Addendum

Addendum Number: 03

Addendum Issue Date: April 28, 2025

Owner: Robinson CUSD #2

Project Name: Robinson Washington Elementary Renovation & Addition

Project Number: 02401781.001

Containing: 32 Pages; 20 Drawings; 2 Specifications Sections

This addendum amends the drawings and specifications of the above reference project and is hereby incorporated into the contract documents as part thereof. Bidders must acknowledge receipt of this Addendum in the space provided on the Bid Form. ***FAILURE TO DO SO MAY SUBJECT BIDDER TO DISQUALIFICATION.***

General:

1. The General Contractor is not responsible for carrying a Builder's Risk Insurance policy. This type of insurance is not required for the project.
2. The basis of design for the VRF refrigerant is a 2-pipe system. Actual lengths and sizes of piping may vary from manufacturer. The manufacturer is responsible for sizing the pipe and determining lengths based on our schematic drawings.
3. Spec 064100 is for the front office reception desk only. Spec Section 123200 is for all other casework.
4. We'd like the rubber in gross motor and LVT in the classroom entry areas in the corridors, waterjet cut only. The carpet would be field-cut.
5. We have window graphics on all the windows except for window F (courtyard-facing windows), which will receive solid color films. All exterior glazed doors will also receive solid color film as selected by the owner and architect.

Drawings:

1. C1.1 – SITE & UTILITY PLAN
    a. REMOVE color black specified for handrails/guardrails.
    b. ADD note that handrail/guardrail color will be selected by the Owner and Architect.
2. C1.2 – SITE DETAILS
    a. REVISE handrail material and color on Detail 1.
    b. REVISE guardrail material and color on Detail 2.
    c. REVISE handrail material and color on Detail 3.
    d. REVISE handrail material and color on Detail 10.
3. S3.2 – FOUNDATION DETAILS
    a. ADD protective steel coating below slab in Detail 11.
4. A5.9 – EXTERIOR DETAILS
    a. ADD protective steel coating below slab to all the columns in the Gross Motor area.
    b. ADD 2" rigid insulation to wrap around the columns.

5. A7.31 – GLAZING ELEVATIONS - WINDOW GRAPHICS
    a. REVISE note to include security and privacy films.
6. M1.1A – ENLARGED VENTILATION FLOOR PLAN – AREA A
    a. REVISE ductwork.
    b. ADD keynote #3.
    c. REMOVE cfm values on air device tags for return air devices that do not require volume dampers.
7. M1.1B – ENLARGED VENTILATION FLOOR PLAN – AREA B
    a. REMOVE cfm values on air device tags for return air devices that do not require volume dampers.
8. M1.1D – ENLARGED VENTILATION FLOOR PLAN – AREA D
    a. REMOVE cfm values on air device tags for return air devices that do not require volume dampers.
    b. ADD keynote #3 to existing wall grille in Secretary X131.
    c. ADD keynotes #5, #6, and #7.
9. M1.1E – ENLARGED VENTILATION FLOOR PLAN – AREA E
    a. REMOVE cfm values on air device tags for return air devices that do not require volume dampers.
    b. ADD keynote #3.
10. M1.4 – OVERALL ROOF MECHANICAL PLAN
    a. ADD keynote #5.
11. M2.1A – ENLARGED MECHANICAL PIPING FLOOR PLAN – AREA A
    a. ADD VRF System control panel locations.
    b. ADD keynotes #2 and #3.
12. M2.1C – ENLARGED MECHANICAL PIPING FLOOR PLAN – AREA C
    a. ADD VRF System control panel locations.
    b. ADD keynote #2.
13. M2.1D – ENLARGED MECHANICAL PIPING FLOOR PLAN – AREA D
    a. ADD VRF System and hot water plant control panel locations.
    b. ADD keynotes #3 and #4.
14. M2.1E – ENLARGED MECHANICAL PIPING FLOOR PLAN – AREA E
    a. ADD VRF System control panel locations.
    b. ADD keynote #2.
15. M6.1 – SCHEDULES
    a. REVISE Dedicated Outdoor Air System Schedule.
    b. REVISE Rooftop Unit Schedule.
    c. ADD remarks to all schedules.
16. M6.2 – SCHEDULES Cont.
    a. ADD remarks to all schedules.
17. M7.1 – CONTROLS DIAGRAMS
    a. REVISE all controls diagrams.
18. M7.2 – CONTROLS DIAGRAMS Cont.
    a. ADD sheet.
19. M7.3 – CONTROLS DIAGRAMS Cont.
    a. ADD sheet.

20. M7.4 – CONTROLS DIAGRAMS Cont.
    a. ADD sheet.

Specifications:

1. 00 2100 – INSTRUCTIONS TO BIDDERS
    a. REVISE paragraph 1.1.W.1 to indicate "Adhere to 30 ILCS 580/1**."**
2. 08 8723 – SAFETY AND SECURITY FILMS
    a. REVISE paragraph 2.3.2 to indicate "Color: To be selected by the Owner and Architect – See drawings for more information and location".

END OF ADDENDUM

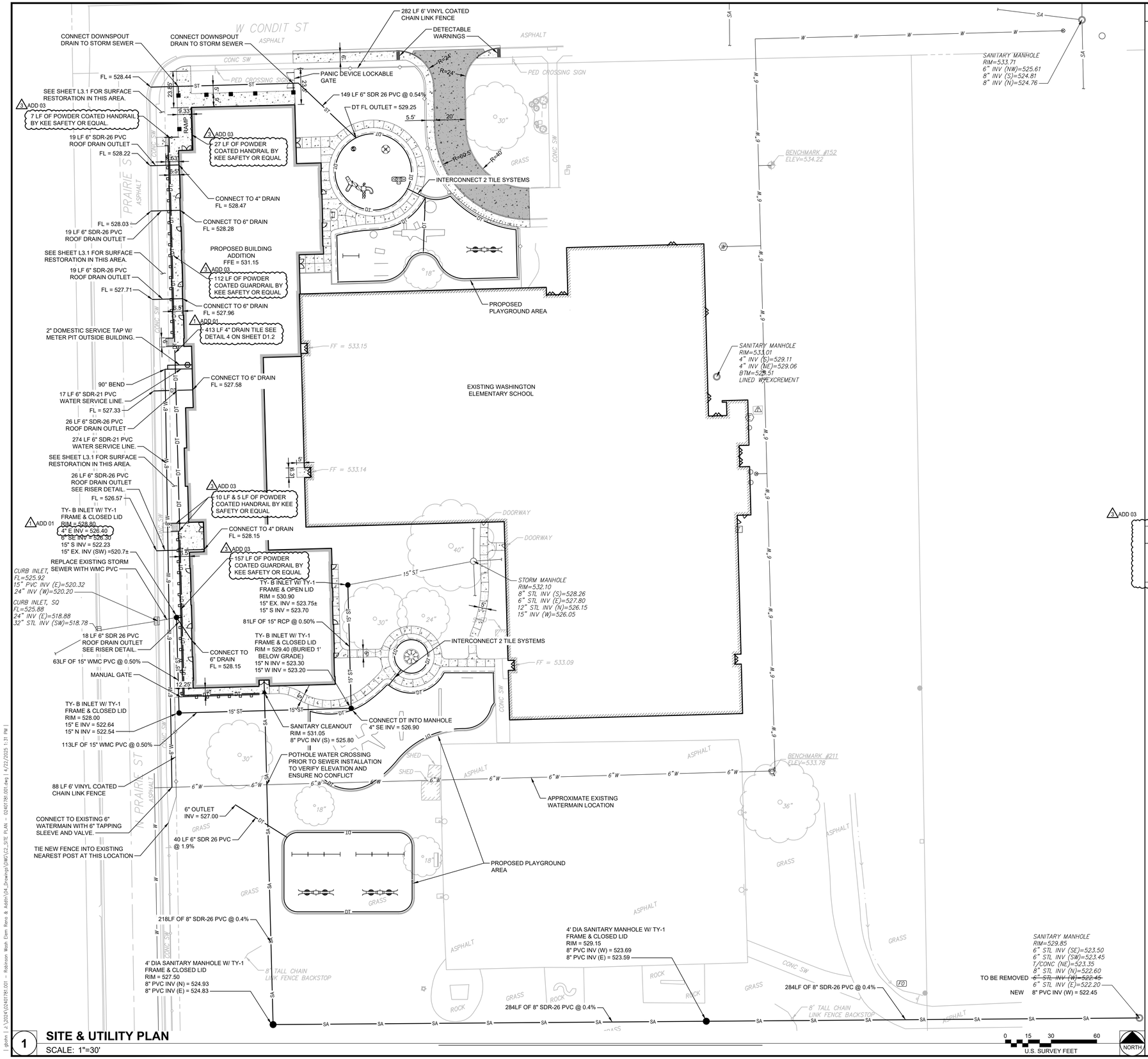
Issued By:

FARNSWORTH GROUP, INC.
Annapoorna Halepatali
Project Architect

Attachments:

Drawings: C1.1, C1.2, S3.2, M1.1A, M1.1B, M1.1D, M1.1E, M1.4, M2.1A, M2.1C, M2.1D, M2.1E, M6.1, M6.2, M7.1, M7.2, M7.3, M7.4

Specifications: 00 2100, 08 8723



1 **SITE & UTILITY PLAN**
SCALE: 1"=30'

0 15 30 60
U.S. SURVEY FEET
NORTH

PROPOSED LEGEND

(STANDARD LEGEND - NOT ALL ITEMS DEPICTED ON PLANS)

- WATER METER PIT W/ METER
- W — WATER SERVICE
- SA — SANITARY SERVICE
- ST — STORM SEWER
- G — GAS SERVICE
- E — ELECTRIC CONDUITS
- SIDEWALK, TYPE SPECIAL
- CONCRETE MONOLITHIC CURB & GUTTER
- COMBINED CONCRETE CURB & GUTTER (PUBLIC STREET) PER LOCAL SPECIFICATIONS
- DEPRESSED CURB
- P.C.C. SIDEWALK, 4"
- FULL-DEPTH HMA 2" HMA SURFACE 2 ½" HMA BINDER AGG. BASE COURSE, TYPE B, 10"
- ACCESSIBLE PATH DETECTABLE WARNING STRIP
- BOLLARD
- NEW SIGN
- SITE LIGHTING
- END SECTION
- STORM INLET
- CURB INLET
- STORM MANHOLE
- SANITARY MANHOLE
- SEWER CLEAN OUT

ADD 03

HANDRAIL/GUARDRAIL NOTE

1. BLACK COLOR NOTE FOR RAILING HAS BEEN DELETED. COLOR OF RAILING WILL BE SELECTED BY OWNER & ARCHITECT PRIOR TO CONSTRUCTION.

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ISSUE:

#	DATE:	DESCRIPTION:
1	04/17/2025	ADDENDUM #1
3	04/28/2025	ADDENDUM #3

BID SET
04/03/2025

PROJECT:
Robinson CUSD #2

WASHINGTON ELEMENTARY RENOVATION & ADDITION

WASHINGTON ELEM.SCHOOL
507 W.Condit St.
Robinson, Il 62454

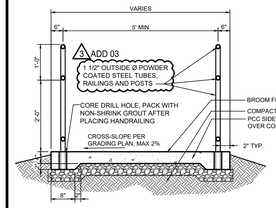
DATE:	04/03/2025
DESIGNED:	JRR
DRAWN:	GAB
REVIEWED:	ACH
FIELD BOOK NO.:	-

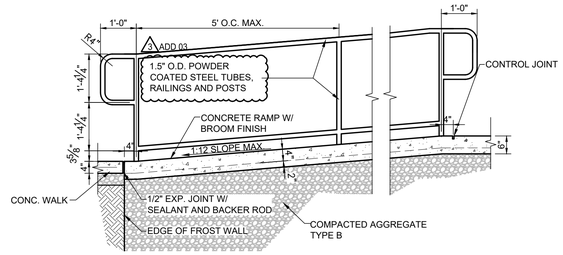
SHEET TITLE:
SITE & UTILITY PLAN

SHEET NUMBER:
C1.1

PROJECT NO.: 02401781.001

[gbohn | J:\2024\02401781.001 - Robinson Wash Elem Reno & Addtn\04_Drawings\DWG\C2_SITE PLAN - 02401781.001.dwg | 4/22/2025 1:31 PM]



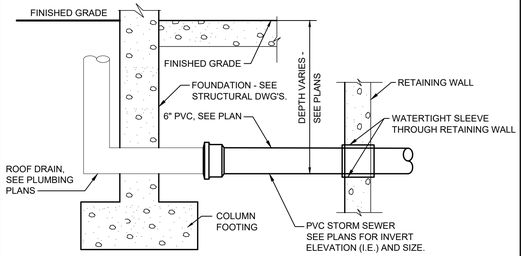


ADD 03 NOTES:

1. ALL TUBES AND PIPES ARE TO BE POWDER COATED STEEL. JOINTS BETWEEN RAILINGS AND POSTS ARE TO BE WELDED AND GROUND SMOOTH.
2. RAILING COLOR TO BE SELECTED BY OWNER & ARCHITECT.
3. HANDRAIL SYSTEM DESIGN AND CONSTRUCTION IS TO MEET OR EXCEED ALL APPLICABLE LOCAL BUILDING CODE AND LOADING REQUIREMENTS.
4. CONTRACTOR IS REQUIRED TO FURNISH SHOP DRAWINGS OF RAILING SYSTEM IDENTIFYING LAYOUT, DIMENSIONS, MATERIALS, AND PRODUCTS FOR APPROVAL PRIOR TO CONSTRUCTION.

3 P.C. CONCRETE RAMP AND HANDRAIL

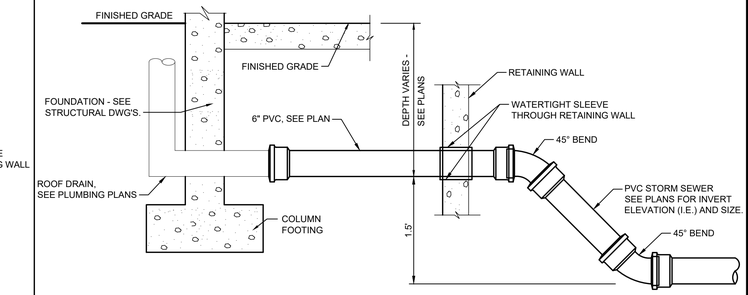
Scale: NOT TO SCALE



CONNECTION SHALL BE MADE WITH A PVC DOWNSPOUT ADAPTER AND REDUCER (IF NEEDED). SUBMIT PRODUCT DATA TO ENGINEER/ARCHITECT FOR APPROVAL.

8 ROOFDRAIN CONNECTION

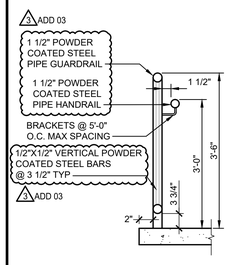
Scale: NOT TO SCALE



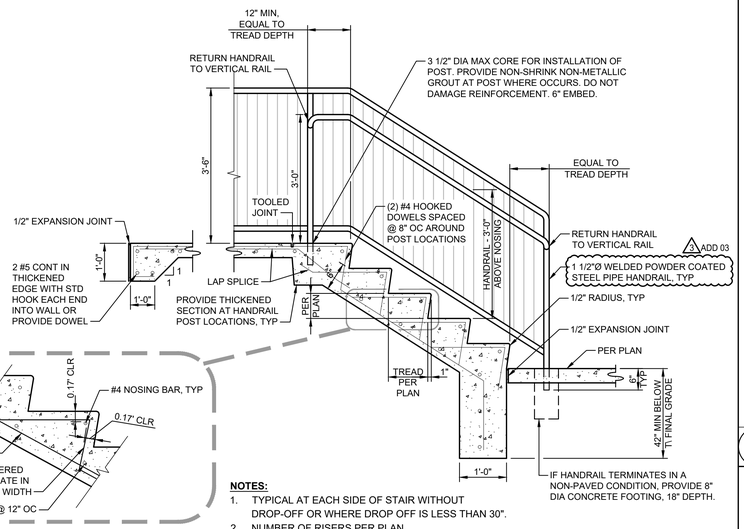
CONNECTION SHALL BE MADE WITH A PVC DOWNSPOUT ADAPTER AND REDUCER (IF NEEDED). SUBMIT PRODUCT DATA TO ENGINEER/ARCHITECT FOR APPROVAL.

9 ROOFDRAIN CONNECTION RISER

Scale: NOT TO SCALE



GUARDRAIL SECTION

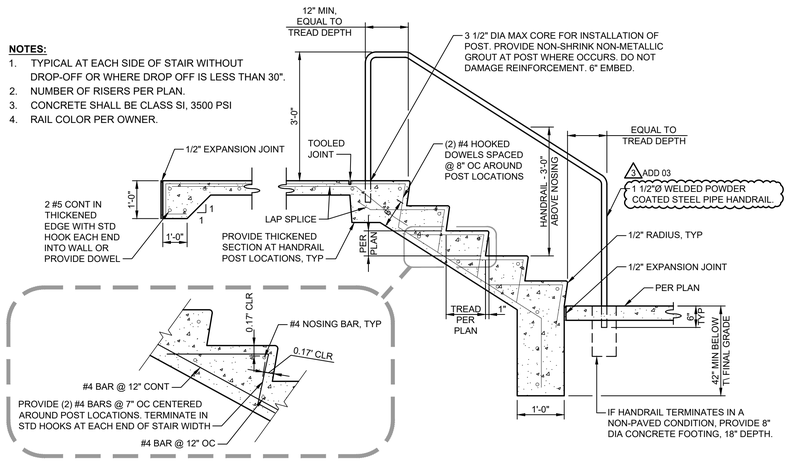


NOTES:

1. TYPICAL AT EACH SIDE OF STAIR WITHOUT DROP-OFF OR WHERE DROP OFF IS LESS THAN 30".
2. NUMBER OF RISERS PER PLAN.
3. CONCRETE SHALL BE CLASS SI, 3500 PSI
4. RAIL COLOR PER OWNER.

2 P.C. CONCRETE STAIR WITH GUARDRAIL

Scale: NOT TO SCALE

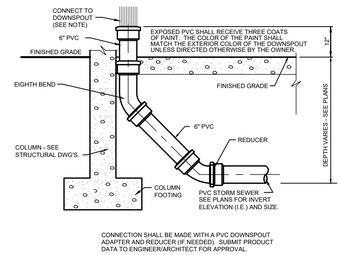


NOTES:

1. TYPICAL AT EACH SIDE OF STAIR WITHOUT DROP-OFF OR WHERE DROP OFF IS LESS THAN 30".
2. NUMBER OF RISERS PER PLAN.
3. CONCRETE SHALL BE CLASS SI, 3500 PSI
4. RAIL COLOR PER OWNER.

1 P.C. CONCRETE STAIR WITH HANDRAIL

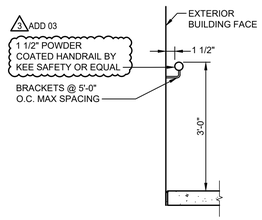
Scale: NOT TO SCALE



CONNECTION SHALL BE MADE WITH A PVC DOWNSPOUT ADAPTER AND REDUCER (IF NEEDED). SUBMIT PRODUCT DATA TO ENGINEER/ARCHITECT FOR APPROVAL.

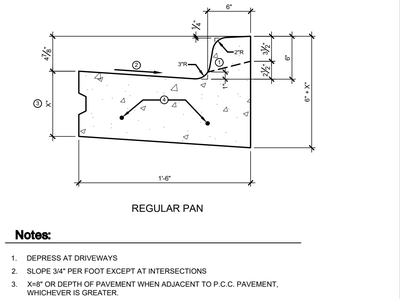
7 DOWNSPOUT CONNECTION

Scale: NOT TO SCALE



10 WALL MOUNTED HANDRAIL

Scale: NOT TO SCALE



REGULAR PAN

Notes:

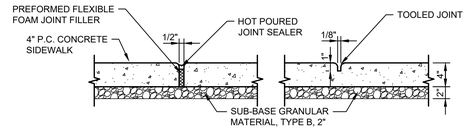
1. DEPRESS AT DRIVEWAYS
2. SLOPE 3/4" PER FOOT EXCEPT AT INTERSECTIONS
3. X=8" OR DEPTH OF PAVEMENT WHEN ADJACENT TO P.C.C. PAVEMENT, WHICHEVER IS GREATER.
   X=8" WHEN ADJACENT TO P.C.C. AGGREGATE, BITUMINOUS OR BRICK BASE COURSE.
4. 2-#4 REBARS SHALL BE PLACED LONGITUDINALLY ONLY WHEN CROSSING UTILITY TRENCHES. REBARS SHALL EXTEND A MINIMUM OF 5' BEYOND THE TRENCH ON EACH SIDE.

11 B-6.12 COMB. CURB AND GUTTER

Scale: NOT TO SCALE

4 UPPER LANDING AND HANDRAIL

Scale: 1" = 1'

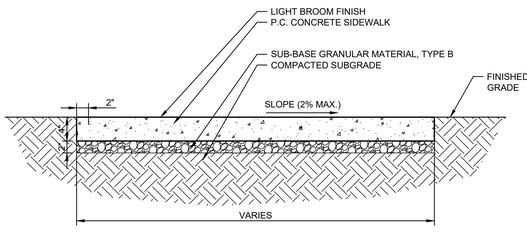


EXPANSION JOINT CONTRACTION JOINT

1. PROVIDE EXPANSION JOINTS AT 30'-0" O.C. MAXIMUM AND AT INTERSECTION WITH STRUCTURES AND ABRUPT CHANGES.
2. PROVIDE CONTRACTION JOINTS AT 5' INTERVALS OR AS NOTED ON PLANS OR SHOWN IN DETAILS.

6 4" P.C. CONCRETE SIDEWALK JOINT

Scale: NOT TO SCALE



5 4" P.C. CONCRETE SIDEWALK

Scale: NOT TO SCALE

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ISSUE:

#	DATE:	DESCRIPTION:
3	04/28/2025	ADDENDUM #3

BID SET
04/03/2025

PROJECT:

Robinson CUSD #2

WASHINGTON ELEMENTARY RENOVATION & ADDITION

WASHINGTON ELEM.SCHOOL
507 W.Condit St.
Robinson, Il 62454

DATE:	04/03/2025
DESIGNED:	-
DRAWN:	-
REVIEWED:	-
FIELD BOOK NO.:	-

SHEET TITLE:

SITE DETAILS

SHEET NUMBER:

D1.2

PROJECT NO.: 02401781.001

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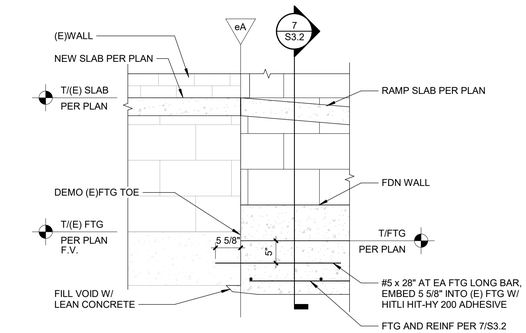
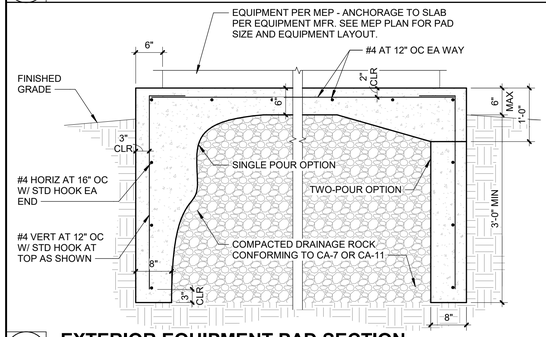
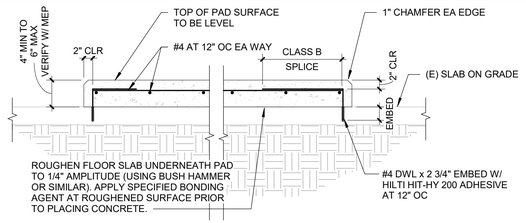


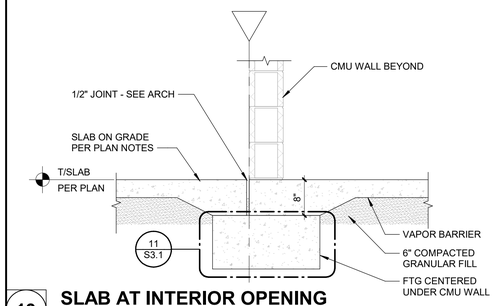
16 FOUNDATION AT EXISTING AT RAMP
SCALE: 3/4" = 1'-0"



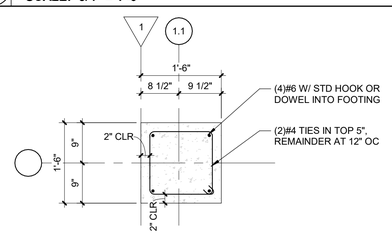
15 EXTERIOR EQUIPMENT PAD SECTION
SCALE: 3/4" = 1'-0"



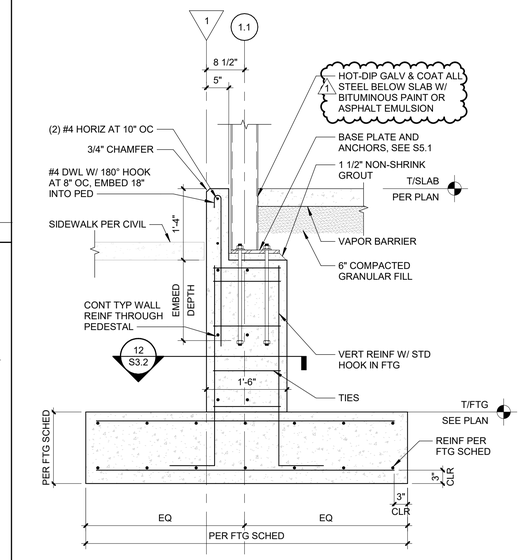
14 INTERIOR EQUIPMENT PAD DETAIL
SCALE: 3/4" = 1'-0"



