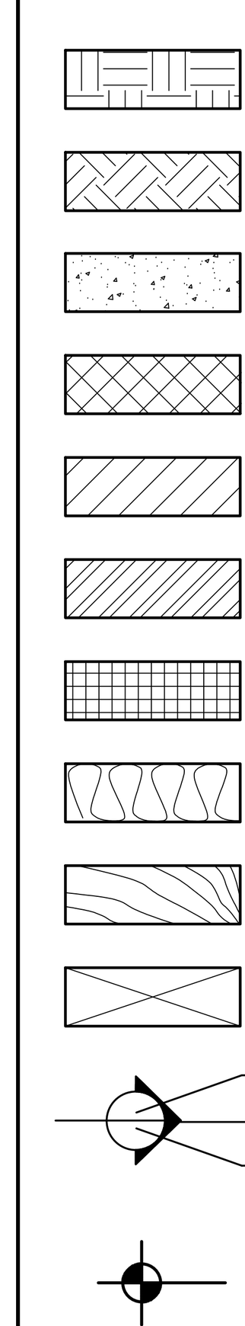
RENOVATION
AT
WOODBINE MUNICIPAL AIRPORT
HANGAR #5

675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

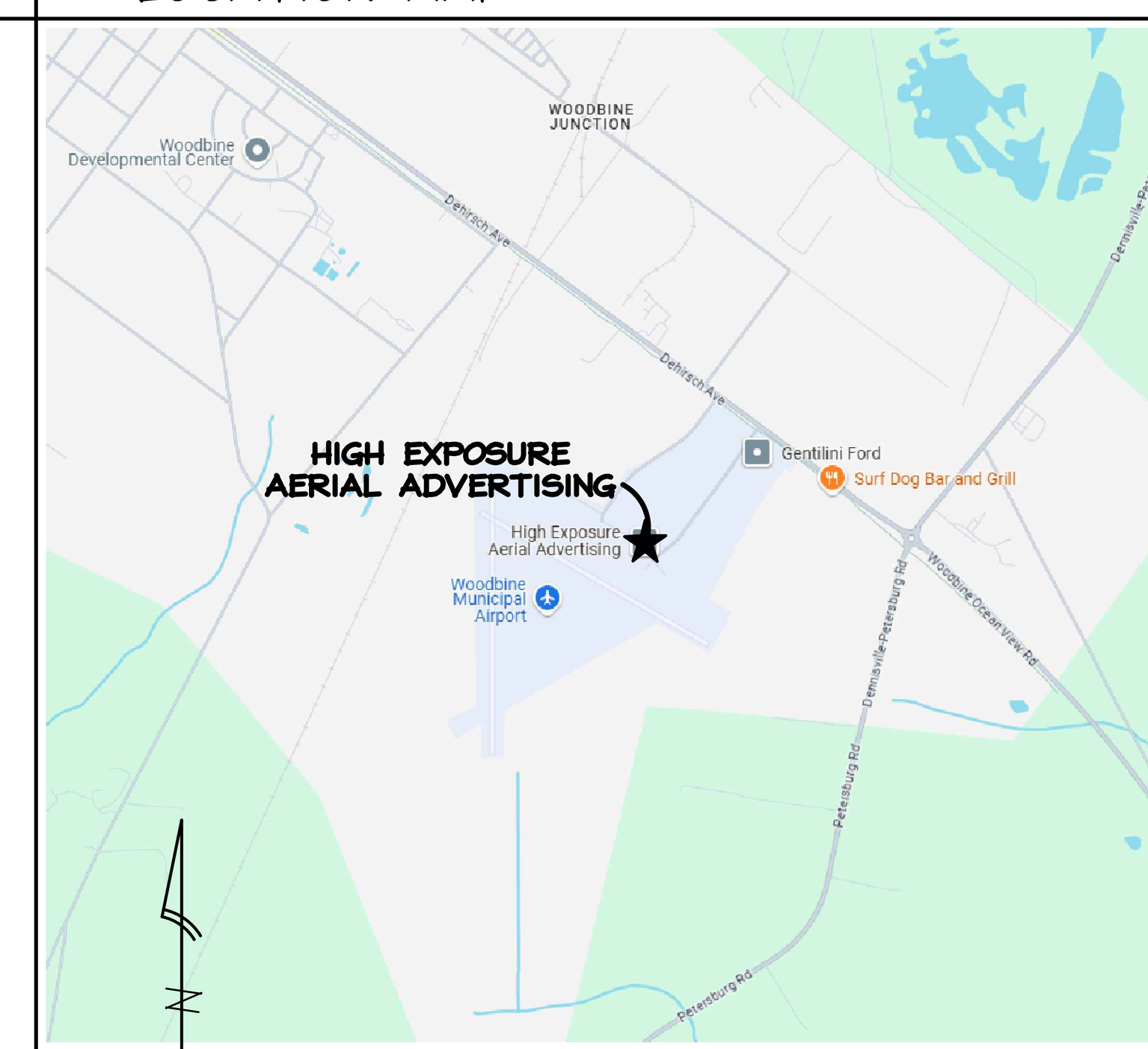
ABBREVIATIONS

AL. TH.	ALUMINUM THRESHOLD
B.P.	BEARING PLATE
BRG.	BEARING
BRK.	BRICK
CAB.	CABINET
C.A.B.C.	COURSE AGGREGATE BITUMINOUS CONCRETE
CARP.	CARPET
C.B.	CATCH BASIN
C.J.	CONTROL JOINT
CLG.	CEILING
CL.	CLOSET
C.L.L.	CONTRACT LIMIT LINE
CLR.	CLEAR - CLEARANCE
C.I.	CAST IRON
C.M.U.	CONCRETE MASONRY UNIT
C.O.	CLEAN OUT
COL.	COLUMN
CONC.	CONCRETE
CONT.	CONTINUOUS
CONTR.	CONTRACTOR
CORR.	CORRIDOR
CORRU.	CORRUGATED
C.S.	CONSTRUCTION SHOWING
C.S.P.	CONSTRUCTION SHOWING PAINTED
C.T.	CERAMIC TILE
C.T.C.B.	CERAMIC TILE COVE BASE
C.W.	COLD WATER
DEMO.	DEMOLISH
DIA.	DIAMETER
D.F.	DRINKING FOUNTAIN
D.L.	DOUBLE LOAD
DR.	DOOR
DWG.	DRAWING
EA.	EACH
ELEC.	ELECTRIC - ELECTRICAL
ELEV.	ELEVATION
E. PNL.	ELECTRICAL PANEL
EQUIP.	EQUIPMENT
EWC.	ELECTRIC WATER COOLER
EXP. JT.	EXPANSION JOINT
EXH.	EXHAUST
EXIST'G	EXISTING
E.T.R.	EXISTING TO REMAIN
F.A.B.C.	FINE AGGREGATE BITUMINUOUS CONCRETE
F.B.	FACE BRICK
F.D.	FLOOR DRAIN
F.E.	FIRE EXTINGUISHER
FIN. FL.	FINISH FLOOR
FIN. GR.	FINISH GRADE
FL.	FLOOR
FLD'G.	FOLDING
FD'N	FOUNDATION
FTG.	FOOTING
GYP.	GYPSUM BOARD
HRD. WD.	HARDWOOD
INSUL.	INSULATION
INT.	INTERIOR
INV.	INVERT
JAN.	JANITOR
JST.	JOIST
JT.	JOINT
KIT.	KITCHEN
LAV.	LAVATORY
L.W.T.	LIGHT WEIGHT
L.F.	LINEAR FEET
MAX.	MAXIMUM
MB.TH.	MARBLE THRESHOLD
MECH.	MECHANICAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MIR.	MIRROR
M.O.	MASONRY OPENING
M.T.P.	METAL TOILET PARTITION
M.R.	MAT RECESS
M. REC.	MOP RECEPTOR
M.T.	METAL THRESHOLD
MTL.	METAL
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OFF.	OFFICE
O.H.D.	OVERHEAD DOOR
OPN'G.	OPENING
PERF.	PERFORATED
PLAS.	PLASTIC
PLAT.	PLATFORM
PLY'WD	PLYWOOD
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
P.T.	PORCELAIN TILE
P.T.C.B.	PORCELAIN TILE COVE BASE
PTD.	PAINTED
PVC.	POLYVINYL CHLORIDE
Q.T.	QUARRY TILE
Q.T.C.B.	QUARRY TILE COVE BASE
R.	RISER
RAD.	RADIUS
R.D.	ROOF DRAIN
REQ'D	REQUIRED
RFG.	ROOFING
RM.	ROOM
R.O.	ROUGH OPENING
R.O.W.	RIGHT OF WAY
R.W.C.	RAIN WATER CONDUCTOR
SAN.	SANITARY
SCH.	SCHEDULE
SECT.	SECTION
SEW.	SEWER
S.L.	SKYLIGHT
SPEC.	SPECIFICATION(S)
S.S.	SERVICE SINK
STL.	STEEL
ST.STL.	STAINLESS STEEL
STOR.	STORAGE
S.U.	SINK UNIT
T.	TREAD
T. CN.	TOP OF CONCRETE
T.&G.	TONGUE AND GROOVE
TH.	THRESHOLD
THK.	THICK - THICKNESS
T.O.F.	TOP OF FOOTING
T.O.M.	TOP OF MASONRY
T.O.S.	TOP OF STEEL
T.PNL.	TELEPHONE PANEL
TYP.	TYPICAL
T.P.	TOILET PARTITION
UC.	UNDERCUT
U.D.	UNIT DIMENSION
U/G	UNDERGROUND
U.H.	UNIT HEATER
U.N.O.	UNLESS NOTED OTHERWISE
U/S	UNDER SLAB
U.V.	UNIT VENTILATOR
V.	SHEET VINYL
V.C.B.	VINYL COVE BASE
V.C.T.	VINYL COMPOSITION TILE
V.S.B.	VINYL STRAIGHT BASE
VEST.	VESTIBULE
V.T.R.	VENT THRU ROOF
W/	WITH
W.B.	WONDER BD. CEMENTATIOUS BACKER
W.C.	WATER CLOSET
WD.	WOOD
W/O	WITHOUT
WSCT.	WAINSCOT
WTH.	WIDTH
W.W.M.	WELD WIRE MESH

SYMBOLS



LOCATION MAP



SITE LOCATION

675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

LIST OF CONSULTANTS

ARCHITECT
McKERNAN ARCHITECTS & ASSOCIATES
100 DOBBS LANE SUITE 204
CHERRY HILL, N.J.
TEL: (856)-616-2960
FAX: (856)-616-2963

MEP ENGINEER
HOLSTEIN WHITE
3800 HORIZON BLVD SUITE 503
TREVOSE, PA
TEL: (215)-322-7711
FAX: (215)-322-7709

STRUCTURAL ENGINEER
PENNONI
1900 MARKET STREET SUITE 300
PHILADELPHIA, PA
TEL: (215)-222-3000

DRAWING INDEX

CODE INFORMATION

APPLICABLE CODES:

INTERNATIONAL BUILDING CODE/2021 (NJAC 5:23-3.14)
THE NATIONAL STANDARD PLUMBING CODE/2021 (N.J.A.C. 5:23-3.15)
THE NATIONAL ELECTRICAL CODE (NFPA 70) 2020 (NJAC 5:23-3.16)
INTERNATIONAL MECHANICAL CODE/2021 (NJAC 5:23-3.20)
BARRIER FREE REQUIREMENTS PER ICC/ANSI A117.1-2017
REHABILITATION CODE (NJAC 5:23-6)
INTERNATIONAL ENERGY CONSERVATION CODE 2021

BUILDING USE GROUP/ OCCUPANCY
S-1 (MODERATE-HAZARD STORAGE)
CONSTRUCTION TYPE - VB

AREA:
EXISTING HANGAR BUILDING AREA IS APPROX. 4,894 S.F.

NUMBER OF STORIES:
ONE STORY W/ MEZZANINE

OCCUPANT LOADS:

1.	100 UTILITY ROOM	70 S.F/ 300 GROSS =	1 OCCUPANT
2.	EXISTING OFFICE	72 S.F/ 150 GROSS =	1 OCCUPANT
3.	EXISTING OFFICE	159 S.F/ 150 GROSS =	1 OCCUPANT
4.	EXISTING OFFICE	108 S.F/ 150 GROSS =	1 OCCUPANT
5.	EXISTING HANGAR	4,182 S.F/ 300 GROSS =	8 OCCUPANT
			12 TOTAL OCCUPANTS

FIRE PROTECTION:
BUILDING IS NOT SPRINKLERED

EGRESS REQUIREMENTS:
12 OCCUPANTS x .2" PER OCCUPANT = 2.4" REQUIRED FOR EGRESS (72" PROVIDED)

FIRE RESISTIVE RATINGS:

STRUCTURAL FRAME INCLUDING COLUMNS, GIRDERS, TRUSSES	0 HR
EXTERIOR BEARING WALLS	0 HR
INTERIOR BEARING WALLS	0 HR
EXTERIOR NONBEARING WALLS AND PARTITIONS	0 HR
INTERIOR NONBEARING WALLS AND PARTITIONS	0 HR
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS	0 HR
ROOF CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS	0 HR
TENANT SEPARATION WALL	0 HR

PLUMBING:
S-1 (MODERATE-HAZARD STORAGE) WATER CLOSETS = 1 PER 100 OCCUPANTS

12 OCCUPANTS REQUIRES:

- -1 WATER CLOSETS
- -1 LAVATORY
- -1 SERVICE SINK
- -1 DRINKING FOUNTAIN

No.	DATE	DESCRIPTION	REV'D BY
	5/9/2025	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT: **RENOVATION AT WOODBINE MUNICIPAL AIRPORT HANGAR #5**
675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

JOSEPH F. McKERNAN JR., R.A.
NJ ARCH AI 10984 . PA ARCH RA-011402-X . CT ARCH 7324

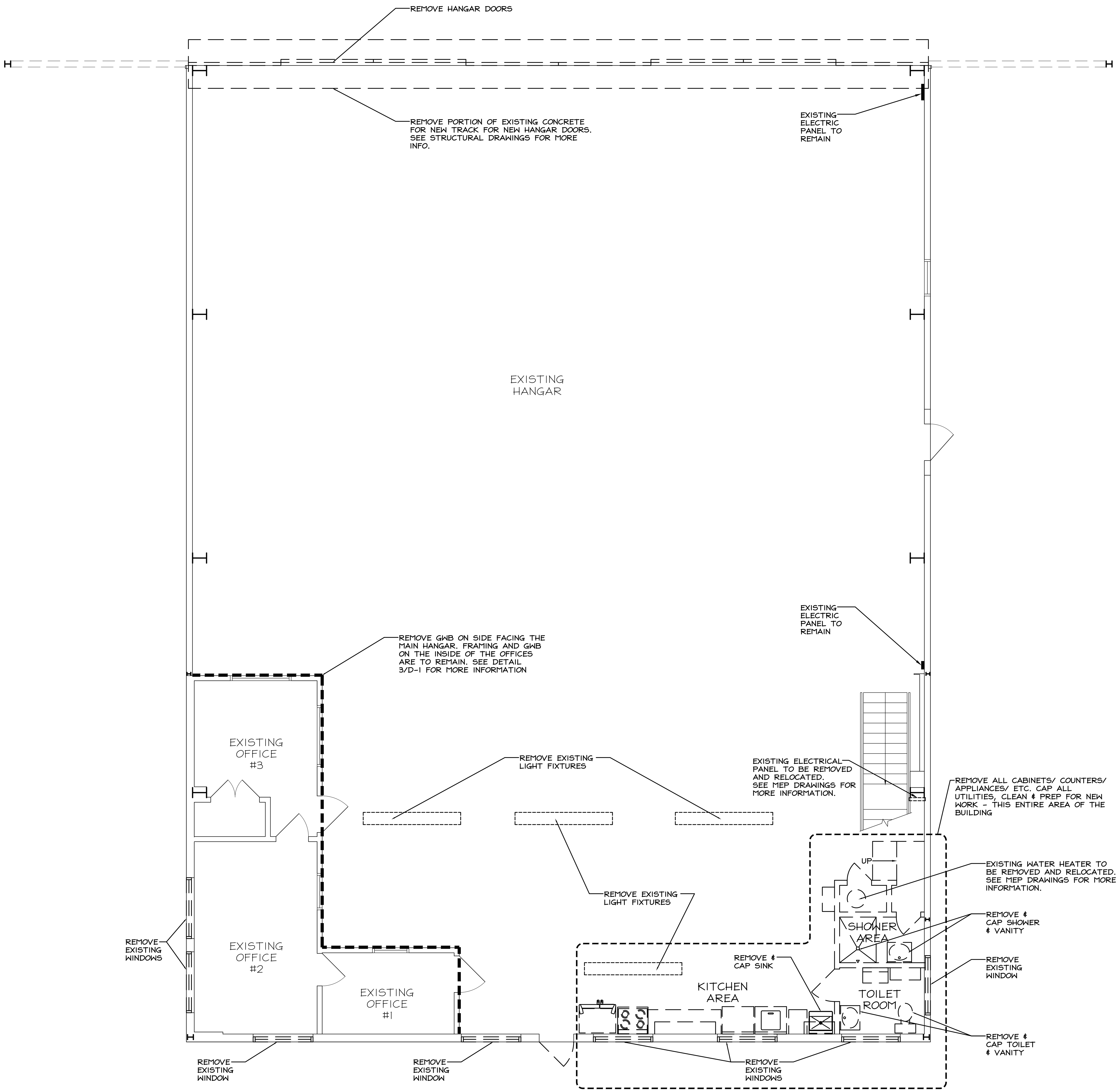
TITLE: COVER SHEET

SEAL:

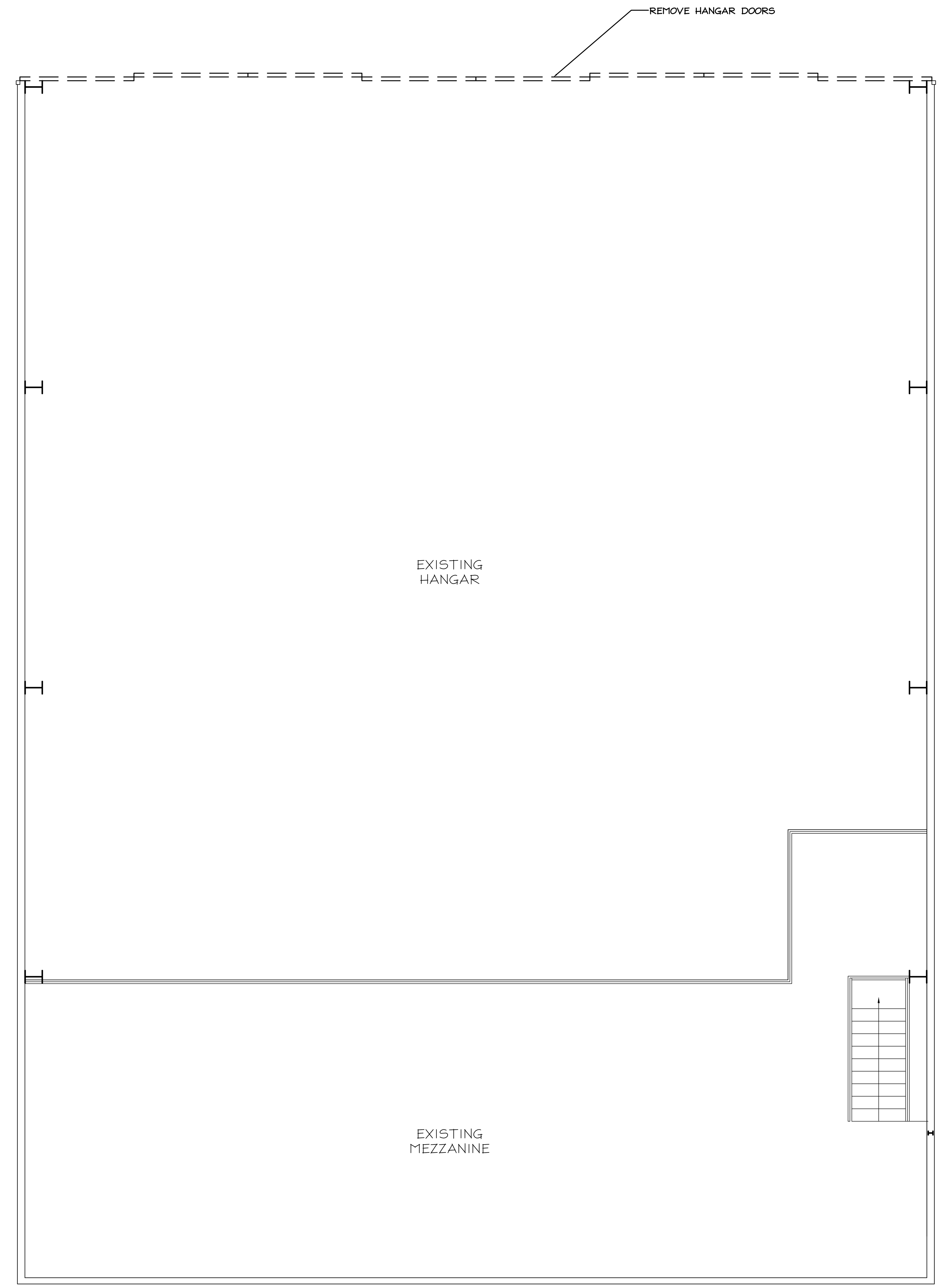
DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

SCALE: AS NOTED
PROJ.NO.: 1336
DATE: 05/09/2025
REV'D.:
DRAWN BY: DR
CHKD.BY: OG

DRAWING NO: CS-1



1 / D-1 DEMOLITION PLAN - HANGAR #5
1/4" = 1'-0"



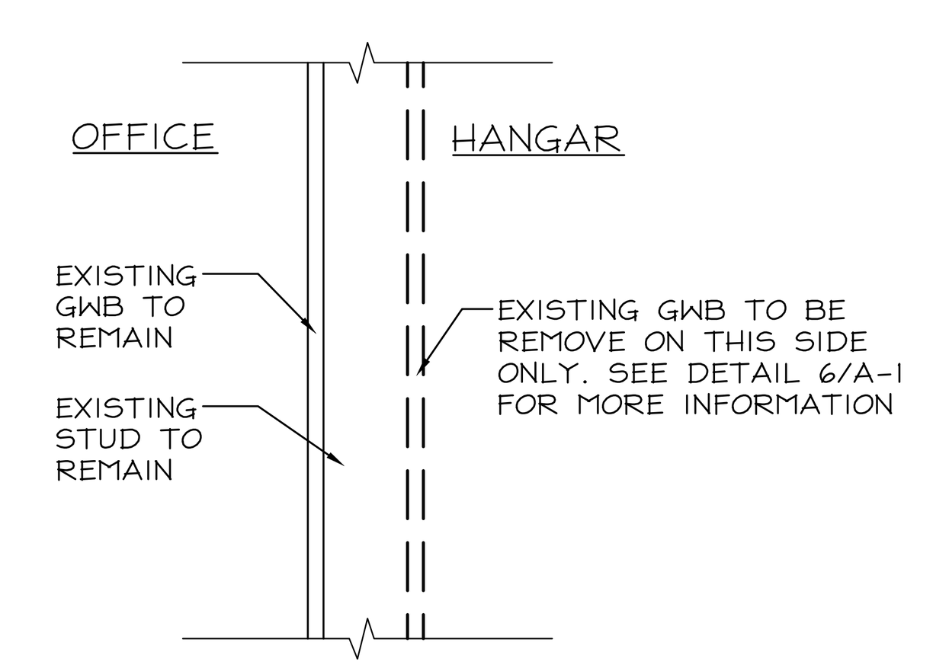
2 / D-1 DEMOLITION PLAN - HANGAR #5
1/4" = 1'-0"

DEMOLITION NOTES

1. REMOVE AND LEGALLY DISPOSE OF ITEMS EXCEPT THOSE INDICATED TO BE REINSTALLED, SALVAGED OR TO REMAIN ON THE OWNER'S PROPERTY. PROMPTLY DISPOSE OF DEMOLISHED MATERIALS. DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON-SITE.
2. LAYOUT WORK AND VERIFY DIMENSIONS IN FIELD PRIOR TO STARTING DEMOLITION.
3. OWNER WILL REMOVE LOOSE FURNITURE, APPLIANCES AND ITEMS PRIOR TO DEMOLITION.
4. DO NOT CLOSE, BLOCK, OR OTHERWISE OBSTRUCT EXIT WAYS OF THE BUILDING.
5. SURVEY THE CONDITION OF THE BUILDING(S) TO DETERMINE WHETHER REMOVING AN ELEMENT MIGHT RESULT IN STRUCTURAL DEFICIENCY OR UNPLANNED COLLAPSE OF ANY PORTION OF THE STRUCTURE OR ADJACENT STRUCTURES DURING SELECTIVE DEMOLITION.
6. REMOVE ELECTRICAL SWITCHES, RECEPTACLES, AND WIRES LOCATED WITHIN WALLS TO BE REMOVED.
7. REMOVE FROM BUILDING SITE: DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM DEMOLITION OPERATIONS. TRANSPORT AND LEGALLY DISPOSE OFF SITE. NOTIFY OWNER IF HAZARDOUS MATERIALS ARE ENCOUNTERED DURING DEMOLITION OPERATIONS.
8. REMOVE EXISTING CARPET, VINYL BASE AND OTHER FLOORING MATERIALS, AND CEILINGS WHERE NOTED TO BE PREPARED FOR NEW INSTALLATION OF FINISH.
9. EXISTING STRUCTURE TO REMAIN SHALL NOT BE DISTURBED. CONSULT WITH OWNER AND ARCHITECT REGARDING AREAS OF CONFLICT.
10. MAINTAIN EXISTING UTILITIES INDICATED TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION.
11. LOCATE, IDENTIFY, SHUT OFF, DISCONNECT, AND SEAL OR CAP OFF UTILITY SERVICES SERVING EQUIPMENT LOCATED IN THE DEMOLITION AREA.
12. WHERE UTILITY SERVICES ARE REQUIRED TO BE REMOVED, RELOCATED, OR ABANDONED, PROVIDE BYPASS CONNECTIONS TO MAINTAIN CONTINUITY OF SERVICE TO OTHER PARTS OF THE BUILDING BEFORE PROCEEDING WITH SELECTIVE DEMOLITION.
13. RESTORE EXPOSED FINISHES OF PATCHED AREAS AND EXTEND FINISH RESTORATION INTO ADJOINING CONSTRUCTION TO REMAIN IN A MANNER THAT ELIMINATES EVIDENCE OF PATCHING AND REFINISHING.
14. UPON COMPLETION OF DEMOLITION WORK, REMOVE TOOLS, EQUIPMENT, AND DEMOLISHED MATERIALS FROM SITE. REMOVE PROTECTION AND LEAVE INTERIOR AREAS BROOM CLEAN.
15. COORDINATE OPENINGS FOR MECH, ELEC., AND PLMB'G. w/ OTHER PRIME CONTRACTORS.
16. PATCH & REPAIR ALL WALLS IN AREAS OF NEW WORK.
17. CONTRACTOR TO CAP ALL REMOVED PLUMBING FIXTURES AND PATCH/ REPAIR FLOOR AS REQUIRED.

WALL LEGEND

- EXISTING PARTITION WALL TO REMAIN
- PARTITION WALL TO BE REMOVED
- DOOR AND FRAME TO BE REMAIN
- DOOR AND FRAME TO BE REMOVED



3 / D-1 WALLS SECTION
1-1/2" = 1'-0"

No.	DATE	DESCRIPTION	REV'D BY
	5/9/2025	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT: **RENOVATION AT WOODBINE MUNICIPAL AIRPORT HANGAR #5**
675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

JOSEPH F. McKERNAN JR., R.A.
NJ ARCH AI 10984 . PA ARCH RA-011402-X . CT ARCH 7324

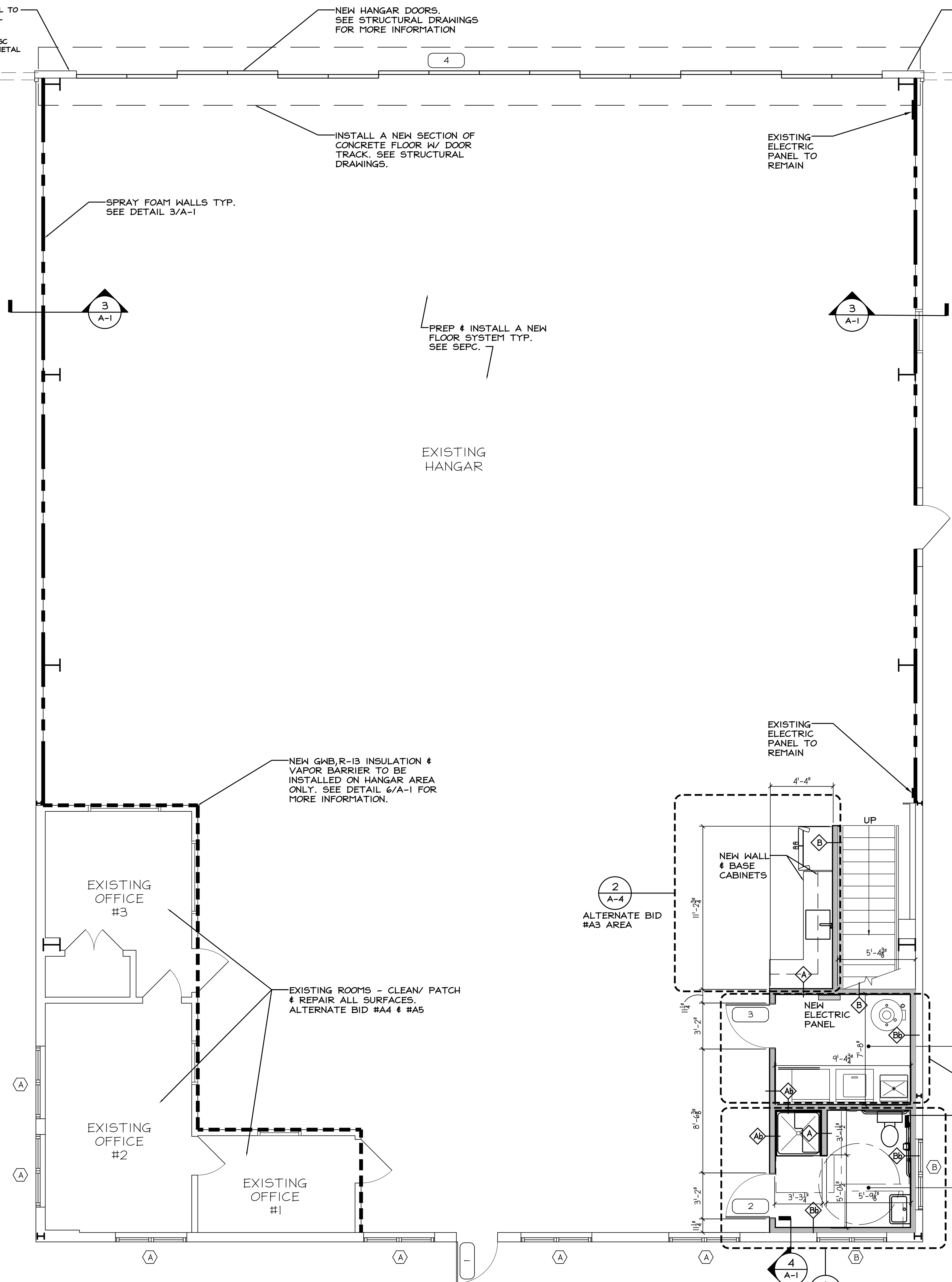
TITLE: DEMOLITION PLANS HANGAR #5

SEAL:

DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

SCALE: AS NOTED
PROJ.NO.: 1336
DATE: 05/09/2025
REV'D.:
DRAWN BY: DR
CHKD.BY: OG

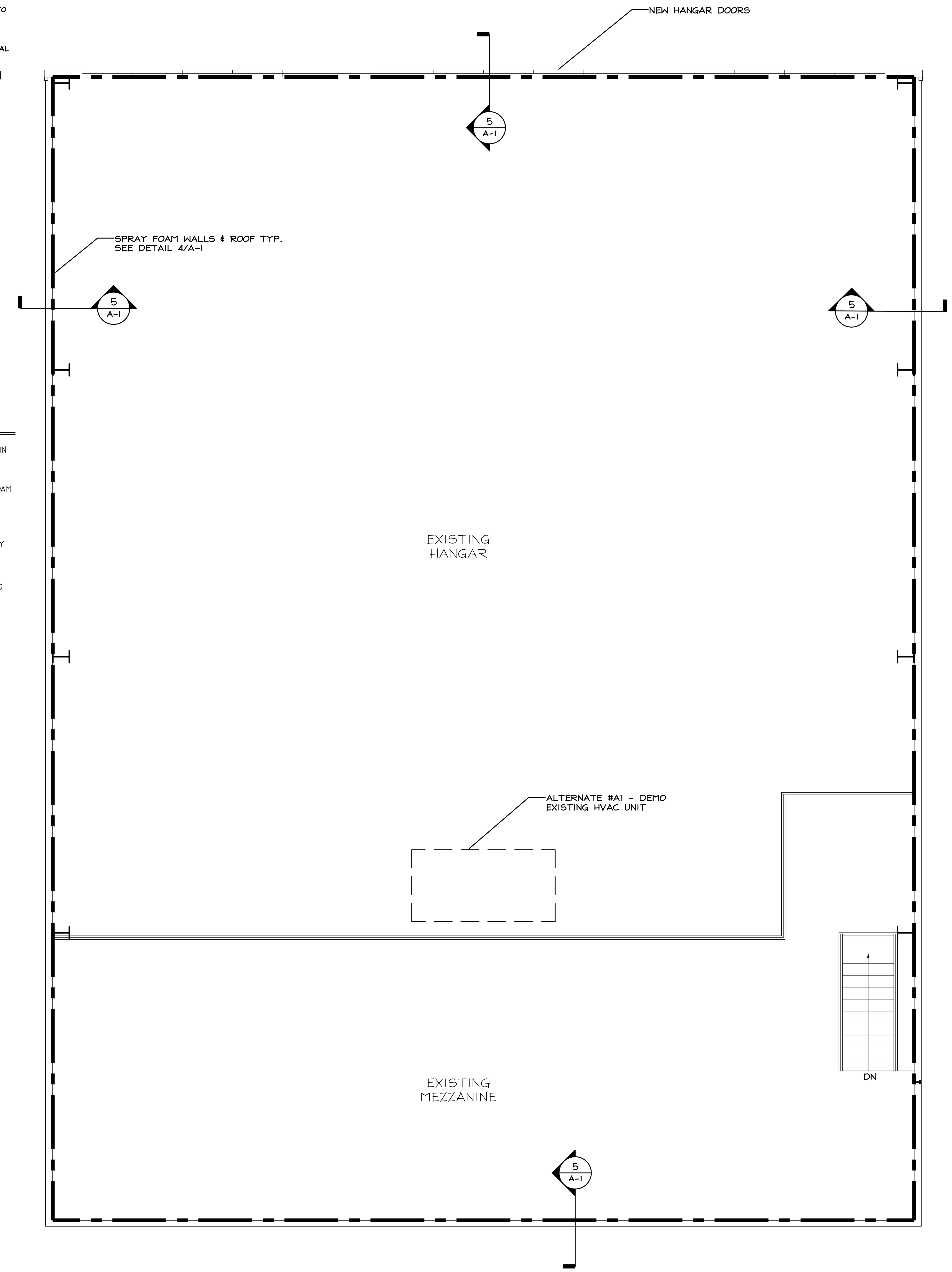
DRAWING NO: D-1



1 A-1 CONSTRUCTION PLAN - HANGAR #5
1/4" = 1'-0"

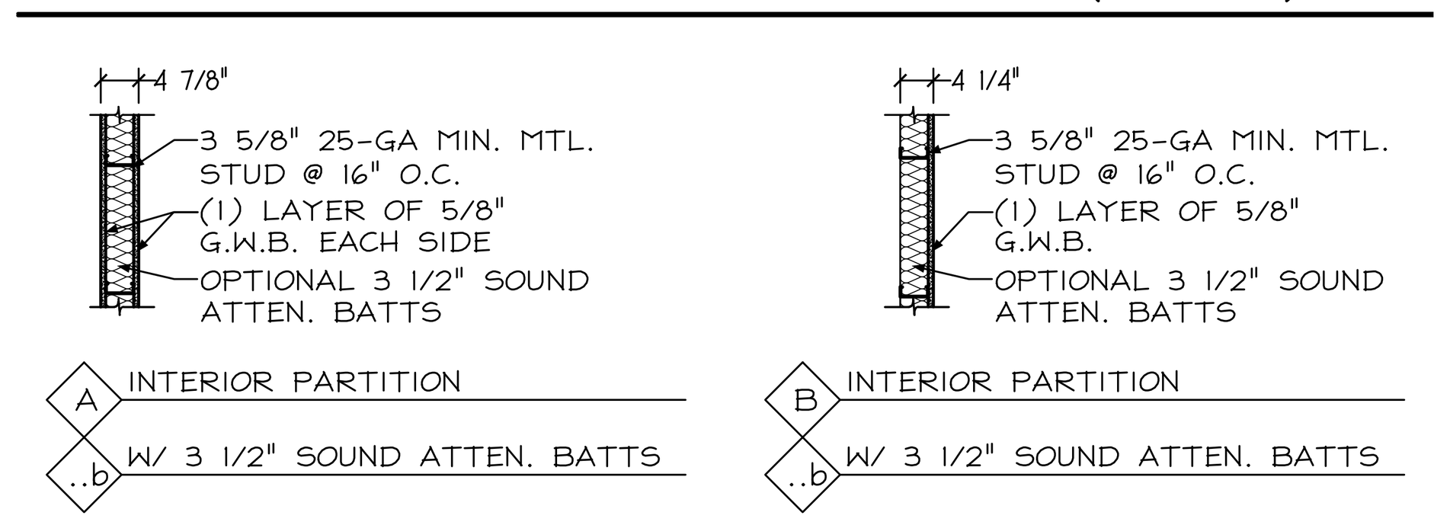
WALL LEGEND

- EXISTING PARTITION WALL TO REMAIN
- NEW PARTITION WALL
- NEW R-19 POLYURETHANE SPRAY FOAM INSULATION FOR EXTERIOR WALLS. SEE DETAIL 3/A-1
- NEW R-19 POLYURETHANE SPRAY FOAM INSULATION FOR EXTERIOR WALLS & R-19 POLYURETHANE SPRAY FOAM INSULATION FOR ROOF. SEE DETAILS 3/A-1 & 4/A-1
- NEW 5/8" GWB WALL WITH R-13 INSULATION AND VAPOR BARRIER TO BE INSTALLED FROM FLOOR TO CEILING IN HANGAR AREA ONLY.



2 A-1 MEZZANINE - HANGAR #5
1/4" = 1'-0"

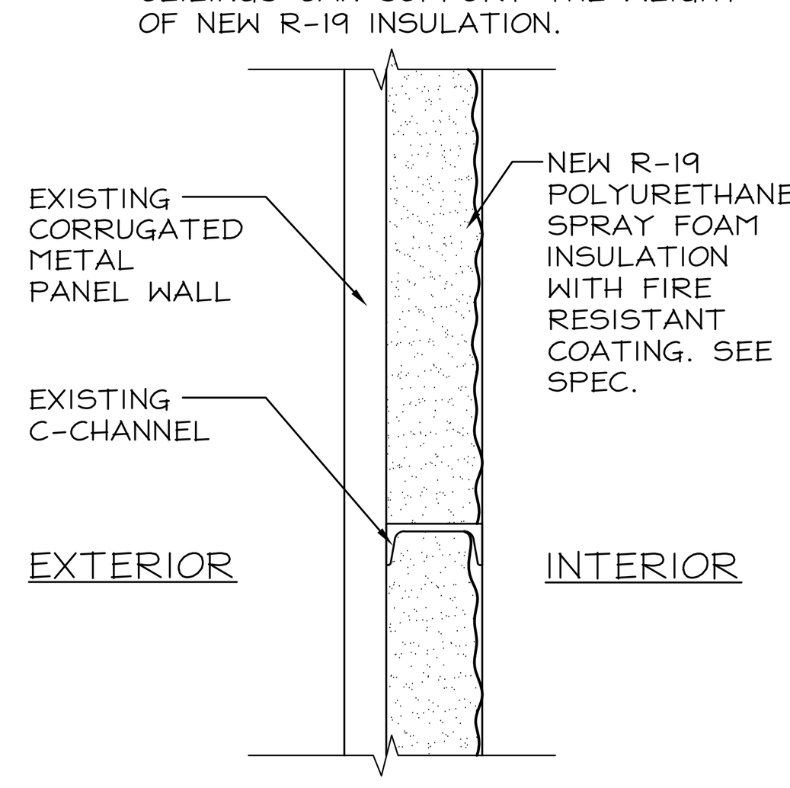
TYPICAL INTERIOR PARTITIONS: (PLAN VIEW)



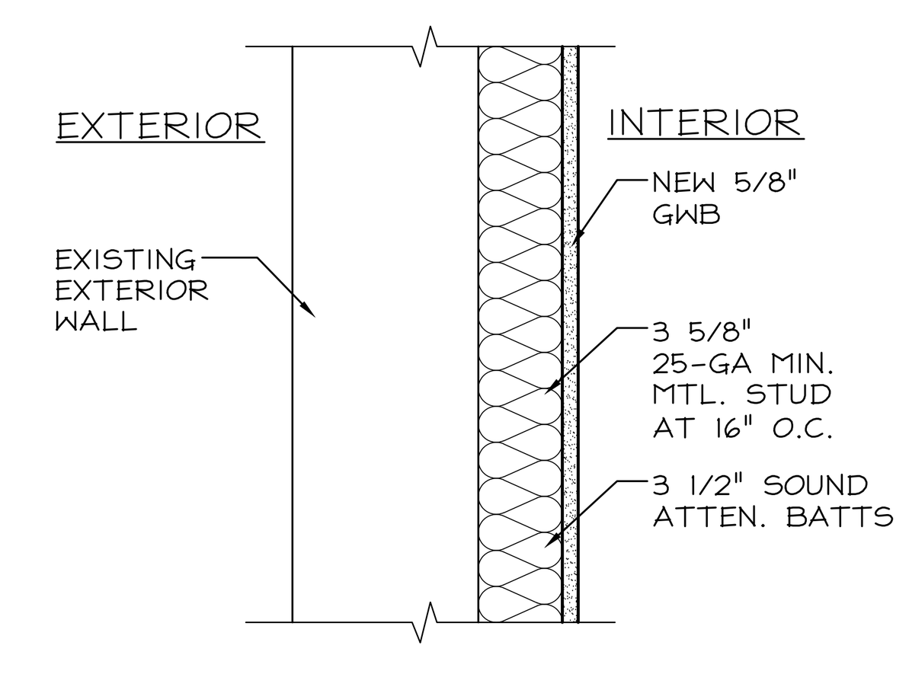
GENERAL CONSTRUCTION NOTES

1. CONTRACTOR TO VERIFY OR ESTABLISH ALL DIMENSIONS, ELEVATIONS AND CONDITIONS IN THE FILED. ALL DIMENSIONS ARE TO THE FACE OF METAL STUD
2. CONTRACTOR TO CONFORM TO ALL APPLICABLE CODES. OBTAIN ALL PERMITS AS REQUIRED.
3. PAINT ALL NEW AND EXISTING WALLS AT AREAS OF NEW WORK, WITH ONE COAT PRIMER AND TWO COATS FINISH PAINT (U.N.O.).
4. PROVIDE DOUBLE STUDS AT ALL DRYWALL OPENINGS.
5. CONTRACTOR TO SUBMIT SAMPLES OF FLOORING, WINDOWS AND FINISHES, ETC. FOR OWNER'S APPROVAL PRIOR TO INSTALLATION.
6. SEE SHEET A-3 FOR WINDOW TYPE & INFORMATION.

NOTE:
CONTRACTOR'S RESPONSIBILITY TO INSURE EXISTING HANGAR WALLS & CEILINGS CAN SUPPORT THE WEIGHT OF NEW R-19 INSULATION.

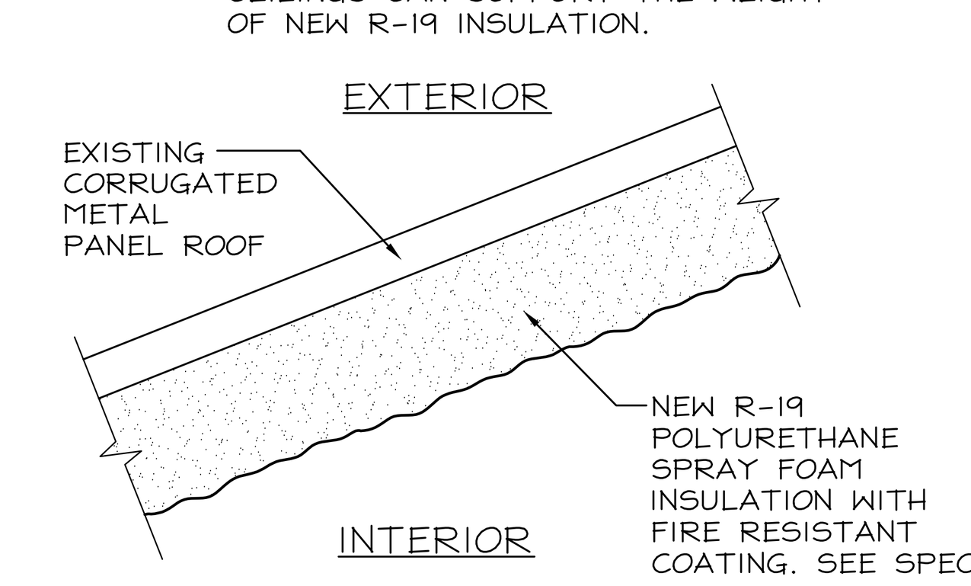


3 A-1 TYPICAL SECTION AT EXTERIOR WALLS
1-1/2" = 1'-0"

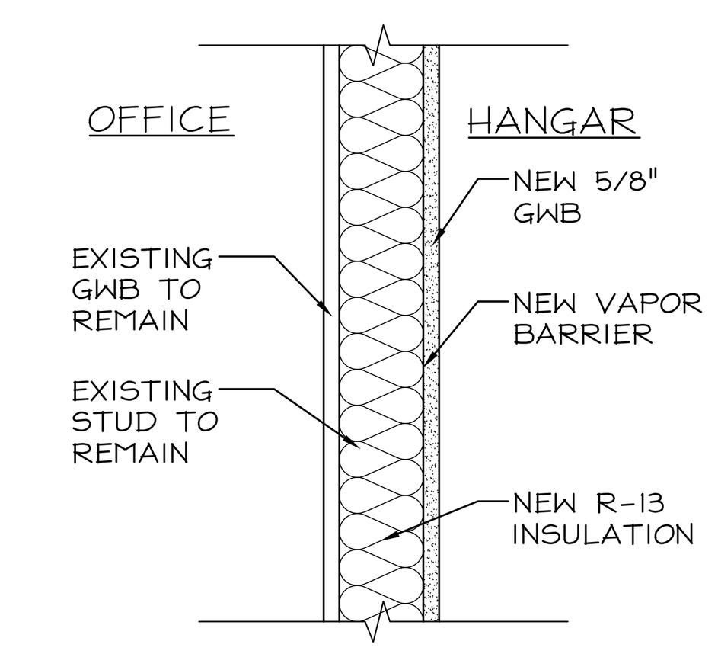


4 A-1 WALLS SECTION
1-1/2" = 1'-0"

NOTE:
CONTRACTOR'S RESPONSIBILITY TO INSURE EXISTING HANGAR WALLS & CEILINGS CAN SUPPORT THE WEIGHT OF NEW R-19 INSULATION.



5 A-1 TYPICAL SECTION AT ROOF
1-1/2" = 1'-0"



6 A-1 WALLS SECTION
1-1/2" = 1'-0"

No.	DATE	DESCRIPTION	REV'D BY
	5/9/2025	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:
RENOVATION AT WOODBINE MUNICIPAL AIRPORT HANGAR #5
675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

JOSEPH F. McKERNAN JR., R.A.
NJ ARCH AI 10984 . PA ARCH RA-011402-X . CT ARCH 7324

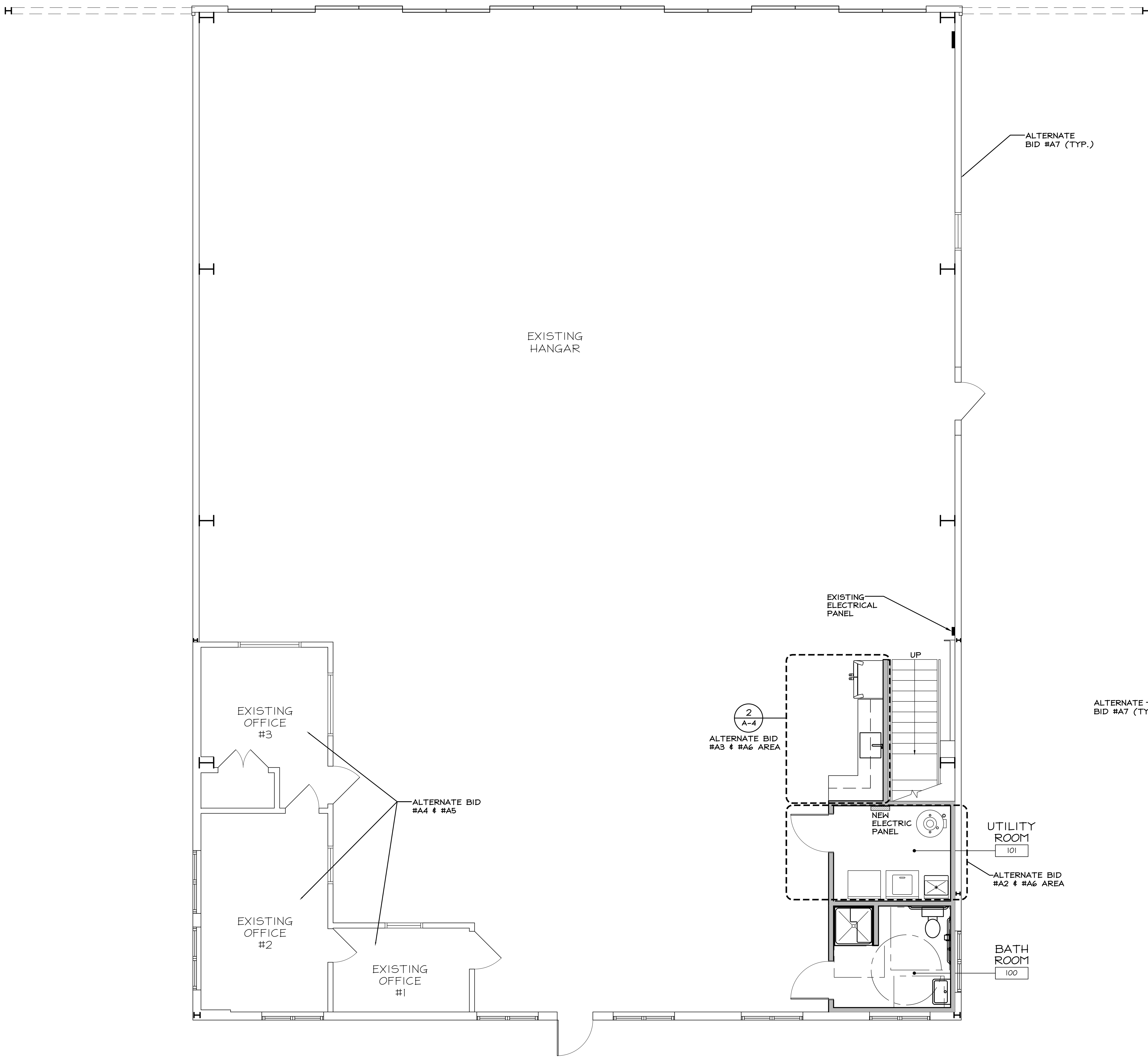
TITLE: CONSTRUCTION FLOOR PLANS HANGAR #5

SEAL:

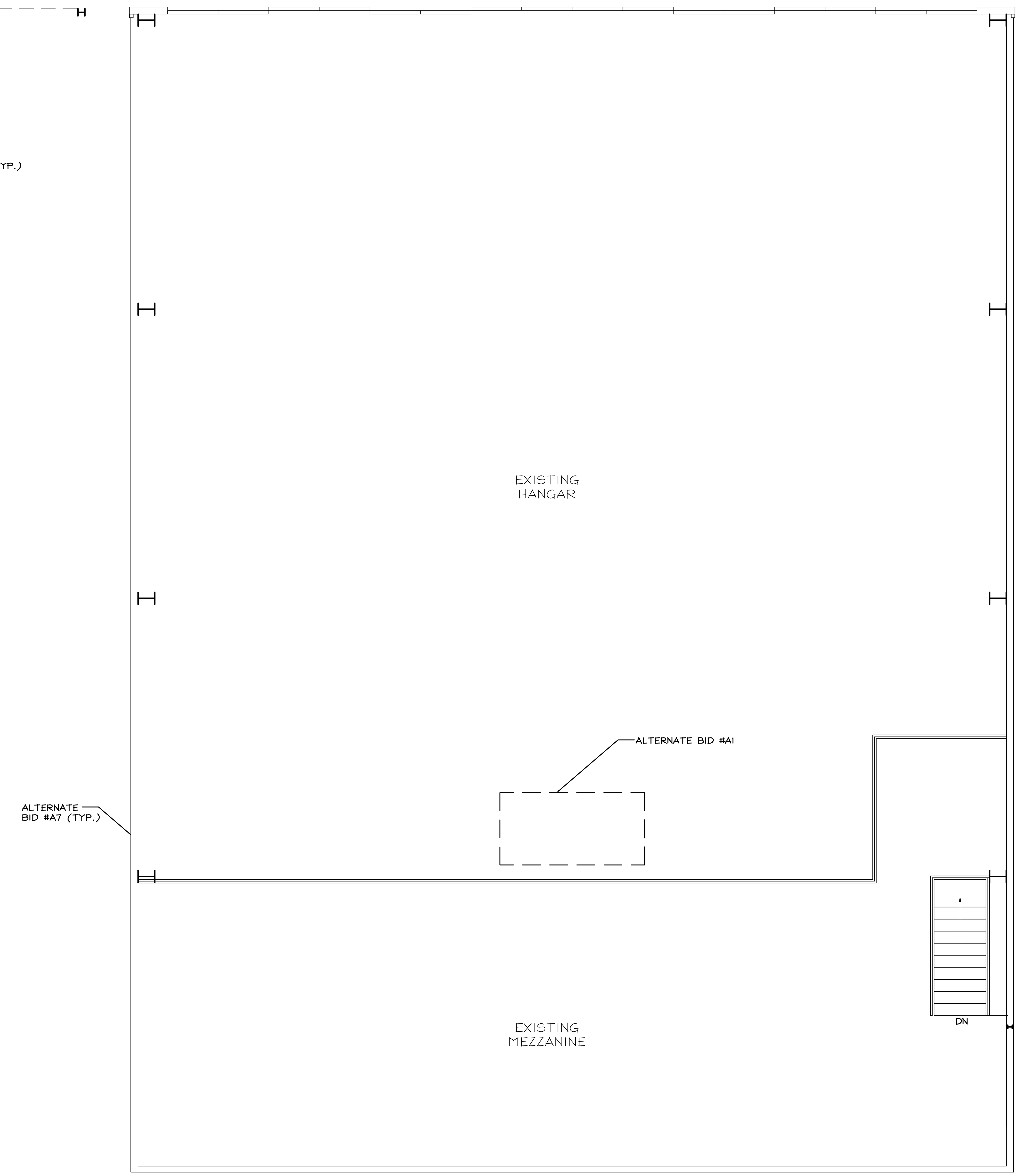
DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION.
DO NOT SCALE DRAWING.

