PUBLIC SAFETY FACILITY

1249 MAIN STREET, ST. JOHNSBURY, VT

ISSUE FOR CONSTRUCTION
02/07/2025



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GENERAL NOTES:

1. SURVEY PROVIDED BY TRULINE LAND SURVEYORS INC. ON JANUARY 12, 2021 BASED ON VERMONT NAD83. THIS IS NOT A BOUNDARY SURVEY. HORIZONTAL DATUM IS BASED ON NAD83. VERTICAL DATUM IS BASED ON NAVD88.

2. ALL CONSTRUCTION ACTIVITIES SHALL BE CONFINED TO THE RIGHT-OF-WAY, LANDS OWNED BY THE TOWN OF ST. JOHNSBURY OR IN EASEMENT AREAS AVAILABLE TO THE TOWN. PROPERTY LINES SHOWN HEREIN WERE PROVIDED BY TRULINE LAND SURVEYORS INC, ST JOHNSBURY, VT ON JANUARY 19, 2021.

3. IT IS THE DESIGN INTENT TO PRESERVE EXISTING SIDEWALKS AND CURB THROUGHOUT THE PROJECT AREA EXCEPT WHERE NECESSARY TO COMPLETE THE WORK SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING SIDEWALK. ANY SIDEWALKS NOT SPECIFICALLY CALLED OUT TO BE REPLACED, THAT ARE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.

4. THERE ARE BURIED UTILITIES ON THIS SITE. THE LOCATION OF PIPES, DUCTS, CONDUITS, AND OTHER UNDERGROUND STRUCTURES SHOWN IN THESE PLANS ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND STRUCTURES ARE SHOWN. THESE UTILITIES ARE SHOWN BASED ON BEST AVAILABLE FIELD EVIDENCE AND INFORMATION PROVIDED BY THE TOWN OF ST JOHNSBURY, VERMONT AND OTHER LOCAL UTILITY COMPANIES. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH DIG SAFE, THE TOWN AND OTHER UTILITY COMPANIES TO LOCATE AND MARK BURIED UTILITIES DURING THE PROJECT. ALL REPAIRS TO DAMAGED UTILITIES SHALL BE MADE BY THE CONTRACTOR USING MATERIALS APPROVED BY THE ENGINEER PRIOR TO INSTALLATION AND AT NO ADDITIONAL EXPENSE TO THE OWNER.

5. THE CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATION TO VERIFY LOCATIONS AND SIZES OF EXISTING UTILITIES, PRIOR TO INSTALLATION OF ANY SEGMENT OF NEW UTILITIES. CONTRACTOR SHALL USE EXTREME CAUTION TO PREVENT DAMAGE TO EXISTING UTILITIES. CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF ALL UTILITIES WHETHER OR NOT THEY ARE SHOWN ON THE PLANS.

6. CONTRACTOR SHALL VERIFY LOCATION OF ALL OVERHEAD AND UNDERGROUND ELECTRIC, CABLE AND TELEPHONE LINES AND TAKE NECESSARY PRECAUTIONS IN STRICT ACCORDANCE WITH OSHA STANDARDS DURING CONSTRUCTION. CONTRACTOR SHALL CONTACT THE LOCAL POWER UTILITY AND TELEPHONE UTILITY REGARDING ANY NECESSARY SUPPORT OF ANY UTILITY POLES DURING CONSTRUCTION. LOCAL ELECTRIC UTILITY IS GREEN MOUNTAIN POWER. LOCAL PHONE UTILITY IS CONSOLIDATED COMMUNICATIONS.

7. IT IS THE INTENT TO NOT SIGNIFICANTLY DISTURB ANY UNDERGROUND TELECOMMUNICATION MANHOLES, VAULTS, OR CONDUITS DURING THE INSTALLATION OF THE PROPOSED UTILITIES. SHOULD IT BE NECESSARY TO RELOCATE ANY TELECOMMUNICATION ITEMS DUE TO CONFLICT WITH NEW UTILITIES, THE CONTRACTOR IS REQUIRED TO COORDINATE WITH THE UTILITY COMPANY PRIOR TO ANY RELOCATION.

8. CONTRACTOR TO USE EXTREME CAUTION WHEN EXCAVATING NEAR BUILDINGS AND OTHER STRUCTURES.

9. CONTRACTORS SHALL COORDINATE WITH DIG SAFE (1-888-DIG SAFE) AND THE TOWN OF ST. JOHNSBURY A MINIMUM OF 72 HOURS PRIOR TO ANY EXCAVATION.

10. CONTRACTOR SHALL MAKE EVERY EFFORT TO ALLOW ACCESS TO AND FROM ADJACENT PROPERTIES. COORDINATION WILL BE REQUIRED.

11. STATE AND FEDERAL PERMITS OBTAINED BY THE TOWN AND ISSUED FOR THIS PROJECT ARE CONTAINED IN THE SPECIFICATIONS. THE CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS CONTAINED IN THESE PERMITS.

12. TECHNICAL SPECIFICATIONS PROVIDE NECESSARY INFORMATION AND ARE PART OF THE CONTRACT DOCUMENTS FOR THIS PROJECT.

13. ALL AREAS TO BE RESTORED AS GRASSED AREAS WILL BE RESTORED TO CLASS A RESTORATION AS SPECIFIED UNLESS OTHERWISE SHOWN. LOCATION OF PROPOSED UTILITY MAINS ARE NOT INTENDED TO DISTURB ROOT SYSTEMS OF EXISTING TREES OR SHRUBS. CONTRACTOR SHALL EXERCISE DUE CARE TO PREVENT DAMAGE THERETO. CONTRACTOR IS RESPONSIBLE FOR REMOVAL, CARE AND REPLANTING OF ALL PLANTINGS AND SHRUBS DISTURBED DURING CONSTRUCTION, UNLESS OTHERWISE NOTED ON THE PLANS.

14. GENERALLY DARK OR HEAVY LINE WEIGHT REFERS TO PROPOSED IMPROVEMENTS INCLUDED IN THIS CONTRACT. NORMAL FONT OR LIGHT LINE WORK GENERALLY REFERS TO EXISTING FACILITIES AND FEATURES.

15. EXISTING SEWER SERVICE SHALL BE MAINTAINED IN SERVICE DURING CONSTRUCTION. THE UTILITY OWNER WILL ASSIST IN THE LOCATION AND MARKING OF THESE SERVICES BUT THE CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATION AS REQUIRED.

16. MINIMUM VERTICAL CLEARANCE BETWEEN WATER MAINS AND NEW SEWERS AND STORM DRAINS SHALL BE EIGHTEEN (18) INCHES AT CROSSING LOCATIONS. SEE DETAIL ON SHEET C4.

17. WHEN REPLACING STRUCTURES AND/OR CONNECTING TO EXISTING PIPING SYSTEMS, CONFIRM EXISTING LOCATIONS, SIZES AND ELEVATIONS OF INVERTS PRIOR TO ORDERING PRECAST STRUCTURES. EXPLORATORY EXCAVATION MAY BE REQUIRED.

18. CONTRACTOR SHALL REMOVE ALL PIPE ENCOUNTERED WITHIN THE EXCAVATION LIMITS THAT ARE TO BE ABANDONED. ALL PIPE ABANDONED IN PLACE SHALL BE CAPPED AT THE EDGE OF THE EXCAVATION LIMITS.

19. NEW SANITARY SEWER SERVICE SHALL BE A MINIMUM OF 6-INCH PVC AND IN ACCORDANCE WITH THE SPECIFICATIONS. FINAL LOCATION IS TO BE COORDINATED WITH THE ENGINEER AND TOWN. NEW SEWER SERVICE INCLUDES CONNECTION TO WYE, FITTINGS, PVC SERVICE PIPE AND INSTALLATION THROUGH FOUNDATION. CONNECTION TO EXISTING WYE IS PREFERRED. FLEXIBLE COUPLINGS ARE NOT PERMITTED TO BE USED. COORDINATION WITH INTERIOR PLUMBING REQUIRED.

20. CONTRACTOR SHALL WORK WITH MONTROSE ENVIRONMENTAL SERVICES TO COORDINATE REMOVAL AND DISPOSAL OF EXCESS EXCAVATED SOILS AT THE CASELLA WASTE SYSTEMS LANDFILL IN COVENTRY, VERMONT.

21. SPRINKLER AND WATER SERVICES SHALL BE A MINIMUM OF 10-FEET FROM THE SANITARY SEWER OR 5-FEET FROM THE STORM SEWER. EXISTING WATER SERVICE SHALL BE PROPERLY ABANDONED BY TURNING OFF EXISTING CURB STOP, CAPPING EXISTING SERVICE AND REMOVING EXISTING CURB STOP BOX AS DIRECTED BY THE ENGINEER.

22. 4-INCHES OF RIGID INSULATION SHALL BE PROVIDED AT ALL WATER MAIN AND WATER SERVICE CROSSINGS FOR STORM SEWER, REGARDLESS OF THE DEPTH.

23. 4-INCHES OF RIGID INSULATION SHALL BE PROVIDED BETWEEN ANY UTILITY WITHIN 5.0' HORIZONTAL FEET OF A BURIED PROPANE TANK.

24. WATER SERVICE SHALL NOT BE INTERRUPTED FOR MORE THAN FOUR (4) HOURS. ALL CUSTOMERS THAT MAY BE TEMPORARILY OUT OF WATER FOR ANY GIVEN TIME SHALL BE NOTIFIED A MINIMUM OF TWENTY-FOUR (24) HOURS PRIOR TO SHUT DOWN. THE TOWN SHALL BE GIVEN THE SAME NOTIFICATION FOR ALL WATER MAIN SHUT DOWNS. CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATION TO LOCATE EXISTING WATER MAIN, DEVELOP A WRITTEN PLAN FOR TEMPORARY WATER AND RECEIVE APPROVAL PRIOR TO COMMENCEMENT OF WORK. ALL CAPPING, BYPASSING, OR OTHER MEANS OF TEMPORARY WATER SERVICE DURING CONSTRUCTION PERIOD SHALL REQUIRE APPROVAL PRIOR TO INSTALLATION AND SHALL BE TESTED IN ACCORDANCE WITH AWWA STANDARDS PRIOR TO CONNECTION TO CUSTOMERS.

25. LISTING OF WATER MAIN FITTINGS IS FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. ADDITIONAL MATERIALS MAY BE REQUIRED. SOLID SLEEVES OR TRANSITION COUPLINGS WILL BE REQUIRED FOR CONNECTION TO THE EXISTING MAINS OR SERVICES. WHENEVER A SOLID SLEEVE IS INDICATED ON THE DRAWINGS, THE CONTRACTOR MAY BE REQUIRED TO USE A TRANSITION COUPLING DEPENDING ON THE MATERIAL OF THE EXISTING PIPE.

26. ALL BURIED WATER MAINS SHALL UTILIZE CONCRETE THRUST BLOCK RESTRAINTS. REFER TO THRUST BLOCK DETAILS ON SHEET C4.

27. MECHANICAL JOINT RESTRAINTS AND THRUST BLOCKS SHALL BE USED WHERE WATER MAIN VALVES WILL BE SUBJECTED TO SERVICE PRESSURES ON ON SIDE BEFORE BEING FULLY INCORPORATED INTO THE DISTRIBUTION SYSTEM.

28. ALL MECHANICAL JOINT FITTINGS, VALVES, AND HYDRANTS SHALL INCORPORATE A WEDGE TYPE RETAINER GLAND INSTEAD OF THE COMMON FOLLOWER GLAND.

29. MINIMUM VERTICAL CLEARANCE BETWEEN NEW WATER MAINS AND ALL EXISTING UTILITIES, WITH THE EXCEPTION OF SANITARY AND STORM SEWERS, IS TO BE 6-INCHES AT CROSSING LOCATIONS.

30. DEPENDING ON ACTUAL FIELD CONDITIONS AND ONLY AT THE DISCRETION OF THE ENGINEER, BELL JOINT CLAMPS ON THE PUSH-ON JOINTS OF WATER MAIN SHALL BE UTILIZED IN LOCATIONS WHERE EXISTING WATER MAIN TO REMAIN IS WITHIN 5-FEET (EDGE TO EDGE) OF STORM DRAIN PIPES OR STRUCTURE OR WITHIN 10-FEET (EDGE TO EDGE) OF SANITARY SEWER PIPES OR STRUCTURES. CONTRACTOR SHALL NOTIFY THE ENGINEER OF SUCH A REQUEST AND PROCEED ONLY AFTER RECEIVING WRITTEN APPROVAL FOR THIS WORK PRIOR TO INSTALLATION. REFER TO SHEET C4 FOR FURTHER SEPARATION REQUIREMENTS.

31. NEW WATER SERVICE IS REQUIRED. NEW WATER SERVICES SHALL INCLUDE NEW CORPORATIONS AT NEW WATER MAIN, NEW COPPER TUBING FROM THE WATER MAIN TO NEW CURB STOP AT THE RIGHT-OF-WAY AND CONNECTION TO EXISTING SERVICE FROM THE NEW WATER MAIN.

32. ALL CHLORINATED WATER FROM DEWATERING, TESTING, OR ANY OTHER CONSTRUCTION ACTIVITIES SHALL BE DECHLORINATED AND PLACED IN THE TOWN SEWER COLLECTION SYSTEM TO BE CONVEYED TO THE WASTEWATER TREATMENT FACILITY, OR OTHER APPROVED METHODS. METHODS TO PROVIDE DECHLORINATION SHALL BE IN PLACE TO INSURE HEAVILY CHLORINATED WATER DOES NOT ENTER THE WASTEWATER COLLECTION SYSTEM. THE CONTRACTOR SHALL NOTIFY THE OPERATOR AT THE WASTEWATER TREATMENT FACILITY IN ADVANCE OF ANY FLUSHING ACTIVITIES. NO CHLORINATED WATER SHALL BE DISCHARGED EITHER DIRECTLY OR INDIRECTLY THROUGH THE STORM WATER COLLECTION SYSTEM TO WATERS OF THE STATE.

EROSION CONTROL AND SEDIMENT PREVENTION NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION PREVENTION AND SEDIMENTATION CONTROL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, INCLUDING, ALL STATE AND FEDERAL PERMITS AND GUIDELINES.

2. CONSTRUCTION ACTIVITY WAS DETERMINED TO BE LOW RISK FOR EROSION FOR THIS SITE. THE CONTRACTOR SHALL COMPLY WITH THE STATE OF VERMONT LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL.

3. THE CONTRACTOR SHALL NOT HAVE MORE THAN 2 ACRES OF DISTURBED GROUND AT ANY ONE TIME WITHOUT TEMPORARY OR FINAL STABILIZATION.

4. THE CONTRACTOR SHALL INSTALL TEMPORARY OR PERMANENT STABILIZATION ON DISTURBED GROUND WITHIN 7 DAYS OF DISTURBANCE.

LOCAL VALVE OPERATION:

1. PROPOSED MAIN LINE GATE VALVES SHALL OPEN LEFT OR COUNTER CLOCKWISE. OPERATION OF ALL VALVES, NEW OR EXISTING, WILL BE PERFORMED BY THE UTILITY OWNER'S STAFF ONLY.

2. ALL INTERCONNECTIONS TO THE EXISTING SYSTEM CAN ONLY BE MADE WITH THE WRITTEN PERMISSION OF THE FIELD ENGINEER.

ABBREVIATION LIST

ABB	DESCRIPTION
APPROX	APPROXIMATE
ASP	ASPHALT
B	BORING
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
BGN	BEGIN
BL	BREAK LINE
BLD	BUILDING
BM	BENCH MARK
BNK	BANK
BOT	BOTTOM
CB	CATCH BASIN
CI	CAST IRON
CL	CENTER LINE
CMP	CORRUGATED METAL PIPE
CON	CONCRETE
COR	CORNER
CPP	CORRUGATED PLASTIC PIPE
CS	COMBINED SEWER
CSW	CONCRETE SIDEWALK
D	STORM DRAIN LINE
DI	DUCTILE IRON
DMH	DRAIN MANHOLE
DRI	DROP INLET
ED	EDGE
EL	ELEVATION
END	END
EOG	EDGE OF GRAVEL
EOP	EDGE OF PAVEMENT
EOW	EDGE OF WATER
EVCS	END VERTICAL CURVE STATION
EVCE	END VERTICAL CURVE ELEVATION
EX	EXISTING
EXMH	EXISTING MANHOLE
FD	FOUND
FL	FLOW LINE
FM	FORCE MAIN
FP	FENCE POST
FT	FEET
FX	FENCE
GND	GROUND
GR	GUARD RAIL
HDPE	HIGH DENSITY POLYETHYLENE
HW	HEAD WALL
ID	INSIDE DIAMETER
INT	INTERSECTION
INV	INVERT
IP	IRON PIPE
IPF	IRON PIPE FOUND
IPS	IRON PIPE SET
IRF	IRON ROD FOUND
IRS	IRON ROD SET
LP	LIGHT POLE
MB	MAIL BOX
MH	MANHOLE
MON	MONUMENT
OHW	OVERHEAD WIRE
PL	PROPERTY LINE
POR	PORCH
PT	POINT
PVC	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
S	SEWER LINE
SDR	STANDARD THERMOPLASTIC PIPE DIM. RATIOS
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
TBM	TEMPORARY BENCH MARK
TOC	TOP OF CURB (SEE SHEET C20 NOTE)
TYP	TYPICAL
W	WATER LINE
WL	WETLAND
WS	WATER SERVICE
WSO	WATER SHUTOFF

LEGEND

EXISTING:	
W W	WATER MAIN PIPE
S	SEWER MAIN PIPE
D D	STORM DRAIN PIPE
OHU OHU	OVERHEAD WIRE
	BUILDING/STRUCTURE OUTLINE
	PAVED ROAD OUTLINE
	PROPERTY LINE
	RAILING
500	MAJOR CONTOUR
502	MINOR CONTOUR
	TREE LINE
	SIGNS
	FIRE HYDRANT
	WATER SHUTOFF VALVE
	WATER VALVE
S	SEWER MANHOLE
D	STORM DRAIN MANHOLE
	CATCH BASIN
	IRON PIPE/REBAR
	UTILITY POLE/GUY WIRE
	DECIDUOUS TREE
	CONIFEROUS TREE
1	TRAVERSE POINT
PROPOSED:	
SS	SEWER SERVICE
D	STORM DRAIN PIPE
UD	6" PERFORATED UNDERDRAIN
W W	WATER MAIN PIPE
WS WS	WATER SERVICE
D	STORM DRAIN MANHOLE
	CATCH BASIN
	WATER VALVE
	WATER FITTINGS
	PRECAST CURBING
	GRANITE CURBING
500	MAJOR CONTOUR
502	MINOR CONTOUR
	SECURITY FENCE
	RAILING
	BUILDING/STRUCTURE OUTLINE
	PAVED AREA
	CONCRETE WALKWAY
	PAINTED PARKING LINE
A	LIGHT POLE WITH CONCRETE BASE

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PUBLIC SAFETY FACILITY
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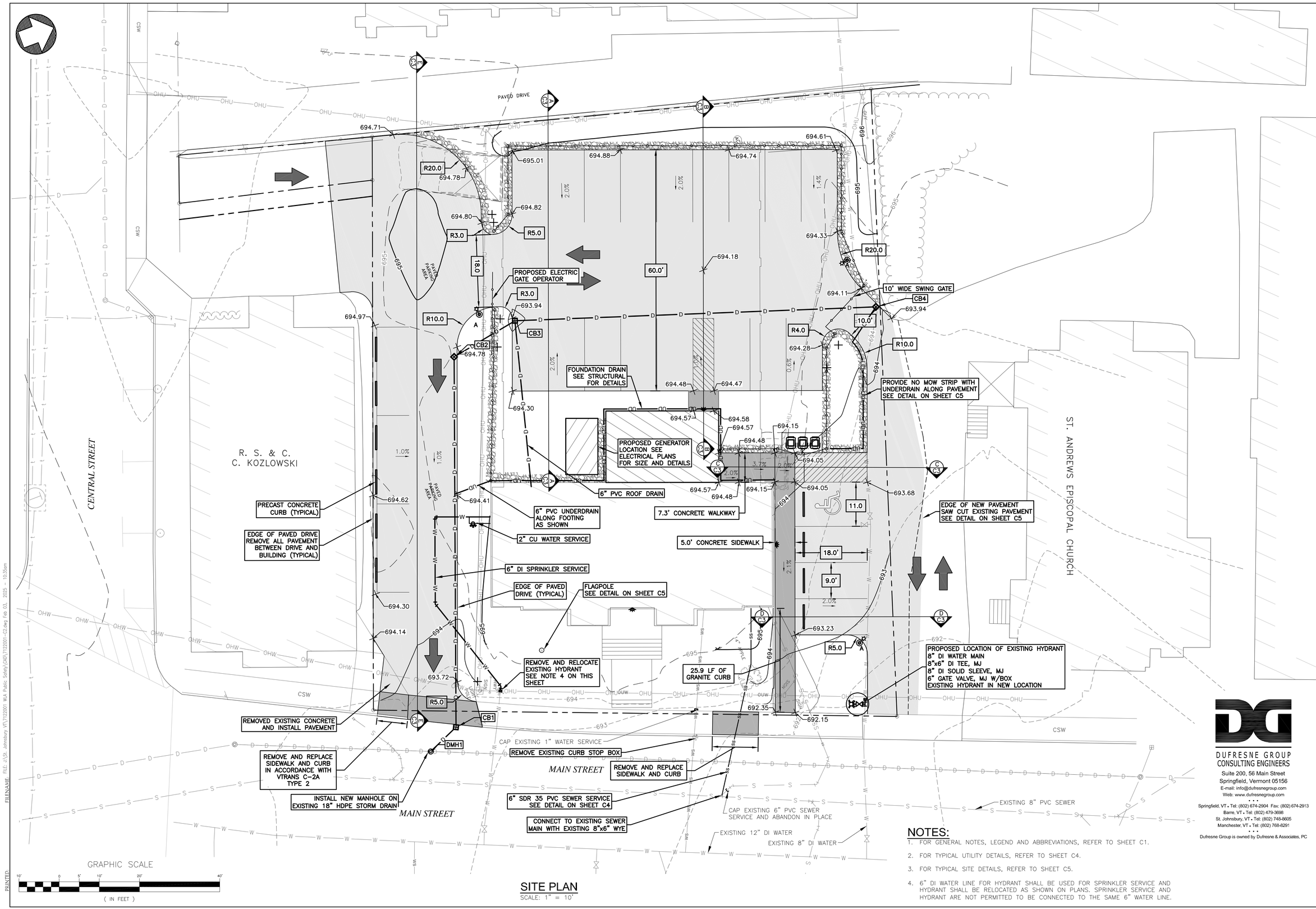
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CHECKED BY: AJD

SHEET TITLE:
GENERAL NOTES, LEGEND AND ABBREVIATONS

SHEET NUMBER:
C1

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SITE PLAN
SCALE: 1" = 10'

NOTES:

1. FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS, REFER TO SHEET C1.
2. FOR TYPICAL UTILITY DETAILS, REFER TO SHEET C4.
3. FOR TYPICAL SITE DETAILS, REFER TO SHEET C5.
4. 6" DI WATER LINE FOR HYDRANT SHALL BE USED FOR SPRINKLER SERVICE AND HYDRANT SHALL BE RELOCATED AS SHOWN ON PLANS. SPRINKLER SERVICE AND HYDRANT ARE NOT PERMITTED TO BE CONNECTED TO THE SAME 6" WATER LINE.

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PUBLIC SAFETY FACILITY
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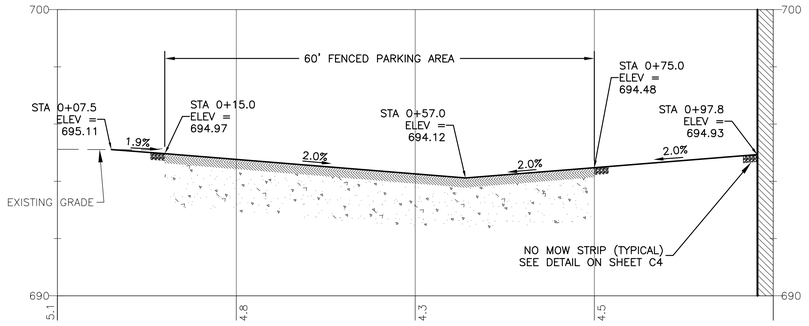
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SITE PLAN

SHEET NUMBER:
C2

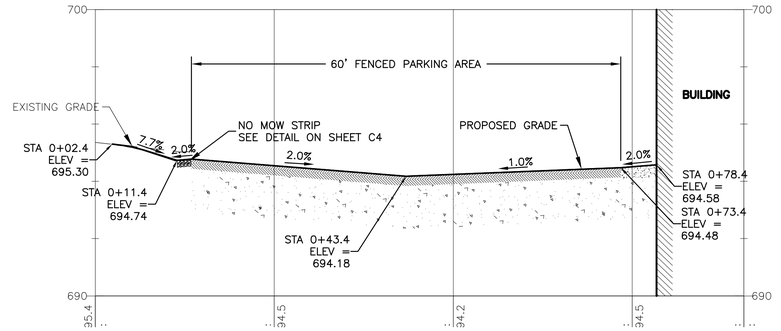
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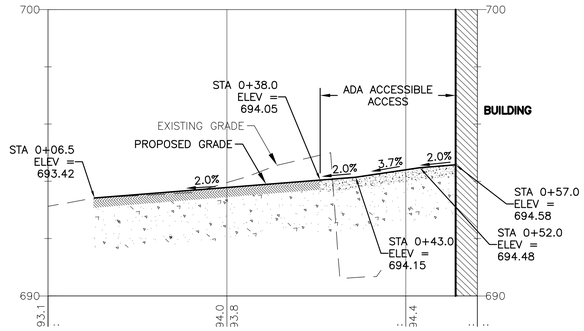
SITE SECTION A

SCALE: H 1" = 10'
V 1" = 2.5'



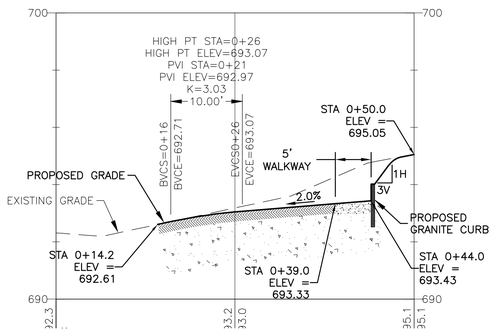
SITE SECTION B

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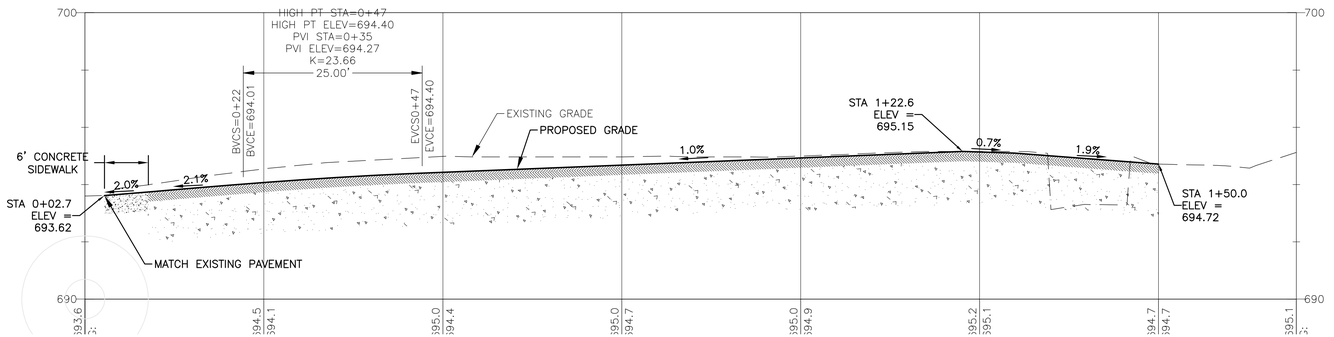
SITE SECTION C

SCALE: H 1" = 10'
V 1" = 2.5'



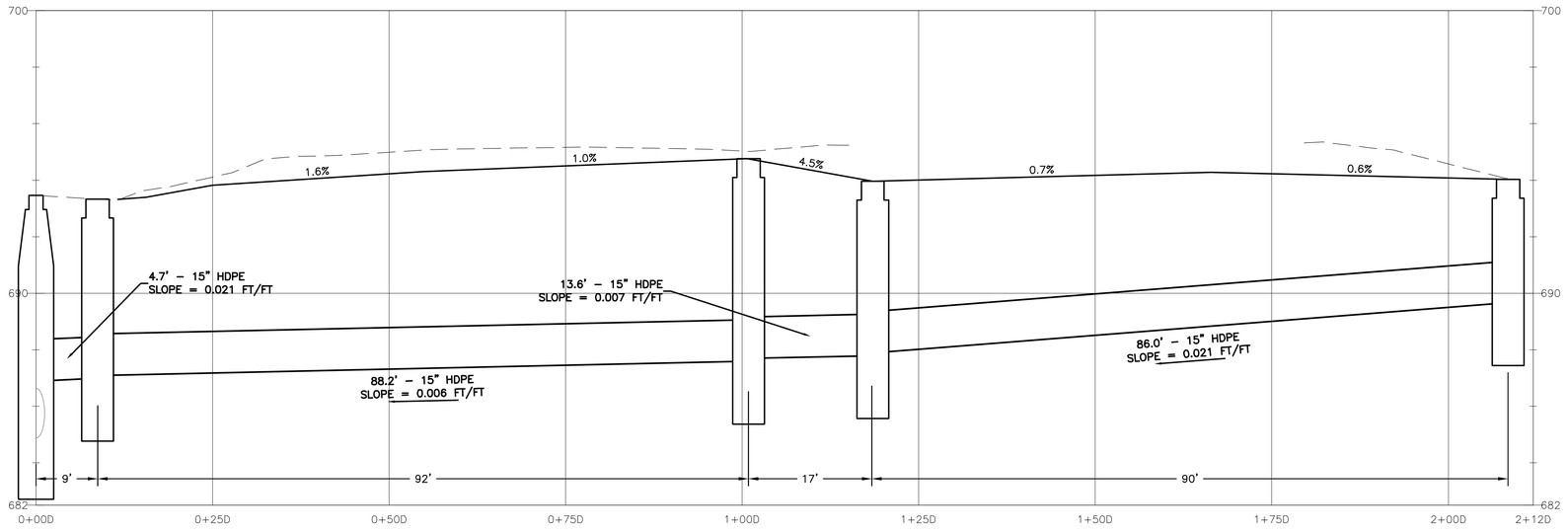
SITE SECTION D

SCALE: H 1" = 10'
V 1" = 2.5'



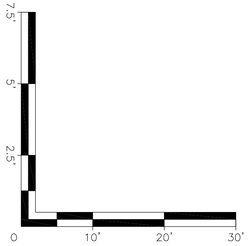
SITE SECTION E

SCALE: H 1" = 10'
V 1" = 2.5'



STORMWATER COLLECTION PROFILE

SCALE: H 1" = 10'
V 1" = 2.5'



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NO.	DATE:	REVISION:

DATE: 2/7/2025
SCALE: As indicated
PROJECT NO:
DRAWN BY: EAE
CHECKED BY: AJD

SHEET TITLE:

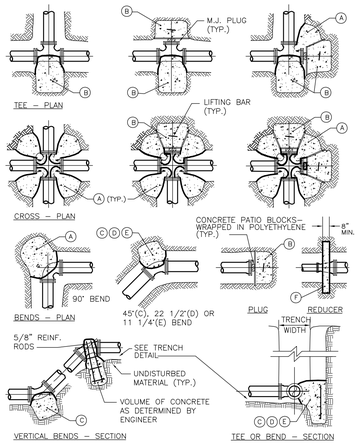
SITE SECTIONS

SHEET NUMBER:

C3

DUFRESNE GROUP
CONSULTING ENGINEERS
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Springfield, Vermont 05156
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St. Johnsbury, VT • Tel: (802) 748-8605
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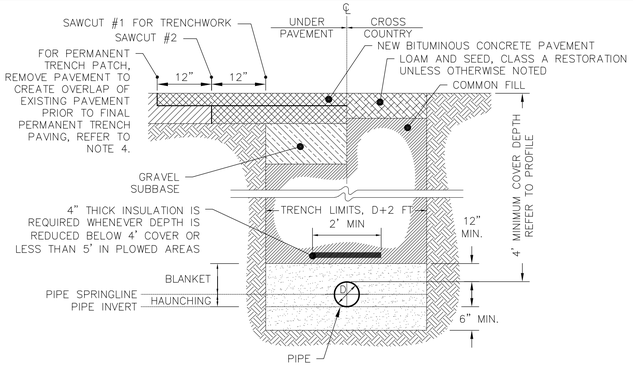
THRUST BLOCK SCHEDULE SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL										
REACTION TYPE		PIPE SIZE								
		4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
TEST PRESSURE 200 PSI	Ⓐ	5	11	19	28	39	52	67	85	104	148
	Ⓑ	4	8	13	20	28	37	48	60	74	105
	Ⓒ	3	6	10	15	21	29	37	46	57	81
	Ⓓ	2	3	6	8	11	15	19	24	29	41
	Ⓔ	1	2	3	4	6	8	10	12	15	21
	Ⓕ	–	4	10	16	24	30	41	47	54	77

NOTES:
1. THRUST RESTRAINT IS REQUIRED FOR ALL TEES, BENDS, REDUCERS, CAPS, PLUGS, OR CROSSES.
2. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL. WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
3. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
4. PLACE CONCRETE PATIO BLOCKS IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCK.
5. PRE–FORMED AND PRE–POURED THRUST BLOCKS ARE NORMALLY NOT ACCEPTABLE AND SHALL ONLY BE USED WHEN SPECIFICALLY APPROVED BY THE OWNER.
6. THE USE OF A MECHANICAL JOINT RESTRAINT SYSTEM DOES NOT REDUCE THE REQUIREMENTS SHOWN IN THIS DETAIL.
7. ALL FITTINGS SHALL BE WRAPPED IN POLYETHYLENE OR BUILDING PAPER PRIOR TO INSTALLATION OF CONCRETE RESTRAINT.
8. IF THREADED ROD IS USED, IT SHALL BE ANSI A242 FY50 PIPE RESTRAINT NUTS TO MATCH AWWA C111.
9. SIZES FOR REDUCERS SHOWN ARE BASED ON THE SMALLEST AVAILABLE RUN SIZE FOR A GIVEN PIPE SIZE.
10. INSTALL LIFT HOOKS INTO THRUST BLOCKS AT END CAPS AND PLUGS.
11. TEST PRESSURE TO BE 200 PSI MIN. AT LOW END OF THE TEST SECTION. SQUARE FEET OF CONCRETE THRUST BLOCKING FOR OTHER TEST PRESSURES IS DIRECTLY PROPORTIONAL TO THE ABOVE TABLE. FOR INSTANCE, AT 300 PSI TEST PRESSURE, THE NUMBERS SHOWN IN THE ABOVE TABLE ARE MULTIPLIED BY 1.5. SEE BELOW FOR EXAMPLE CALCULATION.
12. THRUST BLOCK AREA IS BASED ON A SOIL BEARING STRENGTH OF 1500 LBS/SF AND A SAFETY FACTOR OF 1.5. MULTIPLY THE BEARING AREA FROM ABOVE (WITH CONSIDERATION OF TEST PRESSURE) AND MULTIPLY BY THE FOLLOWING FACTORS TO DETERMINE BEARING AREA REQUIRED FOR VARIOUS SOIL CONDITIONS:

SOIL TYPE	BEARING CAPACITY (LB/SF)	FACTOR
SOFT CLAY	1,000	1.50
SILT	1,500	1.00
SANDY SILT	3,000	0.50
SAND	4,000	0.38
SANDY GRAVEL	5,000	0.30
SANDY CLAY	6,000	0.25
GRAVEL W/ ROCK	7,000	0.21
HARD CLAY	9,000	0.17

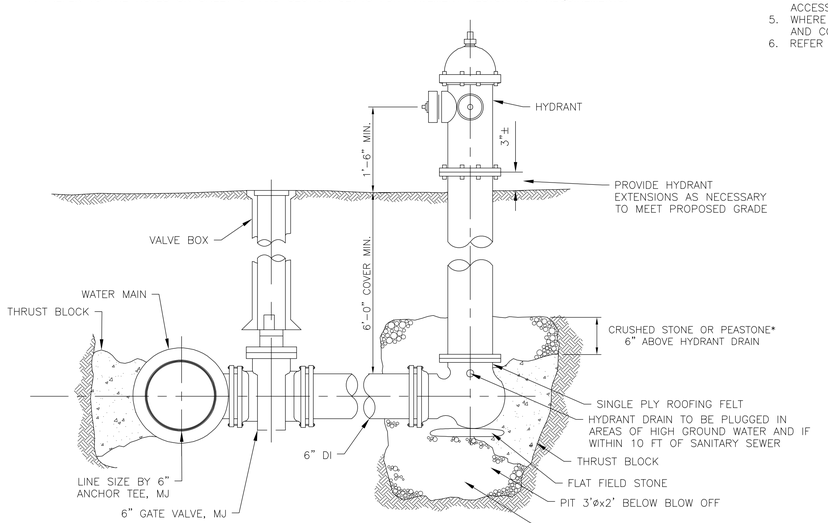
EXAMPLE: AN 8–INCH 90° BEND IN SANDY GRAVEL SOILS, TEST PRESSURE OF 200 PSI:
AREA REQUIRED = 19 SF x 1 x 0.30 = 5.7 SF

THRUST BLOCK DETAILS AND NOTES
NOT TO SCALE



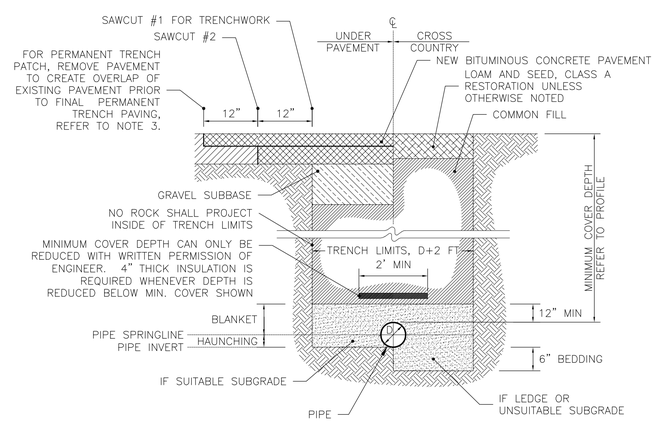
SANITARY SEWER MAIN TYPICAL TRENCH DETAIL
NOT TO SCALE

NOTES:
1. TYPICAL TRENCH DETAILS SHOWN HEREIN ARE BASED ON THE USE OF PVC OR HDPE PIPE.
2. REFER TO SPECIFICATIONS FOR PAVEMENT THICKNESS REQUIREMENTS.
3. REFER TO THE SPECIFICATIONS FOR COMPACTION, PAY LIMITS, AND SPECIALTY MATERIALS FOR BLANKET, HAUNCHING, BEDDING, AND GRAVELS. HAND TAMP HAUNCHING TO REMOVE ALL VOIDS UNDER PIPE.
4. REMOVE EXISTING PAVEMENT TO A DEPTH EQUAL TO NEW WEARING COURSE PAVEMENT THICKNESS FOR A MINIMUM DISTANCE OF 12–INCHES FROM SAWCUT #2. CLEAN SURFACES AND TACK COAT ALL EDGES OF EXISTING PAVEMENT.
5. TRENCH WIDTH SHALL BE SUFFICIENT TO ALLOW PIPE TO BE LAID AND JOINED PROPERLY AND FOR PLACEMENT AND COMPACTION OF BEDDING. TRENCH SUPPORT SHALL BE ADEQUATE TO PERMIT SAFE ACCESS BY INSPECTOR FOR COMPACTION SAMPLES.
6. WHERE PIPE IS INSTALLED IN GRAVEL SHOULDER OR IN GRAVELED ROAD, GRAVEL SUBBASE MATERIAL AND COMPACTION SHALL BE AS SPECIFIED.
7. REFER TO THE NOTES ON SHEET G1 AND SECTION 02740 FOR PAVEMENT RESTORATION REQUIREMENTS.



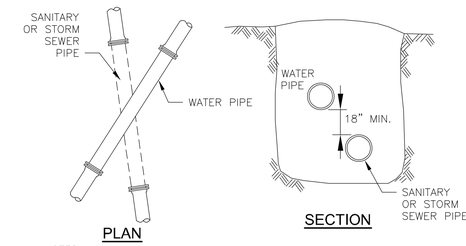
HYDRANT ASSEMBLY DETAIL
NOT TO SCALE

*CRUSHED STONE OR PEASTONE SHALL BE ENVELOPED IN FILTER FABRIC



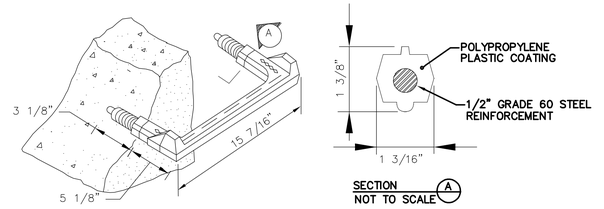
WATER MAIN TYPICAL TRENCH DETAIL
NOT TO SCALE

NOTES:
1. REFER TO SPECIFICATIONS FOR PAVEMENT THICKNESS REQUIREMENTS.
2. REFER TO THE SPECIFICATIONS FOR COMPACTION, PAY LIMITS, AND SPECIALTY MATERIALS FOR BLANKET, HAUNCHING, BEDDING, AND GRAVELS. HAND TAMP HAUNCHING TO REMOVE ALL VOIDS UNDER PIPE.
3. REMOVE EXISTING PAVEMENT TO A DEPTH EQUAL TO NEW WEARING COURSE PAVEMENT THICKNESS FOR A MINIMUM DISTANCE OF 12–INCHES FROM SAWCUT #2. CLEAN SURFACES AND TACK COAT ALL EDGES OF EXISTING PAVEMENT.
4. TRENCH WIDTH SHALL BE SUFFICIENT TO ALLOW PIPE TO BE LAID AND JOINED PROPERLY AND FOR PLACEMENT AND COMPACTION OF BEDDING. TRENCH SUPPORT SHALL BE ADEQUATE TO PERMIT SAFE ACCESS BY INSPECTOR FOR COMPACTION SAMPLES.
5. WHERE PIPE IS INSTALLED IN GRAVEL SHOULDER OR IN GRAVELED ROAD, GRAVEL SUBBASE MATERIAL AND COMPACTION SHALL BE AS SPECIFIED.
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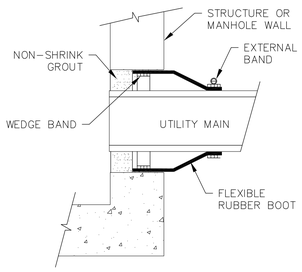


NOTES:
1. PARALLEL INSTALLATION: WATER PIPES SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED MANHOLE OR SANITARY SEWER. THIS DISTANCE CAN BE REDUCED TO 5 FEET FOR STORM SEWERS. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE.
2. CROSSINGS: WATER PIPES CROSSING SEWERS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SANITARY OR STORM SEWER. THIS SHALL BE THE CASE WHERE THE WATER PIPE IS EITHER ABOVE OR BELOW THE SEWER. AT CROSSINGS, ONE FULL LENGTH OF WATER PIPE SHALL BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE. IF THE SEWER PIPE IS OVER THE WATER PIPE, THE FIRST SEWER PIPE JOINTS ON EACH SIDE OF THE WATER PIPE MUST BE CONCRETE ENCASED. SPECIAL STRUCTURAL SUPPORT FOR THE WATER AND SEWER PIPES MAY BE REQUIRED. WATER PIPES SHALL NOT PASS THROUGH SEWER MANHOLES OR BE SUBMERGED IN BASINS CONTAINING SEWAGE OR OTHER GROSSLY CONTAMINATED OR HAZARDOUS MATERIAL.
3. EXCEPTION: THE ENGINEER MUST SPECIFICALLY APPROVE ANY VARIANCE FROM THESE REQUIREMENTS WHEN IT IS IMPOSSIBLE TO OBTAIN THE SPECIFIED SEPARATION DISTANCES.
4. BELL JOINT CLAMPS ON THE PUSH–ON JOINTS OF DUCTILE IRON WATER PIPE SHALL BE UTILIZED IN LOCATIONS WHERE THE MINIMUM SEPARATION REQUIREMENTS CANNOT BE MET. ENGINEER MUST BE NOTIFIED AND APPROVE OF EACH INDIVIDUAL USE PRIOR TO INSTALLATION.

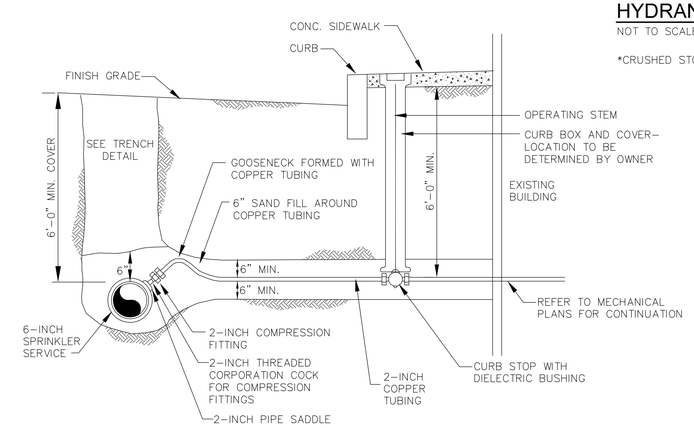
SANITARY AND/OR STORM SEWER PIPE AND WATER MAIN CROSSING DETAIL
NOT TO SCALE



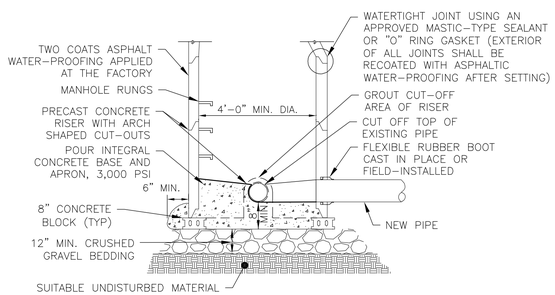
MANHOLE STEP DETAIL
NOT TO SCALE



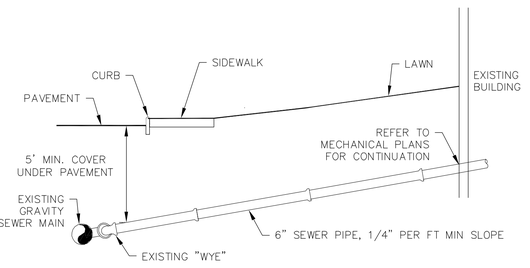
PIPE TO STRUCTURE OR MANHOLE JOINT DETAIL
NOT TO SCALE



TYPICAL WATER SERVICE CONNECTION
NOT TO SCALE



NEW MANHOLE ON EXISTING PIPE
NOT TO SCALE



TYPICAL WASTEWATER SERVICE DETAIL
NOT TO SCALE

NOTE:
1. ALL FITTINGS USED TO CONNECT TO THE EXISTING GRAVITY SEWER MAIN SHALL BE RIGID PVC SOLID SLEEVES. FERNCO GASKETS ARE NOT PERMITTED.

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wiemannlamphere.com

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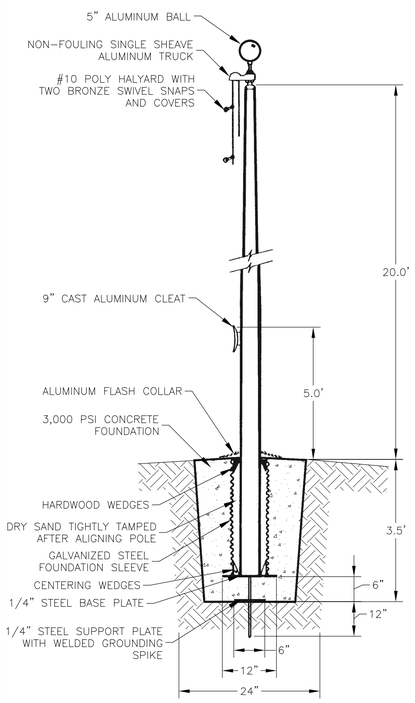
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DRAWN BY: EAE
CHECKED BY: AJD

SHEET TITLE:
UTILITY DETAILS

SHEET NUMBER:
C4

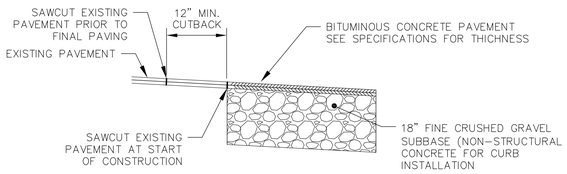
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FLAGPOLE DETAIL

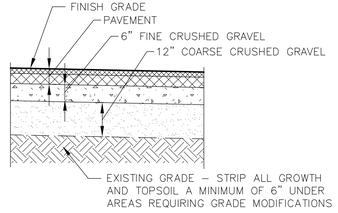
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PAVEMENT SAWCUT DETAIL

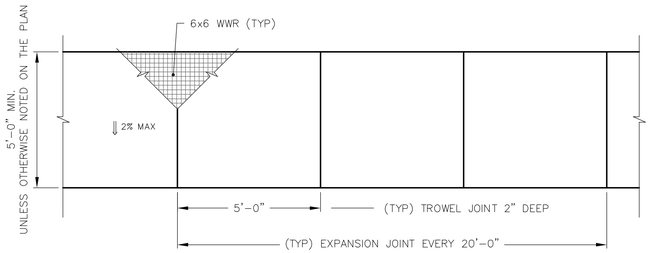
NOT TO SCALE

NOTE: IF EXISTING PAVEMENT THICKNESS EXCEEDS DEPTHS SHOWN, THE GREATER SHALL BE USED.



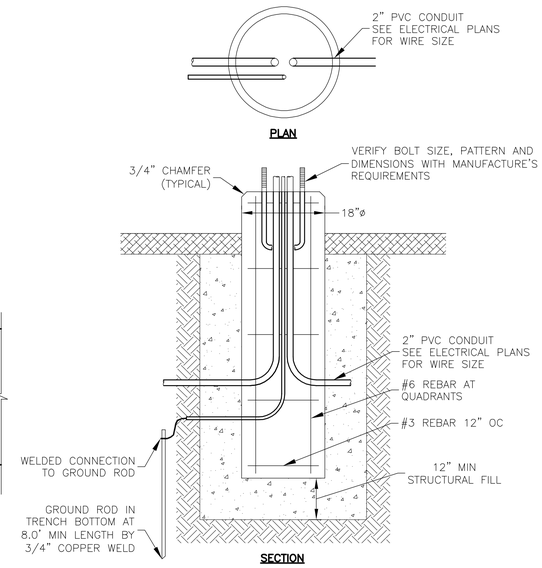
TYPICAL PARKING AREA PAVEMENT SECTION

NOT TO SCALE



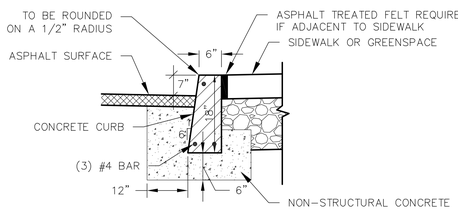
TYPICAL CONCRETE WALK PLAN DETAIL

NOT TO SCALE



LIGHT POLE CONCRETE BASE DETAIL

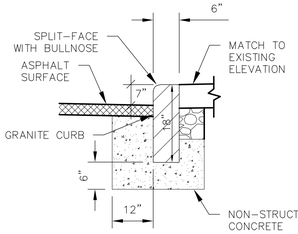
NOT TO SCALE



CONCRETE CURB DETAIL

NOT TO SCALE

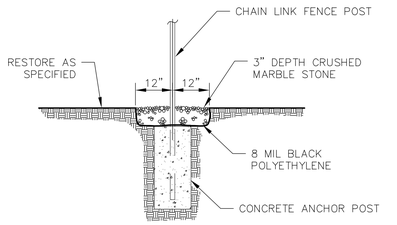
1. NON-STRUCTURAL CONCRETE UNDER CURB IS REQUIRED ONLY FOR PRE-CAST CONCRETE CURBING. CAST-IN-PLACE CONCRETE CURB SHALL BE INSTALLED DIRECTLY ON COMPACTED SUBBASE.
2. TWO SECTIONS OF FINE CRUSHED GRAVEL ARE ACCEPTABLE FOR INITIAL CURB INSTALLATION AND LEVELING PRIOR TO THE FLOWABLE FILL PROVIDED THE TWO SECTIONS OF GRAVEL DO NOT EXCEED 10% OF THE CURB LENGTH.



GRANITE CURB DETAIL

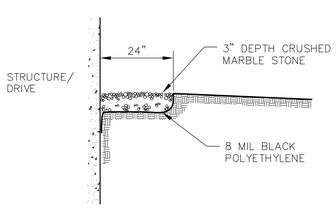
NOT TO SCALE

1. TWO SECTIONS OF FINE CRUSHED GRAVEL ARE ACCEPTABLE FOR INITIAL CURB INSTALLATION AND LEVELING PRIOR TO THE FLOWABLE FILL PROVIDED THE TWO SECTIONS OF GRAVEL DO NOT EXCEED 10% OF THE CURB LENGTH.



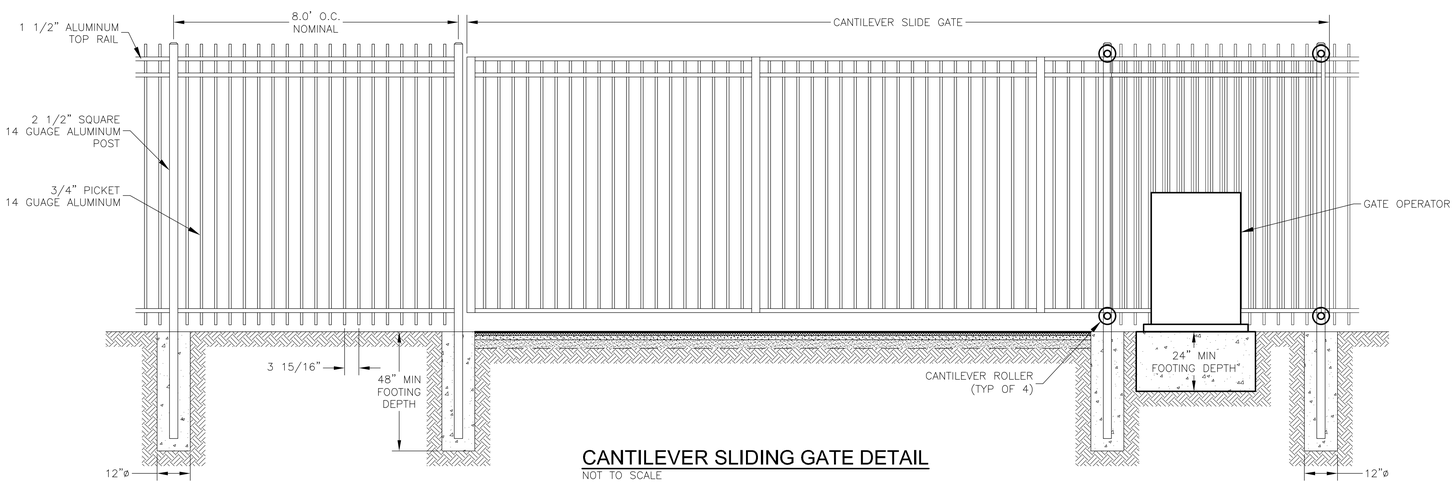
NO MOW STRIP AT FENCE

NOT TO SCALE



NO MOW STRIP AT EDGE OF STRUCTURE AND PAVEMENT

NOT TO SCALE



CANTILEVER SLIDING GATE DETAIL

NOT TO SCALE

NOTE:
1. ALL COMPONENTS AND HARDWARE FOR THE FENCE SHALL BE MATTE BLACK POWDER COATED FINISH.

Wiemann Lamphere ARCHITECTS
525 Hercules Drive
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802.655.5020
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SITE DETAILS

SHEET NUMBER:
C5

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A. GENERAL NOTES

1. ALL STRUCTURAL WORK SHALL CONFORM TO THE PROJECT SPECIFICATIONS, DRAWINGS, AND THE 2015 VERMONT FIRE AND BUILDING SAFETY CODE (ADOPTING IBC 2015 WITH AMENDMENTS).

2. CONTRACTOR SHALL COORDINATE STRUCTURAL WORK WITH RELATED TRADES AND WITH OTHER DESIGN DISCIPLINE REQUIREMENTS PRIOR TO MAKING SUBMITTALS. CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO PERFORMING WORK.

3. REFER TO OTHER DESIGN DISCIPLINE DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION REQUIRED FOR THE SUBMITTALS AND INSTALLATION OF STRUCTURES, INCLUDING BUT NOT LIMITED TO DIMENSIONS, ELEVATIONS, SLOPES, LOCATIONS OF OTHER SYSTEMS AND EQUIPMENT, OPENINGS, WALLS, STAIRS, FINISHES, COATINGS, AND OTHER NON-STRUCTURAL ITEMS. NOTES PROVIDED ON THE DRAWINGS ARE INTENDED FOR USE IN CONJUNCTION WITH PROJECT SPECIFICATIONS

4. DETAILS LABELED AS TYPICAL DETAILS ON THE DRAWINGS SHALL APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. SUCH TYPICAL DETAILS SHALL APPLY WHETHER OR NOT THEY ARE DEMARKED AT EACH LOCATION IN THE DRAWINGS. FOR CONDITIONS NOT SPECIFICALLY SHOWN, PROVIDE DETAILS OF A SIMILAR NATURE. VERIFY APPLICABILITY BY SUBMITTALS.

5. CONTRACTOR IS RESPONSIBLE FOR COORDINATION DETAILS AND ACCURACY OF THE WORK; FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; FOR SELECTING FABRICATION PROCESSES, FOR TECHNIQUES OF ASSEMBLY IN ACCORDANCE WITH GENERAL CONDITIONS AND DIVISION 1 SPECIFICATION REQUIREMENTS; AND FOR PERFORMING ALL WORK IN A SAFE AND SECURE MANNER IN ACCORDANCE WITH GOVERNING JOB SAFETY STANDARDS.

6. CONTRACTOR SHALL VERIFY ALL CONDITIONS AT THE SITE, INCLUDING LOCATIONS OF ALL EXISTING STRUCTURES AND EXISTING UTILITIES ABOVE AND BELOW GROUND (AS ANY INFORMATION SHOWN IS APPROXIMATE AND NOT NECESSARILY COMPLETE,) CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO PERFORMING WORK.

7. LOADS APPLIED DURING CONSTRUCTION SHALL NOT EXCEED THE DESIGN LOADS NOTED ON THE DRAWINGS OR THE CAPACITY OF PARTIALLY COMPLETED CONSTRUCTIONS AS DETERMINED BY THE CONTRACTOR. THE STRUCTURAL ELEMENTS OF THE PROJECT AS SHOWN IN THE CONSTRUCTION DOCUMENTS HAVE BEEN DESIGNED FOR THE SPECIFIED VERTICAL AND LATERAL FORCES ACTING ON THE COMPLETED BUILDING. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND PROVIDE ALL REQUIRED SHORING AND BRACING NEEDED DURING CONSTRUCTION TO MAINTAIN THE STABILITY AND SAFETY OF THE PARTIALLY-COMPLETED STRUCTURE AND FOR CONSTRUCTION LOADINGS THAT EXCEED THE SPECIFIED DESIGN LOADS

8. SHORING, BRACING, PROTECTING, AND MAINTAINING THE INTEGRITY OF ANY EXISTING, ADJACENT, AND/OR ONGOING PARTIALLY COMPLETED STRUCTURES IS THE RESPONSIBILITY OF THE CONTRACTOR.

B. EXISTING BUILDING NOTES

1. DIMENSIONS, ELEVATIONS, MEMBER SIZES, AND DETAILS OF EXISTING STRUCTURE SHOWN IN THE STRUCTURAL DRAWINGS HAVE BEEN EXTRACTED FROM RECORD DRAWINGS AND/OR LIMITED FIELD MEASUREMENTS. AS SUCH THEY ARE NOT TO BE CONSIDERED SUITABLY ACCURATE FOR ANY CONSTRUCTION WORK SHOWN, INCLUDING FABRICATIONS, SUBMITTALS, ETC. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS OF THE EXISTING CONSTRUCTION, INCLUDING PLUMBNESS OR FLATNESS OF WALLS, FLOORS, ETC. AT THE JOB SITE PRIOR TO SUBMITTAL, FABRICATION OR CONSTRUCTION WORK. ANY DEVIATIONS FOUND IN THE FIELD FROM WHAT IS SHOWN ON THE DRAWINGS SHALL BE REPORTED TO THE ARCHITECT PRIOR TO FABRICATION OR CONSTRUCTION.

2. TEMPORARY SHORING AND BRACING OF FLOORS, WALLS, AND OTHER STRUCTURAL ELEMENTS OF THE EXISTING BUILDINGS REQUIRED TO ACHIEVE THE INSTALLATION OF NEW AND/OR THE REMOVAL OF EXISTING STRUCTURAL ELEMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL, EMPLOY ENGINEERING SERVICES FOR DESIGN OF TEMPORARY BRACING, SHORING AND PROTECTION. BACKUP CALCULATIONS SHALL BE PROVIDED AND BE SIGNED AND SEALED BY A VERMONT PE. EXISTING BUILDING MOVEMENTS SHALL BE LIMITED TO PREVENT DISTRESS FROM OCCURRING.

3. REPORT EXISTING CONDITIONS UNCOVERED, REVEALED, FOUND OR DEVELOPED DURING CONSTRUCTION INDICATIVE OF STRUCTURAL INTEGRITY LOSS OR DETERIORATION, UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.

4. DO NOT CUT, DRILL OR ALTER ANY EXISTING STRUCTURAL ELEMENTS UNLESS SHOWN OR NOTED ON THE STRUCTURAL DRAWINGS WITHOUT NOTIFY THE ARCHITECT FOR REVIEW, INCLUDING TEMPORARY MEASURES OR FOR THE INSTALLATION OF OTHER DESIGN DISCIPLINE WORK.

5. MONITORING OF CONSTRUCTION WORK SHALL INCLUDE, BUT IS NOT LIMITED TO FIRE WATCH DURING AND AT LEAST 24 HOURS AFTER ALL STEEL WELDING OR DRILLING, WOOD DRILLING, AND HEAT TRANSFERRING CONSTRUCTION MEASURES. DO NOT ALLOW HEAT OR ENERGY FROM EQUIPMENT TO DAMAGE OR OTHERWISE ALTER EXISTING STRUCTURAL ELEMENTS TO REMAIN.

6. FOR EXISTING STEEL ELEMENTS, DO NOT ALLOW THE THROUGH THICKNESS TEMPERATURE OF THE STEEL TO EXCEED 300º FAHRENHEIT DURING WELDING PROCESSES UNLESS SPECIFICALLY NOTED OTHERWISE. USE ACTIVE, OBSERVABLE SURFACE MONITORING METHODS.

C. DEFERRED SUBMITTALS

1. IN ACCORDANCE WITH REQUIREMENTS LISTED BY THE DRAWINGS AND SPECIFICATIONS, DEFERRED SUBMITTALS AS DEFINED BY THE IBC ARE REQUIRED FOR THE CONDUCTANCE OF THIS PROJECT. THESE SUBMITTALS REQUIRE ACCEPTABLE REVIEW BY THE ARCHITECT AND/OR ENGINEER-OF-RECORD (EOR) AS WELL AS PRESENTATION OF REVIEWED "RECORD" SUBMITTALS TO THE AHJ AT THEIR DISCRETION AND FOR THEIR ACCEPTANCE.

2. DEFERRED SUBMITTALS ARE SPECIFIED TO INCLUDE CALCULATIONS AND DRAWINGS PREPARED UNDER THE AUSPICES OF AN APPROPRIATELY LICENSED (SPECIALTY) ENGINEER. SUBMITTALS INDICATE CODE (MINIMUM) OR SPECIFIED LOAD TYPE, MAGNITUDES, AND LOCATIONS; FRAMING AND CONNECTION TYPES AND CONFIGURATIONS; INCLUDING ATTACHMENT TO PRIMARY OR BASE STRUCTURE FRAMING.

3. THE PURPOSE OF THE EOR'S REVIEW OF THE SUBMITTALS CONCERNS THAT THE SUBMITTAL DRAWINGS AND CALCULATIONS ARE PROPERLY SEALED; THAT THE LOAD CRITERIA GENERALLY CONFORM TO THE SPECIFIED DESIGN BASIS AND CODE; THAT CONNECTIONS LOADS ATTACHMENTS AND CONFIGURATIONS TO THE PRIMARY OR BASE STRUCTURE ARE COMPATIBLE WITH THE STRUCTURAL DESIGN AND CODE REQUIREMENTS.

4. THE EOR RELIES ON THE (SPECIALTY) ENGINEER'S SEAL AS CERTIFICATION THAT THE DEFERRED SUBMITTAL ITEMS COMPLY WITH SPECIFIED AND CODE CRITERIA. THE EOR IS NOT RESPONSIBLE FOR THE ADEQUACY OR EFFECTS OF THE (SPECIALTY) ENGINEER'S DESIGN. DESIGN OF TEMPORARY SHORING AND BRACING AS WELL AS TESTING AND INSPECTIONS THAT REQUIRE THE SUPERVISION OF A LICENSED ENGINEER, SUCH AS FOUNDATION SUBGRADE REVIEW, ARE NOT CONSIDERED DEFERRED SUBMITTALS.

5. DEFERRED STRUCTURAL SUBMITTAL ITEMS INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
   - STEEL STAIRS
   - STRUCTURAL STEEL CONNECTIONS
   - CURTAIN WALL SYSTEM/LIGHT GAGE METAL FRAMING
   - TEMPORARY SHORING OF EXISTING STRUCTURES

   IN ADDITION, STRUCTURAL REQUIREMENTS ARE SPECIFIED FOR VARIOUS MISCELLANEOUS METAL, EXTERIOR WALL, EQUIPMENT, AND MEP SYSTEM COMPONENTS BY OTHER DESIGN DISCIPLINES; WHERE THE CONNECTION TO THE PRIMARY OR BASE STRUCTURE IS REVIEWED.

D. FOUNDATION RELATED EARTHWORK

1. RECOMMENDATIONS AND DESIGNS CONTAINED IN GEOTECHNICAL REPORTING AS FOLLOWS: COORDINATE WITH GEOTECHNICAL REPORT TITLED "EXPLORATIONS AND GEOTECHNICAL ENGINEERING SERVICES: PROPOSED ST. JOHNSBURY ARMORY REHABILITATION" BY S.W. COLE ENGINEERING, INC. DATED 12/20/2024.

2. THE GEOTECHNICAL REPORTING CONTAINS SPECIFIC REQUIREMENTS PERTAINING TO GRUBBING, SITE, SUBFLOOR AND BEARING SURFACE PREPARATION AND PROTECTION; STRUCTURAL FILL AND COMPACTION REQUIREMENTS; GROUND WATER MANAGEMENT; ETC. THAT ARE NOT NECESSARILY SHOWN BY THE DRAWINGS AND SPECIFICATIONS. ALSO, IBC CHAPTER 18 "SOILS AND FOUNDATION" REQUIREMENTS APPLY, UNLESS SPECIFICALLY NOTED OTHERWISE BY THE GEOTECHNICAL REPORTING, DRAWINGS OR SPECIFICATIONS. REPORT CONFLICTS BETWEEN THE REPORTING AND THE DRAWINGS AND SPECIFICATIONS TO THE ARCHITECT PRIOR TO COMMENCING ANY AFFECTED WORK.

3. A LICENSED GEOTECHNICAL ENGINEER SHALL INSPECT AND REPORT ON ALL NATIVE SUB-GRADES FOR SLABS-ON-GRADE AND FOUNDATION PREPARED SOIL SURFACES PRIOR TO THE PLACEMENT OF ANY BACKFILL, FILL, AND FOUNDATION STRUCTURAL ELEMENTS. FOUNDATIONS AND FOOTINGS SHALL BEAR ON COMPETENT NATIVE SOILS OR COMPACTED STRUCTURAL FILLS IN ACCORDANCE WITH THE GEOTECHNICAL REPORTING.

4. FOOTINGS, AND SLABS CAST DIRECTLY AGAINST THE EARTH SHALL BE SIDE-FORMED AS REQUIRED TO KEEP EARTH OUT OF THE CONCRETE. COMPACT DISTURBED LOAD BEARING SOIL IN DIRECT CONTACT WITH FOUNDATIONS TO ORIGINAL BEARING CAPACITY. AS WET WEATHER OR GROUND CONDITIONS WARRANT, PLACE A MINIMUM OF 12 INCHES OF CRUSHED STONE WRAPPED IN GEOTEXTILE FABRIC FOR SUBGRADE PROTECTION BENEATH FOUNDATIONS, DO NOT ALLOW FOR STANDING WATER ON EARTH. IF OVER-EXCAVATION OCCURS, REPLACE MATERIAL WITH BACKFILL MEASURES SPECIFIED FOR USE UNDER FOUNDATIONS, AFTER ACCEPTANCE BY GEOTECHNICAL ENGINEER.

5. UNLESS NOTED OTHERWISE, PLACE AND COMPACT BACKFILL IN EQUAL CONTINUOUS LAYERS NOT EXCEEDING A MAXIMUM OF 8" OF COMPACTED DEPTH FOR HAND-HELD COMPACTION EQUIPMENT AND A MAXIMUM OF 12" INCHES COMPACTED DEPTH FOR VIBRATORY ROLLERS. ONLY HAD-OPERATED EQUIPMENT HAVING A STATIC WEIGHT OF 500 POUNDS OR LESS MAY BE USED WITHIN 3 FEET OF NEW WALLS OR STRUCTURES. MAINTAIN OPTIMUM MOISTURE CONTENT OF BACKFILL MATERIALS TO ATTAIN COMPACTION DENSITY.

6. AT EARTH RETAINING AND FOUNDATION WALLS, BACKFILL LIFTS TO NOT EXCEED 12 INCH DIFFERENCE IN ELEVATION UNTIL FINAL ELEVATION ARE REACHED ON BOTH SIDES OF THE WALL. AT BASEMENT WALLS, DO NOT BACKFILL UNTIL GROUND FLOOR AND CONNECTED ELEVATED FRAMED LEVELS SLABS HAVE BEEN COMPLETED AND THE CONCRETE AT WALLS AND FLOORS HAS ACHIEVED FULL DESIGN STRENGTH.

7. THE CONSTRUCTION CONSIDERATIONS IN THE GEOTECHNICAL REPORTING AND PROJECT SPECIFICATIONS SHALL APPLY TO THIS PROJECT, INCLUDING BUT NOT LIMITED TO PROOFROLLING SUBGRADES AT THE EXCAVATION AND/OR BEARING ELEVATIONS; REMOVING AND REPLACING LOOSE OR SOFT POCKETS, FILL SLOPE CONSTRUCTIONS, ETC.

8. BACKFILL REQUIREMENTS:
   A. FILL WITHIN BUILDING ENVELOPE AND EXTENDING OUTWARD AT 1:1 SLOPE TO ACCEPTABLE NATIVE SOIL CONDITIONS:
      MATERIAL: "GRANULAR BORROW"
      COMPACTION: 95% MODIFIED PROCTOR

   B. BACKFILL DIRECTLY BELOW INTERIOR SLABS-ON-GRADE ASSEMBLIES (12 INCHES UNLESS NOTED OTHERWISE): "CRUSHED STONE" WITHOUT GEOTEXTILE AND "STRUCTURAL FILL"
      COMPACTION: 3 TO 5 PASSES OF A VIBRATORY PLATE COMPACTER HAVING A STATIC WEIGHT OF AT LEAST 500 POUNDS.

   C. BACKFILL BELOW PAVEMENT, WALKS, ENTRY SLABS IN VICINITY OF BUILDING:
      MATERIAL: "STRUCTURAL FILL"
      COMPACTION: 95% MODIFIED PROCTOR

   D. BACKFILL BEHIND RETAINING WALLS AND BASEMENT WALLS, OUTSIDE BUILDING ENVELOPE AND UNDER PAVEMENT, WALKS, ENTRY SLABS:
      MATERIAL: "STRUCTURAL FILL"
      COMPACTION: 95% MODIFIED PROCTOR

   E. BACKFILL ALONG EXTERIOR OF BUILDING AGAINST WALLS AND NOT UNDER PAVEMENT, WALKS, ENTRY SLABS:
      MATERIAL: "SUITABLE NATIVE SOIL" COVERED BY 2 FEET DEEP BY 4 FEET WIDTH OF "STRUCTURAL FILL
      COMPACTION: 95% MODIFIED PROCTOR

9. BACKFILL MATERIALS: RECYCLED CONCRETE AGGREGATE TO BE USED IN WHOLE OR BLENDED WITH OTHER AGGREGATES TO ACHIEVE GRADATIONS BELOW. ONSITE MATERIALS MEETING THE FOLLOWING CLASSIFICATIONS MAY BE USED:
   A. "STRUCTURAL FILL":

SIEVE DESIGNATION	% BY WEIGHT PASSING SIEVES
4 INCH	100
3 INCH	90-100
1/4 INCH	25-90
No. 40	0-30
No. 200	0-6

   B. "GRANULAR BORROW":

SIEVE DESIGNATION	% BY WEIGHT PASSING SIEVES
6 INCH	100
3 INCH	90-100
No. 40	0-70
No. 200	0-7

   C. "CRUSHED STONE": CRUSHED STONE BENEATH FOUNDAITONS, SLABS, AND FOR UNDERDRAIN SHOULD BE WASHED, HARD, DURABLE ROCK MEETING THE REQUIREMENTS OF 2018 VTRANS STANDARD SPECIFICATION 704.02B 3/4-INCH STONE.

10. GEOTEXTILE FABRIC: NON-WOVEN WITH 12 LAPPED SEAMS SEE GEOTECHNICAL REPORTING FOR USE AND MEETING:
    - GRAB STRENGTH OF 205 POUNDS MINIMUM MEETING ASTM D4632
    - PUNCTURE STRENGTH OF 500 POUNDS MINIMUM MEETING ASTM D4833
    - TRAPEZOID TEAR OF 80 POUNDS MINIMUM MEETING ASTM D4533
    - APPARENT OPENING SIZE OF NO. 80 MAX. (US SIEVE) MEETING ASTM D4751

11. INSULATION AT EXTERIOR SLABS AND WALKS (NOT PAVEMENTS): EXTRUDED POLYSTYRENE, STRENGTH OF 40 PSI (UNO) AND RATED FOR UNDERSLAB/UNDERGROUND USE. STAGGER AND DO NOT TAPE BOARD JOINTS.

E. CAST-IN-PLACE CONCRETE

1. CODES AND STANDARDS: COMPLY WITH THE PROVISIONS OF THE LATEST EDITIONS OF:
   A. ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"
   B. ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE"
   C. ACI 304 "GUIDE FOR MIXING, TRANSPORTING AND PLACING CONCRETE"
   D. ACI 305 "HOT WEATHER CONCRETING"
   E. ACI 306 "STANDARD SPECIFICATION FOR COLD WEATHER CONCRETING"
   F. ACI 308 "STANDARD PRACTICE FOR CURING CONCRETE".

2. CONCRETE TESTING: THE CONTRACTOR SHALL PREPARE A SET OF 4 CYLINDERS/TEST SET TO BE TESTED AT AN INDEPENDENT LABORATORY. THE CYLINDERS SHALL BE TAKEN FROM ONE CONCRETE TRUCK AND LABELED WITH DATE, TRUCK NUMBER, AND LOCATION OF CONCRETE PLACEMENT. EACH SAMPLE SHALL ALSO BE TESTED FOR SLUMP, AIR CONTENT, AND TEMPERATURE. THE CYLINDERS SHALL BE TESTED AS FOLLOWS: 1 AT 7 DAYS; 2 AT 28 DAYS; AND A THIRD HELD FOR A 56 DAY BREAK IF REQUIRED. TEST CYLINDERS SHALL BE TAKEN AT LEAST ONCE PER PLACEMENT OR AT THE FOLLOWING INCREMENTS:
   A. WALLS AND FOOTINGS: 50 CUBIC YARDS
   B. ISOLATED FOOTINGS: 25 CUBIC YARDS
   C. SLABS: 50 CUBIC YARDS

   FIELD TESTING SHALL BE PERFORMED BY A GRADE I ACI (MINIMUM)FIELD TESTING TECHNICIAN.

3. SUBMIT MIX DESIGN AND EITHER TRIAL MIX DESIGNS OR HISTORIC FIELD DATA FOR APPROVAL IN ACCORDANCE WITH ACI 318, CHAPTER 5, INCLUDE TECHNICAL DATA SHEETS, GRADATIONS, AND MATERIAL VERIFICATIONS ON ALL COMPONENTS. SUBMIT MIX DESIGNS, PRIOR TO PLACEMENT OF CONCRETE, TRANSIT MIX SHALL CONFORM TO ASTM C94.

4. COMPRESSIVE MIXTURES AS DELINEATED IN TABLE BELOW; SEE 03 3000 & NOTES BELOW FOR ADDITIONAL INFORMATION.
   A. SLUMP: 3"-5" BEFORE ADDITION OF WATER REDUCER, 6"-8" AFTER ADDITION OF WATER REDUCER
   B. ALL CONCRETE NORMALWEIGHT, UNLESS NOTED OTHERWISE.

5. MAXIMUM AGGREGATE SIZE IN ACCORDANCE WITH ACI 301; CLEARLY NOTE LOCATION WHERE AGGREGATES GREATER THAT 3/4" MAXIMUM SIZE ARE PROPOSED FOR USE.

6. NO CHLORIDE OR OTHER UNAUTHORIZED ADMIXTURES SHALL BE USED. MAINTAIN MAXIMUM WATER SOLUBLE CHLORIDE ION (CL-) IN CONCRETE, BY WEIGHT OF CEMENT AT LESS THAN 1.00 FOR NON-EXPOSED CONCRETES AND 0.30 FOR EXTERIOR EXPOSED CONCRETES

7. WHEN AMBIENT TEMPERATURE IS BELOW 40º FAHRENHEIT OR MORE THAN 90º FAHRENHEIT PLACE AND PROTECT CONCRETE IN ACCORDANCE WITH ACI STANDARDS LISTED ABOVE.

8. CONCRETE PLACEMENT MAY REQUIRE ADJUSTMENT OF REINFORCEMENT, EMBEDDED ITEMS OR ANCHOR BOLTS. REVIEW DRAWINGS IDENTIFY THESE LOCATIONS TO ARCHITECT PRIOR TO SUBMITTALS. PROVIDE ADDITIONAL SUPERVISION AT ALL STEEL TO CONCRETE CONNECTION LOCATIONS AND MODIFY PLACEMENT MEASURES TO ACCOUNT FOR CONGESTIONS.

9. COMPLY WITH ACI CODES AND PLACE CONCRETE IN A CONTINUOUS OPERATION WITHIN PLANNED JOINTS OR SECTIONS. DO NOT PERMIT COLD JOINTS TO OCCUR.

10. CURING: COVER OR WET CURE ALL ELEMENTS. BEGIN INITIAL CURING AS SOON AS FREE WATER HAS DISAPPEARED FROM EXPOSED SURFACES. WHERE POSSIBLE, KEEP CONTINUOUSLY WET FOR 72 HOURS. CONTINUE CURING BY USE OF MOISTURE RETAINING COVER. USE OF MEMBRANE-FORMING CURING COMPOUNDS IS PROHIBITED.

11. SEE 03 3000 FOR SURFACE FINISHES. NOTE EXPOSED WALL REQUIREMENTS IN SPECIFICATIONS.

12. PROVIDE CONTROL AND CONSTRUCTION JOINTS BY DETAIL AND SPECIFICATION REQUIREMENTS. SHOW LOCATION ON REINFORCING SUBMITTAL FOR COORDINATION WITH FLOORING, EQUIPMENT AND OTHER CONTRACTOR REQUIREMENTS.
   A. SLABS SAW-CUT CONTROL JOINTS AS SOON AS CONCRETE HAS HARDENED ENOUGH TO WALK ON SURFACE WITHOUT DAMAGING CONCRETE AND NO MORE THAN 4 HOURS AFTER FINAL TROWEL. JOINT SPACING SHALL, UNLESS NOTED OTHERWISE, NOT EXCEED 36 TIMES THE SLAB THICKNESS OR 18 FEET
   B. WALLS CONTROL JOINTS: NOT EXCEEDING 20 FEET AND AT EACH INTEGRAL PILASTER; CONSTRUCTION JOINTS AT 80 FEET OF MAXIMUM SPACING.

13. HEADED STUD ANCHORS, DEFORMED BAR ANCHORS (DBA'S), AND OTHER EMBEDDED ITEMS AS SPECIFIED FOR STRUCTURAL STEEL. ALL WELDS FOR STUDS AND DBA'S SHALL BE AUTOMATICALLY WELDED WITH MANUFACTURER'S EQUIPMENT AND RECOMMENDATIONS FOR FLUX FILLED HEADS.

F. CONCRETE REINFORCEMENT

1. SHOP DRAWINGS SHALL BE PROVIDED PRIOR TO START OF CONCRETE PLACING AND BE IN ACCORDANCE WITH:
   A. ACI 301
   B. ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT"
   C. ACI SP-66 "ACI DETAILING MANUAL"
   D. CRSI MSP "MANUAL OF STANDARD PRACTICE"

   SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. SHOW ALL SLABS IN PLAN AND ALL WALLS IN ELEVATION WITH OPENINGS AND PENETRATIONS SHOWN BASED ON MEP COORDINATION SUBMITTALS AND ARCHITECTURAL REQUIREMENTS. SUBMIT PROPOSED CONTROL AND CONSTRUCTION JOINTS FOR REVIEW ON REINFORCING SUBMITTALS

2. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60, STEEL BARS PER ASTM A305, UNLESS NOTED OTHERWISE.

3. PROVIDE EPOXY-COATED BARS WHERE SHOWN MEETING ASTM A775 AND USING EPOXY COATED SUPPORTS, COATED WIRE, AND EPOXY COATING FOR REPAIR OF SURFACE PRIOR TO POURING.

4. WHERE SPECIFICALLY SHOWN ON THE DRAWINGS, WELD REINFORCING BARS IN ACCORDANCE WITH AWSD1.4 PRE-QUALIFIED JOINT, ELECTRODE 9E90 LOW HYDROGEN) AND PROCESS REQUIREMENTS INCLUDING COORDINATED WITH MILL CERTIFIED CARBON EQUIVALENT. ALTERNATIVELY, ASTM A706, GRADE 60 MAY BE SUBSTITUTED, INDICATE MATERIAL AND WELDING REQUIREMENTS ON SUBMITTAL. DO NOT WELD AT LOCATIONS NOT DETAILED, UNLESS SUBMITTED AND REVIEWED BY ARCHITECT.

5. FIELD BENDING OR REINFORCEMENT SHALL CONFORM TO ACI 301, INCLUDING PRE-HEAT REQUIREMENTS.

6. WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185 WITH A MINIMUM ULTIMATE TENSILE STRENGTH OF 70,000 PSI. LAP ONE CROSS WIRE SPACING PLUS 2". SUPPORT MESH ON CHAIRS PER CRSI WITH #4 AT 4'-0"oc, EACH WAY.

7. PROVIDE MINIMUM CONCRETE COVER TO REINFORCEMENT AS FOLLOWS, UNLESS OTHERWISE NOTED:
   A. BOTTOM OF FOOTINGS, GRADE BEAMS, AND SLABS-ON-GRADE: 3"
   B. SIDES OF FOOTINGS AND GRADE BEAMS: 2"
   C. FOUNDATION WALLS, FROST WALLS, RETAINING WALLS, PIT WALLS: 2"
   D. EXTERIOR WALLS (EXPOSED TO WEATHER): 2"
   E. FACES OF WALLS OTHER THAN THOSE NOTED ABOVE: 3/4"
   F. FOUNDATION PIERS: 2" TO TIES
   G. ALL FACES OF BEAMS AND COLUMNS: 1-1/2" TO TIES
   H. TOP AND BOTTOM OF ELEVATED SLABS: 3/4"
   I. TOPPING SLAB: 3/4"
   J. SLAB-ON-DECK: 3/4" FROM DECK, 3/4" FROM TOP SURFACE

8. ALL LAPS SHALL BE FULL TENSION LAPS (CLASS B SPLICE) UNLESS SPECIFICALLY NOTED OTHERWISE. DOWELS SHALL MATCH SIZE AND SPACING OF MAIN REINFORCEMENT, UNLESS OTHERWISE NOTED.

9. CHAIRS AND SPACERS SHALL BE PLACED TO ADEQUATELY SUPPORT REINFORCING DURING PLACEMENT. FOREIGN MATERIALS SUCH AS WOOD, CLAY BRICK OR OTHER UNSUITABLE SUPPORTS SHALL NOT BE USED TO SUPPORT REINFORCING. SET WIRE TIES SO ENDS ARE DIRECTED INTO CONCRETE WHERE CONCRETE WILL BE EXPOSED. DO NOT USE CONCRETE SUPPORTS OR PUDDLING FOR SLABS UNLESS SUBMITTED AND ACCEPTABLY REVIEWED.

G. CONCRETE FORMWORK

1. CONCRETE FORMS SHALL BE CLEAN AND FREE FROM DEBRIS. IF FORMS ARE COATED WITH A VEGETABLE BASED (SOY) RELEASE AGENT, WHICH SHALL NOT STAIN CONCRETE OR ABSORB MOISTURE OR IMPAIR NATURAL BONDING OF CONCRETE.

2. COORDINATE WITH REINFORCING SUBMITTAL FOR OPENING AND ADDITIONAL REQUIREMENTS. SUBMIT, BEFORE FRAMING OPENINGS IN STRUCTURAL ELEMENTS WHICH ARE NOT INDICATED ON DRAWINGS.

3. PROVIDE BRACING TO ENSURE STABILITY OF FORMWORK. FOR PLACEMENT OPERATIONS. DO NOT REMOVE FORMS OR BRACING UNTIL CONCRETE HAS GAINED SUFFICIENT STRENGTH TO CARRY ITS OWN WEIGHT AND IMPOSED LOADS.

4. ALL WALL SIDES AND SLAB EDGES EXPOSED TO VIEW TO HAVE CLASS A – CLASS OF SURFACE. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

TABLE 1. CONCRETE MIXTURES

CONCRETE USAGE	MIN. COMPRESSIVE STRENGTH (f'_c)	CONCRETE TYPE	EXPOSURE CLASSES	MAX. W/CM RATIO	PERMISSIBLE AIR CONTENT	REQUIRED CEMENT REPLACEMENT	MAX. AGGREGATE SIZE	ADDITIONAL REMARKS
COMBINED FOOTINGS, CONTINUOUS FOOTINGS, SPREAD FOOTINGS	4,000 psi AT 56 DAYS	NWC	C1	N/A	N/A	0 - 70%	1-1/2"	SEE NOTE 6
FOUNDATION WALLS, COLUMNS AND PIERS	4,500 psi AT 28 DAYS	NWC	C1, F1	0.45	4.5% ±1.5%	0 - 50%	1"	
INTERIOR SLAB-ON-GRADE	4,000 psi AT 28 DAYS	NWC	C1	0.45	N/A	0 - 50%	1-1/2"	
EXTERIOR SLAB-ON-GRADE	5,000 psi AT 28 DAYS	NWC	C2, F3	0.45	5.5% ±1.5%	0 - 35%	1-1/2"	
SLABS-ON-METAL DECK	3,500 psi AT 28 DAYS	NWC		0.45	N/A	0 - 50%	3/4"	

NOTES:
1. ALL CONCRETE SHALL BE CONSIDERED TO BE IN EXPOSURE CLASS F0, S0, P0 AND C0 ACCORDING TO ACI 318-14 UNLESS NOTED OTHERWISE IN TABLE ABOVE, IN NOTES BELOW OR ELSEWHERE ON THE STRUCTURAL DRAWINGS.
2. CONCRETE NOTED ABOVE OR ON PLAN AS EXPOSURE CLASS F1, F2, S1, S2, S3, P1, C1 OR C2 SHALL BE PROPORTIONED TO COMPLY WITH ACI 318-14 TABLES 19.3.2.1, 19.3.3.1, AND 26.4.2.2b IN ADDITION TO THE NOTATIONS IN THE REQUIREMENTS FOR VARIOUS EXPOSURE CLASSES RELATIVE TO CEMENT TYPE, AIR ENTRAINMENT REQUIREMENTS, CHLORIDE ION LIMITS AND POZZOLAN LIMITS.
3. FOR SLAB, COORDINATE AND PROVIDE MIX DESIGNS MEETING MAXIMUM CEMENT CONTENT FOR AGGREGATE SIZE TO COMPLY WITH TABLE 8.4.1B OF ACI 302-15.
4. WHERE INDICATED IN THE "ADDITIONAL REMARKS" ABOVE, CONCRETE SHALL BE PROPORTIONED FOR A MAXIMUM ALLOWABLE UNIT SHRINKAGE OF 0.035% MEASURED 28 DAYS AFTER CURING IN LIME WAS AS DETERMINED BY ASTM C157, USING AIR STORAGE.
5. WALLS AND PIERS THAT ARE LOCATED EXTERIOR TO THE BUILDING FOOTPRINT AND EXTEND ABOVE THE FROST LINE ARE EXPOSURE CLASS C1 AND F1 AND SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4,500 psi AT 28 DAYS, HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.45 AND HAVE A MINIMUM 4.5% AIR ENTRAINMENT.
6. CONCRETE MIX IS APPLICABLE TO SITE RETAINING WALLS ON CIVIL AND LANDSCAPE DRAWINGS.

BASIS OF DESIGN

1. Building Code: 2015 VERMONT FIRE AND BUILDING CODE

2. Dead Loads:
   a. Roof Dead Load: 25 psf
   b. Floor Superimposed Dead Load: 15 psf
   c. Floor Superimposed Dead Load W/ Partitions: 30 psf

3. Live Loads:
   a. Roof Live Load: Snow Load Governs
   b. Floor Live Load: 50 psf (At Office)
   c. Floor Live Load: 100 psf (At Office 1st Floor Public)
   d. Floor Live Load: 80 psf (At Office 2nd Floor Corridors)

4. Roof Snow Load:
   a. Ground Snow Load, P_g: 60 psf
   b. Flat Roof Snow Load, P_f: 45 psf
   c. Snow Exposure Factor, C_e: 0.9
   d. Snow Load Importance Factor, I: 1.2
   e. Thermal Factor, C_t: 1.0 (Main Building 1.2 (Open Car Port)

5. Wind Design Data:
   a. Basic Wind Speed (3-second gust), V: 120 mph
   b. Wind Exposure: C
   c. Internal Pressure Coefficients: +/- 0.18
   d. Components and Cladding Wind Pressure: per ASCE 7-10

6. Earthquake Design Data:
   a. Seismic Importance Factor, I: 1.5
   b. Risk Category: IV
   c. Mapped Spectral Response Acceleration, S_S: 0.251
   d. Mapped Spectral Response Acceleration S_1: 0.089
   e. Site Class: D
   f. Spectral Response Coefficient, S_{DS}: 0.267
   g. Spectral Response Coefficient, S_{D1}: 0.142
   h. Seismic Design Category: D
   i. Basic Seismic-Force-Resisting System: ORDINARY CONCENTRIC BRACED FRAMES
   j. Seismic Response Coefficient, C_S: 0.124
   k. Response Modification Factor, R: 3.25
   l. Analysis Procedure Used: Equivalent Lateral Force Procedure

7. Allowable Soil Bearing Pressure: 2000 psf

ABBREVIATIONS

AB	ANCHOR BOLT	MC	MOMENT CONNECTION
AFF	ABOVE FINISH FLOOR	N.S.	NEAR SIDE
B.O.F.	BOTTOM OF FOOTING	oc	ON CENTER
DWG	DRAWING	P#	PIER DESIGNATION
E.F.	EACH FACE	PL	PLATE
ELEV.	ELEVATION	SS	STAINLESS STEEL
EP	EMBED PLATE	STD	STANDARD
EQ	EQUAL	T.O.C.	TOP OF CONCRETE
E.S.	EACH SIDE	T.O.S.	TOP OF STEEL
E.W.	EACH WAY	T.O.SHELF	TOP OF SHELF
EX.	EXISTING	T.O.W.	TOP OF WALL
F#	FOOTING DESIGNATION	T

H. STRUCTURAL STEEL

1. UNLESS OTHERWISE NOTED, STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:
   - A. WIDE FLANGE SECTIONS: ASTM A572 GRADE 50 OR ASTM A992 (FY = 50 KSI)
   - B. ANGLES, CHANNELS: ASTM A36 (FY = 36 KSI)
   - C. TUBES: ASTM A500 GRADE C (FY = 50 KSI)
   - D. PIPES: ASTM A53 GRADE B TYPE E OR S (FY = 35 KSI)
   - E. BASEPLATES, CONNECTION PLATES, STIFF. PLATES, MISC. PLATES: ASTM A572 GRADE 50 (FY = 50 KSI)
   - F. THREADED RODS: ASTM A572 GRADE 50
   - G. STAINLESS STEEL (SS) BARS & PLATES: ASTM A304, FY = 30 KSI
   - H. ANCHOR BOLTS: ASTM F1554 GRADE 55, UNLESS NOTED OTHERWISE, WITH SUPPLEMENTARY REQUIREMENT S1 FOR WELDABILITY.
2. BOLTS, NUTS AND WASHERS: ASTM A325 TYPE 1 BOLTS (3/4" MINIMUM DIAMETER), ASTM A563 DH HEAVY HEX NUTS WITH ASTM F436 HARDENED WASHERS. PROVIDE BOLT ASSEMBLIES GALVANIZED TO ASTM A153 AT GALVANIZED STRUCTURAL MEMBERS. PROVIDE ASTM A490 BOLTS WHERE NOTED ON DRAWINGS OR WHERE NEEDED FOR SPECIFIED LOADS. DO NOT MIX BOLT SIZES BETWEEN A325 AND A490 BOLTS. HIGH STRENGTH LOAD INDICATOR BOLTS MAY BE USED AT THE CONTRACTOR'S OPTION.
3. DESIGN OF STEEL CONNECTIONS: CONTRACTOR IS RESPONSIBLE FOR DESIGN OF ALL STEEL CONNECTIONS OR PORTIONS OF CONNECTIONS NOT FULLY DETAILED IN THE CONTRACT DOCUMENTS, FOR THE SPECIFIED CONNECTION FORCES. SEE SPECIFICATIONS FOR DESIGN REQUIREMENTS. IN NO CASE SHALL LOADS BE LESS THAN 8 KIPS (WORKING).
4. SUBMITTALS FOR REVIEW
   - A. SHOP DRAWINGS: INDICATE PROFILES, SIZES, SPACING, AND LOCATIONS OF STRUCTURAL MEMBERS, DECKING, OPENINGS, ATTACHMENTS, AND FASTENERS. SHOW ALL CONNECTION DETAILS. PROVIDE DESIGN OF CONNECTIONS NOT DETAILED ON DRAWINGS. INDICATE WELDED CONNECTIONS WITH AWS A2.0 WELDING SYMBOLS. INDICATE NET WELD LENGTHS
   - B. EACH SHOP DRAWING SHALL BE DATED AND IDENTIFIED WITH A UNIQUE DRAWING NUMBER AND REVISION NUMBER. RESUBMITTED SHOP DRAWINGS SHALL BE GIVEN A NEW REVISION NUMBER, AND ALL CHANGES/ADDITIONS/DELETIONS FROM THE PREVIOUS SUBMISSION SHALL BE CLEARLY IDENTIFIED.
   - C. ERECTION DRAWINGS SHALL INCLUDE DETAILS OF ALL FIELD WELDING AND ANY OTHER SPECIAL FIELD INSTRUCTIONS SEE SPECIFICATION SECTION 05120 AND NOTES BELOW FOR ADDITIONAL REQUIREMENTS
5. SUBMITTALS FOR INFORMATION
   - A. MANUFACTURER'S MILL CERTIFICATE: CERTIFY THAT PRODUCTS MEET OR EXCEED SPECIFIED REQUIREMENTS.
   - B. MILL TEST REPORTS: SUBMIT INDICATING STRUCTURAL STRENGTH, DESTRUCTIVE AND NON-DESTRUCTIVE TEST ANALYSIS.
   - C. WELDERS CERTIFICATES: CERTIFY WELDERS EMPLOYED ON THE WORK, VERIFYING AWS QUALIFICATION WITHIN THE PREVIOUS 12 MONTHS.
6. DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STEEL CONSTRUCTION," 14TH EDITION, BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, AND THE STRUCTURAL WELDING CODE (AWS D1.1) LATEST EDITION, BY THE AMERICAN WELDING SOCIETY.
7. STRUCTURAL STEEL CONNECTIONS SHALL BE AS FOLLOWS:
   - A. ALL CONNECTIONS UNLESS INDICATED OTHERWISE SHALL BE MADE WITH 3/4 INCH DIAMETER A325 BOLTS. AT MOMENT CONNECTIONS, 3/4" DIAMETER A325 BOLTS, MINIMUM, FULLY-TENSIONED. THE USE OF FULLY-TENSIONED BOLTS INSTALLED IN ACCORDANCE WITH THE AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" IS REQUIRED AT THE FOLLOWING LOCATIONS:
     - BRACING CONNECTIONS
     - CONNECTIONS CARRYING SPECIFIED AXIAL LOADS
     - COLUMN SPLICES FOR BRACING COLUMNS
     - FLANGE AND WEB BOLTS AT MOMENT CONNECTIONS AND MOMENT SPLICES

     ALL OTHER BOLTS MAY BE BEARING BOLTS (THREADS INCLUDED) TIGHTENED TO THE SNUG-TIGHT CONDITION, UNLESS NOTED OTHERWISE.
   - B. THE MINIMUM NUMBER OF BOLTS IN ANY CONNECTION SHALL BE TWO 3/4 INCH DIAMETER A325 BOLTS UNLESS INDICTED OTHERWISE.
   - C. IN CONNECTIONS OF BEAMS AND GIRDERS, THE MINIMUM NUMBER OF BOLTS SHALL BE REQUIRED TO DEVELOP THE BEAM SHEAR "V" NOTED ON THE CONTRACT DRAWINGS. THE PLAN NOTES SHALL ALSO BE APPLIED. IF THE BEAM SHEAR IS NOT NOTED, THE CONNECTIONS SHALL DEVELOP THE BEAM SHEAR (V=2W/3) WHERE W = THE TOTAL ALLOWABLE BEAM UNIFORM LOAD BASED ON SIMPLE SPAN MOMENTS AND BRACED COMPRESSION FLANGES. (SEE AISC MANUAL OF STEEL CONSTRUCTION, BEAMS); LOADS SHOWN ARE THE SERVICE (UNFACTORED) DESIGN FORCES INDICATED ON THE DRAWINGS. ANY 1/3 ALLOWABLE STRESS INCREASE MAY NOT BE TAKEN WITH THE SPECIFIED DESIGN FORCES.
   - D. CONNECTIONS OF BEAM AND GIRDERS SHALL DEVELOP THE BEAM SHEAR DESCRIBED ABOVE IN ADDITION TO AXIAL FORCES LISTED ON THE STRUCTURAL DRAWINGS. (COMPRESSION OR TENSION) DO NOT USE SINGLE PLATE CONNECTIONS FOR FRAMING WITH AXIAL LOADS.
   - E. THE CONNECTION FOR DIAGONAL BRACING, VERTICAL AND HORIZONTAL, SHALL DEVELOP THE FORCE INDICATED ON THE DRAWINGS BUT NOT LESS THAN 50% OF THE AXIAL CAPACITY OF THE BRACE IN TENSION.
   - F. DESIGN CALCULATIONS, SIGNED AND SEALED BY CONTRACTOR'S PROFESSIONAL ENGINEER SHALL BE SUBMITTED FOR ALL CONNECTIONS NOT FULLY DETAILED IN THE STRUCTURAL DRAWINGS.
   - G. CALCULATIONS FOR STANDARD, REPETITIVE BEAM CONNECTIONS ARE TO BE SUBMITTED IN THE FORM OF SUMMARIZED CAPACITY TABLES FOR EACH TYPE OF CONNECTION USED (DOUBLE ANGLE, SHEAR PLATE, ETC.). THE TABLES ARE TO BE ACCOMPANIED BY A DETAIL CLEARLY SHOWING THE CONNECTION GEOMETRY, INCLUDING THE NUMBER, SIZE, GRADE AND TYPE (BEARING OR SLIP-CRITICAL) OF BOLTS; SIZE OF BOLT HOLES; SIZE, GRADE, AND GEOMETRY OF CONNECTION ANGLES OR PLATES; SIZE AND LENGTH OF WELDS; AND MINIMUM WEB THICKNESS FOR FULL CAPACITY. COMPUTER PRINTOUTS OF DETAILED CONNECTION CHECKS FOR EACH INDIVIDUAL PIECE (AS GENERATED BY SOME DETAILING SOFTWARE) ARE NOT ACCEPTABLE FOR THE STANDARD, REPETITIVE BEAM CONNECTIONS.
   - H. CALCULATIONS FOR BRACING AND OTHER NON-STANDARD CONNECTIONS SHALL INCLUDE A DETAIL SHOWING THE CONNECTION GEOMETRY AND DESIGN FORCES, AND FULL CALCULATIONS DEMONSTRATING THE ADEQUACY OF THE CONNECTION.
   - I. CONTRACTOR TO SUBMIT CONNECTION DETAILS AND CALCULATIONS IN ADVANCE OF PREPARING PIECE DRAWINGS SO AS TO STREAMLINE THE SHOP DRAWING PREPARATION AND REVIEW PROCESS. SEE SPECIFICATION SECTION 05120 FOR ADDITIONAL REQUIREMENTS
   - J. DESIGN OF STEEL CONNECTIONS FOR SHEAR SHALL INCLUDE THE EFFECTS OF ECCENTRICITY.
   - K. CONTRACTOR SHALL PROVIDE STIFFENERS, WEB DOUBLER PLATES, AND OTHER REINFORCEMENT AS NECESSARY TO RESIST LOCAL EFFECTS DUE TO THE SPECIFIED CONNECTION LOADS.
   - L. MOMENT CONNECTIONS SHALL BE DESIGNED TO DEVELOP THE FULL MOMENT CAPACITY OF THE MEMBER UNLESS NOTED OTHERWISE.
   - M. SINGLE-ANGLE CONNECTIONS MAY NOT BE USED FOR BEAM CONNECTIONS.
8. ALL STRUCTURAL SHOP AND FIELD WELDING SHALL BE MADE WITH ELECTRODES DESIGNED BY E70XX LOW HYDROGEN, IN ACCORDANCE WITH AWS D1.1, PERFORMED BY CERTIFIED WELDERS.
9. PROVIDE 3/8" WEB STIFFENERS IN BEAMS OVER OR UNDER ALL COLUMNS OR POSTS. TWO ON EACH SIDE IN LINE WITH COLUMN FLANGES.
10. THE MINIMUM THICKNESS OF GUSSET AND FIN PLATES SHALL BE 3/8".
11. GROUT: NON-SHRINK TYPE, PRE-MIXED COMPOUND CONSISTING OF NON-METALLIC AGGREGATE CEMENT, WATER REDUCING AND PLASTICIZING ADDITIVES, CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI AT 28 DAYS.
12. SHOP AND TOUCH-UP PRIMER: TNEMEC SERIES FM88 OR APPROVED EQUIVALENT.
13. TOUCH-UP PRIMER FOR GALVANIZED SURFACES: TNEMEC SERIES 37, ZINC RICH RED APPROVED EQUIVALENT.
14. FINISH
   - A. COORDINATE ALL COATINGS WITH DIVISION 9 SPECIFICATION REQUIREMENTS
   - B. WHERE INDICATED, STRUCTURAL STEEL MEMBERS ARE TO BE GALVANIZED IN ACCORDANCE WITH ASTM A123. PROVIDE MINIMUM 1.25 OZ/SQ FT GALVANIZED COATING. ALL MEMBERS EXPOSED TO THE EXTERIOR OR EXTENDING THROUGH AND BEYOND BUILDING ELEMENT SHALL BE GALVANIZED
15. ERECTION
   - A. ALLOW FOR ERECTION LOADS, AND FOR SUFFICIENT TEMPORARY BRACING TO MAINTAIN STRUCTURE SAFE, PLUMB, AND IN TRUE ALIGNMENT UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRACING.
   - B. FIELD WELD COMPONENTS INDICATED ON DRAWINGS AND SHOP DRAWINGS.
   - C. DO NOT FIELD CUT OR ALTER STRUCTURAL MEMBERS WITHOUT APPROVAL OF ARCHITECT/ENGINEER.
   - D. AFTER ERECTION, PRIME WELDS, ABRASIONS, AND SURFACES NOT SHOP PRIMED, EXCEPT SURFACES TO BE IN CONTACT WITH CONCRETE.
   - E. GROUT UNDER BASE PLATES WITH PRE-MIXED NON-SHRINK GROUT WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 7,000 PSI

I. HEADED STUD AND DEFORMED BAR ANCHOR CONNECTORS

1. STUD SHEAR CONNECTORS SHALL BE TYPE B HEADED STUDS MADE FROM ASTM A108 MATERIAL (Fu=65 KSI) AND CONFORMING TO THE REQUIREMENTS OF AWS D1.1. USE 3/4" DIAMETER STUDS; UNLESS NOTED OTHERWISE. UNLESS NOTED OTHERWISE, USE STUDS FOR AT 1" LESS THAN SLAB THICKNESS FOR ELEVATED FRAMING.
2. DEFORMED BAR ANCHORS (DBA'S): NELSON DEFORMED BAR ANCHORS, D2L (OR ACCEPTED EQUAL) AS FOLLOWS: ASTM A 496; Fy = 70ksi (MIN); Fu = 80ksi (MIN); WELDED ACCORDING TO AWS D1.1, CHAPTER 7 WITH A STUD WELDING GUN.
3. HEADED AND DEFORMED BAR ANCHORS. STUDS SHALL BE FASTENED USING AN AUTOMATIC STUD WELDING SYSTEM USING MANUFACTURERS' EQUIPMENT. MANUAL STICK WELDING OF STUDS IS PROHIBITED.
4. FOR ELEVATED COMPOSITE BEAM AND SLAB FRAMING:
   - A. MAXIMUM STUD SPACING IS 12" ON CENTER. WHERE STUD COUNT SHOWN IN PLAN RESULTS IN SPACING EXCEEDING 12" ON CENTER, PROVIDE ADDITIONAL STUDS TO MAINTAIN THE 12" MAXIMUM SPACING. PROVIDE STUDS AT ALL BEAMS SUPPORTING CONCRETE SLAB; IF NO STUD COUNT IS SHOWN, PROVIDE STUDS AT 12" ON CENTER
   - B. FOR DECK SPANNING PERPENDICULAR TO BEAMS, MINIMUM STUD SPACING IS 12" ON CENTER. FOR DECK SPANNING PARALLEL TO BEAM, MINIMUM STUD SPACING IS 4.5" ON CENTER. PLACE STUDS IN SINGLE LINE TO EXTENT POSSIBLE. NO MORE THAN TWO STUDS MAY BE PLACED ACROSS WIDTH OF FLANGE. CENTER OF STUD SHALL NOT BE LESS THAN 1-1/4" FROM EDGE OF BEAM FLANGE.