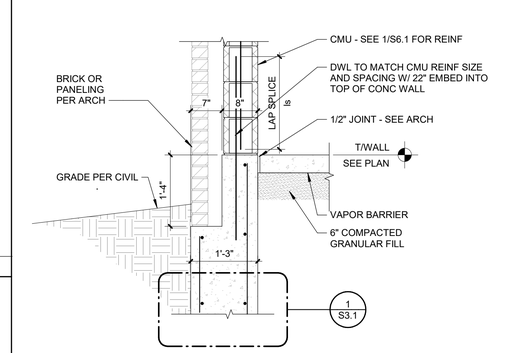
13 SLAB AT INTERIOR OPENING
SCALE: 3/4" = 1'-0"



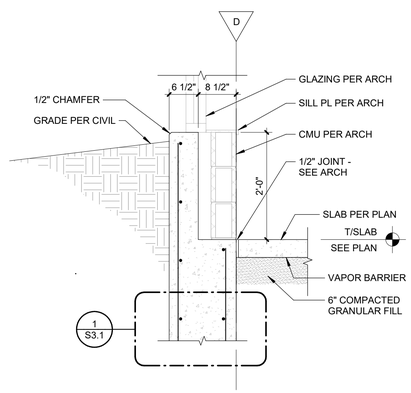
12 SECTION THROUGH 18IN PEDESTAL
SCALE: 3/4" = 1'-0"



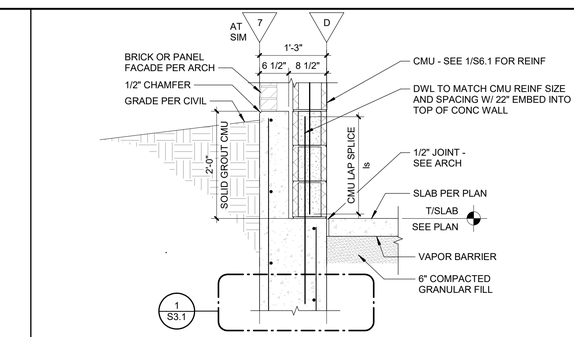
11 PEDESTAL IN WALL SECTION
SCALE: 3/4" = 1'-0"



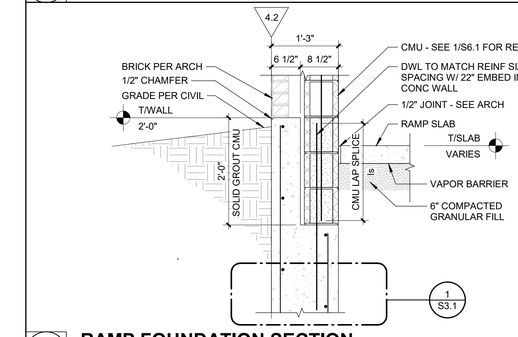
10 FOUNDATION SECTION BETWEEN GRIDS 4 & 6
SCALE: 3/4" = 1'-0"



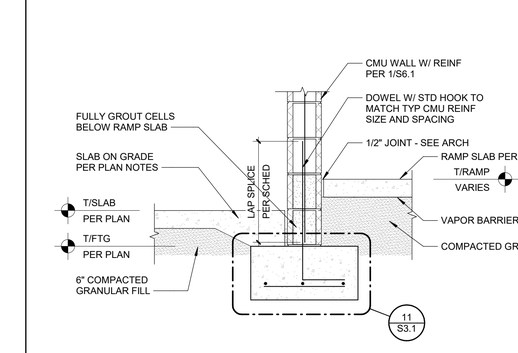
9 CORRIDOR WINDOW FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



8 RETAINING WALL SECTION
SCALE: 3/4" = 1'-0"

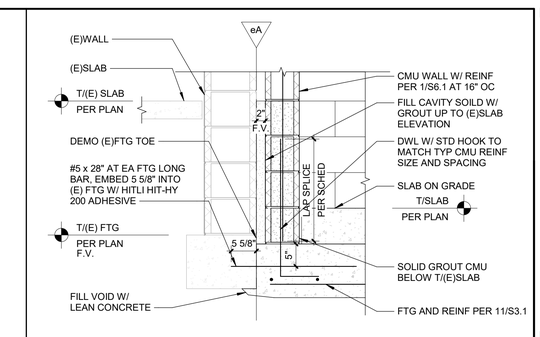


7 RAMP FOUNDATION SECTION
SCALE: 3/4" = 1'-0"

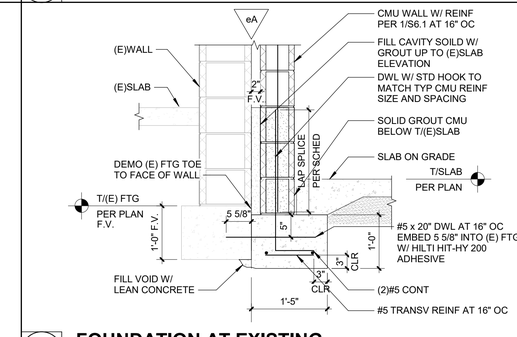


6 INTERIOR WALL FTG AT RAMP
SCALE: 3/4" = 1'-0"

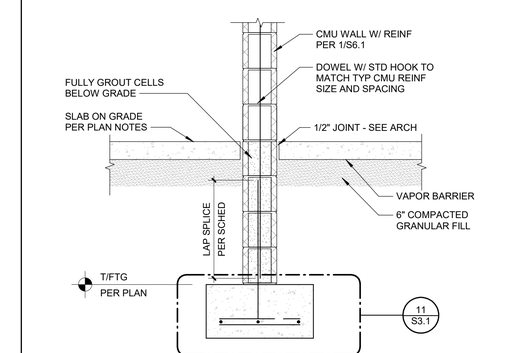
5 PAD FOOTING AT WALL
SCALE: 3/4" = 1'-0"



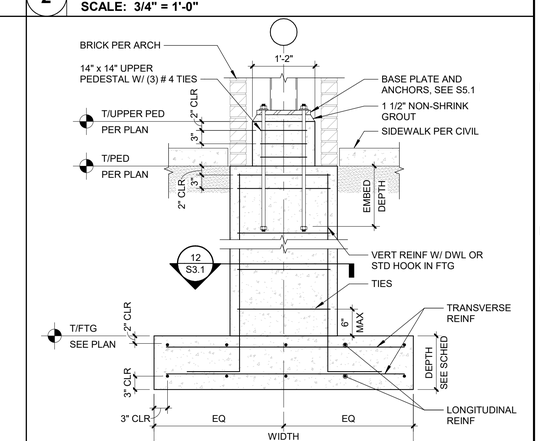
4 FOUNDATION AT EXISTING
SCALE: 3/4" = 1'-0"



3 FOUNDATION AT EXISTING
SCALE: 3/4" = 1'-0"



2 FOUNDATION AT FTG STEP
SCALE: 3/4" = 1'-0"



1 TYPICAL CANOPY PEDESTAL DETAIL
SCALE: 3/4" = 1'-0"

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ISSUE:

#	DATE:	DESCRIPTION:
1	04/28/2025	ADD 03

Bid Set
04/03/2025

PROJECT:
Robinson CUSD #2

Washington Elementary Renovation & Addition

507 W. Condit St. Robinson, IL 62454

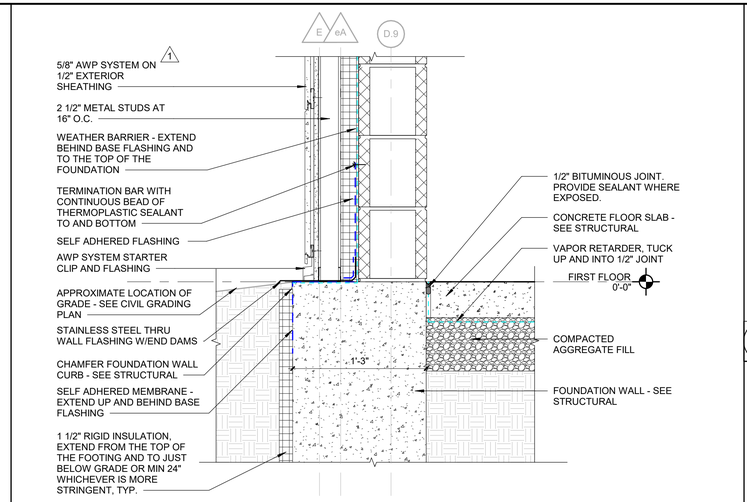
DATE:	04/03/2025
DESIGNED:	AKC/JWH
DRAWN:	JWH/PND
REVIEWED:	AKC/PMH

SHEET TITLE:
FOUNDATION DETAILS

SHEET NUMBER:
S3.2

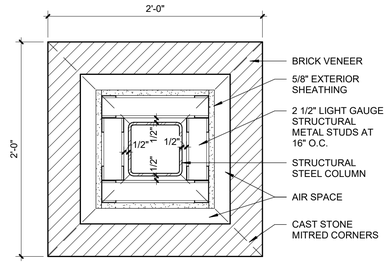
PROJECT NO.: 02401781.001

4/29/2025 1:18:06 PM



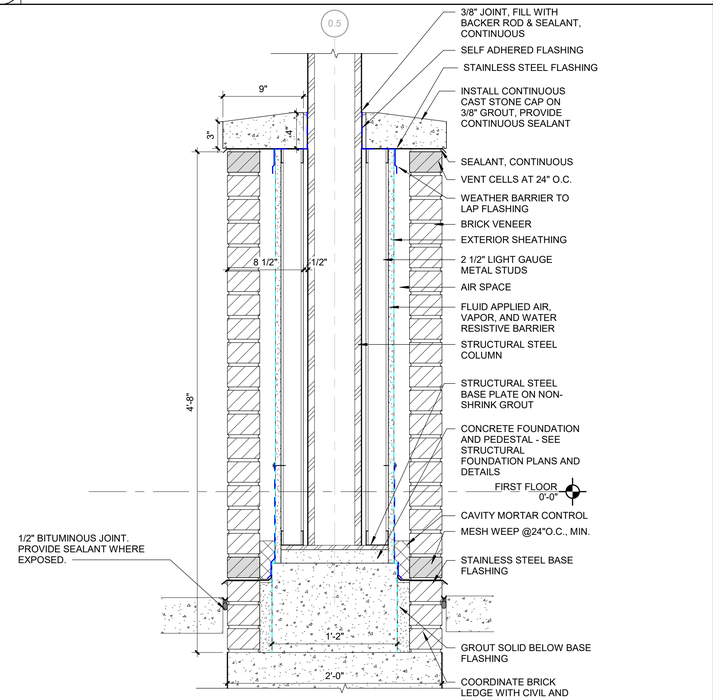
6 GROSS MOTOR AWP DETAIL AT GRADE

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



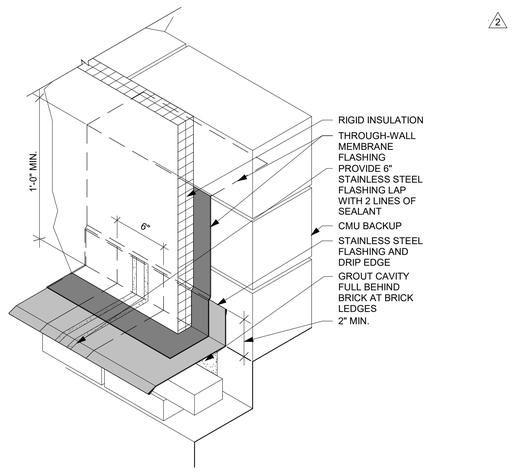
3 TYP CANOPY COLUMN DETAIL

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



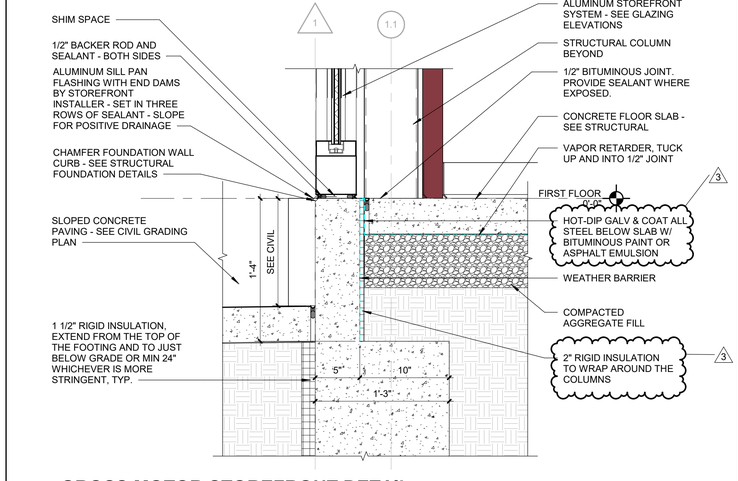
2 COLUMN PEDESTAL DETAIL

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



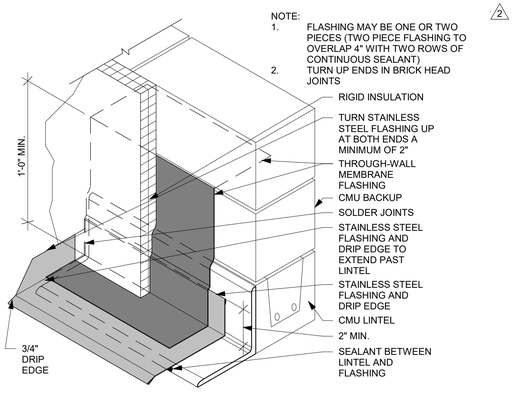
8 BRICK/CMU - TYPICAL BASE FLASHING AT LAP JOINTS

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



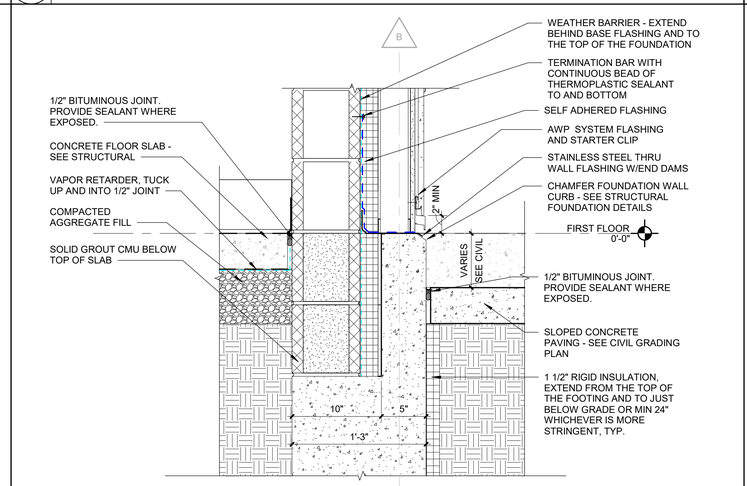
5 GROSS MOTOR STOREFRONT DETAIL AT PAVING

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



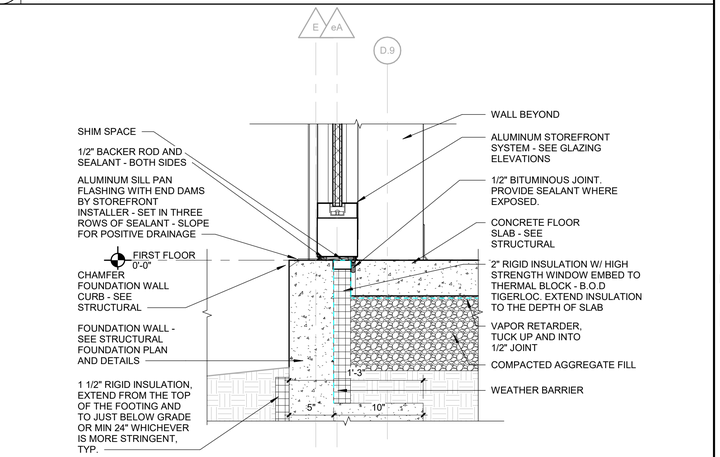
7 BRICK/CMU - TYPICAL FLASHING AT LINTEL

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



4 GROSS MOTOR AWP DETAIL AT PAVING

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



1 GROSS MOTOR STOREFRONT DETAIL AT GRADE

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

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ISSUE:

#	DATE:	DESCRIPTION:
1	04/17/2025	ADD 01
2	04/22/2025	ADD 02
3	04/28/2025	ADD 03

Bid Set
04/03/2025

PROJECT:

Robinson CUSD #2

Washington Elementary Renovation & Addition

507 W. Condit St. Robinson, IL 62454

DATE:	04/03/2025
DESIGNED:	APH
DRAWN:	TMM
REVIEWED:	APH/SCB/JB

SHEET TITLE:

EXTERIOR DETAILS

SHEET NUMBER:

A5.9

PROJECT NO.: 02401781.001

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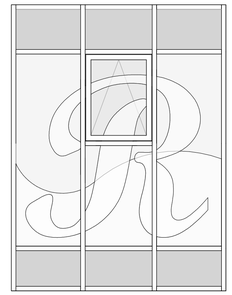


A

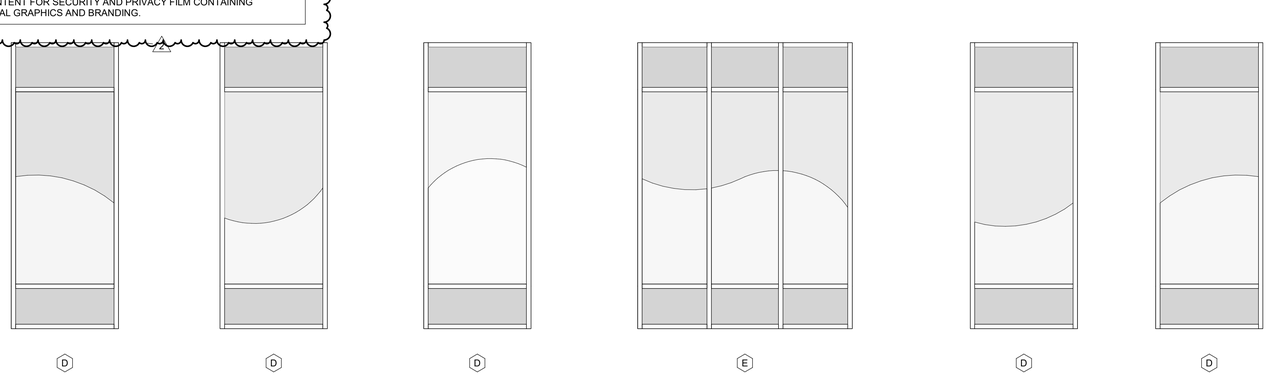
2

TYP CLASSROOM WINDOW GRAPHICS

NOTE:
ELEVATIONS SHOWN ARE TO GIVE GENERAL DESIGN INTENT ONLY. FINAL DESIGN, INCLUDING COLORS AND LOGOS, ARE TO BE CONFIRMED BY OWNER AND ARCHITECT. 2

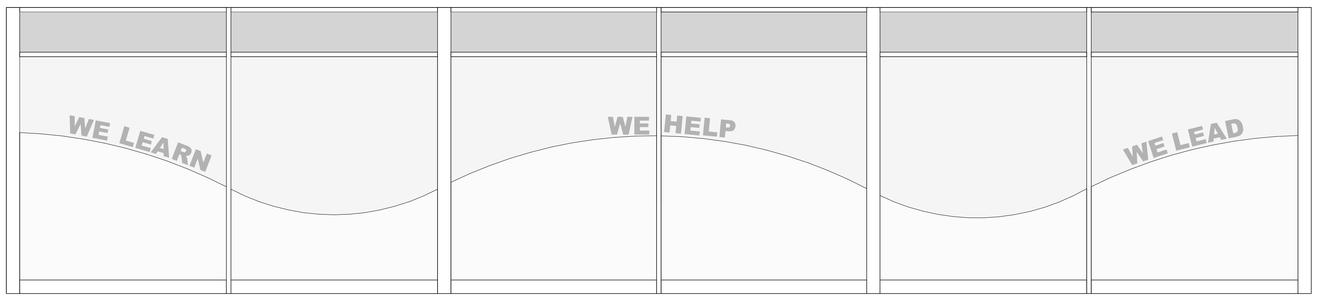
ALL GLAZING MARKED AS IG-1, TO HAVE SECURITY AND PRIVACY FILM APPLIED, SEE A7.3. ALL GLAZING CONTAINING SECURITY AND PRIVACY FILM NOT SHOWN ON THIS SHEET IS TO BE OF A SOLID COLOR SELECTED BY ARCHITECT AND OWNER. THIS SHEET IS ONLY TO SHOW DESIGN INTENT FOR SECURITY AND PRIVACY FILM CONTAINING ADDITIONAL GRAPHICS AND BRANDING.

3



D D D E D D

WEST ELEVATION - AREA B GRAPHICS



B

1 **GLAZING ELEVATIONS - WINDOW FILM GRAPHICS**
SCALE: 3/8" = 1'-0"

4/29/2025 3:05:28 PM

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Bid Set
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PROJECT:
Robinson CUSD #2

Washington Elementary Renovation & Addition

507 W. Condit St. Robinson, IL 62454

DATE:	04/03/2025
DESIGNED:	APH
DRAWN:	TMM
REVIEWED:	APH/SCB/JB

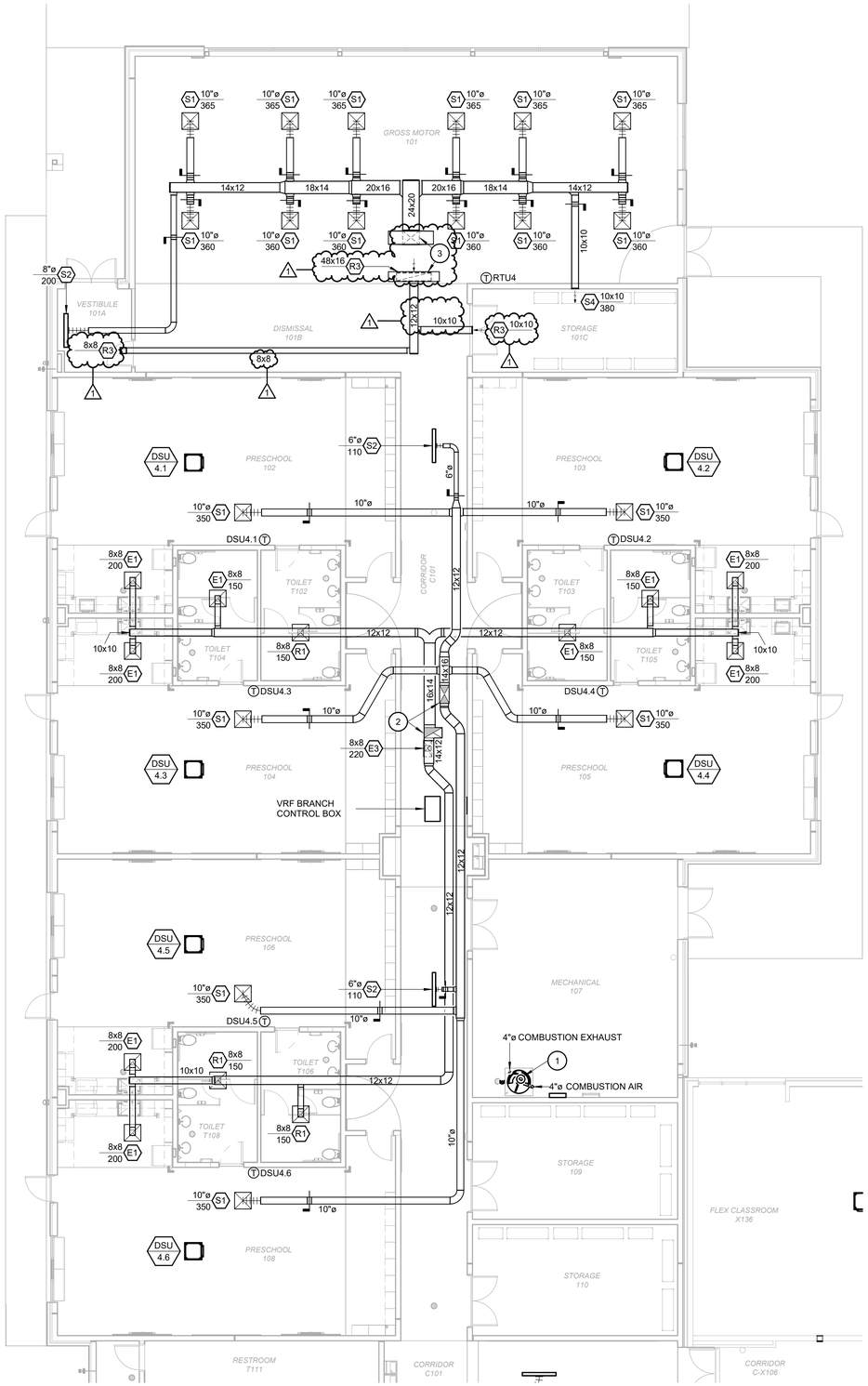
SHEET TITLE: 1

GLAZING ELEVATIONS - WINDOW GRAPHICS

SHEET NUMBER:

A7.3.1

PROJECT NO.: 02401781.001



1 **ENLARGED VENTILATION FLOOR PLAN - AREA A**

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

0 4 8 16

TRUE NORTH

GENERAL NOTES

A. THE CONTRACTOR SHALL REMOVE EXISTING ACOUSTIC CEILING TILES AND GRID AS REQUIRED TO ALLOW RE-INSULATION OF EXISTING PIPING AND INSTALLATION OF NEW DUCTWORK. ALL REMOVED TILES SHALLBE STORED ON SITE AND PROTECTED FROM DAMAGE DURING CONSTRUCTION. ACOUSTICAL CEILING SHALL BE REINSTALLED AFTER COMPLETION OF MECHANICAL WORK. REPLACE ANY CEILING TILES AND GRID...