SCALE: AS NOTED
PROJ.NO.: 1336
DATE: 05/09/2025
REV'D.:
DRAWN BY: DR
CHKD.BY: OG

DRAWING NO: A-1



1 / A-1 CONSTRUCTION PLAN - HANGAR #5 (ALTERNATES)
1/4" = 1'-0"



2 / A-1 MEZZANINE - HANGAR #5 (ALTERNATES)
1/4" = 1'-0"

ALTERNATE LEGEND

A1-DEMOLITION OF EXISTING UNUSED HEATER ON MEZZANINE.

A2-CONSTRUCTION OF NEW UNITY ROOM WITH WASHER, DRYER AND UTILITY SINK.

A3-CONSTRUCTION OF NEW KITCHENETTE CABINETS (ALL APPLIANCES ARE AT THE TENANT'S EXPENSE)

A4-PAINT, PATCH & REPAIR WALLS IN EXISTING OFFICES.

A5-INSTALLATION OF NEW FLOORING IN OFFICES

A6-STUB-IN ELECTRIC AND PLUMBING FOR FUTURE UTILITIES

A7-TREAT & PAINT ENTIRE EXTERIOR WALLS OF HANGAR. EXCEPT NEW DOOR

No.	DATE	DESCRIPTION	REV'D BY
	5/9/2025	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT: **RENOVATION AT WOODBINE MUNICIPAL AIRPORT HANGAR #5**
675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

JOSEPH F. McKERNAN JR., R.A.
NJ ARCH AI 10984 . PA ARCH RA-011402-X . CT ARCH 7324

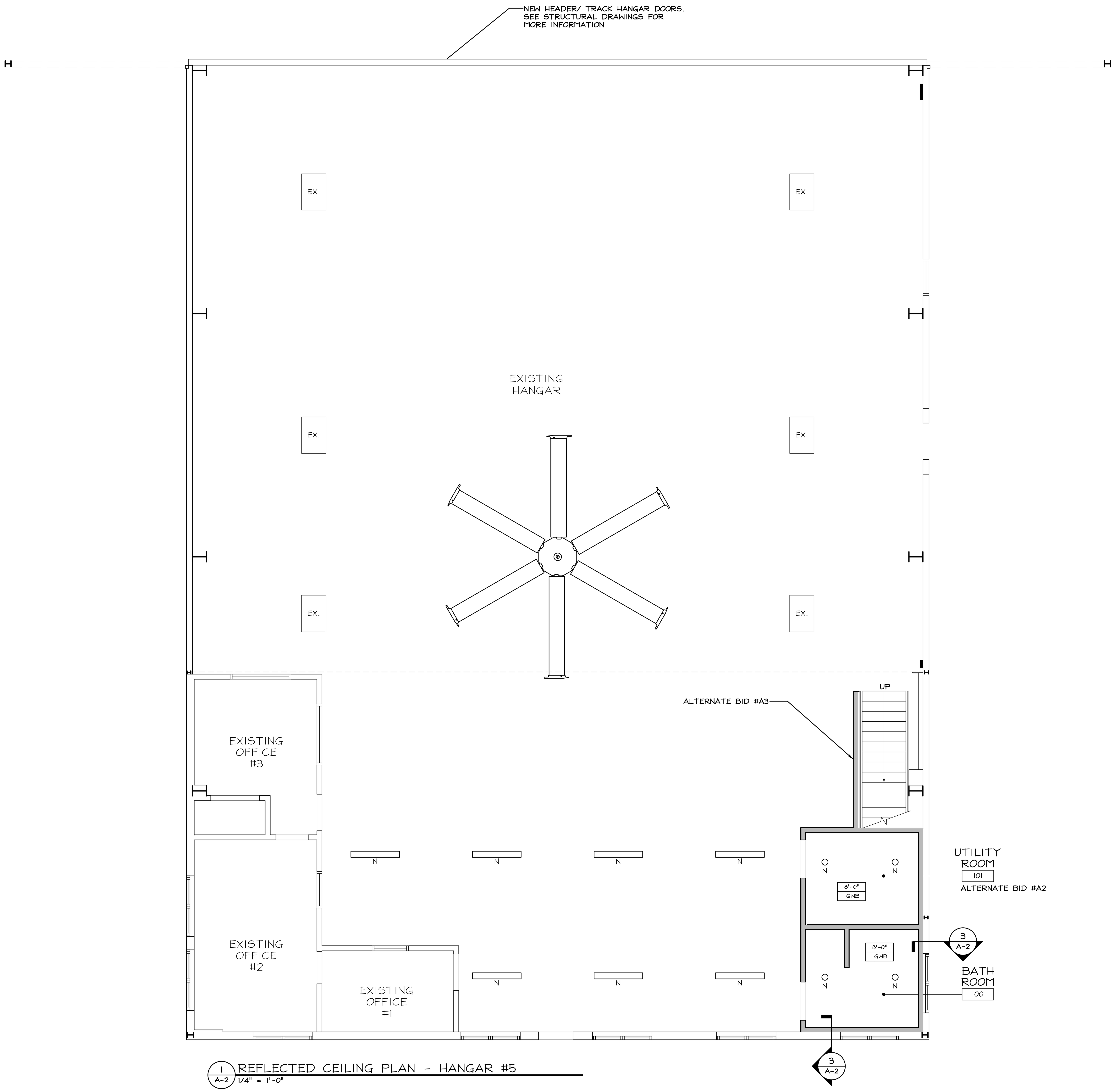
TITLE: ALTERNATES HANGAR #5

SEAL:

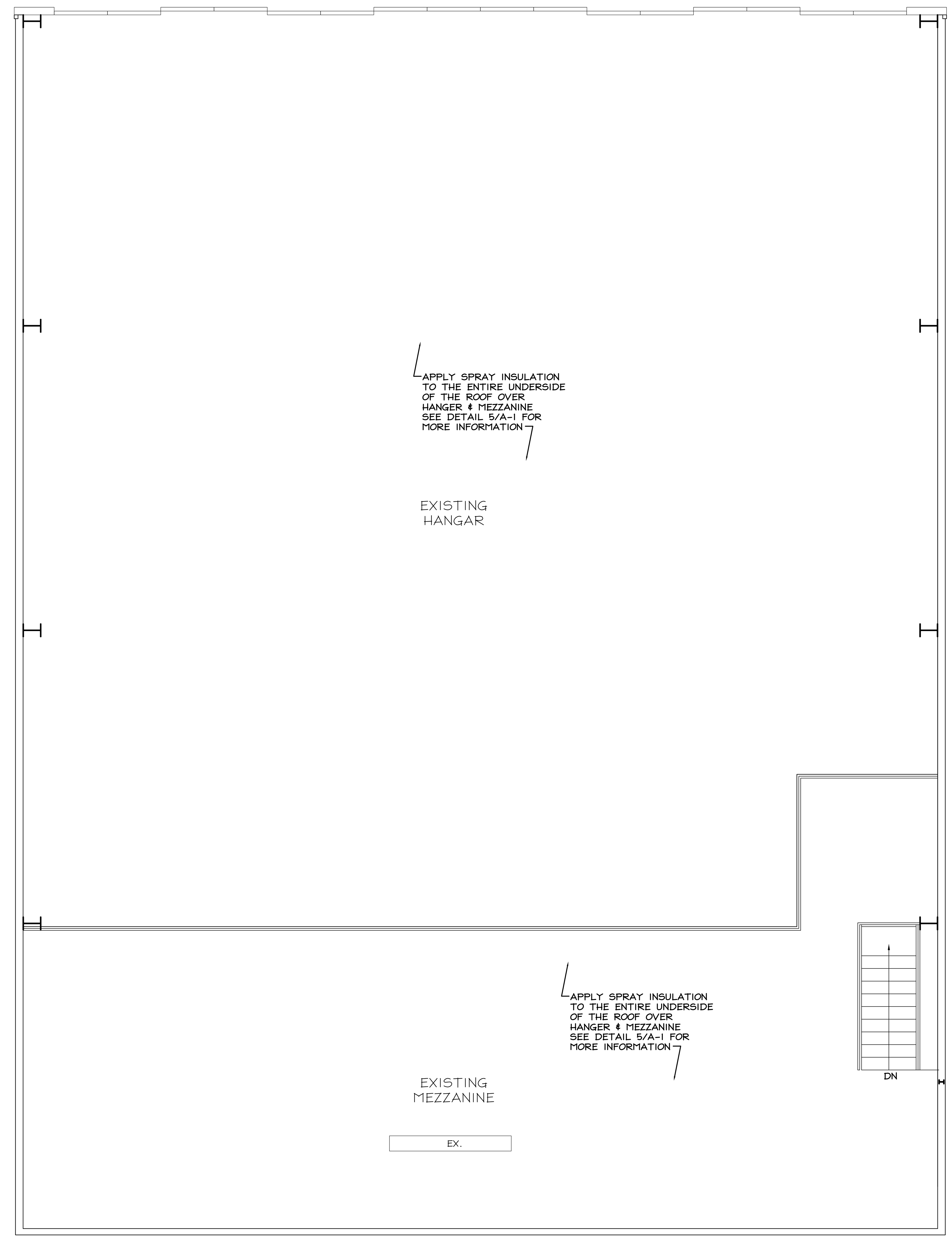
DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

SCALE: AS NOTED
PROJ.NO.: 1336
DATE: 05/09/2025
REV'D.:
DRAWN BY: DR
CHKD.BY: OG

DRAWING NO: A1.1



1 A-2 REFLECTED CEILING PLAN - HANGAR #5
1/4" = 1'-0"



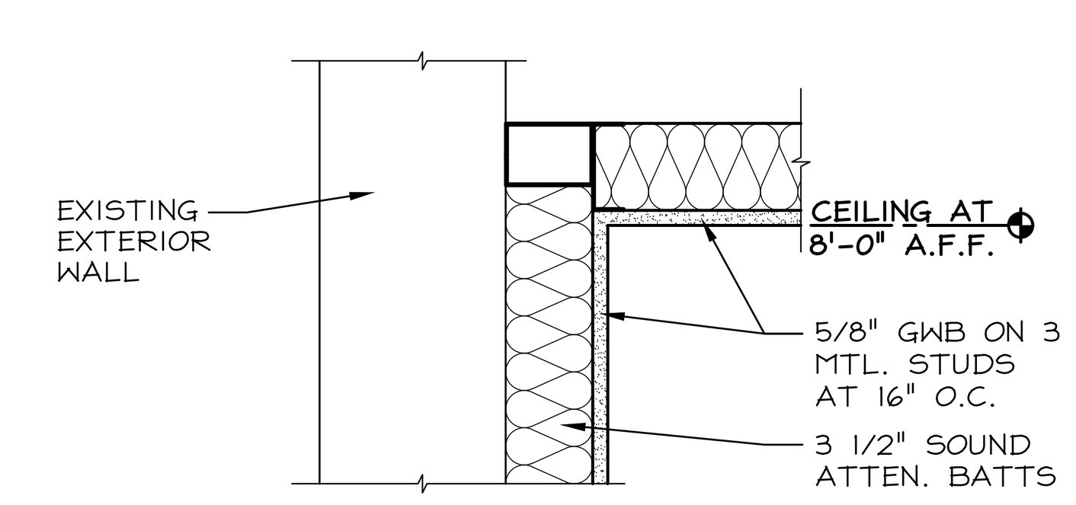
2 A-2 MEZZANINE - HANGAR #5
1/4" = 1'-0"

LIGHTING FIXTURE LEGEND

- NEW 6" RECESSED LED LIGHTING FIXTURE
- NEW LED STRIP LIGHTING FIXTURE
- NEW CEILING FAN. SEE MEP DRAWINGS FOR MORE INFORMATION
- EXISTING SURFACE MOUNTED LED LIGHTING FIXTURE
- EXISTING SURFACE MOUNTED LIGHT IN HANGAR AREA

NOTES:

1. SEE MPE DRAWINGS FOR LOCATIONS OF DIFFUSERS, REGISTERS, RETURNS, ETC.



3 A-2 CEILING DETAIL
1-1/2" = 1'-0"

No.	DATE	DESCRIPTION	REV'D BY
	5/9/2025	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT: **RENOVATION AT WOODBINE MUNICIPAL AIRPORT HANGAR #5**
675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

TITLE: REFLECTED CEILING PLAN HANGAR #5

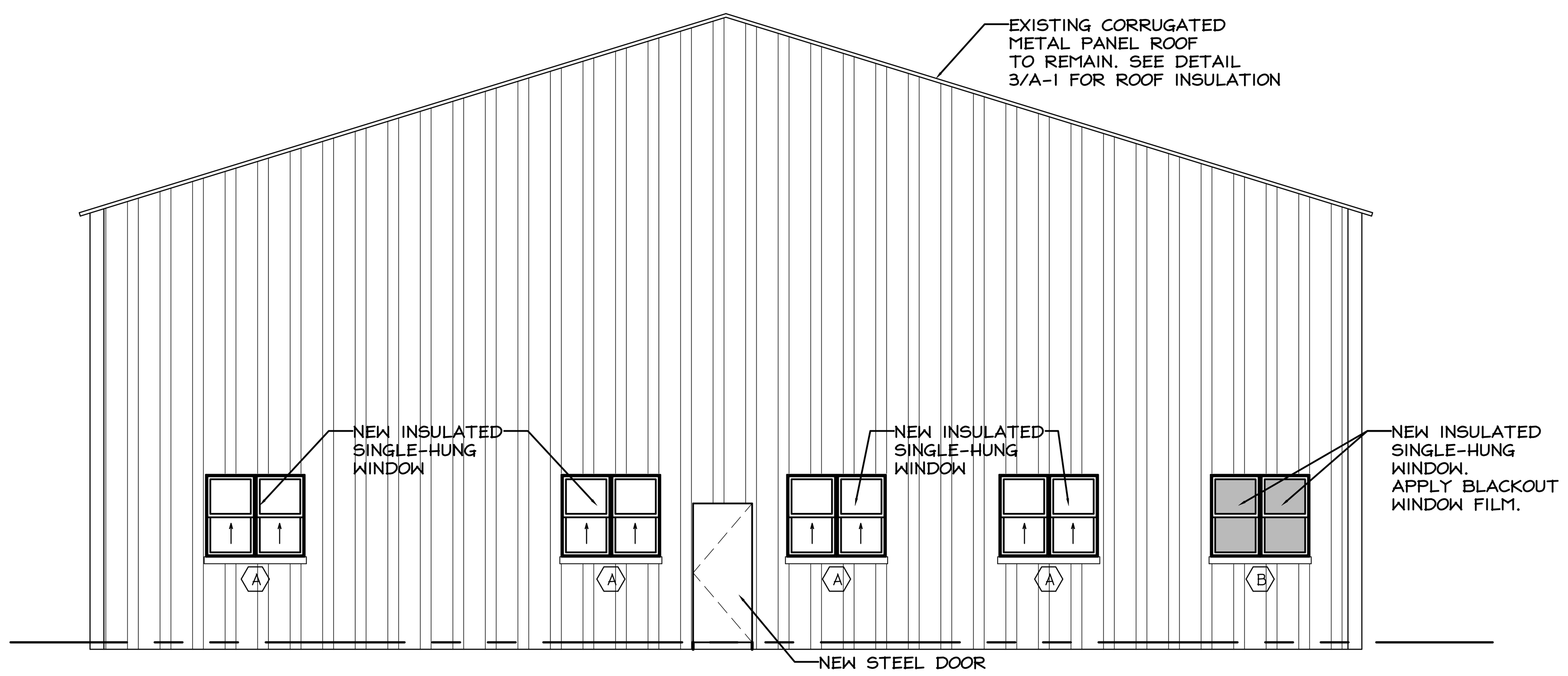
JOSEPH F. McKERNAN JR., R.A.
NJ ARCH AI 10984 . PA ARCH RA-011402-X . CT ARCH 7324

SEAL:

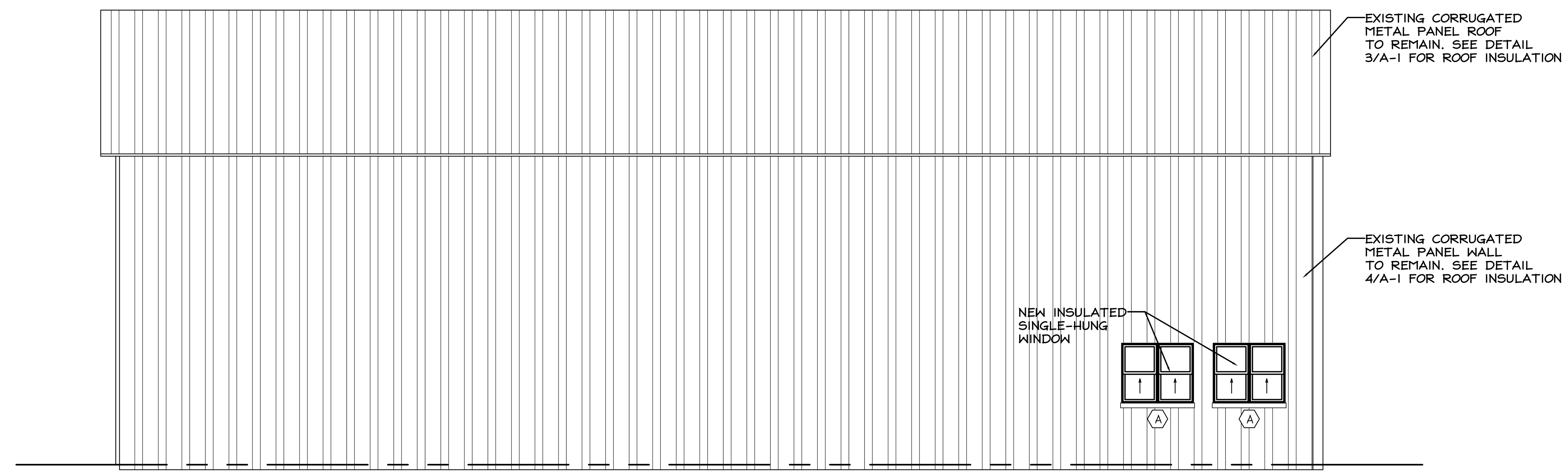
DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

SCALE: AS NOTED
PROJ.NO.: 1336
DATE: 05/09/2025
REV'D.:
DRAWN BY: DR
CHKD.BY: OG

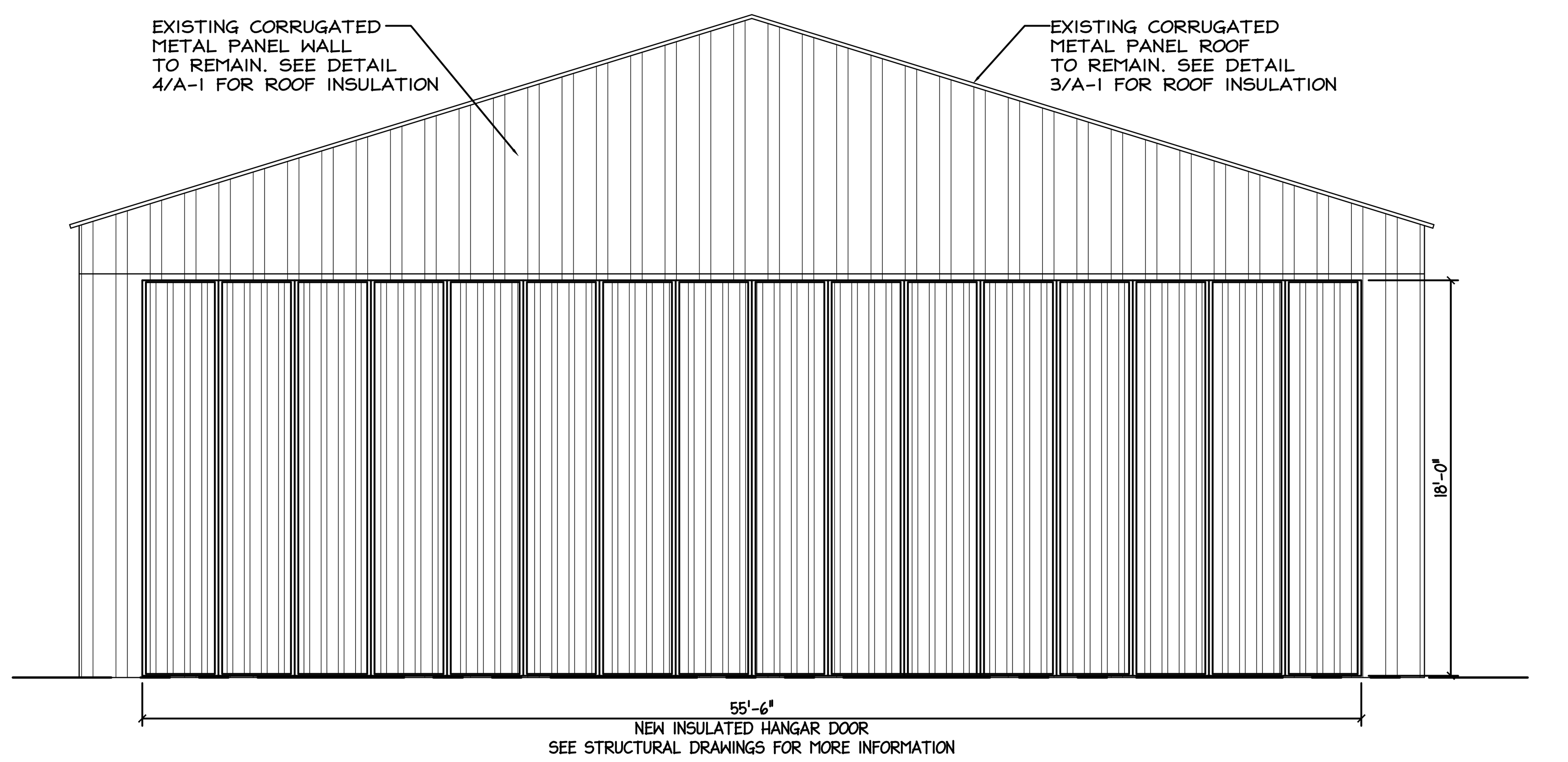
DRAWING NO: A-2



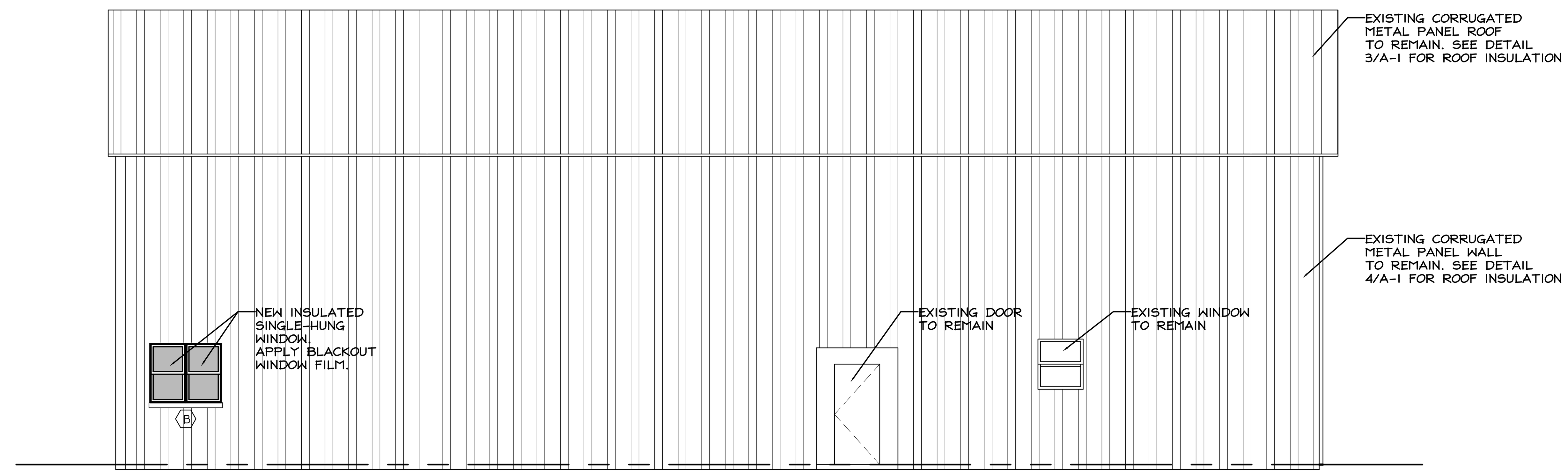
1 A-3 ELEVATION - HANGAR #5
3/16" = 1'-0"



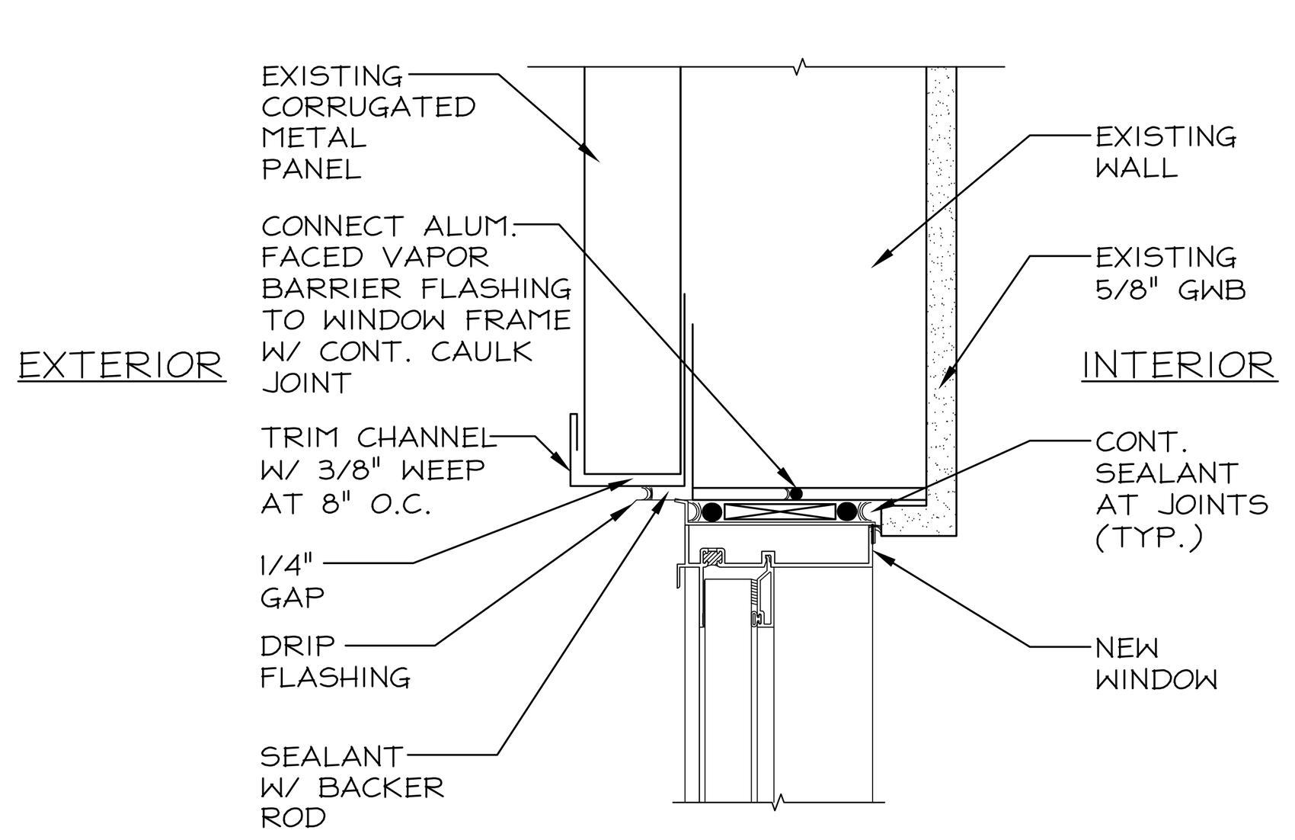
2 A-3 ELEVATION - HANGAR #5
3/16" = 1'-0"



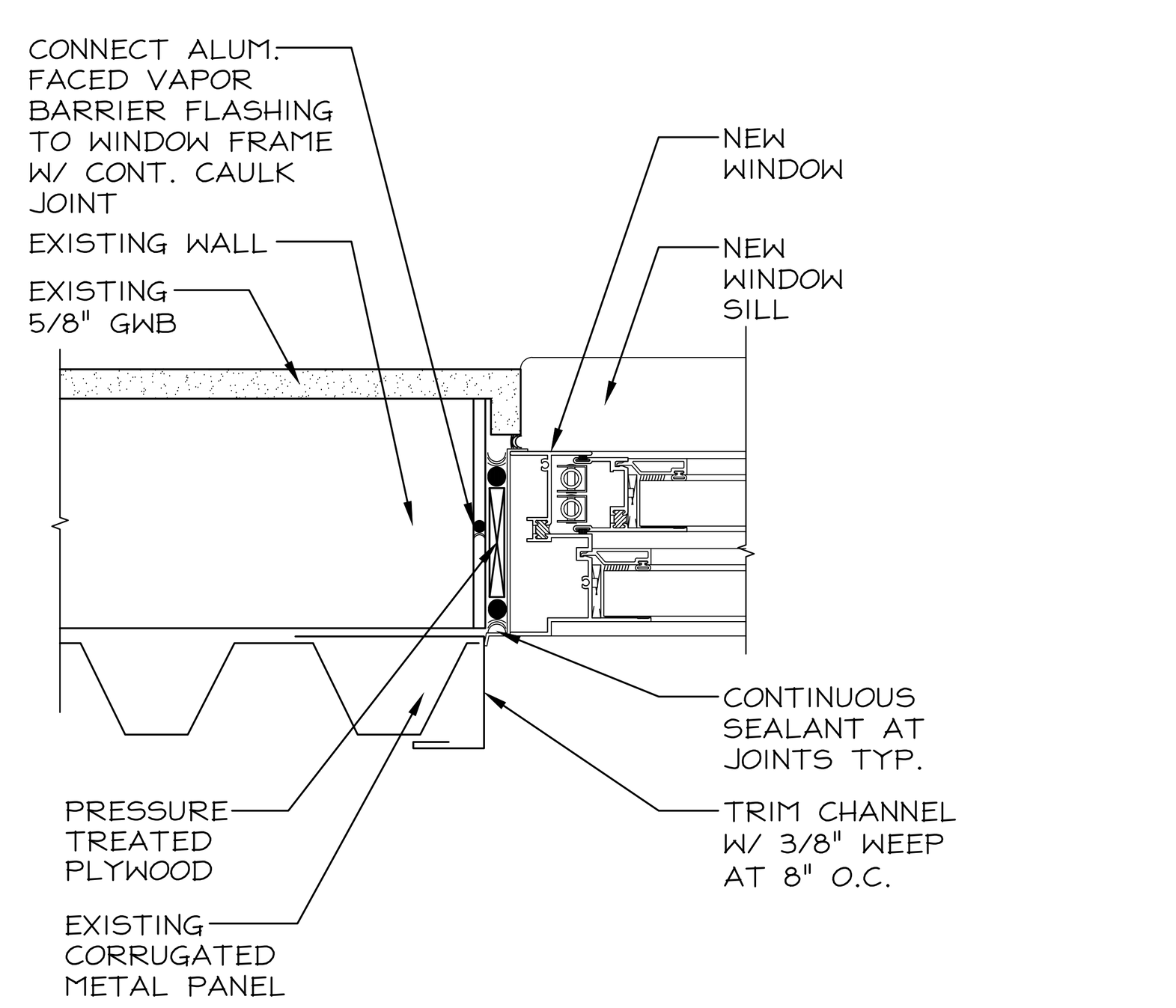
3 A-3 ELEVATION - HANGAR #5
3/16" = 1'-0"



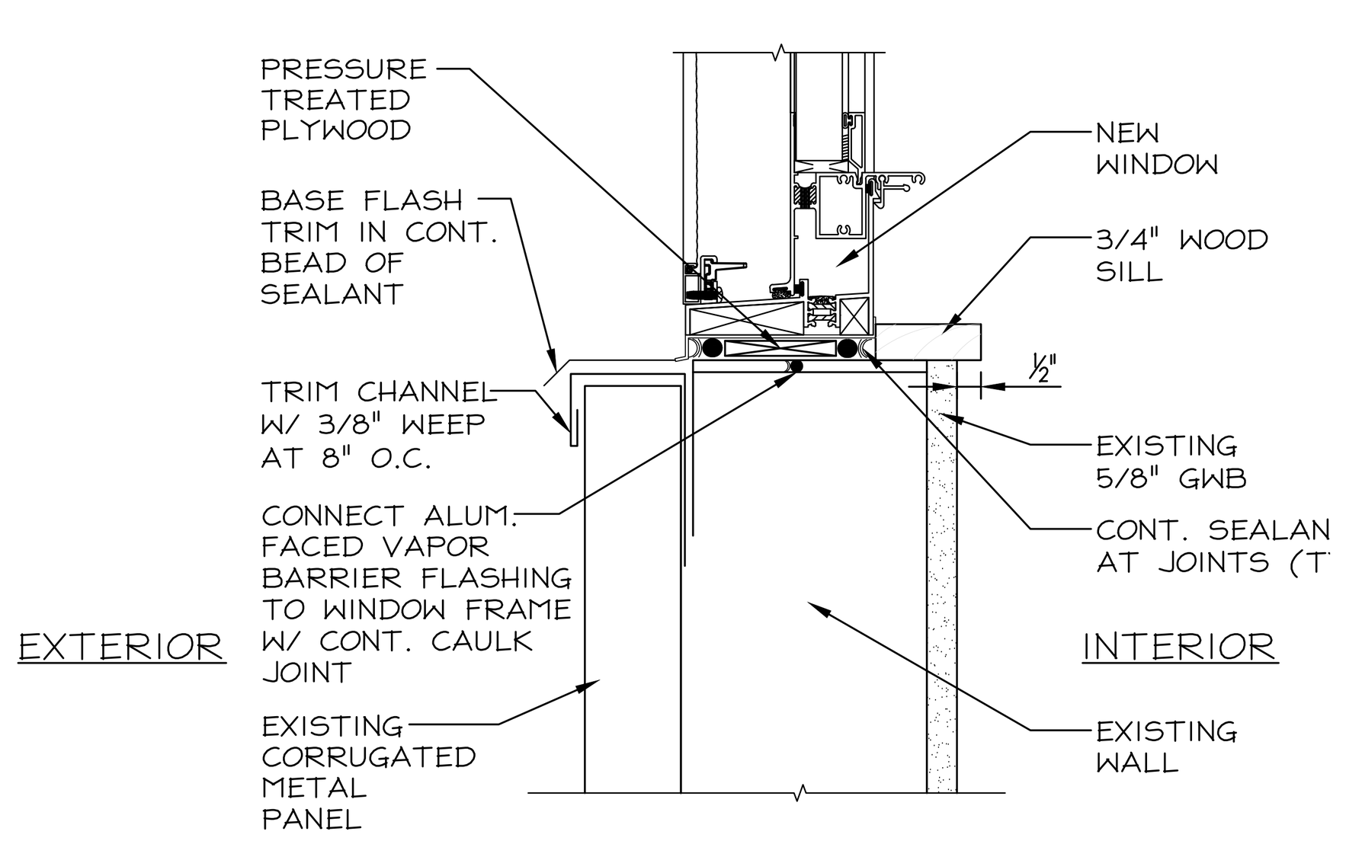
4 A-3 ELEVATION - HANGAR #5
3/16" = 1'-0"



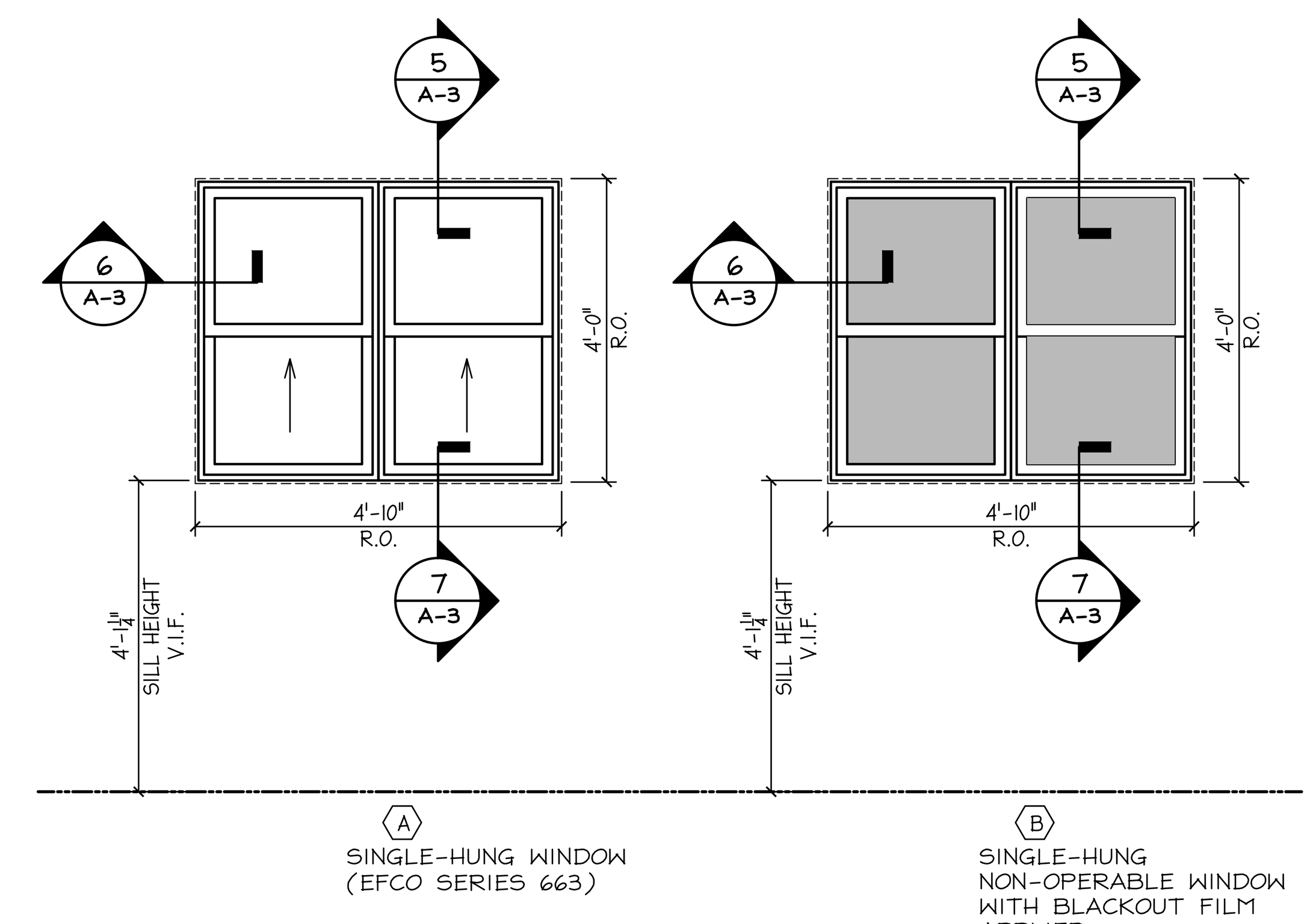
5 A-3 WINDOW HEAD
3" = 1'-0"



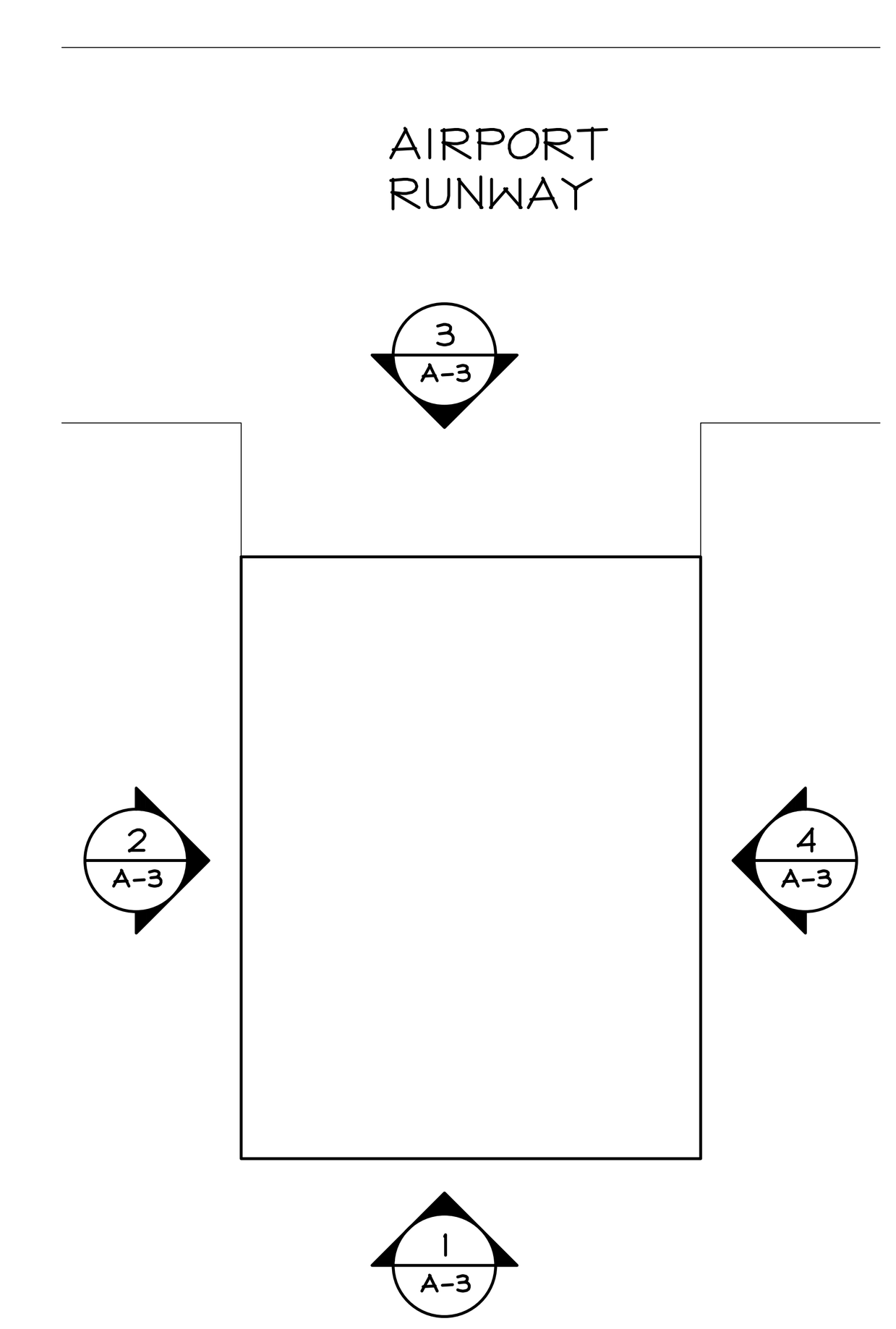
6 A-3 WINDOW JAMB
3" = 1'-0"



7 A-3 WINDOW SILL
3" = 1'-0"



8 A-3 WINDOW TYPE
1-1/2" = 1'-0"



KEY PLAN - HANGAR #5
N.T.S.