J. COMPOSITE STEEL FLOOR DECK

1. FLOOR DECK SIZE: SEE DRAWINGS AND SPECIFICATION 05 31 00.
2. FLOOR DECK FASTENERS: SEE DRAWINGS AND SPECIFICATION 05 31 00.
3. FLOOR DECK SHALL BE GALVANIZED AND SHALL CONFORM TO TH EREQUIREMENTS OF ASTM A653 COATING CLASS G90. THE MINIMUM YIELD STRENTH OF THE DECK IS 40 KSI.
4. DECK PANELS SHALL BE ARRANGED TO PROVIDE THREE-SPAN CONTINUOUS SUPPORT CONDITIONS IN ALL LOCATIONS, UNLESS OTHERWISE NOTED. DO NOT HAVE SINGLE-SPAN CONDITIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS; HIGHLIGHT LOCATIONS ON THE SUBMITTAL.
5. PROVIDE 2" MINIMUM END BEARING AND 1/2" MINIMUM SIDE BEARING.
6. WHERE NOT SPECIFICALLY DETAILED, PROVIDE CONTINUOUS BENT METAL CLOSURES OF 12 GAGE MINIMUM THICKNESS AT ALL SLAB OPENINGS AND SLAB EDGES. CONNECT TO ADJACENT FRAMING WITH CONTINUOUS AISC MINIMUM FILET WELD TO TOP AND BOTTOM SIDES. PROVIDE CONTINUOUS DECK CLOSURE AT ALL DECK ENDS.
7. PROVIDE METAL LATH CLOSURES AROUND COLUMNS.
8. ALIGN DECK RIBS ACROSS SUPPORTING BEAMS WHERE DECK IS EXPOSED TO VIEW IN THE FINAL CONDITION.
9. DECK UNITS SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH CURRENT "DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS, AND ROOF DECKS" PUBLISHED BY THE STEEL DECK INSTITUTE.
10. ALL NECESSARY ACCESSORY ITEMS, SUCH AS CLOSURES, INSULATION CLIPS, ETC. SHALL BE GALVANIZED, FURNISHED, AND INSTALLED AS REQUIRED.
11. ALL WELDING OF STEEL DECK SHALL BE IN CONFORMANCE WITH ANSI/AWS D1.3 "STRUCTURAL WELDING CODE - SHEET STEEL". WELDING SHALL BE PERFORMED BY CERTIFIED LIGHT GAGE WELDERS THOROUGHLY EXPERIENCED IN WELDING LIGHT GAGE STRUCTURAL METALS. SPECIAL INSPECTION IS REQUIRED FOR WELDING OF METAL DECK.
12. DELIVER DECK TO THE JOBSITE FREE FROM OIL, GREASE, ETC. AND CLEAN DECKING THOROUGHLY PRIOR TO PLACING CONCRETE.
13. COMPOSITE FLOOR DECK ENDS ARE TO BUTTED OR LAPPED AT CONTRACTOR'S OPTION.

K. STEEL ROOF DECK

1. ROOF DECK SIZE: SEE DRAWINGS AND SPECIFICATION 05 31 00.
2. ROOF DECK FASTENERS: SEE DRAWINGS AND SPECIFICATION 05 31 00.
3. ROOF DECK SHALL BE GALVANIZED AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM A653 COATING CLASS G90. THE MINIMUM YIELD STRENTH OF THE DECK IS 40 KSI.
4. DECK PANELS SHALL BE ARRANGED IN THREE-SPAN CONTINUOUS SUPPORT CONDITION WHEREVER POSSIBLE. DO NOT HAVE SINGLE-SPAN CONDITIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS; HIGHLIGHT LOCATIONS ON THE SUBMITTAL.
5. WHERE NOT SPECIFICALLY DETAILED, PROVIDE CONTINUOUS BENT METAL CLOSURES OF 14 GAGE MINIMUM THICKNESS AT ALL ROOF OPENINGS AND ROOF EDGES. CONNECT TO ADJACENT FRAMING WITH CONTINUOUS AISC MINIMUM FILET WELD TO TOP AND BOTTOM SIDES. PROVIDE CONTINUOUS DECK CLOSURE AT ALL DECK ENDS.
6. PROVIDE 2" MINIMUM END BEARING.
7. ROOF DECK SHALL BE SUPPORTED AND FASTENED AT ALL EDGES (BOTH PARALLEL AND PERPENDICULAR TO RIBS), AT INTERIOR SUPPORTS PERPENDICULAR TO RIBS, AT RIDGES AND VALLEYS, AND AT OTHER LOCATIONS SPECIFIED IN THE DRAWINGS. WHERE ROOF DECK DOES NOT SIT FLAT ON TOP OF THE SUPPORTING BEAM FLANGE AT THESE LOCATIONS, PROVIDE 1/4" MINIMUM DECK SUPPORT PLATE WELDED TO THE BEAM. IF THE RIB SPACING IS SUCH THAT THE RIB MISSES THE SUPPORT PLATE, PROVIDE A 16 GAGE MINIMUM SHEET METAL CLOSURE PLATE TO SPAN THE GAP AND ALLOW FOR THE SPECIFIED FASTENING OF THE DECK TO THE SUPPORT PLATE.
8. PROVIDE 16 GAGE MINIMUM SHEET METAL CLOSURE PLATES AT RIDGES AND VALLEYS. FASTEN TO DECK BOTH SIDES OF THE RIDGE/VALLEY AS FOR SIDELAPS.
9. ALIGN DECK RIBS ACROSS SUPPORTING BEAMS WHERE DECK IS EXPOSED TO VIEW IN THE FINAL CONDITION.
10. DECK UNITS SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH CURRENT "DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS, AND ROOF DECKS" PUBLISHED BY THE STEEL DECK INSTITUTE.
11. ALL WELDING OF STEEL DECK SHALL BE IN CONFORMANCE WITH ANSI/AWS D1.3 "STRUCTURAL WELDING CODE - SHEET STEEL". WELDING SHALL BE PERFORMED BY CERTIFIED LIGHT GAGE WELDERS THOROUGHLY EXPERIENCED IN WELDING LIGHT GAGE STRUCTURAL METALS. SPECIAL INSPECTION IS REQUIRED FOR WELDING OF METAL DECK.

L. POST-INSTALLED ANCHORS INTO CONCRETE AND MASONRY

1. WHERE A MANUFACTURER'S ANCHORS IS SPECIFICALLY CALLED OUT ON THE DRAWINGS, IT SHALL BE CONSIDERED THE DESIGN BASIS FOR THE REQUIRED ANCHOR. ALTERNATES MEETING OR EXCEEDING ANCHOR SYSTEM DEMANDS, INCLUDING, BUT NOT LIMITED TO CAPACITY LOADING, EDGE DISTANCE, SUBSTRATE THICKNESS FOR CONNECTION ELEMENTS AND BASE MATERIAL SHALL BE SUBMITTED FOR PROPOSED USE PENDING ACCEPTABLE REVIEW. SUBMIT ICC-ES CODE REPORTS.
2. ADHESIVE ANCHORS, WHERE NOT SPECIFICALLY DETAILED, SHALL BE:
   - A. FOR CONCRETE AND CONCRETE MASONRY: HILTI HIT HY-200
   - B. FOR EXISTING BRICK MASONRY: HILTI HIT-HY 270

     INSTALL IN ACCORDANCE WITH MANUFACTURERS' SPECIFICATIONS. USE 3/4 INCH DIAMETER AT MINIMUM EMBEDMENT UNLESS OTHERWISE INDICATED BY DETAIL. SEE NOTE 1.
3. EXPANSION ANCHORS, WHERE NOT SPECIFICALLY DETAILED, SHALL BE:
   - A. FOR CONCRETE: HILTI KWIK BOLT TZ
   - B. FOR MASONRY: HILTI KWIK BOLT 3.

     INSTALL IN ACCORDANCE WITH MANUFACTURERS' SPECIFICATIONS. USE 3/4 INCH DIAMETER AT MINIMUM EMBEDMENT UNLESS OTHERWISE INDICATED BY DETAIL. SEE NOTE 1.
4. SCREW TYPE ANCHORS: WHERE NOT SPECIFICALLY DETAILED, SHALL, FOR CONCRETE AND MASONRY: SIMPSON TITEN-HD INSTALL IN ACCORDANCE WITH MANUFACTURERS' SPECIFICATIONS. USE 3/4 INCH DIAMETER AT MINIMUM EMBEDMENT UNLESS OTHERWISE INDICATED BY DETAIL. SEE NOTE 1.

M. COLD-FORMED METAL FRAMING

1. DESIGN, MANUFACTURE, HANDLING AND ERECTION OF LIGHTWEIGHT STEEL FRAMING SHALL BE IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE (AISI) COLD FORMED STEEL DESIGN MANUAL - "SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", LATEST EDITION.
2. DESIGN OF COLD FORMED FRAMING SYSTEMS AND CONNECTIONS SHALL BE BY THE FABRICATOR. SUBMIT DESIGN CALCULATIONS BEARING THE STAMP OF A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE OF VERMONT FOR REVIEW PRIOR TO COMMENCING THE WORK. MEMBER SIZES AND GAUGES INDICATED ON THE DRAWINGS SHALL BE CONSIDERED MINIMUMS. MEMBER SPACING SHALL BE CONSIDERED MAXIMUMS. DESIGN LOADINGS SHALL BE AS INDICATED IN THE CONTRACT DOCUMENTS OR AS PER THE REFERENCE BUILDING CODE, WHICHEVER IS MORE STRINGENT.
3. SHOP DRAWINGS SHALL SHOW ALL MATERIALS, DETAILS, CONNECTIONS, LINTELS, POSTS, BRIDGING, AND OTHER ACCESSORIES REQUIRED FOR PROPER INSTALLATION.
4. WELDING SHALL BE IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) STRUCTURAL WELDING CODE (D1.1), SPECIFICATION FOR WELDING SHEET STEEL IN STRUCTURES (D1.3).
5. SCREWS SHALL BE 5/8" LONG TYPE S-12, AS MANUFACTURED BY U.S. GYPSUM, OR EQUAL (UNLESS INDICATED OTHERWISE ON THE DRAWINGS).
6. MEMBER DESIGNATIONS: MEMBERS ARE DESIGNATED "DEPTH-TYPE-GAUGE", FOR EXAMPLE, 6C16 INDICATES A 6" C-STUD, 16 GAUGE. TYPES ARE AS FOLLOWS:
   - A. "C"= WALL STUD, 1-5/8" WIDE, STIFFENED FLANGES
   - B. "J"= JOIST OR RAFTER, 2" WIDE, STIFFENED FLANGES
   - C. "TR"= TRACK, 1-1/4" FLANGE
7. EXTERIOR CURTAIN WALL MEMBERS SHALL BE DESIGNED USING THE FOLLOWING PARAMETERS:
   - A. DESIGN SHALL INCLUDE DESIGN WIND PRESSURE FOR COMPONENTS AND CLADDING AS SHOWN ON SXX
   - B. DESIGN SHALL INCLUDE SEISMIC LOADS PER HTE 2015 IBC
   - C. MAXIMUM ALLOWABLE DEFLECTIONS (HORIZONTAL) FOR EXTERIOR MEMBERS NOT TO EXCEED 1/360 OF SPAN AND FOR ALL OTHER MEMBERS NOT TO EXCEED 1/360 OF SPAN.
   - D. MAXIMUM STUD SPACING IS 16" O.C.
   - E. MINIMUM STUD THICKNESS IS 18 GAGE.
8. STEEL FOR STUDS TRACKS, HEADERS, AND ACCESSORIES SHALL BE COLD-FORMED ASTM A446 GRADE D (50 KSI), FOR 16 GAGE AND GREATER, AND SHALL BE GRADE A (33 KSI) FOR 18 GAGE AND LESS. ALL MATERIAL SHALL BE GALVANIZED WITH A MINIMUM G90 COATING FOR BRICK VENEER BACKUP STUDS, AND G60 ELSEWHERE.
9. FOR STUD WALLS, PROVIDE BRIDGING PER MANUFACTURER'S RECOMMENDAITONS, BUT NOT SPACED GREATER THAN 4'-0" O.C.
10. GAGE OF WALL TRACKS SHALL MATCH GAGE OF WALL STUDS AS A MINIMUM.
11. DESIGN FRAMING SYSTEMS TO PROVIDE FOR MOVEMENT OF FRAMING MEMBERS WITHOUT DAMAGE OR OVERSTRESSING, SHEATHING FAILURE, CONNECTION FAILURE, UNDUE STRAIN ON FASTENERS AND ANCHORS, OR OTHER DETRIMENTAL EFFECTS WHEN SUBJECT TO MAXIMUM AMBIENT TEMPERATURE CHANGE OF 120 DEG F.
12. DESIGN FRAMING SYSTEM TO MAINTAIN CLEARANCED AT OPENINGS, TO ALLOW FOR CONSTRUCTION TOLERANCES, AND ACCOMODATE LIVE LOAD DEFLECTION OF PRIMARY BUILDING STRUCTURE AS FOLLOWS:
   - A. UPWARD AND DOWNWARD MOVEMENT OF 7/8".
13. DESIGN EXTERIOR NON-LOADBEARING WALL FRAMING TO ACCOMODATE HORIZONTAL DEFLECTION WITHOUT REGARDS FOR CONTRIBUTION OF SHEATHING MATERIAL.
14. INSTALL HEADERS OVER WALL OPENINGS WIDER THAN STUD SPACING. LOCATE HEADERS ABOVE OPENINGS AS INDICATED. FABRICATE HEADERS OF COMPOUND SHAPES INDICATED OR REQUIRED TO TRANSFER LOAD TO SUPPORTING STUDS, COMPLETE WITH CLIP-ANGLE CONNECTORS, WEB STIFFENERS, OR GUSSET PLATES.
   - A. FRAME WALL OPENINGS WITH NOT LESS THAN A DOUBLE STUD AT EACH JAMB OF FRAME AS INDICATED ON SHOP DRAWINGS. FASTEN JAMB MEMBERS TOGETHER TO UNIFORMLY DISTRIBUTE LOADS.
   - B. INSTALL RUNNER TRACKS AND JACK STUDS ABOVE AND BELOW WALL OPENINGS. ANCHOR TRACKS TO JAMB STUDS WITH CLIP ANGLES OR BY WELDING, AND SPACE JACK STUDS SAME AS FULL-HEIGHT WALL STUDS.
15. ISOLATE NON-LOAD BEARING STEEL FRAMING FORM BUILDING STRUCURE TO PREVENT TRANSFER OF VERTICAL LOADS WHILE PROVIDING LATERAL SUPPORT.
   - A. INSTALL SINGLE-LEG DEFLECTION TRACKS ADN ANCHOR TO BUILDING STRUCTURE.
   - B. INSTALL DOUBLE DEEP-LEG DEFLECTION TRACKS AND ANCHOR OUTER TRACK TO BUILDING STRUCTURE.
   - C. CONNECT VERTICAL DEFLECTION CLIPS TO BYPASSING AND INFILL STUDS AND ANCHOR TO BUILDING STRUCTURE.
   - D. CONNECT DRIFT CLIPS TO COLD FORMED METAL FRAMING AND ANCHOR TO BUILDING STRUCTURE.

N. CONCRETE MASONRY

1. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE MASONRY SHALL BE F'm = 1500 PSI, DETERMINED BY THE UNIT STRENGTH METHOD.
2. CONCRETE MASONRY UNITS SHALL BE LOAD-BEARING NORMAL WEIGHT AGGREGATE CONCRETE MASONRY UNITS CONFORMING TO THE REQUIREMENTS OF ASTM C-90, GRADE N, TYPE 1 WITH MINIMUM AVERAGE NET-AREA COMPRESSIVE STRENGTH OF 2,150 PSI. USE TWO-CELL HOLLOW BLOCK, NOMINAL FACE SIZE 8"x16" WITH NOMINAL THICKNESS AS SHOWN IN THE DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR FIRE RATING REQUIREMENTS.
3. MORTAR SHALL CONFORM TO ASTM C270 TYPE S WITH MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI.
4. GROUT SHALL CONFORM TO ASTM C476 WITH MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI. GROUT BOND BEAMS AND ALL CELLS WITH VERTICAL REINFORCEMENT.
5. DEFORMED REINFORCING BARS SHALL BE ASTM A615 GRADE 60.
6. JOINT REINFORCEMENT SHALL BE No. 9 GALVANIZED TRUSS TYPE WIRE REINFORCING TO ASTM A-82 BY DUR-O-WAL UNLESS NOTED OTHERWISE. PLACE AT 16" ON CENTER VERTICALLY, UNLESS NOTED OTHERWISE.
7. ALL CONCRETE MASONRY UNITS SHALL BE PLACED IN RUNNING BOND. WHERE NEW MASONRY IS TO CONNECT TO EXISTING MASONRY, COURSING OF NEW MASONRY SHALL MATCH COURSING OF EXISTING MASONRY.
8. CONCRETE BLOCK BENEATH BEAM BEARING POINTS SHALL BE FILLED SOLID WITH GROUT FOR A MINIMUM OF TWO FULL COURSES BENEATH THE BEAM AND FOR A WIDTH OF 24".
9. CONCRETE BLOCK PLACED BENEATH GRADE SHALL BE GROUTED SOLID.
10. TOP COURSES SHALL BE FULL COURSE AS REINFORCED AND GROUTED BOND BEAMS.
11. PROVIDE THE FOLLOWING REINFORCEMENT IN ADDITION TO THE SCHEDULED REINFORCEMENT:
   - A. ONE #5 VERTICAL CONTINUOUS FROM SUPPORT TO SUPPORT AT EACH CORNER, AT EACH SIDE OF OPENINGS, AND AT ENDS OF WALLS.
   - B. ONE #5 HORIZONTAL BAR AT TOP AND BOTTOM OF WALL OPENINGS; EXTEND 24" PAST END OF OPENING
12. LAP LENGTHS SHALL BE AS FOLLOWS FOR DEFORMED REINFORCEMENT:
    #3 - 18"; #4 - 24"; #5 - 30"; #6 - 36"; #7 - 42"; #8 - 48"

O. STEEL STAIRS

1. STAIRS SHALL BE STEEL, PAN TYPE CONCRETE TREAD, DESIGNED FOR 100 PSF LIVE LOAD.
2. DESIGN OF STAIRS AND LANDINGS SHALL BE THE RESPONSIBILITY OF THE FABRICATOR AND SHALL CONFORM TO HTE OSHA SAFETY IMPROVEMENTS. STAIR CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF VERMONT, AND SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.
3. SURROUNDING STRUCTURAL FRAMING HAS BEEN DESIGNED TO CARRY STAIR LOADS BASED ON THE LOADING ASSUMPTIONS AND LOCATIONS AS PER THE ARCHITECTURAL DETAILS AND SPECIFICATIONS. ATTACHMENT POINTS OUTSIDE OF THESE REQUIREMENTS WILL REQUIRE BRACING BY THE STAIR CONTRACTOR TO RESOLVE ECCENTRIC FORCES ON THE BUILDING STRUCTURE WITH APPROVAL OF THE ENGINEER.

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VERMONT

N

GENERAL NOTES

PROJECT NO:	21601
DATE:	2/7/2025
CHECKED BY:	JMH
DRAWN BY:	KLG
SCALE:	1/8" = 1'-0"

S0.02

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SPECIAL INSPECTION REQUIREMENTS

STRUCTURAL TESTS AND SPECIAL INSPECTIONS ARE REQUIRED ON THIS PROJECT FOR THE FOLLOWING PORTIONS OF CONSTRUCTION:

1. SOILS AND FOUNDATIONS
2. CAST-IN-PLACE CONCRETE
3. STRUCTURAL STEEL

STRUCTURAL TESTS AND INSPECTIONS ARE TO BE PERFORMED BY THE REGISTERED DESIGN PROFESSIONAL AND/OR A QUALIFIED PERSON, COMPETANT IN THE INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION. THE REGISTERED DESIGN PROFESSIONALS AND SUGGESTIONS FOR TESTING AGENCIES ARE LISTED BELOW:

INSPECTION AGENT	FIRM	ADDRESS
STRUCTURAL ENGINEER OF RECORD	ENGINEERING VENTURES, PC.	208 FLYNN AVE, SUITE 2A BURLINGTON, VT 05401
ARCHITECT OF RECORD	WIEMANN LAMPHERE ARCHITECTS	38 EASTWOOD DRIVE SOUTH BURLINGTON, VT 05403
TESTING AGENCY	TBD	TBD
SPECIAL INSPECTION AGENT & COORDINATOR	TBD	TBD

SOILS

ITEM	FREQUENCY	AGENT	REFERNCES
VERIFICATION AND INSPECTION (APPROVED SOILS REPORT AND CONSTRUCTION DOCUMENTS SHALL BE USED TO DETERMINE COMPLIANCE)	PERIODIC	TA	
VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	PERIODIC	TA/GE	
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	PERIODIC	TA	
PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS.	FOR EACH SOURCE OF FILL MATERIAL	TA	SPECIFICATIONS
VERIFY USE OF PEOPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL.	CONTINUOUS	TA	
PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	ONCE FOR EACH AREA OF PLACEMENT	TA	
COMPACTION TESTING	EVERY OTHER LIFT, EVERY 1000 SF	TA	ASTM D2922

TA = TESTING AGENCY
EV = ENGINEERING VENTURES, PC.
GE = GEOTECHNICAL ENGINEER

CAST-IN-PLACE CONCRETE

ITEM	SCOPE	FREQUENCY	REFERNCES	AGENT
MIX DESIGN	REVIEW MIX DESIGN FOR CONFORMANCE WITH SPECIFICATIONS	PRIOR TO CONSTRUCTION	ACI 318 SPECIFICATIONS	EV
MATERIAL CERTIFICATION	REVIEW SUBMITTALS FOR CONFORMANCE WITH SPECIFICATIONS	PRIOR TO CONSTRUCTION	ACI 318 SPECIFICATIONS	EV
REINFORCING INSTALLATION	REVIEW REINFORCING FOR SIZE, QUANTITY, CONDITION, AND PLACEMENT	PERIODIC	ACI 318 SPECIFICATIONS	TA
CONCRETE PLACEMENT	OBSERVE CONCRETE PLACEMENT OPERATIONS. VERIFY CONFORMANCE WITH HOT OR COLD WEATHER REQUIREMENTS. PERFORM SLUMP, DENSITY, AND AIR CONTENT TESTS AT POINT OF DISCHARGE.	PERIODIC	ACI 318 SPECIFICATIONS	TA
CURING AND PROTECTION	OBSERVE PROCEDURES FOR CONFORMANCE WITH SPECIFICATIONS	PERIODIC	ACI 318 SPECIFICATIONS	TA
EVALUATION OF CONCRETE STRENGTH	TEST (TA) AND EVALUATE (EV) FOR CONFORMANCE WITH SPECIFICATIONS	CONTINUOUS	ACI 318 SPECIFICATIONS	TA EV

TA = TESTING AGENCY
EV = ENGINEERING VENTURES, PC.

SPECIAL INSPECTION REQUIREMENTS (CON'T)

STRUCTURAL STEEL

ITEM	SCOPE	FREQUENCY	REFERNCES	AGENT
FABRICATOR CERTIFICATION / QUALITY CONTROL PROCEDURES	FABRICATOR QUALITY CONTROL PROCEDURE SPECIFICATIONS AND DETAILED FABRICATION PROCEDURES	PRIOR TO CONTRUCTION	IBC SECTION 1704.2.1	EV
MATERIAL VERIFICATION OF STRUCTURAL STEEL	IDENTIFICATION MARKINGS TO CONFORM TO AISC 360	PERIODIC	AISC 360, SECTION M5.5	TA
MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS	IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	PERIODIC	AISC 360, A3.3 AND APPLICABLE ASTM STANDARDS	TA
HIGH-STRENGTH BOLTING	DETERMINATION THAT THE REQUIREMENTS FOR BOLTS, NUTS, WASHERS AND PAINT; BOLTED PARTS AND INSTALLATION AND TIGHTENTING STANDARDS ARE MET	PERIODIC	AISC 360, SECTION M2.5	TA
MATERIAL VERIFICATION OF WELD FILLER MATERIALS	IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS	PERIODIC	AISC 360, SECTION A3.5, AND APPLICABLE AWS A5 DOCUMENTS	TA
WELDING	WELDING INSPECTION AND WELDING INSPECTOR QUALIFICATIONS FOR STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH AWSD1.1	PERIODIC/CONTINUOUS	AWS D1.1 AND D1.3	TA
STRUCTURAL FRAMING, DETAILS AND ASSEMBLIES	REVIEW SUBMITTALS AND SHOP DRAWINGS FOR CONFORMANCE WITH CONSTRUCTION DOCUMENTS	PRIOR TO CONTRUCTION	AISC 360, SPECIFICATION	EV

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EV = ENGINEERING VENTURES, PC.

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#	DATE	REVISION DESCRIPTION

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ST. JOHNSBURY, VERMONT

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SPECIAL INSPECTIONS

PROJECT NO:	21601
DATE:	2/7/2025
CHECKED BY:	JMH
DRAWN BY:	KLG
SCALE:	1/2" = 1'-0"

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ROOF FRAMING																				ROOF FRAMING
125' - 0 1/2" LEVEL 2 FRAMING							HSS8X6X3/8			HSS6X6X5/16 NOTE 3	HSS6X6X3/8		HSS6X6X5/16 NOTE 3		HSS6X6X5/16					125' - 0 1/2" LEVEL 2 FRAMING
110' - 6 1/2" LEVEL 1 FRAMING	HSS8X6X3/8	HSS8X6X3/8	HSS8X6X5/16	HSS6X6X5/16	HSS8X6X3/8	HSS6X6X5/16		HSS8X6X1/2	HSS8X6X3/8			HSS8X6X3/16		HSS8X8X3/8		HSS8X8X3/8	HSS8X8X3/8	HSS3X8X3/8	HSS8X8X3/8	110' - 6 1/2" LEVEL 1 FRAMING
99' - 6 1/2" T.O. FOUNDATION																				99' - 6 1/2" T.O. FOUNDATION
95' - 0" BASEMENT																				95' - 0" BASEMENT
89' - 6"																				89' - 6"
BASE PLATE ANCHOR RODS EMBEDMENT	BP2A 1"ø TYPE 'C' 16" EMBED	BP1A 1"ø TYPE 'C' 16" EMBED	BP2 3/4"ø TYPE 'C' 12" EMBED	BP1 3/4"ø TYPE 'C' 12" EMBED	BP3 1"ø TYPE 'B' 12" EMBED	BP4 3/4"ø TYPE 'A' 12" EMBED	BP5 3/4"ø TYPE 'B' 24" EMBED	BP3 1"ø TYPE 'B' 12" EMBED	BP3 1"ø TYPE 'B' 12" EMBED	BP7 3/4"ø TYPE 'C' 12" EMBED	BP6 3/4"ø TYPE 'B' 24" EMBED	BP4 3/4"ø TYPE 'A' 12" EMBED	BP7 3/4"ø TYPE 'C' 12" EMBED	BP1A 1"ø TYPE 'C' 16" EMBED	BP5 3/4"ø TYPE 'A' 12" EMBED	BP3 1"ø TYPE 'B' 12" EMBED	BP2A 1"ø TYPE 'C' 16" EMBED	BP1A 1"ø TYPE 'C' 16" EMBED	BP2A 1"ø TYPE 'C' 16" EMBED	
Column Locations	A-2	A-3	A-5	A.9-5	B-2	B-3	C-1	C-2	C-3	C-5	D-1	D-4	D-5	D.8-5	E-1	E-2	F-2	F-4	F-5	

STEEL COLUMN SCHEDULE

1/4" = 1'-0"

NOTES:

1. "BP#" DENOTES COLUMN BASE PLATE. SEE DETAILS ON S2.20
2. SEE 1/S2.20 FOR ANCHOR ROD TYPES.
3. COLUMN SITS ON EXISTING BRICK WALL. SURVEY WALL TO DETERMINE CONDITION OF BRICK AND IF BASEPLATE AS SHOWN FITS ON BRICK. NOTIFY EOR IF CONDITIONS DO NOT MATCH BASEPLATE SIZE. UTILIZE HILTI HY-270 EPOXY FOR ANCHORS IN MASONRY.

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ST. JOHNSBURY, VERMONT

N

COLUMN SCHEUDLE

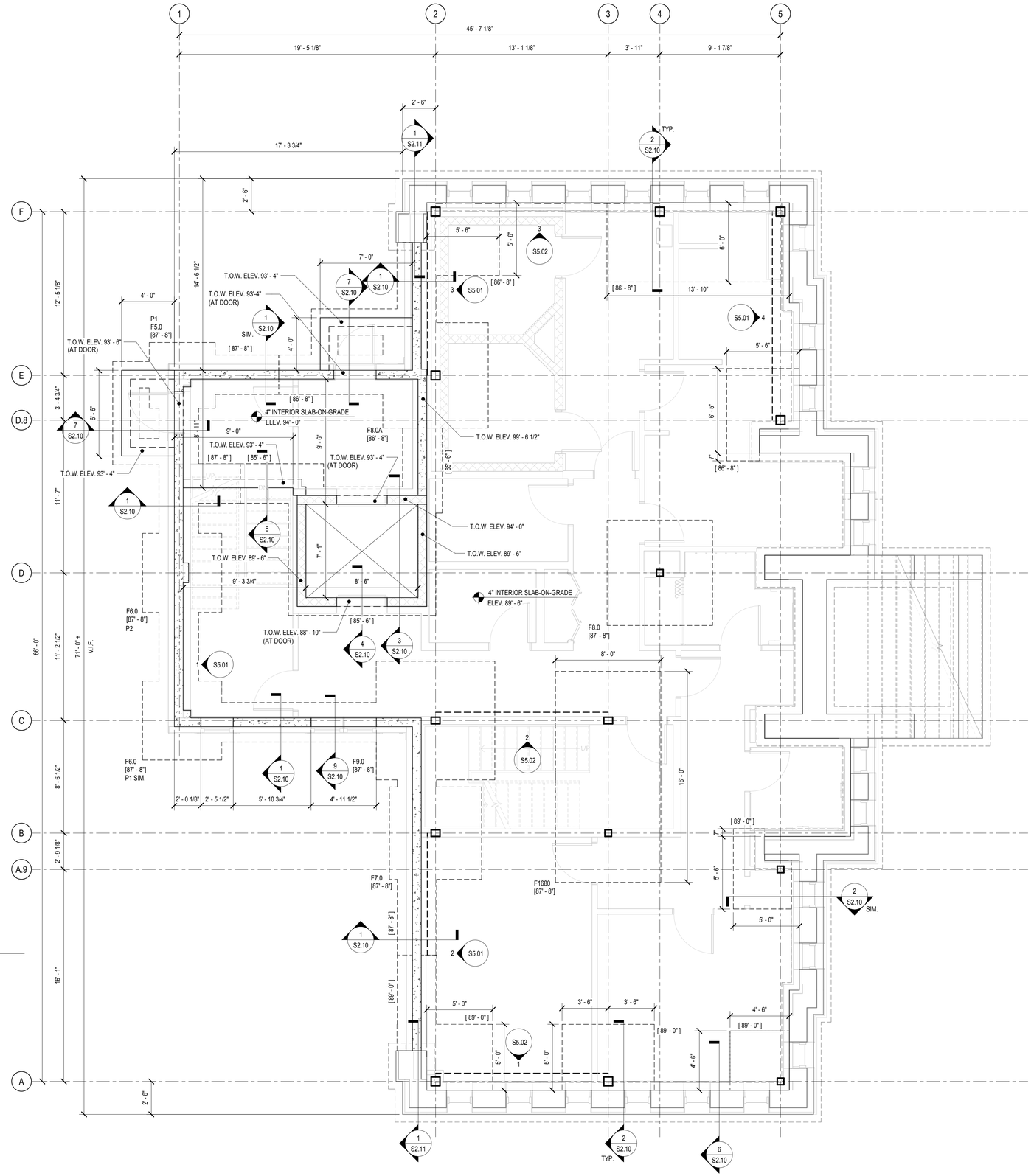
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DATE:	2/7/2025
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SCALE:	1/4" = 1'-0"

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FOOTING SCHEDULE

Type	Length	Width	Footing Thickness	Reinforcing
F5.0	5' - 0"	5' - 0"	1' - 0"	(6) #5 BOTT. E.W.
F6.0	6' - 0"	6' - 0"	1' - 2"	(7) #6 BOTT. E.W.
F7.0	7' - 0"	7' - 0"	1' - 4"	(8) #6 TOP AND BOTT. E.W.
F8.0	8' - 0"	8' - 0"	1' - 6"	(9) #6 BOTT. E.W.
F8.0A	8' - 0"	8' - 0"	1' - 6"	(9) #6 TOP AND BOTT. E.W.
F9.0	9' - 0"	9' - 0"	1' - 6"	(10) #6 BOTT. E.W.
F1680	16' - 0"	8' - 0"	1' - 6"	(10) #6 TOP AND BOTT. LONG DIR. (20) #6 TOP AND BOTT. SHORT DIR.



1 BASEMENT
1/4" = 1'-0"

NOTES:

1. SLAB-ON-GRADE ELEVATION 89'-6" REFERENCES CIVIL FINISH FLOOR ELEVATION 690.70'.
2. FOR INTERIOR AND EXTERIOR SLAB ON GRADE, SEE DETAIL 8/S2.01.
3. [XX'-XX"] INDICATES TOP OF FOOTING ELEVATION.
4. "F#" DENOTES SPREAD FOOTING. SEE FOOTING SCHEDULE FOR SIZE AND REINFORCING.
5. "P#" DENOTES CONCRETE PIER. SEE DETAILS ON SHEET S2.20.
6. (XX'-XX") INDICATES TOP OF PIER ELEVATION.

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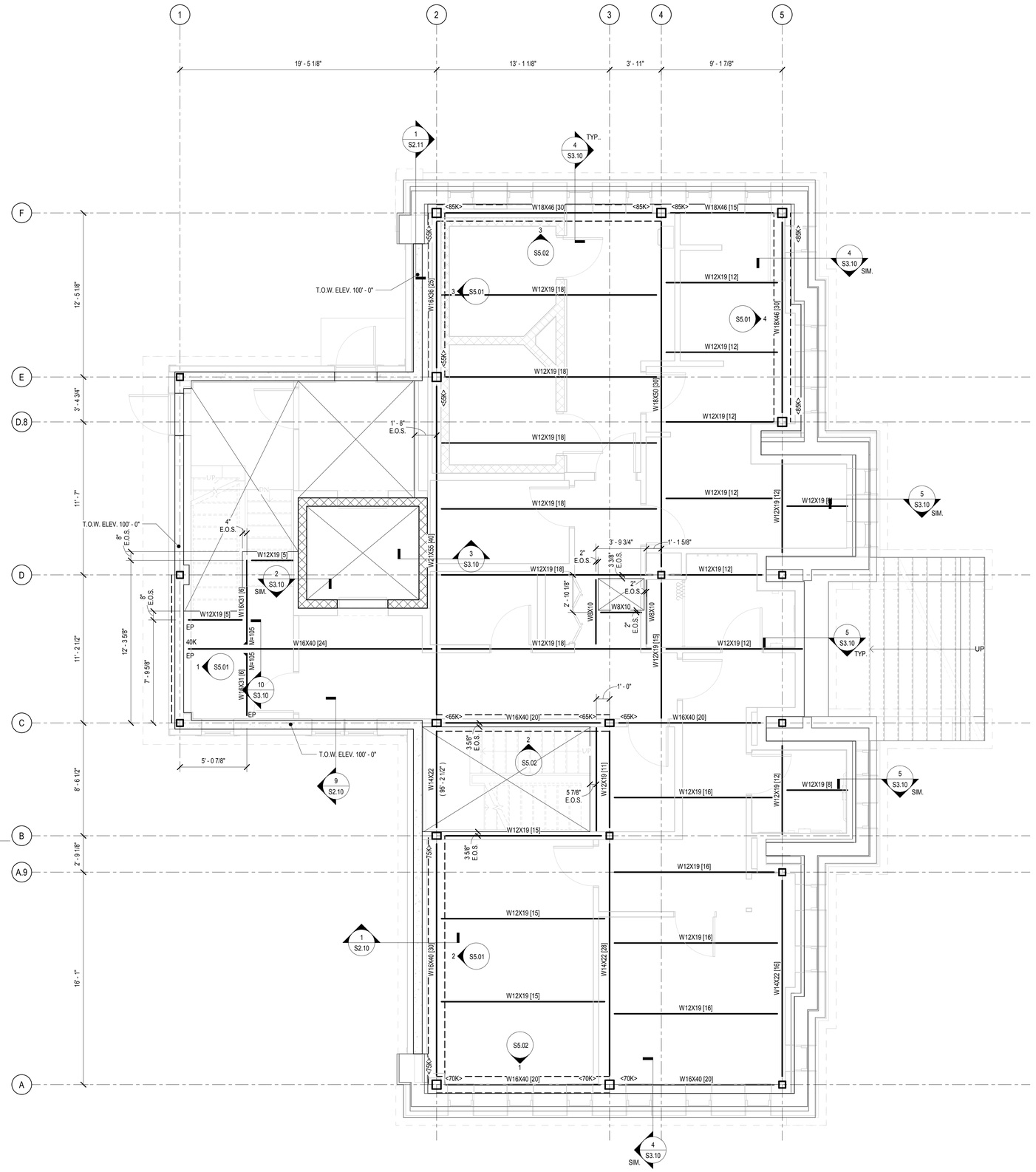
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FOUNDATION PLAN

PROJECT NO:	21601
DATE:	2/7/2025
CHECKED BY:	JMH
DRAWN BY:	KLG
SCALE:	As indicated

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1 LEVEL 1 FRAMING
1/4" = 1'-0"

NOTES:

1. COMPOSITE SLAB-ON-DECK TO BE 2" 18 GAGE METAL DECK WITH 3-1/2" NORMAL WEIGHT CONCRETE (5 1/2" TOTAL THICKNESS), POURED TO LEVEL PER ACI TOLERANCES. REINFORCE WITH 6x6-W4.0xW4.0 WELDED WIRE FABRIC AT TOP (3/4" CLEAR, MIN.). FASTEN TO SUPPORTS WITH 5/8"ø PUDDLE WELDS ON A 36/4 PATTERN. FASTEN SIDE LAPS WITH #10 TEK SCREWS, (4) SCREWS PER SPAN MINIMUM, 2'-0"oc MAX.
2. TOP OF CONCRETE SLAB ELEVATION = 100'-0"
3. TOP OF STEEL ELEVATION = 99'-6 1/2", UNLESS NOTED OTHERWISE BY (X'-X").
4. UNLESS NOTED OTHERWISE, INFILL FRAMING TO BE EQUALLY SPACED AS SHOWN BETWEEN REFERENCE POINTS.
5. [#] INDICATES NUMBER OF 3/4"ø SHEAR STUDS REQUIRED (UNIFORM SPACING).
6. COORDINATE FLOOR PENETRATIONS AND REQUIRED SUPPORT FRAMING WITH MEP DRAWINGS.
7. EP = INDICATES EMBED PLATE, SEE 6/S3.01.
8. XXK INDICATES SHEAR REACTION AT END OF BEAM FOR CONNECTION DEISGN (KIPS) (ASD).
9. <XXK> INDICATES AXIAL LOAD AT END OF BEAM FOR CONNECTION DESIGN (KIPS) (ASD).
10. M=XX INDICATES MOMENT FOR CONNECTION DESIGN (KIP-FT) (ASD).

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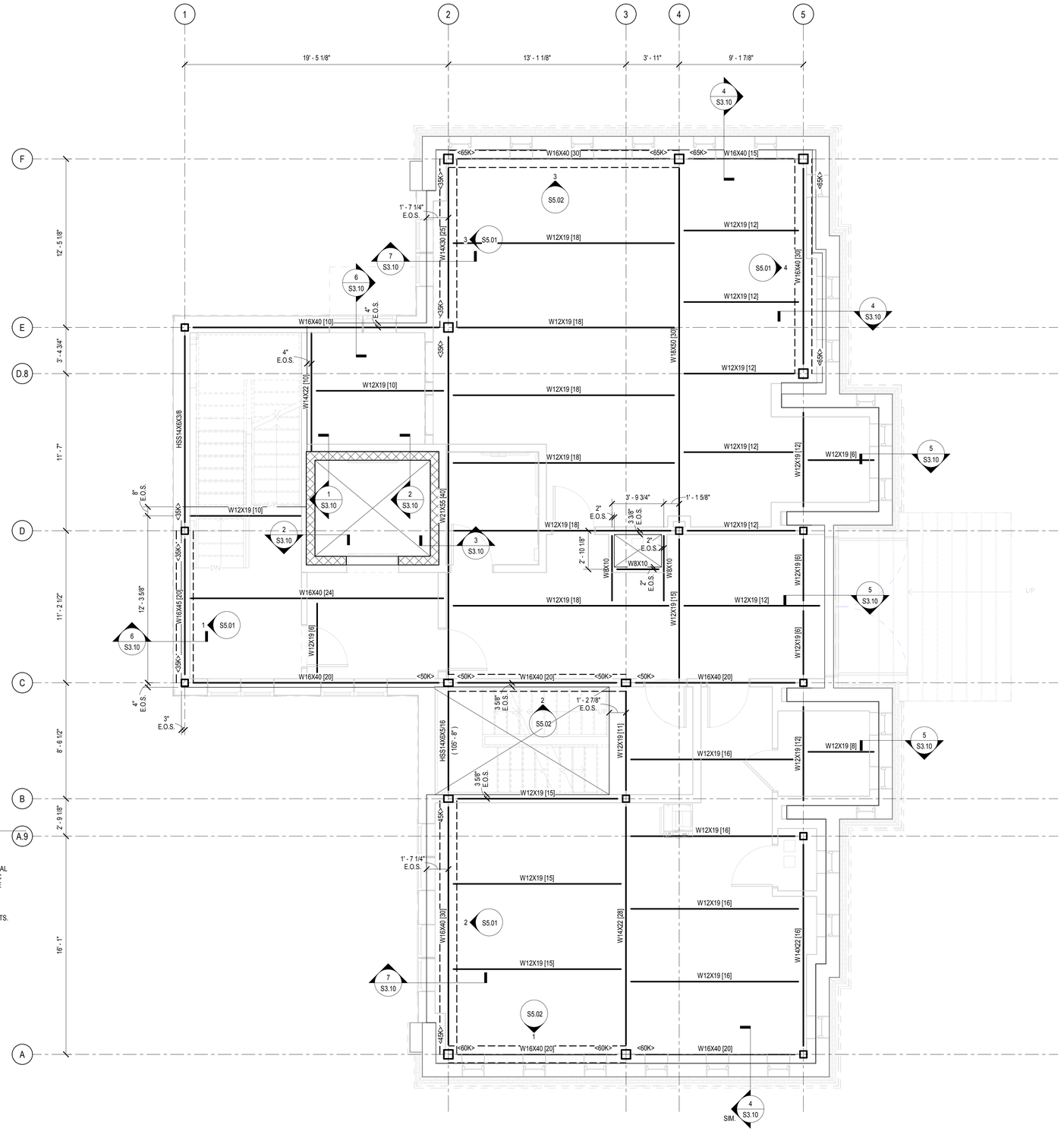
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LEVEL 1 FRAMING PLAN

PROJECT NO:	21601
DATE:	2/7/2025
CHECKED BY:	JMH
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SCALE:	As indicated

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1 LEVEL 2 FRAMING
1/4" = 1'-0"

NOTES:

1. COMPOSITE SLAB-ON-DECK TO BE 2" 18 GAGE METAL DECK WITH 3-1/2" NORMAL WEIGHT CONCRETE (5 1/2" TOTAL THICKNESS), POURED TO LEVEL PER ACI TOLERANCES. REINFORCE WITH 6x6-W4.0xW4.0 WELDED WIRE FABRIC AT TOP (3/4" CLEAR, MIN.). FASTEN TO SUPPORTS WITH 5/8"ø PUDDLE WELDS ON A 36/4 PATTERN. FASTEN SIDE LAPS WITH #10 TEK SCREWS, (4) SCREWS PER SPAN MINIMUM, 2'-0"oc MAX.
2. TOP OF CONCRETE SLAB ELEVATION = 111'-0"
3. TOP OF STEEL ELEVATION = 110'-6 1/2", UNLESS NOTED OTHERWISE BY (X'-X").
4. UNLESS NOTED OTHERWISE, INFILL FRAMING TO BE EQUALLY SPACED AS SHOWN BETWEEN REFERENCE POINTS.
5. [#] INDICATES NUMBER OF 3/4"ø SHEAR STUDS REQUIRED (UNIFORM SPACING).
6. COORDINATE FLOOR PENETRATIONS AND REQUIRED SUPPORT FRAMING WITH MEP DRAWINGS.
7. XXK INDICATES SHEAR REACTION AT END OF BEAM FOR CONNECTION DEISGN (KIPS) (ASD).
8. <XXK> INDICATES AXIAL LOAD AT END OF BEAM FOR CONNECTION DESIGN (KIPS) (ASD).

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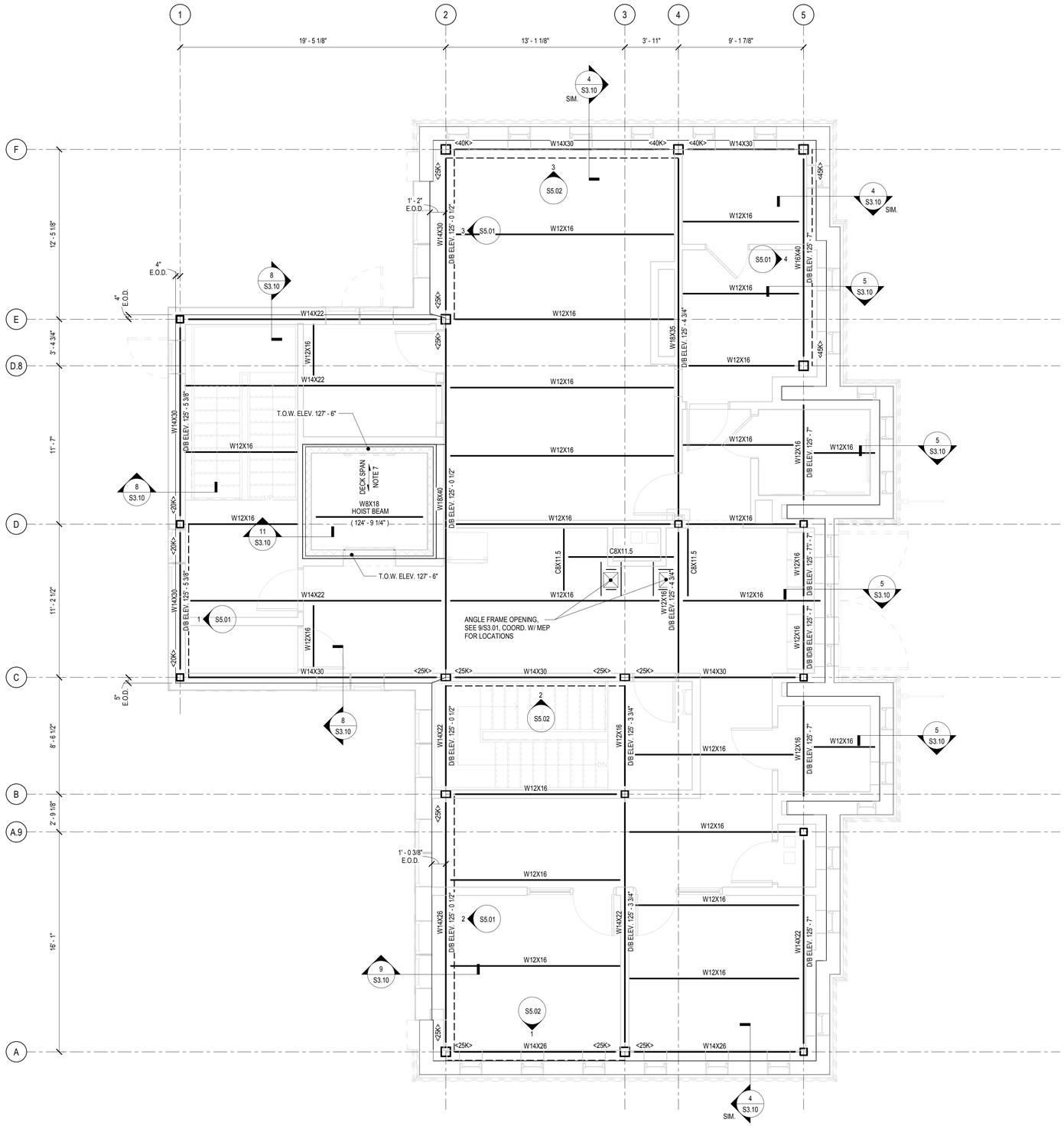
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LEVEL 2 FRAMING PLAN

PROJECT NO:	21601
DATE:	2/7/2025
CHECKED BY:	JMH
DRAWN BY:	KLG
SCALE:	As indicated

S1.03

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FILENAME: C:\Users\jameshl\Documents\21601 St J Public Safety_Bldg A_STRUCT_R24_central_jameshl@engineeringventures.com.rvt



1 ROOF FRAMING
1/4" = 1'-0"

NOTES:

1. ROOF DECK TO BE 1-1/2" TYPE B 18 GAGE, UNLESS NOTED OTHERWISE. FASTEN TO SUPPORTS WITH HILTI POWDER ACTUATED FASTENERS (OR EQUAL) ON A 30/6 PATTERN. FASTEN SIDE LAP WITH HILTI SIDE LAP CONNECTORS, 1'-0"oc MAX.
2. ROOF DECK BEARING ELEVATION DENOTED BY "D/B ELEV. = XX-XX" "
3. COORINDATE LOCATION OF RTU SUPPORT STEEL WITH MEP DRAWINGS AND SUBMITTALS PRIOR TO FABRICATION.
4. COORDINATE ROOF DECK PENETRATION LOCATIONS AND REQUIRED SUPPORT FRAMING WITH MEP DRAWINGS.
5. XXK INDICATES SHEAR REACTION AT END OF BEAM FOR CONNECTION DEISGN (KIPS) (ASD).
6. <XXK> INDICATES AXIAL LOAD AT END OF BEAM FOR CONNECTION DEISGN (KIPS) (ASD).
7. ELEVATOR ROOF DECK TO BE 3" 18 GAGE. TYPE N ROOF DECK. FASTEN TO SUPPORTS WITH HILTI POWDER ACTUATED FASTENERS (OR EQUAL) ON A 24/4 PATTERN. FASTEN SIDE LAP WITH HILTI SIDE LAP CONNECTORS, 1'-0" oc MAX.

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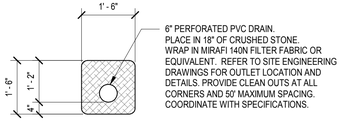
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ROOF FRAMING PLAN

PROJECT NO:	21601
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SCALE:	As indicated

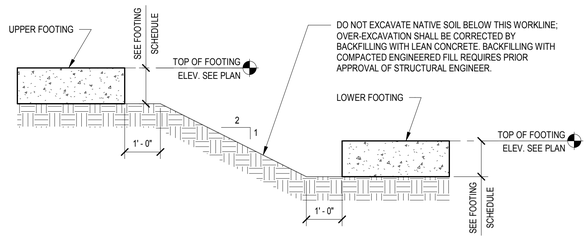
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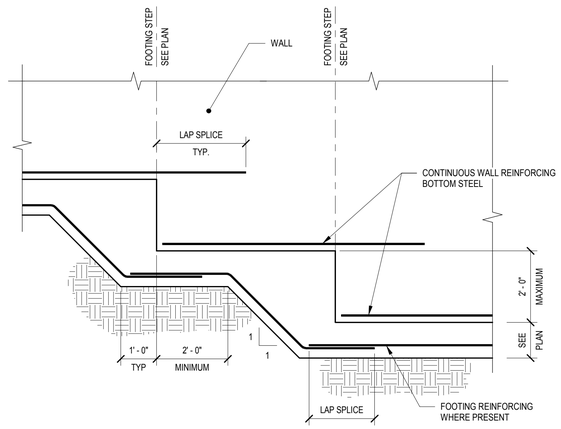


6" PERFORATED PVC DRAIN. PLACE IN 18" OF CRUSHED STONE. WRAP IN MIRAFI 140N FILTER FABRIC OR EQUIVALENT. REFER TO SITE ENGINEERING DRAWINGS FOR OUTLET LOCATION AND DETAILS. PROVIDE CLEAN OUTS AT ALL CORNERS AND 50' MAXIMUM SPACING. COORDINATE WITH SPECIFICATIONS.

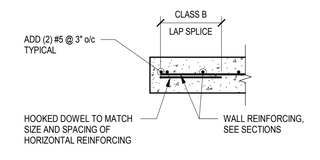
1 TYPICAL FOOTING DRAIN
1/2" = 1'-0"



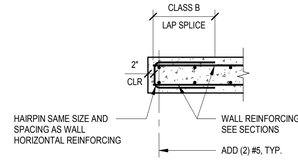
2 TYPICAL EXCAVATION AT ADJACENT FOOTING
1/2" = 1'-0"



3 TYPICAL FOOTING STEP
1/2" = 1'-0"

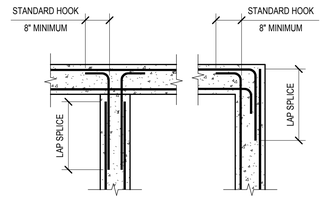


PART PLAN-SINGLE LAYER OF REINFORCING

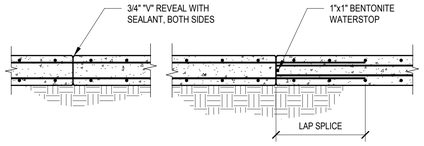


PART PLAN-DOUBLE LAYER OF REINFORCING

4 TYPICAL CONCRETE WALL END
1/2" = 1'-0"



5 TYPICAL WALL CORNER REINFORCING
1/2" = 1'-0"



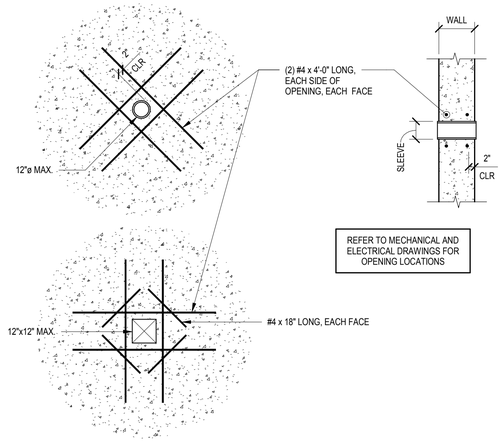
CONTROL JOINT

CONSTRUCTION JOINT

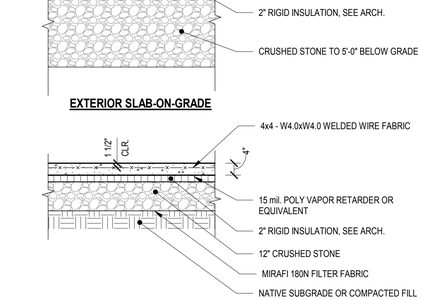
NOTES:

1. MAXIMUM SPACING BETWEEN CONSTRUCTION JOINTS, OR FROM JOINT TO CORNER SHALL BE 120 FEET.
2. MAXIMUM SPACING BETWEEN CONTROL JOINTS SHALL BE 20 FEET.
3. NO JOINT SHALL BE WITHIN 10 FEET OF CORNER.
4. SUBMIT LOCATIONS ON WALL ELEVATIONS OF CONCRETE REINFORCING SHOP DRAWINGS.

6 TYPICAL CONCRETE WALL JOINTS
1/2" = 1'-0"



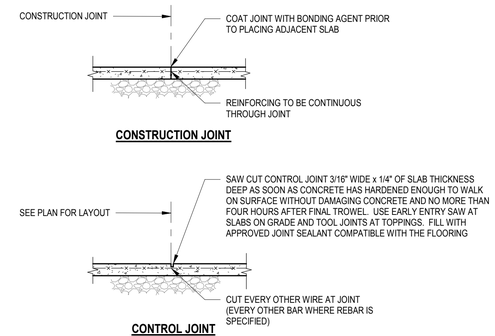
7 TYPICAL CONCRETE WALL OPENINGS
1/2" = 1'-0"



EXTERIOR SLAB-ON-GRADE

INTERIOR SLAB-ON-GRADE

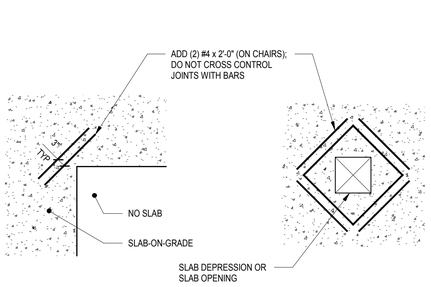
8 TYPICAL SLAB-ON-GRADE SECTIONS
1/2" = 1'-0"



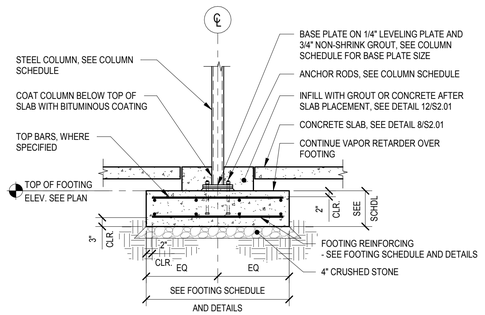
CONSTRUCTION JOINT

CONTROL JOINT

9 TYPICAL SLAB-ON-GRADE JOINTS
1/2" = 1'-0"



TYPICAL RE-ENTRANT CORNERS AT SLAB-ON-GRADE
10 1/2" = 1'-0"



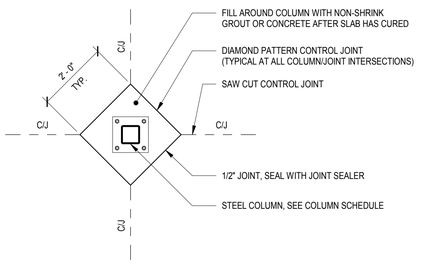
11 TYPICAL INTERIOR SPREAD FOOTING
1/2" = 1'-0"



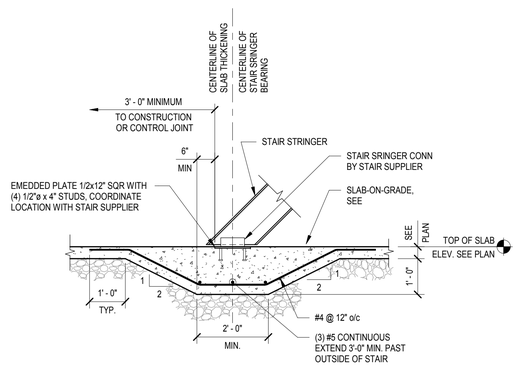
NOTES:

1. COORDINATE WITH OTHER TRADES AND INDICATE PENETRATIONS GREATER THAN 12" ON FORMWORK AND REBAR SHOP DRAWINGS.
2. CLEAR DISTANCE BETWEEN ADJACENT OPENINGS SHALL NOT BE LESS THAN SIZE OF OPENING.
3. OPENINGS NOT SPECIFICALLY SHOWN ON STRUCTURAL DRAWINGS ARE SUBJECT TO STRUCTURAL ENGINEERS APPROVAL.

14 TYPICAL CONCRETE WALL OPENING (≤ 4' - 0")
1/2" = 1'-0"



TYPICAL COLUMN ISOLATION JOINT AT SLAB-ON-GRADE
12 1/2" = 1'-0"



TYPICAL SLAB-ON-GRADE THICKENING AT STAIR STRINGERS
13 1/2" = 1'-0"

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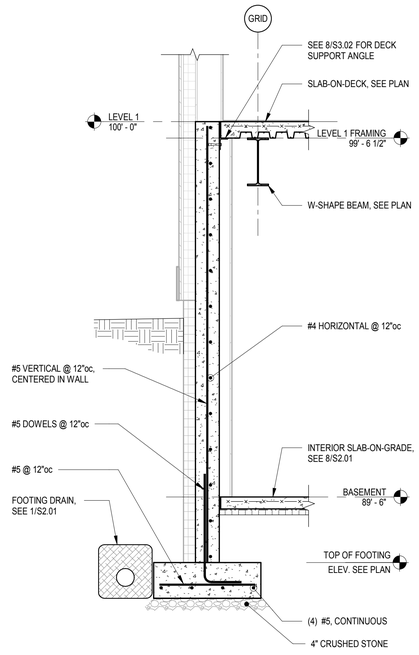
ST. JOHNSBURY, VERMONT

TYPICAL FOUNDATION PLAN

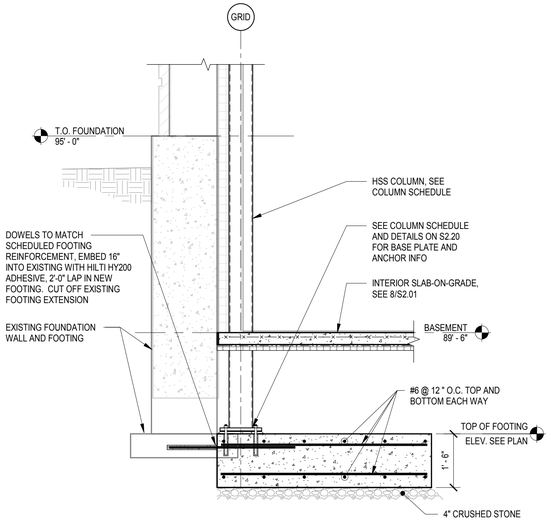
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DATE:	2/7/2025
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DRAWN BY:	KLG
SCALE:	1/2" = 1'-0"

S2.01

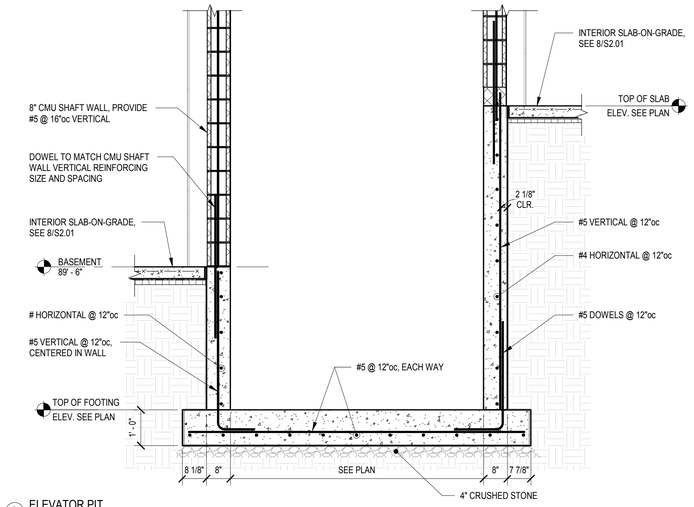
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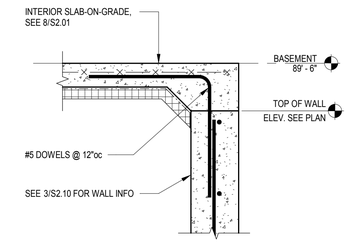
1 FOUNDATION WALL
1/2" = 1'-0"



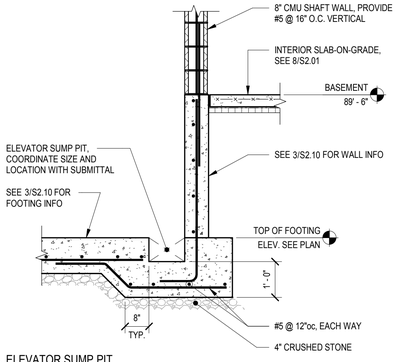
2 COLUMN / FOOTING AT EXISTING FOUNDATION
1/2" = 1'-0"



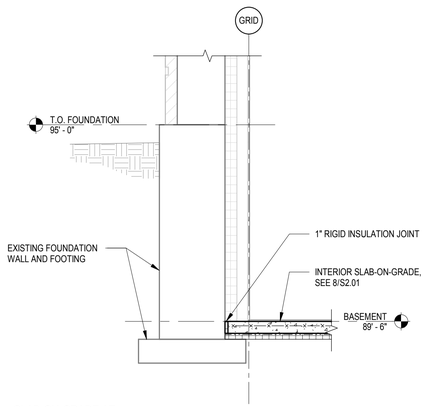
3 ELEVATOR PIT
1/2" = 1'-0"



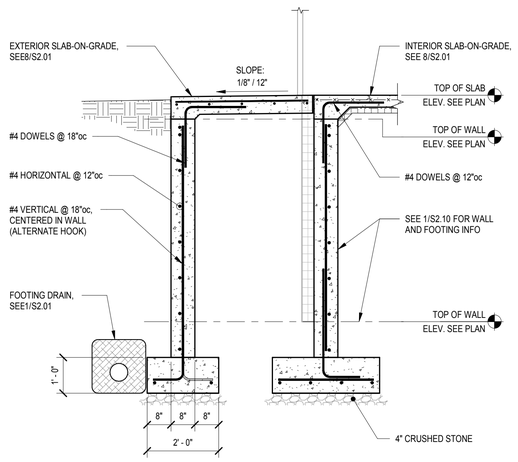
4 ELEVATOR PIT WALL AT DOOR
1" = 1'-0"



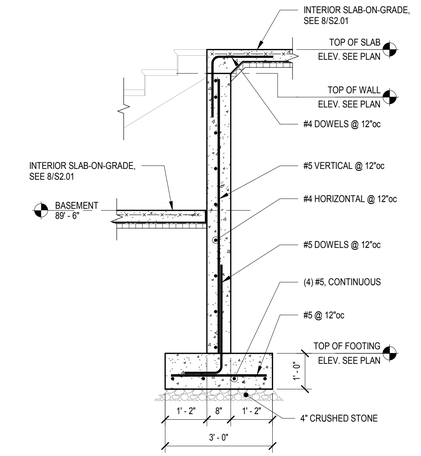
5 ELEVATOR SUMP PIT
1/2" = 1'-0"



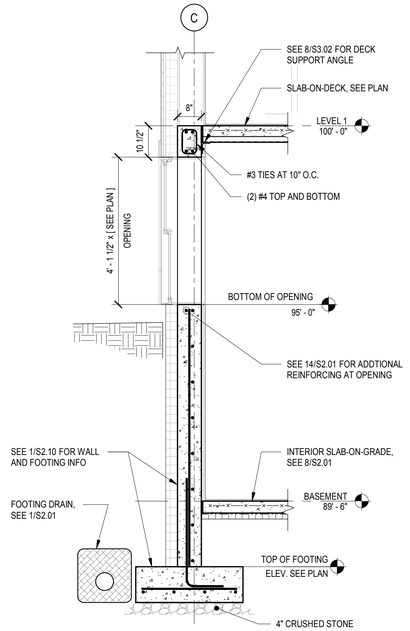
6 SLAB-ON-GRADE AT EXISTING FOUNDATION WALL
1/2" = 1'-0"



7 FOUNDATION AT EXTERIOR SLAB
1/2" = 1'-0"



8 INTERIOR FOUNDATION WALL
1/2" = 1'-0"



9 FOUNDATION WALL AT WINDOW OPENING
1/2" = 1'-0"

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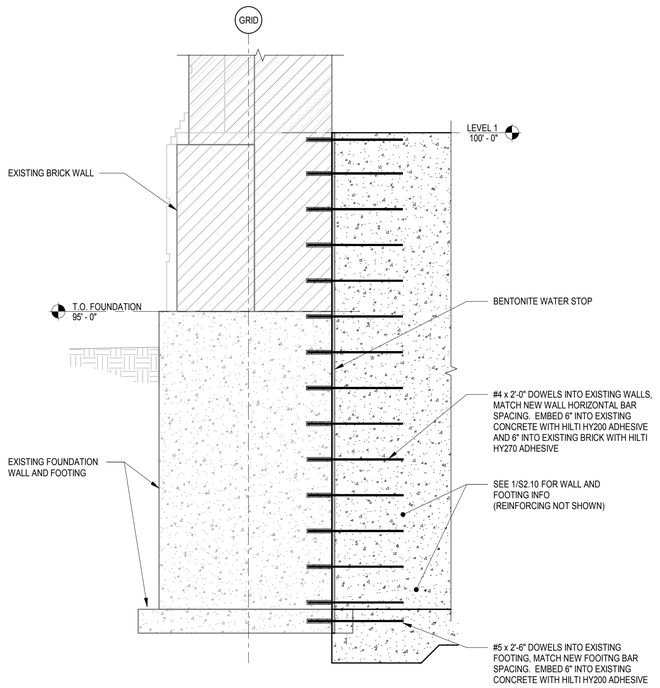
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FOUNDATION DETAILS

PROJECT NO:	21601
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1 FOUNDATION WALL AT EXISTING
1/2" = 1'-0"

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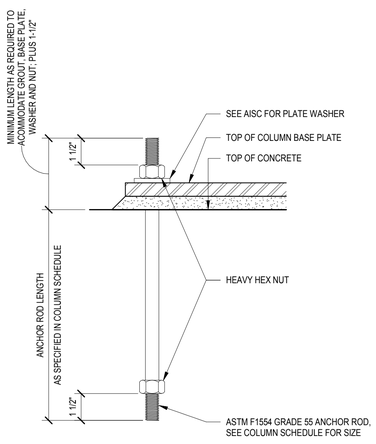
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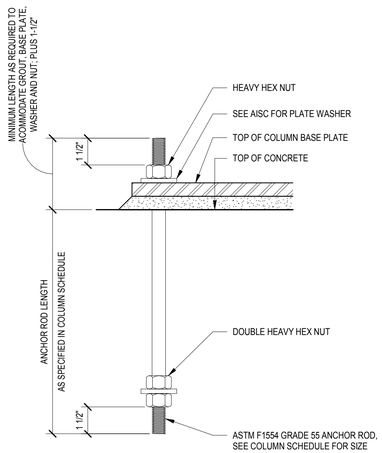
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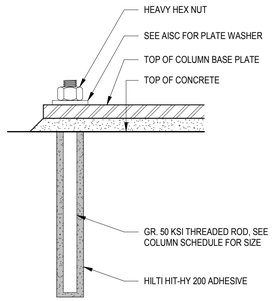
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TYPE 'A'



TYPE 'B'

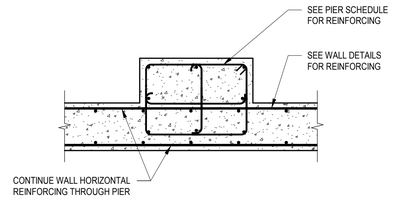


TYPE 'C'

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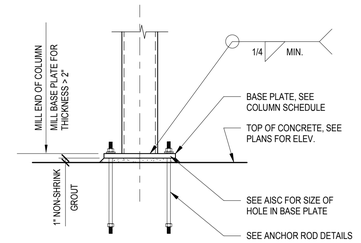
1. ANCHOR THREADS AT THE EMBEDDED END SHALL BE STRICKEN AT TWO PLACES BELOW THE HEAVY HEX NUT.
2. UNLESS NOTED OTHERWISE, ALL NUTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC AFTER THE CONCRETE IS AT LEAST 14 DAYS OLD.
3. THE HOLE IN THE PLACE WASHER SHALL BE 1/16" LARGER THAN THE ROD DIAMETER.

1 TYPICAL ANCHOR ROD DETAIL
3" = 1'-0"

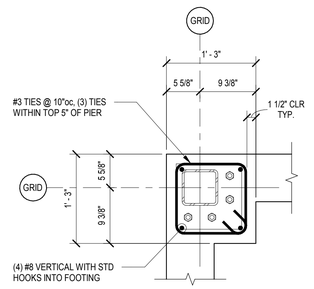


PARTIAL PLAN

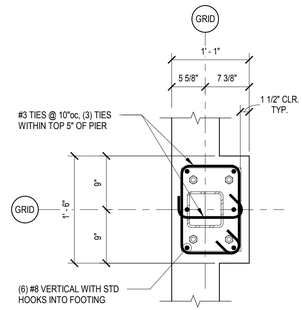
2 TYPICAL PIER EMBEDDED IN WALL
1/2" = 1'-0"



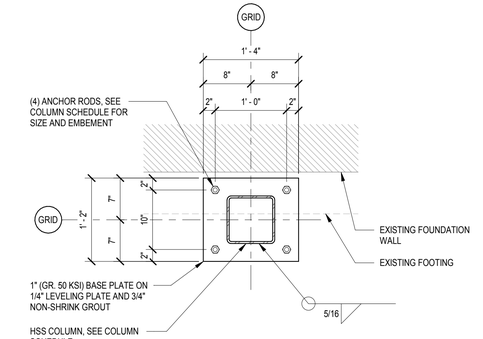
3 TYPICAL BASE PLATES
3/4" = 1'-0"



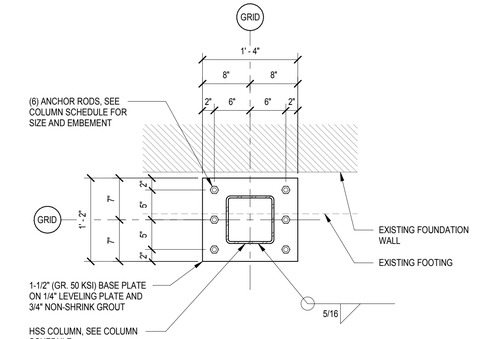
4 PIER P1
1" = 1'-0"



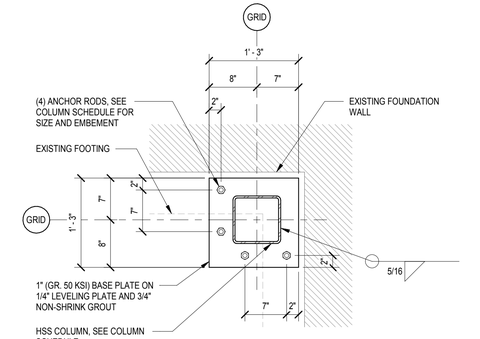
5 PIER P2
1" = 1'-0"



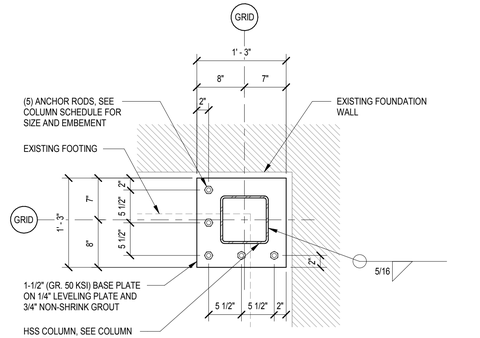
6 BASE PLATE BP1
1" = 1'-0"



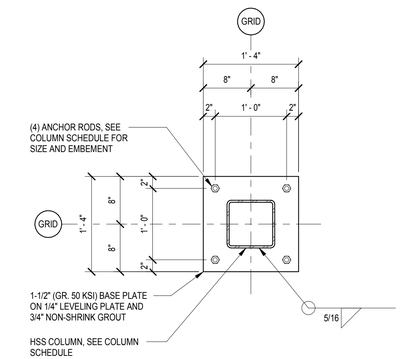
7 BASE PLATE BP1A
1" = 1'-0"



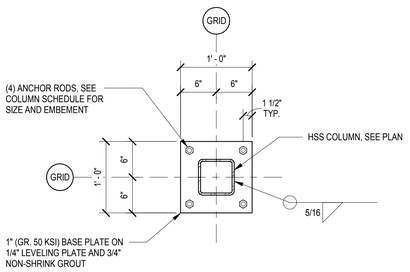
8 BASE PLATE BP2
1" = 1'-0"



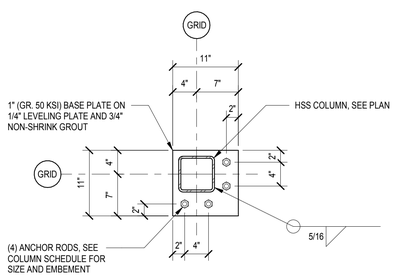
9 BASE PLATE BP2A
1" = 1'-0"



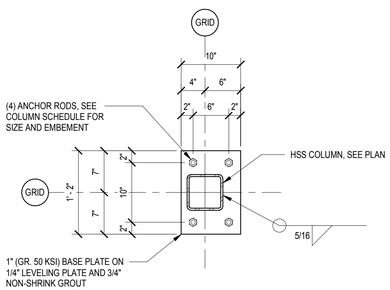
10 BASE PLATE BP3
1" = 1'-0"



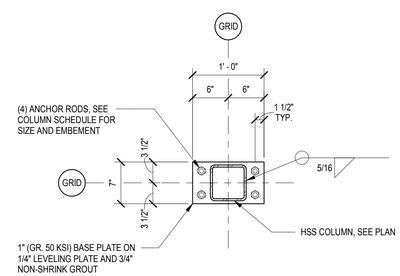
11 BASE PLATE BP4
1" = 1'-0"



12 BASE PLATE BP5
1" = 1'-0"



13 BASE PLATE BP6
1" = 1'-0"



14 BASE PLATE BP7
1" = 1'-0"

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VERMONT

PIER AND BASE PLATE DETAILS

PROJECT NO:	21601
DATE:	2/7/2025
CHECKED BY:	JMH
DRAWN BY:	KLG
SCALE:	As indicated

S2.20

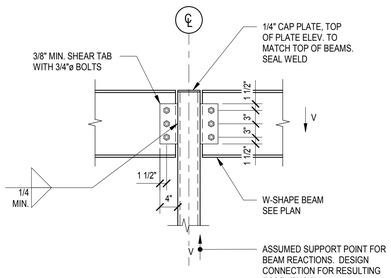
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SCHEDULE OF MINIMUM BEAM CONNECTIONS

NOMINAL BEAM DEPTH (NOTE 1)	MINIMUM ROWS OF BOLTS (NOTE 2)	MINIMUM VERTICAL REACTION FOR BEAM CONNECTION, DESIGN, KIPS (NOTE 2)
W6	N = 2	8
W8	N = 2	10
W10	N = 2	15
W12	N = 2	20
W14	N = 3	25
W16	N = 3	30
W18	N = 4	40
W21	N = 4	50
W24	N = 5	60
W27	N = 5	70
W30	N = 6	80

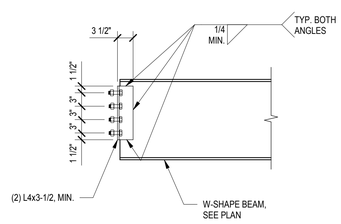
NOTES:
1. MINIMUM REQUIREMENTS FOR CHANNELS AND TUBES AS BEAMS ARE THE SAME FOR WIDE-FLANGE BEAMS OF THE SAME NOMINAL DEPTH.
2. PROVIDE ADDITIONAL BOLTS AS NEEDED TO RESIST THE SPECIFIED CONNECTION FORCES.
3. DESIGN BEAMS CONNECTIONS FOR REACTIONS INDICATED IN THE DRAWINGS. WHERE NO REACTION IS INDICATED, DESIGN FOR THE SCHEDULED MINIMUM REACTION.

1 MINIMUM BEAM CONNECTION SCHEDULE
3/4" = 1'-0"



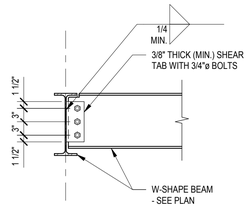
NOTES:
1. NUMBER OF BOLTS SHOWN ARE INDICATIVE ONLY. DESIGN CONNECTION FOR SPECIFIED REACTION.
2. SEE 1/S3.01 FOR SCHEDULE OF MINIMUM BEAM CONNECTIONS.

2 TYPICAL STEEL BEAM TO HSS COLUMN CONNECTION
3/4" = 1'-0"



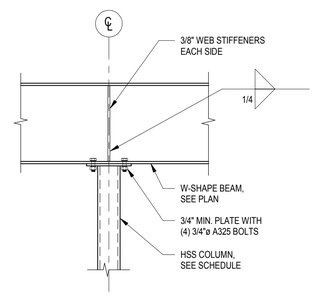
NOTES:
1. NUMBER OF BOLTS SHOWN ARE INDICATIVE ONLY. DESIGN CONNECTION FOR SPECIFIED REACTION.
2. SEE 1/S3.01 FOR SCHEDULE OF MINIMUM BEAM CONNECTIONS.

3 TYPICAL DOUBLE ANGLE CONNECTION
3/4" = 1'-0"

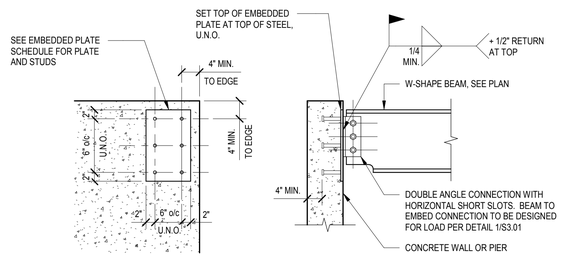


NOTES:
1. NUMBER OF BOLTS SHOWN ARE INDICATIVE ONLY. DESIGN CONNECTION FOR SPECIFIED REACTION.
2. SEE 1/S3.01 FOR SCHEDULE OF MINIMUM BEAM CONNECTIONS.

4 TYPICAL BEAM-TO-BEAM CONNECTION
3/4" = 1'-0"



5 TYPICAL STEEL BEAM RUNNING OVER COLUMN
3/4" = 1'-0"

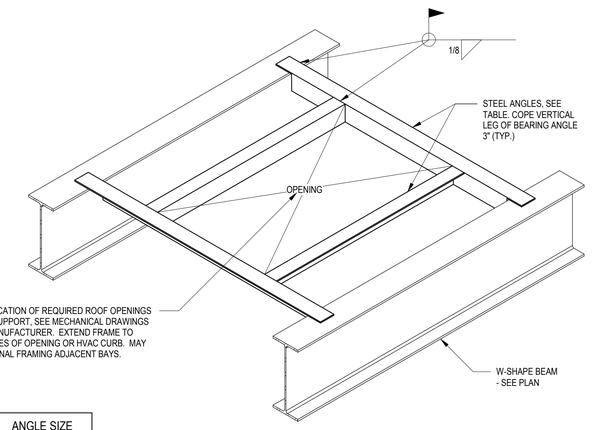


BEAM SIZE	MIN. LINES OF BOLTS FOR EMBED CONNECTIONS	EMBED PLATE SIZE	STUDS
W10	N = 2	1/2"x12"x1'-6"	(9) 3/4" dia. x 6"
W12	N = 3	1/2"x12"x1'-6"	(9) 3/4" dia. x 6"
W14	N = 4	1/2"x12"x1'-6"	(9) 3/4" dia. x 6"
W16	N = 4	3/4"x12"x2'-0"	(12) 3/4" dia. x 6"
W18	N = 5	3/4"x12"x2'-0"	(12) 3/4" dia. x 6"
W21	N = 5	3/4"x12"x2'-0"	(12) 3/4" dia. x 6"
W24	N = 6	3/4"x12"x2'-0"	(12) 3/4" dia. x 6"

6 TYPICAL EMBEDDED PLATES FOR STEEL BEAMS
3/4" = 1'-0"

7 TYPICAL HSS COLUMN AT TRANSFER BEAM
3/4" = 1'-0"

8 TYPICAL ELEVATOR SILL SUPPORT AT SLAB-ON-DECK
1" = 1'-0"



FOR SIZE AND LOCATION OF REQUIRED ROOF OPENINGS OR HVAC CURB SUPPORT, SEE MECHANICAL DRAWINGS AND/OR HVAC MANUFACTURER. EXTEND FRAME TO SUPPORT ALL SIDES OF OPENING OR HVAC CURB. MAY REQUIRE ADDITIONAL FRAMING ADJACENT BAYS.

SPAN	ANGLE SIZE
UP TO 4'-0"	L3x3x1/4
4'-1" TO 6'-0"	L4x3x1/4 (LLV)
6'-1" TO 8'-0"	L5x3x5/16 (LLV)
8'-1" TO 10'-0"	L6x3x3/8 (LLV)

NOTES:
1. PROVIDE SIMILAR FRAMING AT ROOF DRAINS.
2. WELD/CONNECT DECK TO ALL FRAMING AT 6" o/c MAXIMUM SPACING. COORDINATE WITH ENGINEER FOR SPECIAL DETAILS REQUIRED TO CONNECT ANGLES TO EXISTING DECK IN AN INSTALLATION OF NEW UNIT ON EXISTING ROOF FRAMING.
3. ANCHOR EQUIPMENT AND CURB TO MISCELLANEOUS FRAMING SHOWN AS REQUIRED FOR WIND AND/OR SEISMIC FORCES. COORDINATE WITH EQUIPMENT/CURB MANUFACTURER.

9 TYPICAL ROOF OPENING SUPPORT FRAMING AT W-SHAPE BEAMS
3/4" = 1'-0"

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PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VERMONT

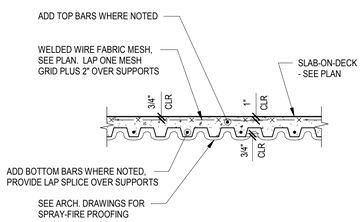
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TYPICAL STEEL FRAMING DETAILS

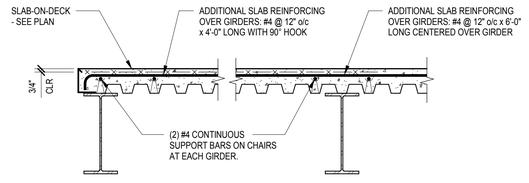
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DATE:	2/7/2025
CHECKED BY:	JMH
DRAWN BY:	KLG
SCALE:	As indicated

S3.01

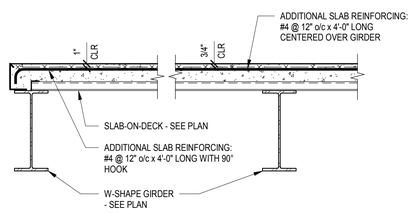
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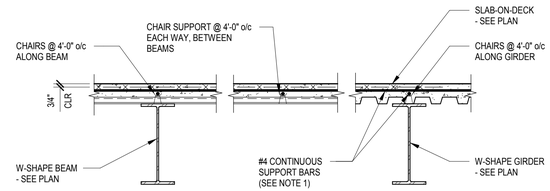
1 TYPICAL SLAB-ON-DECK
3/4" = 1'-0"



2 TYPICAL ADDED SLAB-ON-DECK TOP BARS OVER BEAMS PARALLEL TO DECK RIBS
3/4" = 1'-0"

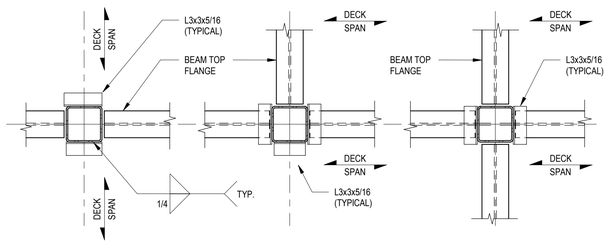


3 TYPICAL ADDED SLAB-ON-DECK TOP BARS OVER BEAMS PERPENDICULAR TO DECK RIBS
3/4" = 1'-0"



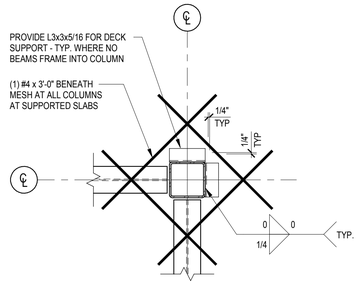
NOTE:
1. PROVIDE CONTINUOUS #4 SUPPORT BARS AT 4'-0" o/c MAX. IN EACH DIRECTION. TO SUPPORT MESH AND/OR TOP REINFORCING AT SPECIFIED ELEVATION. AT EACH INTERSECTION POINT, TIE SUPPORT BARS TOGETHER & PROVIDE HIGH CHAIR. CHAIRS SHALL BE MANUFACTURED FOR SUPPORT ON METAL DECK (CRSI TYPE HCM). TIE MESH AND SPECIFIED TOP SLAB REINFORCEMENT TO SUPPORT BARS AT 4'-0" o/c IN EACH DIRECTION.

4 TYPICAL BAR SUPPORTS FOR SLAB-ON-DECK MESH AND TOP BARS
3/4" = 1'-0"

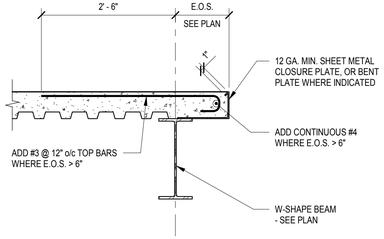


NOTE: APPLIES TO BOTH ROOF DECK AND FLOOR DECK

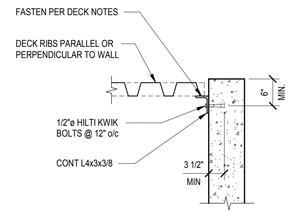
5 TYPICAL DECK SUPPORT AT STEEL COLUMNS
3/4" = 1'-0"



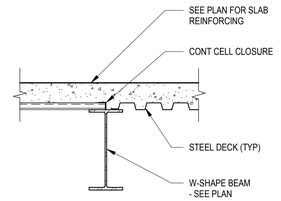
6 TYPICAL SLAB DETAIL AT COLUMN
3/4" = 1'-0"



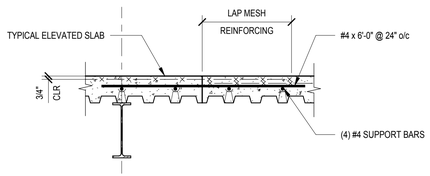
7 TYPICAL SLAB-ON-DECK EDGE
3/4" = 1'-0"



8 TYPICAL DECK SUPPORT AT CONCRETE WALL
3/4" = 1'-0"

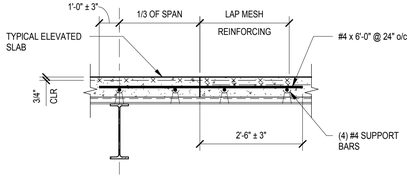


9 TYPICAL SLAB-ON-DECK DIRECTION CHANGE
3/4" = 1'-0"



JOINT PARALLEL TO DECK FLUTES

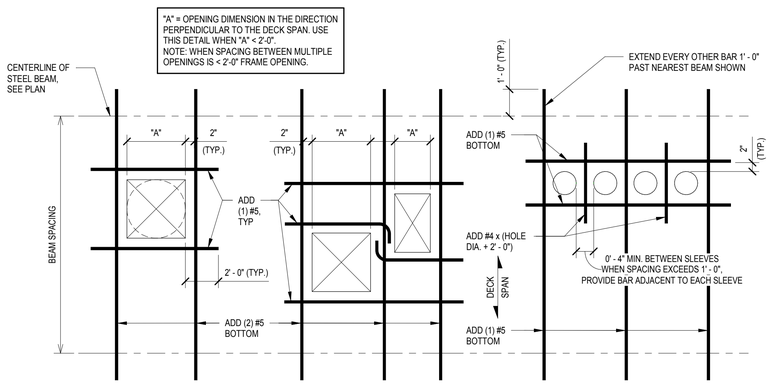
NOTES:
1. SUBMIT LOCATIONS OF ALL CONSTRUCTION JOINTS FOR REVIEW AND ACCEPTANCE BEFORE FORMING.
2. LOCATE 5'-0" MIN. FROM CENTERLINE OF NEAREST GIRDER.



JOINT PERPENDICULAR TO DECK FLUTES

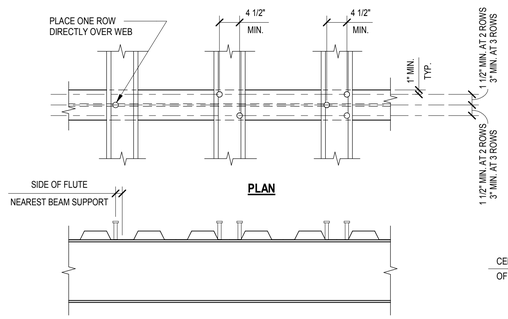
NOTE:
1. SUBMIT LOCATIONS OF ALL CONSTRUCTION JOINTS .

10 TYPICAL SLAB-ON-DECK CONSTRUCTION JOINT
3/4" = 1'-0"



11 TYPICAL OPENINGS IN SLAB-ON-DECK (2' - 0" MAX.)
3/4" = 1'-0"

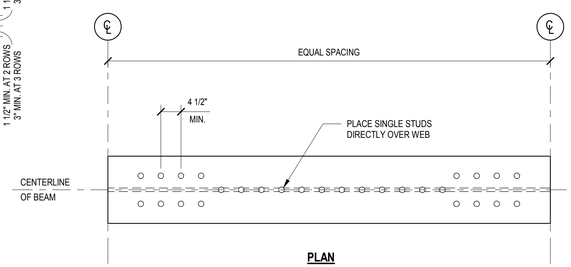
NOTES:
1. COORDINATE OPENING SIZE AND LOCATION WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. INDICATE ON REINFORCING AND DECK SUBMITTALS.
2. MAXIMUM DIMENSION "A" SHALL BE 2'-0". REFER TO PLAN OR DETAIL ON DRAWINGS FOR FRAMING OF OPENINGS GREATER THAN 2'-0".
3. WWF SLAB REINFORCEMENT SHALL BE CUT AROUND SLAB OPENING. WWF SHALL EXTEND TO WITHIN 2" OF OPENING ON ALL SIDES.
4. OPENINGS 6" AND SMALLER DO NOT REQUIRE ADDITIONAL REINFORCING.
5. FIELD CUT OPENINGS IN DECK AFTER CONCRETE SLAB HAS BEEN POURED AND HAS ATTAINED MINIMUM 75% OF ITS SPECIFIED 28 DAY COMPRESSIVE STRENGTH.
6. REINFORCEMENT PERPENDICULAR TO DECK SPAN SHALL BE PLACED ON TOP OF DECK FLUTES.
7. REINFORCEMENT PARALLEL TO DECK SPAN SHALL BE PLACED IN THE LOWER FLUTE AND SHALL BE CHAIRED TO PROVIDE 3/4" COVER.
8. THIS DETAIL SHOWS TYPICAL CONDITIONS; VERIFY REINFORCING STEEL PLACEMENT WITH ENGINEER FOR SPECIAL CASES.
9. PROVIDE REINFORCEMENT AS SHOWN FOR SQUARE, RECTANGULAR OR ROUND OPENINGS.



NOTES:
1. FEWER STUDS THAN VALLEYS: PLACE A STUD IN ALTERNATING FLUTES FOR ENTIRE LENGTH OF BEAM. PLACE REMAINING STUDS IN FLUTES NOT ALREADY HAVING A STUD, STARTING NEAR BEAM ENDS AND CONTINUING TOWARD BEAM CENTER. MAXIMUM SPACING ALLOWED IS 12" o/c.
2. MORE STUDS THAN VALLEYS: PLACE A STUD IN ALL AVAILABLE FLUTES. IF STUDS REMAIN, PLACE A SECOND STUD IN FLUTES NEAR BEAM ENDS AND CONTINUE PLACING A SECOND STUD IN EACH FLUTE TOWARD BEAM CENTER "STARTING" AT SUPPORT END. IF STUDS REMAIN, PLACE A THIRD STUD IN FLUTES NEAR BEAM ENDS AND CONTINUE PLACING A THIRD STUD IN EACH FLUTE TOWARD BEAM CENTER.
3. SEE PLAN FOR MINIMUM NUMBER OF STUDS [XX] AT BEAM OR BEAM SEGMENT AND PLACE AS SHOWN FOR BEAM OR BEAM SEGMENT.
4. PROVIDE STUDS AT 12" o/c MAXIMUM SPACING, WITH ADDITIONAL STUDS FROM NUMBER SHOWN ON PLANS AS REQUIRED FOR ANY BEAM OR BEAM SEGMENT.

DECK PERPENDICULAR TO SUPPORTS

12 TYPICAL SHEAR STUD SPACING
3/4" = 1'-0"



NOTES:
1. SPACE SPECIFIED NUMBER OF STUDS EQUALLY ALONG BEAM IN A SINGLE ROW.
2. IF SPACING IS LESS THAN 4-1/2", USE DOUBLE ROW STARTING AT ENDS.
3. PROVIDE STUDS AT 12" o/c MAXIMUM SPACING.

DECK PARALLEL TO SUPPORTS

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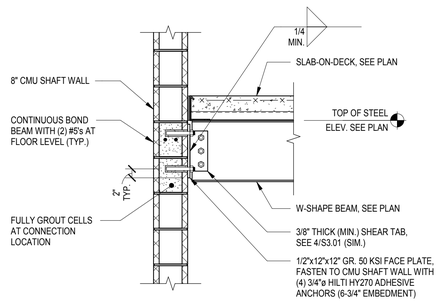
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TYPICAL METAL DECK DETAILS

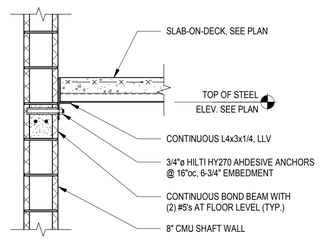
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DATE:	2/7/2025
CHECKED BY:	JMH
DRAWN BY:	KLG
SCALE:	3/4" = 1'-0"

S3.02

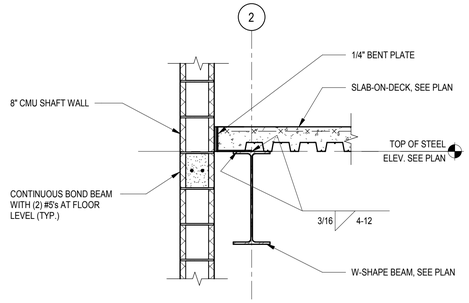
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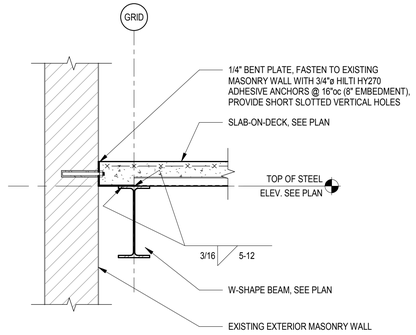
1 W-BEAM CONNECTION TO CMU WALL
3/4" = 1'-0"



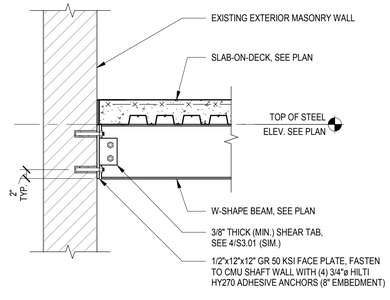
2 DECK SUPPORT AT CMU WALL
3/4" = 1'-0"



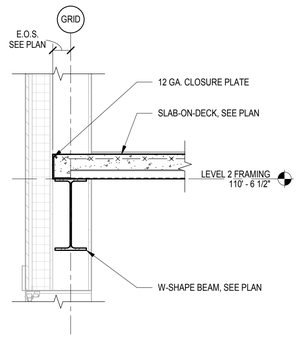
3 EDGE OF DECK AT CMU SHAFT WALL
3/4" = 1'-0"



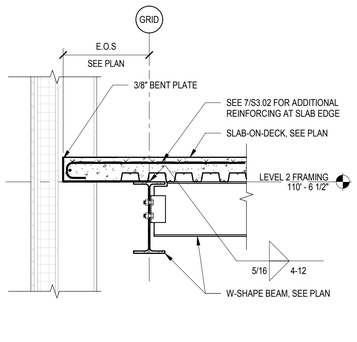
4 EDGE OF DECK AT EXISTING EXTERIOR MASONRY WALL
3/4" = 1'-0"



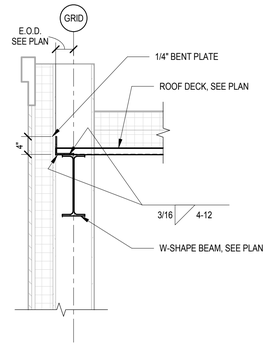
5 NEW BEAM CONNECTION AT EXISTING EXTERIOR MASONRY WALL
3/4" = 1'-0"



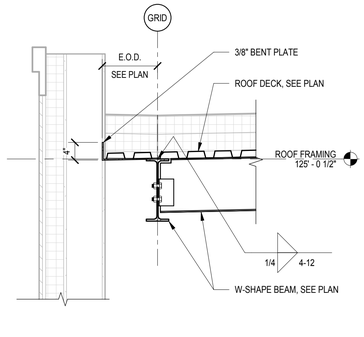
6 EDGE OF SLAB AT EXTERIOR WALL
3/4" = 1'-0"



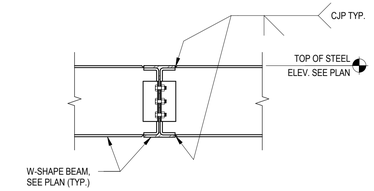
7 EDGE OF SLAB AT EXTERIOR WALL
3/4" = 1'-0"



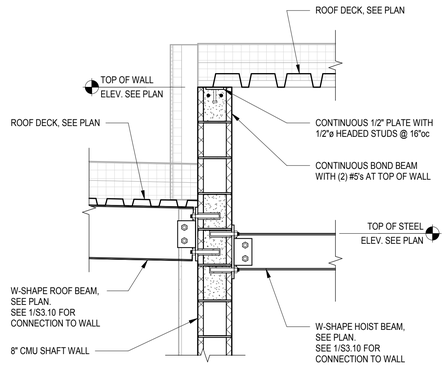
8 EDGE OF ROOF DECK AT EXTERIOR WALL
3/4" = 1'-0"



9 EDGE OF ROOF DECK AT EXTERIOR WALL
3/4" = 1'-0"



10 MOMENT CONNECTION AT W-SHAPE BEAM
3/4" = 1'-0"



11 TOP OF ELEVATOR
3/4" = 1'-0"

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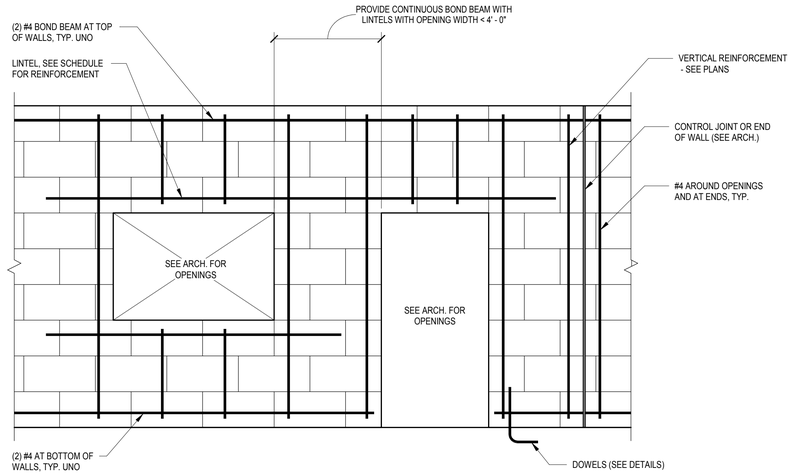
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STEEL FRAMING DETAILS

PROJECT NO:	21601
DATE:	2/7/2025
CHECKED BY:	JMH
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SCALE:	3/4" = 1'-0"

S3.10

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1 TYPICAL CMU WALL REINFORCING
3/4" = 1'-0"

LINTEL SCHEDULE

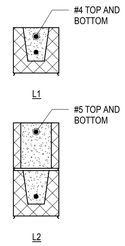
SPAN TABLE

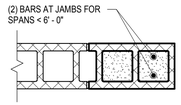
OPENING SIZE	8" CMU	
0" ≤ 4' - 0"	L1	
4' - 0" ≤ 6' - 0"	L2	

LINTEL NOTES:
1. ALL MASONRY OPENINGS REQUIRE A LINTEL. PROVIDE A STANDARD LINTEL PER SPAN TABLES, UNLESS NOTED OTHERWISE ON PLANS.
2. BOND BEAM LINTELS SHALL BE FILLED WITH 3,000 PSI GROUT.

