WILL COME ON OR CONTINUE TO TO RUN, THE HOOD MAKEUP AIR WILL SHUTDOWN, AND A SIGNAL WILL BE SENT FOR ACTIVATING THE SHUNT TRIP BREAKER PROVIDED BY THE ELECTRICIAN. FUEL GAS WILL SHUT OFF VIA A MECHANICAL/ELECTRICAL GAS VALVE ACTUATED BY THE HOOD FIRE SUPPRESSION SYSTEM.

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M5.2

DATE: 04/19/2022

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ELECTRICAL LEGEND:

LIGHTING:

- EXISTING SURFACE MOUNTED OR SUSPENDED1' X 2' LIGHT FIXTURE
- EXISTING SURFACE MOUNTED OR SUSPENDED1' X 4' LIGHT FIXTURE
- EXISTING SURFACE MOUNTED OR SUSPENDED DOWNLIGHT FIXTURE
- EXISTING RECESSED 2' X 2' LIGHT FIXTURE
- EXISTING RECESSED 2' X 4' LIGHT FIXTURE
- EXISTING SURFACE MOUNTED OR SUSPENDED1' X 8' LIGHT FIXTURE
- EXISTING EXIT LIGHT
- S — SINGLE POLE SWITCH; 20A, 120/277 VOLT. INSTALL OUTLET BOX +48" A.F.F.

POWER:

- SM — MOTOR RATED SWITCH, 20A, 120/277 VOLT
- S2M — TWO-POLE MOTOR RATED SWITCH, 20A, 240 VOLT
- EF — ELECTRICAL CONNECTION TO EXHAUST FAN
- E — ELECTRICAL CONNECTION TO EQUIPMENT.
- MS — MAGNETIC MOTOR STARTER
- J — JUNCTION BOX - SIZE AS REQUIRED BY N.E.C. IF NOT INDICATED
- H — HANDHOLE - SEE NEW WORK NOTES ON FLOOR PLANS FOR ADDITIONAL REQUIREMENTS
- 3P 60 40 3R — DISCONNECT SWITCH, 600V, U.O.N.: 3P = NUMBER OF POLES, 60 = SWITCH RATING, 40 = FUSE RATING (NF INDICATES NON-FUSED). 3R = NEMA 3R ENCLOSURE.
- WP,GFI H, C H, W H, AC H, 4 H — DUPLEX RECEPTACLE, 20A, 120V. INSTALL +18" A.F.F. TO CENTER U.O.N. CENTER SHADED INDICATES INSTALL +6" ABOVE COUNTER OR BACKSPLASH. SUBSCRIPT "WP,GFI" WHEN USED INDICATES, WEATHER-RESISTANT, GROUND FAULT INTERRUPTER TYPE RECEPTACLE WITH WEATHERPROOF WHILE IN USE RATED COVERPLATE. SUBSCRIPT "AC" WHEN USED INDICATE EXISTING DEVICE INSTALLED ABOVE THE CEILING. SUBSCRIPT "C" WHEN USED INDICATED CEILING MOUNTED. SUBSCRIPT "W" WHEN USED INDICATES DEVICE INSTALLED IN A SURFACE METAL OUTLET BOX. SUBSCRIPT "4" WHEN USED INDICATES DOUBLE DUPLEX RECEPTACLE.
- EXISTING SURFACE MOUNTED PLUGMOLD RACEWAY
- 2 COMPARTMENT RACEWAY
- EXISTING TELE/POWER POLE
- PANELBOARD, 480Y/277 VOLT
- PANELBOARD, 208Y/120 VOLT
- T — DRY TYPE TRANSFORMER
- BRANCH CIRCUIT OR FEEDER WIRING IN CONDUIT. NO TICK MARKS INDICATES 2 #12 CONDUCTORS AND 1 #12 GND., IN 1/2" CONDUIT U.O.N. TICK MARKS INDICATE NUMBER OF CONDUCTORS IF OTHER THAN THREE: (7) INDICATES GROUNDING CONDUCTOR. SEE NEW WORK NOTES, POWER RISER DIAGRAM - NEW WORK AND PANELBOARD SCHEDULES FOR CONDUCTOR SIZES LARGER THAN #12.
- HOMERUNS TO PANEL. PANEL & CIRCUIT DESIGNATIONS AS INDICATED.
- LA-2 — CONDUIT RUN CONCEALED ABOVE CEILING OR IN WALL.
- CONDUIT TURNED UP.
- CONDUIT TURNED DOWN.
- 1 — DEMOLITION NOTE INDICATOR.
- 1 — NEW WORK NOTE INDICATOR.
- 42 — ROOM NUMBER INDICATOR.

FIRE ALARM SYSTEMS:

- S — FIRE ALARM SMOKE DETECTOR.
- D — FIRE ALARM SYSTEM DUCT SMOKE DETECTOR. FOR NEW DEVICES, PROVIDE BOSCH CATALOG NUMBER D342P HOUSING WITH SAMPLING TUBES. LENGTH AS REQUIRED AND BOSCH CATALOG NUMBER D344-5.
- D — FIRE ALARM SYSTEM DUCT SMOKE DETECTOR REMOTE INDICATING LIGHT / TEST SWITCH, BOSCH CATALOG NUMBER D344-RT.
- CM — NEW CEILING MOUNTED CARBON MONOXIDE DETECTOR. CONNECT TO EXISTING FIRE ALARM CONTROL PANEL.
- FAPS — EXISTING FIRE ALARM POWER SUPPLY.
- FACP — EXISTING FIRE ALARM CONTROL PANEL.
- F — EXISTING FIRE ALARM PULL STATION.
- 15 — FIRE ALARM AUDIO/VISUAL DEVICE.
- EXISTING FIRE ALARM AUDIO/VISUAL DEVICE
- EXISTING FIRE ALARM VISUAL DEVICE

INTERCOM / CLOCK /TV / SOUND SYSTEMS:

- P — CEILING MOUNTED PROJECTOR
- SP — CEILING MOUNTED PROJECTOR SPEAKER
- S — CEILING MOUNTED SPEAKER.
- TV — TELEVISION MONITOR
- CEILING MOUNTED CLOCK
- SB — WALL MOUNTED SMART BOARD

DATA INFRASTRUCTURE SYSTEM:

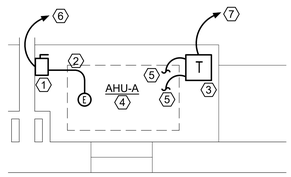
- WA — EXISTING CEILING MOUNTED WIRELESS ACCESS POINT.
- E — EXISTING SURFACE MOUNTED DATA OUTLET.
- W — NEW SURFACE MOUNTED DATA OUTLET. PROVIDE 1-GANG SURFACE NON-METALLIC OUTLET BOX WITH SURFACE NON-METALLIC RACEWAY FROM OUTLET BOX UP TO ABOVE THE CEILING. PROVIDE LEVITION CATALOG NUMBER 42081115 COVERPLATE WITH OUTLET BOX. INSTALL BOX +6" ABOVE COUNTER U.O.N.
- B — NEW SURFACE MOUNTED DATA OUTLET. PROVIDE 1-GANG SURFACE NON-METALLIC OUTLET BOX WITH SURFACE NON-METALLIC RACEWAY FROM OUTLET BOX UP TO ABOVE THE CEILING. PROVIDE BLANK COVERPLATE ON OUTLET BOX. INSTALL BOX +6" ABOVE COUNTER.
- PP — EXISTING DATA INFRASTRUCTURE PATCH PANEL.

CCTV / SECURITY SYSTEMS:

- EXISTING CEILING MOUNTED CCTV CAMERA.

GENERAL DEMOLITION NOTES:

1. PERFORM ALL REQUIRED DEMOLITION TO COMPLY WITH THE SCOPE AND INTENT OF THE PROJECT. REMOVE ALL WIRING ASSOCIATED WITH THE REQUIRED DEMOLITION BACK TO POINT OF ORIGIN OR LAST DEVICE TO REMAIN U.O.N.
2. VERIFY ALL CIRCUITS SAVED DURING DEMOLITION FOR REUSE AS TO WIRE SIZE AND POINT OF ORIGIN.
3. EXERCISE CARE IN REMOVING MATERIAL AND EQUIPMENT DURING DEMOLITION. REPAIR ANY DAMAGE TO EXISTING SURFACES OR EXISTING EQUIPMENT TO REMAIN TO THE SATISFACTION OF THE ARCHITECT AND OWNER AT NO ADDITIONAL COST TO THE OWNER.
4. PROVIDE THE OWNER WITH FIRST RIGHT OF REFUSAL FOR ALL ELECTRICAL EQUIPMENT BEING REMOVED AS A PART OF THIS CONTRACT AND NOT SCHEDULED FOR REINSTALLATION. ALL ELECTRICAL EQUIPMENT NOT TURNED OVER TO THE OWNER SHALL BECOME THE PROPERTY OF THE ELECTRICAL CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
5. FLUORESCENT BALLASTS IN EXISTING LIGHT FIXTURES SCHEDULED TO BE REMOVED MAY CONTAIN PCB'S. REMOVE THE BALLASTS FROM THE LIGHT FIXTURES, PROPERLY CONTAIN AND DISPOSE OF SAME IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS GOVERNING SAME.
6. FLUORESCENT LAMPS IN EXISTING LIGHT FIXTURES SCHEDULED TO BE REMOVED MAY CONTAIN MERCURY. REMOVE THE LAMPS FROM THE LIGHT FIXTURES, PROPERLY CONTAIN AND DISPOSE OF SAME IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS GOVERNING SAME.
7. LABEL ALL EXISTING LIGHT FIXTURES REMOVED AND SCHEDULE FOR REINSTALLATION WITH ROOM NUMBER TO ENSURE LIGHT FIXTURES ARE REINSTALLED IN THE SAME ROOM THEY WERE REMOVED FROM.
8. ALL BRANCH CIRCUITRY ASSOCIATED WITH LIGHTING REPLACEMENT MECHANICAL EQUIPMENT BEING REMOVED AS A PART OF THIS PROJECT SHALL BE REMOVED BACK TO POINT OF ORIGIN. ONLY CONDUITS IN EXISTING WALLS MAY BE ABANDONED IN PLACE.
9. EXISTING CONCEALED WIRING TO BE REMOVED SHALL BE DISCONNECTED FROM ITS SOURCE. REMOVE CONDUCTORS AND CUT CONDUITS FLUSH WITH CONCRETE FLOORS, AND TOP OPENINGS WITH NON-SHRINK GROUT. WHERE WOOD FLOORS ARE ENCOUNTERED, REMOVE CONDUIT TO BELOW WOOD FLOOR. WHERE CONDUIT THAT PASSES THROUGH WALLS IS REMOVED, SEAL OPENING IN WALL WITH A MATERIAL THAT IS EQUAL TO THE FIRE RATING OF THE MATERIAL THE WALL IS CONSTRUCTED FROM.
10. LABEL ALL EQUIPMENT/DEVICES WITH REGARDS TO ROOM NUMBERS AND LOCATIONS TO ENSURE EACH ITEM IS REINSTALLED IN THE SAME LOCATION FROM WHICH THEY WERE REMOVED. All ITEMS SHALL BE SECURELY STORED IN A TEMPERATURE AND HUMIDITY CONTROLLED LOCATION AND AWAY FROM ALL CONSTRUCTION. COORDINATE THE IDENTIFICATION OF EACH ITEM WITH THE OWNER PRIOR TO REMOVAL AND PROVIDE DOCUMENTATION IDENTIFYING EACH ITEM TYPE AND QUANTITY.
12. BEFORE BEGINNING ANY WORK, FIELD VERIFY THE WORKING CONDITION OF ALL EXIT LIGHTS AND LIGHT FIXTURE SCHEDULED FOR REMOVAL. NOTIFY THE OWNER OF ANY DEFECTIVE EQUIPMENT. AFTER REINSTALLATION OF EXIT LIGHT AND LIGHT FIXTURE SAVED DURING DEMOLITION IS COMPLETE, RE-VERIFY THE WORKING CONDITION OF EACH. REPLACE ALL EXIT LIGHTS AND LIGHT FIXTURES FOUND DEFECTIVE AFTER REINSTALLATION WHICH WAS WORKING PRIOR TO REMOVAL TO MATCH EXISTING AT NO ADDITIONAL COST TO THE OWNER.
13. DURING REMOVAL OF THE EXISTING LAY-IN CEILING PANELS, SUPPORT ALL BRANCH CIRCUITRY TO ACCOMMODATE THE INSTALLATION OF NEW HVAC SYSTEM EQUIPMENT AND DUCTWORK. RE-VERIFY THE WORKING CONDITION OF BRANCH CIRCUITRY AND REPLACE ALL BRANCH CIRCUITRY TO MATCH EXISTING AT NO ADDITIONAL COST TO OWNER.



TYPICAL CLASSROOM AHU DEMOLITION PLAN

SCALE : ¼" = 1'-0"

NEW WORK NOTES (THIS DRAWING ONLY)

1. REMOVE DISCONNECT SWITCH BELOW TOP OF AHU ENCLOSURE.
2. REMOVE BRANCH CIRCUIT TO AHU.
3. REMOVE STEP-DOWN TRANSFORMER
4. REFER TO DEMOLITION FLOOR PLANS ON DRAWINGS ED1.1 & ED1.3 FOR PANELBOARD AND CIRCUIT NUMBER SERVING EXISTING AHU.
5. REMOVE BRANCH CIRCUIT BETWEEN SECONDARY SIDE OF STEP-DOWN TRANSFORMER AND FAN TERMINAL STRIP IN AHU.
6. REMOVE BRANCH CIRCUIT FROM DISCONNECT SWITCH TO 480Y/277 VOLT PANEL.
7. REMOVE BRANCH CIRCUIT FROM DISCONNECT SWITCH TO 208Y/120 VOLT PANEL.

GENERAL FIRE ALARM NOTES:

1. IF THERE WILL BE A POWER OUTAGE A GENERATOR WILL NEED TO BE PROVIDED TO SUPPORT THE ALARM SYSTEMS AND COX TELEPHONE EQUIPMENT. COORDINATE IN ADVANCE WITH NNPS PLANT SERVICES/ELECTRIC SHOP AND NNPS TECHNOLOGY.
2. ALL FIRE ALARM WORK (WIRING DEVICES AND CONNECTING DEVICES) SHALL BE PERFORMED BY CERTIFIED BOSCH/RADIONICS MANUFACTURER. DOCUMENTATION OF BOSCH CERTIFICATION BY COMPANY AND INSTALLER SHALL BE PROVIDED.
3. NNPS TECHNOLOGY STAFF WILL PROVIDE ADDRESSING AND VERBAL GUIDANCE ON THE ALARM CONNECTIVITY. IF QUESTIONS COME UP DURING THE PROJECT CONTACT NNPS TECHNOLOGY.
4. NNPS TECHNOLOGY STAFF WILL PROVIDE THE FIRE ALARM PANEL PROGRAMMING.
5. AMBASSADOR OR ANOTHER AUTHORIZED NOTIFIER TECHNICIAN NEEDS TO BE CONTRACTED FOR NOTIFIER SYSTEM PROGRAMMING
6. PRIOR TO THE PROJECT STARTING GENERAL CONTRACTOR FOREMAN AND ASSISTANT FOREMAN NAMES AND TELEPHONE NUMBERS SHOULD BE PROVIDED TO NNPS TECHNOLOGY SO THAT ALARM CODES CAN BE CREATED AND THE ABILITY OF PLACING THE ALARM SYSTEMS ON TEST
7. PRIOR TO ANY DISTURBANCE OF THE ALARM SYSTEMS THE SYSTEM(S) SHOULD BE PLACED ON TEST WITH OUR ALARM MONITORING CENTER
8. ANY NEW FIRE DEVICES SHALL BE WIRED WITH 4-CONDUCTOR RED PLENUM RATED FIRE WIRE. RED AND BLACK WIRES SHALL BE POWER AND THE OTHER TWO USED FOR DATA.
9. NO T-TAPPING SHALL BE USED ON THE FIRE ALARM SYSTEM
10. IF ANY MODIFICATIONS OR DEVICE REMOVAL/REINSTALLATIONS ARE NEEDED A CITY PERMIT MUST BE PULLED FOR THE FIRE ALARM SYSTEM.
11. HARD AND ELECTRONIC COPIES OF AS-BUILT DRAWINGS SHALL BE PROVIDED TO NNPS TECHNOLOGY THAT SHOWS CABLE PATH, ZONE NUMBER FOR ANY NEW DEVICES, LOCATION OF DEVICES, ETC.
12. PROVIDE REQUIRED MODULES IN EXISTING FIRE ALARM CONTROL PANEL TO MONITOR NEW CARBON MONOXIDE DETECTORS.

GENERAL NOTES:

1. WHERE INDIVIDUAL 120V HOMERUN CIRCUITS ARE SHOWN ON THE DRAWINGS THEY MAY BE COMBINED AS FOLLOWS:
   - NO MORE THAN THREE (3) PHASE CONDUCTOR PLUS THREE NEUTRALS AND ONE (1) GROUND PER CONDUIT, EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.
   - NO TWO OF THE SAME PHASE CONDUCTOR PER UNIT.
   - PROVIDE 120V CIRCUIT WITH INDIVIDUAL NEUTRALS PER CIRCUIT. NEUTRALS MAY NOT BE SHARED BETWEEN PHASES.
2. PAINT ALL EXPOSED CONDUIT TO MATCH THE SURFACE TO WHICH ATTACHED.
3. COORDINATE WITH MECHANICAL DRAWINGS FOR EXACT LOCATION OF EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS INCLUDING EXACT POINT OF ELECTRICAL CONNECTION. MAKE ADJUSTMENTS TO CONDUIT ROUTING, PLACEMENT OF DISCONNECTS AND STARTERS AS REQUIRED.
4. PROTECT BRANCH CIRCUIT WIRING FROM PAINT OVERSPRAY DURING CONSTRUCTION TO PRESERVE COLOR-CODING. CONDUCTORS PAINTED SHALL BE COMPLETELY CLEANED OF PAINT BEFORE FINAL CONNECTIONS ARE MADE.
5. COORDINATE WIRING DEVICE OUTLET LOCATIONS WITH ARCHITECTURAL PLANS, ELECTRICAL PLANS, ENLARGED FLOOR PLANS, EQUIPMENT AND FURNITURE LAYOUTS, SECTIONS, ELEVATIONS, DETAILS AND JOB SITE DIFFERENCES PRIOR TO ROUGHING-IN CONDUITS. MAKE REQUIRED ADJUSTMENTS (WITH ARCHITECTS AND ENGINEERS APPROVAL) AT NO ADDITIONAL COST TO OWNER.
6. INSTALL DEVICES SHOWN ON DRAWINGS IN ACCORDANCE WITH MOUNTING HEIGHTS SHOWN IN THE ELECTRICAL LEGEND AND/OR THE PROJECT SPECIFICATIONS. MOUNT FIRE ALARM DEVICES IN ACCORDANCE WITH A.D.A. REQUIREMENTS.
7. PROVIDE NEW TYPED PANEL INDEX CARDS IN EXISTING PANELBOARDS WHERE CIRCUITS HAVE BEEN MODIFIED BY THIS PROJECT. PROVIDE COPIES OF MODIFIED PANEL INDEX CARDS ON AS BUILT DRAWINGS AND INCLUDED IN OPERATION AND MAINTENANCE MANUALS.
8. LABEL ALL DISCONNECT SWITCHES IN ACCORDANCE WITH SPECIFICATION SECTION 260500.
9. THE CONTRACTOR SHALL ONLY USE DESIGNATED AREAS WITHIN THE HVAC EQUIPMENT FOR PENETRATIONS OF ELECTRICAL CONDUITS AND CONTROL CONDUITS. THESE PENETRATIONS MUST BE WEATHERTIGHT. IF A CONTRACTOR PENETRATES ANY AREAS IN THE EQUIPMENT THAT IS NOT DESIGNATED BY THE MANUFACTURER FOR PENETRATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS TO THE EQUIPMENT, TO INSURE IT IS WEATHERTIGHT. IF EQUIPMENT CANNOT BE MADE WEATHERTIGHT, THE CONTRACTOR SHALL BE REQUIRED TO REPLACE THE EQUIPMENT AT HIS/HER OWN EXPENSE.

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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS
VIRGINIA

ELECTRICAL LEGEND, ABBREVIATIONS, NOTES

REVISIONS

MARK	DESCRIPTION	DATE

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DRAWN BY:	RAB
CHECKED BY:	KC

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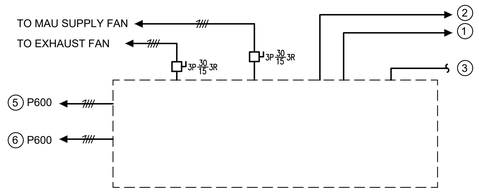
ABBREVIATIONS:

A, AMP	AMPERE
AC	ALTERNATING CURRENT
A.D.A.	AMERICANS WITH DISABILITIES ACT
A.F.F.	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BKR.	BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
C/T	CURRENT TRANSFORMER
CUH	CABINET UNIT HEATER
DDC	DIRECT DIGITAL CONTROL
D.E.	DOMINION ENERGY
DIST.	DISTRIBUTION
DOAS	DEDICATED OUTDOOR AIR SYSTEM
EF	EXHAUST FAN
EX, EXIST.	EXISTING
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
HP	HEAT PUMP
HTR	HEATER
IU	INDOOR UNIT
KAIC	KILO-AMPERE INTERRUPTING CAPACITY
KWHR	KILO WATT HOUR METER
KCMIL	THOUSAND CIRCULAR MILLS
M.C.B.	MAIN CIRCUIT BREAKER
MDS	MAIN DISTRIBUTION SWITCHBOARD
M.L.O.	MAIN LUGS ONLY
MTD.	MOUNTED
N.E.C.	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NF	NON FUSED
NO	NUMBER
OU	OUTDOOR UNIT
PTAC	PACKAGED TERMINAL AIR CONDITIONER
P	POLE
PH OR Ø	PHASE
PRV	POWER ROOF VENTILATOR
RTU	ROOF TOP UNIT
SPD	SURGE PROTECTION DEVICE
SYM	SYMBOL
TYP.	TYPICAL
UH	UNIT HEATER
U.O.N.	UNLESS OTHERWISE NOTED
UV	UNIT VENTILATOR
V	VOLT
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE
WP	WEATHERPROOF
XFMR	TRANSFORMER
Y	WYE



KITCHEN HOOD CONTROL WIRING DIAGRAM ④

NOT TO SCALE

KITCHEN HOOD CONTROL WIRING DIAGRAM NOTES

1. PROVIDE JUNCTION BOX ON THE END OF EXISTING KITCHEN HOOD CONTROL AND HOOD LIGHTING BRANCH CIRCUITS SAVED DURING DEMOLITION AND EXTEND NEW BRANCH CIRCUIT TO HOOD CONTROL PANEL.
2. PROVIDE ELECTRICAL CONNECTION TO "KMAU-1" CONTROL PANEL. SEE DRAWING E1.2 FOR ADDITIONAL REQUIREMENTS.
3. CONNECT EXISTING KITCHEN HOOD FIRE ALARM WIRING SAVED DURING DEMOLITION TO NEW KITCHEN HOOD CONTROL PANEL.
4. COORDINATE BRANCH CIRCUIT REQUIREMENTS WITH HOOD CONTROL PANEL PROVIDED AND IF DIFFERENT FROM THAT SHOWN ABOVE, MAKE ALL NECESSARY ADJUSTMENTS REQUIRED AT NO ADDITIONAL COST TO THE PROJECT.
5. PROVIDE ELECTRICAL CONNECTION TO KITCHEN HOOD EXHAUST FAN VIA MOTOR STARTER / VFD IN KITCHEN HOOD CONTROL PANEL. SEE DRAWING E1.2 FOR ADDITIONAL REQUIREMENTS.
6. PROVIDE ELECTRICAL CONNECTION TO KKMAU-1 VIA MOTOR STARTER / VFD IN KITCHEN HOOD CONTROL PANEL. SEE DRAWING E1.2 FOR ADDITIONAL REQUIREMENTS.

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HVAC REPLACEMENT
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PARTIAL FLOOR PLAN AND SCHEDULES

REVISIONS

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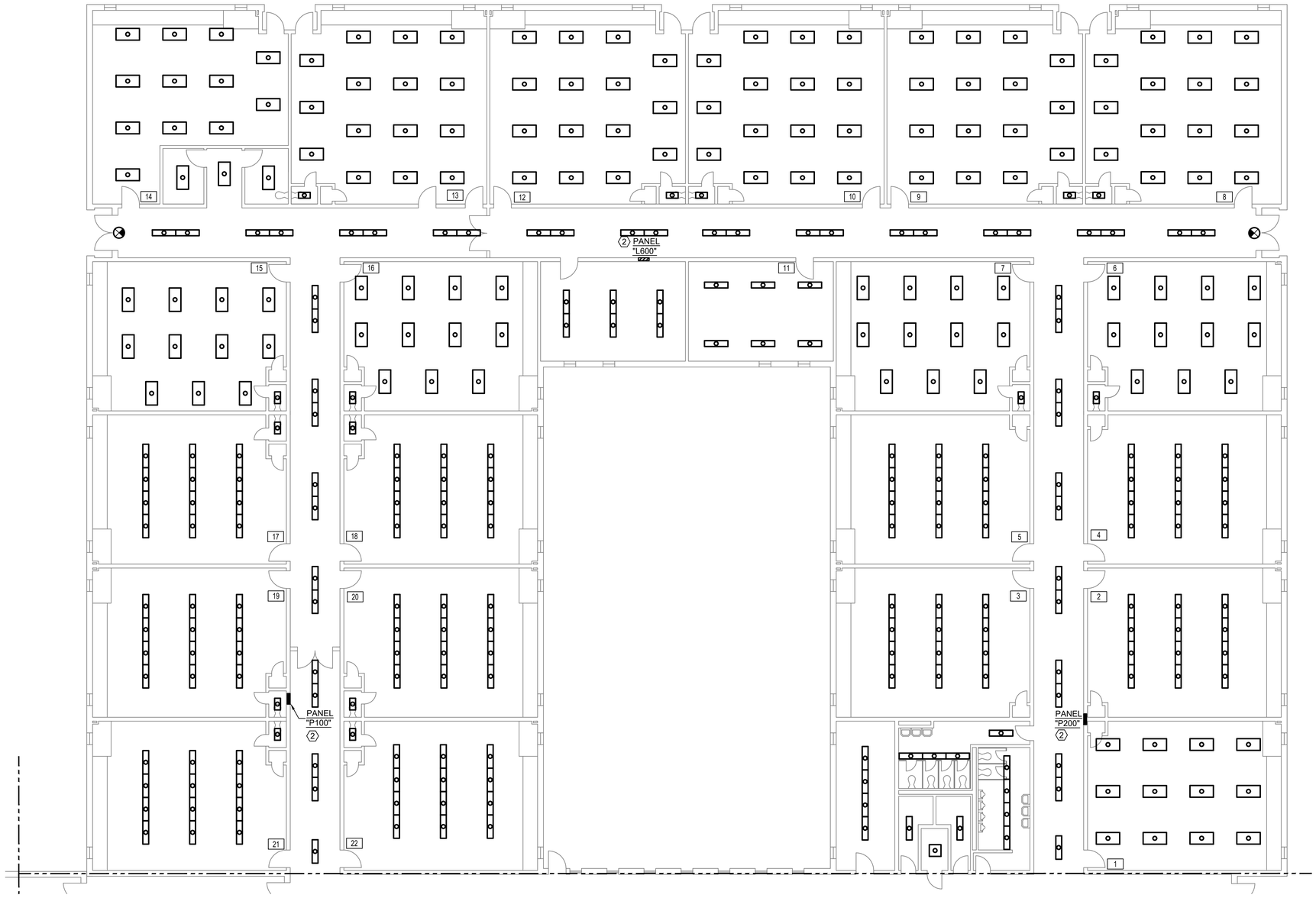


FLOOR PLAN - AREA 'A' - LIGHTING - DEMOLITION AND NEW WORK ① 1

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

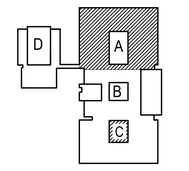
DEMOLITION NOTES: (THIS DRAWING ONLY)

① DISCONNECT AND REMOVE ALL CEILING MOUNTED EXIT LIGHTS, LIGHT FIXTURES, LIGHT SENSOR DEVICE ASSOCIATED WITH LIGHT FIXTURES AND SAVE FOR REUSE. LABEL EACH EXIT LIGHT AND LIGHT FIXTURE WITH REGARDS TO ROOM NUMBERS SHOWN ON THIS DRAWING AND LOCATIONS TO ENSURE EACH EXIT LIGHT AND LIGHT FIXTURE IS INSTALLED IN THE SAME LOCATION FROM WHICH THEY WERE REMOVED. SAVE ASSOCIATED BRANCH CIRCUITRY FOR REUSE. RELOCATE AND EXTEND EXISTING BRANCH CIRCUITRY AS REQUIRED TO ACCOMMODATE THE REMOVAL AND INSTALLATION OF NEW MECHANICAL EQUIPMENT AND DUCTWORK.