No.	DATE	DESCRIPTION	REV'D BY
	5/9/2025	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:
RENOVATION AT WOODBINE MUNICIPAL AIRPORT HANGAR #5
675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

JOSEPH F. McKERNAN JR., R.A.
NJ ARCH AI 10984 . PA ARCH RA-011402-X . CT ARCH 7324

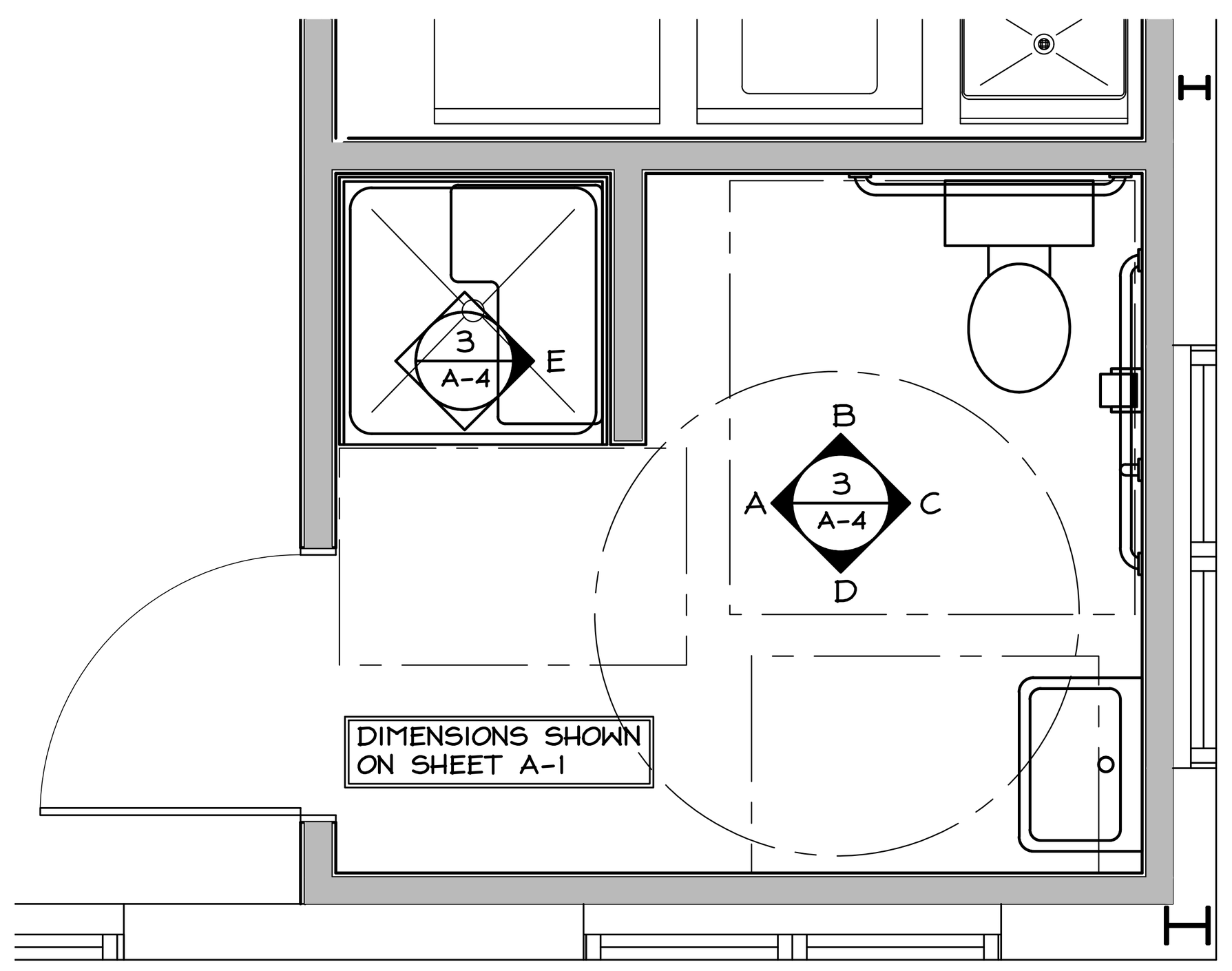
TITLE: EXTERIOR ELEVATIONS HANGAR #5

SEAL:

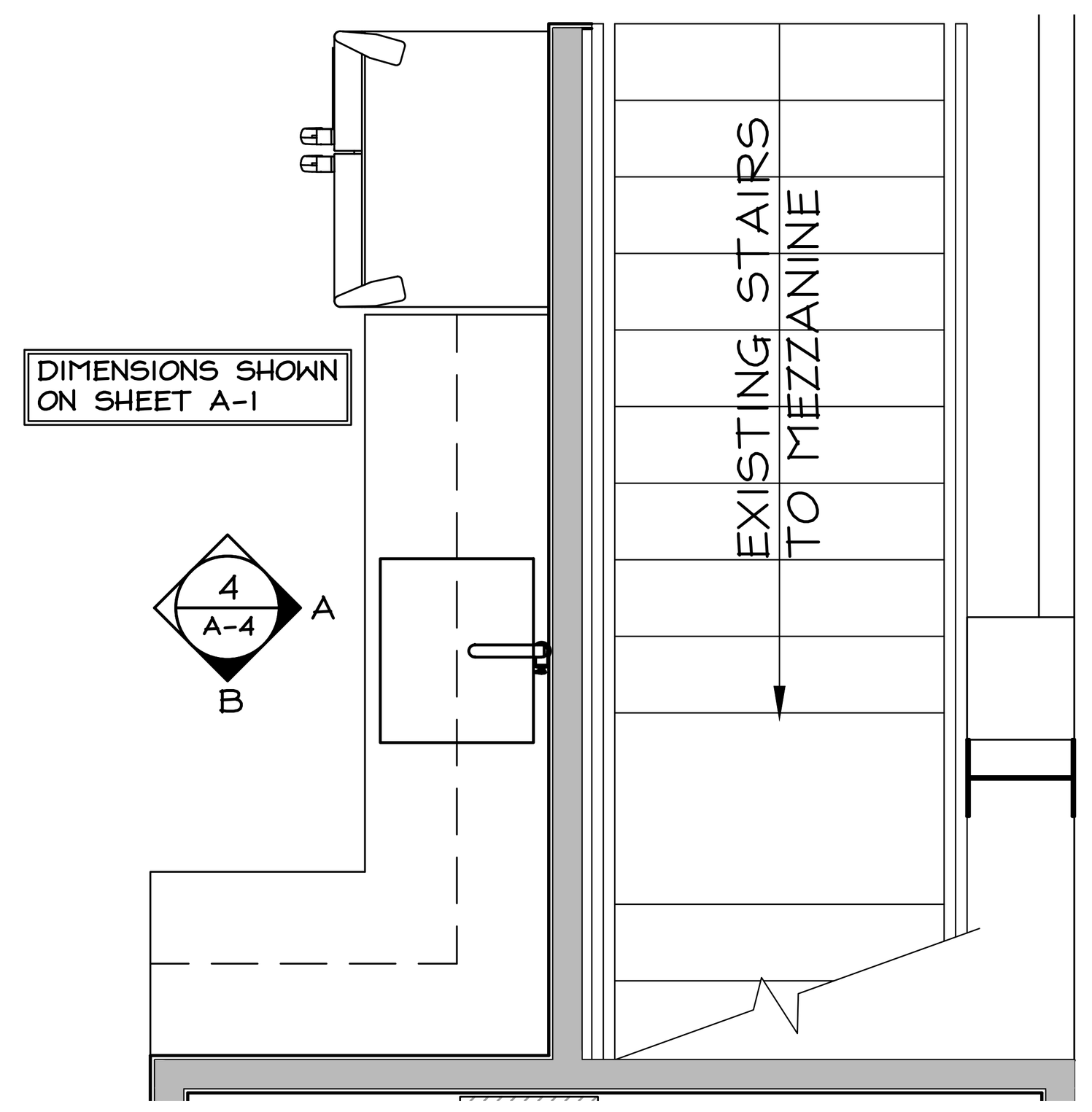
DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

SCALE: AS NOTED
PROJ.NO.: 1336
DATE: 05/09/2025
REV'D.:
DRAWN BY: DR
CHKD.BY: OG

DRAWING NO: A-3

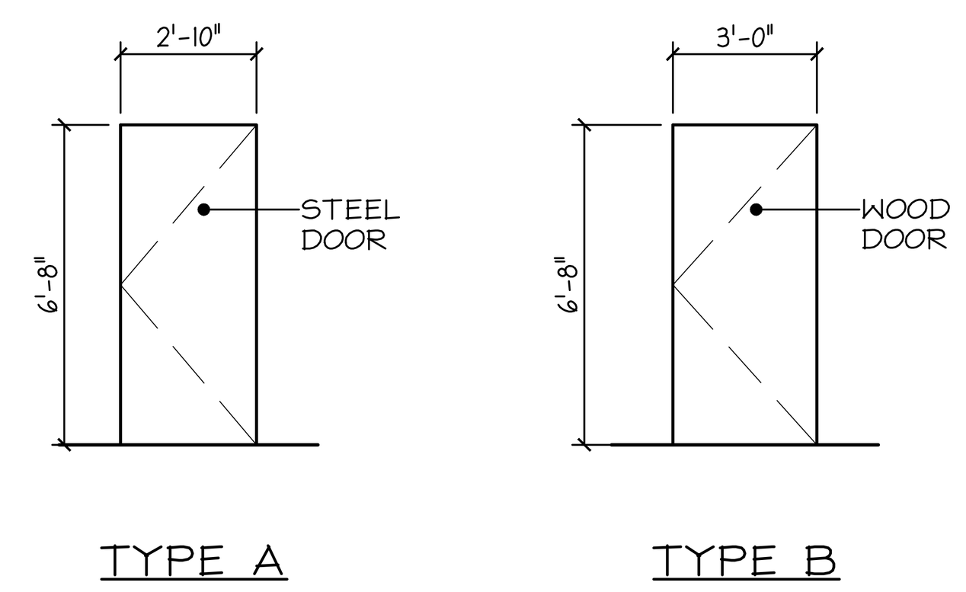


1 NEW ADA SHOWER - BASE BID
A-4 1/2" = 1'-0"

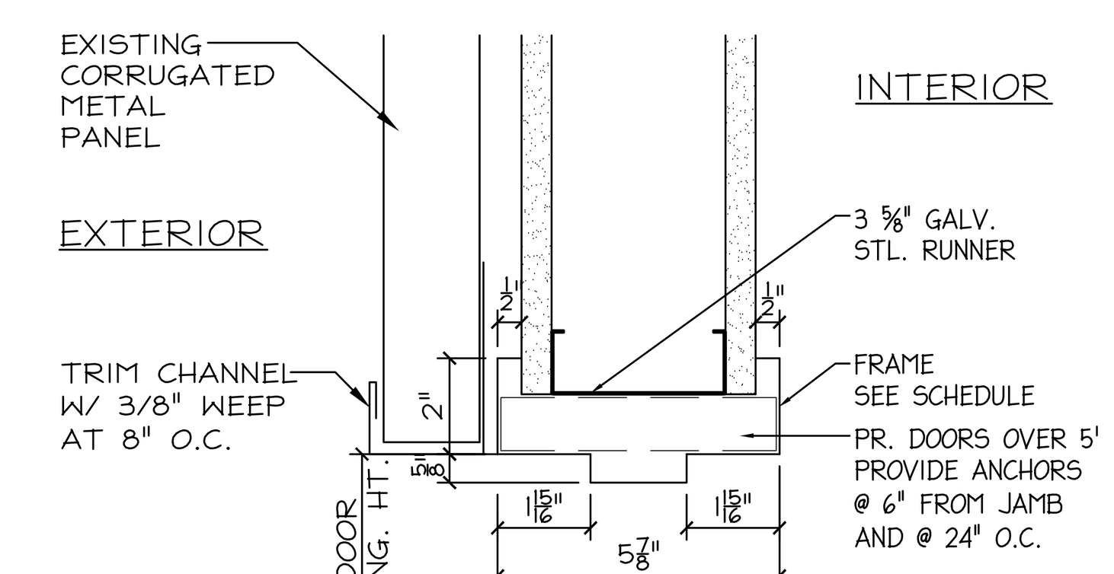


2 NEW KITCHENETTE AREA - ALT #3
A-4 1/2" = 1'-0"

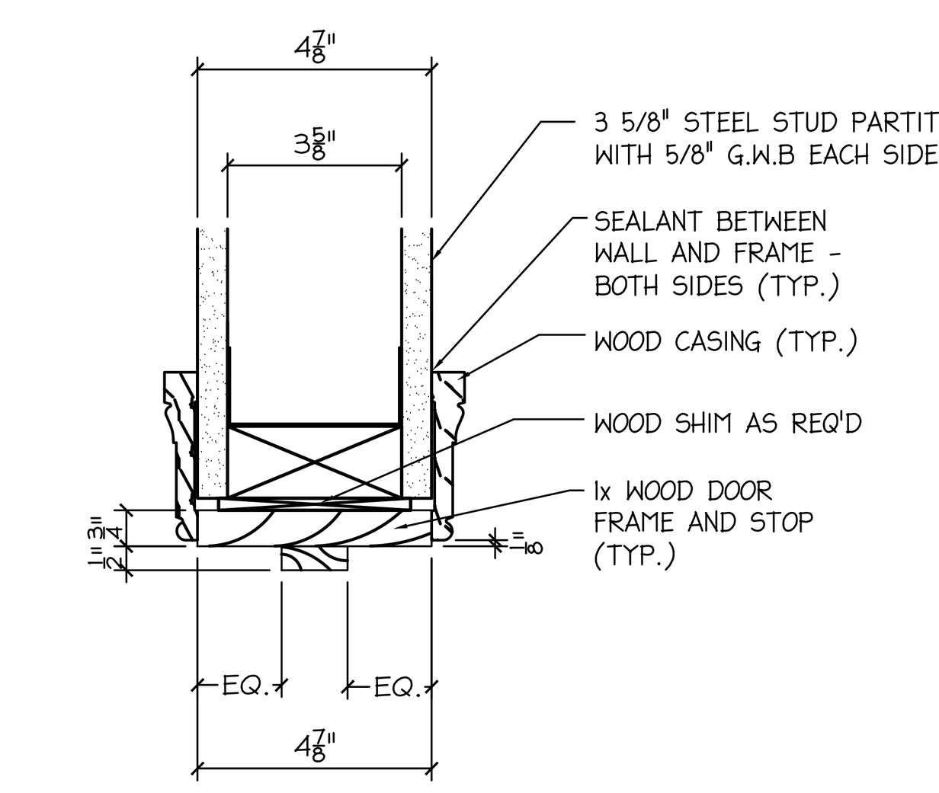
DOOR SCHEDULE									
DOOR NO.	DOOR SIZE	TYPE	THICK	MAT.	FRAME				REMARKS
					TYPE	MAT.	HEAD	JAMB	
1	2'-10" x 6'-8"	A	1 3/4"	STEEL	1	HM.	H1	J1	
2	3'-0" x 6'-8"	B	1 3/4"	WD.	2	WD.	H2	J2	ADA ALUMINUM THRESHOLD
3	3'-0" x 6'-8"	B	1 3/4"	WD.	2	WD.	H2	J2	ALTERNATE BID #2
4	55'-6" x 18'-0"	SEE MANUFACTURER SPECS.							STACKED 8 PANELS EACH SIDE HANGAR DOOR



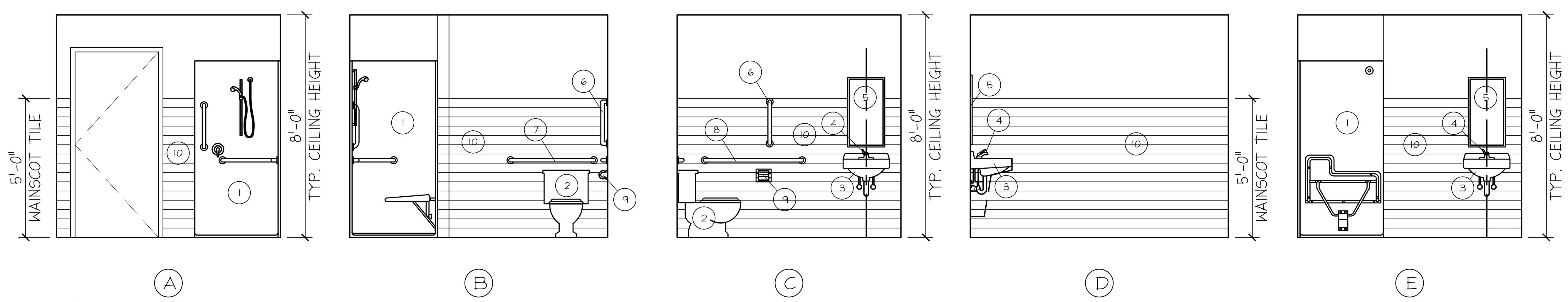
DOOR TYPES
SCALE: 1/4" = 1'-0"



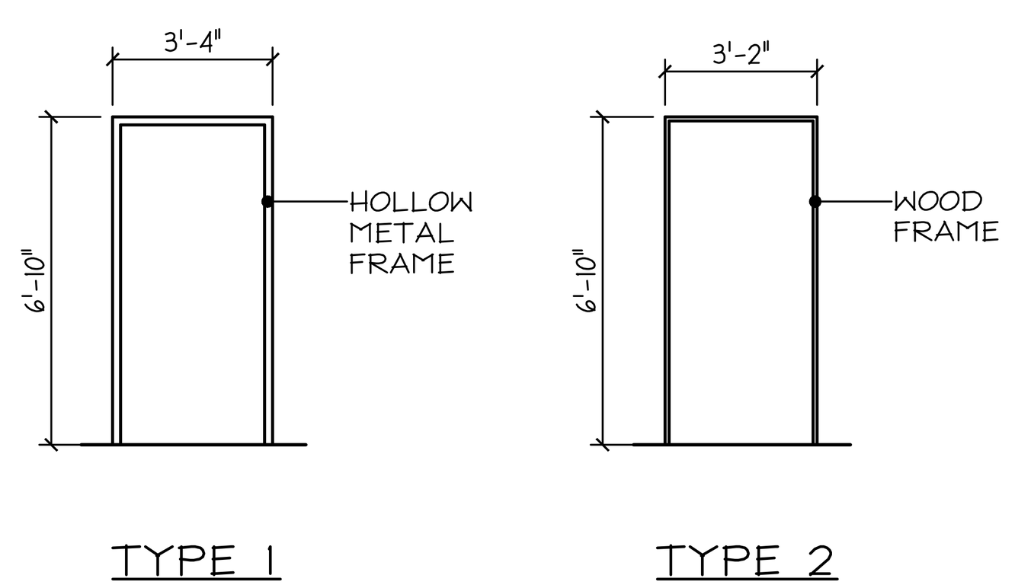
H1 DOOR HEAD DETAIL
3" = 1'-0"



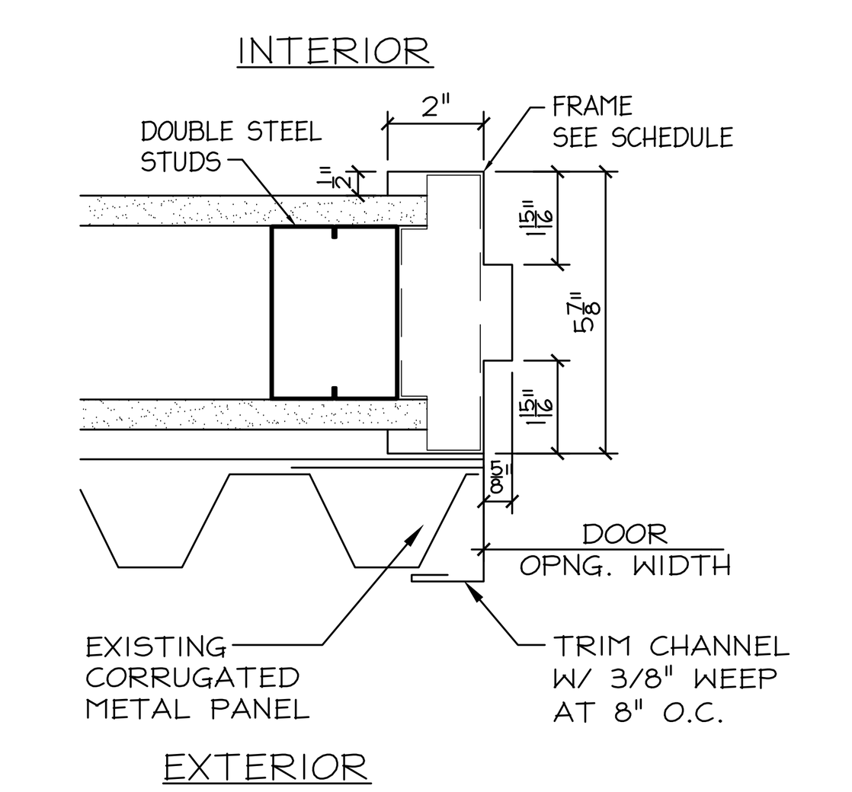
H2 DOOR HEAD DETAIL
3" = 1'-0"



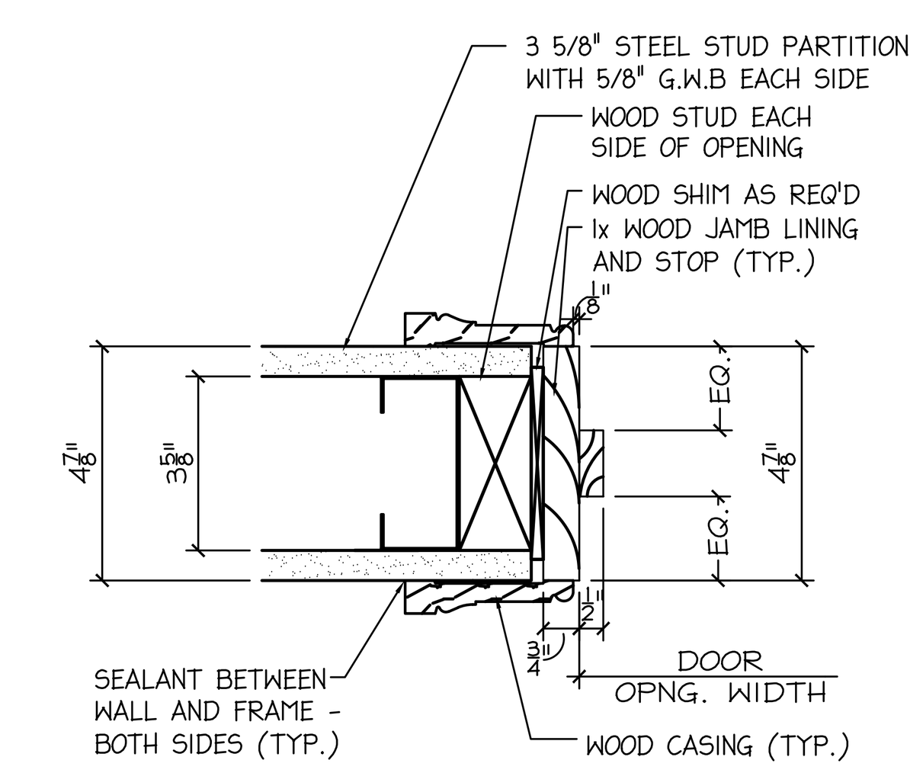
3 TOILET ROOM - BASE BID
A-4 3/8" = 1'-0"



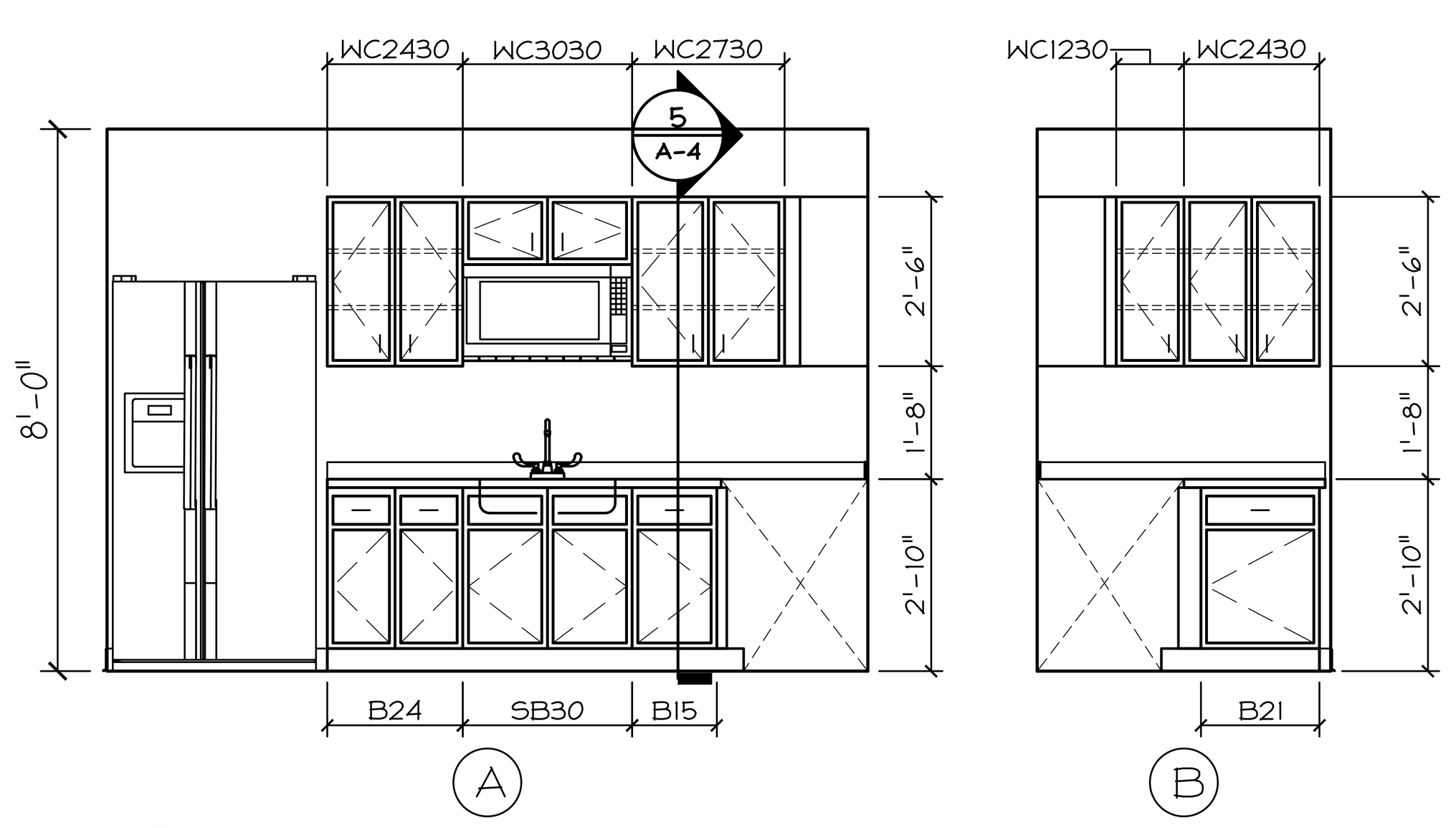
FRAME TYPES
SCALE: 1/4" = 1'-0"



J1 DOOR JAMB DETAIL
3" = 1'-0"



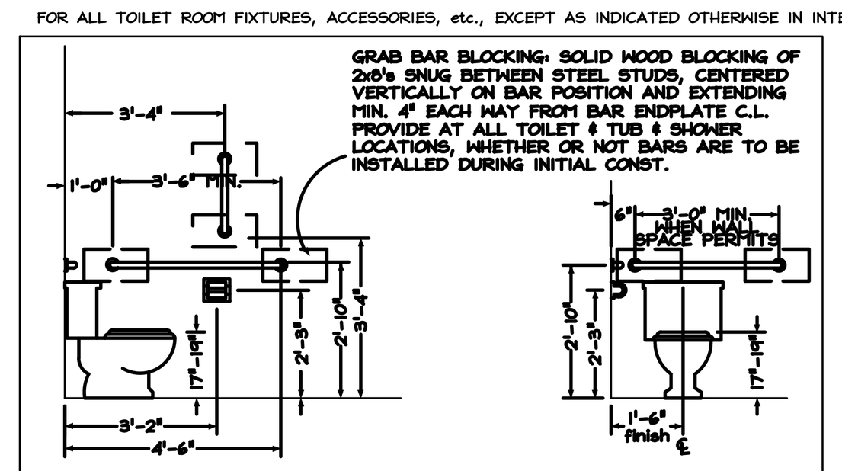
J2 DOOR JAMB DETAIL
3" = 1'-0"



4 KITCHENETTE AREA - ALT. #3
A-4 3/8" = 1'-0"

ROOM FINISH SCHEDULE							
ROOM #	ROOM NAME	FLOOR	BASE	WALLS	CEILING	HEIGHT	REMARKS
100	BATH ROOM	CERAMIC TILE	RUBBER	PTD	GWB	8'-0"	5'-0" WAINSCOT TILE ALL WALLS
101	UTILITY ROOM	EXPOSED CONCRETE	RUBBER	PTD	GWB	8'-0"	
EXISTING	EXISTING OFFICES	EXISTING	EXISTING	PTD	EXISTING	EXISTING	PATCH & REPAIR DISTURBED AREAS TO MATCH EXISTING

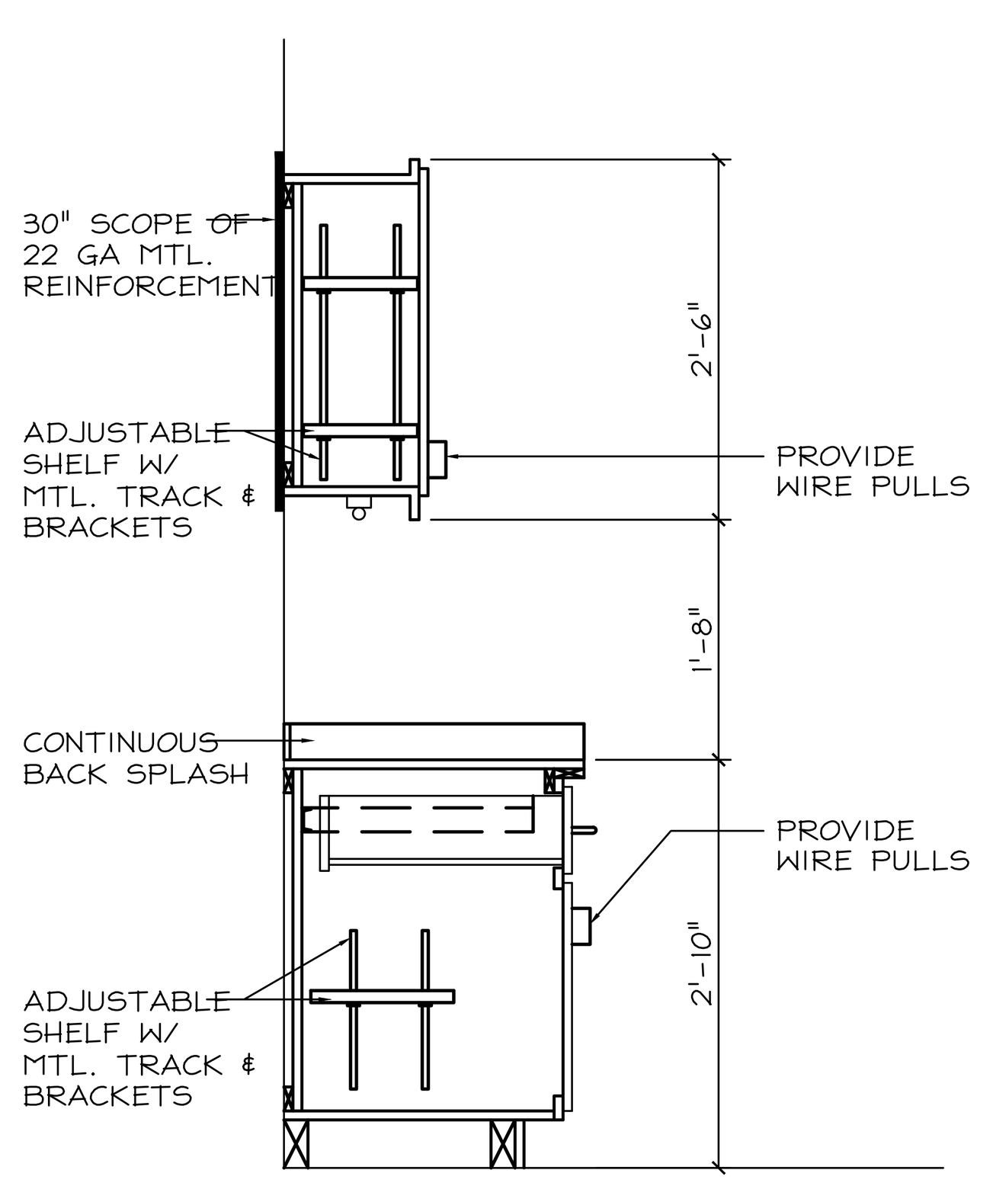
TYPICAL FIXTURE & ACCESSORY MOUNTING HEIGHTS, POSITIONS, ETC.
FOR ALL TOILET ROOM FIXTURES, ACCESSORIES, etc., EXCEPT AS INDICATED OTHERWISE IN INTERIOR ELEVATIONS ABOVE



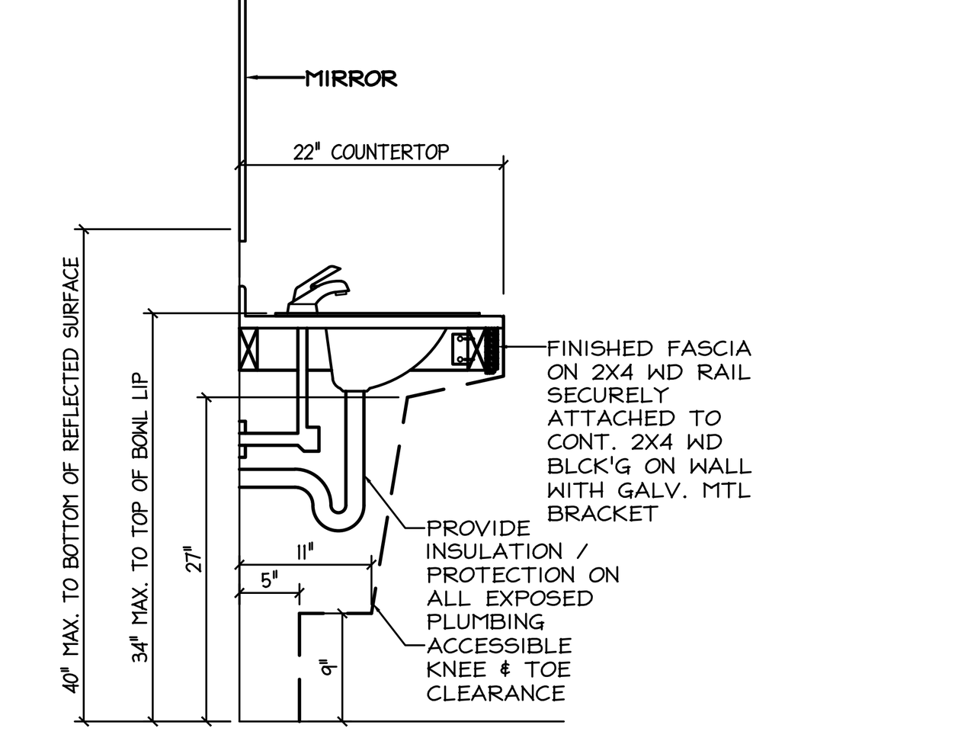
TYP. at ACCESSIBLE TOILET

BATHROOM NOTES

1. REFER TO TYP. FIXTURE & ACCESSORY MOUNTING HEIGHTS, POSITIONS, ETC.
2. PROVIDE SOLID CONTINUOUS WOOD BLOCKING BEHIND ALL WALL HUNG EQUIPMENT TO SUPPORT 250LB. LOAD.
3. PROVIDE ALL APPROPRIATE ACCESSORIES (DRAINS, TRAPS, SUPPLIES AND STOPS, MOUNTING HARDWARE, BLOCKING, ETC.) FOR A COMPLETE INSTALLATION.
4. HANDRAIL, GRAB BAR STRUCTURAL NOTES:
   A. Bending stress in a grab bar or seat induced by the maximum bending moment from the application of 250 lbf shall be less than the allowable stress for the material of the grab bar or seat.
   B. Shear stress induced in a grab bar or seat by the application of 250 lbf shall be less than the allowable shear stress for the material of the grab bar or seat. If the connection between the grab bar or seat and its mounting bracket or other support is considered to be fully restrained, then direct and torsional shear stresses shall be totaled for the combined shear stress, which shall not exceed the allowable shear stress.
   C. Shear force induced in a fastener or mounting device from the application of 250 lbf shall be less than the allowable lateral load of either the fastener or mounting device or the supporting structure, whichever is the smaller allowable load.
   D. Tensile force induced in a fastener by a direct tension force of 250 lbf plus the maximum moment from the application of 250 lbf shall be less than the allowable withdrawal and the supporting structure.
   E. Grab bars shall not rotate within their fittings.



5 TYP. CASEWORK SECTION
A-4 3/4" = 1'-0"



6 WALL-HUNG LAVATORY SECTION
A-4 3/4" = 1'-0"

EQUIPMENT LEGEND

ITEM. NO.	ITEM	MFR./ MODEL#	COMMENTS
1	PREFABRICATED ADA TRANSFER SHOWER	...	...
2	TWO-PIECE ADA TOILET		
3	WALL-HUNG LAVATORY		
4	FAUCET (BATHROOM)		
5	MIRROR		
6	18" VERTICAL GRAB BAR		
7	36" HORIZONTAL GRAB BAR		
8	42" HORIZONTAL GRAB BAR		
9	TOILET PAPER DISPENSER		
10	WAINSCOT TILE		5'-0" HIGH

No.	DATE	DESCRIPTION	REV'D BY
	5/9/2025	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT: **RENOVATION AT WOODBINE MUNICIPAL AIRPORT HANGAR #5**
675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

TITLE: EXTERIOR ELEVATIONS HANGAR #5

JOSEPH F. McKERNAN JR., R.A.
NJ ARCH AI 10984 . PA ARCH RA-011402-X . CT ARCH 7324

SEAL:

DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

SCALE: AS NOTED
PROJ.NO.: 1336
DATE: 05/09/2025
REV'D.:
DRAWN BY: DR
CHKD.BY: OG

DRAWING NO: A-4

GENERAL STRUCTURAL AND CONSTRUCTION NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2021 NEW JERSEY INTERNATIONAL BUILDING CODE AS WELL AS ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES.

2. ALL CODES AND STANDARDS REFERENCED IN THESE NOTES APPLY TO THE DESIGN, CONSTRUCTION, DEMOLITION, QUALITY CONTROL AND SAFETY OF ALL WORK PERFORMED ON THE PROJECT. UNLESS SPECIFICALLY STATED, USE THE LATEST ADOPTED EDITIONS OF THE CODES AND STANDARDS.

3. THE STRUCTURAL DRAWINGS ARE INTENDED TO BE USED IN CONJUNCTION WITH THE ARCHITECTURAL AND ALL OTHER APPLICABLE DISCIPLINE DRAWINGS. IN CASE OF CONFLICT BETWEEN THE NOTES, AND DETAILS, THE MOST RIGID REQUIREMENTS SHALL GOVERN. IF THERE IS A DISCREPANCY BETWEEN DRAWINGS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE DESIGNER'S OF RECORD PRIOR TO PERFORMING THE WORK.

4. ALL SECTIONS AND DETAILS, WHETHER EXPLICITLY CUT ON PLAN OR NOT, SHALL BE CONSIDERED TYPICAL AND APPLY AT SIMILAR CONDITIONS. MINOR DETAILS OR INCIDENTAL ITEMS NOT SHOWN OR SPECIFIED, BUT NECESSARY FOR A PROPER AND COMPLETE INSTALLATION SHALL BE INCLUDED IN THE WORK AT NO ADDITIONAL COST. SIGNIFICANT ADJUSTMENTS ACCOUNTING FOR VARYING CONDITIONS IN THE FIELD SHOULD BE SUBMITTED TO THE DESIGNER'S OF RECORD FOR APPROVAL AND BE RESOLVED PRIOR TO BEGINNING WORK.

5. GENERAL CONTRACTOR'S RESPONSIBILITIES:

   A. THE CONTRACTOR SHALL NOT MAKE DEVIATIONS FROM THE DESIGN DOCUMENTS WITHOUT WRITTEN APPROVAL FROM THE DESIGNER'S OF RECORD. CHANGES BY THE CONTRACTOR, DUE TO CONTRACTOR PROPOSED ALTERNATIVES OR TO CORRECT CONTRACTOR ERRORS/OMISSIONS, MUST BE SUBMITTED TO THE DESIGNER'S OF RECORD FOR APPROVAL. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS, INCLUDING ENGINEERING FEES FOR REVIEW, SITE OBSERVATIONS, STRUCTURAL CALCULATIONS AND DRAWING REVISIONS. THE CONTRACTOR SHALL ALSO PROCESS THE REVISED PLANS REFLECTING ALL SUBSTITUTIONS THROUGH THE APPROPRIATE OFFICE OF ALL GOVERNING AGENCIES.

   B. THE STRUCTURE IS DESIGNED AS SELF SUPPORTING AFTER THE STRUCTURE IS FULLY COMPLETED. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION METHODS, PROCEDURES AND SEQUENCES, UNLESS SPECIFICALLY INDICATED ON THESE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ALLOWABLE CONSTRUCTION LOADS AND PROVIDING DESIGN AND CONSTRUCTION OF FALSEWORK, FORMWORK, STAGING, TEMPORARY BRACING, SHEETING, SHORING, UNDERPINNING, ETC. TO ENSURE THE STRUCTURAL STABILITY OF THE NEW STRUCTURE, AND TO PREVENT ANY LATERAL MOVEMENT OF EXISTING STRUCTURES, SIDEWALKS, AND UTILITIES. DESIGNS SHALL BE PROVIDED BY A PROFESSIONAL ENGINEER REGISTERED IN THE LOCAL JURISDICTION. LOADS GREATER THAN THE INDICATED DESIGN LIVE LOADS SHALL NOT BE PLACED ON THE STRUCTURE.

   C. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE ENGINEER FREE AND HARMLESS OF LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THE PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE ENGINEER.

   D. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY AND ESTABLISH ALL EXISTING SITE CONDITIONS, DIMENSIONS, ELEVATIONS AND LOCATE ALL UTILITIES PRIOR TO STARTING ANY CONSTRUCTION. IF THE EXISTING FIELD CONDITIONS DO NOT PERMIT THE INSTALLATION OF THE WORK IN ACCORDANCE WITH THE DETAILS SHOWN, THE CONTRACTOR SHALL NOTIFY THE DESIGNER'S OF RECORD IMMEDIATELY AND PROVIDE A SKETCH OF THE CONDITION WITH HIS/HER PROPOSED MODIFICATION OF THE DETAILS FOR APPROVAL PRIOR TO COMMENCING WORK. FAILURE TO NOTIFY THE DESIGNER'S OF RECORD OF UNSATISFACTORY CONDITIONS CONSTITUTES ACCEPTANCE OF THE UNSATISFACTORY CONDITIONS.

   E. THE CONTRACTOR SHALL VERIFY ALL EXISTING STRUCTURES RELATED TO THE PROJECT. STRUCTURAL MEMBERS IDENTIFIED ON THESE DRAWINGS AS EXISTING (EXST) WERE OBTAINED DURING LIMITED FIELD OBSERVATIONS AND/OR FROM LIMITED EXISTING DRAWINGS (IF AVAILABLE.) ACTUAL CONDITIONS MAY DIFFER FROM THAT WHICH IS INDICATED ON THE PLANS AND DETAILS. IF FIELD CONDITIONS VARY FROM THOSE SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL CONTACT THE DESIGNER'S OF RECORD IMMEDIATELY. ALL FIELD DIMENSIONS ARE TO BE VERIFIED AND NOTED AS SUCH ON SHOP DRAWINGS PRIOR TO FABRICATION OF ANY NEW STRUCTURAL MEMBERS.

   F. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR SAFEGUARDS DURING CONSTRUCTION, AS REQUIRED PER THE APPLICABLE EDITION OF THE INTERNATIONAL BUILDING CODE AS WELL AS ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES. WHERE ADDITIONAL ENGINEERING SERVICES OUTSIDE THE SCOPE OF THESE CONSTRUCTION DOCUMENTS ARE REQUIRED AS PART OF SAFEGUARDS DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION COMMENCING.

6. THE STRUCTURAL DRAWINGS SHALL GOVERN THE WORK FOR ALL STRUCTURAL FEATURES, UNLESS NOTED OTHERWISE. THE ARCHITECTURAL DRAWINGS SHALL GOVERN THE WORK FOR ALL DIMENSIONS AND INFORMATION NOT SHOWN. WORKING DIMENSIONS SHALL NOT BE SCALED FROM STRUCTURAL PLANS, SECTIONS, OR DETAILS. ANY REFERENCE TO WATERPROOFING AND FIREPROOFING ON THE STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY, REFER TO THE ARCHITECTURAL DRAWINGS FOR SPECIFIC REQUIREMENTS.

7. THE STRUCTURAL DRAWINGS ARE ONLY INTENDED TO CONVEY THE REQUIREMENTS OF THE STRUCTURE DOCUMENTED IN THESE PLANS. THE STRUCTURAL DRAWINGS SHOULD NOT BE USED AS MEANS OF COORDINATING BETWEEN TRADES OR DISCIPLINES.

8. THE CONTRACTOR IS TO PROVIDE SUBMITTALS FOR ALL STRUCTURAL MATERIALS, TO THE DESIGNER'S OF RECORD FOR REVIEW PRIOR TO THE START OF FABRICATION OR THE COMMENCEMENT OF WORK.

   A. REPRODUCTION OF ANY PORTION OF THE STRUCTURAL CONTRACT DRAWINGS FOR RE-SUBMITTAL AS SHOP DRAWINGS IS PROHIBITED AND SUBMITTAL OF SUCH DRAWINGS WILL BE **REJECTED AND RETURNED**.

   B. SUBMITTALS SHALL BEAR THE CONTRACTOR'S STAMP OF APPROVAL WHICH CONSTITUTES CERTIFICATION THAT THE CONTRACTOR HAS VERIFIED ALL CONSTRUCTION CRITERIA, MATERIALS, AND SIMILAR DATA AND HAS CHECKED EACH DRAWING FOR COMPLETENESS, COORDINATION, AND COMPLIANCE WITH THE CONTRACT DOCUMENTS.

   C. ALLOW FOR A MINIMUM OF TWO (2) WEEKS REVIEW PERIOD.

DELEGATED DESIGN

1. ALL DESIGN REQUIREMENTS, LOADING, PERFORMANCE CRITERIA, SUBMISSION STANDARDS AND ANY OTHER APPLICABLE INFORMATION IS LOCATED IN THE GENERAL NOTES, DESIGN DATA, PLANS, SECTIONS, DETAILS AND SPECIFICATIONS (CONSTRUCTION DOCUMENTS) FOR THE DELEGATED DESIGN OF THE COMPONENTS NOTED. **BY BIDDING ON THIS PROJECT, THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR THE DESIGN OF THE COMPONENTS DELEGATED BY THESE CONTRACT DOCUMENTS AND ACCEPTS THAT THERE IS ADEQUATE INFORMATION SHOWN ON THE CONTRACT DOCUMENTS TO PERFORM THE DELEGATED DESIGN.**

2. A BID SUBMISSION THAT DOES NOT INCLUDE THE REQUIRED DELEGATED DESIGN WILL RESULT IN THE REJECTION OF ANY AND ALL CONSTRUCTION PHASE SUBMISSIONS, RFI'S AND SHOP DRAWINGS.

3. THE ARCHITECTURAL AND STRUCTURAL DRAWINGS MAY SHOW DETAILS FOR DELEGATED DESIGN COMPONENTS, INCLUDING MINIMUM OR MAXIMUM ASSEMBLY REQUIREMENTS (I.E. DEPTH, GAGE, LENGTH, SPAN OR SPACING), OR SUGGESTED ATTACHMENT METHODS. THESE DETAILS AND INFORMATION ARE INTENDED TO BE SCHEMATIC IN NATURE, AND ARE NOT INTENDED TO BE USED FOR BID QUANTITIES. THE CONTRACTOR SHALL MAKE ALLOWANCES IN THEIR BID TO ACCOMMODATE THE COST OF THE ACTUAL ASSEMBLIES AFTER DELEGATED DESIGN IS COMPLETE.

4. THE DESIGN OF DELEGATED COMPONENTS IS THE RESPONSIBILITY OF THE CONTRACTOR'S ENGINEER, WHO MUST BE REGISTERED IN THE PROJECT'S JURISDICTION. ALL SUBMITTALS SHALL BEAR THIS ENGINEER'S SEAL AND SIGNATURE. THE ENGINEER MUST BE QUALIFIED TO DESIGN THE DESIGNATED ASSEMBLY AND MUST BE ABLE TO DEMONSTRATE PRIOR EXPERIENCE WITH THE DESIGN OF THE ASSEMBLY. REVIEW SHALL BE FOR GENERAL CONFORMANCE WITH THE PROJECT REQUIREMENTS AS INDICATED ON THE DRAWINGS AND IN THE GENERAL NOTES.

5. THE CONTRACTOR SHALL SUBMIT, FOR REVIEW, DRAWINGS AND CALCULATIONS FOR ALL PERFORMANCE ASSEMBLIES IDENTIFIED BELOW.

6. DELEGATED DESIGNS SHALL ALSO BE SUBMITTED TO THE AUTHORITY HAVING JURISDICTION AS DEFERRED SUBMITTALS AS PART OF THE PERMIT APPROVAL PROCESS, IF REQUIRED.

DELEGATED DESIGNS:

   A. DOOR SYSTEM & ITS COMPONENTS NOT EXPLICITY DDTAILED IN THESE DRAWINGS

   B. THE MEP CONTRACTRO SHALL PROVIE CONNECTION OF SUSPENDED TO ROOF STRUCTURE, INCLUDING ANCHORAGE, ALL ATTACHMENTS SHALL BE PROVIDED BY THE MEP CONTRACTOR. ATTACHMENTS SHALL BE DESIGNED TO SUPPORT THE WEIGHT OF THE EQUIPMENT IN ADDITION TO ALL APPLICABLE LATERAL FORCES.

PENNONI HAS CALCULATED THE INCREASED LOADING FROM THE PROPOSED NEW R-19 SPRAY INSULTATION, NEW SUSPENDED HEATER UNITS AND NEW FAN. THE NEW GRAVITY LOADS ON THE ROOF DECK AND PURLINS DOES NOT INCREASE THE TOTAL APPLIED LOAD BY MORE THAN 5% (INSULATION ONLY) AND THE NEW GRAVITY LOADS ON THE MAIN PORTAL FRAMES ALSO DOES NOT INCREASE THE TOTAL APPLIED LOAD BY MORE THAN 5% (INSULATION, HEATERS AND FANS), THEREFORE THE EXISTING BUILDING IS ACCEPTABLE PER THE PROVISIONS OF THE IEBC

EARTHWORK

1. ENGINEERED (CONTROLLED COMPACTED) FILL WITHIN THE BUILDING AREA SHALL BE CONSTRUCTED PRIOR TO FOUNDATION EXCAVATION. ENGAGE A PROFESSIONAL GEOTECHNICAL ENGINEER FOR RECOMMENDATIONS AND REQUIREMENTS OF CONTROLLED COMPACTED FILL

2. EXCAVATION SHALL BE PERFORMED SO AS NOT TO DISTURB EXISTING ADJACENT BUILDINGS, STREETS, AND UTILITY LINES. VERIFY LOCATION OF ALL UTILITIES PRIOR TO COMMENCEMENT OF WORK. HAND EXCAVATE AROUND UTILITIES AS REQUIRED.

3. THE CONTRACTOR IS RESPONSIBLE FOR EXCAVATION SAFETY. EXCAVATIONS MUST BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA STANDARDS AND REGULATIONS.

4. REFER TO THE PROJECT GEOTECHNICAL REPORT FOR EXCAVATION, BACKFILL AND PREPARATION OF THE FOUNDATION AND SLAB-ON-GRADE SUBGRADE, INCLUDING COMPACTION REQUIREMENTS.

5. UNLESS NOTED OTHERWISE, SATISFACTORY FILL MATERIALS ARE THOSE COMPLYING WITH ASTM D2487, GROUPS GW, GP, GM, SM, SW, AND SP. ON SITE BORROW MATERIAL SHALL BE TESTED TO DETERMINE SUITABILITY FOR USE AS FILL MATERIAL.

6. COMPACT SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DENSITY OF MODIFIED PROCTOR (ASTM D1557):
   A. UNDER BUILDING FOUNDATIONS - 98%
   B. UNDER BUILDING SLABS, STEPS, PAVEMENTS - 95%

7. REMOVE EXISTING VEGETATION, TOPSOIL, AND UNSATISFACTORY SOIL MATERIALS. PROOF ROLL SUBGRADE TO OBTAIN UNIFORMLY DENSIFIED SUBSTRATA PRIOR TO PLACING FILL MATERIAL EVENLY IN 8" THICK (MAXIMUM) LAYERS AND COMPACTING TO REQUIRED DENSITY.

8. BACKFILL SHALL BE BROUGHT UP SIMULTANEOUSLY ON EACH SIDE OF WALLS AND GRADE BEAMS, WITH A GRADE DIFFERENCE NOT TO EXCEED 2'-0" AT ANY TIME.

9. THE OWNER, OR CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL GEOTECHNICAL ENGINEER, SUBJECT TO THE APPROVAL OF THE DESIGNER'S OF RECORD, TO PERFORM SOIL TESTING AND INSPECTION. THE ENGINEER SHALL INSPECT THE SUBGRADE TO VERIFY BEARING LEVELS AND ENSURE THAT THE SAFE BEARING CAPACITY MEETS OR EXCEEDS THE NOTED DESIGN BEARING CAPACITY, REFER TO THE FOUNDATIONS NOTE SECTION OF THESE DRAWINGS . REPORTS SHALL BE SUBMITTED TO THE DESIGNER'S OF RECORD OUTLINING THE WORK PERFORMED AND TEST RESULTS.

FOUNDATIONS

1. A NEW SUBSURFACE INVESTIGATION REPORT, WITH FOUNDATION RECOMMENDATIONS, HAS NOT BEEN PROVIDED BY THE OWNER FOR THIS PROJECT, AS SUCH, FOUNDATIONS HAVE BEEN DESIGNED AND FOOTING ELEVATIONS ESTABLISHED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, SECTION 1806. THE SOIL INFORMATION AND BEARING CAPACITY SHALL BE VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER DURING CONSTRUCTION.

2. FOOTINGS SHALL BEAR ON UNDISTURBED STRATUM OR ENGINEERED FILL WITH A MINIMUM BEARING CAPACITY OF 1,500 PSF USING TABLE 1806.2 AND AN ASSUMED SOIL TYPE OF SAND, SILTY SAND, CLAYEY SAND, SILTY GRAVEL AND CLAYEY GRAVEL (SW, SP, SM, SC, GM AND GC).

3. FOUNDATIONS SHOWN HAVE BEEN DESIGNED FOR AXIAL FORCES AND MOMENTS INDICATED ON THE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR ANY RE-DESIGN OR RE-CONSTRUCTION OF FOUNDATIONS, DUE TO PRE-MANUFACTURED BUILDINGS CALCULATED REACTIONS WHICH EXCEED FORCES SHOWN ON THE DRAWINGS.

4. THE BOTTOM OF EXTERIOR FOOTINGS SHALL BE A MINIMUM OF THREE (3'-0") FEET BELOW FINISHED GRADE, AS REQUIRED BY LOCAL BUILDING CODES, OR AS NOTED ON PLANS AND DETAILS, WHICH EVER IS MORE STRICT.

5. THE BEARING ELEVATIONS OF NEW FOOTINGS ADJACENT TO EXISTING FOOTINGS ARE TO MATCH THE ADJACENT EXISTING FOOTING BEARING ELEVATIONS UNLESS INDICATED OTHERWISE ON PLANS.