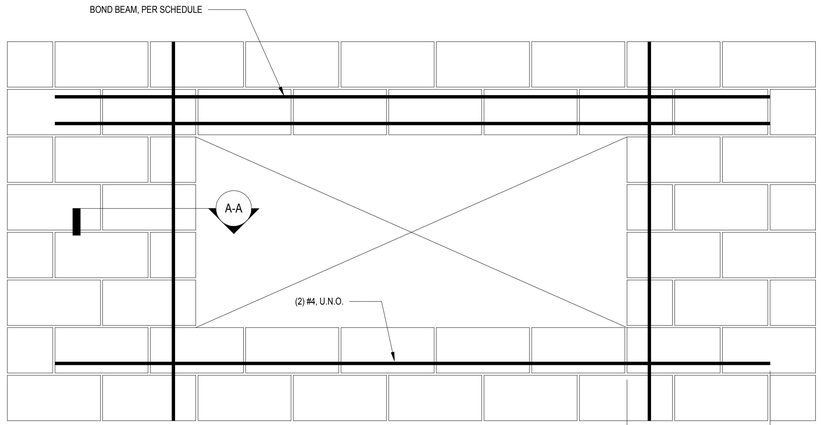
STANDARD LINTELS

8" CMU





SECTION A-A



CMU WALL OPENING WITH BOND BEAM LINTEL

2 LNT-02 - LINTEL SCHEDULE
1" = 1'-0"

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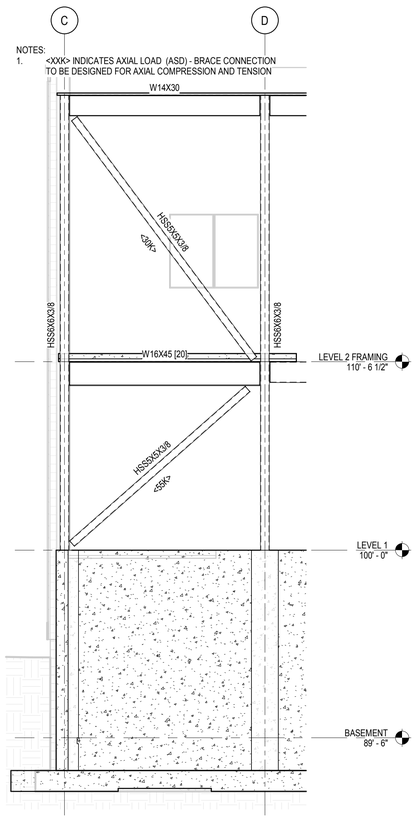
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TYPICAL MASONRY DETAILS

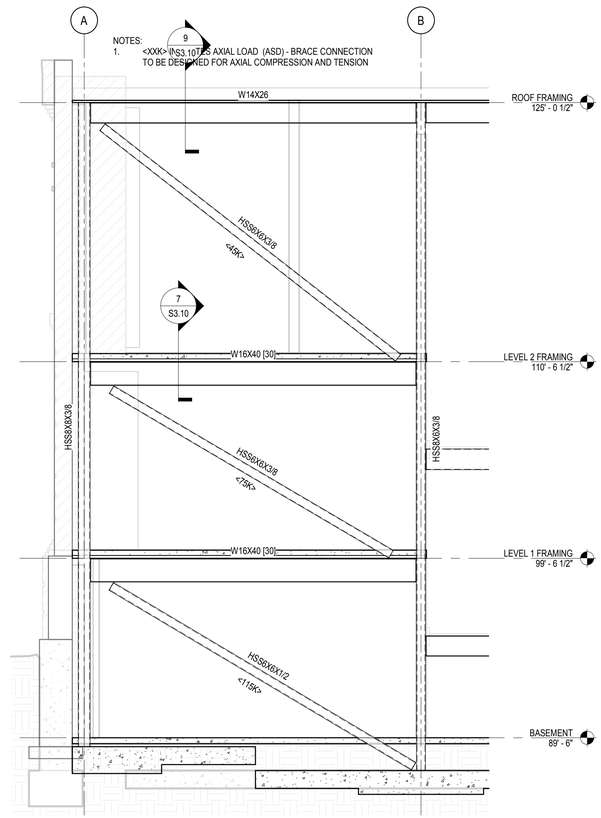
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DRAWN BY:	KLG
SCALE:	As indicated

S4.01

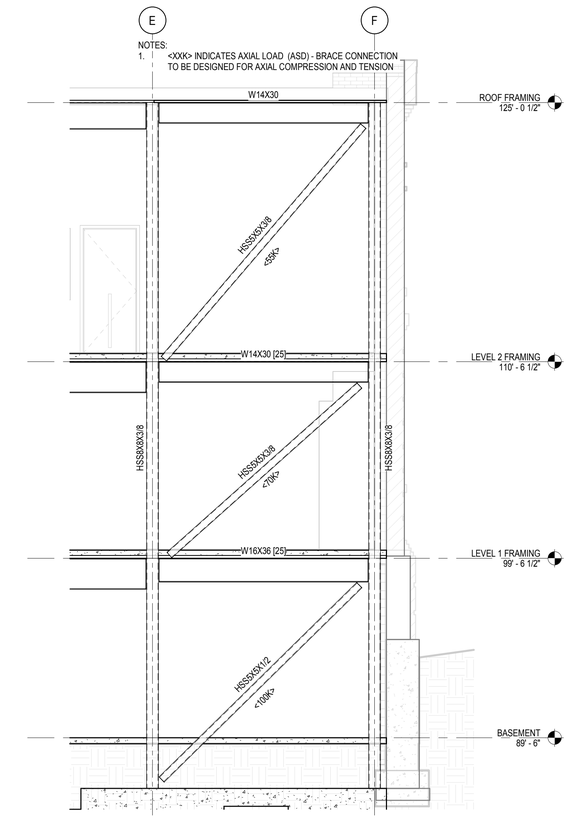
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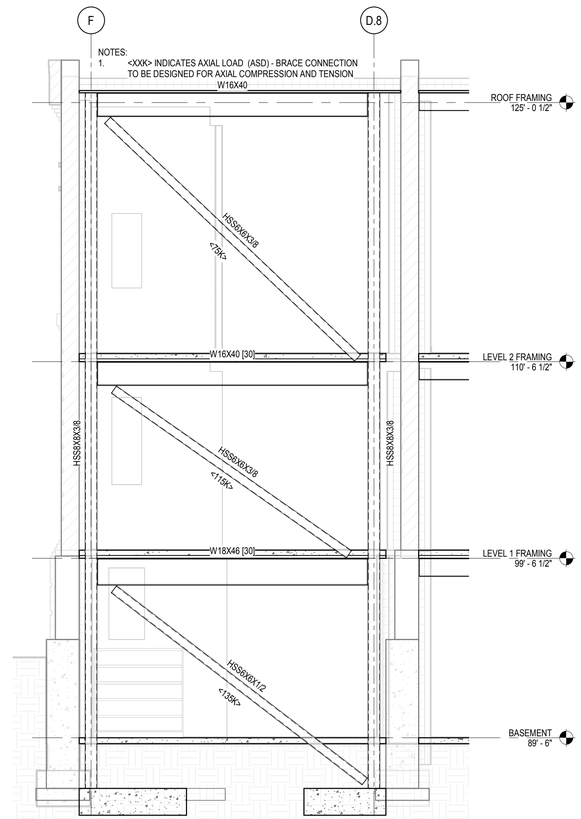
1 GRID 1 BRACED FRAME ELEVATION
1/4" = 1'-0"



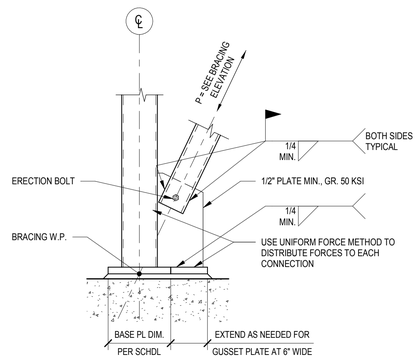
2 GRID 2 BRACED FRAME ELEVATION (A-B)
1/4" = 1'-0"



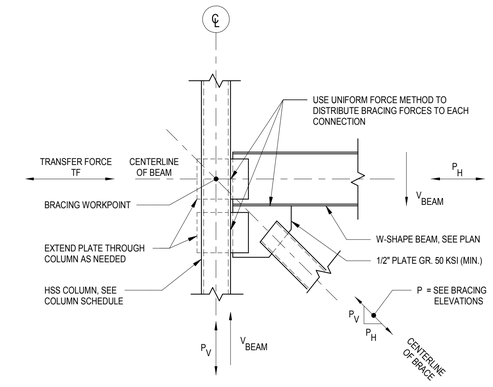
3 GRID 2 BRACED FRAME ELEVATION (E-F)
1/4" = 1'-0"



4 GRID 5 BRACED FRAME ELEVATION
1/4" = 1'-0"



5 TYPICAL BRACING BACE PLATE CONNECTION
3/4" = 1'-0"



6 TYPICAL BRACING CONNECTION AT HSS COLUMN
3/4" = 1'-0"

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ST. JOHNSBURY, VERMONT

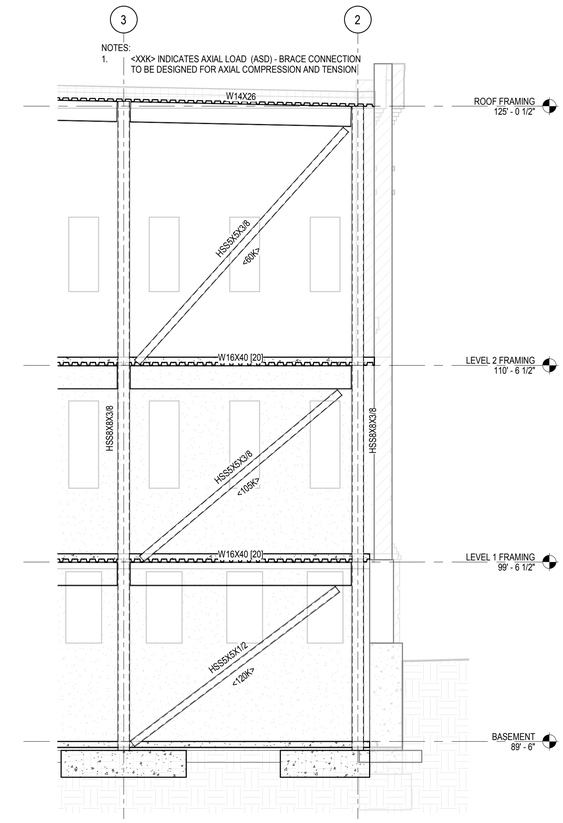
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BRACED FRAME ELEVATIONS

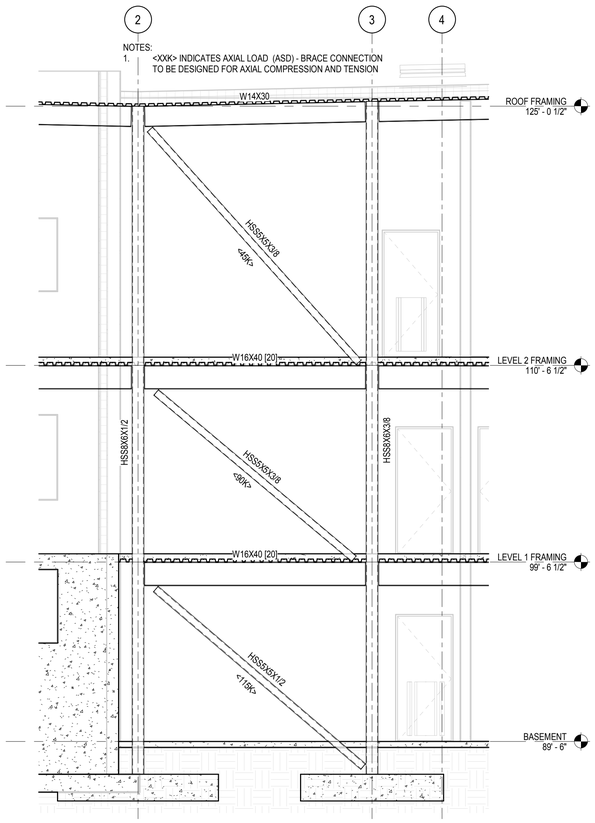
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CHECKED BY:	JMH
DRAWN BY:	KLG
SCALE:	As indicated

S5.01

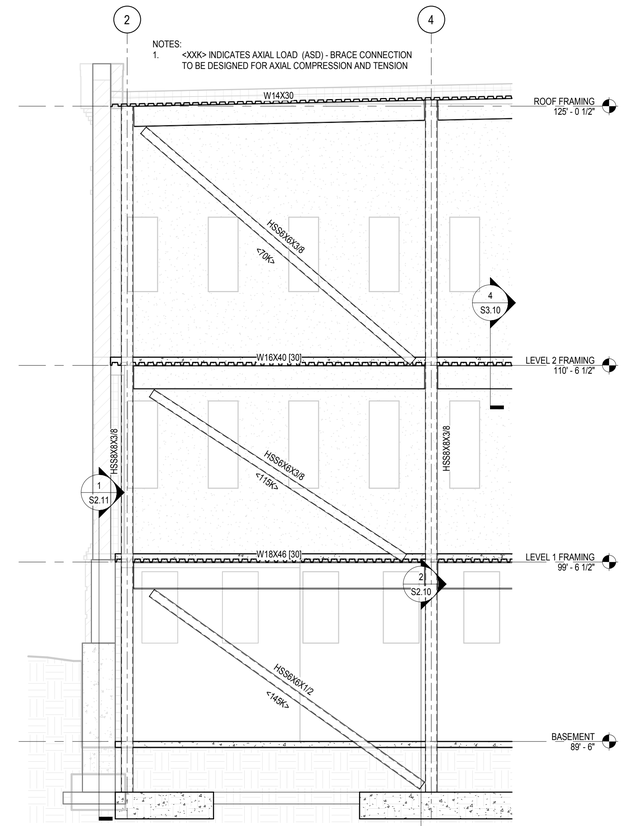
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1 GRID A BRACED FRAME ELEVATION
1/4" = 1'-0"



2 GRID C BRACED FRAME ELEVATION
1/4" = 1'-0"



3 GRID F BRACED FRAME ELEVATION
1/4" = 1'-0"

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BRACED FRAME ELEVATIONS

PROJECT NO:	21601
DATE:	2/7/2025
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DRAWN BY:	Author
SCALE:	1/4" = 1'-0"

S5.02

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ABBREVIATIONS

ABBR	DEFINITION
A	
A/C	AIR CONDITIONING
AB	ANCHOR BOLT
ACP	ACOUSTICAL CEILING PANEL
ADA	COMPLIES W/ADAAG ACCESSIBILITY REQUIREMENTS
AFF	ABOVE FINISH FLOOR
AIB	AIR INFILTRATION BARRIER
ALT	ALTERNATIVE
ALUM / AL	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECT (URAL)
AVG	AVERAGE
B	
BD	BOARD
BLDG	BUILDING
BLK	BLOCK
BM	BEAM
BM	BENCH MARK
BO	BOTTOM OF
BSMT	BASEMENT
BTM	BOTTOM
BTWN	BETWEEN
C	
CAB	CABINET
CB	CATCH BASIN
CF	CUBIC FEET
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CFOI	CONTRACTOR FURNISHED OWNER INSTALLED
CG	CORNER GUARD
CHALK	CHALKBOARD
CI	CONTINUOUS INSULATION
CIP	CAST IN PLACE
CJ	CONSTRUCTION JOINT / CONTROL JOINT
CL	CENTERLINE
CLG	CEILING
CLO	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUE (CONTINUOUS)
COPT	COMMON PATH OF TRAVEL
COR	CORRIDOR
CORR	CORRUGATED
CPT	CARPET
CS	COURSE
CT	CERAMIC TILE
CTR	CENTER
CY	CUBIC YARD
D	
DBL	DOUBLE
DF	DRINKING FOUNTAIN
DIA / Ø	DIAMETER
DIM	DIMENSION
DISP	DISPENSER / DISPLAY
DIV	DIVISION
DN	DOWN
DTL	DETAIL
DWG	DRAWING
E	
E	EAST
EA	EACH
EIFS	EXTERIOR INSULATION FINISH SYSTEM
ELEC	ELECTRIC (AL)
ELEV	ELEVATOR / ELEVATION
ENC	ENCLOSURE / ENCLOSE
EP	ELECTRICAL PANEL
EQ	EQUAL / EQUIPMENT
EQUIP	EQUIPMENT
EW	EACH WAY
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
F	
FD	FLOOR DRAIN
FO	FINISHED OPENING
FR	FIRE RATE (ED) / FIRE RATING
FT	FOOT
FTG	FOOTING
FURN	FURNITURE
FUT	FUTURE
G	
GA	GAGE / GAUGE
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GFRC	GLASS FIBER REINFORCED CONCRETE
GLAZ	GLAZING
GWB	GYPSUM WALL BOARD
GYP	GYPSUM

ABBREVIATIONS

ABBR	DEFINITION
H	
H	HIGH
HC	HOLLOW CORE
HDR	HEADER
HDW	HARDWARE
HDWD	HARDWOOD
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HORSE POWER
HR	HOUR
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HVAC	HEATING, VENTILATING & AIR CONDITIONING
HW	HOT WATER
HYD	HYDRANT
I	
ID	INNER DIAMETER
IN	INCH
INCL	INCLUDE
INSUL / INS	INSULATION
INT	INTERIOR
J	
JC	JANITORS CLOSET
JNT	JOINT
K	
KW	KILOWATT
L	
L	LONG / LENGTH
LAM	LAMINATE
LAV	LAVATORY
LB	POUND
LF	LINEAR FOOT
LH	LEFT HAND
LKR	LOCKER
LOC	LOCATION
M	
MAS	MASONRY
MAX	MAXIMUM
MECH	MECHANICAL
MEP	MECHANICAL ELECTRICAL & PLUMBING
MFR	MANUFACTURE (R) (ED)
MH	MOP HOLDER
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MRGB	MOISTURE RESISTANT GYPSUM BOARD
MTD	MOUNTED
MTL	METAL
N	
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
O	
OC	ON CENTER
OD	OUTER DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
OH	OVERHEAD
OH.DR.	OVERHEAD DOOR
OPNG	OPENING
OPP	OPPOSITE (HAND)
P	
PC	PIECE
PERF	PERFORATED
PH	PHASE / PARTIAL HEIGHT
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLBG	PLUMBING
PLF	POUNDS PER LINEAR FOOR
PNL	PANEL
PNT	PAINT (ED)
PR	PAIR
PREFIN	PREFINISHED
PROJ	PROJECT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE PRESERVATIVE TREATED
PTN	PARTITION
PVC	POLYVINYL CHLORIDE
PWD	PLYWOOD
Q	
QT	QUARRY TILE

ABBREVIATIONS

ABBR	DEFINITION
R	
R	RADIUS / RISER
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REF	REFERENCE
REFR	REFRIGERATOR
REINF	REINFORCED
REQ	REQUIRED / REQUIREMENT
RES	RESILIENT
REV	REVISION / REVISE (D) / REVERSE
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RTU	ROOF TOP UNIT
S	
S	SOUTH
SAN	SANITARY
SC	SOLID CORE
SCH	SCHEDULE (D)
SECT	SECTION
SF	SQUARE FOOT
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STL	STEEL
STO	STORAGE
STRUCT	STRUCTURAL / STRUCTURE
SUSP	SUSPENSION
SY	SQUARE YARD
SYM	SYMMETRICAL
SYN	SYNTHETIC
T	
T	TREAD
T&G	TONGUE AND GROOVE
TEL	TELEPHONE
TEMP	TEMPORARY
TERM	TERMINATE
THRU	THROUGH
TLT	TOILET
TO	TOP OF
TOC	TOP OF CURB / CONCRETE
TOW	TOP OF WALL
TV	TELEVISION
TYP	TYPICAL
U	
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
US	URINAL SCREEN
V	
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
W	
W	WEST
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WH	WATER HEATER
WT	WEIGHT
Y	
YD	YARD

EXISTING BUILDING GENERAL NOTES:

1. DIMENSIONS
   A. VERIFY ALL DIMENSIONS AND CONDITIONS. NOTIFY ARCHITECT FOR CLARIFICATION OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
2. CONTRACTOR TO FIELD VERIFY EXISTING ROOF PITCH(ES) MATCH THOSE INDICATED WITHIN DRAWING SET.
3. COORDINATE AND ALIGN NEW WALL FINISHES WHERE ABUTTING EXISTING CONDITIONS UNLESS OTHERWISE NOTED.
4. ALL WORK SHALL CONFORM TO APPLICABLE SAFETY AND BUILDING CODES, LABOR LAWS, AND ORDINANCES.
5. DO NOT SCALE DRAWINGS:
   A. THE CONTRACTOR SHALL USE DIMENSIONS SHOWN ON THE DRAWINGS AND ACTUAL FIELD MEASUREMENTS. NOTIFY THE ARCHITECT FOR CLARIFICATION IF ANY DISCREPANCIES ARE FOUND.
6. ABBREVIATIONS:
   A. COMMON-USE ABBREVIATIONS ARE USED THROUGHOUT THE DRAWINGS. THE ABBREVIATIONS LIST IS NOT INTENDED TO BE COMPLETE OR REPRESENT CONDITIONS OR MATERIALS USED IN THE PROJECT. REQUEST ARCHITECT CLARIFICATION FOR ANY ABBREVIATIONS IN QUESTION.
7. THE DRAWINGS AND SPECIFICATIONS:
   A. PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS ARE SUPPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK WITH THE ARCHITECTURAL DRAWINGS BEFORE THE INSTALLATION OF THEIR WORK. ANY DISCREPANCY BETWEEN THE ARCHITECTURAL AND THE CONSULTING ENGINEER(S) DRAWINGS SHALL BE BROUGHT TO THE ARCHITECTS ATTENTION BY WRITTEN REQUEST FOR CLARIFICATION. ANY WORK INSTALLED IN CONFLICT WITH THE ARCHITECTURAL DRAWINGS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR ARCHITECT.
8. COORDINATIONS:
   A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATIONS AND THE COORDINATION OF THE WORK TO ASSURE COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS, AND THE ACCURATE LOCATION OF STRUCTURAL MEMBERS AND OPENINGS FOR MECHANICAL.
   B. THE CONTRACTOR SHALL VERIFY SIZES AND LOCATIONS OF ALL OPENINGS FOR EQUIPMENT WITH MECHANICAL AND ELECTRICAL SUBCONTRACTOR(S) BEFORE PROCEEDING WITH THE WORK.
   C. THE CONTRACTOR SHALL VERIFY SIZES AND LOCATIONS OF ALL EQUIPMENT PADS AND BASES AS WELL AS POWER AND WATER OR DRAIN INSTALLATION WITH EQUIPMENT MANUFACTURERS BEFORE PROCEEDING WITH THE WORK.
9. PARTITIONS SHALL BE FULL HEIGHT ASSEMBLY TO FLOOR OR ROOF DECK ABOVE, UNLESS NOTED OTHERWISE.
10. FINISHED FLOOR ELEVATION IS TOP OF CONCRETE SLAB OR SUB-FLOOR.
11. WHEN CONTENT EXISTS IN MULTIPLE LOCATIONS, THE VIEW WITH THE LARGEST SCALE SUPERCEDES ALL VIEWS OF A SMALLER SCALE.

ARCHITECTURAL LEGEND

- DENSE PACK CELLULOSE
- LOOSE CELLULOSE
- MINERAL WOOL INSULATION
- RIGID INSULATION
- BATT INSULATION
- CONCRETE
- GRAVEL
- UNDISTURBED OR COMPACTED SOIL
- PLYWOOD
- BRICK
- CONCRETE MASONRY UNIT
- MILLWORK
- GYPSUM CEILING BOARD
- GYPSUM WALL BOARD

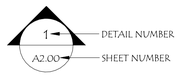
MEMBRANE LAYERS LEGEND

- WEATHER RESISTANT BARRIER (WRB)
- VARIABLE VAPOR RETARDER (VVR)
- UNDERSLAB VAPOR BARRIER (UVB)
- FLEXIBLE FLASHING WEATHER BARRIER (FFWB)

MISC. ARCHITECTURAL SYMBOLS

- CENTER LINE — ℄
- DEMOLITION NOTE — 1
- WALL TYPE TAG — 50
- WINDOW TYPE TAG — A
- ROOM NAME/NUMBER — OFFICE 101
- DOOR NUMBER TAG — 101

BUILDING ELEVATION IDENTIFICATION



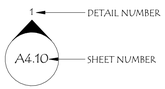
DETAIL IDENTIFICATION



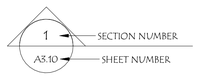
BUILDING SECTION IDENTIFICATION



INT. ELEVATION IDENTIFICATION



WALL SECTION IDENTIFICATION



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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VERMONT

GENERAL NOTES

PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	DPR
DRAWN BY:	RJH
SCALE:	As indicated

A0.01

FILENAME: C:\Users\hoppe\Documents\2021050 St. J Public Safety_R24_ARCH_Bldg A_hoppeTBQPQ.rvt
PRINTED: 2/9/2025 2:15:10 PM

APPLICABLE CODES:

- ☑ VERMONT FIRE & BUILDING SAFETY CODE, 2015 EDITION (VFBS)
  - ☑ NFPA 1 - UNIFORM FIRE CODE W/ VT AMENDMENTS, 2015 EDITION (NFPA1)
  - ☑ NFPA 101 - LIFE SAFETY CODE W/ VT AMENDMENTS, 2015 EDITION (NFPA101)
  - ☑ NFPA 70 - NATIONAL ELECTRICAL CODE W/ VT AMENDMENTS, 2017 EDITION
  - ☑ INTERNATIONAL BUILDING CODE W/ VT AMENDMENTS, 2015 EDITION (IBC)
  - ☑ INTERNATIONAL PLUMBING CODE W/ VT AMENDMENTS, 2021 EDITION (IPC)
    (LIMITED SCOPE: CHAPTER 4 ONLY, REMAINDER OF REVIEW BY PLUMBING ENGINEER)
- ☑ VERMONT COMMERCIAL BUILDING ENERGY STANDARDS, 2024 EDITION (CBES)
- ☑ VERMONT ACCESS RULES, 2012 EDITION (VAR)
  - ☑ AMERICANS WITH DISABILITIES ACT W/ VT AMENDMENTS, 2010 EDITION (ADA)

PROJECT TYPE: VT FIRE & BUILDING SAFETY CODE p.4

☐ NEW CONSTRUCTION ☑ MAJOR REHABILITATION, MODIFICATION, RECONSTRUCTION

☐ BUILDING ADDITION ☐ EXISTING BUILDING WITH CHANGE OF USE / RENOVATION

ADDITIONAL APPLICABLE CODES PER PROJECT TYPE:
☑ IEBC (STRUCTURAL)
☑ NFPA 101 CHAPTER 43

BUILDING OCCUPANCY: NFPA 101 USE CHAPTERS & IBC SECTION 303

NFPA OCCUPANCY	NFPA CHAPTER	IBC OCCUPANCY	IBC SECTION
BUSINESS	6.1.11	BUSINESS (B)	304.1
MIXED USE: ☐ YES ☑ NO	IF MIXED USE: ☐ SEPARATED ☐ NON-SEPARATED		

LOCK UPS

NFPA101 A22.1.1.1.7 - LOCKUPS IN WHICH PERSONS ARE DETAINED WITH SOME DEGREE OF SECURITY IMPOSED ON THEM ARE COMMON IN MANY OCCUPANCIES. EXAMPLES INCLUDE THE FOLLOWING:
(4) LOCAL POLICE DEPARTMENT HOLDING AREAS

NFPA101 22.4.5.1.3 - REQUIREMENTS FOR NEWLOCK UPS: LOCKUPS IN OCCUPANCIES, OTHER THAN DETENTION AND CORRECTIONAL AND HEALTHCARE OCCUPANCIES, WHERE THE HOLDING AREA HAS CAPACITY FOR NOT MORE THAN 3 DETAINEES, AND WHERE NO INDIVIDUAL IS DETAINED FOR 24 HOURS OR MORE, SHAL COMPLY WITH 22.4.5.1.4 AND 22.4.5.2

NFPA101 22.4.5.1.4 - THE LOCKUP SHALL BE PERMITTED TO COMPLY WITH THE REQUIREMENTS FOR THE PRODOMINANT OCCUPANCY IN THE LOCKUP IS PLACED, PROVIDED THAT ALL OF THE FOLLOWING CRITERIA ARE MET:
(1) DOORS AND OTHER PHYSICAL RESTRAINTS TO FREE EGRESS BY DETAINEES CAN BE READILY RELEASED BY STAFF WITHIN 2 MINUTES OF THE ONSET OF A FIRE OR SIMILAR EMERGENCY.
(2) STAF IS IN SUFFICIENT PROXIMITY TO THE LOCKUP SO AS TO BE ABLE TO EFFECT THE 2 MINUTE RELEASE REQUIRED WHENEVER DETAINEES OCCUPY THE LOCKUP.
(3) STAFF IS AUTHERIZED TO EFFECT THE RELEASE REQUIRED.
(4) STAFF IS TRAINED AND PRACTICED IN EFFECTING THE RELEASE.
(5) WHERE THE RELEASE IS EFFECTED BY MEANS OF REMOTE RELEASE, DETAINEES ARE NOT TO BE RESTRAINED FROM EVACUATING WITHOUT THE ASSISTANCE OF OTHERS.

NFPA101 22.4.5.2.2 - WHERE SECURITY OPERATIONS NECESSITATE THE LOCKING OF REQUIRED MEANS OF EGRESS, THE FOLLOWING SHALL APPLY:
(1) DETENTION-GRADE HARDWARE MEETING THE REQUIREMENTS OF ASTM F 1577, STANDARD TEST METHODS FOR DETENTION LOCKS FOR SWINGING DOORS, SHALL BE PROVIDED ON SWINGING DOORS WITHIN THE REQUIRED MEANS OF EGRESS.

EGRESS REQUIREMENTS NFPA 101 CHAPTER 7 & USE GROUP CHAPTER PROVISIONS

SEE LIFE SAFETY PLANS FOR DETAILS

EXIT REMOTENESS - 7.5.1.3
☐ 1/2 DIAGONAL DISTANCE (7.5.1.3.2)
☑ 1/3 DIAGONAL DISTANCE (7.5.1.3.3)
REQUIRED EXIT SEPARATION DISTANCE: 23' - 0"
EXIT SEPARATION DISTANCE PROVIDED: 24' - 0"

NUMBER OF MEANS OF EGRESS EXITS - 7.4.1.1
☑ BY LEVEL REQUIREMENT = 2

EGRESS DISTANCES (NFPA TABLE A7.6)

OCC. TYPE	DEAD END CORRIDOR	COMMON PATH OF TRAVEL	TOTAL TRAVEL DISTANCE
BUSINESS (S)	50 FT	100 FT	300 FT

EGRESS CAPACITY (NFPA TABLE 7.3.3.1)

OCC LOAD	CAPACITY FACTORS		MINIMUM WIDTHS (INCHES)	
	STAIRWAYS	PATHS	STAIRWAYS	PATHS
85	0.3	0.2	25.5	17

MINIMUM WIDTH OF AN EGRESS PATH OF TRAVEL IS 44" REGARDLESS OF OCCUPANCY REQUIREMENT

MEANS OF EGRESS SPECIAL PROVISIONS:
FOR ASSEMBLY USES, THE COMMON PATH OF TRAVEL IS 20 FEET WHEN SERVING A SPACE GREATER THAN 50 OCCUPANTS. IT IS 75 FEET WHEN SERVING A SPACE OF 50 OR LESS OCCUPANCTS.

CLASSIFICATION OF HAZARDOUS CONTENTS: NFPA 101 SECTION 6.2.2

☐ LOW ☑ ORDINARY ☐ HIGH

CONSTRUCTION TYPE: IBC CHAPTER 6, TABLE 601 & NFPA 101 SECTION 8.2.1

☐ TYPE I	☐ A (442)	☐ B (332)
☐ TYPE II	☐ A (111)	☐ B (000)
☑ TYPE III	☐ A (211)	☑ B (200)
☐ TYPE IV	☐ A	☐ B (2HH)
☐ TYPE V	☐ A (111)	☐ B (000)

OCCUPANT LOAD NFPA 101 TABLE 7.3.1.2

OCCUPANT LOAD (NFPA TABLE 7.3.1.2)

AREA	USE	AREA	LOAD FACTOR	OCC. LOAD
BUSINESS (S)	GENERAL OFFICE USAGE	1845 SF	100	19
BUSINESS (S)	GENERAL OFFICE USAGE	1030 SF	100	11
BUSINESS (S)	MECHANICAL SPACE	229 SF	100	3
BUSINESS (S)	LECTURE HALLS	721 SF	20	37
BUSINESS (S)	EXERCISE ROOM / LOCKER ROOM	189 SF	50	4
BUSINESS (S)	STORAGE	271 SF	500	1
BUSINESS (S)	GENERAL OFFICE USAGE	679 SF	100	7
BUSINESS (S)	LOCKUP	355 SF	120	3
BUSINESS (S)		5298 SF		85
GRAND TOTALS:		5298 SF		85

* OCCUPANCY OF THE LOCKER ROOM FALLS BELOW 50 OCCUPANTS AND IS CLASSIFIED AS BUSINESS (IBC 303.1.1)
* OCCUPANCY OF THE LECTURE HALL FALLS BELOW 50 OCCUPANTS AND IS CLASSIFIED AS BUSINESS (IBC 303.1.1)

FIRE PROTECTION SYSTEMS NFPA 101 CHAPTER 7 & USE GROUP CHAPTER PROVISIONS

FIRE ALARM:
☐ MANUAL ☑ AUTOMATIC DETECTION ☐ SINGLE STATION SMOKE ☐ CO ALARM

SPRINKLER SYSTEM:
☐ N/A ☑ AUTOMATIC/SUPERVISED ☑ NFPA 13 ☐ NFPA 13R ☐ FM-200

EXTINGUISHMENT REQUIREMENTS:
☑ SUPERVISED AUTOMATIC SPRINKLER SYSTEM
☑ PORTABLE FIRE EXTINGUISHERS
RATING PROVIDED
CLASS ABC
TRAVEL DISTANCE: ☑ 75FT 50FT 30FT

BUILDING FIRE SEPARATION DISTANCE: GREATER THAN 30 FT, NO PROTECTION REQUIRED.

FIRE RESISTANCE RATINGS: IBC CHAPTER 6, TABLE 601 & NFPA 101 SPECIAL PROVISIONS

ELEMENT	RATING	IBC / NFPA SECTION
PRIMARY STRUCTURAL FRAME	0 HR	IBC TABLE 601
EXTERIOR BEARING WALLS	2 HR	IBC TABLE 601/602
INTERIOR BEARING WALLS	0 HR	IBC TABLE 601
NON BEARING EXTERIOR WALLS	0 HR	IBC TABLE 602
NON BEARING INTERIOR WALLS	0 HR	IBC TABLE 601
FLOOR	0 HR	IBC TABLE 601
ROOF	0 HR	IBC TABLE 601
OCCUPANCY SEPARATION	N/A	NFPA 101 6.1.14.4.1
INCIDENTAL USE / PROTECTION FROM HAZARDS		
BOILER ROOMS	1 HR OR SPRINKLER SYSTEM	IBC TABLE 509
GROUP I-3 CELLS	1 HR	IBC TABLE 509
EGRESS ENCLOSURES		
EXITS	1 HR	NFPA 101 7.1.3.2.1
EXIT ACCESS CORRIDORS	1 HR	NFPA 101 7.1.3.1
VERTICAL OPENINGS		
ELEVATORS	1 HR	NFPA 101 8.6.5
SHAFTS	1 HR	NFPA 101 8.6.5

BUILDING HEIGHT & AREA LIMITATIONS IBC CHAPTER 5

FRONTAGE INCREASE ☑ N/A ☐ YES % ALLOWABLE INCREASE

BUILDING HEIGHT, STORIES & AREA

Name	NFPA Occ. Sect.	IBC Occ. Sect.	MAXIMUM ALLOWABLE IBC REQUIREMENTS HEIGHT	STORIES	BUILDING AREA	PROPOSED VALUES HEIGHT	STORIES	AREA
BUSINESS (S)	6.1.11	304.1	75'	4	57,000 SF	33'	3	5298 SF

PLUMBING FIXTURES IBC CHAPTER 29 SECTION 2902.1

PLUMBING FIXTURE REQUIREMENTS (IPC TABLE 403.1)

FIXTURE TYPE	REQUIREMENT	MINIMUM	PROVIDED
DRINKING FOUNTAIN	1 PER 100	1	2
LAVATORIES	1 PER 25 FOR THE FIRST 50 AND 1 PER 50 FOR THE REMAINDER EXCEEDING 50	3	3
SERVICE SINK	1	1	1
WATER CLOSET	1 PER 40 FOR THE FIRST 80 AND 1 PER 80 FOR THE REMAINDER	3	3

*EACH HOLDING CELL REQUIRES 1 TOILET AND 1 LAVATORY.

ENERGY CODE REVIEW:

ENVELOPE REQUIREMENTS 2024 VT COMMERCIAL BUILDING ENERGY STANDARDS

COMPONENT	MAXIMUM U-FACTOR		MINIMUM R-VALUE	
	CONDITIONED	SEMI-COND	CONDITIONED	SEMI-COND
PRIMARY ROOF ASSEMBLY	U-0.022	U-0.039	R-45ci	R-25ci
EXTERIOR WALLS	U-0.037	U-0.064	R-13 + R-18.8ci or R-25ci	R-13 + 7.5ci
OPAQUE EXTERIOR DOORS (SWINGING)	U-0.37		N/A	
OH SECTIONAL DOORS	N/A		R-10	
UNHEATED SLAB	F-0.434	F-0.540	R-20ci (48" BELOW)	R-10 FOR 24"
FOUNDATION WALLS	C-0.048	C-0.119	R-20ci	R-7.5ci
FENESTRATION	MAX U-FACTOR	SHGC		
FIXED WINDOWS	U-0.29	0.38		
OPERABLE WINDOWS	U-0.36	0.34		
ENTRANCE DOORS	U-0.63			

AIR BARRIER PERFORMANCE TESTING- 402.4.1.1
BUILDING THERMAL ENVELOPE SHALL BE TESTED IN ACCORDNACE WITH ASTM E779 AT A PRESSURE DIFFERENTIAL OF 0.3 INCH WATER GAUGE (75 Pa). TESTED AIR LEAKAGE RATE SHALL NOT BE GREATER THAN 0.25 CFM/FT^2

CONTINUOUS AIR BARRIER COMMISSIONING- 402.4.1.2
PRIOR TO FINAL INSPECTION, A DESIGN PROFESSIONAL / AGENCY SHALL PROVIDE EVIDENCE OF COMMISSIONING OF THE CONTINUOUS AIR BARRIER BY AN APPROVED AGENCY

ADDITIONAL ENERGY EFFICIENT PACKAGES
NEW COMMERCIAL BUILDINGS SHALL COMPLY WITH SUFFICIENT PACKAGES FROM TABLE 406.1.1
BUSINESS OCCUPANCIES MUST ACHIEVE MINIMUM NUMBER OF (30) CREDITS
(MORE THAN 65% OF THE BUILDING IS OCCUPANCY TYPE B)

H01 - HVAC PERFORMANCE = 6 POINTS
H02 - HEATING EFFICIENCY = 9 POINTS
H03 - COOLING EFFICIENCY = 1 POINT
H05 - ENERGY RECOVERY = 114 POINTS
W02 - HEAT PUMP WATER HEATER = 5 POINTS

PROJECTED EFFICIENCY PACKAGE CREDITS = 135

ADDITIONAL RENEWABLE AND LOAD MANAGEMENT CREDIT REQUIREMENTS
BUILDINGS SHALL COMPLY WITH MEASURES FROM C406.3 TO ACHIEVE NOT LESS THAN THE NUMBER OF REQUIRED RENEWABLE AND LOAD MANAGEMENT CREDITS FROM TABLE C406.1.2 BASED ON BUILDING OCCUPANCY GROUP

EXCEPTION 2: WHERE A BUILDING ACHIEVES AND ADDITIONAL 120% OF THE REQUIRED POINTS FROM TABLE C406.1.1, ZERO POINTS FROM TABLE C406.1.2 ARE REQUIRED.

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

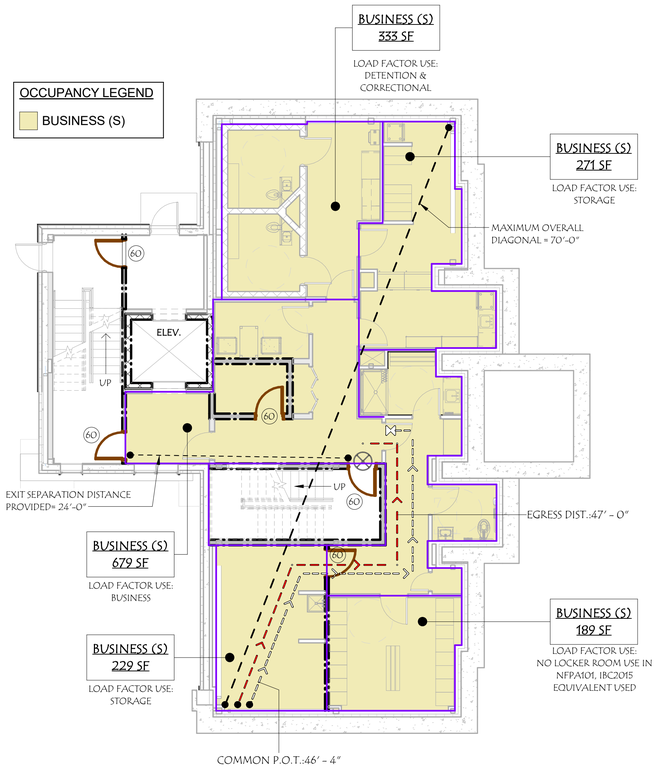
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BUILDING & ENERGY CODE REVIEWS

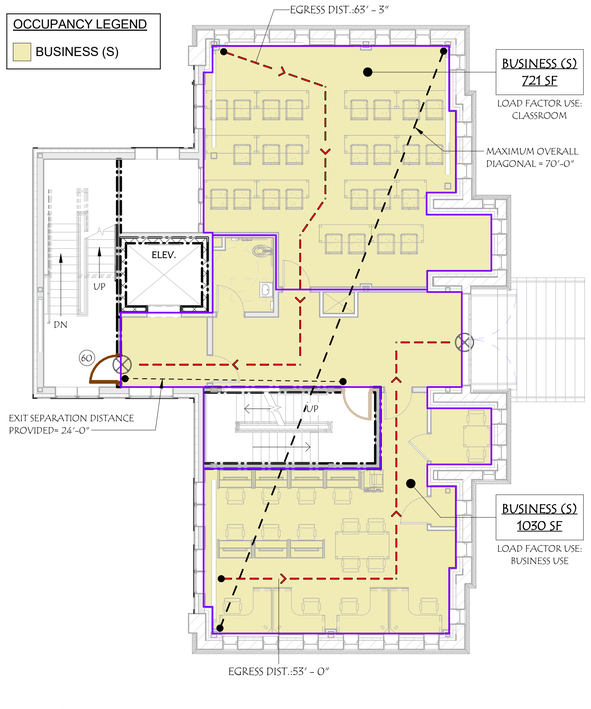
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CHECKED BY:	DPR
DRAWN BY:	RJH
SCALE:	1/4" = 1'-0"

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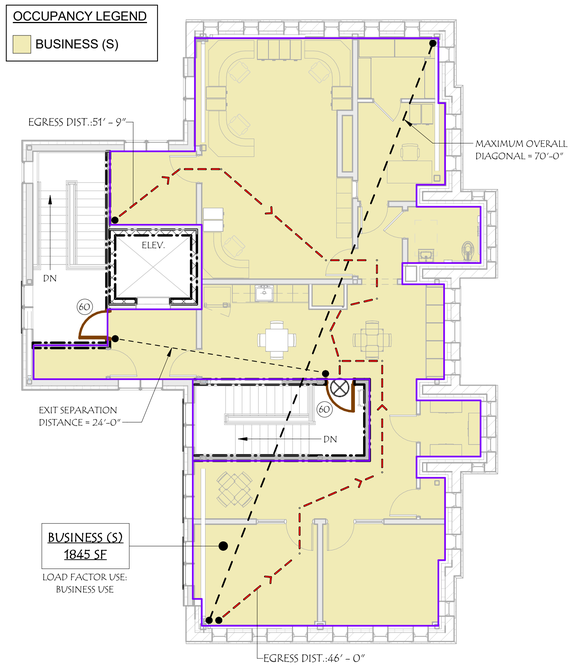
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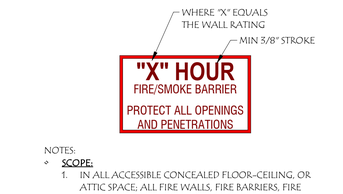
4 A0.11 BASEMENT - FIRE & EGRESS PLAN
1/8" = 1'-0"



1 A0.11 1ST FLOOR - FIRE & EGRESS PLAN
1/8" = 1'-0"

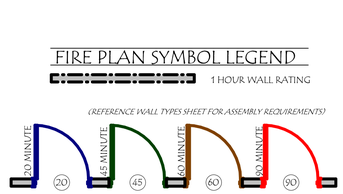


5 A0.11 2ND FLOOR - FIRE & EGRESS PLAN
1/8" = 1'-0"



NOTES:
- SCOPE:
  1. IN ALL ACCESSIBLE CONCEALED FLOOR-CEILING, OR ATTIC SPACE; ALL FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS, AND SMOKE BARRIERS SHALL BE LABELED WITH THE ABOVE SIGNAGE
     A. SIGNS SHALL BE LOCATED A MAXIMUM OF 15FT FROM THE END OF EACH WALL.
     B. SIGNS SHALL BE LOCATED AT A MAXIMUM SPACING OF 30FT ON CENTER.
- SIGNAGE TO BE COMPLIANT WITH IBC-2015 SECTION 703.7
- SIGNAGE TO BE STICKER OR PAINT STENCIL

FIRE BARRIER MARKINGS
1" = 1'-0"



GENERAL NOTES:
- FIRE EXTINGUISHER CABINETS LOCATED WITHIN RATED WALLS MUST MEET THE UL RATING OF THE WALL.
- UNLESS NOTED OTHERWISE, INSTALL CABINETS WITH THE BASE 8" MINIMUM AFF, AND TOP 48" AFF MAXIMUM.
- ALL PENETRATIONS THROUGH FIRE RESISTIVE BARRIERS, FIRE BARRIERS, AREA SEPARATION WALLS, AND FIRE WALLS SHALL USE A TESTED AND APPROVED THROUGH-WALL PENETRATION SYSTEM, REFER TO SPECIFICATIONS, IN THE ABSENCE OF SPECIFICATION, CONTRACTOR TO NOTIFY ARCHITECT FOR PENETRATION PROTECTION SYSTEM.

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ST. JOHNSBURY, VERMONT

LIFE SAFETY FIRE AND EGRESS PLANS

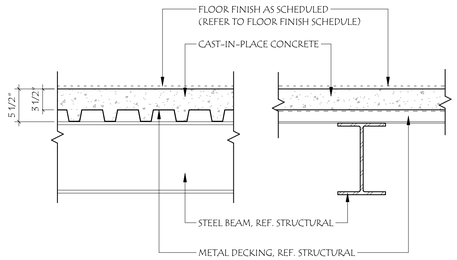
PROJECT NO:	2021050
DATE:	02/07/2025
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DRAWN BY:	RJH
SCALE:	As indicated

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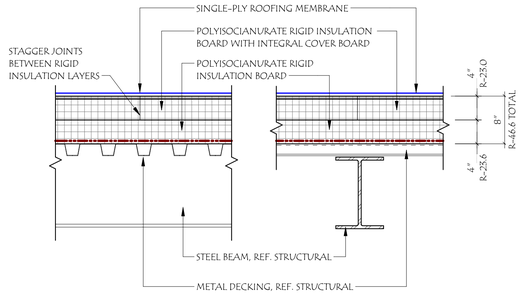
FLOOR / CEILING / ROOF TYPES

TYPICAL CONCRETE FLOOR ASSEMBLY
AT NEW BUILDING ADPTION

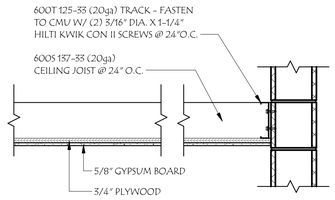


16 A0.12 TYPICAL FLOOR ASSEMBLY
1" = 1'-0"

TYPICAL SINGLE-PLY ROOF ASSEMBLY
AT NEW BUILDING ADDITION



18 A0.12 TYPICAL ROOF ASSEMBLY @ ADDITION
1" = 1'-0"

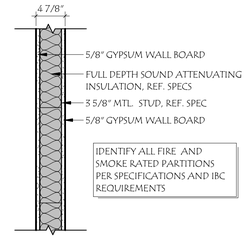


19 A0.12 TYPICAL HOLDING CELL CEILING ASSEMBLY
1" = 1'-0"

INTERIOR PARTITION TYPES

WALL AND PARTITION GENERAL NOTES

1. WALLS AND PARTITIONS SHALL BE FULL HEIGHT (INCLUDING FINISHES) TO FLOOR OR ROOF DECK ABOVE, UNLESS NOTED OTHERWISE.
2. REFERENCE STRUCTURAL DRAWINGS FOR STUD SPACING, TYPICAL
3. REFERENCE SPECIFICATION(S) AND STRUCTURAL DRAWINGS FOR CFS DESIGN, TYPICAL
4. PROVIDE MOISTURE RESISTANT GYPSUM (MRGWB) IN ALL TOILET AND BATHROOM LOCATIONS UNLESS NOTED OTHERWISE.

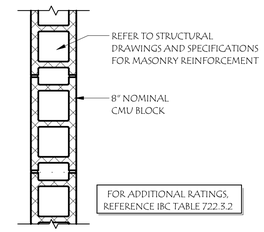


WT 50 — 1 HOUR RATED WALL CONST. REFERENCE UL U425

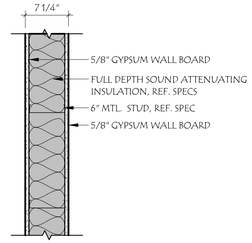
50B SIM. TO WT 50 EXCEPT: FULL DEPTH SOUND ATTENUATING NOT REQUIRED, NOTE: "* 1 HR. RATING STILL REQUIRED**

50C SIM. TO WT 50 EXCEPT: 1 HOUR FIRE RATING NOT REQUIRED

50D SIM. TO WT 50 EXCEPT: FULL DEPTH SOUND ATTENUATING NOT REQUIRED, 1 HOUR FIRE RATING NOT REQUIRED



WT 42

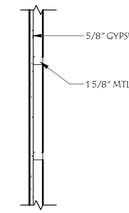


WT 52 — 1 HOUR RATED WALL CONST. REFERENCE UL U465

52B SIM. TO WT 52 EXCEPT: FULL DEPTH SOUND ATTENUATING NOT REQUIRED, NOTE: "* 1 HR. RATING STILL REQUIRED**

52C SIM. TO WT 52 EXCEPT: 1 HOUR FIRE RATING NOT REQUIRED

52D SIM. TO WT 52 EXCEPT: FULL DEPTH SOUND ATTENUATING NOT REQUIRED, 1 HOUR FIRE RATING NOT REQUIRED



WT 59

59B SIM. TO WT 59 EXCEPT: 2 1/2" METAL STUDS, REF. SPEC

59C SIM. TO WT 59 EXCEPT: 3 5/8" METAL STUDS, REF. SPEC

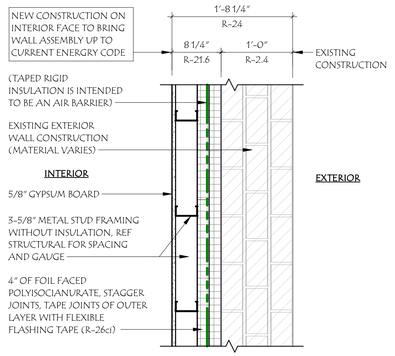
59D SIM. TO WT 59C ADD SOUND ATTENUATION INSULATION WITH SPECIFIED BATT SUPPORT SYSTEM

59E SIM. TO WT 59 EXCEPT: 6" METAL STUDS, REF. SPEC, ADD SOUND ATTENUATION INSULATION WITH SPECIFIED BATT SUPPORT SYSTEM

59F SIM. TO WT 59 EXCEPT: 7/8" METAL STUDS, REF. SPEC

59G SIM. TO WT 59 EXCEPT: 5/8" METAL STUDS, REF. SPEC

EXTERIOR WALL TYPES

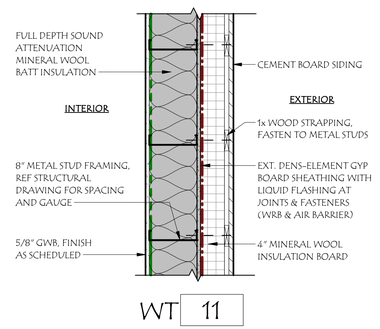


WT 12

12B SIM. TO WT 12 EXCEPT: 2" OF RIGID INSULATION PANELS (R-11.6)

12C SIM. TO WT 12 EXCEPT: 5" OF RIGID INSULATION PANELS (R-26.6)

12D SIM. TO WT 12 EXCEPT: 6" METAL STUDS, REF SPEC



WT 11

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VERMONT

FLOOR ASSEMBLIES & WALL TYPES

PROJECT NO:	2021050
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DILINIATION LINE OF SCOPE OF DEMOLITION WORK

DEMOLISH DRILL HALL PORTION OF BUILDING IN ITS ENTIRETY (ROOF, WALL, FOUNDATION, ETC)

THE MAJORITY OF THIS WORK WILL HAVE ALREADY BEEN COMPLETED BY THE HAZARDOUS REMEDIATION CONTRACTOR

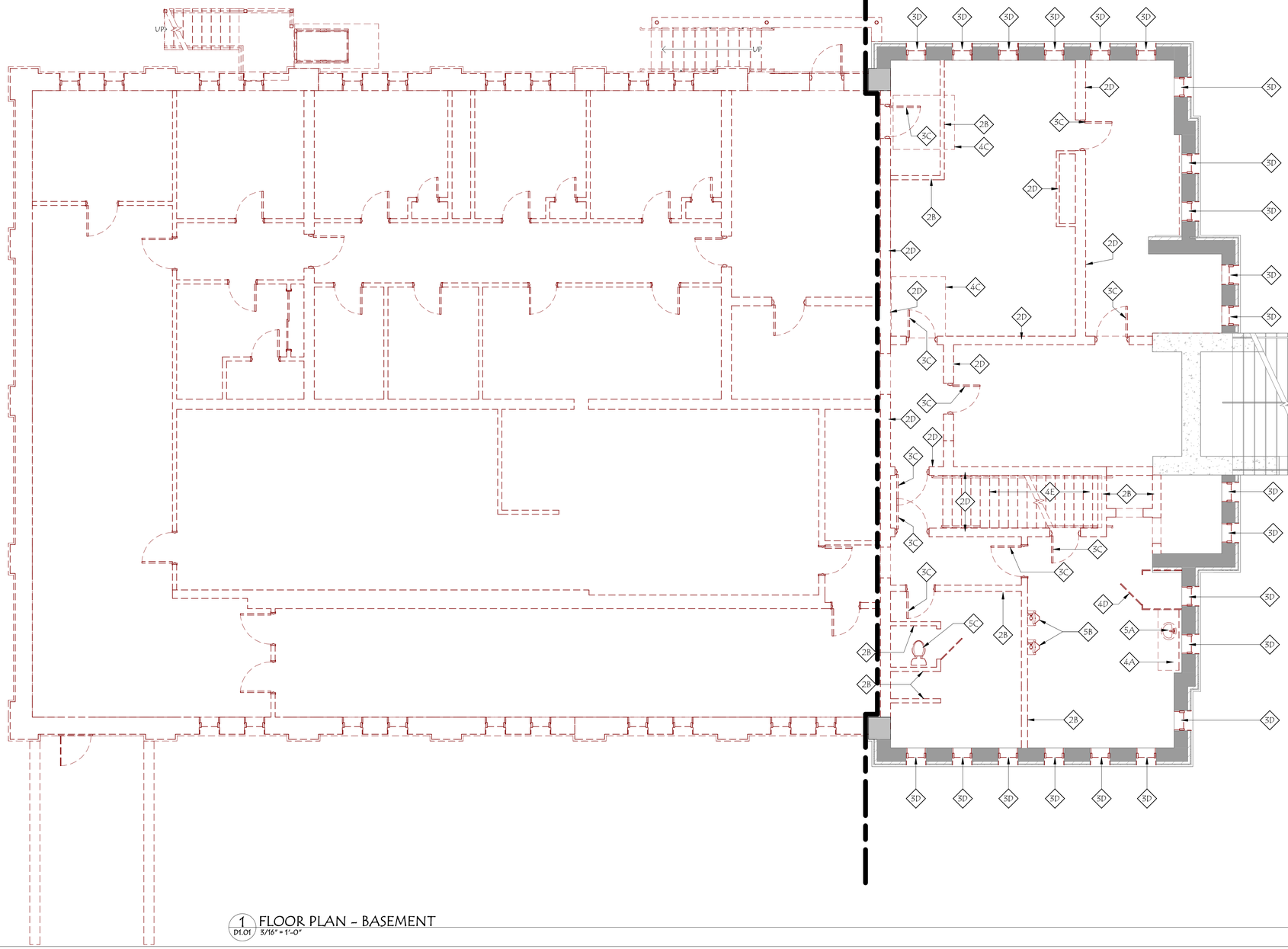
SELECTIVE DEMOLITION OF EXISTING BUILDING TO REMAIN, REFER TO KEY NOTES ON PLAN

GENERAL DEMOLITION NOTES

1. THE EXISTING CONDITIONS SHOWN ARE DIAGRAMMATIC AND ARE BASED ON EXISTING DRAWINGS AND SITE OBSERVATION. THEY ARE INTENDED TO SHOW THE GENERAL SCOPE OF DEMOLITION. CUTTING & PATCHING WORK REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING OVERALL SCOPE OF THE DEMOLITION, CUTTING & PATCHING WORK REQUIRED IN ORDER TO ACHEIVE THE NEW CONSTRUCTION.
2. CONTRACTOR TO FIELD VERIFY THE CURRENT CONDITIONS AND WHAT SCOPE OF DEMOLITION WORK HAS ALREADY BEEN COMPLETED AS PART OF THE HAZARDOUS REMEDIATION SCOPE OF WORK.
3. ALL ITEMS DASHED IN RED ARE TO BE REMOVED, UNLESS NOTED OTHERWISE.
4. REFER TO NEW CONSTRUCTION DRAWINGS FOR EXTENT OF DEMOLITION FOR NEW DOORS, WINDOWS, ETC.
5. ALL CEILINGS ARE TO BE REMOVED AND REPLACED PER CEILING PLAN.
6. AT LOCATIONS OF WINDOW REMOVAL:
   A. COVER ROUGH OPENING FROM EXTERIOR OF BUILDING WITH PLYWOOD. ATTACH PLYWOOD WITH 6 HILTI TYPE SCREWS DRIVEN INTO THE MORTAR (NOT BRICK).
   B. REMOVE PLYWOOD AS NEW WINDOWS ARE INSTALLED.
   C. REPAIR MORTAR AS NECESSARY FOR CONTINUOUS MORTAR JOINT.

DEMOLITION KEY SCHEDULE

KEY	DESCRIPTION
2B	DEMO INTERIOR WALL PARTITION.
2D	DEMO INTERIOR MASONRY WALL IN ITS ENTIRETY
3C	DEMO INTERIOR DOOR AND FRAME
3D	DEMO EXTERIOR WINDOW AND PREP FOR WINDOW REPLACEMENT
4A	REMOVE MILLWORK COUNTER
4C	DEMO EXISTING CONCRETE RAMP
4D	REMOVE EXISTING TOILET PARTITIONS. PATCH AND REPAIR WALL / FLOOR ATTACHEMENT
4E	REMOVE EXISTING WOOD STAIR AND RAILINGS.
5A	REMOVE SINK, CAP PLUMBING IN WALL, COVER WITH S.S. PLATE
5B	REMOVE WALL HUNG URINAL, CAP PLUMBING BEHIND WALL, CAP WITH S.S. PLATE
5C	REMOVE FLOOR MOUNT TOILET



1 D1.01 FLOOR PLAN - BASEMENT
3/16" = 1'-0"

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DEMOLITION PLAN - BASEMENT

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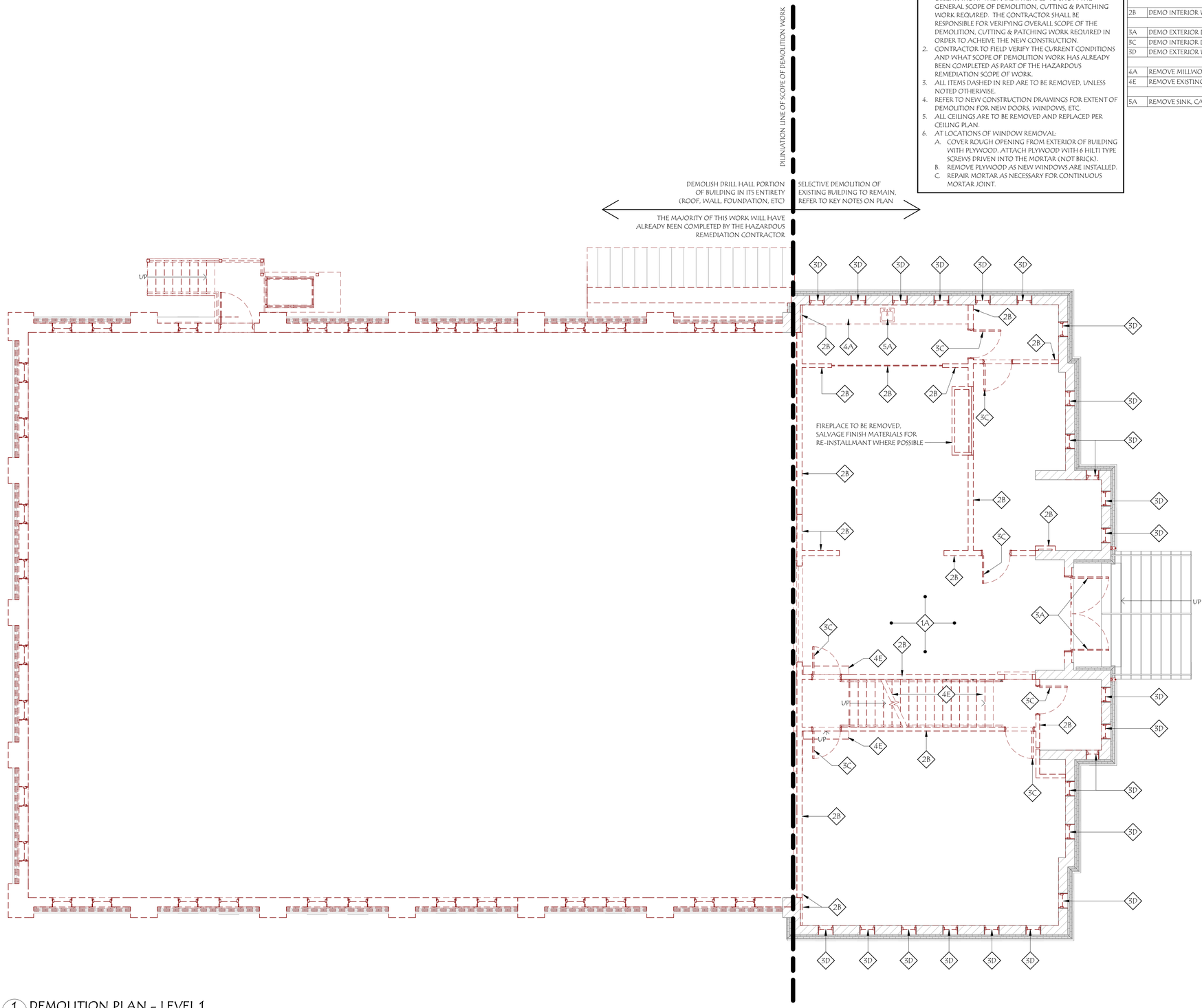
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2. CONTRACTOR TO FIELD VERIFY THE CURRENT CONDITIONS AND WHAT SCOPE OF DEMOLITION WORK HAS ALREADY BEEN COMPLETED AS PART OF THE HAZARDOUS REMEDIATION SCOPE OF WORK.
3. ALL ITEMS DASHED IN RED ARE TO BE REMOVED, UNLESS NOTED OTHERWISE.
4. REFER TO NEW CONSTRUCTION DRAWINGS FOR EXTENT OF DEMOLITION FOR NEW DOORS, WINDOWS, ETC.
5. ALL CEILINGS ARE TO BE REMOVED AND REPLACED PER CEILING PLAN.
6. AT LOCATIONS OF WINDOW REMOVAL:
   A. COVER ROUGH OPENING FROM EXTERIOR OF BUILDING WITH PLYWOOD. ATTACH PLYWOOD WITH 6 HILTI TYPE SCREWS DRIVEN INTO THE MORTAR (NOT BRICK).
   B. REMOVE PLYWOOD AS NEW WINDOWS ARE INSTALLED.
   C. REPAIR MORTAR AS NECESSARY FOR CONTINUOUS MORTAR JOINT.

DEMOLITION KEY SCHEDULE

KEY	DESCRIPTION
1A	DEMOLISH FLOOR & FRAMING IN ITS ENTIRETY.
2B	DEMO INTERIOR WALL PARTITION.
3A	DEMO EXTERIOR DOOR AND FRAME
3C	DEMO INTERIOR DOOR AND FRAME
3D	DEMO EXTERIOR WINDOW AND PREP FOR WINDOW REPLACEMENT
4A	REMOVE MILLWORK COUNTER
4E	REMOVE EXISTING WOOD STAIR AND RAILINGS.
5A	REMOVE SINK, CAP PLUMBING IN WALL, COVER WITH S.S. PLATE



1 D1.02 DEMOLITION PLAN - LEVEL 1
3/16" = 1'-0"

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DEMOLITION PLAN - LEVEL 1

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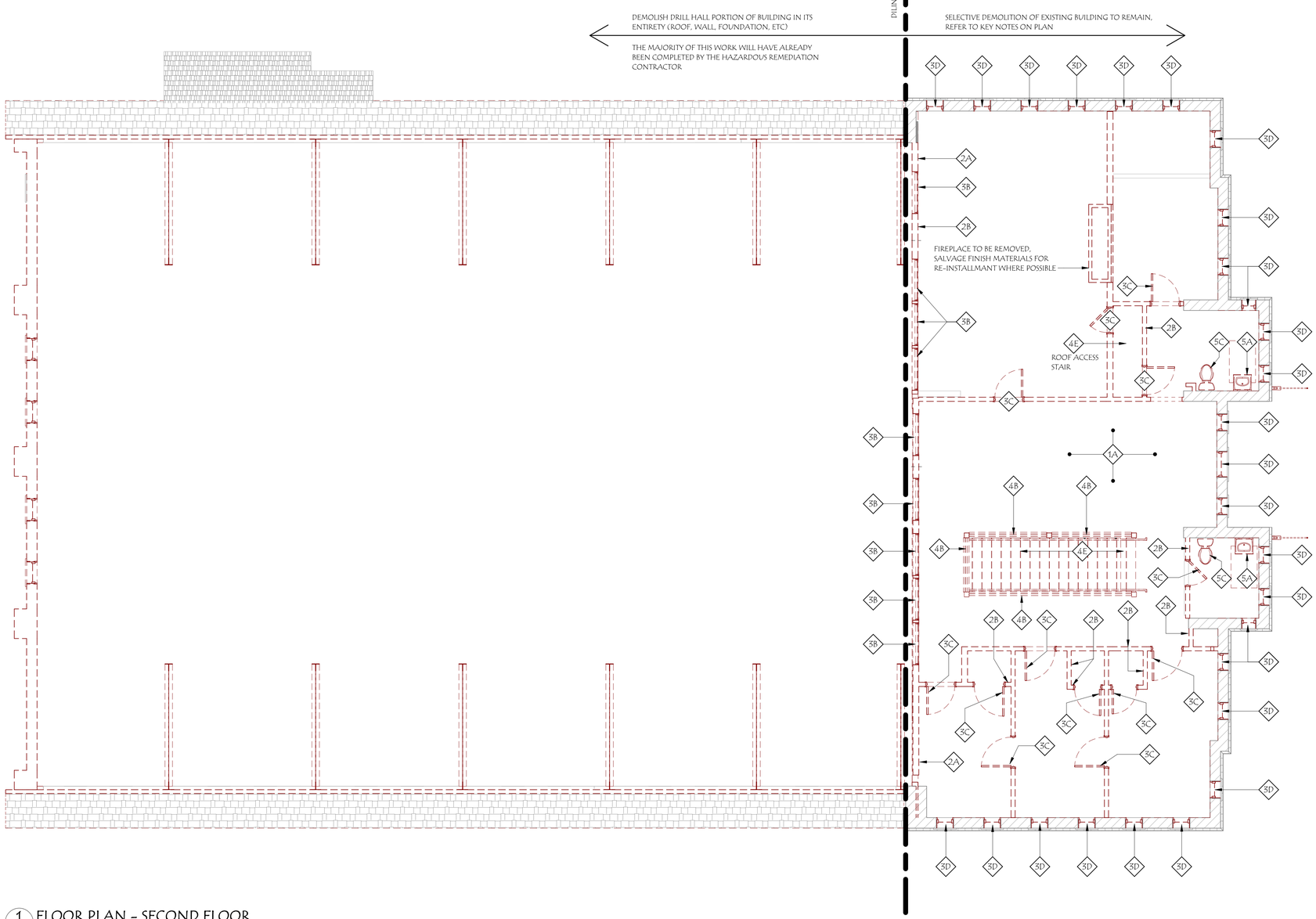
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DEMOLITION KEY SCHEDULE

KEY	DESCRIPTION
1A	DEMOLISH FLOOR & FRAMING IN ITS ENTIRETY.
2A	DEMO EXTERIOR BRICK MASONRY WALL
2B	DEMO INTERIOR WALL PARTITION.
3B	DEMO EXTERIOR WINDOW AND FRAME
3C	DEMO INTERIOR DOOR AND FRAME
3D	DEMO EXTERIOR WINDOW AND PREP FOR WINDOW REPLACEMENT
4B	REMOVE EXISTING WOOD RAILING
4E	REMOVE EXISTING WOOD STAIR AND RAILINGS.
5A	REMOVE SINK, CAP PLUMBING IN WALL, COVER WITH S.S. PLATE
5C	REMOVE FLOOR MOUNT TOILET



1 FLOOR PLAN - SECOND FLOOR
D1.03 3/16" = 1'-0"

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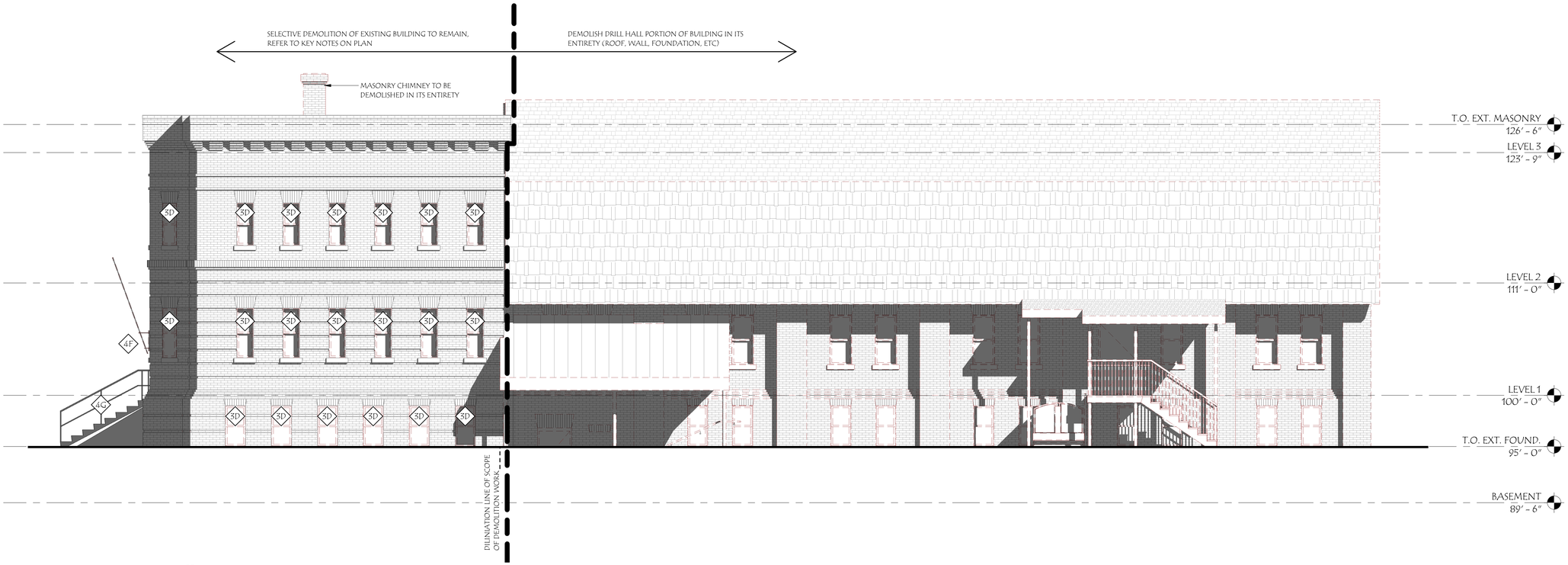
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DEMOLITION PLAN - LEVEL 2

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1 D2.01 DEMOLITION ELEVATION - NORTH
3/16" = 1'-0"



2 D2.01 DEMOLITION ELEVATION - EAST
3/16" = 1'-0"

DEMOLITION KEY SCHEDULE	
KEY	DESCRIPTION
3A	DEMO EXTERIOR DOOR AND FRAME
3D	DEMO EXTERIOR WINDOW AND PREP FOR WINDOW REPLACEMENT
4F	REMOVE EXISTING FLAG POLES, PATCH AND REPAIR MASONRY AS NECESSARY
4G	REMOVE EXISTING EXTERIOR HANDRAILS. PROTECT CONCRETE STAIR CORE DRILL OPENINGS FOR INSTALATION OF NEW HANDRAILS

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DUFRESNE GROUP
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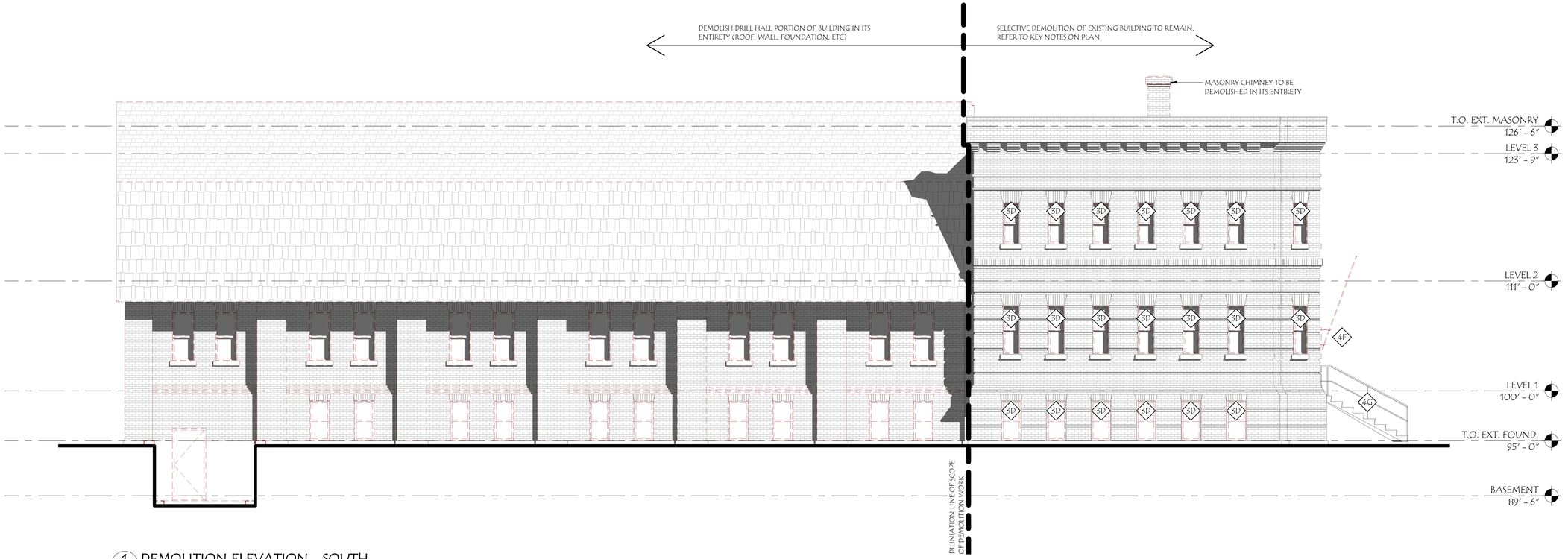
ST. JOHNSBURY, VERMONT

DEMOLITION ELEVATIONS

PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	DPR
DRAWN BY:	RJH
SCALE:	3/16" = 1'-0"

D2.01

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1 D2.02 DEMOLITION ELEVATION - SOUTH
3/16" = 1'-0"



2 D2.02 DEMOLITION ELEVATION - WEST
3/16" = 1'-0"

DEMOLITION KEY SCHEDULE	
KEY	DESCRIPTION
5D	DEMO EXTERIOR WINDOW AND PREP FOR WINDOW REPLACEMENT
4F	REMOVE EXISTING FLAG POLES, PATCH AND REPAIR MASONRY AS NECESSARY
4G	REMOVE EXISTING EXTERIOR HANDRAILS. PROTECT CONCRETE STAIR CORE DRILL OPENINGS FOR INSTALATION OF NEW HANDRAILS

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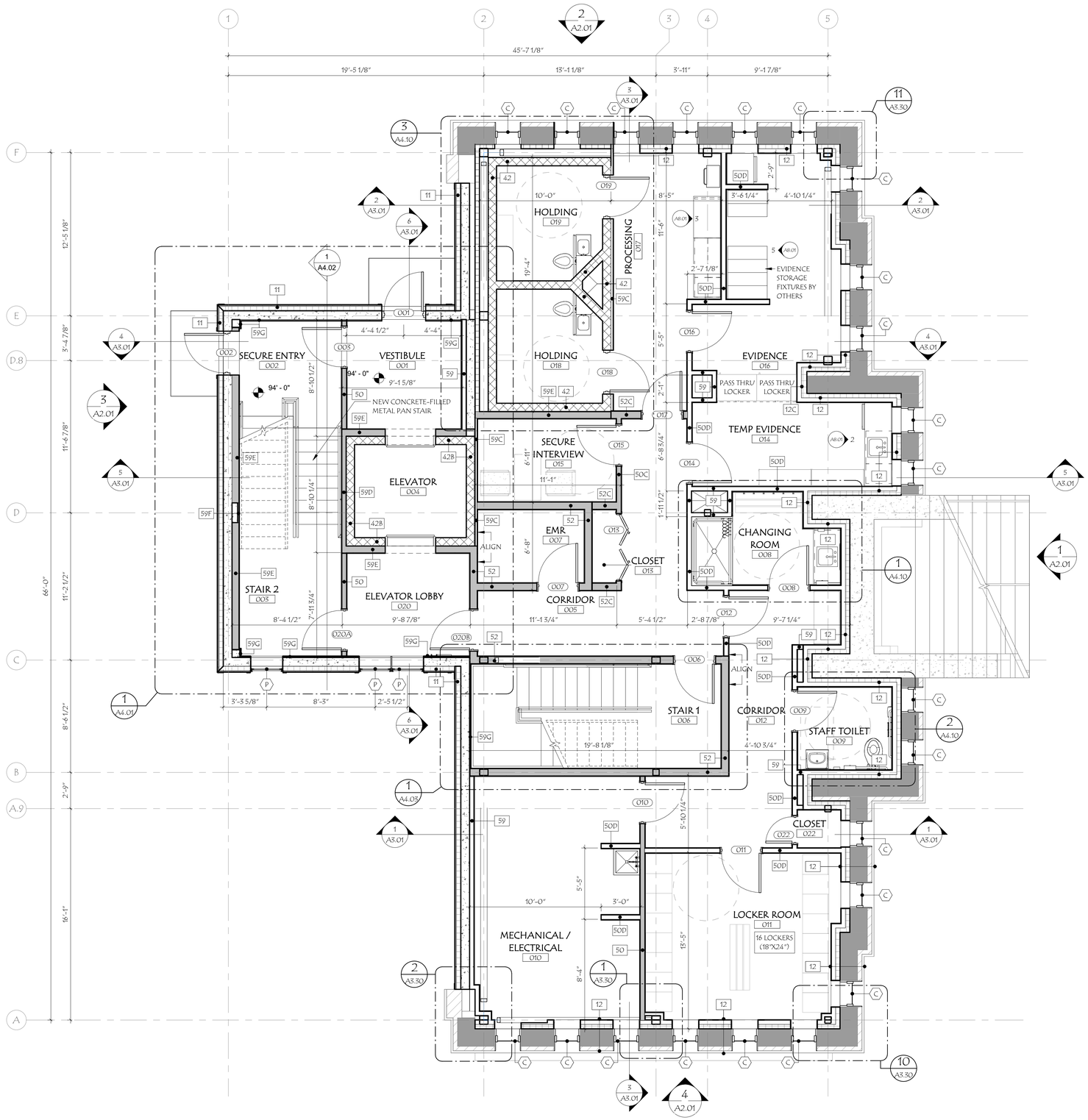
ST. JOHNSBURY, VERMONT

DEMOLITION ELEVATIONS

PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	DPR
DRAWN BY:	RJH
SCALE:	3/16" = 1'-0"

D2.02

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1 A1.01 FLOOR PLAN - BASEMENT
1/4" = 1'-0"

CONSTRUCTION LEGEND

- NEW WALL CONSTRUCTION — SOLID COLOR
- EXISTING WALL CONSTRUCTION TO REMAIN — GRAY TONE

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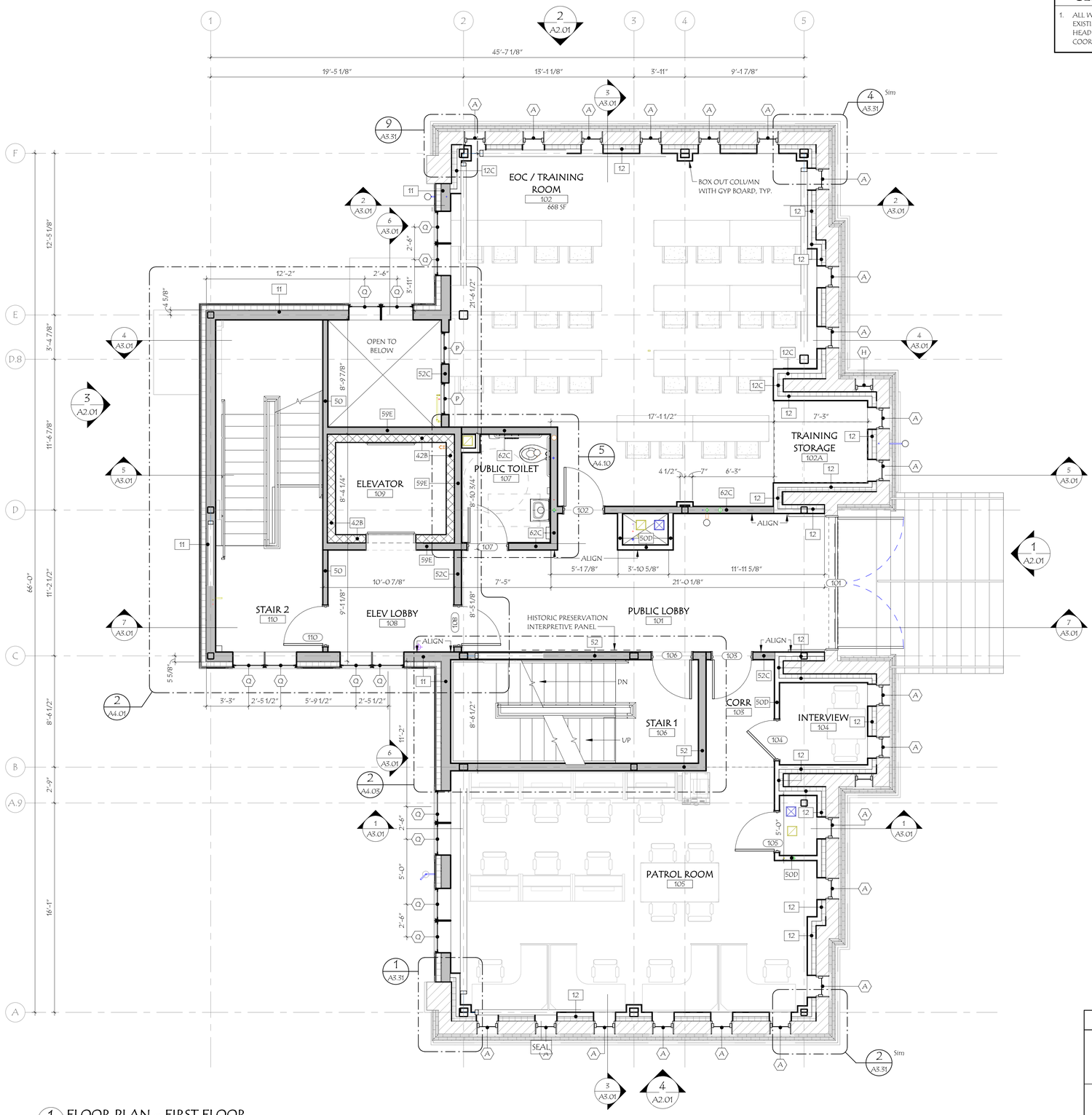
ST. JOHNSBURY, VERMONT

FLOOR PLAN - BASEMENT

PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	DPR
DRAWN BY:	RJH/JP
SCALE:	1/4" = 1'-0"

A1.01

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1 FLOOR PLAN - FIRST FLOOR
A1.02 1/4" = 1'-0"

GENERAL PLAN NOTES

1. ALL WALL AND DOOR FRAMING THAT IS EXISTING TO REMAIN WILL NEED TO HAVE HEADERS AND SILL PLATES REFRAMED TO COORDINATE WITH THE NEW CONCRETE SLAB.

CONSTRUCTION LEGEND

- NEW WALL CONSTRUCTION
- SOLID COLOR
- EXISTING WALL CONSTRUCTION TO REMAIN
- GRAY TONE

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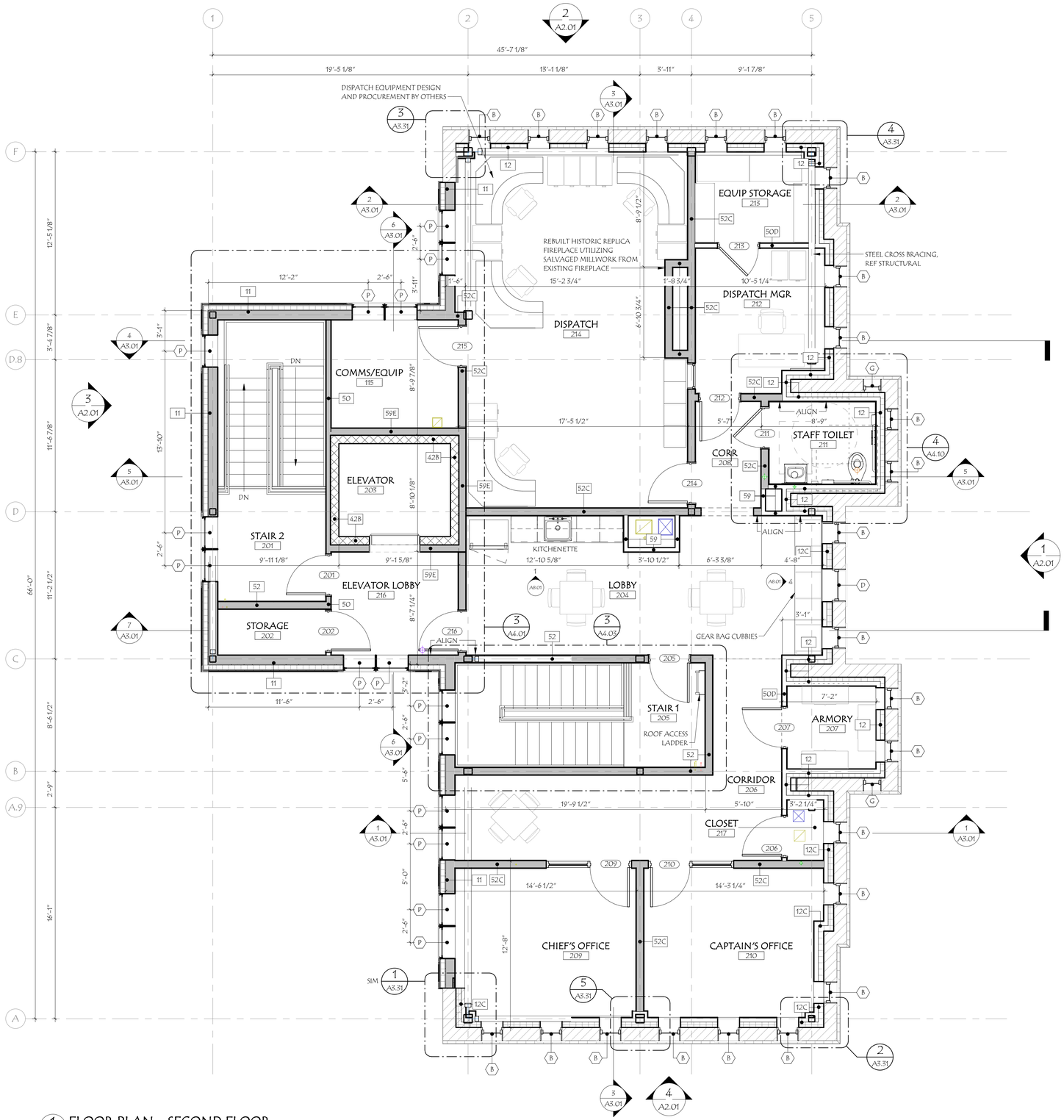
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FLOOR PLAN - LEVEL 1

PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	DPR
DRAWN BY:	RJH
SCALE:	1/4" = 1'-0"

A1.02

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1 FLOOR PLAN - SECOND FLOOR
A1.03 1/4" = 1'-0"

GENERAL PLAN NOTES

1. ALL WALL AND DOOR FRAMING THAT IS EXISTING TO REMAIN WILL NEED TO HAVE HEADERS AND SILL PLATES REFRAMED TO COORDINATE WITH THE NEW CONCRETE SLAB.

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PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VERMONT

FLOOR PLAN - LEVEL 2

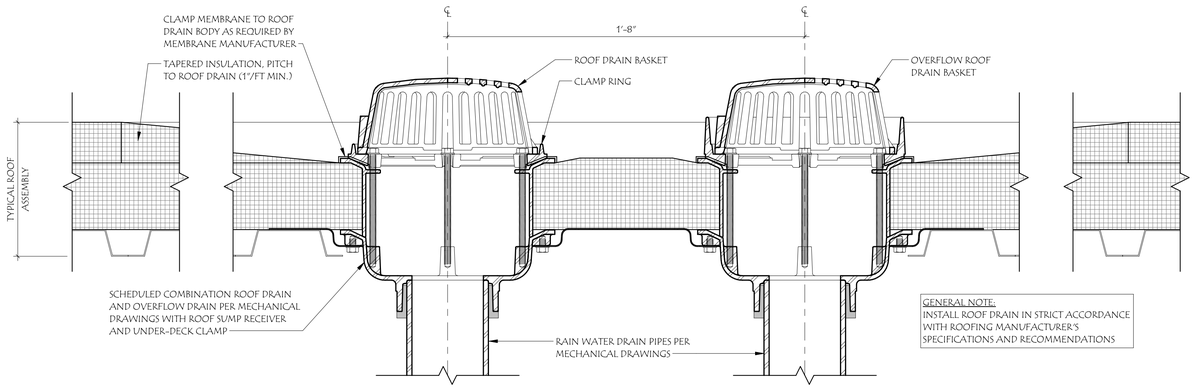
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SCALE:	1/4" = 1'-0"

A1.03

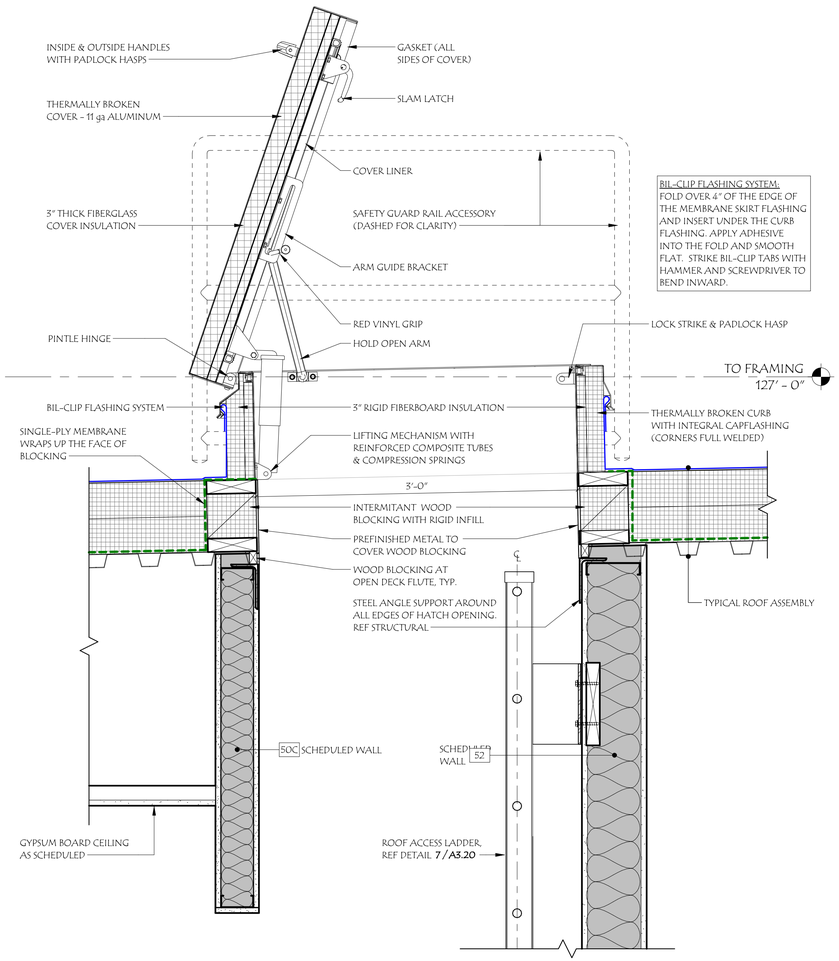
CONSTRUCTION LEGEND

- NEW WALL CONSTRUCTION — SOLID COLOR
- EXISTING WALL CONSTRUCTION TO REMAIN — GRAY TONE

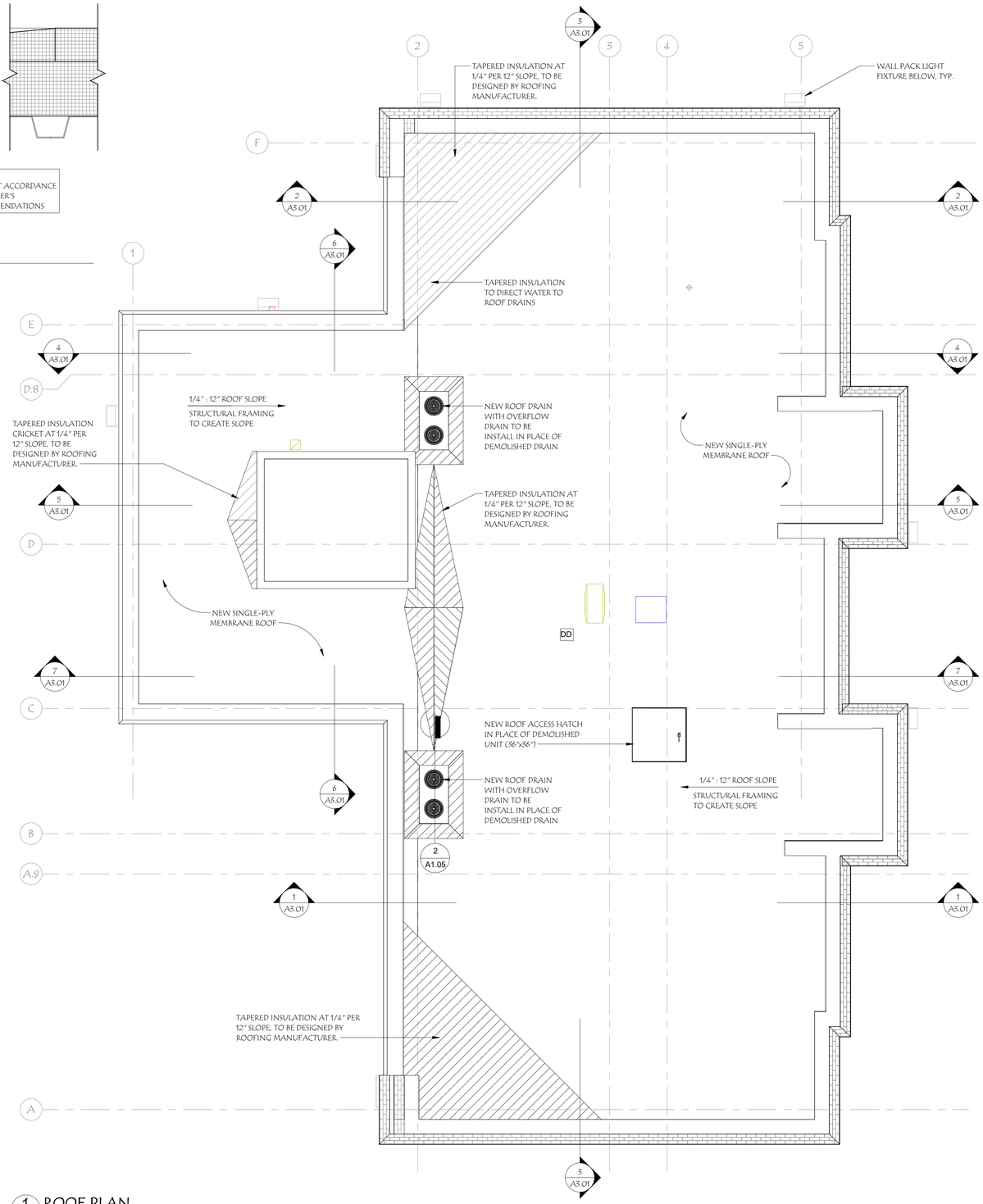
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2 ROOF DRAIN WITH OVERFLOW DRAIN
A1.05 3" = 1'-0"



3 ROOF HATCH DETAIL
A1.05 1 1/2" = 1'-0"



1 ROOF PLAN
A1.05 1/4" = 1'-0"

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ST. JOHNSBURY, VERMONT

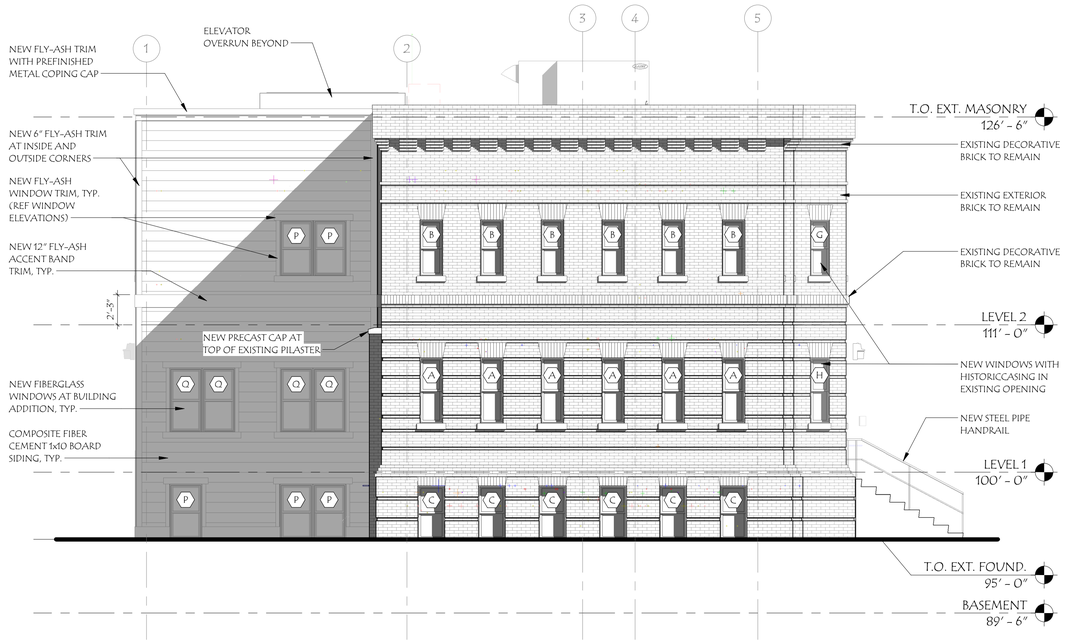
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ROOF PLAN

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DRAWN BY:	RJH
SCALE:	As indicated

A1.05

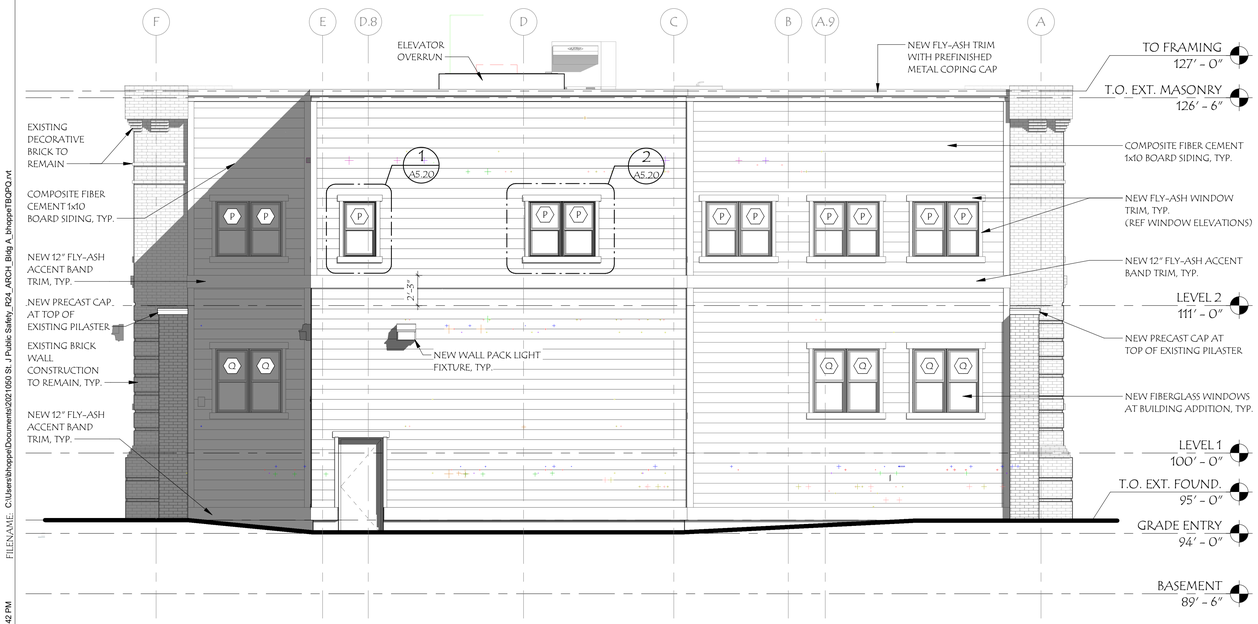
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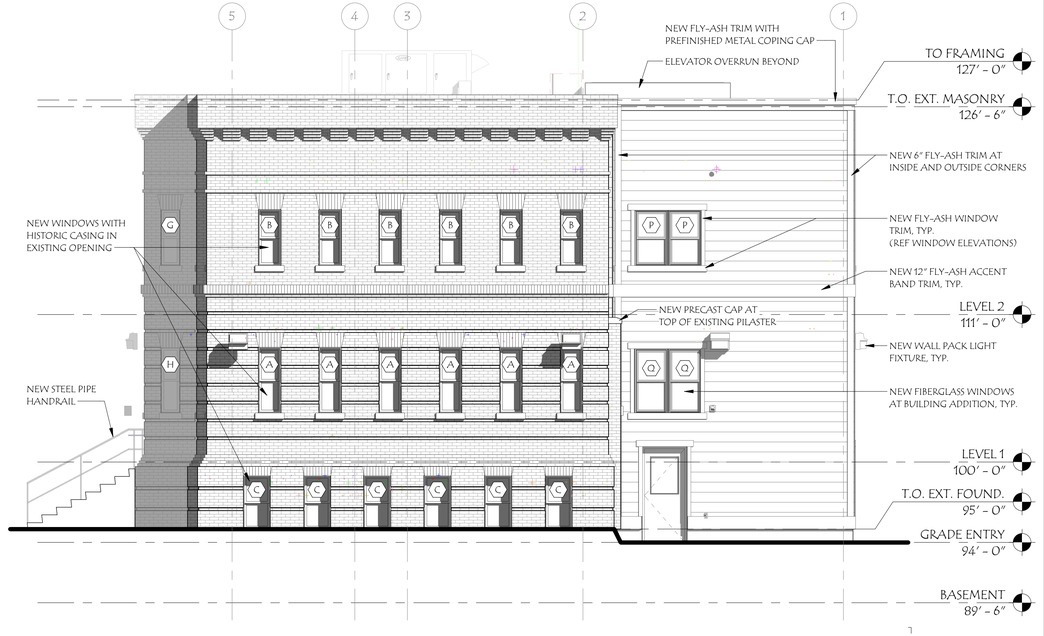
4 EXTERIOR ELEVATION- WEST
A2.01 3/16" = 1'-0"



1 EXTERIOR ELEVATION - EAST
A2.01 3/16" = 1'-0"



3 EXTERIOR ELEVATION- SOUTH
A2.01 3/16" = 1'-0"



2 EXTERIOR ELEVATION - NORTH
A2.01 3/16" = 1'-0"

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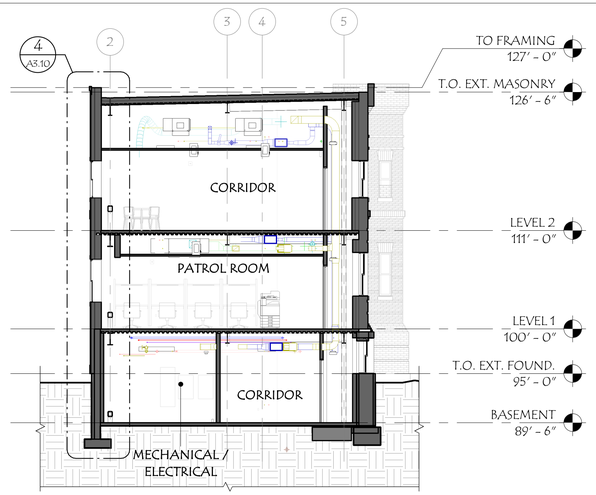
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EXTERIOR ELEVATIONS

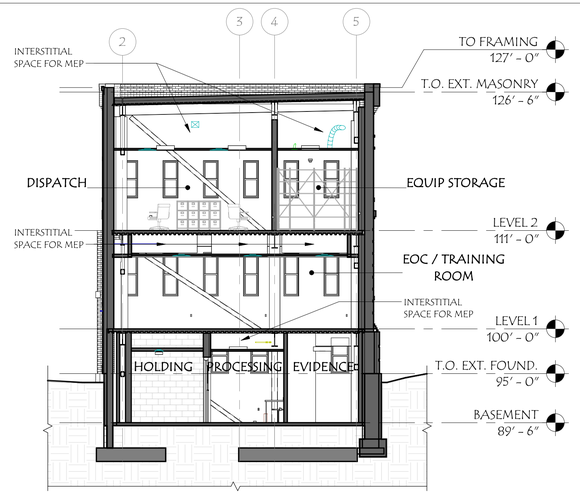
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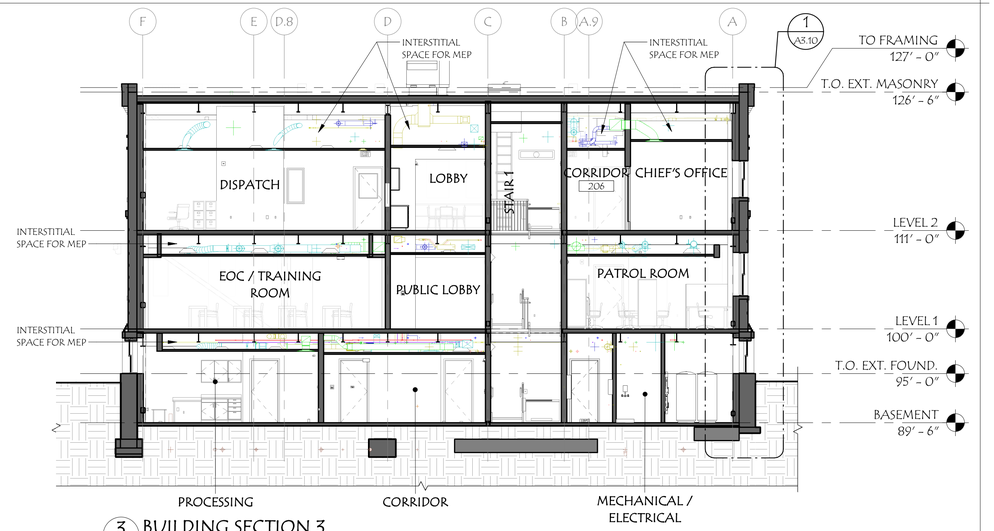
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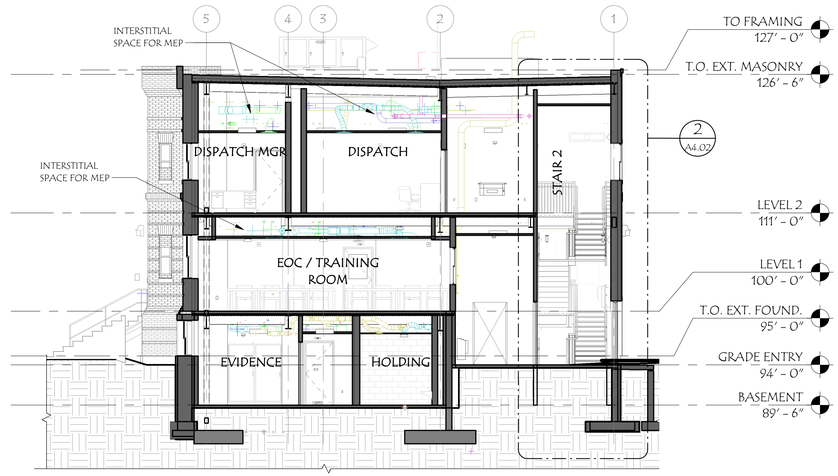
1 BUILDING SECTION 1
A3.01 1/8" = 1'-0"