② EXISTING ELECTRICAL EQUIPMENT TO REMAIN.

NEW WORK NOTES: (THIS DRAWING ONLY)

1 REINSTALL ALL CEILING MOUNTED EXIT LIGHTS, LIGHT FIXTURES, LIGHT SENSOR DEVICE ASSOCIATED WITH LIGHT FIXTURES SAVED DURING DEMOLITION IN NEW CEILING IN ORIGINAL LOCATIONS AND RECONNECT TO EXISTING BRANCH CIRCUITRY SAVED DURING DEMOLITION. EXTEND EXISTING BRANCH CIRCUITRY AS REQUIRED. PROVIDE NEW ANNEALED, LIGHT ZINC-COATED FINISH, 12-GAUGE WIRE FROM ALL FOUR CORNERS TIED TO BUILDING STRUCTURAL MEMBERS FOR ALL RECESSED LIGHT FIXTURES. SECURING SAFETY WIRES TO BRIDGING IS NOT ACCEPTABLE. THE SUPPORTING WIRES SHALL BE DISTINGUISHABLE BY COLOR OR TAGGING. PROVIDE ROD HANGERS CAPABLE OF SUPPORTING TWICE THE WEIGHT OF THE FIXTURES SUPPORTED BY THE ROD HANGER FOR ALL SURFACE MOUNTED LIGHT FIXTURES. ROD HANGERS SHALL BE A MINIMUM .18" DIAMETER. COORDINATE NEW LIGHT FIXTURE SUPPORTS WITH NEW DUCTWORK AND PIPING AND ADJUST AS DIRECTED BY THE MECHANICAL CONTRACTOR.



KEY PLAN
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FLOOR PLAN - AREA 'A' - LIGHTING - DEMOLITION AND NEW WORK

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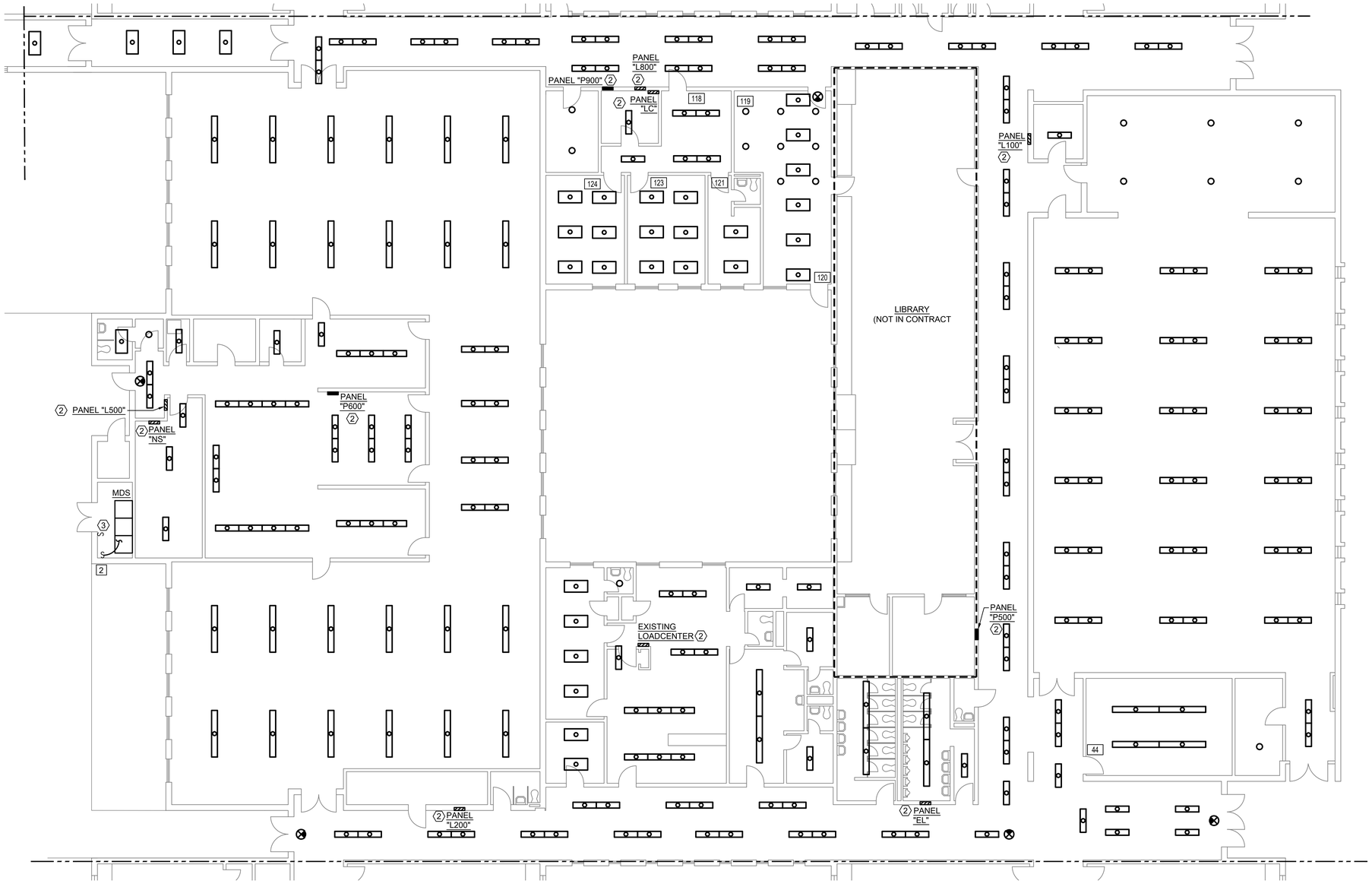


FLOOR PLAN - AREA 'B' - LIGHTING - DEMOLITION AND NEW WORK 1 1

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

DEMOLITION NOTES: (THIS DRAWING ONLY)

1. DISCONNECT AND REMOVE ALL CEILING MOUNTED EXIT LIGHTS, LIGHT FIXTURES, LIGHT SENSOR DEVICE ASSOCIATED WITH LIGHT FIXTURES AND SAVE FOR REUSE. LABEL EACH EXIT LIGHT AND LIGHT FIXTURE WITH REGARDS TO ROOM NUMBERS SHOWN ON THIS DRAWING AND LOCATIONS TO ENSURE EACH EXIT LIGHT AND LIGHT FIXTURE IS INSTALLED IN THE SAME LOCATION FROM WHICH THEY WERE REMOVED. SAVE ASSOCIATED BRANCH CIRCUITRY FOR REUSE. RELOCATE AND EXTEND EXISTING BRANCH CIRCUITRY AS REQUIRED TO ACCOMMODATE THE REMOVAL AND INSTALLATION OF NEW MECHANICAL EQUIPMENT AND DUCTWORK.

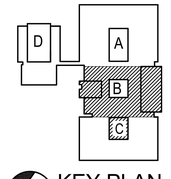
2. EXISTING ELECTRICAL EQUIPMENT TO REMAIN.

3. REMOVE LIGHT SWITCH AND BRANCH CIRCUITRY UP TO EXISTING LIGHT FIXTURE.

NEW WORK NOTES: (THIS DRAWING ONLY)

1. REINSTALL ALL CEILING MOUNTED EXIT LIGHTS, LIGHT FIXTURES, LIGHT SENSOR DEVICE ASSOCIATED WITH LIGHT FIXTURES SAVED DURING DEMOLITION IN NEW CEILING IN ORIGINAL LOCATIONS AND RECONNECT TO EXISTING BRANCH CIRCUITRY SAVED DURING DEMOLITION. EXTEND EXISTING BRANCH CIRCUITRY AS REQUIRED. PROVIDE NEW ANNEALED, LIGHT ZINC-COATED FINISH, 12-GAUGE WIRE FROM ALL FOUR CORNERS TIED TO BUILDING STRUCTURAL MEMBERS FOR ALL RECESSED LIGHT FIXTURES. SECURING SAFETY WIRES TO BRIDGING IS NOT ACCEPTABLE. THE SUPPORTING WIRES SHALL BE DISTINGUISHABLE BY COLOR OR TAGGING. PROVIDE ROD HANGERS CAPABLE OF SUPPORTING TWICE THE WEIGHT OF THE FIXTURES SUPPORTED BY THE ROD HANGER FOR ALL SURFACE MOUNTED LIGHT FIXTURES. ROD HANGERS SHALL BE A MINIMUM .18" DIAMETER. COORDINATE NEW LIGHT FIXTURE SUPPORTS WITH NEW DUCTWORK AND PIPING AND ADJUST AS DIRECTED BY THE MECHANICAL CONTRACTOR.

2. PROVIDE NEW LIGHT SWITCH IN SURFACE MOUNTED OUTLET BOX. PROVIDE BRANCH CIRCUITRY RUN EXPOSED UP WALL AND CONNECT TO EXISTING LIGHT FIXTURE.



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FLOOR PLAN - AREA 'B' - LIGHTING - DEMOLITION AND NEW WORK

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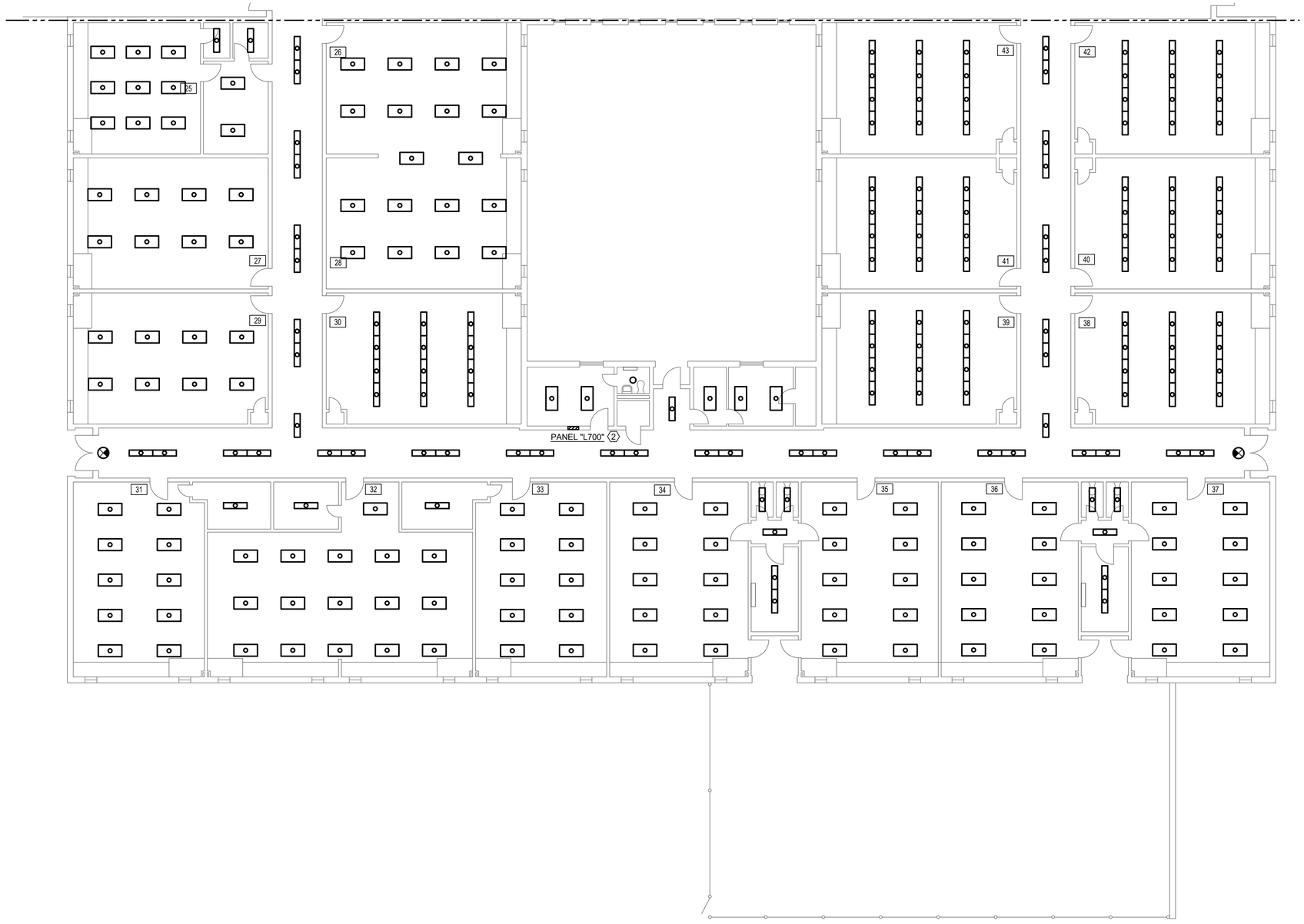


FLOOR PLAN - AREA 'C' - LIGHTING - DEMOLITION AND NEW WORK 1 1

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

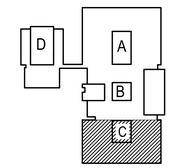
DEMOLITION NOTES: (THIS DRAWING ONLY)

1. DISCONNECT AND REMOVE ALL CEILING MOUNTED EXIT LIGHTS, LIGHT FIXTURES, LIGHT SENSOR DEVICE ASSOCIATED WITH LIGHT FIXTURES AND SAVE FOR REUSE. LABEL EACH EXIT LIGHT AND LIGHT FIXTURE WITH REGARDS TO ROOM NUMBERS SHOWN ON THIS DRAWING AND LOCATIONS TO ENSURE EACH EXIT LIGHT AND LIGHT FIXTURE IS INSTALLED IN THE SAME LOCATION FROM WHICH THEY WERE REMOVED. SAVE ASSOCIATED BRANCH CIRCUITRY FOR REUSE. RELOCATE AND EXTEND EXISTING BRANCH CIRCUITRY AS REQUIRED TO ACCOMMODATE THE REMOVAL AND INSTALLATION OF NEW MECHANICAL EQUIPMENT AND DUCTWORK.

2. EXISTING ELECTRICAL EQUIPMENT TO REMAIN.

NEW WORK NOTES: (THIS DRAWING ONLY)

1. REINSTALL ALL CEILING MOUNTED EXIT LIGHTS, LIGHT FIXTURES, LIGHT SENSOR DEVICE ASSOCIATED WITH LIGHT FIXTURES SAVED DURING DEMOLITION IN NEW CEILING IN ORIGINAL LOCATIONS AND RECONNECT TO EXISTING BRANCH CIRCUITRY SAVED DURING DEMOLITION. EXTEND EXISTING BRANCH CIRCUITRY AS REQUIRED. PROVIDE NEW ANNEALED, LIGHT ZINC-COATED FINISH, 12-GAUGE WIRE FROM ALL FOUR CORNERS TIED TO BUILDING STRUCTURAL MEMBERS FOR ALL RECESSED LIGHT FIXTURES. SECURING SAFETY WIRES TO BRIDGING IS NOT ACCEPTABLE. THE SUPPORTING WIRES SHALL BE DISTINGUISHABLE BY COLOR OR TAGGING. PROVIDE ROD HANGERS CAPABLE OF SUPPORTING TWICE THE WEIGHT OF THE FIXTURES SUPPORTED BY THE ROD HANGER FOR ALL SURFACE MOUNTED LIGHT FIXTURES. ROD HANGERS SHALL BE A MINIMUM .18" DIAMETER. COORDINATE NEW LIGHT FIXTURE SUPPORTS WITH NEW DUCTWORK AND PIPING AND ADJUST AS DIRECTED BY THE MECHANICAL CONTRACTOR.



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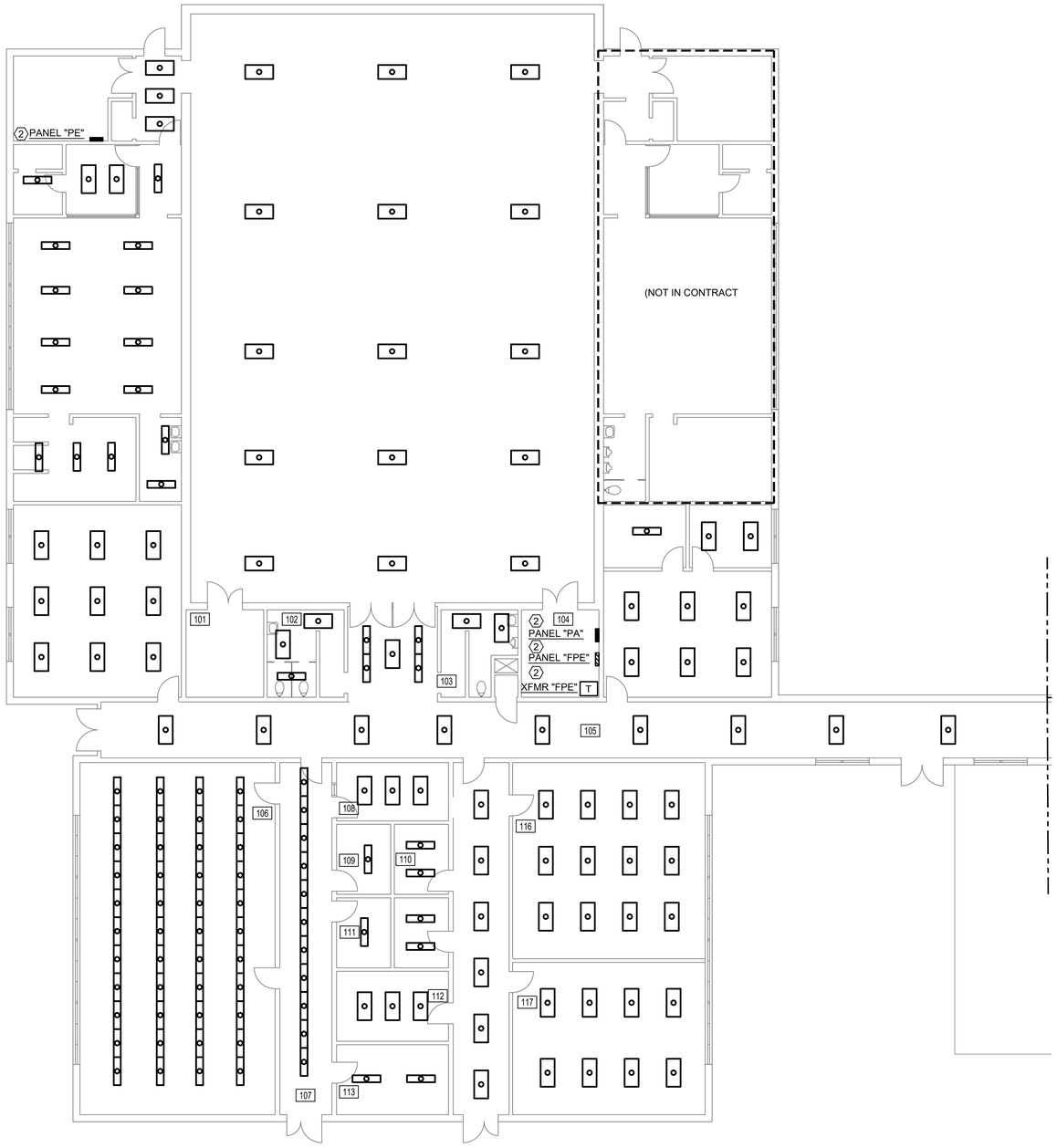


FLOOR PLAN - AREA 'D' - LIGHTING - DEMOLITION AND NEW WORK 1 1

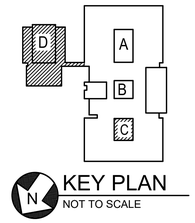
SCALE: 1/8" = 1'-0"

DEMOLITION NOTES: (THIS DRAWING ONLY)

1 DISCONNECT AND REMOVE ALL CEILING MOUNTED EXIT LIGHTS, LIGHT FIXTURES, LIGHT SENSOR DEVICE ASSOCIATED WITH LIGHT FIXTURES AND SAVE FOR REUSE. LABEL EACH EXIT LIGHT AND LIGHT FIXTURE WITH REGARDS TO ROOM NUMBERS SHOWN ON THIS DRAWING AND LOCATIONS TO ENSURE EACH EXIT LIGHT AND LIGHT FIXTURE IS INSTALLED IN THE SAME LOCATION FROM WHICH THEY WERE REMOVED. SAVE ASSOCIATED BRANCH CIRCUITRY FOR REUSE. RELOCATE AND EXTEND EXISTING BRANCH CIRCUITRY AS REQUIRED TO ACCOMMODATE THE REMOVAL AND INSTALLATION OF NEW MECHANICAL EQUIPMENT AND DUCTWORK.

NEW WORK NOTES: (THIS DRAWING ONLY)

1 REINSTALL ALL CEILING MOUNTED EXIT LIGHTS, LIGHT FIXTURES, LIGHT SENSOR DEVICE ASSOCIATED WITH LIGHT FIXTURES SAVED DURING DEMOLITION IN NEW CEILING IN ORIGINAL LOCATIONS AND RECONNECT TO EXISTING BRANCH CIRCUITRY SAVED DURING DEMOLITION. EXTEND EXISTING BRANCH CIRCUITRY AS REQUIRED. PROVIDE NEW ANNEALED, LIGHT ZINC-COATED FINISH, 12-GAUGE WIRE FROM ALL FOUR CORNERS TIED TO BUILDING STRUCTURAL MEMBERS FOR ALL RECESSED LIGHT FIXTURES. SECURING SAFETY WIRES TO BRIDGING IS NOT ACCEPTABLE. THE SUPPORTING WIRES SHALL BE DISTINGUISHABLE BY COLOR OR TAGGING. PROVIDE ROD HANGERS CAPABLE OF SUPPORTING TWICE THE WEIGHT OF THE FIXTURES SUPPORTED BY THE ROD HANGER FOR ALL SURFACE MOUNTED LIGHT FIXTURES. ROD HANGERS SHALL BE A MINIMUM .18" DIAMETER. COORDINATE NEW LIGHT FIXTURE SUPPORTS WITH NEW DUCTWORK AND PIPING AND ADJUST AS DIRECTED BY THE MECHANICAL CONTRACTOR.