B. SOME DUCTWORK IS SHOWN IN SCHEMATIC FORM. NOT ALL DUCT RISERS AND DROPS ARE SHOWN. CONTRACTOR SHALL PROVIDE OFFSETS AS REQUIRED TO MEET SPACE REQUIREMENTS AND TO AVOID INTERFERENCE WITH OTHER TRADES, EXISTING STRUCTURE, AND OTHER EXISTING CONDITIONS. EXACT LOCATION OF DUCTWORK MAY VARY ACCORDING TO THE COORDINATED SPACE REQUIREMENTS. EACH TRADE...

C. BRANCH DUCT RUNOUTS TO AIR DEVICES ARE SAME SIZE AS AIR DEVICE NECK UNLESS NOTED OTHERWISE.

D. DIFFUSER, GRILLE, AND REGISTER LOCATIONS SHALL BE COORDINATED WITH LOCATIONS OF EXISTING LIGHTS, EXIT LIGHTS, ETC. DIFFUSER LOCATION MAY VARY TO AVOID EXISTING CEILING EQUIPMENT AND DEVICES.

E. ALL DUCTWORK SHALL BE SHEET METAL, CONSTRUCTED OF GALVANIZED STEEL (UNLESS INDICATED OTHERWISE), IN ACCORDANCE WITHE SMACNA LOW PRESSURE DUCT CONSTRUCTION STANDARDS. SUPPORT NEW DUCTWORK AND FANS FROM STRUCTURE PER SMACNA REQUIREMENTS.

F. PROVIDE MANUAL BALANCING VOLUME DAMPER AT ALL BRANCH DUCTS AND AT ALL OTHER LOCATIONS REQUIRES FOR A COMPLETE AND BALANCEABLE AIR...

G. BALANCE ENTIRE AIR DISTRIBUTION SYSTEM INCLUDING NEW EXHAUST FANS TO DESIGN FLOW RATE S INDICATED ON THE DRAWINGS.

H. ALL SUPPLY AND RETURN AIR DUCTWORK SHALL BE EXTERNALLY INSULATED WITH FIBERGLASS DUCT INSULATION AS INDICATED IN THE SPECIFICATION.

I. PROVIDE SLEEVE THROUGH WALLS AND SEALANT IN THE ANNULAR SPACE FOR DUCTS PASSING THROUGH WALL, IN ACCORDANCE WITH THE SPECIFICATIONS.

J. WALL THERMOSTAT SHALL BE 4'-0" ABOVE FLOOR, UNLESS NOTED OTHERWISE.

K. FIRE DAMPER WITH ACCESS DOOR SHALL BE INSTALLED AS REQUIRED IN ALL DUCTS PENETRATING FIRE RATED WALLS. ACCESS DOORS SHALL BE LARGE ENOUGH TO PERFORM INSPECTION AND MAINTENANCE OF FUSIBLE LINKS.

L. PRIOR TO ORDERING ANY EQUIPMENT OR FABRICATION OF DUCTWORK, THE CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AT THE SITE AND MAKE...

M. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SIZE, QUANTITY, AND LOCATION OF ALL OPENINGS NEEDED FOR DUCT AND PIPE PENETRATION THROUGH WALLS, FLOORS, AND ROOF.

N. CLEARNCES FOR DUCTWORK TO BUILDING MEMBERS, PLUMBING PIPING, RECESSED LIGHT FIXTURES, SPRINKLER PIPING, ETC. MAY BE VERY TIGHT. COORDINATE CAREFULLY BEFORE FABRICATING ANY PIPING OR DUCTWORK.

O. WHERE CUTTING IS REQUIRED, PATCH FLOORS, WALLS, CEILINGS, ETC. TO MATCH EXISTING CONDITIONS.

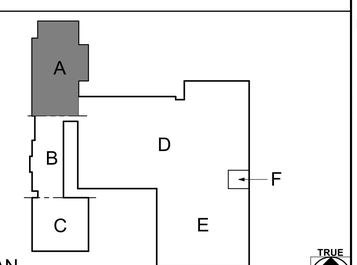
P. ALL NEW TOILET EXHAUST FANS SHALL BE INTERLOCKED RESPECTIVELY WITH NEW ROOFTOP UNITS.

KEYNOTES (#)

1 ROUTE 4" PVC PIPING FROM BOTH COMBUSTION AIR INTAKE AND COMBUSTION EXHAUST TO CONCENTRIC VENT KIT THROUGH ROOF.

2 26x14 SUPPLY AIR AND 24x15 EXHAUST AIR DUCTS UP TO DEDICATED OUTDOOR AIR SYSTEM DOAS4.

1 3 24x20 INCH SUPPLY AIR AND 50x12 INCH RETURN AIR DUCTS UP TO ROOFTOP UNIT RTU4.



KEY PLAN

SCALE: NO SCALE

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ISSUE:

#	DATE:	DESCRIPTION:
1	04/28/2025	ADD 03

Bid Set
2025.04.03

PROJECT:
Robinson CUSD #2

Washington Elementary Renovation & Addition

507 W. Condit St. Robinson, IL 62454

DATE:	04/03/2025
DESIGNED:	TMG/GPF
DRAWN:	GPF
REVIEWED:	DRR

SHEET TITLE:

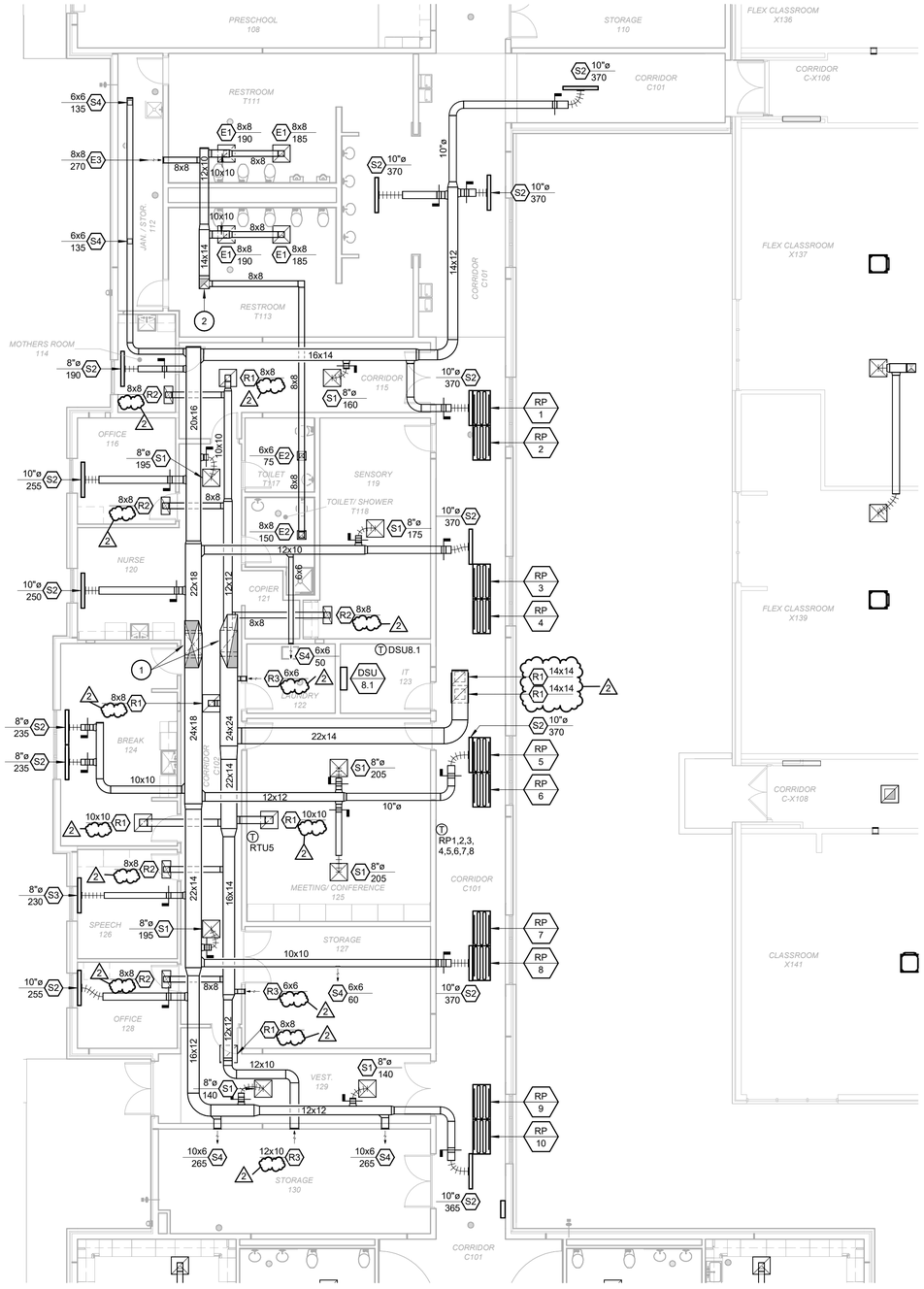
ENLARGED VENTILATION FLOOR PLAN - AREA A

SHEET NUMBER:

M1.1A

PROJECT NO.: 02401781.001

4/28/2025 1:56:30 PM



GENERAL NOTES

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B. SOME DUCTWORK IS SHOWN IN SCHEMATIC FORM. NOT ALL DUCT RISERS AND DROPS ARE SHOWN. CONTRACTOR SHALL PROVIDE OFFSETS AS REQUIRED TO MEET SPACE REQUIREMENTS AND TO AVOID INTERFERENCE WITH OTHER TRADES, EXISTING STRUCTURE, AND OTHER EXISTING CONDITIONS. EXACT LOCATION OF DUCTWORK MAY VARY ACCORDING TO THE COORDINATED SPACE REQUIREMENTS. EACH TRADE...

C. BRANCH DUCT RUNOUTS TO AIR DEVICES ARE SAME SIZE AS AIR DEVICE NECK UNLESS NOTED OTHERWISE.

D. DIFFUSER, GRILLE, AND REGISTER LOCATIONS SHALL BE COORDINATED WITH LOCATIONS OF EXISTING LIGHTS, EXIT LIGHTS, ETC. DIFFUSER LOCATION MAY VARY TO AVOID EXISTING CEILING EQUIPMENT AND DEVICES.

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F. PROVIDE MANUAL BALANCING VOLUME DAMPER AT ALL BRANCH DUCTS AND AT ALL OTHER LOCATIONS REQUIRES FOR A COMPLETE AND BALANCEABLE AIR...

G. BALANCE ENTIRE AIR DISTRIBUTION SYSTEM INCLUDING NEW EXHAUST FANS TO DESIGN FLOW RATE S INDICATED ON THE DRAWINGS.

H. ALL SUPPLY AND RETURN AIR DUCTWORK SHALL BE EXTERNALLY INSULATED WITH FIBERGLASS DUCT INSULATION AS INDICATED IN THE SPECIFICATION.

I. PROVIDE SLEEVE THROUGH WALLS AND SEALANT IN THE ANNULAR SPACE FOR DUCTS PASSING THROUGH WALL, IN ACCORDANCE WITH THE SPECIFICATIONS.

J. WALL THERMOSTAT SHALL BE 4'-0" ABOVE FLOOR, UNLESS NOTED OTHERWISE.

K. FIRE DAMPER WITH ACCESS DOOR SHALL BE INSTALLED AS REQUIRED IN ALL DUCTS PENETRATING FIRE RATED WALLS. ACCESS DOORS SHALL BE LARGE ENOUGH TO PERFORM INSPECTION AND MAINTENANCE OF FUSIBLE LINKS.

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M. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SIZE, QUANTITY, AND LOCATION OF ALL OPENINGS NEEDED FOR DUCT AND PIPE PENETRATION THROUGH WALLS, FLOORS, AND ROOF.

N. CLEARNCES FOR DUCTWORK TO BUILDING MEMBERS, PLUMBING PIPING, RECESSED LIGHT FIXTURES, SPRINKLER PIPING, ETC. MAY BE VERY TIGHT. COORDINATE CAREFULLY BEFORE FABRICATING ANY PIPING OR DUCTWORK.

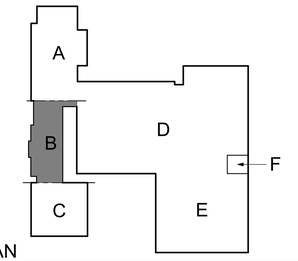
O. WHERE CUTTING IS REQUIRED, PATCH FLOORS, WALLS, CEILINGS, ETC. TO MATCH EXISTING CONDITIONS.

P. ALL NEW TOILET EXHAUST FANS SHALL BE INTERLOCKED RESPECTIVELY WITH NEW ROOFTOP UNITS.

KEYNOTES (#)

1 30x24 SUPPLY/RETURN AIR DUCT UP TO ROOFTOP UNIT RTU5.

2 14x14 EXHAUST AIR DUCT UP TO ROOF EXAHUST FAN EF3.



KEY PLAN
SCALE: NO SCALE

1 **ENLARGED VENTILATION FLOOR PLAN - AREA B**
SCALE: 1/8" = 1'-0"

0 4 8 16

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1	04/17/2025	ADD 01
2	04/28/2025	ADD 03

Bid Set
2025.04.03

PROJECT:
Robinson CUSD #2

Washington Elementary Renovation & Addition

507 W. Condit St. Robinson, IL 62454

DATE:	04/03/2025
DESIGNED:	TMG/GPF
DRAWN:	GPF
REVIEWED:	DRR

SHEET TITLE:
ENLARGED VENTILATION FLOOR PLAN - AREA B

SHEET NUMBER:
M1.1B

PROJECT NO.: 02401781.001

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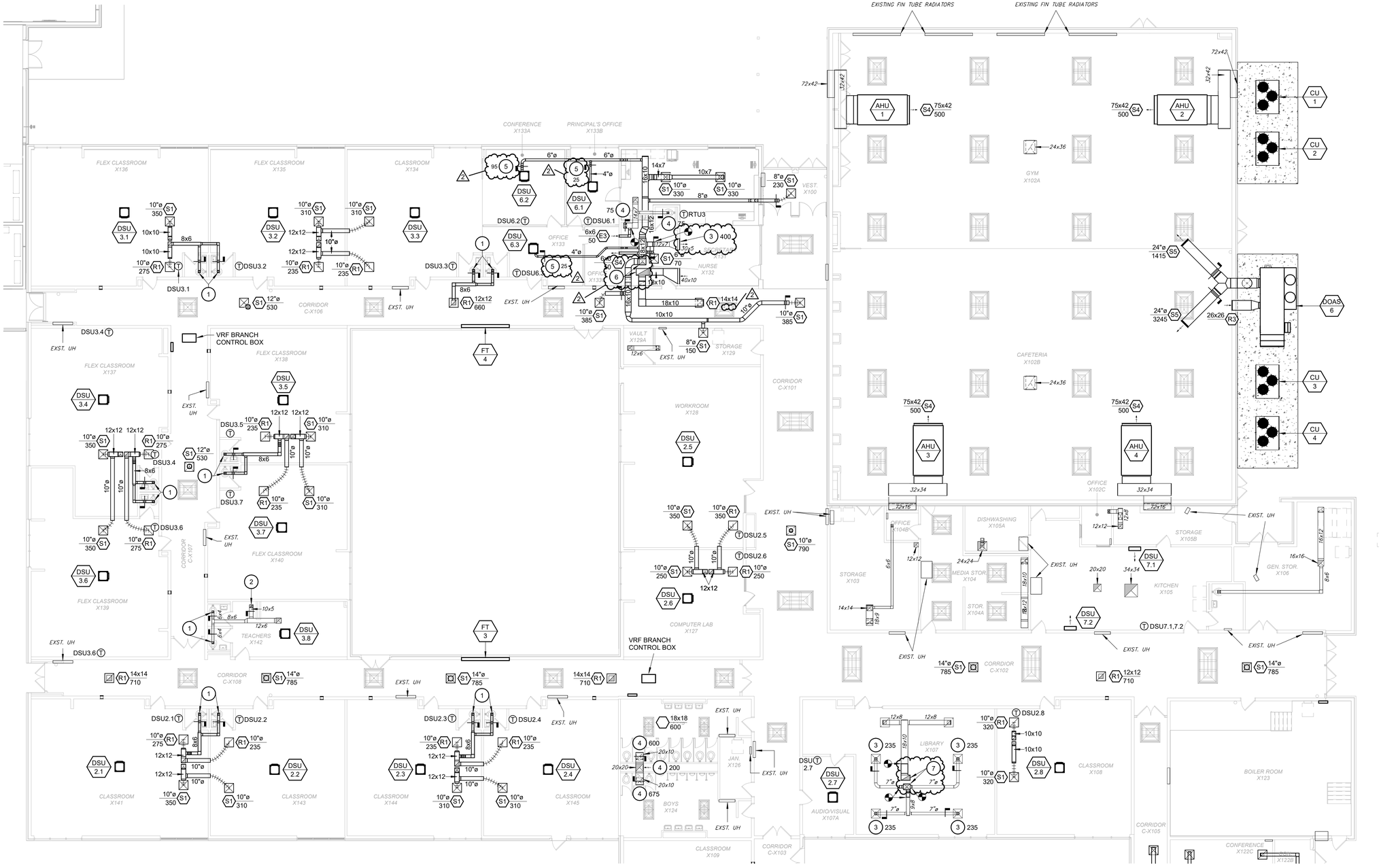

1 ENLARGED VENTILATION FLOOR PLAN - AREA D

SCALE: 3/32" = 1'-0"

0 4 8 16

TRUE NORTH

GENERAL NOTES

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C. BRANCH DUCT RUNOUTS TO AIR DEVICES ARE SAME SIZE AS AIR DEVICE NECK UNLESS NOTED OTHERWISE.

D. DIFFUSER, GRILLE, AND REGISTER LOCATIONS SHALL BE COORDINATED WITH LOCATIONS OF EXISTING LIGHTS, EXIT LIGHTS, ETC. DIFFUSER LOCATION MAY VARY TO AVOID EXISTING CEILING EQUIPMENT AND DEVICES.

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GENERAL NOTES

F. PROVIDE MANUAL BALANCING VOLUME DAMPER AT ALL BRANCH DUCTS AND AT ALL OTHER LOCATIONS REQUIRES FOR A COMPLETE AND BALANCEABLE AIR...

G. BALANCE ENTIRE AIR DISTRIBUTION SYSTEM INCLUDING NEW EXHAUST FANS TO DESIGN FLOW RATE S INDICATED ON THE DRAWINGS.

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I. PROVIDE SLEEVE THROUGH WALLS AND SEALANT IN THE ANNULAR SPACE FOR DUCTS PASSING THROUGH WALL, IN ACCORDANCE WITH THE SPECIFICATIONS.

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P. ALL NEW TOILET EXHAUST FANS SHALL BE INTERLOCKED RESPECTIVELY WITH NEW ROOFTOP UNITS.

KEYNOTES (#)

1 RECONNECT NEW DUCTWORK TO EXISTING EXHAUST DIFFUSERS. INSTALL VOLUME DAMPERS IF NONE ARE PRESENT. BALANCE TO 75 CFM EACH.

2 RECONNECT NEW DUCTWORK TO EXISTING EXHAUST DIFFUSER. INSTALL VOLUME DAMPER IF NONE IS PRESENT. BALANCE TO 180 CFM EACH.

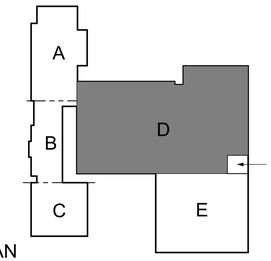
3 REBALANCE EXISTING SUPPLY AIR DIFFUSER TO CFM SHOWN. INSTALL NEW VOLUME DAMPER IF NONE IS PRESENT.

4 REBALANCE EXISTING EXHAUST AIR GRILLE TO CFM SHOWN. INSTALL NEW VOLUME DAMPER IF NONE IS PRESENT.

2 5 BALANCE SUPPLY AIR DUCT CONNECTED TO CEILING CASSETTE UNIT TO CFM SHOWN.

6 18x18 SUPPLY AIR AND 32x18 RETURN AIR DUCTS UP TO ROOFTOP UNIT RTU3.

7 18x15 INCH SUPPLY AIR AND 24x14 INCH RETURN AIR DUCTS UP TO ROOFTOP UNIT RTU2.



KEY PLAN

SCALE: NO SCALE

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Washington Elementary Renovation & Addition

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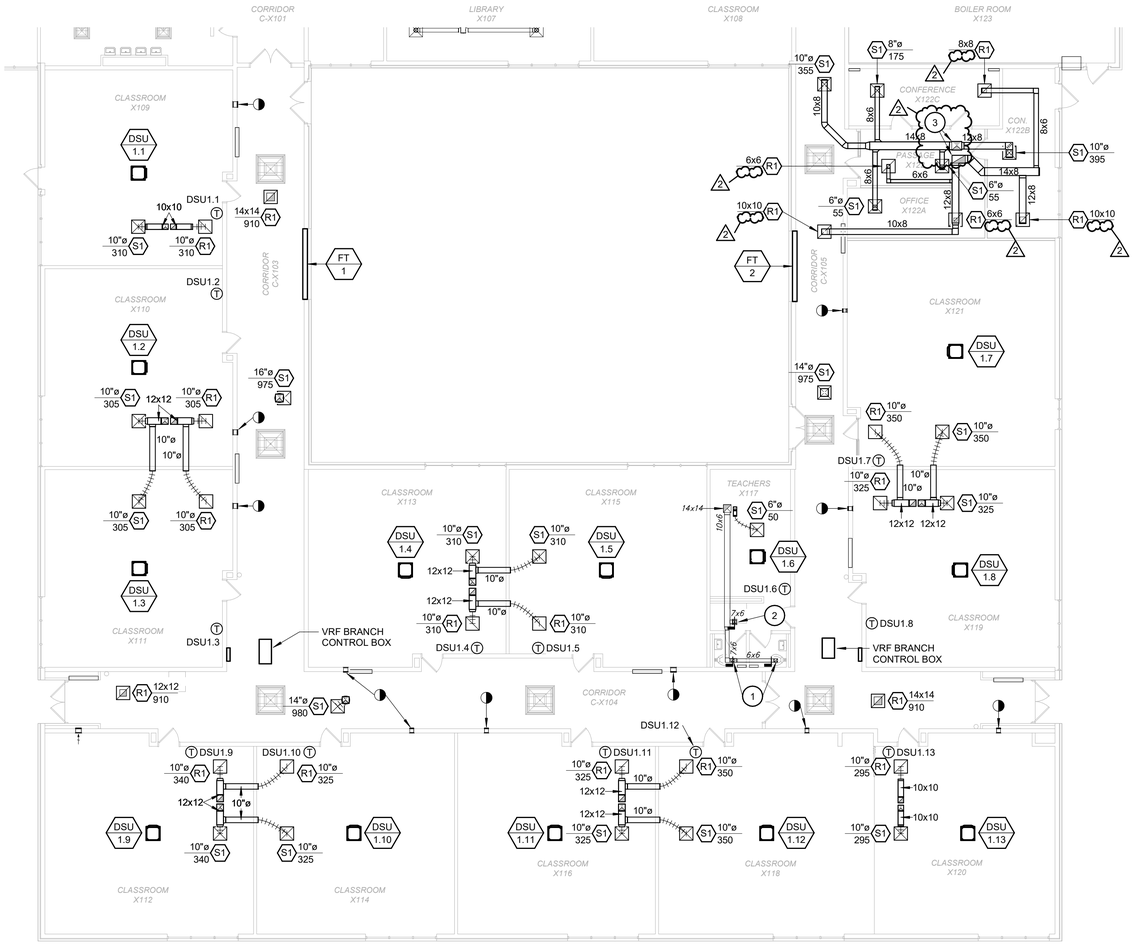
DRAWN:	GPF
REVIEWED:	DRR

SHEET TITLE:
ENLARGED VENTILATION FLOOR PLAN - AREA D

SHEET NUMBER:
M1.1D

PROJECT NO.: 02401781.001

4/28/2025 1:56:37 PM



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I. PROVIDE SLEEVE THROUGH WALLS AND SEALANT IN THE ANNULAR SPACE FOR DUCTS PASSING THROUGH WALL, IN ACCORDANCE WITH THE SPECIFICATIONS.

J. WALL THERMOSTAT SHALL BE 4'-0" ABOVE FLOOR, UNLESS NOTED OTHERWISE.

K. FIRE DAMPER WITH ACCESS DOOR SHALL BE INSTALLED AS REQUIRED IN ALL DUCTS PENETRATING FIRE RATED WALLS. ACCESS DOORS SHALL BE LARGE ENOUGH TO PERFORM INSPECTION AND MAINTENANCE OF FUSIBLE LINKS.

L. PRIOR TO ORDERING ANY EQUIPMENT OR FABRICATION OF DUCTWORK, THE CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AT THE SITE AND MAKE...

M. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SIZE, QUANTITY, AND LOCATION OF ALL OPENINGS NEEDED FOR DUCT AND PIPE PENETRATION THROUGH WALLS, FLOORS, AND ROOF.

N. CLEARNCES FOR DUCTWORK TO BUILDING MEMBERS, PLUMBING PIPING, RECESSED LIGHT FIXTURES, SPRINKLER PIPING, ETC. MAY BE VERY TIGHT. COORDINATE CAREFULLY BEFORE FABRICATING ANY PIPING OR DUCTWORK.