6. PRIOR TO CONCRETE PLACEMENT FOR FOOTINGS, THE FOOTING SUBGRADE SHALL BE APPROVED BY THE INSPECTING GEOTECHNICAL ENGINEER. IF CONDITIONS PROVE TO BE UNACCEPTABLE AT ELEVATIONS SHOWN, FOOTING BOTTOMS SHALL BE LOWERED TO ACCEPTABLE SUBGRADE MATERIAL. FILL OVER-EXCAVATION WITH LEAN CONCRETE WITH A 28-DAY COMPRESSIVE STRENGTH OF f'c = 2,500 PSI.

7. CONCRETE FOR FOOTINGS SHALL BE PLACED ON THE SAME DAY THE SUBGRADE IS APPROVED BY THE GEOTECHNICAL ENGINEER.

8. FOUNDATIONS SHALL BE CENTERED UNDER SUPPORTED STRUCTURAL MEMBERS, UNLESS NOTED OTHERWISE ON PLANS OR DETAILS IN THESE DRAWINGS.

9. UTILITY LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT THE STRUCTURAL ENGINEER'S APPROVAL.

10. THE CONTRACTOR SHALL OBSERVE/MONITOR WATER CONDITIONS AT THE SITE AND TAKE THE NECESSARY PRECAUTIONS TO ENSURE THAT THE FOUNDATION EXCAVATIONS REMAIN DRY DURING CONSTRUCTION. ANY SHEETING OR SHORING REQUIRED FOR DEWATERING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SURFACE AND INFILTRATING WATER SHALL BE REMOVED BY SITE GRADING AND/OR PUMPING FROM SUMPS AS REQUIRED.

11. NO FOUNDATION CONCRETE SHALL BE PLACED IN WATER OR ON FROZEN SUBGRADE MATERIAL.

12. CONTRACTOR TO PROTECT IN-PLACE FOUNDATIONS AND SLABS FROM FROST PENETRATION UNTIL THE PROJECT IS COMPLETED.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE NEED TO USE FOUNDATION REBAR AS A GROUNDING ELECTRODE SYSTEM AND SHALL BE RESPONSIBLE FOR INSTALLING THE BONDING CLAMP PRIOR TO PLACEMENT OF THE CONCRETE AS PER NJUCC BULLETIN NO. 02-2.

CAST-IN-PLACE CONCRETE

1. CAST-IN-PLACE CONCRETE WORK SHALL CONFORM TO THE ACI-318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE," ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE," THE CURRENT EDITION OF SP-66 "ACI DETAILING MANUAL," AND THE CRSI "MANUAL OF STANDARD PRACTICE."

2. CAST-IN-PLACE CONCRETE AND CONCRETE REINFORCING REQUIRES SPECIAL INSPECTION AND TESTING IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE AND ABOVE REFERENCED CODES. ALL CONCRETE SHALL BE CONTROLLED CONCRETE, PROPORTIONED, MIXED AND PLACED IN THE PRESENCE OF A REPRESENTATIVE OF AN APPROVED TESTING AGENCY. REFER TO THE SPECIAL INSPECTION GENERAL NOTES ON THESE DRAWINGS FOR ADDITIONAL REQUIREMENTS.

3. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH, f'c = **[4,500]** PSI. CONCRETE AIR ENTRAINMENT TO BE 6% +/- 1.5% FOR ALL EXPOSED CONCRETE WORK. PROVIDE A MAXIMUM WATER / CEMENT RATIO OF 0.45.

4. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE (144 PCF +/-) WITH ALL CEMENT CONFORMING TO ASTM C150, TYPE I/II. MAXIMUM AGGREGATE SIZE SHALL BE 1-1/2" FOR FOOTINGS AND 3/4" FOR WALLS AND SLABS, CONFORMING TO ASTM C33.

5. ALL CONCRETE EXPOSED TO WEATHER IN THE FINISHED PROJECT SHALL BE AIR ENTRAINED PER ACI 318 BASED ON AGGREGATE SIZE, OR PER EXPOSURE CLASS, WHICH EVER IS MORE STRINGENT.

6. LEVELING GROUT SHALL BE NON-SHRINK, NON-METALLIC TYPE, FACTORY PRE-MIXED GROUT IN ACCORDANCE WITH CE-CRD-C621 OR ASTM C109, WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI.

7. PRIOR TO PLACING CONCRETE, THE CONTRACTOR SHALL SUBMIT THE FOLLOWING FOR REVIEW BY THE ENGINEER FOR APPROVAL:

   A. CONCRETE MIX DESIGNS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS INDICATED IN THE GENERAL NOTES AS WELL AS SUBMITTALS FOR ANY ADMIXTURES.

   B. THE USE OF HIGH-EARLY STRENGTH CONCRETE MAY BE REQUESTED BY THE CONTRACTOR. MIX DESIGN DATA USING FIELD CURED SPECIMENS SHALL BE SUBMITTED.

   C. REINFORCING STEEL SHOP DRAWINGS INCLUDING A SCHEDULE OF NECESSARY ACCESSORIES TO HOLD REINFORCEMENT SECURELY IN POSITION.

   D. FORMWORK, SHORING, AND RESHORING.

8. ALL FORMWORK TO BE CONSTRUCTED IN ACCORDANCE WITH ACI-347 "GUIDE TO FORMWORK FOR CONCRETE" WITHIN TOLERANCE LIMITS DEFINED IN ACI-117 "SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS."

9. CONCRETE FOR FOOTINGS IS TO BE PLACED ON THE SAME DAY AS THE SUBGRADE PREPARATION IS APPROVED BY THE INSPECTION AGENCY / GEOTECHNICAL ENGINEER.

10. CONCRETE SHALL NOT BE PUMPED THROUGH ALUMINUM PIPES AND SHALL NOT BE PLACED IN CONTACT WITH ALUMINUM FORMS, MIXING DRUMS, BUGGIES, CHUTES, CONVEYORS OR OTHER EQUIPMENT MADE OF ALUMINUM.

11. PROVIDE 3/4" x 3/4" CHAMFER ON ALL EXPOSED CONCRETE CORNERS, UNLESS NOTED OTHERWISE ON ARCHITECTURAL DRAWINGS.

12. BONDING AGENT SHALL BE USED WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE.

13. NO SLEEVE SHALL BE PLACED THROUGH ANY CONCRETE ELEMENT UNLESS SHOWN ON THE APPROVED SHOP DRAWINGS OR SPECIFICALLY AUTHORIZED IN WRITING BY THE ENGINEER. THE CONTRACTOR SHALL VERIFY DIMENSIONS AND LOCATIONS OF ALL SLOTS, PIPE SLEEVES, ETC. AS REQUIRED FOR MECHANICAL TRADES BEFORE CONCRETE IS PLACED.

14. THE CONTRACTOR SHALL PROTECT THE CONCRETE FROM THE FOLLOWING IMMEDIATELY AFTER PLACEMENT:
   A. PREMATURE / EARLY DRYING OUT OF CONCRETE, ESPECIALLY DURING THE FIRST 24 HOURS
   B. HOT WEATHER, REFER TO ACI-305R "HOT WEATHER CONCRETING"
   C. COLD WEATHER / FREEZING, REFER TO ACI-306R "COLD WEATHER CONCRETING"
   D. EXCESSIVE LOADING, CONSTRUCTION EQUIPMENT, STORAGE OF MATERIALS, ETC

15. ALL SURFACES SHALL BE MOIST CURED OR PROTECTED USING A MEMBRANE CURING AGENT, AND APPLIED AS SOON AS FORMS ARE REMOVED. IF MEMBRANE CURING AGENT IS USED, EXERCISE CARE NOT TO DAMAGE COATING.

16. ALL REINFORCEMENT SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS, STIRRUPS OR CHAIRS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT FOR ALL BARS.

17. LAP WELDED WIRE REINFORCEMENT TWO (2) FULL WIRE SPACES AT SPLICES AND WIRE TOGETHER.

18. TOLERANCES FOR CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 117.

19. THE MINIMUM CONCRETE STRENGTH REQUIRED FOR THE SUPPORT OF DEAD LOADS AND CONSTRUCTION LIVE LOADS IS 75% OF THE SPECIFIED 28-DAY COMPRESSIVE STRENGTH, AT WHICH POINT ALL FORMS, SHORES AND RE-SHORING CAN BE REMOVED UNLESS DETERMINED OTHERWISE BY THE FORMWORK ENGINEER. REFER TO ACI 347 "GUIDE TO FORMWORK FOR CONCRETE" FOR ADDITIONAL INFORMATION, INCLUDING STRIPPING TIMES AND DELEGATED DESIGN REQUIREMENTS.

20. CAST-IN-PLACE CONCRETE ANCHORS:
   A. ALL HEADED CONCRETE ANCHORS TO BE MANUFACTURED FROM MATERIAL WHICH CONFORMS TO ASTM A108 FOR LOW CARBON STEEL.
   B. ALL WELDS TO BE MADE IN ACCORDANCE WITH THE STRUCTURAL WELDING CODE, ANSI/AWS D1.1, LATEST EDITION AND WITH THE RECOMMENDATIONS OF THE STUD MANUFACTURER.
   C. THE SPACING, MINIMUM EMBEDMENT, AND INSTALLATION OF THE ANCHORS TO BE IN ACCORDANCE WITH ACI 318 AND THE MANUFACTURER'S RECOMMENDED PROCEDURES.

STRUCTURAL STEEL

1. THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "STEEL CONSTRUCTION MANUAL", AISC 360 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", AISC 303 "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS," AND THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS."

2. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS AND SHALL CONFORM TO THE AMERICAN WELDING SOCIETY (AWS) D1.1 "STRUCTURAL WELDING CODE - STEEL."

   A. STRUCTURAL SECTIONS, SHAPES AND FASTENERS SHALL CONFORM THE ASTM SPECIFICATIONS LISTED IN THE STRUCTURAL STEEL MATERIALS SCHEDULE, UNLESS NOTED OTHERWISE.

3. HIGH-STRENGTH BOLTED CONNECTIONS HAVE BEEN DESIGNED BY PENNONI AND ARE DETAILED IN THESE CONSTRUCTION DOCUMENTS.

   A. ALL BOLTED CONNECTIONS SHALL BE ASTM F3125 HIGH STRENGTH BOLTS AND BE A MINIMUM 3/4" DIAMETER, UNLESS NOTED OTHERWISE.

   B. ALL BOLTS ARE TO BE INSTALLED "SNUG TIGHT" MINIMUM, UNLESS NOTED OTHERWISE IN THE CONTRACT DOCUMENTS, AS REQUIRED BY AISC OR RCSC, OR AS NOTED ON CONNECTION DETAILS.

   C. THE STEEL FABRICATOR / ERECTOR MAY REQUEST ALTERNATE CONNECTION DETAILS IF SUCH DETAILS ARE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW AND APPROVAL. THE STEEL FABRICATOR / ERECTOR IS RESPONSIBLE FOR PROVIDING THE DESIGN OF ALTERNATE DETAILS, AND CONNECTION CALCULATIONS ARE TO BE PROVIDED, SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE HAVING JURISDICTION OVER THE PROJECT, FOR REVIEW AND APPROVAL. THE STRUCTURAL ENGINEER OF RECORD SHALL BE THE SOLE JUDGE OF ACCEPTANCE OF ALTERNATIVES, AND THE CONTRACTOR'S BID SHALL ANTICIPATE THE USE OF THOSE DETAILS SHOWN ON THESE DRAWINGS.

4. THE CONTRACTOR IS REQUIRED TO SUBMIT SHOP DRAWINGS FOR THE FABRICATION AND ERECTION OF ALL STRUCTURAL STEEL. SHOP DRAWINGS ARE TO INCLUDE:

   A. COORDINATED DIMENSIONS OF MECHANICAL / ELECTRICAL EQUIPMENT REQUIRING SUPPORT, FLOOR AND ROOF PENETRATIONS, EDGES OF METAL DECK, ETC.

   B. CLEARLY SHOW ALL SHOP WELDS AND SHOP BOLTED CONNECTIONS. CLEARLY SHOW ALL FIELD WELDS AND FIELD BOLTED CONNECTIONS.

   C. CLEARLY SHOW ALL CUTS, HOLES, COPING, ETC. REQUIRED FOR OTHER TRADES OR EXISTING FIELD CONDITIONS THAT ARE TO BE MADE IN THE SHOP. **CUTTING OR BURNING OF MAIN STRUCTURAL STEEL MEMBERS IS NOT PERMITTED IN THE FIELD.**

   D. THE INITIAL SUBMITTAL SHALL INCLUDE ALL CONNECTION DETAILS AND JOB STANDARDS.

   E. SHOP DRAWINGS SHALL DIRECTLY REFERENCE CONNECTION DETAILS ON THE SUBMITTAL OR THE CONNECTION ENGINEER SHALL PROVIDE A LETTER STATING THAT THEY HAVE REVIEWED THE SHOP DRAWINGS AND CONFIRM THAT THE FABRICATION CONNECTION DETAILS ARE IN CONFORMANCE WITH THEIR CONNECTION DESIGN REQUIREMENTS.

5. SUBMIT A WRITTEN ERECTION PLAN AND ASSOCIATED CALCULATIONS, TO THE ENGINEER FOR REVIEW. THIS PLAN IS TO INDICATE, AS A MINIMUM, SEQUENCE OF ERECTION OPERATIONS, CALCULATIONS INDICATING ERECTION STRESSES, FIELD SPLICE LOCATIONS, FIELD SPLICE DETAILS, AND LOCATION OF TEMPORARY SHORING, SCAFFOLDING, BRACING, ETC. THE STRESSES CAUSED DURING ERECTION AND HANDLING SHALL NOT EXCEED ALLOWABLE MEMBER STRESSES. THE ERECTION PLAN AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A STRUCTURAL/CONSTRUCTION ENGINEER LICENSED IN THE STATE HAVING JURISDICTION OVER THE PROJECT.

6. THE GENERAL CONTRACTOR OR STEEL FABRICATOR / ERECTOR SHALL NOTIFY THE STRUCTURAL ENGINEER OF ANY FABRICATION OR ERECTION ERRORS, OR DEVIATIONS FROM THE CONTRACT DRAWINGS AND RECEIVE WRITTEN APPROVAL BEFORE ANY FIELD CORRECTIONS ARE MADE. FAILURE TO NOTIFY THE STRUCTURAL ENGINEER IS AT THE CONTRACTOR'S RISK.

7. STEEL MEMBERS SHOWN ON THESE FRAMING PLANS ARE TO BE EQUALLY SPACED, UNLESS NOTED OTHERWISE..

8. **FIELD WELDING TO THE EXISTING STEEL WILL NOT BE PERMITTED**, UNLESS SPECIFICALLY NOTED ON THESE DRAWINGS, AND THE CONTRACTOR SHALL ANTICIPATE USING FIELD DRILLED AND BOLTED CONNECTIONS TO THE EXISTING STEEL. WHEN SPECIFICALLY REQUIRED BY THE CONTRACT DOCUMENTS TO WELD TO EXISTING STEEL, THE EXISTING STEEL FRAMING SHALL BE THOROUGHLY CLEANED TO ENSURE PROPER WELDING PREPARATION. THE CONTRACTOR / STEEL ERECTOR IS REQUIRED TO PROVIDE TEMPORARY SHORING OF THE EXISTING STEEL MEMBER ON BOTH SIDES OF THE WELD LOCATION. SHORING IS TO BE IN PLACE PRIOR TO, FOR THE DURATION OF, AND REMAIN IN PLACE AFTER WELDING HAS BEEN COMPLETED, UNTIL THE WELDS HAVE BEEN INSPECTED BY A CERTIFIED WELDING INSPECTOR (CWI) AND THE INSPECTIONS REPORTS ARE SUBMITTED TO, REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.

9. THE STEEL STRUCTURE IS A NON-SELF-SUPPORTING STEEL FRAME WHICH IS DEPENDENT UPON DIAPHRAGM ACTION OF THE METAL ROOF / FLOOR DECKS AND THEIR COMPLETE ATTACHMENT TO THE LATERAL FORCE RESISTING SYSTEM FOR STABILITY AND RESISTANCE TO WIND AND SEISMIC FORCES. THE CONTRACTOR / STEEL ERECTOR IS REQUIRED TO PROVIDE TEMPORARY CABLES / GUYS AND OTHER BRACING / SHORING REQUIRED TO PROVIDE SUFFICIENT LATERAL STABILITY TO THE STEEL FRAME DURING CONSTRUCTION. TEMPORARY BRACING / SHORING SHALL BE ADEQUATELY SIZED AND ANCHORED BY THE CONTRACTOR FOR THE ANTICIPATED LOADING CONDITIONS. THIS BRACING / SHORING SHALL REMAIN IN PLACE UNTIL THE PERMANENT LATERAL FORCE RESISTING SYSTEM IS CONSTRUCTED IN ITS ENTIRETY.

10. ALL STRUCTURAL STEEL SHALL BE HOT-DIPPED GALVANIZED PER ASTM A123.

11. ALL STEEL ANGLES AND PLATES, ALONG WITH BOLTS AND WASHERS, SHALL BE HOT-DIPPED GALVANIZED PER ASTM A123.

12. FIELD WELDED SURFACES WITHIN FOUR (4) INCHES OF WELD SHALL BE CLEANED AND GROUND SMOOTH. AFTER FIELD WELDS HAVE BEEN INSPECTED AND APPROVED, COAT THE EXPOSED AREA WITH APPROPRIATE FIELD APPLIED PRIMER / PAINTS / GALVANIZING REPAIR PAINT, AS REQUIRED. WELDS THAT ARE COATED PRIOR TO INSPECTION **WILL NOT BE INSPECTED** AND ARE REQUIRED TO BE FULLY CLEANED WITH A WIRE WHEEL OR BRUSH PRIOR TO INSPECTION.

13. ALL DISSIMILAR METALS SHALL BE TREATED OR PROPERLY SEPARATED TO PREVENT GALVANIC AND/OR CORROSIVE EFFECTS.

STRUCTURAL ABBREVIATIONS

ADDL	ADDITIONAL
AR	ANCHOR ROD
APPROX	APPROXIMATE
AVG	AVERAGE
ALT	ALTERNATE
ARCH	ARCHITECT / ARCHITECTURAL
BP	BASE PLATE / BEARING PLATE
BM	BEAM
BF	BRACED FRAME
BS	BOTH SIDES
BLDG	BUILDING
BOT	BOTTOM
B/	BOTTOM OF
CANT	CANTILEVER
CC	CENTER TO CENTER
CL	CENTER LINE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CM	CONSTRUCTION MANAGER
CMU	CONCRETE MASONRY UNIT
CONN/CONNX	CONNECTION
CONSTR	CONSTRUCTION
CJ	CONSTRUCTION JOINT / CONTROL JOINT
CONT	CONTINUOUS
DBA	DEFORMED BARE ANCHOR
DEMO	DEMOLITION
DET	DETAIL
DIA / Ø	DIAMETER
DIM	DIMENSION
DWG	DRAWING(S)
EF	EACH FACE
EW	EACH WAY
ELEV	ELEVATION
EMBED	EMBEDED / EMBEDMENT
EOR	ENGINEER OF RECORD
EQ	EQUAL
EQUIP	EQUIPMENT
EXST	EXISTING
EXP	EXPANSION
EJ	EXPANSION JOINT
FS	FAR SIDE
FT	FEET
FLR	FLOOR
FD	FLOOR DRAIN
FTG	FOOTING(S)
FND	FOUNDATION
GALV	GALVANIZED
GA	GAGE
GC	GENERAL CONTRACTOR
GR	GRADE
HR	HAND RAIL
HGR	HANGER
HP	HIGH POINT
HORZ	HORIZONTAL
IF	INSIDE FACE
IN	INCHES
INFO	INFORMATION
ISO	ISOLATION JOINT
JT	JOINT
K	KIP(S) = 1000 LBS
KB	KNEE BRACE
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LP	LOW POINT
LBS / #	POUNDS
LW	LIGHTWEIGHT
MFR	MANUFACTURER
MAX	MAXIMUM
MEP	MECHANICAL / ELECTRICAL / PLUMBING
MIN	MINIMUM
MISC	MISCELLANEOUS
MC	MOMENT CONNECTION
NS	NEAR SIDE
NW	NORMAL WEIGHT
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OF	OUTSIDE FACE
OPP	OPPOSITE
OPNG	OPENING
PERP	PERPENDICULAR
PL	PLATE
PROJ	PROJECTION
QTY	QUANTITIY
R	RADIUS
REF	REFERENCE
REINF	REINFORCE(D)
REQD	REQUIRED
REV	REVISION
SCH	SCHEDULE
SECT	SECTION
SER	STRUCTURAL ENGINEER OF RECORD
SF	STEP FOOTING
SIM	SIMILAR
SOG	SLAB ON GRADE
SSOG	STRUCTURED SLAB ON GRADE
SOMD	SLAB ON METAL DECK
SST	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STIFF	STIFFENER
STRUCT	STRUCTURAL
TEMP	TEMPORARY
THK	THICK
T&G	TONGUE AND GROOVE
T&B	TOP AND BOTTOM
T/	TOP OF
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WWR / WWF	WELDED WIRE REINFORCING / WELDED WIRE FABRIC
WF	WIDE FLANGE
WP	WORK POINT

PENNONI ASSOCIATES INC.
1900 Market Street, Suite 300
Philadelphia, PA 19103
T 215.222.3000 **F** 215.222.3588

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK

WOODBINE AIRPORT - HANGER #5 DOOR REPLACEMENT
660 HENRY DECINQUE BLVD.
WOODBINE, NJ

GENERAL NOTES

DATE	NO.	REVISIONS	BY
05.09.2025	1	ISSUED FOR BID	

PROJECT	MCKAX25002
DATE	05.09.2025
DRAWING SCALE	AS NOTED
DRAWN BY	JC
APPROVED BY	RHP

S001

SHEET 1 OF 6

STATEMENT OF SPECIAL INSPECTIONS

1. **THIS PROJECT REQUIRES SPECIAL INSPECTIONS IN ACCORDANCE WITH THE BUILDING CODE, SECTION 17 AND ANY STATE / LOCAL PROVISIONS DEEMED NECESSARY BY THE BUILDING OFFICIAL:**
2. INSPECTION IS REQUIRED OF ALL CONSTRUCTION DELINEATED ON THESE STRUCTURAL DRAWINGS AND/OR SPECIFICATIONS.
3. INSPECTION AND TESTING SHALL BE PERFORMED AT THE OWNER'S EXPENSE. THE OWNER SHALL RETAIN A QUALIFIED INSPECTOR / INSPECTION AGENCY, SUBJECT TO APPROVAL BY THE LOCAL AUTHORITY HAVING JURISDICTION, TO PERFORM ALL THE NECESSARY INSPECTIONS.
4. THE ENGINEER OF RECORD (EOR) IS NOT RESPONSIBLE TO PERFORM OR OBTAIN THE INSPECTION AND TESTING SERVICES AS PART OF THE DESIGN SERVICE. STRUCTURAL SITE VISITS AND SITE OBSERVATION REPORTS (SORs) ISSUED BY THE EOR ARE TO ASCERTAIN GENERAL CONFORMANCE WITH THE CONTRACT DOCUMENTS AND ARE NOT TO BE CONSTRUED AS MEETING SPECIAL INSPECTION REQUIREMENTS.
5. THE ARCHITECT, WITH INPUT FROM THE ENGINEER OF RECORD, IS RESPONSIBLE FOR PREPARING AND SUBMITTING THE "STATEMENT OF SPECIAL INSPECTIONS" IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, SECTION 1705, AND ANY LOCAL PROVISIONS DEEMED NECESSARY BY THE BUILDING OFFICIAL.
6. **THE ENGINEER OF RECORD WILL NOT AUTHORIZE ANY FINAL COMPLIANCE FORMS REQUIRED BY THE LOCAL BUILDING OFFICIAL FOR OBTAINING A CERTIFICATE OF OCCUPANCY IF THE REQUIREMENTS FOR INSPECTIONS HAVE NOT BEEN SUBMITTED FOR REVIEW AND APPROVAL.**
7. THE EOR IS NOT RESPONSIBLE FOR CONSTRUCTION SITE SAFETY AND IS NOT REQUIRED TO INSPECT THE WORK FOR COMPLIANCE WITH OSHA REGULATIONS.
8. THE SPECIAL INSPECTION AGENCY SHALL REVIEW THE REQUIRED INSPECTIONS, TESTING AND TEST PROCEDURES WITH THE OWNER, GENERAL CONTRACTOR, ARCHITECT AND EOR PRIOR TO THE GENERAL CONTRACTOR PERFORMING ANY RELATED CONSTRUCTION ACTIVITIES.
9. THE GENERAL CONTRACTOR WILL PROVIDE THE SPECIAL INSPECTION AGENCY WITH ADEQUATE NOTICE WHEN REQUESTING INSPECTIONS AND TESTING, AND PROVIDE AN ANTICIPATED SCHEDULE OF CONSTRUCTION ACTIVITIES REQUIRING SPECIAL INSPECTIONS. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND PROVIDING SAFE ACCESS TO THE WORK FOR REQUIRED SPECIAL INSPECTIONS.
10. THE SPECIAL INSPECTION AGENCY SHALL KEEP COMPREHENSIVE RECORDS OF ALL INSPECTIONS AND TESTING AND FURNISH DAILY FIELD REPORTS TO THE CONTRACTOR, ARCHITECT AND EOR FOR RECORD. AT THE COMPLETION OF CONSTRUCTION, THE SPECIAL INSPECTION AGENCY SHALL SUBMIT A FINAL REPORT OF SPECIAL INSPECTIONS, DOCUMENTING ALL REQUIRED SPECIAL INSPECTIONS AND TESTING THAT HAS BEEN COMPLETED, AS WELL AS DESCRIBE ANY CORRECTIONS OF DISCREPANCIES THAT MAY HAVE OCCURRED DURING CONSTRUCTION, TO THE BUILDING OFFICIAL, OWNER, CONTRACTOR, ARCHITECT AND EOR.
11. THE SPECIAL INSPECTION SCHEDULE BELOW INDICATES THE MINIMUM REQUIRED STRUCTURAL CONSTRUCTION ACTIVITIES AND MATERIALS THAT REQUIRE SPECIAL INSPECTIONS AND TESTING. THIS SCHEDULE IS NOT COMPREHENSIVE OF ALL INSPECTIONS AND TESTING REQUIRED FOR THE PROJECT, OR BY THE REFERENCED BUILDING CODE OR BUILDING OFFICIAL. REFER TO EACH DISCIPLINE / CONSTRUCTION TRADE'S CONSTRUCTION DRAWINGS FOR ADDITIONAL INSPECTIONS REQUIRED ON THE PROJECT.

MATERIAL SPECIFIC SPECIAL INSPECTION REQUIREMENTS

CAST-IN-PLACE CONCRETE

1. THE INSPECTION AGENCY SHALL PREPARE CONCRETE TEST CYLINDERS FROM EACH DAY'S POUR. CYLINDERS SHALL BE PROPERLY CURED AND STORED. SAMPLE FRESH CONCRETE IN ACCORDANCE WITH ASTM C172.
2. RETAIN A LABORATORY TO PROVIDE TESTING SERVICES. TEST CONCRETE FOR SLUMP PER ASTM C143, AIR CONTENT PER ASTM C231 OR C173, CYLINDER SAMPLES AND TESTS PER ASTM C31 AND C39. CAST ONE (1) SET OF SIX (6) 4"x8" CYLINDERS FOR EACH 50 CUBIC YARDS PLACED AND FOR EACH MIX USED PER DAY. REPORTS OF ALL TESTS TO BE SUBMITTED TO THE ENGINEER.
3. PRIOR TO PLACEMENT OF CONCRETE, A FIELD REPRESENTATIVE SHALL BE INFORMED A MINIMUM OF TWENTY-FOUR (24) HOURS IN ADVANCE OF PLACEMENT TO ALLOW FOR INSPECTION OF REINFORCING STEEL. PLACEMENT OF CONCRETE SHALL NOT START UNTIL PLACEMENT OF REINFORCING STEEL HAS BEEN APPROVED BY THE INSPECTION AGENCY.

STRUCTURAL STEEL

1. **THE STEEL STRUCTURE AND ITS CONNECTIONS ARE REQUIRED TO HAVE SPECIAL INSPECTIONS.**
2. THE SPECIAL INSPECTOR IS TO PERFORM ALL REQUIRED PRE-INSTALLATION AND POST-INSTALLATION INSPECTIONS AND TESTING OF HIGH-STRENGTH BOLTED FASTENER ASSEMBLIES.
3. THE CERTIFIED WELDING INSPECTOR (CWI) IS TO PERFORM ALL WELDING VISUAL INSPECTIONS AND NON-DESTRUCTIVE TESTING (NDT). THE STEEL ERECTOR IS TO PROVIDE ALL REQUIRED WELDER QUALIFICATIONS, WELDING PROCEDURE SPECIFICATIONS (WPS), ETC TO THE CWI AS REQUESTED.
4. THE FOLLOWING NON-DESTRUCTIVE TESTING (NDT) IS REQUIRED AT MINIMUM FOR ALL FIELD WELDED CONNECTIONS:
   A. VISUALLY INSPECT 100% OF FIELD FILLET WELDS AND FINISHED MULTI-PASS WELDS. WELDS FAILING VISUAL INSPECTIONS ARE TO BE REPAIRED PRIOR TO PERFORMING ANY NDT.

STATEMENT OF SPECIAL INSPECTIONS SCHEDULE

TYPE & EXTENT OF INSPECTIONS / TESTS	FREQUENCY OF INSPECTION
STRUCTURAL STEEL (IBC 1705.2)	
STRUCTURAL STEEL PER AISC 360 QUALITY ASSURANCE INSPECTION REQUIREMENTS	
STEEL DECK PER SDI QUALITY ASSURANCE INSPECTION REQUIREMENTS	
OPEN-WEB STEEL JOISTS & GIRDERS PER SJI & IBC TABLE 1705.2.3	
WELDING PER AWS D1.1 QUALITY ASSURANCE INSPECTION REQUIREMENTS	
BOLTING PER AISC 360 & RCSC QUALITY ASSURANCE INSPECTION REQUIREMENTS	
CONCRETE CONSTRUCTION (IBC 1705.3)	
INSPECTION OF REINFORCING STEEL	PERIODIC
REINFORCING STEEL WELDING	SEE TABLE 1705.3
CAST-IN-ANCHORS	PERIODIC
POST-INSTALLED ADHESIVE ANCHORS HORIZONTAL & UPWARD INCLINED TO RESIST SUSTAINED TENSION LOADS	CONTINUOUS
POST-INSTALLED ANCHORS - MECHANICAL AND OTHER ADHESIVE	PERIODIC
VERIFY CONCRETE MIX DESIGN	PERIODIC
SAMPLING, CYLINDERS, SLUMP, AIR CONTENT, TEMPERATURE	CONTINUOUS
CURING TEMPERATURE & TECHNIQUES	PERIODIC
FORMWORK SHAPE, LOCATION, DIMENSIONS	PERIODIC
SOILS (IBC 1705.6)	
SHALLOW FOUNDATION MATERIALS AND BEARING CAPACITY	PERIODIC
EXCAVATIONS - VERIFY PROPER DEPTH & MATERIAL ARE REACHED	PERIODIC
CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	PERIODIC
VERIFY COMPACTED FILL MATERIALS, DENSITIES & LIFT THICKNESSES	CONTINUOUS
PRIOR TO FILL, INSPECT SUBGRADE AND SITE PREPARATION	PERIODIC
FABRICATORS (IBC 1705.10)	
INSPECTION OF FABRICATED ITEMS TO BE IN ACCORDANCE WITH IBC 1704.2.5	

NOTES:
1. FREQUENCY OF INSPECTIONS ARE DEFINED AS:
   A. **PERIODIC** INSPECTION: PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED.
   B. **CONTINUOUS** INSPECTION: FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AFTER COMPLETION OF THE WORK.
2. SHOP INSPECTIONS OF ANY APPROVED FABRICATORS MAY BE WAIVED BY THE BUILDING OFFICIAL OR EOR. IF SHOP INSPECTIONS ARE WAIVED A FABRICATOR'S CERTIFICATE OF COMPLIANCE SHALL BE SUBMITTED TO THE EOR FOR REVIEW AND RECORD.

MATERIAL SPECIFICATION - CAST-IN-PLACE CONCRETE MIX DESIGNS

STRUCTURAL USE	EXPOSURE CLASS				AIR CONTENT	MINIMUM 28-DAY COMPRESSIVE STRENGTH, f'c
	F	S	W	C		
FOUNDATION	F2	S0	W0	C1	4.5% - 7.5%	4,500 PSI

MATERIAL SPECIFICATION - STRUCTURAL STEEL, BOLTS & WELDS

SECTION TYPE	ASTM SPECIFICATION
WIDE FLANGE, WF SHAPES	ASTM A992, GRADE 50
PLATES, ANGLES, CHANNELS, ETC	ASTM A36
HSS STEEL TUBING (RECTANGULAR, SQUARE & ROUND)	ASTM A500, GRADE C
GALVANIZED STRUCTURAL STEEL: • STRUCTURAL SHAPES & RODS • BOLTS, FASTENERS & HARDWARE	 ASTM A123 ASTM A153
ANCHOR RODS	HILTI POST-INSTALLED ANCHORS AS NOTED ON DRAWINGS
HIGH STRENGTH BOLS, NUTS & WASHER ASSEMBLIES	ALL BOLTS SHALL BE A MINIMUM 3/4" Ø, UNO ASTM F3125 BOLTS / ASSEMBLIES - (INCLUSIVE OF PREVIOUS ASTMS - A325, A490, F1852 AND F2280) ASTM A563 NUTS ASTM F436 WASHERS OR ASTM F959 DIRECT TENSION INDICATING (DTI) WASHERS
WELDING ELECTRODES	UTILIZE 70 KSI MINIMUM STRENGTH, LOW HYDROGEN SERIES ELECTRODE / WIRE, UNO PERMITTED WELDING PROCESS • SHIELDED METAL ARC WELDING (SMAW) - E70XX ELECTRODES • GAS METAL ARC WELDING (GMAW) - ER70S-X FLUX-CORED WIRE

MATERIAL SPECIFICATION - REINFORCING STEEL

REINFORCING TYPE	ASTM SPECIFICATION
MILD-REINFORCING STEEL (REBAR)	ASTM A615, GRADE 60
EPOXY-COATED REINFORCING STEEL (REBAR)	ASTM A775, GRADE 60
WELDED WIRE REINFORCEMENT, WWR	ASTM A1064

MATERIAL SPECIFICATION - POST-INSTALLED ANCHORS

SUBSTRATE	ANCHOR TYPE	APPROVED HILTI ANCHORS (BASIS OF DESIGN)	ALTERNATIVE ANCHORS (WITH APPROVAL, SEE NOTE #1)
CRACKED & UNCRACKED CONCRETE	SCREW ANCHOR	KWIK HUS EZ	DEWALT SCREW-BOLT+ SIMPSON TITEN HD
	EXPANSION ANCHOR	KWIK BOLT-TZ	DEWALT POWER-STUD+ SD2 SIMPSON STRONG BOLT 2
		KWIK BOLT 3 **(SEE NOTE #2)**	DEWALT POWER-STUD+ SD1 SIMPSON STRONG BOLT 2
		HDA UNDERCUT ANCHOR	DEWALT CCU+ SIMPSON TCA
		HSL-3	DEWALT POWER-BOLT+
	ADHESIVE ANCHOR	HIT-HY 200 SAFE SET SYSTEM HAS-E ROD, HIT-Z ROD, REBAR	DEWALT AC200+ SIMPSON AT-3G
		HIT-HY 500 V3 SAFE SET SYSTEM HAS-E ROD, HIT-Z ROD, REBAR	DEWALT PURE110+ SIMPSON SET-3G

NOTES:
1. TO UTILIZE ALTERNATIVE ANCHORS, THE CONTRACTOR MUST SUBMIT A FORMAL SUBSTITUTION REQUEST AND / OR SIGNED AND SEALED CALCULATIONS TO THE ENGINEER OF RECORD TO REVIEW AND APPROVE PRIOR TO USE.
2. ANCHOR IS APPLICABLE FOR USE IN UNCRACKED CONCRETE ONLY.
3. ANCHOR IS APPLICABLE FOR USE IN SOLID GROUT-FILLED CONCRETE MASONRY ONLY
4. ANCHORS IN HOLLOW MASONRY UNITS AND MULTI-WYTHE MASONRY CONSTRUCTION ARE TO UTILIZE APPROPRIATELY SIZED MESH SCREEN TUBES, CONSULT WITH ANCHOR MANUFACTURER FOR APPROVED SCREEN TUBES.
5. ALL ANCHORS TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, MPII.

PENNONI ASSOCIATES INC.
1900 Market Street, Suite 300
Philadelphia, PA 19103
T 215.222.3000 F 215.222.3588

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK

WOODBINE AIRPORT - HANGER #5 DOOR REPLACEMENT
660 HENRY DECINQUE BLVD.
WOODBINE, NJ

GENERAL NOTES

NO.	DATE	REVISIONS / ISSUED FOR BID	BY
1	05.09.2025	ISSUED FOR BID	

PROJECT	MCKAX25002
DATE	05.09.2025
DRAWING SCALE	AS NOTED
DRAWN BY	JC
APPROVED BY	RHP

S002

SHEET 2 OF 6

DESIGN CRITERIA - LATERAL LOADS		
WIND DESIGN		
DESCRIPTION	SYMBOL	VALUE
BASIC DESIGN WIND SPEED	V_{ULT}	120 mph
ALLOWABLE STRESS DESIGN WIND SPPPED	V_{ASD}	93 mph
RISK CATEGORY		II
WIND EXPOSURE CATEGORY		C
INTERNAL PRESSURE COEFFICIENT	GC_{pi}	±0.55
COMPONENTS AND CLADDING	SEE SCHEDULE	
EARTHQUAKE (SEISMIC) DESIGN		
DESCRIPTION	SYMBOL	VALUE
RISK CATEGORY		II
IMPORTANCE FACTOR	I_e	1
SITE CLASSIFICATION	D (DEFAULT)	
MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETERS, S_S & S_1	S_S	0.119g
	S_1	0.04g
DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETERS, S_{DS} & S_{D1}	S_{DS}	0.127g
	S_{D1}	0.063g
SEISMIC DESIGN CATEGORY	S_{DC}	A
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE PROCEDURE	

DESIGN CRITERIA - SNOW LOADS		
DESCRIPTION	SYMBOL	VALUE
GROUND SNOW LOAD	P_g	20 psf
FLAT ROOF SNOW LOAD	P_f	20 psf
SNOW EXPOSURE FACTOR	C_e	1.0
SNOW LOAD IMPORTANCE FACTOR	I_s	1.0
THERMAL FACTOR	C_t	1.1
SLOPE FACTOR	C_s	1.0
SNOW DRIFT	SNOW DRIFTS NOT APPLICABLE	

MECHANICAL EQUIPMENT WEIGHT SCHEDULE	
MECH EQPT	WEIGHT (LBS)
GHU-1 & GHU-2	220
GHU-3	151
FAN-1	217

NOTES:
1. **REFER TO THE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION**

DESIGN CRITERIA - ROOF LOADS	
DEAD LOADS (SEE NOTE #1)	
DESCRIPTION	VALUE (PSF)
ROOFING & INSULATION	3
ROOF FRAMING	12
COLLATERAL / MISCELLANEOUS	2
TOTAL DEAD LOAD	17
LIVE LOAD	
ROOF LIVE LOAD	20

NOTES:
1. SELF WEIGHT OF PRIMARY STRUCTURAL COMPONENTS (BEAMS, SLABS, COLUMNS) ARE INCLUDED SEPARATELY, UNLESS NOTED OTHERWISE ABOVE.

DESIGN CRITERIA - WIND DESIGN COMPONENTS AND CLADDING

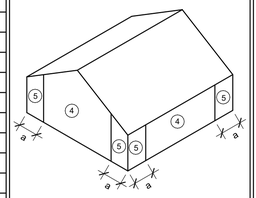
ROOF & WALL PRESSURES

ZONE	EFFECTIVE WIND AREA (FT²)	P (PSF) NEGATIVE	P (PSF) POSITIVE
1	10	-78.9	17.0
	20	-78.9	16.0
	50	-60.8	16.0
	100	-24.6	16.0
	200	-24.6	16.0
	500	-24.6	16.0
2e	10	-78.9	17.0
	20	-78.9	16.0
	50	-60.8	16.0
	100	-24.6	16.0
	200	-24.6	16.0
	500	-24.6	16.0
2r	10	-115.2	17.0
	20	-98.9	16.0
	50	-78.9	16.0
	100	-64.1	16.0
	200	-48.2	16.0
	500	-42.7	16.0
2n	10	-115.2	17.0
	20	-98.9	16.0
	50	-78.9	16.0
	100	-64.1	16.0
	200	-48.2	16.0
	500	-42.7	16.0
3e	10	-115.2	17.0
	20	-98.9	16.0
	50	-78.9	16.0
	100	-64.1	16.0
	200	-48.2	16.0
	500	-42.7	16.0
3r	10	-136.9	17.0
	20	-115.2	16.0
	50	-89.8	16.0
	100	-71.7	16.0
	200	-71.7	16.0
	500	-71.7	16.0
4	10	-46.4	
	20	-44.4	
	50	-41.9	
	100	-39.9	
	200	-38.0	
	500	-35.5	
5	10	-57.2	
	20	-53.4	
	50	-48.3	
	100	-44.4	
	200	-40.6	
	500	-35.5	

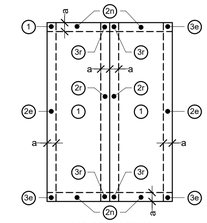
ZONE 4 & 5 - POSITIVE WALL PRESSURES (PSF)

HEIGHT ABOVE GRADE, Z (FT)	EFFECTIVE WIND AREA (FT²)				
	10	20	50	100	200
15	37.8	36.2	33.9	32.3	30.6
20	39.8	38.0	35.7	33.9	32.1
30	42.7	40.8	38.3	36.3	34.4

BUILDING DIAGRAMS



WALL ZONES



GABLE ROOF ZONES

$7° < \Theta \leq 45°$

NOTES

1. THESE COMPONENT & CLADDING WIND PRESSURES ARE ULTIMATE WIND PRESSURES
2. EDGE DISTANCE, "a" IS THE SMALLER OF:
   - 10% OF LEAST HORIZONTAL DIMENSION
   - 0.4 x h
   - "a" IS NOT LESS THAN 4% OF LEAST HORIZONTAL DIMENSION OR 3-FT
3. h = MEAN ROOF HEIGHT IN FEET, EXCEPT WHEN $\Theta \leq 10°$, EAVE HEIGHT SHALL BE USED
4. Θ = ANGLE OF PLANE OF ROOF FROM HORIZONTAL, IN DEGREES.
5. IF AN OVERHANG EXISTS, THE EDGE DISTANCE SHALL BE MEASURED FROM THE OUTSIDE EDGE OF THE OVERHANG. THE HORIZONTAL DISTANCE USED TO COMPUTE EDGE DISTANCE SHALL NOT INCLUDE THE ANY OVERHANG DISTANCES.

PENNONI ASSOCIATES INC.
1900 Market Street, Suite 300
Philadelphia, PA 19103
T 215.222.3000 F 215.222.3588

WOODBINE AIRPORT - HANGER #5 DOOR REPLACEMENT
660 HENRY DECINQUE BLVD.
WOODBINE, NJ

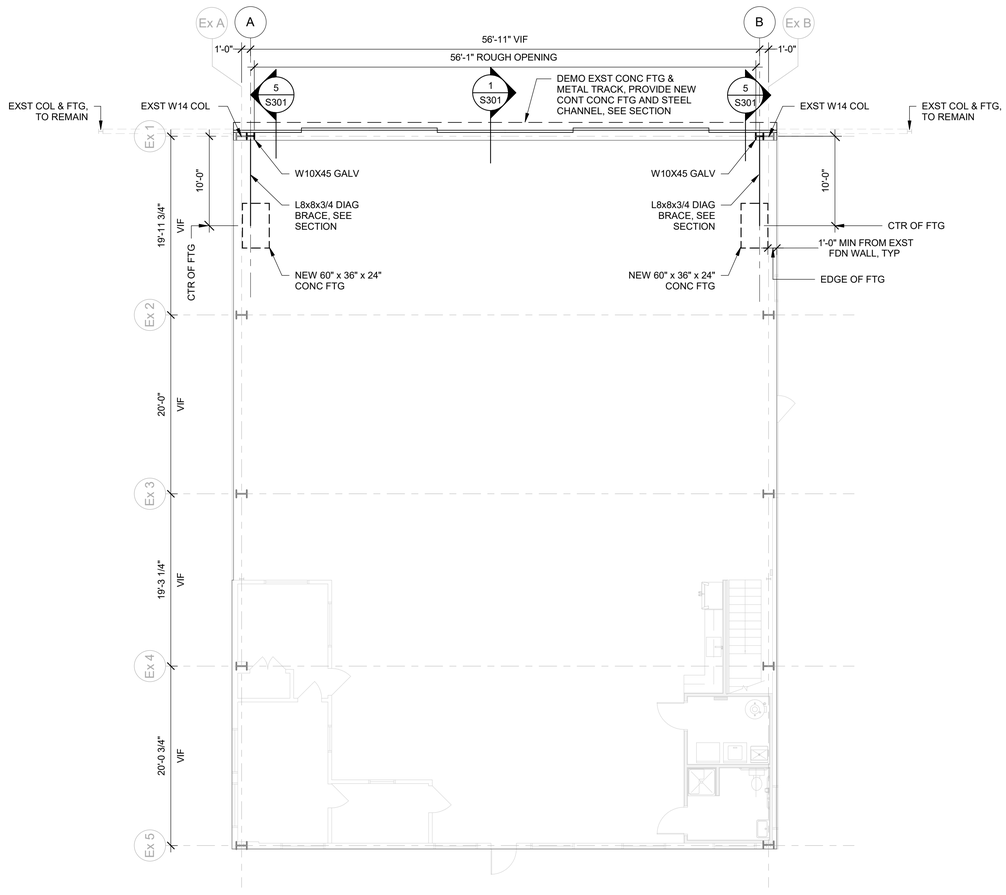
DESIGN CRITERIA

NO.	DATE	REVISIONS	BY
1	05.09.2025	ISSUED FOR BID	

PROJECT	MCKAX25002
DATE	05.09.2025
DRAWING SCALE	AS NOTED
DRAWN BY	JC
APPROVED BY	RHP

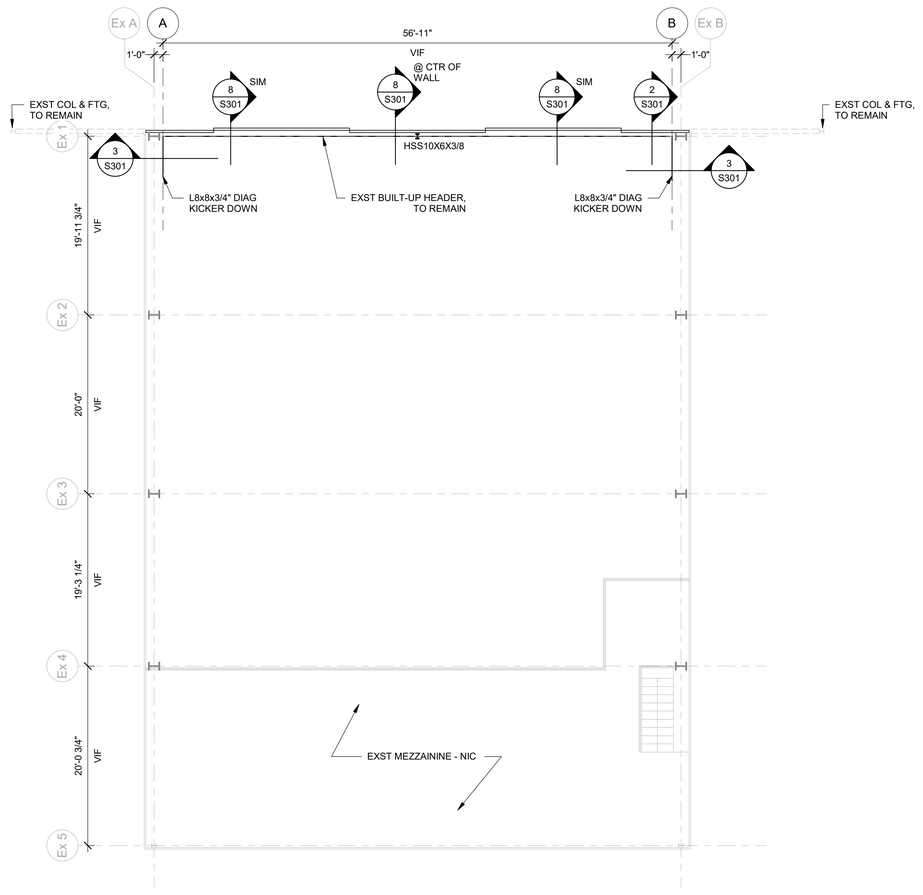
S003

SHEET 3 OF 6



1 FOUNDATION PLAN
1/8" = 1'-0"

PLAN NOTES:
1. TOP OF SLAB ELEVATION IS AT ELEVATION (0'-0"), UNLESS OTHERWISE NOTED THUS (+) FROM DATUM EL. 0'-0".
2. SEE DRAWING S000 SERIES FOR DESIGN CRITERIA, LOADING MAPS AND GENERAL NOTES.
3. SEE S300 SERIES FOR SECTIONS AND TYPICAL CONSTRUCTION DETAILS.
4. CONTRACTOR TO VISIT THE SITE AND FIELD VERIFY EXISTING CONDITIONS / CONFIRM ALL MEASUREMENTS PRIOR TO FABRICATION OF NEW STEEL.



2 HEADER FRAMING PLAN
1/8" = 1'-0"

PLAN NOTES:
1. TOP OF SLAB ELEVATION IS AT ELEVATION (0'-0"), UNLESS OTHERWISE NOTED THUS (+) FROM DATUM EL. 0'-0".
2. SEE DRAWING S000 SERIES FOR DESIGN CRITERIA, LOADING MAPS AND GENERAL NOTES.
3. SEE S300 SERIES FOR SECTIONS AND TYPICAL CONSTRUCTION DETAILS.
4. CONTRACTOR TO VISIT THE SITE AND FIELD VERIFY EXISTING CONDITIONS / CONFIRM ALL MEASUREMENTS PRIOR TO FABRICATION OF NEW STEEL.