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FLOOR PLAN - AREA 'D' - LIGHTING - DEMOLITION AND NEW WORK

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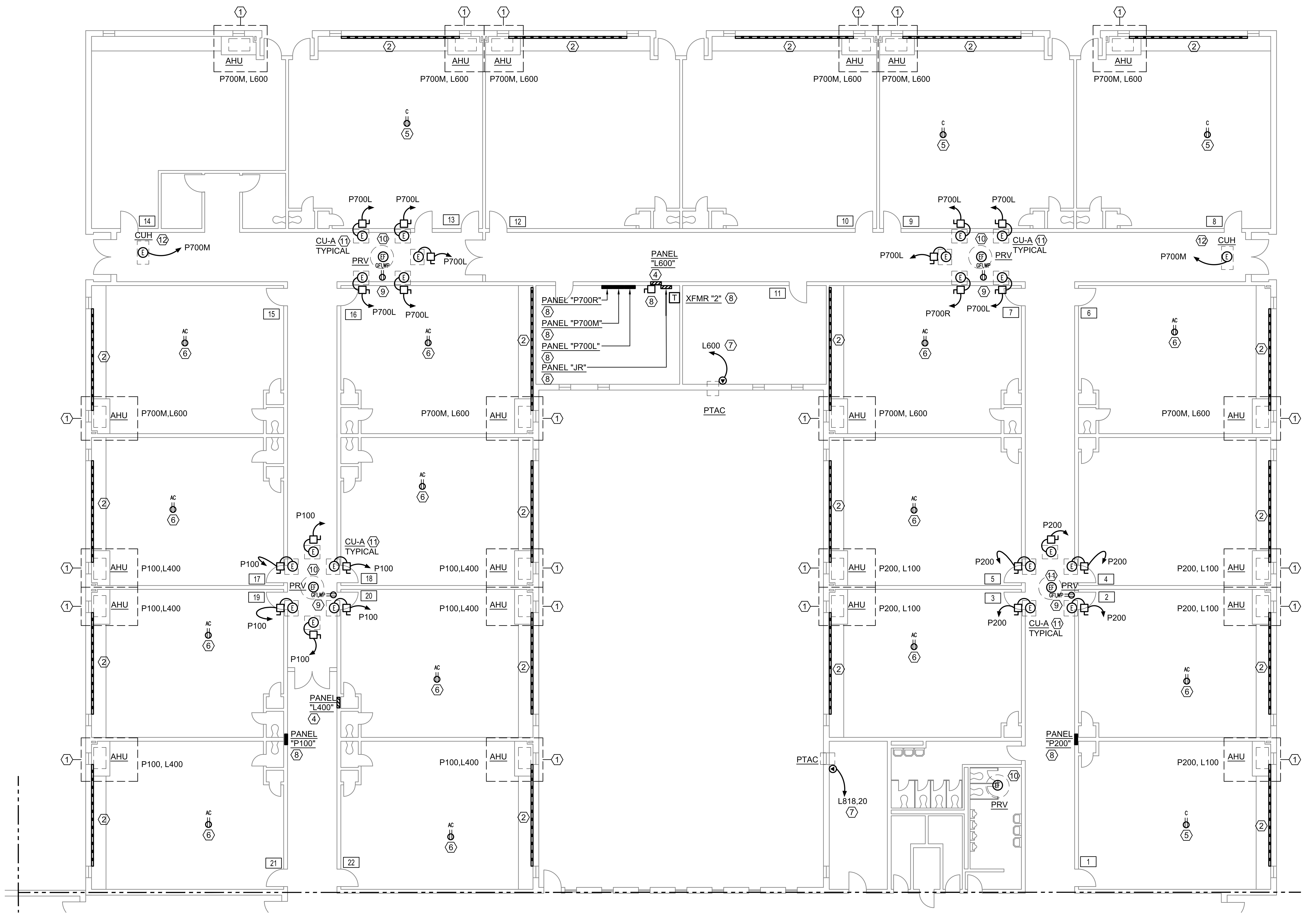


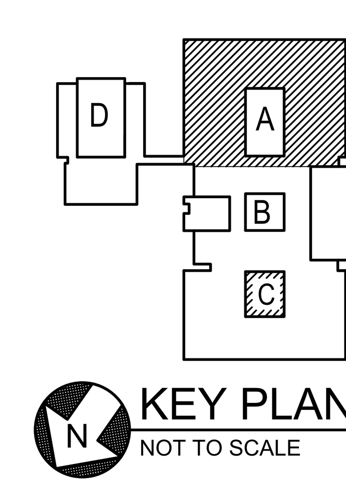
FLOOR PLAN - AREA 'A' - POWER - DEMOLITION ③

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

DEMOLITION NOTES:

(THIS DRAWING ONLY)

1. SEE "TYPICAL CLASSROOM AHU DEMOLITION PLAN " ON DRAWING E0.1 FOR WORK IN THIS AREA.
2. REMOVE PLUGMOLD AND BRANCH CIRCUITRY IN SURFACE RACEWAY UP TO ABOVE THE CEILING. SAVE BRANCH CIRCUITRY ABOVE THE CEILING FOR REUSE.
3. SEE DRAWING ED2.2 FOR LOCATIONS OF PANEL "L100".
4. EXISTING ELECTRICAL EQUIPMENT TO REMAIN.
5. REMOVE DUPLEX RECEPTACLE AND OUTLET BOX INSTALLED FLUSH IN EXISTING CEILING. SAVE BRANCH CIRCUITRY FOR REUSE.
6. REMOVE DUPLEX RECEPTACLE AND OUTLET BOX INSTALLED ABOVE EXISTING CEILING. SAVE BRANCH CIRCUITRY FOR REUSE.
7. REMOVE RECEPTACLE, SURFACE MOUNTED OUTLET BOX AND BRANCH CIRCUITRY BACK TO POINT OF ORIGIN. LABEL CIRCUIT BREAKER "SPARE" IN PANELBOARD INDEX.
8. SEE "POWER RISER DIAGRAM - DEMOLITION & NEW WORK" ON DRAWING E4.2 FOR WORK ASSOCIATED WITH THIS ELECTRICAL EQUIPMENT.
9. REMOVE GFI,WP RECEPTACLE AND OUTLET BOX. REMOVE BRANCH CIRCUITRY BACK TO POINT OF ORIGIN. LABEL CIRCUIT BREAKER "SPARE" IN PANELBOARD INDEX. COORDINATE ROOF PATCHING WITH MECHANICAL CONTRACTOR.
10. DISCONNECT ELECTRICAL CONNECTION TO EQUIPMENT. REMOVE BRANCH CIRCUITRY TO BELOW ROOF AND SAVE REMAINING BRANCH CIRCUITRY FOR REUSE.
11. DISCONNECT ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT. REMOVE DISCONNECT SWITCH, REMOVE BRANCH CIRCUITRY BACK TO POINT OF ORIGIN. COORDINATE ROOF PATCHING WITH THE MECHANICAL CONTRACTOR.
12. DISCONNECT ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT. REMOVE BRANCH CIRCUITRY BACK TO POINT OF ORIGIN.



KEY PLAN
NOT TO SCALE

COMMONWEALTH OF VIRGINIA
KENZIE CAMBAR
Lic. No.049752
04-19-2022
PROFESSIONAL ENGINEER

THOMPSON
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
FLOOR PLAN - AREA 'A' - POWER - DEMOLITION

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	DWC
DRAWN BY:	RAB
CHECKED BY:	KC

ED2.1

DATE: 04/19/2022

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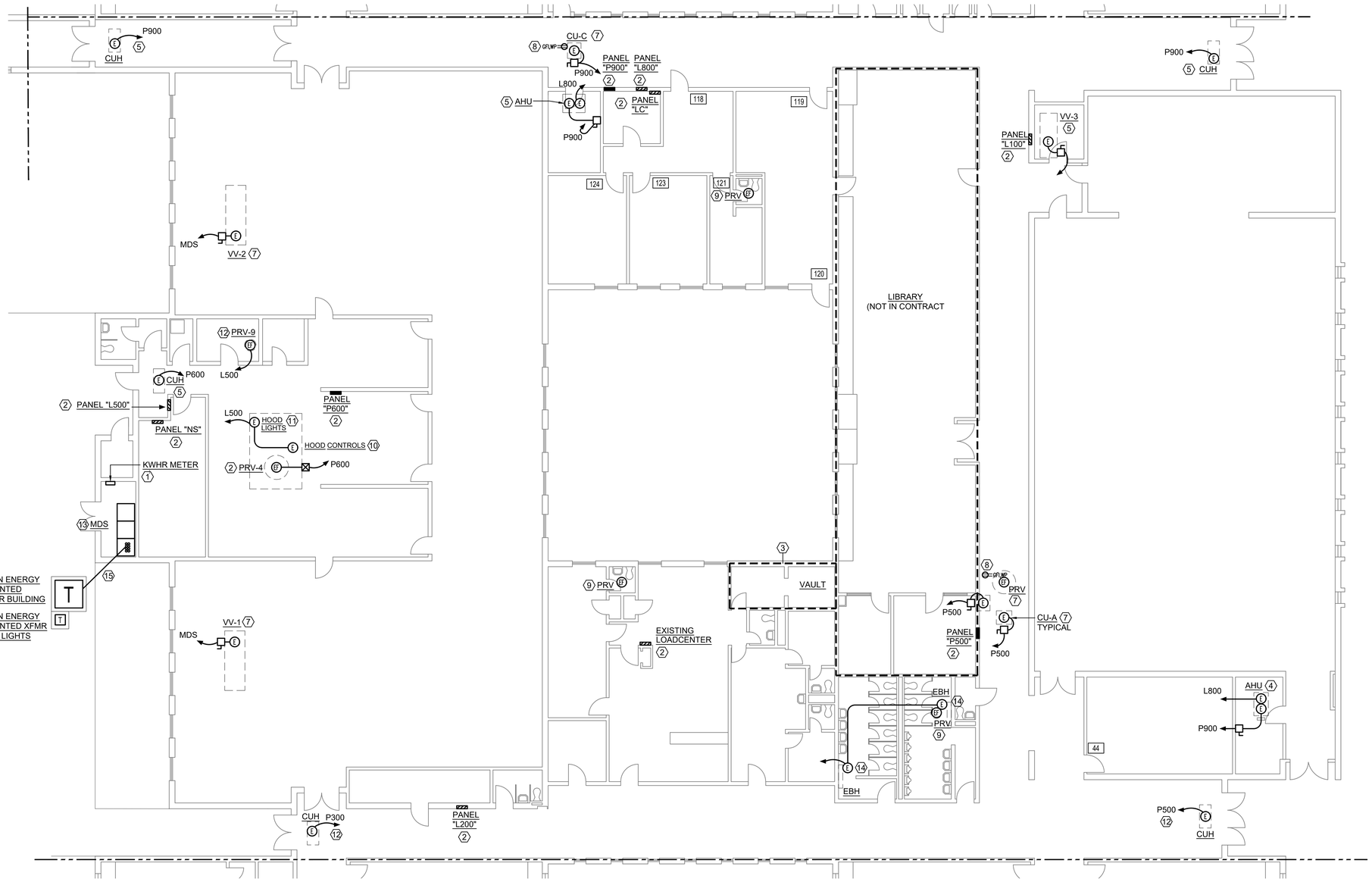
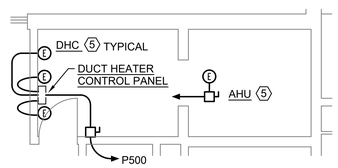


FLOOR PLAN - AREA 'B' - POWER - DEMOLITION ⑥

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

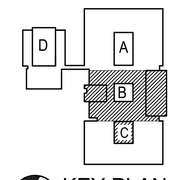
DEMOLITION NOTES: (THIS DRAWING ONLY)

1. REMOVE DOMINION ENERGY METERING CONDUIT. REMOVE DOMINION ENERGY KWHR METER BASE AND RELOCATE AS INDICATED ON DRAWING E1.2.
2. EXISTING ELECTRICAL EQUIPMENT TO REMAIN.
3. SEE "PARTIAL FLOOR PLAN - POWER - DEMOLITION" ON THIS DRAWING FOR WORK IN THIS AREA.
4. DISCONNECT ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT. REMOVE DISCONNECT SWITCH AND BRANCH CIRCUITRY BACK TO POINT OF ORIGIN. REMOVE STEP-DOWN TRANSFORMER, LINE SIDE BRANCH CIRCUITRY AND LOAD SIDE BRANCH CIRCUITRY. LABEL CIRCUIT BREAKER "SPARE" IN PANELBOARD INDEX.
5. DISCONNECT ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT. REMOVE DISCONNECT SWITCH AND BRANCH CIRCUITRY BACK TO POINT OF ORIGIN. LABEL CIRCUIT BREAKER "SPARE" IN PANELBOARD INDEX.
6. SEE DRAWING ED2.3 FOR LOCATION OF PANEL "P300".
7. DISCONNECT ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT. REMOVE DISCONNECT SWITCH AND BRANCH CIRCUITRY BACK TO POINT OF ORIGIN. LABEL CIRCUIT BREAKER "SPARE" IN PANELBOARD INDEX. COORDINATE ROOF PATCHING WITH THE MECHANICAL CONTRACTOR.
8. REMOVE GFI,WP RECEPTACLE AND OUTLET BOX. REMOVE BRANCH CIRCUITRY BACK TO POINT OF ORIGIN. LABEL CIRCUIT BREAKER "SPARE" IN PANELBOARD INDEX. COORDINATE ROOF PATCHING WITH THE MECHANICAL CONTRACTOR.
9. DISCONNECT ELECTRICAL CONNECTION TO EQUIPMENT. REMOVE BRANCH CIRCUITRY TO BELOW ROOF AND SAVE REMAINING BRANCH CIRCUITRY FOR REUSE.
10. DISCONNECT SHUNT-TRIP CIRCUIT BREAKER CONTROL CONDUIT AND CONDUCTORS FROM EXISTING KITCHEN HOOD CONTROL PANEL. SAVE CONDUIT AND CONDUCTORS FOR REUSE.
11. DISCONNECT KITCHEN HOOD LIGHTS AND SAVE BRANCH CIRCUITRY FOR REUSE.
12. DISCONNECT ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT. REMOVE DISCONNECT SWITCH AND BRANCH CIRCUITRY BACK TO POINT OF ORIGIN.
13. SEE "POWER RISER DIAGRAM - DEMOLITION & NEW WORK" ON DRAWING E4.2 FOR WORK ASSOCIATED WITH THIS ELECTRICAL EQUIPMENT.
14. DISCONNECT ELECTRICAL CONNECTION TO EQUIPMENT REMOVE CONDUCTORS BACK TO POINT OF ORIGIN. CUT CONDUIT FLUSH WITH FLOOR. PATCH FLOOR TO THE SATISFACTION OF THE OWNER.
15. COORDINATE REMOVAL OF EXISTING SERVICE ENTRANCE CONDUITS AND CONDUCTORS WITH DOMINION ENERGY.



PARTIAL FLOOR PLAN - POWER - DEMOLITION

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



KEY PLAN
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COMMONWEALTH OF VIRGINIA
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
FLOOR PLAN - AREA 'B' - POWER - DEMOLITION

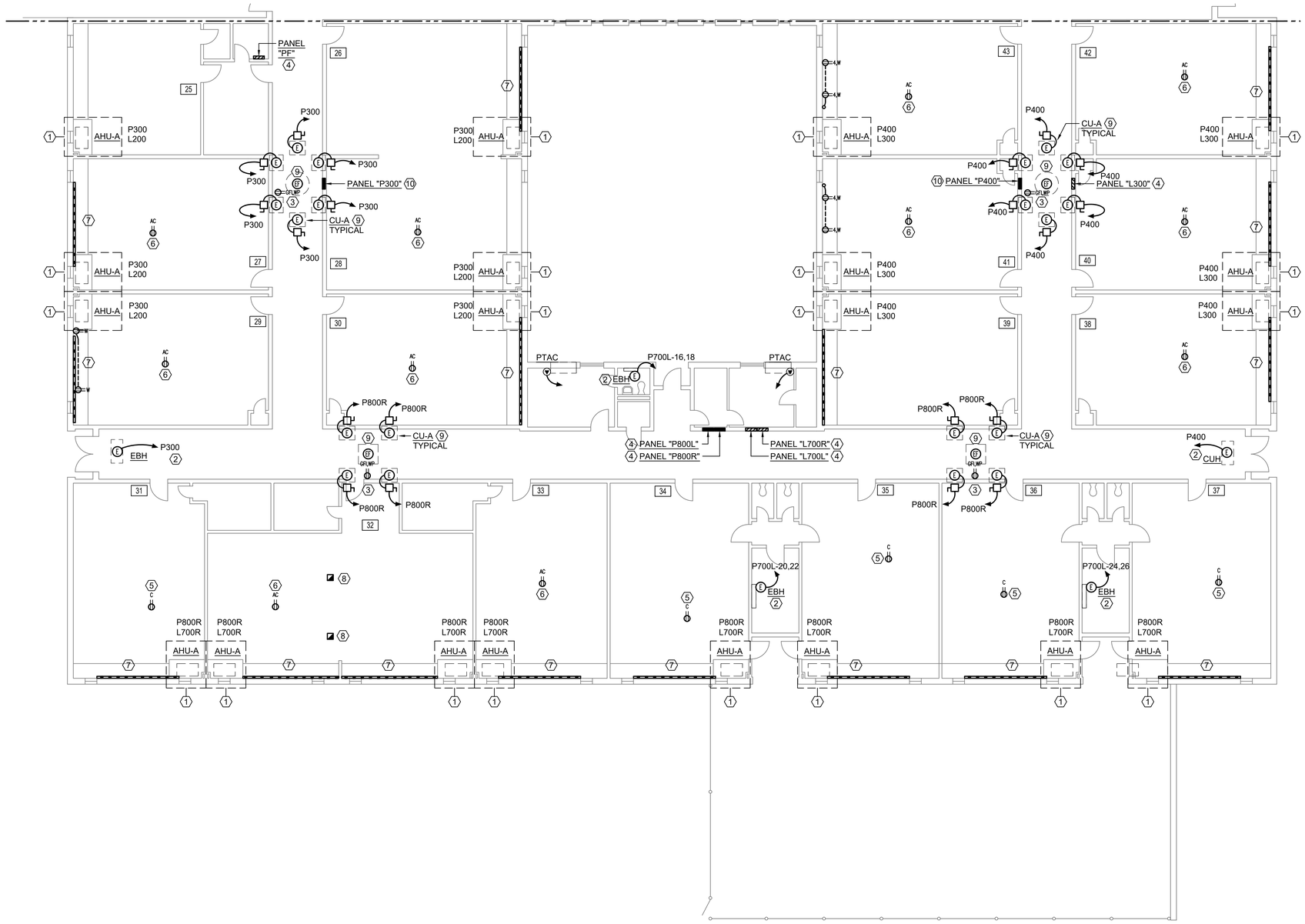
REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	DWC
DRAWN BY:	RAB
CHECKED BY:	KC

ED2.2

DATE: 04/19/2022

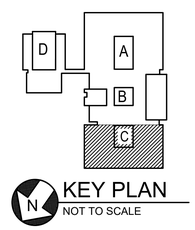


FLOOR PLAN - AREA 'C' - POWER - DEMOLITION

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

DEMOLITION NOTES: (THIS DRAWING ONLY)

1. SEE "TYPICAL CLASSROOM AHU DEMOLITION PLAN " ON DRAWING SHEET E0.1 FOR WORK IN THIS AREA.
2. DISCONNECT ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT. REMOVE BRANCH CIRCUITRY BACK TO POINT OF ORIGIN. LABEL CIRCUIT BREAKER "SPARE" IN PANELBOARD INDEX. COORDINATE ROOF PATCHING WITH THE MECHANICAL CONTRACTOR.
3. REMOVE GFI,WP RECEPTACLE AND OUTLET BOX. REMOVE BRANCH CIRCUITRY BACK TO POINT OF ORIGIN. LABEL CIRCUIT BREAKER "SPARE" IN PANELBOARD INDEX. COORDINATE ROOF PATCHING WITH THE MECHANICAL CONTRACTOR.
4. EXISTING ELECTRICAL EQUIPMENT TO REMAIN.
5. REMOVE DUPLEX RECEPTACLE AND OUTLET BOX INSTALLED FLUSH IN EXISTING CEILING. SAVE BRANCH CIRCUITRY FOR REUSE.
6. REMOVE DUPLEX RECEPTACLE AND OUTLET BOX INSTALLED ABOVE EXISTING CEILING. SAVE BRANCH CIRCUITRY FOR REUSE.
7. REMOVE PLUGMOLD AND BRANCH CIRCUITRY IN SURFACE RACEWAY UP TO ABOVE THE CEILING. SAVE BRANCH CIRCUITRY ABOVE THE CEILING FOR REUSE.
8. DISCONNECT BRANCH CIRCUITRY CONNECTED TO POWER POLE AND SAVE FOR REUSE. REMOVE POWER POLE AND SAVE FOR REUSE.
9. DISCONNECT ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT. REMOVE DISCONNECT SWITCH AND BRANCH CIRCUITRY BACK TO POINT OF ORIGIN. LABEL CIRCUIT BREAKER "SPARE" IN PANELBOARD INDEX. COORDINATE ROOF PATCHING WITH THE MECHANICAL CONTRACTOR.
10. SEE "POWER RISER DIAGRAM - DEMOLITION & NEW WORK" ON DRAWING E4.2 FOR WORK ASSOCIATED WITH THIS ELECTRICAL EQUIPMENT.



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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS
VIRGINIA
FLOOR PLAN - AREA 'C' - POWER - DEMOLITION

REVISIONS

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COMM. NO:	21-059
DESIGNED BY:	DWC
DRAWN BY:	RAB
CHECKED BY:	KC

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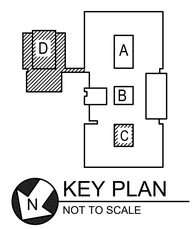
DATE: 04/19/2022

FLOOR PLAN - AREA 'D' - POWER - DEMOLITION

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

DEMOLITION NOTES: (THIS DRAWING ONLY)

1. DISCONNECT ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT. REMOVE DISCONNECT SWITCH AND BRANCH CIRCUITRY BACK TO POINT OF ORIGIN. LABEL CIRCUIT BREAKER "SPARE" IN PANELBOARD INDEX. COORDINATE ROOF PATCHING WITH THE MECHANICAL CONTRACTOR.
2. DISCONNECT ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT. REMOVE BRANCH CIRCUITRY BACK TO POINT OF ORIGIN. LABEL CIRCUIT BREAKER "SPARE" IN PANELBOARD INDEX. COORDINATE ROOF PATCHING WITH THE MECHANICAL CONTRACTOR.
3. EXISTING ELECTRICAL EQUIPMENT TO REMAIN.
4. DISCONNECT ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT. REMOVE BRANCH CIRCUITRY BACK TO POINT OF ORIGIN. LABEL CIRCUIT BREAKER "SPARE" IN PANELBOARD INDEX. COORDINATE ROOF PATCHING WITH THE MECHANICAL CONTRACTOR.



KEY PLAN
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
FLOOR PLAN - AREA 'D' - POWER - DEMOLITION

REVISIONS

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CHECKED BY: KC

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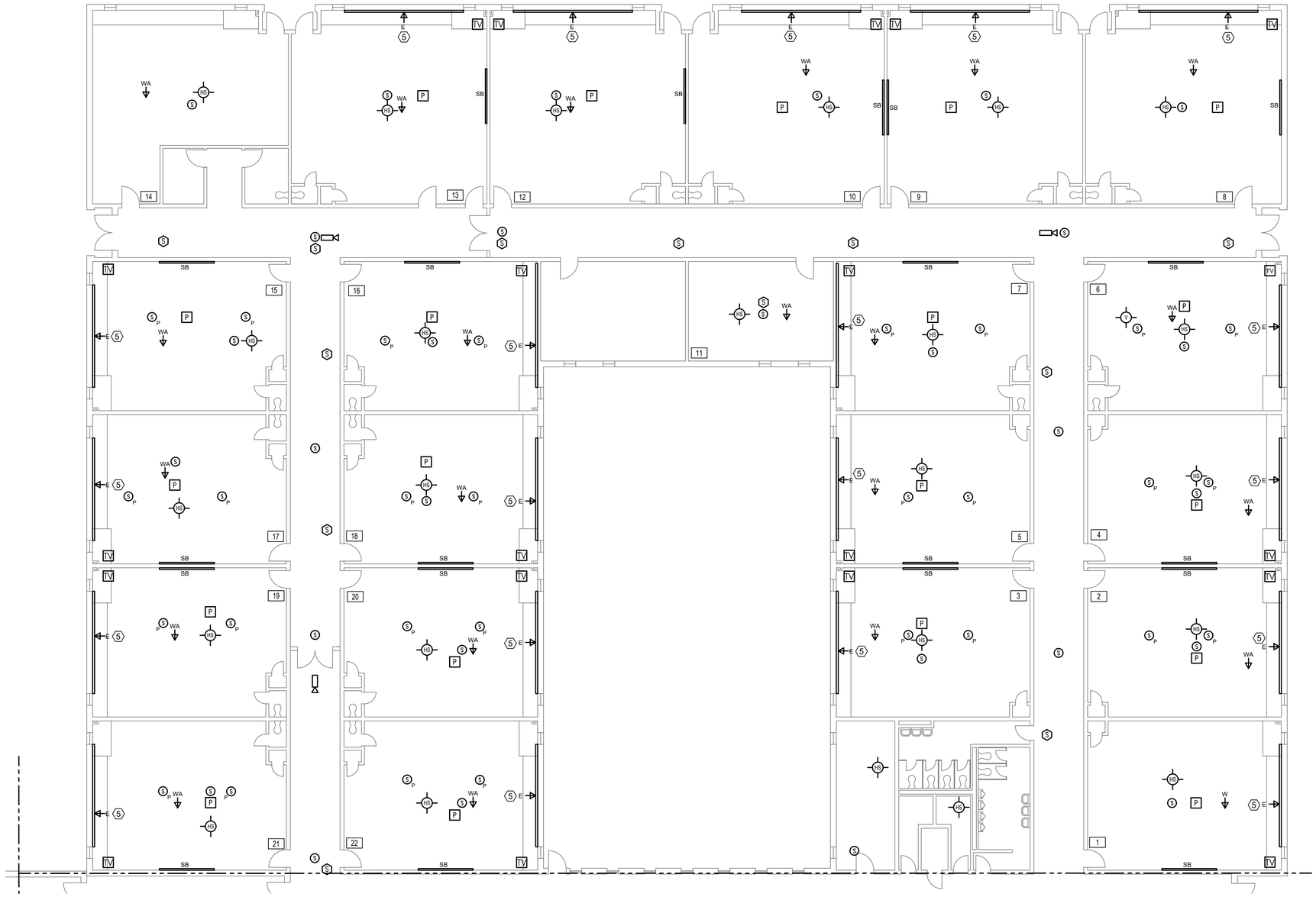


FLOOR PLAN - AREA 'A' - AUXILIARY SYSTEMS - DEMOLITION ① ② ③ ④ ⑥

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

DEMOLITION NOTES: (THIS DRAWING ONLY)

① DISCONNECT AND REMOVE ALL CEILING MOUNTED CCTV CAMERAS, PROJECTORS, WIRELESS ACCESS POINTS, SMOKE DETECTORS, FIRE ALARM NOTIFICATION DEVICES, SPEAKERS SHOWN ON THIS DRAWING AND SAVE FOR REUSE. LABEL EACH PIECE OF EQUIPMENT/DEVICE WITH REGARDS TO ROOM NUMBERS AND LOCATIONS TO ENSURE EACH PIECE IS INSTALLED IN THE SAME LOCATION FROM WHICH THEY WERE REMOVED. COORDINATE FIRE ALARM AND SECURITY WORK WITH THE OWNER.

② BEFORE BEGINNING ANY WORK, FIELD VERIFY THE WORKING CONDITION OF ALL AUXILIARY SYSTEM EQUIPMENT/DEVICES (WIRELESS ACCESS POINTS, PROJECTORS, SMOKE DETECTORS, MOTION DETECTORS, FIRE ALARM DEVICES, PHONES, PRINTERS, COMPUTERS, MONITORS, KEYBOARDS, ETC.) SCHEDULED FOR REMOVAL. NOTIFY THE OWNER OF ANY DEFECTIVE EQUIPMENT. AFTER REINSTALLATION OF AUXILIARY SYSTEMS EQUIPMENT/DEVICES SAVED DURING DEMOLITION IS COMPLETE, RE-VERIFY THE WORKING CONDITION OF EACH. REPLACE ALL EQUIPMENT/DEVICES FOUND DEFECTIVE AFTER REINSTALLATION WHICH WAS WORKING PRIOR TO REMOVAL WITH NEW EQUIPMENT/DEVICES TO MATCH EXISTING AT NO ADDITIONAL COST TO THE OWNER.