O. WHERE CUTTING IS REQUIRED, PATCH FLOORS, WALLS, CEILINGS, ETC. TO MATCH EXISTING CONDITIONS.

P. ALL NEW TOILET EXHAUST FANS SHALL BE INTERLOCKED RESPECTIVELY WITH NEW ROOFTOP UNITS.

KEYNOTES (#)

1 RECONNECT NEW DUCTWORK TO EXISTING EXHAUST DIFFUSERS. INSTALL VOLUME DAMPERS IF NONE ARE PRESENT. BALANCE TO 75 CFM EACH.

2 RECONNECT NEW DUCTWORK TO EXISTING EXHAUST DIFFUSERS. INSTALL VOLUME DAMPERS IF NONE ARE PRESENT. BALANCE TO 75 CFM EACH.

2 3 18X15 INCH SUPPLY AIR AND 24X14 INCH RETURN AIR DUCTS UP TO ROOFTOP UNIT RTU1.

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ISSUE:

#	DATE:	DESCRIPTION:
1	04/17/2025	ADD 01
2	04/28/2025	ADD 03

Bid Set
2025.04.03

PROJECT:
Robinson CUSD #2

Washington Elementary Renovation & Addition

507 W. Condit St. Robinson, IL 62454

DATE:	04/03/2025
DESIGNED:	TMG/GPF
DRAWN:	GPF
REVIEWED:	DRR

SHEET TITLE:
ENLARGED VENTILATION FLOOR PLAN - AREA E

SHEET NUMBER:
M1.1E

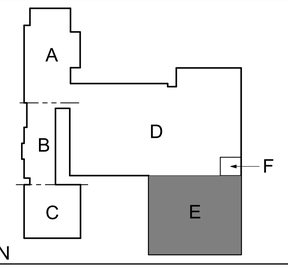
PROJECT NO.: 02401781.001

1 **ENLARGED VENTILATION FLOOR PLAN - AREA E**
SCALE: 3/32" = 1'-0"

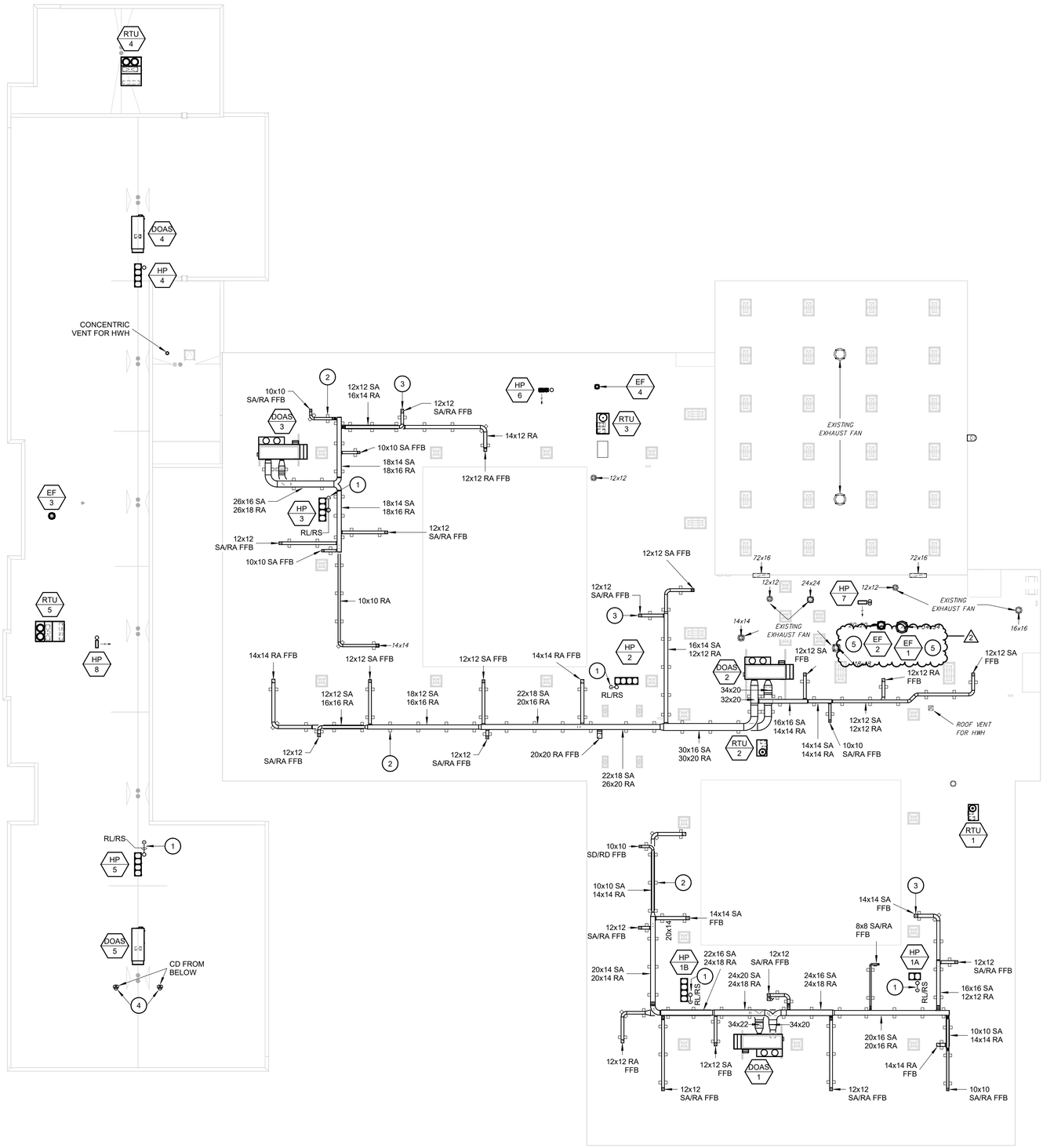
0 4 8 16

TRUE NORTH

KEY PLAN
SCALE: NO SCALE



4/29/2025 1:56:39 PM



GENERAL NOTES

A. ALL ROOFING WORK INCLUDING BUT NOT LIMITED TO CUTTING, PATCHING, FLASHING, AND OTHER SIMILAR WORK SHALL BE COMPLETED BY ORIGINAL INSTALLER OR ANOTHER RECOGNIZED EXPERIENCED AND SPECIALIZED FIRM AS REQUIRED TO MAINTAIN OWNERS EXISTING ROOF WARRANTY.

B. SOME DUCTWORK IS SHOWN IN SCHEMATIC FORM. NOT ALL DUCT RISERS AND DROPS ARE SHOWN. CONTRACTOR SHALL PROVIDE OFFSETS AS REQUIRED TO MEET SPACE REQUIREMENTS AND TO AVOID INTERFERENCE WITH OTHER TRADES, EXISTING STRUCTURE, AND OTHER EXISTING CONDITIONS. EXACT LOCATION OF DUCTWORK MAY VARY ACCORDING TO THE COORDINATED SPACE REQUIREMENTS. EACH TRADE SHALL BE TOTALLY RESPONSIBLE FOR COORDINATION WITH OTHER TRADES.

C. PRIOR TO ORDERING ANY EQUIPMENT OR FABRICATION OF DUCTWORK, THE CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AT THE SITE AND MAKE...

D. CLEARNCES FOR DUCTWORK TO BUILDING MEMBERS, PLUMBING PIPING, RECESSED LIGHT FIXTURES, SPRINKLER PIPING, ETC. MAY BE VERY TIGHT. COORDINATE CAREFULLY BEFORE FABRICATING ANY PIPING OR DUCTWORK.

E. ALL EXISTING EQUIPMENT, ETC. SHOWN ARE TO REMAIN, UNLESS SHOWN OR NOTED OTHERWISE.

F. VERIFY EXACT SIZE AND LOCATION OF EQUIPMENT, ETC. PRIOR TO CONSTRUCTION.

G. CONNECTIONS TO AND SHUTDOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE OWNER TO ALLOW MINIMUM INTERFERENCE WITH OWNERS OPERATION AND DOWNTIME OF EXISTING SERVICE. CONTRACTOR SHALL SUBMIT THE PROPSED PHASING PLAN OF WORK TO OWNER FOR REVIEW AND APPROVAL.

H. CONTRACTOR SHALL COMPLY WITH GENERAL CONDITIONS AND PROTECTION PROVISIONS SPECIFIED FOR JOINT OWNER/CONTRACTOR OCCUPANCY WORK AREAS.

I. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS BEFORE BEGINNING WORK. CONTRACTOR SHALL PROTECT EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION. ANY EXISTING UTILITIES AND SERVICES DAMAGED SHALL BE REPAIRED AT NO EXPENSE TO THE OWNER. CONTRACTORS SHALL TEMPORARILY MOVE OR TAKE EQUIPMENT OUT OF SERVICE AS NECESSARY TO COMPLETE WORK. SUCH EQUIPMENT SHALL BE RESTORED TO SERVICE MATCHING EXISTING...

KEYNOTES (#)

1 PROVIDE REFRIGERANT PIPE ROOF SUPPORT. REFER TO PROJECT MANUAL FOR SPECIFICATION.

2 PROVIDE ROOF DUCT SUPPORTS. REFER TO DETAILS ON SHEET M5.2 FOR MORE INFORMATION. MAXIMUM SPACING AS SPECIFIED IN PROJECT MANUAL. TYPICAL FOR ALL.

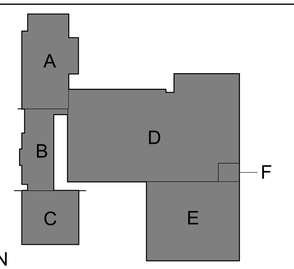
3 SUPPLY AND/OR RETURN/EXHAUST DUCT DROPS DOWN THROUGH ROOF. SEE FIRST FLOOR PLAN FOR CONTINUATION. DUCT DROP SIZES AS NOTED.

4 INSTALL PIPE PORTAL STYLE ROOF CURB FOR CONDENSATE DRAIN PENETRATIONS THROUGH ROOF. REFER TO DEATIL #1 ON SHEET M5.2 FOR MORE INFORMATION. ABOVE ROOF ROUTE CONDENSATE DRAIN PIPING TO DRAIN INDIRECTLY TO CLOSEST ROOF DRAIN.

5 EXHAUST FAN SHALL BE INTEGRATED AND INTERLOCKED WITH EXISTING KITCHEN HOOD CONTROLS.

1 **OVERALL ROOF MECHANICAL PLAN**
SCALE: 1" = 20'-0"

0 10 20 40



KEY PLAN
SCALE: NO SCALE

TRUE NORTH

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PROJECT:
Robinson CUSD #2

Washington Elementary Renovation & Addition

507 W. Condit St. Robinson, IL 62454

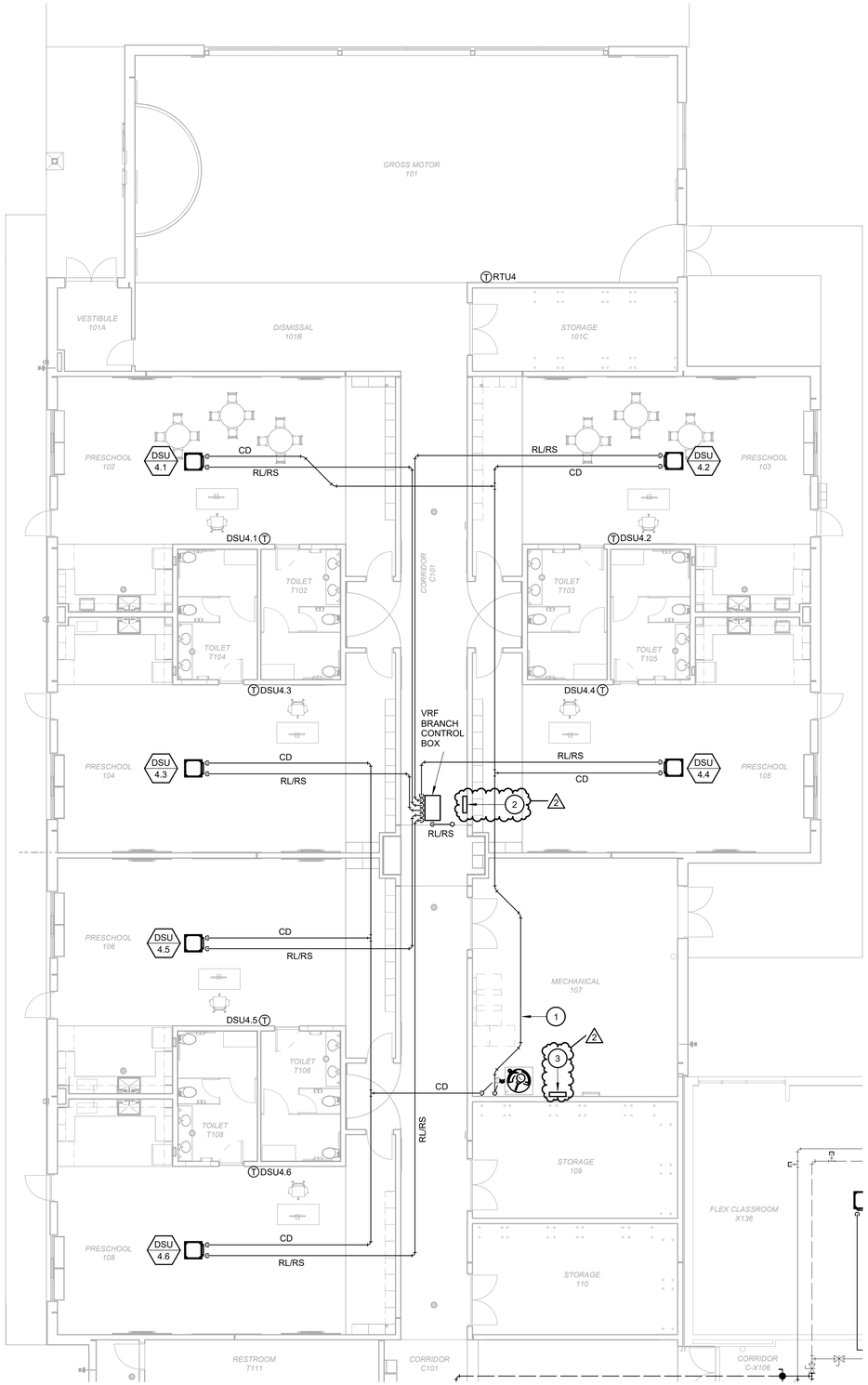
DATE:	04/03/2025
DESIGNED:	TMG/GPF
DRAWN:	GPF
REVIEWED:	DRR

SHEET TITLE:
OVERALL ROOF MECHANICAL PLAN

SHEET NUMBER:
M1.4

PROJECT NO.: 02401781.001

4/28/2025 1:06:42 PM



GENERAL NOTES

A. ALL EXISTING WATER PIPING, VALVING, EQUIPMENT, ETC. SHOWN ARE TO REMAIN, UNLESS SHOWN OR NOTED OTHERWISE.

B. ALL PIPING IS SHOWN ON THE DRAWING IN SCHEMATIC FORM FOR CLARITY. ACTUAL ROUTING MAY VARY.

C. IF IT IS NECESSARY TO REMOVE EXISTING INSULATION FROM HEATING HOT WATER LINES SERVING HEATING/COOLING EQUIPMENT FOR NEW WORK, RE-INSULATE HEATING HOT WATER LINES USING 1" THICK ELASTOMERIC INSULATION WITH VAPOR...

D. THE CONTRACTOR SHALL REMOVE EXISTING ACOUSTIC CEILING TILES AND GRID AS REQUIRED TO ALLOW INSTALLATION OF NEW PIPING AND DUCTWORK. ALL REMOVED TILES SHALLBE STORED ON SITE AND PROTECTED FROM DAMAGE DURING CONSTRUCTION. ACOUSTICAL CEILING SHALL BE REINSTALLED AFTER COMPLETION OF MECHANICAL WORK. REPLACE ANY CEILING TILES AND GRID DAMAGED DURING...

E. VERIFY EXACT SIZE AND LOCATION OF HWS/HWR PIPING, VALVES, EQUIPMENT, ETC. PRIOR TO CONSTRUCTION.

F. CONNECTIONS TO AND SHUTDOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE OWNER TO ALLOW MINIMUM INTERFERENCE WITH OWNERS OPERATION AND DOWNTIME OF EXISTING SERVICE. CONTRACTOR SHALL SUBMIT THE PROPSED PHASING PLAN OF WORK TO OWNER FOR REVIEW AND APPROVAL.

G. CONTRACTOR SHALL COMPLY WITH GENERAL CONDITIONS AND PROTECTION PROVISIONS SPECIFIED FOR JOINT OWNER/CONTRACTOR OCCUPANCY WORK AREAS.

H. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS BEFORE BEGINNING WORK. CONTRACTOR SHALL PROTECT EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION. ANY EXISTING UTILITIES AND SERVICES DAMAGED SHALL BE REPAIRED AT NO EXPENSE TO THE OWNER. CONTRACTORS SHALL TEMPORARILY MOVE OR TAKE EQUIPMENT OUT OF SERVICE AS NECESSARY TO COMPLETE WORK. SUCH EQUIPMENT SHALL BE RESTORED TO SERVICE MATCHING EXISTING...

I. WIRING DIAGRAMS AND REFIRGERANT PIPE SIZES AND LENGTHS TO BE PROVIDED BY SELECTED VRF SYSTEM MANUFACTURER.

KEYNOTES (#)

1 ROUTE CONDENSATE DRAIN TO AVOID ELECTRICAL PANELS.

2 VRF SYSTEM LOCAL CONTROL PANEL SHALL BE INSTALLED IN CORRIDOR NEAR VRF BRANCH CONTROL BOX. PROVIDE ALL NECESSARY LOW VOLTAGE WIRING TO VRF DUCTLESS UNITS, BRANCH CONTROL BOX, HEAT PUMPS AND MAIN BAS/VRF CONTROL PANEL.

3 MASTER VRF SYSTEM CONTROL PANEL SHALL BE INSTALLED IN MECHANICAL 107. PROVIDE ALL NECESSARY LOW VOLTAGE WIRING TO AUXILIARY VRF CONTROL BOXES.

1 ENLARGED MECHANICAL PIPING FLOOR PLAN - AREA A

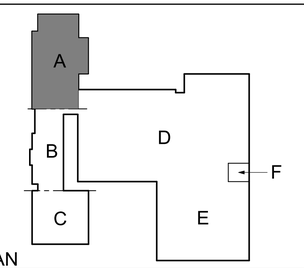
SCALE: 1/8" = 1'-0"

0 4 8 16

TRUE NORTH

KEY PLAN

SCALE: NO SCALE



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1	04/17/2025	ADD 01
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Bid Set
2025.04.03

PROJECT:
Robinson CUSD #2

Washington Elementary Renovation & Addition

507 W. Condit St. Robinson, IL 62454

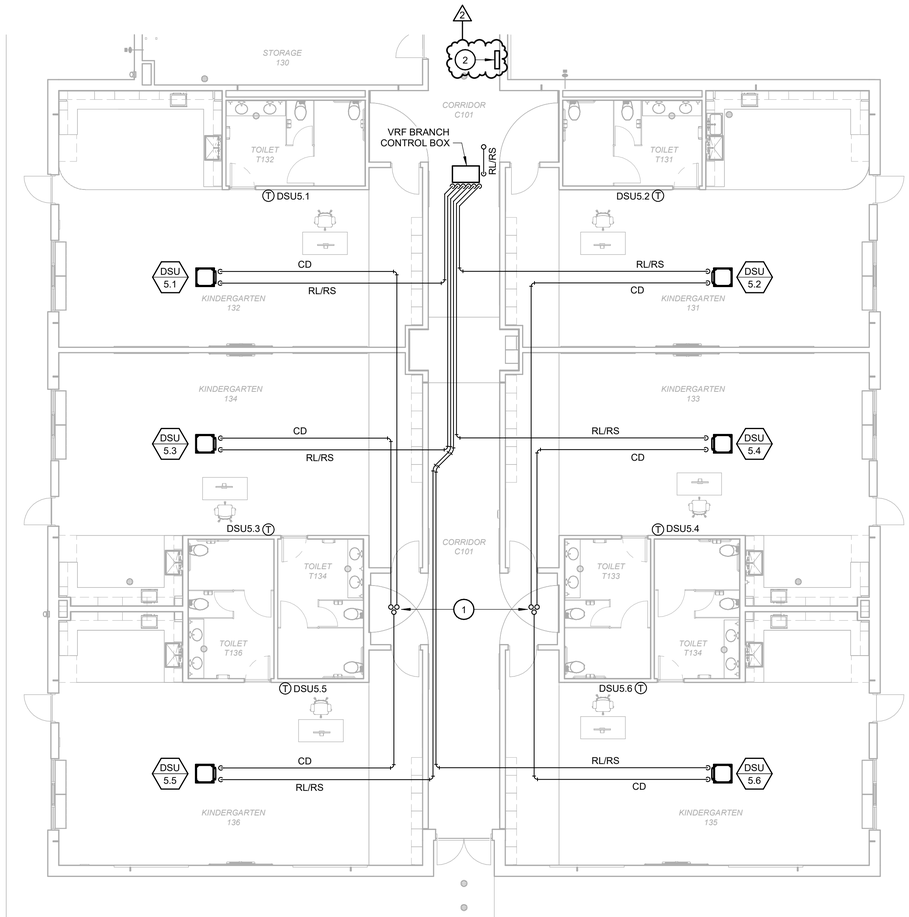
DATE:	04/03/2025
DESIGNED:	TMG/GPF
DRAWN:	GPF
REVIEWED:	DRR

SHEET TITLE:
ENLARGED MECHANICAL PIPING FLOOR PLAN - AREA A

SHEET NUMBER:
M2.1A

PROJECT NO.: 02401781.001

4/28/2025 1:09:44 PM



GENERAL NOTES

A. ALL EXISTING WATER PIPING, VALVING, EQUIPMENT, ETC. SHOWN ARE TO REMAIN, UNLESS SHOWN OR NOTED OTHERWISE.

B. ALL PIPING IS SHOWN ON THE DRAWING IN SCHEMATIC FORM FOR CLARITY. ACTUAL ROUTING MAY VARY.

C. IF IT IS NECESSARY TO REMOVE EXISTING INSULATION FROM HEATING HOT WATER LINES SERVING HEATING/COOLING EQUIPMENT FOR NEW WORK, RE-INSULATE HEATING HOT WATER LINES USING 1" THICK ELASTOMERIC INSULATION WITH VAPOR...

D. THE CONTRACTOR SHALL REMOVE EXISTING ACOUSTIC CEILING TILES AND GRID AS REQUIRED TO ALLOW INSTALLATION OF NEW PIPING AND DUCTWORK. ALL REMOVED TILES SHALLBE STORED ON SITE AND PROTECTED FROM DAMAGE DURING CONSTRUCTION. ACOUSTICAL CEILING SHALL BE REINSTALLED AFTER COMPLETION OF MECHANICAL WORK. REPLACE ANY CEILING TILES AND GRID DAMAGED DURING...

E. VERIFY EXACT SIZE AND LOCATION OF HWS/HWR PIPING, VALVES, EQUIPMENT, ETC. PRIOR TO CONSTRUCTION.

F. CONNECTIONS TO AND SHUTDOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE OWNER TO ALLOW MINIMUM INTERFERENCE WITH OWNERS OPERATION AND DOWNTIME OF EXISTING SERVICE. CONTRACTOR SHALL SUBMIT THE PROPSED PHASING PLAN OF WORK TO OWNER FOR REVIEW AND APPROVAL.

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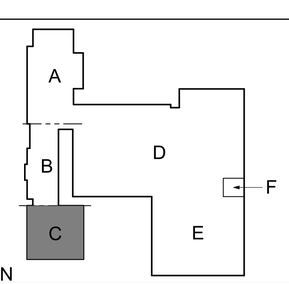
I. WIRING DIAGRAMS AND REFIRGERANT PIPE SIZES AND LENGTHS TO BE PROVIDED BY SELECTED VRF SYSTEM MANUFACTURER.

KEYNOTES (#)

1 CONDENSATE DRAIN PIPING ROUTED UP THROUGH ROOF. SEE SHEET M1.4 FOR CONTINUATION.

2 VRF SYSTEM LOCAL CONTROL PANEL SHALL BE INSTALLED IN CORRIDOR NEAR VRF BRANCH CONTROL BOX. PROVIDE ALL NECESSARY LOW VOLTAGE WIRING TO VRF DUCTLESS UNITS, BRANCH CONTROL BOX, HEAT PUMPS AND MAIN BAS/VRF CONTROL PANEL.