Pennoni
PENNONI ASSOCIATES INC.
1900 Market Street, Suite 300
Philadelphia, PA 19103
T 215.222.3000 F 215.222.3588

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK

WOODBINE AIRPORT - HANGER #5 DOOR REPLACEMENT
660 HENRY DECINQUE BLVD.
WOODBINE, NJ

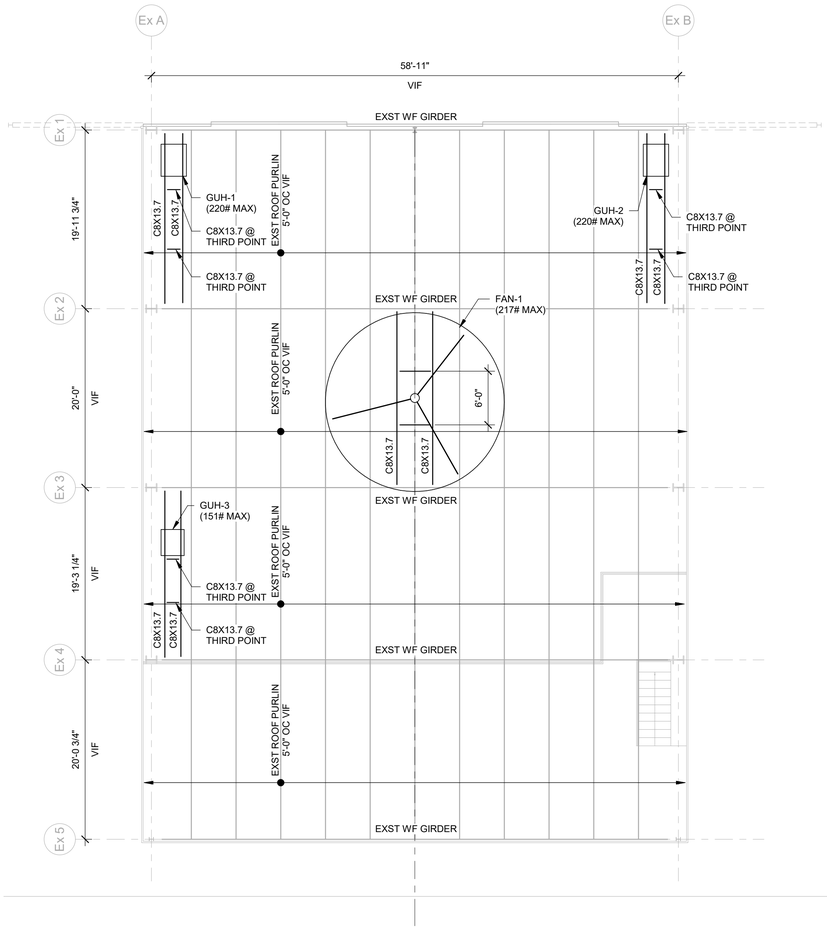
STRUCTURAL FOUNDATION AND FRAMING PLAN

NO.	DATE	REVISIONS	BY
1	05.09.2025	ISSUED FOR BID	

PROJECT	MCKAX25002
DATE	05.09.2025
DRAWING SCALE	AS NOTED
DRAWN BY	JC
APPROVED BY	RHP

S101

SHEET 4 OF 6



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

PLAN NOTES:

1. SEE DRAWING S000 SERIES FOR DESIGN CRITERIA, LOADING MAPS AND GENERAL NOTES.
2. SEE DRAWING S300 SERIES FOR TYPICAL CONSTRUCTION DETAILS.
3. SEE GENERAL STRUCTURAL NOTES FOR WORK INVOLVING MODIFICATION OF THE EXISTING STRUCTURE.
4. PROPOSED STEEL CHANNEL FRAMING TO BE CONNECTED TO THE WEBS OF THE EXISTING WIDE FLANGE STEEL GIRDERS. SEE TYPICAL BOLTED CONNECTION DETAILS.
5. NO FANS OR MECHANICAL EQUIPMENT ARE PERMITTED TO BE SUSPENDED FROM THE METAL DECK OR EXISTING METAL PURLINS. EQUIPMENT IS ONLY TO BE SUSPENDED FROM NEW STEEL CHANNEL FRAMING WHICH IS CONNECTED TO THE EXISTING STEEL WIDE FLANGE GIRDERS.

Pennoni

PENNONI ASSOCIATES INC.
1900 Market Street, Suite 300
Philadelphia, PA 19103
T 215.222.3000 F 215.222.3588

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK

WOODBINE AIRPORT - HANGER #5 DOOR REPLACEMENT
660 HENRY DECINQUE BLVD.
WOODBINE, NJ

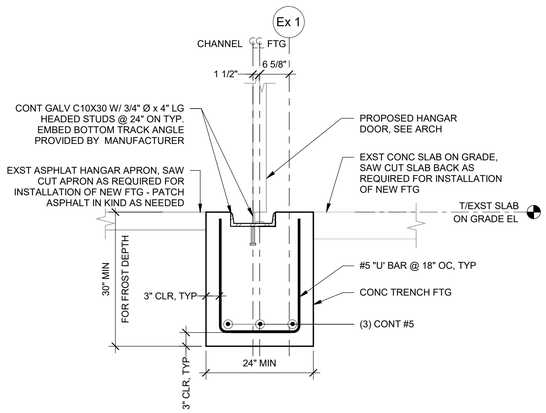
ROOF FRAMING PLAN

NO.	REVISIONS	DATE	BY
1	ISSUED FOR BID	05.09.2025	

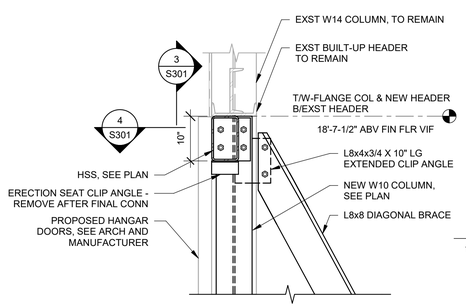
PROJECT	MCKAX25002
DATE	05.09.2025
DRAWING SCALE	AS NOTED
DRAWN BY	JC
APPROVED BY	RHP

S102

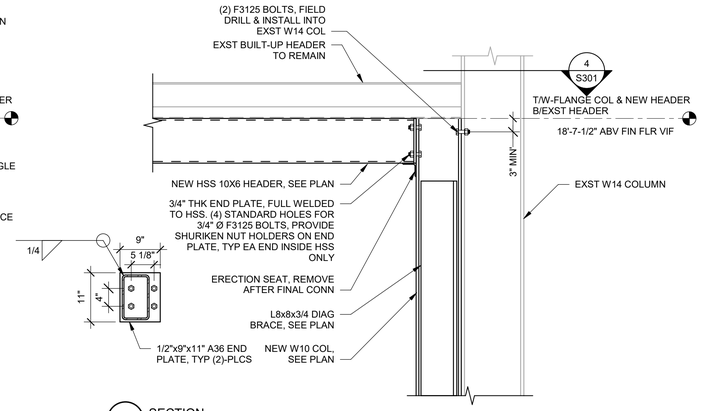
SHEET 5 OF 6



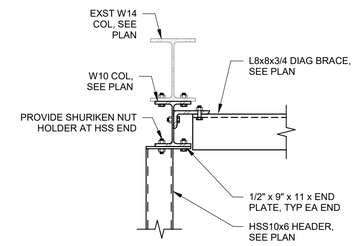
1 SECTION
3/4" = 1'-0"



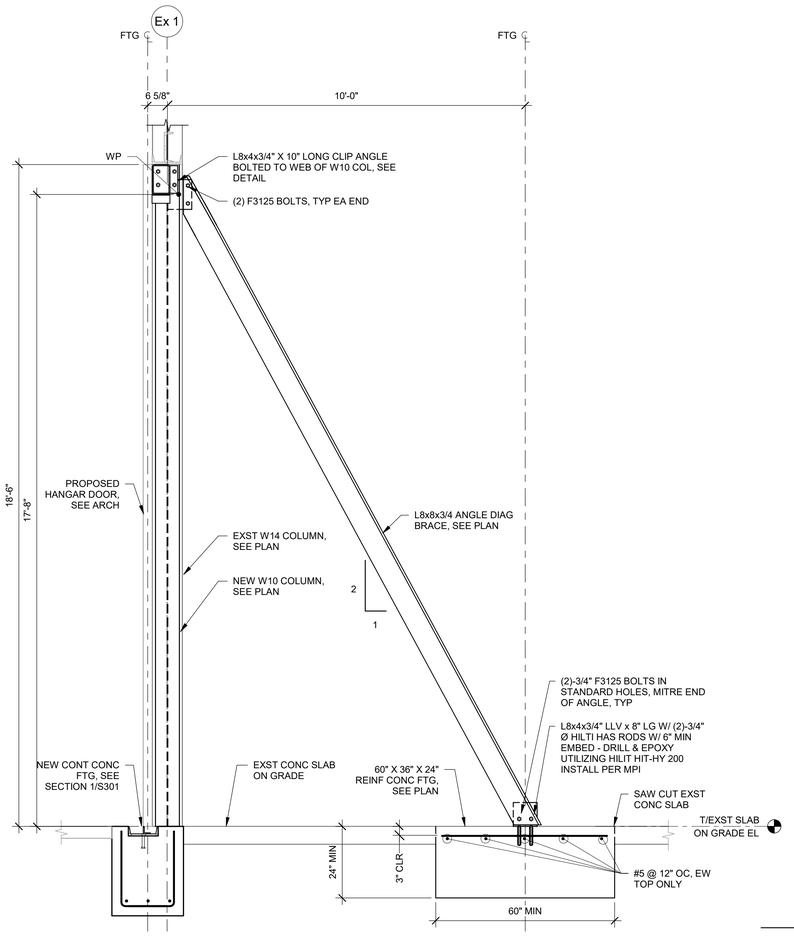
2 SECTION
3/4" = 1'-0"



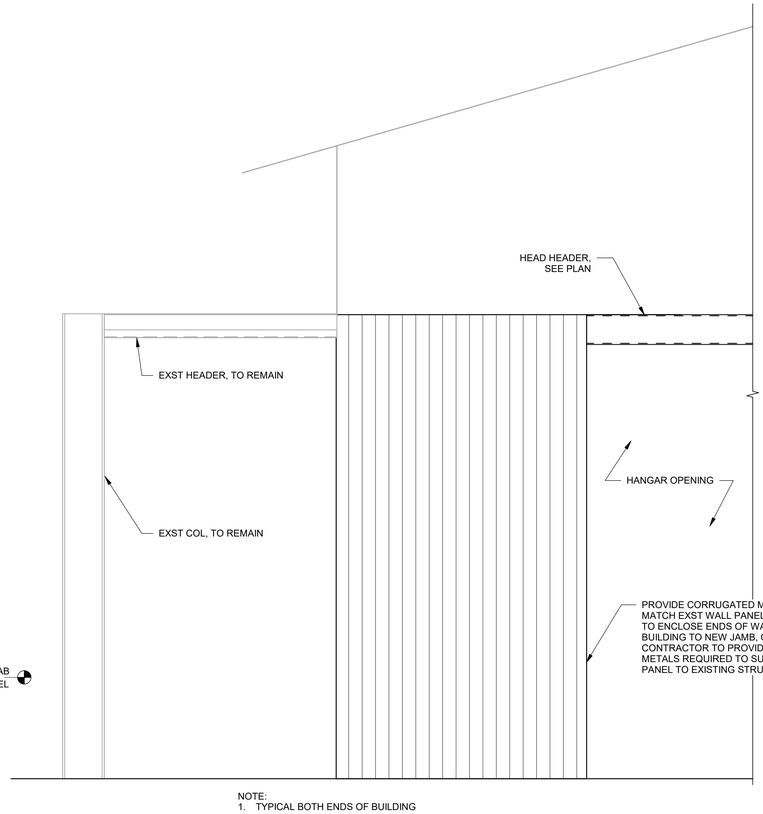
3 SECTION
3/4" = 1'-0"



4 SECTION
3/4" = 1'-0"

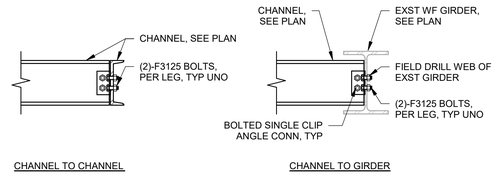


5 SECTION
1/2" = 1'-0"

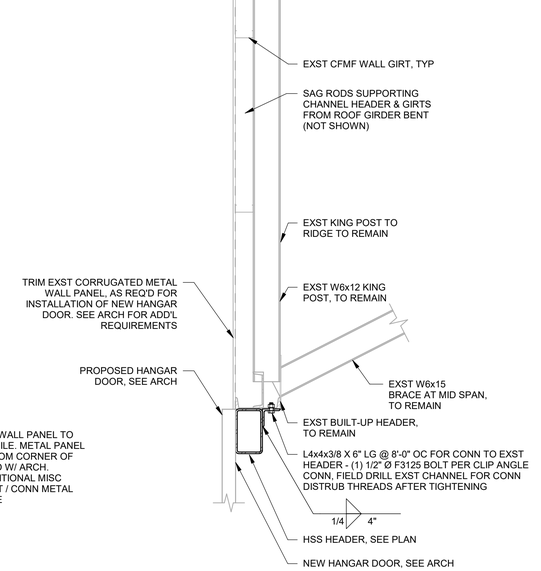


NOTE:
1. TYPICAL BOTH ENDS OF BUILDING

6 SECTION
1/2" = 1'-0"



TD1 TYPICAL BOLTED CONNECTIONS
N.T.S



NOTE:
1. THIS SECTION OCCURS AT MIDDLE OF HANGAR END WALL
2. NO KING POST OR WIDE FLANGE BRACE AT SIMILAR SECTION ALONG LENGTH OF HEADER

8 SECTION
3/4" = 1'-0"

PENNONI ASSOCIATES INC.
1900 Market Street, Suite 300
Philadelphia, PA 19103
T 215.222.3000 F 215.222.3588

WOODBINE AIRPORT - HANGER #5 DOOR REPLACEMENT

660 HENRY DECINQUE BLVD.
WOODBINE, NJ

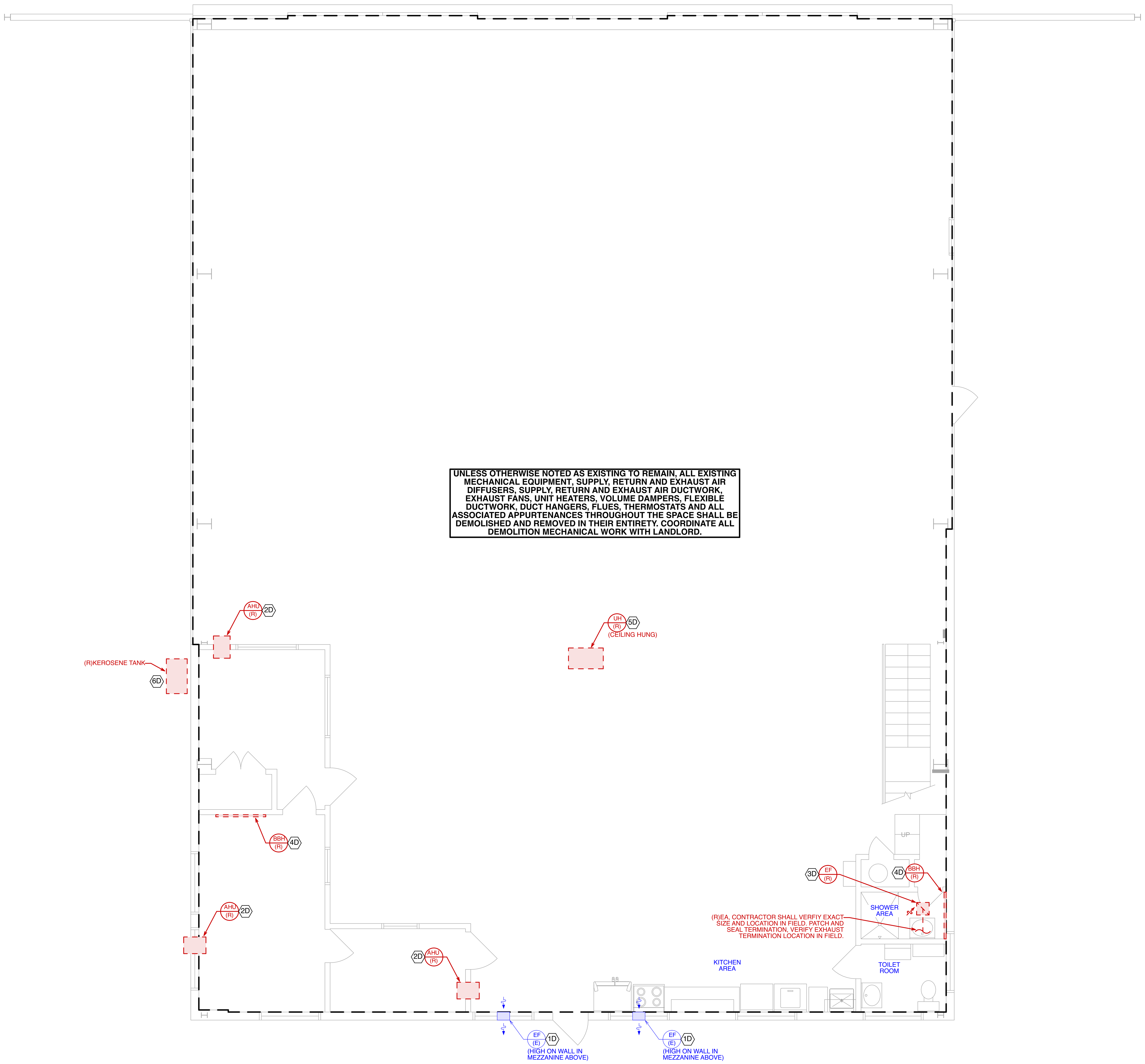
SECTIONS AND TYPICAL DETAILS

NO.	DATE	REVISIONS	BY
1	05.09.2025	ISSUED FOR BID	

PROJECT	MCKAX25002
DATE	05.09.2025
DRAWING SCALE	AS NOTED
DRAWN BY	JC
APPROVED BY	RHP

S301

SHEET 6 OF 6



1 FIRST FLOOR DEMOLITION MECHANICAL PLAN
SCALE: 1/4" = 1' - 0"

DEMOLITION SHEET NOTES

1D REFER TO "EXISTING EQUIPMENT NOTES" 1, 2 & 3 ON THIS SHEET FOR FURTHER INFORMATION.

2D CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING THROUGH WALL AIR HANDLING UNIT AS SHOWN. ALL WORK NOT BEING REUSED SHALL BE DEMOLISHED, REMOVED AND MADE SAFE AS REQUIRED. ALL EXISTING THERMOSTATS, PIPING, VALVES, WIRING AND COMPONENTS SHALL BE DEMOLISHED AND REMOVED. ALL WALL PENETRATIONS SHALL BE PATCHED/SEALED IN A MANOR ACCEPTABLE TO THE LANDLORD/ ARCHITECT.

3D CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING EXHAUST FAN AS SHOWN. ALL WORK NOT BEING REUSED SHALL BE DEMOLISHED, REMOVED AND MADE SAFE AS REQUIRED. ALL EXISTING EXHAUST DUCTWORK, WIRING AND COMPONENTS SHALL BE DEMOLISHED AND REMOVED. ALL WALL/ ROOF PENETRATIONS SHALL BE PATCHED/SEALED IN A MANOR ACCEPTABLE TO THE LANDLORD/ ARCHITECT.

4D CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING ELECTRIC BASEBOARD HEATER AS SHOWN. ALL WORK NOT BEING REUSED SHALL BE DEMOLISHED, REMOVED AND MADE SAFE AS REQUIRED. ALL EXISTING WIRING AND COMPONENTS SHALL BE DEMOLISHED AND REMOVED. ALL WALL PENETRATIONS SHALL BE PATCHED/SEALED IN A MANOR ACCEPTABLE TO THE LANDLORD/ARCHITECT.

5D CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING UNIT HEATER AS SHOWN. ALL WORK NOT BEING REUSED SHALL BE DEMOLISHED, REMOVED AND MADE SAFE AS REQUIRED. ALL EXISTING DUCTWORK, WIRING AND COMPONENTS SHALL BE DEMOLISHED AND REMOVED. ALL WALL/ROOF PENETRATIONS SHALL BE PATCHED/SEALED IN A MANOR ACCEPTABLE TO THE LANDLORD/ ARCHITECT.

6D CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING KEROSENE TANK AS SHOWN. ALL WORK NOT BEING REUSED SHALL BE DEMOLISHED, REMOVED AND MADE SAFE AS REQUIRED. ALL EXISTING COMPONENTS SHALL BE DEMOLISHED AND REMOVED. ALL WALL/ROOF PENETRATIONS SHALL BE PATCHED/SEALED IN A MANOR ACCEPTABLE TO THE LANDLORD/ARCHITECT.

DRAWING SYMBOLS

Symbol	Description
(E)	EXISTING MECHANICAL WORK TO REMAIN
(R)	EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
(RE)	EXISTING MECHANICAL WORK TO BE RELOCATED AS SHOWN
(N)	NEW MECHANICAL WORK
thin blue line	EXISTING MECHANICAL WORK TO REMAIN
red dashed line	EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
heavy black line	NEW MECHANICAL WORK
half-shaded diamond	POINT OF DEMOLITION, CUT AND CAP BACK TO POINT INDICATED ON PLANS
half-shaded circle	POINT OF CONNECTION, EXTEND AND CONNECT TO EXISTING WHERE INDICATED

DEMOLITION GENERAL NOTES

1. REMOVE DESIGNATED ELEMENTS AS SHOWN ON DRAWINGS.
2. ALL MECHANICAL EQUIPMENT AND ASSOCIATED APPURTENANCES DESCRIBED SHALL BE REMOVED AND DEMOLISHED.
3. ALL ELECTRICAL WIRING SHALL BE DEMOLISHED BACK TO MAIN PANEL UNLESS INDICATED TO BE RECONNECTED.
4. COMPLY WITH APPLICABLE NFPA STANDARDS WHEN TORCH CUTTING.
5. PROVIDE, ERECT AND MAINTAIN TEMPORARY BARRIERS AND SECURITY DEVICES AS REQUIRED.
6. OBTAIN WRITTEN CONSENT OF OWNER PRIOR TO TORCH CUTTING.
7. ERECT AND MAINTAIN TEMPORARY PARTITIONS TO PREVENT SPREAD OF DUST, FUMES, NOISE AND SMOKE TO PROVIDE FOR CONTINUING OWNER OCCUPANCY.
8. CONDUCT DEMOLITION TO MINIMIZE INTERFERENCE WITH ADJACENT BUILDING AREAS. MAINTAIN PROTECTED LEGAL EGRESS AND ACCESS AT ALL TIMES. KEEP REQUIRED EXIT WAYS UNENCUMBERED AT ALL TIMES AND ARTIFICIALLY LIGHTED.
9. ALL SYSTEMS CONTAINING REFRIGERANTS SHALL BE EVACUATED FOR REFRIGERANT RECYCLING PRIOR TO DEMOLITION.
10. REMOVE DEMOLISHED MATERIALS FROM SITE AS WORK PROGRESSES AND DISPOSE OF IN A PROPER, LEGAL MANNER. UPON COMPLETION OF WORK, LEAVE AREAS OF WORK IN BROOM CLEAN CONDITION AT THE END OF EACH DAY.
11. COORDINATE ALL DEMOLITION WORK WITH FACILITIES MANAGEMENT PRIOR TO SHUT DOWN THE SERVICE MAINS TO PERFORM THE REQUIRED WORK.
12. PRIOR TO COMMENCEMENT OF DEMOLITON, THE CONSTRUCTION MANAGER SHALL WALK THE PROJECT WITH THE CONTRACTOR PERFORMING THIS WORK TO CONFIRM THE EXTENT OF DEMOLITION.
13. THE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING THEIR PROPOSAL TO VERIFY ACTUAL SITE CONDITIONS AND ANY DISCOVERED DISCREPANCIES BETWEEN DRAWINGS AND SITE CONDITIONS SHALL BE BROUGHT TO THE OWNER'S ATTENTION PRIOR TO SUBMITTING THEIR BID. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION WORK EXPOSED AND CONCEALED, WHETHER OR NOT SHOWN ON DRAWINGS, NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEM. THE CONTRACTOR SHALL ALSO INCLUDE TEMPORARY REMOVAL AND REINSTALLATION OF EXISTING WORK WHEREVER NECESSARY. THE OWNER SHALL NOT ACCEPT (NOR THE CONTRACTOR PAID) EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.
14. CONTRACTOR SHALL PATCH ROOF AS REQUIRED AND SEAL WATERTIGHT (CONTRACTOR SHALL COORDINATE ALL ROOF WORK WITH EXISTING ROOF CONTRACTOR IN ORDER NOT TO VOID EXISTING ROOF WARRANTY).

EXISTING EQUIPMENT NOTES

1. ALL EXISTING HVAC EQUIPMENT TO BE REUSED SHALL BE REFURBISHED WHERE APPLICABLE AND HAVE FULL MAINTENANCE ROUTINES PERFORMED INCLUDING LUBRICATION, ADJUSTMENT OR REPLACEMENT OF PARTS, REPLACEMENT OF VALUES AND GAUGES AND CHECKING FOR PROPER OPERATION. ALL MINOR REPAIRS SHALL BE INCLUDED AS PART OF THIS CONTRACT. SHOULD MAJOR WORK ON THE EQUIPMENT BE REQUIRED. THE CONTRACTOR SHALL PROVIDE A WRITTEN REPORT TO OWNER AND ENGINEER, INDICATING THE NATURE OF THE WORK ALONG WITH A COST ESTIMATE TO PERFORM SAID REPAIRS.
2. ALL EXISTING CONTROLS TO BE REUSED SHALL BE REFURBISHED WHERE APPLICABLE AND HAVE FULL MAINTENANCE ROUTINES PERFORMED INCLUDING CALIBRATION, ADJUSTMENT AND VERIFICATION OF SEQUENCE OF OPERATION. ALL MINOR REPAIRS SHALL BE INCLUDED AS PART OF THIS CONTRACT. SHOULD CONTROLS NEED REPLACEMENT OR OTHER SIGNIFICANT REPAIRS THE CONTRACTOR SHALL PROVIDE A WRITTEN REPORT TO OWNER AND ENGINEER, INDICATING THE NATURE OF THE WORK ALONG WITH A COST ESTIMATE TO PERFORM SAID REPAIRS.
3. CONTRACTOR SHALL CARRY A CONTINGENCY IN THEIR PRICE TO PERFORM THESE REPAIRS. IF REPAIR WORK IS APPROVED, THE CONTRACTOR SHALL DRAW AGAINST CONTINGENCY. IF REPAIR WORK IS NOT APPROVED / REQUIRED, CONTINGENCY SHALL BE CREDITED BACK TO OWNER.

EXISTING CONDITIONS NOTES

1. ALL THE EXISTING DUCTWORK SIZES, LOCATIONS, EXISTING MECHANICAL EQUIPMENT LOCATIONS, TAGS, EXISTING ARCHITECTURAL PLANS, ETC., HAVE BEEN DOCUMENTED BASED OFF PHOTOGRAPHS AND SURVEY DATA BY HOLSTEIN WHITE, INC. FROM APRIL 4, 2025.
2. ALTHOUGH THE EXISTING CONDITIONS HAVE BEEN MODIFIED PER OBSERVATIONS IN THE FIELD, THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM FINAL FIELD VERIFICATION OF ALL OF THE EXISTING CONDITIONS PRIOR TO COMMENCING WORK.

No.	DATE	DESCRIPTION	REV'D BY
	05/09/25	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:
RENOVATION AT WOODBINE MUNICIPLE AIRPORT HANGAR #5
675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

HOLSTEIN WHITE ENGINEERS
3800 Horizon Blvd., Suite 503
Trevose, PA 19053
O: (215)-322-7711
F: (215)-322-7709
www.holsteinwhite.com

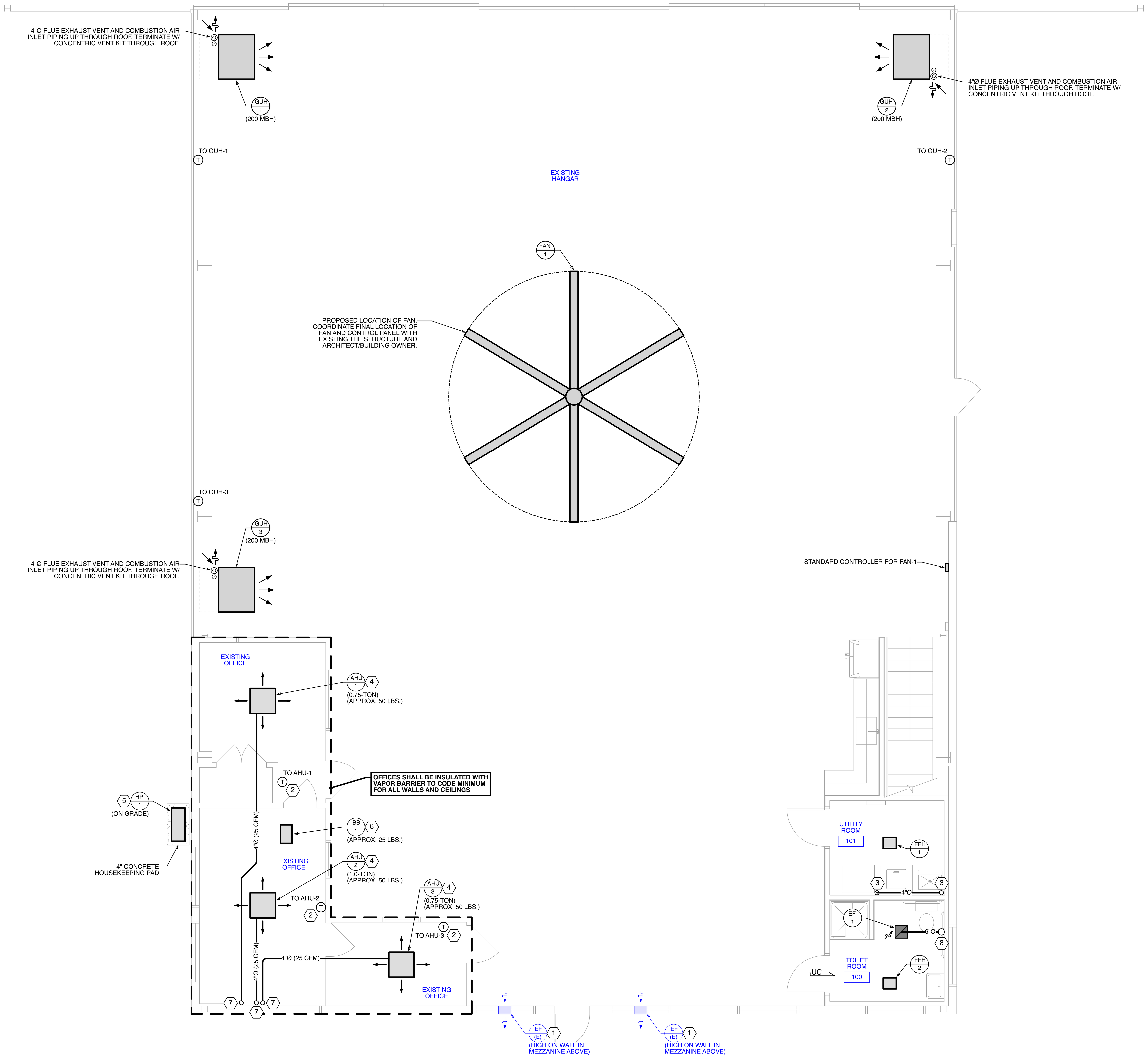
TITLE: FIRST FLOOR DEMOLITION MECHANICAL PLAN

SEAL:
SCOTT A. WHITE
NJ PE NO. 24GE04677900
NJ AUTH NO. 24GA28143700

DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

SCALE:	AS NOTED
PROJ.NO.:	1336
DATE:	05/09/25
REV'D.:	BA
DRAWN BY:	RY
CHKD.BY:	BA I SW

DRAWING NO: DM-1.0



1 FIRST FLOOR MECHANICAL PLAN

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

SHEET NOTES

1. REFER TO "EXISTING EQUIPMENT NOTES" 1, 2 & 3 ON THIS SHEET FOR FURTHER INFORMATION.
2. INDICATES LOCATION OF NEW SEVEN-DAY ELECTRONIC PROGRAMABLE THERMOSTAT WITH OCCUPIED AND UNOCCUPIED CAPABILITIES FOR INDICATED HVAC UNIT. PROVIDE NON-TAMPER TRANSPARENT ENCLOSURE FOR THERMOSTAT. COORDINATE ENCLOSURE AND FINAL LOCATION OF THE THERMOSTAT WITH ARCHITECT/TENANT PRIOR TO INSTALLATION.
3. 4"Ø DRYER VENT FROM DRYER TO TERMINATE WITH MANUFACTURER'S RECOMMENDED ROOF CAP. COORDINATE EXACT LOCATION OF DRYER VENT CONNECTION W/ ARCHITECTURAL PLANS. SIZE AND INSTALL RIGID DUCT DRYER VENT ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. COORDINATE FINAL ROUTING OF EXHAUST DUCTWORK W/ ALL TRADES PRIOR TO INSTALLATION. PROVIDE FLUSH MOUNTED DRYER BOX AS MANUFACTURED BY "GUY GREY" (MODEL NO.: DB480). PROVIDE UL705 BOOSTER FAN IF VENT LENGTH EXCEEDS MANUFACTURER'S RECOMMENDATIONS. COORDINATE ALL ELECTRICAL REQUIREMENTS W/ ELECTRICAL CONTRACTOR.
4. REFER TO THE FOLLOWING NOTES FOR EACH AHU:
   - RUN REFRIGERANT PIPING FROM INDOOR AIR HANDLING UNIT TO CORRESPONDING OUTDOOR HEAT PUMP UNIT. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE ALL RUNS WITH ARCHITECT.
   - CONDENSATE FROM AHU TO DRAIN TO SPLASH BLOCK ON GRADE. COORDINATE FINAL LOCATION IN FIELD AND WITH OWNER. PROVIDE INTEGRAL CONDENSATE PUMP. COORDINATE WITH ELECTRICAL CONTRACTOR.
   - COORDINATE THE FINAL LOCATION OF AHU W/ ARCHITECT. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL REQUIRED MAINTENANCE CLEARANCES.
5. REFER TO THE FOLLOWING NOTES FOR EACH HP:
   - COORDINATE THE FINAL LOCATION OF HP W/ ARCHITECT AND OWNER. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL REQUIRED MAINTENANCE CLEARANCES.
   - ROUTE REFRIGERANT PIPING TO CORRESPONDING AHU. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE ALL RUNS WITH ARCHITECT AND TENANT FLOORS ABOVE.
   - HEAT PUMP SHALL BE MOUNTED ON 4" CONCRETE HOUSEKEEPING PAD OR 4" HIGH PRE-FABRICATED PAD.
6. REFER TO THE FOLLOWING NOTES REGARDING THE INDICATED BRANCH BOX:
   - EXTEND AND CONNECT REFRIGERANT PIPING (LIQUID AND SUCTION) FROM BRANCH BOX TO ASSOCIATED OUTDOOR UNIT. REFER TO "VRF SYSTEM SCHEMATIC DIAGRAMS" ON M-2.0 FOR FURTHER INFORMATION.
   - REFRIGERANT PIPING SHALL BE SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. COORDINATE FINAL ROUTING OF ALL REFRIGERANT PIPING WITH ALL TRADES PRIOR TO INSTALLATION.
   - CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE MANUFACTURER'S MAXIMUM ALLOWABLE REFRIGERANT LINE LENGTHS ARE NOT EXCEEDED.
   - CONDENSATE PIPING SHALL DRAIN TO SPLASH BLOCK ON GRADE.
7. 4"Ø OUTSIDE AIR UP. TERMINATE W/ GOOSENECK. CONTRACTOR SHALL ENSURE THAT ALL OUTSIDE AIR PENETRATIONS ARE INSTALLED A MINIMUM OF 10'-0" FROM ANY EXISTING EXHAUST TERMINATIONS.
8. 6"Ø EXHAUST UP. TERMINATE W/ GOOSENECK. CONTRACTOR SHALL ENSURE THAT ALL EXHAUST PENETRATIONS ARE INSTALLED A MINIMUM OF 10'-0" FROM ANY EXISTING OA INTAKES.

DRAWING SYMBOLS

(E)	EXISTING MECHANICAL WORK TO REMAIN
(R)	EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
(RE)	EXISTING MECHANICAL WORK TO BE RELOCATED AS SHOWN
(N)	NEW MECHANICAL WORK
thin line	EXISTING MECHANICAL WORK TO REMAIN
dashed line	EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
heavy line	NEW MECHANICAL WORK
◆	POINT OF DEMOLITION, CUT AND CAP BACK TO POINT INDICATED ON PLANS
⊗	POINT OF CONNECTION, EXTEND AND CONNECT TO EXISTING WHERE INDICATED

GENERAL NOTES

1. ALL BRANCH DUCTWORK SHALL HAVE BALANCING DAMPERS.
2. COORDINATE ALL AIR DEVICES WITH LIGHTING AND REFLECTED CEILING PLANS.
3. IT IS THE INTENT TO MAINTAIN THE CEILING HEIGHTS AS SHOWN ON THE REFLECTED CEILING PLANS.
4. DUCTWORK SHOULD BE INSTALLED AS TIGHT AS POSSIBLE TO THE STRUCTURAL FRAMING AND DECK.
5. MECHANICAL CONTRACTOR SHALL FURNISH ALL REQUIRED CEILING ACCESS PANELS AND WALL OPENINGS TO SERVICE ALL MECHANICAL EQUIPMENT , INSTALLED BY G.C. COORDINATED ALL LOCATIONS AND SIZES WITH ARCHITECT PRIOR TO INSTALLATION.
6. ALL TRANSVERSE JOINTS AND LONGITUDINAL SEAMS SHALL BE SEALED WITH RCD#8 LOW-VOC MASTIC. ALL DUCTWORK SHALL BE IN ACCORDANCE WITH SMACNA'S SEAL CLASS "B".
7. ALL DUCTWORK SIZES SHOWN ON PLAN ARE CLEAR I.D. DIMENSIONS. ALL SUPPLY AND RETURN DUCTWORK SHALL BE INSULATED.
8. CONTRACTOR SHALL COORDINATE ALL REQUIRED ROOF CUTTING AND PATCHING WITH CURRENT ROOFING CONTRACTOR TO MAINTAIN ROOF WARRANTY. COORDINATE ALL WORK WITH LANDLORD PRIOR TO CONSTRUCTION.
9. ALL INTAKE AIR OPENINGS SHALL BE A MINIMUM OF 10'-0" FROM ALL EXHAUST, SANITARY VENT AND FLUE LOCATIONS.

EXISTING EQUIPMENT NOTES

1. ALL EXISTING HVAC EQUIPMENT TO BE REUSED SHALL BE REFURBISHED WHERE APPLICABLE AND HAVE FULL MAINTENANCE ROUTINES PERFORMED INCLUDING LUBRICATION, ADJUSTMENT OR REPLACEMENT OF PARTS, REPLACEMENT OF VALUES AND GAUGES AND CHECKING FOR PROPER OPERATION. ALL MINOR REPAIRS SHALL BE INCLUDED AS PART OF THIS CONTRACT. SHOULD MAJOR WORK ON THE EQUIPMENT BE REQUIRED. THE CONTRACTOR SHALL PROVIDE A WRITTEN REPORT TO OWNER AND ENGINEER, INDICATING THE NATURE OF THE WORK ALONG WITH A COST ESTIMATE TO PERFORM SAID REPAIRS.
2. ALL EXISTING CONTROLS TO BE REUSED SHALL BE REFURBISHED WHERE APPLICABLE AND HAVE FULL MAINTENANCE ROUTINES PERFORMED INCLUDING CALIBRATION, ADJUSTMENT AND VERIFICATION OF SEQUENCE OF OPERATION. ALL MINOR REPAIRS SHALL BE INCLUDED AS PART OF THIS CONTRACT. SHOULD CONTROLS NEED REPLACEMENT OR OTHER SIGNIFICANT REPAIRS THE CONTRACTOR SHALL PROVIDE A WRITTEN REPORT TO OWNER AND ENGINEER, INDICATING THE NATURE OF THE WORK ALONG WITH A COST ESTIMATE TO PERFORM SAID REPAIRS.
3. CONTRACTOR SHALL CARRY A CONTINGENCY IN THEIR PRICE TO PERFORM THESE REPAIRS. IF REPAIR WORK IS APPROVED, THE CONTRACTOR SHALL DRAW AGAINST CONTINGENCY. IF REPAIR WORK IS NOT APPROVED / REQUIRED, CONTINGENCY SHALL BE CREDITED BACK TO OWNER.

EXISTING CONDITIONS NOTES

1. ALL THE EXISTING DUCTWORK SIZES, LOCATIONS, EXISTING MECHANICAL EQUIPMENT LOCATIONS, TAGS, EXISTING ARCHITECTURAL PLANS, ETC., HAVE BEEN DOCUMENTED BASED OFF PHOTOGRAPHS AND SURVEY DATA BY HOLSTEIN WHITE, INC. FROM APRIL 4, 2025.
2. ALTHOUGH THE EXISTING CONDITIONS HAVE BEEN MODIFIED PER OBSERVATIONS IN THE FIELD, THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM FINAL FIELD VERIFICATION OF ALL OF THE EXISTING CONDITIONS PRIOR TO COMMENCING WORK.

INDICATED VARIABLE REFRIGERANT FLOW (VRF) SYSTEMS ARE SCHEMATIC AND FOR DIAGRAMMATIC PURPOSES ONLY, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FULLY COORDINATING ALL VRF SYSTEM DETAILS (I.E. BRANCH SELECTOR BOX LOCATIONS, REFRIGERANT PIPING SIZES AND LOCATIONS, ETC.) WITH THE EQUIPMENT MANUFACTURER AND SHALL SUBMIT FINAL DETAILS TO THE ARCHITECT AND ENGINEER FOR REVIEW AND COMMENT.

TRANE INDUSTRIES - BASIS OF DESIGN VRF SYSTEM:
FOR ADDITIONAL PRICING INFORMATION & ALL DESIGN IMPLEMENTATION QUESTIONS PLEASE CONTACT:
DEAN KARAGIANNIS / TRANE
DEAN.KARAGIANNIS@TRANE.COM

No.	DATE	DESCRIPTION	REV'D BY
	05/09/25	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT: **RENOVATION AT WOODBINE MUNICIPLE AIRPORT HANGAR #5**
675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

HOLSTEIN WHITE ENGINEERS
3800 Horizon Blvd., Suite 503
Trevose, PA 19053
O: (215)-322-7711
F: (215)-322-7709
www.holsteinwhite.com

TITLE: FIRST FLOOR MECHANICAL PLAN

SEAL:
SCOTT A. WHITE
NJ PE NO. 24GE04677900
NJ AUTH NO. 24GA28143700

DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

SCALE:	AS NOTED
PROJ.NO.:	1336
DATE:	05/09/25
REV'D.:	BA
DRAWN BY:	RY
CHKD.BY:	BA I SW

DRAWING NO: M-1.0

MATERIAL AND INSULATION SCHEDULE

	Material	Insulation				
	Basis of Design	Basis of Design	Type	Wall (in.)	Vapor Barrier	Remarks
Combstion Air Intake / Flue Exhaust Piping	Sch. 40 PVC (Solid Wall)	------	------	------	------	------
Ductwork, OA	Galvanized Steel	Certainteed	Duct Wrap	1/2	Integral	Construction per SMACNA standards
Ductwork, Exhaust Air	Galvanized Steel	------	------	------	------	Construction per SMACNA standards
Condensate Piping - A/C	Type "L" Copper	Certainteed	500° Snap On	1	Yes	Alt. insulation 1" Rubatex R-180FS. Alt. material PVC
Refrigerant Piping	"ACR" Copper	Armacell	Armatuff	1-1/2	Integral	Insulate per manufacturer's recommendations.

MECHANICAL SYMBOLS, INDICATIONS & ABBREVIATIONS

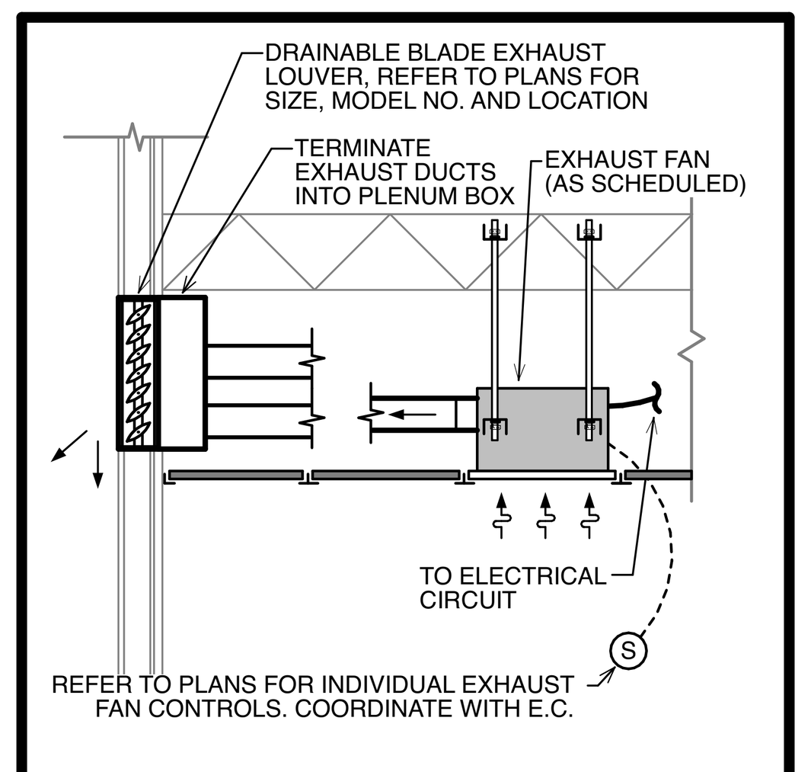
- EQUIPMENT DESIGNATION TAG
- SUPPLY AIR DIFFUSER (CEILING)
- SUPPLY AIR DIFFUSER (SIDEWALL)
- SUPPLY AIR DIFFUSER (LINEAR, CEILING)
- SUPPLY AIR DIFFUSER (LINEAR, WALL)
- RETURN AIR DIFFUSER (CEILING)
- EXHAUST AIR DIFFUSER (CEILING)
- RETURN/EXHAUST AIR DIFFUSER (SIDEWALL)
- BRANCH DAMPER
- VOLUME DAMPER
- 2" DOOR UNDERCUT
- THERMOSTAT
- DUCT MOUNTED SMOKE DETECTOR
- DUCT SIZE TRANSITION
- EXHAUST FAN

- FLEXIBLE DUCTWORK
- DUCT W/ ACOUSTICAL LINING
- RETURN/EXHAUST AIR DUCT UP
- RETURN/EXHAUST AIR DUCT DN
- SUPPLY/MAKE-UP AIR DUCT UP
- SUPPLY/MAKE-UP AIR DUCT DN
- MOTORIZED DAMPER
- CONDENSATE DRAIN
- DIRECTION OF FLOW
- PIPE TURNING DOWN
- PIPE TURNING UP
- CAPPED FLANGE

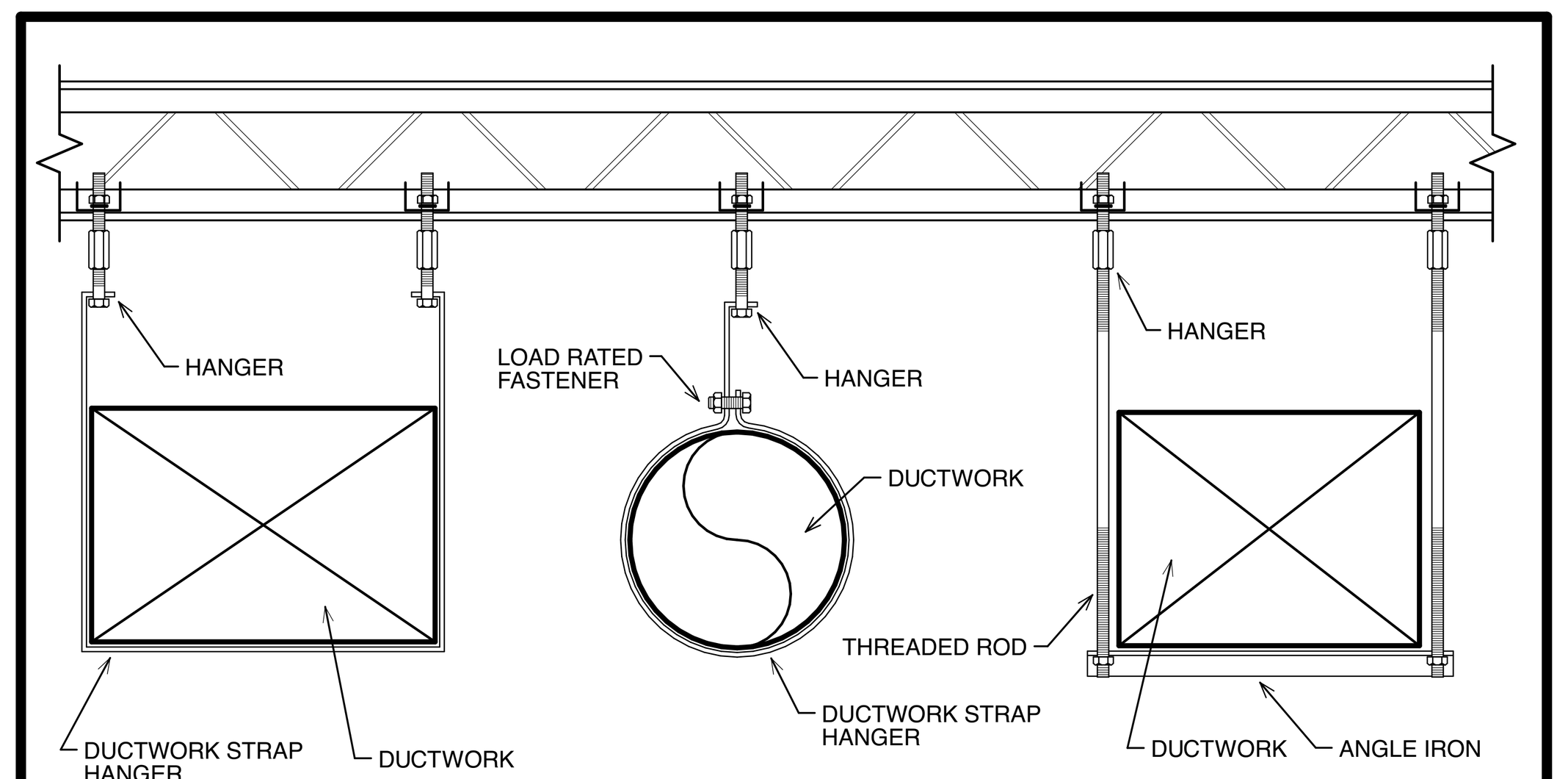
AD	AIR DEVICE
A.F.F.	ABOVE FINISHED FLOOR
CFM	CUBIC FEET OF AIR PER MINUTE
DN	DOWN
EA	EXHAUST AIR
EF	EXHAUST FAN
FFH	FAN FORCED HEATER
M.O.D.	MOTORIZED DAMPER
OA	OUTSIDE AIR
RA	RETURN AIR
RTU	ROOFTOP UNIT
SA	SUPPLY AIR
UC	UNDERCUT

(E)	EXISTING MECHANICAL WORK TO REMAIN
(R)	EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
(RE)	EXISTING MECHANICAL WORK TO BE RELOCATED AS SHOWN
(N)	NEW MECHANICAL WORK

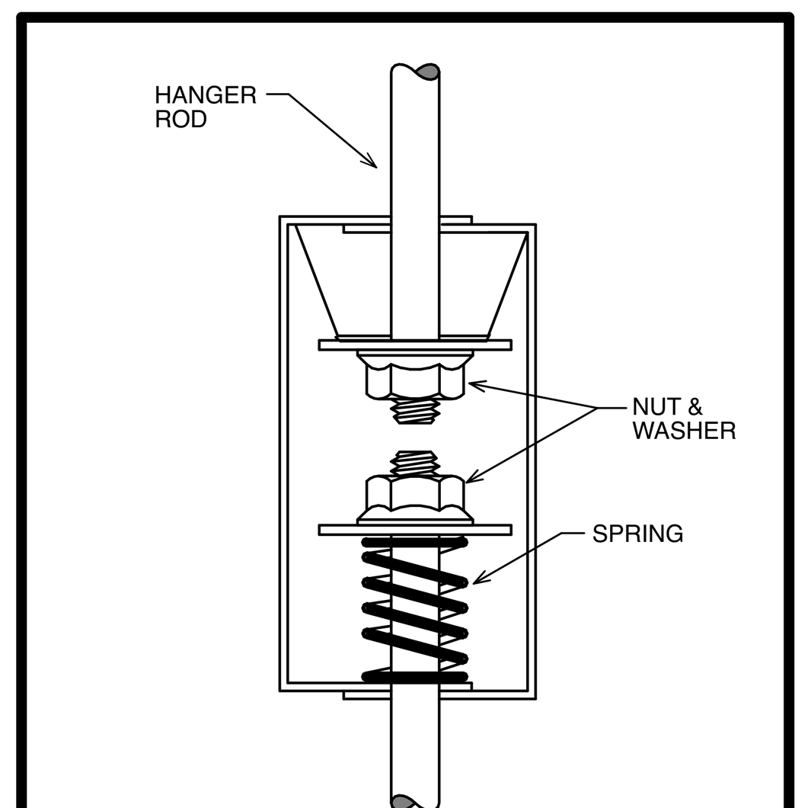
- EXISTING MECHANICAL WORK TO REMAIN
- EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
- NEW MECHANICAL WORK
- POINT OF DEMOLITION, CUT AND CAP BACK TO POINT INDICATED ON PLANS
- POINT OF CONNECTION, EXTEND AND CONNECT TO EXISTING WHERE INDICATED