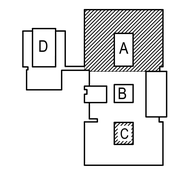
③ DURING REMOVAL OF THE EXISTING LAY-IN CEILING PANELS, SUPPORT ALL EXISTING AUXILIARY SYSTEMS CABLES (DATA, TELEPHONE, CCTV, FIRE ALARM, MOTION DETECTORS, CATV, ETC.) ORIGINATING FROM MDF OR IDF EQUIPMENT FROM EXISTING STRUCTURE ABOVE EXISTING CEILING. ADJUST ROUTING OF THESE CABLE TO ACCOMMODATE THE INSTALLATION OF NEW HVAC SYSTEM EQUIPMENT AND DUCTWORK. RE-VERIFY THE WORKING CONDITION OF THESE CABLES AND REPLACE ALL CABLES FOUND DEFECTIVE AFTER REINSTALLATION, WHICH WERE WORKING PRIOR TO REMOVAL WITH CABLES TO MATCH EXISTING AT NO ADDITIONAL COST TO OWNER.

④ DISCONNECT, REMOVE AND SAVE FOR REINSTALLATION THE FOLLOWING EQUIPMENT/DEVICES IN ALL SPACES WHERE CEILING ARE REMOVED/REINSTALLED AND WITH HVAC SYSTEM DEMOLITION/NEW WORK:

- ALL COMPUTERS INCLUDING ASSOCIATED MONITORS, TOWERS, POWER CORDS AND DATA PATCH CABLES.
- ALL WALL AND DESK MOUNTED TELEPHONE INSTRUMENTS, INCLUDING PATCH CABLES.
- ALL PRINTERS INCLUDING ASSOCIATED POWER CORDS AND DATA PATCH CABLES.
- ALL WIRELESS ACCESS POINTS DEVICES.
- ALL CEILING MOUNTED OR CART MOUNTED PROJECTORS INCLUDING ASSOCIATED MOUNTING PLATES, CEILING MOUNTED RECEPTACLES, CEILING MOUNTED DATA OUTLETS, POWER CORDS AND DATA PATCH CABLES.
  ALL WALL MOUNTED SMARTBOARDS, MDF AND IDF DATA RACKS SHALL REMAIN IN PLACE, COVERED AND PROTECTED THROUGHOUT CONSTRUCTION.

⑤ REMOVE SURFACE MOUNTED DATA OUTLET AND SURFACE RACEWAY. REMOVE DATA INSERT AND CABLING UP TO ABOVE THE CEILING. SAVE INSERT AND CABLING FOR REUSE.

⑥ DISCONNECT AND REMOVE FROM SITE ALL WALL/CEILING MOUNTED TELEVISIONS SHOWN ON THIS DRAWING, INCLUDING WALL/CEILING MOUNTED TELEVISION BRACKETS, POWER AND AV PATCH CABLES. EXISTING POWER AND AV OUTLET BOXES TO REMAIN.



KEY PLAN
NOT TO SCALE

COMMONWEALTH OF VIRGINIA
KENZIE CAMBAR
Lic. No.049752
04-19-2022
PROFESSIONAL ENGINEER

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PROJECT NUMBER:

HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS
VIRGINIA
FLOOR PLAN - AREA 'A' - AUXILIARY SYSTEMS - DEMOLITION

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: DWC
DRAWN BY: RAB
CHECKED BY: KC

ED3.1

DATE: 04/19/2022

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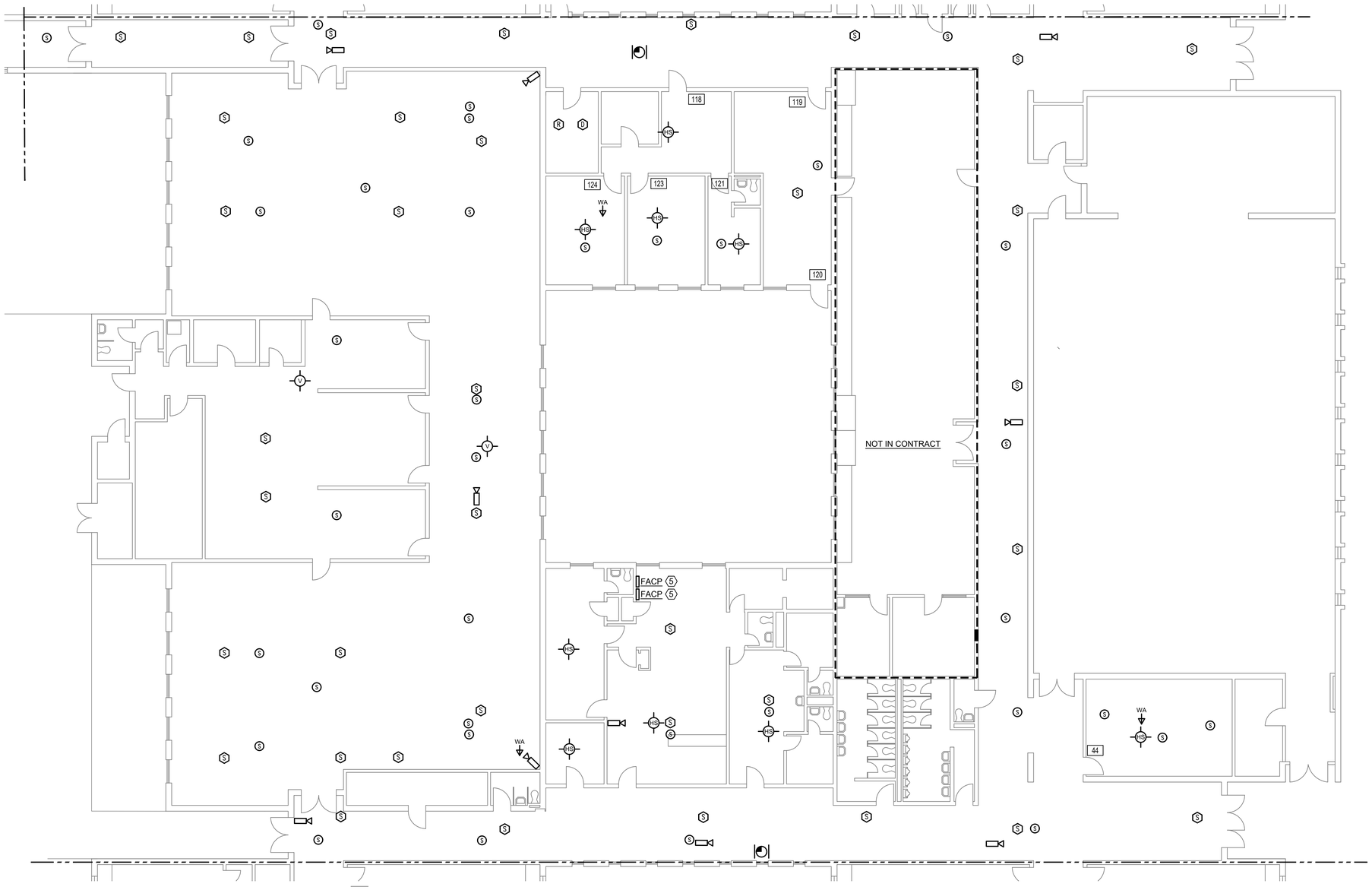


FLOOR PLAN - AREA 'B' - AUXILIARY SYSTEMS - DEMOLITION 1 2 3 4

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

DEMOLITION NOTES: (THIS DRAWING ONLY)

1. DISCONNECT AND REMOVE ALL CEILING MOUNTED CLOCKS, CCTV CAMERAS, SMOKE DETECTORS, WIRELESS ACCESS POINTS, FIRE ALARM NOTIFICATION DEVICES, SPEAKERS SHOWN ON THIS DRAWING AND SAVE FOR REUSE. LABEL EACH PIECE OF EQUIPMENT/DEVICE WITH REGARDS TO ROOM NUMBERS AND LOCATIONS TO ENSURE EACH PIECE IS INSTALLED IN THE SAME LOCATION FROM WHICH THEY WERE REMOVED. COORDINATE FIRE ALARM AND SECURITY WORK WITH THE OWNER.

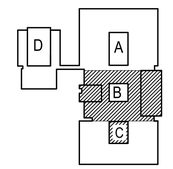
2. BEFORE BEGINNING ANY WORK, FIELD VERIFY THE WORKING CONDITION OF ALL AUXILIARY SYSTEM EQUIPMENT/DEVICES (WIRELESS ACCESS POINTS, SMOKE DETECTORS, FIRE ALARM DEVICES, PHONES, PRINTERS, COMPUTERS, MONITORS, KEYBOARDS, ETC.) SCHEDULED FOR REMOVAL. NOTIFY THE OWNER OF ANY DEFECTIVE EQUIPMENT. AFTER REINSTALLATION OF AUXILIARY SYSTEMS EQUIPMENT/DEVICES SAVED DURING DEMOLITION IS COMPLETE, RE-VERIFY THE WORKING CONDITION OF EACH. REPLACE ALL EQUIPMENT/DEVICES FOUND DEFECTIVE AFTER REINSTALLATION WHICH WAS WORKING PRIOR TO REMOVAL WITH NEW EQUIPMENT/DEVICES TO MATCH EXISTING AT NO ADDITIONAL COST TO THE OWNER.

3. DURING REMOVAL OF THE EXISTING LAY-IN CEILING PANELS, SUPPORT ALL EXISTING AUXILIARY SYSTEMS CABLES (DATA, TELEPHONE, CCTV, FIRE ALARM, MOTION DETECTORS, CATV, ETC.) ORIGINATING FROM MDF OR IDF EQUIPMENT FROM EXISTING STRUCTURE ABOVE EXISTING CEILING. ADJUST ROUTING OF THESE CABLE TO ACCOMMODATE THE INSTALLATION OF NEW HVAC SYSTEM EQUIPMENT AND DUCTWORK. RE-VERIFY THE WORKING CONDITION OF THESE CABLES AND REPLACE ALL CABLES FOUND DEFECTIVE AFTER REINSTALLATION, WHICH WERE WORKING PRIOR TO REMOVAL WITH CABLES TO MATCH EXISTING AT NO ADDITIONAL COST TO OWNER.

4. DISCONNECT, REMOVE AND SAVE FOR REINSTALLATION THE FOLLOWING EQUIPMENT/DEVICES IN ALL SPACES WHERE CEILING ARE REMOVED/REINSTALLED AND WITH HVAC SYSTEM DEMOLITION/NEW WORK:

   - ALL COMPUTERS INCLUDING ASSOCIATED MONITORS, TOWERS, POWER CORDS AND DATA PATCH CABLES.
   - ALL WALL AND DESK MOUNTED TELEPHONE INSTRUMENTS, INCLUDING PATCH CABLES.
   - ALL PRINTERS INCLUDING ASSOCIATED POWER CORDS AND DATA PATCH CABLES.
   - ALL WIRELESS ACCESS POINTS DEVICES.
   - ALL CEILING MOUNTED OR CART MOUNTED PROJECTORS INCLUDING ASSOCIATED MOUNTING PLATES, CEILING MOUNTED RECEPTACLES, CEILING MOUNTED DATA OUTLETS, POWER CORDS AND DATA PATCH CABLES.
   - ALL WALL MOUNTED SMARTBOARDS, MDF AND IDF DATA RACKS SHALL REMAIN IN PLACE, COVERED AND PROTECTED THROUGHOUT CONSTRUCTION.

5. EXISTING TO REMAIN



KEY PLAN
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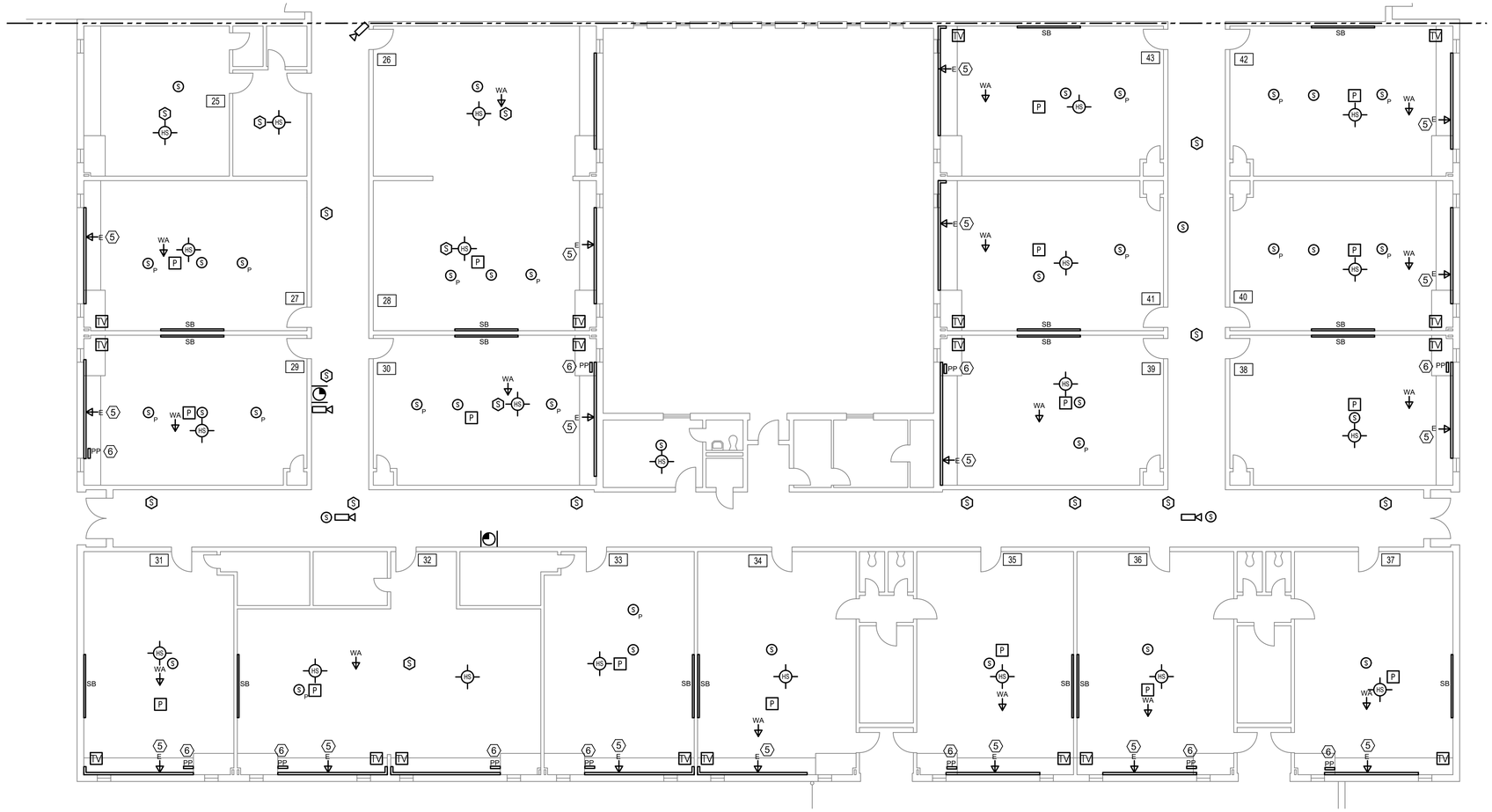


FLOOR PLAN - AREA 'C' - AUXILIARY SYSTEMS - DEMOLITION ① ② ③ ④ ⑦

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

DEMOLITION NOTES: (THIS DRAWING ONLY)

① DISCONNECT AND REMOVE ALL CEILING MOUNTED CLOCKS, CCTV CAMERAS PROJECTORS, WIRELESS ACCESS POINTS, SMOKE DETECTORS, FIRE ALARM NOTIFICATION DEVICES, SPEAKERS SHOWN, ON THIS DRAWING AND SAVE FOR REUSE. LABEL EACH PIECE OF EQUIPMENT/DEVICE WITH REGARDS TO ROOM NUMBERS AND LOCATIONS TO ENSURE EACH PIECE IS INSTALLED IN THE SAME LOCATION FROM WHICH THEY WERE REMOVED. COORDINATE FIRE ALARM AND SECURITY WORK WITH THE OWNER.

② BEFORE BEGINNING ANY WORK, FIELD VERIFY THE WORKING CONDITION OF ALL AUXILIARY SYSTEM EQUIPMENT/DEVICES (WIRELESS ACCESS POINTS, PROJECTORS, SMOKE DETECTORS, MOTION DETECTORS, FIRE ALARM DEVICES, PHONES, PRINTERS, COMPUTERS, MONITORS, KEYBOARDS, ETC.) SCHEDULED FOR REMOVAL. NOTIFY THE OWNER OF ANY DEFECTIVE EQUIPMENT. AFTER REINSTALLATION OF AUXILIARY SYSTEMS EQUIPMENT/DEVICES SAVED DURING DEMOLITION IS COMPLETE, RE-VERIFY THE WORKING CONDITION OF EACH. REPLACE ALL EQUIPMENT/DEVICES FOUND DEFECTIVE AFTER REINSTALLATION WHICH WAS WORKING PRIOR TO REMOVAL WITH NEW EQUIPMENT/DEVICES TO MATCH EXISTING AT NO ADDITIONAL COST TO THE OWNER.

③ DURING REMOVAL OF THE EXISTING LAY-IN CEILING PANELS, SUPPORT ALL EXISTING AUXILIARY SYSTEMS CABLES (DATA, TELEPHONE, CCTV, FIRE ALARM, MOTION DETECTORS, CATV, ETC.) ORIGINATING FROM MDF OR IDF EQUIPMENT FROM EXISTING STRUCTURE ABOVE EXISTING CEILING. ADJUST ROUTING OF THESE CABLE TO ACCOMMODATE THE INSTALLATION OF NEW HVAC SYSTEM EQUIPMENT AND DUCTWORK. RE-VERIFY THE WORKING CONDITION OF THESE CABLES AND REPLACE ALL CABLES FOUND DEFECTIVE AFTER REINSTALLATION, WHICH WERE WORKING PRIOR TO REMOVAL WITH CABLES TO MATCH EXISTING AT NO ADDITIONAL COST TO OWNER.

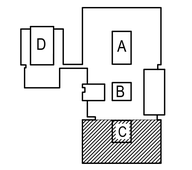
④ DISCONNECT, REMOVE AND SAVE FOR REINSTALLATION THE FOLLOWING EQUIPMENT/DEVICES IN ALL SPACES WHERE CEILING ARE REMOVED/REINSTALLED AND WITH HVAC SYSTEM DEMOLITION/NEW WORK:

- ALL COMPUTERS INCLUDING ASSOCIATED MONITORS, TOWERS, POWER CORDS AND DATA PATCH CABLES.
- ALL WALL AND DESK MOUNTED TELEPHONE INSTRUMENTS, INCLUDING PATCH CABLES.
- ALL PRINTERS INCLUDING ASSOCIATED POWER CORDS AND DATA PATCH CABLES.
- ALL WIRELESS ACCESS POINTS DEVICES.
- ALL CEILING MOUNTED OR CART MOUNTED PROJECTORS INCLUDING ASSOCIATED MOUNTING PLATES, CEILING MOUNTED RECEPTACLES, CEILING MOUNTED DATA OUTLETS, POWER CORDS AND DATA PATCH CABLES.
  ALL WALL MOUNTED SMARTBOARDS, MDF AND IDF DATA RACKS SHALL REMAIN IN PLACE, COVERED AND PROTECTED THROUGHOUT CONSTRUCTION.

⑤ REMOVE SURFACE MOUNTED DATA OUTLET AND SURFACE RACEWAY. REMOVE DATA INSERT AND CABLING UP TO ABOVE THE CEILING. SAVE INSERT AND CABLING FOR REUSE.

⑥ REMOVE ABANDONED SURFACE MOUNTED PATCH PANEL. REMOVE FIBER OPTIC CABLE BACK TO POINT OF ORIGIN. VERIFY LOCATION WITH OWNER.

⑦ DISCONNECT AND REMOVE FROM SITE ALL WALL/CEILING MOUNTED TELEVISIONS SHOWN ON THIS DRAWING, INCLUDING WALL/CEILING MOUNTED TELEVISION BRACKETS, POWER AND AV PATCH CABLES. EXISTING POWER AND AV OUTLET BOXES TO REMAIN.



KEY PLAN
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NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA

FLOOR PLAN - AREA 'C' - AUXILIARY SYSTEMS - DEMOLITION

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	DWC
DRAWN BY:	RAB
CHECKED BY:	KC

ED3.3

DATE: 04/19/2022

FLOOR PLAN - AREA 'D' - AUXILIARY SYSTEMS - DEMOLITION ① ② ③ ④

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

DEMOLITION NOTES: (THIS DRAWING ONLY)

① DISCONNECT AND REMOVE CEILING MOUNTED CLOCKS, CCTV CAMERAS ALL PROJECTORS, SMOKE DETECTORS, WIRELESS ACCESS POINTS, FIRE ALARM NOTIFICATION DEVICES, SPEAKERS SHOWN ON THIS DRAWING AND SAVE FOR REUSE. LABEL EACH PIECE OF EQUIPMENT/DEVICE WITH REGARDS TO ROOM NUMBERS AND LOCATIONS TO ENSURE EACH PIECE IS INSTALLED IN THE SAME LOCATION FROM WHICH THEY WERE REMOVED. COORDINATE FIRE ALARM AND SECURITY WORK WITH THE OWNER.

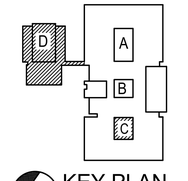
② BEFORE BEGINNING ANY WORK, FIELD VERIFY THE WORKING CONDITION OF ALL AUXILIARY SYSTEM EQUIPMENT/DEVICES (WIRELESS ACCESS POINTS, PROJECTORS, SMOKE DETECTORS, MOTION DETECTORS, FIRE ALARM DEVICES, PHONES, PRINTERS, COMPUTERS, MONITORS, KEYBOARDS, ETC.) SCHEDULED FOR REMOVAL. NOTIFY THE OWNER OF ANY DEFECTIVE EQUIPMENT. AFTER REINSTALLATION OF AUXILIARY SYSTEMS EQUIPMENT/DEVICES SAVED DURING DEMOLITION IS COMPLETE, RE-VERIFY THE WORKING CONDITION OF EACH. REPLACE ALL EQUIPMENT/DEVICES FOUND DEFECTIVE AFTER REINSTALLATION WHICH WAS WORKING PRIOR TO REMOVAL WITH NEW EQUIPMENT/DEVICES TO MATCH EXISTING AT NO ADDITIONAL COST TO THE OWNER.

③ DURING REMOVAL OF THE EXISTING LAY-IN CEILING PANELS, SUPPORT ALL EXISTING AUXILIARY SYSTEMS CABLES (DATA, TELEPHONE, CCTV, FIRE ALARM, MOTION DETECTORS, CATV, ETC.) ORIGINATING FROM MDF OR IDF EQUIPMENT FROM EXISTING STRUCTURE ABOVE EXISTING CEILING. ADJUST ROUTING OF THESE CABLE TO ACCOMMODATE THE INSTALLATION OF NEW HVAC SYSTEM EQUIPMENT AND DUCTWORK. RE-VERIFY THE WORKING CONDITION OF THESE CABLES AND REPLACE ALL CABLES FOUND DEFECTIVE AFTER REINSTALLATION, WHICH WERE WORKING PRIOR TO REMOVAL WITH CABLES TO MATCH EXISTING AT NO ADDITIONAL COST TO OWNER.

④ DISCONNECT, REMOVE AND SAVE FOR REINSTALLATION THE FOLLOWING EQUIPMENT/DEVICES IN ALL SPACES WHERE CEILING ARE REMOVED/REINSTALLED AND WITH HVAC SYSTEM DEMOLITION/NEW WORK:

- ALL COMPUTERS INCLUDING ASSOCIATED MONITORS, TOWERS, POWER CORDS AND DATA PATCH CABLES.
- ALL WALL AND DESK MOUNTED TELEPHONE INSTRUMENTS, INCLUDING PATCH CABLES.
- ALL PRINTERS INCLUDING ASSOCIATED POWER CORDS AND DATA PATCH CABLES.
- ALL WIRELESS ACCESS POINTS DEVICES.
- ALL CEILING MOUNTED OR CART MOUNTED PROJECTORS INCLUDING ASSOCIATED MOUNTING PLATES, CEILING MOUNTED RECEPTACLES, CEILING MOUNTED DATA OUTLETS, POWER CORDS AND DATA PATCH CABLES.

ALL WALL MOUNTED SMARTBOARDS, MDF AND IDF DATA RACKS SHALL REMAIN IN PLACE, COVERED AND PROTECTED THROUGHOUT CONSTRUCTION.