KEY PLAN
SCALE: NO SCALE

TRUE NORTH

1 **ENLARGED MECHANICAL PIPING FLOOR PLAN - AREA C**
SCALE: 1/8" = 1'-0"

0 4 8 16

TRUE NORTH

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PROJECT:
Robinson CUSD #2

Washington Elementary Renovation & Addition

507 W. Condit St. Robinson, IL 62454

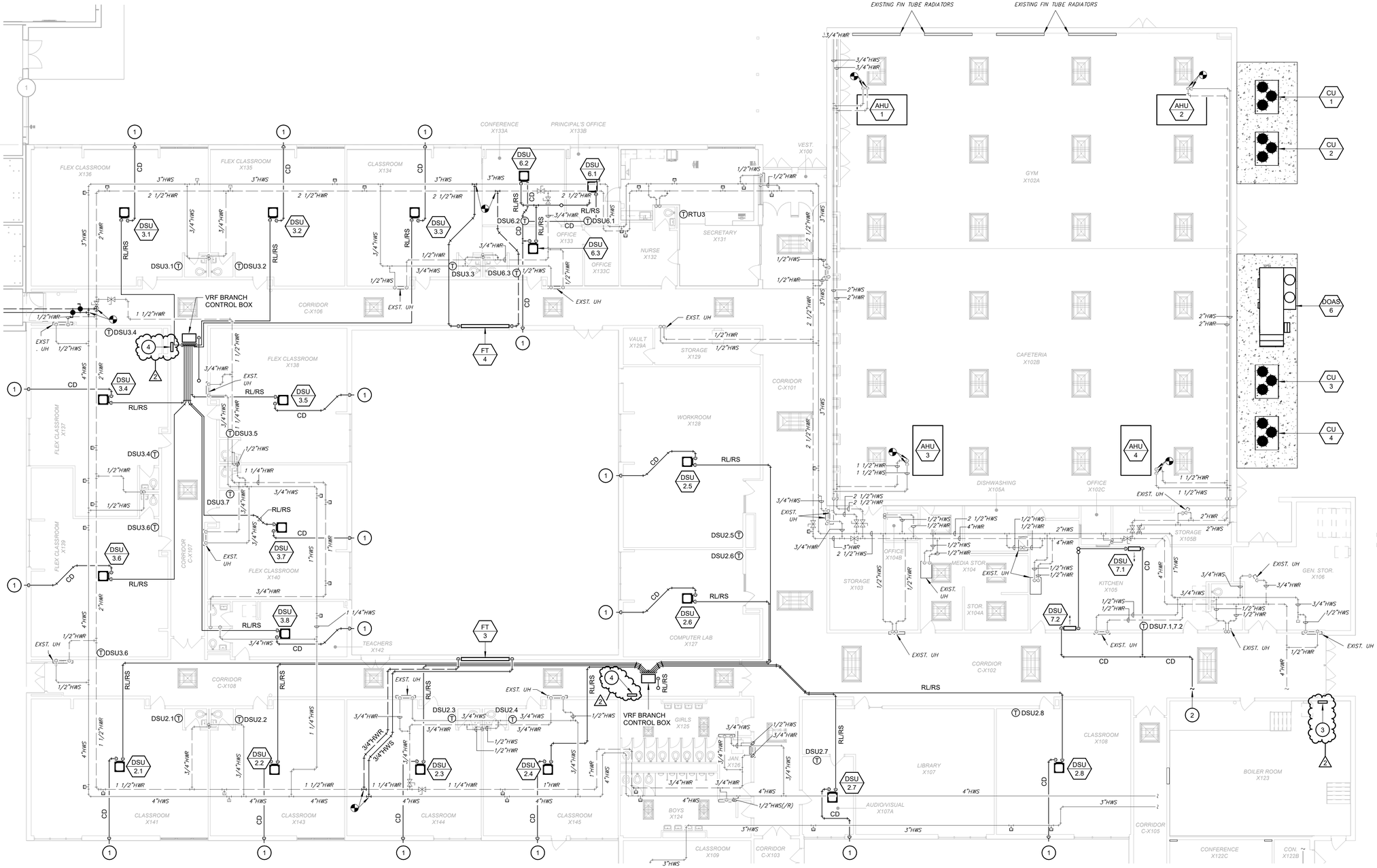
DATE:	04/03/2025
DESIGNED:	TMG/GPF
DRAWN:	GPF
REVIEWED:	DRR

SHEET TITLE:
ENLARGED MECHANICAL PIPING FLOOR PLAN - AREA C

SHEET NUMBER:
M2.1C

PROJECT NO.: 02401781.001

4/28/2025 1:08:48 PM



1 ENLARGED MECHANICAL PIPING FLOOR PLAN - AREA D

SCALE: 3/32" = 1'-0"

0 4 8 16 TRUE NORTH

GENERAL NOTES

A. ALL EXISTING WATER PIPING, VALVING, EQUIPMENT, ETC. SHOWN ARE TO REMAIN, UNLESS SHOWN OR NOTED OTHERWISE.

B. ALL PIPING IS SHOWN ON THE DRAWING IN SCHEMATIC FORM FOR CLARITY. ACTUAL ROUTING MAY VARY.

C. IF IT IS NECESSARY TO REMOVE EXISTING INSULATION FROM HEATING HOT WATER LINES SERVING HEATING/COOLING EQUIPMENT FOR NEW WORK, RE-INSULATE HEATING HOT WATER LINES USING 1" THICK ELASTOMERIC INSULATION WITH VAPOR BARRIER.

D. THE CONTRACTOR SHALL REMOVE EXISTING ACOUSTIC CEILING TILES AND GRID AS REQUIRED TO ALLOW INSTALLATION OF NEW PIPING AND DUCTWORK. ALL REMOVED TILES SHALLBE STORED ON SITE AND PROTECTED FROM DAMAGE DURING CONSTRUCTION. ACOUSTICAL CEILING SHALL BE REINSTALLED AFTER COMPLETION OF MECHANICAL WORK. REPLACE ANY CEILING TILES AND GRID DAMAGED DURING REMOVAL OR RE-INSTALLATION. REPLACEMENT TILES AND GRID TO MATCH EXISTING.

E. VERIFY EXACT SIZE AND LOCATION OF HWS/HWR PIPING, VALVES, EQUIPMENT, ETC. PRIOR TO CONSTRUCTION.

GENERAL NOTES

F. CONNECTIONS TO AND SHUTDOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE OWNER TO ALLOW MINIMUM INTERFERENCE WITH OWNERS OPERATION AND DOWNTIME OF EXISTING SERVICE. CONTRACTOR SHALL SUBMIT THE PROPSED PHASING PLAN OF WORK TO OWNER FOR REVIEW AND APPROVAL.

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I. WIRING DIAGRAMS AND REFRIGERANT PIPE SIZES AND LENGTHS TO BE PROVIDED BY SELECTED VRF SYSTEM MANUFACTURER.

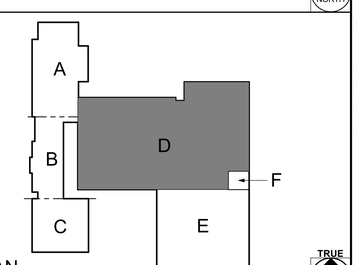
KEYNOTES (#)

1 ROUTE CONDENSATE DRAIN DOWN THROUGH EXTERIOR WALL AND DRAIN WITHIN 2 FT OF GRADE LEVEL.

2 ROUTE CONDENSATE DRAIN PIPING FROM DSU7.1 AND 7.2 TO NEAREST CONVENIENT FLOOR DRAIN WITHIN BOILER ROOM X123.

3 HOT WATER PLANT CONTROLLER SHALL BE INSTALLED IN BOILER ROOM X123 IN MOST CONVENIENT LOCATION. PROVIDE ALL NECESSARY LOW VOLTAGE WIRING TO HOT WATER BOILER AND PUMPS.

4 VRF SYSTEM LOCAL CONTROL PANEL SHALL BE INSTALLED IN CORRIDOR NEAR VRF BRANCH CONTROL BOX. PROVIDE ALL NECESSARY LOW VOLTAGE WIRING TO VRF DUCTLESS UNITS, BRANCH CONTROL BOX, HEAT PUMPS AND MAIN BAS/VRF CONTROL PANEL.



KEY PLAN

SCALE: NO SCALE

TRUE NORTH

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PROJECT:

Robinson CUSD #2

Washington Elementary Renovation & Addition

507 W. Condit St. Robinson, IL 62454

DATE:	04/03/2025
DESIGNED:	TMG/GPF
DRAWN:	GPF
REVIEWED:	DRR

SHEET TITLE:

ENLARGED MECHANICAL PIPING FLOOR PLAN - AREA D

SHEET NUMBER:

M2.1D

PROJECT NO.: 02401781.001

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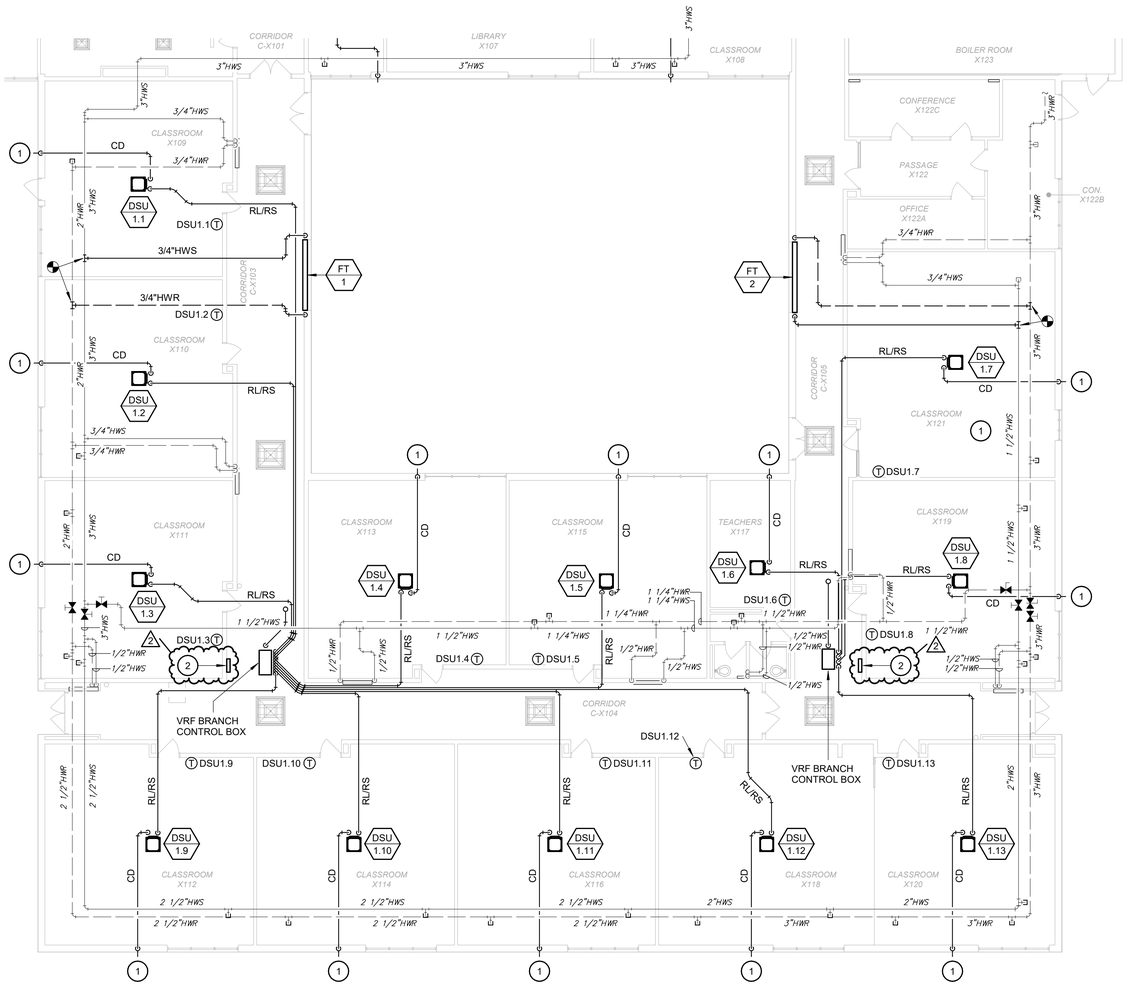

GENERAL NOTES

A. ALL EXISTING WATER PIPING, VALVING, EQUIPMENT, ETC. SHOWN ARE TO REMAIN, UNLESS SHOWN OR NOTED OTHERWISE.

B. ALL PIPING IS SHOWN ON THE DRAWING IN SCHEMATIC FORM FOR CLARITY. ACTUAL ROUTING MAY VARY.

C. IF IT IS NECESSARY TO REMOVE EXISTING INSULATION FROM HEATING HOT WATER LINES SERVING HEATING/COOLING EQUIPMENT FOR NEW WORK, RE-INSULATE HEATING HOT WATER LINES USING 1" THICK ELASTOMERIC INSULATION WITH VAPOR BARRIER.

D. THE CONTRACTOR SHALL REMOVE EXISTING ACOUSTIC CEILING TILES AND GRID AS REQUIRED TO ALLOW INSTALLATION OF NEW PIPING AND DUCTWORK. ALL REMOVED TILES SHALLBE STORED ON SITE AND PROTECTED FROM DAMAGE DURING CONSTRUCTION. ACOUSTICAL CEILING SHALL BE REINSTALLED AFTER COMPLETION OF MECHANICAL WORK. REPLACE ANY CEILING TILES AND GRID DAMAGED DURING REMOVAL OR RE-INSTALLATION. REPLACEMENT TILES AND GRID TO MATCH EXISTING.

E. VERIFY EXACT SIZE AND LOCATION OF HWS/HWR PIPING, VALVES, EQUIPMENT, ETC. PRIOR TO CONSTRUCTION.

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I. WIRING DIAGRAMS AND REFIRGERANT PIPE SIZES AND LENGTHS TO BE PROVIDED BY SELECTED VRF SYSTEM MANUFACTURER.

KEYNOTES (#)

1 ROUTE CONDENSATE DRAIN DOWN THROUGH EXTERIOR WALL AND DRAIN WITHIN 2 FT OF GRADE LEVEL.

2 VRF SYSTEM LOCAL CONTROL PANEL SHALL BE INSTALLED IN CORRIDOR NEAR VRF BRANCH CONTROL BOX. PROVIDE ALL NECESSARY LOW VOLTAGE WIRING TO VRF DUCTLESS UNITS, BRANCH CONTROL BOX, HEAT PUMPS AND MAIN BAS/VRF CONTROL PANEL.

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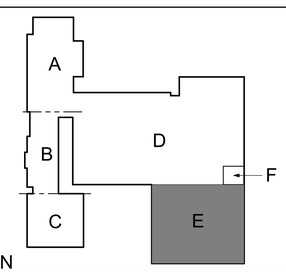
SHEET TITLE:
ENLARGED MECHANICAL PIPING FLOOR PLAN - AREA E

SHEET NUMBER:
M2.1E

PROJECT NO.: 02401781.001



KEY PLAN
SCALE: NO SCALE

1 **ENLARGED MECHANICAL PIPING FLOOR PLAN - AREA E**
SCALE: 3/32" = 1'-0"

0 4 8 16

TRUE NORTH

4/28/2025 1:56:54 PM

DEDICATED OUTDOOR AIR SYSTEM SCHEDULE

MARK	MANUF.	MODEL	LOCATION	SERVICE	SUPPLY / OUTDOOR AIR FAN					RETURN / EXHAUST AIR FAN					HEAT RECOVERY SUMMER				HEAT RECOVERY WINTER				HEATING		COOLING					FILTER					ELECTRICAL DATA			PHYSICAL DATA				REMARKS
					CFM	ESP (IN. W.C.)	BHP	HP	FLA	CFM	ESP (IN. W.C.)	BHP	HP	FLA	OA EAT DB/WB (°F)	SA LAT DB/WB (°F)	RA EAT DB/WB (°F)	EA LAT DB/WB (°F)	OA EAT DB/WB (°F)	SA LAT DB/WB (°F)	RA EAT DB/WB (°F)	EA LAT DB/WB (°F)	TOTAL CAP. (MBH)	EDB (°F)	LDB (°F)	TOTAL CAP. (MBH)	SENS. CAP. (MBH)	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	TYPE	EVAP MERV	RA MERV	OA MERV	THICK. (IN.)	MAX. FACE VEL. (FPM)	V/PH	MCA	MOCP	L (IN.)	W (IN.)	H (IN.)	WT (LB.)	
DOAS1	TRANE	OADG030F1-DAB1GBK00	ROOF	SOUTHEAST EXISTING CLASSROOMS/ CORRIDORS	6805	1.00	6.39	10	26.4	7072	1.0	4.21	5	14.0	95/78	82.4/69.5	75/63	87.2/72.5	-10/-11	37.5/30.7	70/51	20.4/18.6	400	37.5	81.4	373.6	222.1	82.4	69.5	51.9	51.2	DISP	13	8	8	2	250	208/3	170.3	200	183	95	68	4578	1,2,3
DOAS2	TRANE	OADG025F1-DAB1GBJ00	ROOF	CENTRAL EXISTING CLASSROOMS/ CORRIDORS	5440	1.00	3.50	5	14.0	5700	1.0	2.79	5	14.0	95/78	81.3/68.6	75/63	88.3/73.3	-10/-11	42/33.9	70/51	16.1/15	350	42	90	295.5	175.6	81.3	68.6	51.2	50.1	DISP	13	8	8	2	250	208/3	135.4	175	183	95	68	4512	1,2,3
DOAS3	TRANE	OADG015F1-DAB1GAF00	ROOF	NORTHWEST EXISTING CLASSROOMS/ CORRIDORS	3220	1.00	1.8	2	5.8	3420	1.0	1.66	2	5.8	95/78	81.5/68.8	75/63	88.1/73.2	-10/-11	41.2/33.4	70/51	16.9/15.7	200	41.2	87.0	181.8	110.2	81.5	68.8	49.6	49.5	DISP	13	8	8	2	250	208/3	84.3	110	183	95	68	4060	1,2,3
DOAS4	TRANE	OABD108D3-D1B4G1KM	ROOF	NORTH ADDITION CLASSROOMS/ CORRIDORS	2324	1.00	1.75	3	8.0	2506	1.0	1.64	3	8.0	95/78	80.1/67.7	75/63	89.6/74.2	-10/-11	51.2/45.4	70/58	21.8/21.3	150	51.2	98.8	109.9	71	80.1	67.7	51.7	51.7	DISP	13	8	8	2	250	208/3	61.1	90	161	52	55	2146	1,2,3
DOAS5	TRANE	OABD108D3-D1B4G1KM	ROOF	SOUTH ADDITION CLASSROOMS/ CORRIDORS	2675	1.00	2.41	5	12.4	2854	1.0	1.64	3	8.0	95/78	81.4/68.7	75/63	90.3/74.6	-10/-11	46.7/42	70/58	19.2/19.1	150	46.7	88.0	114.8	75.7	81.4	68.7	55	54.7	DISP	13	8	8	2	250	208/3	65.5	90	161	52	55	2146	1,2,3
DOAS6	TRANE	OADG025F1-DAB1GBH00	GRADE	GYM/CAFETERIA	4660	1.00	3.14	5	14.0	4870	1.0	2.62	5	14.0	95/78	83.5/70.3	75/63	86.1/71.7	-10/-11	33.2/27.7	70/51	24.7/22.1	300	33.2	81.3	292.3	165.9	83.5	70.3	50.2	40.9	DISP	13	8	8	2	250	208/3	135.4	175	183	95	68	4477	1,2,3

NOTES: 1. PROVIDE UNITS WITH HORIZONTAL DISCHARGE AND RETURN, MODULATING HOT GAS REHEAT, DIRECT DRIVE SUPPLY FAN(S), DISCHARGE AIR CONTROL, BACNET INTERFACE, VARIABLE SPEED ENERGY RECOVERY WHEEL WITH ROTATION SENSOR, HAIL GUARDS, HINGED ACCESS DOORS, AND CABINET SERVICE LIGHTS
2. LEAD COMPRESSOR SHALL BE VARIABLE CAPACITY
3. PROVIDE FACTORY DISCONNECT

ROOFTOP UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	LOCATION	SERVICE	SUPPLY FAN						HEATING SECTION						COOLING COIL							COMPRESSOR			CONDENSER FAN			EER	REFRIG. TYPE	FILTER				ELECTRICAL DATA			PHYSICAL DATA				REMARKS
					CFM	MIN. OA CFM	ESP (IN. W.C.)	BHP	HP	FLA	BURNER CONTROL	FUEL	INPUT (MBH)	OUTPUT (MBH)	EAT (°F)	LAT (°F)	MAX. FACE VEL. (FPM)	TOTAL CAP. (MBH)	SENS. CAP. (MBH)	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	QTY.	RLA 1	RLA 2	QTY.	FLA EACH	KW EACH			TYPE	MERV	THICK. (IN.)	MAX. FACE VEL. (FPM)	V/PH	MCA	MOCP	L (IN.)	W (IN.)	H (IN.)	WT. (LB.)	
RTU1	TRANE	YSK036A3S0L	ROOF	SE ADMIN	1035	160	1	0.49	1	5.7	2 STAGE	NG	80	64.8	57.2	114.6	250	35.96	24.43	78.2	65.76	57.53	54.95	1	12.5	N/A	1	2.8	-	12	R-454B	PLEATED	13	2	250	208/3	25	35	69.8	44.3	46.9	772	1
RTU2	TRANE	YSK036A3S0L	ROOF	LIBRARY	940	170	1	0.40	1	5.7	2 STAGE	NG	80	64.8	55.6	118.7	250	35.51	24.26	78.6	66.09	56.94	54.31	1	12.5	N/A	1	2.8	-	12	R-454B	PLEATED	13	2	250	208/3	25	35	69.8	44.3	46.9	772	1
RTU3	TRANE	YSK060A3S0M	ROOF	NE ADMIN	2400	280	1	0.82	1	6.9	2 STAGE	NG	100	81.0	61.2	92.3	250	61.13	50.43	76.65	64.92	56.95	56.34	1	16.5	9.9	1	5.3	-	12	R-454B	PLEATED	13	2	250	208/3	33	45	69.8	44.3	46.9	812	1
RTU4	TRANE	YSK180A3S0L	ROOF	GROSS MOTOR / DISMISSAL	4925	715	1	2.10	2 x 3	8.8	1 STAGE	NG	250	202.5	58	95.38	250	177.82	49.48	78	65.59	55.66	54.12	2	32.3	16.5	2	2.2	-	10.8	R-454B	PLEATED	13	2	250	208/3	79	110	123.0	87.0	4.9	2400	1,2
RTU5	TRANE	YSK180A3S0L	ROOF	ADDITION ADMIN	6670	382	1	3.29	2 x 3	8.8	1 STAGE	NG	250	202.5	65.2	92.9	250	181.15	146.24	76.2	64.05	57.19	55.46	2	32.3	16.5	2	2.2	-	10.8	R-454B	PLEATED	13	2	250	208/3	79	110	123.0	87.0	59.0	2400	1,2

NOTES: 1. PROVIDE UNITS WITH FACTORY DISCONNECT, MODULATING HOT GAS REHEAT, DIRECT DRIVE SUPPLY FAN(S), BACNET INTERFACE, LOW LEAK ECONOMIZER, RETURN AIR SMOKE DETECTOR, HAIL GUARDS, AND HINGED ACCESS DOORS
2. VARIABLE SPEED SUPPLY FAN