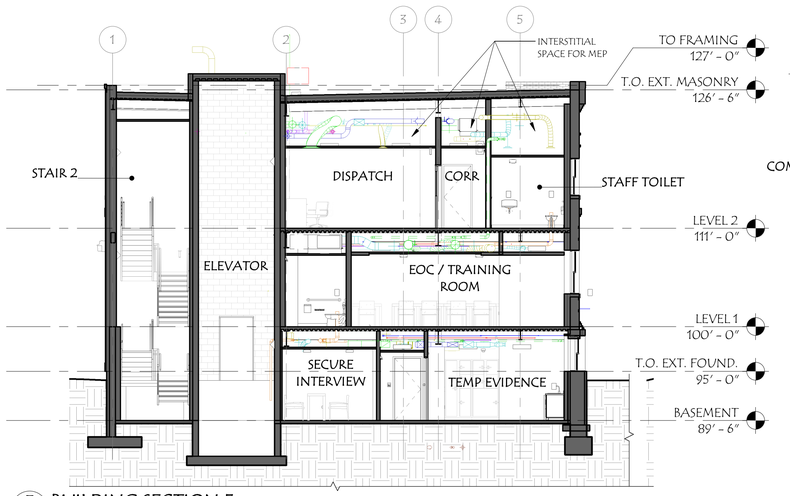
2 BUILDING SECTION 2
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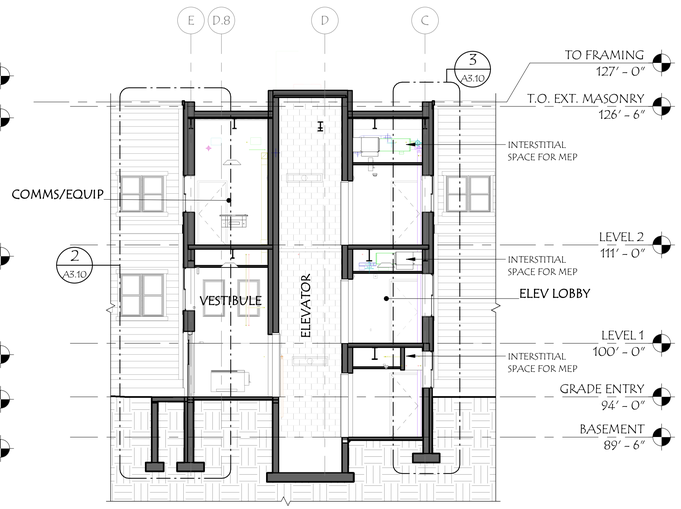
3 BUILDING SECTION 3
A3.01 1/8" = 1'-0"



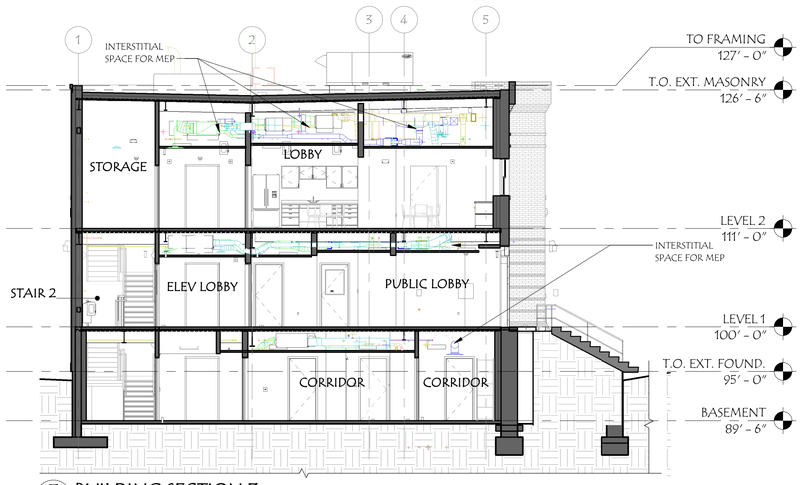
4 BUILDING SECTION 4
A3.01 1/8" = 1'-0"



5 BUILDING SECTION 5
A3.01 1/8" = 1'-0"



6 BUILDING SECTION 6
A3.01 1/8" = 1'-0"



7 BUILDING SECTION 7
A3.01 1/8" = 1'-0"

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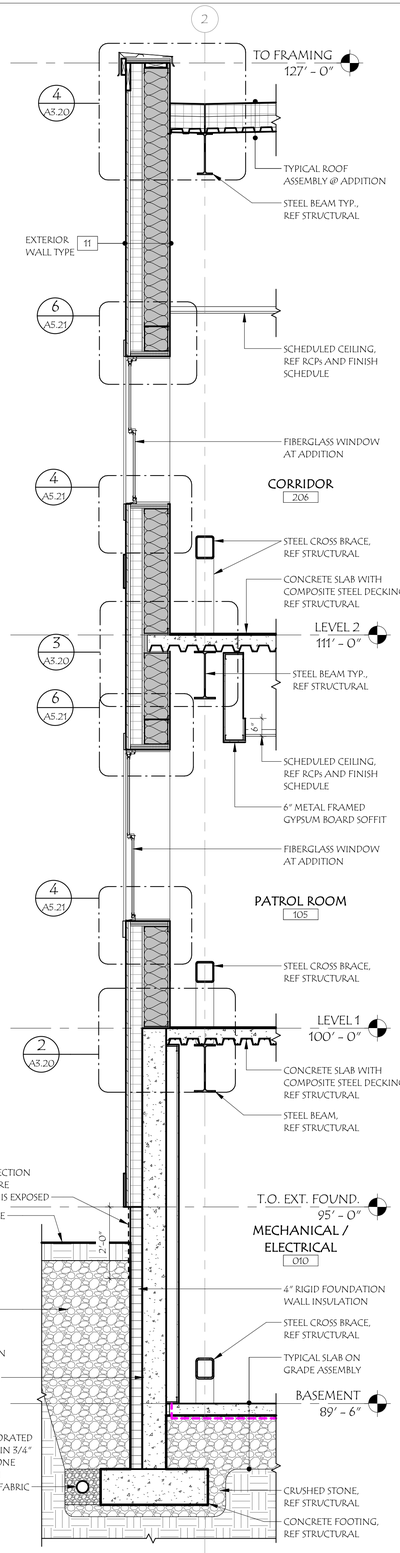
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BUILDING SECTIONS

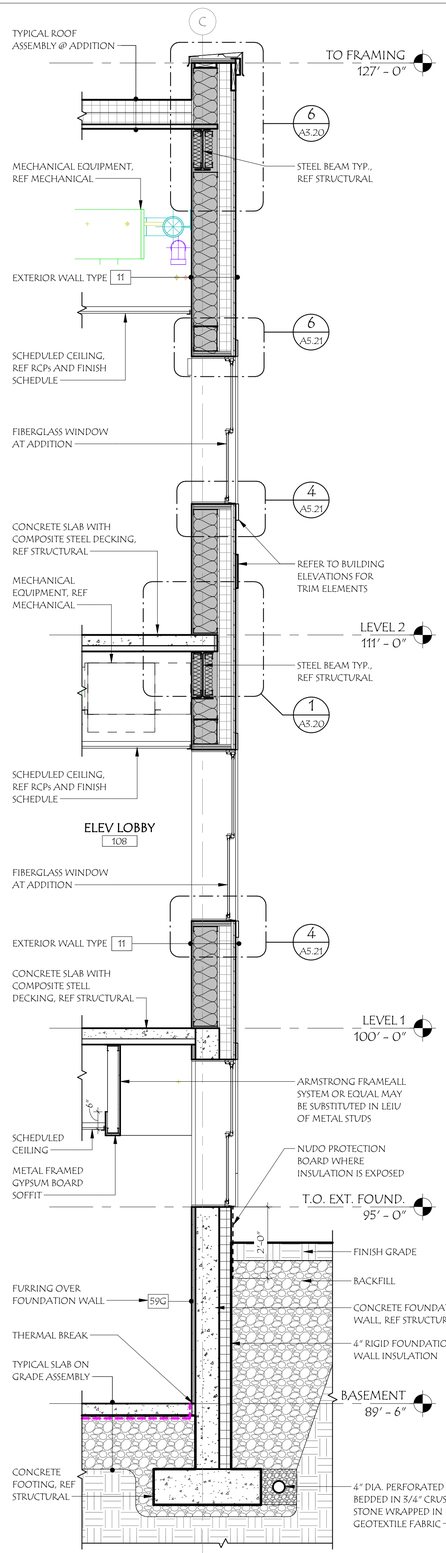
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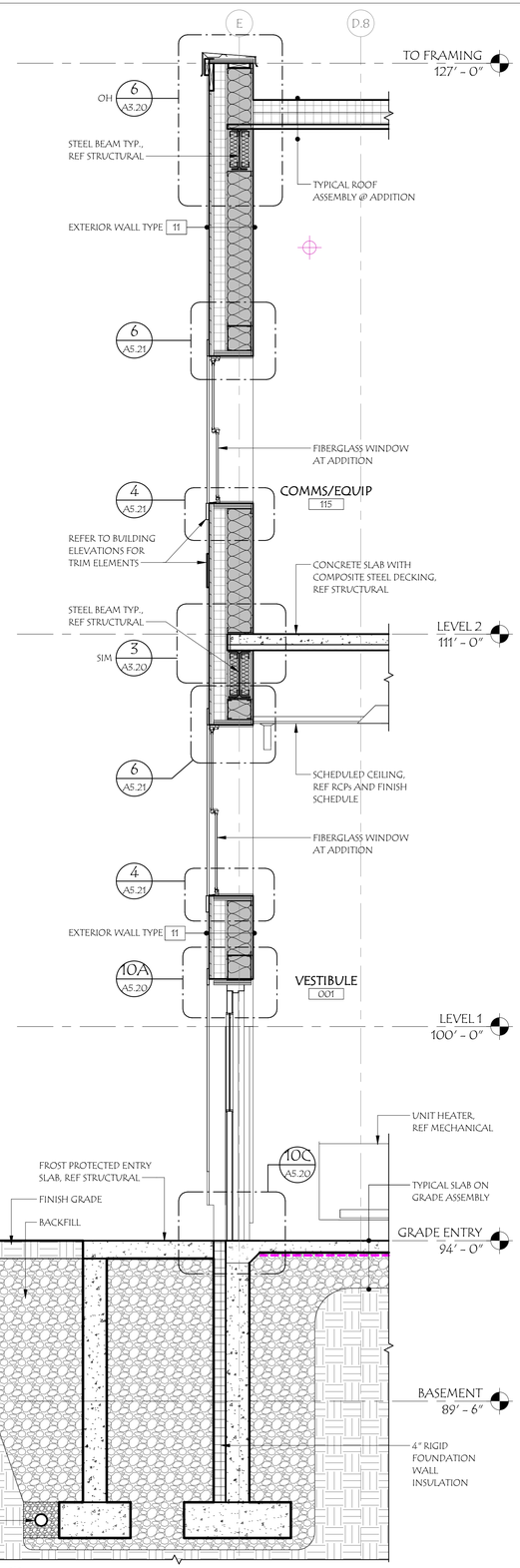
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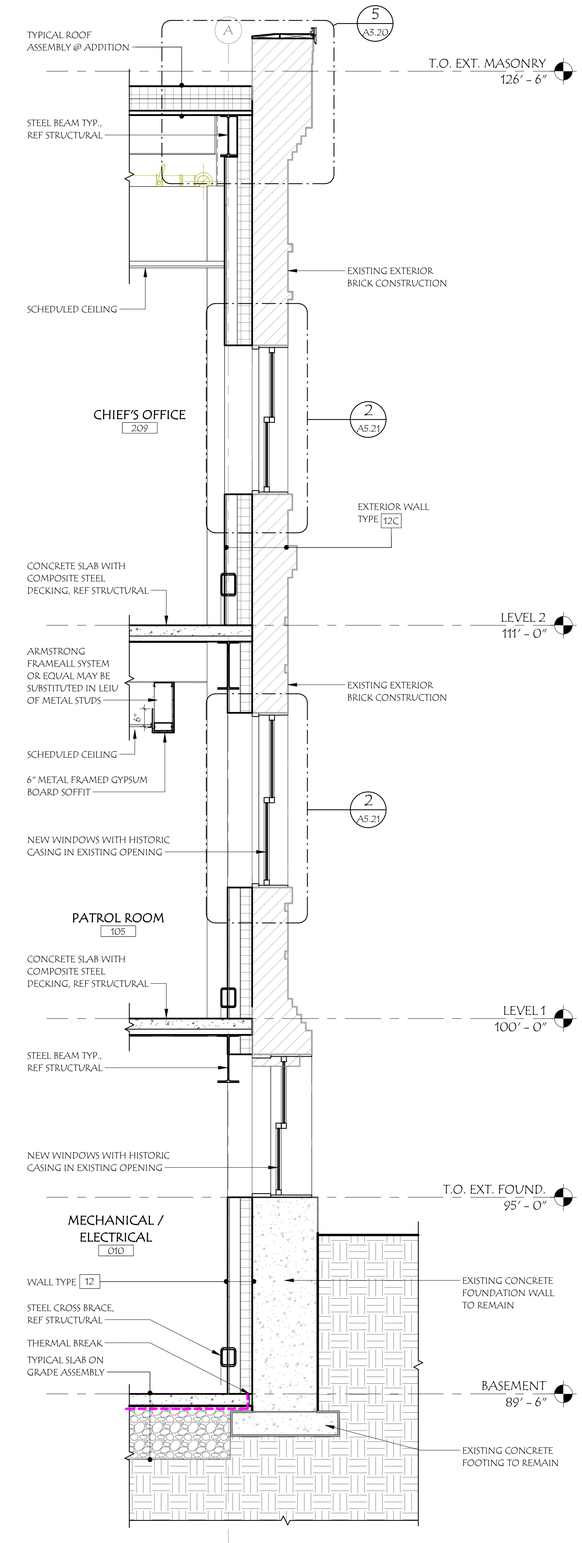
4 A3.10 WALL SECTION 1 @ ADDITION
1/2" = 1'-0"



3 A3.10 WALL SECTION @ ADDITION---
1/2" = 1'-0"



2 A3.10 DETAIL @ ADDITION @ MIDWALL @ E LINE
1/2" = 1'-0"



1 A3.10 WALL SECTION 2 - TYPICAL @ EXISTING
1/2" = 1'-0"

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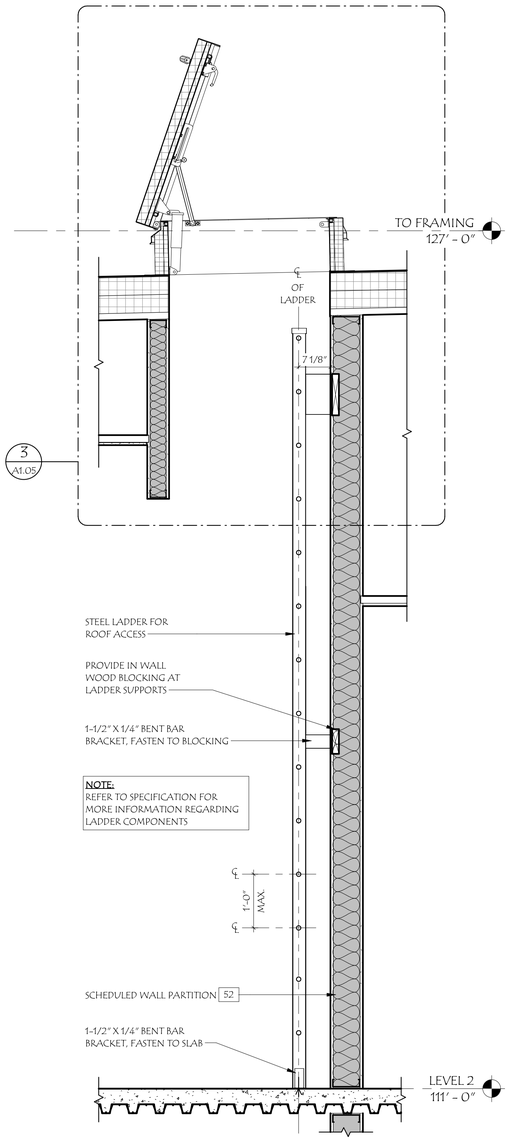
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WALL SECTIONS

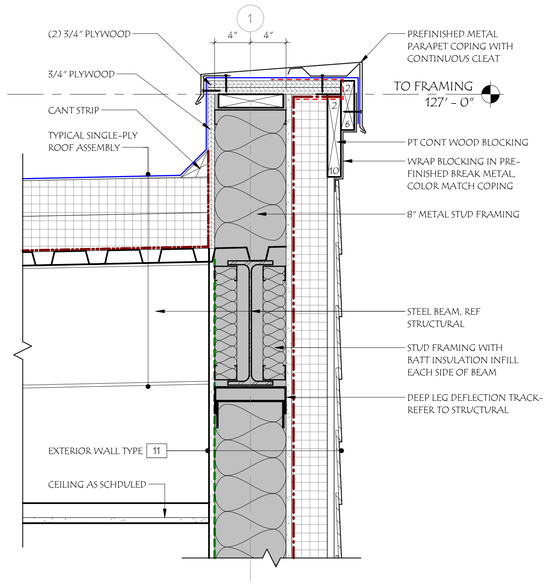
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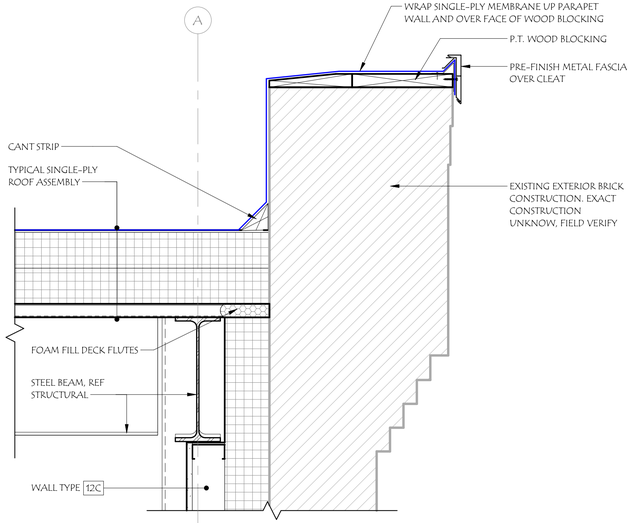
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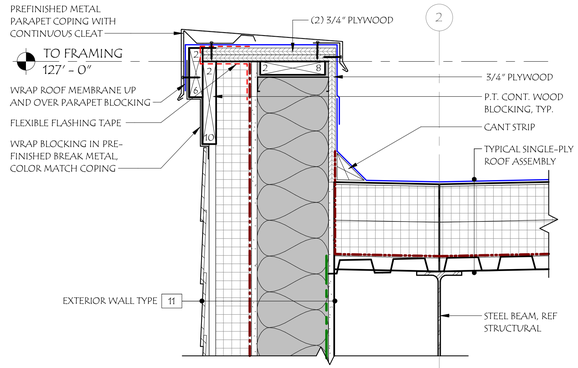
7 A3.20 ROOF ACCESS LADDER DETAIL
3/4" = 1'-0"



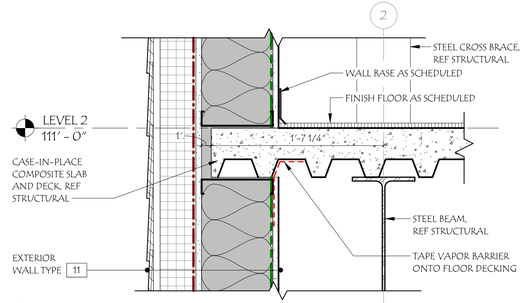
6 A3.20 TYPICAL DETAIL @ ADDITION PARAPET
1 1/2" = 1'-0"



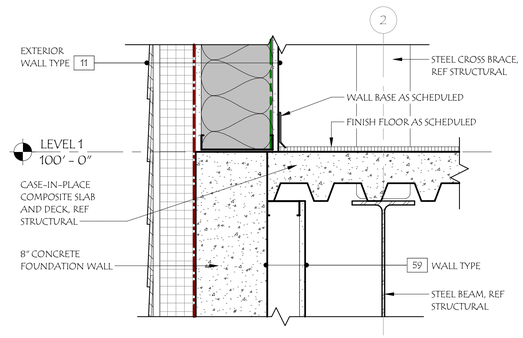
5 A3.20 TOP OF WALL DETAIL @ WS 2-EXISTING TYP-PARAPET
1 1/2" = 1'-0"



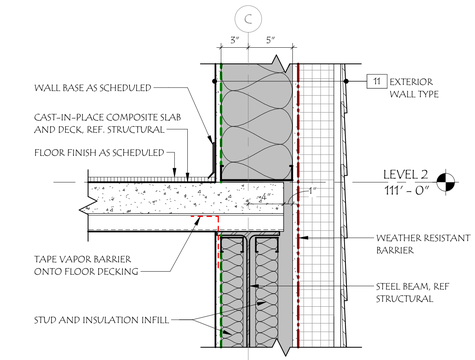
4 A3.20 TOP OF WALL DETAIL @ COL. LINE 2
1 1/2" = 1'-0"



3 A3.20 MIDWALL DETAIL @ COL. LINE 2
1 1/2" = 1'-0"



2 A3.20 BOTTOM OF WALL DETAIL @ COL. LINE 2
1 1/2" = 1'-0"



1 A3.20 SECTION DETAIL @ C-LINE
1 1/2" = 1'-0"

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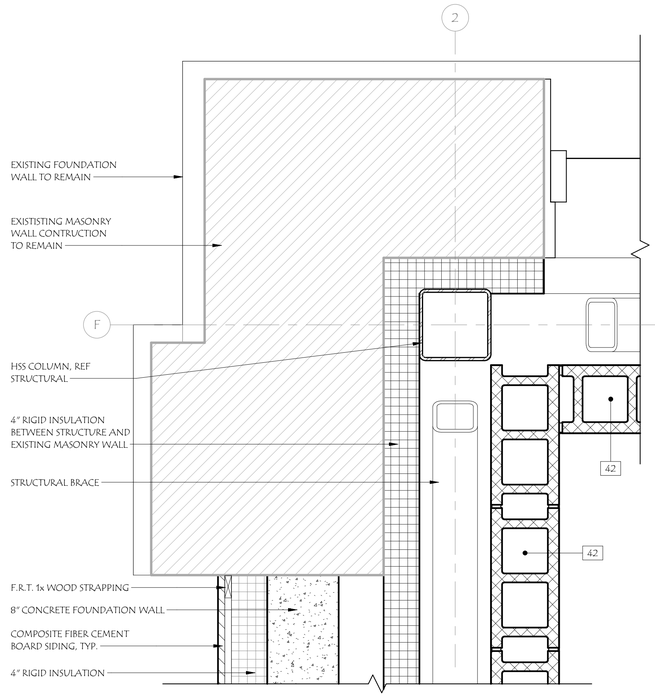
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EXTERIOR SECTION DETAILS

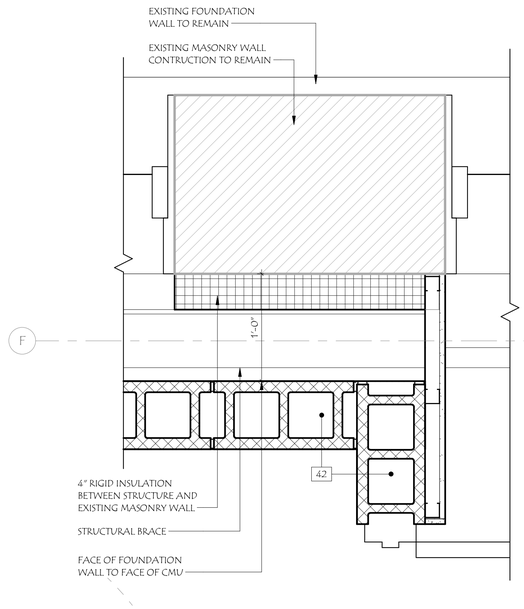
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A3.20

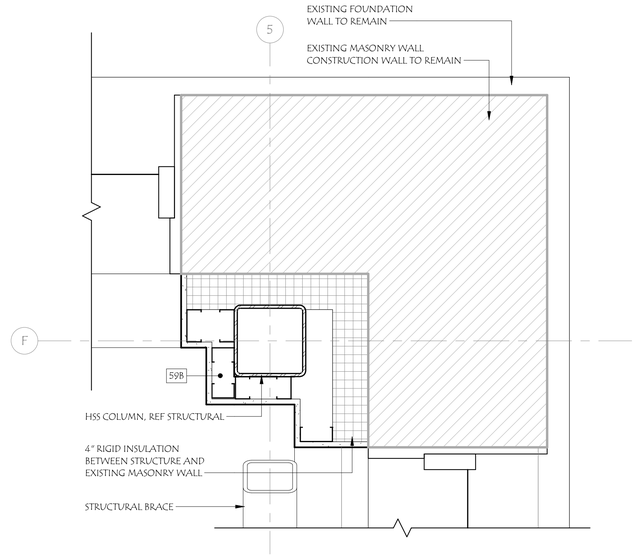
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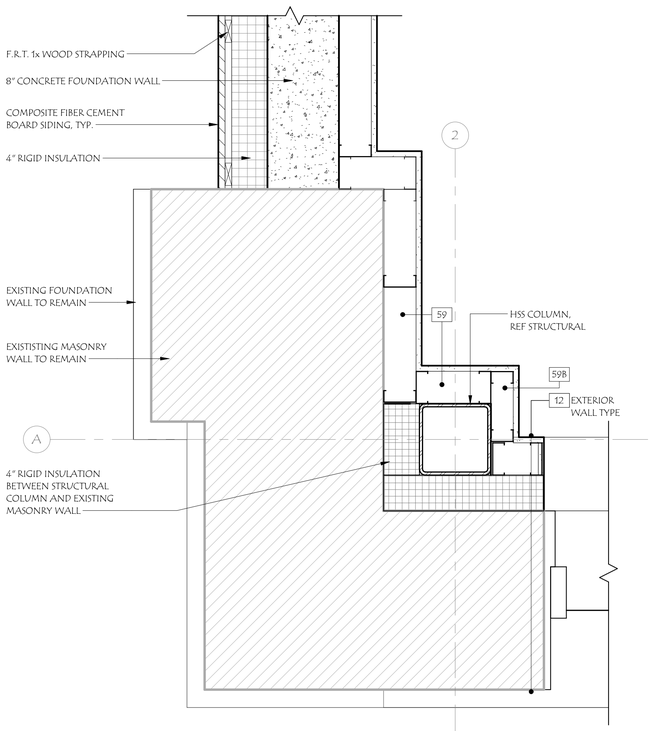
5 A3.30 PLAN DETAIL @ HOLDING-LB @ F-LINE & 2-LINE
1 1/2" = 1'-0"



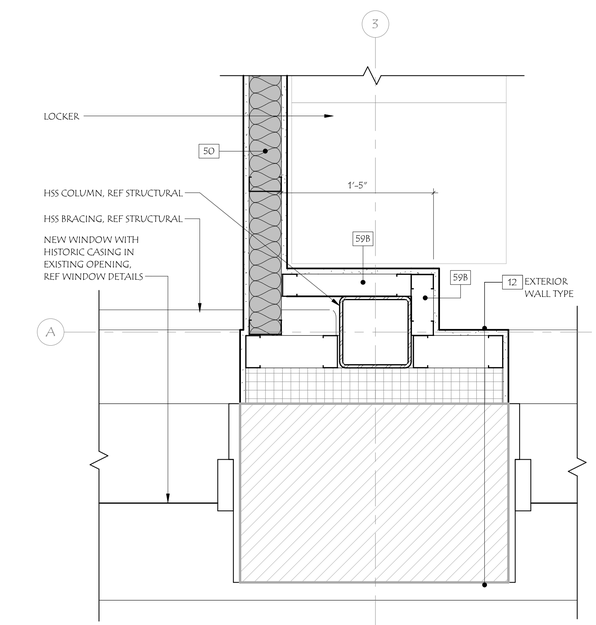
4 A3.30 PLAN DETAIL @ HOLDING @ F-LINE
1 1/2" = 1'-0"



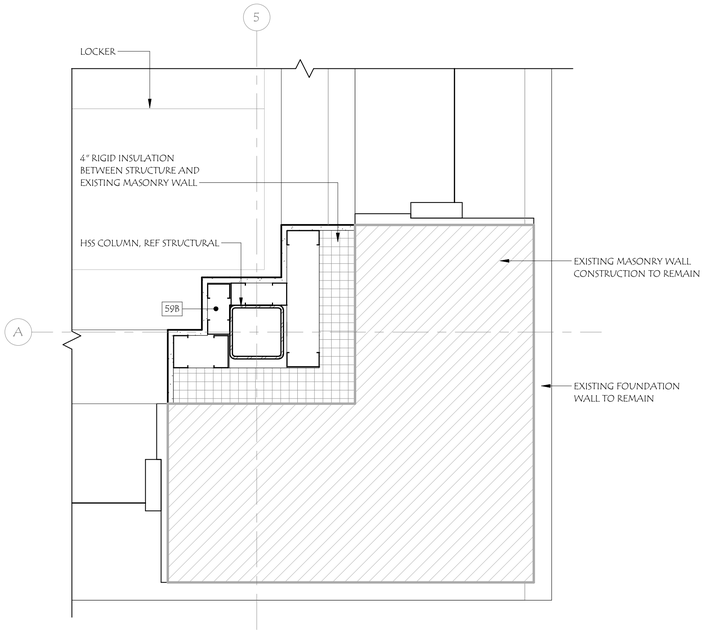
11 A3.30 BASEMENT PLAN @ EVIDENCE ROOM-LB @ F-LINE & 5-LINE
1 1/2" = 1'-0"



2 A3.30 PLAN DETAIL @ MECHANICAL-LB @A-LINE & 2-LINE
1 1/2" = 1'-0"



1 A3.30 PLAN DETAIL @ PATROL ROOM-LB @ A-LINE & 3-LINE
1 1/2" = 1'-0"



10 A3.30 PLAN DETAIL @ LOCKER ROOM-LB @ A-LINE & 5-LINE
1 1/2" = 1'-0"

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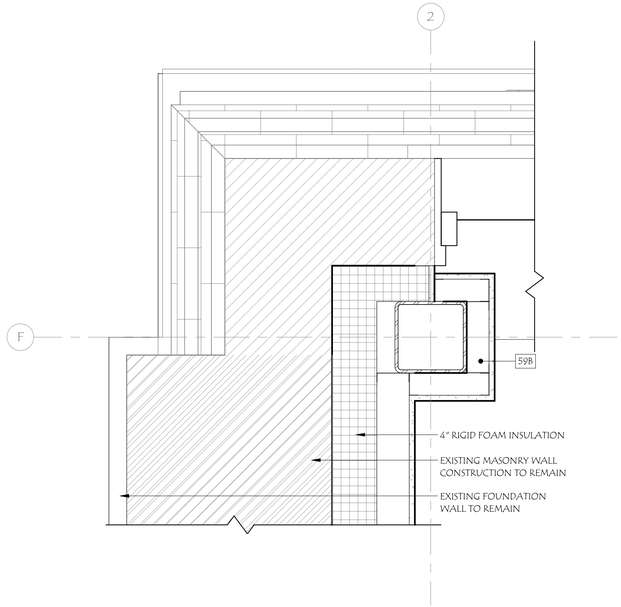
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PLAN DETAILS

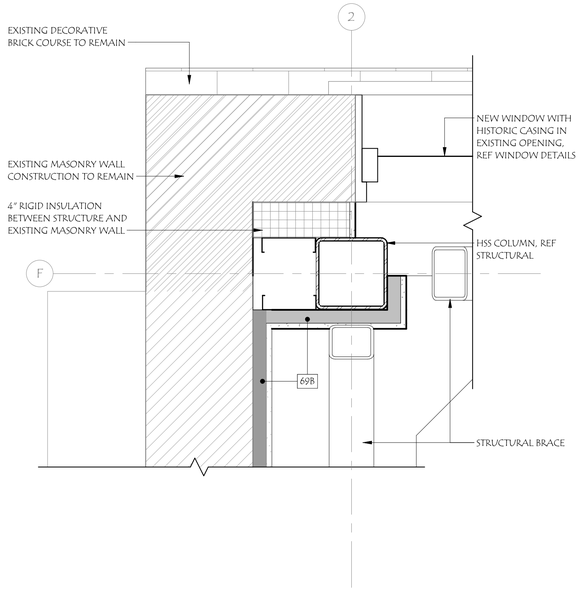
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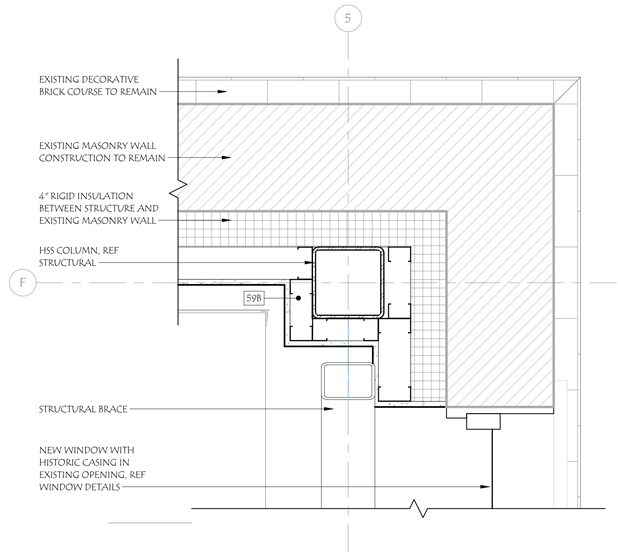
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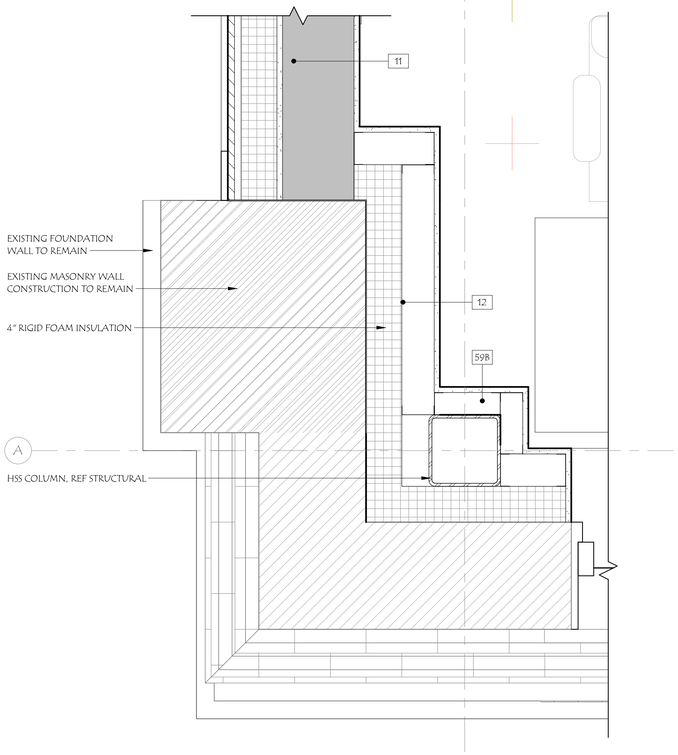
9 A3.31 PLAN DETAIL AT TRAINING ROOM 2-LINE AND F-LINE @ L1
1 1/2" = 1'-0"



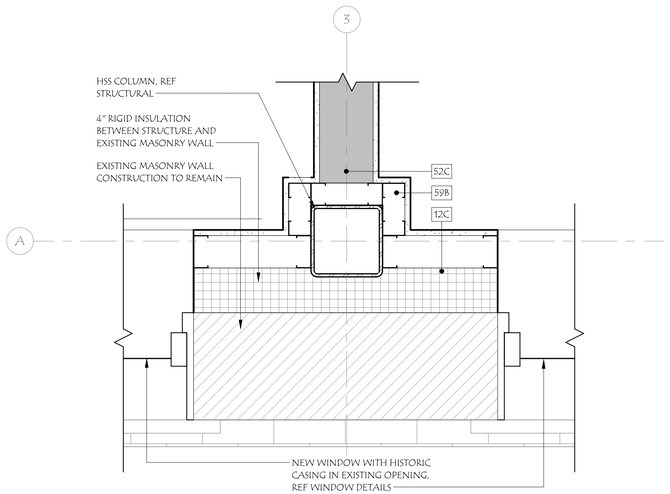
3 A3.31 PLAN DETAIL @ DISPATCH-L2 @ F-LINE & 2-LINE
1 1/2" = 1'-0"



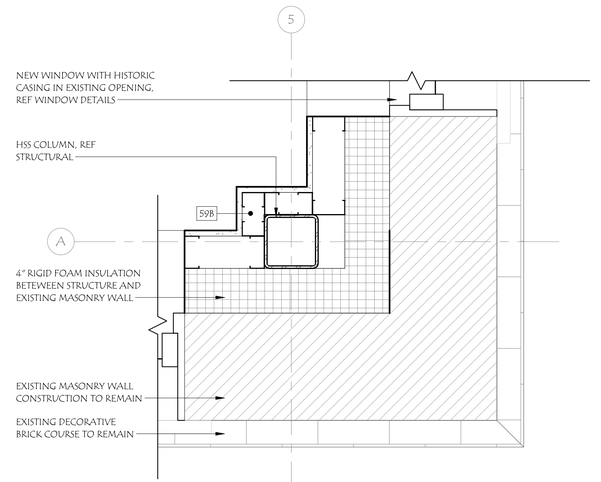
4 A3.31 PLAN DETAIL @ EQUIP STORAGE-L2 @ F-LINE & 5-LINE
1 1/2" = 1'-0"



1 A3.31 PLAN DETAIL @ PATROL ROOM-L1 @ A-LINE & 2-LINE
1 1/2" = 1'-0"



5 A3.31 PLAN DETAIL @ L2 @ A-LINE & 3-LINE
1 1/2" = 1'-0"



2 A3.31 PLAN DETAIL @ CAPTAIN'S OFFICE-L2 @ A-LINE & 5-LINE
1 1/2" = 1'-0"

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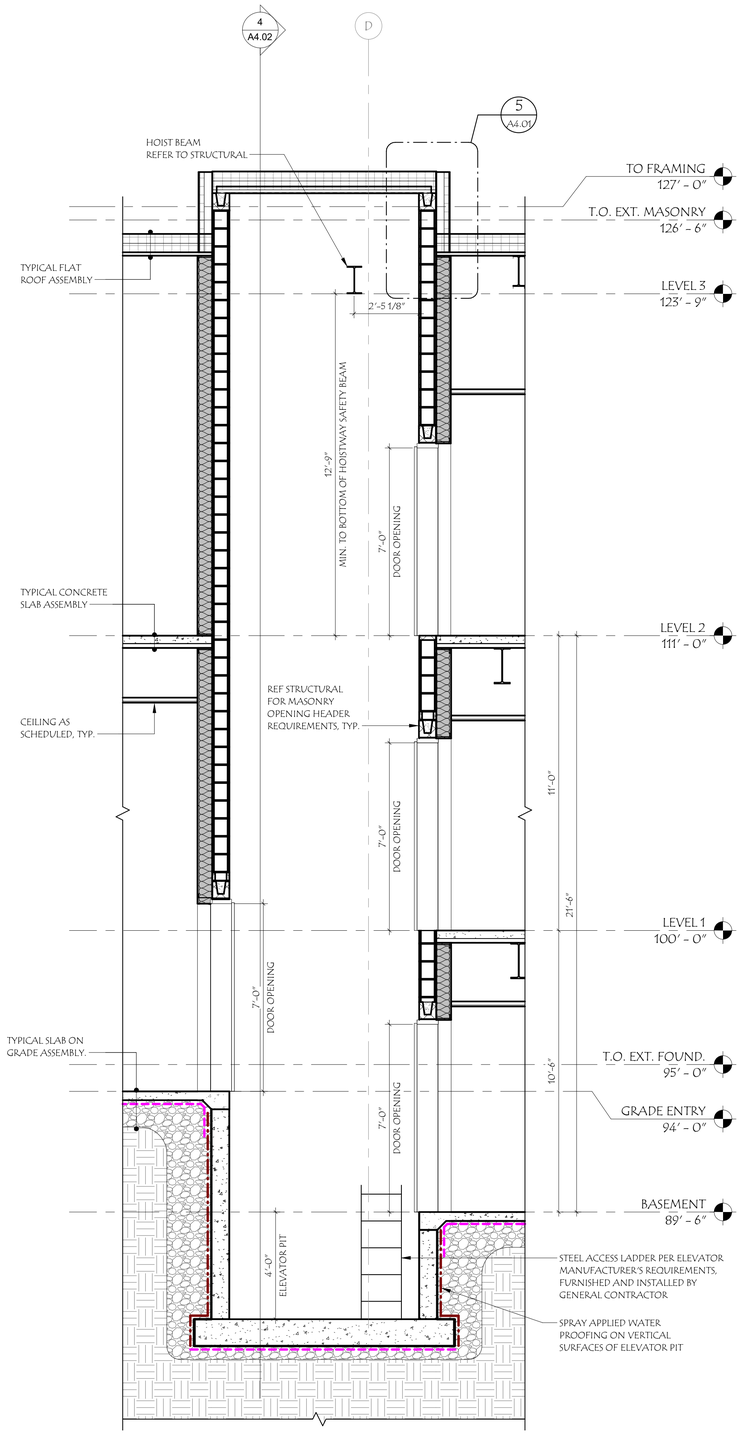
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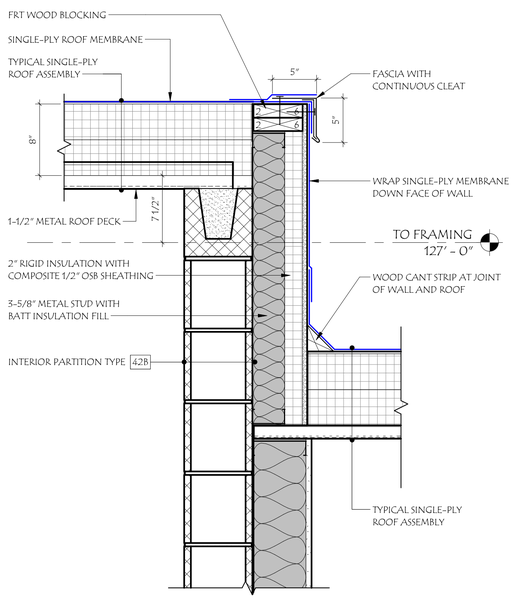
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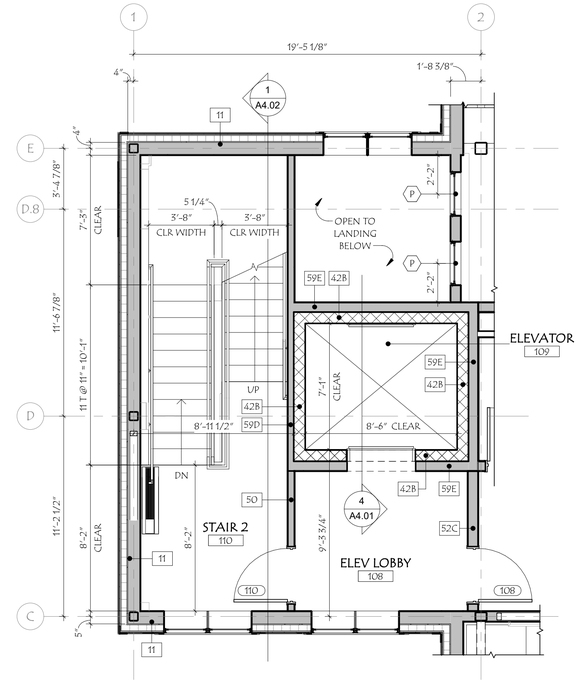
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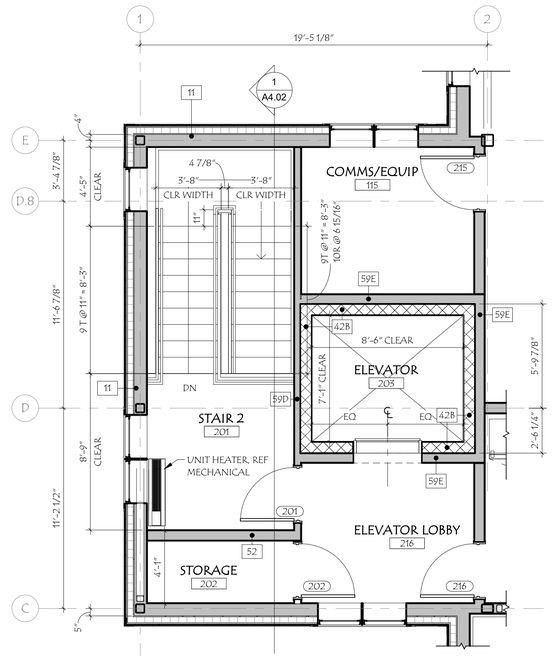
4 A4.01 ELEVATOR SECTION
3/8" = 1'-0"



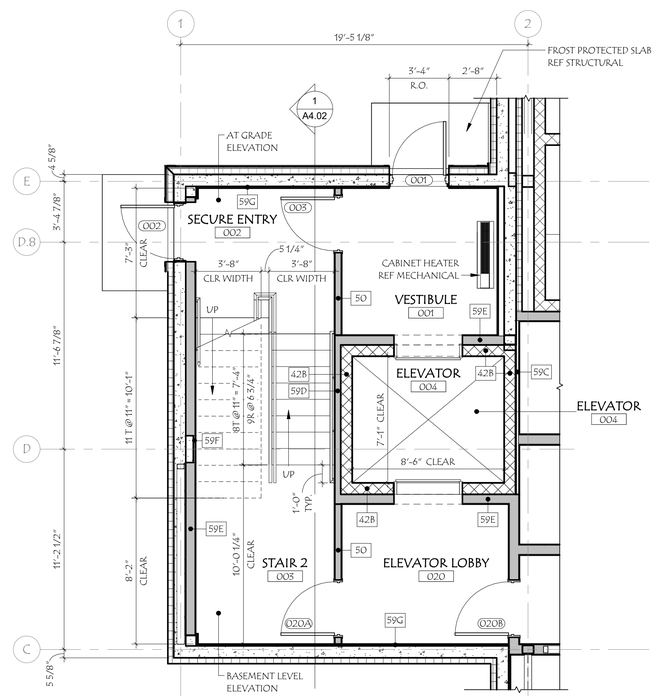
5 A4.01 ELEVATOR ROOF DETAIL
1 1/2" = 1'-0"



2 A4.01 ELEVATOR ENLARGED PLAN @ L1
1/4" = 1'-0"



3 A4.01 ELEVATOR ENLARGED PLAN @ L2
1/4" = 1'-0"



1 A4.01 ELEVATOR ENLARGED PLAN @ BASEMENT
1/4" = 1'-0"

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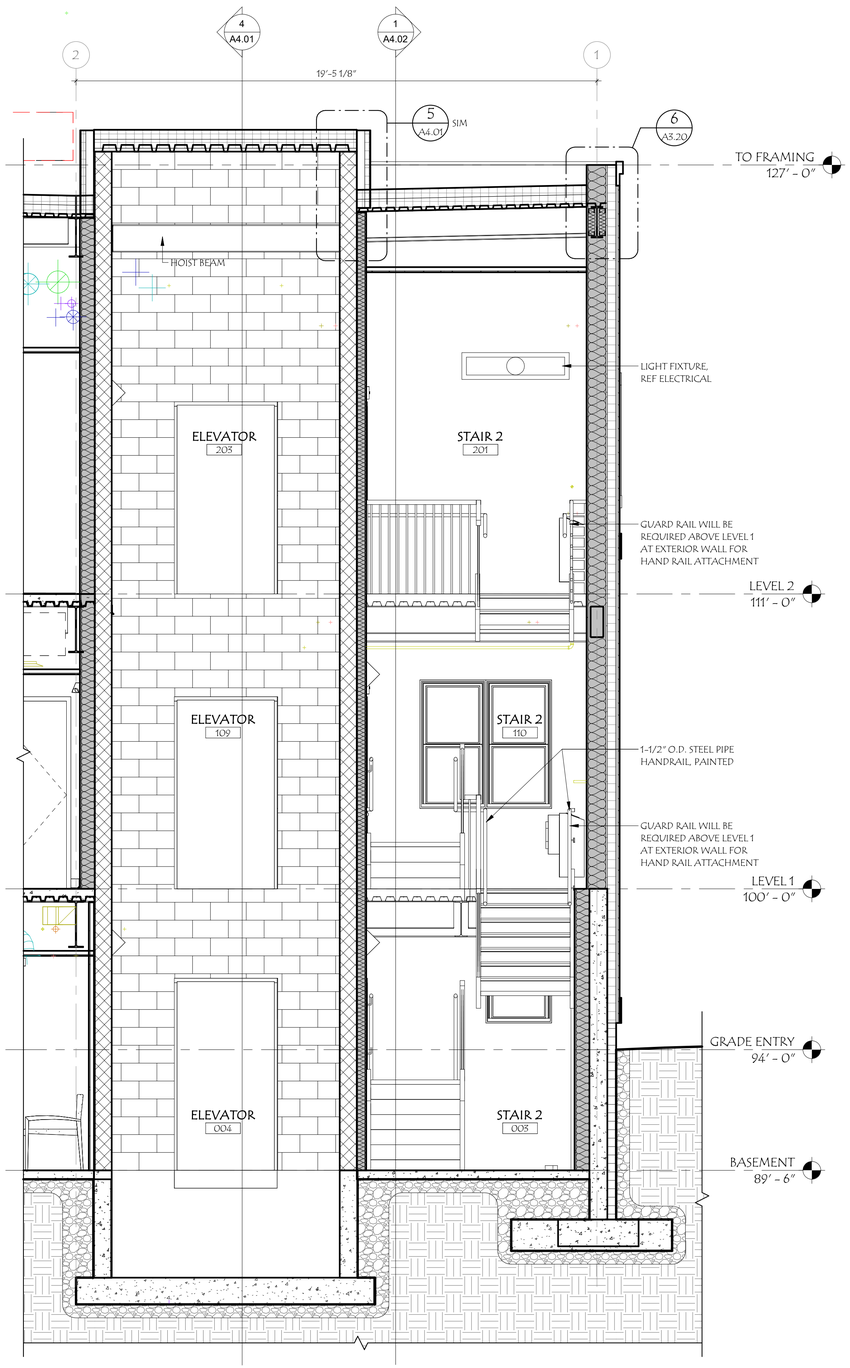
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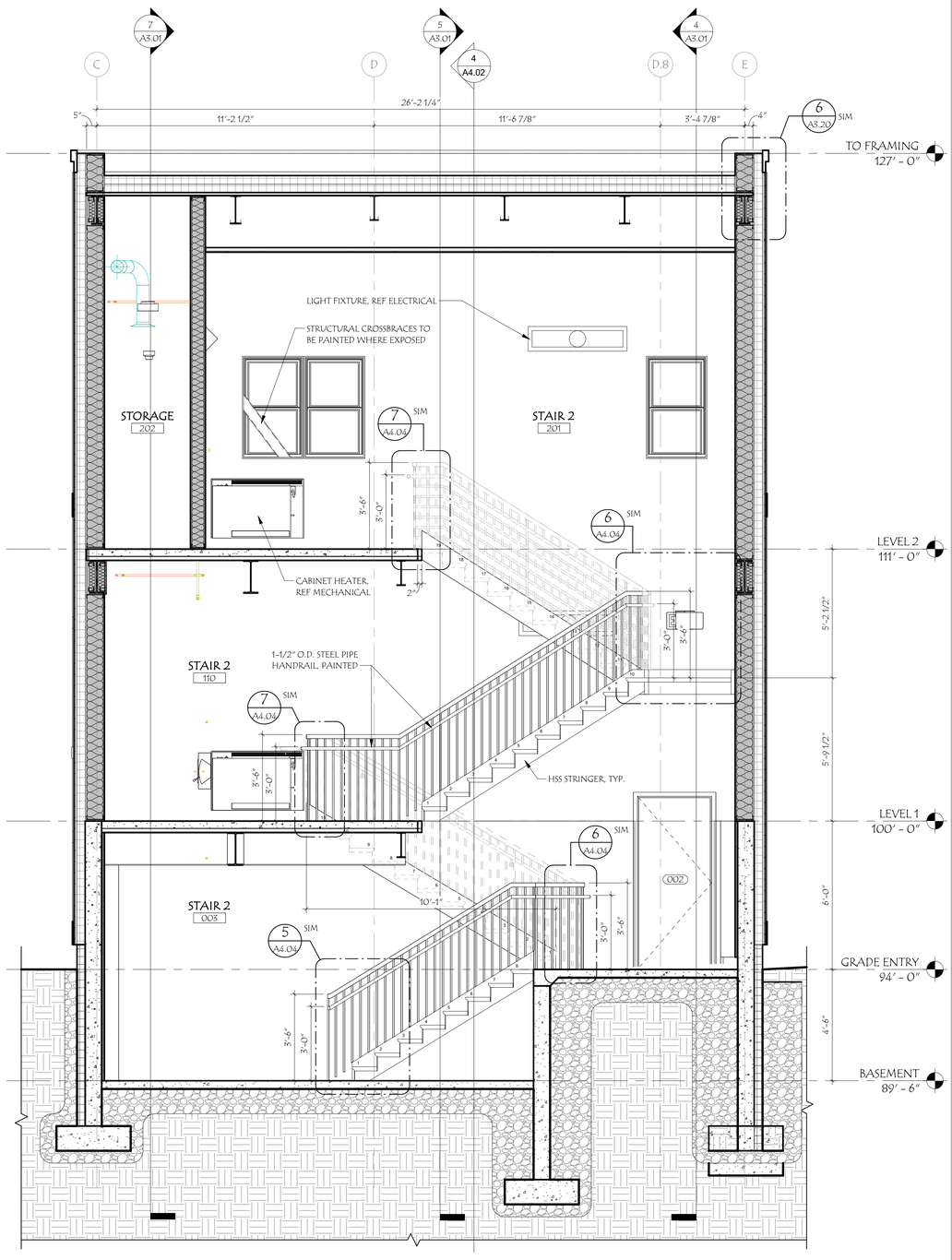
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4 A4.02 STAIR 2 SECTION- TRANSVERSE
3/8" = 1'-0"



1 A4.02 STAIR 2 SECTION
3/8" = 1'-0"

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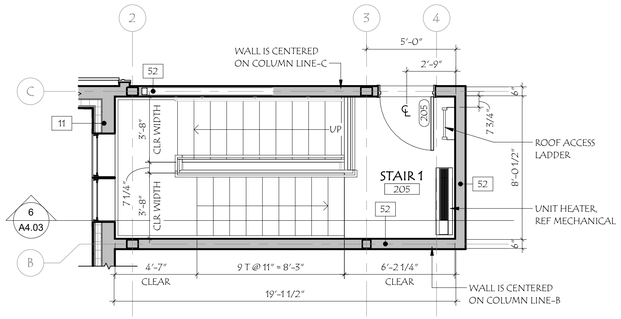
ST. JOHNSBURY, VERMONT

STAIR PLANS AND SECTIONS

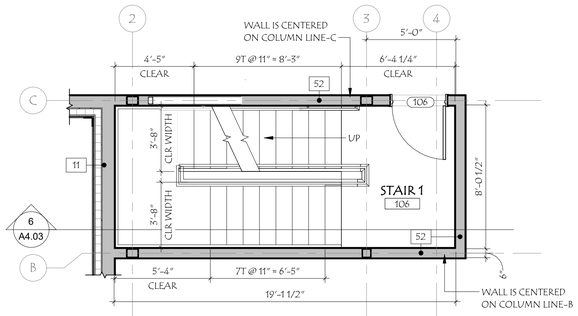
PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	Checker
DRAWN BY:	Author
SCALE:	3/8" = 1'-0"

A4.02

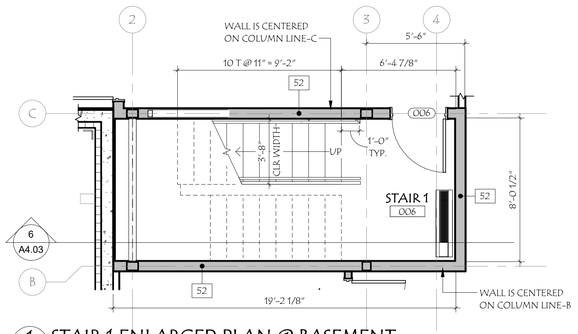
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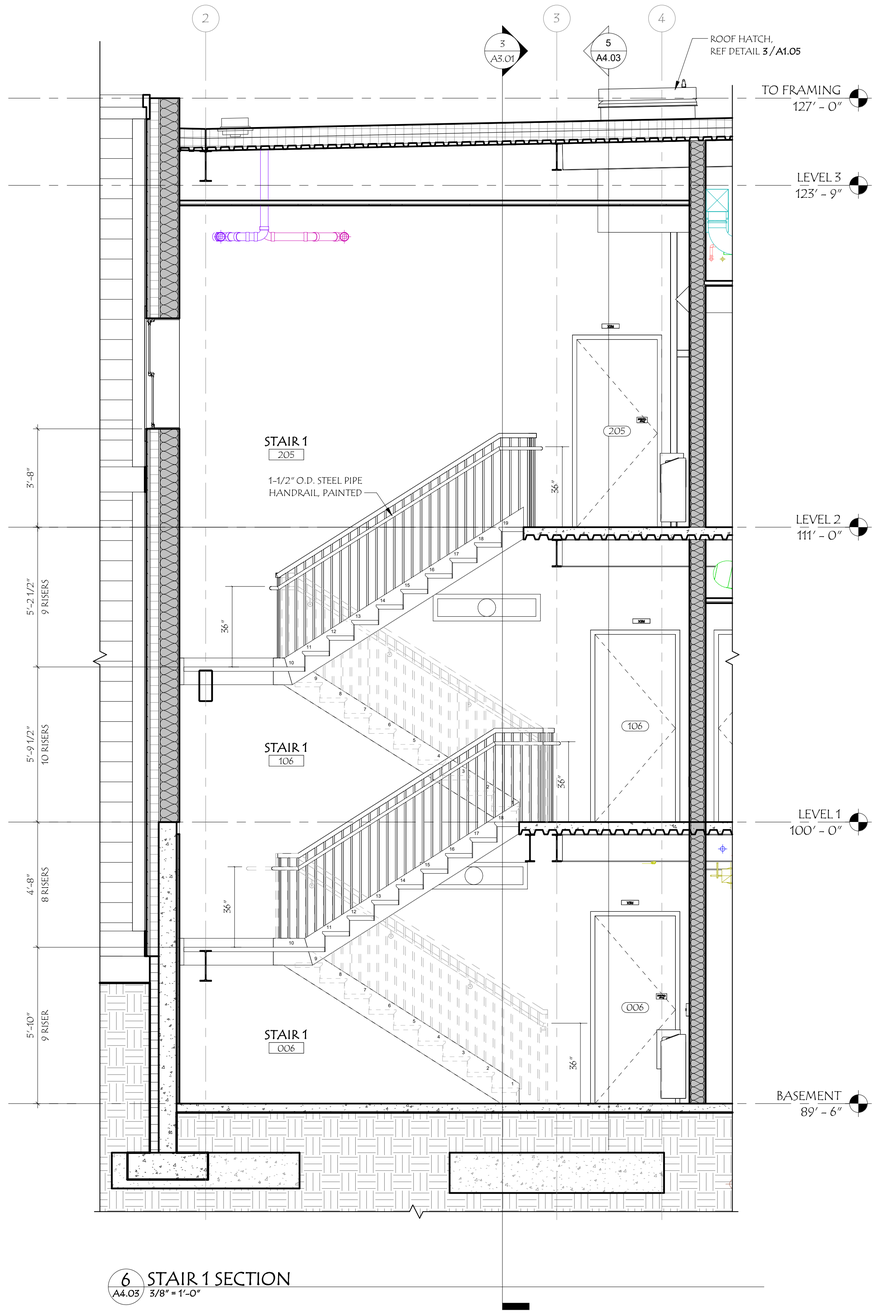
3 A4.03 STAIR 1 ENLARGED PLAN @ L2
1/4" = 1'-0"



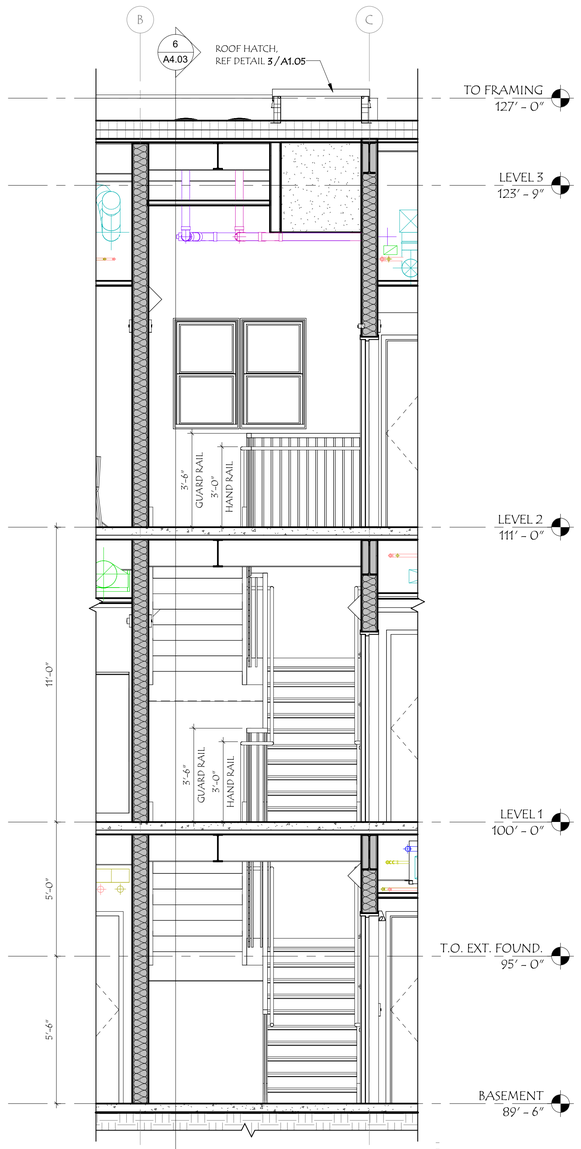
2 A4.03 STAIR 1 ENLARGED PLAN @ L1
1/4" = 1'-0"



1 A4.03 STAIR 1 ENLARGED PLAN @ BASEMENT
1/4" = 1'-0"



6 A4.03 STAIR 1 SECTION
3/8" = 1'-0"



5 A4.03 STAIR 1 SECTION TRANSVERSE
3/8" = 1'-0"

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PUBLIC SAFETY FACILITY

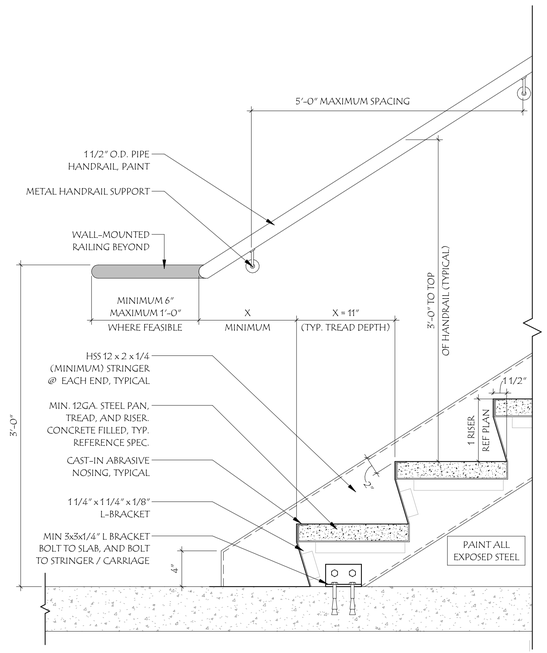
ST. JOHNSBURY, VERMONT

STAIR PLANS AND SECTIONS

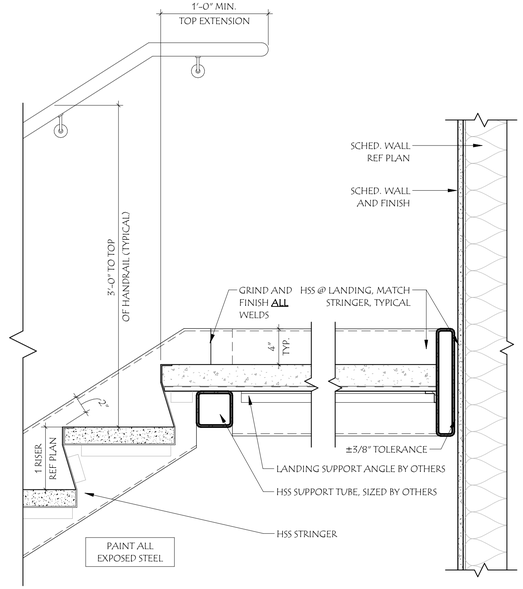
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DATE:	02/07/2025
CHECKED BY:	Checker
DRAWN BY:	Author
SCALE:	As indicated

A4.03

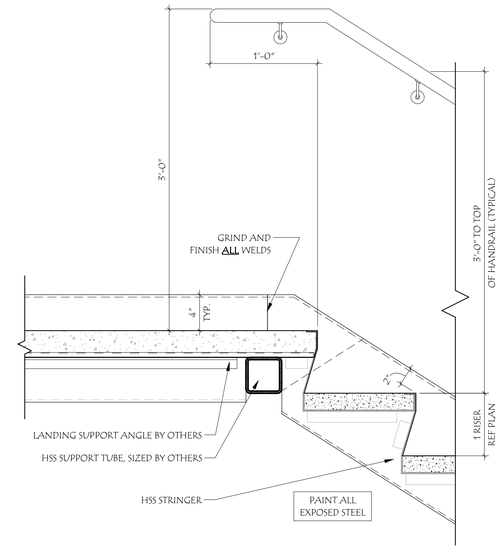
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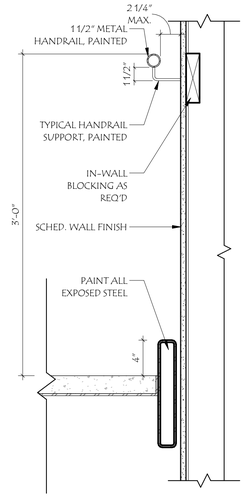
1 A4.04 TYP. STAIR LANDING @ SLAB W/ HANDRAIL
1 1/2" = 1'-0"



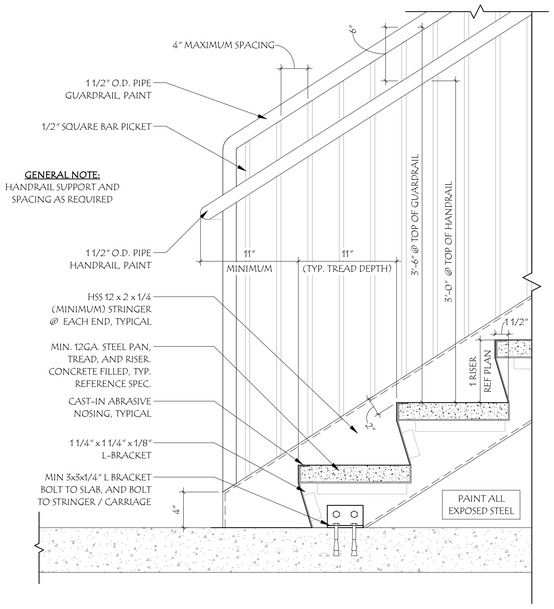
2 A4.04 TYPICAL STAIR @ INT. LANDING W/ HANDRAIL
1 1/2" = 1'-0"



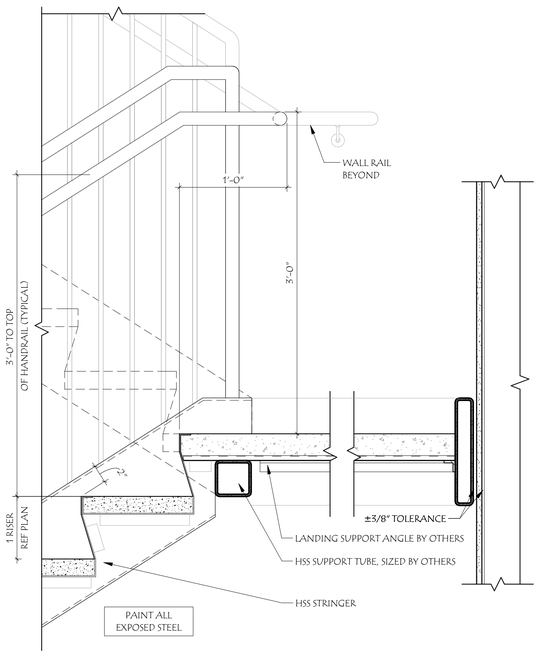
3 A4.04 TYPICAL STAIR @ LANDING W/ HANDRAIL
1 1/2" = 1'-0"



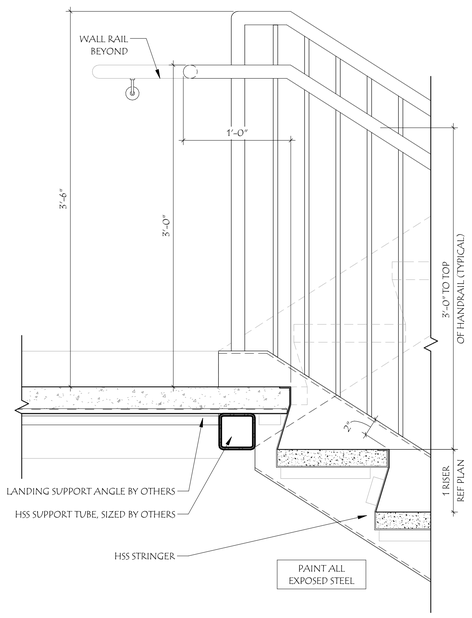
4 A4.04 TYPICAL HANDRAIL
1 1/2" = 1'-0"



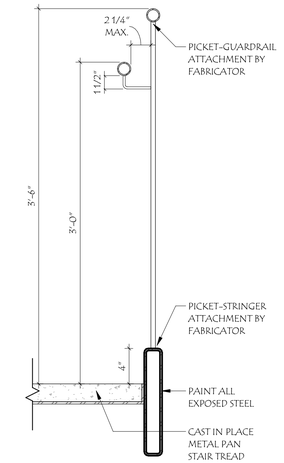
5 A4.04 TYP. STAIR LANDING @ SLAB W/ GUARDRAIL
1 1/2" = 1'-0"



6 A4.04 TYPICAL STAIR @ INT. LANDING W/ GUARDRAIL
1 1/2" = 1'-0"



7 A4.04 TYPICAL STAIR @ LANDING W/ GUARDRAIL
1 1/2" = 1'-0"



8 A4.04 TYPICAL GUARDRAIL
1 1/2" = 1'-0"

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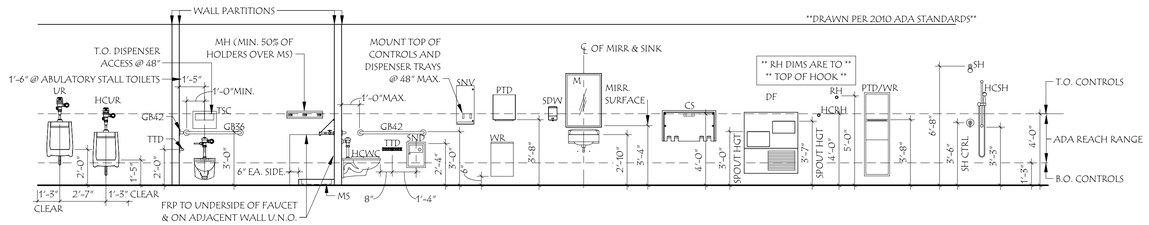
STAIR DETAILS

PROJECT NO:	2021050
DATE:	02/07/2025
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DRAWN BY:	Author
SCALE:	1 1/2" = 1'-0"

A4.04

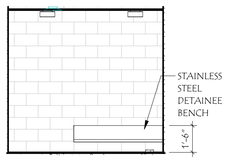
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** NOTE: BLOCKING REQUIRED FOR OWNER FURNISHED / OWNER INSTALLED ACCESSORIES, COORD. WITH OWNER **

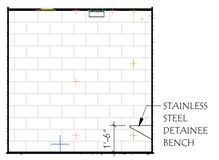


PLUMBING FIXTURE MOUNTING LEGEND
1/4" = 1'-0"

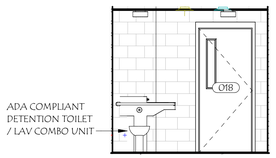
TOILET ROOM ACCESSORIES ABBREVIATIONS	
ABBV	DESCRIPTION
CS	BABY CHANGING STATION
FTD	FACIAL TISSUE DISPENSER
GB[XX]	GRAB BAR[XX (LENGTH OF BAR IN INCHES)]
HCRH	ADA ACCESSIBLE ROBE HOOK
HCUR	ADA ACCESSIBLE URINAL
HCWC	ADA ACCESSIBLE WATER CLOSET
HD	HAND DRYER
M	MIRROR
MH	MOP HOLDER
PTD	PAPER TOWEL DISPENSER
PTD/WR	COMBINATION UNIT: PAPER TOWEL DISPENSER / WASTE RECEPTACLE
RH	ROBE HOOK
SDC	SOAP DISPENSER, COUNTER MOUNTED
SDW	SOAP DISPENSER, WALL MOUNTED
SND	SANITARY NAPKIN DISPOSAL
SNV	SANITARY NAPKIN VENDOR / DISPENSER
SRC	SHOWER ROD & CURTAIN
TB[XX]	TOWER BAR[XX (LENGTH OF BAR IN INCHES)]
TSC	TOILET SEAT COVER DISPENSER
TTD-X	TOILET TISSUE (PAPER) DISPENSER [-X (# OF ROLLS)]
UR	URINAL
WC	WATER CLOSET
WR	WASTE RECEPTACLE



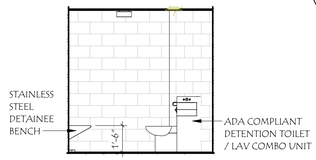
6D HOLDING 018 – ELEV 4
1/4" = 1'-0"



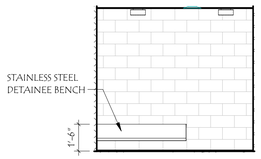
6C HOLDING 018 – ELEV 3
1/4" = 1'-0"



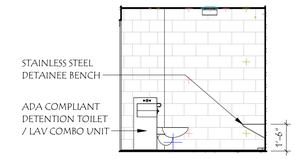
6B HOLDING 018 – ELEV 2
1/4" = 1'-0"



6A HOLDING 018 – ELEV 1
1/4" = 1'-0"



3D HOLDING 019 – ELEV 4
1/4" = 1'-0"



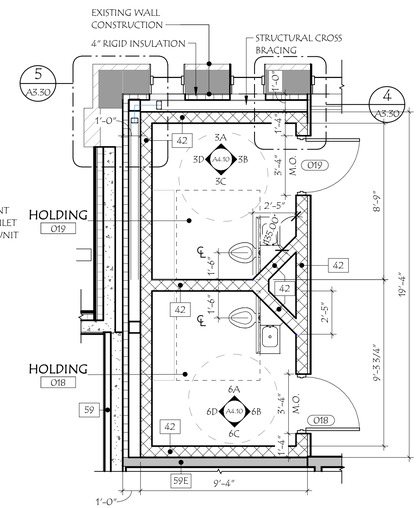
3C HOLDING 019 – ELEV 3
1/4" = 1'-0"



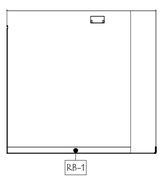
3B HOLDING 019 – ELEV 2
1/4" = 1'-0"



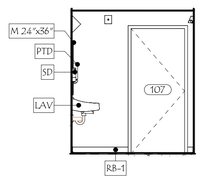
3A HOLDING 019 – ELEV 1
1/4" = 1'-0"



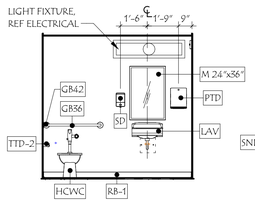
3 HOLDING CELLS
A4.10 1/4" = 1'-0"



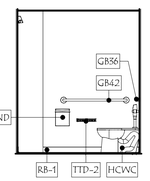
5D TLT 107 – ELEV 4
1/4" = 1'-0"



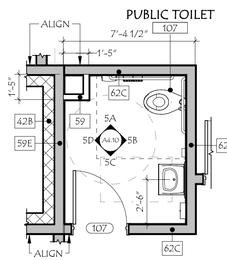
5C TLT 107 – ELEV 3
1/4" = 1'-0"



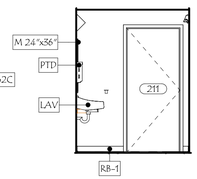
5B TLT 107 – ELEV 2
1/4" = 1'-0"



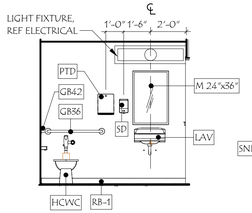
5A TLT 107 – ELEV 1
1/4" = 1'-0"



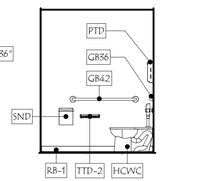
5 PUBLIC TLT 107
A4.10 1/4" = 1'-0"



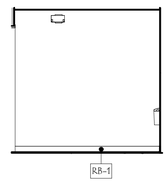
4D TLT 211 – ELEV 4
1/4" = 1'-0"



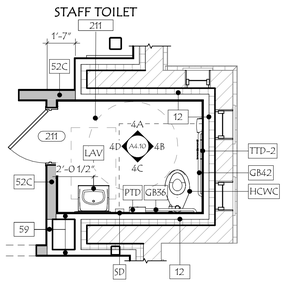
4C TLT 211 – ELEV 3
1/4" = 1'-0"



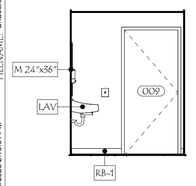
4B TLT 211 – ELEV 2
1/4" = 1'-0"



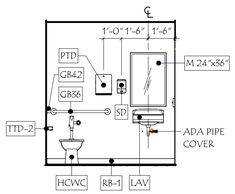
4A TLT 211 – ELEV 1
1/4" = 1'-0"



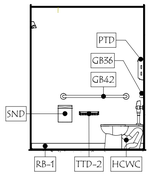
4 STAFF TLT 211
A4.10 1/4" = 1'-0"



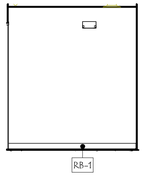
2D TLT 009 – ELEV 4
1/4" = 1'-0"



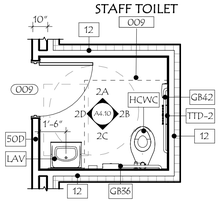
2C TLT 009 – ELEV 3
1/4" = 1'-0"



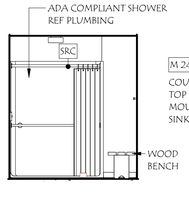
2B TLT 009 – ELEV 2
1/4" = 1'-0"



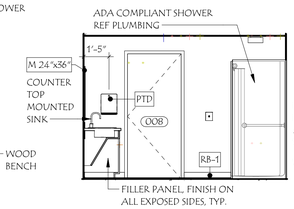
2A TLT 009 – ELEV 1
1/4" = 1'-0"



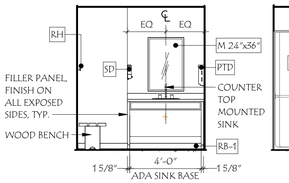
2 STAFF TLT 009
A4.10 1/4" = 1'-0"



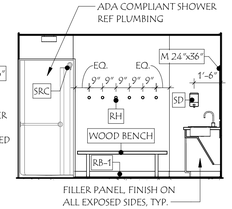
1D CHANGING – ELEV 4
1/4" = 1'-0"



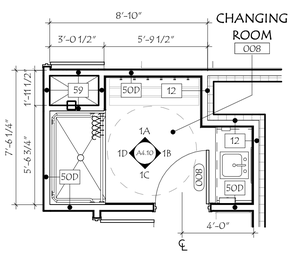
1C CHANGING – ELEV 3
1/4" = 1'-0"



1B CHANGING – ELEV 2
1/4" = 1'-0"



1A CHANGING – ELEV 1
1/4" = 1'-0"



1 CHANGING RM 008
A4.10 1/4" = 1'-0"

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VERMONT

BATHROOM ENLARGED PLAN AND ELEVATIONS

PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	DPR
DRAWN BY:	RJH
SCALE:	1/4" = 1'-0"

A4.10

FILENAME: C:\Users\rjhoppe\Documents\2021050 St. J Public Safety_R24_ARCH_Bldg A_bhoppeTBQPO.rvt
PRINTED: 2/6/2025 2:16:01 PM

DOOR SCHEDULE

MARK	ASSOCIATED ROOMS: ROOM	ASSOCIATED ROOMS: ROOM	PANEL: TYPE	PANEL: MATL.	PANEL: FINISH	PANEL: WIDTH		PANEL: HEIGHT	PANEL: THICK.	PANEL: GLAZING	FRAME: TYPE	FRAME: MATL	FRAME: FINISH	DETAILS: HEAD	DETAILS: JAMB	DETAILS: SILL	SPECIFICATIONS: DR RATING	REMARKS	MARK
BASEMENT																			
006	CORRIDOR	STAIR 1	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -	60 MIN	SMOKE SEAL DOOR	006
007	EMR	CORRIDOR	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -	60 MIN	SMOKE SEAL DOOR	007
008	CORRIDOR	CHANGING ROOM	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			008
009	CORRIDOR	STAFF TOILET	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			009
010	CORRIDOR	MECHANICAL / ELECTRICAL	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -	60 MIN	SMOKE SEAL DOOR	010
011	LOCKER ROOM	CORRIDOR	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			011
012	CORRIDOR	CORRIDOR	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			012
013	CORRIDOR	CLOSET	BI-FOLD	HM	- - -	5' - 0"	x	7' - 0"	1 3/4"	- - -	- - -	- - -	- - -	- - -	- - -	- - -			013
014	CORRIDOR	TEMP EVIDENCE	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			014
015	CORRIDOR	SECURE INTERVIEW	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			015
016	PROCESSING	EVIDENCE	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			016
017	CORRIDOR	PROCESSING	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			017
018	PROCESSING	HOLDING	NL	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	SECURITY	B	HM	PNT	3A/A5.20	3B/A5.20	- - -			018
019	HOLDING	PROCESSING	NL	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	SECURITY	B	HM	PNT	3A/A5.20	3B/A5.20	- - -			019
020A	ELEVATOR LOBBY	STAIR 2	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -	60 MIN	SMOKE SEAL DOOR	020A
020B	CORRIDOR	ELEVATOR LOBBY	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			020B
022	CLOSET	CORRIDOR	F	HM	PNT	2' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			022
GRADE ENTRY																			
001	VESTIBULE		HL	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	SAFETY	A	HM	PNT	1D/A5.20	11/A5.20, 12/A5.20	13/A5.20			001
002	SECURE ENTRY		F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1D/A5.20	11/A5.20, 12/A5.20	13/A5.20			002
003	SECURE ENTRY	VESTIBULE	NL	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	SAFETY	A	HM	PNT	1A/A5.20	1B/A5.20	- - -	60 MIN	SMOKE SEAL DOOR	003
EXTERIOR																			
LEVEL 1																			
101			FD	WD	PNT	10' - 4"	x	7' - 2"	2"	SAFETY	- - -	WD	PNT	- - -	- - -	- - -		CUSTOM DOOR, NOTE #5	101
102	PUBLIC LOBBY	EOC / TRAINING ROOM	3P-HL	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	SAFETY	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			102
103	PUBLIC LOBBY	CORR	5P	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			103
104	INTERVIEW	CORR	5P	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			104
105		PATROL ROOM	5P	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			105
106	STAIR 1	PUBLIC LOBBY	5P	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -	60 MIN	SMOKE SEAL DOOR	106
107	PUBLIC LOBBY	PUBLIC TOILET	5P	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			107
108	ELEV LOBBY	PUBLIC LOBBY	5P	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			108
110	STAIR 2	ELEV LOBBY	NL	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	SAFETY	A	HM	PNT	1A/A5.20	1B/A5.20	- - -	60 MIN	SMOKE SEAL DOOR	110
LEVEL 2																			
201	ELEVATOR LOBBY	STAIR 2	NL	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	SAFETY	A	HM	PNT	1A/A5.20	1B/A5.20	- - -	60 MIN	SMOKE SEAL DOOR	201
202	STORAGE	ELEVATOR LOBBY	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			202
205	LOBBY	STAIR 1	5P	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -		HM	PNT	1A/A5.20	1B/A5.20	- - -	60 MIN	SMOKE SEAL DOOR	205
206	CLOSET	CORRIDOR	5P	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			206
207	ARMORY	CORRIDOR	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			207
209	CHIEF'S OFFICE	CORRIDOR	5P	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	C		PNT	1A/A5.20	1B/A5.20	- - -			209
210	CORRIDOR	CAPTAIN'S OFFICE	5P	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	C		PNT	1A/A5.20	1B/A5.20	- - -			210
211	CORR	STAFF TOILET	5P	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			211
212	CORR	DISPATCH MGR	5P	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			212
213	EQUIP STORAGE	DISPATCH MGR	F	HM	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			213
214	CORR	DISPATCH	3P-HL	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			214
215	DISPATCH	COMMS/EQUIP	5P	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			215
216	LOBBY	ELEVATOR LOBBY	5P	MDF	PNT	3' - 0"	x	7' - 0"	1 3/4"	- - -	A	HM	PNT	1A/A5.20	1B/A5.20	- - -			216

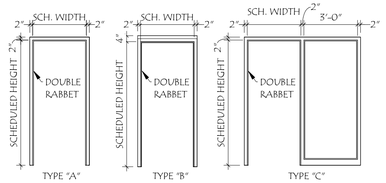
DOOR NOTES:
1. VERIFY ALL EXISTING OPENING SIZES TO RECEIVE NEW FRAME AND/OR DOOR PANEL PRIOR TO ORDERING NEW FRAMES AND DOORS.
2. VERIFY ANY EXISTING FRAME, PANEL, HARDWARE COMPONENTS TO REMAIN ARE COMPATIBLE WITH NEW WORK.
3. FOR ACCESS CONTROL DOORS, CONTRACTOR TO PROVIDE POWER TO AND PREPARE DOOR FRAME TO RECEIVE ELECTRIC STRIKE. SECURITY CONSULTANT TO INSTALL ELECTRIC STRIKES AND CARD/FOB READERS. REFER TO ELECTRICAL SPECIAL SYSTEMS PLANS FOR LOCATIONS OF CARD READERS.
4. LEVER SETS WITHIN DETENTION AREA ARE TO BE HEAVY-DUTY MORTISE TYPE.
5. CUSTOM HISTORICAL FRONT DOOR SHALL BE A DEFERRED DESIGN BY A HISTORIC DOOR SPECIALIST.

DOOR HARDWARE SCHEDULE

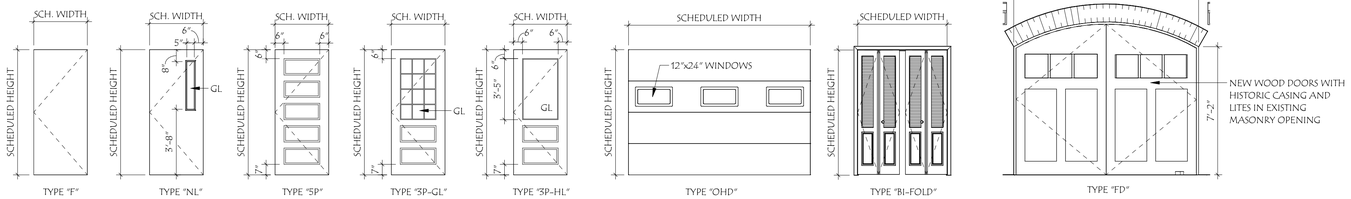
NO.	FUNCTION	DOOR PREP: CYLINDER	DOOR PREP: MORTISE	PUSH PULL TRIM	LEVERSET TRIM	DEADBOLT	PANIC EXIT DEVICE	FIRE EXIT DEVICE	SINGLE ACTION EGRESS	FLUSH BOLT	STANDARD HINGES	HEAVY DUTY HINGES	CLOSER	SILENCERS	STOPS OR BUMPERS	KICKPLATE	THRESHOLD	WEATHERSTRIPPING	SOUNDSEAL AND SHOE	ELECTRIC STRIKE	KEYPAD OR CARDSWIPE	ELECTRIC LOCK	MAG HOLD OPEN	REMARKS
BASEMENT																								
006	PASSAGE	●			●			●	●		●		●	●	●			●						
007	CLASSROOM	●			●						●		●	●	●			●						
008	PRIVACY	●			●						●			●										OCCUPANCY INDICATOR LEVER
009	PRIVACY	●			●						●			●										OCCUPANCY INDICATOR LEVER
010	CLASSROOM	●			●			●	●		●		●	●	●			●						
011	CLASSROOM	●			●						●		●	●										
012	CLASSROOM	●			●						●		●	●	●									
013	BI-FOLD DOORS																							HARDWARE PROVIDED BY DOOR MANUFACTURER
014	STORE ROOM	●			●						●			●	●					●	●			NOTE: 2
015	PASSAGE	●			●						●			●	●									
016	STORE ROOM		●		●								●	●	●					●	●			NOTE: 4, 5
017	PASSAGE		●		●								●	●	●									NOTE: 5
018	HOLDING CELL					●							●											DETENTION HARDWARE - REF SPEC.
019	HOLDING CELL					●							●											DETENTION HARDWARE - REF SPEC.
020A	PASSAGE	●			●			●	●		●		●	●	●									
020B	STORE ROOM	●					●		●		●			●	●					●	●			NOTE: 2
022	CLASSROOM	●			●						●			●	●									
GRADE ENTRY																								
001	STORE ROOM	●			●		●		●			●	●	●						●	●			NOTE: 3
002	STORE ROOM	●			●		●		●			●	●	●						●	●			NOTE: 3
003	PASSAGE	●			●						●		●	●	●			●						
LEVEL 1																								
101	ENTRY	●			●		●		●	●			●				●	●						HISTORIC HARDWARE
102	CLASSROOM	●			●						●			●	●									
103	STORE ROOM	●			●						●			●	●					●	●			NOTE: 1
104	PASSAGE	●			●						●			●	●									
105	CLASSROOM	●			●						●			●										
106	STORE ROOM	●			●						●		●	●	●					●	●			NOTE: 1
107	PRIVACY	●			●						●			●	●									OCCUPANCY INDICATOR LEVER
108	STORE ROOM	●			●						●			●	●					●	●			NOTE: 6
110	PASSAGE	●						●	●		●		●	●	●			●						
LEVEL 2																								
201	PASSAGE	●			●			●	●		●		●	●	●			●						
202	CLASSROOM	●			●						●			●	●									
205	STORE ROOM	●			●			●	●		●		●	●				●		●	●			NOTE: 7
206	CLASSROOM	●			●						●			●	●									
207	CLASSROOM	●			●						●			●										
209	OFFICE	●			●						●			●	●									
210	OFFICE	●			●						●			●	●									
211	PRIVACY	●			●						●			●										OCCUPANCY INDICATOR LEVER
212	OFFICE	●			●						●			●	●									
213	CLASSROOM	●			●						●			●	●									
214	OFFICE	●			●						●			●										
215	CLASSROOM	●			●						●			●	●									
216	STORE ROOM	●			●						●		●	●	●					●	●			NOTE: 6

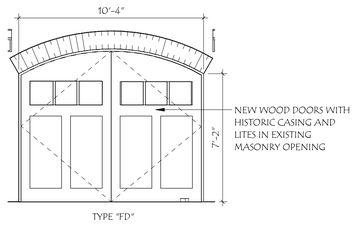
DOOR NOTES:
1. ACCESS CONTROL SYSTEM IS TO BE PROVIDED BY OWNER HIRED CONSULTANT. CONTROL DEVICE TO BE PROVIDED ON SECURE ENTRY SIDE OF DOOR.
2. ACCESS CONTROL SYSTEM IS TO BE PROVIDED BY OWNER HIRED CONSULTANT. CONTROL DEVICE TO BE PROVIDED ON CORRIDOR SIDE OF DOOR.
3. ACCESS CONTROL SYSTEM IS TO BE PROVIDED BY OWNER HIRED CONSULTANT. CONTROL DEVICE TO BE PROVIDED ON EXTERIOR SIDE OF DOOR.
4. ACCESS CONTROL SYSTEM IS TO BE PROVIDED BY OWNER HIRED CONSULTANT. CONTROL DEVICE TO BE PROVIDED ON PROCESSING SIDE OF DOOR.
5. DOOR LEVERSET TO BE HEAVY DUTY, REFER TO SPECIFICATION.
6. ACCESS CONTROL SYSTEM IS TO BE PROVIDED BY OWNER HIRED CONSULTANT. CONTROL DEVICE TO BE PROVIDED ON ELEVATOR LOBBY SIDE OF DOOR.
7. ACCESS CONTROL SYSTEM IS TO BE PROVIDED BY OWNER HIRED CONSULTANT. CONTROL DEVICE TO BE PROVIDED ON STAIR SIDE OF DOOR.

THROAT SCHEDULE	
WALLTYPE	THROAT
	<varies>
11	<varies>
12	8 1/4"
12B	6 1/4"
12C	9 1/4"
12D	10 5/8"
13	1' - 5 7/8"
42	7 5/8"
42B	7 5/8"
50	4 7/8"
50C	4 7/8"
50D	4 7/8"
52	7 1/4"
52C	7 1/4"
52D	7 1/4"
59	4 1/4"
59C	2 1/4"
59D	4 1/4"
59E	6 5/8"
59G	11/4"
62C	6 3/4"



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





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

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VERMONT

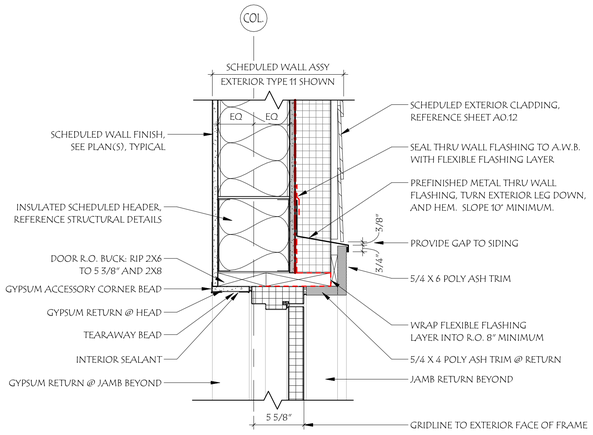
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DOOR SCHEDULE

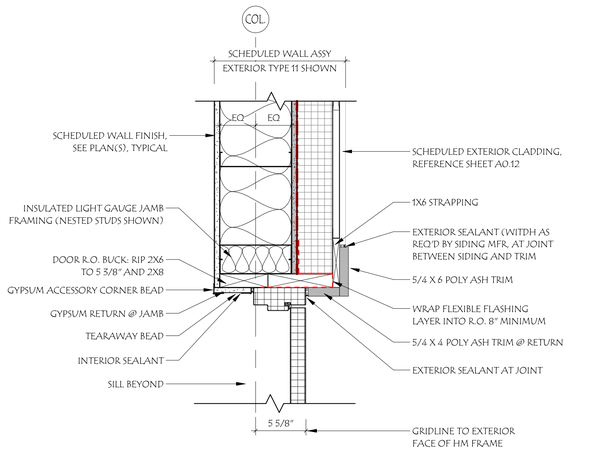
PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	DPR
DRAWN BY:	RJH
SCALE:	1/4" = 1'-0"

A5.01

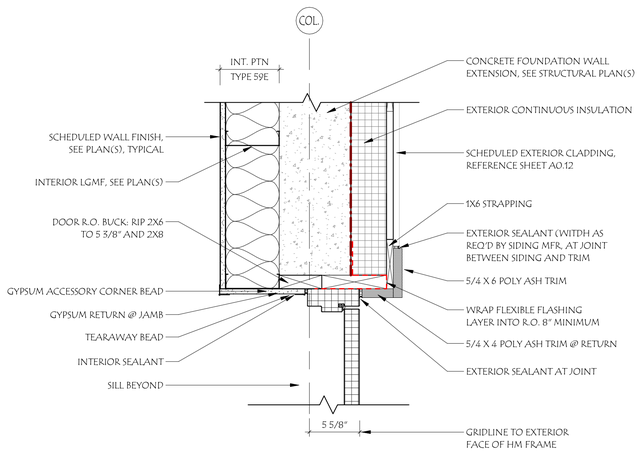
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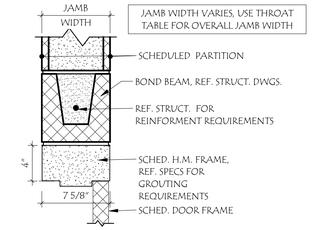
10A DOOR HEAD @ ADDITION SECURE ENTRY
A5.20 1 1/2" = 1'-0"



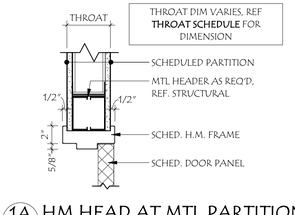
10B DOOR JAMB @ ADDITION SECURE ENTRY (AT FRAMING)
A5.20 1 1/2" = 1'-0"



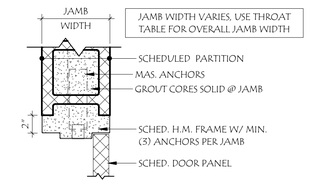
11B DOOR JAMB @ ADDITION SECURE ENTRY (AT CONCRETE)
A5.20 1 1/2" = 1'-0"



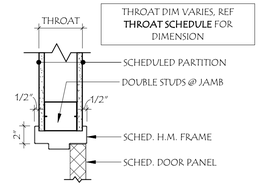
3A HM HEAD AT CMU PARTITION
A5.20 1 1/2" = 1'-0"



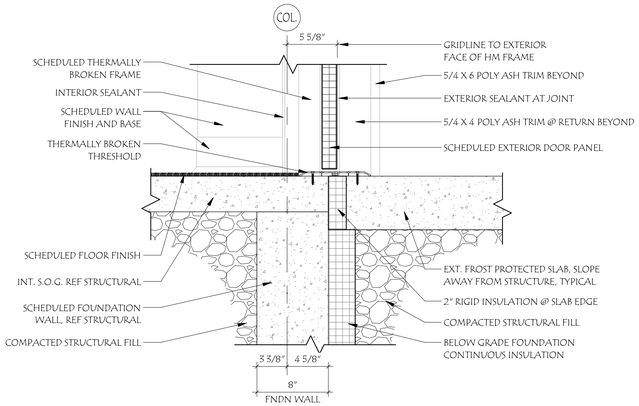
1A HM HEAD AT MTL PARTITION
A5.20 1 1/2" = 1'-0"



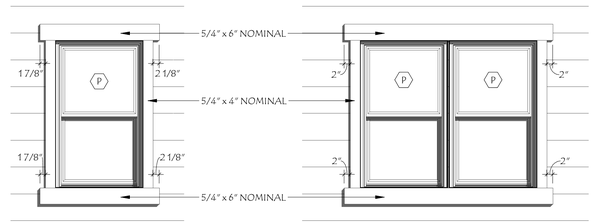
3B HM JAMB AT CMU PARTITION
A5.20 1 1/2" = 1'-0"



1B HM JAMB AT MTL PARTITION
A5.20 1 1/2" = 1'-0"

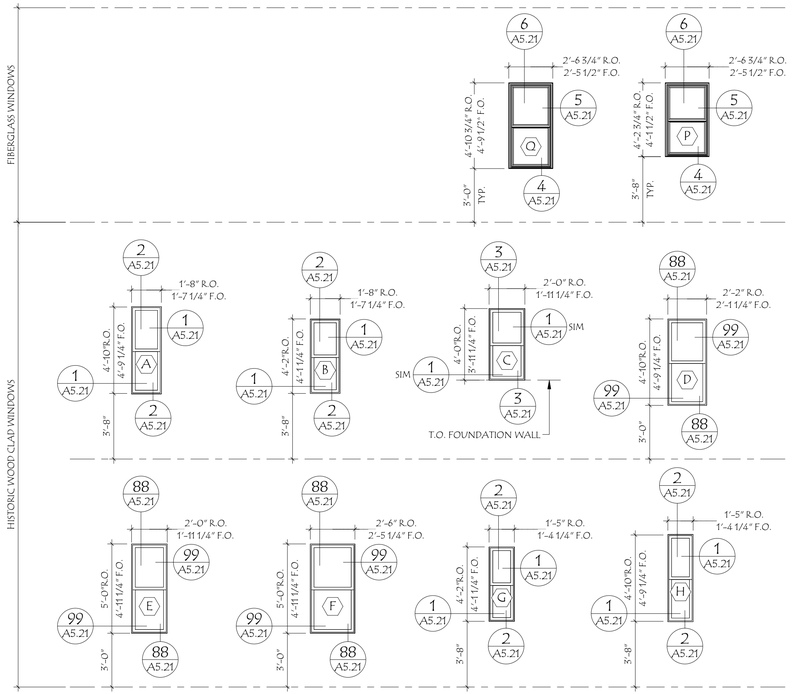


10C DOOR SILL @ ADDITION SECURE ENTRY
A5.20 1 1/2" = 1'-0"



1 WINDOW TRIM DETAIL
A5.20 1/2" = 1'-0"

2 WINDOW TRIM DETAIL
A5.20 1/2" = 1'-0"



WINDOW LEGEND
1/4" = 1'-0"

NOTE:
CONTRACTOR TO FIELD VERIFY ALL WINDOW OPENINGS PRIOR TO ORDERING OF WINDOWS.