KEY PLAN
NOT TO SCALE

COMMONWEALTH OF VIRGINIA
KENZIE CAMBAR
Lic. No.049752
04-19-2022
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
FLOOR PLAN - AREA 'D' - AUXILIARY SYSTEMS - DEMOLITION

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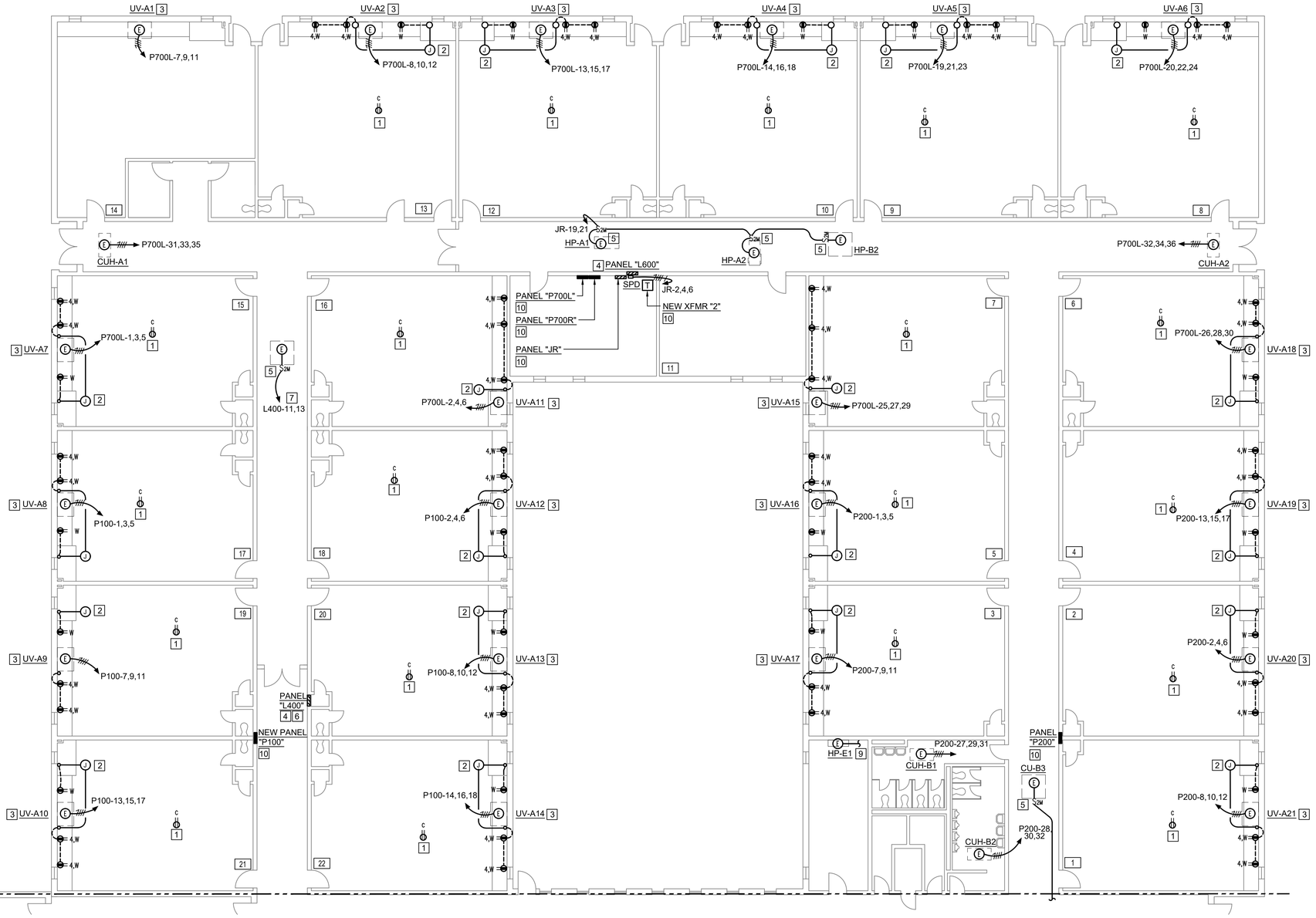
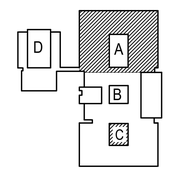


FLOOR PLAN - AREA 'A' - POWER - NEW WORK 8

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

NEW WORK NOTES: (THIS DRAWING ONLY)

1. PROVIDE DUPLEX RECEPTACLE FLUSH IN CEILING. SUPPORT OUTLET BOX FROM CEILING GRID. CONNECT RECEPTACLE TO EXISTING BRANCH CIRCUITRY SAVED DURING DEMOLITION. INSTALL RECEPTACLE IN SAME CEILING TILE AS PROJECTOR.
2. PROVIDE JUNCTION BOX ON THE END OF EXISTING BRANCH CIRCUITRY SAVED DURING DEMOLITION. PROVIDE BRANCH CIRCUITRY TO RECEPTACLES ON EXTERIOR WALL. CONVERT CONDUIT TO SURFACE METAL RACEWAY ABOVE CEILING AND RUN BRANCH CIRCUITRY DOWN WALL TO RECEPTACLES.
3. PROVIDE ELECTRICAL CONNECTION TO DISCONNECT SWITCH FURNISHED WITH MECHANICAL EQUIPMENT.
4. UTILIZE EXISTING CONDUIT CONCEALED IN WALL TO EXTEND BRANCH CIRCUIT TO CIRCUIT BREAKERS IN EXISTING PANEL(S).
5. INSTALL DISCONNECT ON NON-REMOVABLE PANEL ON MECHANICAL EQUIPMENT. COORDINATE EXACT LOCATION WITH EQUIPMENT SUPPLIER.
6. REMOVE FOUR (4) 20A-1P CIRCUIT BREAKERS IN SPACES 11,13,14 & 16 MADE SPARE DURING DEMOLITION AND TURN OVER TO OWNER. PROVIDE ONE (1) 15A-2P, 10 KAIC AND ONE (1) 20A-2P, 10 KAIC CIRCUIT BREAKERS AND INSTALL IN SPACES. PANEL "L400" IS A CUTLER HAMMER TYPE "PRL1A" PANEL.
7. PROVIDE 2 #12 AND 1 #12 GROUND IN 1/2" CONDUIT. CONNECT HOMERUN TO NEW 15A-2P CIRCUIT BREAKER IN INDICATED SPACES IN PANEL. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
8. SEE DRAWING E1.2 FOR LOCATION OF PANEL "L100".
9. PROVIDE 3/4" CONDUIT BETWEEN ELECTRICAL CONNECTION TO IU AND ELECTRICAL CONNECTION TO OU. CONVERT CONDUIT TO LIQUID TIGHT FLEX AND EXTEND CONDUIT TO OU. FOLLOW PATH OF REFRIGERANT PIPING. INSTALL WIRING FURNISHED BY EQUIPMENT MANUFACTURER IN CONDUIT AND MAKE ELECTRICAL CONNECTIONS TO IU AND OU AS DIRECTED BY THE EQUIPMENT MANUFACTURER.
10. SEE "POWER RISER DIAGRAM - DEMOLITION & NEW WORK" ON DRAWING E4.2 FOR WORK ASSOCIATED WITH THIS ELECTRICAL EQUIPMENT.



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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
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FLOOR PLAN - AREA 'A' - POWER - NEW WORK

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E1.1

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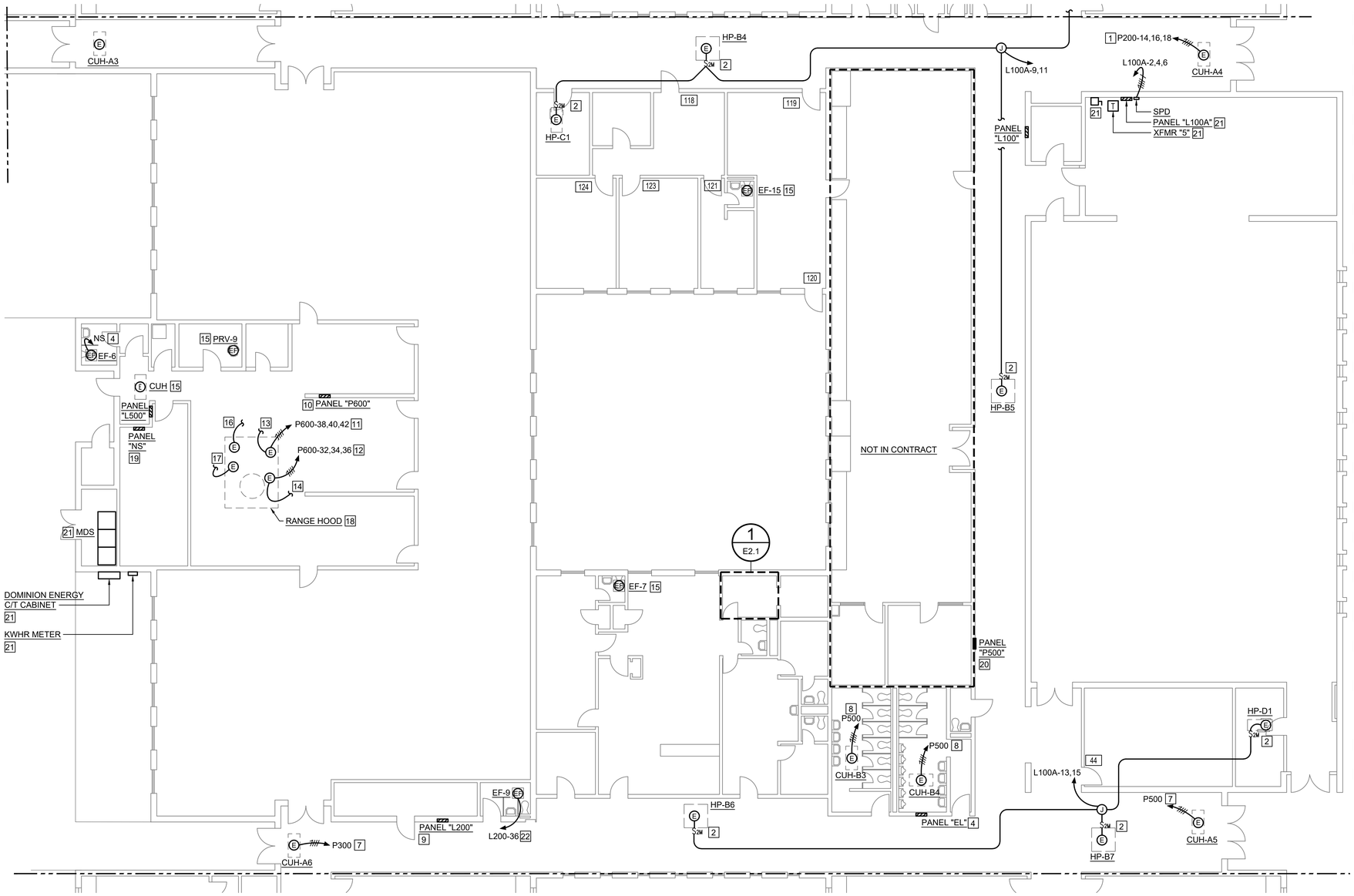
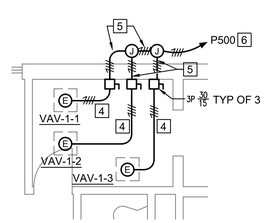


FLOOR PLAN - AREA 'B' - POWER - NEW WORK 1 3

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



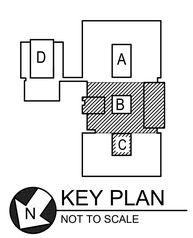
PARTIAL FLOOR PLAN

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

1 / E2.1

NEW WORK NOTES: (THIS DRAWING ONLY)

1. SEE E1.1 FOR LOCATION OF PANEL "P200".
2. INSTALL DISCONNECT ON NON-REMOVABLE PANEL ON MECHANICAL EQUIPMENT. COORDINATE EXACT LOCATION WITH EQUIPMENT SUPPLIER.
3. SEE DRAWING E1.3 FOR LOCATION OF PANEL "P300".
4. PROVIDE 2 #12 AND 1 #12 GROUND IN 1/2" CONDUIT. CONNECT TO 20A-1P CIRCUIT BREAKER IN INDICATED PANEL. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
5. PROVIDE 3 #8 AND 1 #10 GROUND IN 3/4" CONDUIT.
6. PROVIDE 3 #8 AND 1 #10 GROUND IN 3/4" CONDUIT AND CONNECT TO NEW 40A-3P CIRCUIT BREAKER PROVIDED BY NEW WORK NOTE 20 IN INDICATED SPACE IN PANEL. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
7. PROVIDE 3 #12 AND 1 #12 GROUND IN 1/2" CONDUIT. CONNECT TO CIRCUIT BREAKER THAT SERVED EXISTING CUH.
8. PROVIDE 3 #12 AND 1 #12 GROUND IN 1/2" CONDUIT. CONNECT TO 20A-3P CIRCUIT BREAKER MADE SPARE DURING DEMOLITION. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
9. REMOVE TWO (2) 20A-1P CIRCUIT BREAKERS MADE SPARE DURING DEMOLITION AND TURN OVER TO OWNER. PROVIDE ONE (1) 15A-2P CIRCUIT BREAKER AND INSTALL IN PANEL. PANEL "L200" IS A CUTLER HAMMER TYPE "PR1L" PANEL.
10. REMOVE 15A-3P CIRCUIT BREAKER THAT SERVED KITCHEN HOOD EXHAUST FAN AND TURN OVER TO OWNER. PROVIDE 20A-3P, 35 KAIC CIRCUIT BREAKER AND INSTALL IN SPACE. PANEL 600 IS A CUTLER HAMMER TYPE "PRL4B" PANEL.
11. PROVIDE 3 #12 AND 1 #12 GROUND IN 1/2" CONDUIT. FROM LINE SIDE TERMINALS FOR EXHAUST FAN IN KITCHEN HOOD CONTROL PANEL. CONNECT HOMERUN TO NEW 20A-3P CIRCUIT BREAKER IN INDICATED SPACE IN PANEL.
12. PROVIDE 3 #12 AND 1 #12 GROUND IN 1/2" CONDUIT FROM LINE SIDE TERMINALS FOR KMAU-1 IN KITCHEN HOOD CONTROL PANEL. CONNECT HOMERUN TO SPARE 15A-3P CIRCUIT BREAKER IN INDICATED SPACE IN PANEL. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
13. PROVIDE 3 #12 AND 1 #12 GROUND IN 1/2" CONDUIT FROM LOAD SIDE TERMINALS FOR EXHAUST FAN IN KITCHEN HOOD CONTROL PANEL. CONNECT BRANCH CIRCUIT TO EXHAUST FAN DISCONNECT SWITCH ON ROOF. SEE DRAWING E2.2 FOR CONTINUATION.
14. PROVIDE 3 #12 AND 1 #12 GROUND IN 1/2" CONDUIT FROM LOAD SIDE TERMINALS FOR KMAU-1 IN KITCHEN HOOD CONTROL PANEL. CONNECT BRANCH CIRCUIT TO KMAU-1 DISCONNECT SWITCH ON ROOF. SEE DRAWING E2.2 FOR CONTINUATION.
15. CONNECT MECHANICAL EQUIPMENT TO EXISTING BRANCH CIRCUIT SAVED DURING DEMOLITION.
16. CONNECT EXISTING SHUNT-TRIP CONTROL BRANCH CIRCUIT SAVED DURING DEMOLITION TO KITCHEN HOOD CONTROL PANEL AS DIRECTED BY CONTROL PANEL MANUFACTURER.
17. CONNECT EXISTING HOOD LIGHT BRANCH CIRCUIT SAVED DURING DEMOLITION TO KITCHEN HOOD CONTROL PANEL AS DIRECTED BY CONTROL PANEL MANUFACTURER.
18. SEE "KITCHEN HOOD WIRING DIAGRAM" ON DRAWING E0.2 FOR ADDITIONAL REQUIREMENT REGARDING THE KITCHEN HOOD.
19. PROVIDE TWO (2) 20A-1P, 10 KAIC CIRCUIT BREAKERS AND INSTALL IN INDICATED SPACES IN PANEL. PANEL "NS" IS A CUTLER HAMMER TYPE "PR1L" PANEL. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
20. REMOVE ONE (1) 100A-3P AND FOUR (4) 15A-3P CIRCUIT BREAKERS MADE SPARE DURING DEMOLITION AND TURN OVER TO OWNER. PROVIDE ONE (1) 60A-3P CIRCUIT BREAKER, ONE (1) 40A-3P CIRCUIT BREAKER AND THREE (3) 20A-3P CIRCUIT BREAKERS AND INSTALL IN SPACES. PANEL "P500" IS A CUTLER HAMMER TYPE "PRL3A" PANEL. PROVIDE ALL 35 KAIC CIRCUIT BREAKERS.
21. SEE "POWER RISER DIAGRAM - DEMOLITION & NEW WORK" ON DRAWING E4.2 FOR WORK ASSOCIATED WITH THIS ELECTRICAL EQUIPMENT.
22. TERMINATE HOMERUN IN SPARE 20A-1P CIRCUIT BREAKER IN INDICATED SPACE AND PANEL.



KEY PLAN
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NEWSOME PARK ELEMENTARY SCHOOL
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FLOOR PLAN - AREA 'B' - POWER - NEW WORK

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E1.2

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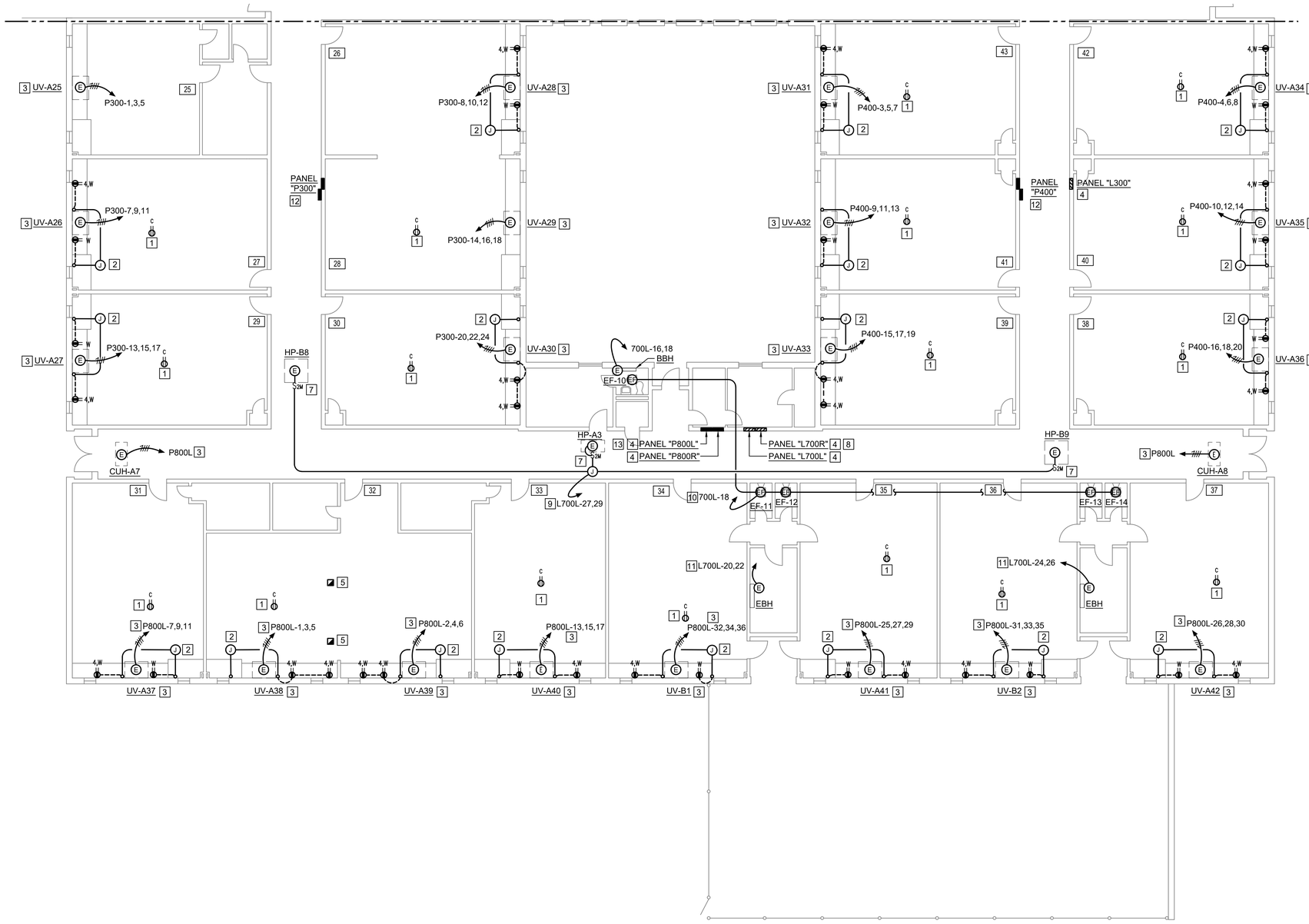
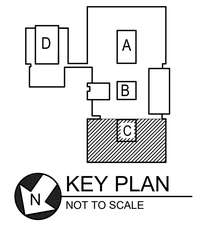


FLOOR PLAN - AREA 'C' - POWER - NEW WORK

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

NEW WORK NOTES: (THIS DRAWING ONLY)

1. PROVIDE DUPLEX RECEPTACLE FLUSH IN CEILING. SUPPORT OUTLET BOX FROM CEILING GRID. CONNECT RECEPTACLE TO EXISTING BRANCH CIRCUITRY SAVED DURING DEMOLITION. INSTALL RECEPTACLE IN SAME CEILING TILE AS PROJECTOR.
2. PROVIDE JUNCTION BOX ON THE END OF EXISTING BRANCH CIRCUITRY SAVED DURING DEMOLITION. PROVIDE BRANCH CIRCUITRY TO RECEPTACLES ON EXTERIOR WALL. CONVERT CONDUIT TO SURFACE METAL RACEWAY ABOVE CEILING AND RUN BRANCH CIRCUITRY DOWN WALL TO RECEPTACLES.
3. PROVIDE ELECTRICAL CONNECTION TO DISCONNECT SWITCH FURNISHED WITH MECHANICAL EQUIPMENT. PROVIDE 3 #10 AND 1 #10 GROUND IN 1/2" CONDUIT AND CONNECT TO NEW CIRCUIT BREAKER. CHANGE PANEL INDEX TO REFLECT LOAD SERVED. INCLUDE ROOM NUMBER IN PANEL INDEX.
4. UTILIZE EXISTING CONDUIT CONCEALED IN WALL TO EXTEND BRANCH CIRCUIT TO CIRCUIT BREAKERS IN EXISTING PANEL(S).
5. REINSTALL EXISTING POWER POLE AND CONNECT TO EXISTING BRANCH CIRCUITRY SAVED DURING DEMOLITION.
6. PROVIDE 3 #12 AND 1 #12 GROUND IN 1/2" CONDUIT. CONNECT TO CIRCUIT BREAKER THAT SERVED EXISTING CUH.
7. INSTALL DISCONNECT ON NON-REMOVABLE PANEL ON MECHANICAL EQUIPMENT. COORDINATE EXACT LOCATION WITH EQUIPMENT SUPPLIER.
8. REMOVE SIX (6) 20A-1P CIRCUIT BREAKERS IN ODD NUMBERED 27 THRU 39 AND TURN OVER TO OWNER. PROVIDE TWO (2) 20A-2P, 10 KAIC AND ONE (1) 15A-2P, 10 KAIC CIRCUIT BREAKERS AND INSTALL IN SPACES. PANEL "L700R" IS A CUTLER HAMMER TYPE "PR1L" PANEL.
9. PROVIDE 2 #12 AND 1 #12 GROUND IN 1/2" CONDUIT. CONNECT TO SPARE 20A-2P CIRCUIT BREAKER IN INDICATED SPACE IN PANEL. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
10. PROVIDE 2 #12 AND 1 #12 GROUND IN 1/2" CONDUIT. CONNECT TO NEW 15A-2P CIRCUIT BREAKER IN INDICATED SPACE IN PANEL. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
11. CONNECT BBH TO EXISTING BRANCH CIRCUIT SAVED DURING DEMOLITION.
12. SEE "POWER RISER DIAGRAM - DEMOLITION & NEW WORK" ON DRAWING E4.2 FOR WORK ASSOCIATED WITH THIS ELECTRICAL EQUIPMENT.
13. REMOVE AND REPLACE 20A-3P CIRCUIT BREAKERS NUMBERED 1,7,13,25,31,34,2, AND 26 WITH NEW 30A-3P CIRCUIT BREAKERS WITH 14 KALC PANEL "P800L" IS A CUTLER HAMMER TYPE "PRL2A".



KEY PLAN
NOT TO SCALE

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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
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FLOOR PLAN - AREA 'C' - POWER - NEW WORK

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E1.3

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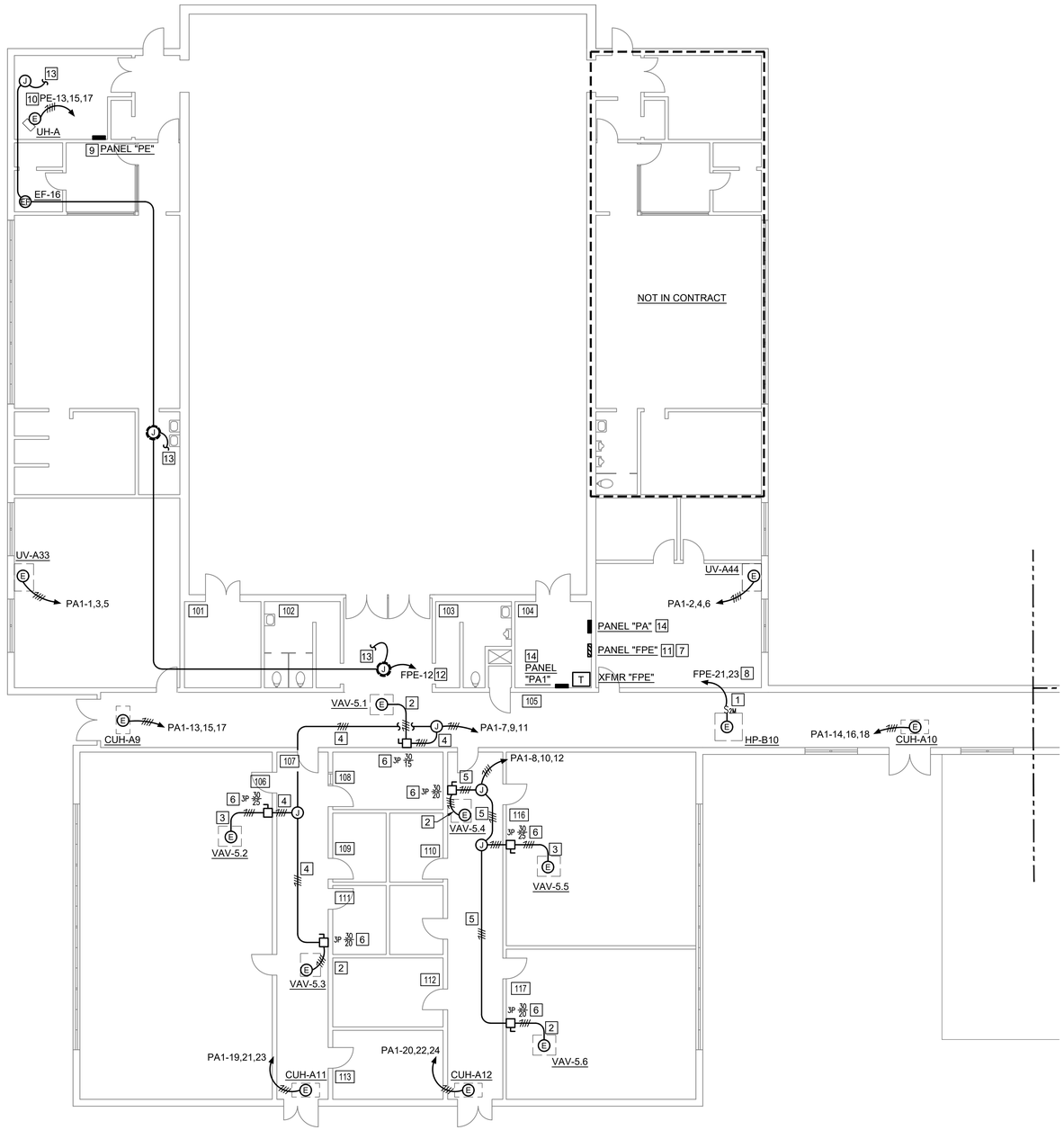
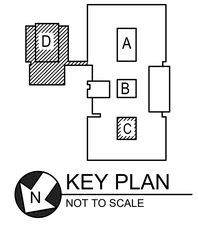


FLOOR PLAN - AREA 'D' - POWER - NEW WORK

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

NEW WORK NOTES: (THIS DRAWING ONLY)

1. INSTALL DISCONNECT ON NON-REMOVABLE PANEL ON MECHANICAL EQUIPMENT. COORDINATE EXACT LOCATION WITH EQUIPMENT SUPPLIER.
2. PROVIDE 3 #12 AND 1 #12 GROUND IN 1/2" CONDUIT.
3. PROVIDE 3 #10 AND 1 #10 GROUND IN 1/2" CONDUIT.
4. PROVIDE 3 #8 AND 1 #10 GROUND IN 3/4" CONDUIT.
5. PROVIDE 3 #6 AND 1 #10 GROUND IN 1" CONDUIT.
6. INSTALL DISCONNECT SWITCH ON WALL ABOVE CEILING. MAINTAIN NEC REQUIRED WORKING CLEARANCES AROUND DISCONNECT SWITCH.
7. REMOVE AND REPLACE ONE (1) 30A-2P CIRCUIT BREAKER IN SPACES 21 AND 23 MADE SPARE DURING DEMOLITION WITH NEW 15A-2P, 10 KAIC CIRCUIT BREAKER. PROVIDE ONE (1) 20A-2P, 10 KAIC CIRCUIT BREAKER AND INSTALL IN SPACES 27 AND 29. PANEL "FPE" IS A CUTLER HAMMER TYPE "PRL1A" PANEL.
8. PROVIDE 2 #12 AND 1 #12 GROUND IN 1/2" CONDUIT AND CONNECT TO 15A-2P CIRCUIT BREAKER IN INDICATED SPACES IN PANEL. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
9. REMOVE ONE (1) 30A-3P CIRCUIT BREAKER IN SPACES 7,9 AND 11 MADE SPARE DURING DEMOLITION AND TURN OVER TO OWNER. PROVIDE ONE (1) 20A-3P CIRCUIT BREAKER AND INSTALL IN SPACES. PROVIDE ONE (1) 15A-3P CIRCUIT BREAKER AND INSTALL IN AVAILABLE SPACES I PANEL. PROVIDE 35 KAIC CIRCUIT BREAKERS. PANEL "PE" IS A CUTLER HAMMER TYPE "PRL2A".
10. PROVIDE 3 #12 AND 1 #12 GROUND IN 12" CONDUIT AND CONNECT TO 15A-3P CIRCUIT BREAKER IN INDICATED PANEL. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
11. REMOVE 70A-3P CIRCUIT BREAKER IN SPACES 12, 14 AND 16 MADE SPARE DURING DEMOLITION AND TURN OVER TO OWNER. PROVIDE THREE (3) 20A-1P, 10 KAIC CIRCUIT BREAKERS AND INSTALL IN SPACES. LABEL UNUSED CIRCUIT BREAKERS "SPARE". PANEL "FPE" IS A CUTLER HAMMER TYPE "PRL1A" PANEL.
12. PROVIDE 2 #12 AND 1 #12 GROUND IN 1/2" CONDUIT AND CONNECT TO 20A-1P CIRCUIT BREAKER IN INDICATED PANEL. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
13. UP TO EF ON ROOF. SEE DRAWING E2.4 FOR CONTINUATION.
14. SEE "POWER RISER DIAGRAM - DEMOLITION & NEW WORK" ON DRAWING E4.2 FOR WORK ASSOCIATED WITH THIS ELECTRICAL EQUIPMENT.