VARIABLE REFRIGERANT FLOW INDOOR/OUTDOOR UNIT SCHEDULE

INDOOR UNIT														OUTDOOR UNIT										REMARKS
MARK	MANUFACTURER	MODEL	LOCATION	CFM		CAP. (MBH)		ELECTRICAL DATA				PHYSICAL DATA				MARK	MANUFACTURER	MODEL	LOCATION	NOM. CAP. (TONS)	ELECTRICAL DATA				PHYSICAL DATA				
				LOW	HIGH	HEAT	COOL	V/PH	FLA	MCA	MOCP	L (IN.)	W (IN.)	H (IN.)	WT. (LB.)						V/PH	FLA	MCA	MOCP	L (IN.)	W (IN.)	H (IN.)	WT. (LB.)	
DSU1.6	TRANE/MITSUBISHI	TPLFYP012FM140B	X117	-	335	10.9	11.0	120/1	-	0.29	15	22.44	22.44	8.19	31.3	HP1A	TRANE / MITSUBISHI	TURYE1203AN41AN	ROOF	10	208/3	-	56	90	29.1875	48.875	71.625	622	1,2,3,4
DSU1.7	TRANE/MITSUBISHI	TPLFYP036EM142A	X121	-	1095	32.3	33.0	120/1	-	0.92	15	22.44	22.44	8.19	31.3														
DSU1.8	TRANE/MITSUBISHI	TPLFYP030EM142A	X119	-	812	27.5	27.5	120/1	-	0.57	15	22.44	22.44	8.19	31.3														
DSU1.13	TRANE/MITSUBISHI	TPLFYP036EM142A	X120	-	1095	32.3	33.0	120/1	-	0.92	15	22.44	22.44	8.19	31.3														
DSU1.1	TRANE/MITSUBISHI	TPLFYP030EM142A	X109	-	812	26.1	27.3	120/1	-	0.57	15	22.44	22.44	8.19	31.3	HP1B	TRANE / MITSUBISHI	TURYE2883BN41AN	ROOF	24	208/3	-	60	100	2 x 29.2	2 x 48.9	2 x 71.6	2 x 680	1,2,3,4
DSU1.2	TRANE/MITSUBISHI	TPLFYP030EM142A	X110	-	812	26.1	27.3	120/1	-	0.57	15	22.44	22.44	8.19	31.3														
DSU1.3	TRANE/MITSUBISHI	TPLFYP036EM142A	X111	-	1095	30.7	32.8	120/1	-	0.92	15	22.44	22.44	8.19	31.3														
DSU1.4	TRANE/MITSUBISHI	TPLFYP030EM142A	X113	-	812	26.1	27.3	120/1	-	0.57	15	22.44	22.44	8.19	31.3														
DSU1.5	TRANE/MITSUBISHI	TPLFYP030EM142A	X115	-	812	26.1	27.3	120/1	-	0.57	15	22.44	22.44	8.19	31.3														
DSU1.9	TRANE/MITSUBISHI	TPLFYP036EM142A	X112	-	1095	30.7	32.8	120/1	-	0.92	15	22.44	22.44	8.19	31.3														
DSU1.10	TRANE/MITSUBISHI	TPLFYP030EM142A	X114	-	812	26.1	27.3	120/1	-	0.57	15	22.44	22.44	8.19	31.3														
DSU1.11	TRANE/MITSUBISHI	TPLFYP030EM142A	X116	-	812	26.1	27.3	120/1	-	0.57	15	22.44	22.44	8.19	31.3														
DSU1.12	TRANE/MITSUBISHI	TPLFYP030EM142A	X118	-	812	26.1	27.3	120/1	-	0.57	15	22.44	22.44	8.19	31.3														
DSU2.1	TRANE/MITSUBISHI	TPLFYP048EM142A	X143	-	1236	45.4	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3	HP2	TRANE / MITSUBISHI	TURYE2883BN41AN	ROOF	24	208/3	-	60	100	2 x 29.2	2 x 48.9	2 x 71.6	2 x 680	1,2,3,4
DSU2.2	TRANE/MITSUBISHI	TPLFYP048EM142A	X145	-	1236	45.4	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3														
DSU2.3	TRANE/MITSUBISHI	TPLFYP030EM142A	X146	-	812	28.6	27.3	120/1	-	0.57	15	22.44	22.44	8.19	31.3														
DSU2.4	TRANE/MITSUBISHI	TPLFYP030EM142A	X147	-	812	28.6	27.3	120/1	-	0.57	15	22.44	22.44	8.19	31.3														
DSU2.5	TRANE/MITSUBISHI	TPLFYP036EM142A	X128	-	1095	33.7	32.8	120/1	-	0.92	15	22.44	22.44	8.19	31.3														
DSU2.6	TRANE/MITSUBISHI	TPLFYP024EM142A	X127	-	812	22.7	21.9	120/1	-	0.54	15	22.44	22.44	8.19	31.3														
DSU2.7	TRANE/MITSUBISHI	TPLFYP008FM140B	X107A	-	315	7.6	7.3	120/1	-	0.28	15	22.44	22.44	8.19	31.3														
DSU2.8	TRANE/MITSUBISHI	TPLFYP030EM142A	X108	-	812	28.6	27.3	120/1	-	0.57	15	22.44	22.44	8.19	31.3														
DSU3.1	TRANE/MITSUBISHI	TPLFYP048EM142A	X137	-	1236	42.7	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3	HP3	TRANE / MITSUBISHI	TURYE2883BN41AN	ROOF	24	208/3	-	60	100	2 x 29.2	2 x 48.9	2 x 71.6	2 x 680	1,2,3,4
DSU3.2	TRANE/MITSUBISHI	TPLFYP030EM142A	X136	-	812	26.9	27.3	120/1	-	0.57	15	22.44	22.44	8.19	31.3														
DSU3.3	TRANE/MITSUBISHI	TPLFYP030EM142A	X135	-	812	26.9	27.3	120/1	-	0.57	15	22.44	22.44	8.19	31.3														
DSU3.4	TRANE/MITSUBISHI	TPLFYP036EM142A	X139	-	1095	31.6	32.8	120/1	-	0.92	15	22.44	22.44	8.19	31.3														
DSU3.5	TRANE/MITSUBISHI	TPLFYP036EM142A	X138	-	1095	31.6	32.8	120/1	-	0.92	15	22.44	22.44	8.19	31.3														
DSU3.6	TRANE/MITSUBISHI	TPLFYP036EM142A	X141	-	1095	31.6	32.8	120/1	-	0.92	15	22.44	22.44	8.19	31.3														
DSU3.7	TRANE/MITSUBISHI	TPLFYP048EM142A	X140	-	1236	42.7	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3														
DSU3.8	TRANE/MITSUBISHI	TPLFYP012FM140B	X142	-	335	10.7	10.9	120/1	-	0.29	15	22.44	22.44	8.19	31.3														
DSU4.1	TRANE/MITSUBISHI	TPLFYP048EM142A	102	-	1236	40.8	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3	HP4	TRANE / MITSUBISHI	TURYE2883BN41AN	ROOF	24	208/3	-	60	100	2 x 29.2	2 x 48.9	2 x 71.6	2 x 680	1,2,3,4
DSU4.2	TRANE/MITSUBISHI	TPLFYP048EM142A	103	-	1236	40.8	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3														
DSU4.3	TRANE/MITSUBISHI	TPLFYP048EM142A	104	-	1236	40.8	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3														
DSU4.4	TRANE/MITSUBISHI	TPLFYP048EM142A	105	-	1236	40.8	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3														
DSU4.5	TRANE/MITSUBISHI	TPLFYP048EM142A	106	-	1236	40.8	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3														
DSU4.6	TRANE/MITSUBISHI	TPLFYP048EM142A	108	-	1236	40.8	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3														
DSU5.1	TRANE/MITSUBISHI	TPLFYP048EM142A	130	-	1236	40.8	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3	HP5	TRANE / MITSUBISHI	TURYE2883BN41AN	ROOF	24	208/3	-	60	100	2 x 29.2	2 x 48.9	2 x 71.6	2 x 680	1,2,3,4
DSU5.2	TRANE/MITSUBISHI	TPLFYP048EM142A	131	-	1236	40.8	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3														
DSU5.3	TRANE/MITSUBISHI	TPLFYP048EM142A	132	-	1236	40.8	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3														
DSU5.4	TRANE/MITSUBISHI	TPLFYP048EM142A	133	-	1236	40.8	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3														
DSU5.5	TRANE/MITSUBISHI	TPLFYP048EM142A	134	-	1236	40.8	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3														
DSU5.6	TRANE/MITSUBISHI	TPLFYP048EM142A	135	-	1236	40.8	43.7	120/1	-	1.27	15	22.44	22.44	8.19	31.3														

NOTES: 1. VRF SYSTEM SHALL HAVE CONTINUOUS HEATING OPERATION DOWN TO -27°F.
2. OUTDOOR HEAT PUMPS SHALL BE MOUNTED ON EQUIPMENT RAILS SECURED TO ROOF.
3. PROVIDE OUTDOOR HEAT PUMP UNIT WITH FACTORY DISCONNECT.
4. PROVIDE INDOOR UNIT WITH WIRED PROGRAMMABLE THERMOSTAT, LOCAL DISCONNECT SWITCH, AND FACTORY INSTALLED CONDENSATE PUMP.

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ISSUE:

#	DATE:	DESCRIPTION:
1	04/28/2025	ADD 03

Bid Set
2025.04.03

PROJECT:
Robinson CUSD #2

Washington Elementary Renovation & Addition

507 W. Condit St. Robinson, IL 62454

DATE:	04/03/2025
DESIGNED:	TMG/GPF
DRAWN:	GPF
REVIEWED:	DRR

SHEET TITLE:
SCHEDULES

SHEET NUMBER:
M6.1

PROJECT NO.: 02401781.001

4/29/2025 1:56:54 PM

AIR HANDLING UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	LOCATION	SERVICE	ARRANGEMENT	SUPPLY FAN						PREHEAT COIL								COOLING COIL									FILTER				ELECTRICAL DATA			PHYSICAL DATA				REMARKS
						CFM	TSP (IN. W.C.)	ESP (IN. W.C.)	BHP	HP	FLA	CFM	MAX. FACE VEL. (FPM)	MAX. AIR P.D. (IN. W.C.)	TOTAL CAP. (MBH)	FLOW (GPM)	MAX. FLUID P.D. (FT. W.C.)	EWT (°F)	LWT (°F)	EAT (°F)	LAT (°F)	CFM	MAX. FACE VEL. (FPM)	MAX. AIR P.D. (IN. W.C.)	TOTAL CAP. (MBH)	SENS. CAP. (MBH)	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	TYPE	MERV	THICK. (IN.)	MAX. FACE VEL. (FPM)	V/PH	MCA	MOCP	L (IN.)	W (IN.)	H (IN.)	WT. (LB.)	
AHU1	TRANE	UCCAG17A0G0RC113000002 GD882DB1AC0021B0B1	GYM	GYM	HORIZONTAL	8550	3.165	1	9.428	10	42.5	8550	525	0.178	463.62	44.26	6.58	180	159.08	45	95	8550	525	1.207	264.73	206.62	80	67	58.02	57.24	PLEATED	13	2	250	208/3	53	90	131.16	79	54.068	2202.8	1
AHU2	TRANE	UCCAG17A0G0RC113000002 GD882DB1AC0021B0B1	GYM	GYM	HORIZONTAL	8550	3.165	1	9.428	10	42.5	8550	525	0.178	463.62	44.26	6.58	180	159.08	45	95	8550	525	1.207	264.73	206.62	80	67	58.02	57.24	PLEATED	13	2	250	208/3	53	90	131.16	79	54.068	2202.8	1
AHU3	TRANE	UCCAG17A0G0RC113000002 GD882DB1AC0021B0B1	CAFETERIA	CAFETERIA	HORIZONTAL	8500	3.158	1	9.317	10	42.5	8500	522	0.177	460.91	43.26	6.3	180	158.72	45	95	8500	522	1.21	302.71	220.81	80	67	56.35	55.6	PLEATED	13	2	250	208/3	53	90	131	79	54.068	2202.8	1
AHU4	TRANE	UCCAG17A0G0RC113000002 GD882DB1AC0021B0B1	CAFETERIA	CAFETERIA	HORIZONTAL	8500	3.158	1	9.317	10	42.5	8500	522	0.177	460.91	43.26	6.3	180	158.72	45	95	8500	522	1.21	302.71	220.81	80	67	56.35	55.6	PLEATED	13	2	250	208/3	53	90	131	79	54.068	2202.8	1

NOTES: 1. PROVIDE UNIT WITH FACTORY DISCONNECT SWITCH, HORIZONTAL DISCHARGE AND RETURN, VARIABLE SPEED DIRECT DRIVE SUPPLY FAN(S), AND BACNET INTERFACE. 2

DUCTLESS SPLIT UNIT SCHEDULE

INDOOR UNIT														OUTDOOR UNIT										REMARKS
MARK	MANUFACTURER	MODEL	LOCATION	CFM		CAP. (MBH)		ELECTRICAL DATA			PHYSICAL DATA				MARK	MANUFACTURER	MODEL	LOCATION	NOM. CAP. (TONS)	ELECTRICAL DATA			PHYSICAL DATA				
				LOW	HIGH	HEAT	COOL	V/PH	MCA	MOCP	L (IN.)	W (IN.)	H (IN.)	WT. (LB.)						V/PH	MCA	MOCP	L (IN.)	W (IN.)	H (IN.)	WT. (LB.)	
DSU6.1	MITSUBISHI	PLFY-L08NFMU-A	X133B	230	315	8.8	7.8	208/1	0.36	15	22.4...	22.4...	8.1875	28.9												1,3,4,5,6,7,8,9
DSU6.2	MITSUBISHI	PLFY-L12NFMU-A	X133A	245	335	13.2	11.8	208/1	0.36	15	22.4...	22.4...	8.1875	31.3	HP6	MITSUBISHI	MXZ-SM36NLHZ	ROOF	3	208/1	45	80	13	41.34375	52.6875	283	1,3,4,5,6,7,8,9
DSU6.3	MITSUBISHI	PLFY-L08NFMU-A	X133	230	315	8.8	7.8	208/1	0.36	15	22.4...	22.4...	8.1875	28.9												1,3,4,5,6,7,8,9
DSU7.1	MITSUBISHI	MSZ-GX12NL	X105	136	448	8.9	11.7	-	-	-	9.65...	31.4...	11.7...	23												2,3,4,5,6,7,8,9
DSU7.2	MITSUBISHI	MSZ-GX12NL	X106	136	448	8.9	11.7	-	-	-	9.65...	31.4...	11.7...	23	HP7	MITSUBISHI	MXZ-3D24NL	ROOF	2	208/1	28.7	48	13	37.34375	31.34375	137	2,3,4,5,6,7,8,9
DSU8.1	MITSUBISHI	MSY-GS12NA	123	121	381	-	12.0	-	-	-	9.125	31.4...	11.625	23	HP8	MITSUBISHI	MUY-GS12NA	ROOF	1	208/1	10	15	11.25	31.5	21.625	79	2,3,4,5,6,7,8,9

NOTES:
1. INDOOR UNIST ARE POWERED SEPARATELY FROM OUTDOOR UNIT.
2. INDOOR UNITS ARE POWERED BY OUTDOOR UNIT.
3. WIRED THERMOSTAT ATTACHED TO WALL.
4. PROVIDE AND INSTALL ALL REFRIGERANT PIPING, CONDESATE PIPING ETC. REQUIRED TO MAKE THE SYSTEM FULLY FUNCTIONAL.
5. OUTDOOR UNIT WITH CONTROLS FOR LOW AMBIENT TEMPERATURE TO 0°F OPERATION, WIND BAFFLE.
6. SINGLE-POINT POWER CONNECTION AT OUTDOOR UNIT, PROVIDE FACTORY DISCONNECT. 2
7. 23.1 SEER, 13 EER, 12.5 HSPF, 3.8 COP.
8. FACTORY DISCONNECT SWITCH FOR INDOOR UNIT.
9. CONDENSATE PUMP: BLUE DIAMOND X87-721, 3 GPH @ 23 FT.

AIR DEVICE SCHEDULE

MARK	MANUFACTURER	MODEL	SERVICE	STYLE	FACE SIZE	FRAME	FINISH	MATERIAL	REMARKS
S1	PRICE	SPD	SUPPLY	PLAQUE	24x24	LAY-IN	WHITE	ALUMINUM	1
S2	PRICE	TBD	SUPPLY	LINEAR SLOT	48x6	LAY-IN	WHITE	ALUMINUM	1
S3	PRICE	TBD	SUPPLY	LINEAR SLOT	24x6	LAY-IN	WHITE	ALUMINUM	1
S4	PRICE	600	SUPPLY	GRILLE	NECK+2"	SURFACE	WHITE	ALUMINUM	1
S5	AIR CONCEPTS	RDDW-RD	SUPPLY	GRILLE	NECK+2"	DUCT MTD	ANODIZED	ALUMINUM	
R1	PRICE	PDR	RETURN	PERFORATED	24x24	LAY-IN	WHITE	ALUMINUM	1
R2	PRICE	PDR	RETURN	PERFORATED	12x24	LAY-IN	WHITE	ALUMINUM	1
R3	PRICE	600	RETURN	GRILLE	NECK+2"	SURFACE	WHITE	ALUMINUM	1
E1	PRICE	PDR	EXHAUST	PERFORATED	24x24	LAY-IN	WHITE	ALUMINUM	1
E2	PRICE	PDR	EXHAUST	PERFORATED	12x12	LAY-IN	WHITE	ALUMINUM	1
E3	PRICE	PDR	EXHAUST	PERFORATED	12x12	LAY-IN	WHITE	ALUMINUM	1

NOTES: 1. HIGH LIPS WITH FACE OPERATED VOLUME DAMPER INTEGRAL TO THE UNIT AT GYPSUM CEILING, OR WHERE NO DUCT VOLUME DAMPER IS NOTED. IF NO CFM IS NOTED ON THE DRAWINGS, NO FACE OPERATED DAMPER IS REQUIRED. COORDINATE WITH REFLECTED CEILING PLAN. 2

CONDENSING UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	SERVICE	AMBIENT TEMP. (°F)	REFRIG. TYPE	NOM. CAP. (TONS)	STEPS	IEER	COMPRESSOR			FAN		ELECTRICAL DATA			PHYSICAL DATA				REMARKS
									QTY.	RLA 1	RLA 2	QTY.	FLA EACH	V/PH	MCA	MOCP	L (IN.)	W (IN.)	H (IN.)	WT. (LB.)	
CU1	TRANE	RAUKC20EE*0000000 0000200000	AHU1	95	R454-B	20	4	14.6	2	49.6	34.7	2	4.1	208/3	115	150	88.31	60.13	74.25	1850	1
CU2	TRANE	RAUKC20EE*0000000 0000200000	AHU2	95	R454-B	20	4	14.6	2	49.6	34.7	2	4.1	208/3	115	150	88.31	60.13	74.25	1850	1
CU3	TRANE	RAUKC25EE*0000000 0000200000	AHU3	95	R454-B	25	5	15.5	2	62.1	40.1	3	4.1	208/3	141	200	88.31	60.13	74.25	1898	1
CU4	TRANE	RAUKC25EE*0000000 0000200000	AHU4	95	R454-B	25	5	15.5	2	62.1	40.1	3	4.1	208/3	141	200	88.31	60.13	74.25	1898	1

NOTES: 1. PROVIDE FACTORY DISCONNECT SWITCH. 2

FIN TUBE RADIATOR SCHEDULE

MARK	MANUFACTURER	MODEL	LOCATION	TOTAL CAP. (MBH)	MBH / FT	EWT (°F)	EAT (°F)	PHYSICAL DATA					REMARKS
								LENGTH (FT.)	TUBE DIA. (IN.)	FINS PER FT.	FIN SIZE	ENCLOSURE HEIGHT (IN.)	
FT1	STERLING	JVB-PM C3/4-435	C-X103	9.5	0.95	180	65	10	3/4	50	3.625 x 4.25	10.75	1
FT2	STERLING	JVB-PM C3/4-435	C-X105	9.5	0.95	180	65	10	3/4	50	3.625 x 4.25	10.75	1
FT3	STERLING	JVB-PM C3/4-435	C-X108	9.5	0.95	180	65	10	3/4	50	3.625 x 4.25	10.75	1
FT4	STERLING	JVB-PM C3/4-435	C-X106	9.5	0.95	180	65	10	3/4	50	3.625 x 4.25	10.75	1

NOTES: 1. PROVIDE UNIT WITH WALL-MOUNTED PROGRAMMABLE THERMOSTAT. 2

EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	DRIVE	SERVICE	CFM	TSP (IN. W.C.)	FAN MOTOR BHP	SONES	DAMPER	ROOF OPENING		ELECTRICAL DATA			PHYSICAL DATA			REMARKS
											L (IN.)	W (IN.)	HP/ WATTS	V/PH	FLA	L (IN.)	W (IN.)	H (IN.)	
EF1	GREENHECK	CUBE-200	UPBLAST	BELT	KITCHEN HOOD	3600	0.5	0.75	12	NO	26.5	26.5	3/4 HP	208/1	13.8	37	37	49	1
EF2	GREENHECK	CUBE-120	UPBLAST	BELT	KITCHEN HOOD	1000	0.5	0.18	8.3	NO	15.5	15.5	1/4 HP	208/1	5.8	25	25	38	1
EF3	GREENHECK	G-140-VG	DOWNBLAST	DIRECT	T111, 112, T113, T116, T117	1050	0.31	0.11	6	BACKDRAFT	18.5	18.5	1/4 HP	208/1	2.1	28	28	36	1,2
EF4	GREENHECK	G-70-D	DOWNBLAST	DIRECT	X132, X132A, X133C	226	0.32	0.02	4.4	BACKDRAFT	N/A	N/A	1/30 HP	120/1	-	19	19	24	1,2,3

NOTES: 1. PROVIDE FAN WITH FACTORY DISCONNECT SWITCH.
2. FAN OPERATION INTERLOCKED WITH OPERATION OF NEARBY ROOFTOP UNIT TO OPERATE CONTINUOUSLY WHILE BUILDING IS OCCUPIED. 2
3. PROVIDE WITH ROOF CURB ADAPTER TO MOUNT NEW FAN ON EXISTING ROOF CURB.

RADIANT PANEL SCHEDULE

MARK	MANUFACTURER	MODEL	LOCATION	TUBE QTY.	BTUH / LF	TOTAL CAP. (MBH)	FLOW (GPM)	EWT (°F)	LWT (°F)	EAT (°F)	PHYSICAL DATA			REMARKS
											L (IN.)	W (IN.)	D (IN.)	
RP1	PRICE	RPM	C101	6	-	1680	0.5	180	160	-	48	24	2	1

NOTES: PROVIDE WITH WALL-MOUNTED PROGRAMMABLE THERMOSTAT. 2

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ISSUE:

#	DATE:	DESCRIPTION:
1	04/17/2025	ADD 01
2	04/28/2025	ADD 03

Bid Set
2025.04.03

PROJECT:
Robinson CUSD #2

Washington Elementary Renovation & Addition

507 W. Condit St. Robinson, IL 62454

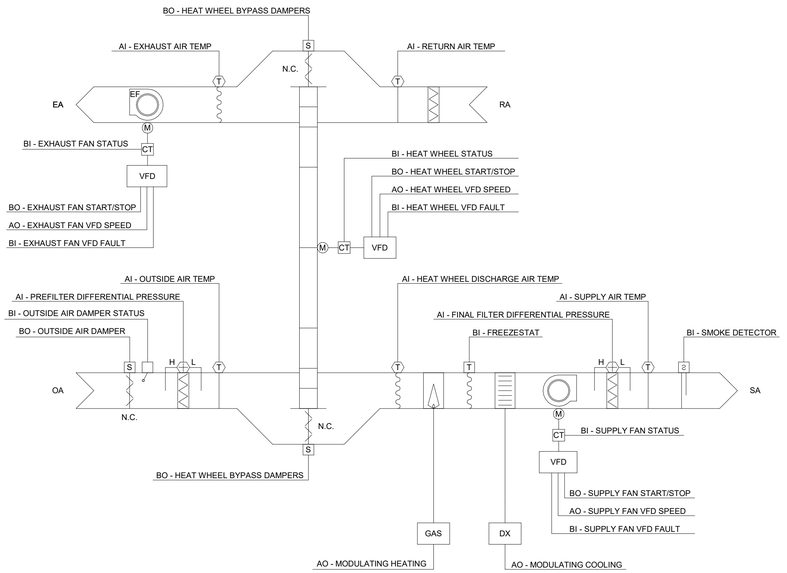
DATE:	04/03/2025
DESIGNED:	TMG/GPF
DRAWN:	GPF
REVIEWED:	DRR

SHEET TITLE:
SCHEDULES Cont.

SHEET NUMBER:
M6.2

PROJECT NO.: 02401781.001

4/29/2025 1:56:56 PM



	HARDWARE POINTS				SOFTWARE POINTS						
POINT NAME	**AI**	**AO**	**BI**	**BO**	**AV**	**BV**	**Loop**	**Sched**	**Trend**	**Alarm**	**Show on Graphic**
Outside Air Temp	x								x		x
Exhaust Air Temp	x								x		x
Heat Wheel Discharge Air Temp	x								x		x
Return Air Temp	x								x		x
Prefilter Differential Pressure	x								x		
Final Filter Differential Pressure	x								x		
Supply Air Temp	x								x		x
Heat Wheel VFD Speed		x							x		x
Freezestat			x						x	x	x
Smoke Detector			x						x	x	x
Outside Air Damper Status			x						x		x
Heat Wheel Status			x						x		x
Heat Wheel VFD Fault			x						x	x	x
Supply Fan Status			x						x		x
Exhaust Fan Status			x						x		x
Outside Air Damper				x					x		x
Heat Wheel Start/Stop				x					x		x
Heat Wheel Bypass Dampers				x					x		x
Supply Fan Start/Stop				x					x		x
Supply Fan VFD Speed		x							x		
Supply Fan VFD Fault			x							x	
Exhaust Fan Start/Stop				x					x		x
Exhaust Fan VFD Speed		x							x		
Exhaust Fan VFD Fault			x							x	
Modulating Cooling (%)		x							x		x
Modulating Heating (%)		x							x		x
Demand Limit Level					x						x
Supply Air Temp Setpoint					x				x		x
Outside Air Temp					x						x
Emergency Shutdown						x			x	x	x
Schedule								x			
Outside Air Damper Failure										x	
Outside Air Damper in Hand										x	
Heat Wheel Rotation Failure										x	
Heat Wheel in Hand										x	
Heat Wheel Runtime Exceeded										x	
Supply Fan Failure										x	
Supply Fan in Hand										x	
Supply Fan Runtime Exceeded										x	
Exhaust Fan Failure										x	
Exhaust Fan in Hand										x	
Exhaust Fan Runtime Exceeded										x	
Compressor Runtime Exceeded										x	
Prefilter Change Required										x	x
Final Filter Change Required										x	x
High Supply Air Temp										x	
Low Supply Air Temp										x	

SEQUENCE OF OPERATION - MAKEUP AIR UNIT - SUPPLY AIR TEMP - DX (TYPICAL OF 1)

RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL RUN BASED UPON AN OPERATOR ADJUSTABLE SCHEDULE.

EMERGENCY SHUTDOWN:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING AN EMERGENCY SHUTDOWN SIGNAL.

FREEZE PROTECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A FREEZESTAT STATUS.

SMOKE DETECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A SMOKE DETECTOR STATUS.

DEMAND LIMITING - SETPOINT ADJUST:
TO LOWER POWER CONSUMPTION, THE SUPPLY AIR TEMPERATURE SETPOINT SHALL AUTOMATICALLY RELAX (RAISED FOR COOLING; LOWERED FOR HEATING) WHEN THE FACILITY POWER CONSUMPTION EXCEEDS DEFINABLE THRESHOLDS. THE AMOUNT OF RELAXATION SHALL BE ACCOMPLISHED BY ONE OF THE FOLLOWING METHODS:
- THE SUPPLY AIR TEMPERATURE SETPOINT SHALL RELAX BY 2°F (ADJ.) FOR EACH DEMAND THRESHOLD EXCEEDED.
- THE SETPOINTS IN THE ZONES SUPPLIED BY THIS UNIT SHALL BE RELAXED AS SPECIFIED IN THE SEQUENCE OF OPERATIONS FOR THE ZONES. THIS SHALL IN TURN RELAX THE UNIT'S SUPPLY AIR TEMPERATURE SETPOINT BY A USER DEFINABLE AMOUNT.

ALL SETPOINTS SHALL AUTOMATICALLY RETURN TO THEIR PREVIOUS SETTINGS WHEN THE FACILITY POWER CONSUMPTION DROPS BELOW THE THRESHOLDS.