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VERMONT

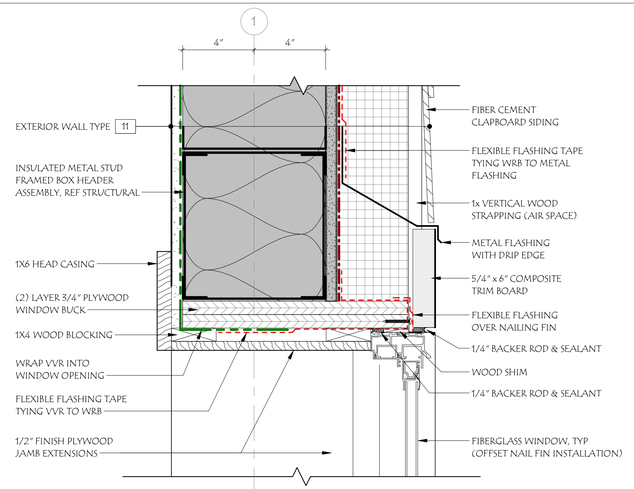
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DOOR DETAILS

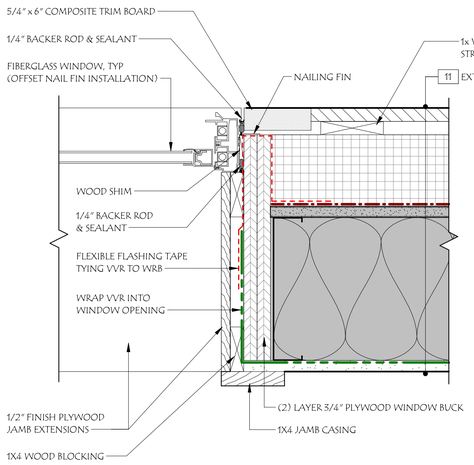
PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	Checker
DRAWN BY:	Author
SCALE:	As indicated

A5.20

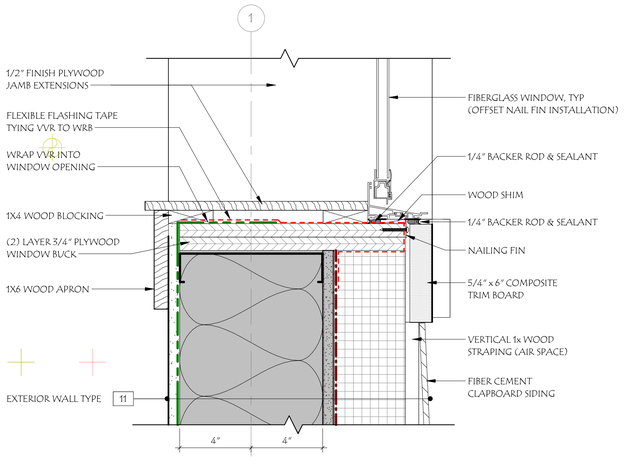
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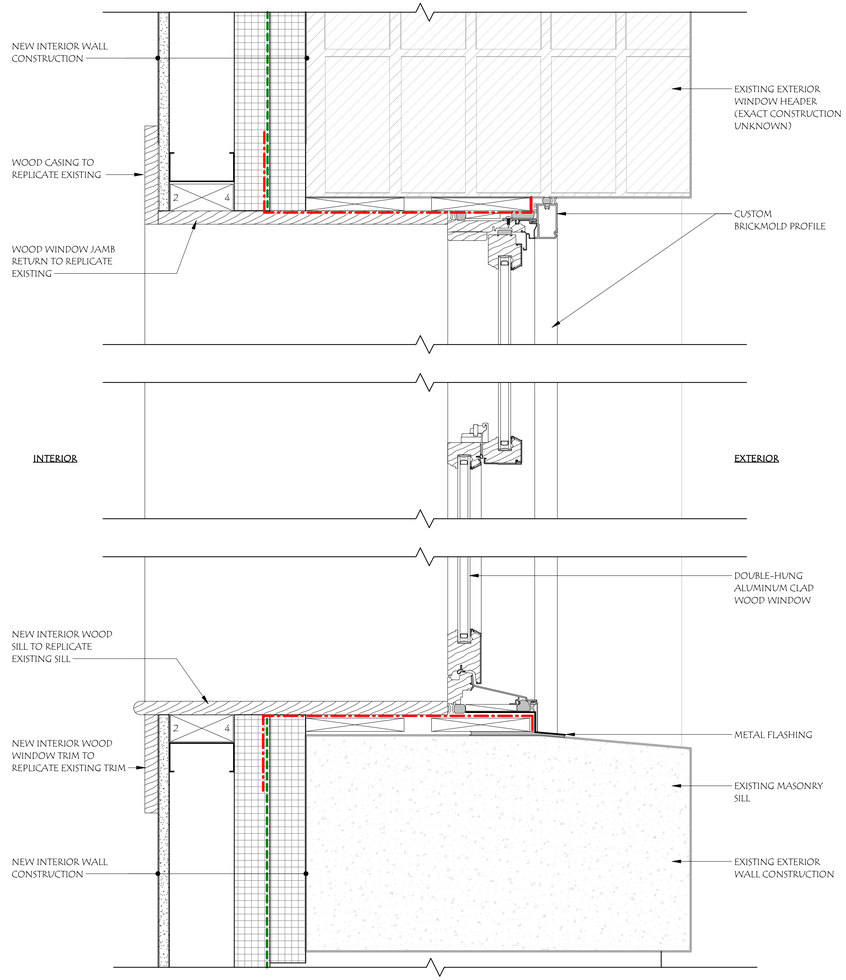
6 A5.21 DETAIL @ ADDITION WINDOW HEAD
3" = 1'-0"



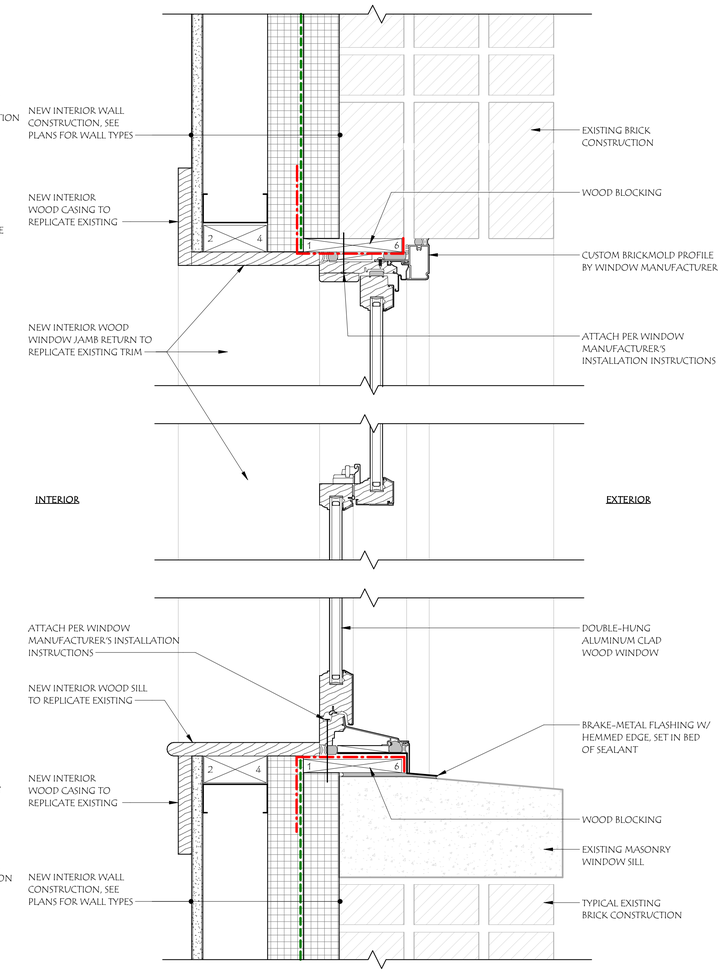
5 A5.21 DETAIL @ ADDITION WINDOW JAMB
3" = 1'-0"



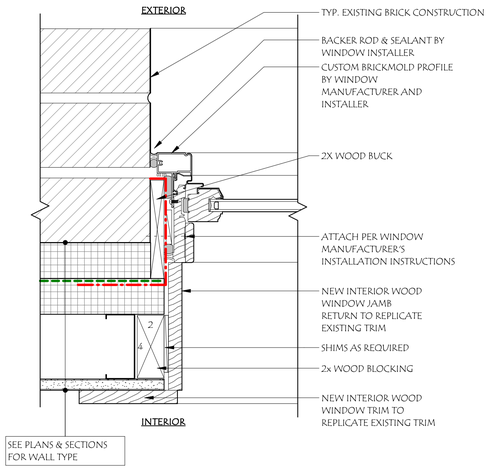
4 A5.21 DETAIL @ ADDITION WINDOW SILL
3" = 1'-0"



3 A5.21 WINDOW SILL / HEAD @ EXISTING FOUNDATION WALL
3" = 1'-0"



2 A5.21 WINDOW SILL / HEAD @ EXISTING WALL
3" = 1'-0"



1 A5.21 WINDOW JAMB @ EXISTING WALL
3" = 1'-0"

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VERMONT

N

WINDOW DETAILS

PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	DPR
DRAWN BY:	RJH
SCALE:	3" = 1'-0"

A5.21

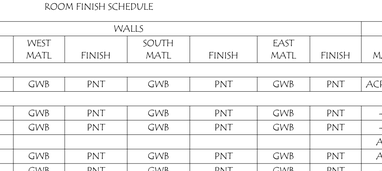
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ROOM FINISH SCHEDULE

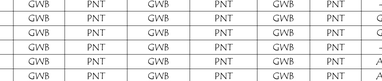
ROOM #	ROOM NAME	FLOORS MATL	FLOORS FINISH	FLOORS BASE MATL	WALLS NORTH MATL	WALLS NORTH FINISH	WALLS WEST MATL	WALLS WEST FINISH	WALLS SOUTH MATL	WALLS SOUTH FINISH	WALLS EAST MATL	WALLS EAST FINISH	CEILING MATL	CEILING FINISH	REMARKS / NOTES
208	MEETING SPACE	CONC	CPT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	ACP/WD	FF	
002	SECURE ENTRY	CONC	SEAL		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	---	---	
005	STAIR 2	CONC	RBR		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	---	---	
004	ELEVATOR												ACP	FF	
005	CORRIDOR	CONC	LVT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	ACP	FF	
006	STAIR 1	CONC	RBR		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	---	---	
007	EMR	CONC	SEAL		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	---	---	
008	CHANGING ROOM	CONC	PT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP	FF	
009	STAFF TOILET	CONC	PT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP	FF	
010	MECHANICAL / ELECTRICAL	CONC	SEAL		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	---	---	
011	LOCKER ROOM	CONC	LVT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	ACP	FF	
012	CORRIDOR	CONC	LVT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	ACP	FF	
013	CLOSET	CONC	LVT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	ACP	FF	
014	TEMP EVIDENCE	CONC	LVT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	---	---	
015	SECURE INTERVIEW	CONC	LVT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP	FF	
016	EVIDENCE	CONC	LVT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	---	---	
017	PROCESSING	CONC	EPY		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP	FF	
018	HOLDING	CONC	EPY		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP	FF	
019	HOLDING	CONC	EPY		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP	FF	
020	ELEVATOR LOBBY														
022	CLOSET	CONC	LVT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	ACP	FF	
001	VESTIBULE	CONC	SEAL		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	ACP	FF	
101	PUBLIC LOBBY	CONC	LVT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	ACP/WD	FF	
102	EOC / TRAINING ROOM	CONC	CPT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP/ACP	FF	
102A	TRAINING STORAGE	CONC	CPT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP/ACP	FF	
103	CORR	CONC	CPT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	---	---	
104	INTERVIEW	CONC	CPT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	ACP	FF	
105	PATROL ROOM	CONC	CPT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	---	---	
106	STAIR 1	CONC	RBR		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	---	---	
107	PUBLIC TOILET	CONC	PT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP	FF	
108	ELEV LOBBY	CONC	LVT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	ACP	FF	
109	ELEVATOR												ACP	FF	
110	STAIR 2	CONC	RBR		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	---	---	
115	COMMS/EQUIP	CONC	CPT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	---	---	
201	STAIR 2	CONC	RBR		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP	FF	
202	STORAGE	CONC	SEAL		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	---	---	
203	ELEVATOR												ACP	FF	
204	LOBBY	CONC	LVT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	ACT	FF	
205	STAIR 1	CONC	RBR		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP	FF	
206	CORRIDOR	CONC	LVT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	ACP	FF	
207	ARMORY	CONC	LVT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP	FF	
208	CORR	GWB	PNT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	ACP	FF	
209	CHIEF'S OFFICE	CONC	CPT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP	FF	
210	CAPTAIN'S OFFICE	CONC	CPT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP	FF	
211	STAFF TOILET	CONC	PT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP	FF	
212	DISPATCH MGR	CONC	LVT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	ACP	FF	
213	EQUIP STORAGE	CONC	LVT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	ACP	FF	
214	DISPATCH	CONC	CPT		GWB	PNT	GWB	PNT	GWB	PNT	GWB	PNT	GYP	FF	
216	ELEVATOR LOBBY														
217	CLOSET														

MATERIALS ABBV. SCHEDULE

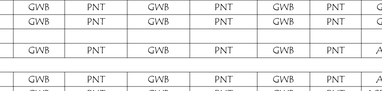
ABBV.	DESCRIPTION
ACP	ACOUSTICAL CEILING PANEL
CONC	CONCRETE
CPT	CARPET
CT	CERAMIC TILE
EPY	EPOXY FLOORING
FF	FACTORY FINISH
FRP	FIBERGLASS REINFORCED PLASTIC
GWB	GYPSUM WALL BOARD
LVS	LUXURY VINYL SHEET
LVT	LUXURY VINYL TILE
MR GWB	MOISTURE RESISTANT GYPSUM WALL BOARD
N/A	NOT APPLICABLE
PLY	PLYWOOD
PNT	PAINT
PT	PORCELAIN TILE
QT	QUARRY TILE
RB	RESILIENT BASE
RBR	RUBBER TILE
SEAL	CONCRETE SEALER
SPFL	SPECIALTY FLOORING
VCT	VINYL COMPOSITION TILE
WB	WOOD BASE
WD	WOOD
WOM	WALK OFF MAT



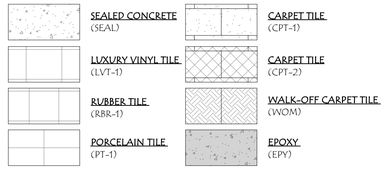
2 A6.01 TYPICAL CPT TO LAMINATE
3" = 1'-0"



3 A6.01 TYPICAL LAMINATE TO SUBFLOOR
3" = 1'-0"



4 A6.01 TYPICAL TILE TO LAMINATE
3" = 1'-0"



FLOOR FINISH KEY
1/4" = 1'-0"



1. SEE FINISH FLOOR PLANS FOR ADDITIONAL WALL & FLOOR FINISH INFORMATION & LOCATIONS
2. SEE REFLECTED CEILING PLANS FOR ADDITIONAL CEILING INFORMATION.
3. PROVIDE MOISTURE RESISTANT GYP BD IN ALL TOILET & BATHROOMS.

FINISH SCHEDULE NOTES
1/4" = 1'-0"

	TAG	DESCRIPTION
	PNT-1	FIELD PAINT COLOR - BM STONINGTON GRAY
	PNT-2	ACCENT PAINT COLOR - BM LAFAYETTE GREEN
	PNT-3	ACCENT PAINT COLOR - BM NEWBURG GREEN
	WP-1	PVC WALL PROTECTION - ALTRO FORTIS TITANIUM (GRANITE)

WALL FINISH KEY
1/4" = 1'-0"

1 A6.01 FINISH FLOOR PLAN - BASEMENT
1/4" = 1'-0"

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VERMONT

FINISH SCHEDULE & PLAN

PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	DPR
DRAWN BY:	RJH
SCALE:	As indicated

A6.01

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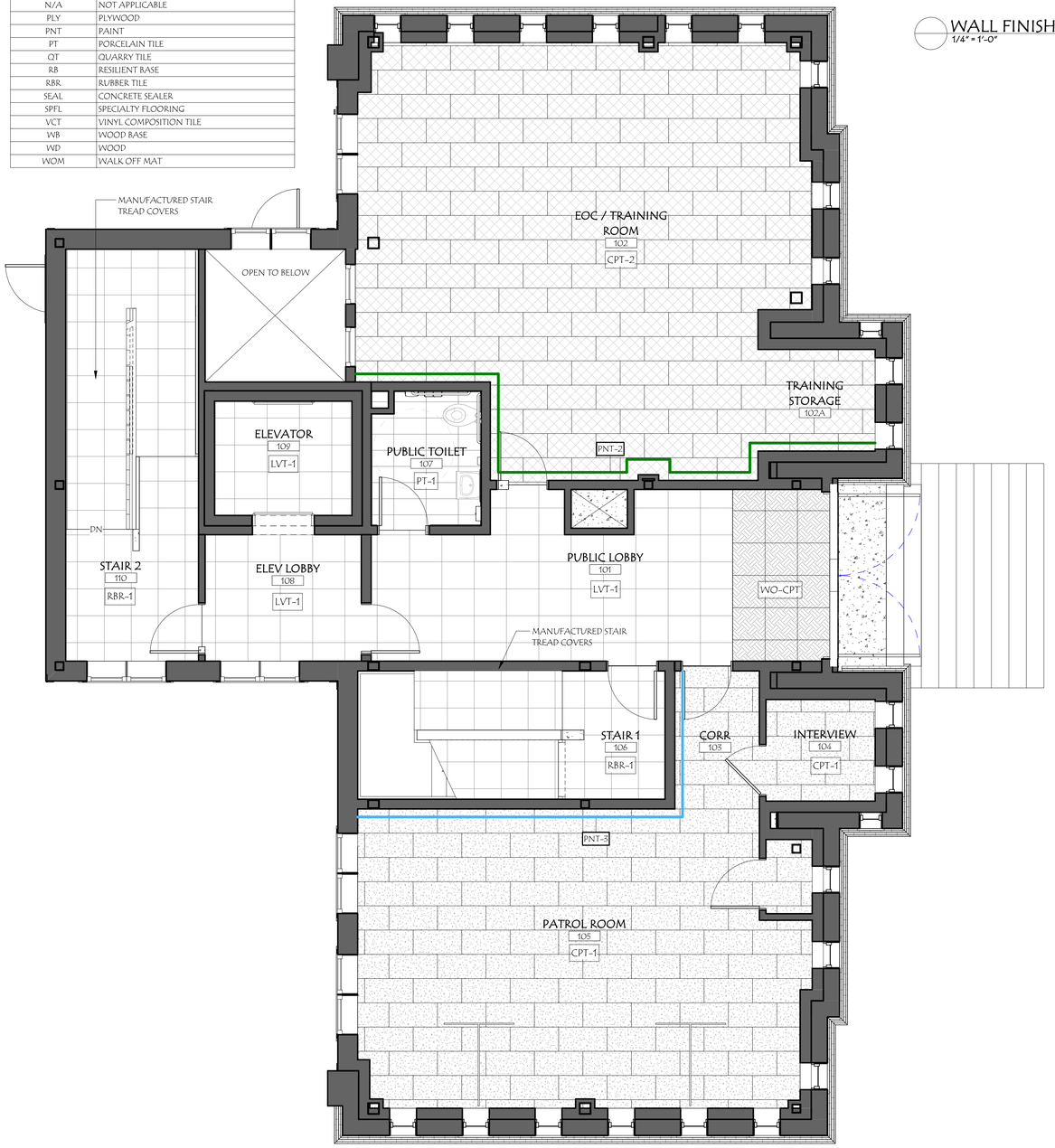
MATERIALS ABBV. SCHEDULE	
ABBV.	DESCRIPTION
ACP	ACOUSTICAL CEILING PANEL
CONC	CONCRETE
CPT	CARPET
CT	CERAMIC TILE
EPY	EPOXY FLOORING
FF	FACTORY FINISH
FRP	FIBERGLASS REINFORCED PLASTIC
GWB	GYPSUM WALL BOARD
LVS	LUXURY VINYL SHEET
LVT	LUXURY VINYL TILE
MR GWB	MOISTURE RESISTANT GYPSUM WALL BOARD
N/A	NOT APPLICABLE
PLY	PLYWOOD
PNT	PAINT
PT	PORCELAIN TILE
QT	QUARRY TILE
RB	RESILIENT BASE
RBR	RUBBER TILE
SEAL	CONCRETE SEALER
SPFL	SPECIALTY FLOORING
VCT	VINYL COMPOSITION TILE
WB	WOOD BASE
WD	WOOD
WOM	WALK OFF MAT

	TAG	DESCRIPTION
	PNT-1	FIELD PAINT COLOR - BM STONINGTON GRAY
	PNT-2	ACCENT PAINT COLOR - BM LAFAYETTE GREEN
	PNT-3	ACCENT PAINT COLOR - BM NEWBURG GREEN
	WP-1	PVC WALL PROTECTION - ALTRO FORTIS TITANIUM (GRANITE)

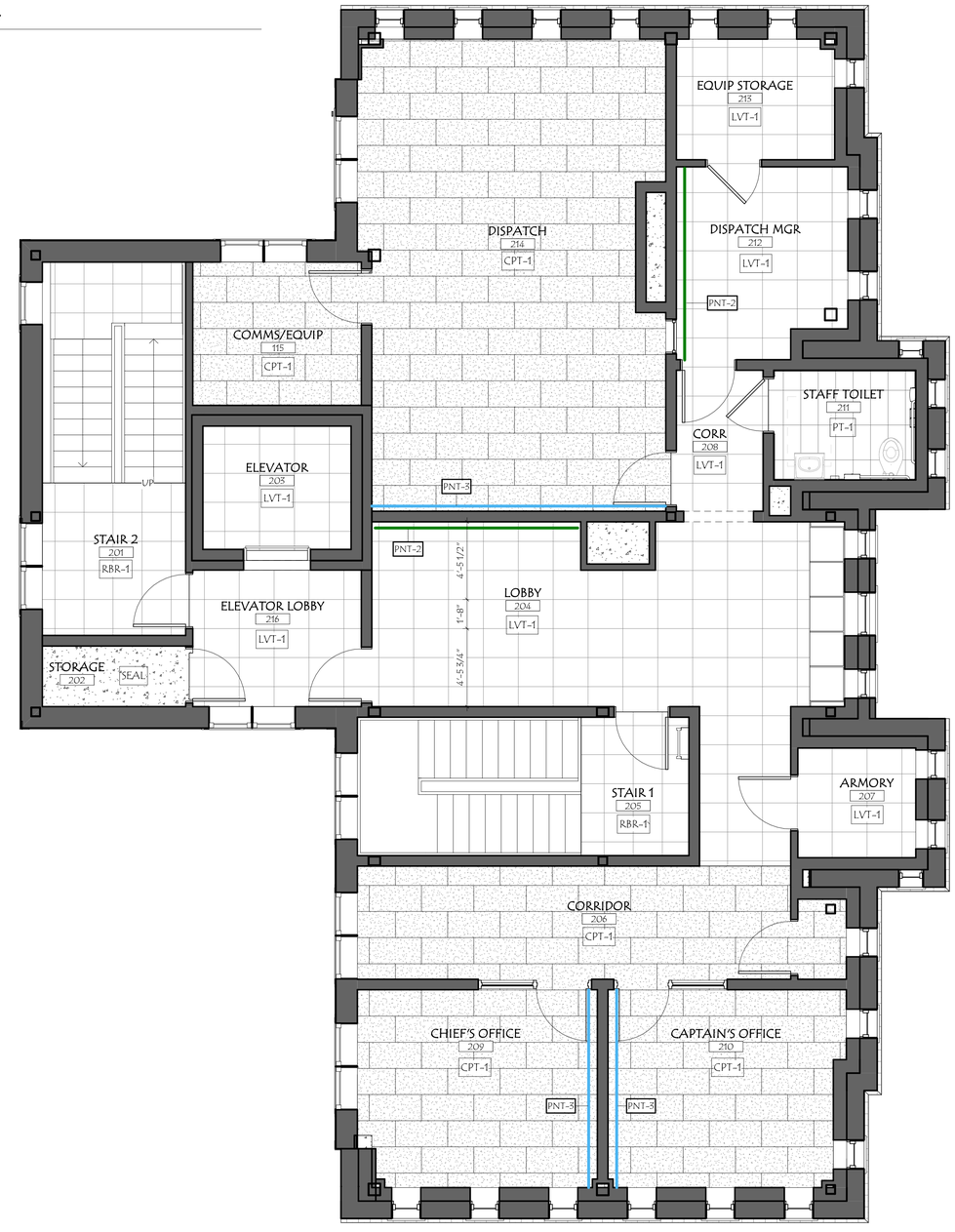
WALL FINISH KEY
1/4" = 1'-0"

- SEALED CONCRETE (SEAL)
- LUXURY VINYL TILE (LVT-1)
- RUBBER TILE (RBR-1)
- PORCELAIN TILE (PT-1)
- CARPET TILE (CPT-1)
- CARPET TILE (CPT-2)
- WALK-OFF CARPET TILE (WOM)
- EPOXY (EPY)

FLOOR FINISH KEY
1/4" = 1'-0"



1 A6.02 FINISH FLOOR PLAN - LEVEL 1
1/4" = 1'-0"



2 A6.02 FINISH FLOOR PLAN - LEVEL 2
1/4" = 1'-0"

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#	DATE	REVISION DESCRIPTION

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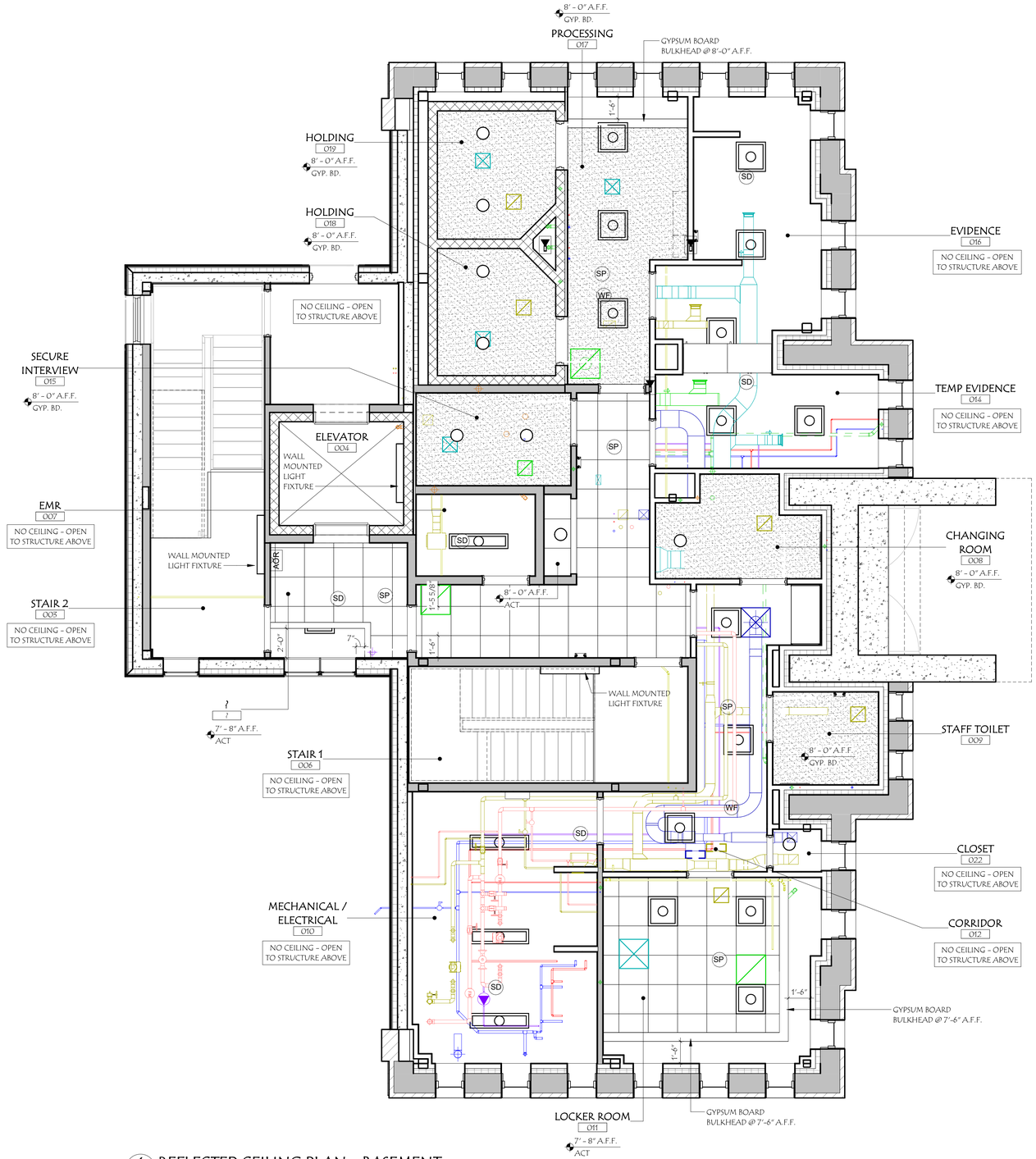
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FLOOR FINISH PLANS

PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	DPR
DRAWN BY:	RJH
SCALE:	1/4" = 1'-0"

A6.02

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1 A7.01 REFLECTED CEILING PLAN - BASEMENT
1/4" = 1'-0"

2' X 4' SUSPENDED ACP TILE
2' X 2' SUSPENDED ACP TILE
GYPSUM BOARD CEILING
Name / Elevation — HEIGHT A.F.F. INDICATOR
SKYLIGHT
RECESSED LIGHT FIXTURE
SURFACE MOUNTED LIGHT FIXTURE
PENDANT LIGHT FIXTURE
SPRINKLER HEAD
RECESSED GRID LIGHT FIXTURE
SUPPLY AIR DIFFUSER
RETURN AIR GRILLE

NOTES:
1. REFER TO ENLARGED REFLECTED CEILING PLANS FOR ADDITIONAL INFORMATION.
2. ALL CEILING MOUNTED MECHANICAL, ELECTRICAL, AND FIRE PROTECTION ITEMS MAY NOT BE SHOWN, CONTRACTOR TO COORDINATE.
3. REFERENCE A9 DRAWINGS FOR GUEST ROOM CEILING ELEVATIONS.

RCP KEY LEGEND
1/4" = 1'-0"

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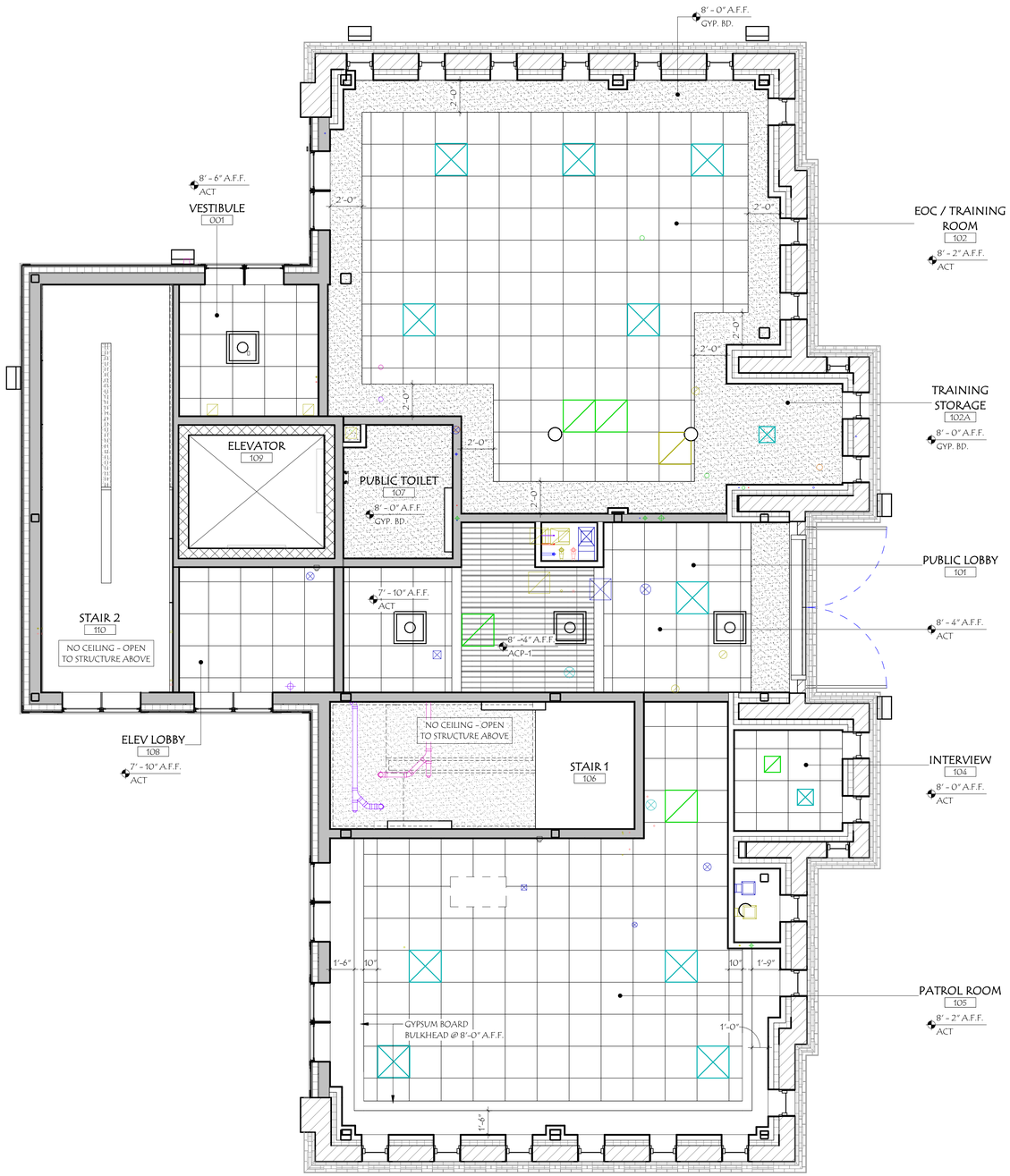
ST. JOHNSBURY, VERMONT

CEILING PLAN - BASEMENT

PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	DPR
DRAWN BY:	RJH
SCALE:	1/4" = 1'-0"

A7.01

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1 A7.02 REFLECTED CEILING PLAN - LEVEL 1
1/4" = 1'-0"

	2' X 4' SUSPENDED ACP TILE
	2' X 2' SUSPENDED ACP TILE
	GYPSUM BOARD CEILING
Name / Elevation	HEIGHT A.F.F. INDICATOR
	SKYLIGHT
	RECESSED LIGHT FIXTURE
	SURFACE MOUNTED LIGHT FIXTURE
	PENDANT LIGHT FIXTURE
	SPRINKLER HEAD
	RECESSED GRID LIGHT FIXTURE
	SUPPLY AIR DIFFUSER
	RETURN AIR GRILLE

NOTES:
1. REFER TO ENLARGED REFLECTED CEILING PLANS FOR ADDITIONAL INFORMATION.

2. ALL CEILING MOUNTED MECHANICAL, ELECTRICAL, AND FIRE PROTECTION ITEMS MAY NOT BE SHOWN, CONTRACTOR TO COORDINATE.

3. REFERENCE A9 DRAWINGS FOR GUEST ROOM CEILING ELEVATIONS.

RCP KEY LEGEND
1/4" = 1'-0"

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PUBLIC SAFETY FACILITY

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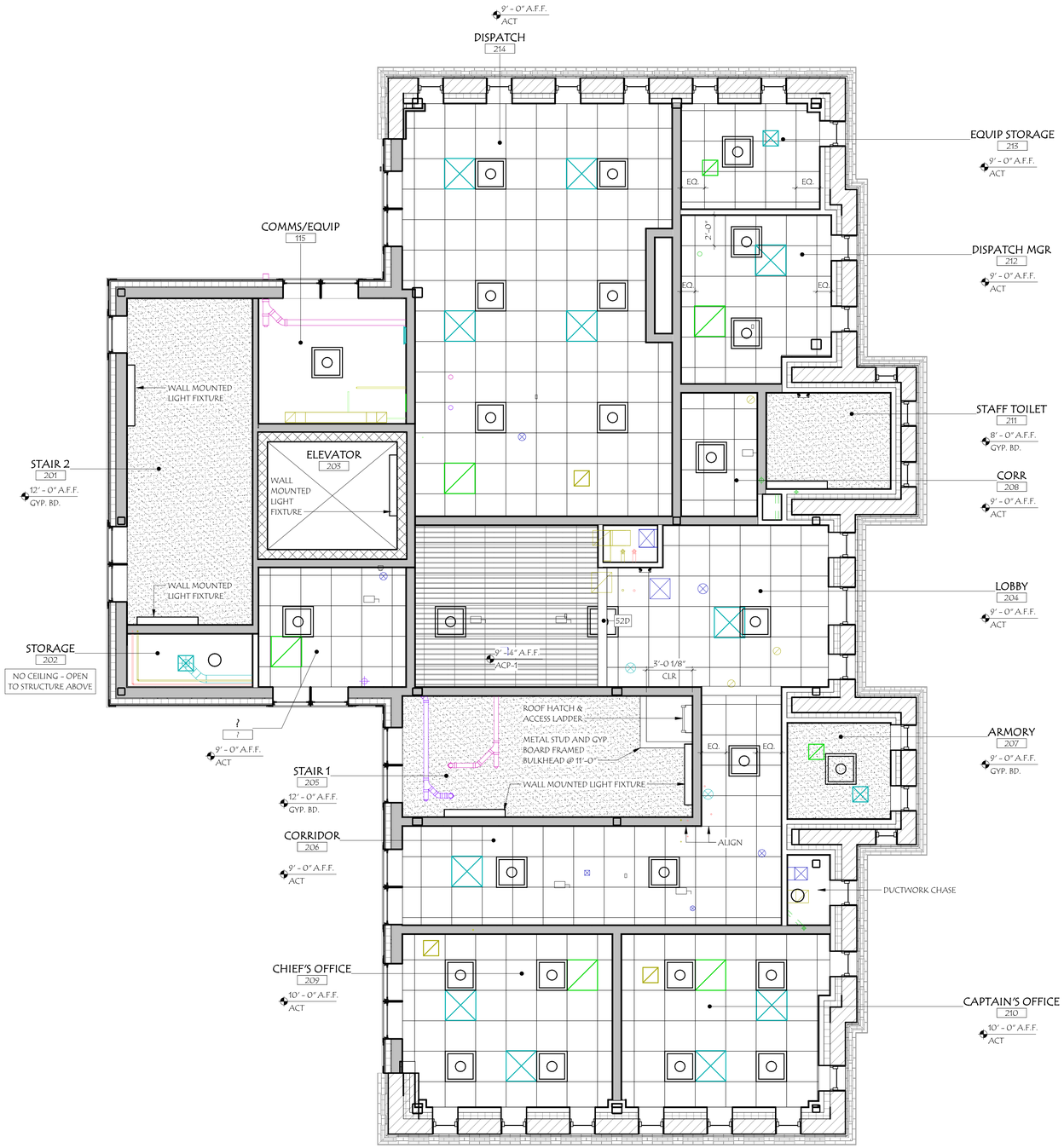
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CEILING PLAN - LEVEL 1

PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	DPR
DRAWN BY:	RJH
SCALE:	1/4" = 1'-0"

A7.02

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1 REFLECTED CEILING PLAN - LEVEL 2
A7.03 1/4" = 1'-0"

2' X 4' SUSPENDED ACP TILE
2' X 2' SUSPENDED ACP TILE
GYPSUM BOARD CEILING
Name / Elevation — HEIGHT A.F.F. INDICATOR
SKYLIGHT
RECESSED LIGHT FIXTURE
SURFACE MOUNTED LIGHT FIXTURE
PENDANT LIGHT FIXTURE
SPRINKLER HEAD
RECESSED GRID LIGHT FIXTURE
SUPPLY AIR DIFFUSER
RETURN AIR GRILLE

NOTES:
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3. REFERENCE A9 DRAWINGS FOR GUEST ROOM CEILING ELEVATIONS.

RCP KEY LEGEND
1/4" = 1'-0"

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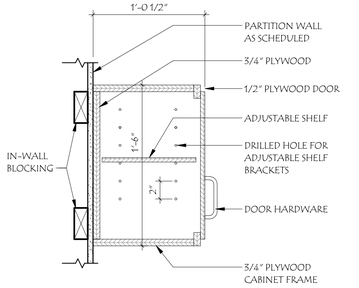
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CEILING PLAN - LEVEL 2

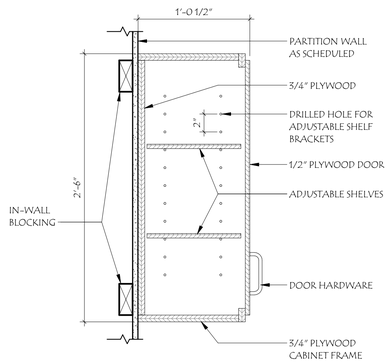
PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	DPR
DRAWN BY:	RJH
SCALE:	1/4" = 1'-0"

A7.03

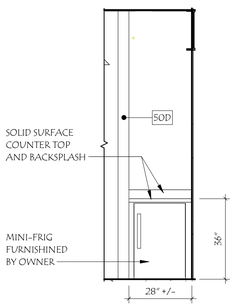
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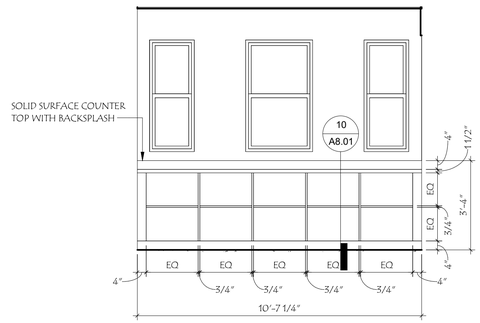
12 A8.01 WALL CABINET - MEDIUM
1 1/2" = 1'-0"



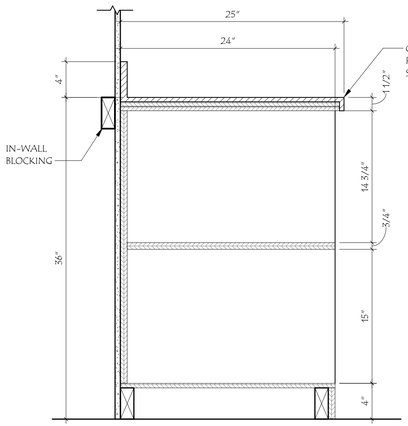
11 A8.01 WALL CABINET - TYP
1 1/2" = 1'-0"



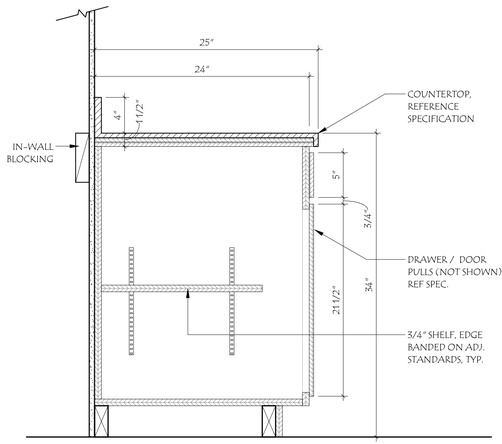
5 EVIDENCE STORAGE
3/8" = 1'-0"



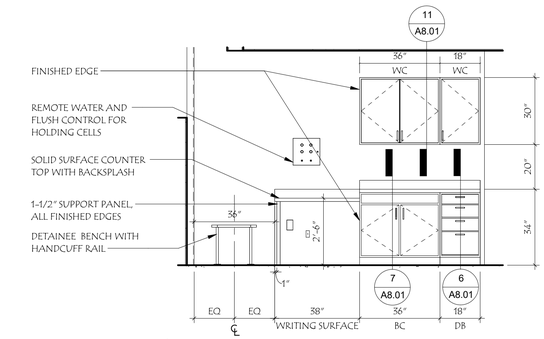
4 CUBBIES ELEVATION
3/8" = 1'-0"



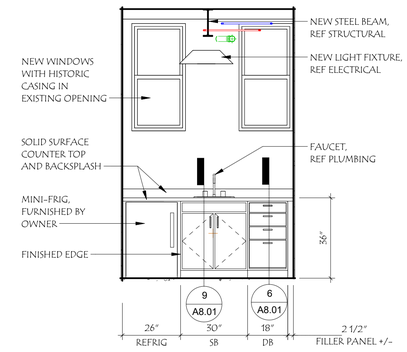
10 A8.01 CUBBIES TYPICAL DETAIL
1 1/2" = 1'-0"



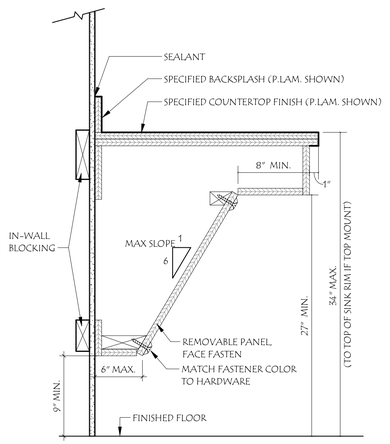
9 A8.01 BASE CABINET SECTION DETAIL WITH DOOR AND SINK
1 1/2" = 1'-0"



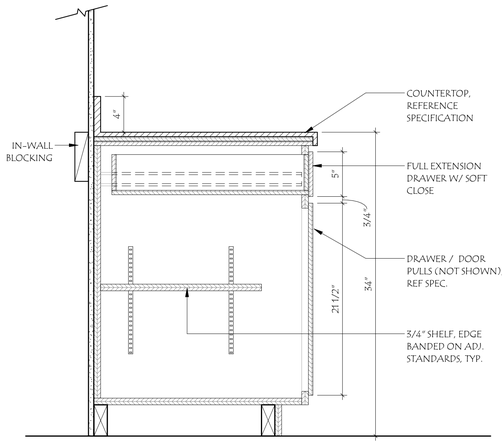
3 PROCESSING - CASEWORK ELEVATION
3/8" = 1'-0"



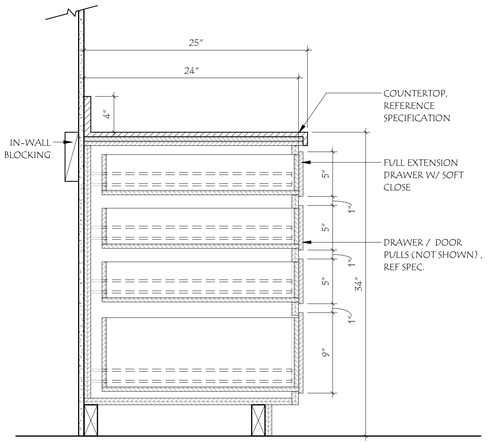
2 TEMP EVIDENCE MILLWORK
3/8" = 1'-0"



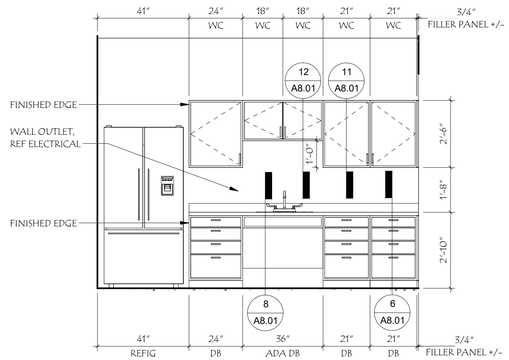
8 A8.01 TYPICAL ACCESSIBLE SINK BASE
1 1/2" = 1'-0"



7 A8.01 BASE CABINET SECTION DETAIL WITH DOOR
1 1/2" = 1'-0"



6 A8.01 BASE CABINET SECTION DETAIL WITH DRAWERS
1 1/2" = 1'-0"



1 KITCHENETTE - CASEWORK ELEVATION
3/8" = 1'-0"

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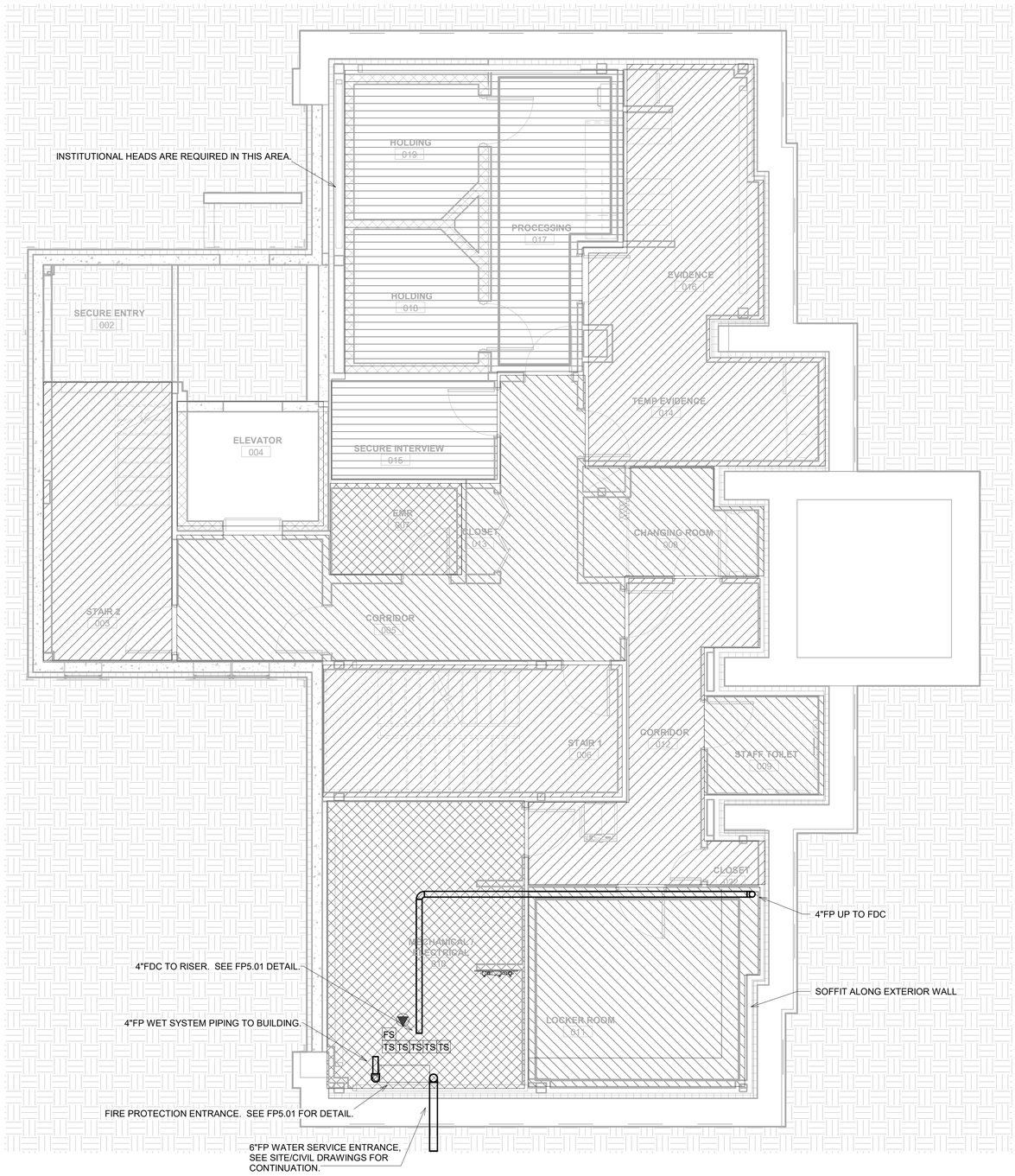
ST. JOHNSBURY, VERMONT

MILLWORK

PROJECT NO:	2021050
DATE:	02/07/2025
CHECKED BY:	DPR
DRAWN BY:	RJH
SCALE:	As indicated

A8.01

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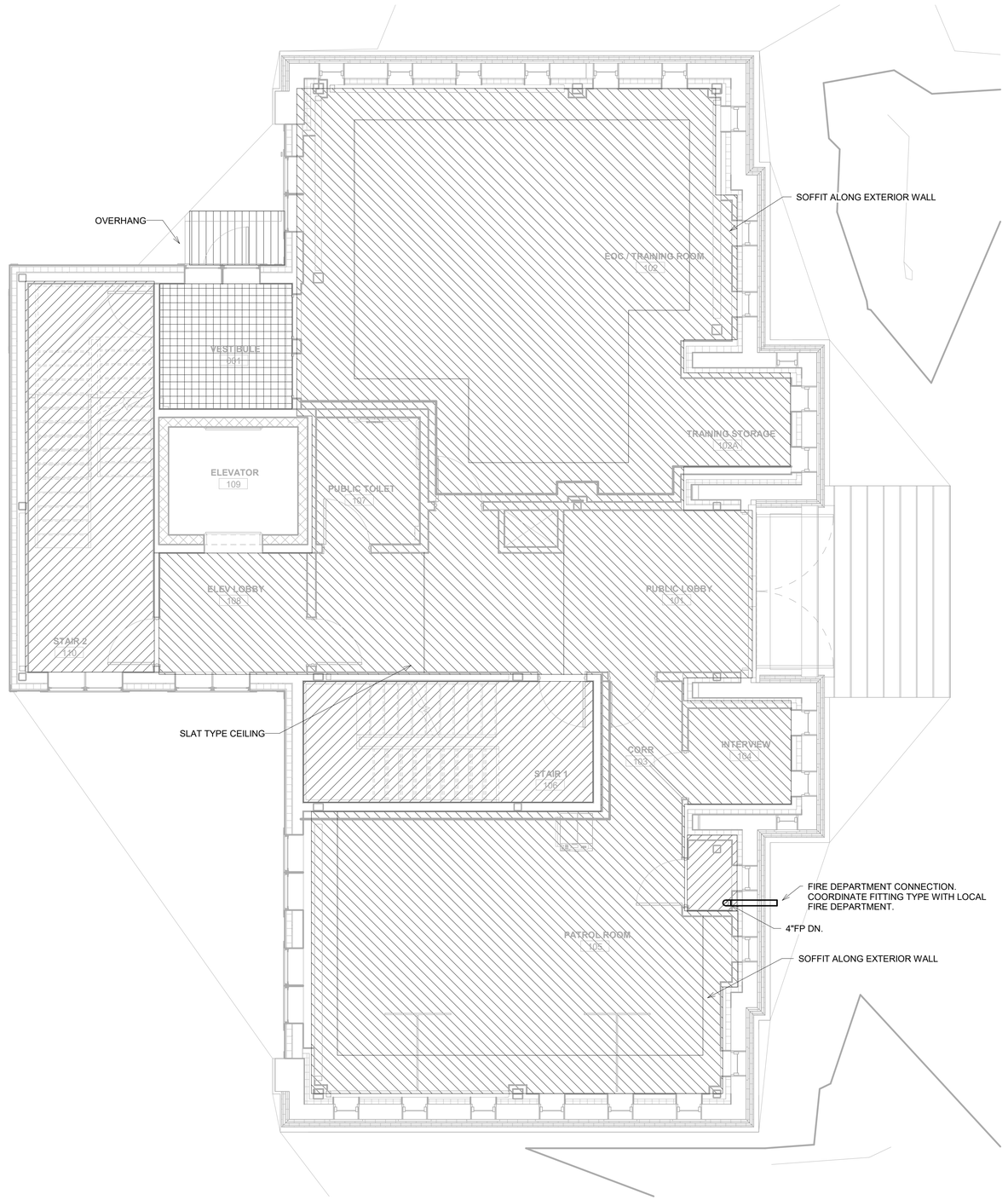
PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

BASEMENT - FIRE PROTECTION PROPOSED PLAN

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

FP1.0



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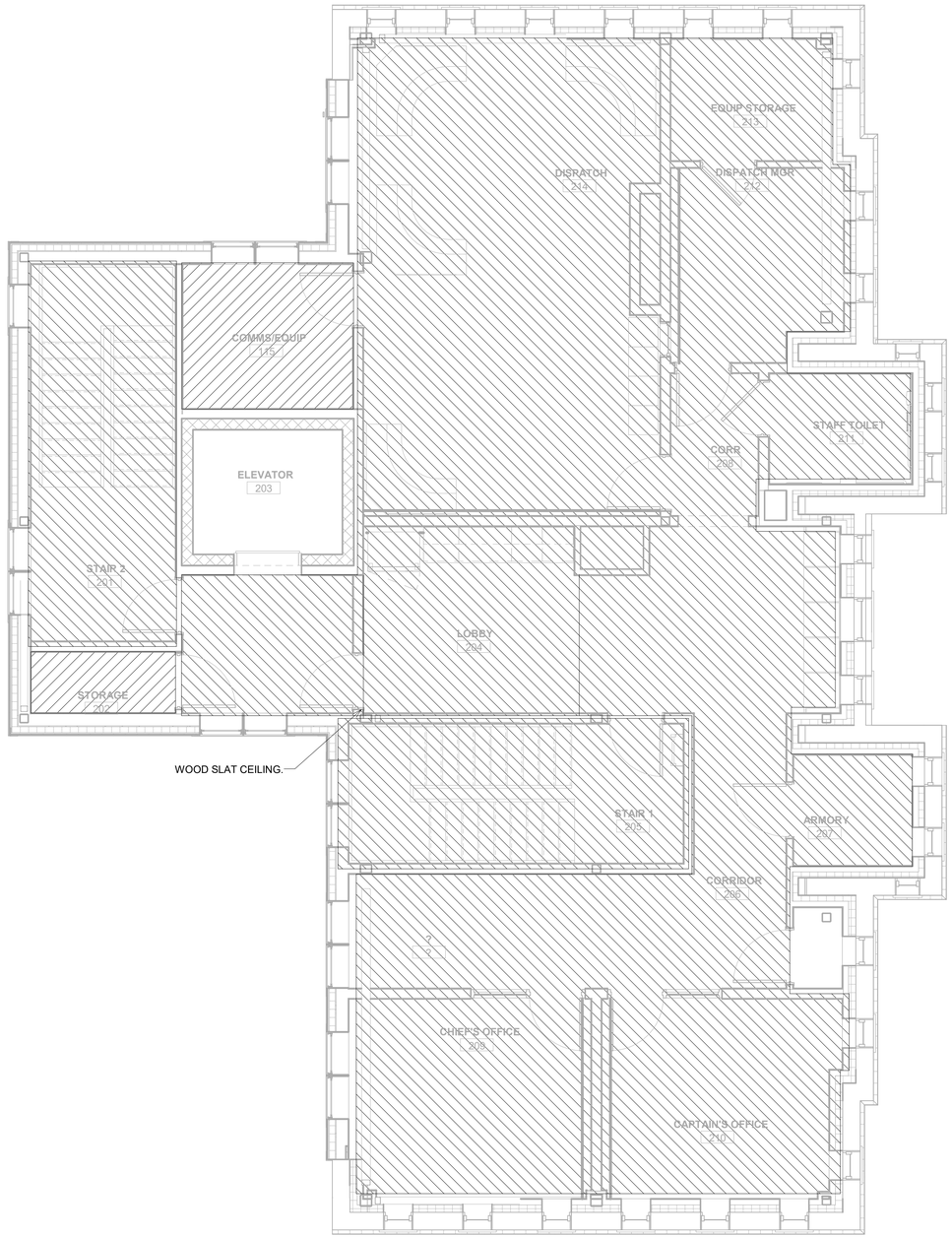
PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

LEVEL 1 - FIRE PROTECTION PROPOSED PLAN

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

FP1.1



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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

N

LEVEL 2 - FIRE PROTECTION PROPOSED PLAN

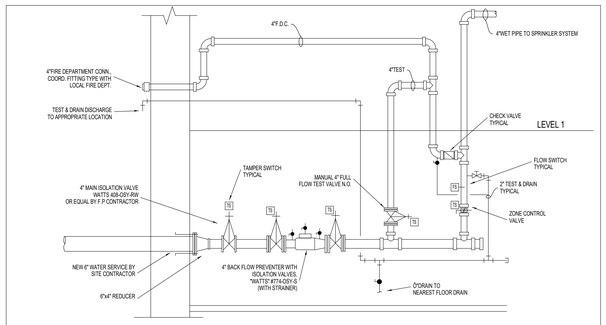
PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

FP1.2

FIRE PROTECTION COVERAGE LEGEND

HATCH PATTERN	DESCRIPTION
	PROVIDE LIGHT HAZARD WET FIRE PROTECTION SPRINKLER SYSTEM. ALL PIPING TO BE RUN CONCEALED ABOVE THE CEILING. SPRINKLER HEADS TO BE QUICK RESPONSE CONCEALED TYPE. SEE ARCHITECTURAL PLANS AND SECTIONS FOR CEILING TYPES AND CEILING HEIGHTS, INCLUDING SOFFITS ETC. CONCEALED SPRINKLER HEAD COLOR TO BE PER THE ARCHITECT. DENSITY: 0.10 GPM/1500 SQFT + 100 GPM HOSE
	EXPOSED (NO CEILING) FIRE PROTECTION COVERAGE - PROVIDE ORDINARY HAZARD WET FIRE PROTECTION SPRINKLER SYSTEM COVERAGE FOR ALL SPACES. PIPING MAY BE EXPOSED WITHIN THE SPACES. ALL PIPING TO BE RUN TO PROVIDE MAXIMUM SPACE FOR PERSONNEL TO WALK THROUGH THE AREA (AS HIGH AS POSSIBLE). SPRINKLER HEADS TO BE UPRIGHT QUICK RESPONSE TYPE. SEE ARCHITECTURAL PLANS AND SECTIONS FOR CEILING TYPES AND CEILING HEIGHTS, INCLUDING SOFFITS ETC. SPRINKLER HEAD COLOR TO BE PER THE ARCHITECT. DENSITY: 0.15 GPM/1500 SQFT + 250 GPM HOSE
	EXPOSED (NO CEILING) FIRE PROTECTION COVERAGE - PROVIDE LIGHT HAZARD WET FIRE PROTECTION SPRINKLER SYSTEM COVERAGE FOR ALL SPACES. PIPING MAY BE EXPOSED WITHIN THE SPACES. ALL PIPING TO BE RUN TO PROVIDE MAXIMUM SPACE FOR PERSONNEL TO WALK THROUGH THE AREA (AS HIGH AS POSSIBLE). SPRINKLER HEADS TO BE UPRIGHT QUICK RESPONSE TYPE. SEE ARCHITECTURAL PLANS AND SECTIONS FOR CEILING TYPES AND CEILING HEIGHTS, INCLUDING SOFFITS ETC. SPRINKLER HEAD COLOR TO BE PER THE ARCHITECT. DENSITY: 0.10 GPM/1500 SQFT + 100 GPM HOSE
	PROVIDE LIGHT HAZARD WET FIRE PROTECTION SPRINKLER SYSTEM. ALL PIPING IS TO BE RUN CONCEALED ABOVE THE CEILING. SPRINKLER HEADS ARE TO BE INSTITUTIONAL QUICK RESPONSE TYPE FOR HOLDING AREAS. THESE HEADS MUST BE LIGATURE RESISTANT TYPE. SEE ARCHITECTURAL PLANS AND SECTIONS FOR CEILING TYPES AND CEILING HEIGHTS, INCLUDING SOFFITS ETC. DENSITY: 0.10 GPM/1500 SQFT + 100 GPM HOSE
	PROVIDE LIGHT DRY PENDENT FIRE PROTECTION HEADS OFF OF THE WET SPRINKLER SYSTEM FOR ALL VESTIBULES. ALL PIPING TO BE RUN CONCEALED ABOVE THE CEILING. SPRINKLER HEADS TO BE QUICK RESPONSE CONCEALED TYPE. SEE ARCHITECTURAL PLANS AND SECTIONS FOR CEILING TYPES AND CEILING HEIGHTS, INCLUDING SOFFITS ETC. CONCEALED SPRINKLER HEAD COLOR TO BE PER THE ARCHITECT. DENSITY: 0.10 GPM/1500 SQFT + 100 GPM HOSE
	PROVIDE LIGHT DRY SIDEWALL FIRE PROTECTION HEADS OFF OF THE WET SPRINKLER SYSTEM FOR ALL OVERHANGS. ALL PIPING TO BE RUN CONCEALED ABOVE THE CEILING. SPRINKLER HEADS TO BE QUICK RESPONSE CONCEALED TYPE. SEE ARCHITECTURAL PLANS AND SECTIONS FOR CEILING TYPES AND CEILING HEIGHTS, INCLUDING SOFFITS ETC. CONCEALED SPRINKLER HEAD COLOR TO BE PER THE ARCHITECT. DENSITY: 0.10 GPM/1500 SQFT + 100 GPM HOSE

NOTES:
1. DENSITY AREA PERMITTED TO BE ADJUSTED AS PER NFPA 13 WITH THE USE OF QUICK RESPONSE SPRINKLER HEADS.
2. SPRINKLER HEADS WITHIN DETENTION OCCUPANCY SPACE SHALL BE RECESSED, LIGATURE RESISTANT AND VANDAL RESISTANT TYPE.



NOTES:
1. THE FIRE DEPARTMENT CONNECTION AND TEST AND DRAIN IN THE MAIN BUILDING IS LOCATED ON THE LEVEL ABOVE. COORDINATE EXACT FLOOR PENETRATION LOCATION WITH ARCHITECTURAL PLANS. COORDINATE FIRE DEPARTMENT CONNECTION LOCATION WITH LOCAL FIRE DEPARTMENT.
2. BOTH BACKFLOW PREVENTERS ARE TO BE INSTALLED IN THE VERTICAL TO CONSERVE SPACE.
3. FIRE PROTECTION ENTRANCE TO BE INSTALLED IN THE VERTICAL TO CONSERVE SPACE. SHOWN HORIZONTALLY HERE FOR CLARIFICATION ONLY.

1 FIRE PROTECTION SERVICE ENTRANCE DIAGRAM
N.T.S.

O & M MANUAL NOTES:

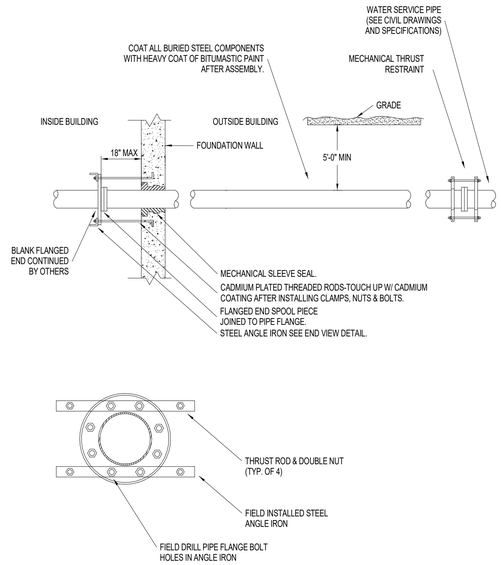
1. PROVIDE OPERATING AND MAINTENANCE INFORMATION FOR ALL EQUIPMENT, DEVICES, SYSTEMS, AND MATERIALS. THIS SHALL INCLUDE ALL MAINTENANCE AND OPERATIONS PROCEDURES, RECOMMENDATIONS, AND SERVICE REQUIREMENTS. ALL SUBMITTED DATA MUST INCLUDE MINIMUM EQUIPMENT/DEVICE OPERATIONS AND MAINTENANCE REQUIREMENTS TO FULFILL MANUFACTURERS WARRANTIES.
2. SUBMIT ALL ENGINEERING SELECTION AND SPECIFICATION DOCUMENTATION WITH OPERATING AND MAINTENANCE INFORMATION FOR ALL EQUIPMENT, DEVICES, SYSTEMS, AND MATERIALS.
3. SUBMIT ALL DATA MEDIA IN A DETAILED, ORGANIZED, AND COMPLETE MANNER. PROVIDE ELECTRONIC COPY TO OWNERS CONSTRUCTION SUPERVISOR FOR ENGINEER/ARCHITECT REVIEW.

SEISMIC DESIGN AND CONSTRUCTION:

THIS IS AN ESSENTIAL FACILITY AND THE SPECIFICATIONS REQUIRE A SEISMIC DELEGATED DESIGN. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND CLARIFICATION.

FIRE PROTECTION LEGEND

TAG	DESCRIPTION
TS	TAMPER SWITCH
FS	FLOW SWITCH
PS	PRESSURE SWITCH
	CONCEALED TYPE PENDANT SPRINKLER HEAD. COLOR BY ARCHITECT.
	UPRIGHT SPRINKLER HEAD.
	PROVIDE SPRINKLER COVERAGE ABOVE AND BELOW CEILING.
	HORIZONTAL SIDEWALL SPRINKLER HEAD
	TIE INTO EXISTING
	GATE VALVE, INDICATING PER NFPA
	FULL PORT BALL VALVE
	PIPE CAP
	PIPE REDUCER
	FIRE DEPARTMENT CONNECTION. LOCATION AND STYLE PER LOCAL FIRE DEPARTMENT



2 FIRE PROTECTION WATER SERVICE THROUGH FOUNDATION WALL
N.T.S.

FIRE PROTECTION GENERAL NOTES:

1. FIRE PROTECTION SYSTEM AND SPRINKLER HEAD CONFIGURATION SHALL CONFORM TO CURRENT EDITION OF NFPA 13, AUTHORITY HAVING JURISDICTION, AND LOCAL BUILDING CODE.

2. ALL SPRINKLER HEADS INSTALLED SHALL BE QUICK RESPONSE, GB, T=150°F UNLESS OTHERWISE INDICATED. PROVIDE NEW QUICK RESPONSE SPRINKLER HEADS WHERE INDICATED AND AS NECESSARY. SPRINKLER HEAD COLOR AND FINISH SHALL BE SELECTED BY THE ARCHITECT, SUBMIT SAMPLES FOR APPROVAL.

3. ALL PIPING SHALL BE RUN CONCEALED WHERE POSSIBLE OR UNLESS OTHERWISE INDICATED. SEE ARCHITECTURAL PLANS AND SECTIONS FOR CEILING TYPES AND CEILING HEIGHTS INCLUDING SOFFITS ETC. COORDINATE ROUTING WITH STRUCTURAL PLANS.

4. THE FIRE PROTECTION DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO SHOW GENERAL PIPING LAYOUT AND HEAD LOCATIONS. ACTUAL BRANCH AND MAIN PIPE SIZING SHALL BE DETERMINED BY FIRE PROTECTION DESIGNER AND HYDRAULIC CALCULATIONS PRIOR TO BIDDING. THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR PROVIDING FIRE PROTECTION COVERAGE PER CURRENT EDITION OF NFPA 13 INCLUDING ALL CONCEALED SPACES WHERE APPLICABLE. THE FIRE PROTECTION CONTRACTOR SHALL REVIEW THE ARCHITECTURAL PLANS, SECTIONS, AND ELEVATIONS PRIOR TO SUBMITTALS. THESE DRAWINGS SHOULD NOT BE UTILIZED FOR FIRE PROTECTION DESIGN. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE SPRINKLER SYSTEM DESIGN, SPRINKLER HEAD LAYOUT, AND FLOW CALCULATIONS (HYDRAULIC DESIGN). ACTUAL PIPE SIZES SHALL BE DETERMINED BASED ON LAYOUT AND HYDRAULIC CALCULATIONS. THIS SHALL BE COMPLETED BY A NICET LEVEL THREE (3) CERTIFIED TECHNICIAN. SHOP DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL.

5. WHERE APPLICABLE, ALL NEW SPRINKLER HEAD INSTALLATIONS SHALL BE CENTERED IN CEILING TILE.

6. PROVIDE FIRE AND SMOKE PROOF CAULKING FOR ALL WALL PENETRATIONS. COORDINATE ALL FIRE AND SMOKE PROOFING WITH THE CONSTRUCTION SUPERVISOR.

7. PROVIDE SEISMIC BRACING FOR SPRINKLER PIPING INSTALLATION PER NFPA 13 AND INTERNATIONAL BUILDING CODE REQUIREMENTS.

8. COORDINATE FLOW AND TAMPER SWITCH QUANTITIES AND LOCATIONS WITH ELECTRICAL AND/OR FIRE ALARM CONTRACTORS.

9. ALL NEW SPRINKLER HEADS SHALL HAVE REMOVABLE ESCUTCHEONS TO ALLOW CEILING TILE REPLACEMENT.

10. PROVIDE A 10 PSI CUSHION BETWEEN FIRE PROTECTION SYSTEM DEMAND AND FIRE PROTECTION SYSTEM WATER SUPPLY.

11. PROVIDE SPRINKLER SYSTEM AND SPRINKLER SYSTEM TEST DRAINS PER CODE.

12. PROVIDE AUXILIARY DRAINS AS REQUIRED PER NFPA 13. PIPE AUXILIARY DRAINS TO EXTERIOR LOCATION. COORDINATE EXACT LOCATION OF DRAIN LOCATIONS WITH ARCHITECT AND AUTHORITY HAVING JURISDICTION. ALL PIPING SHALL BE PITCHED TO DRAIN.

13. THE FIRE PROTECTION CONTRACTOR SHALL COMPLETE A HYDRANT FLOW TEST ON THE EXISTING MUNICIPAL WATER SYSTEM PRIOR TO DESIGN AND SHALL UTILIZE THE PERFORMANCE DATA FROM THE WATER FLOW TEST TO DEVELOP THE FIRE PROTECTION SYSTEM HYDRAULIC DESIGN.

14. WET SYSTEM PIPING - SEE SPECIFICATIONS FOR PIPE MATERIAL AND OTHER INFORMATION.

15. DRY SYSTEM PIPING - SEE SPECIFICATIONS FOR PIPE MATERIAL AND OTHER INFORMATION.

16. SPRINKLER CONTRACTOR SHALL COORDINATE ALL FIRE ALARM SYSTEM TIE-INS WITH FIRE ALARM CONTRACTOR.

17. COORDINATE FIRE PROTECTION PIPING (BRANCH, MAINS, ETC) WITH MECHANICAL EQUIPMENT. DO NOT LOCATE ANY PIPING WITHIN 12" HEAT PUMP UNITS. ANY PIPING RUN UNDER EQUIPMENT SHALL BE REROUTED BY THE FIRE PROTECTION CONTRACTOR AT NO ADDITION EXPENSE TO THE OWNER.

18. COORDINATE FIRE PROTECTION PIPING (BRANCHES, MAINS, ETC.) WITH ELECTRICAL EQUIPMENT. DO NOT ROUTE ANY PIPING OVER ELECTRICAL EQUIPMENT. ANY PIPING RUN OVER ELECTRICAL EQUIPMENT SHALL BE REROUTED BY THE FIRE PROTECTION CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.

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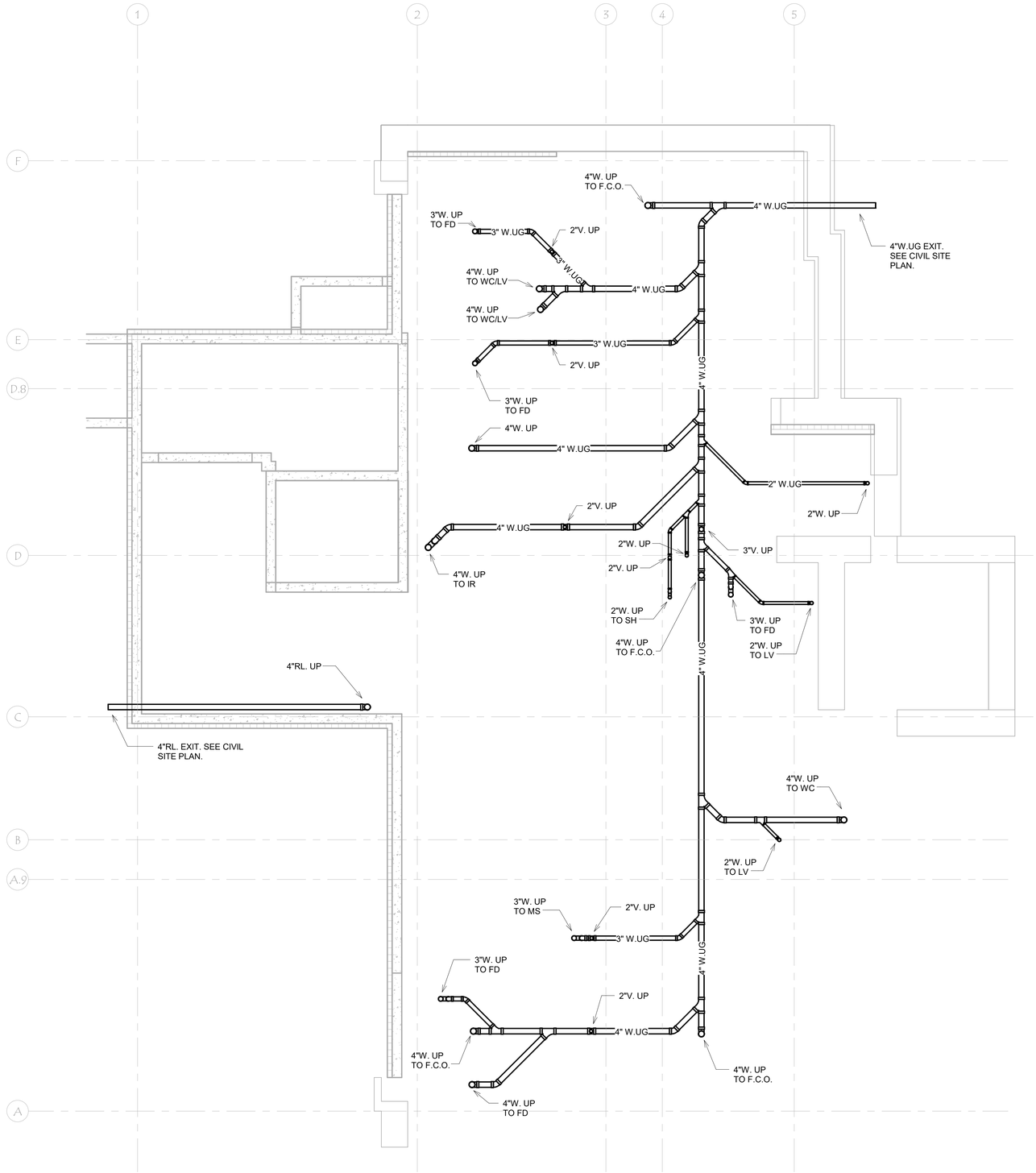
PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

FIRE PROTECTION LEGEND, SCHEDULE & NOTES

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	N.T.S.

FP5.1



SPECIFIC PLUMBING NEW WORK NOTES:

1. ALL PLUMBING FIXTURES LOCATED WITHIN THE HOLDING AND PROCESSING AREAS MUST BE LIGATURE RESISTANT.
2. PROVIDE U.L. LISTED FIRE CAULKING PER MANUFACTURER'S REQUIREMENTS FOR ALL PIPING PENETRATING FIRE RATED PARTITIONS. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. PROVIDE LOCKABLE ACCESS PANEL FOR ELEVATOR PIT INDIRECT WASTE RECEIVER. INDIRECT RECEIVER IT TO BE CAPPED.
4. COORDINATE WITH G.C. TO BOX OUT THE RAIN LEADER DROP IN THE LOBBY SPACE.
5. PROVIDE BALL VALVE AND CHECK VALVE FOR EACH CONDENSATE DRAIN CONNECTION TO THE RAIN LEADER. ENSURE THAT CONDENSATE CONNECTS INTO THE VERTICAL LINE AFTER DROPPING AT LEAST 1 FOOT.
6. DOMESTIC WATER PIPING RISERS LOCATED WITHIN THE CHASE ARE TO BE COORDINATED WITH OTHER UTILITIES TO ENSURE THERE IS NO CONFLICT. OFFSET PIPING AS NECESSARY TO AVOID OTHER UTILITIES.

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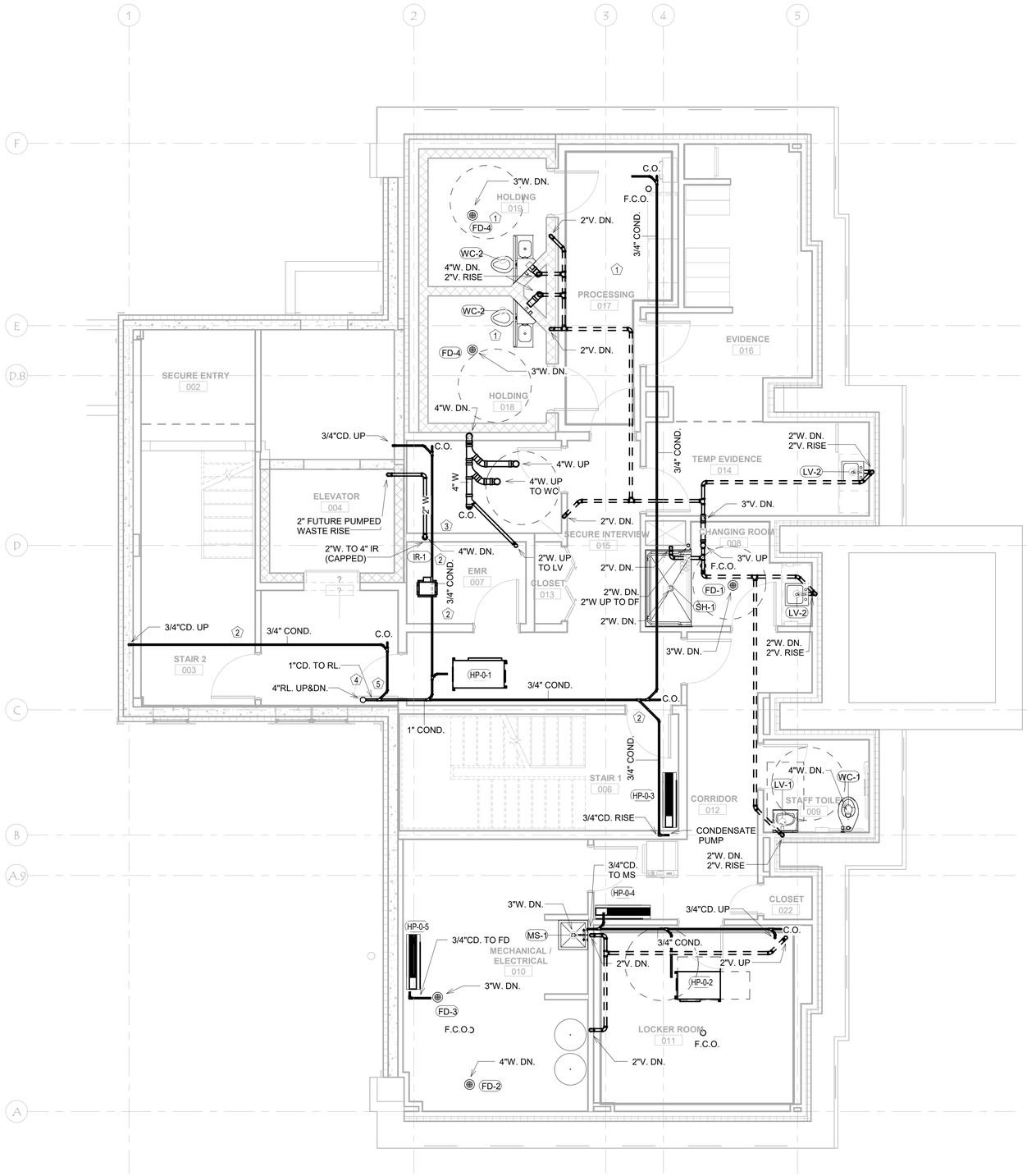
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ST. JOHNSBURY, VT

UNDERSLAB - PLUMBING WASTE & VENT PLAN

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

P1.U1



SPECIFIC PLUMBING NEW WORK NOTES:

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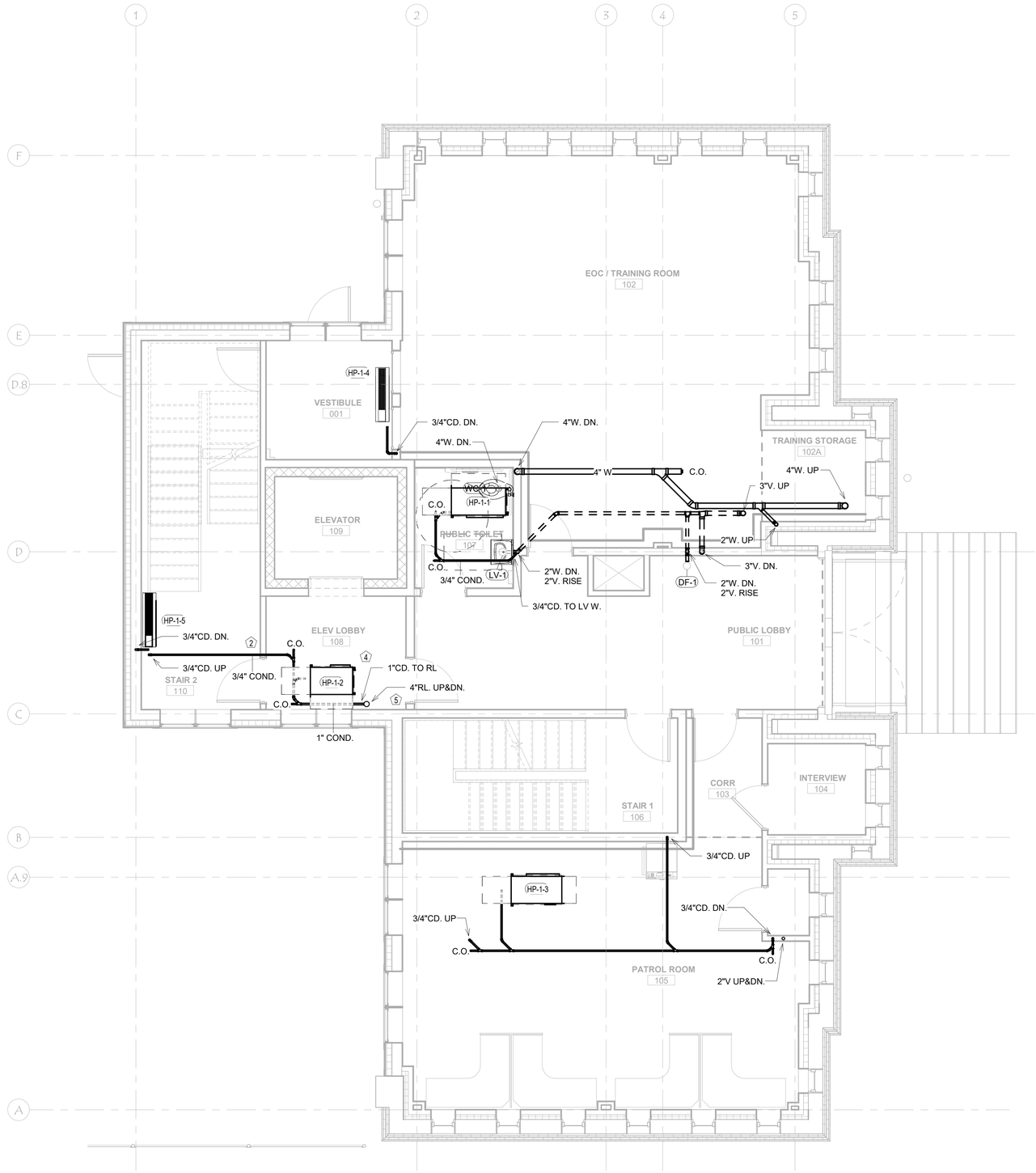
PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

BASEMENT - PLUMBING WASTE & VENT

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

P1.01



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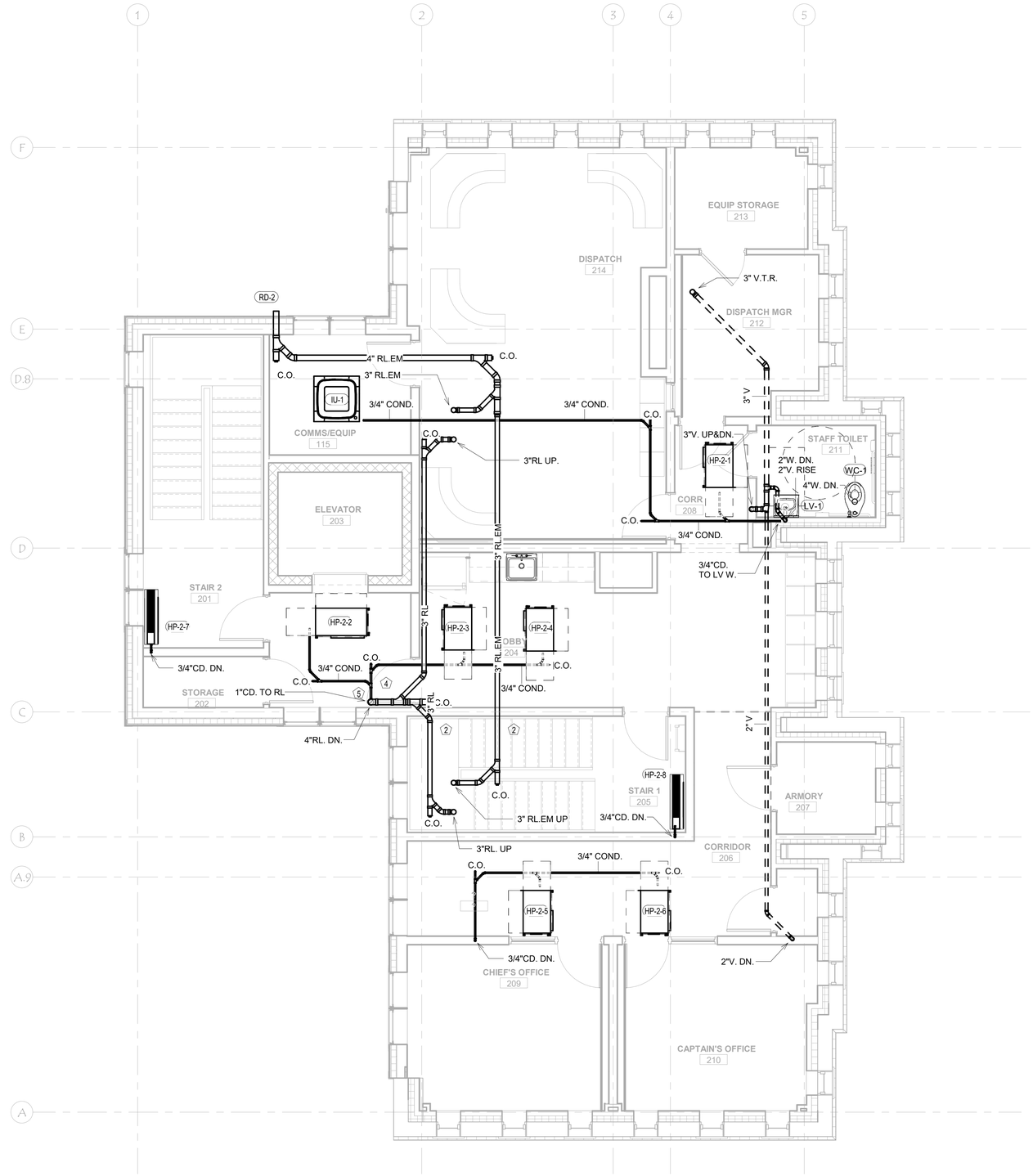
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LEVEL 1 - PLUMBING WASTE & VENT

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

P1.11



SPECIFIC PLUMBING NEW WORK NOTES:

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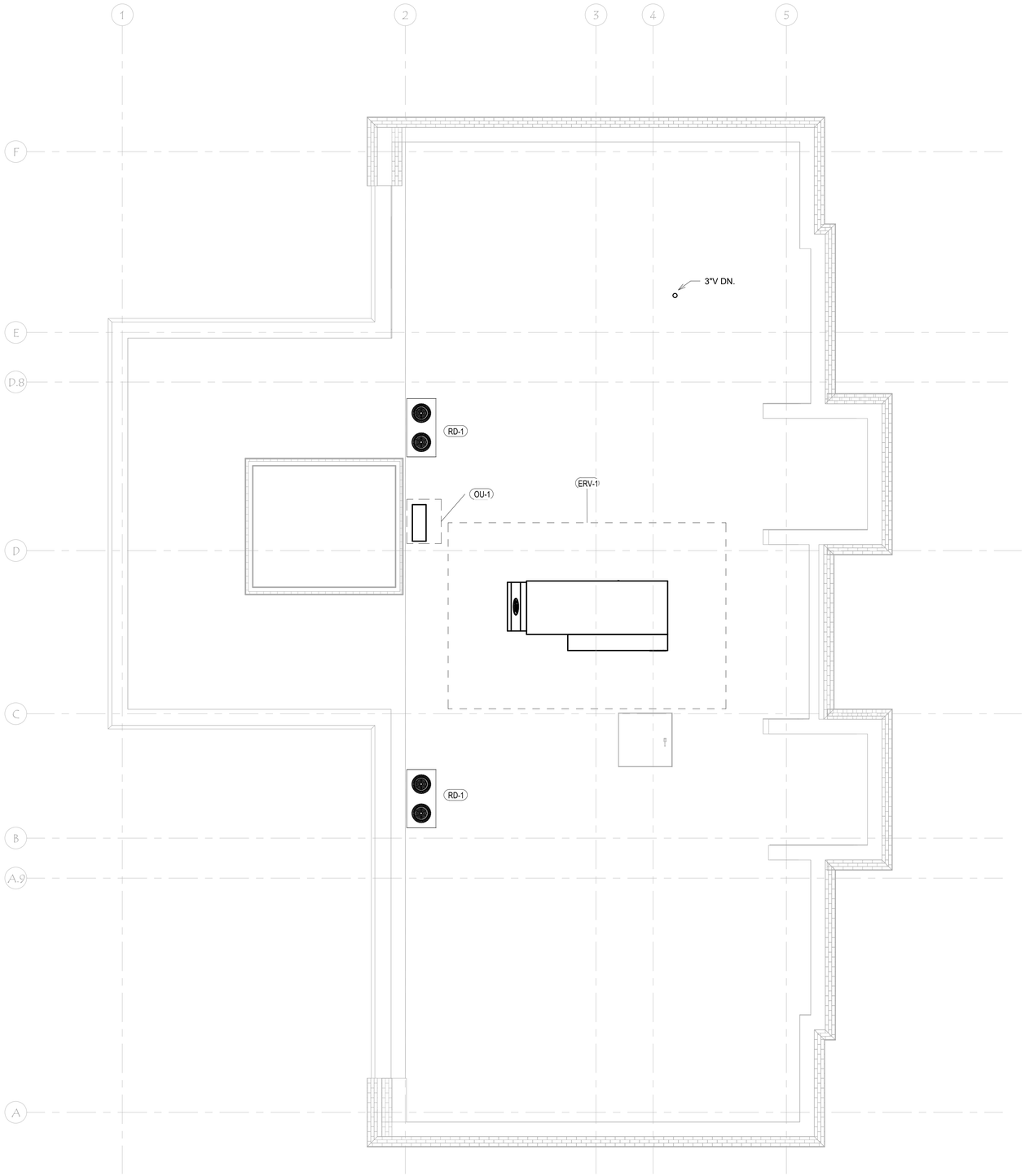
PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

LEVEL 2 - PLUMBING WASTE & VENT

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

P1.21



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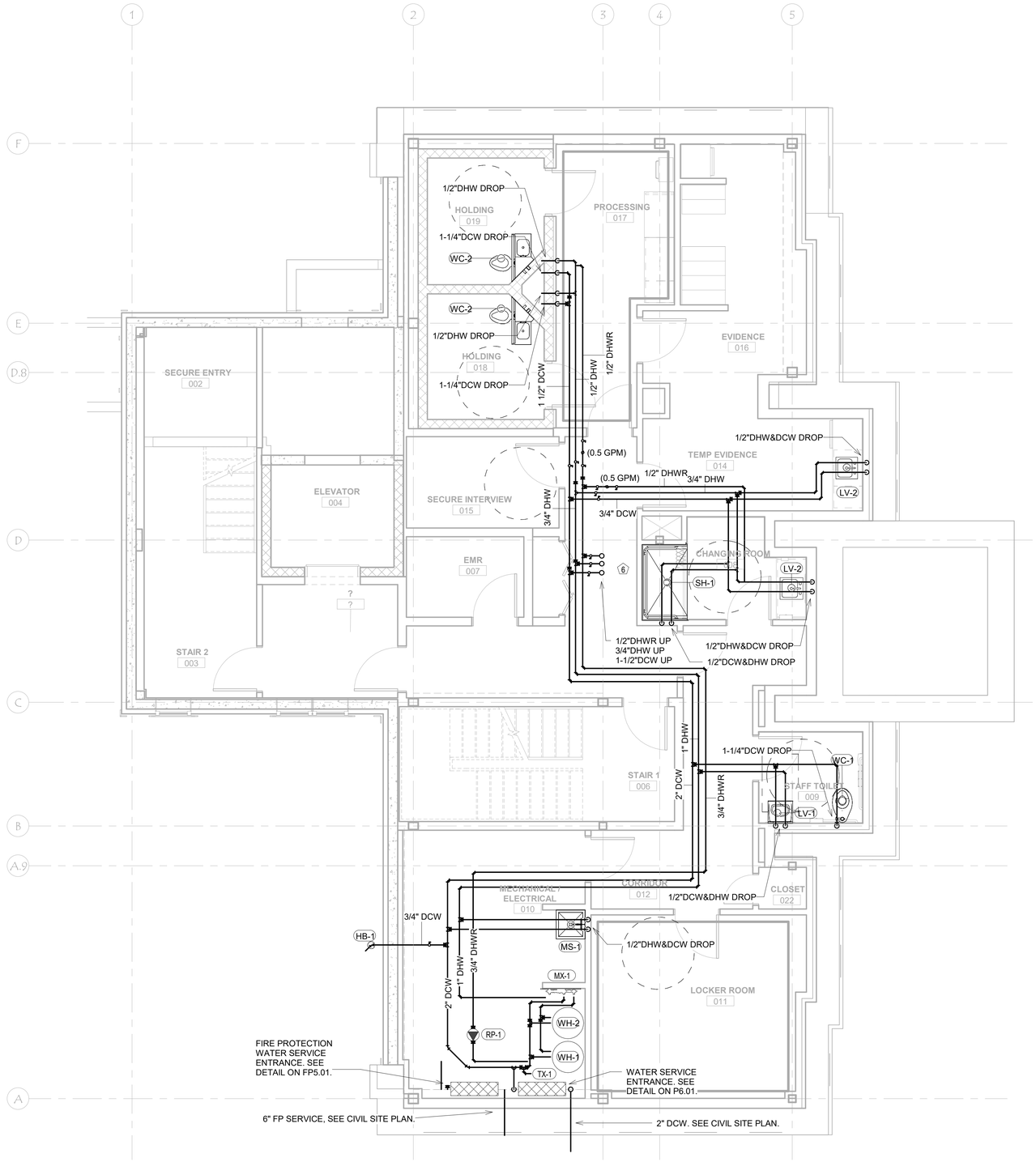
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ROOF - PLUMBING PLAN

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

P1.31



SPECIFIC PLUMBING NEW WORK NOTES:

1. ALL PLUMBING FIXTURES LOCATED WITHIN THE HOLDING AND PROCESSING AREAS MUST BE LIGATURE RESISTANT.
2. PROVIDE U.L. LISTED FIRE CAULKING PER MANUFACTURER'S REQUIREMENTS FOR ALL PIPING PENETRATING FIRE RATED PARTITIONS. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. PROVIDE LOCKABLE ACCESS PANEL FOR ELEVATOR PIT INDIRECT WASTE RECEIVER. INDIRECT RECEIVER IT TO BE CAPPED.
4. COORDINATE WITH G.C. TO BOX OUT THE RAIN LEADER DROP IN THE LOBBY SPACE.
5. PROVIDE BALL VALVE AND CHECK VALVE FOR EACH CONDENSATE DRAIN CONNECTION TO THE RAIN LEADER. ENSURE THAT CONDENSATE CONNECTS INTO THE VERTICAL LINE AFTER DROPPING AT LEAST 1 FOOT.
6. DOMESTIC WATER PIPING RISERS LOCATED WITHIN THE CHASE ARE TO BE COORDINATED WITH OTHER UTILITIES TO ENSURE THERE IS NO CONFLICT. OFFSET PIPING AS NECESSARY TO AVOID OTHER UTILITIES.

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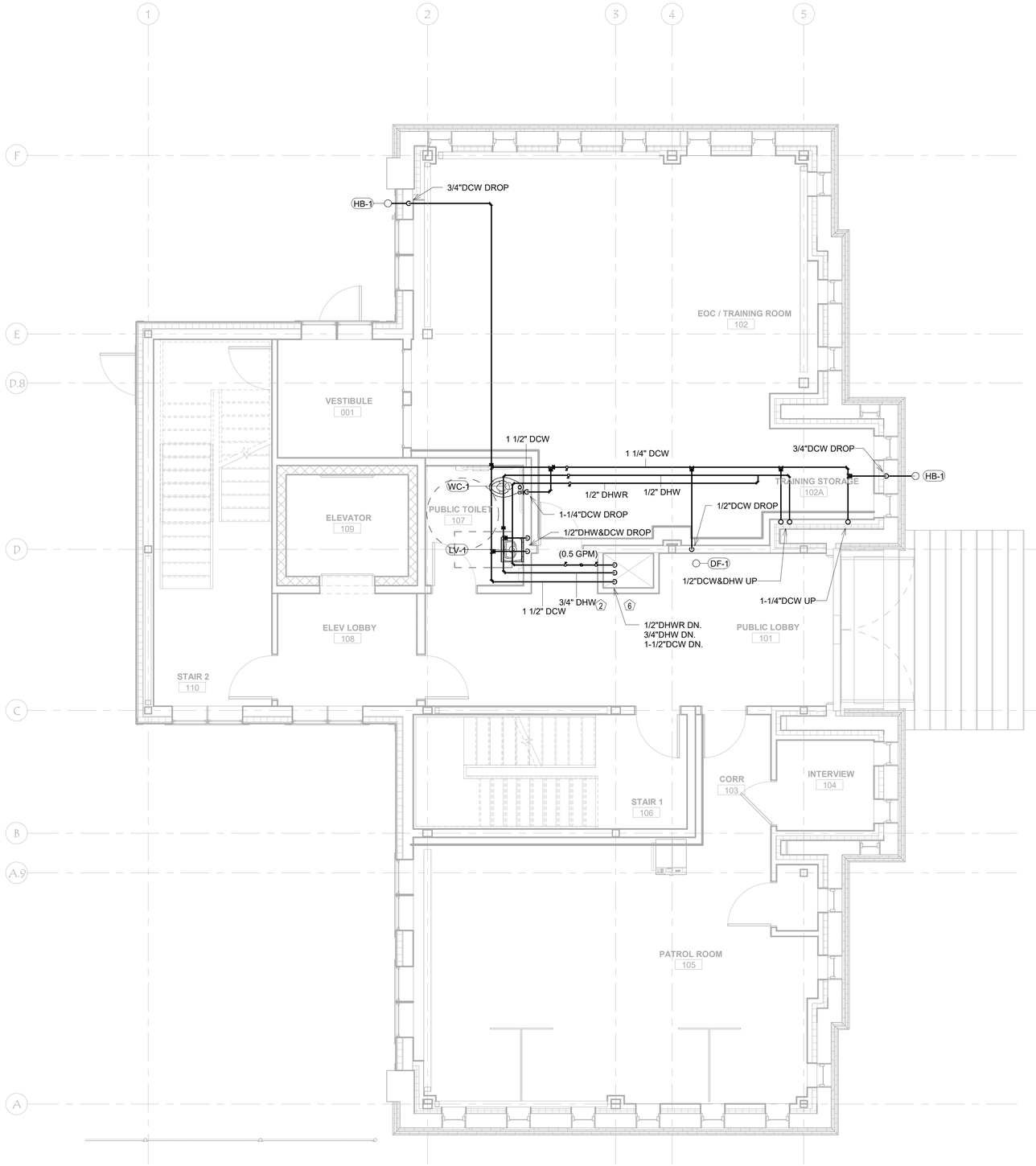
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ST. JOHNSBURY, VT

BASEMENT - PLUMBING DOMESTIC WATER

PROJECT NO:	21261
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P2.01



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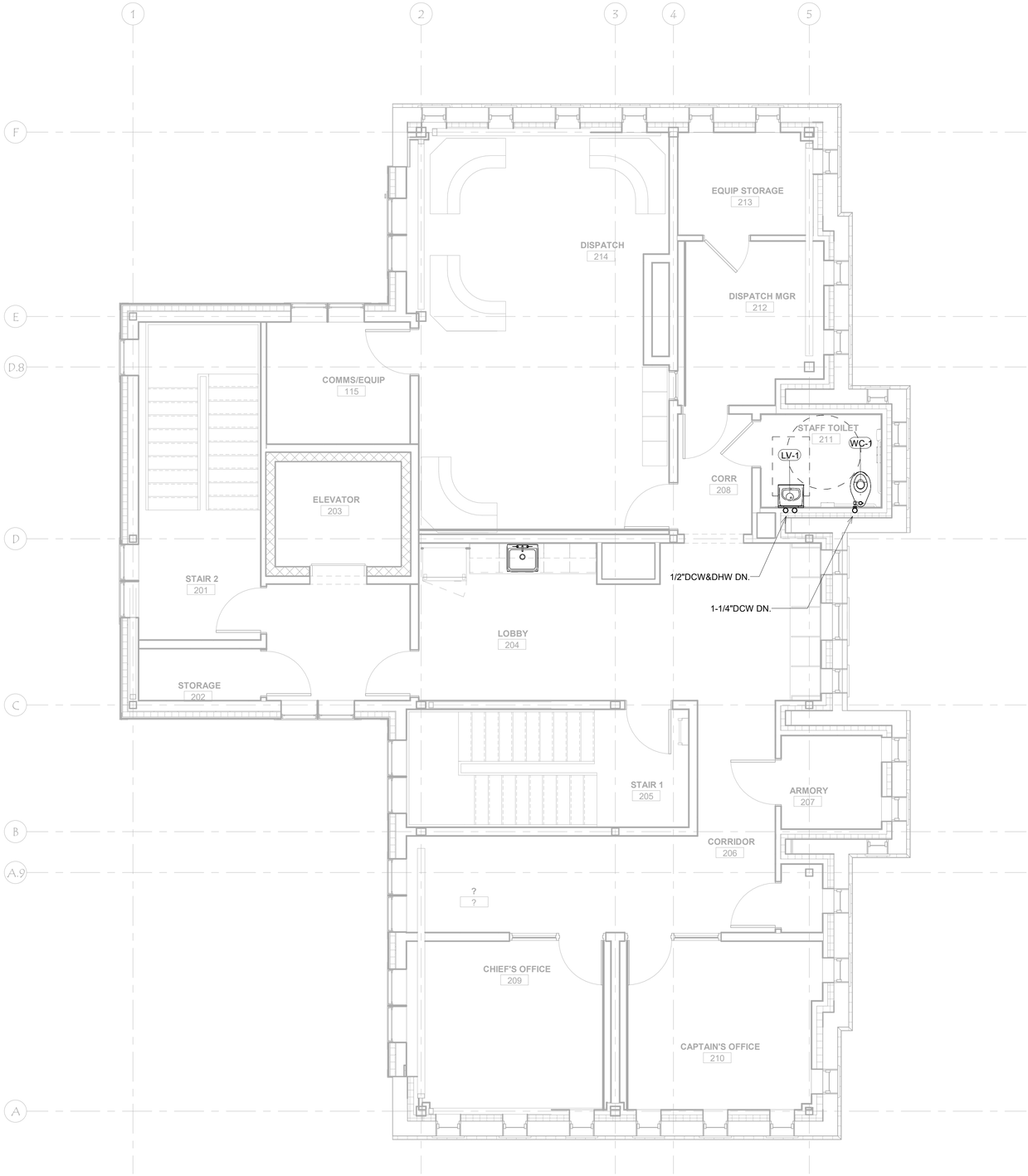
ST. JOHNSBURY, VT

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LEVEL 1 - PLUMBING DOMESTIC WATER

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P2.11



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PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

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LEVEL 2 - PLUMBING DOMESTIC WATER

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P2.21

PLUMBING LEGEND

SYMBOL	DESCRIPTION
	BRASS BODY, STAINLESS STEEL BALL, BALL VALVE
	BUTTERFLY VALVE
	GATE VALVE
	SWING CHECK VALVE
	PIPE DROP/DN.
	PIPE RISE/UP
	PIPE CAP
	PIPE CONTINUATION
	PIPE CLEANOUT
	CONNECT TO EXISTING
	BALANCE VALVE
	THREE WAY REGULATING VALVE
	REGULATING VALVE OR SOLENOID VALVE
	RELIEF VALVE
	AIR VENT
	PIPE REDUCER
	PIPE STRAINER
	PIPE TEE DOWN
	PIPE TEE
	PIPE UNION
	TEMPERATURE GAUGE
	PRESSURE GAUGE
	PUMP
#	PLUMBING EQUIPMENT TAG
CD	CONDENSATE DRAIN
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
DN.	DOWN
RL	RAIN LEADER
V	SANITARY VENT
VTR	VENT THROUGH ROOF
W	SANITARY WASTE

PLUMBING FIXTURE SCHEDULE

TAG	DESCRIPTION	MAKE & MODEL	C.W.	H.W.	WASTE	VENT	REMARKS
LV-1	WALL MOUNT LAVATORY, A.D.A.	KOHLER PRODUCTS SOHO #K-2084-N	1/2"	1/2"	1 1/2"	1 1/2"	PROVIDE SLOAN OPTIMA EAF-225 0.5 GPM HARDWIRED FAUCET WITH PLUG ADAPTER AND INSTALL PER MANUFACTURER'S INSTALLATION REQUIREMENTS. PROVIDE OFFSET GRID DRAIN, CP P-TRAP, ADA INSULATION KIT, ZURN #Z-1231 CONCEALED ARM CARRIER.
LV-2	UNDERMOUNT LAVATORY, A.D.A.	KOHLER PRODUCTS LADENA #K-2214	1/2"	1/2"	1 1/2"	1 1/2"	PROVIDE SLOAN OPTIMA EAF-225 0.5 GPM HARDWIRED FAUCET WITH PLUG ADAPTER AND INSTALL PER MANUFACTURER'S INSTALLATION REQUIREMENTS. PROVIDE OFFSET GRID DRAIN, CP P-TRAP, AND ADA INSULATION KIT. MOUNT PER MANUFACTURER'S REQUIREMENTS.
WC-1	ADA FLOOR MOUNTED WATER CLOSET	TOTO CT705ELNG 1.28GPF	1 1/4"	-	4"	2"	PROVIDE ELONGATED OPEN FRONT SEAT, LESS COVER. PROVIDE SLOAN, ROYAL FLUSHOMETER MODEL #111 ESS-1.28-TMO-HW. FEED UP TO (10) FLUSHOMETERS FROM SINGLE SLOAN TRANSFORMER WHERE ABLE. INSTALL PER MANUFACTURER'S REQUIREMENTS.
WC-2	SECURITY LAVATORY/ WATER CLOSET COMBY	ACORN ENG. PENAL-WARE 1449FA SERIES	1 1/4"	1/2"	4"	2"	PROVIDE LEFT/RIGHT ORIENTATION AND ADDITIONAL OPTIONS PER ARCHITECTURAL DRAWINGS. PROVIDE WITH TOILET FLOOR WASTE OUTLET. PROVIDE HET-1.28 GPF MANUAL FLUSH VALVE. PROVIDE MANUAL HOT/COLD VALVE. PROVIDE WITH REMOTE FLUSH VALVE CONTROL OPERATION FOR FLUSH VALVE TO BE REMOTELY FLUSHED FROM WITHIN THE PROCESSING AREA (NOT LOCALLY FROM WITHIN THE HOLDING CELL).
SH-1	ADA SHOWER	BEST BATH LSS6537A7ST (L/R)	1/2"	1/2"	2"	1 1/2"	MOLDED A.D.A. SHOWER UNIT WITH GRAB BARS, FOLDING SEAT, SOAP DISH, CURTAIN ROD BRACKETS, T-SHAPED RUBBER WATER STOPPER, NO-CAULK BRASS DRAIN. COORDINATE HANDING WITH ARCHITECT. PROVIDE SYMMONS SHOWER/HAND SHOWER SYSTEM MODEL C-96-500-B30-V-X WITH TEMPTROL PRESSURE BALANCING VALVE, H35-36 A.D.A. GRAB BAR/SLIDEBAR, 60" FLEXIBLE METAL HOSE, INTEGRAL CHECK VALVES WITH SERVICE STOPS, AND 1.5GPM FLOW RESTRICTOR.
MS-1	MOP SERVICE BASIN	FIAT PRODUCTS MSB2424	3/4"	3/4"	3"	2"	WITH #830-AA FAUCET, #832-AA HOSE AND BRACKET, #889-CC MOP HANGER, E-88-AA S.S. BUMPER GUARD, MSG2424 S.S. WALL GUARD, P-TRAP.
DF-1	BI-LEVEL DRINKING FOUNTAIN W/ BOTTLE FILLER	ELKAY LZSTL8WSAP-W1	1/2"	-	1-1/2"	1-1/2"	REFRIGERATED DRINKING FOUNTAIN TO BE PROVIDED WITH (2) SPARE 71300C FILTERS, MLP200 WALL CARRIER AND STAINLESS STEEL BACK PANEL. COORDINATE ELECTRICAL INSTALLATION REQUIREMENTS WITH ELECTRICAL CONTRACTOR.
HB-1	WALL HYDRANT	WOODFORD MODEL B65	3/4"	-	-	-	DELIVER TO G.C. FOR MOUNTING IN EXTERIOR WALL FINISH, MOUNT PER ARCHITECT. COORDINATE WALL THICKNESS PRIOR TO ORDERING.
RD-1	15" COMBINATION ROOF DRAIN	ZURN ZC-163-3"-EA-G-SC	-	-	3"	-	PROVIDE GALVANIZED CAST IRON DOME. PROVIDE ADJUSTABLE EXTENSION ASSEMBLY TO ACCOMMODATE INSULATION THICKNESS. PROVIDE WITH SECONDARY CLAMPING COLLARS.
RD-2	ROOF DRAIN DOWNSPOUT	ZURN ZF199-4"	-	-	4"	-	PROVIDE DOWNSPOUT GASKET. COORDINATE COLORS AND FINISHES WITH ARCHITECT.
FD-1	3" FLOOR DRAIN	ZURN ZN-415-BZ1-3"-TSP	-	-	3"	2"	COORDINATE ROUGH IN AND INSTALLATION WITH PROPOSED FLOOR TREATMENT. PROVIDE WITH TRAP SEAL PROTECTION DEVICE.
FD-2	4" FLOOR DRAIN RECESSED	ZURN ZN-415I-4"-TSP	-	-	4"	2"	COORDINATE ROUGH IN AND INSTALLATION WITH PROPOSED FLOOR TREATMENT.
FD-3	3" FLOOR DRAIN RECESSED	ZURN ZN-415I-3"-TSP	-	-	3"	2"	COORDINATE ROUGH IN AND INSTALLATION WITH PROPOSED FLOOR TREATMENT.
FD-4	3" FLOOR DRAIN VANDAL RESISTANT	AQUA DESIGN 303070XN-ZU	-	-	3"	2"	COORDINATE ROUGH IN AND INSTALLATION WITH PROPOSED FLOOR TREATMENT. PROVIDE VANDAL RESISTANT DRAIN WITH "ZURN Z415" DRAIN BODY WITH -TSP TRAP SEAL PROTECTION DEVICE.
SB-1	CONDENSATE DRAIN SERVICE BOX	WATER-TITE UTILITY BOX 1500	-	-	1"	1"	SPECIFY ROUGH-IN REQUIREMENTS WITH APPROVED SHOP DRAWINGS. INSTALL WHERE NECESSARY.
RP-1	DHW RECIRC. PUMP	GRUNDFOS ALPHA 15-58F	-	3/4"	-	-	DESIGNED FOR OPEN LOOP DOMESTIC HOT WATER RECIRCULATION.
IR-1	INDIRECT RECEIVER	-	-	-	2"	2"	FIELD FURNISHED AND INSTALLED. SEE DETAIL FOR INSTALLATION.
F.C.O.	FLOOR CLEANOUTS	ZURN ZN1400-XNH-KC	-	-	X"	-	INSTALL PER MANUFACTURER'S REQUIREMENTS. COORDINATE INDIVIDUAL SIZE WITH PLAN DRAWINGS.
W.C.O.	WALL CLEANOUTS	ZURN Z1441-XNH	-	-	X"	-	INSTALL PER MANUFACTURER'S REQUIREMENTS. COORDINATE INDIVIDUAL SIZE WITH PLAN DRAWINGS.