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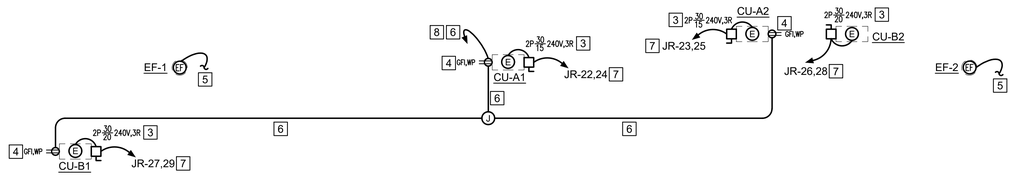
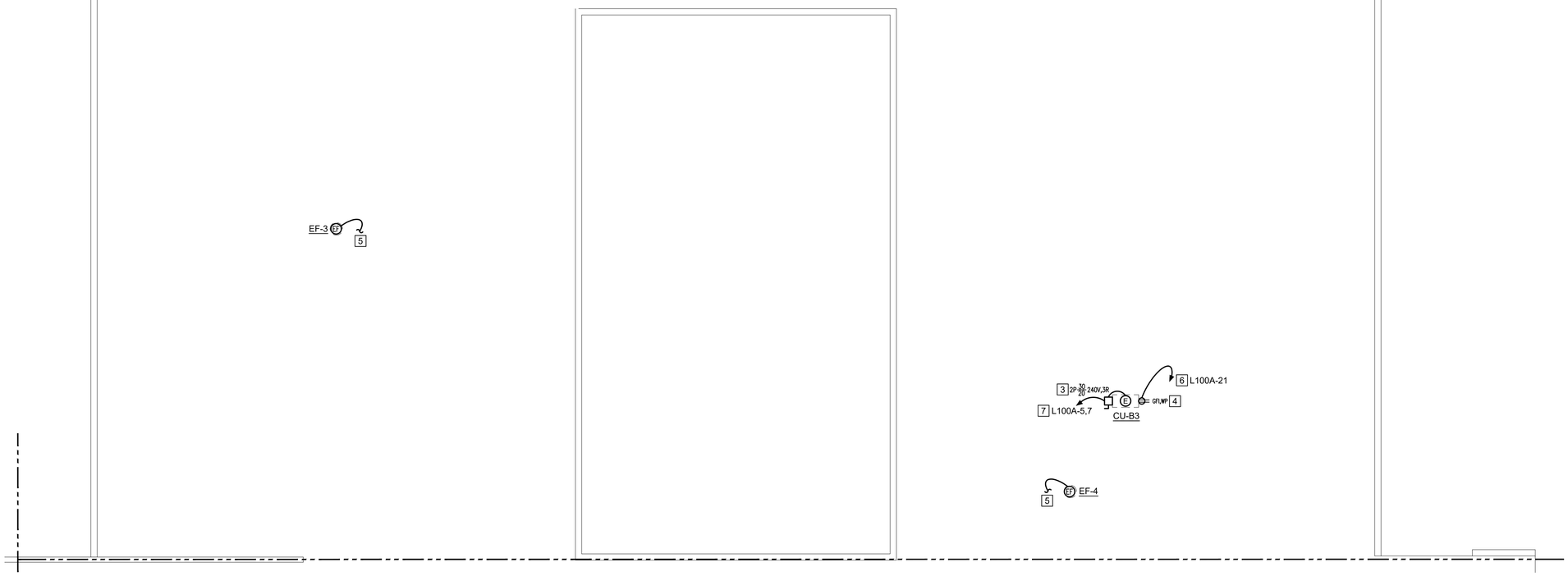




ROOF PLAN - AREA 'A' - POWER - NEW WORK [1] [2]

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

NEW WORK NOTES: (THIS DRAWING ONLY)

[1] SEE DRAWING M3.1 FOR ROOF PENETRATION DETAIL.

[2] SEE DRAWING E1.1 FOR LOCATION OF ALL PANELS EXCEPT "L100A" WHICH IS ON DRAWING E1.2.

[3] INSTALL DISCONNECT SWITCH ON NON-REMOVABLE PANEL ON EQUIPMENT. COORDINATE LOCATION WITH MECHANICAL EQUIPMENT PROVIDER.

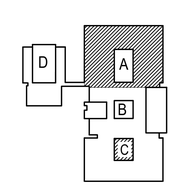
[4] INSTALL WP,GFI RECEPTACLE ON NON-REMOVABLE PANEL ON EQUIPMENT. COORDINATE LOCATION WITH MECHANICAL EQUIPMENT PROVIDER.

[5] PROVIDE JUNCTION BOX ON THE END OF EXISTING BRANCH CIRCUIT SAVED DURING DEMOLITION. PROVIDE BRANCH CIRCUITRY FROM JUNCTION BOX AND CONNECT TO EXHAUST FAN.

[6] RUN BRANCH CIRCUITRY ABOVE THE CEILING. CONVERT CONDUIT TO LIQUID-TIGHT FLEXIBLE METAL CONDUIT BELOW EACH CU AND CONNECT TO RECEPTACLE ON CU VIA ROOF PENETRATION PROVIDED BY THE MECHANICAL CONTRACTOR.

[7] CONVERT HOMERUN CONDUIT TO LIQUID-TIGHT FLEXIBLE METAL CONDUIT ABOVE CEILING AND EXTEND BRANCH CIRCUIT TO DISCONNECT SWITCH ON CU VIA ROOF PENETRATION PROVIDED BY THE MECHANICAL CONTRACTOR.

[8] CONNECT HOMERUN TO 20A-1P CIRCUIT BREAKER IN INDICATED PANEL MADE SPARE DURING DEMOLITION. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.



KEY PLAN
NOT TO SCALE

COMMONWEALTH OF VIRGINIA
KENZIE CAMBAR
Lic. No.049752
04-19-2022
PROFESSIONAL ENGINEER

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Consulting Engineers
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TELEPHONE: (757) 599-6433 PROJECT NUMBER:

HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
ROOF PLAN - AREA 'A' - POWER - NEW WORK

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	DWC
DRAWN BY:	RAB
CHECKED BY:	KC

E2.1

DATE: 04/19/2022

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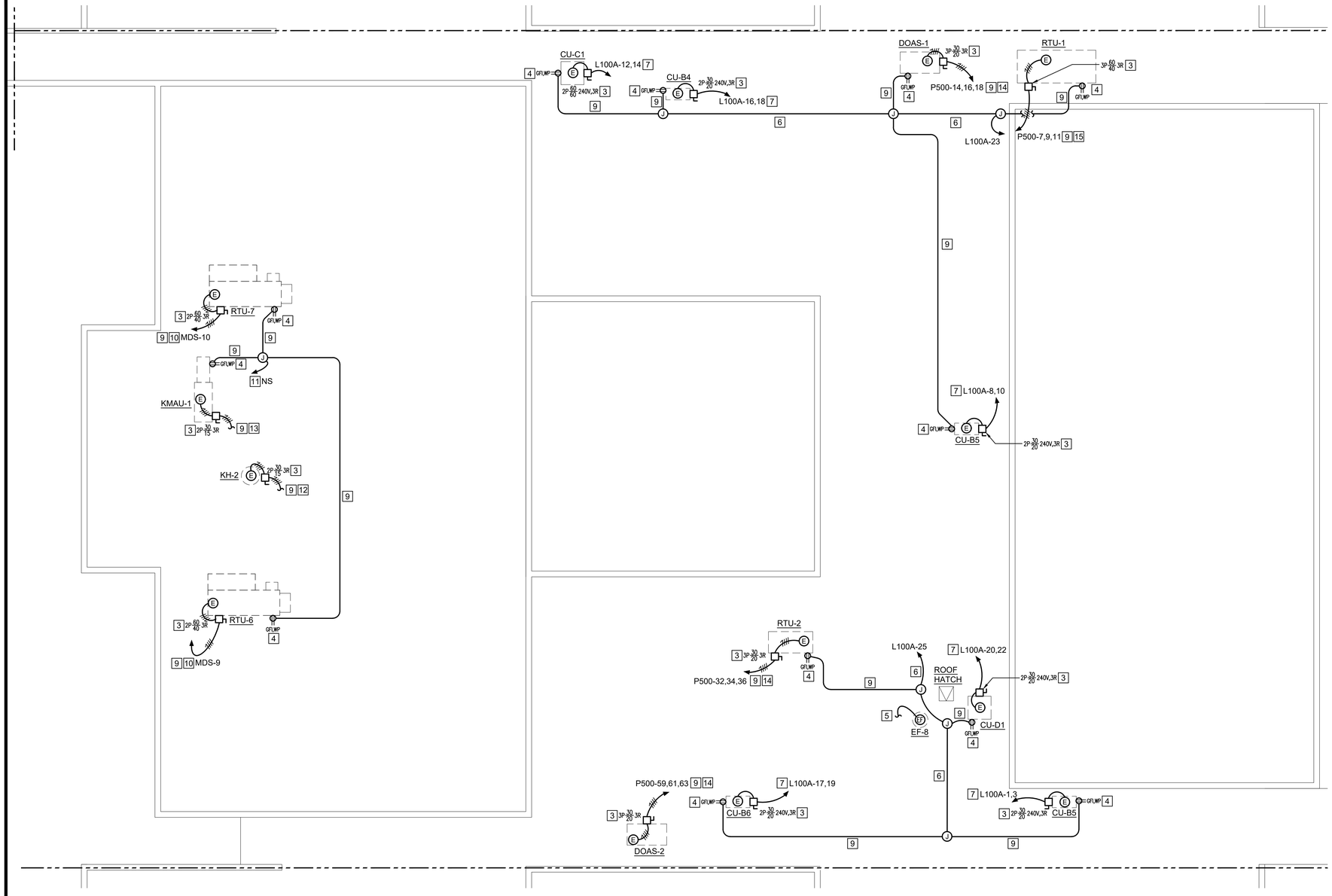
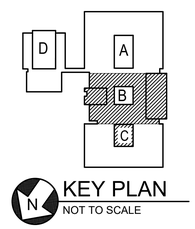


NEW WORK NOTES: (THIS DRAWING ONLY)

1. SEE DRAWING M3.1 FOR ROOF PENETRATION DETAIL.
2. SEE DRAWING E1.2 FOR LOCATION OF MDS AND PANELS.
3. INSTALL DISCONNECT SWITCH ON NON-REMOVABLE PANEL ON EQUIPMENT. COORDINATE LOCATION WITH MECHANICAL CONTRACTOR.
4. INSTALL WP,GFI RECEPTACLE ON NON-REMOVABLE PANEL ON EQUIPMENT. COORDINATE LOCATION WITH
5. PROVIDE JUNCTION BOX ON THE END OF EXISTING BRANCH CIRCUIT SAVED DURING DEMOLITION. PROVIDE BRANCH CIRCUITRY FROM JUNCTION BOX AND CONNECT TO EXHAUST FAN.
6. RUN BRANCH CIRCUITRY ABOVE THE CEILING. CONVERT CONDUIT TO LIQUID-TIGHT FLEXIBLE METAL CONDUIT BELOW EACH CU AND CONNECT TO RECEPTACLE ON CU VIA ROOF PENETRATION PROVIDED BY THE MECHANICAL CONTRACTOR.
7. CONVERT HOMERUN CONDUIT TO LIQUID-TIGHT FLEXIBLE METAL CONDUIT ABOVE CEILING AND EXTEND BRANCH CIRCUIT TO DISCONNECT SWITCH ON CU VIA ROOF PENETRATION PROVIDED BY THE MECHANICAL CONTRACTOR.
8. CONNECT HOMERUN TO 20A-1P CIRCUIT BREAKER IN INDICATED PANEL MADE SPARE DURING DEMOLITION. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
9. RUN BRANCH CIRCUIT UP THROUGH ROOF CURB ON MECHANICAL EQUIPMENT. COORDINATE CONDUIT ROUTING WITH THE EQUIPMENT PROVIDER. NEW PENETRATIONS THROUGH ROOF ARE NOT PERMITTED.
10. PROVIDE 3 #8 AND 1 #10 GROUND IN 3/4" CONDUIT AND CONNECT TO NEW 40A-3P CIRCUIT BREAKER IN NEW MDS.
11. CONNECT HOMERUN TO NEW 20A-1P CIRCUIT BREAKER IN PANEL "NS" PROVIDED BY NEW WORK NOTE "19" ON DRAWING E1.2.
12. CONNECT HOMERUN TO LOAD SIDE OF MOTOR STARTER IN KITCHEN HOOD CONTROL PANEL FOR KH-2 AS DIRECTED BY KITCHEN HOOD PANEL MANUFACTURER. SEE DRAWING E0.2 FOR ADDITIONAL INFORMATION.
13. PROVIDE 3 #12 AND 1 #12 GROUND IN 1/2" CONDUIT AND CONNECT TO LOAD SIDE OF MOTOR STARTER IN KITCHEN HOOD CONTROL PANEL FOR KMAU-1 AS DIRECTED BY KITCHEN HOOD PANEL MANUFACTURER. SEE DRAWING E0.2 FOR ADDITIONAL INFORMATION.
14. CONNECT HOMERUN TO NEW 20A-3P BREAKER IN INDICATED SPACES IN PANEL. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
15. PROVIDE 3 #6 AND 1 #10 GROUND IN 1" CONDUIT AND CONNECT TO NEW 60A-3P CIRCUIT BREAKER IN INDICATED SPACES IN PANEL. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.

ROOF PLAN - AREA 'B' - POWER - NEW WORK 1 2

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



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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
ROOF PLAN - AREA 'B' - POWER - NEW WORK

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	DWC
DRAWN BY:	RAB
CHECKED BY:	KC

E2.2

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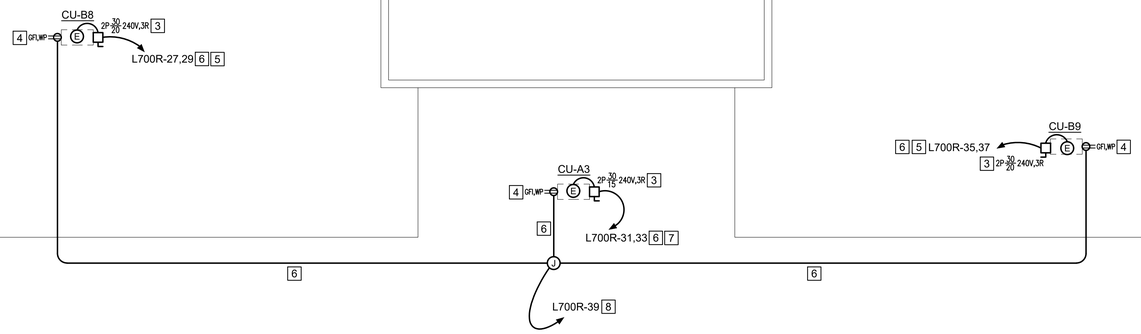
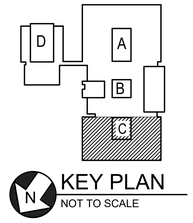


ROOF PLAN - AREA 'C' - POWER - NEW WORK 1 2

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

NEW WORK NOTES: (THIS DRAWING ONLY)

1. SEE DRAWING M3.1 FOR ROOF PENETRATION DETAIL.
2. SEE DRAWING E1.3 FOR LOCATION OF PANELS.
3. INSTALL DISCONNECT SWITCH ON NON-REMOVABLE PANEL ON EQUIPMENT. COORDINATE LOCATION WITH MECHANICAL CONTRACTOR.
4. INSTALL WP,GFI RECEPTACLE ON NON-REMOVABLE PANEL ON EQUIPMENT. COORDINATE LOCATION WITH MECHANICAL EQUIPMENT PROVIDER.
5. CONNECT HOMERUN TO 20A-2P CIRCUIT BREAKER IN INDICATED SPACES IN PANEL. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
6. RUN BRANCH CIRCUITRY ABOVE THE CEILING. CONVERT CONDUIT TO LIQUID-TIGHT FLEXIBLE METAL CONDUIT BELOW EACH CU AND CONNECT TO RECEPTACLE ON CU VIA ROOF PENETRATION PROVIDED BY THE MECHANICAL CONTRACTOR.
7. CONNECT HOMERUN TO 15A-2P CIRCUIT BREAKER IN INDICATED SPACES IN PANEL. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
8. CONNECT HOMERUN TO 20A-1P CIRCUIT BREAKER IN INDICATED SPACE IN PANEL. CHANGE INDEX TO REFLECT LOAD SERVED.



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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
VIRGINIA
NEWPORT NEWS
ROOF PLAN - AREA 'C' - POWER - NEW WORK

REVISIONS

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COMM. NO:	21-059
DESIGNED BY:	DWC
DRAWN BY:	RAB
CHECKED BY:	KC

E2.3

DATE: 04/19/2022

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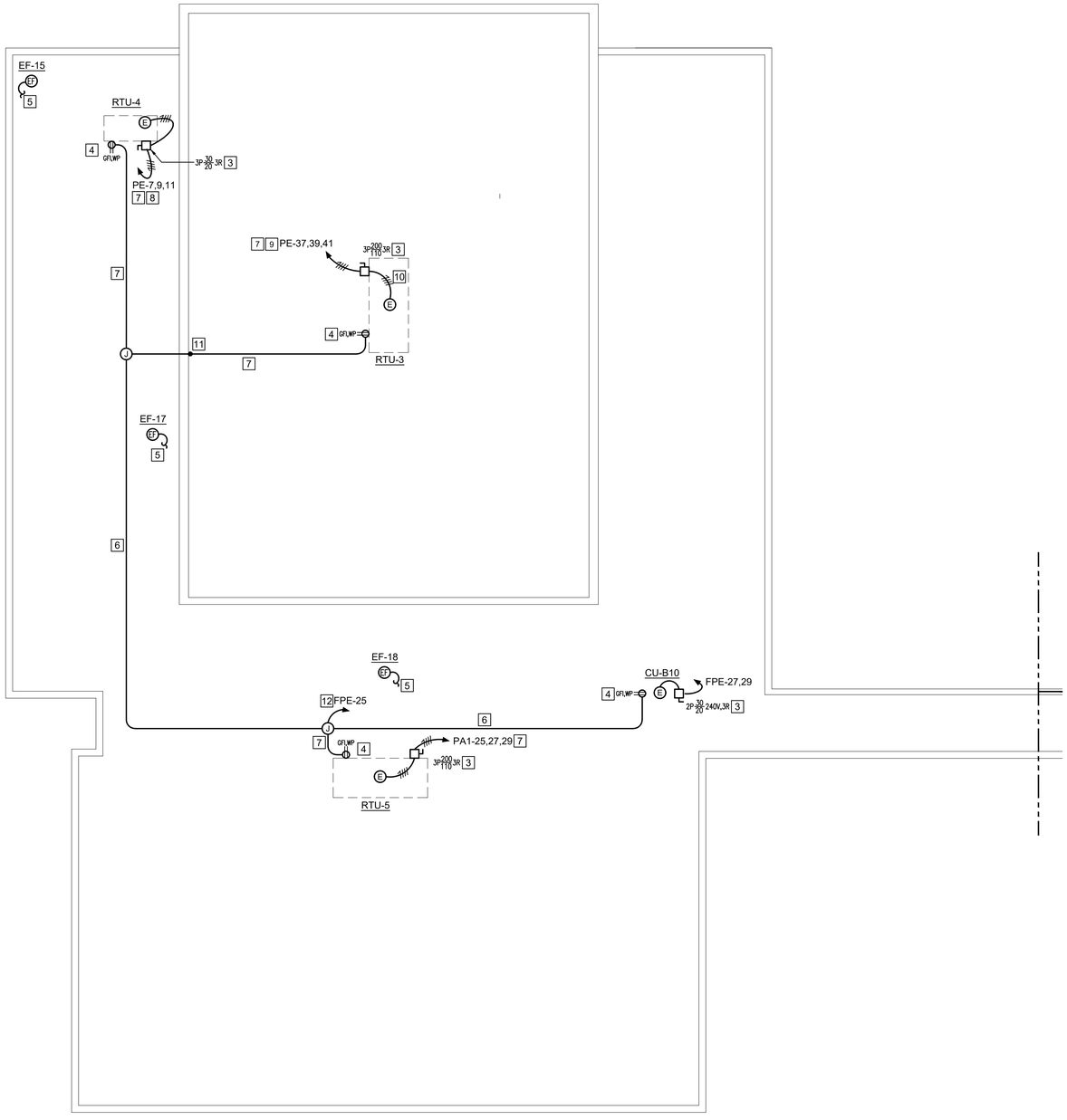
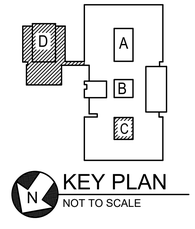


ROOF PLAN - AREA 'D' - POWER - NEW WORK 1 2

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

NEW WORK NOTES: (THIS DRAWING ONLY)

1. SEE DRAWING M3.1 FOR ROOF PENETRATION DETAIL.
2. SEE DRAWING E1.4 FOR LOCATION OF PANELS.
3. INSTALL DISCONNECT SWITCH ON NON-REMOVABLE PANEL ON EQUIPMENT. COORDINATE LOCATION WITH MECHANICAL EQUIPMENT PROVIDER.
4. INSTALL WP,GFI RECEPTACLE ON NON-REMOVABLE PANEL ON EQUIPMENT. COORDINATE LOCATION WITH MECHANICAL EQUIPMENT PROVIDER.
5. PROVIDE BRANCH CIRCUITRY DOWN TO NEW JUNCTION BOX ABOVE CEILING. SEE DRAWING E1.4 FOR CONTINUATION.
6. RUN BRANCH CIRCUITRY ABOVE THE CEILING. CONVERT CONDUIT TO LIQUID-TIGHT FLEXIBLE METAL CONDUIT BELOW EACH CU AND CONNECT TO RECEPTACLE ON UNIT VIA ROOF PENETRATION PROVIDED BY THE MECHANICAL CONTRACTOR.
7. CONVERT HOMERUN CONDUIT TO LIQUID-TIGHT FLEXIBLE METAL CONDUIT ABOVE CEILING AND EXTEND BRANCH CIRCUIT TO DISCONNECT SWITCH ON UNIT VIA ROOF PENETRATION PROVIDED BY THE MECHANICAL CONTRACTOR.
8. PROVIDE 3 #12 AND 1 #12 GROUND IN 1/2" CONDUIT AND CONNECT TO NEW 20A-3P CIRCUIT BREAKER IN PANEL "PE" PROVIDED BY NEW WORK NOTE "9" ON E1.4. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.
9. PROVIDE 3 #1 AND 1 #6 GROUND IN 1-1/2" CONDUIT AND CONNECT TO EXISTING 125A-3P SPARE CIRCUIT BREAKER IN PANEL "PE". CHANGE PANEL INDEX TO REFLECT LOAD SERVED. RUN CONDUIT ABOVE ART CLASSROOM CEILING AND EXPOSED IN GYMNASIUM. PAINT EXPOSED CONDUIT TO MATCH SURFACE ON WHICH ATTACHED.
10. PROVIDE 3 #2 AND 1 #6 GROUND IN 1-1/4" CONDUIT.
11. RUN BRANCH CIRCUIT EXPOSED IN GYMNASIUM. PAINT CONDUIT TO MATCH SURFACE ON WHICH ATTACHED.
12. CONNECT HOMERUN TO 20A-1P CIRCUIT BREAKER IN INDICATED PANEL MADE SPARE DURING DEMOLITION. CHANGE PANEL INDEX TO REFLECT LOAD SERVED.