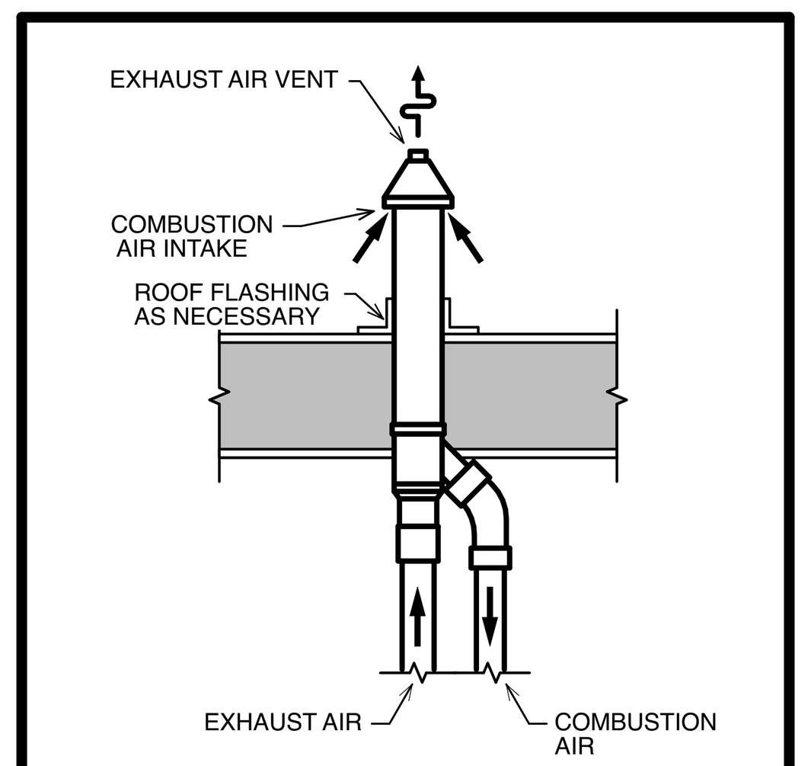
1 TYPICAL EXHAUST FANS W/ PLENUM BOX & LOUVER DETAIL
NOT TO SCALE



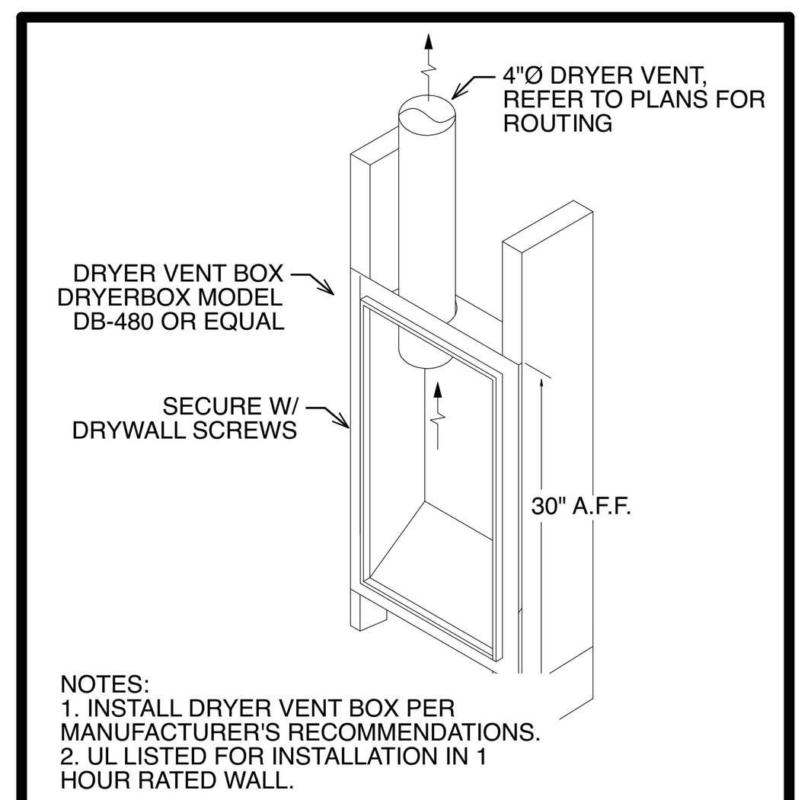
2 TYPICAL DUCTWORK HANGING DETAIL
NOT TO SCALE



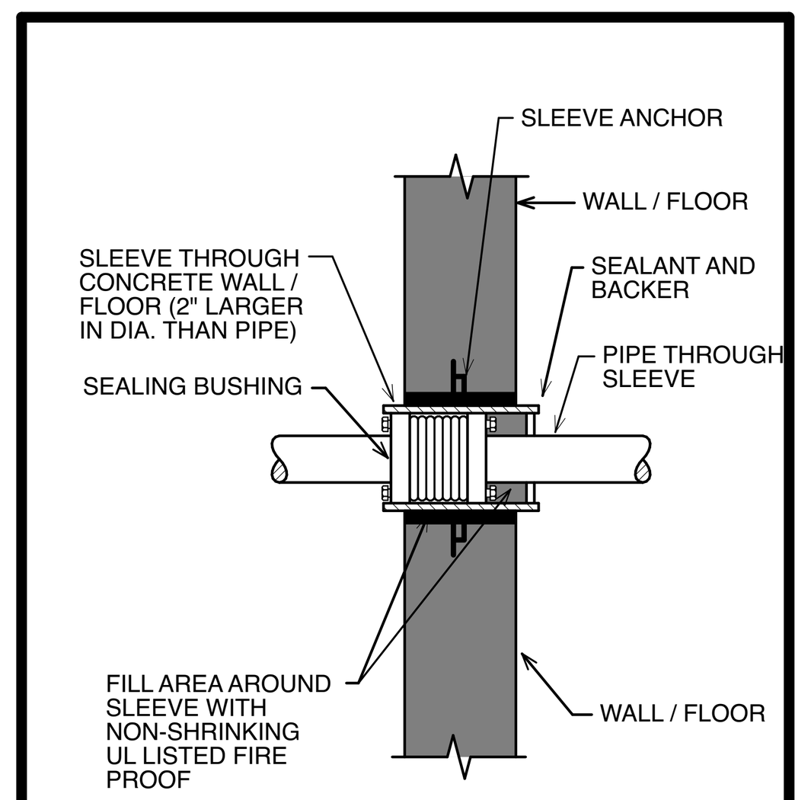
3 SPRING ISOLATOR DETAIL
NOT TO SCALE



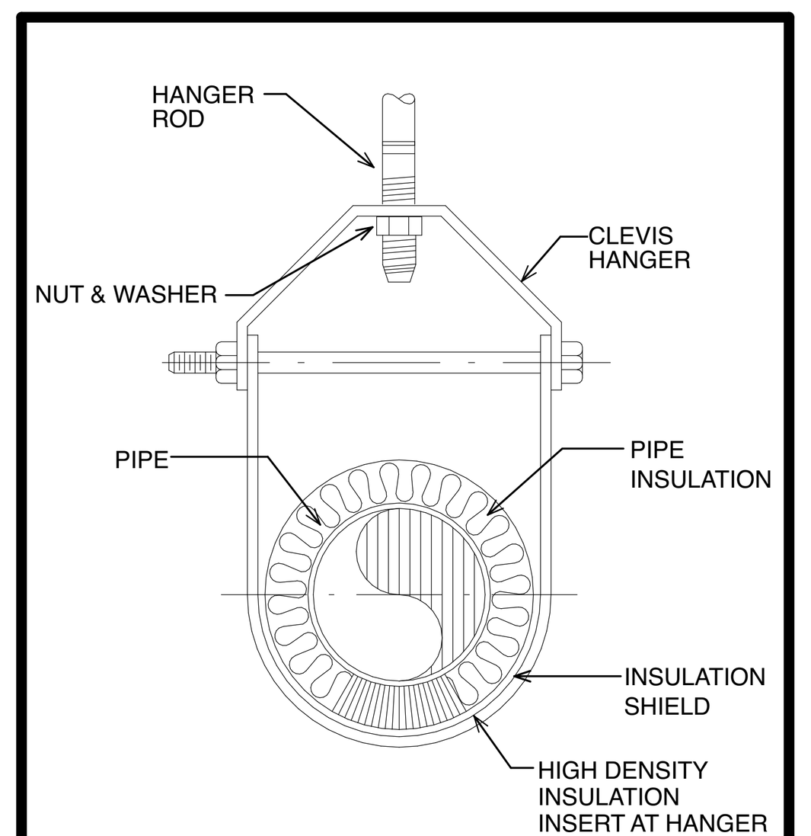
4 CONCENTRIC VENT ROOF (FLAT) PENETRATION DETAIL
NOT TO SCALE



5 DRYER VENT WALL BOX DETAIL
NOT TO SCALE



6 PIPE WALL/FLOOR PENETRATION DETAIL
NOT TO SCALE



7 CLEVIS HANGER DETAIL
NOT TO SCALE

CEILING FAN SCHEDULE

Unit Designation	FAN-1
Description	Fan
Basis of Design	Big Ass Fans
Model Number	BASIC 6
Mount	Ceiling
Dimensions (DØ x H)	20Ø ft x 57.5 in.
Weight (lbs)	217
Location	Refer to Plans
Quantity	1
Electrical	**240 / 1Ø / 60**
Motor hp	2.0 hp (1.5 kW)
Max Speed	68 RPM
Accessories	
Finish	Selected by Architect
Standard Controller	Yes

Notes
1. Install per manufacturer's recommendations.
2. Coordinate location of standard controller with owner.

FAN FORCED HEATER (CEILING-MTD.) SCHEDULE

Unit Designation	FFH-1 & FFH-2
Description	Unit Heater
Basis of Design	Q-Mark
Model Number	QCH1101F
Mount	Ceiling
Dimensions (L x W x H) (in.)	12-1/2 x 10-1/2 x 3-7/8
Weight (lbs)	10
Location	Refer to Plans
Quantity	2
Electrical	**120 / 1Ø / 60**
Capacity (kW)	0.5
Number of Elements	1
Unit Amps	4.7 Amps
Accessories	
Finish	Selected by Architect
Mounting Kit	Yes
Non-Fused Disconnect Switch	Yes
Over Current Protection	Yes
Automatic Reset Thermal Limit	Yes
Automatic Fan Delay Circuit	No
Control	
Unit Mounted Thermostat	Yes, Tamperproof

Notes
1. Final finish shall be coordinated with Architect.
2. Mechanical Contractor shall furnish all equipment disconnect switches and Electrical Contractor shall install all equipment disconnect switches.

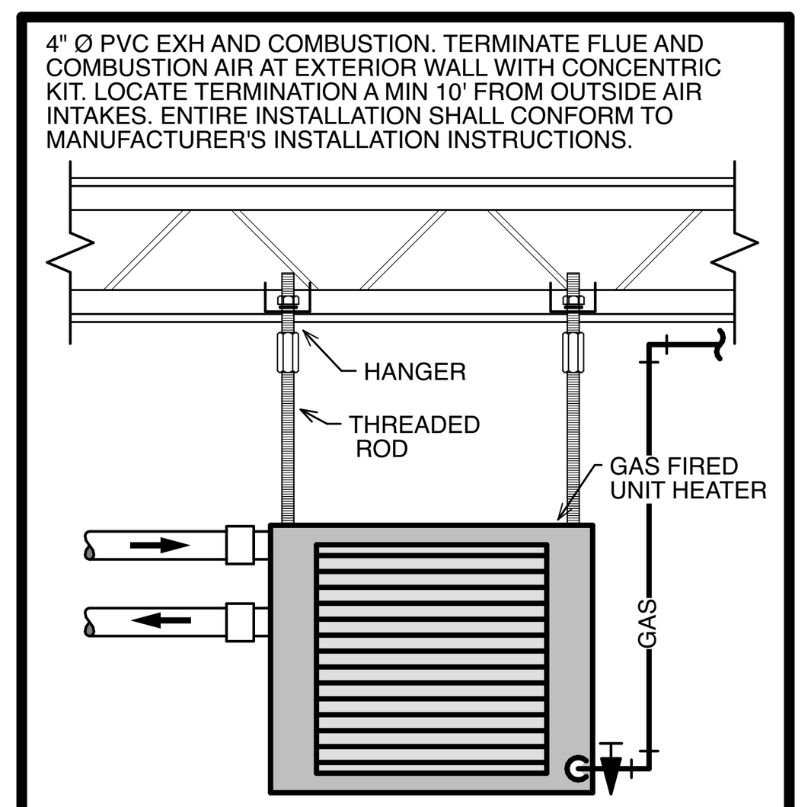
PIPING AND DUCT CRITERIA

1. ALL DUCTWORK SHALL BE SIZED USING A STANDARD DUCTULATOR. THE FOLLOWING CRITERIA SHALL BE USED TO CALCULATE DUCT SIZES:
   a. SUPPLY DUCTS SHALL BE NO MORE THAN 0.10 IN. PER 100 FEET OF PRESSURE DROP.
   b. RETURN AND EXHAUST DUCTS SHALL BE NO MORE THAN 0.05 IN. PER 100 FEET OF PRESSURE DROP.
   c. VENTILATION DUCTS SHALL BE NO MORE THAN 0.075 IN. PER 100 FEET OF PRESSURE DROP.
2. CONDENSATE SHALL BE COLLECTED AND RUN WITH ADEQUATE PITCH TO THE CLOSEST SAFE-WASTE. PROVIDE CONDENSATE PUMPS IF PITCH CAN NOT BE ACHIEVED. CONDENSATE PIPING SHALL BE SIZED AS FOLLOWS:

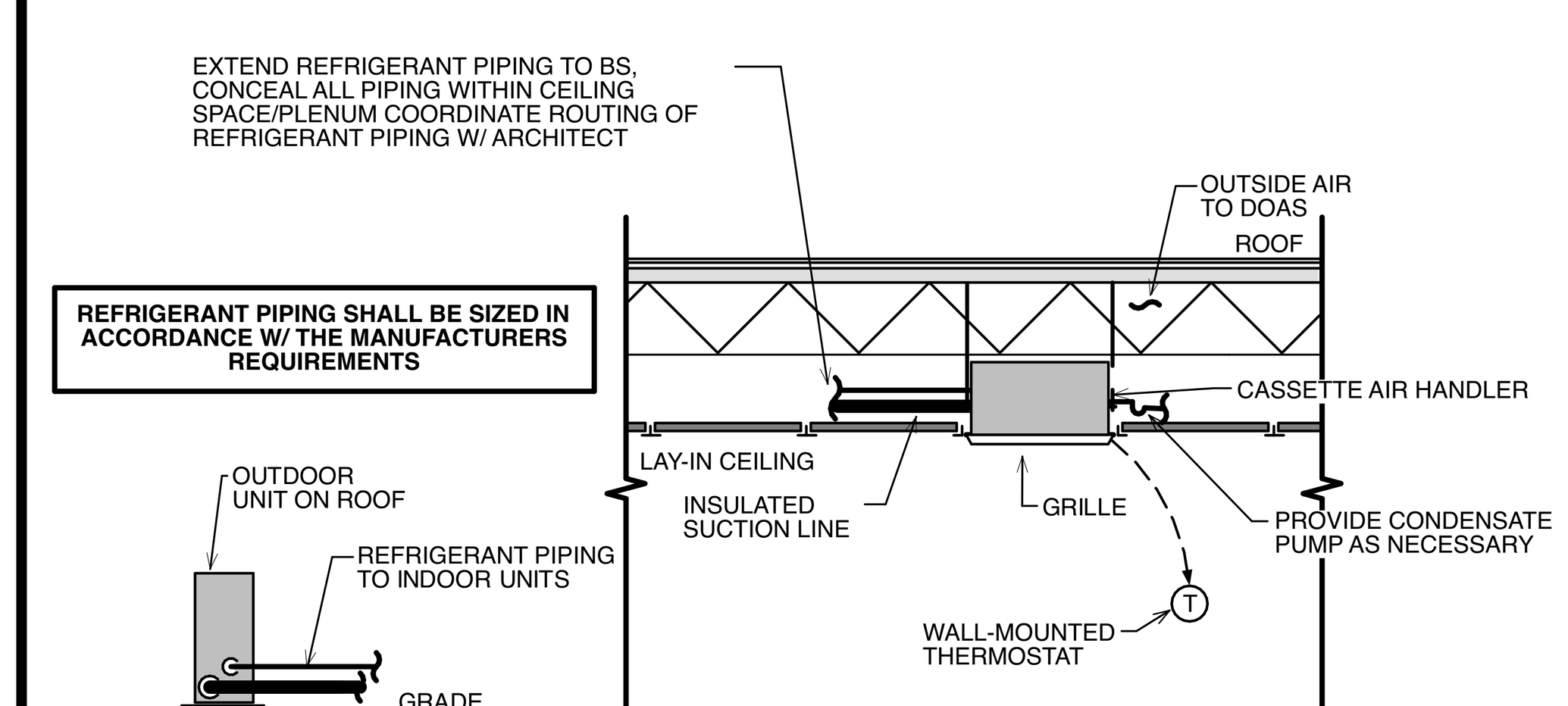
CONDENSATE PIPE SIZING CHART

TONS	SIZE
0-20	3/4"
20-40	1"
40-90	1-1/4"
90-125	1-1/2"
125-250	2"

3. ALL CONDENSATE DRAINS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.



9 TYPICAL GAS-FIRED UNIT HEATER DETAIL
NOT TO SCALE



10 DUCTLESS CASSETTE MINI-SPLIT SYSTEM
NOT TO SCALE

VRF SYSTEM OUTDOOR CONDENSING UNIT SCHEDULE

Unit Designation	HP-1
Corresponding Indoor Unit(s)	Refer to VRF Diagrams
Basis of Design	Mitsubishi
Model Number	MXZ-SM36NLHZ
Dimensions (H x W x D) (in.)	52-11/16 x 41-11/32 x 13
Weight (lbs.)	283
Nominal Tonnage	3.0
Refrigerant Type	R454B
Location	Refer to Plans
Cooling Performance	
Nominal Capacity (BTU/hr)	36,000
Minimum Capacity (BTU/hr)	13,000
Heating Performance	
Nominal Capacity (BTU/hr)	42,000
Heating Capacity @ -13°F (BTU/hr)	42,000
Electrical	**208/230 / 1Ø / 60**
Minimum Circuit Ampacity	---
Max. Overcurrent Protection	45
Efficiency Ratings	
EER2	14.5
SEER2	23.0
COP (@47°F)	4.0
COP (@17°F)	2.04

Notes & Options
1. Coordinate required refrigerant charge w/ manufacturer.

VRF SYSTEM BRANCH BOX SCHEDULE

Unit Designation	BB-1
Corresponding Outdoor Unit	HP-1
Corresponding Indoor Unit(s)	Refer to VRF Diagrams
Basis of Design	Mitsubishi
Model Number	PAC-LMA30BC
Dimensions (W x H x D) (in.)	17-23/32 x 6-11/16 x 11-1/32
Weight (lbs.)	15
Number of Ports	3
Refrigerant Type	R454B
Location	Refer to Plans
Electrical	**208-230 / 1Ø / 60**
Power Input (kW)	0.003
Running Current (A)	0.15

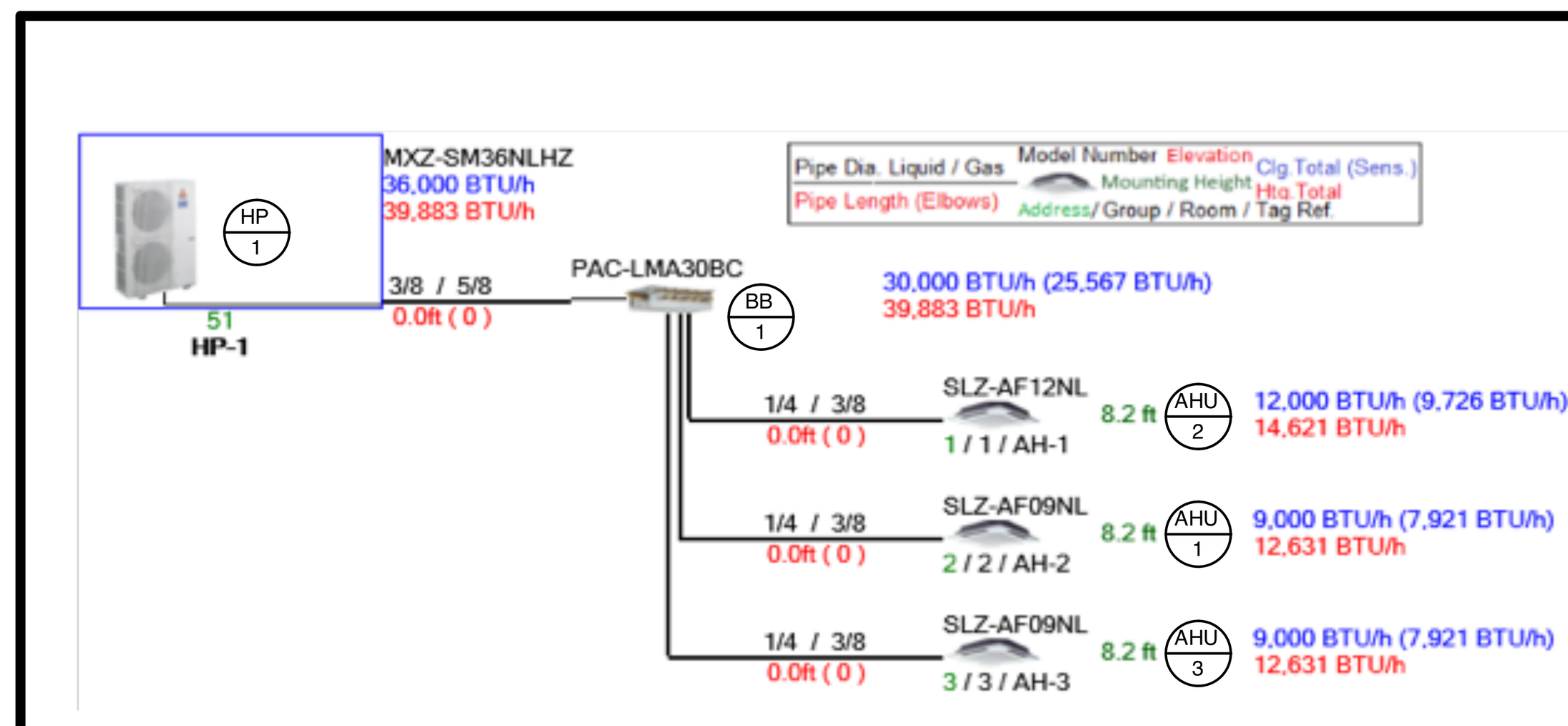
Notes & Options
1. Include ball valves (700 PSIG working pressure, full port, R454B rated) for each port. Cap all unused ports for future use.
2. Connected capacity to branch box shall not exceed the manufacturer's listed maximum connected capacity per port.
3. Where required, provide condensate removal pumps. Install per manufacturer's recommendations. Coordinate all electrical requirements with Electrical Contractor.

EXHAUST FAN SCHEDULE

Unit Designation	EF-1
Basis of Design	Cook
Model Number	GC-146
CFM	75
E.S.P. (in. W.C.)	0.25
Drive Type	Direct
Dim (L x W x H)(in.)	13-1/4" x 15-1/2" x 9"
Weight (lbs.)	12
Location	Ceiling Mounted
Service	Refer to Plans
Electrical	**115/1Ø/60**
Motor Power	31 Watts
Motor HP	0.040
Accessories	
Backdraft Damper	Yes
Roof Curb	No
Wall Cap	No
Roof Cap	Yes
Exhaust Grille	Yes,White
Vibration Isolation Kit	Yes
Standard Disconnect	Yes
Control	
Speed Controller	Yes
Time Delay Switch	No
Interlock	Interconnect w/ Lightswitch Coordinate w/ E.C.

ELECTRICAL COORDINATION

1. IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE THE LOCATIONS OF SUPPRESSION SYSTEM PIPING WITH THE ELECTRICAL CONTRACTOR. DUCTWORK SHALL NOT BE INSTALLED WITHIN THE DEDICATED EQUIPMENT SPACE REQUIRED FOR EXISTING OR NEW ELECTRICAL EQUIPMENT.
2. COORDINATION OF DUCTWORK LOCATIONS SHALL BE SOLELY THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. APPROVAL OF SHEET METAL SUBMITTAL DRAWINGS DOES NOT RELEASE THE CONTRACTOR FROM COORDINATION RESPONSIBILITY. FINAL COORDINATION SHALL OCCUR IN FIELD WITH ELECTRICAL CONTRACTOR. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN RELOCATION OF SUPPRESSION SYSTEM PIPING AT CONTRACTOR'S EXPENSE.
3. PER NFPA 70, ARTICLE 110.26(F); DEDICATED EQUIPMENT SPACE SHALL APPLY TO SWITCHBOARDS, DISTRIBUTION PANELS, AND MOTOR CONTROL CENTERS. THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE EQUIPMENT AND EXTENDING FROM THE FLOOR TO A HEIGHT OF 6' ABOVE THE EQUIPMENT OR TO THE STRUCTURAL CEILING, WHICHEVER IS LOWER, SHALL BE DEDICATED TO THE ELECTRICAL INSTALLATION. NO PIPING, DUCTS, LEAK PROTECTION APPARATUS, OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION SHALL BE LOCATED IN THIS ZONE.



INDICATED VARIABLE REFRIGERANT FLOW (VRF) SYSTEMS ARE SCHEMATIC AND FOR DIAGRAMMATIC PURPOSES ONLY, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FULLY COORDINATING ALL VRF SYSTEM DETAILS (I.E. BRANCH SELECTOR BOX LOCATIONS, REFRIGERANT PIPING SIZES AND LOCATIONS, ETC.) WITH THE EQUIPMENT MANUFACTURER AND SHALL SUBMIT FINAL DETAILS TO THE ARCHITECT AND ENGINEER FOR REVIEW AND COMMENT.

TRANE INDUSTRIES - BASIS OF DESIGN VRF SYSTEM: FOR ADDITIONAL PRICING INFORMATION & ALL DESIGN IMPLEMENTATION QUESTIONS PLEASE CONTACT: DEAN KARAGIANNIS / TRANE DEAN.KARAGIANNIS@TRANE.COM

ALL FINAL SIZES AND LENGTHS OF REFRIGERANT PIPING SHALL BE COORDINATED W/ MANUFACTURER PRIOR TO INSTALLATION.

11 VARIABLE REFRIGERANT FLOW (VRF) SYSTEM PIPING DIAGRAMS
NOT TO SCALE

VRF SYSTEM INDOOR UNIT SCHEDULE

Unit Designation	AHU-1 & AHU-3	AHU-2
Corresponding Outdoor Unit	HP-1	HP-1
Basis of Design	Mitsubishi	Mitsubishi
Model Number	SLZ-AF09NL	SLZ-AF12NL
Air Handler Type	Ceiling Cassette	Ceiling Cassette
Dimensions (W x D x H) (in.)	22-7/16 x 22-7/16 x 8-3/16	22-7/16 x 22-7/16 x 8-3/16
Weight (lbs.)	31	31
Nominal Tonnage	0.75	1.0
Airflow Rate (CFM)	230-265-300	230-280-335
Outside Air (CFM)	25	25
Refrigerant Type	R454B	R454B
Remote Thermostat	Yes	Yes
Location	Refer to Plans	Refer to Plans
Cooling Performance	**80°F DB / 67°F WB**	**80°F DB / 67°F WB**
Nominal Capacity (BTU/hr)	9,000	12,000
Rated Capacity (BTU/hr)	9,000	12,000
Minimum Capacity (BTU/hr)	2,300	3,000
Heating Performance		
Nominal Capacity (BTU/hr)	14,600	16,900
Electrical	**208/230 / 1Ø / 60**	**208/230 / 1Ø / 60**
Minimum Circuit Ampacity	1.0	1.0
Powered By Outdoor	Yes	Yes

Notes & Options
1. See "VRF System Outdoor Condensing Unit Schedule" for outdoor ambient conditions, connected capacity and other factors.
2. See schematic piping/control diagram for further infication of required system controllers and integration devices.
3. Where required, provide condensate removal pumps. Install per manufacturer's recommendations. Coordinate all electrical requirements with Electrical Contractor.

GAS FIRED UNIT HEATER SCHEDULE

Unit Designation	GUH-1 thru GUH-3
Basis of Design	Modine
Model Number	PTX200
Mount	Ceiling
Dimensions (L x W x H) (in.)	42.53 x 34.43 x 25.81
Weight (lbs)	220
Location	Refer to Plans
Electrical	**115 / 1Ø / 60**
Motor Power (HP)	1/3
Motor RPM	1,075
Gas	
Input (MBH)	200
Output (MBH)	166
Accessories	
Fingerproof Fan Guard	Yes
Mounting Kit	Yes
Disconnect Switch	Yes
High Limit Safety Control	Yes
Differential Pressure Switch	Yes
Two Stage Gas Valve	Yes
Built-in Fan Delay	Yes
Unit Mounted Thermostat	Yes, Tamperproof

1. Install per manufacturer's recommendations.

MECHANICAL SPECIFICATIONS

GENERAL WORK:

1. The Contractor shall provide all labor, materials, tools, apparatus and equipment required to complete his work in accordance with the contract documents, codes, laws and ordinances, and accepted trade procedures.
2. In preparing his estimate, the contractor shall review all of the contract documents including those of the other trades in order to acquaint himself with existing and related conditions that may, will, or could affect his work. He shall be experienced, skilled, and knowledgeable with this type of construction and shall be expert and proficient in the preparation of estimates and the comprehension, implementation, and interpretation of contract documents such as those prepared for this project.
3. The contractor by his acceptance of the contract guarantees that all work installed shall be free from all defects in workmanship and materials and that all apparatus furnished by him shall develop the capacities and characteristics specified. He further guarantees that if, during a period of one (1) year from the date of the certificate of completion and acceptance of the work, any such defects in workmanship, material or performance appear, such defects shall be remedied by him without cost to the owner. If the contractor fails to remedy the defects as outlined within a reasonable length of time, to be specified in a notice from the owner's authorized representative to the contractor, the owner will have such work done, and he will charge the cost to the contractor.
4. The contractor shall visit the site before he submits his proposal. He shall examine all existing conditions which affect the work. The submission of the proposal shall be considered evidence that this requirement has been fulfilled. No extra payment will be allowed for additional work made necessary by the failure to visit the site.
5. Mechanical work shall be installed in a neat and workmanlike manner in accordance with latest and best practices of the trade. Only mechanics skilled in this type of Work shall be employed and utilized by Contractor for this Division in the execution of this Work.
6. The contract drawings are diagrammatic and indicate the general arrangement of all systems and work included in the contract. The contract drawings are not to be scaled. The architectural contract drawings and details together with the other contract documents shall be examined for all dimensional information.
7. The contractor shall follow the contract drawings in laying out his work, and he shall also check the contract drawings of the other trades to verify spaces in which his work shall be provided.
8. The contractor shall, without additional costs to the owner, make reasonable modifications in the layout of his work in order to prevent conflicts with the work of other trades or for the proper execution of his work.
9. The contractor shall supply all labor required to perform all work which may be claimed by trade organizations within his jurisdiction. All work shall be performed without any additional cost to the owner irregardless of which section of the contract documents the work is described. The contractor shall be responsible to verify with all local organizations the extent of any collective bargaining agreements and/or any jurisdictional decisions rendered regarding disputes between the respective trades, and provide and install his work in accordance with the accepted trade practice in the area.
10. The entire installation shall conform with the 2021 International Mechanical Code, and all pertinent codes and regulations of the local, municipal, county, state, and federal authorities, The National Board of Fire Underwriters, the codes of the International Codes Council, the National Fire Protective Association and all other regulatory bodies having jurisdiction. All materials and equipment shall bear the stamps or seals of the NFPA, ASME, NEMA, IEEE, UL and other recognized industry regulatory groups.
11. The contractor shall give all necessary notices, obtain all permits, pay all governmental taxes, fees and other costs in connection with his work. He shall file all necessary plans, and prepare all other documents including additional detailed plans that are required for compliance with all applicable laws, ordinances, rules and regulations.
12. The HVAC and Plumbing trades shall coordinate with the General Contractor, locate all required cutting and patching of existing work required by the installation of their trades work, and arrange for his compensation.
13. All work shall be installed in strict accordance with the equipment manufacturer's recommendations and requirements. All systems are to be tested, adjusted and balanced to provide performance as indicated on the drawings. Test and adjust all safety controls.
14. Coordinate to assure that all work of all trades will be concealed within the wall and ceiling construction and without the need to reduce ceiling heights. Report exceptions to the Architect prior to construction and erection of the work. Openings around piping passing through the construction shall be sealed with fire barrier caulking. All materials located within the return air plenum shall be non-combustable with flame spread ratings of 25 or less and smoke developed ratings of 50 or less. All control wiring located within ceiling return air plenums shall be plenum rated or shall be run in conduit. All work shall be located to avoid conflicts with other work and provide adequate clearances for architectural design, proper operation, adjustments,, component service, and provide a minimum 2" clearance between all piping and other work.
15. Provide supports, hangers, flexible pipe connections, vibration isolation, supplementary supports, controls and wiring, cleaning, painting, specialties and all other labor, materials, devices and services required for a complete, first quality installation. All work shall be supported from the building structural system. Work shall not be supported from the ceiling suspension system, from electrical work, nor from other mechanical work. Unless otherwise indicated, run all piping as high as possible. Provide starters for all motor driven equipment.
16. The contractor shall provide and maintain in good order a complete set of blueline prints of the contract drawings. As the work progresses, the actual location of all work shall be clearly recorded, including all changes to the contract and equipment size and type. These prints shall be available at the site for inspection at all times. At the conclusion of the work, the contractor shall, at his own expense, obtain a set of reproducibles of the original contract drawings, and utilizing the symbols on the contract drawings, shall incorporate all "as built" data in a clearly legible and reproducible manner. All schedules shall be corrected to indicate "as built" conditions. All revisions shall be incorporated on these reproducibles including all sketches and written directives. All concealed equipment, mainfeeders, pull and junction boxes, etc. shall be dimensionally located from the building structure. As a condition for acceptance of the work, the "as built" reproducibles and one (1) set of prints shall be signed, dated and delivered to the engineer.
17. The Mechanical and Plumbing trades shall coordinate all electrical loads with the Electrical Contractor.
18. The architectural general conditions shall apply to and form a part of this section of these specifications.
19. The contractor shall perform all demolition work as indicated on the drawings as required to perform the work.
20. The contractor shall verify all utility service information shown on the drawings with the local utility company prior to submitting a bid. Any changes or service charges imposed by the utility company shall be qualified and included in the bid.
21. All equipment, materials and workmanship shall be guaranteed for a minimum of one year (five year for all compressors) from the date of acceptance by the owner.
22. Where products are specified by brand name, catalog numbers or by names of manufacturers, the reference is intended to be descriptive and not restrictive and is solely for the purpose of indicating the type of quality of the item that will be acceptable. An approved equal will be accepted unless otherwise indicated.
23. All cutting and patching of every nature required in connection with this contract shall be done by this contractor with mechanics experienced in their respective trades. All patching shall match adjacent surfaces.
24. All HVAC equipment shall be rated in excess of the available fault current, and shall be permanently labeled in accordance with the National Electric Code Sections 110.24, 430.99m 440.10, 700.5 and all applicable local codes. Coordinate exact available fault current and labeling with the Electrical Contractor. The Electrical Contractor shall provide all fault current labels.
25. Contractor shall perform all system commissioning with an approved commissioning agency per Section C408 of the 2021 International Energy Conservation Code (if required).

HVAC NOTES:

1. Provide all specialties, accessories, controls, and the like to provide a complete, quiet, properly operating automatically controlled systems.
2. Do not operate the air conditioning systems during construction except for testing, and provide new filters for all units and immediately prior to substantial completion.
3. Ductwork shall be constructed of galvanized sheet metal fabricated and erected in accordance with ASHRAE and SMACNA standards. Provide turning vanes in all elbows, manual volume dampers in all branches, air equalizers, and similar devices as required to properly balance the systems and produce quiet, draftless operation. Ductwork sizes shown on the plans are sheet metal I.D. free area.
4. Ductwork shall be constructed to the sizes shown and made airtight during erection with caulked, taped or hardcast joints to restrict leakage to 5% or less of circulated air.
5. All ductwork shall be closely coordinated prior to fabrication. The architectural contract drawings and details together with the other contract documents shall be examined for all dimensional information. Full sheet metal shop drawings drawings shall be developed with all spacial requirements worked out and shown on drawings. These drawing must show: locations of openings to be cut through existing construction and any problems. These drawing shall be submitted for review by the architect and engineer prior to fabrication.
6. Provide UL labeled and inspected fire dampers for all ducts and openings passing through floors, fire rated walls and ceilings, where shown on the drawings, and in locations required by codes.
7. Provide starters for all motor driven equipment, supports, hangers, flexible duct connections, flexible pipe connections, vibration isolation, supplementary supports, controls and wiring, cleaning, painting, specialties and all other labor, materials, devices and services required for a complete, first quality installation. Retain the General Contractor to provide all cutting and patching required by the HVAC trade.
8. Prior to ordering materials and equipment, submit product data sheets for all items for review by the Engineer.
9. Balance all air quantities to within 5% of the CFM shown on the drawings. Finally balance individual outlets to the occupants' satisfaction. Install all devices required for balancing in the system during construction. Provide certified balancing reports for review by the Engineer.
10. Provide a complete, automatic, ready-to-use system, unconditionally guaranteed in writing against defective workmanship and materials for a period of one year from the date of beneficial occupancy.
11. All flexible ductwork shall conform with the UL rating under flexible air duct test UL-181.

EQUIPMENT:

1. Ductwork
   1.1 Ductwork shall be galvanized steel designed for two inch W.C. pressures for supply and return systems and one inch W.C. for exhaust systems in accordance with SMACNA. All elbows shall be provided with single thickness turning vanes. All supply and return ductwork shall be insulated with 1-1/2" fiberglass duct wrap as manufactuered by Owens Corning with a minimum installed R-value of five (5) in unconditioned spaces and R-value of eight (8) outside the building.
   1.1.1 Insulate all sheetmetal supply and return ducts.
   1.1.2 Provide acoustical lining at the first ten feet of the supply and return ductwork of the rooftop unit.
   1.2 Flexible ductwork shall be UL 181 Class 1 complete with an insulating fiberglass blanket, foil faced vapor barrier and designed to withstand pressures up to six inches positive pressure W.G. flexible duct runs shall be a maximim of 6 feet in length and shall be type 5M-insulated as manufactured byFlexmaster USA, INC. with a minimum R-value of six (6)
2. Fans
   2.1 Centrifugal cabinet fans shall have centrifugal steel wheels, galvanized steel fan casing with intergral backdraft damper, disconnect switch mounted and wired and perforated metal face grille with extruded aluminum frame where scheduled. Fans shall carry the UL label and be rated in accordance with the AMCA test code. Fans shall be provided with a unit mounted speed controller. Capacities shall be as indicated on the drawings. Fans shall be as manufactured by Loren Cook Company., Inc. with model numbers as scheduled.
   2.2 Diffusers, Registers and Grilles
   2.3 Ceiling diffusers shall be complete with balancing dampers and white enamel finish.
   2.4 Ceiling return air registers shall be complete with balancing dampers and white enamel finish.
3. Controls
   3.1 The contractor shall provide and install all necessary control components included, but not limited to, relays, automatic dampers, damper operators, thermostats, controllers, etc. and wiring as required to provide automatic temperature control. All control components shall be as manufactured by Honeywell or equal. All wiring shall be done in accordance with the local and state codes and the national electric code.
   3.1.1 Thermostats for HVAC units shall be Honeywell T7350 series with seven-day programming for night setback. Thermostat shall be mounted in accordance with ADA requirements.
   3.1.2.1 Occupied mode: supply fan shall run continuously, the outside air damper shall be open to the minimum position and the heating and cooling portions of the unit shall function as required to maintain space conditions.
   3.1.2.1 Unoccupied mode: the outside air damper shall be closed and the fan shall cycle with heating/cooling portions of the unit.
   3.1.3 All exhaust fans shall be connected to Timeclock furnished by the Electrical Contractor unless otherwise indicated.
4. The equipment and materials shall be completely cleaned prior to testing, insulating and placing the system in operation.
5. The refrigeration system shall be tested and proven tight prior to placing in operation. Units shall be checked for proper refrigerant charge and operation and adjusted as per the manufacturer's recommendations.
6. The complete supply, return and exhaust air duct systems, including fans, dampers, outlets, and appurtenances shall be properly balanced to deliver air volumes within +/- 5 percent of the values indicated. The total system leakage through duct joints and connections shall not exceed five percent. Temperature, ampere and RPM readings shall also be provided to verify system performance.
7. The contractor shall furnish three sets of instruction manuals to the owner at the completion of construction.

No.	DATE	DESCRIPTION	REV'D BY
	05/09/25	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:
RENOVATION AT WOODBINE MUNICIPLE AIRPORT HANGAR #5
675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

HOLSTEIN WHITE ENGINEERS
3800 Horizon Blvd., Suite 503
Trevose, PA 19053
O: (215)-322-7711
F: (215)-322-7709
www.holsteinwhite.com

SEAL:
SCOTT A. WHITE
NJ PE NO. 24GE04677900
NJ AUTH NO. 24GA28143700

TITLE: MECHANICAL SCHEDULES & DETAILS

DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

SCALE:	AS NOTED
PROJ.NO.:	1336
DATE:	05/09/25
REV'D.:	BA
DRAWN BY:	RY
CHKD.BY:	BA I SW

DRAWING NO: M-2.0

1 FIRST FLOOR ELECTRICAL PLAN

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

DRAWING NOTES

1. FIELD VERIFY LOCATION OF ALL WIRING DEVICES WITH ARCHITECT PRIOR TO ROUGH-IN.
2. COORDINATE INSTALLATION OF HVAC EQUIPMENT WITH MECHANICAL CONTRACTOR. INSTALL AND WIRE DISCONNECT SWITCHES FURNISHED BY MECHANICAL CONTRACTOR.
3. FIELD VERIFY EXACT LOCATIONS OF ALL LIGHTING FIXTURES WITH ARCHITECT PRIOR TO ROUGH-IN.
4. UNLESS OTHERWISE NOTED, ALL POWER SHALL BE CIRCUITED TO PANEL 'P1'.
5. UNLESS OTHERWISE NOTED ALL LIGHTING SHALL BE CIRCUITED TO PANEL 'P1'.
6. EMERGENCY LIGHTING AND EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE OF LOCAL LIGHTING CONTROL.
7. COORDINATE ALL LOW VOLTAGE WORK WITH OWNER AND OWNERS LOW VOLTAGE VENDOR. ELECTRICAL CONTRACTORS SHALL FURNISH AND INSTALL ALL BACKBOARDS WITH CONDUIT AND PULL STRING TO ACCESSIBLE CEILING SPACE.
8. UNLESS OTHERWISE NOTED ALL EXTERIOR LIGHTING SHALL BE EXISTING TO REMAIN.

DEMOLITION NOTES

1. WHERE EXISTING FACILITIES ARE BEING ALTERED, DISCONNECT AND REMOVE OR RELOCATE ALL EXISTING ELECTRICAL WORK THAT INTERFERES WITH OR IS NECESSARY BECAUSE OF NEW CONSTRUCTION AS SPECIFIES, SHOWN OR REQUIRED.
2. PERFORM ALTERATION AND ADDITIONS TO PRESENT ELECTRICAL SYSTEM WITH A MINIMUM INTERRUPTION IN THE OPERATION OF THESE SYSTEMS. OBTAIN WRITTEN CLEARANCE FROM OWNER FOR SUCH INTERRUPTIONS AND SCHEDULE SAME AT WHATEVER TIME SPECIFIED IN WRITING BY OWNER.
3. WHERE SPECIFIED OR REQUIRED, EXTEND EXISTING SYSTEMS OR TIE INTO SAME TO PROVIDE A COMPLETE COORDINATED ELECTRICAL SYSTEM TO SATISFACTION OF OWNER AND ARCHITECT.
4. ALL EXISTING WORK TO REMAIN, BUT DISTURBED AND DISCONNECTED BECAUSE OF ALTERATIONS AND NEW CONSTRUCTION SHALL BE REPLACED AND PUT IN OPERATING CONDITION UNLESS INSTRUCTED OTHERWISE IN WRITING BY OWNER OR ARCHITECT.
5. EXISTING BRANCH CIRCUITS NOT SHOWN SHALL REMAIN INTACT TO EXTENT PRACTICABLE, AND SHALL BE EXTENDED AS REQUIRED.
6. DISCONNECT AND REMOVE EXISTING WIRING DEVICES, LIGHTING FIXTURES AND ASSOCIATED BRANCH CIRCUIT WIRING NO LONGER REQUIRED BY NEW CONSTRUCTION.
7. PERFORM ALL WORK NECESSARY TO PERMIT OPERATION OF ALL EXISTING SYSTEMS DURING THE CONSTRUCTION PERIOD. PROVIDE AND MAINTAIN APPLICABLE APPROVED TEMPORARY WIRING TO MEET THIS REQUIREMENT.
8. DEMOLISH AND REMOVE EXISTING ELECTRICAL EQUIPMENT, FEEDERS AND CONDUIT NO LONGER REQUIRED BY NEW CONSTRUCTION BACK TO ELECTRICAL PANEL.
9. ALL CIRCUIT BREAKERS NO LONGER REQUIRED BY NEW CONSTRUCTION SHALL BE MADE SPARE AND SET OPEN POSITION.
10. ELECTRICAL CONTRACTOR SHALL UPDATE PANEL DIRECTORIES AT THE COMPLETION OF WORK.
11. THE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING HIS PROPOSAL TO VERIFY ACTUAL SITE CONDITIONS AND ANY DISCOVERED DISCREPANCIES BETWEEN DRAWINGS AND SITE CONDITIONS SHALL BE BROUGHT TO THE OWNER'S ATTENTION PRIOR TO SUBMITTING THEIR BID. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION WORK EXPOSED AND CONCEALED, WHETHER OR NOT SHOWN ON DRAWINGS, NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEM. THE OWNER SHALL NOT ACCEPT (NOR THE CONTRACTOR PAID) EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.