NOTES:

1. INSTALL SHOCK ABSORBERS IN THE SUPPLY LINE TO EACH WATER CLOSET. SHOCK ABSORBER TO BE A "PRECISION PLUMBING PRODUCTS" MODEL #SC-750. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE CHECK VALVES IN SUPPLIES TO THE MOP SERVICE BASINS AND SHOWERS. PROVIDE ISOLATION VALVES UPSTREAM OF EACH MOP SINK OR SHOWER IN ACCESSIBLE LOCATION.
3. ALL EQUIPMENT OR DEVICE IN CONTACT WITH POTABLE WATER SYSTEM TO BE LEAD FREE CONSTRUCTION.
4. PROVIDE DISHWASHER TAILPIECE ADAPTERS AS NECESSARY TO ACCOMMODATE CONDENSATE DRAINS.

MIXING VALVE SCHEDULE

TAG	DESCRIPTION	MAKE	FLUID	CONN. SIZE	REMARKS
MX-1	DIGITAL MIXING VALVE	CALEFFI LEGIOMIX #600064A 001	WATER	1"	FABRICATE MOUNTING RACK AND PIPE PER DIAGRAM, COORDINATE WITH E.C. AND CONTROLS CONTRACTOR FOR POWER AND CONTROL CONNECTIONS RESPECTIVELY. PROVIDE WITH DISCHARGE THERMOSTAT AND ISOLATION VALVE, ADJUST TO 115 DEG. F.

NOTES:

1. PROVIDE HEAT TRAP PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE LEAD FREE CONSTRUCTION.

EXPANSION TANK SCHEDULE

TAG	DESCRIPTION	MAKE & MODEL	CAPACITY	DIMENSIONS	REMARKS:
TX-1	DOMESTIC WATER EXPANSION TANK	AMTROL THERM-X-TROL ST-12C-DD	6.4 GAL. TANK VOLUME 0.50 MAX ACCEPT. FACTOR	12"DIA. X 18"H	PROVIDE DRAIN W/ BALL VALVE, STRUCTURAL SUPPORT.

NOTES:

1. PROVIDE ASME RATED CONSTRUCTION.
2. NSF APPROVED FOR POTABLE WATER APPLICATION.

DOMESTIC WATER HEATER SCHEDULE

TAG	DESCRIPTION	MAKE AND MODEL	CAPACITY	GPH RATING @ 90°F	ELECTRICAL	COLD WATER CONNECTION	HOT WATER CONNECTION	SIZE	NOTES:
WH-1	HYBRID HEAT PUMP WATER HEATER	STATE HPAX-80-DHPT 200	80 GAL.	95 GAL.	208V-1Ø-30A CB	3/4"	3/4"	26 1/2"Ø X 69"H	1,2,3
WH-2	HYBRID HEAT PUMP WATER HEATER	STATE HPAX-80-DHPT 200	80 GAL.	95 GAL.	208V-1Ø-30A CB	3/4"	3/4"	26 1/2"Ø X 69"H	1,2,3

NOTES:

1. FURNISH AND INSTALL PRESSURE/TEMPERATURE RELIEF VALVE IF NOT SUPPLIED BY WATER HEATER. PIPE TO FLOOR PER PLUMBING CODE.
2. FURNISH AND INSTALL CONCRETE HOUSEKEEPING PAD 4" THICK UNDER WATER HEATER.
3. PIPE WATER HEATER CONDENSATE TO NEAREST FLOOR DRAIN. ENSURE CONDENSATE PIPING IS ROUTED AND PROTECTED FROM PHYSICAL DAMAGE.

SEISMIC DESIGN AND CONSTRUCTION:

THIS IS AN ESSENTIAL FACILITY AND THE SPECIFICATIONS REQUIRE A SEISMIC DELEGATED DESIGN. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND CLARIFICATION.

EQUIPMENT SHORT CIRCUIT CURRENT RATING:

PLUMBING EQUIPMENT IS TO BE PROVIDED WITH A SHORT CIRCUIT CURRENT RATING (SCCR) OF 10,000 AMPS OR GREATER WHERE AVAILABLE. IF THE PLUMBING EQUIPMENT SCCR IS LESS THAN 10,000 AMPS, A FUSED DISCONNECT WITH RK-5 CURRENT LIMITING FUSE IS TO BE PROVIDED FOR EACH PIECE OF EQUIPMENT.

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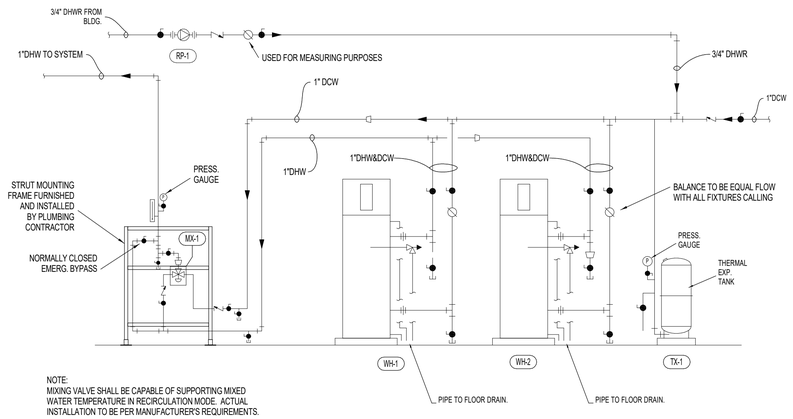
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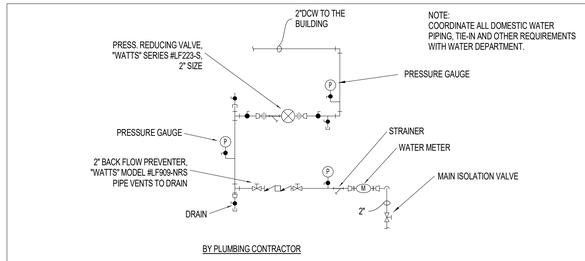
PLUMBING SCHEDULES & NOTES

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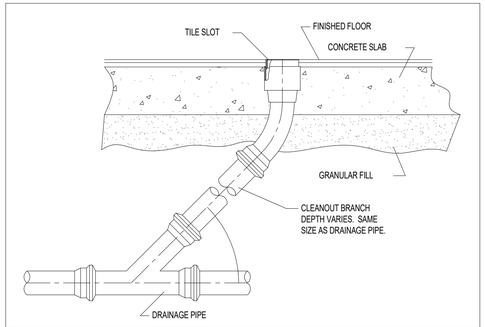
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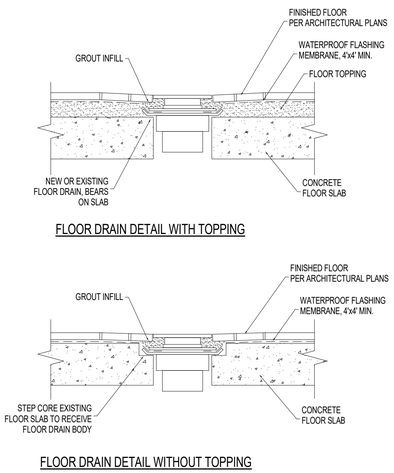
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N.T.S.



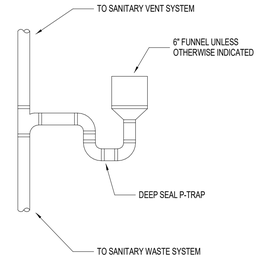
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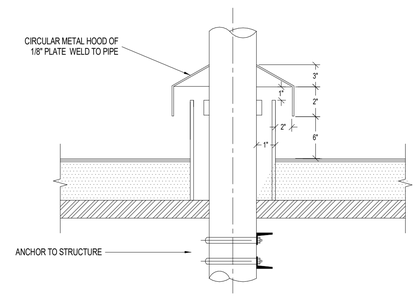
3 CLEAN-OUT DETAIL
N.T.S.



4 FLOOR DRAIN INSTALLATION DETAILS
N.T.S.



5 INDIRECT WASTE RECEIVER DETAIL
N.T.S.



6 TYPICAL VENT THROUGH ROOF SCHEMATIC
N.T.S.

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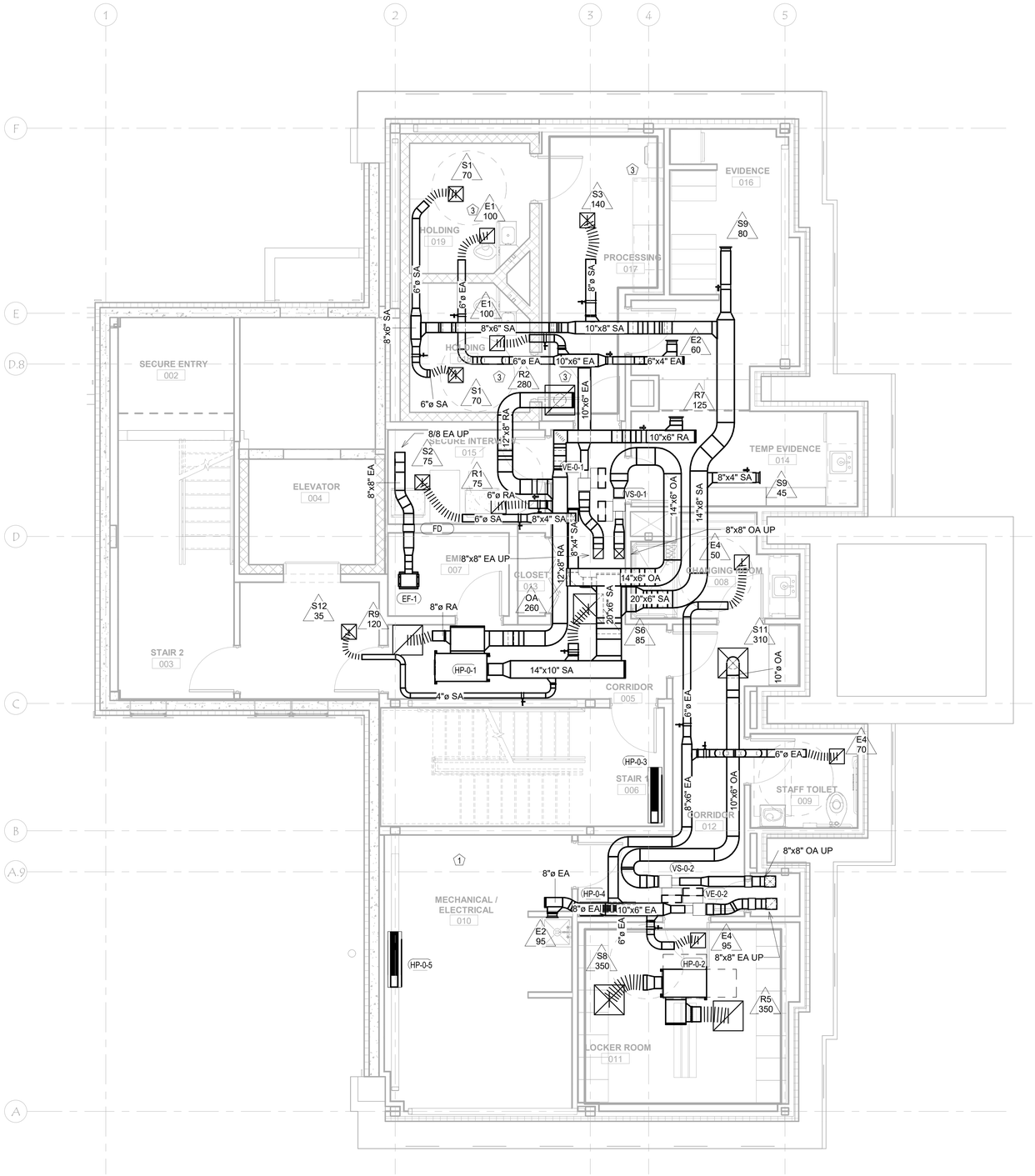
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ST. JOHNSBURY, VT

PLUMBING DETAILS

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	N.T.S.

P6.01



SPECIFIC MECHANICAL NEW WORK NOTES:

1. COORDINATE DUCTWORK AND PIPE ROUTING IN THE MECHANICAL ROOM TO ENSURE THAT NOTHING IS RUN OVER THE ELECTRICAL PANELS OR ELECTRICAL EQUIPMENT. COORDINATE EXACT ROUTING REQUIREMENTS WITH ELECTRICAL CONTRACTOR AND COORDINATION DRAWINGS.
2. COORDINATE THE EXACT GEOTHERMAL ENTRANCE LOCATION WITH THE SITE/GEOTHERMAL CONTRACTOR AND THE MECHANICAL ROOM COORDINATION DRAWINGS.
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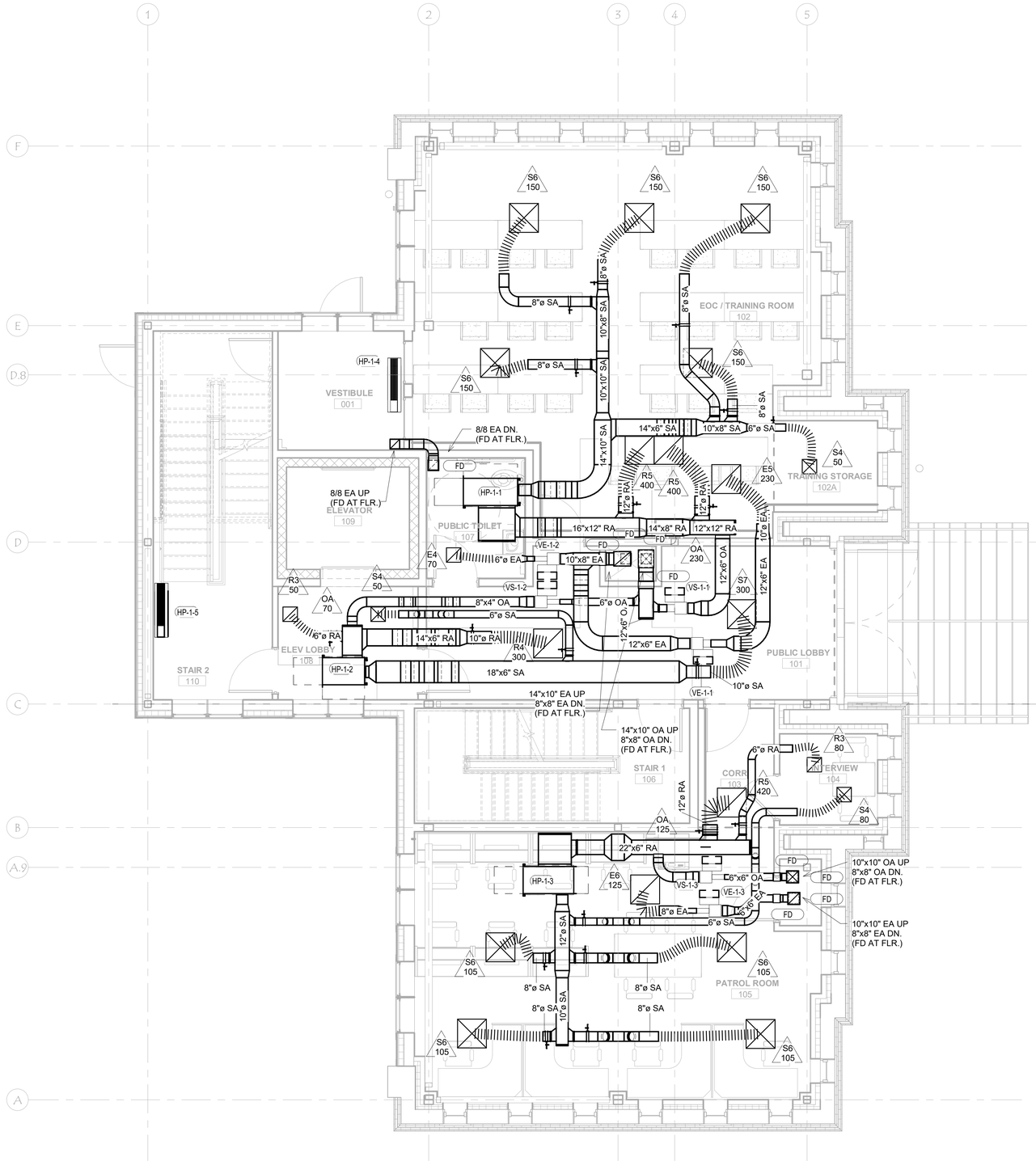
PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

BASEMENT - MECHANICAL DUCTWORK

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

M1.01



SPECIFIC MECHANICAL NEW WORK NOTES:

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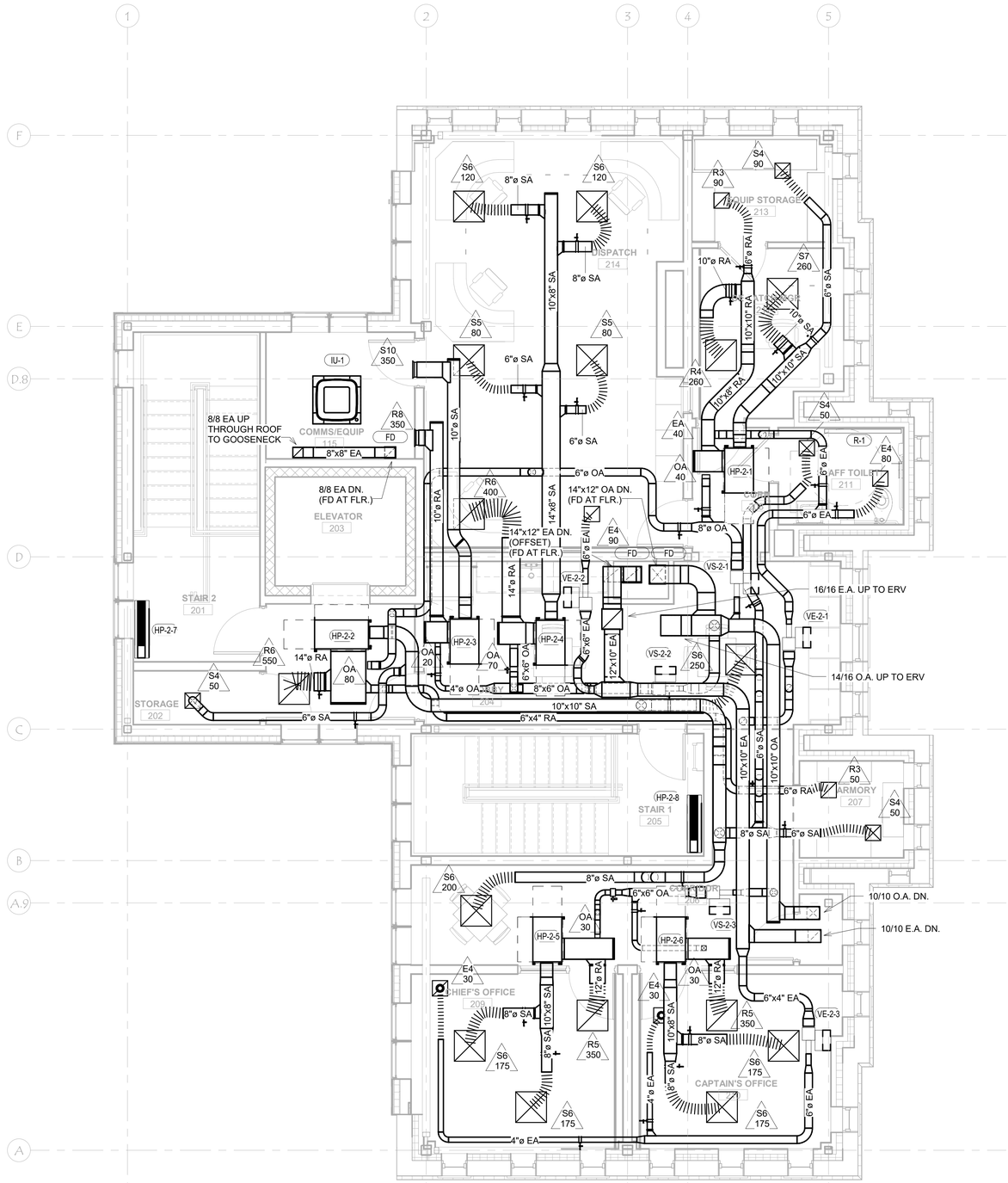
PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

LEVEL 1 - MECHANICAL DUCTWORK

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

M1.11



SPECIFIC MECHANICAL NEW WORK NOTES:

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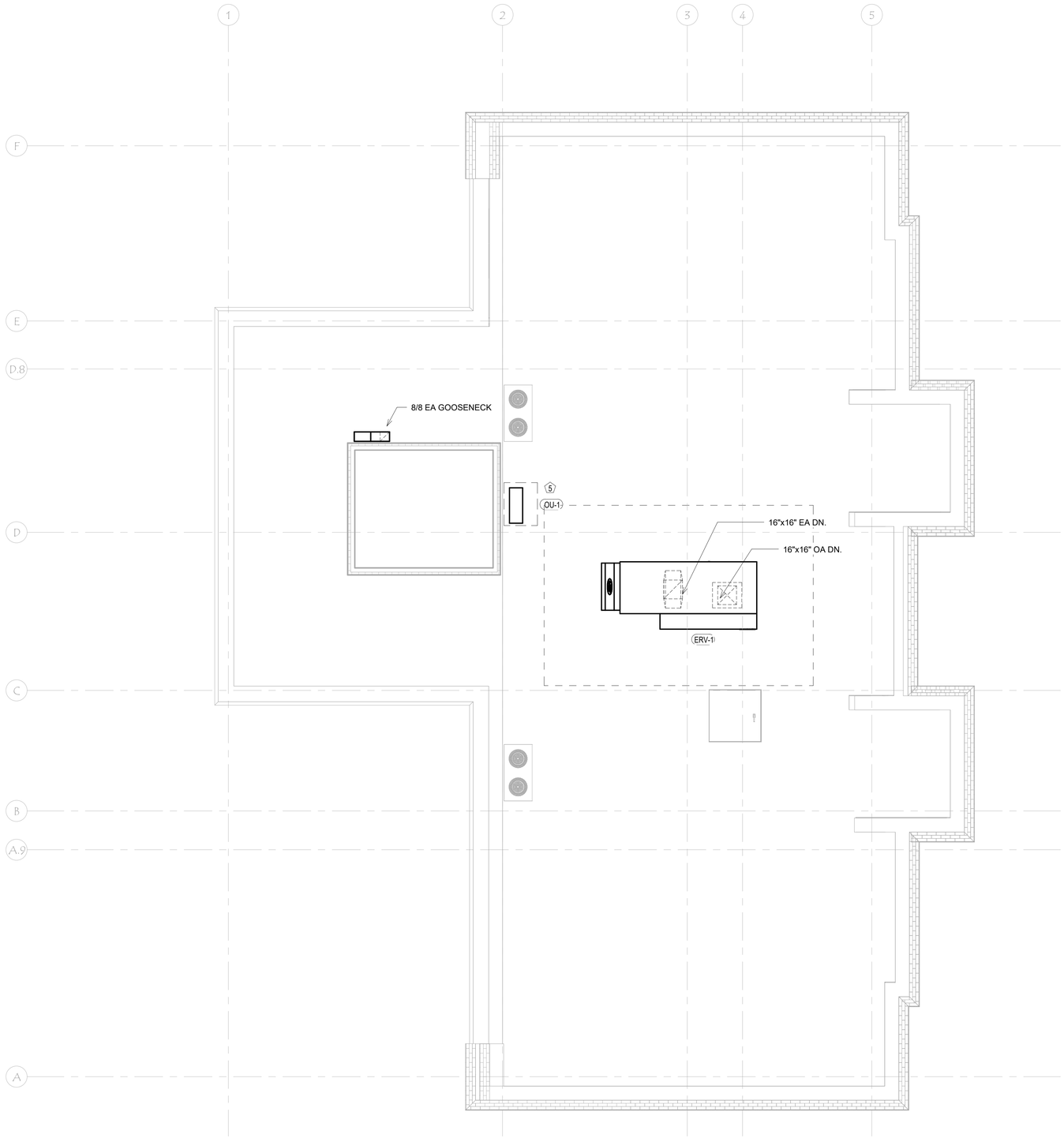
ST. JOHNSBURY, VT

N

LEVEL 2 - MECHANICAL DUCTWORK

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

M1.21



SPECIFIC MECHANICAL NEW WORK NOTES:

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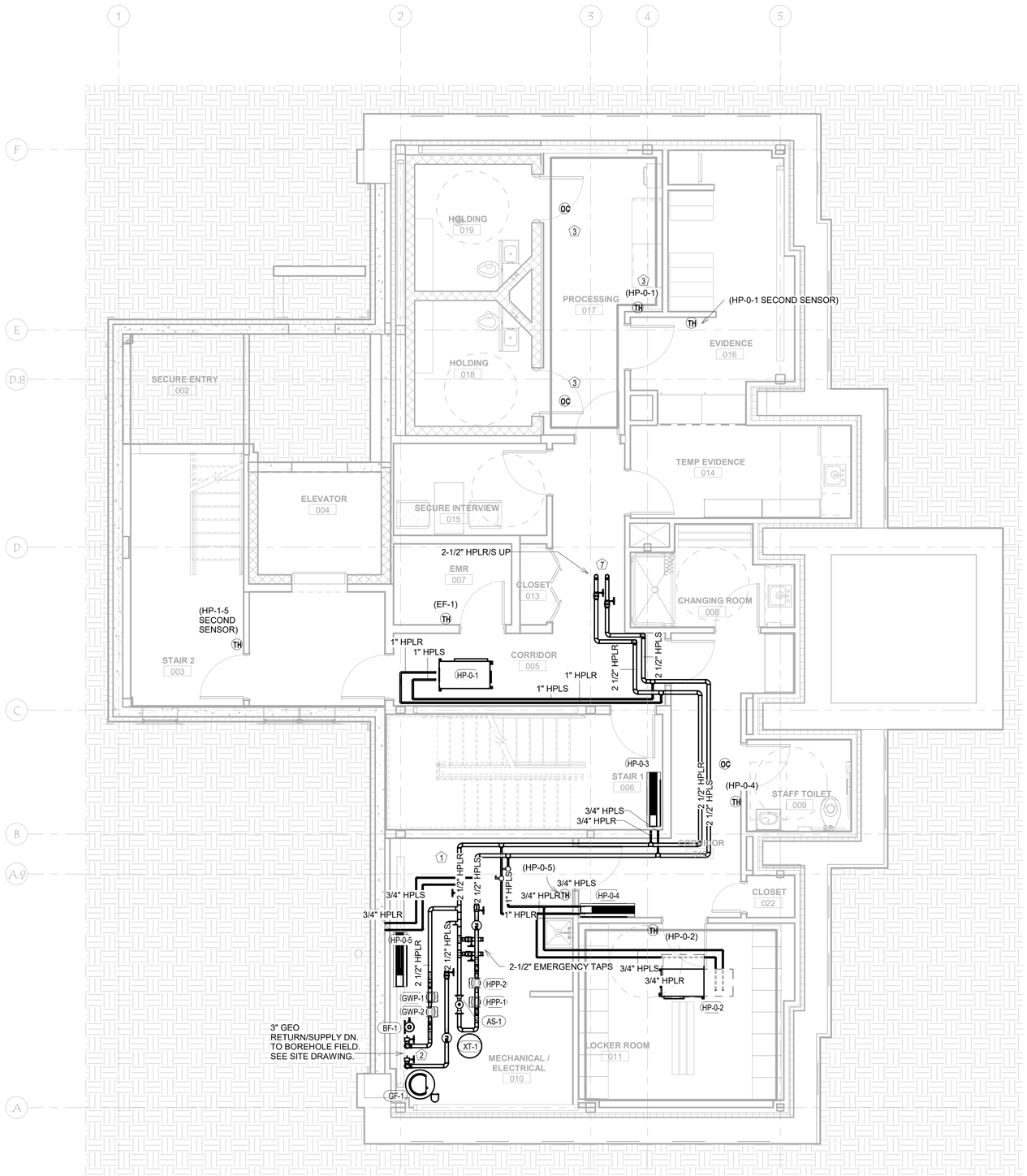
PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

ROOF - MECHANICAL DUCTWORK

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

M1.31



SPECIFIC MECHANICAL NEW WORK NOTES:

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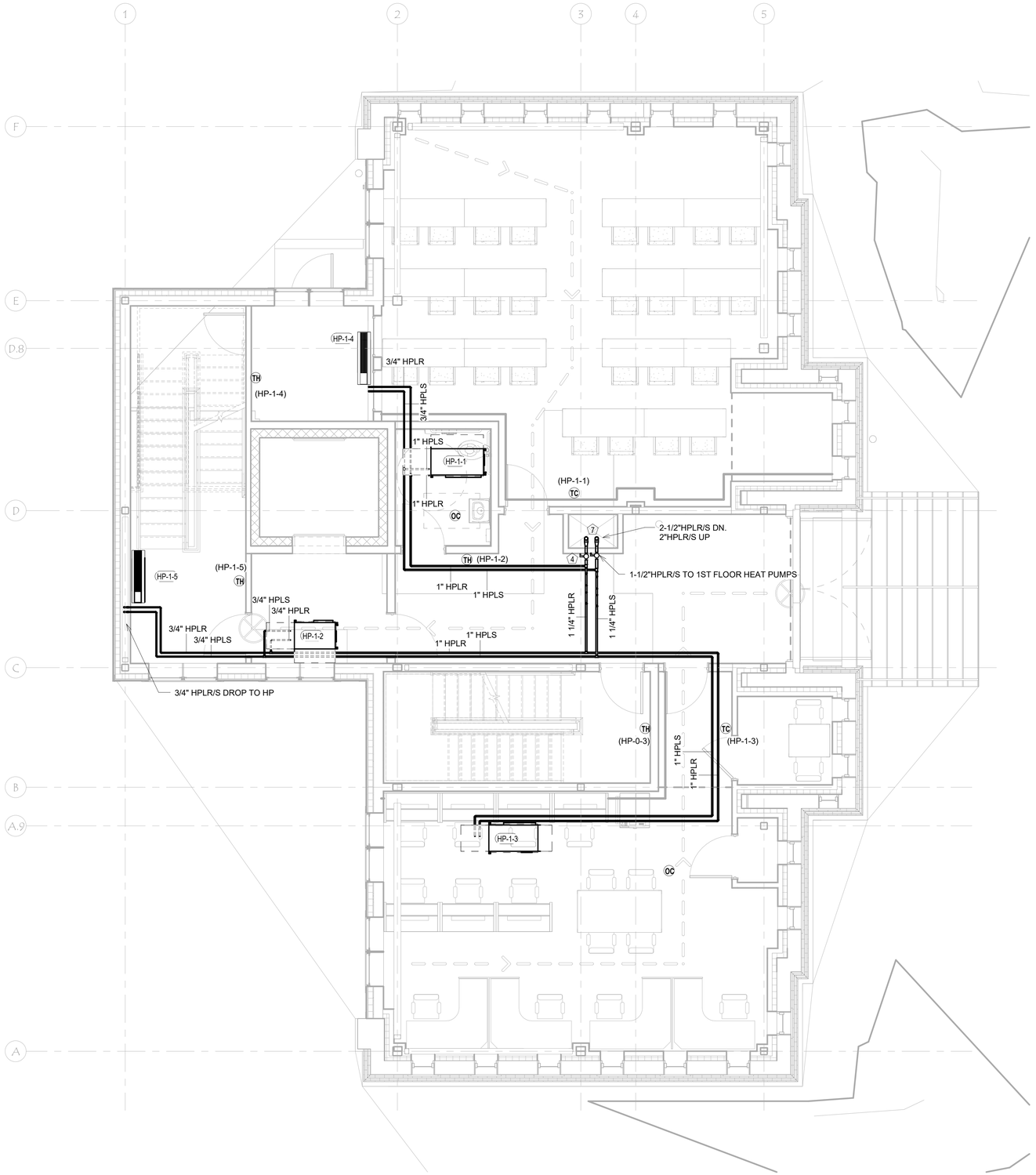
ST. JOHNSBURY, VT

N

BASEMENT - MECHANICAL PIPING

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

M2.01



SPECIFIC MECHANICAL NEW WORK NOTES:

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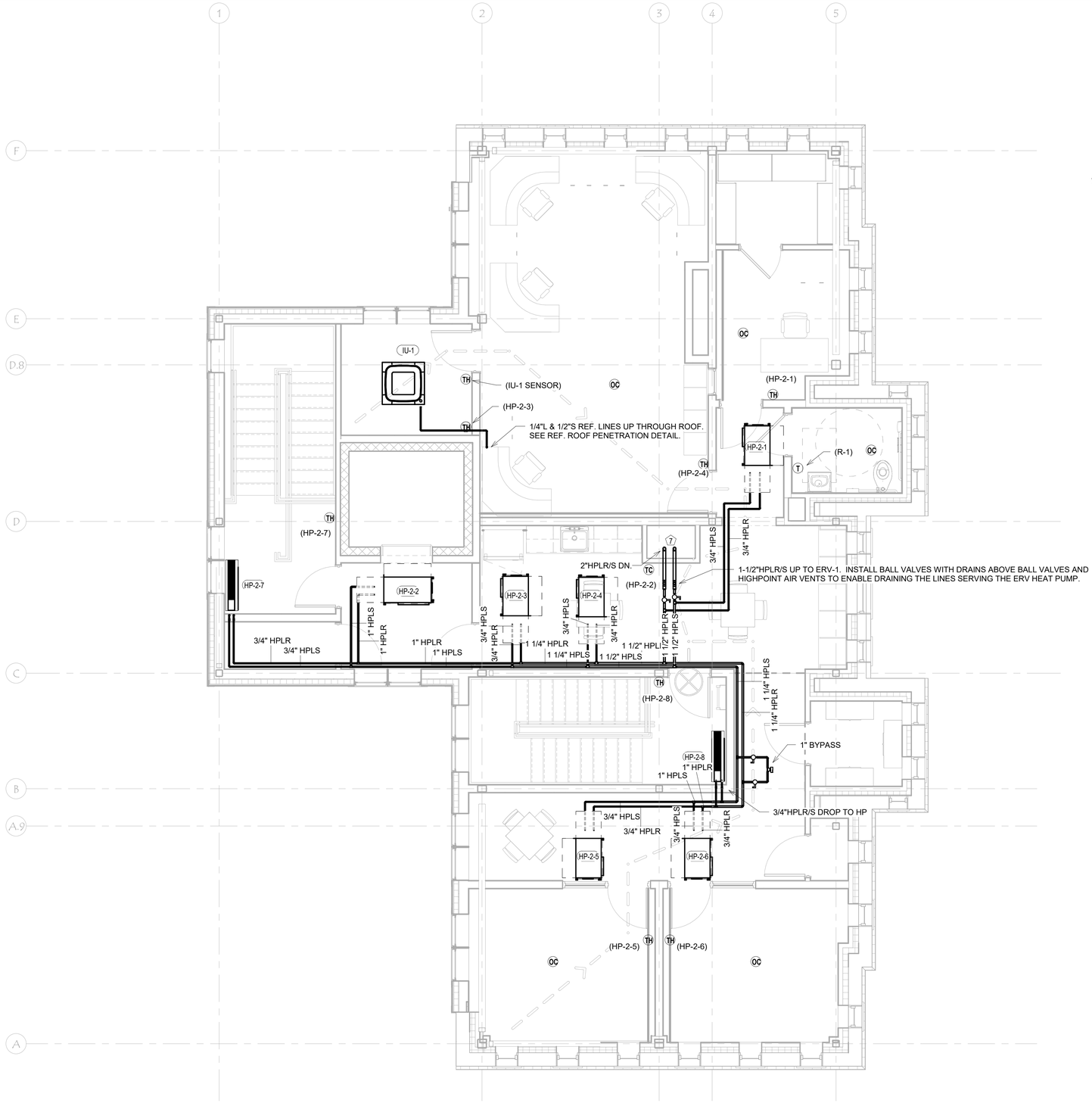
PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

LEVEL 1 - MECHANICAL PIPING

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

M2.11



SPECIFIC MECHANICAL NEW WORK NOTES:

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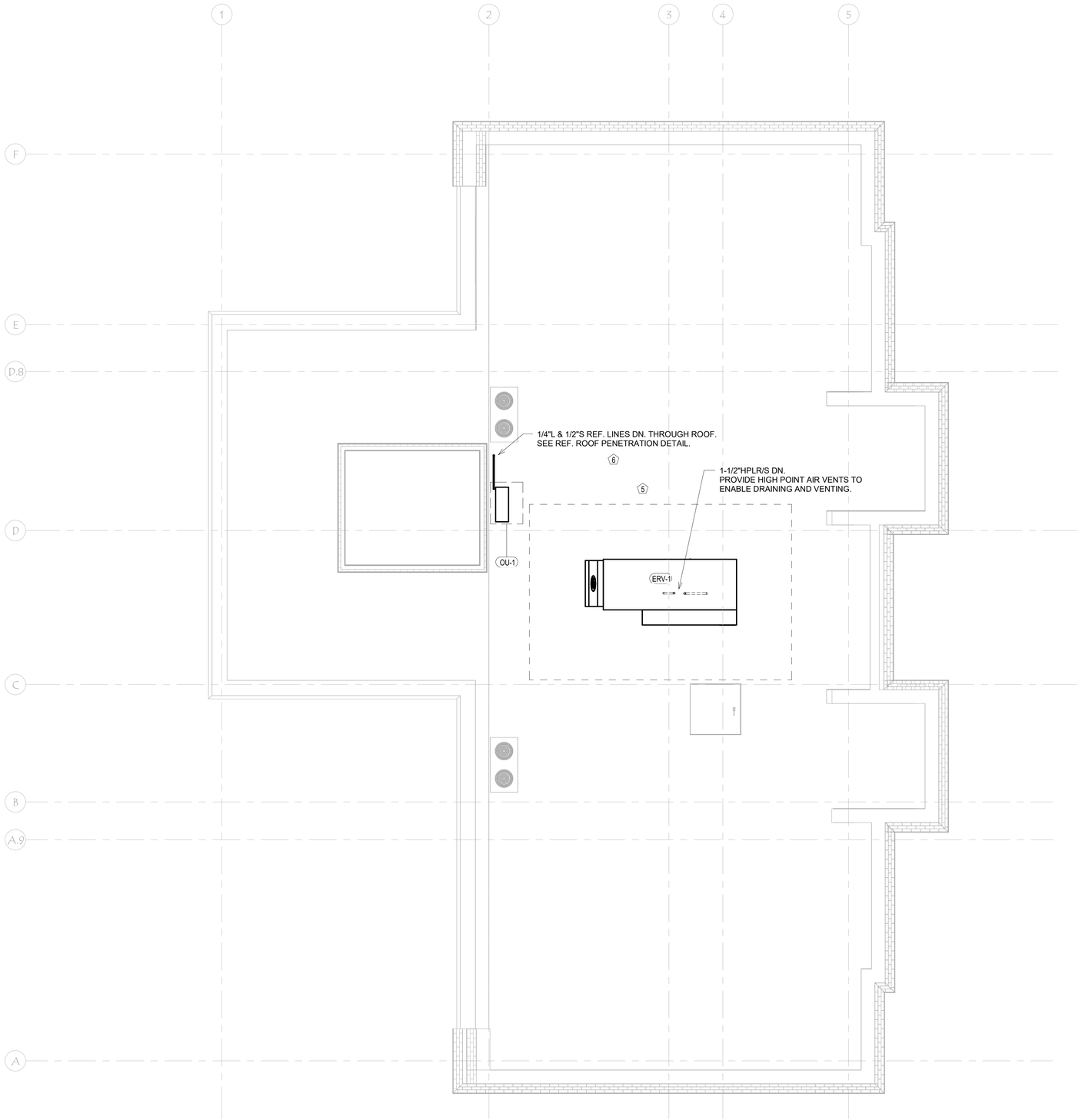
ST. JOHNSBURY, VT

N

LEVEL 2 - MECHANICAL PIPING

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

M2.21



SPECIFIC MECHANICAL NEW WORK NOTES:

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

ROOF - MECHANICAL PIPING

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

M2.31

LEGEND			
SYMBOL	DESCRIPTION		
	HIGH POINT AUTOMATIC AIR VENT		THERMOMETER
	BALL VALVE		PUMP
	AUTOMATIC FLOW CONTROL VALVE		PIPE REDUCER
	CALIBRATED BALANCE VALVE		PIPE STRAINER
	CHECK VALVE - FULL PORT/LINE SIZE		PIPE TEE FLANGE
	AUTOMATIC CONTROL VALVE (TWO-WAY)		PIPE UNION
	AUTOMATIC CONTROL VALVE (3-WAY)		PIPE WELL
FS	FLOAT LEVEL SENSOR	M OR	VISUAL FLOW METER
PS	PRESSURE SWITCH	M	WATER METER
DPT	DIFFERENTIAL PRESSURE TRANSMITTER		PIPE CAP
	FLEXIBLE HOSE		PRESSURE GAUGE
	PRESSURE REGULATING VALVE		TEMPERATURE GAUGE
	BACKFLOW PREVENTER		RELIEF VALVE
	PETE'S PLUG		BACK PRESSURE VALVE

GENERAL NOTES:

1. HORIZONTAL AND VERTICAL HEAT PUMP SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS. PROVIDE 24" LONG STAINLESS STEEL BRAIDED FLEXIBLE HOSES, AND SPECIALTIES INDICATED.

2. HIGH POINT AIR VENTS TO BE PROVIDED AT ALL HIGH POINTS IN BOTH THE HOT WATER HEATING AND HEAT PUMP PIPING SYSTEMS PER THE SPECIFICATIONS.

3. LOW POINT DRAINS TO BE PROVIDED AT ALL LOW POINTS IN THE HEAT PUMP PIPING SYSTEMS PER THE SPECIFICATIONS.

4. SEE MECHANICAL DRAWINGS AND SPECIFICATIONS FOR EQUIPMENT INSTALLATION SCHEMATICS, REQUIRED ACCESSORIES, PIPING CONNECTIONS, AND DUCTWORK CONNECTIONS.

5. ENTIRE HYDRONIC SYSTEM WILL REQUIRE A PROPYLENE GLYCOL SOLUTION OF CONCENTRATION REQUIRED TO MEET THE FOLLOWING MINIMUM PROTECTION RATINGS: FREEZING +20°F (APPROXIMATELY 20% PG BY VOLUME).

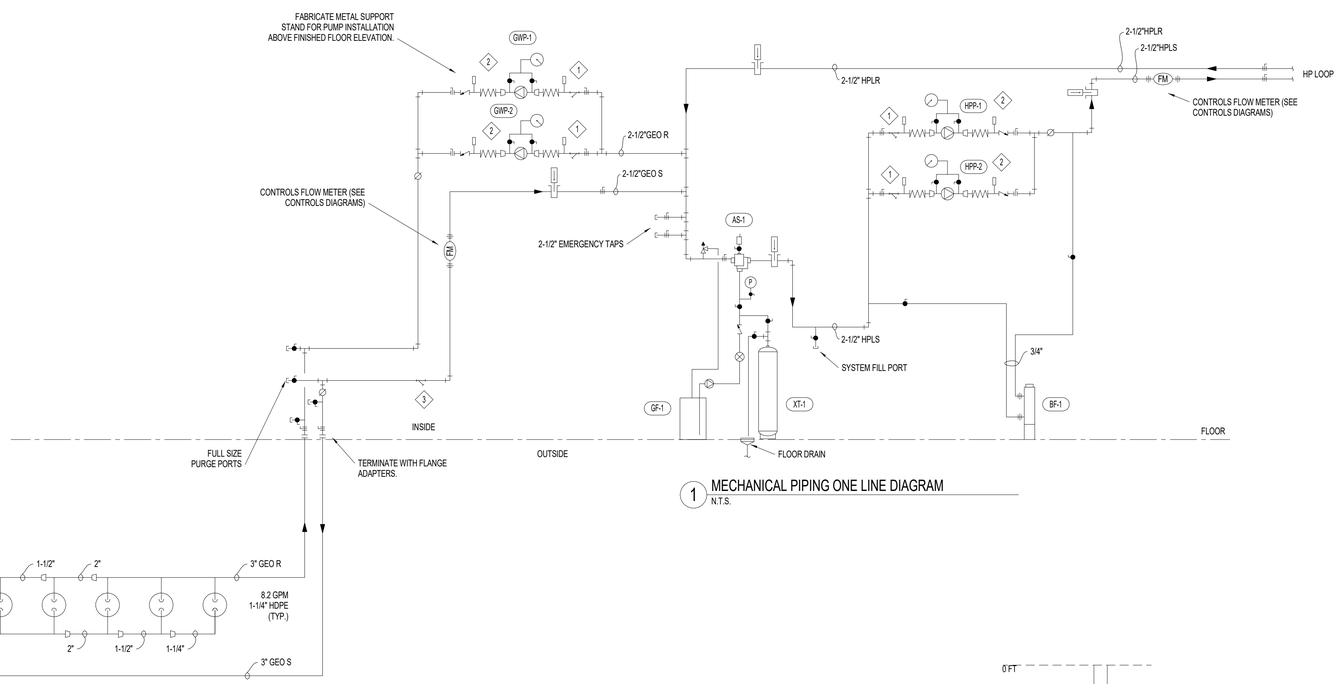
6. ENTIRE HEAT PUMP LOOP SUPPLY AND RETURN PIPING WILL REQUIRE INSULATION PER SPECIFICATIONS. ANY INSULATION EXPOSED TO UV RADIATION SHALL BE PROTECTED PER INSULATION MANUFACTURER'S REQUIREMENTS. ALL INSULATION MUST BE SEALED VAPOR TIGHT TO PREVENT CONDENSATION FROM FORMING.

#SPECIFIC NOTES

1. STRAINERS PROVIDED WITHIN SUCTION DIFFUSERS WILL BE PERMITTED IN LIEU OF PIPE MOUNTED STRAINERS INDICATED.

2. SEPARATE ISOLATION VALVES, CHECK VALVES AND BALANCE VALVES SHALL BE PROVIDED AS INDICATED. MULTIPURPOSE VALVE WILL NOT BE PERMITTED.

3. FULL SIZE SYSTEM STRAINER TO BE PROVIDED WITH FINE MESH PRIOR TO START UP OF CIRCULATOR PUMPS. OPERATE PUMPS AT 100% FLOW FOR 48 HOURS. PULL STRAINER AND INSTALL STANDARD MESH BASED ON STRAINER SIZE. BALANCING SHALL OCCUR AFTER FINE MESH IS REMOVED.



1 MECHANICAL PIPING ONE LINE DIAGRAM
N.T.S.

BORE-HOLE NOTES

1. PROVIDE 6" DIAMETER, 500' DEEP BOREHOLES PER STATE OF VERMONT AGENCY OF NATURAL RESOURCES (ANR) REQUIREMENTS.

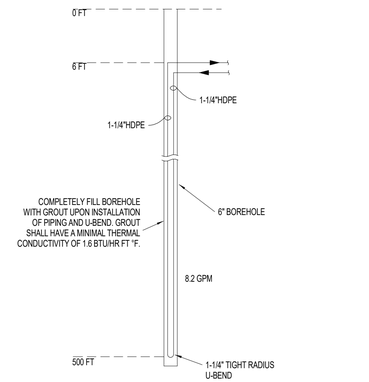
2. WELL DRILLER SHALL BE LICENSED AND CERTIFIED BY AND PERFORM THE WORK IN ACCORDANCE WITH THE STATE OF VERMONT ANR REQUIREMENTS.

3. WELL DRILLER SHALL PROVIDE A PRICE FOR THE FOLLOWING:

A. PROPOSED BOREHOLES AS INDICATED.
B. DR11 HDPE LOOP PIPING WITHIN BOREHOLES (U-BENDS).
C. DR11 HDPE HORIZONTAL PIPING BACK TO BUILDING.
D. BOREHOLE GROUT WITH A MINIMUM CONDUCTIVITY OF 1.6.

4. BOREHOLE CONTRACTOR SHALL SUBMIT PROPOSED GROUT FOR APPROVAL. THE BOREHOLE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING OF THE INSTALLED GROUT.

5. BURIED PIPE SHALL BE AT LEAST 5-FEET BELOW GRADE. IF THE LOOP DISTRIBUTION PIPES ARE LESS THAN 5-FEET BELOW GRADE THEN PIPES SHALL HAVE 2" OF FOAM INSULATION OVERTOP OF PIPING IN TRENCH. FOAM INSULATION SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 25 PSI AND MINIMUM R-VALUE OF 5 PER INCH. PIPES MUST BE INSTALLED WITH MINIMUM DISTANCE BETWEEN SUPPLY AND RETURN OF 24", OR USE OF 2" BOARD FOAM BETWEEN PIPES.



2 TYPICAL GEOTHERMAL BOREHOLE DIAGRAM
N.T.S.

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PUBLIC SAFETY FACILITY
ST. JOHNSBURY, VT

MECHANICAL ONE-LINE DIAGRAMS

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M3.01

LEGEND	
SYMBOL	DESCRIPTION
AFS	AIR FLOW STATION
CS	CURRENT SENSOR
DM	DAMPER MOTOR ACTUATOR
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
DD	DUCT SMOKE DETECTOR (FURNISHED BY OTHERS)
DWT	DEW POINT TEMPERATURE SENSOR
DP	DIFFERENTIAL PRESSURE TRANSMITTER
F	INSTANTANEOUS FLOW
FC	FLOAT CONTROLLER
FM	FLOW METER
FS	FREEZE STAT
FT	TOTAL FLOW
HL	HUMIDITY HIGH LIMIT SWITCH
HWL	BOILER HIGH LIMIT SWITCH
LW	BOILER LOW WATER CUTOFF
PH	PHOTO-HELIC
PT	PRESSURE TRANSMITTER
RLD	REFRIGERANT ALARM SENSOR
RH	RELATIVE HUMIDITY SENSOR
T	TEMPERATURE SENSOR
TF	TOTALIZED FLOW
V	VALVE ACTUATOR
VPT	VELOCITY PRESSURE TRANSMITTER
#	SPECIFIC NOTE
	THERMOMETER WELL
	MOTORIZED BUTTERFLY VALVE
ATC	AUTOMATIC TEMPERATURE CONTROLS
CAV	CONSTANT AIR VOLUME
CC	COOLING COIL
CF	CARBON FILTER
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
EA	EXHAUST AIR
EAD	EXHAUST AIR DAMPER
FF	FINAL FILTER
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NSR	NON-SPRING RETURN
OA	OUTDOOR AIR
OAD	OUTDOOR AIR DAMPER
PF	PRE-FILTER
PHC	PRE-HEAT COIL
RA	RETURN AIR
RAF	RETURN AIR FAN
RHC	RE-HEAT COIL
SA	SUPPLY AIR
SAF	SUPPLY AIR FAN
SR	SPRING RETURN
V.A.V.	VARIABLE AIR VOLUME

DIRECT DIGITAL CONTROLS GENERAL NOTES

1. THE PROPOSED CONTROLS SYSTEM SHALL UTILIZE THE BACNET COMMUNICATIONS PROTOCOL. SEE CONTROL SPECIFICATIONS FOR FURTHER INFORMATION. SYSTEM IS TO BE WEB BASED WITH REMOTE ACCESS. PROVIDE SECURITY PROTECTION AND PROTOCOLS FOR OFF SITE ACCESS.

2. ALL NEW CONTROLS WORK SHALL UTILIZE A COMPLETE DIRECT DIGITAL CONTROLS SYSTEM.

3. THE CONTROLS CONTRACTOR SHALL PROVIDE ALL THE NECESSARY MATERIALS, LABOR AND ACCESSORIES IN ORDER TO PROVIDE A COMPLETE WORKING DIRECT DIGITAL CONTROLS SYSTEM.

4. PROVIDE A COMPLETE AND OPERATIONAL DIRECT DIGITAL CONTROLS SYSTEM INCLUDING ALL REQUIRED WIRING, PROGRAMMING, DEVICES, AND OPERATIONS MANUALS. THE CONTROLS CONTRACTOR'S WORK SHALL INCLUDE BUT NOT BE LIMITED TO: PROVIDING SENSORS FOR THE CONTROLS SYSTEM, AUTOMATIC CONTROL VALVES AND ACTUATORS, CONTROL MODULE(S), CONDUCTORS, CONDUIT, "FRONT END" GRAPHICS, PROGRAMMING, AND CONNECTION TO THE COMMUNICATIONS BUS.

5. THE CONTROLS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROLS CONDUIT. ALL CONTROLS NETWORK AND COMMUNICATIONS LOOP CABLES SHALL BE INSTALLED WITHIN E.M.T. OR FLEXIBLE METAL CONDUIT. ALL CONTROLS CONDUCTORS CONCEALED IN WALLS OR INACCESSIBLE SPACE SHALL IN CONDUIT. THE CONTROLS CONDUIT SHALL BE A MINIMUM OF 3/4" EMT. FINAL DROPS TO TEMPERATURE SENSORS MAY BE IN 1/2" EMT. CONTROLS DEVICE WIRING IN ACCESSIBLE CEILINGS MAY BE INSTALLED IN WIRE TRAYS, ON J-HOOKS OR SIMILAR CABLE MANAGEMENT SYSTEMS.

6. EXTEND TEMPERATURE CONTROLS COMMUNICATION BUS TO CONTROL MODULE LOCATIONS IN E.M.T.

7. A MAXIMUM DISTANCE OF 6'-0" SHALL BE PERMITTED FOR UTILIZING FLEXIBLE METAL CONDUIT OR SEAL TIGHT CONDUIT.

8. PROVIDE CONTROLS TO ACCOMMODATE CONTROLS POINTS LIST, DIAGRAMS AND SEQUENCE OF OPERATIONS.

9. ALL CONTROLS CONDUCTORS SHALL BE EXTENDED TO THE TEMPERATURE CONTROLS PANELS.

10. ALL CONTROLS MODULES SHALL BE MOUNTED IN A PROTECTIVE ENCLOSURE.

11. PROVIDE TIME CLOCK PROGRAMS FOR THE VARIOUS CONTROLS SYSTEM.

12. THE CONTROLS CONTRACTOR SHALL BE PRESENT AND PROVIDE ASSISTANCE DURING THE FINAL BALANCE OF EACH NEW AIR HANDLING DEVICE OR SYSTEM.

13. COORDINATE LOCATION OF ALL THERMOSTATS, TEMPERATURE SENSORS, CO2 SENSORS, AND CONTROL VALVES IN FIELD. VERIFY LOCATIONS WITH ARCHITECT/ENGINEER PRIOR TO INSTALLATION.

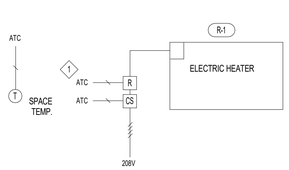
14. CONTROLS CONTRACTOR IS TO COORDINATE CONTROLS DEVICE/SYSTEM POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR TO ENSURE POWER IS PROVIDED IN THE LOCATIONS NECESSARY. COORDINATE QUANTITIES OF POWER CIRCUITS REQUIRED FOR THE CONTROLS EQUIPMENT/DEVICES WITH THE ELECTRICAL CONTRACTOR. CONTROLS CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE ELECTRICAL POWER REQUIRED FOR THE CONTROLS DEVICES/SYSTEM.

15. THE CONTROLS CONTRACTOR IS RESPONSIBLE FOR ASSISTING THE COMMISSIONING AGENT DURING THE COMMISSIONING PROCESS. THE CONTROLS CONTRACTOR SHALL WORK IN CONJUNCTION WITH THE COMMISSIONING AGENT TO COMPLETE THE PRE-FUNCTIONAL TEST SHEETS FOR ALL EQUIPMENT AND SYSTEMS TO BE COMMISSIONED. THE CONTROLS CONTRACTOR SHALL BE PRESENT TO ASSIST THE COMMISSIONING AGENT DURING THE SYSTEM AND EQUIPMENT FUNCTIONAL TESTING PERIOD.

16. THE CONTROLS CONTRACTOR IS RESPONSIBLE FOR ASSISTING THE TESTING AND BALANCE AGENT DURING THE BALANCING PROCESS. THE CONTROLS CONTRACTOR SHALL WORK IN CONJUNCTION WITH THE TESTING AND BALANCE AGENT TO COMPLETE THE BALANCE AND CALIBRATION OF ALL SYSTEMS.

17. ALL DEVICES INDICATED ON THE CONTROL SCHEMATICS ARE INTENDED TO BE FURNISHED AND INSTALLED BY THE CONTROLS CONTRACTOR, UNLESS NOTED OTHERWISE. THE CONTROLS CONTRACTOR SHALL COORDINATE DIRECTLY WITH THE VARIOUS SELECTED MECHANICAL EQUIPMENT VENDORS TO DETERMINE WHAT FACTORY SUPPLIED SENSORS, WIRING, ETC. ARE TO BE FIELD INSTALLED BY THE CONTRACTOR. ANY FACTORY SUPPLIED CONTROLS COMPONENTS THAT ARE SHIPPED LOOSE FOR FIELD INSTALLATION SHALL BE THE RESPONSIBILITY OF THE CONTROLS CONTRACTOR.

18. THE CONTROLS SYSTEM SHALL INCLUDE A WEB ACCESS SYSTEM, INCLUDING ALL REQUIRED EQUIPMENT AND PROGRAMMING TO ALLOW ALL SYSTEMS TO BE ACCESSED AND MODIFIED THROUGH THE WEB. ALL CONTROLS POINTS, DATA, GRAPHICS, ETC., SHALL BE AVAILABLE VIA INTERNET ACCESS FOR REMOTE MONITORING AND ACCESS BY THE OWNER AND ALL APPROVED REPRESENTATIVES. PROVIDE ROUTERS AND PROGRAMMING AS REQUIRED. SET UP SECURITY PROTOCOLS FOR VARIOUS LEVELS OF ACCESS (READ ONLY, MAINTENANCE, PROGRAMMER, ETC.). COORDINATE WITH THE ELECTRICAL CONTRACTOR AND I.T. DEPARTMENT FOR STATIC I.P. ADDRESS(ES) AND DATA OUTLETS REQUIRED. CONTROLS CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE INSTALLATION OF THE DATA OUTLETS FOR THE CONTROLS SYSTEM.



1 TYPICAL ELECTRIC HEATER CONTROL SCHEMATIC
N.T.S.

NOTES:

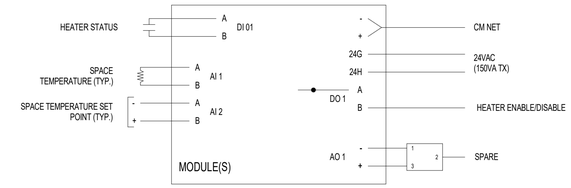
1. FURNISH AND INSTALL DDC THERMOSTAT WITH LOCAL TEMPERATURE DISPLAY.

SEQUENCE OF OPERATION

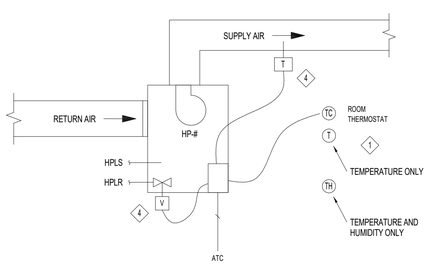
THE SPACE TEMPERATURE IS TO BE MONITORED AT ALL TIMES. ELECTRIC RESISTANCE HEATER IS TO OPERATE AS NECESSARY TO MAINTAIN SPACE TEMPERATURE AT SET POINT. HEATER TEMPERATURE MAXIMUM SET POINT IS TO EQUAL THE SET POINT OF THE HEAT PUMP SERVING THE SPACE (HP-2-2). ELECTRIC HEATER IS TO BE DISABLED IF HP-2-2 IS IN COOLING MODE.

ALARM POINTS

SPACE TEMPERATURE LOW
SPACE TEMPERATURE HIGH



2 TYPICAL ELECTRIC HEATER CONTROL POINTS SCHEMATIC
N.T.S.



ALARM POINTS

HEAT PUMP FACTORY ALARM
SPACE TEMPERATURE HIGH
SPACE TEMPERATURE LOW
SPACE RELATIVE HUMIDITY HIGH
SERVER RM. BACK-UP UNIT ON

(TYPICAL)
3 WATER SOURCE HEAT PUMP CONTROL DIAGRAM
N.T.S.

MAPPED OBJECTS FROM FACTORY CONTROLLER	
READ: DISCHARGE AIR TEMPERATURE	READ: THERMOSTAT ROOM TEMPERATURE SET POINT
READ: SPACE AIR TEMPERATURE	READ: COMPRESSOR STATUS
READ/WRITE: MODE	READ: COMPRESSOR SPEED (MULTI-SPEED)
READ/WRITE: FAN OPERATION	READ: FACTORY ALARM
READ/WRITE: FAN SPEED	READ: LEAVING WATER TEMPERATURE
READ: CONTROL VALVE POSITION	READ: RETURN AIR TEMPERATURE
READ/WRITE: HOT GAS REHEAT (DEHUMIDIFICATION)	

NOTES

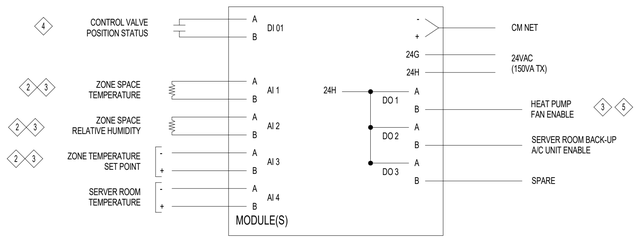
1. OBTAIN THE HEAT PUMP COMBINATION SPACE TEMPERATURE, RELATIVE HUMIDITY (AND CO2 SENSORS WHERE INDICATED) FROM THE HEAT PUMP VENDOR. SENSORS TO HAVE ACCESSIBLE LIMITED LOCAL ADJUSTMENT AND WITH A DIGITAL DISPLAY. WALL MOUNT AT 46"+/- A.F.F. LABEL WITH ZONE NUMBER. THE SAME SENSOR IS TO BE UTILIZED TO CONTROL THE VENTILATION VAVS WHERE APPLICABLE. EXACT THERMOSTAT LOCATION IS TO BE COORDINATE WITH THE OWNER AND ARCHITECT PRIOR TO INSTALLATION.

2. WORK WITH THE OWNER FOR DESIRED TEMPERATURE SET POINTS AND OCCUPANCY SCHEDULES.

3. ZONE SPACE TEMP, SPACE TEMP SET POINT, ZONE SPACE HUMIDITY, HUMIDITY SET POINT, CO2 LEVEL AND HEAT PUMP ENABLE MAY ALSO BE MAPPED FROM THE BACNET COMMUNICATION.

4. CONTROLS CONTRACTOR TO PROVIDE AND INSTALL ALL NON-MANUFACTURER PROVIDED DEVICES. WATER CONTROL VALVE IS TO BE PROVIDED BY THE CONTROLS CONTRACTOR AND IS TO BE SIZED FOR 1 PSIG OF PRESSURE DROP OF LESS.

5. CONTROL VALVE OPEN/CLOSE COMMAND IS TO BE VIA THE HEAT PUMP CONTROLS.



(TYPICAL)
4 WATER SOURCE HEAT PUMP CONTROL POINTS SCHEMATIC
N.T.S.

SEQUENCE OF OPERATION

MAP BACNET OBJECTS AS INDICATED, HEAT PUMP SHALL OPERATE ON FACTORY CONTROLS UTILIZING FACTORY THERMOSTAT OR DDC THERMOSTAT TIED INTO THE BACNET CONTROLLER (COORDINATE COMPATIBILITY). WORK WITH THE OWNER TO ESTABLISH OCCUPIED AND UNOCCUPIED SCHEDULES FOR EACH SPACE. EACH SPACE IS TO BE ABLE TO HAVE SEPARATE OCCUPANCY SCHEDULES. COORDINATE WITH OWNER IF OCCUPANCY SENSORS (FOR SPACES WITH OCCUPANCY SENSORS) ARE TO BE UTILIZED TO DETERMINE IF A SPACE IS TO BE IN OCCUPIED MODE.

SYSTEM START UP
UNIT SHALL BE CONTROLLED FROM A PROGRAMMED OCCUPIED/UNOCCUPIED TIME SCHEDULE. DURING OCCUPIED PERIODS, THE BLOWER SHALL BE STARTED FOR CONTINUOUS OPERATION. BLOWER IS TO RUN AT A PROGRAMMED LOW SPEED DURING OCCUPIED HOURS WHEN THERE IS NO CALL FOR HEATING/COOLING/DEHUMIDIFICATION. FAN TO BE OFF DURING UNOCCUPIED HOURS AND SHALL CYCLE ONLY AS NECESSARY TO MAINTAIN SPACE TEMPERATURE. OCCUPANT ADJUSTMENT OF THE LOCAL THERMOSTAT DURING UNOCCUPIED HOURS SHALL TEMPORARILY ADJUST THE SPACE TEMPERATURE SET POINT FOR 1 HOUR (ADJ.). AFTER 1 HOUR, THE SPACE TEMPERATURE SET POINT SHALL REVERT BACK TO PROGRAMMED VALUES. PROVIDE A LIMITED +/- 4 DEGREE USER ADJUSTMENT RANGE.

HEATING AND COOLING MODES
DURING A CALL FOR HEATING OR COOLING, THE UNIT SHALL OPEN THE CONTROL VALVE AND ENABLE THE FAN/RAMP THE FAN SPEED UP AS NECESSARY, AND ENABLE AND MODULATE THE COMPRESSOR (WHERE APPLICABLE) AS NECESSARY TO MAINTAIN SPACE TEMPERATURE SET POINT. PROVIDE USER ADJUSTABLE DEAD BAND.

VESTIBULE IS TO BE HEATING ONLY. COOLING IS TO BE LOCKED OUT FOR THE VESTIBULE HEAT PUMP. VESTIBULE IS TO BE HEATED TO 50°F (ADJ.). FANS ARE TO CYCLE AS NEEDED TO MAINTAIN SPACE TEMPERATURE AT SET POINT.

IF ANY (NON-VESTIBULE) ZONE IS GREATER THAN 2°F (ADJ.) AWAY FROM SET POINT AFTER 1 HOUR (ADJ.) OF A HEATING/COOLING CALL, A HEATING OR COOLING SIGNAL IS TO BE SENT TO THE ERV TO ALTER THE ERV SET POINT. ONCE SPACE IS WITH 1°F (ADJ.) OF SET POINT, THE CALL SHALL BE RESCINDED.

DEHUMIDIFICATION MODE
WHEN SPACE RELATIVE HUMIDITY IS ABOVE SET POINT 50% (ADJ.), THE UNIT SHALL UTILIZE FACTORY HOT GAS REHEAT DEHUMIDIFICATION AND PROGRAMMING TO REDUCE SPACE RELATIVE HUMIDITY. FOR UNITS WITH MODULATING HOT GAS REHEAT, THE FACTORY MODULATING PROGRAMMING SHALL OPERATE TO MAINTAIN THE SPACE RELATIVE HUMIDITY.

SERVER ROOM COOLING
THE WATER-SOURCE HEAT PUMP IS TO BE THE PRIMARY MEANS OF COOLING THE SERVER ROOM. THE HEAT PUMP IS TO OPERATE TO MAINTAIN THE SPACE TEMPERATURE AS INDICATED ABOVE. THE BACKUP/SUPPLEMENTAL SOURCE OF COOLING SHALL BE VIA THE SINGLE-ZONE VRF SPLIT SYSTEM. THE WATER-SOURCE HEAT PUMP SET POINT SHALL BE 5°F (ADJ.) BELOW THE VRF SPLIT SYSTEM SET POINT. AN ALARM IS TO BE SENT WHENEVER THE SERVER VRF SPLIT SYSTEM OU-1 AND IU-1 IS ENABLED.

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ST. JOHNSBURY, VT

MECHANICAL CONTROLS

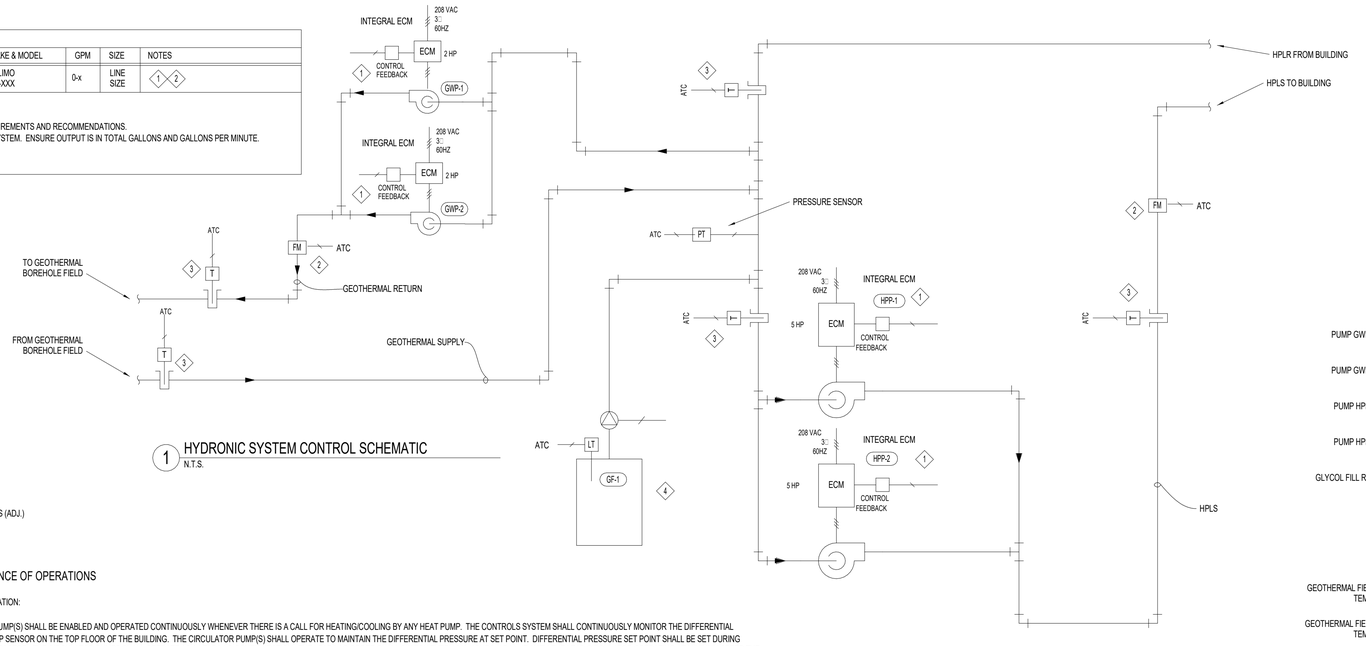
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WATER FLOW METER SCHEDULE					
TAG	DESCRIPTION	MAKE & MODEL	GPM	SIZE	NOTES
FM	GEOTHERMAL/HP LOOP WATER FLOW METER	BELIMO FM-XXX	0-x	LINE SIZE	1 2

NOTES:

1. INSTALL PER MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
2. PROVIDE 0-10V SIGNAL TO THE DDC SYSTEM. ENSURE OUTPUT IS IN TOTAL GALLONS AND GALLONS PER MINUTE.



1 HYDRONIC SYSTEM CONTROL SCHEMATIC
N.T.S.

ALARM POINTS

HEAT PUMP LOOP DIFF. PRESS. HIGH
HEAT PUMP LOOP DIFF. PRESS. LOW
GEOTHERMAL COMBINED FLOW LOW
GEO. WATER LOOP TEMPERATURE HIGH
GEO. WATER LOOP TEMPERATURE LOW
HEAT PUMP LOOP TEMPERATURE HIGH
HEAT PUMP LOOP TEMPERATURE LOW
SYSTEM FILL PRESSURE LOW
VALVE FAILURE (TYP.)
HEAT PUMP ALARM (TYP.)
CIRCULATOR PUMP FAILURE (TYP.)
GLYCOL FILL PUMP OPERATION 30 SECONDS (ADJ.)
GF-1 RESERVOIR LEVEL LOW
GF-1 FAIL

HYDRONIC SYSTEMS SEQUENCE OF OPERATIONS

HEAT PUMP LOOP CIRCULATOR OPERATION:

THE HEAT PUMP LOOP CIRCULATOR PUMP(S) SHALL BE ENABLED AND OPERATED CONTINUOUSLY WHENEVER THERE IS A CALL FOR HEATING/COOLING BY ANY HEAT PUMP. THE CONTROLS SYSTEM SHALL CONTINUOUSLY MONITOR THE DIFFERENTIAL PRESSURE OF THE LOOP FROM THE DP SENSOR ON THE TOP FLOOR OF THE BUILDING. THE CIRCULATOR PUMP(S) SHALL OPERATE TO MAINTAIN THE DIFFERENTIAL PRESSURE AT SET POINT. DIFFERENTIAL PRESSURE SET POINT SHALL BE SET DURING BALANCING BY THE BALANCING CONTRACTOR. THE CIRCULATOR PUMPS SHALL OPERATE AS A LEAD/LAG CONFIGURATION. THE LEAD/LAG ORDER SHALL SWITCH EVERY 240 HOURS (ADJ.). IF, WITH THE LEAD CIRCULATOR OPERATING AT MINIMUM SPEED THE LOOP D.P. RISES ABOVE SET POINT, THE BYPASS VALVE SHALL BE MODULATED OPEN TO MAINTAIN THE D.P. AS THE LOOP D.P. REDUCES, THE FIRST STAGE OF MODULATION SHALL BE TO CLOSE THE BYPASS VALVE AND ONCE THE VALVE IS FULLY CLOSED, THE PUMP SPEED MAY BE INCREASED. IF THE LEAD PUMP FAILS, THEN THE LAG PUMP WILL ENABLE AND AN ALARM WILL BE INITIATED.

GEOTHERMAL FIELD CIRCULATOR PUMPS OPERATION:

THE GEOTHERMAL CIRCULATORS SHALL OPERATE IN A LEAD/LAG CONFIGURATION (SWITCH EVERY 240 HOURS (ADJ.). THE BMS SHALL CONTINUOUSLY MONITOR THE HEAT PUMP LOOP SUPPLY TEMPERATURE WHEN THE HEAT PUMP LOOP CIRCULATOR IS OPERATING. WHEN THE LOOP SUPPLY TEMPERATURE DROPS TO 45°F (ADJ.), THE LEAD GEOTHERMAL CIRCULATOR PUMP SHALL BE ENABLED. ONCE ENABLED, THE LEAD CIRCULATOR SHALL MODULATE AS NECESSARY TO MAINTAIN THE HEAT PUMP LOOP SUPPLY TEMPERATURE AT 47°F (ADJ.). IF THE LEAD PUMP FAILS, THEN THE LAG PUMP WILL ENABLE AND AN ALARM WILL BE INITIATED.

WHEN THE GEOTHERMAL SUPPLY TEMPERATURE RISES ABOVE 47°F (ADJ.) THE LEAD CIRCULATOR SHALL DISABLE. WHEN THE HEAT PUMP LOOP SUPPLY TEMPERATURE RISES TO 75°F (ADJ.) THE LEAD GEOTHERMAL CIRCULATOR SHALL BE ENABLED. ONCE ENABLED, THE LEAD CIRCULATOR SHALL MODULATE AS INDICATED ABOVE TO MAINTAIN THE HEAT PUMP LOOP SUPPLY TEMPERATURE OF 70°F (ADJ.). WHEN THE HEAT PUMP LOOP SUPPLY TEMPERATURE DROPS BELOW 70°F (ADJ.), THE LEAD GEOTHERMAL CIRCULATOR SHALL DISABLE.

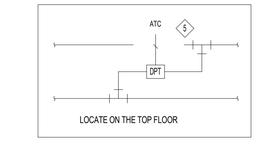
CONTROLS SYSTEM SHALL MONITOR THE GEOTHERMAL AND HEAT PUMP LOOP FLOW RATES. THE GEOTHERMAL PUMP FLOW RATE MAXIMUM IS TO BE EQUAL TO THE HEAT PUMP LOOP FLOW RATE.

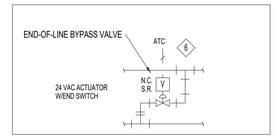
GLYCOL FILL SEQUENCE OF OPERATIONS

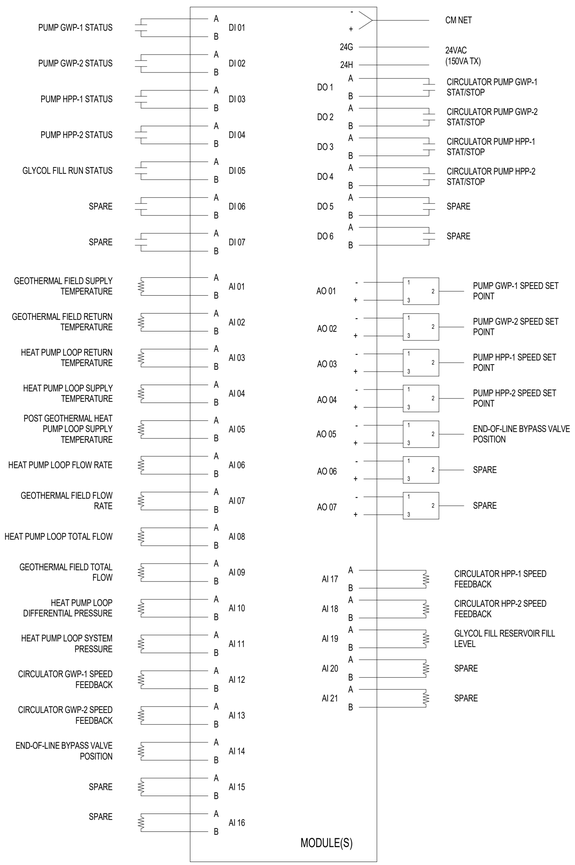
GLYCOL FEEDER TO OPERATE UNDER IT'S OWN CONTROLS TO MAINTAIN SYSTEM FILL PRESSURE AT SET POINT (INITIAL SET POINT TO BE 28 PSIG). SYSTEM SHALL MONITOR GLYCOL FEEDER STATUS. IF GLYCOL FEEDER RUNS FOR MORE THAN 30 SECONDS (ADJ.), AN ALARM IS TO BE SENT TO THE SYSTEM.

NOTES

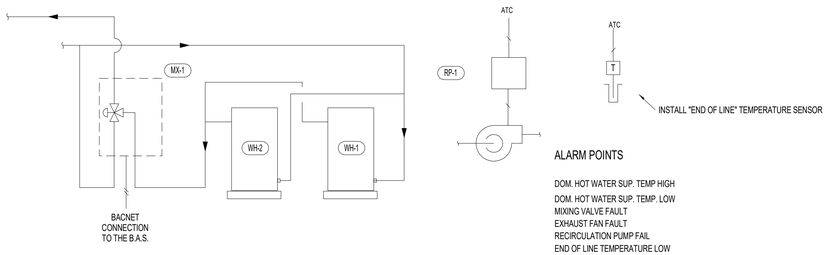
1. ECM CONTROLLERS ARE FACTORY INSTALLED ON THE PUMPS. COORDINATE ALL CONTROL WIRING CONNECTIONS WITH THE MANUFACTURER'S DIAGRAMS. CONTROLS CONTRACTOR TO PROVIDE BACNET INTEGRATION AND SHALL MAP THE BACNET POINTS OF THE CIRCULATORS. MINIMUM MAPPED POINTS ARE FLOW, HEAD, RPM, SPEED, HORSEPOWER (IF AVAILABLE), ALARM.
2. FLOW METERS ARE TO BE INSTALLED ON THE GEOTHERMAL SUPPLY (FROM THE FIELD) LINE AND ON THE MAIN HEAT PUMP LOOP SUPPLY LINE. FLOW METERS ARE TO BE INSTALLED PER MANUFACTURER'S REQUIREMENTS TO PROVIDE ACCURATE FLOW. ENSURE SUFFICIENT STRAIGHT PIPE IS PROVIDED UPSTREAM/DOWNSTREAM.
3. INSTALL TEMPERATURE SENSORS IN THE LINES AS INDICATED. TEMPERATURE SENSORS ARE TO BE INSTALLED WITHIN THERMAL WELLS. PROVIDE THERMAL WELLS TO THE MECHANICAL CONTRACTOR AS NECESSARY TO FACILITATE INSTALLING THE TEMPERATURE SENSORS.
4. INSTALL A LEVEL SENSOR ON THE GLYCOL FILL PUMP. COORDINATE REQUIREMENTS WITH SUBMITTED PRODUCT.
5. INSTALL A DIFFERENTIAL PRESSURE SENSOR FOR MONITORING. COORDINATE INSTALLATION REQUIREMENTS WITH THE MECHANICAL CONTRACTOR.
6. INSTALL AN END-OF-LINE BYPASS VALVE ON THE END OF THE LINE ON THE TOP FLOOR. COORDINATE INSTALLATION WITH THE MECHANICAL CONTRACTOR.







2 HYDRONIC SYSTEM CONTROL POINTS SCHEMATIC
N.T.S.



ALARM POINTS

DOM. HOT WATER SUP. TEMP HIGH
DOM. HOT WATER SUP. TEMP. LOW
MIXING VALVE FAULT
EXHAUST FAN FAULT
RECIRCULATION PUMP FAIL
END OF LINE TEMPERATURE LOW

3 DOM. HOT WATER MIXING VALVE AND RECIRC. PUMP CONTROL SCHEMATIC
N.T.S.

SEQUENCE OF OPERATION

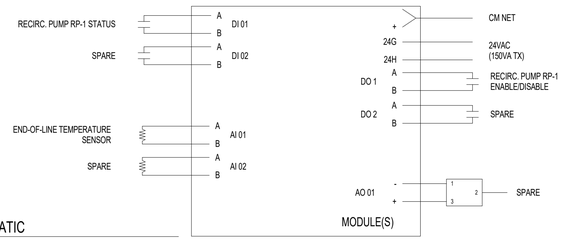
RECIRC. PUMP OPERATION:
PROVIDE ON/OFF NORMAL OPERATING WEEKLY SCHEDULE (COORDINATE SCHEDULE WITH OWNER). DURING OCCUPIED HOURS, RECIRC. PUMP IS TO BE ENABLED AND OPERATE CONTINUOUSLY. DURING UNOCCUPIED HOURS, PUMP TO ENABLE WHEN END-OF-LINE TEMPERATURE SENSOR REGISTERS < 105° F (ADJ.).

PROVIDE A SELECTABLE ALTERNATE SEQUENCE THAT OPERATES THE RECIRC. PUMP BASED ONLY ON THE END-OF-LINE TEMPERATURE SENSOR.

PUMP SPEED IS TO BE SET DURING BALANCING.

MIXING VALVE OPERATION:
THE MIXING VALVE SHALL BE OPERATED AUTOMATICALLY WITH FACTORY INSTALLED CONTROLLER TO MAINTAIN SUPPLY WATER TEMPERATURE SET POINT. THE CONTROLS CONTRACTOR SHALL PROVIDE CONNECTION TO THE FACTORY CONTROLLER VIA BACNET INTERFACE. THE FOLLOWING CONTROL POINTS SHALL BE MONITORED AND REFLECTED ON THE CONTROL SYSTEM GRAPHICS:

1. SUPPLY TEMPERATURE SET POINT (USER ADJUSTABLE)
2. DHW INLET TEMPERATURE
3. DHW MIXED OUTLET TEMPERATURE
4. DCW INLET TEMPERATURE
5. DHWR INLET TEMPERATURE



4 DOM. HOT WATER MIXING VALVE AND RECIRC. PUMP CONTROL POINTS SCHEMATIC
N.T.S.

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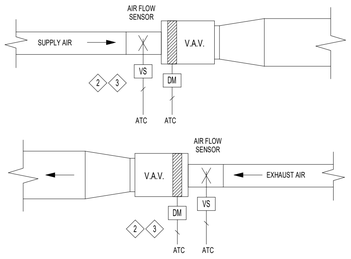
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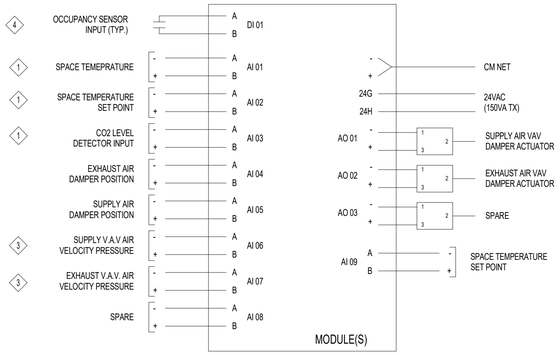
PUBLIC SAFETY FACILITY
ST. JOHNSBURY, VT

MECHANICAL CONTROLS

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	N.T.S.

M4.02





NOTES:

1. CO2 SENSOR SHALL BE COMBINATION TEMPERATURE, HUMIDITY, CO2 DDC SENSOR. COORDINATE SENSOR INSTALLATION WITH HEAT PUMP THERMOSTATS SO THAT HEAT PUMPS AND VENTILATION ARE USING THE SAME SENSOR.
2. VERIFY V.A.V. BOX VOLUME MIN./MAX. CONTROL SET POINTS WITH AIR BALANCE READINGS AND CONFIRM WITH ENGINEER.
3. PROVIDE PROGRAMMING TO DISPLAY V.A.V. BOX VELOCITY PRESSURE IN EQUIVALENT CFM VALUE AT THE OPERATOR STATION.
4. LIGHTING CONTROL SYSTEM OCCUPANCY SENSOR MAY BE UTILIZED IN LIEU OF A SEPARATE DDC SENSOR. COORDINATE SENSOR REQUIREMENTS WITH LIGHTING CONTROL SYSTEM VENDOR TO ENSURE COMPATIBILITY.

SEQUENCE OF OPERATIONS

THE SUPPLY V.A.V. BOX SHALL REMAIN IN MINIMUM POSITION (35% OF DESIGN (ADJ.), SEE VAV SCHEDULE) UNDER NORMAL CONDITIONS. WORK WITH THE AIR BALANCE CONTRACTOR TO ESTABLISH MINIMUM DESIGN FLOW. VAV BOXES ARE TO FAIL IN PLACE WHEN THE ERV IS DISABLED.

VARIABLE VOLUME VAVS OCCUPIED HOURS:
DURING OCCUPIED HOURS, THE VAV BOXES SHALL OPERATE IN MINIMUM POSITION (SEE ABOVE). UPON AN INCREASE IN CO2 LEVELS IN ANY SPACE SERVED BY THE CORRESPONDING VAV (ABOVE 800PPM ADJ.) AT THE CO2 DETECTOR, THE SUPPLY V.A.V. BOX SHALL OPERATE IN VARIABLE VOLUME MODE AND MODULATE OPEN TO INCREASE VENTILATION AIR TO THE SPACE AS NECESSARY TO REDUCE CO2 VALUES BELOW THE SET POINT (UP TO A MAXIMUM AIRFLOW INDICATE IN THE V.A.V. SCHEDULES). THE EXHAUST V.A.V. BOX SHALL TRACK THE SUPPLY V.A.V. BOX. ONCE CO2 LEVELS HAVE DECREASED BELOW THE SET POINT, THE SUPPLY V.A.V. BOX SHALL RETURN TO MINIMUM POSITION. PROVIDE DEADBAND TO LIMIT CYCLING.

VS/VE-1-3 ARE TO OPERATE AT 80 CFM (ADJ.) WHENEVER OCCUPANCY IS DETECTED (SEE SCHEDULE) AND IS TO RAMP UP WHENEVER CO2 LEVELS RISE ABOVE SET POINT. WHEN OCCUPANCY IS NO LONGER SENSED, THE BOXES ARE TO REVERT BACK TO 35% FLOW (ADJ.).

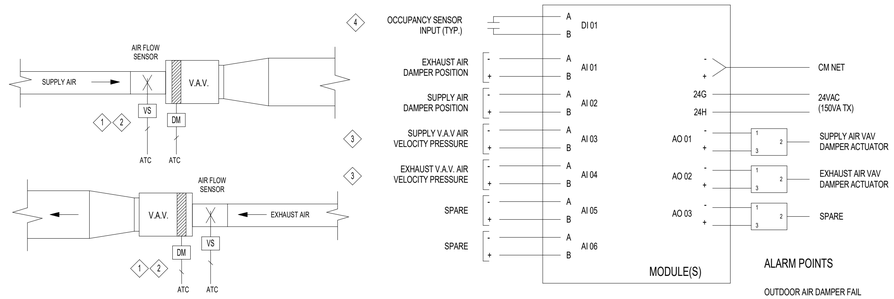
UNOCCUPIED HOURS:
IF DURING UNOCCUPIED HOURS, THE VARIABLE VOLUME VAV BOXES ARE TO BE CLOSED. IF ANY SPACE CO2 LEVELS EXCEED SET POINT, THE ERV SHALL ENABLE (IF NOT OPERATING) AND THE V.A.V.(S) SERVING THE SPACE(S) WITH HIGH CO2 LEVELS SHALL MODULATE OPEN TO REDUCE CO2 LEVELS BELOW SET POINT (SEE PROGRAMMING ABOVE). EXHAUST V.A.V. BOX SHALL TRACK THE SUPPLY. ONCE CO2 LEVELS HAVE DECREASED BELOW THE SET POINT (PROVIDE PROGRAMMED DIFFERENTIAL), THE ERV AND ALL V.A.V. BOXES SHALL REVERT BACK TO NORMAL OPERATION.

BOXES THAT ARE TO OPERATE IN VARIABLE VOLUME MODE ARE:
-VS/VE-1-3
-VS/VE-1-1

ALARM POINTS

CO2 DETECTOR LEVEL ABOVE LIMITS (1500PPM ADJ.)
OUTDOOR AIR DAMPER FAIL
EXHAUST AIR DAMPER FAIL

1 VENTILATION ZONE CONTROL SCHEMATIC (TYP. ALL VARIABLE VOLUME SPACES)
N.T.S.



NOTES:

1. CO2 SENSOR SHALL BE COMBINATION TEMPERATURE, HUMIDITY, CO2 DDC SENSOR. COORDINATE SENSOR INSTALLATION WITH HEAT PUMP THERMOSTATS SO THAT HEAT PUMPS AND VENTILATION ARE USING THE SAME SENSOR.
2. VERIFY V.A.V. BOX VOLUME MIN./MAX. CONTROL SET POINTS WITH AIR BALANCE READINGS AND CONFIRM WITH ENGINEER.
3. PROVIDE PROGRAMMING TO DISPLAY V.A.V. BOX VELOCITY PRESSURE IN EQUIVALENT CFM VALUE AT THE OPERATOR STATION.
4. LIGHTING CONTROL SYSTEM OCCUPANCY SENSOR MAY BE UTILIZED IN LIEU OF A SEPARATE DDC SENSOR. COORDINATE SENSOR REQUIREMENTS WITH LIGHTING CONTROL SYSTEM VENDOR TO ENSURE COMPATIBILITY.



UTILIZE LIGHTING CONTROL SYSTEM OCCUPANCY SENSOR. COORDINATE SENSOR REQUIREMENTS WITH LIGHTING CONTROL SYSTEM VENDOR TO ENSURE COMPATIBILITY.

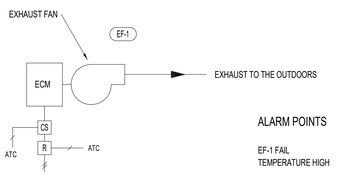
SEQUENCE OF OPERATIONS

ALL REMAINING SPACES WILL OPERATE IN EITHER CONSTANT VOLUME OR VARIABLE VOLUME BASED ON OCCUPANCY SENSOR INPUT. AN OCCUPIED/UNOCCUPIED BUILDING SCHEDULE SHALL BE PROVIDED FOR OPERATING THE BOXES. OBTAIN SCHEDULES FROM OWNER FOR EACH SPACE.

DURING OCCUPIED HOURS, THE SUPPLY V.A.V. BOXES SHALL MODULATE OPEN TO MAINTAIN 50% (ADJ.) OF DESIGN AIRFLOW VALUES AS INDICATED ON THE V.A.V. SCHEDULE. THE EXHAUST V.A.V. BOXES SHALL TRACK THE CORRESPONDING SUPPLY V.A.V. BOXES. WHEN OCCUPANCY IS SENSED BY THE ZONES OCCUPANCY SENSOR, THE BOXES SHALL RAMP UP TO DESIGN FLOW RATE UNTIL OCCUPANCY IS NO LONGER SENSED. PROVIDE A DEADBAND TO LIMIT CYCLING.

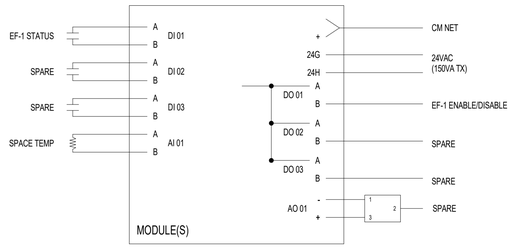
DURING UNOCCUPIED HOURS, THE BOXES SHALL BE CLOSED. IF OCCUPANCY IS SENSED IN THE ZONE BY THE OCCUPANCY SENSOR, THE ERV SHALL BE ENABLED (IF NOT ALREADY OPERATING) AND THE BOXES SERVING THE SPACE THAT REGISTERED OCCUPANCY SHALL OPEN TO DESIGN FLOW UNTIL 30 MINUTES (ADJ.) AFTER OCCUPANCY IS NOT LONGER SENSED. AFTER THIS TIME, THE ERV SHALL REVERT BACK TO NORMAL OPERATION.

2 VENTILATION ZONE CONTROL SCHEMATIC (CONSTANT VOLUME ZONES)
N.T.S.



ALARM POINTS

EF-1 FAIL
TEMPERATURE HIGH



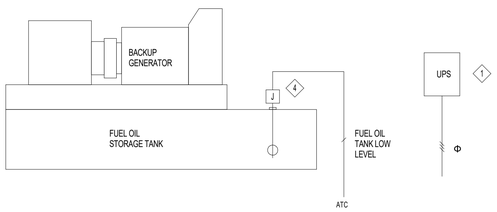
3 EXHAUST FAN CONTROLS SCHEMATIC
N.T.S.

SEQUENCE OF OPERATIONS

EXHAUST FANS EF-1 IS TO RUN CONTINUOUSLY 24/7. ONCE SYSTEM IS COMMISSIONED, FAN IS TO BE ENABLED AND RUN CONTINUOUSLY. SYSTEM SHALL MONITOR FAN OPERATION (MONITOR STATUS). SEND AN ALARM TO THE SYSTEM IF THE FAN IS NO LONGER OPERATING AND IF THE SPACE TEMPERATURE RISES ABOVE A HIGH LIMIT.



4 EXHAUST FAN CONTROLS POINTS SCHEMATIC
N.T.S.



SEQUENCE OF OPERATIONS

THE BMS SYSTEM SHALL CONTINUOUSLY MONITOR THE TOTAL POWER DEMAND FROM THE MAIN SERVICE ENTRANCE POWER METER AND INDICATE AVERAGE DEMAND AND PEAK DEMAND (AND AT WHAT TIME THE PEAK DEMAND OCCURRED).

THE "OPERATOR REMOTE TRANSFER TO BACKUP" FEATURE SHALL BE WIRED TO A BMS NORMALLY OPEN CONTACT. CLOSING OF CONTACT IN BMS CAUSES ENGINE START AND TRANSFER TO BACKUP SOURCE. OPENING OF CONTACT ACTIVATES THE SEQUENCE FOR DELAYED RETRANSFER TO NORMAL POWER. COORDINATE EXACT REQUIREMENTS WITH APPROVED TRANSFER SWITCH MANUFACTURER.

ALARM POINTS

4 GEN. FUEL TANK LEVEL LOW

NOTES

1. PROVIDE UNINTERRUPTIBLE POWER SUPPLY (UPS) FOR CRITICAL PORTIONS OF THE BMS TO ENABLE THE MAIN SYSTEM TO STAY OPERATIONAL UNTIL THE FACILITY TRANSFERS TO BACKUP POWER. THE PORTION OF THE BMS SYSTEM THAT MONITORS THE ATS, AND THE FRONT-END GRAPHICS SHALL BE ON UPS. CONTROLS CONTRACTOR SHALL FURNISH AND INSTALL UPS.
2. FURNISH AND INSTALL BACNET GATEWAY FOR COMMUNICATION WITH ATS FACTORY CONTROL PANEL.
3. FURNISH AND INSTALL BACNET GATEWAY FOR COMMUNICATION WITH THE MAIN SWITCHGEAR METER.
4. WORK WITH GENERATOR SUPPLIER TO PROVIDE A LOW LEVEL SENSOR.

2

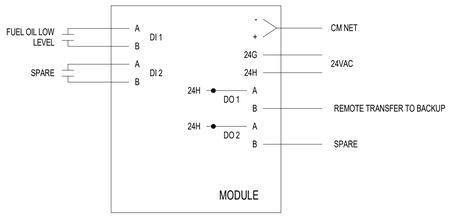
MAPPED OBJECTS FROM ATS

-ATS NORMAL POWER AVAILABLE
-ATS BACKUP POWER AVAILABLE
-ATS NORMAL STATUS
-ATS BACKUP STATUS
-TRANSFER INHIBIT SIGNAL TO ATS
-ATS ALARM
-ATS READ TIME CLOCK (DATE/TIME)
-ATS SET TIME CLOCK (DATE/TIME)
-ENABLE GENERATOR TEST
-ENABLE LOAD SHEDDING

3

MAPPED OBJECTS FROM MDP POWER METER

-AVERAGE VOLTAGE OF PHASES
-AVERAGE CURRENT OF PHASES
-READ TIME CLOCK (DATE/TIME)
-SET TIME CLOCK (DATE/TIME)
-PEAK DEMAND
-ENERGY USAGE (KWH)
-REAL POWER DEMAND
-APPARENT POWER DEMAND
-POWER FAIL
-LOSS OF PHASE
-ACCUMULATED ENERGY RESET
-VOLTAGE SAGS
-VOLTAGE SWELLS
-POWER QUALITY ALARM
-GENERAL OVER-CURRENT ALARM
-SYSTEM STATUS
-SYSTEM ALARM



5 ELECTRICAL CONTROLS POINTS
N.T.S.

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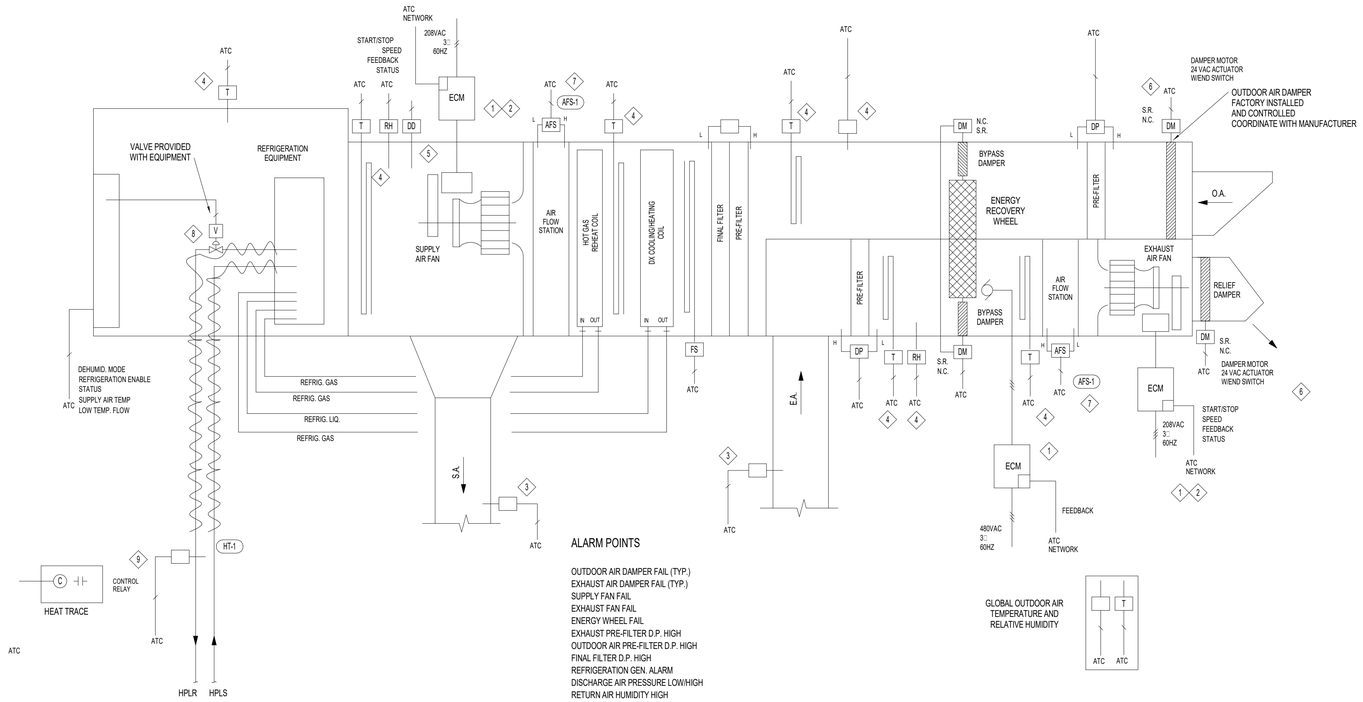
PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

MECHANICAL CONTROLS

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	N.T.S.

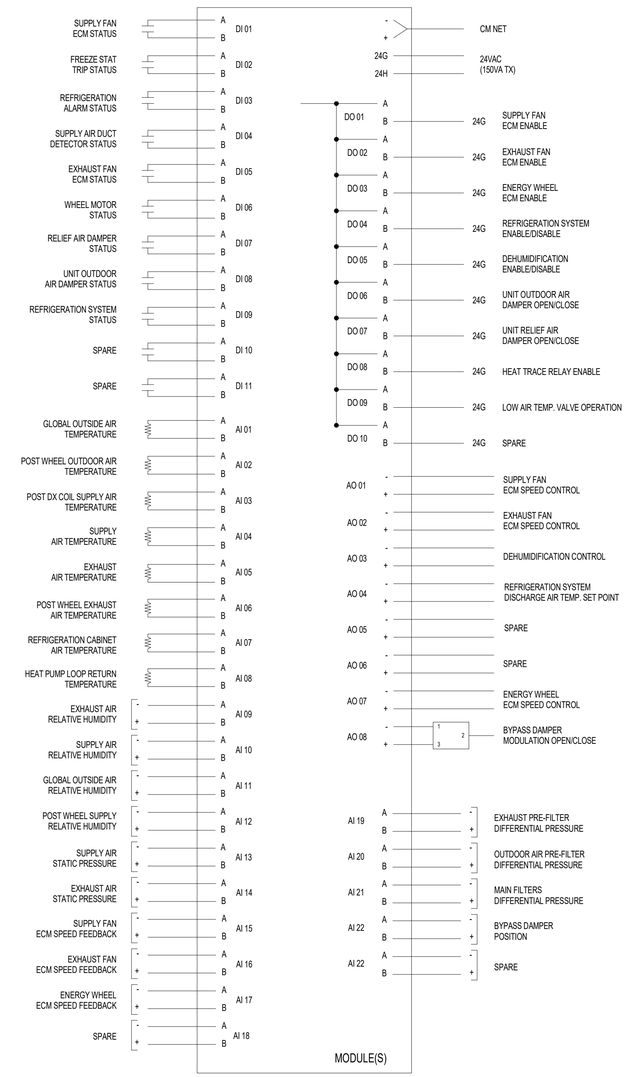
M4.03



1 ENERGY RECOVER VENTILATOR ERV-1 CONTROLS SCHEMATIC
N.T.S.

ALARM POINTS

OUTDOOR AIR DAMPER FAIL (TYP.)
EXHAUST AIR DAMPER FAIL (TYP.)
SUPPLY FAN FAIL
EXHAUST FAN FAIL
ENERGY WHEEL FAIL
EXHAUST PRE-FILTER D.P. HIGH
OUTDOOR AIR PRE-FILTER D.P. HIGH
FINAL FILTER D.P. HIGH
REFRIGERATION GEN. ALARM
DISCHARGE AIR PRESSURE LOW/HIGH
RETURN AIR HUMIDITY HIGH
SUPPLY AIR TEMPERATURE HIGH
SUPPLY AIR TEMPERATURE LOW
FREEZE STAT ALARM
HPLR (BELOW 35°F)



2 ENERGY RECOVERY VENTILATOR ERV-1 CONTROLS POINTS SCHEMATIC
N.T.S.

SEQUENCE OF OPERATIONS

ERV

OPERATING HOURS:
ERV SHALL OPERATE VIA A PROGRAMMED TIME CLOCK SCHEDULE FOR OCCUPIED AND UNOCCUPIED PERIODS (PER THE OWNERS DIRECTION); SCHEDULE TO BE 365 DAY WITH WEEKENDS AND HOLIDAYS. INTERMITTENT OPERATION SHALL OCCUR WITH CALLS FROM SPECIFIC VENTILATION ZONES. SEE V.A.V. SEQUENCE FOR ADDITIONAL INFORMATION.

STARTUP:
DURING UNIT STARTUP, THE UNIT OUTDOOR AIR AND RELIEF AIR CONTROL DAMPERS SHALL BE OPENED. ONCE ALL DAMPERS ARE PROVEN OPEN, THE EXHAUST FAN SHALL ENABLED AND AFTER 30 SECONDS (ADJ.) THE SUPPLY FAN SHALL BE ENABLED AND RAMPED UP TO MINIMUM SPEED, AND THEN SHALL MODULATE AS NECESSARY TO MAINTAIN DUCT STATIC PRESSURE SET POINT (SEE SEQUENCE BELOW). ONCE THE FANS HAVE BEEN ENABLED, THE REFRIGERATION COMPRESSOR(S) SHALL BE ENABLED AS NECESSARY TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT (SEE SEQUENCE BELOW). DURING UNIT SHUTDOWN, THE REFRIGERATION SYSTEM SHALL BE DISABLED, AFTER A PROGRAMMED TIME-DELAY (COORDINATE WITH MANUFACTURER) THE SUPPLY AND EXHAUST FANS SHALL BE DISABLED. ONCE FANS HAVE BEEN DISABLED, ALL DAMPERS ARE TO CLOSE.

FAN CONTROL:
ENERGY RECOVERY VENTILATOR SHALL BE OPERATED ON VARIABLE VOLUME CONTROL BASED UPON SUPPLY AIR DUCT AND EXHAUST AIR DUCT STATIC PRESSURE SET POINTS. THE DUCT STATIC PRESSURE SENSOR SHALL BE LOCATED IN THE AIR DUCTS NEAR THE END OF THE LONGEST DUCT BRANCH. SUPPLY AND EXHAUST FAN ECMS SHALL BE UTILIZED FOR SYSTEM STATIC PRESSURE CONTROL. THE STATIC PRESSURE SET POINTS SHALL OPERATE ON A STATIC PRESSURE RESET SUCH THAT IF ANY V.A.V. IS OPEN 90% OR GREATER (ADJ.) THE STATIC SET POINT RISES 0.1" (ADJ.) EVERY MINUTE (ADJ.). WHEN THE MOST OPEN V.A.V. IS LESS THAN 70% (ADJ.) OPEN, THE STATIC SET POINT SHALL DROP 0.1" (ADJ.) EVERY MINUTE (ADJ.). THE UNIT SHALL BE ENABLED AND RUN CONTINUOUSLY BASED ON THE OWNER SPECIFIED SCHEDULE ALONG WITH TEMPORARY OVERRIDE OPERATION. SEE V.A.V. SEQUENCE FOR TEMPORARY OPERATION DURING UNOCCUPIED HOURS.

HEATING AND COOLING OPERATION MODE:
THE ERV DISCHARGE AIR TEMPERATURE SET POINTS ARE TO BE 52°F (ADJ.) IN HEATING MODE AND 78°F (ADJ.) IN COOLING MODE. PRIOR TO THE HEAT PUMP OPERATING IN HEATING MODE, THE ENERGY RECOVERY WHEEL IS TO BE AT 100% SPEED. WHEN THE DISCHARGE AIR TEMPERATURE FALLS OUTSIDE OF THAT RANGE, A CALL SHALL BE SENT TO ENABLE THE FACTORY REFRIGERATION SYSTEM. THE BMS SHALL SEND THE DISCHARGE AIR SET POINT TO THE FACTORY REFRIGERATION CONTROLLER. THE FACTORY REFRIGERATION SYSTEM SHALL OPEN THE HEAT PUMP LOOP CONTROL VALVE AND MODULATE THE COMPRESSORS AND VALVES AS NECESSARY TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SET POINT. PROVIDE A PROGRAMMED DIFFERENTIAL FOR ALL SET POINTS TO PREVENT "HUNTING". HEAT PUMP COOLING IS PERMISSIBLE DURING ECONOMIZER OPERATION AS LONG AS THE UNIT IS IN 100% ECONOMIZER MODE PRIOR TO THE HEAT PUMP ENABLING.

IF A SIGNAL IS SENT FROM ANY HEAT PUMP ZONE THAT THE ZONE IS 2°F (ADJ.) OR MORE AWAY FROM SET POINT AFTER 1 HOUR OF OPERATION (SEE HEAT PUMP SEQUENCE), THE DISCHARGE AIR TEMPERATURE SET POINT IS TO BE REVISED; THE HEATING SET POINT IS TO BE CHANGED TO 65°F (ADJ.) AND THE COOLING SET POINT IS TO BE 72°F (ADJ.) UNTIL THE CALL IS DISABLED.

DEHUMIDIFICATION MODE:
BMS TO MONITOR RETURN RELATIVE HUMIDITY. WHEN RETURN R.H. IS ABOVE 55% (ADJ.), BMS TO ENABLE DEHUMIDIFICATION MODE. PROVIDE DEADBAND TO LIMIT CYCLING. BMS SHALL PROVIDE FACTORY CONTROLLER WITH DIGITAL OUTPUT TO ENABLE DEHUMIDIFICATION MODE. FACTORY CONTROLLER SHALL MODULATE SYSTEM TO FULL COOLING BASED ON CURRENT SYSTEM AIR FLOW AND MODULATE HOT GAS REHEAT TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT.

ENERGY WHEEL OPERATION:
THE ENERGY WHEEL SHALL BE ROTATED CONTINUOUSLY WHEN UNIT IS IN OPERATION (NON-ECONOMIZER). COORDINATE ROTATION SPEED WITH MANUFACTURER SEQUENCE OF OPERATIONS FOR MAXIMUM EFFICIENCY AND TO MAINTAIN THE POST WHEEL DISCHARGE SET POINT. THE BMS SHALL POLE THE HEAT PUMP ZONE MODES (HEATING OR COOLING). THE POST RECOVERY WHEEL SUPPLY AIR TEMPERATURE SET POINT IS TO BE MODULATED AS NECESSARY TO MAINTAIN THE BUILDING HEAT PUMPS AT 50% HEATING MODE/50% COOLING MODE (ALLOW USER ADJUSTABLE RATIO). THE MINIMUM TEMPERATURE IS TO BE 55°F (ADJ.) AND THE MAXIMUM TEMPERATURE IS TO BE 70°F (ADJ.). THE ENERGY RECOVERY WHEEL SPEED IS TO BE ADJUSTED AND THE BYPASS DAMPERS ARE TO BE OPENED TO PROVIDE ECONOMIZER OPERATION. THE BMS SHALL UTILIZE COMPARATIVE ENTHALPY BETWEEN THE INCOMING OUTDOOR AIR AND THE EXHAUST AIR TO PERMIT ECONOMIZER OPERATION. WHEN COOLING (OR HEATING) IS REQUIRED AND THE OUTDOOR AIR ENTHALPY IS BELOW (OR ABOVE) THE DISCHARGE ENTHALPY, THE UNIT SHALL OPERATE IN ECONOMIZER MODE. WHEN IN ECONOMIZER, THE ENERGY WHEEL SHALL IMPLEMENT A STOP/JOG SEQUENCE TO "CLEAN" THE WHEEL. ENERGY WHEEL SHALL MODULATE AS NECESSARY IN CONJUNCTION WITH THE BYPASS DAMPERS USED FOR WHEEL BYPASS DURING ECONOMIZER OPERATION. THE BYPASS DAMPERS AND ENERGY WHEELS SHALL BE FULLY MODULATING TO OBTAIN DESIRED AIR TEMPERATURE.

THE ENERGY RECOVERY UNIT DEFROST SEQUENCE OF OPERATIONS SHALL BE COMPLETED PER FACTORY SEQUENCE OF OPERATIONS.

IN THE EVENT THAT THE FACTORY SUPPLY DUCT SMOKE DETECTOR IN THE ENERGY RECOVERY VENTILATOR IS INITIATED FROM THE FIRE ALARM SYSTEM, THE SUPPLY AND EXHAUST FANS SHALL BE DISABLED, OUTDOOR AIR AND EXHAUST AIR DAMPERS SHALL BE CLOSED AND HEAT PUMP COMPRESSORS SHALL BE DISABLED.

HEATING COIL FREEZE PROTECTION:
WHENEVER THE OUTDOOR AIR TEMPERATURE DROPS TO 25°F (ADJ.), A FREEZE PROTECTION SIGNAL IS TO BE SENT TO THE FACTORY REFRIGERATION CONTROLLER WHICH SHALL CRACK OPEN THE HEAT PUMP LOOP CONTROL VALVES TO 5% (ADJ.) OPEN AND A SIGNAL SHALL BE SENT TO ENABLE THE HEAT PUMP CIRCULATOR PUMPS IF THEY ARE NOT ALREADY OPERATING. THE SELF-REGULATING HEAT TRACE IS TO BE ENABLED AND OPERATED BASED ON IT'S OWN CONTROLS TO MAINTAIN THE PIPING AT 34°F (ADJ.). WHEN OUTDOOR AIR TEMPERATURE RISES ABOVE 28°F (ADJ.) THE FREEZE PROTECTION SIGNAL SHALL BE CANCELED AND THE SYSTEM SHALL REVERT BACK TO NORMAL OPERATION AND THE HEAT TRACE SHALL BE DISABLED. PROVIDE A DEADBAND TO LIMIT CYCLING. UPON A FREEZESTAT TRIP, THE UNIT FANS SHALL SHUT DOWN AND THE COMPRESSORS SHALL DISABLE, THE HEAT TRACE SHALL ENABLE AND AN ALARM IS TO BE SENT TO THE SYSTEM. AFTER A PROGRAMMED DELAY, RESTART THE SYSTEM AND DISABLE THE HEAT TRACE. A SECOND FREEZESTAT TRIP WITH 1 HOUR (ADJ.) SHALL SHUTDOWN THE UNIT AND INITIATE THE FREEZE PROTECTION SEQUENCE ABOVE.

NOTES

1. GENERALLY ALL ECM'S ARE FACTORY INSTALLED ON THE UNIT. COORDINATE ALL CONTROL WIRING CONNECTIONS WITH THE MANUFACTURER'S DIAGRAMS.
2. WORK WITH THE AIR BALANCE CONTRACTOR TO SET UNIT MINIMUM AND MAXIMUM FAN SPEEDS.
3. WORK WITH AIR BALANCE CONTRACTOR TO DETERMINE LOWEST SUPPLY AND EXHAUST STATIC PRESSURE SET POINTS THAT WILL SATISFY AIRFLOW DEMANDS.
4. MOUNT THE AVERAGING TYPE TEMPERATURE AND HUMIDITY SENSORS WITHIN THE UNIT AS INDICATED.
5. COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR POWER SUPPLIES AND FIRE ALARM CONNECTIONS TO THE DUCT SMOKE DETECTOR. FIRE ALARM CONTRACTOR IS TO SEND THE REMOTE SHUTDOWN SIGNAL TO SHUTDOWN THE UNIT.
6. UNIT IS TO HAVE FACTORY INSTALLED OUTDOOR AIR INTAKE AND RELIEF AIR CONTROL DAMPERS. EXHAUST DAMPER IS TYPICAL OF (2). CONTROLS CONTRACTOR IS TO OPERATE THE DAMPERS.
7. COORDINATE AIRFLOW STATION INSTALLATION WITH THE MANUFACTURER'S REQUIREMENTS. THE AIRFLOW STATIONS ARE TO BE FAN INLET TYPE. THESE MAY BE SUPPLIED BY AND INSTALLED BY THE MANUFACTURER IF THE CONTROLS CONTRACTOR COORDINATES THIS WITH THE VENDOR PRIOR TO BIDDING & ORDERING OF THE UNIT. AIRFLOW STATION CALIBRATION IS TO BE CONFIRMED WITH THE AIRFLOW STATION VENDOR/MANUFACTURER.
8. WORK WITH THE MANUFACTURER TO DEVELOP A SEQUENCE AND INPUT TO ENABLE A MINIMUM CONTROL VALVE POSITION FOR THE HEAT PUMP LOOP CONTROL VALVE. THIS VALVE IS TO HAVE AN ADJUSTABLE SET POINT AND BALANCING IS TO BE CONFIRMED WITH THE BALANCING CONTRACTOR.
9. HEAT TRACE IS TO BE AUTOMATIC, SELF-REGULATING TYPE. CONTROLS SYSTEM IS TO ENABLE/DISABLE THE HEAT TRACE BASED UPON OUTDOOR AIR TEMPERATURE AND HEAT TRACE IS TO SELF-REGULATE TO MAINTAIN THE DESIRED TEMPERATURE AT SET POINT. HEAT TRACE IS TO BE PROVIDED AND INSTALLED BY THE MECHANICAL CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR.

MAPPED OBJECTS FROM RTU FACTORY CONTROLLER	
AI:CURRENT POSITION OF MODULATING HOT GAS REHEAT VALVE	BI:COOLING ENABLED STATUS
AI:COMPRESSOR MODULATING COOL/HEAT SIGNAL (ALL COMPS.)	BI: HEATING ENABLED STATUS
AI:CONDENSER VALVE SIGNAL (FOR ALL UNIT CONDENSERS)	BI: ECONOMIZER ENABLED STATUS
AI:COMPRESSOR SUCTION PRESSURE (FOR ALL COMPRESSORS)	BI:REHEAT ENABLED STATUS
AI:COMPRESSORS HEAD PRESSURE (FOR ALL COMPRESSORS)	BI:MECHANICAL COOLING ALARM
AI:COMPRESSOR SUCTION LINE TEMPERATURE (ALL COMPS.)	BI: MECHANICAL HEATING ALARM
AI:COMPRESSOR SUPERHEAT TEMPERATURE (ALL COMPS.)	BI:FAN/AIRFLOW PROVING ALARM
AI:COMPRESSOR EXPANSION VALVE POSITION (ALL COMPS.)	BI:WATER FLOW PROVING ALARM

MAPPED OBJECTS SENT TO RTU FACTORY CONTROLLER	
AO:UNIT DISCHARGE AIR TEMPERATURE SET POINT	DO:DEHUMIDIFICATION ENABLE (HOT GAS REHEAT)
AO:D.X COIL DISCHARGE AIR TEMPERATURE SET POINT	DO:REFRIGERATION SYSTEM ENABLE/DISABLE
AO:UNIT DISCHARGE AIR RELATIVE HUMIDITY SET POINT	DO:WATER/CONDENSER FREEZE PROTECTION SEQUENCE ENABLE
AO:FACTORY CONTROL VALVE POSITION	

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY
ST. JOHNSBURY, VT

MECHANICAL CONTROLS

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	N.T.S.

M4.04

MECHANICAL GENERAL NEW WORK NOTES:

1. ALL NEW AIR DUCTING SHALL BE RATED FOR AN AIR PRESSURE PER THE SPECIFICATIONS.
2. ALL INSULATION SHALL BE FURNISHED AND INSTALLED AS PER THE SPECIFICATIONS.
3. PROVIDE SHEET METAL GAUGE AND HANGER SPACING PER THE CURRENT EDITION OF SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
4. ALL 90° ELBOWS SHALL BE PROVIDED WITH TURNING VANES. PROVIDE TWO (2) TURNING VANES FOR DUCT WORK UNDER 12" WIDE, AND PROVIDE THREE (3) TURNING VANES FOR DUCTS BETWEEN 12" & 18" WIDE. PROVIDE AN ADDITIONAL TURNING VANE FOR EVERY MULTIPLE OF 3" IN DUCT WIDTH. INSTALL TURNING VANES AS PER CURRENT EDITION OF SMACNA DUCT CONSTRUCTION STANDARDS.
5. ALL CAV AND VAV SYSTEMS SHALL BE COMPLETELY OPERATIONAL. THE DRAWINGS ARE SCHEMATIC IN NATURE, FIELD COORDINATION IS REQUIRED.
6. PROVIDE ALL EQUIPMENT AND MATERIALS NECESSARY FOR MOUNTING ALL MECHANICAL EQUIPMENT.
7. FLEXIBLE DUCTS NOT PERMITTED ON INLET OR OUTLET OF VAV BOXES.
8. ALL VOLUME DAMPERS SHALL BE LOCKING QUADRANT TYPE AND CONSTRUCTED OF 18 GA. GALVANIZED STEEL.
9. ALL VOLUME DAMPERS SHALL BE ULTRA LOW-LEAK AND SHALL HAVE A ROUND SHAFT WITH SHAFT SEALS AT THE PENETRATIONS IN THE DUCTWORK. VOLUME DAMPER NOT CONFORMING TO THE ULTRA-LOW LEAK STANDARD SHALL BE REMOVED AND REPLACED AT THE MECHANICAL CONTRACTORS EXPENSE.
10. 6" MINIMUM, 8' MAXIMUM FLEXIBLE AIR DUCTS ON ALL TAKEOFFS.
11. A MINIMUM AND MAXIMUM OF (2) CHANGES IN DIRECTION SHALL BE ALLOWED IN ALL FLEXIBLE DUCT TAKE-OFFS. ANY FLEXIBLE DUCT TAKE-OFFS NOT SUPPORTED OR WITH GREATER THAN (2) CHANGES IN DIRECTION SHALL BE REMOVED AND REPLACED AT THE MECHANICAL CONTRACTORS EXPENSE.
12. COORDINATE THE LOCATION OF VAV BOXES WITH OTHER TRADES. ALL VAV BOXES SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION APPROVED BY OWNER AND THE ENGINEER.
13. ALL SUSPENDED DUCT WORK, AND PIPING SHALL BE PROVIDED WITH SEISMIC BRACING AS REQUIRED. ALL EQUIPMENT SHALL BE PROVIDED WITH SEISMIC BRACING.
14. ALL DUCT WORK 144 SQ. IN. AND OVER IN CROSS SECTIONAL AREA SHALL BE FABRICATED USING DUCT-MATE FLANGES. NO SLIP AND DRIVE CONNECTIONS SHALL BE PERMITTED. TDF CONNECTIONS ARE ACCEPTABLE FOR DUCTS JOINTS OVER 30" AND 4" W.G. PRESSURE.
15. PROVIDE ALL EQUIPMENT AND MATERIALS NECESSARY FOR INSTALLATION AND DEMO WORK IN CONFINED SPACES (TRENCH WORK ETC.) PER OSHA STANDARDS AND ALL STATE AND LOCAL REQUIREMENTS WHERE APPLICABLE.
16. COORDINATE THE REMOVAL AND REPLACEMENT OF ALL EXISTING CEILING TILES, LIGHTING, AND FIRE ALARM DEVICES FOR INSTALLATION OF NEW MECHANICAL EQUIPMENT, PIPING, AND DUCTWORK. COORDINATE WITH ARCHITECTURAL PLANS FOR CEILING SCOPE OF WORK.
17. COORDINATE ALL DIFFUSER INSTALLATIONS WITH CEILING GRID AND/OR ARCHITECTURAL REFLECTED CEILING PLAN.
18. SEE PIPING SPECIFICATION SECTION FOR VIBRATION ISOLATION HANGER REQUIREMENTS.
19. COORDINATE DIFFUSER AND ACCESS PANEL LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS.
20. COORDINATE THERMOSTAT LOCATIONS WITH ARCHITECTURAL AND INTERIOR PLANS.
21. FIRE DAMPERS REQUIRED IN SPECIFICATION SECTION 233300 SHALL BE PROVIDED AS DYNAMIC FIRE DAMPERS DESIGN TO CLOSE AGAINST AIR MOVEMENT. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
22. FACILITY REQUIRES ADA/ABA FOR ACCESSIBILITY, COORDINATE ALL FIXTURE LOCATIONS AND REQUIRED CLEARANCES WITH THE ARCHITECT PRIOR TO THE COMMENCEMENT OF WORK.
23. EXISTING MASONRY OPENINGS TO BE USED WHEN POSSIBLE. ANY CUTTING OF EXISTING MASONRY IS TO BE REVIEWED AND CONFIRMED WITH THE ARCHITECT PRIOR TO THE COMMENCEMENT OF WORK.
24. SEE ARCHITECTURAL DRAWINGS FOR NLT EXTENTS DIAGRAM. AREAS OF NLT FRAMING HAVE NO INTERSTITIAL SPACE. FRAMED CAVITIES AND CHASES WILL BE USED FOR ROUTING OF SERVICES.

CONTROLS SYSTEM POWER AND DATA COORDINATION NOTES:

1. THE CONTROLS CONTRACTOR IS REQUIRED TO COORDINATE WITH THE ELECTRICAL AND I.T. CONTRACTORS AND COVER ALL COSTS ASSOCIATED WITH PROVIDED POWER AND DATA FOR THE BUILDING MANAGEMENT SYSTEM. SEE GENERAL NOTES ON DRAWING M4.01 FOR ADDITIONAL INFORMATION.

TESTING AND BALANCING GENERAL NOTES:

1. BALANCING CONTRACTOR IS RESPONSIBLE FOR COORDINATING PHASING WITH CONSTRUCTION MANAGER. BALANCING CONTRACTOR TO BALANCE EACH PHASE AT THE COMPLETION OF EACH PHASE. A FINAL BALANCING VERIFICATION WILL BE REQUIRED AT THE COMPLETION OF THE PROJECT TO CONFIRM FINAL SYSTEM DP AND STATIC PRESSURE SET POINTS ETC.
THE BALANCE CONTRACTOR SHALL SUBMIT A FORMAL BALANCE REPORT AT THE COMPLETION OF EACH PHASE OF WORK.
2. THE BALANCE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPERATURE CONTROL VERIFICATION, SEQUENCE OF OPERATIONS VERIFICATION, AND SYSTEM COMMISSIONING AT THE COMPLETION OF EACH PHASE OF WORK. THE BALANCE CONTRACTOR SHALL BE PRESENT DURING THE FINAL CONTROLS SYSTEM COMMISSIONING PROCESS AND SHALL ASSIST THE COMMISSIONING AGENT, THE CONTROLS CONTRACTOR, AND THE MECHANICAL CONTRACTOR DURING THE COMMISSIONING PROCESS.
3. THE TESTING AND BALANCE AGENT SHALL BE RESPONSIBLE FOR TEMPERATURE CONTROLS SEQUENCE OF OPERATIONS VERIFICATION AS OUTLINED IN THE SPECIFICATIONS. THE TESTING AND BALANCING AGENT SHALL WORK WITH THE CONTROLS CONTRACTOR TO VERIFY THE CORRECT OPERATIONS OF ALL CONTROLS SEQUENCES.
4. THE TESTING AND BALANCING AGENT SHALL BE RESPONSIBLE FOR ASSISTING THE COMMISSIONING AGENT AS REQUIRED. THE TESTING AND BALANCING AGENT SHALL BE ON SITE DURING THE COMMISSIONING PROCESS, AND SHALL WORK WITH THE COMMISSIONING AGENT TO VERIFY THE CORRECT OPERATIONS OF ALL CONTROLS SEQUENCES.

GENERAL ALTERNATE EQUIPMENT NOTES:

1. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE ONLY THOSE LISTED IN THE SCHEDULES. ANY MANUFACTURER'S SERIES OTHER THAN THE BASIS OF DESIGN MANUFACTURER'S SERIES NOTED SHALL: (1) HAVE A PRELIMINARY SUBMITTAL FURNISHED NOT LATER THAN ONE WEEK IN ADVANCE OF BID DEADLINE FOR ENGINEER OF RECORD (EOR) REVIEW. THE MANUFACTURER'S SERIES MUST BE ACCEPTED IN WRITING BY THE EOR IN ADVANCE OF BID DEADLINE, OR SHALL NOT BE CARRIED BY ANY BIDDER. (2) BE SUBMITTED AS A SUBSTITUTION TO NOT ONLY DEMONSTRATE MANUFACTURER'S SERIES COMPLIANCE WITH THE REQUIREMENTS, BUT ALSO DEMONSTRATE EQUIVALENCY TO THE BASIS OF DESIGN SERIES. THE MECHANICAL, PLUMBING AND ELECTRICAL DESIGNS ARE BASED UPON THE BASIS OF DESIGN MANUFACTURER'S SERIES EQUIPMENT. IF OTHER THAN THE BASIS OF DESIGN MANUFACTURER'S SERIES IS FURNISHED AND: (1) IF THE POWER REQUIREMENTS DIFFER, THE MECHANICAL CONTRACTOR SHALL COORDINATE ALL REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR INCLUDING CIRCUIT BREAKER, CONDUCTOR, AND CONDUIT SIZES. IN SUCH CASE, THE POWER SHALL STILL COME FROM THE SAME PANEL AS CURRENTLY DESIGNED. (2) IF THE PIPING OR DUCT CONNECTION LOCATION(S) OR SIZES DIFFER, THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH AFFECTED TRADES AND SHALL PROVIDE ALL REQUIRED MODIFICATIONS TO ACCOMMODATE. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ANY ADDITIONAL COST TO ANY TRADE AS NOTED ABOVE AND AS REQUIRED TO COORDINATE INSTALLATION AND PROVIDE PROPER SERVICE CLEARANCES FOR OTHER THAN THE BASIS OF DESIGN MANUFACTURER'S SERIES. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PAYING ANY DESIGN FEES ASSOCIATED WITH REDESIGNING ARCHITECTURAL, STRUCTURAL, OR MEP SYSTEMS TO ACCOMMODATE OTHER THAN THE BASIS OF DESIGN MANUFACTURER'S SERIES.

EQUIPMENT SHORT CIRCUIT CURRENT RATING:

MECHANICAL EQUIPMENT IS TO BE PROVIDED WITH A SHORT CIRCUIT CURRENT RATING (SCCR) OF 10,000 AMPS OR GREATER WHERE AVAILABLE. IF THE MECHANICAL EQUIPMENT SCCR IS LESS THAN 10,000 AMPS, A FUSED DISCONNECT WITH RK-5 CURRENT LIMITING FUSE IS TO BE PROVIDED FOR EACH PIECE OF EQUIPMENT.

HVAC LEGEND

HVAC PIPING ABBREVIATIONS

COND.	CONDENSATE
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
FO	FUEL-OIL
FW	FILTERED WATER
HWR	HOT WATER HEATING RETURN
HWS	HOT WATER HEATING SUPPLY
RL	RAIN LEADER
W	SANITARY WASTE
V	VENT
LPS	LOW PRESSURE STEAM
CR	CONDENSATE RETURN

HVAC DUCTWORK ABBREVIATIONS

E.A.	GENERAL/TOILET EXHAUST AIR
O.A.	OUTDOOR AIR
R.A.	RETURN AIR
S.A.	SUPPLY AIR

HVAC ABBREVIATIONS

RHC	REHEAT COIL
A.F.F.	ABOVE FINISHED FLOOR
DN	DOWN
O.B.V.D.	OPPOSED BLADE VOLUME DAMPER
AHU	AIR HANDLING UNIT
ERV	ENERGY RECOVERY VENTILATOR
U.V.	UNIT VENTILATOR
U.H.	UNIT HEATER

EXISTING TO BE REMOVED UNIT VENTILATOR WITH EXTERIOR LOUVER THROUGH WALL (UV)

HVAC SYMBOLS

	AIR VENT
	BALL VALVE
	BALANCE VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	AUTOMATIC CONTROL VALVE (TWO-WAY)
	AUTOMATIC CONTROL VALVE (THREE WAY)
	FLANGED CONNECTION
	FLEXIBLE CONNECTOR
	GATE VALVE
	NEEDLE VALVE
	PIPE CAP
	PRESSURE GAUGE
	THERMOMETER
	HOSEBIBB
	PUMP
	PIPE TURNED DOWN
	PIPE TURNED UP
	PIPE OUTLET
	PIPE PITCH
	PIPE REDUCER
	PIPE STRAINER
	PIPE TEE DOWN
	PIPE TEE FLANGE
	PIPE UNION
	PIPE WELL
	PUMP SUCTION DIFFUSER
	RELIEF VALVE
	TRIPLE DUTY VALVE
	VALVE
VD	VOLUME DAMPER
BG	BLAST GATE
M	MOTORIZED VALVE ACTUATOR
CW	CHAIN WHEEL - SEE SPECIFICATIONS
AP	DUCT MOUNTED ACCESS PANEL
CO	DUCT CLEAN OUT
T	THERMOSTAT/CO2/RH COMBINATION SENSOR IN NON-VRF LOCATIONS. VRF SYSTEMS SHALL UTILIZE FACTORY THERMOSTATS.
S	TEMPERATURE SENSOR
C	CO2 SENSOR

AHU-1 — NEW EQUIPMENT DESIGNATION / EQUIPMENT NUMBER

AHU-1 — EXISTING EQUIPMENT DESIGNATION / EQUIPMENT NUMBER

TITLE BLOCK LEGEND

M0.11 — DRAWING TRADE / DRAWING TYPE / DRAWING NUMBER / BUILDING LEVEL

DRAWING TRADE

SYMBOL	DESCRITPTION
E	ELECTRICAL
FP	FIRE PROTECTION
M	MECHANICAL HVAC
P	PLUMBING

HVAC TRADE DRAWING TYPES

SYMBOL	DESCRITPTION
0	DEMOLITION PLANS
1	PROPOSED DUCTWORK PLANS
2	PROPOSED PIPING PLANS
3	ONE-LINE DIAGRAMS
4	PIPING AND DUCTWORK SECTIONS
5	LEGENDS, NOTES AND SCHEDULES
6	DETAILS
S	SITE PLANS

SEISMIC DESIGN AND CONSTRUCTION:

THIS IS AN ESSENTIAL FACILITY AND THE SPECIFICATIONS REQUIRE A SEISMIC DELEGATED DESIGN. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND CLARIFICATION.

HEAT PUMP CONDENSATE DRAINAGE PIPING SPECIFICATION:

1. HEAT PUMP CONDENSATION DRAIN PIPING CAN BE EITHER SCHEDULE 40 PVC PIPE WITH DWV FITTINGS OR TYPE L COPPER PIPE WITH COPPER DRAINAGE FITTINGS. BOTH ARE ACCEPTABLE MATERIALS.

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

MECHANICAL SCHEDULES & NOTES

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	N.T.S.

M5.01

TYPICAL WATER SOURCE HEAT PUMP SCHEDULE

TAG	DESCRIPTION	MAKE & MODEL	HEATING (40°F EWT)	COP	COOLING (90°F EWT)	EER	AIRFLOW (CFM)	WATER FLOW	ELECTRICAL	REMARKS	OUTDOOR AIR
HP-0-1	HORIZONTAL HEAT PUMP, 1.5-TON	WATERFURNACE V5-H-018	16,300	3.79	16,800	15.0	600 CFM	5.0 GPM @ 9.6'	208V/1Ø/60HZ 11.1MCA/20MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 1" (TYP.)	260
HP-0-2	HORIZONTAL HEAT PUMP, 0.75-TON	WATERFURNACE V5-H-009	8,300	3.51	9,300	12.8	350 CFM	2.5 GPM @ 11.7'	208V/1Ø/60HZ 6.3MCA/15MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 3/4" (TYP.)	0
HP-0-3	CONSOLE HEAT PUMP, 0.75-TON	WATERFURNACE V5CC-S-09	8,300	3.51	9,300	12.8	350 CFM	2.5 GPM @ 11.7'	208V/1Ø/60HZ 6.3MCA/15MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 3/4" (TYP.)	0
HP-0-4	CONSOLE HEAT PUMP, 0.75-TON	WATERFURNACE V5CC-S-09	8,300	3.51	9,300	12.8	350 CFM	2.5 GPM @ 11.7'	208V/1Ø/60HZ 6.3MCA/15MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 3/4" (TYP.)	(310 IN CORRIDOR)
HP-0-5	CONSOLE HEAT PUMP, 0.75-TON	WATERFURNACE V5CC-S-09	8,300	3.51	9,300	12.8	350 CFM	2.5 GPM @ 11.7'	208V/1Ø/60HZ 6.3MCA/15MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 3/4" (TYP.)	0
HP-1-1	HORIZONTAL HEAT PUMP, 2.0-TON	WATERFURNACE V5-H-026 (2-STAGE)	22,100	4.30	27.5	16.3	800 CFM	6.0 GPM @ 6.2'	208V/3Ø/60HZ 12.1MCA/15MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 1" (TYP.)	230
HP-1-2	HORIZONTAL HEAT PUMP, 0.75-TON	WATERFURNACE V5-H-009	8,300	3.51	9,300	12.8	350 CFM	2.5 GPM @ 11.7'	208V/1Ø/60HZ 6.3MCA/15MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 3/4" (TYP.)	70
HP-1-3	HORIZONTAL HEAT PUMP, 1.25-TON	WATERFURNACE V5-H-015	12,700	3.93	14,200	14.8	500 CFM	4.0 GPM @ 6.0'	208V/1Ø/60HZ 10.4MCA/20MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 1" (TYP.)	125
HP-1-4	CONSOLE HEAT PUMP, 0.75-TON	WATERFURNACE V5CC-S-09	8,300	3.51	9,300	12.8	350 CFM	2.5 GPM @ 11.7'	208V/1Ø/60HZ 6.3MCA/15MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 3/4" (TYP.)	0
HP-1-5	CONSOLE HEAT PUMP, 0.75-TON	WATERFURNACE V5CC-S-09	8,300	3.51	9,300	12.8	350 CFM	2.5 GPM @ 11.7'	208V/1Ø/60HZ 6.3MCA/15MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 3/4" (TYP.)	0
HP-2-1	HORIZONTAL HEAT PUMP, 0.75-TON	WATERFURNACE V5-H-009	8,300	3.51	9,300	12.8	350 CFM	2.5 GPM @ 11.7'	208V/1Ø/60HZ 6.3MCA/15MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 3/4" (TYP.)	40
HP-2-2	HORIZONTAL HEAT PUMP, 1.5-TON	WATERFURNACE V5-H-018	16,300	3.79	16,800	15.0	600 CFM	5.0 GPM @ 9.6'	208V/1Ø/60HZ 11.1MCA/20MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 1" (TYP.)	80
HP-2-3	HORIZONTAL HEAT PUMP, 0.75-TON	WATERFURNACE V5-H-009	8,300	3.51	9,300	12.8	350 CFM	2.5 GPM @ 11.7'	208V/1Ø/60HZ 6.3MCA/15MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 3/4" (TYP.)	20
HP-2-4	HORIZONTAL HEAT PUMP, 1.0-TON	WATERFURNACE V5-H-012	10,300	3.64	13,400	15.7	400 CFM	3.5 GPM @ 3.9'	208V/1Ø/60HZ 6.5MCA/15MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 3/4" (TYP.)	70
HP-2-5	HORIZONTAL HEAT PUMP, 0.75-TON	WATERFURNACE V5-H-009	8,300	3.51	9,300	12.8	350 CFM	2.5 GPM @ 11.7'	208V/1Ø/60HZ 6.3MCA/15MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 3/4" (TYP.)	30
HP-2-6	HORIZONTAL HEAT PUMP, 0.75-TON	WATERFURNACE V5-H-009	8,300	3.51	9,300	12.8	350 CFM	2.5 GPM @ 11.7'	208V/1Ø/60HZ 6.3MCA/15MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 3/4" (TYP.)	30
HP-2-7	CONSOLE HEAT PUMP, 0.75-TON	WATERFURNACE V5CC-S-09	8,300	3.51	9,300	12.8	350 CFM	2.5 GPM @ 11.7'	208V/1Ø/60HZ 6.3MCA/15MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 3/4" (TYP.)	0
HP-2-8	CONSOLE HEAT PUMP, 0.75-TON	WATERFURNACE V5CC-S-09	8,300	3.51	9,300	12.8	350 CFM	2.5 GPM @ 11.7'	208V/1Ø/60HZ 6.3MCA/15MOP	PIPE SIZE TO AND FROM UNIT SHALL BE 3/4" (TYP.)	0

GENERAL NOTES:

1. PIPE CONDENSATE TO NEAREST RAINLEADER (PROVIDE PVC CHECK VALVE AND BALL VALVE AT CONNECTION). SEE PLUMBING DRAWINGS FOR ROUTING AND ENSURE PIPING IS RUN AT 1/4" PER FOOT SLOPE.
2. HEAT PUMPS SHALL BE INSTALLED UTILIZING VIBRATION ISOLATORS AT ALL FOUR CORNERS.
3. FURNISH AND INSTALL WALL MOUNTED THERMOSTAT (COORDINATE WITH DDC CONTRACTOR). COORDINATE EXACT LOCATIONS IN THE FIELD WITH ARCHITECT/OWNER.
4. PERFORMANCE DATA FOR HEAT PUMPS BASED ON 40°F E.W.T., 70°F DB/59°F WB E.A.T. FOR HEATING AND 90°F E.W.T., 80°F DB/67°F WB E.A.T. FOR COOLING.
5. PROVIDE UNITS WITH LOW SOUND PACKAGE. PROVIDE WITH ELASTOMERIC FOAM INSULATION (FOR GEOTHERMAL OPERATION).
6. PROVIDE BALANCING VALVE FOR EACH UNIT ADJUSTED TO THE GPM INDICATED ON THE SCHEDULE.
7. PROVIDE UNITS WITH MERV 13 FILTER KIT.
8. UNITS TO BE PROVIDED WITH VARIABLE SPEED ECM FAN WHERE AVAILABLE. TO BE PROVIDED WITH MULTI-SPEED ECM WHERE VARIABLE SPEED IS UNAVAILABLE.
9. PROVIDE LOW PRESSURE DROP HOSE KITS.
10. HEAT PUMPS TO BE PROVIDED WITH BACNET DDC CONTROLS.
11. RETURN PLENUMS TO HAVE 1" ELASTOMERIC FOAM LINER (EQUIVALENT TO ARMACELL AP COILFLEX).
12. UNITS TO HAVE CONTROLS TO SELECT UNIT MODE.
13. NON-VARIABLE CONSOLE HEAT PUMPS ARE TO HAVE HOT GAS REHEAT DEHUMIDIFICATION.
14. ALTERNATE MANUFACTURER'S MUST MEET OR EXCEED THE SPECIFIED EQUIPMENTS PUBLISHED PERFORMANCE AND SOUND DATA.

APPROVED ALTERNATE MANUFACTURERS: CLIMATE MASTER, FLORIDA HEAT PUMP/BOSCH, DAIKIN

COOLING ONLY SERVER ROOM SPLIT SYSTEM SCHEDULE

TAG	DESCRIPTION	AREA SERVED	MAKE & MODEL	REFRIGERANT	CFM	COOLING CAP.	ELECTRICAL	M.C.A.	CONDENSING UNIT	NOTES
IU-1	CEILING MOUNTED A/C UNIT	COMMS/EQUIP	MITSUBISHI PLA-A12EA7	R-410A	530	12,000 BTU/HR	208V/1P	1.0	OU-1	1 2 3 4 5 6

#NOTES:

1. FURNISH AND INSTALL ALL LIQUID/SUCTION PIPING BETWEEN EVAPORATOR AND CONDENSING UNIT. COORDINATE PIPE SIZING AND ROUTING WITH MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
2. UNIT IS TO BE PROVIDED WITH INTEGRAL CONDENSATE LIFT PUMP.
3. NOMINAL COOLING CAPACITIES BASED ON FOLLOWING CONDITIONS: 80°F DB/ 67°F WB (INDOOR).
4. UNIT TO BE PROVIDE WITH PAR-CT01MAU-SB TOUCH MA CONTROLLER AND PAC-UKPRC001-CN-1 BACNET INTERFACE TO BE TIED INTO THE DDC. PROVIDE AND INSTALL ALL NECESSARY CONTROL AND POWER WIRING BETWEEN INDOOR AND OUTDOOR UNIT.
5. UNIT IS TO BE SUSPENDED WITH VIBRATION ISOLATORS FROM THE STRUCTURE.
6. INDOOR UNIT IS POWERED BY THE OUTDOOR UNIT.

TAG	DESCRIPTION	MAKE & MODEL	REFRIGERANT	CAPACITY BTU/HR	SEER COOLING	EER COOLING	TEMP. RANGE	ELECTRICAL	M.C.A.	MAX BRK.	NOTES
OU-1	OUTDOOR CONDENSING UNIT	MITSUBISHI PUY-A12NKA7	R-410A	12,000 COOLING	27.0	16.4	-40-115°F+	208V/1P	11.8	28 AMP	1 2 3 4

#NOTES:

1. FURNISH AND INSTALL ALL LIQUID/SUCTION PIPING BETWEEN EVAPORATOR UNIT AND CONDENSING UNIT. COORDINATE PIPE SIZING AND ROUTING WITH MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
2. OUTDOOR UNIT IS TO BE MOUNTED ON THE ROOF ON AN 18" QUICK-SLING STAND LOCATED ON THE ROOF IN THE APPROXIMATE LOCATION SHOWN.
3. UNIT IS TO BE PROVIDED WITH WIND BAFFLES AS NECESSARY TO PROVIDE COOLING TO -40 F.
4. PIPING IS TO BE INSULATED WITH 1" OF INSULATION AND WRAPPED WITH ALUMINUM JACKET (SEE SPECIFICATIONS). PIPING IS TO BE SECURED WITH HYDRA-ZORB KLO-SHURE SERIES 7.

PUMP SCHEDULE

TAG	DESCRIPTION	MAKE & MODEL	GPM	HEAD	RPM	EFF	MOTOR HP	BHP	ELEC. DATA	NOTES:
HPP-1	HEAT PUMP LOOP CIRCULATOR PUMP	GRUNDFOS CRE-DP-20-2 208	72	50'	2407	71.8%	5 HP	1.28	208V-3Ø	1 2 3 4 5
HPP-2	HEAT PUMP LOOP CIRCULATOR PUMP	GRUNDFOS CRE-DP-20-2 208	72	50'	2407	71.8%	5 HP	1.28	208V-3Ø	1 2 3 4 5
GWP-1	GEOTHERMAL LOOP CIRCULATOR PUMP	GRUNDFOS CRE-DP 15-1 208	49	40'	3031	61.5%	2 HP	0.81	208V-3Ø	1 2 3 4 5
GWP-2	GEOTHERMAL LOOP CIRCULATOR PUMP	GRUNDFOS CRE-DP 15-1 208	49	40'	3031	61.5%	2 HP	0.81	208V-3Ø	1 2 3 4 5

#

1. PUMP SHALL HAVE EC MOTOR (IE5 EFFICIENCY RATED) WITH VARIABLE SPEED CAPABILITIES.
2. PROVIDE FLEXIBLE CONNECTIONS TO EQUIPMENT.
3. SEE PUMP INSTALLATION DETAIL FOR PUMP SPECIALITIES AND INSTALLATION. PROVIDE MANUFACTURER PROVIDED SUCTION DIFFUSER/STRAINER BEFORE EACH PUMP. TRIPLE DUTY VALVES MAY BE USED AS A BALANCE VALVE AND CHECK VALVE. A SEPARATE ISOLATION VALVE IS REQUIRED.
4. PUMPS ARE TO HAVE BACNET CONNECTION CAPABILITIES PROVIDED.
5. PUMP IS TO BE INSTALLED ON A 4" CONCRETE HOUSE KEEPING PAD ON A MANUFACTURER PUMP STAND INSTALLED ON A VIBRATION ISOLATION PAD. COORDINATE INSTALLATION WITH CUSTOM SUPPORT STAND FOR UPPER PUMPS. SEE DETAIL DRAWING.
6. CONTRACTOR IS TO FABRICATE A CUSTOM SUPPORT STAND TO INSTALL THE UPPER PUMPS (HWP-2 AND GWP-2) TO BE INSTALLED ON. SEE DETAIL DRAWING.

APPROVED ALTERNATE MANUFACTURERS: TACO, ARMSTRONG, WILO. ALTERNATE MANUFACTURER PUMPS MUST MEET OR EXCEED STATED EFFICIENCIES AND FEATURES. ALTERNATE PRODUCTS MUST MATCH PUMP TYPE (BASE MOUNTED/VERTICAL INLINE ETC.). ALTERNATE PUMP TYPES FOR EACH PUMP MUST BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO BIDDING.

FAN SCHEDULE

TAG	DESCRIPTION	BASIS OF DESIGN	CFM	S.P.	BHP	MOTOR HP	RPM	ELECTRICAL	NOTES:
EF-1	ELEVATOR EXHAUST FAN	PANASONIC FV-1115VK2	150	0.2"	-	1/4	1637	120V-1P-60HZ	1 2

NOTES:

1. FAN TO BE PROVIDED WITH VARIABLE SPEED CONTROL.
2. PROVIDE STRUCTURAL SUPPORT FOR FAN. INSTALL WITH FLEXIBLE DUCTWORK ON INLET AND OUTLET CONNECTIONS.

AIR/DIRT SEPARATOR SCHEDULE

TAG	DESCRIPTION	BASIS OF DESIGN	GPM	REMARKS:
AS-1	HEAT PUMP LOOP AIR/DIRT SEPARATOR	SPIROTHERM VDT250-FA	82.5	PROVIDE SUPPORT FROM STRUCTURE.

NOTES:

1. PROVIDE ASME RATED CONSTRUCTION. 125 PSIG DESIGN PRESSURE.
2. PROVIDE FLANGED CONNECTIONS.
3. PROVIDE AUTOMATIC AIR VENT. PIPE AIR VENT TO FLOOR DRAIN.

CHEMICAL BYPASS FEEDER SCHEDULE

TAG	DESCRIPTION	MAKE & MODEL	CAPACITY	NOTES:
BF-1	GEOHERMAL SYSTEM BYPASS FEEDER	NEPTUNE FTF-5HP	5 GAL	1 2 3

#NOTES:

1. FURNISH AND INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ISOLATION VALVES AS PER ONE-LINE DIAGRAM.
2. PROVIDE SUPPORT LEGS.
3. PROVIDE WITH STAINLESS STEEL SCREEN, 5-MICRON AND 20-MICRON FILTER SOCKS.

EXPANSION TANK SCHEDULE

TAG	DESCRIPTION	MAKE & MODEL	ACCEPTANCE	DIMENSIONS	NOTES:
XT-1	GEOTHERMAL HEAT PUMP SYSTEM EXPANSION TANK	AMTROL EXTROL 200-L	53 GAL.	38"- 24"Ø	1 2 3

NOTES:

1.PROVIDE ASME RATED CONTRUCTION. 125 PSIG DESIGN PRESSURE.
2.PROVIDE DRAIN WITH BALL VALVE AND 4" THICK CONCRETE HOUSE KEEPING PAD.
3.ADJUST FACTORY PRESSURE SETTINGS TO MEET SYSTEM REQUIREMENTS.

GLYCOL FEED SCHEDULE

TAG	DESCRIPTION	MAKE & MODEL	PRES.	CAPACITY	ELEC. DATA	NOTES:
GF-1	HEAT PUMP LOOP GLYCOL FEED PUMP AND TANK	AXIOM INDUSTRIES SF100-HP	25 PSI	55 GAL	120V-60HZ-0.9A	1 2

#NOTES:

1. FURNISH AND INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.
2. INSTALL GFCI RECEPTACLE, FEED FROM LOCAL RECEPTACLE CIRCUIT. COORDINATE WITH ELECTRICAL CONTRACTOR.

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

N

MECHANICAL SCHEDULES

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	1/4" = 1'-0"

M5.02

ROOFTOP ENERGY RECOVERY UNIT (W/WATER SOURCE HEAT PUMP) SCHEDULE

TAG	DESCRIPTION	LOCATION	MAKE & MODEL	ELECTRICAL	SUPPLY AIR FAN						EXHAUST/RETURN AIR FAN (CFM TO BE CAPABLE OF 100% ECONOMIZER)					
					QTY	MIN E.S.P.	CFM	MOTOR	MTR. HP	RPM	QTY	MIN E.S.P.	CFM	MOTOR	MTR. HP	RPM
ERV-1	WSHP AIR HANDLER (ERV)	ROOF	AAON RN-006	208V-3Ø-34 MCA-50MOP	1	1.50"	1,500	ECM	2	TBD	1	1.50"	1,500	ECM	1	TBD

NOTES:

1. PRE-FILTER RACK (TO FILTER ALL AIR ENTERING COILS/ERV CORE) TO BE 2" MERV 8 PRE-FILTERS. SUPPLY AIR FILTER IS TO BE 2" MERV 8 AND 4" MERV 13 FILTERS.
2. UNIT SHALL HAVE FACTORY REFRIGERATION CONTROLS OF DX HEATING/COOLING AND HOT GAS REHEAT.
3. DDC CONTROL SENSOR(S) AND EQUIPMENT LOCATIONS ARE TO BE COORDINATED WITH CONTROLS CONTRACTOR.
4. PROVIDE MODULATING HOT GAS REHEAT COIL WITH MODULATING CONTROLLER AND ACCESSORIES.
5. UNIT SHALL BE MOUNTED ON 18" INSULATED ROOF CURB. PROVIDE DUCT RAILS FOR FIELD INSTALLED DUCTWORK SUPPORT.
6. PROVIDE WITH FACTORY INSTALLED SUPPLY AIR DUCT SMOKE DETECTOR. WIRE BACK TO A TERMINAL STRIP FOR CONNECTION TO THE FIRE ALARM SYSTEM. THE FIRE ALARM SYSTEM IS TO SEND THE UNIT SHUTDOWN SIGNAL. PROVIDE INPUT FOR UNIT SHUTDOWN.
7. ALL MOTORS SHALL BE ECM'S WHERE AVAILABLE. WHERE ECM IS NOT AVAILABLE, ALL MOTORS ARE TO BE ON VARIABLE FREQUENCY DRIVES, PREMIUM EFFICIENCY INVERTER DUTY RATED MOUNTED WITHIN THE UNIT. VFDS TO BE FURNISHED AND INSTALLED BY MANUFACTURER.
8. UNIT TO HAVE DOUBLE WALL INSULATED CONSTRUCTION WITH MINIMUM R-13.
9. REFRIGERATION SYSTEM SHALL HAVE MODULATING COMPRESSORS AT MINIMUM ON THE FIRST STAGE OF EACH CIRCUIT FOR HEATING AND COOLING.
10. UNIT SHALL BE CAPABLE OF 100% ECONOMIZER OPERATION WITH MODULATING RECOVERY WHEEL SPEED AND MODULATING BYPASS DAMPERS.
11. UNIT IS TO BE PROVIDED WITH MOTORIZED INSULATED EXHAUST AIR AND OUTDOOR AIR ISOLATION DAMPERS.
12. FANS ARE TO BE HIGH EFFICIENCY DIRECT DRIVE PLENUM FANS. FANS TO BE PROVIDED WITH VIBRATION ISOLATION.
13. PROVIDE UNIT WITH LOW SOUND PACKAGE FOR REFRIGERATION SYSTEM INCLUDING COMPRESSOR SOUND BLANKETS AND COMPRESSOR COMPARTMENT INSULATION.
14. UNIT TO HAVE DOUBLE SLOPED STAINLESS STEEL DRAIN PANS FOR COILS AND HEAT EXCHANGER.
15. UNIT TO BE PROVIDED WITH 120V GFCI RECEPTACLE WITH DEDICATED 120V DISCONNECT FROM MAIN POWER FEED. POWER (AND TRANSFORMER) TO BE TAPPED OFF PRIOR TO THE MAIN UNIT DISCONNECT SO THAT THE RECEPTACLE IS STILL OPERATIONAL WITH THE UNIT POWER DISABLED.
16. MECHANICAL CONTRACTOR IS TO INSTALL 1" ACOUSTICAL ELASTOMERIC FOAM DUCT LINER IN THE EXHAUST AND DISCHARGE DUCTS FOR THE FIRST 20 FEET OF DUCT.

SUMMER HEAT EXCHANGER DESIGN					WINTER HEAT EXCHANGER DESIGN				
	ENTERING O.A.	LEAVING SUPPLY	ENTERING EXHAUST			ENTERING SUPPLY	LEAVING SUPPLY	ENTERING RETURN	
DB	93.0° F	80.0° F	75.0° F		DB	-15.00° F	43.6° F	70.0° F	
WB	73.0° F	65.5° F	62.0 F		WB	-16.00° F	37.7° F	54.0° F	

19. UNIT TO BE PROVIDED WITH DUAL ENERGY RECOVERY CORES WITH AUTOMATIC (FACTORY CONTROLLED DAMPERS) TO REVERSE THE AIRFLOW THROUGH THE CORES FOR CORE RECHARGING. SYSTEM SHALL BE CAPABLE OF ECONOMIZER OPERATION WHEN SIGNALED BY THE DDC SYSTEM. HEAT EXCHANGER CORES ARE TO HAVE FULL LATENT HEAT TRANSFER.
20. UNIT IS TO BE PROVIDED WITH A RECIRCULATING DAMPER THAT ALLOWS AIR TO RECIRCULATE BACK THROUGH THE UNIT AND NOT PASS THROUGH THE CORE DURING UNOCCUPIED HOURS).
21. PROVIDE ECONOMIZER DAMPERS TO BYPASS THE ENERGY RECOVERY CORE DURING ECONOMIZER OPERATION.

WATER SOURCE HEAT PUMP COOLING PERFORMANCE

A.P.D.	EAT °F	LAT °F	EWT	LWT	GPM	WPD	NOM. CAP.	EER
< 0.5"	80.0° F 65.5° F	52.9° DB 51.4° WB	90.0° F	98.1° F	18	7.5 FT	57.2 MBH	14.5

WATER SOURCE HEAT PUMP HEATING PERFORMANCE

A.P.D.	EAT °F	LAT °F	EWT	LWT	GPM	WPD	NOM. CAP.	COP
< 0.5"	43.6° DB	80.0° DB	40.0° F	34.4° F	18	7.5 FT	58.7 MBH	3.1

HOT GAS REHEAT COIL PERFORMANCE

A.P.D.	EAT °F	LAT °F	AREA	ROWS	FPI	MAX FACE VEL.
< 0.1"	52.9° DB 51.4° WB	70.0° DB	8.5 SQF	-	-	500 FPM

NOTE:

1. COMPRESSORS ARE TO BE RATED FOR EXTENDED RANGE OPERATION (FOR GEOTHERMAL WATER TEMPERATURES WITH 15% PROPYLENE GLYCOL). TEMPERATURES TO BE 32°F-90°F IN HEATING MODE AND 40°F-110°F IN COOLING MODE.
2. MODULATING HEAT PUMP LOOP CONTROL VALVE(S) ARE TO BE INTEGRAL TO THE UNIT AND SUPPLIED WITH A MODULATING FREEZE PROTECTION SETTING BASED ON OUTDOOR AIR TEMPERATURE. VALVES ARE TO BE SUPPLIED BY AND INSTALLED BY THE MANUFACTURER COMPLYING WITH THE REQUIREMENTS OF THE SPECIFICATIONS.
3. BALANCE VALVES ARE TO BE INTEGRAL TO THE UNIT AND PROVIDED BY AND INSTALLED BY THE MANUFACTURER COMPLYING WITH THE REQUIREMENTS OF THE SPECIFICATIONS.
4. COILS ARE TO HAVE 0.035" TUBE WALL THICKNESS AND 0.0095" FIN THICKNESS.
5. INTERNAL PIPING AND VALVES ARE TO BE INCREASED IN SIZE AS NECESSARY TO MATCH THE INDICATED WATER PRESSURE DROPS LISTED ABOVE.

SUPPLY AIR VAV SCHEDULE

TAG	MAKE & MODEL	SIZE	MAX. CFM	MIN. CFM	INLET SIZE	INLET SP	AREA SERVED
VS-b1	ENVIRO-TEC MODEL SDR	6	260	130	6Ø	0.25"W.C.	HOLDING 018/019, PROCESSING 017
VS-b2	ENVIRO-TEC MODEL SDR	6	310	160	6Ø	0.25"W.C.	CHANGING ROOM 008, STAFF TOILET 009, MECH 010, LOCKER 011
VS-1-1	ENVIRO-TEC MODEL SDR	6	230	85	6Ø	0.25"W.C.	TRAINING ROOM 102
VS-1-2	ENVIRO-TEC MODEL SDR	4	70	40	4Ø	0.25"W.C.	LOBBY 101
VS-1-3	ENVIRO-TEC MODEL SDR	4	125	80	4Ø	0.25"W.C.	PATROL RM. 105, INTERVIEW 106, CORRIDOR 103
VS-2-1	ENVIRO-TEC MODEL SDR	4	130	65	4Ø	0.25"W.C.	EQUIP. STOR. 112, DIS. MGR. 210, TLT. 209, LOBBY 204, ARMORY 207
VS-2-2	ENVIRO-TEC MODEL SDR	4	90	45	4Ø	0.25"W.C.	DISPATCH 211, COMMS/EQUIP 113
VS-2-3	ENVIRO-TEC MODEL SDR	4	60	40	4Ø	0.25"W.C.	CPTN. OFFICE 210, CHIEF OFFICE 209, MTG. SPACE 208, CORR. 206

NOTES:

1. FLEXIBLE DUCT IS NOT PERMITTED ON INLET AND/OR OUTLET OF VAV BOXES.
2. SEE PLAN FOR VAV BOX LOCATIONS.
3. INSTALL VAV BOX TO PERMIT REMOVAL AND INSTALLATION OF CONTROL ENCLOSURE COVERS, PROVIDE MANUFACTURER'S REQUIRED SERVICE CLEARANCES.
4. VAV BOXES ARE TO HAVE ELASTOMERIC FOAM LINER.
5. SEE EXHAUST VAV BOX SCHEDULE FOR SUPPLY VAV BOXES THAT CORRESPOND TO THE EXHAUST VAV BOX FOR CONTROL PURPOSES.

EXHAUST AIR VAV SCHEDULE

TAG	MAKE & MODEL	SIZE	MAX. CFM	MIN. CFM	INLET SIZE	INLET SP	AREA SERVED	ASSOCIATED SUPPLY VAVS
VE-b1	ENVIRO-TEC MODEL SDR	6	260	130	6Ø	0.25"W.C.	HOLDING 018/019, PROCESSING 017	VS-b1
VE-b2	ENVIRO-TEC MODEL SDR	6	310	160	6Ø	0.25"W.C.	CHANGING ROOM 008, STAFF TOILET 009, MECH 010, LOCKER 011	VS-b2
VE-1-1	ENVIRO-TEC MODEL SDR	6	230	85	6Ø	0.25"W.C.	TRAINING ROOM 102	VS-1-1
VE-1-2	ENVIRO-TEC MODEL SDR	4	70	40	4Ø	0.25"W.C.	LOBBY 101	VS-1-2
VE-1-3	ENVIRO-TEC MODEL SDR	4	125	80	4Ø	0.25"W.C.	PATROL RM. 105, INTERVIEW 106, CORRIDOR 103	VS-1-3
VE-2-1	ENVIRO-TEC MODEL SDR	4	130	65	4Ø	0.25"W.C.	EQUIP. STOR. 112, DIS. MGR. 210, TLT. 209, LOBBY 204, ARMORY 207	VS-2-1
VE-2-2	ENVIRO-TEC MODEL SDR	4	90	45	4Ø	0.25"W.C.	DISPATCH 211, COMMS/EQUIP 113	VS-2-2
VE-2-3	ENVIRO-TEC MODEL SDR	4	60	40	4Ø	0.25"W.C.	CPTN. OFFICE 210, CHIEF OFFICE 209, MTG. SPACE 208, CORR. 206	VS-2-3

NOTES:

1. FLEXIBLE DUCT IS NOT PERMITTED ON INLET AND/OR OUTLET OF VAV BOXES.
2. SEE PLAN FOR VAV BOX LOCATIONS.
3. INSTALL VAV BOX TO PERMIT REMOVAL AND INSTALLATION OF CONTROL ENCLOSURE COVERS, PROVIDE MANUFACTURER'S REQUIRED SERVICE CLEARANCES.
4. VAV BOXES ARE TO HAVE ELASTOMERIC FOAM LINER.

ELECTRIC BASEBOARD SCHEDULE

TAG	DESCRIPTION	MAKE & MODEL	HEIGHT	LENGTH	CAPACITY	ELECTRIC	NOTES
B-1	ELECTRIC BASEBOARD	RUNTAL EB3-120D	10-1/8"	60"	2500 BTUH	120V/733W	

#NOTES:

1. PROVIDE WALL MOUNTING BRACKETS FOR WALL MOUNTED INSTALLATION.
2. SEE PLAN DRAWINGS FOR PIPING CONNECTION SIZES AND LOCATIONS. PIPING CONNECTIONS TO BE ON OPPOSITE ENDS OF RADIATOR.
3. PROVIDE MANUAL HIGH POINT AIR VENTS AND LOW POINT DRAWINGS ON UNITS THAT ARE FED FROM ABOVE.
4. PROVIDE FULL TRIM COVERS TO CONCEAL PIPING ON EACH SIDE OF RADIATOR. PROVIDE CORNER PIECES AS NECESSARY PER PLANS.
5. COLORS TO BE SELECTED BY ARCHITECT.

HEAT TRACE SCHEDULE

TAG	DESCRIPTION	MAKE & MODEL	CONTROLLER
HT-1	ELECTRONIC HEAT TRACE	RAYCHEM 3BTV1-CR/CT	JBS-100-ECW-A

NOTES:

1. PROVIDE SELF REGULATING ELECTRONIC HEAT TRACE FOR THE HEAT PUMP LINES FROM INSIDE THE ROOF TO THE WATER TO REFRIGERANT HEAT EXCHANGER. HEAT TRACE TO BE SIZED AND OPERATED TO MAINTAIN 34°F (ADJ.) TEMPERATURE OF THE PIPING.
2. PROVIDE QUANTITY OF CONTROLLERS AS NECESSARY FOR THE PIPING SYSTEMS. ALL PIPING SYSTEMS MAY BE MAINTAINED AT THE SAME TEMPERATURE.
3. ENSURE PIPING IS FULLY INSULATED AFTER THE INSTALLATION OF THE HEAT TRACE. COORDINATE WITH THE MECHANICAL CONTRACTOR FOR FIELD INSTALLATION OF THE HEAT PUMP LOOP PIPING WITHIN THE HEAT PUMP CABINET.

AIRFLOW STATION SCHEDULE

TAG	DESCRIPTION	MAKE & MODEL	DUCT SIZE	MAX. FLOW	MIN. FLOW	NOTES:
AFS-1	FAN INLET AIRFLOW STATION	EBTRON GOLD GTx108e-F	VERIFY	VERIFY	VERIFY	1 2 3

#NOTES:

1. FURNISH AND INSTALL EBTRON GOLD SERIES PROBE, INSERTION TYPE.
2. INSTALL AIRFLOW STATION PER MANUFACTURERS REQUIREMENTS.
3. COORDINATE FAN LET SIZE AND REQUIREMENTS WITH EQUIPMENT FAN SELECTION.

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

MECHANICAL SCHEDULES

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	TWD
DRAWN BY:	LNC
SCALE:	N.T.S.

M5.03

SUPPLY DIFFUSER, GRILLE & REGISTER SCHEDULE

TAG	DESCRIPTION	MAKE & MODEL	PANEL	NECK	MAX. CFM	NOTES:
S1 CFM	SECURITY LIGATURE RESISTANT 4-WAY BLOW	PRICE #MSRRCD-8x8	-	8/8	120	DIFFUSER TO BE SECURED TO STEEL CEILING STUD BY COUNTERSUNK STAINLESS STEEL TAMPER-PROOF SCREWS.
S2 CFM	MINIMUM SECURITY CEILING GRILLE	NAILOR #SG-6200-6x6	-	6/6	110	GRILLE TO BE SECURED TO STEEL CEILING STUD BY STAINLESS STEEL SCREWS.
S3 CFM	MINIMUM SECURITY CEILING GRILLE	NAILOR #SG-6200-9x9	-	9/9	180	GRILLE TO BE SECURED TO STEEL CEILING STUD BY STAINLESS STEEL SCREWS.
S4 CFM	SUPPLY AIR DIFFUSER	NAILOR #6200-6x6-S-AW	-	6"□	100	WHERE SUPPLY DIFFUSERS ARE INSTALLED IN A LAY-IN CEILING, DIFF. ARE TO BE INSTALLED IN TILE AND ARE TO BE CONNECTED TO FLEX DUCT SO THAT THEY BE REMOVED WITH THE TILE. PROVIDE WITH PLENUM CONNECTION PER DETAIL DRAWING. PROVIDE DUCT TRANSITIONS AS NECESSARY.
S5 CFM	SUPPLY AIR DIFFUSER	NAILOR #6200-9x9-L-24x24-AW	24x24	6"□	80	PROVIDE WITH EITHER PLENUM CONNECTION PER DETAIL DRAWING OR SR-O ADAPTER. NOISE MUST BE MAINTAINED UNDER NC-20 IF SR-O IS UTILIZED (OTHERWISE INCREASE DIFF. SIZE OR PROVIDE PLENUM PER DETAIL). PROVIDE DUCT TRANSITIONS AS NECESSARY.
S6 CFM	SUPPLY AIR DIFFUSER	NAILOR #6200-12x12-L-24x24-AW	24x24	8"□	180	PROVIDE WITH EITHER PLENUM CONNECTION PER DETAIL DRAWING OR SR-O ADAPTER. NOISE MUST BE MAINTAINED UNDER NC-20 IF SR-O IS UTILIZED (OTHERWISE INCREASE DIFF. SIZE OR PROVIDE PLENUM PER DETAIL). PROVIDE DUCT TRANSITIONS AS NECESSARY.
S7 CFM	SUPPLY AIR DIFFUSER	NAILOR #6200-15x15-L-24x24-AW	24x24	10"□	300	PROVIDE WITH EITHER PLENUM CONNECTION PER DETAIL DRAWING OR SR-O ADAPTER. NOISE MUST BE MAINTAINED UNDER NC-20 IF SR-O IS UTILIZED (OTHERWISE INCREASE DIFF. SIZE OR PROVIDE PLENUM PER DETAIL). PROVIDE DUCT TRANSITIONS AS NECESSARY.
S8 CFM	SUPPLY AIR DIFFUSER	NAILOR #6200-15x15-L-24x24-AW	24x24	12"□	375	PROVIDE WITH EITHER PLENUM CONNECTION PER DETAIL DRAWING OR SR-O ADAPTER. NOISE MUST BE MAINTAINED UNDER NC-20 IF SR-O IS UTILIZED (OTHERWISE INCREASE DIFF. SIZE OR PROVIDE PLENUM PER DETAIL). PROVIDE DUCT TRANSITIONS AS NECESSARY.
S9 CFM	SIDEWALL SUPPLY GRILLE	NAILOR #71DV-8x4-S-AW-A	-	8x4	130	PROVIDE TRANSITION FROM DUCT SIZE TO NECK. GRILLE TO SUPPORTED BY THE DUCTWORK IN EXPOSED APPLICATIONS.
S10 CFM	SIDEWALL SUPPLY GRILLE	NAILOR #71DV-12x8-S-AW-A	-	12x8	400	PROVIDE TRANSITION FROM DUCT SIZE TO NECK. GRILLE TO SUPPORTED BY THE DUCTWORK IN EXPOSED APPLICATIONS.
S11 CFM	SUPPLY AIR DIFFUSER	NAILOR #6200-15x15-S-AW	-	10"□	300	PROVIDE WITH EITHER PLENUM CONNECTION PER DETAIL DRAWING OR SR-O ADAPTER. NOISE MUST BE MAINTAINED UNDER NC-20 IF SR-O IS UTILIZED (OTHERWISE INCREASE DIFF. SIZE OR PROVIDE PLENUM PER DETAIL). PROVIDE DUCT TRANSITIONS AS NECESSARY.
S12 CFM	SUPPLY AIR DIFFUSER	NAILOR #6200-6x6-S-AW	-	4"□	40	PROVIDE WITH EITHER PLENUM CONNECTION PER DETAIL DRAWING OR SR-O ADAPTER. NOISE MUST BE MAINTAINED UNDER NC-20 IF SR-O IS UTILIZED (OTHERWISE INCREASE DIFF. SIZE OR PROVIDE PLENUM PER DETAIL). PROVIDE DUCT TRANSITIONS AS NECESSARY.
OA CFM	OUTDOOR AIR DUCT CONNECTION TO RETURN DUCT	-	-	-	SEE PLANS	PROVIDE BOOT TAKEOFF CONNECTION TO RETURN DUCT.

NOTES:
1. PROVIDE BRANCH VOLUME DAMPER FOR EACH DIFFUSER AND REGISTER.
2. ALL ROUND VOLUME DAMPERS SHALL BE EQUAL TO "RUSKIN" CDRS-25 WITH QUADRANT OPERATOR AND STAND-OFF BRACKET FOR INSULATED DUCT.
3. ALL RECTANGULAR VOLUME DAMPERS SHALL BE EQUAL TO "RUSKIN" CD-36 WITH JAMB SEALS, QUADRANT OPERATOR AND STAND-OFF BRACKET FOR INSULATED DUCT.
4. PROVIDE CODE COMPLIANT FLEXIBLE CONNECTIONS TO CEILING MOUNTED DIFFUSERS AND GRILLES. FLEXIBLE DUCT LENGTH TO BE 5' MINIMUM AND 6' MAXIMUM FLEXIBLE AIR DUCT LENGTH.
5. CONNECT FLEXIBLE AIR DUCT TO DIFF./REG. NECK WITH S.S. DRAW CLAMP.
6. PROVIDE BRANCH DUCT TAKE-OFF AS PER DETAIL DRAWINGS AND AS INDICATED ON PLANS.
7. PROVIDE ADAPTER FRAMES FOR ALL T-BAR LAY-IN TYPE DIFFUSERS OR GRILLES INDICATED TO BE INSTALLED IN GYPSUM BOARD CEILINGS. DO NOT FASTEN UNITS DOWN SO THEY CAN BE UTILIZED AS ACCESS OPENINGS. (NON FIRE RATED APPLICATIONS.)
8. PAINT ALL GRILLE BOOTS FLAT BLACK. PAINT ANY SECTIONS OF DUCTWORK VISIBLE THROUGH GRILLES FLAT BLACK.
9. COLOR/FINISH BY ARCHITECT.
10. DIFFUSERS/GRILLES INSTALLED IN LOCATIONS WITHOUT A CEILING ARE TO BE CONNECTED AND SUPPORTED FROM THE DUCTWORK. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS WITHOUT A CEILING.
11. ALL DIFFUSERS WITH SQUARE NECKS AND ROUND DUCT CONNECTIONS ARE TO BE PROVIDED WITH SQUARE TO ROUND ADAPTER SR-O OR THE PLENUM INDICATED IN THE DETAIL DRAWINGS. THE STANDARD NAILOR SHORT SQUARE TO ROUND ADAPTER IS NOT PERMITTED.

EXHAUST DIFFUSER & REGISTER SCHEDULE

TAG	DESCRIPTION	MAKE & MODEL	PANEL	NECK	TYPE	MAX. CFM	NOTES:
E1 CFM	SECURITY LIGATURE RESISTANT RETURN GRILLE	PRICE #MSRRP-9x9	-	9/9	EXH./RET. GRILLE	170 CFM	GRILLE TO BE SECURED TO STEEL CEILING STUD BY COUNTERSUNK STAINLESS STEEL TAMPER-PROOF SCREWS.
E2 CFM	SURFACE MOUNT EXHAUST GRILLE	NAILOR #7145H-8x4-S-AW-A	-	8x4	EXH./RET. GRILLE	100 CFM	PROVIDE TRANSITION FROM DUCT SIZE TO NECK. GRILLE TO SUPPORTED BY THE DUCTWORK IN EXPOSED APPLICATIONS.
E3 CFM	SURFACE MOUNT EXHAUST GRILLE	NAILOR #7145H-8x6-S-AW-A	-	8x6	EXH./RET. GRILLE	130 CFM	PROVIDE TRANSITION FROM DUCT SIZE TO NECK. GRILLE TO SUPPORTED BY THE DUCTWORK IN EXPOSED APPLICATIONS.
E4 CFM	SURFACE MOUNT EXHAUST GRILLE	NAILOR #7145H-8x8-S-AW-A	-	8x8	EXH./RET. GRILLE	80 CFM	RETURN GRILLES INSTALLED IN A LAY-IN CEILING ARE TO BE INSTALLED IN TILE AND ARE TO BE CONNECTED TO FLEX DUCT SO THAT THEY BE REMOVED WITH THE TILE. PROVIDE WITH PLENUM CONNECTION PER DETAIL DRAWING. PROVIDE DUCT TRANSITIONS AS NECESSARY.
E5 CFM	LAY-IN CEILING EXHAUST GRILLE	NAILOR #7145H-15x15 -PLA-24x24-AW-A	24x24	10"□	EXH./RET. GRILLE	300 CFM	PROVIDE WITH EITHER PLENUM CONNECTION PER DETAIL DRAWING OR SR-O ADAPTER. NOISE MUST BE MAINTAINED UNDER NC-20 IF SR-O IS UTILIZED (OTHERWISE INCREASE DIFF. SIZE OR PROVIDE PLENUM PER DETAIL). PROVIDE DUCT TRANSITIONS AS NECESSARY.
E6 CFM	LAY-IN CEILING EXHAUST GRILLE	NAILOR #7145H-12x12 -PLA-24x24-AW-A	24x24	8"□	EXH./RET. GRILLE	200 CFM	PROVIDE WITH EITHER PLENUM CONNECTION PER DETAIL DRAWING OR SR-O ADAPTER. NOISE MUST BE MAINTAINED UNDER NC-20 IF SR-O IS UTILIZED (OTHERWISE INCREASE DIFF. SIZE OR PROVIDE PLENUM PER DETAIL). PROVIDE DUCT TRANSITIONS AS NECESSARY.
EA CFM	EXHAUST CONNECTION TO RETURN DUCT	DUCT SIZE	-	-	-	SEE PLANS	PROVIDE BOOT TAKEOFF CONNECTION TO RETURN DUCT.

NOTES:
1. PROVIDE BRANCH VOLUME DAMPER FOR EACH DIFFUSER AND REGISTER.
2. ALL ROUND VOLUME DAMPERS SHALL BE EQUAL TO "RUSKIN" CDRS-25 WITH QUADRANT OPERATOR AND STAND-OFF BRACKET FOR INSULATED DUCT.
3. ALL RECTANGULAR VOLUME DAMPERS SHALL BE EQUAL TO "RUSKIN" CD-36 WITH JAMB SEALS, QUADRANT OPERATOR AND STAND-OFF BRACKET FOR INSULATED DUCT.
4. PROVIDE CODE COMPLIANT FLEXIBLE CONNECTIONS TO CEILING MOUNTED DIFFUSERS AND GRILLES. FLEXIBLE DUCT LENGTH TO BE 5' MINIMUM AND 6' MAXIMUM FLEXIBLE AIR DUCT LENGTH.
5. CONNECT FLEXIBLE AIR DUCT TO DIFF./REG. NECK WITH S.S. DRAW CLAMP.
6. PROVIDE BRANCH DUCT TAKE-OFF AS PER DETAIL DRAWINGS AND AS INDICATED ON PLANS.
7. PROVIDE ADAPTER FRAMES FOR ALL T-BAR LAY-IN TYPE DIFFUSERS OR GRILLES INDICATED TO BE INSTALLED IN GYPSUM BOARD CEILINGS. DO NOT FASTEN UNITS DOWN SO THEY CAN BE UTILIZED AS ACCESS OPENINGS.
8. PAINT ALL GRILLE BOOTS FLAT BLACK. PAINT ANY SECTIONS OF DUCTWORK VISIBLE THROUGH GRILLES FLAT BLACK.
9. COLOR/FINISH BY ARCHITECT.
10. DIFFUSERS/GRILLES INSTALLED IN LOCATIONS WITHOUT A CEILING ARE TO BE CONNECTED AND SUPPORTED FROM THE DUCTWORK. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS WITHOUT A CEILING.
11. ALL DIFFUSERS WITH SQUARE NECKS AND ROUND DUCT CONNECTIONS ARE TO BE PROVIDED WITH SQUARE TO ROUND ADAPTER FRAME AS INDICATED IN THE DETAIL DRAWINGS. THE STANDARD NAILOR SHORT SQUARE TO ROUND ADAPTER IS NOT PERMITTED.
12. ALL GRILLES UTILIZED AS PLENUM EXHAUST/RETURN SHALL BE RPOVIDED WITH A LINED Z DUCTED TRANSITION TO REDUCE ACOUSTICAL TRANSFER.

DIFFUSER & REGISTER SCHEDULE

TAG	DESCRIPTION	MAKE & MODEL	PANEL	NECK	TYPE	MAX. CFM	NOTES:
R1 CFM	MINIMUM SECURITY CEILING RETURN GRILLE	NAILOR #SG-6145H-9x9	-	9/9	EXH./RET. GRILLE	120 CFM	GRILLE TO BE SECURED TO STEEL CEILING STUD BY COUNTERSUNK STAINLESS STEEL TAMPER-PROOF SCREWS.
R2 CFM	MINIMUM SECURITY CEILING RETURN GRILLE	NAILOR #SG-6145H-14x14	-	14/14	EXH./RET. GRILLE	400 CFM	GRILLE TO BE SECURED TO STEEL CEILING STUD BY COUNTERSUNK STAINLESS STEEL TAMPER-PROOF SCREWS.
R3 CFM	SURFACE MOUNT RETURN GRILLE	NAILOR #7145H-8x8-S-AW-A	-	8x8	EXH./RET. GRILLE	100 CFM	RETURN GRILLES INSTALLED IN A LAY-IN CEILING ARE TO BE INSTALLED IN TILE AND ARE TO BE CONNECTED TO FLEX DUCT SO THAT THEY BE REMOVED WITH THE TILE. PROVIDE WITH PLENUM CONNECTION PER DETAIL DRAWING. PROVIDE DUCT TRANSITIONS AS NECESSARY.
R4 CFM	LAY-IN CEILING RETURN GRILLE	NAILOR #7145H-14x14 -PLA-24x24-AW-A	24x24	10"□	EXH./RET. GRILLE	300 CFM	PROVIDE WITH EITHER PLENUM CONNECTION PER DETAIL DRAWING OR SR-O ADAPTER. NOISE MUST BE MAINTAINED UNDER NC-20 IF SR-O IS UTILIZED (OTHERWISE INCREASE DIFF. SIZE OR PROVIDE PLENUM PER DETAIL). PROVIDE DUCT TRANSITIONS AS NECESSARY.
R5 CFM	LAY-IN CEILING RETURN GRILLE	NAILOR #7145H-16x16 -PLA-24x24-AW-A	24x24	12"□	EXH./RET. GRILLE	450 CFM	PROVIDE WITH EITHER PLENUM CONNECTION PER DETAIL DRAWING OR SR-O ADAPTER. NOISE MUST BE MAINTAINED UNDER NC-20 IF SR-O IS UTILIZED (OTHERWISE INCREASE DIFF. SIZE OR PROVIDE PLENUM PER DETAIL). PROVIDE DUCT TRANSITIONS AS NECESSARY.
R6 CFM	LAY-IN CEILING RETURN GRILLE	NAILOR #7145H-18x18 -PLA-24x24-AW-A	24x24	14"□	EXH./RET. GRILLE	600 CFM	PROVIDE WITH EITHER PLENUM CONNECTION PER DETAIL DRAWING OR SR-O ADAPTER. NOISE MUST BE MAINTAINED UNDER NC-20 IF SR-O IS UTILIZED (OTHERWISE INCREASE DIFF. SIZE OR PROVIDE PLENUM PER DETAIL). PROVIDE DUCT TRANSITIONS AS NECESSARY.
R7 CFM	SURFACE MOUNT RETURN GRILLE	NAILOR #7145H-10x6-S-AW-A	-	10x6	EXH./RET. GRILLE	200 CFM	PROVIDE TRANSITION FROM DUCT SIZE TO NECK. GRILLE TO SUPPORTED BY THE DUCTWORK IN EXPOSED APPLICATIONS.
R8 CFM	SURFACE MOUNT RETURN GRILLE	NAILOR #7145H-12x8-S-AW-A	-	12x8	EXH./RET. GRILLE	370 CFM	PROVIDE TRANSITION FROM DUCT SIZE TO NECK. GRILLE TO SUPPORTED BY THE DUCTWORK IN EXPOSED APPLICATIONS.
R9 CFM	LAY-IN CEILING RETURN GRILLE	NAILOR #7145H-12x12 -PLA-24x24-AW-A	24x24	8"□	EXH./RET. GRILLE	200 CFM	PROVIDE WITH EITHER PLENUM CONNECTION PER DETAIL DRAWING OR SR-O ADAPTER. NOISE MUST BE MAINTAINED UNDER NC-20 IF SR-O IS UTILIZED (OTHERWISE INCREASE DIFF. SIZE OR PROVIDE PLENUM PER DETAIL). PROVIDE DUCT TRANSITIONS AS NECESSARY.

NOTES:
1. PROVIDE BRANCH VOLUME DAMPER FOR EACH DIFFUSER AND REGISTER.
2. ALL ROUND VOLUME DAMPERS SHALL BE EQUAL TO "RUSKIN" CDRS-25 WITH QUADRANT OPERATOR AND STAND-OFF BRACKET FOR INSULATED DUCT.
3. ALL RECTANGULAR VOLUME DAMPERS SHALL BE EQUAL TO "RUSKIN" CD-36 WITH JAMB SEALS, QUADRANT OPERATOR AND STAND-OFF BRACKET FOR INSULATED DUCT.
4. PROVIDE CODE COMPLIANT FLEXIBLE CONNECTIONS TO CEILING MOUNTED DIFFUSERS AND GRILLES. FLEXIBLE DUCT LENGTH TO BE 5' MINIMUM AND 6' MAXIMUM FLEXIBLE AIR DUCT LENGTH.
5. CONNECT FLEXIBLE AIR DUCT TO DIFF./REG. NECK WITH S.S. DRAW CLAMP.
6. PROVIDE BRANCH DUCT TAKE-OFF AS PER DETAIL DRAWINGS AND AS INDICATED ON PLANS.
7. PROVIDE ADAPTER FRAMES FOR ALL T-BAR LAY-IN TYPE DIFFUSERS OR GRILLES INDICATED TO BE INSTALLED IN GYPSUM BOARD CEILINGS. DO NOT FASTEN UNITS DOWN SO THEY CAN BE UTILIZED AS ACCESS OPENINGS.
8. PAINT ALL GRILLE BOOTS FLAT BLACK. PAINT ANY SECTIONS OF DUCTWORK VISIBLE THROUGH GRILLES FLAT BLACK.
9. COLOR/FINISH BY ARCHITECT.
10. DIFFUSERS/GRILLES INSTALLED IN LOCATIONS WITHOUT A CEILING ARE TO BE CONNECTED AND SUPPORTED FROM THE DUCTWORK. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS WITHOUT A CEILING.
11. ALL DIFFUSERS WITH SQUARE NECKS AND ROUND DUCT CONNECTIONS ARE TO BE PROVIDED WITH SQUARE TO ROUND ADAPTER FRAME AS INDICATED IN THE DETAIL DRAWINGS. THE STANDARD NAILOR SHORT SQUARE TO ROUND ADAPTER IS NOT PERMITTED.
12. ALL GRILLES UTILIZED AS PLENUM EXHAUST/RETURN SHALL BE RPOVIDED WITH A LINED Z DUCTED TRANSITION TO REDUCE ACOUSTICAL TRANSFER.

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#	DATE	REVISION DESCRIPTION

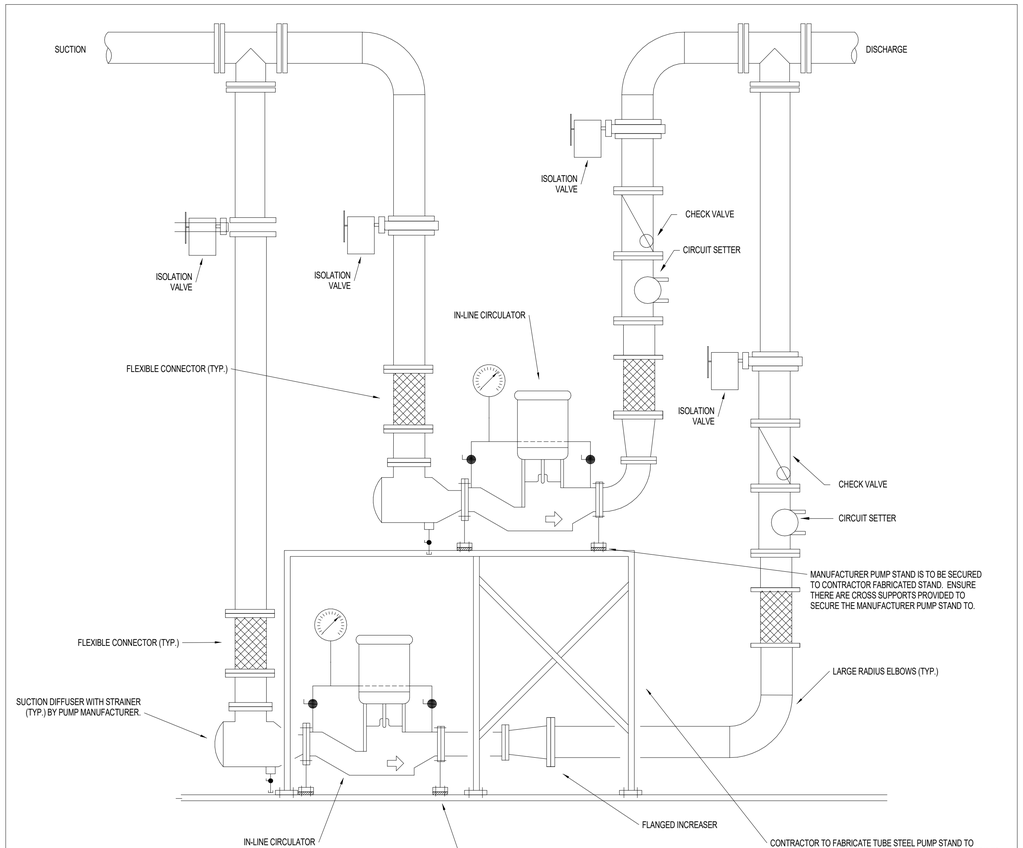
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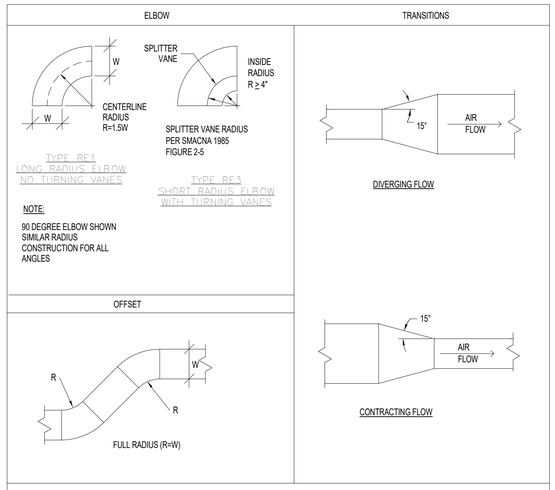
MECHANICAL SCHEDULES

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	N.T.S.

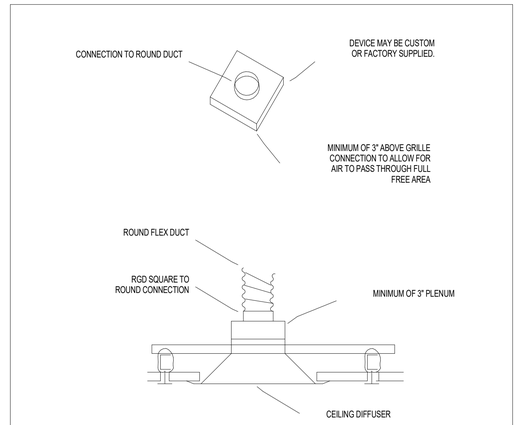
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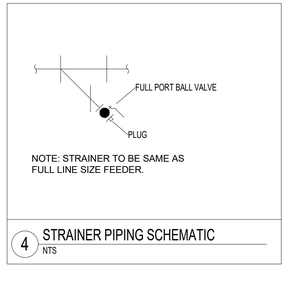
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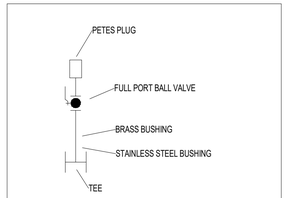
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N.T.S.



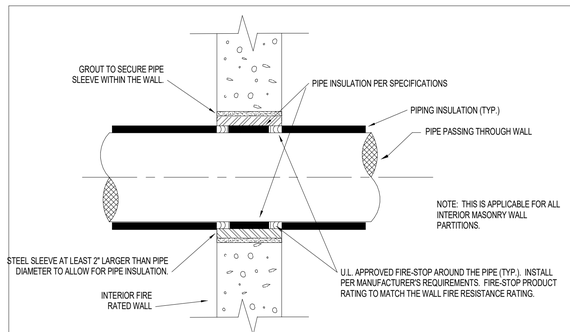
3 RGD SQUARE TO ROUND TRANSITION COLLAR SCHEMATIC
NTS



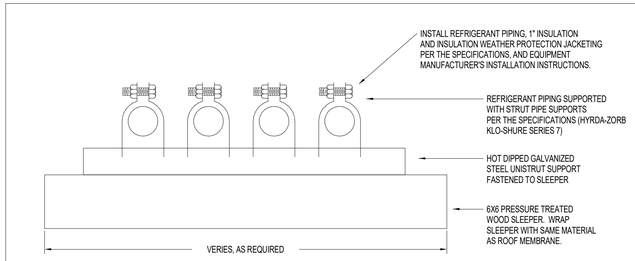
4 STRAINER PIPING SCHEMATIC
NTS



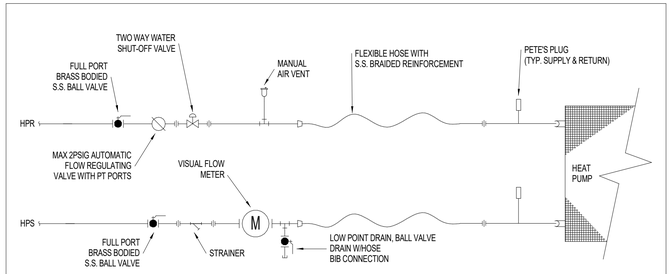
5 PETE'S PLUG SCHEMATIC
NTS



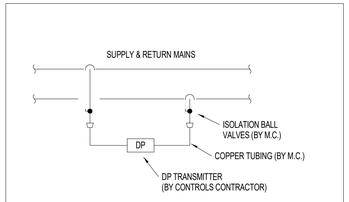
6 PIPE PENETRATING FIRE RATED WALL WITH SLEEVE DETAIL
NTS



7 ROOF TOP PIPING SUPPORT
NTS



8 HEAT PUMP PIPING CONNECTION SCHEMATIC
NTS



7 DIFFERENTIAL PRESSURE SENSOR
NTS

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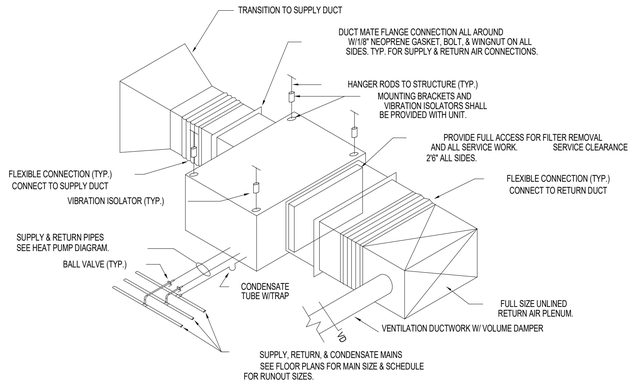
PUBLIC SAFETY FACILITY

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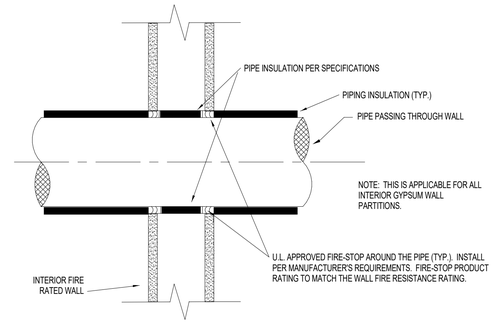
MECHANICAL DETAILS

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	N.T.S.

M6.01

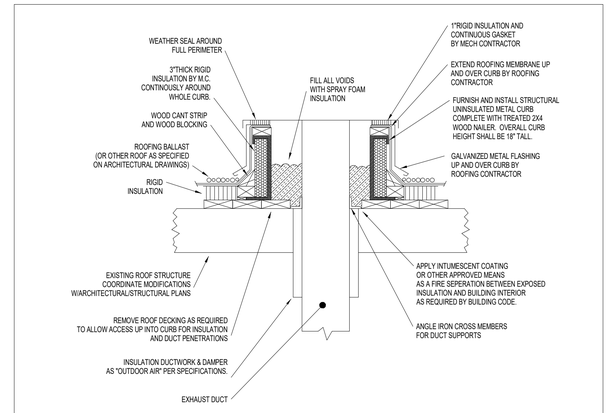


1 TYPICAL HORIZONTAL HEAT PUMP INSTALLATION
N.T.S.

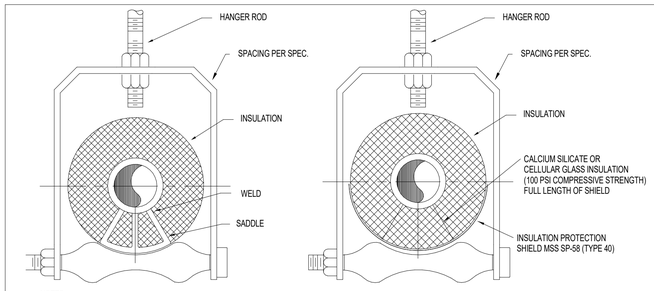


PROVIDE FOR ALL SERVICE PIPING PENETRATIONS OF SMOKE BARRIERS AND FIRE SEPARATIONS

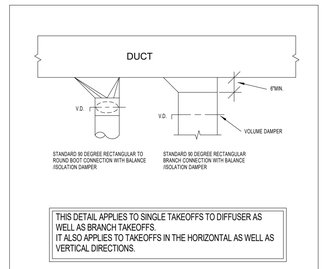
2 PIPE PENETRATING FIRE RATED WALL W/O SLEEVE DETAIL
NTS



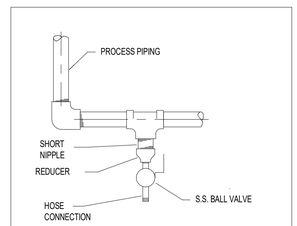
3 INSULATED ROOF CURB INSTALLATION SCHEMATIC
N.T.S.



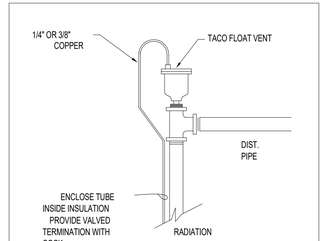
4 ADJUSTABLE ROLLER HANGER
NTS



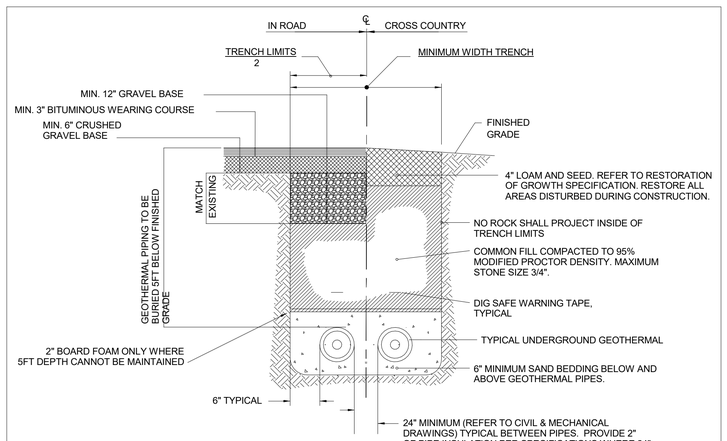
5 DUCT TAKEOFFS
N.T.S.



6 TYPICAL LOW POINT DRAIN
NTS

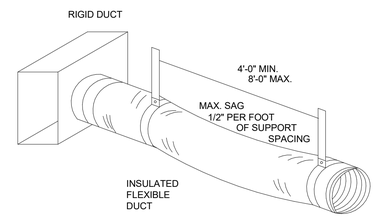


7 HIGH POINT AIR VENT
NTS



NOTES:
1. EXACT FINISHED GRADING AND BACKFILL MATERIALS AND METHODS ARE TO BE PER THE CIVIL AND LANDSCAPING DRAWINGS AND SPECIFICATIONS.

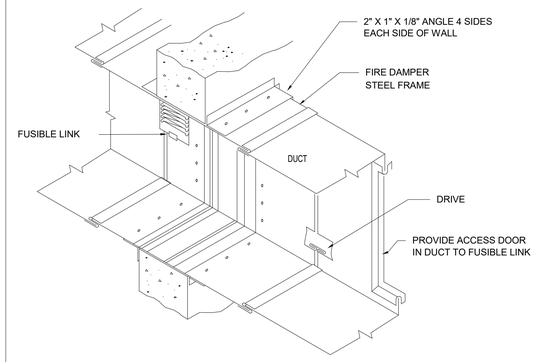
8 GEOTHERMAL TRENCH DETAIL
N.T.S.



NOTE:

FLEXIBLE DUCT SHALL EXTEND STRAIGHT FOR SEVERAL INCHES FROM THE CONNECTION BEFORE BENDING. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE LIMITED TO 8 FEET. FLEXIBLE DUCTS SHALL BE INSTALLED SO THAT NO CHANGE IN DIRECTION EXCEEDS 90 DEGREES.

9 FLEXIBLE DUCTWORK INSTALLATION SCHEMATIC
NTS



NOTES:

1.COORDINATE VERTICAL OR HORIZONTAL INSTALLATION WITH FLOOR PLANS.
2.PROVIDE TYPE C WITH BLADE OUT OF AIR STREAM FOR 100% FREE AREA.
3.PROVIDE DYNAMIC TYPE FIRE DAMPER UNLESS OTHERWISE INDICATED.

10 FIRE DAMPER INSTALLATION SCHEMATIC
NTS

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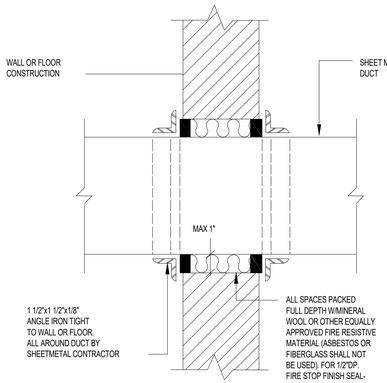
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MECHANICAL DETAILS

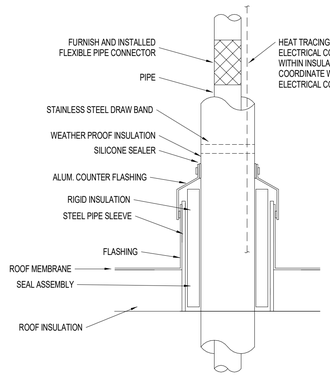
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DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	N.T.S.

M6.02

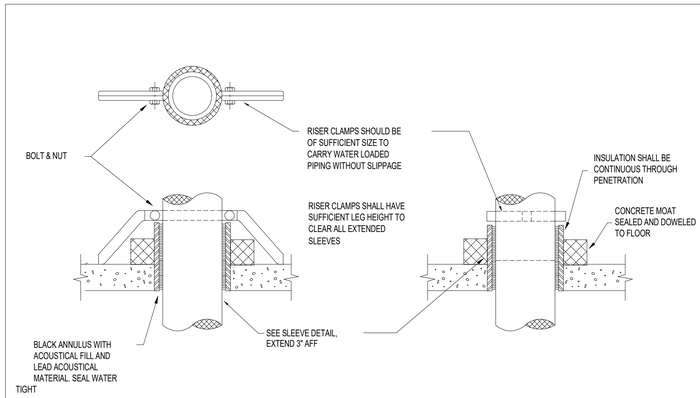


NOTE:
1. FOR WALLS REQUIRING FIRE DAMPERS, SEE OTHER DETAILS.

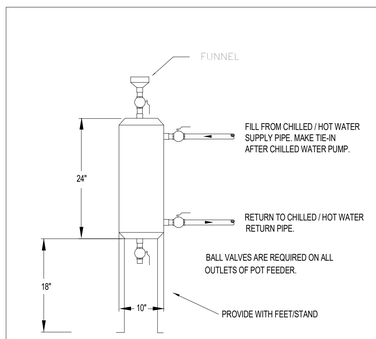
1 ONE HOUR OR LESS FIRE RATED PARTITION DUCT PENETRATION SCHEMATIC
N.T.S.



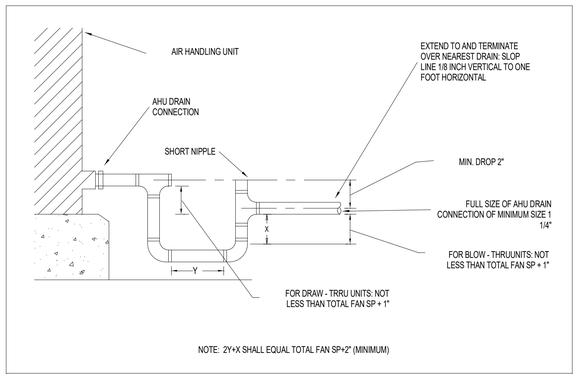
2 HEAT PUMP LOOP PIPE PENETRATION AT ROOF
N.T.S.



3 VERTICAL PIPE SUPPORT
N.T.S.

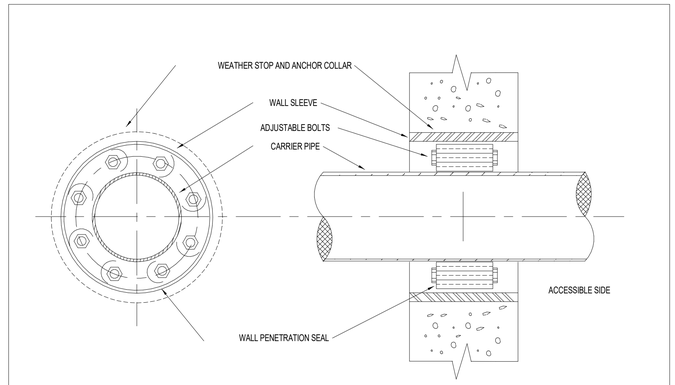


4 POT FEEDER FOR HYDRONIC SYSTEM
N.T.S.

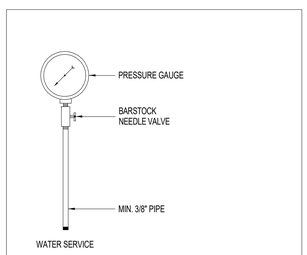


NOTE: 2Y+X SHALL EQUAL TOTAL FAN SP+2" (MINIMUM)

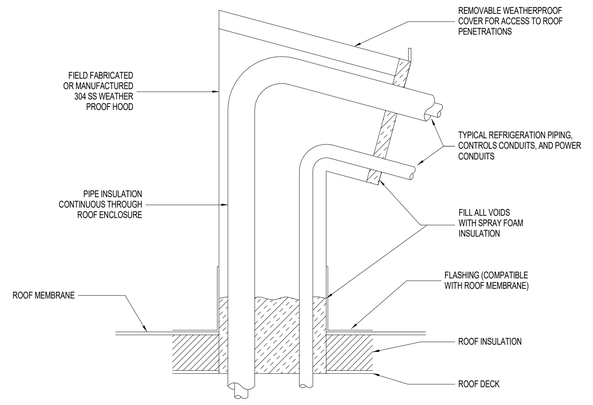
5 TYPICAL AIR HANDLING UNIT CASING DRAIN
N.T.S.



6 EXTERIOR WALL SLEEVE DETAIL
N.T.S.



7 PRESSURE GAUGE ASSEMBLY
N.T.S.



8 TYPICAL ROOF PENETRATION FOR REFRIGERATION PIPING
N.T.S.

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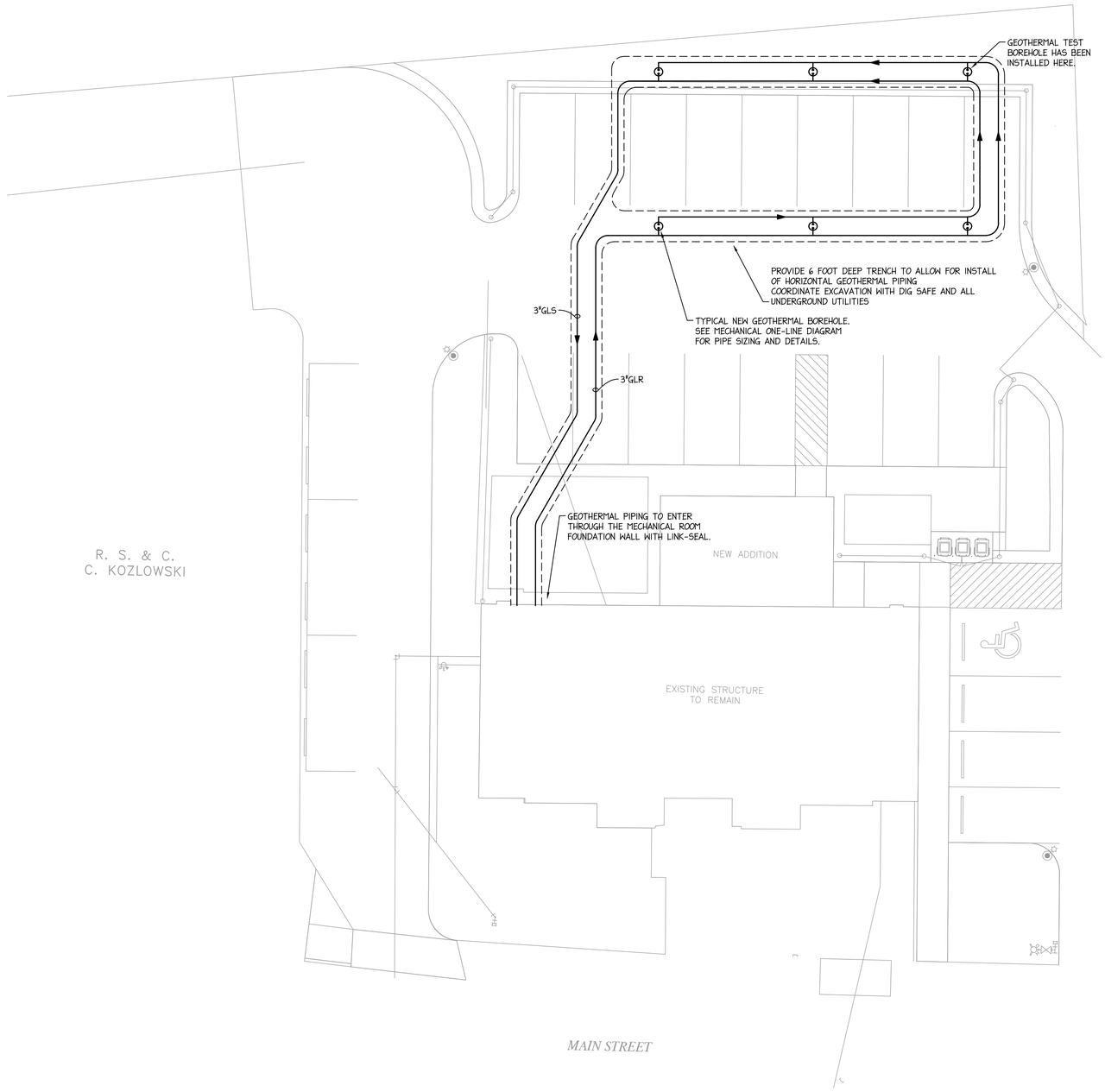
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MECHANICAL DETAILS

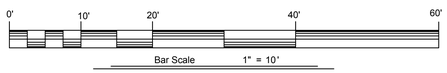
PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	IWD
DRAWN BY:	LNC
SCALE:	N.T.S.