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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS
VIRGINIA

ROOF PLAN - AREA 'D' - POWER - NEW WORK

REVISIONS

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COMM. NO: 21-059
DESIGNED BY: DWC
DRAWN BY: RAB
CHECKED BY: KC

E2.4

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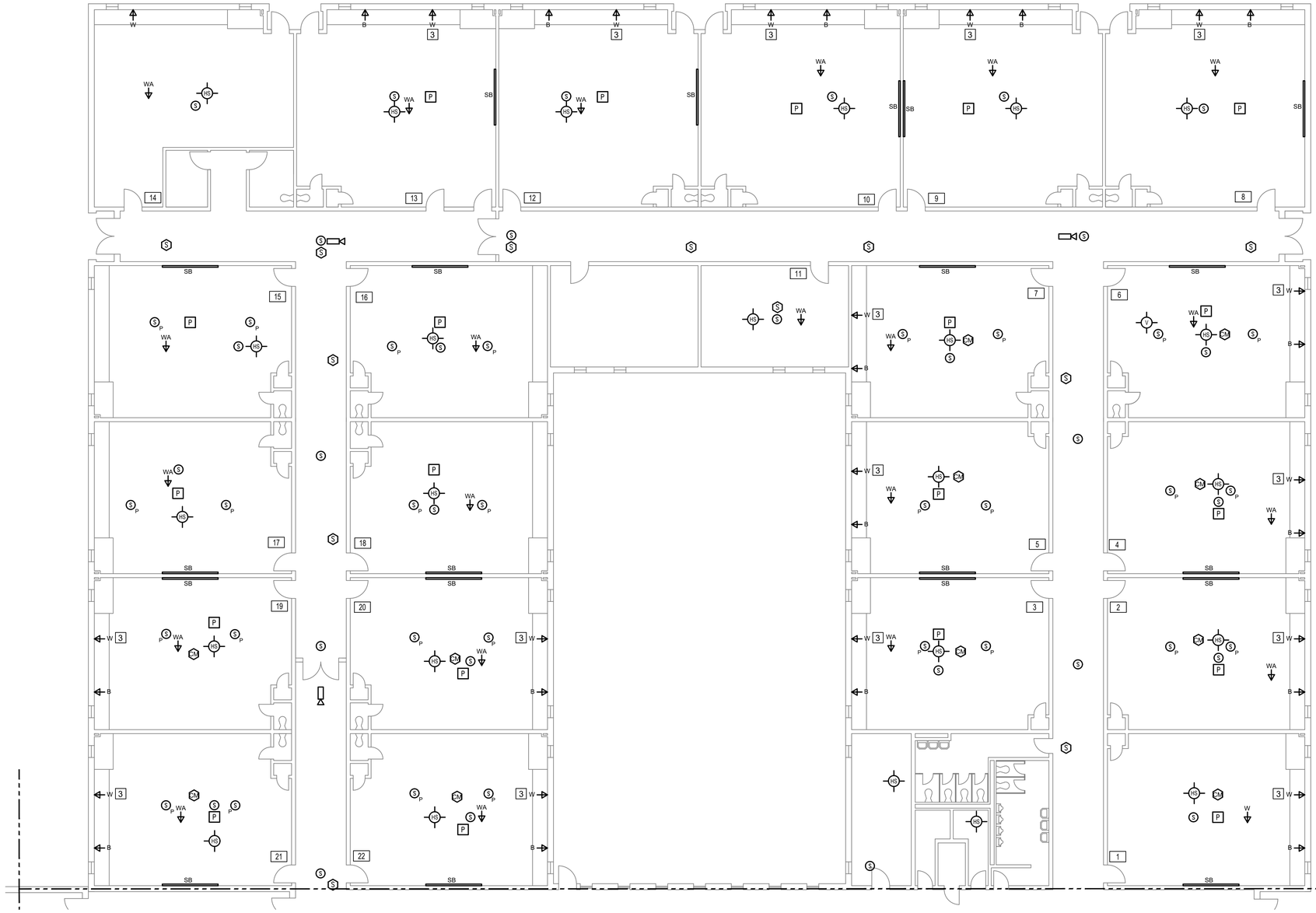


FLOOR PLAN - AREA 'A' - AUXILIARY SYSTEMS - NEW WORK [1] [2]

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

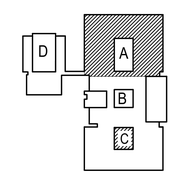
NEW WORK NOTES: (THIS DRAWING ONLY)

[1] REINSTALL ALL CEILING MOUNTED CCTV CAMERAS, PROJECTORS, SMOKE DETECTORS, FIRE ALARM NOTIFICATION DEVICES, CEILING MOUNTED SPEAKERS AND WIRELESS ACCESS POINTS SAVED DURING DEMOLITION IN NEW CEILING IN ORIGINAL LOCATIONS.

[2] REINSTALL THE FOLLOWING EQUIPMENT/DEVICES SAVED DURING DEMOLITION AND CONNECT TO EXISTING AUXILIARY SYSTEM CABLING:

- ALL COMPUTERS INCLUDING ASSOCIATED MONITORS, TOWERS, POWER CORDS AND DATA PATCH CABLES.
- ALL WALL AND DESK MOUNTED TELEPHONE INSTRUMENTS, INCLUDING PATCH CABLES.
- ALL PRINTERS INCLUDING ASSOCIATED POWER CORDS AND DATA PATCH CABLES.
- ALL WIRELESS ACCESS POINTS DEVICES.
- ALL CEILING MOUNTED OR CART MOUNTED PROJECTORS INCLUDING ASSOCIATED MOUNTING PLATES, CEILING MOUNTED RECEPTACLES, CEILING MOUNTED DATA OUTLETS, POWER CORDS AND DATA PATCH CABLES.

[3] INSTALL DATA CABLE SAVED DURING DEMOLITION IN SURFACE NON-METALLIC RACEWAY TO DATA OUTLET BOX. CONNECT EXISTING INSERT SAVED DURING DEMOLITION TO NEW COVERPLATE. LOCATE DATA OUTLET ON WALL SUCH THAT THE EXISTING DATA CABLING ARE SUFFICIENT LENGTH.



KEY PLAN
NOT TO SCALE

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04-19-2022
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
FLOOR PLAN - AREA 'A' - AUXILIARY SYSTEMS - NEW WORK

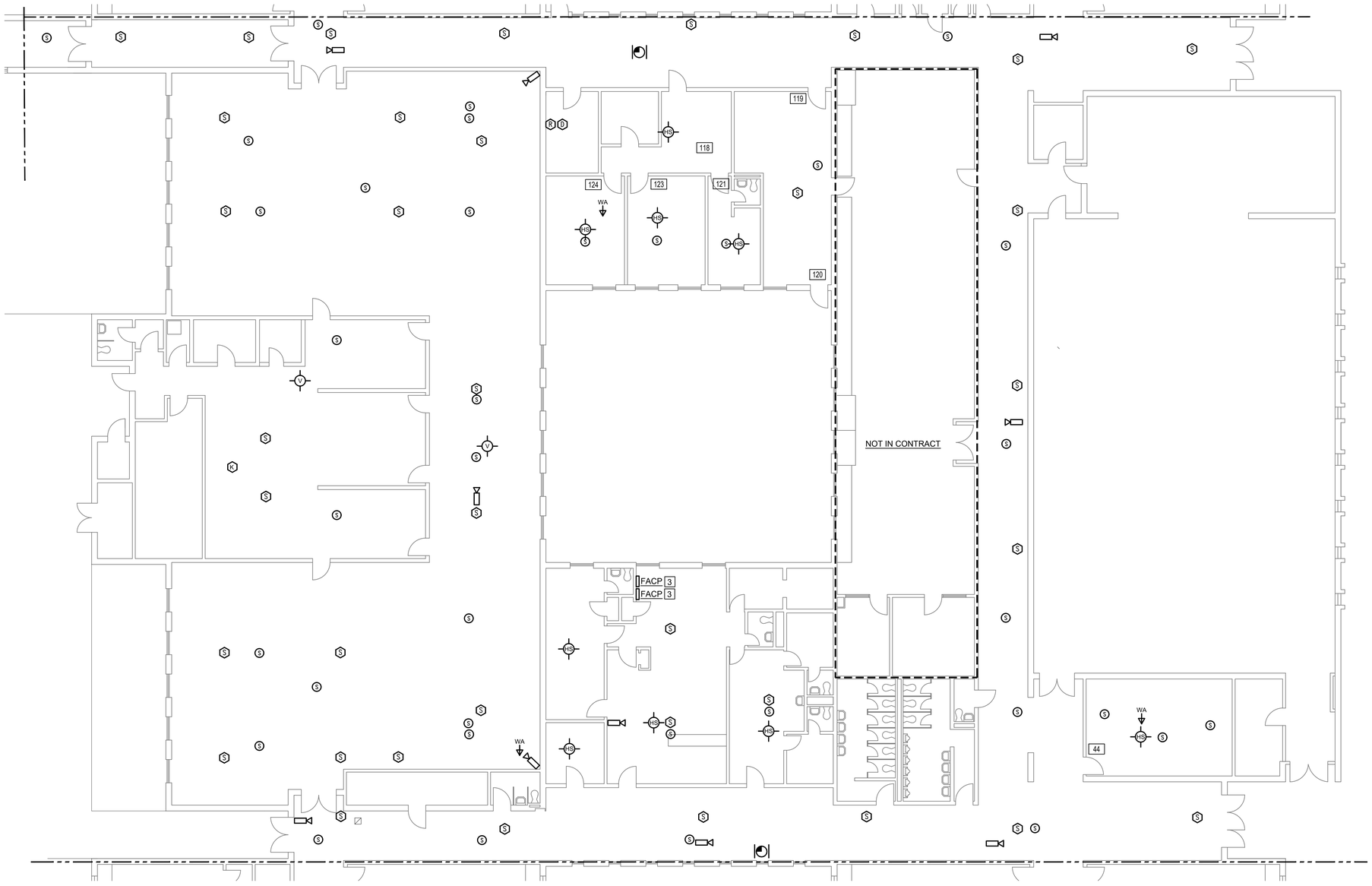
REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	DWC
DRAWN BY:	RAB
CHECKED BY:	KC

E3.1

DATE: 04/19/2022



FLOOR PLAN - AREA 'B' - AUXILIARY SYSTEMS - NEW WORK [1] [2]

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

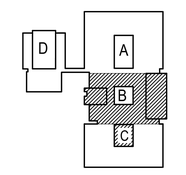
NEW WORK NOTES: (THIS DRAWING ONLY)

[1] REINSTALL ALL CEILING MOUNTED CLOCKS, CCTV CAMERAS, SMOKE DETECTORS, FIRE ALARM NOTIFICATION DEVICES, CEILING MOUNTED SPEAKERS AND WIRELESS ACCESS POINTS SAVED DURING DEMOLITION IN NEW CEILING IN ORIGINAL LOCATIONS.

[2] REINSTALL THE FOLLOWING EQUIPMENT/DEVICES SAVED DURING DEMOLITION AND CONNECT TO EXISTING AUXILIARY SYSTEM CABLING:

- ALL COMPUTERS INCLUDING ASSOCIATED MONITORS, TOWERS, POWER CORDS AND DATA PATCH CABLES.
- ALL WALL AND DESK MOUNTED TELEPHONE INSTRUMENTS, INCLUDING PATCH CABLES.
- ALL PRINTERS INCLUDING ASSOCIATED POWER CORDS AND DATA PATCH CABLES.
- ALL WIRELESS ACCESS POINTS DEVICES.
- ALL CEILING MOUNTED OR CART MOUNTED PROJECTORS INCLUDING ASSOCIATED MOUNTING PLATES, CEILING MOUNTED RECEPTACLES, CEILING MOUNTED DATA OUTLETS, POWER CORDS AND DATA PATCH CABLES.

[3] EXISTING REUSED.



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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA
FLOOR PLAN - AREA 'B' - AUXILIARY SYSTEMS - NEW WORK

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	DWC
DRAWN BY:	RAB
CHECKED BY:	KC

E3.2

DATE: 04/19/2022

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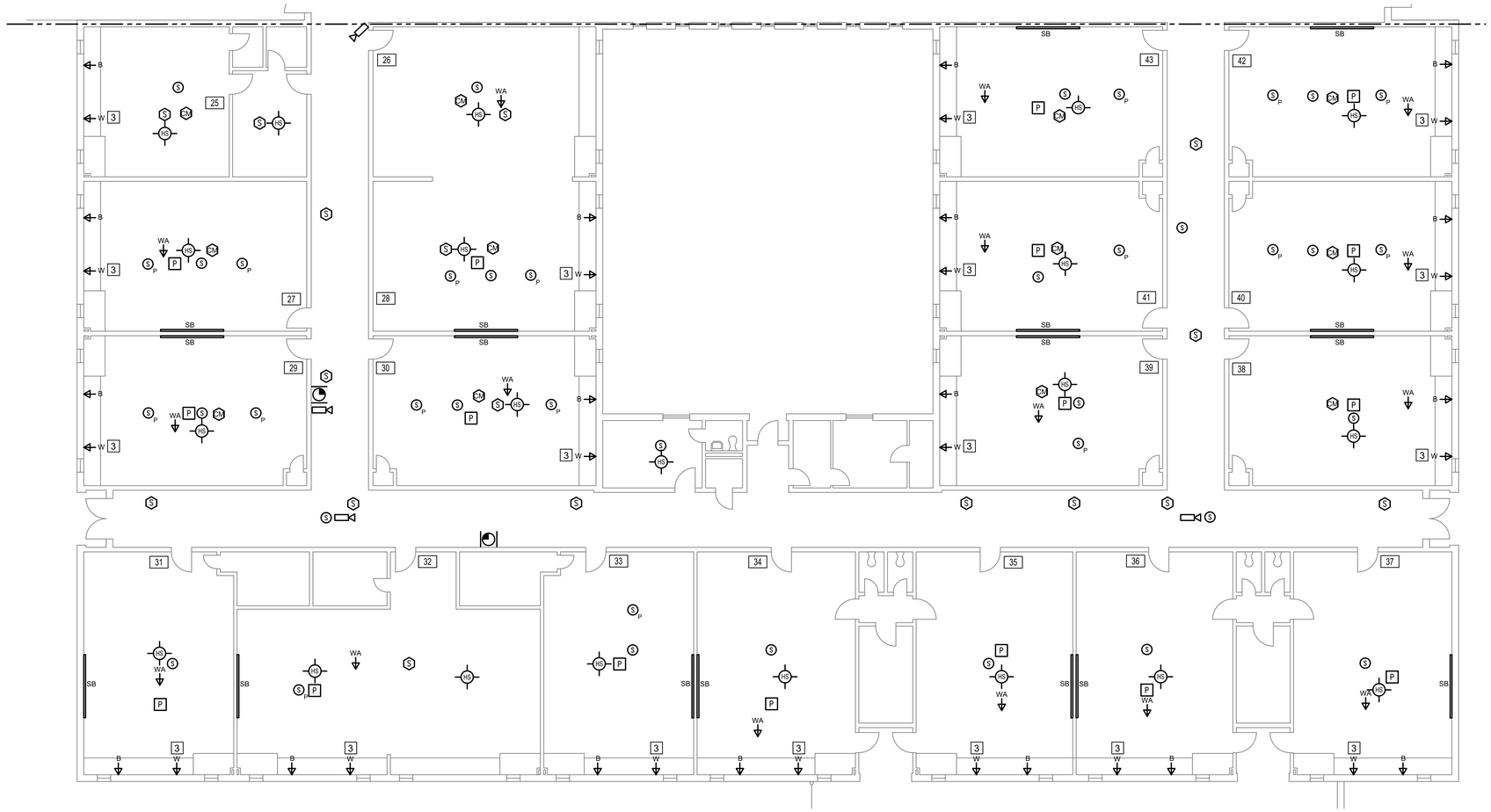


FLOOR PLAN - AREA 'C' - AUXILIARY SYSTEMS - NEW WORK [1] [2]

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

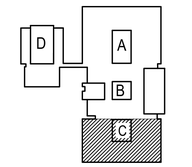
NEW WORK NOTES: (THIS DRAWING ONLY)

[1] REINSTALL ALL CEILING MOUNTED CLOCKS, CCTV CAMERAS, PROJECTORS, SMOKE DETECTORS, FIRE ALARM NOTIFICATION DEVICES, CEILING MOUNTED SPEAKERS AND WIRELESS ACCESS POINTS SAVED DURING DEMOLITION IN NEW CEILING IN ORIGINAL LOCATIONS.

[2] REINSTALL THE FOLLOWING EQUIPMENT/DEVICES SAVED DURING DEMOLITION AND CONNECT TO EXISTING AUXILIARY SYSTEM CABLING:

- ALL COMPUTERS INCLUDING ASSOCIATED MONITORS, TOWERS, POWER CORDS AND DATA PATCH CABLES.
- ALL WALL AND DESK MOUNTED TELEPHONE INSTRUMENTS, INCLUDING PATCH CABLES.
- ALL PRINTERS INCLUDING ASSOCIATED POWER CORDS AND DATA PATCH CABLES.
- ALL WIRELESS ACCESS POINTS DEVICES.
- ALL CEILING MOUNTED OR CART MOUNTED PROJECTORS INCLUDING ASSOCIATED MOUNTING PLATES, CEILING MOUNTED RECEPTACLES, CEILING MOUNTED DATA OUTLETS, POWER CORDS AND DATA PATCH CABLES.

[3] INSTALL DATA CABLE SAVED DURING DEMOLITION IN SURFACE NON-METALLIC RACEWAY TO DATA OUTLET BOX. CONNECT EXISTING INSERT SAVED DURING DEMOLITION TO NEW COVERPLATE. LOCATE DATA OUTLET ON WALL SUCH THAT THE EXISTING DATA CABLING ARE SUFFICIENT LENGTH.



KEY PLAN
NOT TO SCALE

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Lic. No.049752
04-19-2022
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HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS — VIRGINIA

FLOOR PLAN - AREA 'C' - AUXILIARY SYSTEMS - NEW WORK

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO:	21-059
DESIGNED BY:	DWC
DRAWN BY:	RAB
CHECKED BY:	KC

E3.3

DATE: 04/19/2022

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FLOOR PLAN - AREA 'D' - AUXILIARY SYSTEMS - NEW WORK [1] [2]

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

NEW WORK NOTES: (THIS DRAWING ONLY)

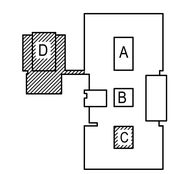
[1] REINSTALL ALL PROJECTORS, WIRELESS ACCESS POINTS, SMOKE DETECTORS, FIRE ALARM NOTIFICATION DEVICES, MOTION DETECTORS, CEILING MOUNTED SPEAKERS AND WIRELESS ACCESS POINTS SAVED DURING DEMOLITION IN NEW CEILING IN ORIGINAL LOCATIONS.

[2] REINSTALL THE FOLLOWING EQUIPMENT/DEVICES SAVED DURING DEMOLITION AND CONNECT TO EXISTING AUXILIARY SYSTEM CABLING:

- ALL COMPUTERS INCLUDING ASSOCIATED MONITORS, TOWERS, POWER CORDS AND DATA PATCH CABLES.
- ALL WALL AND DESK MOUNTED TELEPHONE INSTRUMENTS, INCLUDING PATCH CABLES.
- ALL PRINTERS INCLUDING ASSOCIATED POWER CORDS AND DATA PATCH CABLES.
- ALL WIRELESS ACCESS POINTS DEVICES.
- ALL CEILING MOUNTED OR CART MOUNTED PROJECTORS INCLUDING ASSOCIATED MOUNTING PLATES, CEILING MOUNTED RECEPTACLES, CEILING MOUNTED DATA OUTLETS, POWER CORDS AND DATA PATCH CABLES.

[3] PROVIDE SINGLE GANG SURFACE NON-METALLIC OUTLET BOX FOR REMOTE INDICATING LIGHT/TEST SWITCH. INSTALL OUTLET BOX +7'-6" A.F.F. PROVIDE SURFACE NON-METALLIC RACEWAY FROM OUTLET BOX AND TERMINATE ABOVE THE CEILING.

[4] PROVIDE QUANTITY AND SIZE OF CONDUCTORS AS REQUIRED AND CONNECT DUCT SMOKE DETECTOR TO REMOTE INDICATING LIGHT/TEST SWITCH.



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E3.4

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PANEL "P100" 400 AMP 480Y/277V, 3ø, 4W, M.L.O., SURFACE MTD.

LOAD SERVED	LOAD (AMPS) A	B	C	CKT.BKR. KAIC	TRIP	WIRE SIZE	CKT. NO.	PHASE A	B	C	CKT. NO.	WIRE SIZE	CKT.BKR. KAIC	TRIP	LOAD (AMPS) A	B	C	LOAD SERVED
UV-A8	22.5			18	30	10	1				2	10	18	30	22.5			UV-A12
		22.5					3				4					22.5		
			22.5				5				6						22.5	
UV-A9	22.5				30	10	7				8	10		30	22.5			UV-A13
		22.5					9				10					22.5		
			22.5				11				12						22.5	
UV-A10	22.5				30	10	13				14	10		30	22.5			UV-A14
		22.5					15				16					22.5		
			22.5				17				18						22.5	
SPACE	–				–	–	19				20	–		–	–			SPACE
SPACE		–			–	–	21				22	–		–		–		SPACE
SPACE			–		–	–	23				24	–		–			–	SPACE
SPACE	–				–	–	25				26	–		–	–			SPACE
SPACE		–			–	–	27				28	–		–		–		SPACE
SPACE			–		–	–	29				30	–		–			–	SPACE
SPACE	–				–	–	31				32	–		–	–			SPACE
SPACE		–			–	–	33				34	–		–		–		SPACE
SPACE			–		–	–	35				36	–		–			–	SPACE
SPACE	–				–	–	37				38	–		–	–			SPACE
SPACE		–			–	–	39				40	–		–		–		SPACE
SPACE			–		–	–	41				42	–		–			–	SPACE
EXISTING LOAD	EX				30	EX	43				44	EX		20	EX			EXISTING LOAD
		EX					45				46	–		20		–		SPARE
			EX				47				48	–		20			–	SPARE
EXISTING LOAD	EX				20	EX	49				50	EX		70	EX			EXISTING LOAD
EXISTING LOAD		EX			20	EX	51				52					EX		
SPARE			–		20	–	53				54						EX	
SPACE	–				–	–	55				56	–		–	–			SPACE
SPACE		–			–	–	57				58	–		–		–		SPACE
SPACE			–		–	–	59				60	–		–			–	SPACE

PANEL "P200" 225 AMP 480Y/277V, 3ø, 4W, M.L.O., SURFACE MTD.

LOAD SERVED	LOAD (AMPS) A	B	C	CKT.BKR. KAIC	TRIP	WIRE SIZE	CKT. NO.	PHASE A	B	C	CKT. NO.	WIRE SIZE	CKT.BKR. KAIC	TRIP	LOAD (AMPS) A	B	C	LOAD SERVED
UV-A16	22.5			14	30	10	1				2	10	14	30	22.5			UV-A20
		22.5					3				4					22.5		
			22.5				5				6						22.5	
UV-A17	22.5				30	10	7				8	10		30	22.5			UV-A21
		22.5					9				10					22.5		
			22.5				11				12						22.5	
UV-A19	22.5				30	10	13				14	10		20	15.4			CUH-A4
		22.5					15				16					15.4		
			22.5				17				18						15.4	
EXISTING LOAD	EX				20	EX	19				20	EX		20	EX			EXISTING LOAD
SPARE		–			20	–	21				22	–		20		–		SPARE
SPARE			–		20	–	23				24	–		20			–	SPARE
SPARE	–				20	–	25				26	EX		20	EX			EXISTING LOAD
CUH-B1		7.8			15	12	27				28	12		15		7.8		CUH-B2
			7.8				29				30						7.8	
	7.8						31				32				7.8			
SPACE		–			–	–	33				34	–		–		–		SPACE
SPACE			–		–	–	35				36	–		–			–	SPACE
SPACE	–				–	–	37				38	–		–	–			SPACE
SPACE		–			–	–	39				40	–		–		–		SPACE
SPACE			–		–	–	41				42	–		–			–	SPACE

PANEL "L100A" 100 AMP 208Y/120V, 3ø, 4W, M.C.B., SURFACE MTD.

LOAD SERVED	LOAD (AMPS) A	B	C	CKT.BKR. KAIC	TRIP	WIRE SIZE	CKT. NO.	PHASE A	B	C	CKT. NO.	WIRE SIZE	CKT.BKR. KAIC	TRIP	LOAD (AMPS) A	B	C	LOAD SERVED
CU-B5	13.2			10	20	12	1				2	10	10	30	1			SPD
		13.2					3				4					1		
CU-B3			13.2		20	12	5				6						1	
	13.2						7				8	12		20	13.2			CU-B5
HP-C1,B4 & B3		5			15	12	9				10					13.2		
			5				11				12	6		60			40	CU-C1
HP-B6,B7 & D1	5				15	12	13				14				40			
		5					15				16	12		20		13.2		CU-B4
CU-B6			13.2		20	12	17				18						13.2	
	13.2						19				20	12		20	13.2			CU-D1
ROOF RECEPTACLE		1.5			20	10	21				22					13.2		
ROOF RECEPTACLE			7.5		20	10	23				24	–		20			–	SPARE
ROOF RECEPTACLE	6				20	10	25				26	–		20	–			SPARE
SPACE		–			–	–	27				28	–		20		–		SPARE
SPACE			–		–	–	29				30	–		20			–	SPARE
SPACE	–				–	–	31				32	–		–	–			SPACE
SPACE		–			–	–	33				34	–		–		–		SPACE
SPACE			–		–	–	35				36	–		–			–	SPACE
SPACE	–				–	–	37				38	–		–	–			SPACE
SPACE		–			–	–	39				40	–		–		–		SPACE
SPACE			–		–	–	41				42	–		–			–	SPACE

PANEL "P300" 400 AMP 480Y/277V, 3ø, 4W, M.L.O., SURFACE MTD.

LOAD SERVED	LOAD (AMPS) A	B	C	CKT.BKR. KAIC	TRIP	WIRE SIZE	CKT. NO.	PHASE A	B	C	CKT. NO.	WIRE SIZE	CKT.BKR. KAIC	TRIP	LOAD (AMPS) A	B	C	LOAD SERVED
UV-A25	22.5			14	30	10	1				2	EX	14	90	EX			EXISTING LOAD
		22.5					3				4					EX		
			22.5				5				6						EX	
UV-A26	22.5				30	10	7				8	10		30	22.5			UV-A28
		22.5					9				10					22.5		
			22.5				11				12						22.5	
UV-A27	22.5				30	10	13				14	10		30	22.5			UV-A29
		22.5					15				16					22.5		
			22.5				17				18						22.5	
CUH-A6	15.4				20	12	19				20	10		30	22.5			UV-A30
		15.4					21				22					22.5		
			15.4				23				24						22.5	
EXISTING LOAD	EX				30	EX	25				26	EX		20	EX			EXISTING LOAD
		EX					27				28	EX		20		EX		EXISTING LOAD
			EX				29				30	EX		20			EX	EXISTING LOAD
EXISTING LOAD	EX				20	EX	31				32	–		–	–			SPACE
SPARE		–			20	–	33				34	–		–		–		SPACE
SPARE			–		20	–	35				36	–		–			–	SPACE
SPARE	–				20	–	37				38	–		–	–			SPACE
SPARE		–			20	–	39				40	–		–		–		SPACE
SPARE			–		20	–	41				42	–		–			–	SPACE

PANEL "P400" 400 AMP 480Y/277V, 3ø, 4W, M.L.O., SURFACE MTD.