No.	DATE	DESCRIPTION	REV'D BY
	05/09/25	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:
RENOVATION AT WOODBINE MUNICIPLE AIRPORT HANGAR #5
675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

HOLSTEIN WHITE ENGINEERS
3800 Horizon Blvd., Suite 503
Trevose, PA 19053
O: (215)-322-7711
F: (215)-322-7709
www.holsteinwhite.com

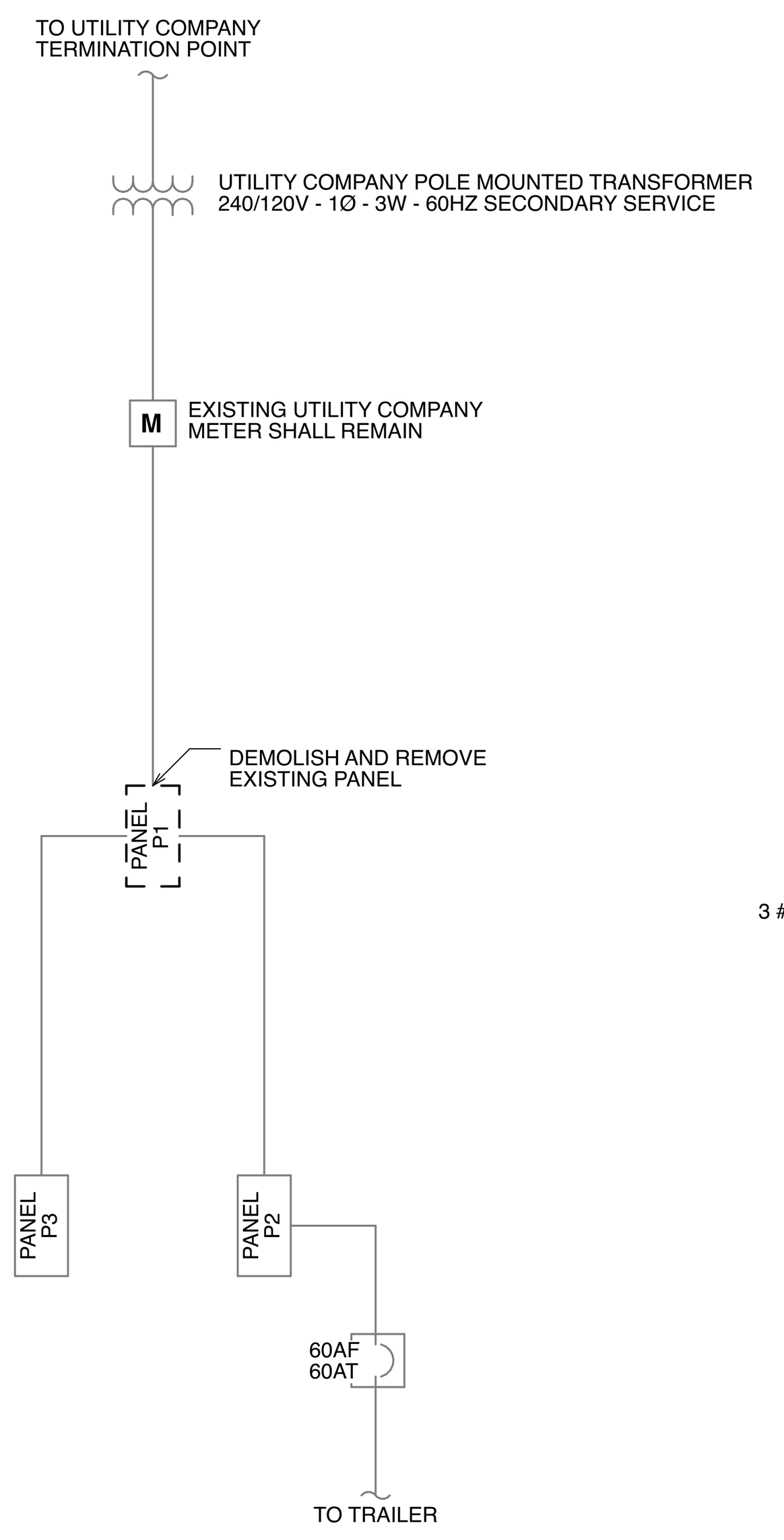
TITLE: FIRST FLOOR ELECTRICAL PLAN

SEAL:
JEFFREY E. HOLSTEIN
NJ PE NO. 24GE04644300
NJ AUTH NO. 24GA28143700

DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

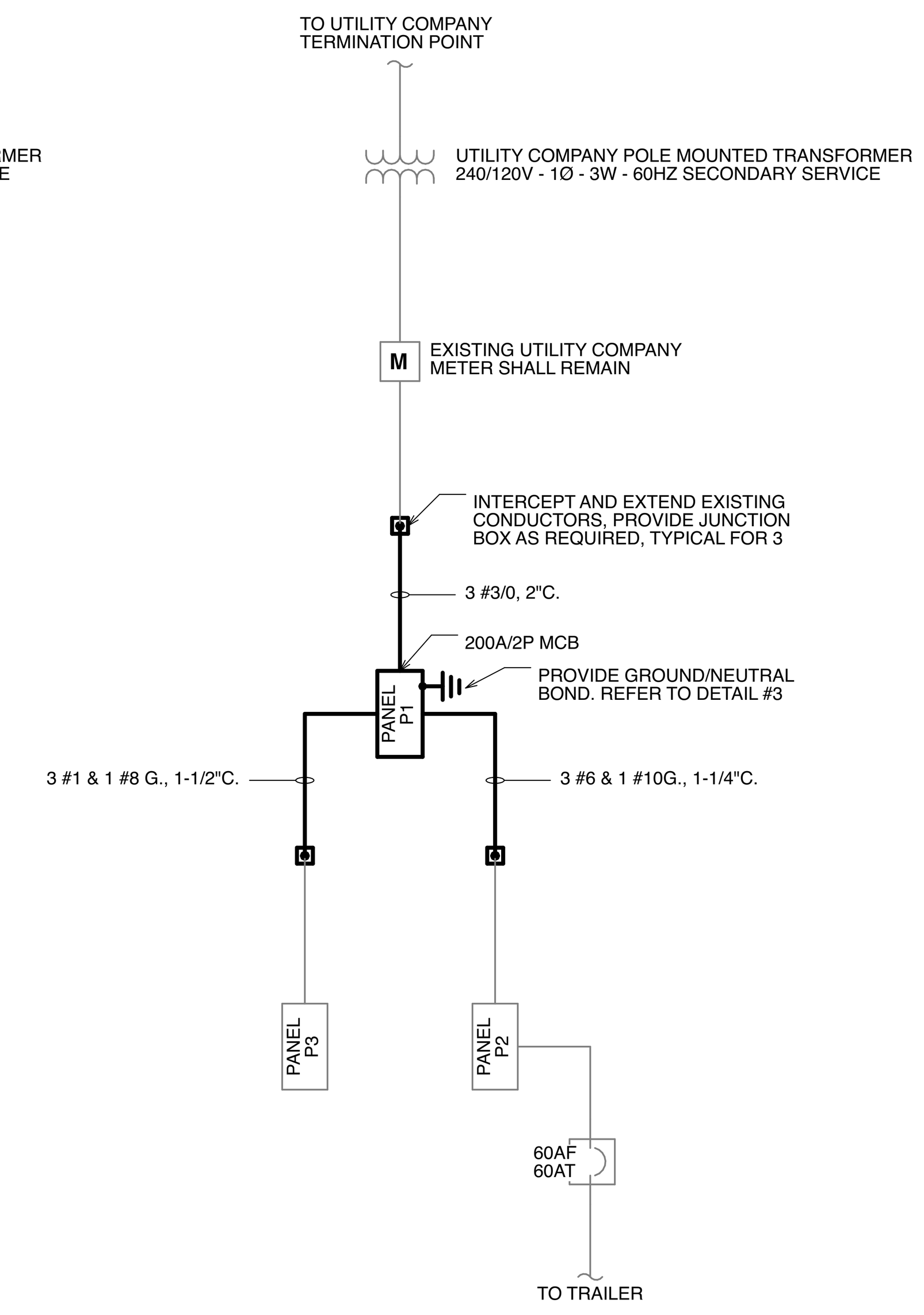
SCALE: AS NOTED
PROJ.NO.: 1336
DATE: 05/09/25
REV'D.:
DRAWN BY: EP
CHKD.BY: PP

DRAWING NO: E-1.0



1 DEMOLITION SINGLE LINE DIAGRAM

NOT TO SCALE

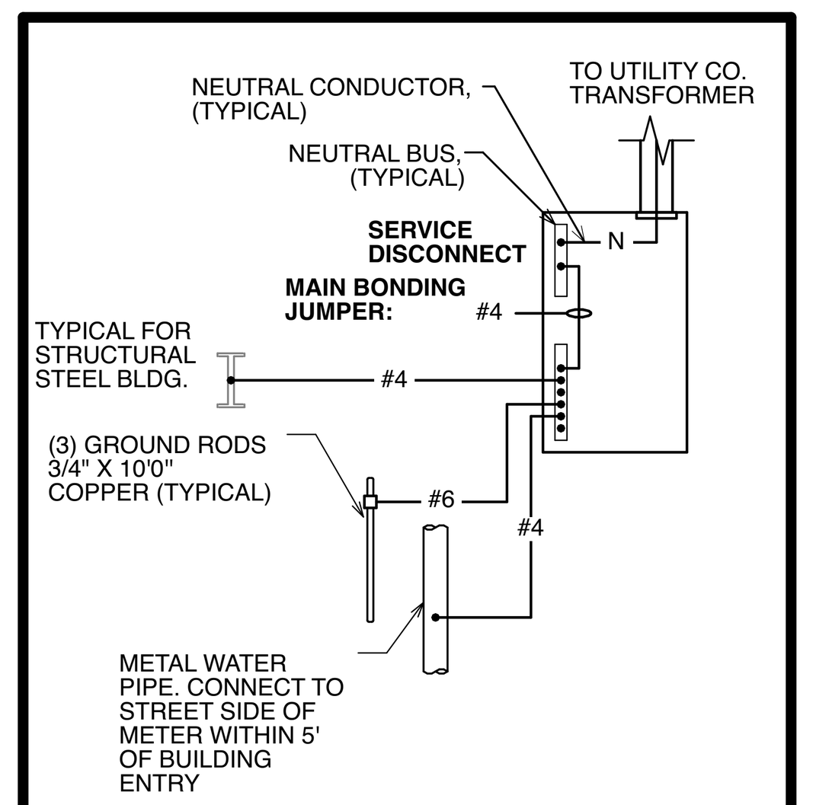


2 NEW WORK SINGLE LINE DIAGRAM

NOT TO SCALE

SINGLE LINE DIAGRAM NOTES

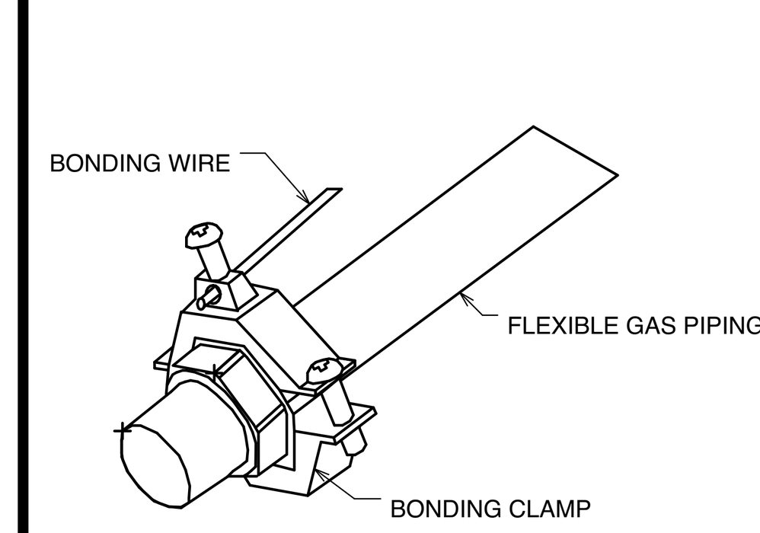
1. UNLESS OTHERWISE NOTED, ALL DEVICES AND SPACES ARE 3 POLE.
2. UNLESS OTHERWISE NOTED, ALL ABOVE GRADE CONDUCTORS SHALL BE COPPER, TYPE THW, RATED 75ºC.
3. UNLESS OTHERWISE NOTED ALL BELOW GRADE CONDUCTORS SHALL BE COPPER, TYPE XHHW-2, RATED 75ºC.
4. UNLESS OTHERWISE NOTED, ALL INTERIOR CONDUITS SHALL BE EMT.
5. UNLESS OTHERWISE NOTED ALL UNDERGROUND AND EXTERIOR CONDUITS SHALL BE SCHEDULE 40 PVC.
6. LIGHT LINEWEIGHT INDICATES EXISTING EQUIPMENT.
7. HEAVY LINEWEIGHT INDICATES NEW EQUIPMENT.
8. DASHED LINEWEIGHT INDICATES DEMOLISH AND REMOVE.
9. ALL EQUIPMENT SHALL BE SERIES RATED TO WITHSTAND THE AVAILABLE SHORT CIRCUIT CURRENT.
10. CONTRACTOR SHALL PROVIDE PERMANENT LABELS ON ALL ELECTRICAL AND HVAC EQUIPMENT INDICATING THE MAXIMUM AVAILABLE FAULT CURRENT.



3 TYPICAL GROUNDING DETAIL

NOT TO SCALE

NOTE: BOND FLEXIBLE GAS PIPING PER MANUFACTURER'S RECOMMENDATIONS



4 FLEXIBLE GAS PIPING GROUNDING DETAIL

NOT TO SCALE

ELECTRICAL SPECIFICATIONS

1. Contractor shall provide all labor, materials, tools, apparatus and equipment required to complete his work in accordance with the contract documents, codes, laws and ordinances, and accepted trade procedures.
2. The contractor by his acceptance of the contract guarantees that all work installed shall be free from all defects in workmanship and materials and that all apparatus furnished by him shall develop the capacities and characteristics specified. He further guarantees that if, during a period of one (1) year from the date of the certificate of completion and acceptance of the work, any such defects in workmanship, material or performance appear, such defects shall be remedied by him without cost to the owner. If the contractor fails to remedy the defects as outlined within a reasonable length of time, to be specified in a notice from the owner's authorized representative to the contractor, the owner will have such work done, and he will charge the cost to the contractor.
3. The contractor shall visit the site before he submits his proposal. He shall examine all existing conditions which affect the work. The submission of the proposal shall be considered evidence that this requirement has been fulfilled. No extra payment will be allowed for additional work made necessary by the failure to visit the site.
4. Electrical equipment shall be installed in a neat and workmanlike manner in accordance with latest and best practices of the trade. Only mechanics skilled in this type of Work shall be employed and utilized by Contractor for this Division in the execution of this Work.
5. The contract drawings are diagrammatic and indicate the general arrangement of all systems and work included in the contract. The contract drawings are not to be scaled. The architectural contract drawings and details together with the other contract documents shall be examined for all dimensional information.
6. The contractor shall, without additional costs to the owner, make reasonable modifications in the layout of his work in order to prevent conflicts with the work of other trades or for the proper execution of his work.
7. The contractor shall provide and maintain in good order a complete set of blueline prints of the contract drawings. As the work progresses, the actual location of all work shall be clearly recorded, including all changes to the contract and equipment size and type. These prints shall be available at the site for inspection at all times. At the conclusion of the work, the contractor shall, at his own expense, obtain a set of reproducibles of the original contract drawings, and utilizing the symbols on the contract drawings, shall incorporate all "as built" data in a clearly legible and reproducible manner. All schedules shall be corrected to indicate "as built" conditions. All revisions shall be incorporated on these reproducibles including all sketches and written directives. All concealed equipment, mainfeeders, pull and junction boxes, etc. shall be dimensionally located from the building structure. As a condition for acceptance of the work, the "as built" reproducibles and one (1) set of prints shall be signed, dated and delivered to the engineer.
8. The contractor shall supply all labor required to perform all work which may be claimed by trade organizations within his jurisdiction. All work shall be performed without any additional cost to the owner irregardless of which section of the contract documents the work is described. The contractor shall be responsible to verify with all local organizations the extent of any collective bargaining agreements and/or any jurisdictional decisions rendered regarding disputes between the respective trades, and provide and install his work in accordance with the accepted trade practice in the area.
9. The entire installation shall conform with all pertinent codes and regulations of the local, municipal, county, state, and federal authorities, The National Board of Fire Underwriters, the codes of the International Codes Council, the codes of the National Fire Protective Association, the New Jersey Uniform Construction Codes, and all other regulatory bodies having jurisdiction. All materials and equipment shall bear the stamps or seals of the NFPA, ASME, NEMA, IEEE, UL and other recognized industry regulatory groups.
10. The contractor shall give all necessary notices, obtain all permits, pay all governmental taxes, fees and other costs in connection with his work. He shall file all necessary plans, and prepare all other documents including additional detailed plans that are required for compliance with all applicable laws, ordinances, rules and regulations.
11. Before starting any work under this Contract, file for inspection with the Middle Department Inspection Agency or other certified Agency. Upon completion of the work, furnish Electrical Certificates from said Agency for all Electrical equipment and systems installed or furnished and installed as part of the work.
12. The contractor shall at all times keep the premises free from the accumulation of waste materials or rubbish caused by his employees or work. At the completion of the work, he shall remove all superfluous materials, equipment and debris resulting from the work.
13. All feeder wiring shall be soft drawn copper of 98% conductivity, installed in code conforming metallic raceways or cable assemblies. All wiring shall be copper, thermoplastic covered insulated Type 75° C. THW or 90° C. Type THHN, 600-volt rating. Wire No. 8 AWG and smaller shall be solid. Wire larger than No. 8 shall be stranded.
14. All wiring shall be insulated copper conductors installed in code conforming raceways or cable assemblies.
15. All wiring shall be run concealed wherever possible. All exposed conduit shall be EMT or rigid steel as required. Flexible conduit shall be smooth liquidtight with appropriate fittings. Conduit drops from above ceiling shall be structurally secured and supported. Cable assemblies used for branch circuits shall not be run exposed. Cable assemblies shall be permitted exposed for final connections to Mechanical and Plumbing equipment and shall be limited to 6 feet total length, routing shall not interfere with equipment workspace.
16. Where conductors connect directly to equipment, the insulation temperature rating of the conductor shall meet or exceed the equipment temperature rating.
17. Color code conductors to designate neutral conductor and phases. Color coding shall conform with existing building standard.
18. Exercise great care in maintaining a uniform and consistent arrangement of phase conductors on all systems. Throughout the entire wiring systems, each phase conductor must always be in the same physical position with respect to the other phase wires at equipment terminals.
19. Grounding shall comply with Article 250 of NEC and to approval of local Underwriters inspection authorities.
20. Panelboards shall be dead front type with plated aluminum bus, bolt-on breakers, fully rated neutral bus and grounding bus block. Cabinet shall be code gauge galvanized steel, NEMA 1, minimum 20" wide, 5-3/4" deep. Cover shall have door and trim and adjustable clamps, gray baked finish, and tumbler type key lock. "Spaces" shall be fully bussed and drilled, ready for breaker installation.
21. Contractor shall provide typed updated panel schedules at completion of project for all panels effected by scope of work.
22. Circuit Breakers shall be molded case, bolted, thermal magnetic trip in each pole, enclosure-compensated to carry full rated load at 40°C., trip-free handles shall clearly indicate trip, on and off condition, quick-make and quick-break action. Lugs approved for copper and aluminum conductors and compression type. Ground Fault type breakers shall be provided with thermal and magnetic protection, UL Class A, 5 milliampere ground fault sensitivity, where required. Circuit breakers used as switches in 120 and 277 volt circuits feeding incandescent, fluorescent, and/or HID fixtures shall be approved for such use and marked "SWD", per NEC. Circuit breakers serving Heating and Air Conditioning equipment shall be HACR rated.
23. Where new circuit breakers are to be installed within existing panelboards, they shall be listed for use with the existing panelboard type, and of sufficient short circuit rating for the application.
24. Provide all labor, materials and equipment required to provide electric power to meet the requirements for heating, ventilating, air-conditioning and plumbing systems. Fully coordinate installation of electrical wiring and equipment with installation of electrically operated mechanical equipment provided by the Mechanical and Plumbing Contractors. Install disconnect switches, motor starters, and control transformers furnished by Mechanical and Plumbing Contractors. Provide final equipment electrical terminations. All internal equipment wiring shall be by manufacturer.
25. Test equipment, including panelboards and all other equipment and wiring for unintended grounds, short circuits, open circuits, continuity, current leakage, and that equipment will operate as specified. Test feeders for insulation resistance; for load balance of the final installation, and for overall operation of systems. Furnish labor and material required for making such tests and make corrections necessary to balance the load and to obtain proper operation.
26. Where existing facilities are being altered, disconnect and remove or relocate all existing electrical work that interferes with or is necessary because of new construction as specified, shown or required.
27. Perform alterations and additions to present electrical systems with a minimum interruption in the operation of these systems. Obtain written clearance from Owner for such interruptions and schedule same at whatever time specified in writing by Owner.
28. Lay out all work from approved building and property lines and benchmarks. Verify and be responsible for the correctness of all measurements in connection with work. Any change made in major overall dimensions as shown which affect the physical size, shape, or location of any part of the Work, whether due to field check or changes due to the use of equipment of a manufacturer other than that used as the basis of design shall not cause any interference with other work.
29. Electrical equipment shall not interfere in any way with other material or equipment and shall provide adequate working space; see Requirements for Electrical Installations, Article 110 and other related articles of the National Electrical Code.
30. Provide materials, equipment, supplies and labor necessary as required to adequately support, brace and strengthen all equipment and materials furnished as part of this work.
31. Locations are subject to changes that may be necessary to avoid obstacles in building construction. Verify all dimensions and conditions at site. Check layout for sizes and clearances, and provide so that the apparatus and material may be installed and operated satisfactorily in space provided. Install equipment and raceways to preserve headroom and to keep openings and passageways clear.
32. Protect all conduit, fittings, panelboards, and other equipment before and during installation and keep clean.
33. Identify each panel, panelboard, and other electrical equipment as to nature, service and purpose, by means of permanently attached, approved size, laminated phenolic nameplates.
34. Where sleeves containing a single conduit penetrate FIRE RATED walls, floors, partitions or slabs, fill and seal conduit to the sleeve with a 1-part intumescent caulk/putty sealant creating a fire stop equal to or exceeding fire rating of construction material being penetrated. Fire sealant shall prevent spread of flame, smoke, air and water through the sleeve and shall pass 3-hour test per ASTM E814 and UL 1479. Fire sealant shall be installed in accordance with manufacturer's written instructions. Where sleeves containing multiple conduits or multiple cables penetrate FIRE RATED walls, floors, partitions, or slabs, fill and seal spaces between the conduits or cables and the sleeve with 2-part intumescent foam sealant creating a fire stop equal to or exceeding fire rating of construction material being penetrated. Fire sealant shall prevent spread of flame, smoke, air and water through the sleeve and shall pass 3-hour test per ASTMA E814 and UL 1479. Fire sealant shall be installed in accordance with manufacturer's written instructions. Where sleeves penetrate exterior walls, fill and seal ends around conduits and/or cables with duct sealant compound equal to Solorite KN--1146, or Link Seal. Install seals in accordance with the manufacturer's recommendations to provide air tightness above ground and hydrostatic sealing below grade. Caulking or other type mastic is not acceptable. Where wiring devices are placed in fire rated construction, fire rating of installed assembly shall meet or exceed the rating of the construction.
35. Coordinate all lighting fixture locations and quantities with Architectural plans, and provide all fixtures indicated.
36. Furnish and install all lighting fixtures as specified. Provide all interior and exterior lighting fixtures complete with sockets, reflectors, diffusers, shades, holders, lamps, ballasts, protective devices and all other required appurtenances. Prior to ordering lighting fixtures, verify exact type of ceiling to be used for each space. Coordinate with Division 15 to avoid conflicts between lighting fixtures and Mechanical and Plumbing piping, ductwork, supports, fittings and equipment. Furnish to other trades, plaster frames, trim rings, etc., where required.
37. Receptacles shall be permanently labeled to identify panelboard and circuit number from which served. Use hot, stamped or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.
38. Standard duplex receptacles shall be polarized, duplex, parallel blade, U-grounding slot, specification grade, rated 20 amperes, 125 volts, style and color as selected by Architect.
39. GFI receptacles shall be 125V, 20 amp rated, as manufactured by Leviton or equal, style and color as selected by Architect. Trip threshold and time shall be as required for the application in accordance with the NEC.
40. Plates for Flush Devices shall be type and color as selected by Architect.
41. Contactors shall be permanent magnetic latched, electrically operated, mechanically-held type with number of poles and current rating as shown. Operating coils shall be 120 volts as required. Contactors shall be housed in NEMA Type 1 enclosures with knockouts and provisions for padlocking or incorporated in branch circuit or distribution panelboards as indicated. Provide hand-off-automatic switch in cover to facilitate safe maintenance. Contactors shall be UL listed for switching 208-volt ballast inductive loads. Install, completely wire and connect all systems in accordance with details on Drawings and manufacturer's instructions.
42. Motor and circuit disconnect means shall be a horsepower rated safety switch or a circuit breaker, each sized for the applied load and system voltage having an interrupting capacity not less than maximum available short-circuit current of circuit on which applied. Disconnects shall be sized in accordance with NEC and NEMA requirements. Safety switches shall be cartridge fuse type or unfused, as required. Manual toggle type motor switches with overload protection may be used as motor disconnects for fractional horsepower motors provided they meet NEC requirements including padlock provision. Safety switches shall be quick-make, quick-break and NEMA Heavy Duty, Type HD. Disconnect enclosures: NEMA 1, NEMA 3R, NEMA 4 to suit application.
43. Contractor shall include in bid Unit Prices for each of the following:
    - A. Each type of receptacle, including coverplate connected to area circuit.
    - B. Voice outlet box with conduit and pullstring.
    - C. Each type of switch, including coverplate connected to area circuit.
    - D. 20/1 Homerun to Local Branch Circuit Panel.
44. Unless otherwise noted all electrical equipment is a basis of design of Square D. Equipment shall be as manufactured by Square D or approved equal.
45. All electrical equipment shall be labeled to warn qualified persons of potential Arc Flash hazards in accordance with NEC Article 110.16 and all local codes. Electrical contractor shall provide all required labels.
46. All electrical equipment and HVAC equipment shall be rated in excess of the available fault current, and shall be permanently labeled in accordance with NEC Articles 110.24, 430.98, 430.99, 440.10, 700.5, and all local codes. The electrical contractor shall coordinate with the utility company to verify actual available fault current. Max values shown on the single line diagram are based on worst case conditions, actual conditions may vary.
47. No product shall be installed without prior approval from Owner.
48. Contractor shall perform all system commissioning with an approved agency per Section 9 of the 90.1 ASHRAE 2019.
49. Where specified or required, extend existing systems or tie into same to provide a complete coordinated electrical system to satisfaction of Owner and Architect.
50. All existing work to remain, but disturbed or disconnected because of alterations and new construction shall be replaced and put in operating condition unless instructed otherwise in writing by Owner or Architect.
51. Perform all work necessary to permit operation of all existing systems during the construction period. Provide and maintain applicable approved temporary wiring to meet this requirement.
52. Existing branch circuits not shown shall remain intact to extent practicable, and shall be extended as required.
53. Demolish and remove existing electrical equipment, feeders and conduit no longer required by new construction.
54. Circuit breakers made spare due to demolition shall be set in off position and labeled 'SPARE'.
55. Power System Study: The following shall be provided with the gear submittal and be performed by a licensed professional engineer authorized to work in the State of New Jersey. The electrical submittals will not be reviewed until a complete Study including all of the following is received. Provide a **Short-Circuit**, and **Arc Flash Protection** Studies. The Studies shall be performed using SKM Power Tools or equal approved by Holstein White. All calculations shall be based on the exact equipment proposed in the gear submittal. All wire types, sizes, and lengths, shall be confirmed by the contractor and accurately reflected in the calculations. The calculations shall start at the utility company termination to the owner's new equipment and shall be based on the available fault current and X/R values furnished by the Utility Company. Contractor shall request the information from the Utility Company and include a copy in the Study Appendix. The **short circuit study** shall be performed in conformance with IEEE 141 and all submitted equipment shall have an AIC rating equal to or exceeding the calculated values. The **arc flash protection study** shall be performed in accordance with the requirements of IEEE 1584 and NFPA 70E. The report shall make recommendations for the reduction of any Dangerous conditions. Upon approval of the study, the contractor shall print and apply arc-flash warning labels to the new equipment. The labels shall be compliant with the latest applicable codes, and shall at a minimum contain the following information: Equipment Name, Upstream Protective Device, Flash Hazard Boundary, Flash Hazard at 18 inches, Shock Hazard (Voltage) with covers removed, Glove Class, Limited Approach Boundary, Restricted Approach Boundary, and Prohibited Approach Boundary.

LIGHTING FIXTURE SCHEDULE

Type	Manufacturer	Catalog No.	Lamps No.	Lamps Watts	Lamps Type	Volts	Mounting	Remarks
A1	ILP Lighting	VS8-10L/11L/12L-U-CCTS-FRL		89	LED 3500K	120	Surface	8' LED strip fixture located under mezzanine. Field selectacle lumens shall be set to 12,000 lumens and selectable color temperature shall be set to 3500 kelvin. Coordinate exact fixture and finish with owner and architect prior to purchase.
A2	Elite Lighting	HH6-LED-1500L-DIM10-MVOLT-35K-HH6-6501		15	LED 3500K	120	Surface	6" LED downlight located in bathroom and utility room. Provide 0-10V dimming. Fixture shall be wet location listed. Coordinate exact fixture and finish with owner and architect prior to
E1	Evenlite	TEBL3W	2	3	LED	120/ 9.6VDC	Surface	Indoor battery pack w/ dual 9.6V/3W LED lighting heads, nickel-cadmium battery, white housing.
E2	Evenlite	TEBL5W	2	3	LED	120/ 9.6VDC	Surface	Indoor battery pack w/ dual 9.6V/3W LED lighting heads, nickel-cadmium battery, white housing. Provide remote capability to interconnection to fixture Type E3.
E3	Evenlite	PRWLED2-MV	2	1	LED	9.6VDC	Exterior Surface	Outdoor dual remote heads 9.6V/1W LED lighting head.
X1	Evenlite	TLX-EM-RU-W			LED	120	As Indicated	LED exit sign, red letters, number of faces and directional arrows as indicated on plan or required by installed location, intergral battery to provide 90 mintues of illumination.

Notes:
1. In addition to those indicated above, refer to Architectural drawings and provide all fixtures specified.
2. All fixtures shall be provided with lamping.
3. Confirm final fixture options and color selection with Architect prior to purchase.
4. Refer to specifications for detailed requirements for construction, handling, ballasts, lamps, etc.
5. Coordinate fixture location and mounting requirements with Architectural drawings and details.
6. Refer to Architectural reflected ceiling plans for ceiling types and conditions affecting mounting and installation of lighting fixtures.
7. Coordinate exact fixture color temperature with owner and architect prior to purchase.

NEW PANEL P1 — 200 A MCB, 22 KAIC — 42 POLE — 240/120V - 1Ø - 3W

Cir. No.	Cir. Bkr.	Wire Size	Description	Load - KVA A	Load - KVA B	Load - KVA A	Load - KVA B	Description	Wire Size	Cir. Bkr.	Cir. No.
1	20/1	#12	*Bath Fix*	-		-		*Panel 'P2'*	#6	60/2	2
3	20/1	#12	*Office*		-		-	-	-	-	-
5	20/1	#12	*Rear Ceiling*	-		-		*Existing Load*	#6	60/2	6
7	20/1	#12	*Office*		-		-	-	-	-	-
9	20/1	#12	*Light Bar Overhead*	-		2.5		*Panel 'P3'*	#1	100/2	10
11	20/1	#12	*F East*		-		2.3	-	-	-	-
13	20/1	#12	*Flood Lts.*	-		-		*H.W.*	#8	40/2	14
15	20/1	#12	*Office*		-		-	-	-	-	-
17	20/1	#12	*Panel Outlet*	-		-		*Dryer*	#10	30/2	18
19	20/1	#12	*Utility Room*		-		-	-	-	-	-
21	20/1	#12	*West Side Outlets*	-		4.3		**HP-1**	#8	45/2	22
23	20/1	#12	*Closet Outlet*		-		4.3	-	-	-	-
25	20/1	#12	*EF*	-		0.4		**AHU-1, 2 & 3**	#12	15/2	26
27	20/1	#12	**Refrigerator**		1.0		0.4	-	-	-	-
29	20/1	#12	**Microwave**	1.5		0.5		**FFH-1**	#12	20/1	30
31	20/1*	#12	**Kitchen**		1.5		0.5	**FFH-2**	#12	20/1	32
33	20/1*	#12	**Kitchen**	1.5		-		*GFI XXX Wall*	#12	15/1	34
35	20/1*	#12	*Outlet Fix A*		-		-	*New Office*	#12	20/1	36
37	20/1*	#12	*Outlets B*	-		-		**Spare**		20/2	38
39	20/1*	#12	*Outlet Strip D*		-		-	-		-	-
41	20/1	#12	**Emergency & Exit Lighting**	0.1		0.2		**Exterior Receptacle**	#12	20/1	42
Total				3.1	2.5	7.8	7.4				Total

Phase (KVA)		Load Summary by Type		
A	10.9	Connected Receptacles		KVA
B	9.9	Connected Lighting		KVA
		Connected Motor		KVA
Total	20.8	Connected Heating		KVA
		Connected Air Conditioning		KVA
		Connected Kitchen		KVA
		Connected Miscellaneous		KVA
		Total	20.8	KVA

Options and Accessories - (X) Indicates Selection
- [ ] Feed Through Lugs
- [ ] Subfeed Main Lugs
- [ ] Split Bus
- [ ] Contactor Controlled
- [ ] Top
- [ ] Bottom
- [ ] Recessed
- [x] Surface
- [ ] Double Panel
- [x] Ground Bus
- [ ] Insulated Ground Bus

NOTE: All existing branch circuits shall be intercepted and extended. Provide conductors, junction boxes, etc. as required for a complete and operational system.

Grey Italic = Existing to remain — **Black Bold = New** — *** = AFCI Type Breaker**

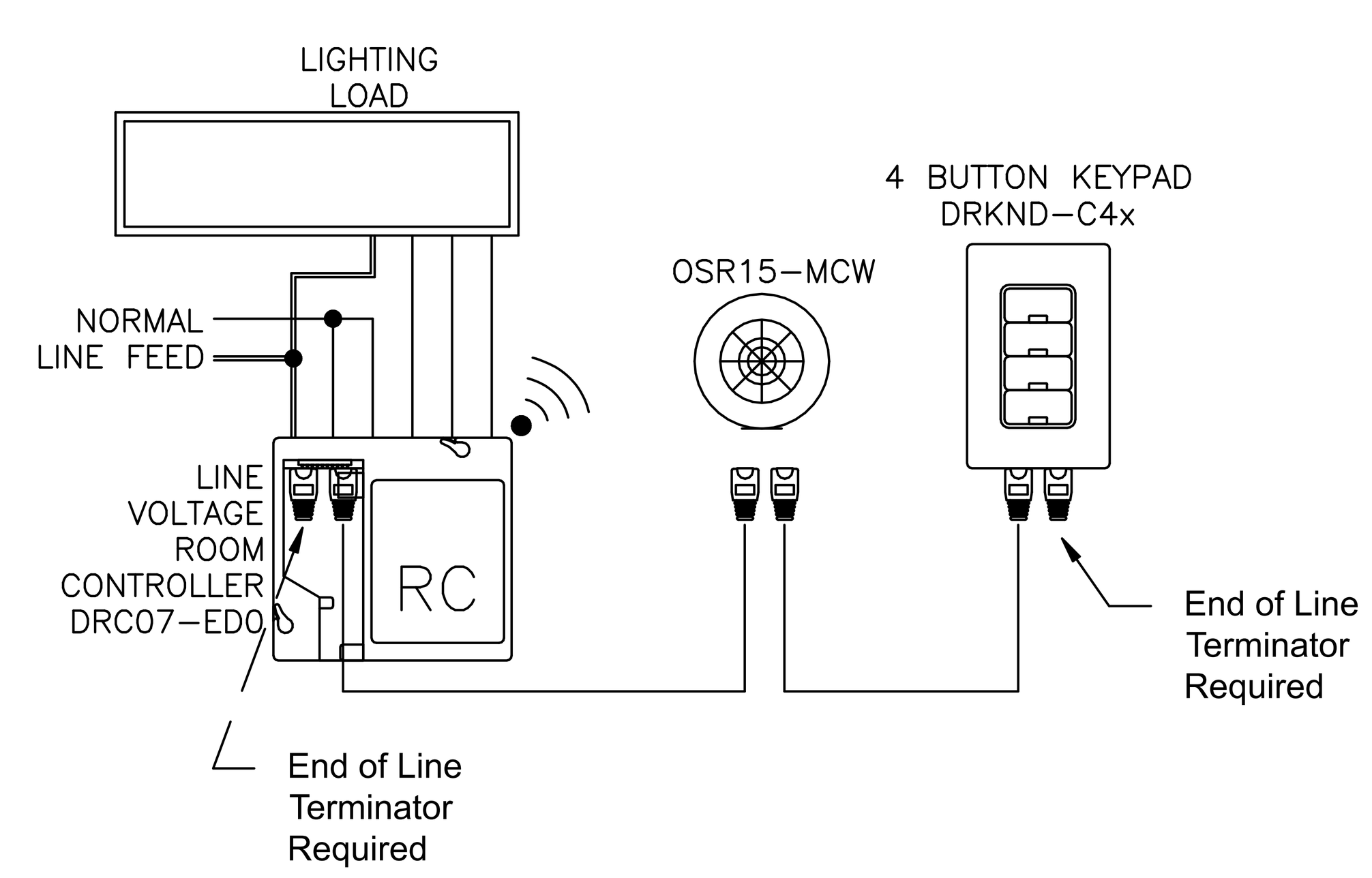
EXISTING PANEL P3 — 100 A MCB — 24 POLE — 240/120V - 1Ø - 3W

Cir. No.	Cir. Bkr.	Wire Size	Description	Load - KVA A	Load - KVA B	Load - KVA A	Load - KVA B	Description	Wire Size	Cir. Bkr.	Cir. No.
1	*20/1*		*Gas Pump #4*	-		-		*GFI Gas Recept.*		*20/1*	2
3	*20/1*		*RV*		-		-	*Flood Light Pumps*		*20/1*	4
5	*15/1*		*Gas Pump #3*	-		0.9		**GUH-1**	#12	20/1	6
7	20/2	#12	**FAN-1**		0.8		0.9	**GUH-2**	#12	20/1	8
-	-	-	-	0.8		0.9		**GUH-3**	#12	20/1	10
11	20/1	#12	**Hanger Receptacles**		0.5		0.1	**Emergency & Exit Lighting**	#12	20/1	12
13			*Space*					*Space*			14
15			*Space*					*Space*			16
17			*Space*					*Space*			18
19			*Space*					*Space*			20
21			*Space*					*Space*			22
23			*Space*					*Space*			24
Total				0.8	1.3	1.7	1.0				Total

Phase (KVA)		Load Summary by Type		
A	2.5	Connected Receptacles		KVA
B	2.3	Connected Lighting		KVA
		Connected Motor		KVA
Total	4.7	Connected Heating		KVA
		Connected Air Conditioning		KVA
		Connected Kitchen		KVA
		Connected Miscellaneous		KVA
		Total	4.7	KVA

Options and Accessories - (X) Indicates Selection
- [ ] Feed Through Lugs
- [ ] Subfeed Main Lugs
- [ ] Split Bus
- [ ] Contactor Controlled
- [ ] Top
- [ ] Bottom
- [ ] Recessed
- [x] Surface
- [ ] Double Panel
- [x] Ground Bus
- [ ] Insulated Ground Bus

Grey Italic = Existing to remain — **Black Bold = New**



NOTES:
1. SENSORS SHALL BE AS MANUFACTURED BY LEVITON OR EQUAL
2. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS FOR WIRING AND ADJUSTMENT OF SENSORS.
3. SENSORS SHALL BE ADJUSTED TO SATISFACTION OF OWNER AND ARCHITECT.
4. OCCUPANCY SENSORS SHALL BE DUAL TECHNOLOGY, MODELS AS INDICATED ABOVE.
5. PROVIDE AND FIELD VERIFY EXACT LOCATIONS OF ROOM CONTROLLERS.
6. PROVIDE ALL POWER PACKS, MODULES, SWITCHES, CONTROLLERS, DIMMERS, AND ALL OTHER ACCESSORIES REQUIRED FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.
7. PROVIDE VOLTAGE BARRIER IN SHARED BOXES TO SEPARATE LOW VOLTAGE FROM LINE VOLTAGE

5 TYPICAL VACANCY SENSOR WIRING DETAIL

NOT TO SCALE

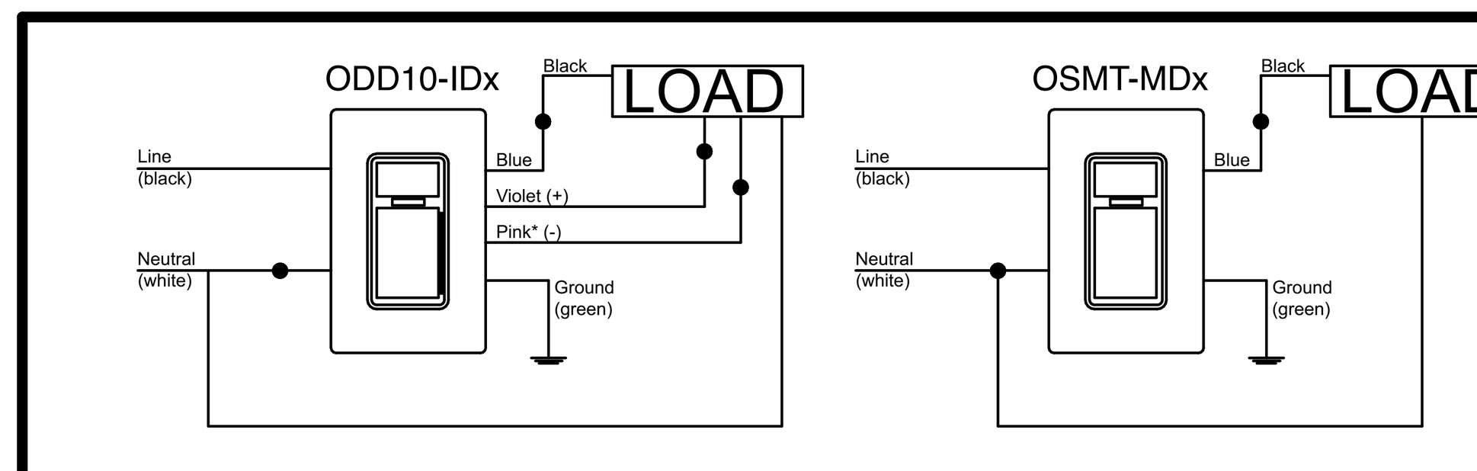
ELECTRICAL SYMBOLS

AF	Amp Frame
AT	Amp Trip
DR	Cloths Dryer
ER	Existing Relocated
EX	Existing to Remain
MW	Microwave
WA	Washer Machine
WP	Weatherproof
+	Device Mounted Above Counter Top
	Duplex Receptacle - 125V, 2P, 3W
	GFI Duplex Receptacle - 125V, 2P, 3W
	Single Receptacle - 250V, 2P, 3W
	Motor
	Solid Connection to Equipment
	Electrical Panel
	LED Lighting Fixture
M CLG	Ceiling Mounted Occupancy Sensor
S_L	Low Voltage Switch
	Ground Rod
	Circuit Breaker
	Circuit Breaker
	Unfused Disconnect Switch
	Fused Disconnect Switch
M	Utility Company Meter
	Transformer

ELECTRICAL STANDARD MOUNTING HEIGHTS

9" Below Finished Ceiling	Wall-Mounted Clocks, Program Bells, Fire Alarm Gongs and Horns
10'-0"	Battery Lighting Units and Remote Wall Mounted Lighting Heads (Or 1'-0" Below Finised Ceiling)
8'-6"	Pendant Hung Industrial and Strip Lighting Fixtures
Center Above Door or Window Opening	Warning and Signaling Fixtures/Signs
6'-8" or 6" Below Finished Ceiling	Fire Alarm Illuminated Flashing Lights (Lowest of the two Heights). **Mounting Height to the Bottom of Device.**
6'-8"	Top of Back-Mounted Wall Exit Signs (Not Mounted Above Doors)
6'-6"	Top of Flush and Surface Mounted Electrical Panelboards and Communication System Cabinets
6'-0"	Top of Highest Electrical Safety Disconnect Switches, Magnetic Motor Starters and Contactors
4'-6"	Wall Mounted Telephones and Pay Stations (3'-6" at Handicap Locations)
4'-0"	Top of Highest Circuit Breaker in Accessible Load Centers
3'-6"	Fire Alarm Pull Stations
3'-4"	Wall Mounted Electrical Device Lighting Switches
2'-0"	Electrical Receptacles in Mechanical Spaces, Electrical and Elevator Rooms
1'-6"	Electrical Receptacles, Television Outlets, Telephone Outlets, and Computer Outlets
0'-0"	Finished Floor

Mounting Heights to center of outlets unless otherwise noted. In masonry construction the mounting heights shall be used for reference to the nearest block or brick coursing.
The above mounting heights shall be adhered to unless specifically noted or detailed on the Architectural drawings or specifications.



NOTES:
1. SENSORS SHALL BE VACANCY TYPE CONFIGURATION, MANUAL ON, AUTOMATIC OFF.
2. WALL SENSORS SHALL HAVE INTEGRAL MANUAL ON / OFF SWITCH.
3. WALL SENSORS SHALL BE LEVITON MODELS AS FOLLOWS:
   PASSIVE INFRARED SINGLE ZONE: OSMT-MDx
   PASSIVE INFRARED 0-10V DIMMING: ODD10-IDx SENSORS SHALL BE CONFIGURED SUCH THAT THEY ARE MANUAL ON TO 100%, AUTOMATIC OFF.
4. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS FOR WIRING AND ADJUSTMENT OF SENSORS.
5. SENSORS SHALL BE ADJUSTED TO SATISFACTION OF OWNER AND ARCHITECT.

6 WALL BOX VACANCY SENSOR WIRING DETAIL

NOT TO SCALE

No.	DATE	DESCRIPTION	REV'D BY
	05/09/25	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT: **RENOVATION AT WOODBINE MUNICIPLE AIRPORT HANGAR #5**
675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

HOLSTEIN WHITE ENGINEERS
3800 Horizon Blvd., Suite 503
Trevose, PA 19053
O: (215) 322-7711
F: (215) 322-7709
www.holsteinwhite.com

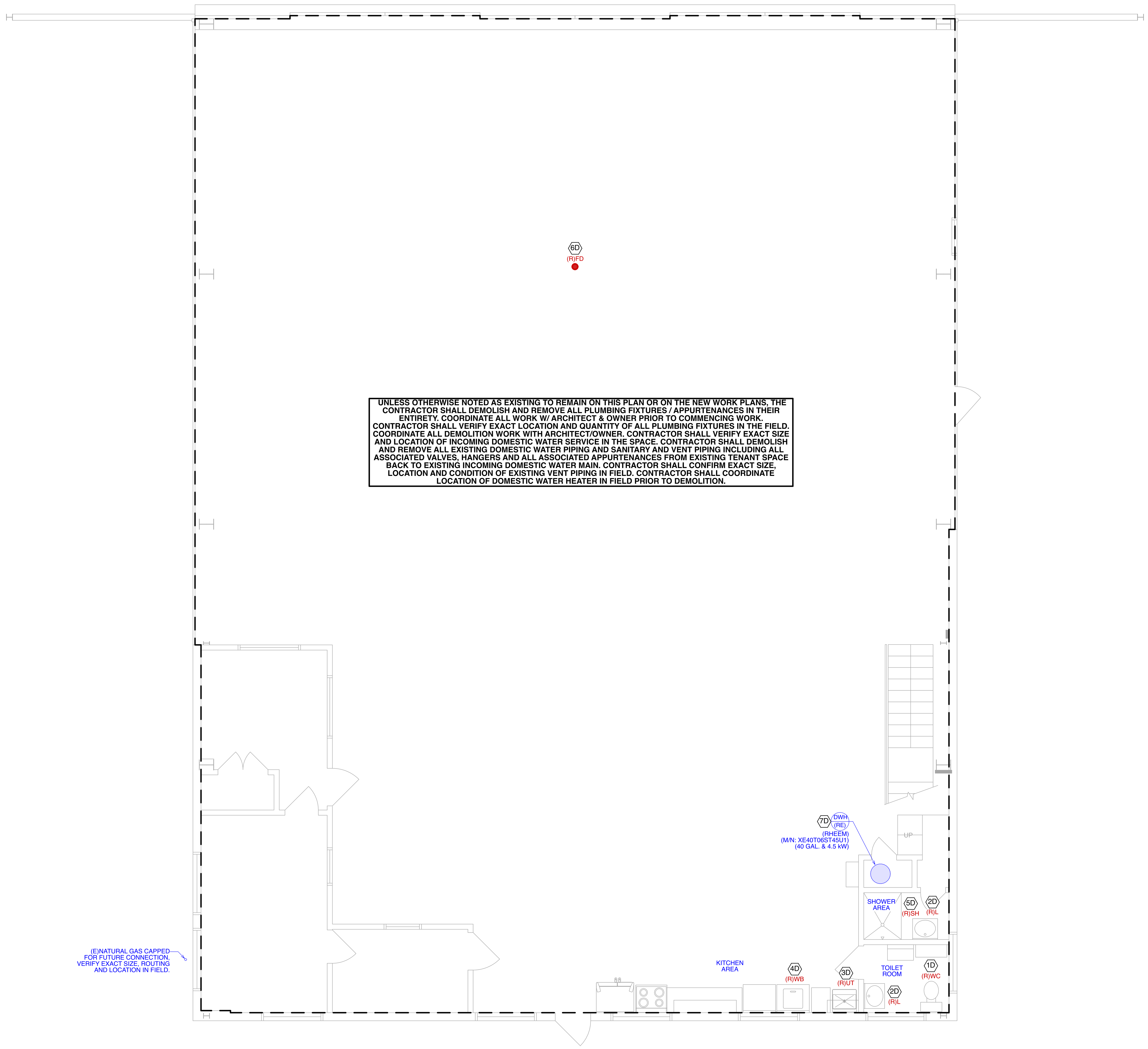
SEAL:
JEFFREY E. HOLSTEIN
NJ PE NO. 24GE04644300
NJ AUTH NO. 24GA28143700

DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

TITLE: ELECTRICAL SCHEDULES & DETAILS

SCALE:	AS NOTED
PROJ.NO.:	1336
DATE:	05/09/25
REV'D.:	
DRAWN BY:	EP
CHKD.BY:	PP

DRAWING NO: E-2.0



UNLESS OTHERWISE NOTED AS EXISTING TO REMAIN ON THIS PLAN OR ON THE NEW WORK PLANS, THE CONTRACTOR SHALL DEMOLISH AND REMOVE ALL PLUMBING FIXTURES / APPURTENANCES IN THEIR ENTIRETY. COORDINATE ALL WORK W/ ARCHITECT & OWNER PRIOR TO COMMENCING WORK. CONTRACTOR SHALL VERIFY EXACT LOCATION AND QUANTITY OF ALL PLUMBING FIXTURES IN THE FIELD. COORDINATE ALL DEMOLITION WORK WITH ARCHITECT/OWNER. CONTRACTOR SHALL VERIFY EXACT SIZE AND LOCATION OF INCOMING DOMESTIC WATER SERVICE IN THE SPACE. CONTRACTOR SHALL DEMOLISH AND REMOVE ALL EXISTING DOMESTIC WATER PIPING AND SANITARY AND VENT PIPING INCLUDING ALL ASSOCIATED VALVES, HANGERS AND ALL ASSOCIATED APPURTENANCES FROM EXISTING TENANT SPACE BACK TO EXISTING INCOMING DOMESTIC WATER MAIN. CONTRACTOR SHALL CONFIRM EXACT SIZE, LOCATION AND CONDITION OF EXISTING VENT PIPING IN FIELD. CONTRACTOR SHALL COORDINATE LOCATION OF DOMESTIC WATER HEATER IN FIELD PRIOR TO DEMOLITION.

1 **FIRST FLOOR DEMOLITION PLUMBING PLAN**
SCALE: 1/4" = 1' - 0"

DEMOLITION SHEET NOTES

1D WATER CLOSET SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.), SANITARY WASTE AND VENT PIPING (INCLUDING ESCUTCHEONS, ETC.) AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY.

2D LAVATORY AND WALL CARRIER SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD WATER AND HOT WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.), SANITARY WASTE AND VENT PIPING (INCLUDING TRAP, ESCUTCHEONS, ETC.) AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY.

3D UTILITY TUB SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD WATER AND HOT WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.), SANITARY WASTE AND VENT PIPING (INCLUDING TRAP, ESCUTCHEONS, ETC.) AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY.

4D WASHER BOX SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD WATER AND HOT WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.), SANITARY WASTE AND VENT PIPING (INCLUDING TRAP, ESCUTCHEONS, ETC.) AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY.

5D SHOWER SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD WATER AND HOT WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.), SANITARY WASTE AND VENT PIPING (INCLUDING TRAP, ESCUTCHEONS, ETC.) AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY.

6D FLOOR DRAIN SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD WATER TRAP PRIMER PIPING, SANITARY WASTE AND VENT PIPING (INCLUDING TRAP, ETC.) AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY.

7D INDICATES EXISTING DOMESTIC WATER HEATER TO BE CAREFULLY REMOVED AND STORED TO BE REINSTALLED WHEN NEW CONSTRUCTION IS COMPLETE (REFER TO ARCHITECTURAL PLANS FOR MORE INFORMATION). COLD WATER AND HOT WATER PIPING SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY.

DEMOLITION GENERAL NOTES

1. REMOVE DESIGNATED ELEMENTS AS SHOWN ON DRAWINGS.
2. ALL PLUMBING EQUIPMENT AND ASSOCIATED WATER AND SANITARY PIPING DESCRIBED SHALL BE DEMOLISHED AND REMOVED. CAP AT MAIN.
3. COMPLY WITH APPLICABLE NFPA STANDARDS WHEN TORCH CUTTING.
4. PROVIDE, ERECT AND MAINTAIN TEMPORARY BARRIERS AND SECURITY DEVICES AS REQUIRED.
5. OBTAIN WRITTEN CONSENT OF OWNER PRIOR TO TORCH CUTTING.
6. ERECT AND MAINTAIN TEMPORARY PARTITIONS TO PREVENT SPREAD OF DUST, FUMES, NOISE AND SMOKE TO PROVIDE FOR CONTINUING OWNER OCCUPANCY.
7. CONDUCT DEMOLITION TO MINIMIZE INTERFERENCE WITH ADJACENT BUILDING AREAS. MAINTAIN PROTECTED LEGAL EGRESS AND ACCESS AT ALL TIMES. KEEP REQUIRED EXIT WAYS UNENCUMBERED AT ALL TIMES AND ARTIFICIALLY LIGHTED.
8. REMOVE DEMOLISHED MATERIALS FROM SITE AS WORK PROGRESSES AND DISPOSE OF IN A PROPER, LEGAL MANNER. UPON COMPLETION OF WORK, LEAVE AREAS OF WORK IN BROOM CLEAN CONDITION AT THE END OF EACH DAY.
9. COORDINATE ALL DEMOLITION WORK WITH LANDLORD PRIOR TO SHUT DOWN THE SERVICE MAINS TO PERFORM THE REQUIRED WORK.
10. PRIOR TO COMMENCEMENT OF DEMOLITON, THE CONSTRUCTION MANAGER SHALL WALK THE PROJECT WITH THE CONTRACTOR PERFORMING THIS WORK TO CONFIRM THE EXTENT OF DEMOLITION.
11. THE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING THEIR PROPOSAL TO VERIFY ACTUAL SITE CONDITIONS AND ANY DISCOVERED DISCREPANCIES BETWEEN DRAWINGS AND SITE CONDITIONS SHALL BE BROUGHT TO THE OWNER'S ATTENTION PRIOR TO SUBMITTING THEIR BID. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION WORK EXPOSED AND CONCEALED, WHETHER OR NOT SHOWN ON DRAWINGS, NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEM. THE CONTRACTOR SHALL ALSO INCLUDE TEMPORARY REMOVAL AND REINSTALLATION OF EXISTING WORK WHEREVER NECESSARY. THE OWNER SHALL NOT ACCEPT (NOR THE CONTRACTOR PAID) EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.
12. CONTRACTOR SHALL PATCH ROOF AS REQUIRED AND SEAL WATERTIGHT (CONTRACTOR SHALL COORDINATE ALL ROOF WORK WITH EXISTING ROOF CONTRACTOR IN ORDER NOT TO VOID EXISTING ROOF WARRANTY).

EXISTING CONDITIONS NOTE

1. ALL THE EXISTING PIPE SIZES AND LOCATIONS, THE PLUMBING FIXTURE LOCATIONS AND TAGS, THE EXISTING ARCHITECTURAL FLOOR PLANS, ETC., HAVE BEEN DOCUMENTED BASED OFF PHOTOGRAPHS AND SURVEY DATA BY HOLSTEIN WHITE, INC. FROM APRIL 4, 2025.
2. ALTHOUGH THE EXISTING CONDITIONS DOCUMENTED ON THESE PLANS HAVE BEEN MODIFIED PER OBSERVATIONS IN THE FIELD, THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM FINAL FIELD VERIFICATION OF ALL OF THE EXISTING CONDITIONS PRIOR TO COMMENCING WORK TO CONFIRM ALL EXISTING CONDITIONS AND LOCATIONS OF ALL PLUMBING FIXTURES, VALVES, PIPING, ETC.

DRAWING SYMBOLS

(E)	EXISTING PLUMBING WORK TO REMAIN
	EXISTING PLUMBING WORK TO REMAIN
(R)	EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
	EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
	NEW SANITARY WORK
	NEW VENTING WORK
	NEW COLD WATER PLUMBING WORK
	NEW HOT WATER PLUMBING WORK
	NEW NATURAL GAS WORK
	POINT OF CONNECTION TO EXISTING
	POINT OF DEMOLITION, CUT AND CAP

No.	DATE	DESCRIPTION	REV'D BY
	05/09/25	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:
RENOVATION AT WOODBINE MUNICIPLE AIRPORT HANGAR #5
675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

HOLSTEIN WHITE ENGINEERS
3800 Horizon Blvd., Suite 503
Trevose, PA 19053
O: (215)-322-7711
F: (215)-322-7709
www.holsteinwhite.com

TITLE:
FIRST FLOOR DEMOLITION PLUMBING PLAN

SEAL:
SCOTT A. WHITE
NJ PE NO. 24GE04677900
NJ AUTH NO. 24GA28143700

DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

SCALE:	AS NOTED
PROJ.NO.:	1336
DATE:	05/09/25
REV'D.:	BA
DRAWN BY:	RY
CHKD.BY:	BA I SW

DRAWING NO:
DP-1.0

SHEET NOTES

1. CONTRACTOR SHALL INSPECT AND VIDEOSCOPE EXISTING SANITARY MAIN TO VERIFY THE FOLLOWING: LOCATION, DEPTH, DIRECTION OF FLOW AND CONDITION OF THE EXISTING SEWER LATERAL. CONTRACTOR SHALL SUBMIT A COPY OF THE VIDEOSCOPE, IF THERE ARE REPAIRS REQUIRED TO REUSE EXISTING SANITARY LATERAL. A PROPOSED COST BREAKDOWN SHALL BE SUBMITTED TO THE OWNER AND ARCHITECT FOR REVIEW.
2. CONTRACTOR SHALL EXTEND AND CONNECT NEW SANITARY PIPING TO NEAREST APPROPRIATELY SIZED EXISTING SANITARY MAIN. CONTRACTOR SHALL VERIFY EXACT SIZE AND LOCATION IN FIELD.

DRAWING NOTES

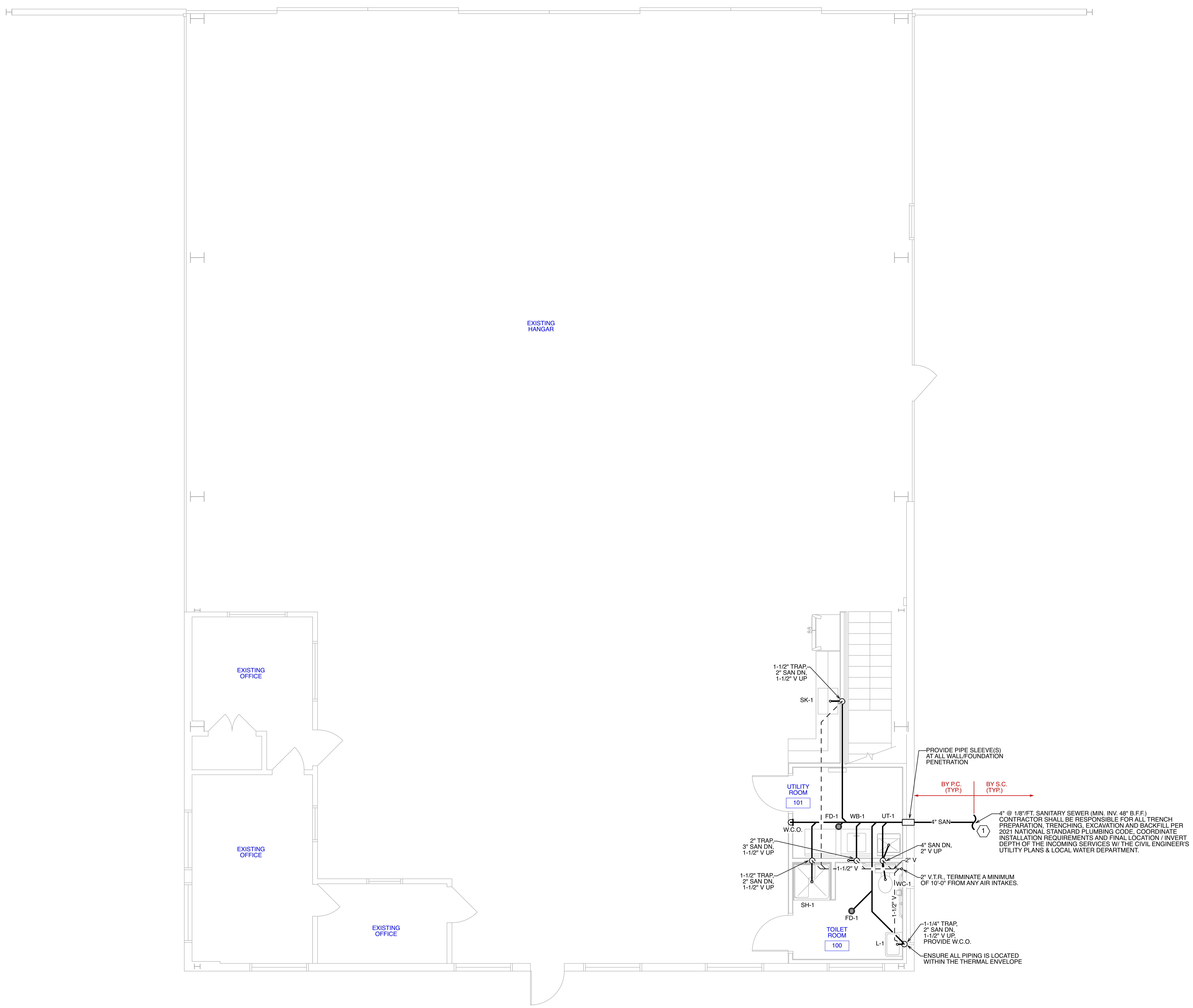
1. REFER TO ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATIONS OF ALL THE FURNITURE, PLUMBING FIXTURES, AND EQUIPMENT.
2. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL UNDERGROUND PIPING WITH THE LOCATION OF ALL FOOTERS AND EXISTING UTILITY PIPING.
3. CONTRACTOR SHALL VERIFY THE EXACT SIZE AND LOCATION OF EXISTING SANITARY AND DOMESTIC WATER PIPING IN THE FIELD. COORDINATE THE INSTALLATION OF THE NEW PIPING WITH THE EXISTING LOCATION.
4. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE NEW PIPING WITH THE LOCATION OF THE PIPING, DUCT WORK, EQUIPMENT, ARCHITECTURAL PLANS, AND STRUCTURAL ELEMENTS IN THE FIELD.
5. ALL PIPING CONNECTIONS ARE SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL VERIFY FINAL CONNECTION POINTS IN FIELD.
6. CONTRACTOR SHALL COORDINATE FINAL LOCATION OF ALL ROOF AND EXTERIOR WALL PENETRATIONS IN THE FIELD WITH LANDLORD PRIOR TO ROUGHING-IN.
7. CONTRACTOR SHALL COORDINATE ALL DOMESTIC WATER PIPING WITHIN THERMAL ENVELOPE OF THE BUILDING TO PREVENT FREEZING.
8. CONTRACTOR SHALL COORDINATE ALL ROOF PENETRATIONS WITH EXISTING ROOFING CONTRACTOR AS TO NOT VOID ROOF WARRANTY.

EXISTING CONDITIONS NOTE

1. ALL THE EXISTING PIPE SIZES AND LOCATIONS, THE PLUMBING FIXTURE LOCATIONS AND TAGS, THE EXISTING ARCHITECTURAL FLOOR PLANS, ETC., HAVE BEEN DOCUMENTED BASED OFF PHOTOGRAPHS AND SURVEY DATA BY HOLSTEIN WHITE, INC. FROM APRIL 4, 2025.
2. ALTHOUGH THE EXISTING CONDITIONS DOCUMENTED ON THESE PLANS HAVE BEEN MODIFIED PER OBSERVATIONS IN THE FIELD, THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM FINAL FIELD VERIFICATION OF ALL OF THE EXISTING CONDITIONS PRIOR TO COMMENCING WORK TO CONFIRM ALL EXISTING CONDITIONS AND LOCATIONS OF ALL PLUMBING FIXTURES, VALVES, PIPING, ETC.

DRAWING SYMBOLS

(E) EXISTING PLUMBING WORK TO REMAIN
EXISTING PLUMBING WORK TO REMAIN
(R) EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
NEW SANITARY WORK
NEW VENTING WORK
NEW COLD WATER PLUMBING WORK
NEW HOT WATER PLUMBING WORK
NEW NATURAL GAS WORK
POINT OF CONNECTION TO EXISTING
POINT OF DEMOLITION, CUT AND CAP



1 FIRST FLOOR SANITARY PLAN

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

No.	DATE	DESCRIPTION	REV'D BY
	05/09/25	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:

RENOVATION AT WOODBINE MUNICIPLE AIRPORT HANGAR #5

675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

TITLE: FIRST FLOOR SANITARY PLAN

HOLSTEIN WHITE ENGINEERS
3800 Horizon Blvd., Suite 503
Trevose, PA 19053
O: (215)-322-7711
F: (215)-322-7709
www.holsteinwhite.com

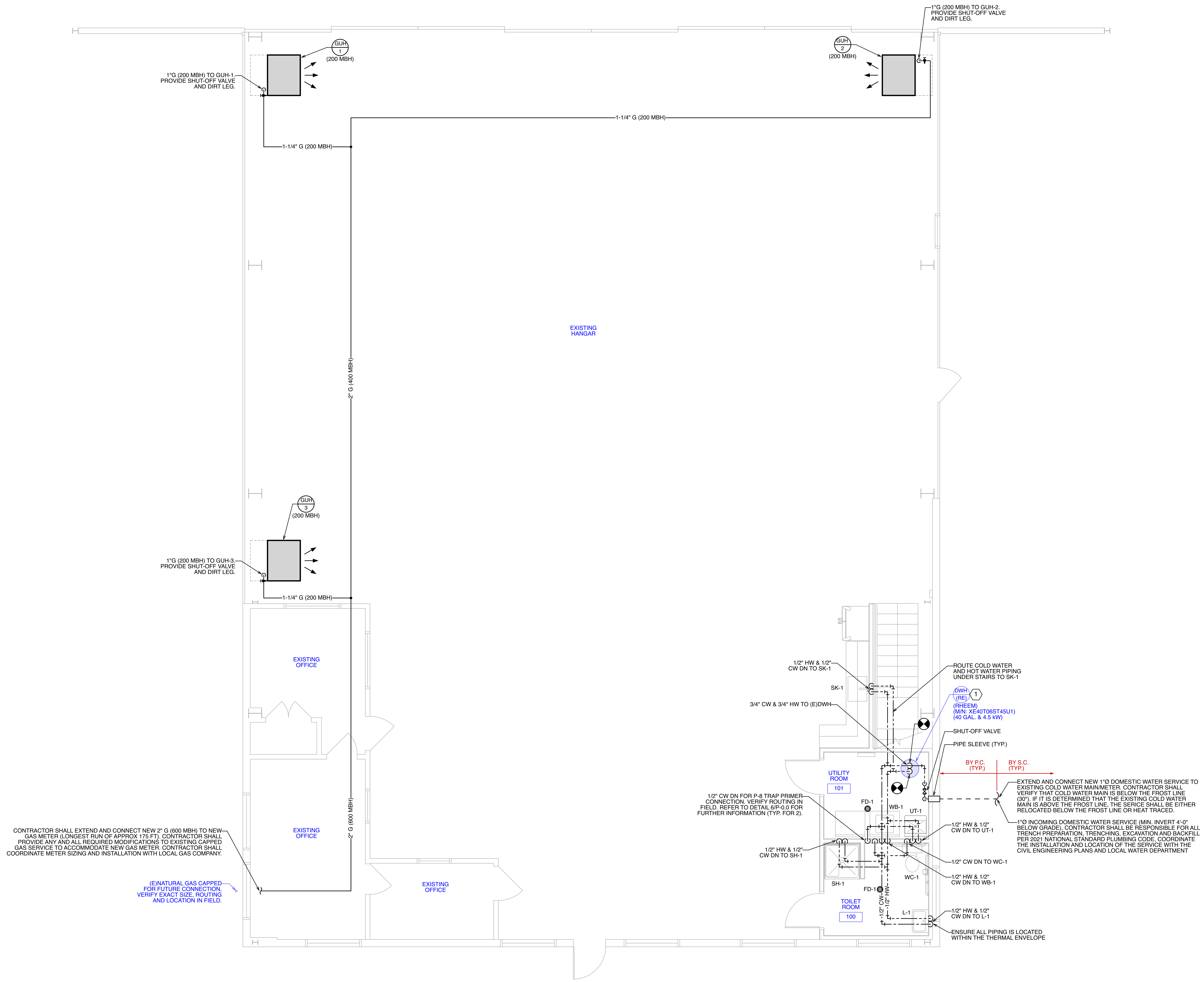
SEAL:

SCOTT A. WHITE
NJ PE NO. 24GE04677900
NJ AUTH NO. 24GA28143700

DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

SCALE: AS NOTED
PROJ.NO.: 1336
DATE: 05/09/25
REV'D.: BA
DRAWN BY: RY
CHKD.BY: BA I SW

DRAWING NO: P-1.0



1 **FIRST FLOOR DOMESTIC WATER PLAN**
SCALE: 1/4" = 1' - 0"

SHEET NOTES

1. CONTRACTOR SHALL REINSTALL EXISTING DOMESTIC WATER HEATER IN INDICATED NEW LOCATION WHEN NEW CONSTRUCTION IS COMPLETE (REFER TO ARCHITECTURAL PLANS FOR MORE INFORMATION). CONTRACTOR SHALL TEST AND INSPECT RELOCATED DOMESTIC WATER HEATER TO ENSURE THAT IT IS FULLY FUNCTIONAL.

DRAWING NOTES

1. REFER TO ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATIONS OF ALL THE FURNITURE, PLUMBING FIXTURES, AND EQUIPMENT.
2. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL UNDERGROUND PIPING WITH THE LOCATION OF ALL FOOTERS AND EXISTING UTILITY PIPING.
3. CONTRACTOR SHALL VERIFY THE EXACT SIZE AND LOCATION OF EXISTING SANITARY AND DOMESTIC WATER PIPING IN THE FIELD. COORDINATE THE INSTALLATION OF THE NEW PIPING WITH THE EXISTING LOCATION.
4. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE NEW PIPING WITH THE LOCATION OF THE PIPING, DUCT WORK, EQUIPMENT, ARCHITECTURAL PLANS, AND STRUCTURAL ELEMENTS IN THE FIELD.
5. ALL PIPING CONNECTIONS ARE SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL VERIFY FINAL CONNECTION POINTS IN FIELD.
6. CONTRACTOR SHALL COORDINATE FINAL LOCATION OF ALL ROOF AND EXTERIOR WALL PENETRATIONS IN THE FIELD WITH LANDLORD PRIOR TO ROUGHING-IN.
7. CONTRACTOR SHALL COORDINATE ALL DOMESTIC WATER PIPING WITHIN THERMAL ENVELOPE OF THE BUILDING TO PREVENT FREEZING.
8. CONTRACTOR SHALL COORDINATE ALL ROOF PENETRATIONS WITH EXISTING ROOFING CONTRACTOR AS TO NOT VOID ROOF WARRANTY.

EXISTING CONDITIONS NOTE

1. ALL THE EXISTING PIPE SIZES AND LOCATIONS, THE PLUMBING FIXTURE LOCATIONS AND TAGS, THE EXISTING ARCHITECTURAL FLOOR PLANS, ETC., HAVE BEEN DOCUMENTED BASED OFF PHOTOGRAPHS AND SURVEY DATA BY HOLSTEIN WHITE, INC. FROM APRIL 4, 2025.
2. ALTHOUGH THE EXISTING CONDITIONS DOCUMENTED ON THESE PLANS HAVE BEEN MODIFIED PER OBSERVATIONS IN THE FIELD, THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM FINAL FIELD VERIFICATION OF ALL OF THE EXISTING CONDITIONS PRIOR TO COMMENCING WORK TO CONFIRM ALL EXISTING CONDITIONS AND LOCATIONS OF ALL PLUMBING FIXTURES, VALVES, PIPING, ETC.

DRAWING SYMBOLS

(E)	EXISTING PLUMBING WORK TO REMAIN
	EXISTING PLUMBING WORK TO REMAIN
(R)	EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
	EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
	NEW SANITARY WORK
	NEW VENTING WORK
	NEW COLD WATER PLUMBING WORK
	NEW HOT WATER PLUMBING WORK
	NEW NATURAL GAS WORK
	POINT OF CONNECTION TO EXISTING
	POINT OF DEMOLITION, CUT AND CAP

GAS PIPING NOTES

1. ALL GAS PIPING SHALL BE INSTALLED PER THE REQUIREMENTS OF IFGC 2021.
2. ALL EXPOSED EXISTING AND NEW GAS PIPING & FITTING SHALL BE COATED OR WRAPPED WITH A CORROSION-RESISTANT MATERIAL.
3. 2" GAS (600 MBH) SIZED FOR LONGEST RUN OF 175 FT FROM METER PER IFGC 2021, TABLE 402.4(1), LESS THAN 2 PSI, 0.3 IN. W.C. PRESSURE DROP, & 0.60 SPECIFIC GRAVITY.

No.	DATE	DESCRIPTION	REV'D BY
	05/09/25	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:
RENOVATION AT WOODBINE MUNICIPLE AIRPORT HANGAR #5
675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

TITLE: FIRST FLOOR DOMESTIC WATER PLAN

HOLSTEIN WHITE ENGINEERS
3800 Horizon Blvd., Suite 503
Trevose, PA 19053
O: (215)-322-7711
F: (215)-322-7709
www.holsteinwhite.com

SEAL:
SCOTT A. WHITE
NJ PE NO. 24GE04677900
NJ AUTH NO. 24GA28143700

DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

SCALE:	AS NOTED
PROJ.NO.:	1336
DATE:	05/09/25
REV'D.:	BA
DRAWN BY:	RY
CHKD.BY:	BA I SW

DRAWING NO: P-1.1

PLUMBING FIXTURE SCHEDULE

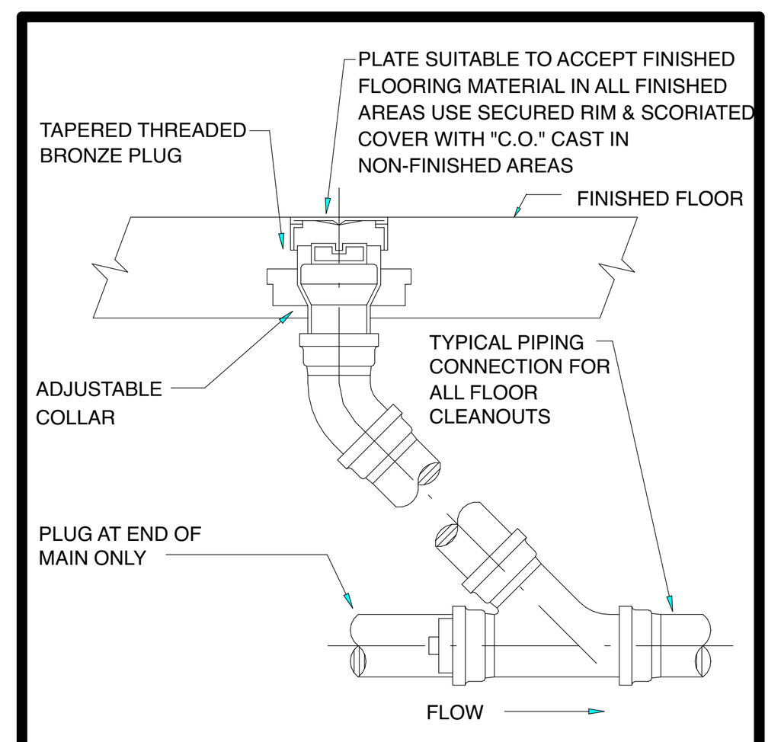
NOTE: ALL PLUMBING FIXTURES AND FAUCETS SHALL BE PROVIDED IN CUSTOM COLORS AND FINISHES. COORDINATE COLOR & FIXTURE SELECTION WITH THE ARCHITECT AND OWNER.

Tag	Fixture Type	Mount	Fixture Mftr./Model #	Domestic Water		Sanitary		Faucet Mftr./Model #	FlushValve Mftr./Model #	Seat Mftr./Model #	Remarks
				CWS	HWS	Drain	Trap				
WC-1	Water Closet ADA	Floor	American Standard 2467.016	1/2"	---	4"	Integral	---	---	American Standard 55003A00B	Floor-mounted, vitreous china, power assist, coupled tank type with elongated siphon action reverse trap bowl, white solid plastic open front seat and china bolt covers, 1.6 gpf. Coordinate side of handle with approach side.
L-1	Lavatory ADA	Wall-Hung	American Sandard 0355.012	1/2"	1/2"	1-1/4"	1-1/4"	Elkay LK422L4	---	---	Wall-hung, handicap lavatory, vitreous china with front over flow. P-trap, drain, trim, stops, offset tailpiece with metal grid strainer, J. R Smith lavatory support with concealed arms 0700, single lever handle faucet, hot limit safety stop (adjust during installation), & Truebro LavGuard to cover all exposed piping located under the lavatory. Provide thermostatic mixing valve set at 110ºF.
SK-1	Sink	Countertop	Elkay LRAD191855	1/2"	1/2"	1-1/2"	1-1/2"	American Standard 7502.175	---	---	Countertop, single bowl, stainless steel with lustrous finish, rear center drain placement, P-trap, drain, trim, stops, wrist blade handles, swivel gooseneck spout, and metal grid strainer. Provide thermostatic mixing valve set at 110ºF.
WB-1	Wall Box	Wall	Guy Gray WB200HA	1/2"	1/2"	2"	2"	---	---	---	Provide Backflow Preventor on supply lines. Water Tight All Welded Construction & Water Hammer Arrestors.
UT-1	Sink	Floor	Mustee 14CP	1/2"	1/2"	1-1/2"	1-1/2"	Included	---	---	One piece molded construction, Co-Polypure resin, 4" center set, 6" swing spout faucet with aerator and hose end, two 20" flexible supply lines and sealant tape, 1-1/2" PVC P-trap with 12" tailpiece, drain stopper. Provide thermostatic mixing valve set at 110ºF.
FD-1	Floor Drain	Floor	Josam 30004-7E	1/2"	---	3"	3"	---	---	---	Cast iron floor drain with double drainage flange, weep holes, bottom outlet, flashing-clamping device and nickel chrome adjustable strainer. If furnished with indirect wastes - 6" funnels, model F-6 cast brass finished to match the grate, or partial type grates all factory fabricated by the drain manufacturer and completely finished to match the grate. Trap Primer connection.
SH-1	Shower	Floor	Comfort Design SSS3636SH-WHG	1/2"	1/2"	1-1/2"	1-1/2"	Delta T13220	---	---	Solid surface finish, GripSure textured floor, one piece design. Provide universal rough in valve R1000-UNWS, diverter rough in valve R11000, shower diverter T11800.

Notes:
1. Provide Water Hammer Arrestors similar to P.P.P., Industries Series SWA on the domestic water branch pipes serving the flush valve fixtures. Install and size per manufacturer's recommendations.
2. Provide Trap Primer Valves similar to P.P.P., Inc. Series PR-500 for all floor drains and floor sinks. Install and size per manufacturer's recommendations.
3. All Floor Cleanouts (F.C.O) shall be similar to Jay R. Smith 4040.
4. All Wall Cleanouts (W.C.O) shall be similar to Jay R. Smith 4710.

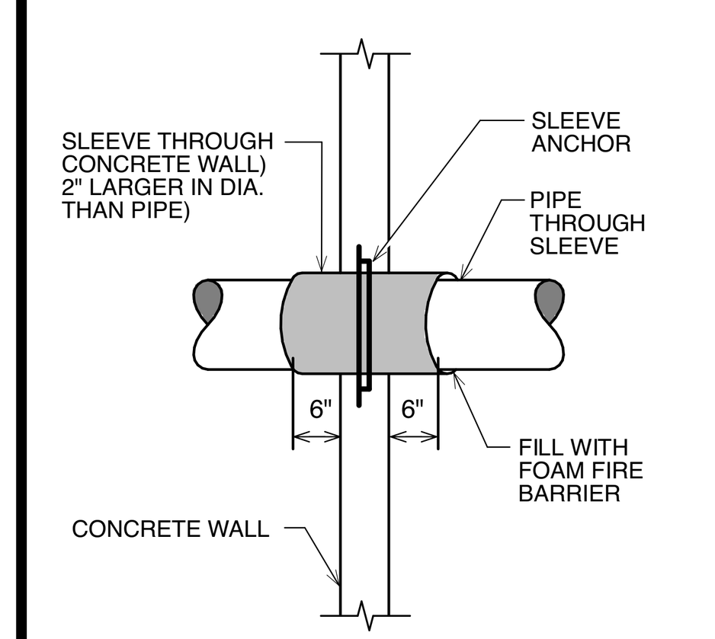
MATERIAL AND INSULATION SCHEDULE

	Material		Insulation				
System	Basis of Design	Alternate	Basis of Design	Type	Wall (in)	Vapor Barrier	Remarks
Domestic CW - Above Grade	Type "L" Copper	PEX-A	Certainteed	500° Snap On	1/2	Yes	Lead free solder shall conform to ASTM B32, Flux shall Conform to ASTM B813
Domestic HW - Above Grade	Type "L" Copper	PEX-A	Certainteed	500° Snap On	1	Yes	Lead free solder shall conform to ASTM B32, Flux shall Conform to ASTM B813
Sanitary Piping - Above Grade	Cast Iron	Sch.40 PVC Solid Wall	------	------	------	------	
Sanitary Piping - Below Grade	Cast Iron	Sch.80 PVC Solid Wall	------	------	------	------	
Sanitary Vent Piping	Cast Iron	Sch.40 PVC Solid Wall	------	------	------	------	
Natural Gas Piping	Sch. 40 Black Steel	------	------	------	------	------	Comply with Utility company standards.



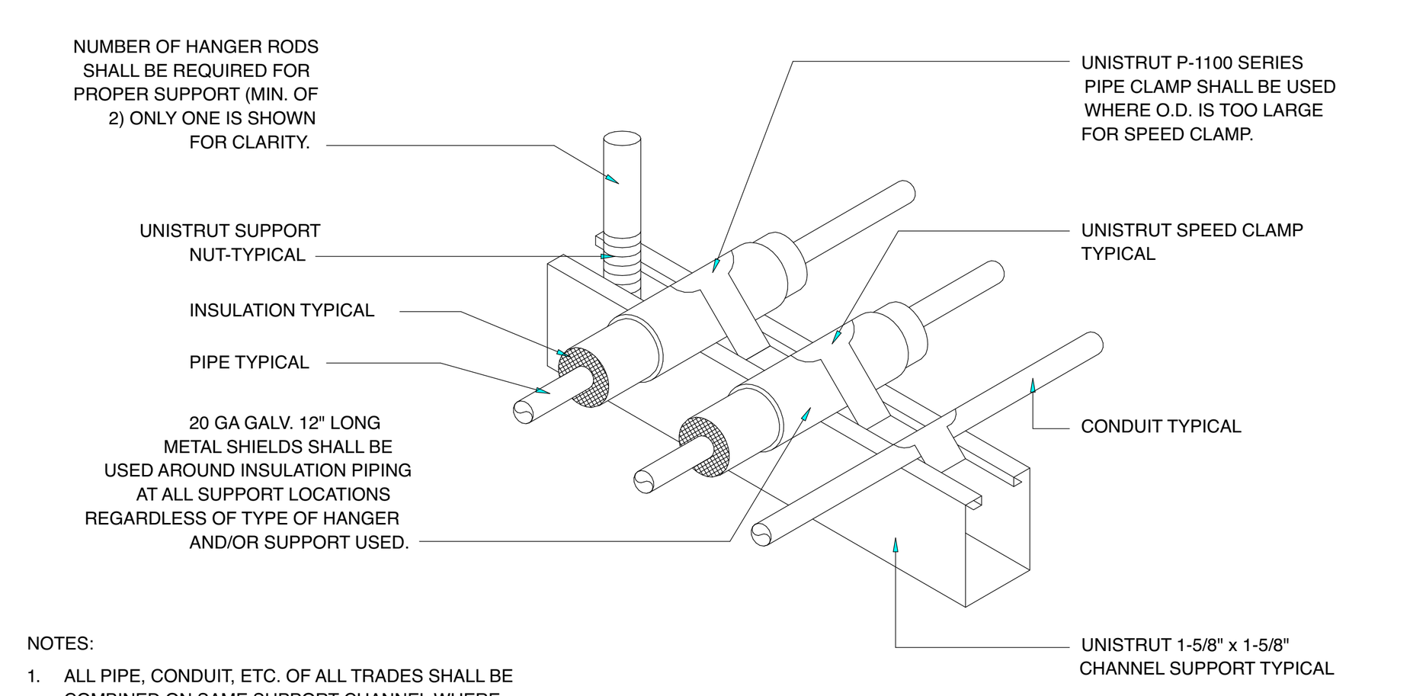
1 **TYPICAL CLEAN OUT DETAIL**

NOT TO SCALE



2 **PIPE SLEEVE DETAIL**

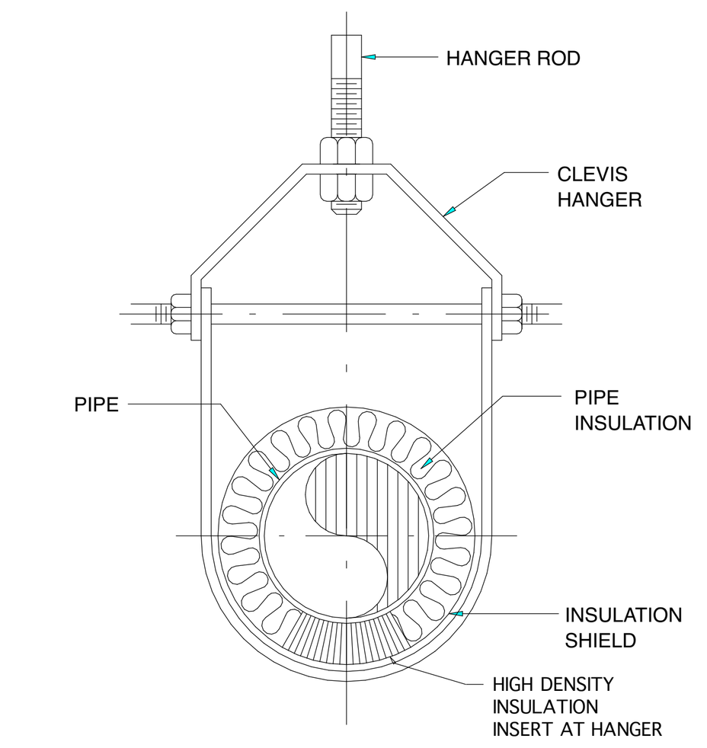
NOT TO SCALE



NOTES:
1. ALL PIPE, CONDUIT, ETC. OF ALL TRADES SHALL BE COMBINED ON SAME SUPPORT CHANNEL WHERE PRACTICAL.
2. SUPPORT CHANNEL LENGTH SHALL NOT BE DETERMINED UNTIL ALL PIPING, CONDUIT, ETC. TO BE SUPPORTED AS COORDINATED.
3. SUPPORT CHANNEL SPACING SHALL BE NO MORE THAN 10'-0".

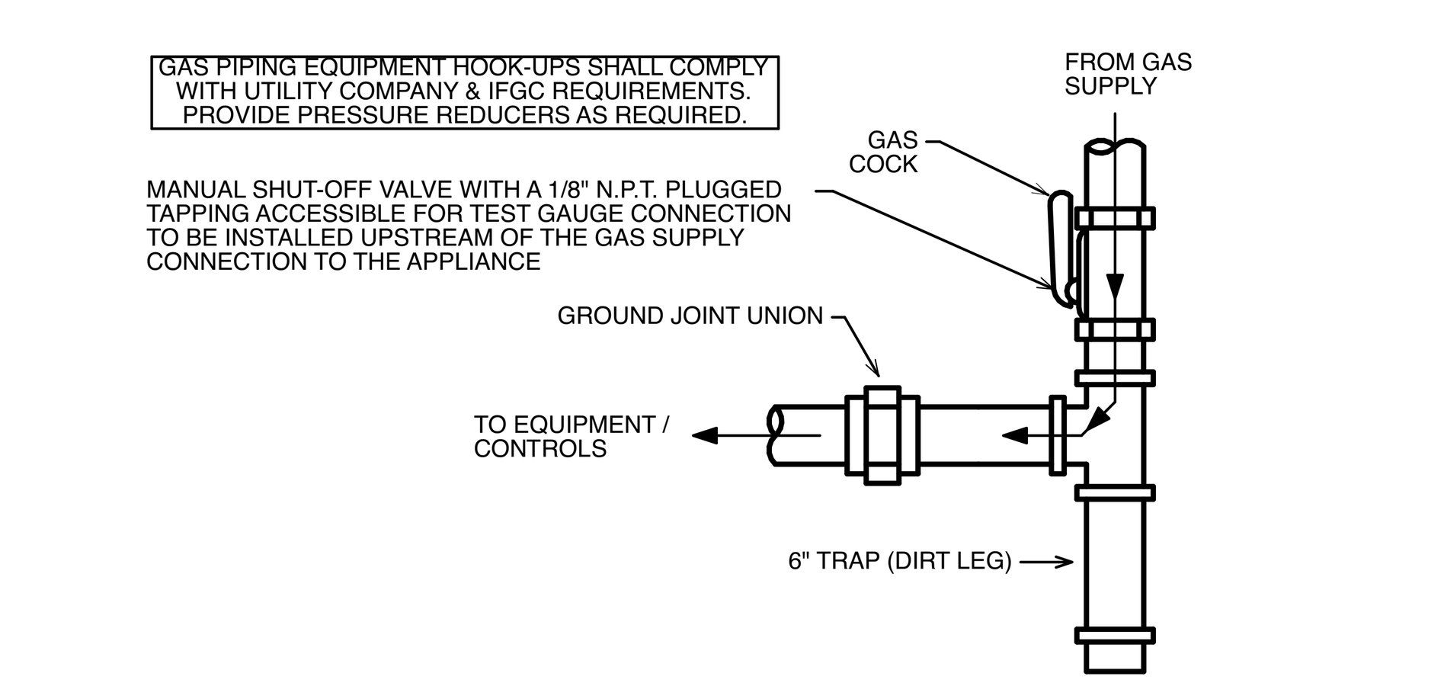
3 **PIPING SUPPORT DETAIL**

NOT TO SCALE



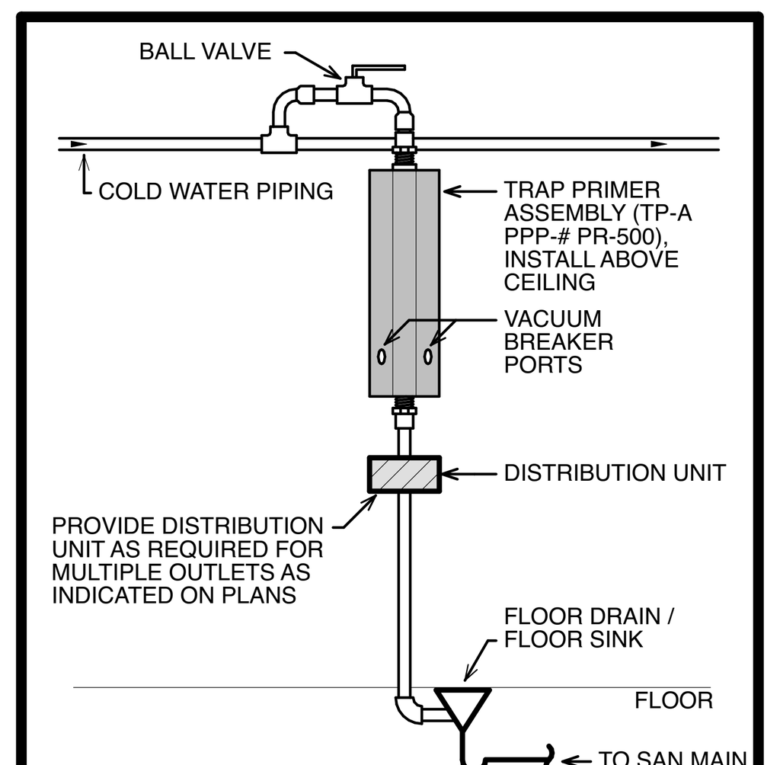
4 **CLEVIS HANGER DETAIL**

NOT TO SCALE



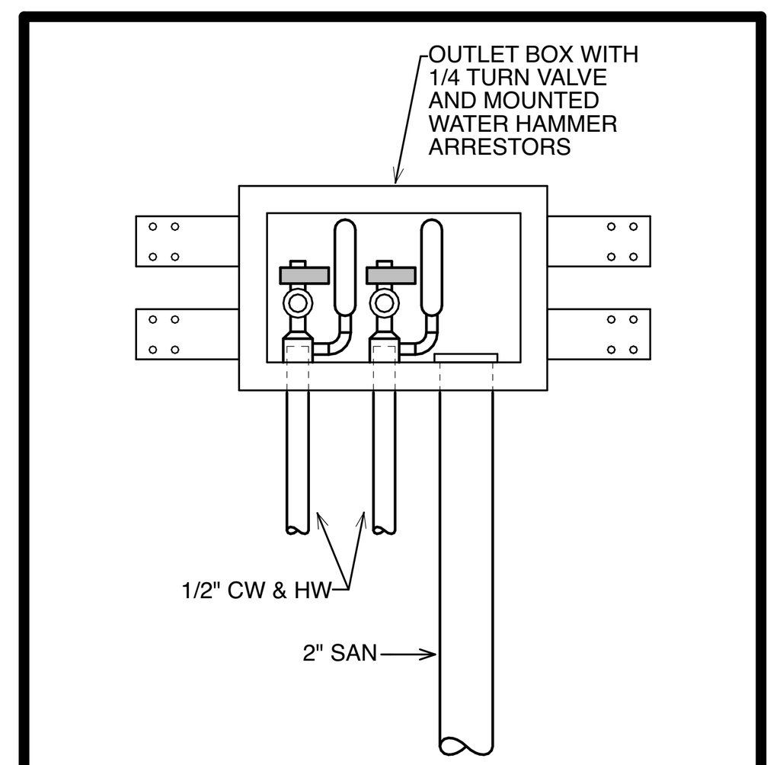
5 **TYPICAL GAS-FIRED EQUIPMENT SUPPLY PIPING DETAIL**

NOT TO SCALE



6 **TRAP PRIMER DETAIL**

NOT TO SCALE



7 **WASHER WALL BOX DETAIL**

NOT TO SCALE

PLUMBING SPECIFICATIONS

GENERAL WORK:

1. The Contractor shall provide all labor, materials, tools, apparatus and equipment required to complete his work in accordance with the contract documents, codes, laws and ordinances, and accepted trade procedures.
2. In preparing his estimate, the contractor shall review all of the contract documents including those of the other trades in order to acquaint himself with existing and related conditions that may, will, or could affect his work. He shall be experienced, skilled, and knowledgeable with this type of construction and shall be expert and proficient in the preparation of estimates and the comprehension, implementation, and interpretation of contract documents such as those prepared for this project.
3. The contractor by his acceptance of the contract guarantees that all work installed shall be free from all defects in workmanship and materials and that all apparatus furnished by him shall develop the capacities and characteristics specified. He further guarantees that if, during a period of one (1) year from the date of the certificate of completion and acceptance of the work, any such defects in workmanship, material or performance appear, such defects shall be remedied by him without cost to the owner. If the contractor fails to remedy the defects as outlined within a reasonable length of time, to be specified in a notice from the owner's authorized representative to the contractor, the owner will have such work done, and he will charge the cost to the contractor.
4. The contractor shall visit the site before he submits his proposal. He shall examine all existing conditions which affect the work. The submission of the proposal shall be considered evidence that this requirement has been fulfilled. No extra payment will be allowed for additional work made necessary by the failure to visit the site.
5. Plumbing work shall be installed in a neat and workmanlike manner in accordance with latest and best practices of the trade. Only mechanics skilled in this type of Work shall be employed and utilized by Contractor for this Division in the execution of this Work.
6. The contract drawings are diagrammatic and indicate the general arrangement of all systems and work included in the contract. The contract drawings are not to be scaled. The architectural contract drawings and details together with the other contract documents shall be examined for all dimensional information.
7. The contractor shall follow the contract drawings in laying out his work, and he shall also check the contract drawings of the other trades to verify spaces in which his work shall be provided.
8. The contractor shall, without additional costs to the owner, make reasonable modifications in the layout of his work in order to prevent conflicts with the work of other trades or for the proper execution of his work.
9. The contractor shall supply all labor required to perform all work which may be claimed by trade organizations within his jurisdiction. All work shall be performed without any additional cost to the owner irregardless of which section of the contract documents the work is described. The contractor shall be responsible to verify with all local organizations the extent of any collective bargaining agreements and/or any jurisdictional decisions rendered regarding disputes between the respective trades, and provide and install his work in accordance with the accepted trade practice in the area.
10. The entire installation shall conform with all pertinent codes and regulations of the local, municipal, county, state, and federal authorities, The National Board of Fire Underwriters, the 2021 National Standard Plumbing Code (NJ Edition), the codes of the International Code Council, the National Fire Protective Association and all other regulatory bodies having jurisdiction. All materials and equipment shall bear the stamps or seals of the NFPA, ASME, NEMA, IEEE, UL and other recognized industry regulatory groups.
11. The contractor shall give all necessary notices, obtain all permits, pay all governmental taxes, fees and other costs in connection with his work. He shall file all necessary plans, and prepare all other documents including additional detailed plans that are required for compliance with all applicable laws, ordinances, rules and regulations.
12. The Contractor shall coordinate with the General Contractor and locate all required cutting and patching and the like required by the installation of the plumbing work.
13. All work shall be installed in strict accordance with the equipment manufacturer's recommendations and requirements. All systems are to be tested, adjusted and balanced to provide performance as indicated on the drawings. Test and adjust all safety controls.
14. Coordinate to assure that all work of all trades will be concealed within the wall and ceiling construction and without the need to reduce ceiling heights. Report exceptions to the Architect prior to construction and erection of the work. Openings around piping passing through the construction shall be sealed with fire barrier caulking. All materials located within the return air plenum shall be non-combustible with flame spread ratings of 25 or less and smoke developed ratings of 50 or less. All control wiring located within ceiling return air plenums shall be plenum rated or shall be run in conduit. All work shall be located to avoid conflicts with other work and provide adequate clearances for architectural design, proper operation, adjustments,, component service, and provide a minimum 2" clearance between all piping and other work.
15. Provide supports, hangers, flexible pipe connections, vibration isolation, supplementary supports, controls and wiring, cleaning, painting, specialties and all other labor, materials, devices and services required for a complete, first quality installation. All work shall be supported from the building structural system. Work shall not be supported from the ceiling suspension system, from electrical work, nor from other mechanical work. Unless otherwise indicated, run all piping as high as possible. Provide starters for all motor driven equipment.
16. The contractor shall provide and maintain in good order a complete set of blueline prints of the contract drawings. As the work progresses, the actual location of all work shall be clearly recorded, including all changes to the contract and equipment size and type. These prints shall be available at the site for inspection at all times. At the conclusion of the work, the contractor shall, at his own expense, obtain a set of reproducibles of the original contract drawings, and utilizing the symbols on the contract drawings, shall incorporate all "as built" data in a clearly legible and reproducible manner. All schedules shall be corrected to indicate "as built" conditions. All revisions shall be incorporated on these reproducibles including all sketches and written directives. All concealed equipment, mainfeeders, pull and junction boxes, etc. shall be dimensionally located from the building structure. As a condition for acceptance of the work, the "as built" reproducibles and one (1) set of prints shall be signed, dated and delivered to the engineer.

PLUMBING:

1. All shutoff valves, fixture trims, and plumbing specialties shall be Lead Free per the current regulations.
2. All shutoff valves shall be ball or gate valves. All valves shall be bronze, 125 psi WP, solid wedge disc, non-rising stem, soldered ends. Provide shut-off valves for all connected equipment and plumbing fixtures.
3. The Contractor shall provide a sanitary drain from all fixtures. The Contractor shall provide all required vent piping for all fixtures installed. Pitch Drainage Piping Equal or Smaller than 3"Ø at 1/4" per foot, Pitch Drainage Piping 4"Ø or Larger at 1/8" per foot.
4. Provide cleanouts in new sanitary and piping 50 feet on centers on all horizontal piping, at direction changes of 45° or more, and elsewhere required by codes. Cleanouts accessible through walls shall be provided with chrome-plated covers and frame, in floors with recessed top to receive floor finishing material.
5. The Contractor shall sterilize all new domestic water piping as required by the plumbing code and the Health Department. The plumbing contractor shall provide water hammer arresters as required. Water hammer arresters: Smith Series 5000 stainless steel Hydrotrols, P.D.I. certified and A.S.S.E. approved.
6. Alternate sanitary vent piping shall be standard weight uncoated cast iron bell and spigot soil pipe and fittings conforming to ASTM A74 with caulked oakum and lead joints, no-hub if permitted by code, DWV Copper, or standard weight galvanized steel with galvanized cast iron banded and recessed screwed drainage fittings, ASTM A126. Alternate sanitary piping within the building shall be standard weight, uncoated cast iron bell and spigot soil pipe and fittings conforming to ASTM A 74 with caulked oakum and lead joints or DWV copper. Codes permitting, no-hub may be used.
7. Provide thermostatic mixing valve at each lavatory, exam room sink, and any sink where hand washing will take place. The mixing valve shall be similar to Powers Model LFe480, with the following devices: union inlet strainers, check stops, and shutoff valves. Mixing valve shall be installed under the counter or fixture being served. Install per manufacturer's recommendations. Leaving water temperature shall be adjusted to 110ºF.
8. Provide trap primers for all floor drains. Trap primers shall be supplied with a 1/2" cold water branch pipe. The pipe shall be installed below grade and insulated with 1" Armaflex.
9. Floor Drains shall be installed according to the 2021 National Standard Plumbing Code (NJ Edition).
10. All Plumbing must be tested and approved by plumbing inspector and meet the requirements of the 2021 National Standard Plumbing Code (NJ Edition).
11. All potable water outlets shall be protected from cross connection as required per the 2021 National Standard Plumbing Code (NJ Edition) and local utility rules and regulations.
12. Provide an unconditional one-year written guarantee to replace or repair all defective work.
13. All hole drilling for pipe hangers or floor and wall penetrations shall be by the Plumbing Contractor for Plumbing work.
14. All piping shall be supported by pipe hangers of similar material as pip ng being supported. Suspend from building structure with spacing of hangers not to exceed requirements of the latest edition of the IBC 2021 and the 2021 National Standard Plumbing Code (NJ Edition) as well as the local authority having jurisdiction. Do not use wire or perforated metal strap to support piping. Do not rest piping on any part of building structure for support. Provide all necessary hangers, inserts, supports required to properly support the equipment and piping. Hanger and supports shall be made of the same material as the material of pipe or equipment which is being supported.
15. All plumbing fixtures and fixture trim shall be provided as specified herein. Fixtures shall be complete with all necessary wall hangers & supports, supply stop valves, 17-gauge chrome-plated brass drainage fittings & p-trap, and chrome-plated escutcheons. All exposed piping shall be chrome-plated brass. all fixtures shall be installed level and plumb according to manufacturer's recommendations and code requirements. Provide mildew resistant joint sealant similar to Phenoseal vinyl adhesive caulk.
16. Seismic protection for the Plumbing system shall be provided as required by the IBC 2021.
17. All gas piping, electric, and other rooftop utilities are to be run from below and brought directly to the machinery they service.
18. Contractor to X-Ray slab/floor for utilities prior to saw cutting, coring, or demolition of floors.
19. All trenches to be backfilled and compacted to 95% compaction, or filled with 3/4" clean stone. Landlord to inspect compaction prior to pouring concrete.

ELECTRICAL COORDINATION

1. IT SHALL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO COORDINATE THE LOCATIONS OF PIPING WITH THE ELECTRICAL CONTRACTOR. PLUMBING PIPING SHALL NOT BE INSTALLED WITHIN THE DEDICATED EQUIPMENT SPACE REQUIRED FOR EXISTING OR NEW ELECTRICAL EQUIPMENT.
2. COORDINATION OF PIPING LOCATIONS SHALL BE SOLELY THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR. APPROVAL OF PLUMBING SUBMITTAL DRAWINGS DOES NOT RELEASE THE CONTRACTOR FROM COORDINATION RESPONSIBILITY. FINAL COORDINATION SHALL OCCUR IN FIELD WITH ELECTRICAL CONTRACTOR. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN RELOCATION OF SUPPRESSION SYSTEM PIPING AT CONTRACTOR'S EXPENSE.
3. PER NFPA 70, ARTICLE 110.26(F); DEDICATED EQUIPMENT SPACE SHALL APPLY TO SWITCHBOARDS, DISTRIBUTION PANELS, AND MOTOR CONTROL CENTERS. THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE EQUIPMENT AND EXTENDING FROM THE FLOOR TO A HEIGHT OF 6' ABOVE THE EQUIPMENT OR TO THE STRUCTURAL CEILING, WHICHEVER IS LOWER, SHALL BE DEDICATED TO THE ELECTRICAL INSTALLATION. NO PIPING, DUCTS, LEAK PROTECTION APPARATUS, OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION SHALL BE LOCATED IN THIS ZONE.

No.	DATE	DESCRIPTION	REV'D BY
	05/09/25	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:
RENOVATION AT WOODBINE MUNICIPLE AIRPORT HANGAR #5
675 HENRY DECINQUE BLVD.
WOODBINE, NJ 08270

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

TITLE: PLUMBING SCHEDULES & DETAILS

HOLSTEIN WHITE ENGINEERS
3800 Horizon Blvd., Suite 503
Trevose, PA 19053
O: (215)-322-7711
F: (215)-322-7709
www.holsteinwhite.com

SEAL:
SCOTT A. WHITE
NJ PE NO. 24GE04677900
NJ AUTH NO. 24GA28143700

DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

SCALE: AS NOTED
PROJ.NO.: 1336
DATE: 05/09/25
REV'D.: BA
DRAWN BY: RY
CHKD.BY: BA I SW

DRAWING NO: P-2.0