OUTSIDE AIR DAMPER:
THE OUTSIDE AIR DAMPER SHALL OPEN ANYTIME THE UNIT RUNS AND SHALL CLOSE ANYTIME THE UNIT STOPS. THE SUPPLY FAN SHALL START ONLY AFTER THE DAMPER STATUS HAS PROVEN THE DAMPER IS OPEN. THE OUTSIDE AIR DAMPER SHALL CLOSE 4SEC (ADJ.) AFTER THE SUPPLY FAN STOPS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- OUTSIDE AIR DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.
- OUTSIDE AIR DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.

HEAT RECOVERY WHEEL - VARIABLE SPEED:
THE CONTROLLER SHALL MODULATE THE HEAT WHEEL FOR ENERGY RECOVERY AS FOLLOWS.

COOLING RECOVERY MODE:
THE CONTROLLER SHALL MEASURE THE HEAT WHEEL DISCHARGE AIR TEMPERATURE AND MODULATE THE HEAT WHEEL SPEED TO MAINTAIN A SETPOINT 2°F (ADJ.) LESS THAN THE UNIT SUPPLY AIR TEMPERATURE SETPOINT. THE HEAT WHEEL SHALL RUN FOR COOL RECOVERY WHENEVER:
- UNIT RETURN AIR TEMPERATURE IS 5°F (ADJ.) OR MORE BELOW THE OUTSIDE AIR TEMPERATURE.
- AND THE UNIT IS IN A COOLING MODE.
- AND THE SUPPLY FAN IS ON.

HEATING RECOVERY MODE:
THE CONTROLLER SHALL MEASURE THE HEAT WHEEL DISCHARGE AIR TEMPERATURE AND MODULATE THE HEAT WHEEL SPEED TO MAINTAIN A SETPOINT 2°F (ADJ.) GREATER THAN THE UNIT SUPPLY AIR TEMPERATURE SETPOINT. THE HEAT WHEEL SHALL RUN FOR HEAT RECOVERY WHENEVER:
- UNIT RETURN AIR TEMPERATURE IS 5°F (ADJ.) OR MORE ABOVE THE OUTSIDE AIR TEMPERATURE.
- AND THE UNIT IS IN A HEATING MODE.
- AND THE SUPPLY FAN IS ON.

PERIODIC SELF-CLEANING:
THE HEAT WHEEL SHALL RUN AT 5% SPEED (ADJ.) FOR 10SEC (ADJ.) EVERY 4HRS (ADJ.) THE UNIT RUNS.

FROST PROTECTION:
THE HEAT WHEEL SHALL RUN AT 5% SPEED (ADJ.) WHENEVER:
- OUTSIDE AIR TEMPERATURE DROPS BELOW 15°F (ADJ.)
- OR WHENEVER EXHAUST AIR TEMPERATURE DROPS BELOW 20°F (ADJ.).

THE BYPASS DAMPERS WILL OPEN WHENEVER THE HEAT WHEEL IS DISABLED.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HEAT WHEEL ROTATION FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- HEAT WHEEL IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- HEAT WHEEL RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
- HEAT WHEEL VFD IN FAULT

SUPPLY FAN:
THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME, UNLESS SHUTDOWN ON SAFETIES.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- SUPPLY FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

EXHAUST FAN:
THE EXHAUST FAN SHALL RUN WHENEVER THE SUPPLY FAN RUNS, UNLESS SHUTDOWN ON SAFETIES.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- EXHAUST FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- EXHAUST FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- EXHAUST FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

SUPPLY AIR TEMPERATURE SETPOINT - OUTSIDE AIR RESET:
THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE AND SHALL MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT. THE SUPPLY AIR TEMPERATURE SETPOINT SHALL RESET FOR COOLING AS FOLLOWS:

AS OUTSIDE AIR TEMPERATURE DROPS FROM 85°F (ADJ.) TO 20°F (ADJ.)
THE SUPPLY AIR TEMPERATURE SETPOINT SHALL RESET UPWARDS FROM 55°F (ADJ.) TO 95°F (ADJ.).

MODULATING COOLING:
THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND MODULATE THE COOLING TO MAINTAIN ITS COOLING SETPOINT. TO PREVENT SHORT CYCLING, THE COMPRESSOR SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE COOLING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJ.).
- AND THE SUPPLY AIR TEMPERATURE IS ABOVE COOLING SETPOINT.
- AND THE FAN STATUS IS ON.

MODULATING GAS HEAT:
THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND MODULATE THE HEATING TO MAINTAIN ITS HEATING SETPOINT. TO PREVENT SHORT CYCLING, THE HEAT CYCLE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE HEATING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE SUPPLY AIR TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE FAN STATUS IS ON.

PREFILTER DIFFERENTIAL PRESSURE MONITOR:
THE CONTROLLER SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE PREFILTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- PREFILTER CHANGE REQUIRED: PREFILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

FINAL FILTER DIFFERENTIAL PRESSURE MONITOR:
THE CONTROLLER SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FINAL FILTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FINAL FILTER CHANGE REQUIRED: FINAL FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

1 **DEDICATED OUTDOOR AIR SYSTEM (DOAS) UNIT - SUPPLY AIR TEMP - DX CONTROLS**
SCALE: No Scale

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ISSUE:

#	DATE:	DESCRIPTION:
1	04/28/2025	ADD 03

Bid Set

PROJECT:
Robinson CUSD #2

Washington Elementary Renovation & Addition

507 W. Condit St. Robinson, IL 62454

DATE: 04/03/2025
DESIGNED: TMG/GPF
DRAWN: GPF
REVIEWED: DRR

SHEET TITLE:
CONTROLS DIAGRAMS

SHEET NUMBER:
M7.1

PROJECT NO.: 02401781.001

4/28/2025 1:56:56 PM

	HARDWARE POINTS				SOFTWARE POINTS						
POINT NAME	**AI**	**AO**	**BI**	**BO**	**AV**	**BV**	**Loop**	**Sched**	**Trend**	**Alarm**	**Show on Graphic**
Zone Temp	x								x		x
Zone Setpoint Adjust	x										x
Filter Differential Pressure	x								x		x
Discharge Air Temp	x								x		x
Zone Carbon Dioxide PPM	x								x		x
Zone Humidity	x								x		x
Heating Valve		x							x		x
Zone Overide			x						x		x
Freezestat			x						x	x	x
Smoke Detector			x						x	x	x
Fan Status			x								x
Fan Start/Stop				x					x		x
Fan VFD Speed		x							x		x
Fan VFD Fault			x							x	x
Cooling Stage 1				x					x		x
Cooling Stage 2				x					x		x
Cooling Stage 3				x					x		x
Cooling Stage 4				x					x		x
Cooling Stage 5				x					x		x
Zone carbon Dioxide PPM Setpoint					x				x		x
Emergency Shutdown						x			x		x
Schedule								x			
Heating Setpoint									x		x
Cooling Setpoint									x		x
High Zone Temp										x	
Low Zone Temp										x	
Compressor Runtime Exceeded										x	
Filter Change Required										x	
High Discharge Air Temp										x	
Low Discharge Air Temp										x	
Fan Failure										x	
Fan in Hand										x	
Fan Runtime Exceeded										x	
High Zone Carbon Dioxide Concentration										x	
High Zone Humidity										x	
Low Zone Humidity										x	

SEQUENCE OF OPERATION - AIR HANDLING UNIT (TYPICAL OF 4)

RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:
- OCCUPIED MODE: THE UNIT SHALL MAINTAIN
- A 74°F (ADJ.) COOLING SETPOINT
- A 70°F (ADJ.) HEATING SETPOINT.

- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN
- A 85°F (ADJ.) COOLING SETPOINT.
- A 55°F (ADJ.) HEATING SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

DEMAND LIMITING - ZONE SETPOINT OPTIMIZATION:
TO LOWER POWER CONSUMPTION, THE ZONE SETPOINTS SHALL AUTOMATICALLY RELAX WHEN THE FACILITY POWER CONSUMPTION EXCEEDS DEFINABLE THRESHOLDS. THE AMOUNT OF RELAXATION SHALL BE INDIVIDUALLY CONFIGURABLE FOR EACH ZONE. THE ZONE SETPOINTS SHALL AUTOMATICALLY RETURN TO THEIR PREVIOUS SETTINGS WHEN THE FACILITY POWER CONSUMPTION DROPS BELOW THE THRESHOLDS.

ZONE SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE OPTIMAL START:
THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

EMERGENCY SHUTDOWN:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING AN EMERGENCY SHUTDOWN SIGNAL.

FREEZE PROTECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A FREEZESTAT STATUS.

SMOKE DETECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A SMOKE DETECTOR STATUS.

FAN:
THE FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN. TO PREVENT SHORT CYCLING, THE FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME, UNLESS SHUTDOWN ON SAFETIES.

COOLING:
- WHEN THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT, THE FACE AND BYPASS DAMPERS SHALL MODULATE OPEN TO FACE POSITION (CLOSED TO BYPASS POSITION) TO MAINTAIN SETPOINT BY MODULATING THE AIR PASSING OVER THE COOLING COIL.
- WHEN THE ZONE TEMPERATURE IS LESS THAN THE COOLING SETPOINT, THE FACE AND BYPASS DAMPERS SHALL CLOSE TO FACE POSITION (OPEN TO BYPASS POSITION).

HEATING:
- WHEN THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT, THE FACE AND BYPASS DAMPERS SHALL MODULATE OPEN TO FACE POSITION (CLOSED TO BYPASS POSITION) TO MAINTAIN SETPOINT BY MODULATING THE AIR PASSING OVER THE HEATING COIL.
- WHEN THE ZONE TEMPERATURE IS GREATER THAN THE HEATING SETPOINT, THE FACE AND BYPASS DAMPERS SHALL CLOSE TO FACE POSITION (OPEN TO BYPASS POSITION).

COOLING STAGES:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE COOLING TO MAINTAIN ITS COOLING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE COOLING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJ.).
- AND THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT.
- AND THE FAN IS ON.

HEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE HEATING COIL VALVE TO MAINTAIN ITS HEATING SETPOINT.

THE HEATING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE FAN IS ON.

THE HEATING COIL VALVE SHALL OPEN WHENEVER THE FREEZESTAT (IF PRESENT) IS ON.

HEATING - HIGH DISCHARGE AIR TEMPERATURE LIMIT:
THE CONTROLLER SHALL MEASURE THE DISCHARGE AIR TEMPERATURE AND, ON RISING TEMPERATURE, LIMIT THE HEATING AS FOLLOWS:
- AS THE DISCHARGE AIR TEMPERATURE RISES FROM 90°F TO 120°F (ADJ.),
- THE CONTROLLER SHALL LIMIT THE HEATING OUTPUT FROM 100% TO 0% (ADJ.).

FILTER DIFFERENTIAL PRESSURE MONITOR:
THE CONTROLLER SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FILTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FILTER CHANGE REQUIRED: FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

DISCHARGE AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40°F (ADJ.).

FAN STATUS:
THE CONTROLLER SHALL MONITOR THE FAN STATUS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- FAN RUNTIME EXCEEDED: FAN STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

ZONE CARBON DIOXIDE (CO2) CONCENTRATION MONITORING:
THE CONTROLLER SHALL MEASURE THE ZONE CO2 LEVELS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH ZONE CARBON DIOXIDE CONCENTRATION: IF THE ZONE CO2 CONCENTRATION IS GREATER THAN 1000PPM (ADJ.) WHEN IN THE OCCUPIED MODE.

ZONE HUMIDITY:
THE CONTROLLER SHALL MONITOR THE ZONE HUMIDITY.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH ZONE HUMIDITY: IF THE ZONE HUMIDITY IS GREATER THAN 70% (ADJ.).
- LOW ZONE HUMIDITY: IF THE ZONE HUMIDITY IS LESS THAN 35% (ADJ.).

1 **AIR HAINDLING UNIT (AHU) - DX CONTROLS**
SCALE: No Scale

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ISSUE:

#	DATE:	DESCRIPTION:
1	04/28/2025	ADD 03

Bid Set

PROJECT:
Robinson CUSD #2

Washington Elementary Renovation & Addition

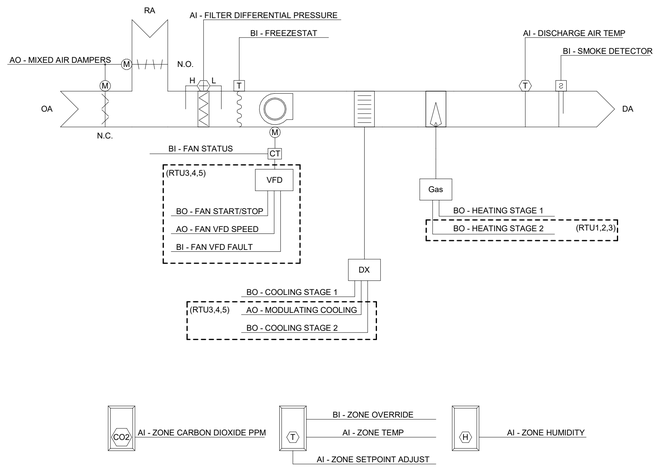
507 W. Condit St. Robinson, IL 62454

DATE: 04/03/2025
DESIGNED: TMG/GPF
DRAWN: GPF
REVIEWED: DRR

SHEET TITLE:
CONTROLS DIAGRAMS Cont.

SHEET NUMBER:
M7.2

PROJECT NO.: 02401781.001



	HARDWARE POINTS				SOFTWARE POINTS						
POINT NAME	**AI**	**AO**	**BI**	**BO**	**AV**	**BV**	**Loop**	**Sched**	**Trend**	**Alarm**	**Show on Graphic**
Zone Temp	x								x		x
Zone Setpoint Adjust	x										x
Filter Differential Pressure	x								x		x
Discharge Air Temp	x								x		x
Zone Carbon Dioxide PPM	x								x		x
Zone Humidity	x								x		x
Mixed Air Dampers		x							x		x
Zone Override			x						x		x
Freezestat			x						x	x	x
Smoke Detector			x						x	x	x
Fan Status			x								x
Fan Start/Stop				x					x		x
Fan VFD Speed		x							x		x
Fan VFD Fault			x							x	x
Modulating Cooling (%)		x							x		x
Cooling Stage 1				x					x		x
Cooling Stage 2				x					x		x
Heating Stage 1				x					x		x
Heating Stage 2				x					x		x
Zone carbon Dioxide PPM Setpoint					x				x		x
Emergency Shutdown						x			x		x
Schedule								x			
Heating Setpoint									x		x
Cooling Setpoint									x		x
High Zone Temp										x	
Low Zone Temp										x	
Compressor Runtime Exceeded										x	
Filter Change Required										x	
High Discharge Air Temp										x	
Low Discharge Air Temp										x	
Fan Failure										x	
Fan in Hand										x	
Fan Runtime Exceeded										x	
High Zone Carbon Dioxide Concentration										x	
High Zone Humidity										x	
Low Zone Humidity										x	

SEQUENCE OF OPERATION - ROOFTOP UNIT (TYPICAL OF 5)

RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:
- OCCUPIED MODE: THE UNIT SHALL MAINTAIN
- A 74°F (ADJ.) COOLING SETPOINT
- A 70°F (ADJ.) HEATING SETPOINT.

- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN
- A 85°F (ADJ.) COOLING SETPOINT.
- A 55°F (ADJ.) HEATING SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

DEMAND LIMITING - ZONE SETPOINT OPTIMIZATION:
TO LOWER POWER CONSUMPTION, THE ZONE SETPOINTS SHALL AUTOMATICALLY RELAX WHEN THE FACILITY POWER CONSUMPTION EXCEEDS DEFINABLE THRESHOLDS. THE AMOUNT OF RELAXATION SHALL BE INDIVIDUALLY CONFIGURABLE FOR EACH ZONE. THE ZONE SETPOINTS SHALL AUTOMATICALLY RETURN TO THEIR PREVIOUS SETTINGS WHEN THE FACILITY POWER CONSUMPTION DROPS BELOW THE THRESHOLDS.

ZONE SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE OPTIMAL START:
THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

EMERGENCY SHUTDOWN:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING AN EMERGENCY SHUTDOWN SIGNAL.

FREEZE PROTECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A FREEZESTAT STATUS.

SMOKE DETECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A SMOKE DETECTOR STATUS.

FAN:
THE FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. THE FAN SPEEDS SHALL AUTOMATICALLY BE INDEXED AS FOLLOWS:
- LOW SPEED SHALL RUN ANYTIME THE ZONE TEMPERATURE IS WITHIN SETPOINTS.
- MEDIUM SPEED SHALL RUN ANYTIME THE ZONE TEMPERATURE IS OUTSIDE OF SETPOINTS.
- HIGH SPEED SHALL RUN ANYTIME THE ZONE TEMPERATURE IS OUTSIDE OF SETPOINTS BY A DEFINABLE AMOUNT (ADJ.).

COOLING:
- WHEN THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT, THE FACE AND BYPASS DAMPERS SHALL MODULATE OPEN TO FACE POSITION (CLOSED TO BYPASS POSITION) TO MAINTAIN SETPOINT BY MODULATING THE AIR PASSING OVER THE COOLING COIL.
- WHEN THE ZONE TEMPERATURE IS LESS THAN THE COOLING SETPOINT, THE FACE AND BYPASS DAMPERS SHALL CLOSE TO FACE POSITION (OPEN TO BYPASS POSITION).

HEATING:
- WHEN THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT, THE FACE AND BYPASS DAMPERS SHALL MODULATE OPEN TO FACE POSITION (CLOSED TO BYPASS POSITION) TO MAINTAIN SETPOINT BY MODULATING THE AIR PASSING OVER THE HEATING COIL.
- WHEN THE ZONE TEMPERATURE IS GREATER THAN THE HEATING SETPOINT, THE FACE AND BYPASS DAMPERS SHALL CLOSE TO FACE POSITION (OPEN TO BYPASS POSITION).

COOLING STAGES:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE COOLING TO MAINTAIN ITS COOLING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE COOLING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJ.).
- AND THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT.
- AND THE FAN IS ON.

GAS HEATING STAGES:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE HEATING TO MAINTAIN ITS HEATING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE HEATING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE FAN IS ON.

HEATING - HIGH DISCHARGE AIR TEMPERATURE LIMIT:
THE CONTROLLER SHALL MEASURE THE DISCHARGE AIR TEMPERATURE AND, ON RISING TEMPERATURE, LIMIT THE HEATING AS FOLLOWS:
- AS THE DISCHARGE AIR TEMPERATURE RISES FROM 90°F TO 120°F (ADJ.),
- THE CONTROLLER SHALL LIMIT THE HEATING OUTPUT FROM 100% TO 0% (ADJ.).

ECONOMIZER:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE MIXED AIR DAMPERS IN SEQUENCE TO MAINTAIN THE ZONE COOLING SETPOINT. THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A MINIMUM ADJUSTABLE POSITION OF 20% (ADJ.) OPEN WHENEVER OCCUPIED.

THE ECONOMIZER SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS AT LEAST 3°F (ADJ.) LESS THAN THE ZONE TEMPERATURE.
- AND THE OUTSIDE AIR TEMPERATURE IS LESS THAN 75°F (ADJ.)

THE ECONOMIZER SHALL CLOSE WHENEVER THE FREEZESTAT (IF PRESENT) IS ON.

THE OUTSIDE AIR DAMPERS SHALL CLOSE AND THE RETURN AIR DAMPER SHALL OPEN WHEN THE UNIT IS OFF. IF OPTIMAL START UP IS AVAILABLE THE MIXED AIR DAMPER SHALL OPERATE AS DESCRIBED IN THE OCCUPIED MODE EXCEPT THAT THE OUTSIDE AIR DAMPER SHALL MODULATE TO FULLY CLOSED.

MINIMUM OUTSIDE AIR VENTILATION - CARBON DIOXIDE (CO2) CONTROL:
WHEN IN THE OCCUPIED MODE, THE CONTROLLER SHALL MEASURE THE ZONE CO2 LEVELS AND OPEN THE OUTSIDE AIR DAMPERS ON RISING CO2 CONCENTRATIONS, OVERRIDING NORMAL DAMPER OPERATION AS CO2 CONCENTRATIONS RISE FROM 750PPM TO 800PPM (ADJ.) AND ABOVE.

FILTER DIFFERENTIAL PRESSURE MONITOR:
THE CONTROLLER SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FILTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FILTER CHANGE REQUIRED: FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

DISCHARGE AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40°F (ADJ.).

FAN STATUS:
THE CONTROLLER SHALL MONITOR THE FAN STATUS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- FAN RUNTIME EXCEEDED: FAN STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

ZONE CARBON DIOXIDE (CO2) CONCENTRATION MONITORING:
THE CONTROLLER SHALL MEASURE THE ZONE CO2 LEVELS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH ZONE CARBON DIOXIDE CONCENTRATION: IF THE ZONE CO2 CONCENTRATION IS GREATER THAN 1000PPM (ADJ.) WHEN IN THE OCCUPIED MODE.

ZONE HUMIDITY:
THE CONTROLLER SHALL MONITOR THE ZONE HUMIDITY.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH ZONE HUMIDITY: IF THE ZONE HUMIDITY IS GREATER THAN 70% (ADJ.).
- LOW ZONE HUMIDITY: IF THE ZONE HUMIDITY IS LESS THAN 35% (ADJ.).

1 **ROOFTOP UNIT (RTU) - DX CONTROLS**
SCALE: No Scale

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#	DATE:	DESCRIPTION:
1	04/28/2025	ADD 03

Bid Set

PROJECT:
Robinson CUSD #2

Washington Elementary Renovation & Addition

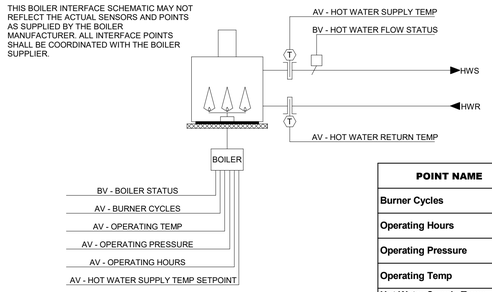
507 W. Condit St. Robinson, IL 62454

DATE: 04/03/2025
DESIGNED: TMG/GPF
DRAWN: GPF
REVIEWED: DRR

SHEET TITLE:
CONTROLS DIAGRAMS Cont.

SHEET NUMBER:
1 **M7.3**

PROJECT NO.: 02401781.001



SEQUENCE OF OPERATION - BOILER INTERFACE (TYPICAL OF 1)

EXISTING BOILER SHALL INTEGRATE INTO NEW HOT WATER PLANT CONTROLS.

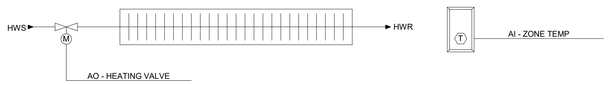
BOILER MODEL: AERCO BMK-2.0, 2000MBH INPUT
BOILER SERIAL NUMBER: G-07-1710

BOILER INTERFACE MONITOR:
CURRENT BOILER STATUS AND OPERATING CONDITIONS WILL BE MONITORED THROUGH ITS COMMUNICATIONS INTERFACE PORT. THE INTERFACE WILL MONITOR AND TREND THE POINTS AS SHOWN ON THE POINTS LIST.

	HARDWARE POINTS				SOFTWARE POINTS						
POINT NAME	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm	Show on Graphic
Burner Cycles					x						x
Operating Hours					x						x
Operating Pressure					x				x		x
Operating Temp					x				x		x
Hot Water Supply Temp Setpoint					x				x		x
Hot Water Supply Temp					x				x		x
Hot Water Return Temp					x				x		x
Boiler Status						x			x		x
Hot Water Flow Status						x			x		x

4 BOILER INTERFACE CONTROLS

SCALE: No Scale



SEQUENCE OF OPERATION - CONVECTIVE / FIN TUBE HEATER (TYPICAL OF 4)

RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:
- OCCUPIED MODE: THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 70° F (ADJ.).
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 65°F (ADJ.).

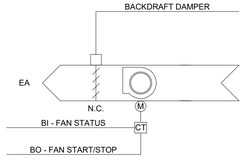
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

HEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE HEATING COIL VALVE TO MAINTAIN ITS HEATING SETPOINT.

THE HEATING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.

3 CONVECTIVE / FIN TUBE HEATER CONTROLS

SCALE: No Scale



SEQUENCE OF OPERATION - EXHAUST FAN - ON/OFF (EF1, EF2)

RUN CONDITIONS - SCHEDULED:
THE FAN SHALL BE INTERLOCKED WITH NEARBY ROOFTOP UNIT OCCUPANCY SCHEDULE.

FAN:
THE FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED HOURS.

EXHAUST AIR DAMPER:
THE FAN SHALL BE EQUIPPED WITH A GRAVITY BACKDRAFT DAMPER THAT SHALL OPEN ANYTIME THE UNIT RUNS AND SHALL CLOSE ANYTIME THE UNIT STOPS.

FAN STATUS:
THE CONTROLLER SHALL MONITOR THE FAN STATUS.

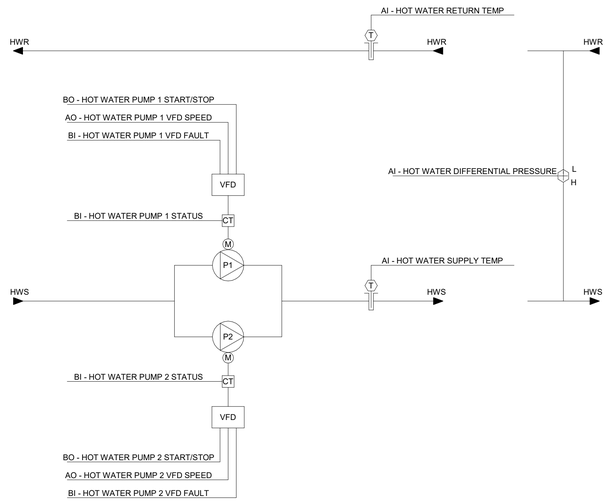
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- FAN RUNTIME EXCEEDED: FAN STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

SEQUENCE OF OPERATION - EXHAUST FAN (EF3, EF4)

FAN SHALL BE INTEGRATED AND INTERLOCKED WITH EXISTING KITCHEN HOOD CONTROLS.