M6.03

GRACE UNITED
METHODIST CHURCH







1 MECHANICAL/GEOTHERMAL SITE PLAN
1"=10'-0"

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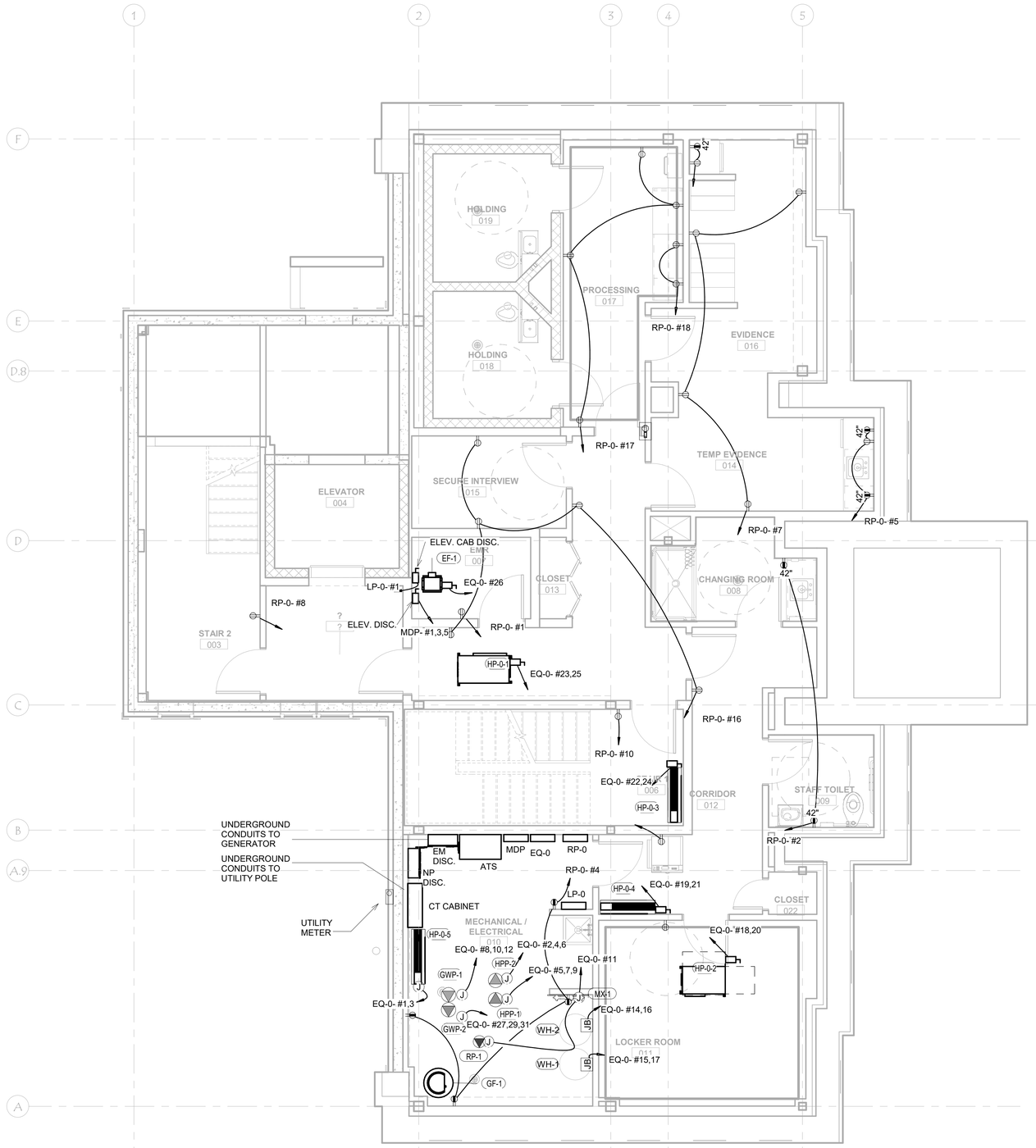
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MECHANICAL/ GEOTHERMAL SITE PLAN

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	LNC
DRAWN BY:	LNC
SCALE:	1" = 10'-0"

MS.11



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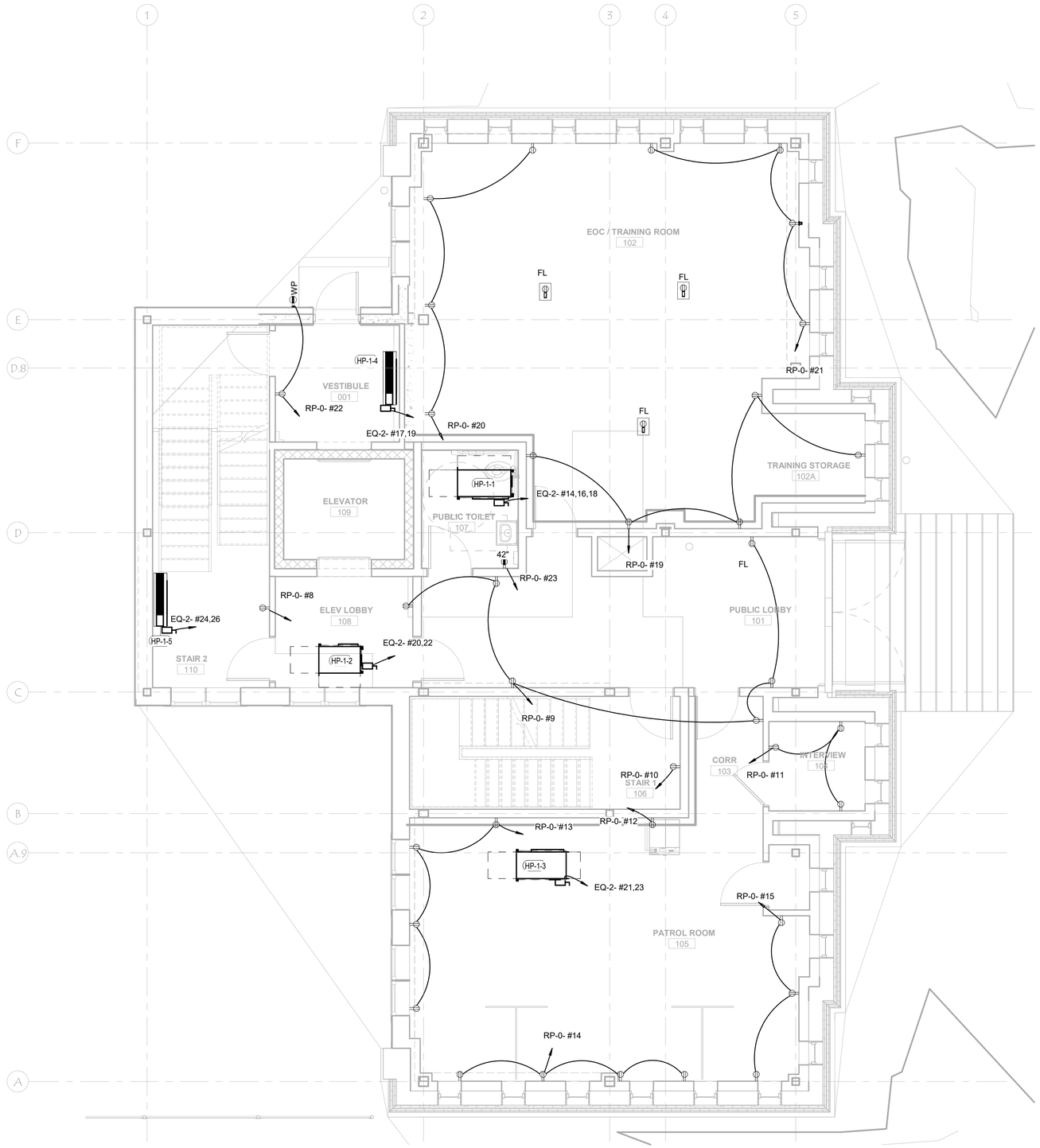
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BASEMENT - ELECTRICAL POWER

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	JEA
DRAWN BY:	ARW
SCALE:	1/4" = 1'-0"

E1.01



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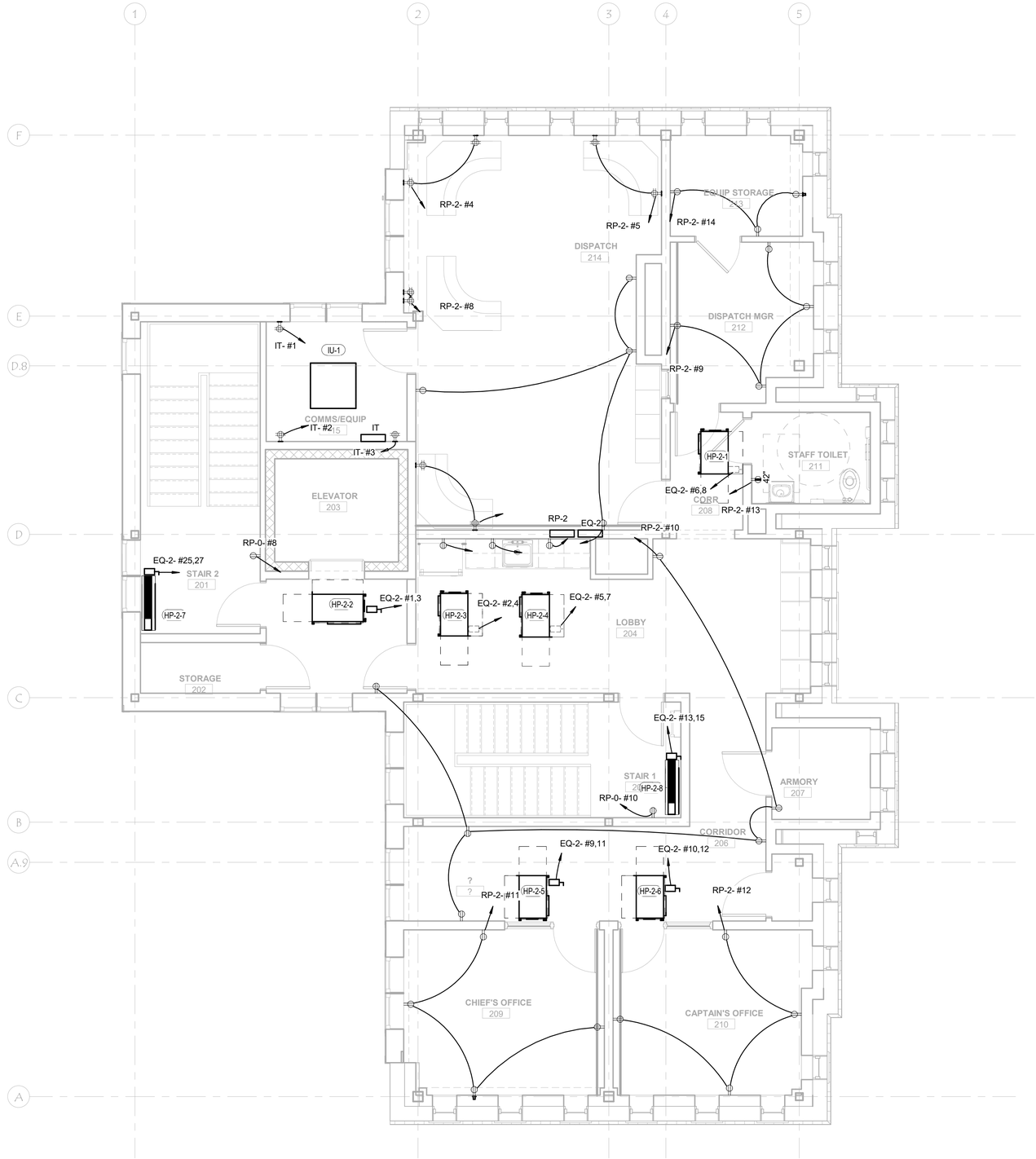
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LEVEL 1 - ELECTRICAL POWER

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	JEA
DRAWN BY:	ARW
SCALE:	1/4" = 1'-0"

E1.11



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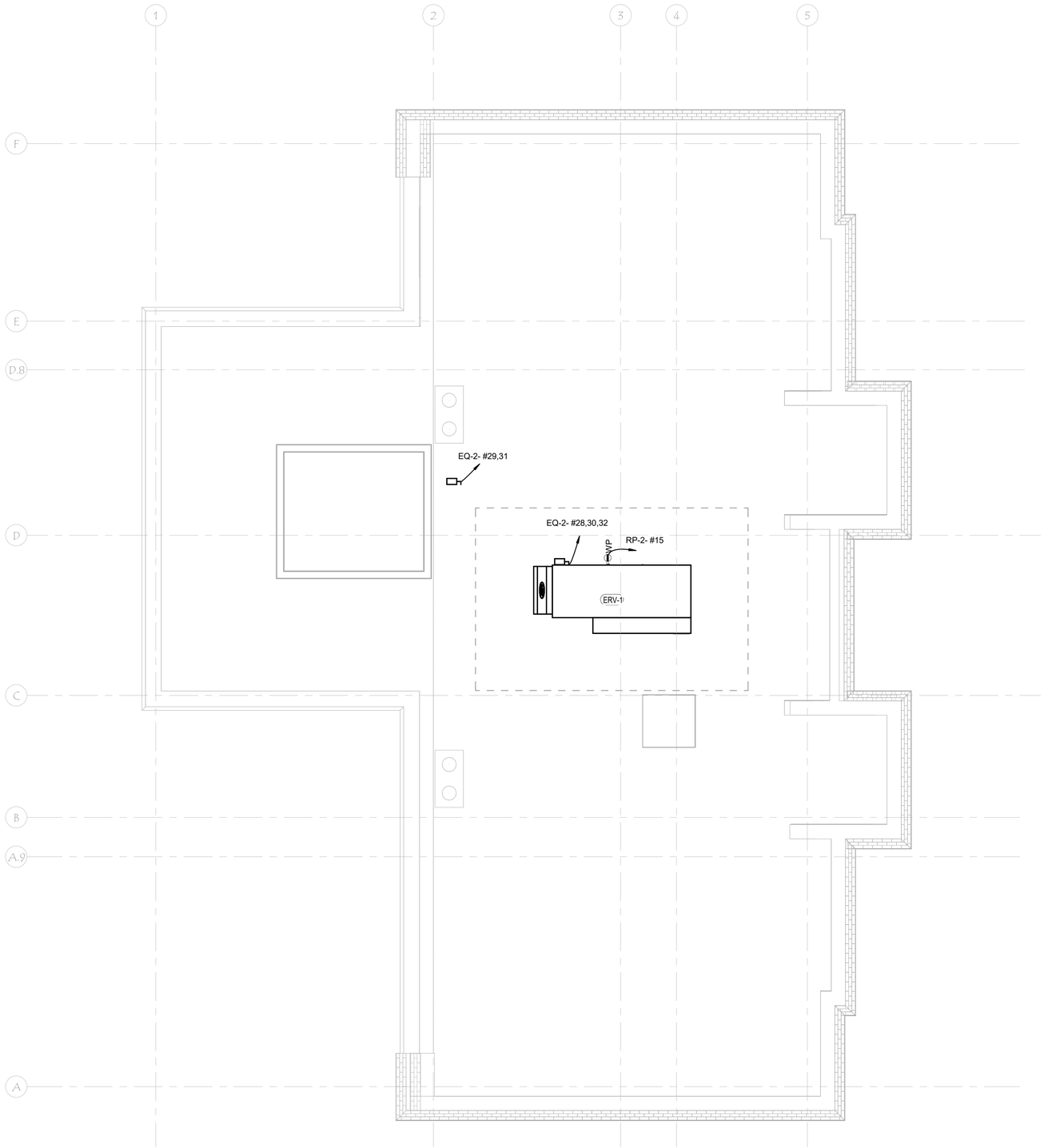
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LEVEL 2 - ELECTRICAL POWER

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	JEA
DRAWN BY:	ARW
SCALE:	1/4" = 1'-0"

E1.21



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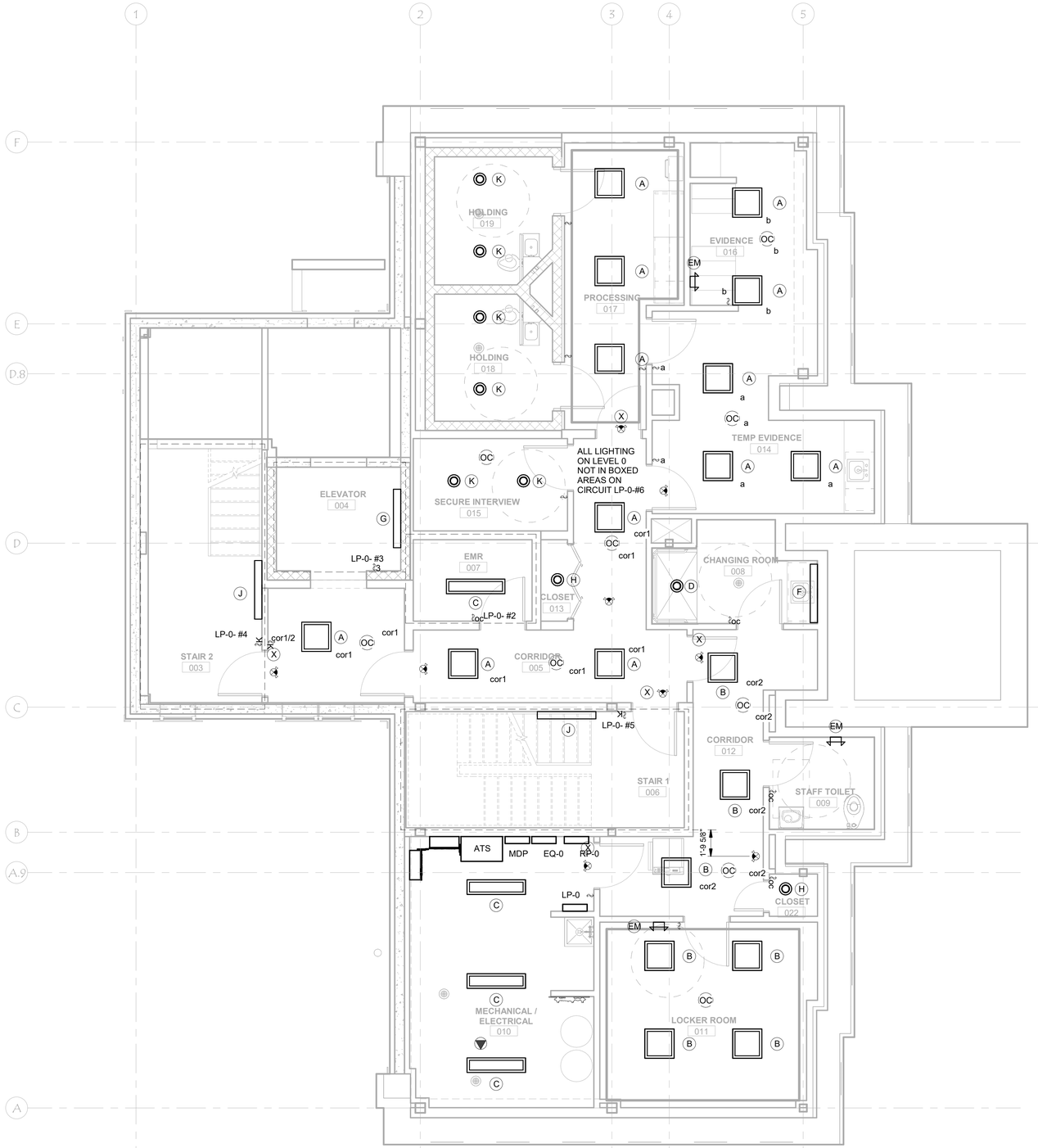
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N

ROOF - ELECTRICAL POWER

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	JEA
DRAWN BY:	ARW
SCALE:	1/4" = 1'-0"

E1.31



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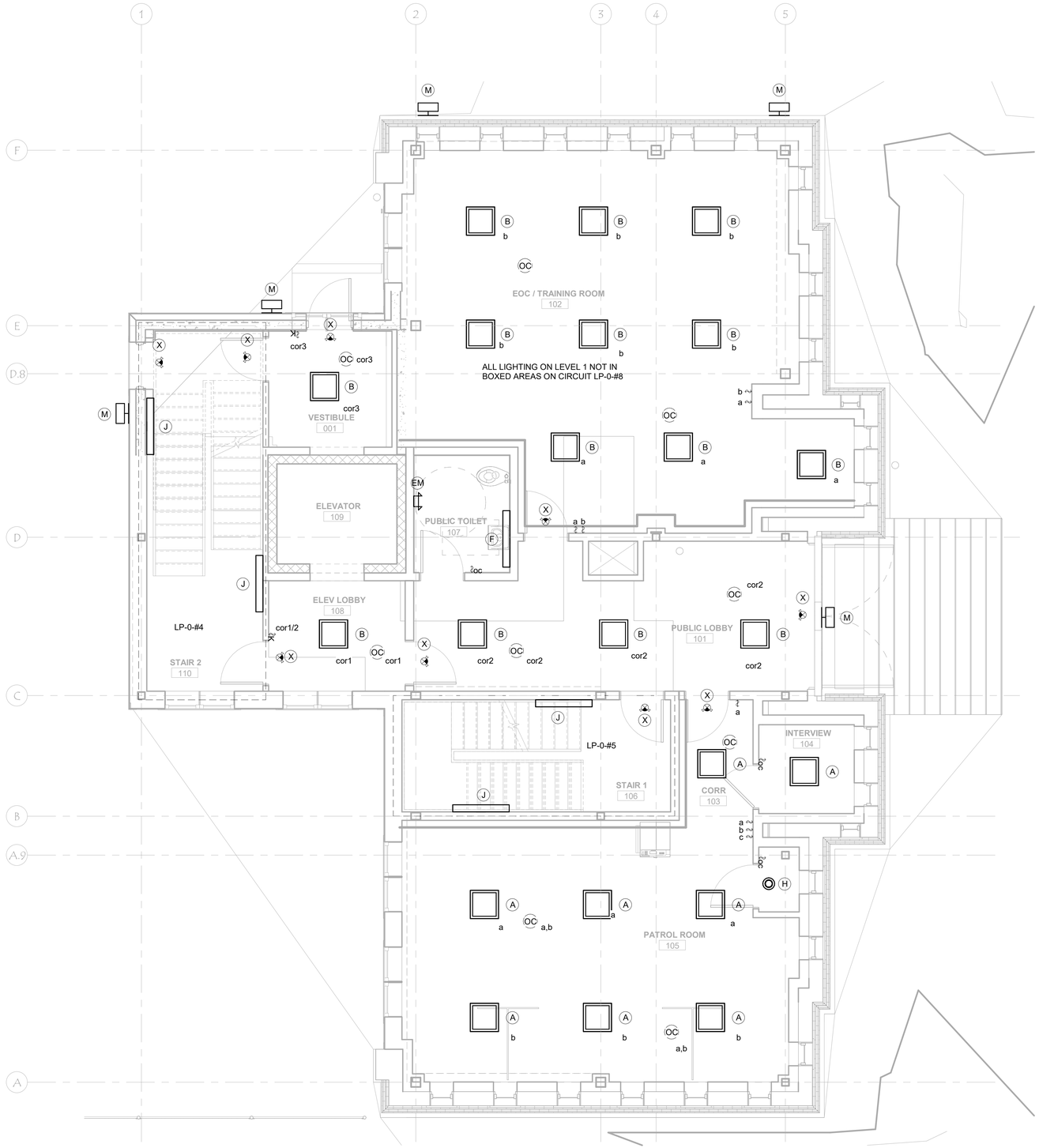
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ST. JOHNSBURY, VT

BASEMENT - ELECTRICAL LIGHTING

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	JEA
DRAWN BY:	ARW
SCALE:	1/4" = 1'-0"

E2.01



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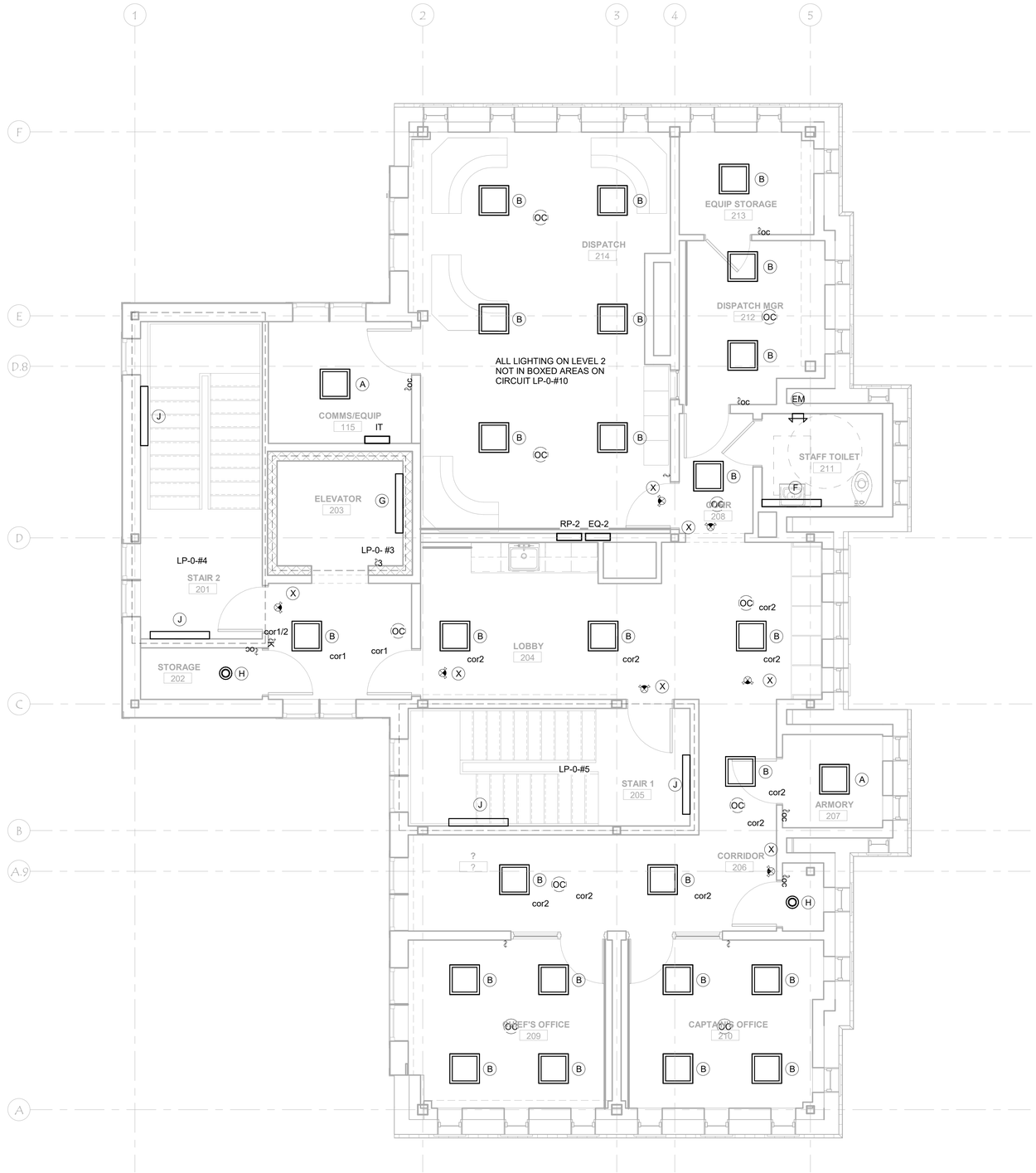
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ST. JOHNSBURY, VT

LEVEL 1 - ELECTRICAL LIGHTING

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	JEA
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E2.11



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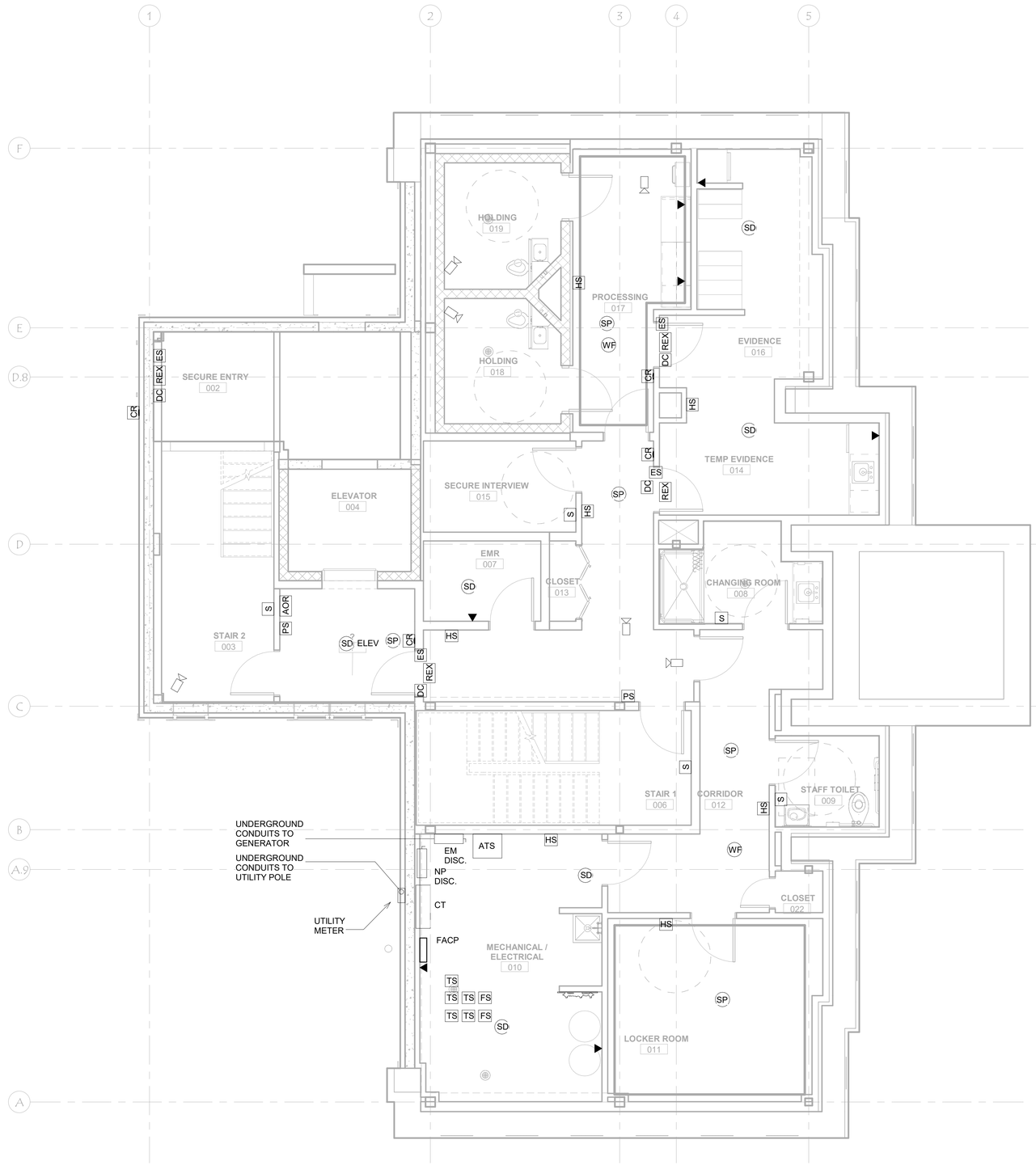
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ST. JOHNSBURY, VT

LEVEL 2 - ELECTRICAL LIGHTING

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	JEA
DRAWN BY:	ARW
SCALE:	1/4" = 1'-0"

E2.21



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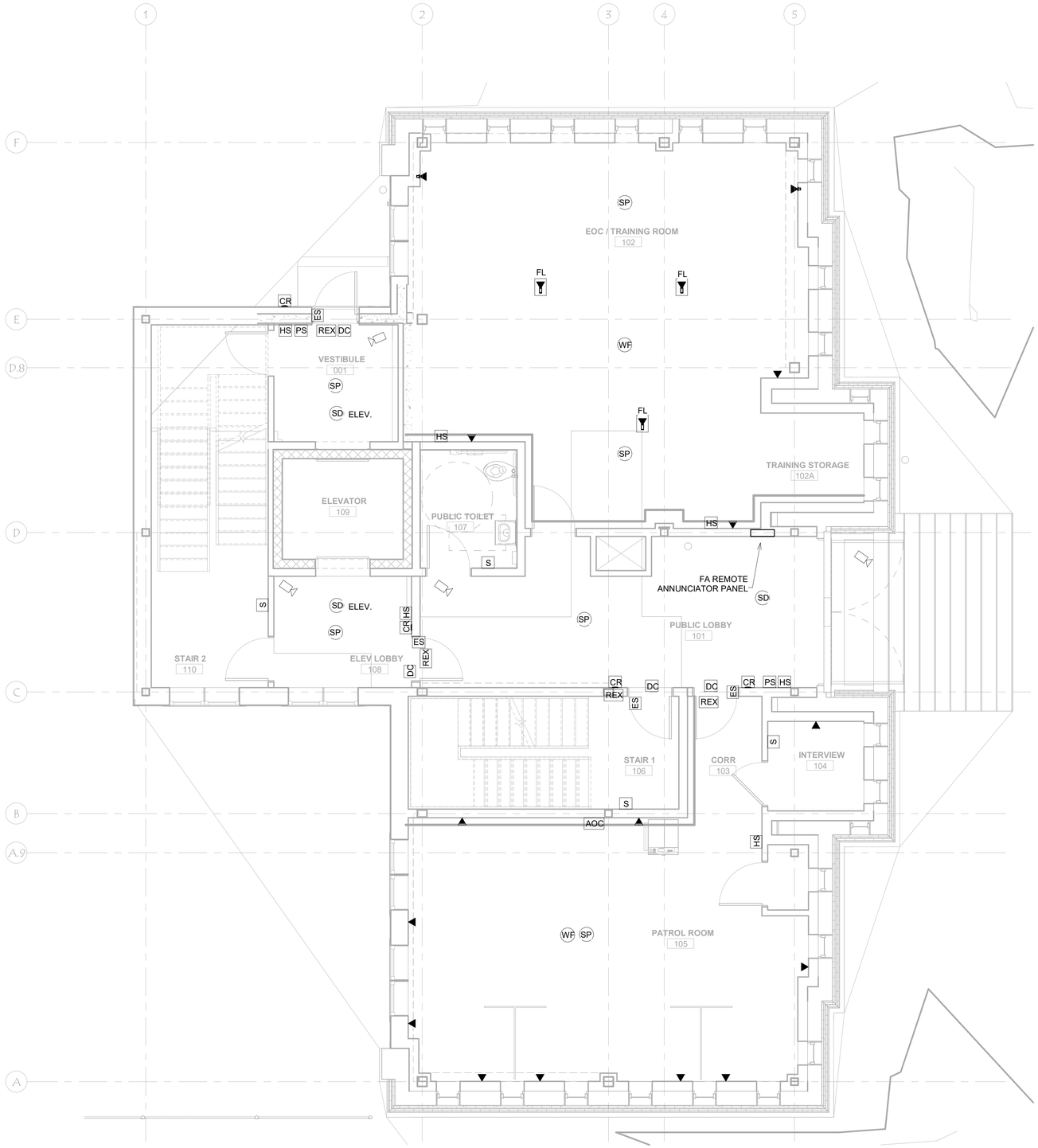
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ST. JOHNSBURY, VT

BASEMENT - ELECTRICAL SPECIAL SYSTEMS PLAN

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	JEA
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SCALE:	1/4" = 1'-0"

E3.01



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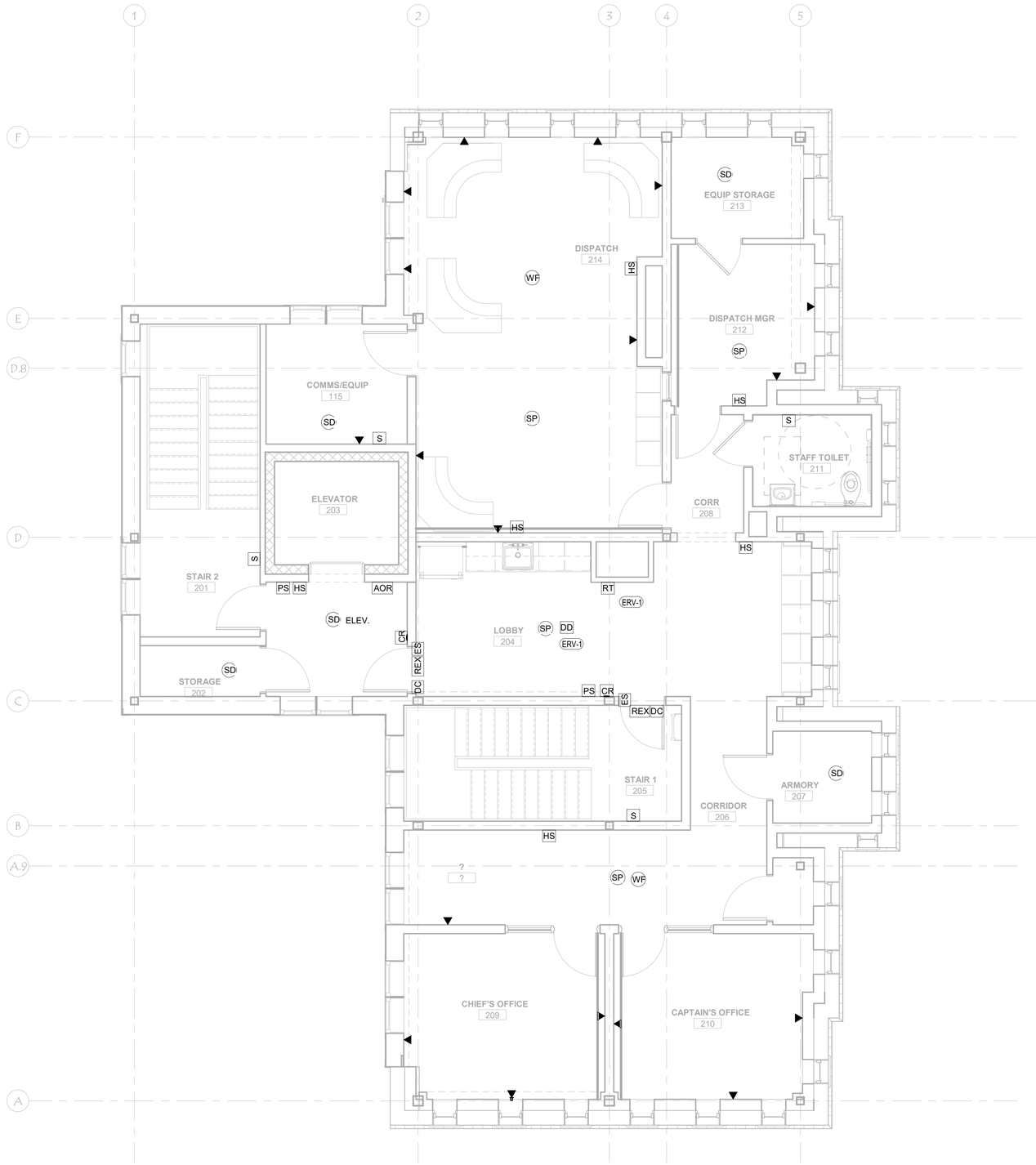
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ST. JOHNSBURY, VT

LEVEL 1 - ELECTRICAL SPECIAL SYSTEMS PLAN

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E3.11



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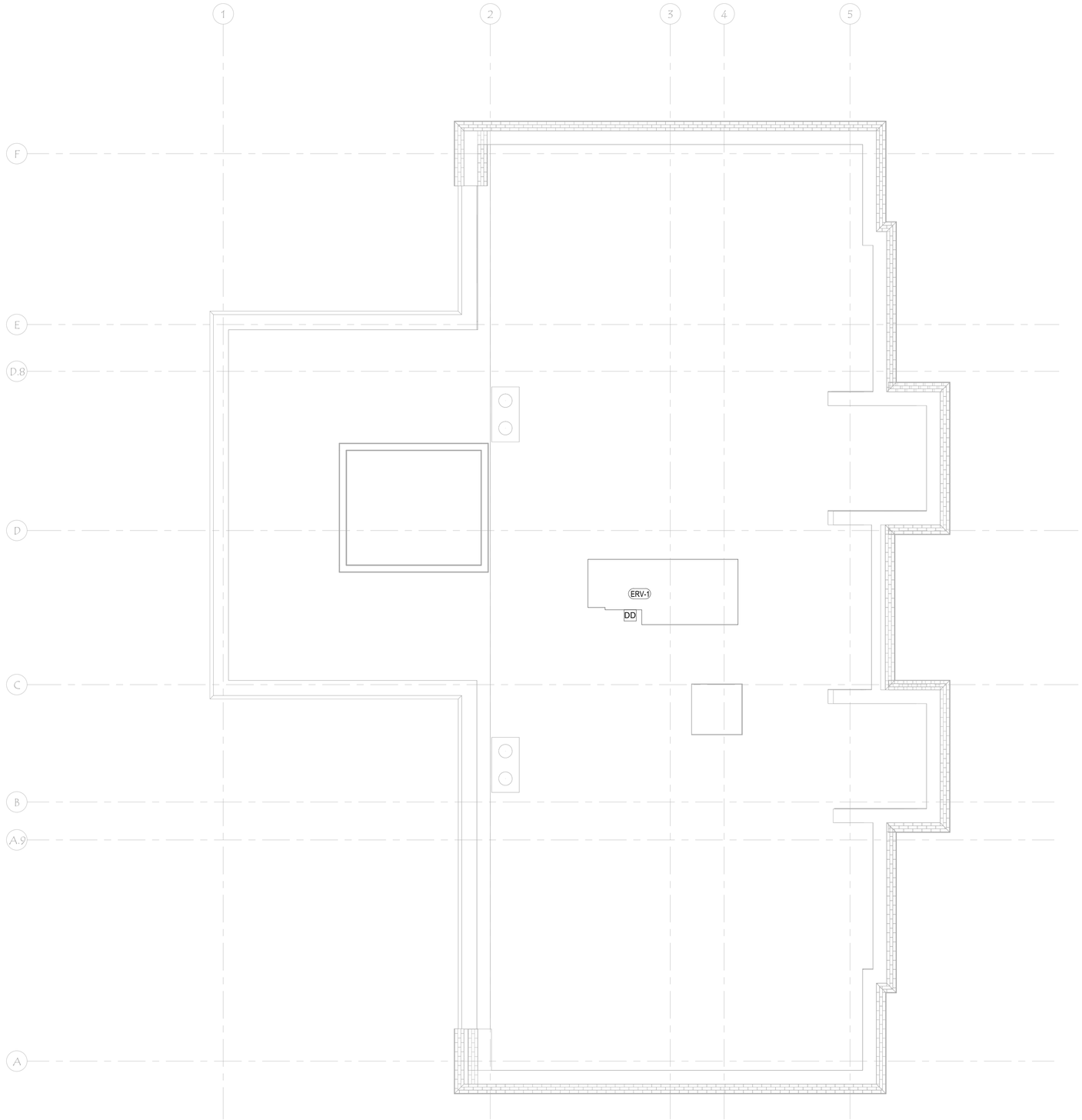
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LEVEL 2 - ELECTRICAL SPECIAL SYSTEMS PLAN

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	JEA
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SCALE:	1/4" = 1'-0"

E3.21



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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

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ROOF - ELECTRICAL SPECIAL SYSTEMS PLAN

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	JEA
DRAWN BY:	ARW
SCALE:	1/4" = 1'-0"

E3.31

ELECTRICAL FEED SCHEDULE						
TAG	CONDUIT	CONDUCTORS	NEUTRAL	GROUND	AMPACITY	SPECIFIC NOTES
①	(2) 4" CONDUIT (1) 4" SPARE	2 RUNS OF (3) #500	2 RUNS OF (1) #500	-	620 AMPS	-
②	(2) 3" CONDUIT	2 RUNS OF (3) #500	2 RUNS OF (1) #500	2 RUNS OF (1) #2/0	620 AMPS	-
③	1/2" CONDUIT	(3) #10	(1) #10	(1) #10	30 AMPS	7
④	2-1/2" CONDUIT	(3) #300	(1) #300	(1) #2	230 AMPS	-
⑤	(3) 4" CONDUIT	-	-	-	-	4
⑥	(2) 5" CONDUIT	-	-	-	-	2
⑦	1" CONDUIT	-	-	-	-	5
⑧	3/4" CONDUIT	(2)#14 FOR GENERATOR START.				
⑨	(4) 1" CONDUIT	-	-	-	-	1
⑩	1" CONDUIT	(4) #10	(2) #10	(1) #10	(2) 20 AMP	6
⑪	(3) 4" CONDUIT	-	-	-	-	8
⑫	(2) 2" CONDUITS (1) 1" CONDUIT	-	-	-	-	10
⑬	3/4" CONDUIT	-	-	-	-	9
⑭	1/2" CONDUIT	(3) #12	(1) #12	(1) #12	15 AMP	11
⑮	1-1/4" CONDUIT	(3) #1/0	(1) #1/0	(1) #6	120 AMPS	-

GENERAL NOTES:

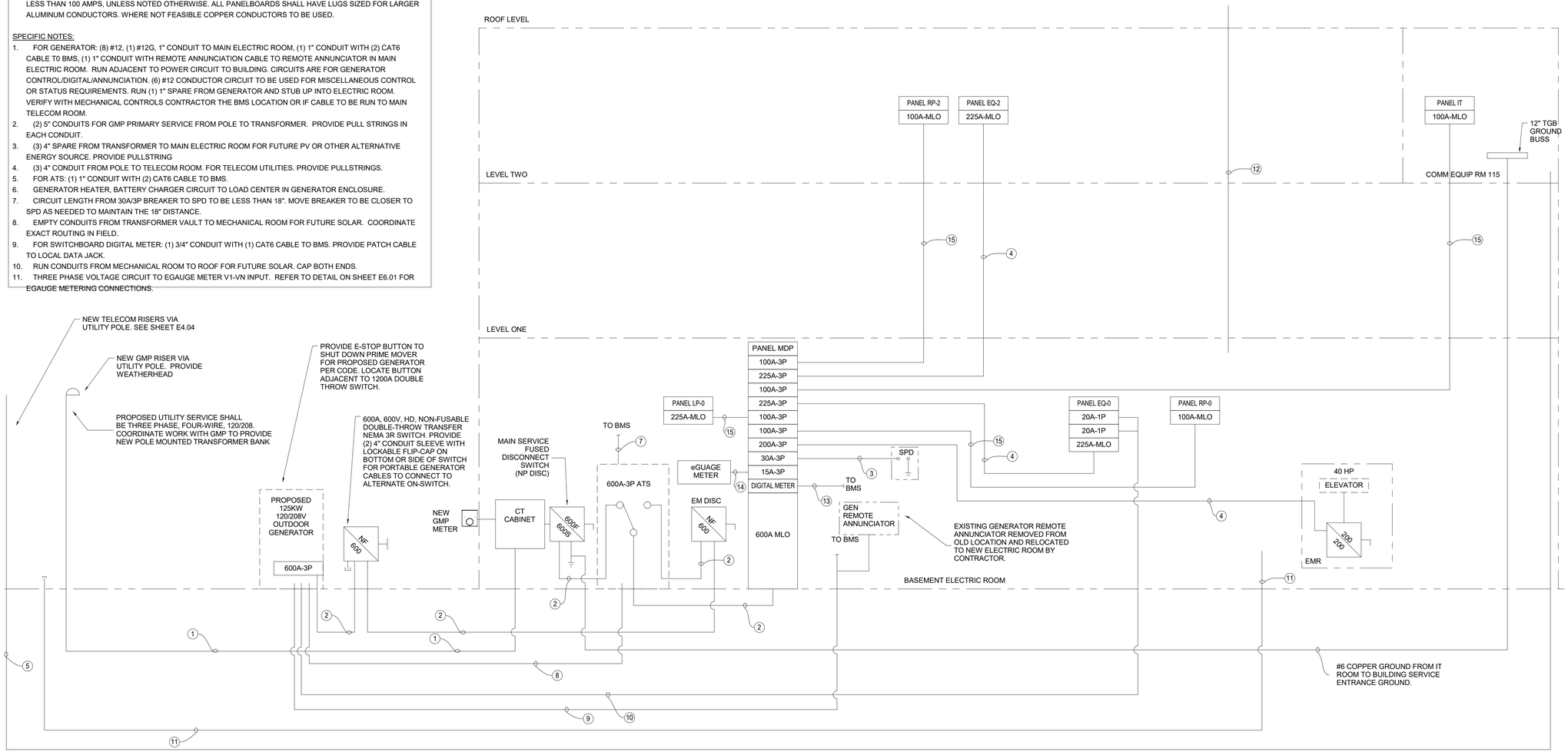
1. CONDUCTOR SIZES BASED ON ALUMINUM FOR 100 AMP CIRCUITS AND HIGHER, COPPER FOR CIRCUITS LESS THAN 100 AMPS, UNLESS NOTED OTHERWISE. ALL PANELBOARDS SHALL HAVE LUGS SIZED FOR LARGER ALUMINUM CONDUCTORS. WHERE NOT FEASIBLE COPPER CONDUCTORS TO BE USED.

SPECIFIC NOTES:

1. FOR GENERATOR: (8) #12, (1) #12G, 1" CONDUIT TO MAIN ELECTRIC ROOM, (1) 1" CONDUIT WITH (2) CAT6 CABLE TO BMS, (1) 1" CONDUIT WITH REMOTE ANNUNCIATION CABLE TO REMOTE ANNUNCIATOR IN MAIN ELECTRIC ROOM. RUN ADJACENT TO POWER CIRCUIT TO BUILDING. CIRCUITS ARE FOR GENERATOR CONTROL/DIGITAL/ANNUNCIATION. (6) #12 CONDUCTOR CIRCUIT TO BE USED FOR MISCELLANEOUS CONTROL OR STATUS REQUIREMENTS. RUN (1) 1" SPARE FROM GENERATOR AND STUB UP INTO ELECTRIC ROOM. VERIFY WITH MECHANICAL CONTROLS CONTRACTOR THE BMS LOCATION OR IF CABLE TO BE RUN TO MAIN TELECOM ROOM.
2. (2) 5" CONDUITS FOR GMP PRIMARY SERVICE FROM POLE TO TRANSFORMER. PROVIDE PULL STRINGS IN EACH CONDUIT.
3. (3) 4" SPARE FROM TRANSFORMER TO MAIN ELECTRIC ROOM FOR FUTURE PV OR OTHER ALTERNATIVE ENERGY SOURCE. PROVIDE PULLSTRING
4. (3) 4" CONDUIT FROM POLE TO TELECOM ROOM. FOR TELECOM UTILITIES. PROVIDE PULLSTRINGS.
5. FOR ATS: (1) 1" CONDUIT WITH (2) CAT6 CABLE TO BMS.
6. GENERATOR HEATER, BATTERY CHARGER CIRCUIT TO LOAD CENTER IN GENERATOR ENCLOSURE.
7. CIRCUIT LENGTH FROM 30A/3P BREAKER TO SPD TO BE LESS THAN 18". MOVE BREAKER TO BE CLOSER TO SPD AS NEEDED TO MAINTAIN THE 18" DISTANCE.
8. EMPTY CONDUITS FROM TRANSFORMER VAULT TO MECHANICAL ROOM FOR FUTURE SOLAR. COORDINATE EXACT ROUTING IN FIELD.
9. FOR SWITCHBOARD DIGITAL METER: (1) 3/4" CONDUIT WITH (1) CAT6 CABLE TO BMS. PROVIDE PATCH CABLE TO LOCAL DATA JACK.
10. RUN CONDUITS FROM MECHANICAL ROOM TO ROOF FOR FUTURE SOLAR. CAP BOTH ENDS.
11. THREE PHASE VOLTAGE CIRCUIT TO EGAUGE METER V1-VN INPUT. REFER TO DETAIL ON SHEET E6.01 FOR EGAUGE METERING CONNECTIONS.

ELECTRICAL NEW WORK LEGEND

NEW ELECTRICAL TO BE FURNISHED AND INSTALLED



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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

ELECTRICAL ONE-LINE DIAGRAM

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	JEA
DRAWN BY:	ARW
SCALE:	N.T.S.

E4.01

ELECTRICAL GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRIC CODE (NEC) AND VERMONT ELECTRICAL CODE.
2. ALL ELECTRIC EQUIPMENT, TRANSFORMER, AND LUMINARIES SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE NEC.
3. CONDUIT RUNS ON DRAWINGS, WHERE INDICATED, ARE FOR SCHEMATIC PURPOSES ONLY. FIELD VERIFY EXACT ROUTING AND LOCATION. PROVIDE ALL BENDS AND JUNCTION BOXES NECESSARY. WHERE CONDUIT HAS TO BE RUN OVERHEAD IT SHALL BE KEPT TIGHT TO DECKING TO REDUCE THE REQUIREMENT OF SEISMIC BRACING ON THE DRAWINGS AND REQUIRED BY CODE.
4. COORDINATE ALL WORK WITH THE OTHER TRADES. PROVIDE A COORDINATION DRAWING TO THE ENGINEER, CONSTRUCTION MANAGER, AND ALL OTHER TRADES SHOWING THE LOCATION OF ALL DEVICES AND EQUIPMENT.
5. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY POWER AND LIGHTING DURING ALL PHASES OF THE WORK.
6. COORDINATE ALL UTILITY SHUT DOWNS WITH THE CONSTRUCTION MANAGER.
7. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING POWER FOR ALL THE DEVICES AND EQUIPMENT REQUIRING POWER SHOWN ON THE MECHANICAL, PLUMBING, AND ARCHITECTURAL PLANS.
8. ALL CIRCUITS SHALL HAVE SEPARATE NEUTRAL. NEUTRAL SHARING IS NOT PERMITTED.
9. ARCHITECTURAL DRAWINGS TAKE PRECEDENCE FOR DEVICE AND EQUIPMENT LOCATIONS. COORDINATE ALL WORK WITH THE GENERAL CONTRACTOR
10. PROVIDE ELECTRICAL BREAKERS IN DESIGNATED PANELS FOR HVAC CONTROL POWER CIRCUITS.
11. ALL CONDUIT SHALL BE PROVIDED WITH SEISMIC BRACING PER LOCAL AND NATIONAL BUILDING CODES.
12. COORDINATE ALL CONDUIT AND CONDUCTORS WITH FIRE ALARM DISTRIBUTOR PRIOR TO COMMENCEMENT OF WORK. SUBMIT DISTRIBUTOR ONE-LINE RISER DIAGRAM FOR APPROVAL. ONE-LINE TO INCLUDE WIRE SIZE, DEVICE TYPE AND ROOM NUMBERS.
13. LIGHT FIXTURES, RECEPTACLES, DATA OUTLETS, ETC. INSTALLED WITHIN PSYCHIATRIC ROOMS SHALL BE TAMPER PROOF DESIGN. USE OF SECURITY FASTENERS IS REQUIRED.
14. ALL RECEPTACLES SHALL BE TAMPER PROOF DESIGN.
15. PROVIDE COMPLETE LABELING OF ALL EQUIPMENT.
16. ELECTRICAL CONTRACTOR SHALL PROVIDE FIRESTOPPING SEALANT AT ALL RATED WALL,FLOOR AND CEILING ELECTRICAL PENETRATIONS.
17. THE ELECTRICAL CONTRACTOR SHALL SUPPLY AS BUILT DRAWINGS TO THE OWNER SHOWING ABOVE CEILING PATHWAYS AND LOCATIONS OF VOICE AND DATA JACK IDS. THIS IS TO BE DONE WITHIN 2 WEEKS AFTER SUBSTANTIAL COMPLETION OF DATA AND VOICE CABLE INSTALLATION.
18. PANEL TAG NAMES TO BE COORDINATED WITH OWNER PRIOR TO CONSTRUCTION AND ALL JUNCTION BOXES AND RECEPTACLE COVER PLATES TO BE LABELED WITH PANEL NAME, CIRCUIT #, AND VOLTAGE
19. TYPICAL ELECTRICAL RECEPTACLE HEIGHT SHALL BE 18" ABOVE FINISHED FLOOR UNLESS OTHERWISE INDICATED ON ELECTRICAL PLANS OR ARCHITECTURAL ELEVATIONS.
20. ALL LIGHT SWITCHES AND CONDUITS TO BE RECESSED IN WALLS. THIS INCLUDES STUD WALLS, MASONRY WALL, ETC.

POWER SYSTEM STUDY:

ELECTRICAL CONTRACTOR TO PROVIDE POWER SYSTEM STUDY PER SPECIFICATION SECTION 260573. AVAILABLE SHORT CIRCUIT CURRENT TO BE DETERMINED FOR THIS FACILITY. MECHANICAL EQUIPMENT TO BE PROVIDED WITH SHORT CIRCUIT CURRENT RATING GREATER THAN AVAILABLE SHORT CIRCUIT CURRENT. THIS SHALL APPLY TO VARIABLE SPEED DRIVES, AIR CONDITIONING AND REFRIGERATION EQUIPMENT SPECIFIED IN THE NATIONAL ELECTRICAL CODE.

SECURITY SYSTEM:

ELECTRICAL CONTRACTOR SHALL PROVIDE ROUGH-IN CONDUIT, PULL-STRINGS AND CAT5E SURVEILLANCE CAMERA CABLES. OWNER SHALL FURNISH AND INSTALL SECURITY (ACCESS CONTROL, INTERCOM CAMERA AND SURVEILLANCE CAMERAS AND ALL BACKBONE HARDWARE). ELECTRICAL CONTRACTOR SHALL COORDINATE WITH SECURITY SYSTEM INSTALLER TO VERIFY FINAL CONNECTIONS AND POWER AND DEVICE ROUGH-IN REQUIREMENTS.

SEISMIC DESIGN AND CONSTRUCTION:

THIS IS AN ESSENTIAL FACILITY AND THE SPECIFICATIONS REQUIRE A SEISMIC DELEGATED DESIGN. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND CLARIFICATION.

MECHANICAL CONTROL NOTES:

MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL MECHANICAL CONTROL SYSTEM (BMS/DDC) POWER AND DATA, ALL VARIABLE FREQUENCY DRIVES (VFD) OR OTHER CONTROL DEVICES SUCH AS MOTOR STARTERS OR RELAYS ASSOCIATED WITH MECHANICAL EQUIPMENT. THIS INCLUDES ALL COSTS ASSOCIATED WITH THIS EQUIPMENT AS WELL AS FOR ALL COSTS FOR ELECTRICAL CONTRACTOR REQUIRED WORK TO PROVIDE THE EQUIPMENT NOTED ABOVE.

LIGHTING SCHEDULE

TAG	MOUNTING	FUNCTION	MANUFACTURER	CATALOG NO.	LENGTH OR DIAMETER	TOTAL WATTAGE	MINIMUM COLOR TEMP	MINIMUM CRI	VOLTAGE	DIMMING PROTOCOL	MINIMUM DIMMING	DLC ENERGY STAR	IC RATED	REFLECTOR COLOR	FLANGE COLOR	CEILING TYPE	NOTES
A	SURFACE	2X2 DOWNLIGHT	LITHONIA	2BLT2-33L-ADP-GZ10-LP835-2X2SMKSHP	2X2	27	3,500	80+	120-277	0-10 V	10%	ENERGY STAR	NO	N/A	WHITE	ACT	PROVIDE SURFACE MOUNT KIT
B	RECESS	2X2 DOWNLIGHT	LITHONIA	2BLT2-33L-ADP-GZ10-LP835	2X2	27	3,500	80+	120-277	0-10 V	10%	DLC	NO	N/A	WHITE	ACT	
C	SURFACE OR CHAIN	4' LINEAR STRIP	ACUITY	CLX-L48-5000LM-SEF-RDL-MVOLT-GZ10-35K-80CRI-WH		32	3,500	80+	120-277	0-10 V	1%	DLC	YES	N/A	WHITE	ACT or GYP	
D	RECESS	6" DIA. RECESSED DOWNLIGHT	ACUITY	LDN6-35K15LM-LO6-AR-LSS-MVOLT-10DIM	6" DIAMETER	17	3,500	80+	120-277	0-10 V	1%	ENERGY STAR	YES	N/A	WHITE	CONCRETE	
F	WALL MOUNT	LINEAR WALL MOUNT DIRECT/INDIRECT ASYMMETRIC	LUMENWERX	WAVE22-AR02-LED-80-750-35-4-UNV-D1-1-DMB	48"	28	3,500	80+	120-277	0-10 V	1%	DLC	N/A	N/A	WHITE	N/A	
G	SURFACE	4' VAPORTIGHT ELEVATOR PIT	LITHONIA	FEM L48 4L MVOLT 6000 PLLFL MD MVOLT-GZ10 40K 80CRI	4'	38	4,000	80+	120-277	0-10 V	1%	ENERGY STAR	YES	N/A	WHITE	N/A	MOUNT ON WALL IN ELEVATOR SHAFT.
H	SURFACE	13" DIA. SURFACE DISK DOWNLIGHT	JUNO	13SF-13IN-18LM-SWW5-90CRI-MVOLT-ZT-DWH	13" DIAMETER	31	3,500	90+	120-277	0-10 V	1%	ENERGY STAR	YES	N/A	WHITE	ACT or GYP	
J	WALL MOUNT	S4W-40-L08-WFIL-MSCH-HD-40K-100CRI-T5W	LITHONIA	140K-I1000LMF-AS-SCT-MIN1-MVOLT- FLL-DC-WHTT-E10WLCP-EDAPDT	2'	20	3,500	80+	120-277	0-10 V	1%	DLC	N/A	N/A	WHITE	OPEN STRUCTURE	ASYMMETRIC INDIRECT. DIM TO 10% WHEN STAIR NOT OCCUPIED. INTEGRAL BATTERY BACKUP.
K	RECESS	6" DIA. RECESSED DOWNLIGHT VANDAL RESISTANT	ACUITY	LDN6VR-30/25-WR-LSS-WD-PPC-MVOLT-10DIM	6" DIAMETER	20	3,500	80+	120-277	0-10 V	1%	ENERGY STAR	YES	N/A	WHITE	CONCRETE	
L	UNDER CABINET	22" UNDERCABINET LIGHT	JUNO	UPLD-22IN-SWW4-90CRI-WH-UCDJB	22"	11	3,500	80+	120	LV	1%	DLC	NO	N/A	WHITE	N/A	HARD WIRED TO A LOCAL LV DIMMER SWITCH
M	WALL MOUNT	EXTERIOR WALL PACK	LITHONIA	WDGE2 LED P2-30K-70-TFTM-MVOLT-SRM-PBBW-NLTAIR2 PIR-DDBXD	12"	19	3,000	80+	120-277	0-10V	1%	N/A	N/A	N/A	DARK BRONZE	N/A	WIRELESS CONTROL AMBIENT/MOTION SENSING. PROVIDE DEDICATED MICROINVERTER LOCATED INDOORS FOR EMERGENCY POWER
SA	POLE	DRIVEWAY	LITHONIA	RADPAP3-30K-SYM-MVOLT-RPA -NLTAIR2-DDBXD	25'	54	3,000	80+	120-277	0-10V	1%	N/A	N/A	N/A	DARK BRONZE	N/A	WIRELESS CONTROL AMBIENT/MOTION SENSING. FIXTURE HEAD AT 17.5' ABOVE GRADE. ROUND POLE.
X	COMBO EXIT SIGN/EM LIGHT	INTERIOR EGRESS LIGHTING VANDAL RESISTANT	ISOLITE	MAX-C-6V42W-R-WH-MTEB-SD	12"	N/A	N/A	N/A	120-277	N/A	N/A	N/A	N/A	N/A	WHITE	UNIVERSAL	VERIFY MOUNTING TYPE CONNECT UNSWITCHED TO LCAL LIGHTING CIRCUIT.
EM	EMERGENCY LIGHT	INTERIOR EGRESS LIGHTING	ISOLITE	HZN-LC-6V18W-MBC-L65-SD	12"	N/A	N/A	N/A	120-277	N/A	N/A	N/A	N/A	N/A	WHITE	N/A	CONNECT UNSWITCHED TO LOCAL LIGHTING CIRCUIT.

NOTES:
1. COLOR BY ARCHITECT AND/OR OWNER.
2. ALL FIXTURES TO BE PROVIDED WITH 0-10 VOLT DIMMABLE DRIVERS.
3. COORDINATE LIGHTING LAYOUT AND FIXTURE SELECTIONS WITH ARCHITECTURAL REFLECTED CEILING PLAN. COORDINATE QUANTITIES WITH PLANS.
4. ELECTRICAL CONTRACTOR TO PROVIDE REQUIRED POWER SUPPLY TO ALL FIXTURES.
5. ELECTRICAL CONTRACTOR TO ENSURE DIMMER CONTROL AND FIXTURE ARE COMPATIBLE.

SECURITY DEVICE LEGEND

TAG	DESCRIPTION
DC	DOOR POSITION CONTACT
CR	CARD READER WALL MOUNTED
	SECURITY CAMERA
ES	ELECTRIC DOOR STRIKE
REX	REQUEST TO EXIT DEVICE

FIRE ALARM LEGEND

SYMBOL	DESCRIPTION
DD	DUCT SMOKE DETECTOR
HS	HORN STROBE
HS	CEILING MOUNTED HORN STROBE
S	STROBE
S	CEILING MOUNTED STROBE
SD	SMOKE DETECTOR
PS	PULL STATION
TS	TAMPER SWITCH
FS	FLOW SWITCH
RT	DUCT SMOKE DETECTOR REMOTE TEST SWITCH

ELECTRICAL EQUIPMENT LEGEND

SYMBOL	DESCRIPTION
	DISCONNECT SWITCH - WHERE LABELED, S = SWITCH SIZE AND F= FUSE SIZE. NF = NO FUSE.
	DOUBLE THROW TRANFER SWITCH - WHERE LABELED, S = SWITCH SIZE AND F= FUSE SIZE. NF = NO FUSE.
$	WALL SWITCH
$d	WALL SWITCH INDICATING CIRCUIT CONTROLLED TYPICAL. DIMMABLE UNLESS NOTED OTHERWISE.
$K	KEYED WALL SWITCH \
$OS	WALL SWITCH WITH INTEGRAL OCCUPANCY SENSOR
OC	OCCUPANCY SENSOR
	DATA OUTLET. (2) CAT6 CABLES AND (2) JACKS PER LOCATION UNLESS NOTED OTHERWISE.
	DUPLEX RECEPTACLE
	QUADPLEX RECEPTACLE
	GFCI RECEPTACLE
	SIMPLEX RECEPTACLE - NEMA L6 CONFIGURATION
JB OR JB	JUNCTION BOX
d	TYPICAL LIGHT SCONCE, LETTER INDICATES CONTROL
d	TYPICAL RECESSED CAN LIGHT, LETTER INDICATES CONTROL
d	TYPICAL SURFACE ROUND LIGHT, LETTER INDICATES CONTROL
d	TYPICAL WALLMOUNT LIGHT FIXTURE, LETTER INDICATES CONTROL
d	TYPICAL RECESSED LIGHT FIXTURE, LETTER INDICATES CONTROL
	TYPICAL EXIT LIGHT FIXTURE
	EMERGENCY LIGHT
	HOME RUN TO PANELBOARD
WF	WI-FI HUBB CEILING JACK. DATA JACK WITH 10FT OF SLACK AT LOCATION INDICATED.

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

ELECTRICAL SCHEDULES, NOTES & LEGENDS

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	JEA
DRAWN BY:	ARW
SCALE:	N.T.S.

E5.01

Branch Panel: MDP

Location: STAIR 1 006
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22KAIC
Mains Type: MLO
Mains Rating: 600 A

Notes:
Spaces shall be prepared to accommodate up to a 225A/3p breaker. Actual spaces based on 42 pole panelboard.

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Elevator	200 A	3	1366...	1085...					3	225 A	EQ-0	2
3	--	--	--			1366...	1145...			--	--	--	4
5	--	--	--					1366...	1070...	--	--	--	6
7	RP-0	100 A	3	5360...	2000...					3	100 A	LP-0	8
9	--	--	--			6040...	1500...			--	--	--	10
11	--	--	--					2880...	1500...	--	--	--	12
13	RP-2	100 A	3	2520...	1315...					3	225 A	EQ-2	14
15	--	--	--			2880...	1163...			--	--	--	16
17	--	--	--					2880...	1173...	--	--	--	18
19	IT	100 A	3	720 VA	--					3	--	Space	20
21	--	--	--			360 VA	--			--	--	--	22
23	--	--	--					0 VA	--	--	--	--	24
25	EV Charger	40 A	2	3600...	--					3	--	Space	26
27	--	--	--			3600...	--			--	--	--	28
29	EV Charger	40 A	2					3600...	--	--	--	--	30
31	--	--	--	3600...	--					3	--	Space	32
33	Space	--	1			--	--			--	--	--	34
35	Space	--	1					--	--	--	--	--	36
37	Space	--	3	--	0 VA					3	30 A	SPD	38
39	--	--	--			--	0 VA			--	--	--	40
41	--	--	--					--	0 VA	--	--	--	42
		Total Load:		55478 VA		51138 VA		46963 VA					
		Total Amps:		468 A		432 A		391 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA		
Receptacle	22140 VA	72.58%	16070 VA	**Total Conn. Load:**	153580 VA
Spare	20400 VA	100.00%	20400 VA	**Total Est. Demand:**	147510 VA
Power	111040 VA	100.00%	111040 VA	**Total Conn.:**	426 A
				Total Est. Demand:	409 A

Notes:

Branch Panel: RP-0

Location: STAIR 1 006
Supply From: MDP
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22KAIC
Mains Type: MLO
Mains Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Receptacle	20 A	1	180 VA	360 VA					1	20 A	Receptacle	2
3	Receptacle	20 A	1			180 VA	720 VA			1	20 A	Receptacle	4
5	Receptacle	20 A	1					540 VA	360 VA	1	20 A	Receptacle	6
7	Receptacle	20 A	1	720 VA	540 VA					1	20 A	Receptacle	8
9	Receptacle	20 A	1			1080...	540 VA			1	20 A	Receptacle	10
11	Receptacle	20 A	1					540 VA	180 VA	1	20 A	Receptacle	12
13	Receptacle	20 A	1	720 VA	720 VA					1	20 A	Receptacle	14
15	Receptacle	20 A	1			540 VA	900 VA			1	20 A	Receptacle	16
17	Receptacle	20 A	1					720 VA	360 VA	1	20 A	Receptacle	18
19	Receptacle	20 A	1	900 VA	720 VA					1	20 A	Receptacle	20
21	Receptacle	20 A	1			720 VA	360 VA			1	20 A	Receptacle	22
23	Receptacle	20 A	1					180 VA	0 VA	1	20 A	Spare	24
25	Generator Power	20 A	1	500 VA	0 VA					1	20 A	Spare	26
27	Generator Power	20 A	1			1000...	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
		Total Load:		5360 VA		6040 VA		2880 VA					
		Total Amps:		48 A		54 A		24 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Receptacle	12780 VA	89.12%	11390 VA		
Spare	1500 VA	100.00%	1500 VA	**Total Conn. Load:**	14280 VA
				Total Est. Demand:	12890 VA
				Total Conn.:	40 A
				Total Est. Demand:	36 A

Notes:

Branch Panel: LP-0

Location: MECHANICAL / ELECTRICAL...
Supply From: MDP
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22 KAIC
Mains Type: MLO
Mains Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Elevator Cab Lighting	20 A	1	500 VA	0 VA					1	20 A	EMR Lighting	2
3	Elevator Pit Lighting	20 A	1			0 VA	0 VA			1	20 A	Stair 2 003 Lighting	4
5	Stair 1 006 Lighting	20 A	1					0 VA	1500...	1	20 A	Level 0 Lighting	6
7	Spare	20 A	1	0 VA	1500...					1	20 A	Level 1 Lighting	8
9	Spare	20 A	1			0 VA	1500...			1	20 A	Level 2 Lighting	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
		Total Load:		2000 VA		1500 VA		1500 VA					
		Total Amps:		17 A		13 A		13 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA		
Spare	4500 VA	100.00%	4500 VA	**Total Conn. Load:**	5000 VA
Power	500 VA	100.00%	500 VA	**Total Est. Demand:**	5000 VA
				Total Conn.:	14 A
				Total Est. Demand:	14 A

Notes:

Branch Panel: RP-2

Location: DISPATCH 214
Supply From: MDP
Mounting: Recessed
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22KAIC
Mains Type: MLO
Mains Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Receptacle	20 A	1	180 VA	180 VA					1	20 A	Receptacle	2
3	Receptacle	20 A	1			180 VA	720 VA			1	20 A	Receptacle	4
5	Receptacle	20 A	1					720 VA	720 VA	1	20 A	Receptacle	6
7	Receptacle	20 A	1	720 VA	720 VA					1	20 A	Receptacle	8
9	Receptacle	20 A	1			720 VA	1080...			1	20 A	Receptacle	10
11	Receptacle	20 A	1					720 VA	720 VA	1	20 A	Receptacle	12
13	Receptacle	20 A	1	180 VA	540 VA					1	20 A	Receptacle	14
15	Receptacle	20 A	1			180 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
		Total Load:		2520 VA		2880 VA		2880 VA					
		Total Amps:		21 A		24 A		24 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Receptacle	8280 VA	100.00%	8280 VA		
				Total Conn. Load:	8280 VA
				Total Est. Demand:	8280 VA
				Total Conn.:	23 A
				Total Est. Demand:	23 A

Notes:

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY
ST. JOHNSBURY, VT

ELECTRICAL SCHEDULES

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	JEA
DRAWN BY:	ARW
SCALE:	N.T.S.

E5.02

Branch Panel: EQ-0

Location: STAIR 1 006
Supply From: MDP
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22KAIC
Mains Type: MLO
Mains Rating: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	HP-0-5	20 A	2	655 VA	2000...					3	20 A	HPP-2	2
3	--	--	--			655 VA	2000...			--	--	--	4
5	HPP-1	20 A	3					2000...	2000...	--	--	--	6
7	--	--	--	2000...	90 VA					3	20 A	GWP-1	8
9	--	--	--			2000...	90 VA			--	--	--	10
11	Power	20 A	1					1000...	90 VA	--	--	--	12
13					2250...					2	20 A	WH-1	14
15	WH-1	20 A	2			2250...	2250...			--	--	--	16
17	--	--	--					2250...	655 VA	2	20 A	HP-0-2	18
19	HP-0-4	20 A	2	655 VA	655 VA					--	--	--	20
21	--	--	--			655 VA	655 VA			2	20 A	HP-0-3	22
23	HP-0-1	20 A	2					1150...	655 VA	--	--	--	24
25	--	--	--	1150...	500 VA					1	20 A	EF-1	26
27	GWP-2	20 A	3			900 VA	0 VA			1	20 A	Spare	28
29	--	--	--					900 VA	0 VA	1	20 A	Spare	30
31	--	--	--	900 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	10855 VA		11455 VA		10700 VA					
			Total Amps:	91 A		96 A		89 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	33010 VA	100.00%	33010 VA		
				Total Conn. Load:	33010 VA
				Total Est. Demand:	33010 VA
				Total Conn.:	92 A
				Total Est. Demand:	92 A

Notes:

Branch Panel: IT

Location:
Supply From: MDP
Mounting: Recessed
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10KAIC
Mains Type: MLO
Mains Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Receptacle	20 A	1	360 VA	360 VA					1	20 A	Receptacle	2
3	Receptacle	20 A	1			360 VA	0 VA			1	20 A	Spare	4
5	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					3	30 A	SPD	20
21	Spare	20 A	1			0 VA	0 VA			--	--	--	22
23	Spare	20 A	1					0 VA	0 VA	--	--	--	24
			Total Load:	720 VA		360 VA		0 VA					
			Total Amps:	6 A		3 A		0 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Receptacle	1080 VA	100.00%	1080 VA		
				Total Conn. Load:	1080 VA
				Total Est. Demand:	1080 VA
				Total Conn.:	3 A
				Total Est. Demand:	3 A

Notes:

Branch Panel: EQ-2

Location: DISPATCH 214
Supply From: MDP
Mounting: Recessed
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22 KAIC
Mains Type: MLO
Mains Rating: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	HP-2-2	15 A	2	1150...	655 VA					2	15 A	HP-2-3	2
3	--	--	--			1150...	655 VA			--	--	--	4
5	HP-2-4	15 A	2					655 VA	655 VA	2	15 A	HP-2-1	6
7	--	--	--	655 VA	655 VA					--	--	--	8
9	HP-2-5	15 A	2			655 VA	655 VA			2	15 A	HP-2-6	10
11	--	--	--					655 VA	655 VA	--	--	--	12
13	HP-2-8	15 A	2	655 VA	1433...					3	15 A	HP-1-1	14
15	--	--	--			655 VA	1433...			--	--	--	16
17	HP-1-4	15 A	2					655 VA	1433...	--	--	--	18
19	--	--	--	655 VA	655 VA					2	15 A	HP-1-2	20
21	HP-1-3	15 A	2			1040...	655 VA			--	--	--	22
23	--	--	--					1040...	655 VA	2	15 A	HP-1-5	24
25	HP-2-7	15 A	2	655 VA	655 VA					--	--	--	26
27	--	--	--			655 VA	4083...			3	50 A	ERV-1	28
29	OU-1	20 A	2					1250...	4083...	--	--	--	30
31	--	--	--	1250...	4083...					--	--	--	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	13157 VA		11637 VA		11737 VA					
			Total Amps:	110 A		97 A		98 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	36530 VA	100.00%	36530 VA		
				Total Conn. Load:	36530 VA
				Total Est. Demand:	36530 VA
				Total Conn.:	101 A
				Total Est. Demand:	101 A

Notes:

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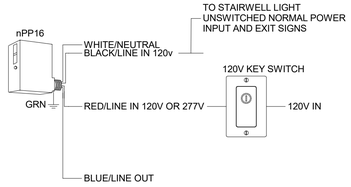
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ELECTRICAL SCHEDULES

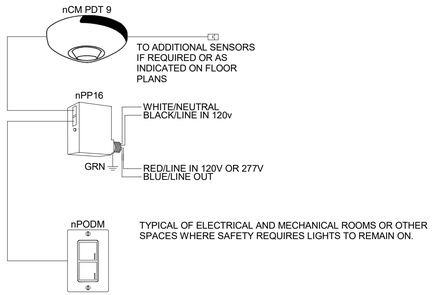
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DRAWN BY:	ARW
SCALE:	N.T.S.

E5.03

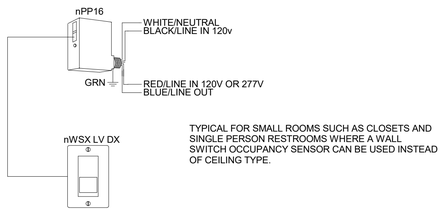


STAIRWAY LIGHTS HAVE INTEGRAL CONTROLS

TYPICAL STAIRWELL ON/OFF w/ KEY SWITCH

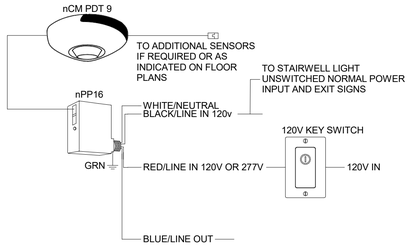


TYPICAL AUTO ON/AUTO OFF w/ LOCAL SWITCH



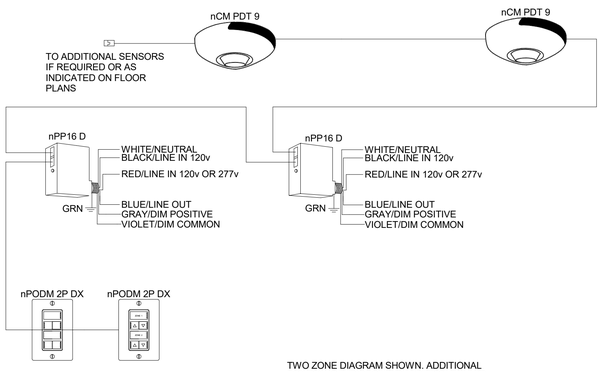
TYPICAL FOR SMALL ROOMS SUCH AS CLOSETS AND SINGLE PERSON RESTROOMS WHERE A WALL SWITCH OCCUPANCY SENSOR CAN BE USED INSTEAD OF CEILING TYPE.

TYPICAL SMALL ROOM MANUAL ON/OFF w/ LOCAL OCCUPANCY SWITCH



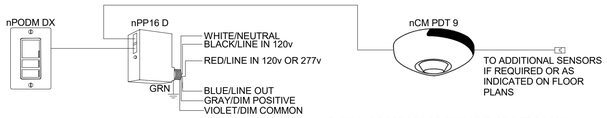
TYPICAL OF CORRIDORS AND LARGE RESTROOMS. KEY SWITCH FOR CORRIDORS WILL INDICATE ZONES CONTROLLED. MAY BE MORE THAN ONE. INTENT IS TO HAVE ONE KEY SWITCH FOR EACH FLOOR'S CORRIDOR SPACES.

TYPICAL CORRIDOR/EGRESS PATH AUTO ON/OFF w/ KEY SWITCH



TWO ZONE DIAGRAM SHOWN. ADDITIONAL ZONES WOULD REQUIRE ADDITION RELAYS AND SWITCHES.

TYPICAL MULTI- ZONE w/ DIMMING



TYPICAL OF OFFICES OR SIMILAR TYPE/SIZE ROOMS WITH DIMMING.

TYPICAL SINGLE ZONE WITH DIMMING

LIGHTING SEQUENCE OF CONTROLS

LOCATION TYPE	DESCRIPTION	MANUAL ON/ AUTO OFF	AUTO ON/ AUTO OFF	LOCAL SWITCHING	LOCAL DIMMING	PROGRAMMED TIMECLOCK ON/OFF	PROGRAMMED DIMMING VIA OCC SENSOR	OCCUPANCY SENSOR/ TIME DELAY	DAYLIGHT SENSOR DIMMING	DAYLIGHT SENSOR ON/OFF	NOTES
CLOSETS, BATHROOMS, IT CLOSETS,	VACANCY SENSING, LOCAL ON/OFF MANUAL CONTROL	X		X				10 MIN			INCLUDES BACK OF SPACE ROOMS INCLUDING LAUNDRY, STORAGE.
OFFICES, OTHER SINGLE LIGHTING ZONE ROOMS	VACANCY SENSING LOCAL MANUAL DIMMING	X			X			10 MIN			NON EGRESS ROOMS ONLY. STUDY ROOMS, SMALL CLASSROOMS.
MULTIPLE LIGHTING ZONE ROOMS	VACANCY SENSING LOCAL MANUAL DIMMING	X			X			10 MIN			OCCUPANCY SENSOR TURNS OFF ALL LIGHTING ZONES IN ROOM. TYPICAL OF LARGE ROOMS WITH MULTIPLE LIGHTING CONTROLS.
ELECTRIC ROOM, MECHANICAL ROOM	LOCAL ON/OFF			X							NO AUTOMATIC CONTROLS
CORRIDORS, VESTIBULES, LOBBIES, EGRESS PATHS	OCCUPANCY SENSING, AUTO ON		X				X	20 MIN			GOES TO 100% WHEN OCCUPANCY SENSED, 30% WHEN VACANCY SENSED.
LARGE RESTROOMS	OCCUPANCY SENSING, AUTO ON		X					10 MIN			
STAIRWELL LIGHTING	OCCUPANCY SENSING VIA INTEGRAL CONTROLS, AUTO ON/AUTO DIM. ALSO TIED TO TIMECLOCK					X	X	20 MIN			DIM TO 30% AFTER 20 MIN UNOCCUPIED. PROGRAMMED TO SHUT OFF ON OFF-HOURS.
POLE MOUNTED EXTERIOR LIGHTING	TIMECLOCK AND OCCUPANCY SENSING VIA INTEGRAL WIRELESS CONTROLS		X			X	X	10 MIN			VIA WIRELESS MESH CONTROLS INTEGRAL TO LIGHTS. DURING NORMAL HOURS LIGHTS DIM WHEN NO OCCUPANCY SENSED. LIGHTS TURN OFF DURING OFF HOURS.
BUILDING MOUNTED EXTERIOR EGRESS DOOR LIGHTING	TIMECLOCK AND OCCUPANCY SENSING		X			X	X	10 MIN			LIGHTS AT DOORS. DURING NORMAL HOURS LIGHTS DIM WHEN NO OCCUPANCY SENSED. DURING OFF HOURS LIGHTS ON ONLY WHEN OCCUPANCY SENSED AND OFF WHEN NO OCCUPANCY SENSED.

NOTES:

1. BASIS OF DESIGN: ACUITY nLIGHT. APPROVED EQUALS ACCEPTABLE PER SPECIFICATIONS.
2. WHEN PROVIDING SUBMITTAL RISER DIAGRAMS, LABEL EACH ZONE CONTROL BASED ON ROOM NAME OR TYPE. DO NOT PROVIDE GENERIC LABELS THAT DO NOT INDICATE ROOM NAME OR TYPE.
3. NO 120/277V WALL SWITCHES OR DEVICES SHALL BE PERMITTED EXCEPT KEY SWITCHES. CIRCUITING SHOWN ON FLOOR PLANS CONNECTING SWITCHES IS DIAGRAMMATIC AND INTENDED TO INDICATE POWER TO ASSOCIATED RELAY DEVICE(S).
4. ALL LIGHTING ZONES EXCEPT CLOSETS, STAIRWELLS, RESTROOMS, MECH/ELEC/ELEV/SPRINKLER ROOMS, STORAGE AREAS AND JANITOR CLOSETS SHALL BE PROVIDED WITH DIMMING FUNCTIONALITY.
5. ALL ROOMS WITH DAYLIGHT HARVESTING CONTROL (PE) TO BE CAPABLE OF DIMMING THE DAYLIGHTING ZONE AND MAY BE OVERRIDDEN BY LOCAL CONTROL
6. nPODM DX CONTROLLERS TO BE PROVIDED WITH ON/OFF/DIMMING CONTROL OF EACH ZONE.
7. ALL CABLING BETWEEN SWITCHES, TOUCHSCREENS, OCCUPANCY SENSORS, PHOTOCELLS AND RELAYS IS MINIMUM CAT 5E.
8. nSP5, nPP16 AND nPP16 D ARE LIGHTING CONTROL POWER RELAYS.
9. FINAL SEQUENCE OF OPERATION OF LIGHTING CONTROLS TO BE VERIFIED WITH OWNER DURING CONSTRUCTION PHASE.

TYPICAL ROOM CONTROLS:

1. SEE LIGHTING CONTROL SEQUENCE OF OPERATION FOR MORE INFORMATION REGARDING LIGHTING CONTROL.
2. ALL ROOMS PROVIDED WITH OCCUPANCY SENSING. WALL SWITCH OCCUPANCY SENSORS MAY BE USED INSTEAD OF CEILING TYPE SHOWN PROVIDED THEY CAN BE TIED TO NETWORK LIGHTING CONTROL.
3. FOR MOST SPACES, 3-BUTTON SWITCHES WITH ON/OFF/RAISE/LOWER (nPOD 2X) TO BE USED. WHERE THERE ARE MULTIPLE ZONES WITHIN A ROOM, SWITCH WITH MORE BUTTONS MAY BE USED HOWEVER ALL ZONES SHALL BE PROVIDED WITH FULL ON/OFF/RAISE/LOWER CONTROL.
4. SINGLE ZONE ROOMS:
   - 4.1. ZONE LETTERING NOT PROVIDED SINCE ALL LIGHT FIXTURES CONTROLLED VIA THE SWITCH WITHIN THE SPACE. EXCEPT FOR ELECTRIC ROOMS, OR UNLESS NOTED OTHERWISE, THESE ROOMS ARE MANUAL ON/AUTO OFF.
   - 4.2. ALL LIGHTING ZONES EXCEPT CLOSETS, STAIRWELLS, RESTROOMS, SHOWERS, MECH/ELEC/ELEV/SPRINKLER ROOMS, IT ROOMS, STORAGE AREAS AND JANITOR CLOSETS SHALL BE PROVIDED WITH DIMMING FUNCTIONALITY.
5. MULTI-ZONE ROOMS:
   - 5.1. ZONE LETTERING PROVIDED. TYPICAL ROOM HAS SWITCHES AT ENTRY DOOR(S) .
   - 5.2. WHERE DAYLIGHT HARVESTING (PE), SEE DAYLIGHT HARVESTING DETAIL TO ALLOW DIMMING CONTROL OF LIGHTING WITHIN LIGHT ZONE INDICATED.
6. CORRIDORS/VESTIBULES/LARGE RESTROOMS:
   - 6.1. EACH LIGHTING CONTROL ZONE FOR CORRIDORS ARE DENOTED WITH "C#". EACH ONE OF THESE ZONES SHALL BE CONTROLLABLE SEPARATELY VIA LOCAL OCCUPANCY SENSOR. THESE AREAS PROVIDED WITH A KEYED SWITCH TO ALLOW REMOVAL OF POWER TO LIGHT FIXTURES FOR MAINTENANCE. THESE ROOMS TO BE PROGRAMMED FOR AUTO ON/AUTO DIM CONTROL.
7. STAIRWELL LIGHTING:
   - 7.1. EACH STAIRWELL FIXTURE IS PROVITDED WITH INTEGRAL OCCUPANCY SENSING AND EMERGENCY BACKUP POWER. THESE AREAS PROVIDED WITH A KEYED SWITCH TO ALLOW REMOVAL OF POWER TO LIGHT FIXTURES FOR MAINTENANCE. STAIRWELLS SHALL DIM WHEN NOT OCCUPIED.
8. BUILDING MOUNTED EXTERIOR LIGHTING:
   - 8.1. EXTERIOR BUILDING MOUNTED LIGHTING CONTROLLED VIA INDIVIDUAL ZONES LABELLED AS "EXT#". LIGHTING TO BE CONTROLLED VIA TIME CLOCK. LIGHTING PROVIDED WITH EMERGENCY BACKUP MICROINVERTERS NEAR THE FIXTURES IN DOORS.
9. EXTERIOR POLE LIGHTING:
   - 9.1. LIGHTING SHALL BE CONTROLLED WIRELESSLY VIA WIRELESS/MESH LIGHTING CONTROL SYSTEM.

1 LIGHTING CONTROL
N.T.S.

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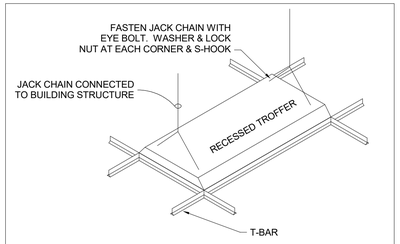
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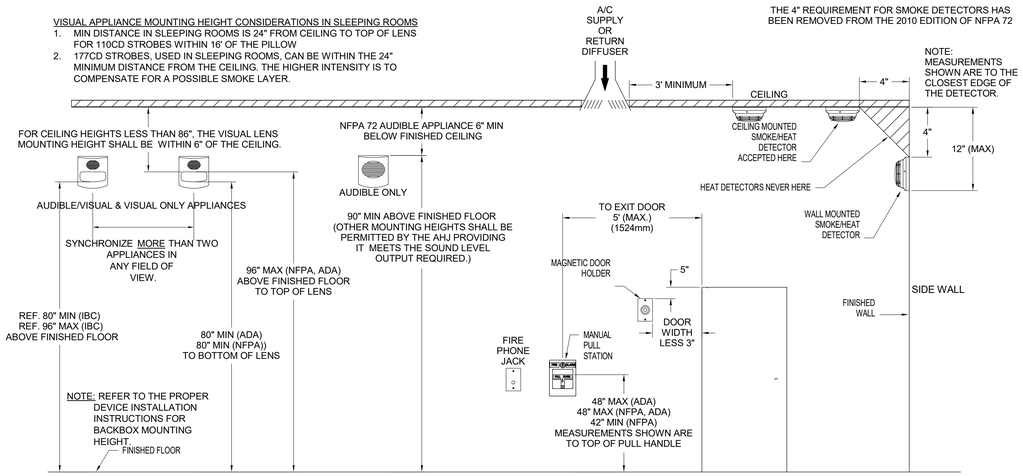
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DATE:	02/07/2025
CHECKED BY:	JEA
DRAWN BY:	ARW
SCALE:	N.T.S.

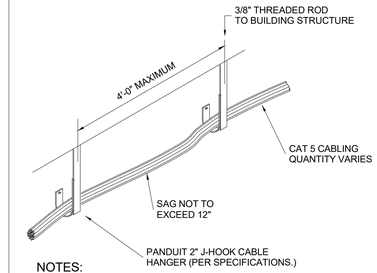
E6.01



4 JACK CHAIN DETAIL
N.T.S.



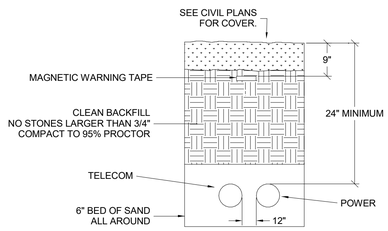
6 FIRE ALARM DEVICE MOUNTING HEIGHT REFERENCE DETAIL
N.T.S.



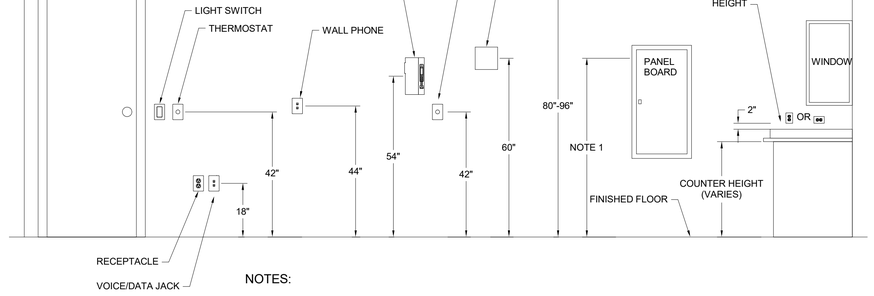
NOTES:

1. WHEN MAKING BENDS OR CORNERS MAINTAIN A MAXIMUM BEND RADIUS PER EIA/TIA STANDARDS AND MANUFACTURERS RECOMMENDATIONS.
2. INSTALL MULTIPLE CLOSELY SPACED CABLE HANGERS ON CORNERS TO MAINTAIN PROPER BENDING RADII.
3. CABLING SHALL BE ROUTED TO AVOID ALL SOURCES OF EMI OR AMBIENT ELECTRICAL NOISE WHENEVER POSSIBLE. MINIMUM DISTANCES FROM FROM EMI SOURCES ARE AS FOLLOWS:
   - 3.1. TWELVE (12) INCHES FROM UNSHIELDED POWER LINES OF < 2 KVA.
   - 3.2. TWELVE (12) INCHES FROM UNSHIELDED POWER LINES OF 2 TO 5 KVA
   - 3.3. TWENTY FOUR (24) INCHES FROM UNSHIELDED POWER LINES OF > 5 KVA.
   - 3.4. TWELVE (12) INCHES FROM HIGH VOLTAGE LIGHTING INCLUDING FLUORESCENT.
   - 3.5. FORTY (40) INCHES FROM TRANSFORMERS AND ELECTRIC MOTORS.
   - 3.6. NO CABLE RUNS SHOULD BE PARALLEL WITH AC LINES.
4. FURNISH AND INSTALL 4" CONDUIT SLEEVES AT ALL RATED WALL PENETRATIONS. MAINTAIN 40% FILL RATIO TO ALLOW FOR FUTURE CABLING.
5. SEAL ALL CONDUIT SLEEVES WITH A UL RATED PILLOW TYPE FIRE SEAL.

1 J-HOOK SUPPORT SCHEMATIC
N.T.S.



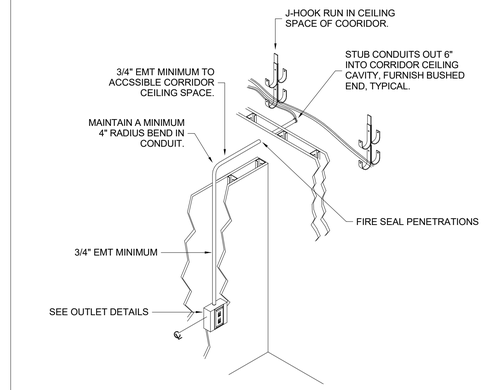
2 TYPICAL SECONDARY VOLTAGE TRENCH DETAIL
N.T.S.



NOTES:

1. PANELBOARDS TO BE MOUNTED NOT HIGHER THAN 6' TO HIGHEST CIRCUIT BREAKER. IN UNITS CONSIDERED HC/ADA, MOUNT SO HIGHEST CIRCUIT BREAKER IS NOT HIGHER THAN 46" AFF.
2. TO ABOVE MOUNTING HEIGHTS SHOWN IN THE DETAIL SHALL APPLY TO ALL DEVICES UNLESS NOTED OTHERWISE ON PLANS. UNLESS NOTED OTHERWISE ALL NOTED DIMENSIONS ARE TO THE CENTERLINE OF THE DEVICE FROM FINISHED FLOOR.
3. WHERE EXISTING OR SPECIAL CONDITIONS PREVENT THE INSTALLATION OF DEVICES AT THE ABOVE HEIGHTS, THE CONTRACTOR SHALL VERIFY THE HEIGHTS ON SITE WITH THE ARCHITECT.
4. ALL DEVICES IN FINISHED AREAS SHALL BE INSTALLED WITH FLUSH DEVICE BOXES. NO SURFACE BOXES SHALL BE ALLOWED UNLESS APPROVED BY THE ARCHITECT.
5. CONTRACTOR SHALL VERIFY FINAL COUNTERTOP, CABINET, VANITY, ETC., HEIGHTS, INCLUDING BACKSPLASHES, ON SITE WITH THE GENERAL CONTRACTOR AND ARCHITECT PRIOR TO INSTALLATION OF BOXES. THIS ALSO INCLUDES LOCATION SUCH AS BATHROOMS WHERE TILE, WAINSCOTTING, ETC., MAKES UP PART OF WALL.
6. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION ON LOCATIONS. WHERE DESCREPANCIES EXIST COORDINATE FINAL LOCATIONS WITH THE ARCHITECT.
7. AREA OF REFUGE TACTILE SIGNAGE TO BE 60" TO CENTER. INSTRUCTIONAL SIGN BETWEEN 48"-60" FROM FLOOR TO TACTILE LETTERS.

5 ELECTRICAL DEVICE LOCATION DETAIL
N.T.S.



3 TYPICAL DATA DROP DETAIL
N.T.S.

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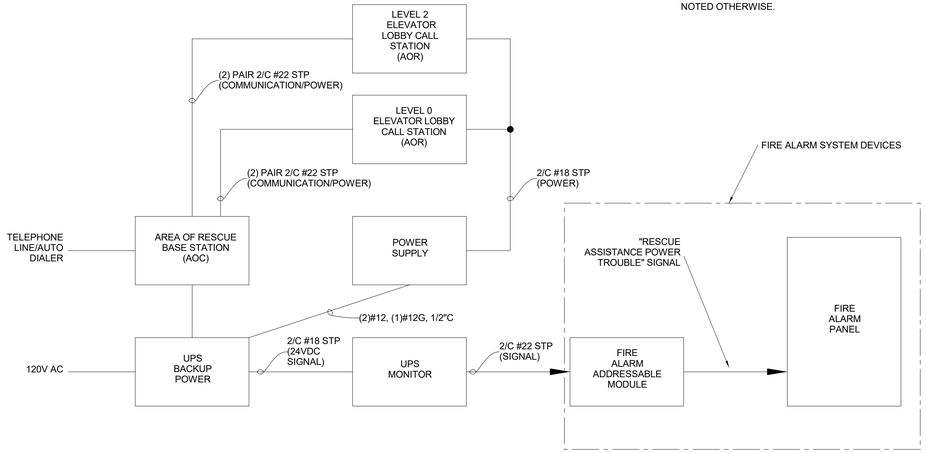
ELECTRICAL DETAILS

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CHECKED BY:	JEA
DRAWN BY:	ARW
SCALE:	N.T.S.

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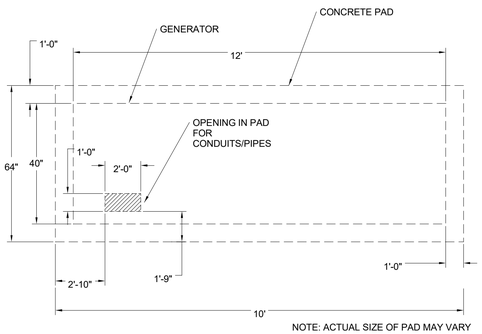
1. DRAWING IS DIAGRAMMATIC. VERIFY WITH MANUFACTURER ACTUAL CIRCUITING REQUIRED
2. SYSTEM TO BE NFPA AND ADAAG COMPLIANT.
3. USE TWISTED SHIELDED PAIR CABLES UNLESS NOTED OTHERWISE.



2 AREA OF RESCUE TYPICAL WIRING DIAGRAM
N.T.S.

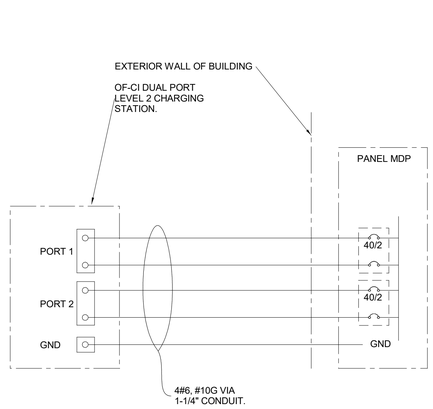
NOTES:

1. DRAWING IS DIAGRAMMATIC. VERIFY WITH MANUFACTURER ACTUAL GENERATOR DIMENSIONS AND PAD OPENING LOCATIONS.
2. PAD 12" THICK.
3. PROVIDE CONCRETE PER DIVISION 3 REQUIREMENTS.

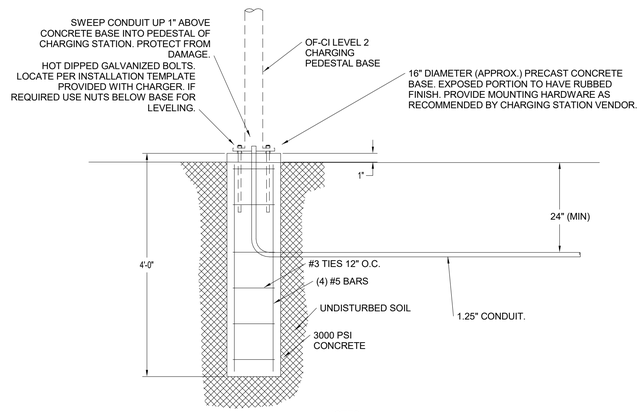


NOTE: ACTUAL SIZE OF PAD MAY VARY

1 GENERATOR PAD LAYOUT DETAIL
NTS



WIRING DIAGRAM



NOTES:

1. DETAIL IS DIAGRAMMATIC. ACTUAL DESIGN SHALL BE BASED ON VENDOR RECOMMENDATIONS.
2. EV CHARGER BASES SHALL BE PRECAST PER DETAIL ABOVE. COORDINATE WITH OWNER EXACT SPECIFICATIONS FOR BASE DESIGN. FURNISH ALL MATERIALS.
3. ALL PVC CONDUIT SHALL BE SCHEDULE 40.
4. REFER TO ARCHITECTURAL DRAWINGS FOR PLACEMENT.

3 LEVEL 2 CHARGING STATION DETAILS
N.T.S.

WLA

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#	DATE	REVISION DESCRIPTION

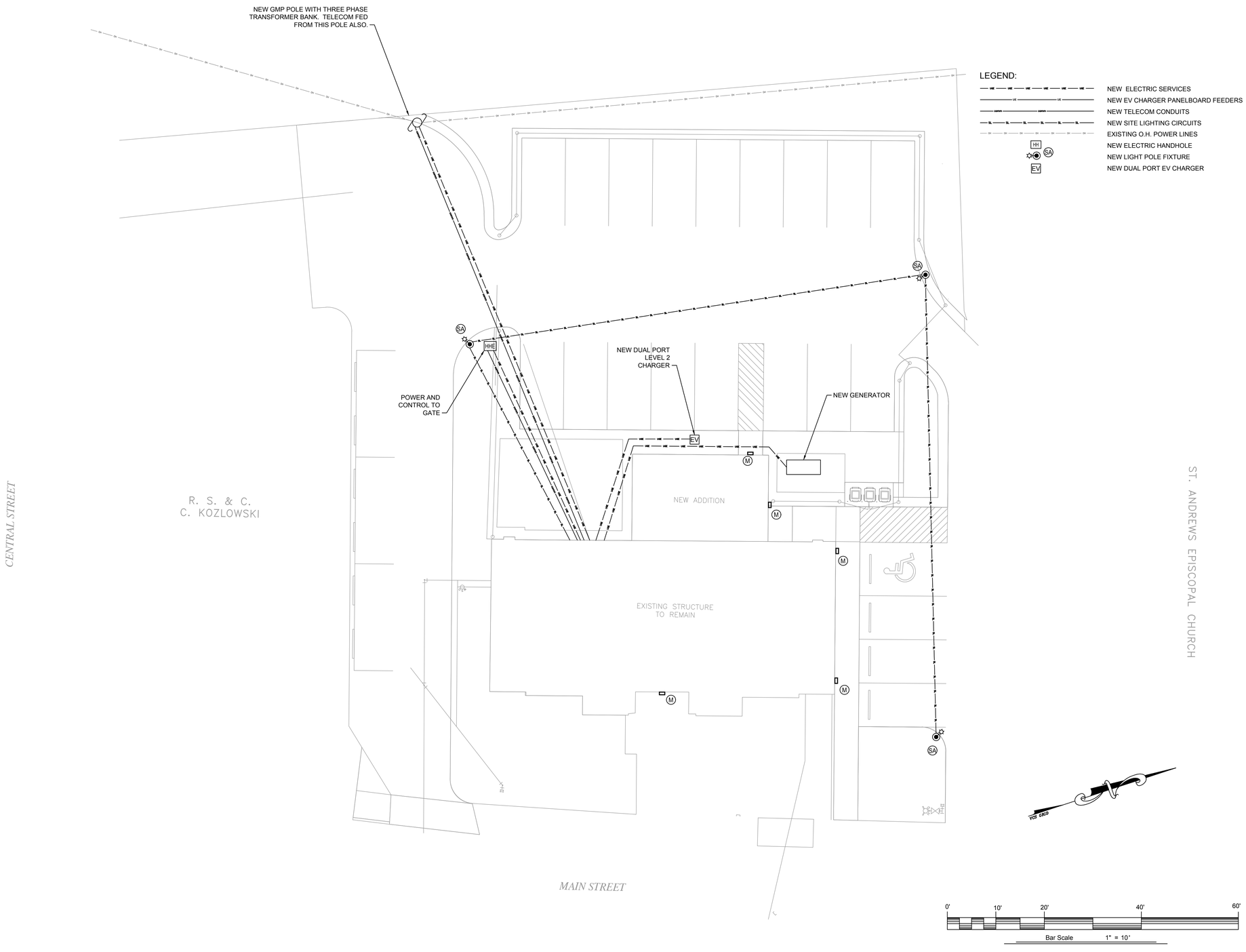
PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

ELECTRICAL DETAILS

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	JEA
DRAWN BY:	ARW
SCALE:	N.T.S.

E6.03



LEGEND:

- NEW ELECTRIC SERVICES
- NEW EV CHARGER PANELBOARD FEEDERS
- NEW TELECOM CONDUITS
- NEW SITE LIGHTING CIRCUITS
- EXISTING O.H. POWER LINES
- NEW ELECTRIC HANDHOLE
- NEW LIGHT POLE FIXTURE
- NEW DUAL PORT EV CHARGER

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#	DATE	REVISION DESCRIPTION

PUBLIC SAFETY FACILITY

ST. JOHNSBURY, VT

ELECTRICAL SITEPLAN

PROJECT NO:	21261
DATE:	02/07/2025
CHECKED BY:	LNC
DRAWN BY:	LNC
SCALE:	1" = 10'-0"

ES.11