LOAD SERVED	LOAD (AMPS) A	B	C	CKT.BKR. KAIC	TRIP	WIRE SIZE	CKT. NO.	PHASE A	B	C	CKT. NO.	WIRE SIZE	CKT.BKR. KAIC	TRIP	LOAD (AMPS) A	B	C	LOAD SERVED
EXISTING LOAD	EX			18	20	EX	1				2	EX	18	20	EX			EXISTING LOAD
UV-A31		22.5			30	10	3				4	10		30		22.5		UV-A34
			22.5				5				6						22.5	
	22.5						7				8				22.5			
UV-A32		22.5			30	10	9				10	10		30		22.5		UV-A35
			22.5				11				12						22.5	
	22.5						13				14				22.5			
UV-A33		22.5			30	10	15				16	10		30		22.5		UV-A36
			22.5				17				18						22.5	
	22.5						19				20				22.5			
SPARE		–			20	–	21				22	–		–		–		SPACE
SPARE			–		20	–	23				24	–		–			–	SPACE
SPACE	–				–	–	25				26	–		–	–			SPACE
SPACE		–			–	–	27				28	–		–		–		SPACE
SPACE			–		–	–	29				30	–		–			–	SPACE
EXISTING LOAD	EX				30	EX	31				32	EX		30	EX			EXISTING LOAD
		EX					33				34					EX		
			EX				35				36						EX	
SPACE	–				–	–	37				38	EX		30	EX			EXISTING LOAD
SPACE		–			–	–	39				40					EX		
SPACE			–		–	–	41				42						EX	
SPACE	–				–	–	43				44	–		–	–			SPACE
SPACE		–			–	–	45				46	–		–		–		SPACE
SPACE			–		–	–	47				48	–		–			–	SPACE
SPACE	–				–	–	49				50	–		–	–			SPACE
SPACE		–			–	–	51				52	–		–		–		SPACE
SPACE			–		–	–	53				54	–		–			–	SPACE
SPACE	–				–	–	55				56	–		–	–			SPACE
SPACE		–			–	–	57				58	–		–		–		SPACE
SPACE			–		–	–	59				60	–		–			–	SPACE

PANEL "PA1" 400 AMP 480Y/277V, 3ø, 4W, M.L.O., SURFACE MTD.

LOAD SERVED	LOAD (AMPS) A	B	C	CKT.BKR. KAIC	TRIP	WIRE SIZE	CKT. NO.	PHASE A	B	C	CKT. NO.	WIRE SIZE	CKT.BKR. KAIC	TRIP	LOAD (AMPS) A	B	C	LOAD SERVED
UV-A43	14.4			35	20	12	1				2	12	35	20	14.4			UV-A44
		14.4					3				4					14.4		
			14.4				5				6						14.4	
VAV-5.1,2,3	40				50	8	7				8	6		60	45			VAV-5.4,5,6
		40					9				10					45		
			40				11				12						45	
CUH-A9	12				20	12	13				14	12		20	12			CUH-A10
		12					15				16					12		
			12				17				18						12	
CUH-A41	12				20	12	19				20	12		20	12			CUH-A12
		12					21				22					12		
			12				23				24						12	
RTU-5	65				110	2	25				26	–		–	–			SPACE
		65					27				28	–		–		–		SPACE
			65				29				30	–		–			–	SPACE
SPACE	–				–	–	31				32	–		–	–			SPACE
SPACE		–			–	–	33				34	–		–		–		SPACE
SPACE			–		–	–	35				36	–		–			–	SPACE
SPACE	–				–	–	37				38	–		–	–			SPACE
SPACE		–			–	–	39				40	–		–		–		SPACE
SPACE			–		–	–	41				42	–		–			–	SPACE

PANEL "P700L" 600 AMP 480Y/277V, 3ø, 4W, M.L.O., SURFACE MTD.

LOAD SERVED	LOAD (AMPS) A	B	C	CKT.BKR. KAIC	TRIP	WIRE SIZE	CKT. NO.	PHASE A	B	C	CKT. NO.	WIRE SIZE	CKT.BKR. KAIC	TRIP	LOAD (AMPS) A	B	C	LOAD SERVED
UV-A7	22.5			18	30	10	1				2	10	18	30	22.5			UV-A
		22.5					3				4					22.5		
			22.5				5				6						22.5	
UV-A1	22.5				30	10	7				8	10		30	22.5			UV-A
		22.5					9				10					22.5		
			22.5				11				12						22.5	
UV-A3	22.5				30	10	13				14	10		30	22.5			UV-A
		22.5					15				16					22.5		
			22.5				17				18						22.5	
UV-A5	22.5				30	10	19				20	10		30	22.5			UV-A
		22.5					21				22					22.5		
			22.5				23				24						22.5	
UV-A15	22.5				30	10	25				26	10		30	22.5			UV-A
		22.5					27				28					22.5		
			22.5				29				30						22.5	
CUH-A1	15.4				20	12	31				32	12		20	15.4			CUH-A2
		15.4					33				34					15.4		
			15.4				35				36						15.4	
NEW XFMR 2	80				100	3	37				38	EX		100	EX			
		80					39				40					EX		EXISTING LOAD
			80				41				42						EX	

THIS IS LEFT SECTION OF TWO SECTION PANEL

PANEL "P700R" 500 AMP 480Y/277V, 3ø, 4W, M.L.O., SURFACE MTD.

LOAD SERVED	LOAD (AMPS) A	B	C	CKT.BKR. KAIC	TRIP	WIRE SIZE	CKT. NO.	PHASE A	B	C	CKT. NO.	WIRE SIZE	CKT.BKR. KAIC	TRIP	LOAD (AMPS) A	B	C	LOAD SERVED
SPARE	–			18	20	–	1				2	–	18	20	–			SPARE
EXISTING LOAD		EX			20	EX	3				4	EX		20		EX		EXISTING LOAD
EXISTING LOAD			EX		20	EX	5				6	EX		20			EX	EXISTING LOAD
EXISTING LOAD	EX				20	EX	7				8	EX		20	EX			EXISTING LOAD
EXISTING LOAD		EX			20	EX	9				10	EX		20		EX		EXISTING LOAD
EXISTING LOAD			EX		20	EX	11				12	EX		20			EX	EXISTING LOAD
EXISTING LOAD	EX				20	EX	13				14	–		20	–			SPARE
SPARE		–			20	–	15				16	–		20		–		SPARE
SPARE			–		20	–	17				18	–		20			–	SPARE
SPARE	–				20	–	19				20	–		20	–			SPARE
		–					21				22					–		
			–				23				24						–	
SPARE	–				20	–	25				26	–		20	–			SPARE
		–					27				28					–		
			–				29				30						–	
SPACE	–				–	–	31				32	–		–	–			SPACE
SPACE		–			–	–	33				34	–		–		–		SPACE
SPACE			–		–	–	35				36	–		–			–	SPACE
SPACE	–				–	–	37				38	–		–	–			SPACE
SPACE		–			–	–	39				40	–		–		–		SPACE
SPACE			–		–	–	41				42	–		–			–	SPACE

THIS IS RIGHT SECTION OF TWO SECTION PANEL

PANEL "JR" 225 AMP 208Y/120V, 3ø, 4W, M.C.B., SURFACE MTD.

LOAD SERVED	LOAD (AMPS) A	B	C	CKT.BKR. KAIC	TRIP	WIRE SIZE	CKT. NO.	PHASE A	B	C	CKT. NO.	WIRE SIZE	CKT.BKR. KAIC	TRIP	LOAD (AMPS) A	B	C	LOAD SERVED
EXISTING LOAD *	EX			10	60	EX	1				2	10	10	30	1			SPD
		EX					3				4					1		
			EX				5				6						1	
EXISTING LOAD *	EX				20	EX	7				8	EX		20	EX			EXISTING LOAD *
EXISTING LOAD *		EX			20	EX	9				10	EX		20		EX		EXISTING LOAD *
EXISTING LOAD *			EX		20	EX	11				12	EX		20			EX	EXISTING LOAD *
EXISTING LOAD *	EX				20	EX	13				14	EX		20	EX			EXISTING LOAD *
EXISTING LOAD *		EX			20	EX	15				16	EX		20		EX		EXISTING LOAD *
EF-1&2			3		20	12	17				18	EX		20			EX	EXISTING LOAD *
HP-A1,A2 & B2	3				15	12	19				20	EX		20	EX			EXISTING LOAD *
		3					21				22	12		15		7.8		CU-A1
CU-A2			7.8		15	12	23				24						7.8	
	7.8						25				26	12		20	13.2			CU-B2
CU-B1		13.2			15	12	27				28	–		–		13.2		
			13.2				29				30	–		–			–	SPACE
SPARE	–				20	–	31				32	–		–	–			SPACE
SPARE		–			20	–	33				34	–		–		–		SPACE
SPARE			–		20	–	35				36	–		–			–	SPACE
SPARE	–				20	–	37				38	–		–	–			SPACE
SPACE		–			–	–	39				40	–		–		–		SPACE
SPACE			–		–	–	41				42	–		–			–	SPACE

COMMONWEALTH OF VIRGINIA
KENZIE CAMBAR
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04-19-2022
PROFESSIONAL ENGINEER

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PROJECT NUMBER:

HVAC REPLACEMENT
NEWSOME PARK ELEMENTARY SCHOOL
NEWPORT NEWS VIRGINIA

PANELBOARD SCHEDULES

REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: DWC
DRAWN BY: RAB
CHECKED BY: KC

E4.1

DATE: 04/19/2022

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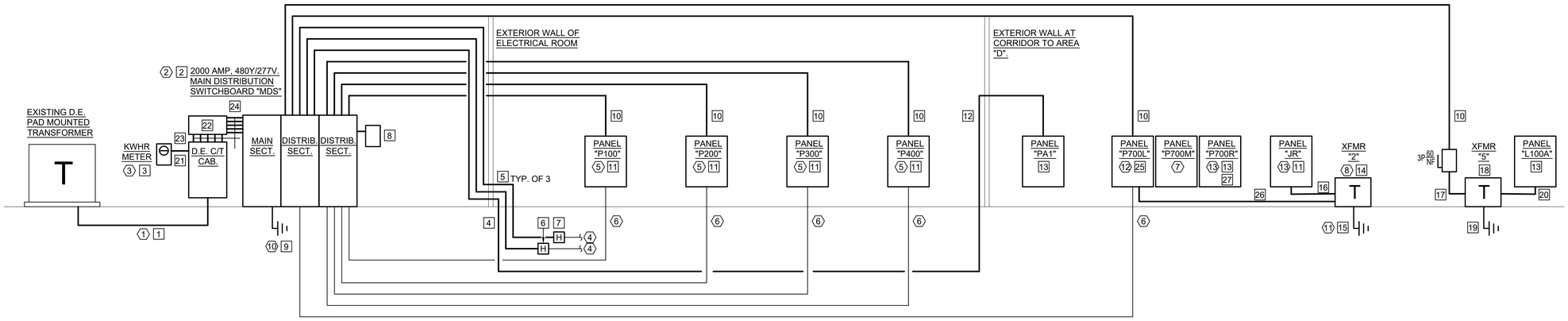

PARTIAL POWER RISER DIAGRAM - DEMOLITION AND NEW WORK

NOT TO SCALE

PARTIAL POWER RISER DIAGRAM DEMOLITION NOTES:

1. COORDINATE DISCONNECTION AND REMOVAL OF ALL EXISTING AND ABANDONED SERVICE ENTRANCE CONDUCTORS WITH DOMINION ENERGY. REMOVE SERVICE ENTRANCE CONDUITS OUTSIDE AS REQUIRED FOR INSTALLATION OF NEW SERVICE ENTRANCE CONDUITS.
2. REMOVE MAIN DISTRIBUTION SWITCHBOARD. SAVE ALL PANEL FEEDERS AND REMAINING BRANCH CIRCUITS FOR REUSE. VERIFY PHASE ROTATION OF EXISTING SYSTEM WITH THE POWER COMPANY AND EXISTING EQUIPMENT TO BE RECONNECTED PRIOR TO REMOVAL
3. COORDINATE DISCONNECTION OF EXISTING METERING CABLES FROM C/T COMPARTMENT OF MDS WITH DOMINION ENERGY. REMOVE KWHR METER BASE AND METERING CONDUIT. SAVE METER BASE FOR REINSTALLATION.
4. EXISTING ELECTRICAL EQUIPMENT TO REMAIN.
5. AFTER ALL OTHER DEMOLITION IS COMPLETE, REMOVE PANEL INTERIOR, INCLUDING CIRCUIT BREAKERS, BUSS BARS, GROUNDING TERMINAL STRIP AND NEUTRAL TERMINAL STRIP. SAVE PANEL BACK CAN AND ALL REMAINING BRANCH CIRCUITS FOR REUSE.
6. REMOVE CONDUCTORS FEEDING PANEL BACK TO MDS AND ABANDON CONDUIT IN PLACE. IF CONDUCTORS CANNOT BE REMOVED, CUT CONDUCTORS ON BOTH ENDS FLUSH WITH THE END OF THE CONDUIT AND ABANDON REMAINING CONDUCTORS IN PLACE.
7. AFTER ALL DEMOLITION WORK IS COMPLETE, REMOVE PANEL.
8. REMOVE TRANSFORMER AND FEEDER BACK TO PANEL "P700L".
9. REMOVE PANEL "JR" AND FEEDER BACK DISCONNECT SWITCH. REMOVE DISCONNECT SWITCH AND FEEDER FROM SECONDARY OF TRANSFORMER.
10. REMOVE SERVICE GROUNDING CONDUCTOR AND CONDUIT.
11. REMOVE TRANSFORMER GROUNDING ELECTRODE CONDUCTOR AND CONDUIT.
12. AFTER DEMOLITION WORK IS COMPLETE, REMOVE PANEL AND PROVIDE NEW PANEL.
13. AFTER DEMOLITION WORK IS COMPLETE, REMOVE PANEL, SAVE ALL REMAINING BRANCH CIRCUITS FOR REUSE.

PARTIAL POWER RISER DIAGRAM NEW WORK NOTES:

1. PROVIDE SIX (6) 4" CONDUITS FOR USE BY DOMINION ENERGY. COORDINATE PROVISIONS FOR NEW SERVICE ENTRANCE CONDUCTORS WITH DOMINION ENERGY.
2. PROVIDE NEW MDS IN ACCORDANCE WITH MDS SCHEDULE ON THIS DRAWING. INSTALL MDS IN SAME LOCATION AS EXISTING SWITCHBOARD. CONNECT ALL EXISTING FEEDERS SAVED DURING DEMOLITION TO CIRCUIT BREAKERS IN NEW MDS IN ACCORDANCE WITH MDS SCHEDULE. TAP AND EXTEND EXISTING FEEDERS AS NECESSARY.
3. REINSTALL METER BASE IN LOCATION AS INDICATED ON DRAWING E1.2 AS DIRECTED BY DOMINION ENERGY.
4. SAW CUT PAVEMENT FOR INSTALLATION OF NEW PANEL "PA1" FEEDER. PATCH PAVEMENT TO MATCH EXISTING TO THE SATISFACTION OF THE OWNER.
5. CONVERT PVC CONDUIT BELOW GRADE TO GRS CONDUIT. TURN CONDUIT AND RUN UP TO ABOVE FINISHED GRADE. CORE DRILL EXTERIOR WALL FOR CONDUIT PENETRATION THROUGH WALL. PROVIDE WEATHERPROOF "LB" CONDULET ON END OF CONDUIT AND EXTEND CONDUIT AS INDICATED. SEAL AROUND CONDUIT THROUGH WALL ON BOTH SIDES TO MAKE WATER-TIGHT TO THE SATISFACTION OF THE OWNER. PROVIDE "LB" CONDULET INSIDE ELECTRICAL ROOM AND RUN CONDUIT EXPOSED TO MDS AS INDICATED.
6. PROVIDE OPEN BOTTOM TRAFFIC RATED HANDHOLE (SIZE AND DEPTH AS REQUIRED) BY QUAZITE OR APPROVED EQUAL ON THE END OF EXISTING PANEL "PA" FEEDER SAVED DURING DEMOLITION. PROVIDE WATERPROOF GASKETED TRAFFIC RATED COVERPLATE WITH "ELECTRICAL" ENGRAVED ON THE TOP. MECHANICALLY COMPACT SOIL AT BOTTOM OF HANDHOLEAND PROVIDE 4" OF CRUSHER-RUN STONE AND INSTALL IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS WITH TOP OF COVER FLUSH WITH TOP OF ASPHALT PAVEMENT. PROVIDE 4 #3/0 AND 1 #6 GROUND IN 2-1/2" CONDUIT FROM HANDHOLE AND CONNECT TO CIRCUIT BREAKER IN NEW MDS. SAW CUT PAVEMENT FOR INSTALLATION OF HANDHOLE AND NEW PANEL FEEDER. PATCH PAVEMENT TO MATCH EXISTING TO THE SATISFACTION OF THE OWNER.
7. PROVIDE OPEN BOTTOM TRAFFIC RATED HANDHOLE (SIZE AND DEPTH AS REQUIRED) BY QUAZITE OR APPROVED EQUAL ON THE END OF EXISTING PANEL "PE" FEEDER SAVED DURING DEMOLITION. PROVIDE WATERPROOF GASKETED TRAFFIC RATED COVERPLATE WITH "ELECTRICAL" ENGRAVED ON THE TOP. MECHANICALLY COMPACT SOIL AT BOTTOM OF HANDHOLEAND PROVIDE 4" OF CRUSHER-RUN STONE AND INSTALL IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS WITH TOP OF COVER FLUSH WITH TOP OF ASPHALT PAVEMENT. PROVIDE 4-500 KCMIL AND 1 #2 GROUND IN 3-1/2" CONDUIT FROM HANDHOLE AND CONNECT TO CIRCUIT BREAKER IN NEW MDS. SAW CUT PAVEMENT FOR INSTALLATION OF HANDHOLE AND NEW PANEL FEEDER. PATCH PAVEMENT TO MATCH EXISTING TO THE SATISFACTION OF THE OWNER.
8. PROVIDE SERVICE ENTRANCE SPD IN ACCORDANCE WITH SPECIFICATION SECTION 264313.
9. PROVIDE #1/0 COPPER GROUNDING ELECTRODE CONDUCTOR TO BUILDING STEEL, 3/4" X 10'-0" COPPER GROUND ROD, METAL WATER PIPE, AND INSTALL IN ACCORDANCE WITH ARTICLE 250 OF THE N.E.C.
10. RUN PANEL FEEDER ABOVE NEW CEILINGS U.O.N. ADJUST ROUTING OF CONDUITS TO AVOID CONFLICT WITH EXISTING ITEMS ABOVE THE CEILINGS.
11. INSTALL PANEL SURFACE MOUNTED ON WALL IN FRONT OF EXISTING PANEL ENCLOSURE SAVED DURING DEMOLITION. PROVIDE OPENINGS WITH BUSHINGS ON BOTH SIDES AT THE TOP AND BOTTOM OF THE BACK OF THE NEW PANEL. EXTEND ALL EXISTING BRANCH CIRCUIT / FEEDER CONDUCTORS SAVED DURING DEMOLITION THROUGH THE OPENINGS AND CONNECT CONDUCTORS TO NEW CIRCUIT BREAKERS / MAIN LUGS IN NEW PANEL. PROVIDE PANEL SKIRT ASSEMBLY BELOW THE NEW PANE TO FLOOR AND ABOVE THE NEW PANEL TO CEILING. PAINT PANEL AND SKIRT TO MATCH ADJACENT WALL.
12. CONVERT PVC CONDUIT BELOW GRADE TO GRS CONDUIT. TURN CONDUIT AND RUN UP EXPOSED ON THE EXTERIOR WALL TO ABOVE CORRIDOR CEILING INSIDE BUILDING INSIDE. CORE DRILL EXTERIOR WALL FOR CONDUIT PENETRATION THROUGH WALL. PROVIDE WEATHERPROOF LB CONDULET AND EXTEND CONDUIT THROUGH WALL AND EXTEND TO PANEL. SEAL PENETRATION ON BOTH SIDES OF THE WALL TO MAKE WATER-TIGHT TO THE SATISFACTION OF THE OWNER.
13. PROVIDE PANEL IN ACCORDANCE WITH PANELBOARD SCHEDULE ON DRAWING E4.2. COORDINATE EXACT LOCATION OF PANEL WITH THE OWNER.
14. PROVIDE 75 KVA 480-208Y/120 VOLT K4 RATED DRY TYPE TRANSFORMER AND INSTALL IN SAME LOCATION AS EXISTING TRANSFORMER. MODIFY EXISTING CASEWORK IN ROOM TO PROVIDE N.E.C. REQUIRED WORKING CLEARANCE AROUND TRANSFORMER.
15. PROVIDE 1 #2 GROUNDING ELECTRODE CONDUCTOR. INSTALL IN ACCORDANCE WITH ARTICLE 250 OF THE N.E.C.
16. PROVIDE 3- 4/0 PHASE CONDUCTORS, 2- 4/0 NEUTRAL CONDUCTORS AND 1 #4 GROUND IN 3" CONDUIT.
17. PROVIDE 3 #8 PHASE CONDUCTORS, 1 #10 GROUND CONDUCTOR IN 3/4" CONDUIT.
18. PROVIDE 30 KVA 480-208Y/120 VOLT K4 RATED DRY TYPE TRANSFORMER. COORDINATE EXACT LOCATION OF TRANSFORMER WITH THE OWNER.
19. PROVIDE 1 #8 GROUNDING ELECTRODE CONDUCTOR. INSTALL IN ACCORDANCE WITH ARTICLE 250 OF THE N.E.C.
20. PROVIDE 3 #3 PHASE CONDUCTORS, 2 #3 NEUTRAL CONDUCTORS AND 1 #8 GROUND IN 1-1/4" CONDUIT.
21. PROVIDE 1-1/4" CONDUIT BETWEEN THE METER BASE AND THE C/T CABINET FOR USE BY DOMINION ENERGY.
22. PROVIDE WEATHERPROOF WIRING TROUGH (SIZE AS REQUIRED BY THE N.E.C.). COORDINATE INSTALLATION ABOVE C/T CABINET WITH DOMINION ENERGY.
23. PROVIDE SIX (6) 4" CONDUITS WITH 3-500 KCMIL PHASE CONDUCTORS AND 1-500 KCMIL NEUTRAL CONDUCTOR IN EACH CONDUIT. TERMINATE CONDUCTORS IN C/T CABINET AS DIRECTED BY DOMINION ENERGY.
24. PROVIDE SIX (6) 4" CONDUITS WITH 3-500 KCMIL PHASE CONDUCTORS AND 1-500 KCMIL NEUTRAL CONDUCTOR IN EACH CONDUIT.
25. PROVIDE PANEL IN ACCORDANCE WITH PANELBOARD SCHEDULE ON DRAWING E4.2. INSTALL BESIDE NEW PANEL P700R. PROVIDE FEED-THRU CONDUCTORS (TWO (2) SETS OF 4-250 KCMIL AND 1 #2 GROUND) BETWEEN THE TWO SECTION PANELS (P700L AND P700R).
26. PROVIDE 3 #3 AND 1 #8 GROUND IN 1-1/4" CONDUIT.
27. EXTEND ALL EXISTING BRANCH CIRCUITS CONDUCTORS SAVED DURING DEMOLITION AND CONNECT TO NEW CIRCUIT BREAKERS.

MAIN DISTRIBUTION SWITCHBOARD (MDS)☆

2000 AMP, 480Y/277 VOLT, 3 PHASE, 4 WIRE SWITCHBOARD WITH 2000 AMP, 100% DUTY RATED MAIN CIRCUIT BREAKER. UL SERVICE ENTRANCE RATED AND GROUND FAULT PROTECTION. BRACE SWITCHBOARD FOR 100 KAIC.

CKT. No.	TO FEED	BREAKER RATING	BREAKER FRAME	FEEDER		
				CONDUIT	WIRE	GROUND
1	PANEL P500 ☆☆	400A-3P	400 AMP	EX.	EX	EX
2	PANEL P600	600A-3P	600 AMP	EX.	EX	EX
3	PANEL P300	300A-3P	400 AMP	3"	4-350 KCMIL	1 #4
4	PANEL P400	300A-3P	400 AMP	3"	4-350 KCMIL	1 #4
5	PANEL P100	300A-3P	400 AMP	3"	4-350 KCMIL	1 #4
6	PANEL P200	225A-3P	225 AMP	2-1/2"	4 #4/0	1 #4
7	SPACE	-	225 AMP	-	-	-
8	SPD	60A-3P	100 AMP	1-1/4"	4 #6	1 #10
9	RTU-6	40A-3P	100 AMP	3/4"	3 #8	1 #10
10	RTU-7	40A-3P	100 AMP	3/4"	3 #8	1 #10
11	PANEL PE ☆☆	400A-3P	400A-3P	3-1/2"	4-500 KCMIL	1 #2
12	PANEL P700L & R	500A-3P	600A-3P	(2) 3"	EACH WITH 4-250 KCMIL	EACH WITH 1 #2
13	PANEL P800	400A-3P	400 AMP	EX.	EX	EX
14	PANEL PA	200A-3P	225 AMP	2-1/2"	4 #3/0	1 #6
15	PANEL PA1	300A-3P	400 AMP	3"	4-350 KCMIL	1 #2
16	TRANSFORMER 5	45A-3P	100 AMP	3/4"	3 # 8	1 #10
17	SPACE	-	225 AMP	-	-	-
18	SPACE	-	225 AMP	-	-	-

☆ PROVIDE NEW MAIN DISTRIBUTION SWITCHBOARD WHOSE DIMENSIONS MATCH THE EXISTING MDS.

☆☆ PROVIDE 100% DUTY RATED CIRCUIT BREAKER.

COMMONWEALTH OF VIRGINIA
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04-19-2022
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REVISIONS

MARK	DESCRIPTION	DATE

COMM. NO: 21-059
DESIGNED BY: DWC
DRAWN BY: RAB
CHECKED BY: KC

E4.2

DATE: 04/19/2022

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