2 MC_EXHAUST FAN - ON/OFF CONTROLS

SCALE: No Scale



	HARDWARE POINTS				SOFTWARE POINTS						
POINT NAME	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm	Show on Graphic
Hot Water Differential Pressure	x								x		x
Hot Water Return Temp	x								x		x
Hot Water Supply Temp	x								x		x
Hot Water Pump 1 VFD Speed		x							x		x
Hot Water Pump 2 VFD Speed		x							x		x
Hot Water Pump 1 Status			x						x		x
Hot Water Pump 2 Status			x						x		x
Hot Water Pump 1 VFD Fault			x							x	x
Hot Water Pump 2 VFD Fault			x							x	x
Hot Water Pump 1 Start/Stop				x					x		x
Hot Water Pump 2 Start/Stop				x					x		x
Outside Air Temp					x						x
Hot Water Differential Pressure Setpoint					x						x
High Hot Water Differential Pressure										x	
Low Hot Water Differential Pressure										x	
Hot Water Pump 1 Failure										x	
Hot Water Pump 2 Failure										x	
Hot Water Pump 1 Running in Hand										x	
Hot Water Pump 2 Running in Hand										x	
Hot Water Pump 1 Runtime Exceeded										x	
Hot Water Pump 2 Runtime Exceeded										x	
High Hot Water Supply Temp										x	
Low Hot Water Supply Temp										x	

SEQUENCE OF OPERATION - HOT WATER LOOP PUMPS (TYPICAL OF 1)

HOT WATER PUMP RUN CONDITIONS:
THE HOT WATER PUMPS SHALL BE ENABLED WHENEVER:
- A DEFINABLE NUMBER OF HOT WATER COILS NEED HEATING.
- AND OUTSIDE AIR TEMPERATURE IS LESS THAN 54°F (ADJ.).

THE PUMPS SHALL RUN FOR FREEZE PROTECTION ANYTIME OUTSIDE AIR TEMPERATURE IS LESS THAN 38°F (ADJ.).

TO PREVENT SHORT CYCLING, THE PUMP SHALL RUN FOR A MINIMUM TIME AND BE OFF FOR A MINIMUM TIME (BOTH USER ADJUSTABLE).

HOT WATER PUMP LEAD/LAG OPERATION:
THE TWO VARIABLE SPEED HOT WATER PUMPS SHALL OPERATE IN A LEAD/LAG FASHION.
- THE LEAD PUMP SHALL RUN FIRST.
- ON FAILURE OF THE LEAD PUMP, THE LAG PUMP SHALL RUN AND THE LEAD PUMP SHALL TURN OFF.
- ON DECREASING HOT WATER DIFFERENTIAL PRESSURE, THE LAG PUMP SHALL STAGE ON AND RUN IN UNISON WITH THE LEAD PUMP TO MAINTAIN HOT WATER DIFFERENTIAL PRESSURE SETPOINT.

THE DESIGNATED LEAD PUMP SHALL ROTATE UPON ONE OF THE FOLLOWING CONDITIONS (USER SELECTABLE):
- MANUALLY THROUGH A SOFTWARE SWITCH
- IF PUMP RUNTIME (ADJ.) IS EXCEEDED
- DAILY
- WEEKLY
- MONTHLY

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HOT WATER PUMP 1
- FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.
- VFD FAULT.

- HOT WATER PUMP 2
- FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.
- VFD FAULT.

HOT WATER DIFFERENTIAL PRESSURE CONTROL:
THE CONTROLLER SHALL MEASURE HOT WATER DIFFERENTIAL PRESSURE AND MODULATE THE HOT WATER PUMP VFDS IN SEQUENCE TO MAINTAIN ITS HOT WATER DIFFERENTIAL PRESSURE SETPOINT.

THE FOLLOWING SETPOINTS ARE RECOMMENDED VALUES. ALL SETPOINTS SHALL BE FIELD ADJUSTED DURING THE COMMISSIONING PERIOD TO MEET THE REQUIREMENTS OF ACTUAL FIELD CONDITIONS.

THE CONTROLLER SHALL MODULATE HOT WATER PUMP SPEEDS TO MAINTAIN A HOT WATER DIFFERENTIAL PRESSURE OF 12LBF/IN2 (ADJ.). THE VFDS MINIMUM SPEED SHALL NOT DROP BELOW 20% (ADJ.).

ON DROPPING HOT WATER DIFFERENTIAL PRESSURE, THE VFDS SHALL STAGE ON AND RUN TO MAINTAIN SETPOINT AS FOLLOWS:
- THE CONTROLLER SHALL MODULATE THE LEAD VFD TO MAINTAIN SETPOINT.
- IF THE LEAD VFD SPEED IS GREATER THAN A SETPOINT OF 90% (ADJ.), THE LAG VFD SHALL STAGE ON.
- THE LAG VFD SHALL RAMP UP TO MATCH THE LEAD VFD SPEED AND THEN RUN IN UNISON WITH THE LEAD VFD TO MAINTAIN SETPOINT.

ON RISING HOT WATER DIFFERENTIAL PRESSURE, THE VFDS SHALL STAGE OFF AS FOLLOWS:
- IF THE VFDS SPEEDS DROPS BACK TO 60% (ADJ.) BELOW SETPOINT, THE LAG VFD SHALL STAGE OFF.
- THE LEAD VFD SHALL CONTINUE TO RUN TO MAINTAIN SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH HOT WATER DIFFERENTIAL PRESSURE: IF 25% (ADJ.) GREATER THAN SETPOINT.
- LOW HOT WATER DIFFERENTIAL PRESSURE: IF 25% (ADJ.) LESS THAN SETPOINT.

HOT WATER TEMPERATURE MONITORING:
THE FOLLOWING TEMPERATURES SHALL BE MONITORED:
- HOT WATER SUPPLY.
- HOT WATER RETURN.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH HOT WATER SUPPLY TEMP: IF THE HOT WATER SUPPLY TEMPERATURE IS GREATER THAN 200°F (ADJ.).
- LOW HOT WATER SUPPLY TEMP: IF THE HOT WATER SUPPLY TEMPERATURE IS LESS THAN 100°F (ADJ.).

1 HOT WATER LOOP PUMP CONTROLS

SCALE: No Scale

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ISSUE:

#	DATE:	DESCRIPTION:
1	04/28/2025	ADD 03

Bid Set

PROJECT:
Robinson CUSD #2

Washington Elementary Renovation & Addition

507 W. Condit St. Robinson, IL 62454

DATE: 04/03/2025
DESIGNED: TMG/GPF
DRAWN: GPF
REVIEWED: DRR

SHEET TITLE:
CONTROLS DIAGRAMS Cont.

SHEET NUMBER:
1 **M7.4**

PROJECT NO.: 02401781.001

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SECTION 00 2100 - INSTRUCTIONS TO BIDDERS

1.1. GENERAL

A. Summary of Work:Type of Bid: Bids shall be on a stipulated sum basis.
   1. This project consists of work associated with the following:
      a. Construction of a building addition that will be utilized for Pre-Kindergarten, Kindergarten, and administrative offices. The Project also consists of replacing the existing HVAC system and associated renovations.

B. Time and Location for Opening of Bids:
   1. Bid Date and Time: 05/01/2025, 2:00 PM Central.
   2. Bid Location: Robinson CUSD #2 Central Office: 1301 North Allen Street, Robinson, IL 62454

C. Examination and Procurement of Documents: Documents will be available online through a electronic bid site managed by Farnsworth Group, Inc. Obtain access after 04/03/2025, by visiting www.f-w.com and clicking on the Project Bid List Link at the bottom of the page or by contacting Farnsworth Group, Inc. Online access will be provided to all registered bidders during the bidding process. A separate FTP site will be made available to the successful bidder for the duration of construction.

D. Bidders will be required to provide Bid security in the form of a Bid Bond in the amount of five (5) percent of the Bid.

E. Interpretations of Addenda
   1. No oral interpretation will be made to any Bidder as to the meaning of the Bidding Documents or any part thereof.
   2. Requests for interpretations shall be made in writing to the Architect.
   3. Contact : Farnsworth Group, Inc.
      a. Anna Halepatali (ahalepatali@f-w.com), 2211 West Bradley Avenue, Champaign, IL 61821
   4. Inquiries received three (3) or more business days prior to the date fixed for opening of bids will be given consideration.
   5. Changes to the Bidding Documents will be in the form of an Addendum to the Bidding Documents, and when issued, will be on file in the office of the Architect upon issuance.
   6. Addenda will be distibuted to each registered plan holder holding Bidding Documents by means of the electronic bid site maintained by Farnsworth Group, Inc. It shall be the Bidders' responsibility to make inquiry as to the Addenda issued and provide distribution of Addenda to all Subcontractors and Suppliers not registered through the electronic bid site.
   7. Addenda shall become part of the Contract and all Bidders shall be bound by such Addenda, whether or not received by the Bidders.

F. Inspection of Site and Documents
   1. Bidder shall visit the site of the proposed work and fully acquaint himself/herself with the existing conditions there relating to construction and labor, and should fully inform himself/herself as to the facilities involved, the difficulties and restrictions attending the performance of the Contract.
   2. The Bidder shall thoroughly examine and familiarize himself/herself with the Drawings, Technical Specifications and all other Bidding Documents.

3. The Contractor by the execution of the Contract shall in no way be relieved of any obligation under it due to his/her failure to receive or examine any form or legal instrument or to visit the site and acquaint himself/herself with the existing conditions, and the Owner will be justified in rejecting any claim based on facts regarding which the contractor should have noticed as a result thereof.
4. A Non-Mandatory Prebid Meeting is scheduled for Tuesday, April 15, 2025.
    a. The Prebid meeting will be held at the 11:00 am Central at Washington Elementary: 507 W Condit Street, Robinson, IL 62454.

G. Bids

1. Scheduled Completion Dates: Owner has provided the required Substantial Completion Date on the Bid Form. Bidder shall state a stipulated sum amount for performance of the work in accordance with these schedule dates.
    a. Substantial Completion shall be by Friday, July 3, 2026.
    b. Final Completion shall be by Friday, August 7, 2026.
2. Each bidder shall include in his/her bid the following information:
    a. Principals
        1) Names
    b. Firm
        1) Name
        2) Treasury Number
        3) Address (City, State, Zip Code and Telephone Numbers)
3. Bidder shall attach a preliminary bar chart construction schedule coordinated with time frames indicated on his/her bid form.
4. The Owner reserves the right to require all or part of any remaining Work not completed by date designated for Substantial Completion to be performed after normal business hours or on other than normal working days at no “extra” or additional cost to Owner and with no extension of time.
5. Bids must be submitted on forms supplied by the Architect/Engineer. All shall be properly signed and seal affixed. Bids must be regular in every respect and no interlineations, excisions or special conditions shall be made or included in the Bid Form by the Bidder except as stated above. The Contractor shall submit two copies of the completed Bid Form and retain one copy for his/her records.
6. Bid Proposal Documents, including the Bid Form, shall be enclosed in envelopes (outer and inner), both of which shall be sealed and clearly labeled with words "42502", name of Bidder, and date and time of Bid Opening. Faxed bid proposals will not be accepted.
7. The Owner may consider as irregular any Bid on which there is an alteration of or departure from the Bid Form provided herein, and at his/her option may reject same.
8. Corrections, erasures or other changes in the Bid Proposal Documents must be explained or noted over the signature of the Bidder.
9. Bids received prior to the advertised hour of opening will be securely kept sealed. The officer whose duty it is to open them will decide when the specified time has arrived. No Bid received thereafter will be considered, except when a Bid arrives by United States mail after the time fixed for opening, but before the reading of all other Bids is completed, and it is shown to the satisfaction of the Owner that the non-arrival on time was due solely to delay in the mails for which the Bidder was not responsible, such Bid will be received and considered.

a. Bidders are cautioned that, while telegraphic modifications of Bids may be received as provided above, such modifications, if not explicit and if in any sense subject to misinterpretation, shall make the Bid so modified or amended, subject to rejection.

10. Opening Of Bids
    a. At the time and place fixed for the opening of Bids, the Owner will cause to be opened and publicly read aloud every Bid received within the time set for receiving Bids, irrespective of any irregularities therein. Bidders and other persons properly interested may be present, in person or by representative.
11. Withdrawal Of Bids
    a. Bids may be withdrawn on written or telegraphic request dispatched by the Bidder in time for delivery in the normal course of business to the time fixed for opening; provided that written confirmation of any telegraphic withdrawal over the signature of the Bidder is placed in the mail and postmarked prior to the time set for Bid opening. The Bid guaranty of any Bidder withdrawing his Bid in accordance with the foregoing conditions will be returned promptly

H. Substitutions
1. Each Bidder represents that his/her Bid is based upon the materials and equipment described in the Bidding Documents.
2. No Substitution will be considered unless request has been submitted to the Architect for approval at least seven (7) days prior to the date of receipt of Bids. Substitution requests shall be written and accompanied by adequate technical and cost data.
3. Requests shall include a complete description of the proposed Substitution, name of the material or equipment for which it is to be substituted, drawings, cuts, performance and test data, and any other data or information necessary for a complete evaluation by the Architect.
4. If the Architect approves any proposed Substitution, such approval will be set forth in an Addendum not less than three (3) days prior to the date for receipt of Bids.

I. Statement Of Bidder's Qualifications
1. Each Bidder shall upon request of the Owner submit on the form furnished for that purpose (a copy of which is included in the Contract Documents), a statement of the Bidder's qualifications, his experience record in constructing the type of improvements embraced in the contract, his organization and equipment available for the work contemplated, and, when specifically requested by the Owner, a detailed financial statement. The Owner shall have the right to take such steps as it deems necessary to determine the ability of the Bidder to perform his obligations under the Contract and the Bidder shall furnish the Owner all such information and data for this purpose as it may request. The right is reserved to reject any Bid where an investigation of the available evidence or information does not satisfy the Owner that the Bidder is qualified to carry out properly the terms of the Contract.

J. Award of Contract: Rejection of Bids
1. The Contract, if awarded, will be awarded to the qualified, responsible Bidder submitting the lowest combination of "Base Bid" for the Work; plus any acceptable Alternates, complying with the conditions of the Bidding Documents, within the Owner's Budget.
2. The Contract shall be deemed to have been awarded when notice of an award shall have been given to the Bidder by some officer or agent of the Owner. The Bidder to whom the awards are made will be notified at the earliest possible date.

3. The Owner reserves the right to consider as unqualified to do the work of general construction any Bidder who does not habitually perform with his own forces the major portions of the work involved in construction of the Improvements embraced in this Contract.
4. The Owner, however, reserves the right to reject any and all Bids and to waive any informality in Bids received whenever such action(s) will serve the Owner's best interest.

K. Bids for Base Bids will be held good for a period of sixty (60) and Alternates will be held good for a period of sixty (60) days subsequent to the opening of Bids.

L. Use and Clarification of Drawings and Specifications
1. All Drawings and Specifications for the work are the property of Owner and are intended solely for use in the work contemplated in such Drawings and Specifications.
2. If there are any discrepancies in, or omissions from, the Drawings or Specifications, or if the Bidder is in doubt as to the true meaning of any part of the Bidding Documents, he/she shall request clarification from Architect/Engineer. Such request must be in writing and shall be made not less than three (3) working days prior to the time scheduled for the termination of Bidding. Interpretations in response to inquiries from any Bidder, or any clarification or corrections issued, will be mailed to each Bidder. If the Bidder fails to request clarification regarding methods of performing work or the material required, his/her proposal shall be deemed to include the method requiring the greater quantity of work or material or upon the material of greatest cost indicated.

M. Execution of Agreement; Submittal of Performance and Payment Bonds and Certificate of Insurance
1. Subsequent to the award and within ten (10) days after the prescribed forms are prepared and presented for signature by the Architect/Engineer, the successful Contractor shall execute and return to the Architect, an Agreement in the form referenced in the Contract Documents in such number of copies as the Owner may require. The submittal shall include required certificates of insurance forms/insurance policies, performance and payment bonds, and data requested by Owner for Owner's insurance. These submittals shall be complete prior to initiation of on-site work.
2. Contractor shall furnish Performance and Payment Bonds in penal sum equal to the contract. The bond premium is to be included in the Stipulated Sum Bid. Contractor represents that this Proposal does include all costs of such bonds.
3. Bidders should note that this Project Manual consists of all pages listed in the Table of Contents. Upon notification, the Architect will furnish any pages missing from the Project Manual, or from the Drawings as printed.
4. If the Bidder to whom the award is made shall fail to enter into a contract for the performance of the Work or furnish the Performance and Payment Bonds and the required certificates within ten (10) days, he/she shall forfeit his/her claim to the Work and the amount represented by the Bid Security accompanying his/her Proposal shall become the property of the Owner as the agreed and liquidated amount of damages caused by such failure.

N. Pre-Construction Conference
1. A "Pre-Construction" Conference will be scheduled shortly after the issuance of the "Notice to Proceed", to establish lines of communication, review schedules, and establish guidelines for execution of the work. This meeting is to be attended by the Contractor, any Subcontractors, the Owner, and the Architect/Engineer.

O. Bidder's Responsibility for Condition of Work

1. The Bidder shall, before submitting his/her Proposal, be held to have examined the premises, so as to compare them with the Drawings and Specifications, and to have satisfied himself/herself as to the existing conditions of the premises and limitations under which the work will have to be executed. No allowance shall subsequently be made on behalf of the Bidder by reason of any error or neglect on his/her part for having failed to follow the instruction here given.
2. The Bidder shall be held to have carefully read the Instructions to Bidders, the General Conditions, the Specifications for his/her work and other branches of the work to the end that he/she may be fully informed not only as to the work he/she is to perform, but also know about the work that will be required to be done by all Subcontractors.

P. Contract Information:
1. Refer to paragraph G above for completion date information.
2. Bids for Base Bids will be held good for a period of sixty (60) days and Alternates will be held good for a period of sixty (60) days subsequent to the opening of Bids.
3. If Contractor does not complete work by date designated Substantial Completion, Owner may require that all or part of any remaining Work to be performed after building leaser's/user's normal business hours or on other than normal working days at no "extra" or additional cost to Owner and with no extension of time.

Q. Sales Tax
1. Owner is a tax exempt organization and Contractor will be permitted to use Owner's tax exempt number for this project.

R. Building Permits
1. The Owner shall provide the Building Permit for the project.
2. Contractor shall obtain and include in the Bid the cost for all notifications, permits, inspection fees, utility connections, curb opening fees and similar charges imposed by government and quasi-governmental entities with jurisdiction, as may be required for all work to be performed for this project.

S. Payment
1. Owner will make partial payments as the work progresses, if found satisfactory by Architect/Engineer. Contractor may submit to Owner, not more than once a month, a partial payment invoice, using the form designated in Section 00 6100, setting forth the value, based on the prices in this Proposal, of labor, materials and supplies furnished and incorporated in the work to the satisfaction of Owner's Liaison and Architect/Engineer and of materials suitably stored on the site at the date of such submission.

T. EXECUTION OF AGREEMENT: PERFORMANCE AND PAYMENT BOND
1. Subsequent to the award and within ten (10) days after the prescribed forms are presented for signature, the successful Bidder shall execute and deliver to the Owner an Agreement in the form included in the Contract Documents in such number of copies as the Owner may require.
2. Having satisfied all conditions of award as set forth elsewhere in these documents, the successful Bidder shall, within the period specified in paragraph "a" above, furnish a surety bond in a penal sum not less than the amount of the Contract as awarded, as security for the faithful performance of the Contract, and for the payment of all persons, firms or corporations to whom the Contractor may become legally indebted for labor, materials, tools, equipment, or services of any nature including utility and transportation services, employed or used by

him in performing the work. Such bond shall be in the same form as that included in the Contract Documents and shall bear the same date as, or a date subsequent to that of the Agreement. The current power of attorney for the person who signs for any surety company shall be attached to such bond. This bond shall be signed by a guaranty or surety company listed in the latest issue of the U.S. Treasury Circular 570 and the penal sum shall

U. Wage Rates
   1. See Section 00 7300.

V. Equal Employment Opportunity
   1. See Section 00 7300.

W. Illinois Drug Free Work Place Act
   1. Adhere to 30 ILCS 580/1 (ADD 03). See Section 00 7300.

X. Contractor/Subcontractor Employee Background Checks
   1. See Section 00 7300.

END OF SECTION 002100

SECTION 08 8723 - SAFETY AND SECURITY FILMS

PART 1 GENERAL

1.1. SECTION INCLUDES

A. Glazing film applied to new glazing assemblies.

B. New Glazing: Factory or shop install film to glazing before installation in frames.

C. Glazing assemblies to receive film are indicated on drawings.

1.2. RELATED REQUIREMENTS

A. Section 08 8000 - Glazing: New glazing to receive film.

1.3. REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).

C. ASTM D882 - Standard Test Method for Tensile Properties of Thin Plastic Sheeting; 2018.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

1.4. SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Record of product certification for safety requirements.
   2. Preparation instructions and recommendations.
   3. Storage and handling requirements and recommendations.
   4. Installation methods.

C. Samples: For each film product to be used, minimum size 4 inches by 6 inches, representing actual product, color, and patterns.

D. Test Reports: Detailed reports of full-scale chamber tests to specified criteria, using assemblies identical to those required for this project.

E. Specimen Warranty.

1.5. QUALITY ASSURANCE

A. Manufacturer Qualifications: Glazing film manufacturer specializing in manufacture of safety glazing films with minimum 10 years successful experience.

1.6. DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of authorities having jurisdiction.

1.7. FIELD CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8. WARRANTY

A. Provide 10 year manufacturer's replacement warranty to cover film against peeling, cracking, discoloration, and deterioration.

PART 2 PRODUCTS

2.1. MANUFACTURERS

A. Basis of Design: 3M Safety & Security Window Film; Safety S140 (SH14CLARL): www.solutions.3m.com.

B. Substitutions: See Section 01 6000 - Product Requirements.

2.2. SAFETY AND SECURITY GLAZING FILM

A. Safety Glazing:

B. Safety Glazing: For glazing assemblies to provide impact resistance complying with ANSI Z97.1 and 16 CFR 1201, Category II.

1. Surface applied film.
2. Requiring no supplemental anchoring devices.

2.3. MATERIALS

A. Glazing Film: Three-ply transparent polyester film for permanent bonding to glass.

1. Thickness: 0.014 inch, (14 mils) minimum.
2. Color: To be selected by the Owner and Architect – See drawings for more information and location. (ADD 03)
3. Adhesive Type: Optically flat pressure sensitive acrylic, meeting the following criteria:
   a. Viewing the film from a distance of ten feet at angles up to 45 degrees from either side of the glass, the film itself shall not appear distorted.
   b. It shall not be necessary to seal around the edges of the applied film system with a lacquer or other substance in order to prevent moisture or free water from penetrating under the film system.
4. Tensile Strength: 25,000 psi minimum when tested in accordance with ASTM D882.
5. Breaking Strength: 350 lbs/in when tested in accordance with ASTM D882.
6. Percent Elongation at Break: Greater than 125 percent when tested in accordance with ASTM D882.
7. Percent Elongation at Yield: Greater than 100 percent when tested in accordance with ASTM D882.
8. Abrasion Resistance: Less than 5 percent increase of transmitted light haze will result in accor
9. Surface Burning Characteristics: Flame spread index of 25, maximum, and smoke developed index of 450, maximum, when tested in accordance with ASTM E84 (Class A).
10. Light Transmission of Film Applied on 1/4 inch Thick Clear Annealed Glass:
    a. Visible Light Transmittance: 85 percent.
    b. Ultra Violet Light Transmittance: 1 percent, maximum.
    c. Visible Reflection: Not more than 10 percent.
    d. Solar Heat Gain Coefficient: 0.78.

B. Accessory Materials: As recommended or required by film manufacturer.

C. Glass Cleaner: As recommended by glazing film manufacturer.

PART 3 EXECUTION

3.1. EXAMINATION

A. Examine glass and frames. Verify that existing conditions are adequate for proper application and performance of film.

B. Verify glass is not cracked, chipped, broken, or damaged.

C. Verify that frames are securely anchored and free of defects.

D. If substrate preparation is the responsibility of another installer, notify Architect/Engineer of unsatisfactory preparation before proceeding.

3.2. PREPARATION

A. Clean glass of dust, dirt, paint, oil, grease, mildew, mold, and other contaminants that would inhibit adhesion.

B. Immediately prior to applying film, thoroughly wash glass with neutral cleaning solution.

C. Protect adjacent surfaces.

D. Do not begin installation until substrates have been properly prepared.

3.3. INSTALLATION

A. Do not apply glazing film when surface temperature is less that 40 degrees F or if precipitation is imminent.

B. Install in accordance with manufacturer's instructions, without air bubbles, wrinkles, streaks, bands, thin spots, pinholes, or gaps, as required to achieve specified performance.

C. Accurately cut film with straight edges to required sizes allowing 1/16 inch to 1/8 inch gap at perimeter of glazed panel unless otherwise required by anchorage method.

D. Seams: Seam film only as required to accommodate material sizes; form seams vertically without overlaps and gaps; do not install with horizontal seams.

E. Clean glass and anchoring accessories following installation. Remove excess sealants and other glazing materials from adjacent finished surfaces.

F. Remove labels and protective covers.

3.4. PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION