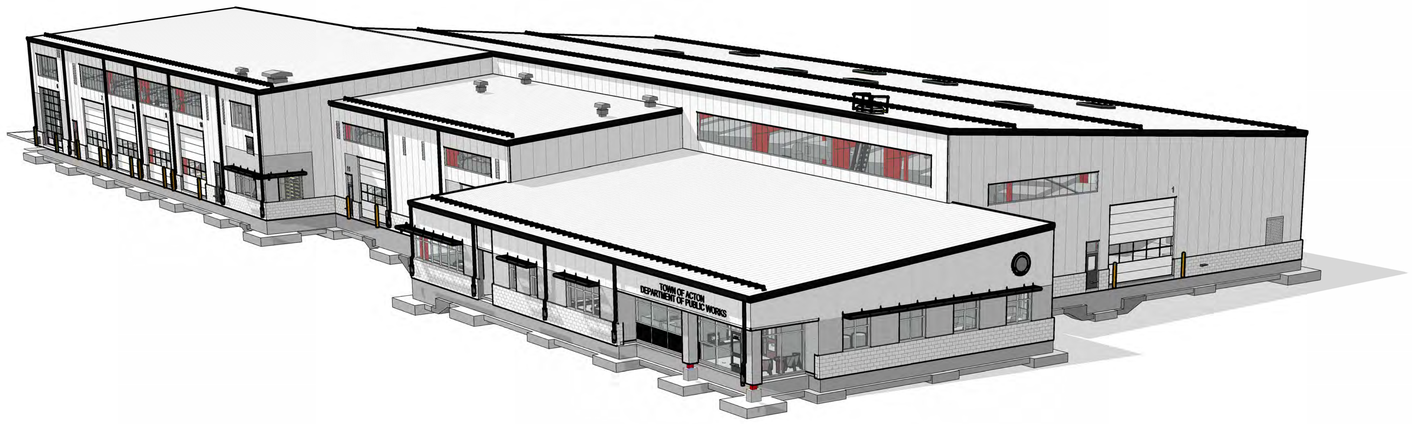
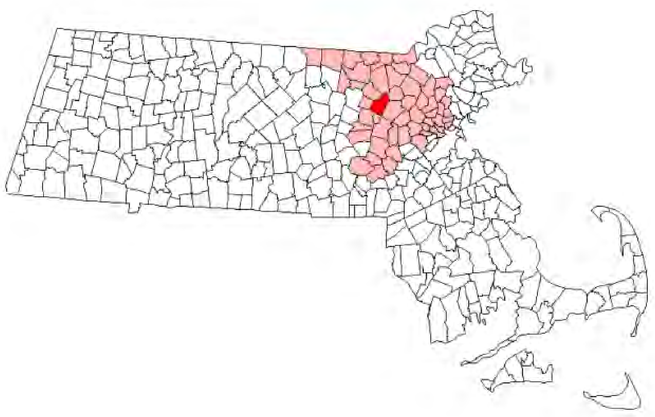
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TOWN OF ACTON

NEW PUBLIC WORKS FACILITY
14 FOREST ROAD, ACTON MA 01720





MASSACHUSETTS MUNICIPAL MAP N.T.S.



LOCUS MAP N.T.S.



PARCEL MAP N.T.S.

DRAWING LIST

GENERAL	
G101	CODE SUMMARY & PLANS
G102	LIFE SAFETY PLANS & LEGENDS
CIVIL	
C100	EXISTING CONDITIONS PLAN
C101	SITE DEMOLITION PLAN
C201	SITE LAYOUT & UTILITY PLAN
C301	GRADING & DRAINAGE PLAN
STRUCTURAL	
S001	GENERAL NOTES
S100	OVERALL FOUNDATION PLAN
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S102	ENLARGED STORAGE FOUNDATION PLAN
S110	OVERALL SLAB PLAN
S111	ENLARGED ADMIN., SHOPS & MAINT. SLAB PLAN
S112	ENLARGED STORAGE SLAB PLAN
S120	MEZZANINE FRAMING PLAN
S130	OVERALL ROOF FRAMING PLAN
S131	ENLARGED ADMIN., SHOPS & MAINT. ROOF FRAMING PLAN
S132	ENLARGED STORAGE ROOF FRAMING PLAN
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A011	ABBREVIATIONS, SYMBOLS, LEGEND & GENERAL NOTES
A012	GENERAL NOTES & MOUNTING HEIGHTS
A021	PARTITION TYPES
A022	EXTERIOR & FUME SEPARATION WALL ASSEMBLIES
A101	OVERALL FLOOR PLAN
A102	OVERALL MEZZANINE PLAN
A103	OVERALL REFLECTED CEILING PLAN - BELOW MEZZANINE
A104	OVERALL REFLECTED CEILING PLAN - ABOVE MEZZANINE
A105	OVERALL ROOF PLAN
A111	LARGE SCALE FLOOR PLAN & RCP - ADMINISTRATION & EMPLOYEE FACILITIES
A112	LARGE SCALE FLOOR & MEZZANINE PLAN - SHOPS & FLEET MAINTENANCE
A113	LARGE SCALE FLOOR & MEZZANINE PLAN - FLEET STORAGE
A114	LARGE SCALE REFLECTED CEILING PLANS - FLEET MAINTENANCE & SHOPS
A115	LARGE SCALE REFLECTED CEILING PLANS - FLEET STORAGE
A121	LARGE SCALE ROOF PLANS - ADMIN, SHOPS & FLEET MAINTENANCE
A122	LARGE SCALE ROOF PLAN - FLEET STORAGE
A131	STORAGE CANOPY PLANS - BID ALT #4
A201	OVERALL ELEVATIONS
A211	LARGE SCALE PARTIAL EXTERIOR ELEVATIONS
A212	LARGE SCALE PARTIAL EXTERIOR ELEVATIONS
A213	LARGE SCALE PARTIAL EXTERIOR ELEVATIONS
A221	3D VIEWS
A301	BUILDING SECTIONS
A302	BUILDING SECTIONS
A401	WALL SECTIONS I
A402	WALL SECTIONS II
A403	WALL SECTIONS III
A404	WALL SECTIONS IV
A411	MAIN ENTRANCE 3D VIEWS, ELEVATIONS, AND WALL SECTION
A501	LARGE SCALE STAIR PLANS / SECTIONS
A502	LARGE SCALE STAIR PLANS / SECTIONS
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A801	DOOR SCHEDULE & DOOR AND FRAME TYPES, DETAILS
A811	DOOR DETAILS I
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A821	FENESTRATION TYPES AND DETAILS
A831	FENESTRATION DETAILS
A841	LOUVERS & TRANSLUCENT PANEL DETAILS
A921	FURNITURE PLAN (FOR REFERENCE ONLY)
INDUSTRIAL	
EQ101	MAINTENANCE EQUIPMENT LAYOUT PLAN
EQ111	FLEET STORAGE EQUIPMENT LAYOUT PLAN
EQ121	WORKSHOPS EQUIPMENT LAYOUT PLAN
Fire Protection	
FP000	FIRE PROTECTION LEGENDS, NOTES AND ABBREVIATIONS
FP101	FIRST FLOOR - ADMIN & FLEET MAINTENANCE- FIRE PROTECTION
FP102	FIRST FLOOR - FLEET STORAGE - FIRE PROTECTION
FP103	MEZZANINE FLOOR - FLEET MAINTENANCE - FIRE PROTECTION
FP104	MEZZANINE FLOOR - FLEET STORAGE - FIRE PROTECTION
FP501	FIRE PROTECTION DETAILS
FP502	FIRE PROTECTION DETAILS
PLUMBING	
P000	PLUMBING LEGENDS, NOTES AND ABBREVIATIONS
P101	UNDERGROUND ADMIN PLAN - PART A
P102	UNDERGROUND FLEET MAINTENANCE AND SHOPS PLAN - PART B
P103	UNDERGROUND FLEET STORAGE PLAN - PART C
P111	FIRST FLOOR AND ROOF ADMIN PLAN - PART A
P112	FIRST FLOOR AND MEZZANINE FLEET MAINTENANCE AND SHOPS - PART B
P113	FIRST FLOOR FLEET STORAGE - PART C
P114	MEZZANINE FLEET STORAGE - PART C
P121	ROOF FLEET MAINTENANCE AND SHOPS PLAN - PART B
P122	ROOF FLEET STORAGE PLAN - PART C
P401	ENLARGED FLOOR PLANS
P402	ENLARGED FLOOR PLANS
P403	ENLARGED FLOOR PLANS
P501	PLUMBING DETAILS
P502	PLUMBING DETAILS
P601	PLUMBING SCHEDULES
P701	DOMESTIC WATER RISER DIAGRAM
P702	WASTE & VENT RISER DIAGRAM
HVAC	
H001	LEGENDS, NOTES, AND ABBREVIATIONS
H101	ADMIN AREA NEW WORK DUCT PLAN
H102	FLEET MAINTENANCE AND SHOPS NEW WORK DUCT PLAN
H103	FLEET STORAGE NEW WORK PLAN
H104	FLEET STORAGE / FLEET MAINTENANCE AND SHOPS ROOF LEVEL NEW WORK DUCT PLAN
H200	RADIANT FLOOR PIPING PLAN
H201	ADMIN AREA FIRST FLOOR NEW WORK PIPING PLAN
H202	FLEET MAINTENANCE AND SHOPS NEW WORK PIPING PLAN
H203	FLEET STORAGE NEW WORK PIPING PLAN
H501	DETAILS
H502	DETAILS
H503	DETAILS
H504	DETAILS
H505	DETAILS
H601	SCHEDULES
H602	SCHEDULES
H701	AUTOMATIC TEMPERATURE CONTROLS
ELECTRICAL	
E001	ELECTRICAL TITLE SHEET
E002	ELECTRICAL SITE PLAN
E201	POWER PLANS
E401	ENLARGED POWER PLANS
E601	ELECTRICAL DIAGRAMS

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Consultants:

COA

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ADDRESS IDENTIFICATION SIGNAGE: IBC 502.1

14

APPLICABILITY:
- VERIFY SPECIFIC REQUIREMENTS WITH LOCAL FIRE CODE OFFICIAL
- CHARACTER HEIGHT - 6" MINIMUM W/ 1/2" STROKE MINIMUM
- COLOR - EASILY IDENTIFIABLE COLOR, CONTRASTING WITH BACKGROUND

2 EXTERIOR SIGNAGE - ADDRESS
1 1/2" = 1'-0"

WARNING: THROUGH-PENETRATION FIRESTOP SYSTEM - DO NOT DISTURB

NOTIFY FACILITY MANAGER / OWNER OF ANY DAMAGE

- CONTRACTOR'S NAME, ADDRESS, PHONE NUMBER
- THROUGH-PENETRATION FIRESTOP SYSTEMS DESIGNATION OF APPLICABLE TESTING AND INSPECTION AGENCY
- DATE OF INSTALLATION
- THROUGH-PENETRATION FIRESTOP SYSTEMS MANUFACTURER'S NAME
- INSTALLER'S NAME

PRESSURE-SENSITIVE, SELF ADHESIVE PRE-PRINTED VINYL LABELS

FOR ALL RATED WALL ASSEMBLIES, BOTH SIDES
- REFER TO "FIRESTOPPING" SPECIFICATION FOR ADDITIONAL INFORMATION

3 RATED WALL LABEL
1 1/2" = 1'-0"

USE GROUP LEGEND

USE GROUP: S-1 STORAGE

USE GROUP: S-2 STORAGE

USE GROUP: B BUSINESS

MEZZANINE

DEFERRED SUBMITTALS IBC 107.3.4.1

SPECIFICATION NUMBER

DIVISION 5
05 50 00 – METAL FABRICATIONS
- MEZZ GUARDRAILS
- STAIRS
- HOSE REEL SUPPORTS
- SHIPS LADDERS
- EXTERIOR ROOF ACCESS LADDER
- BOLLARDS

DIVISION 11
11 42 23 – FALL PROTECTION
- ROOF FALL PROTECTION

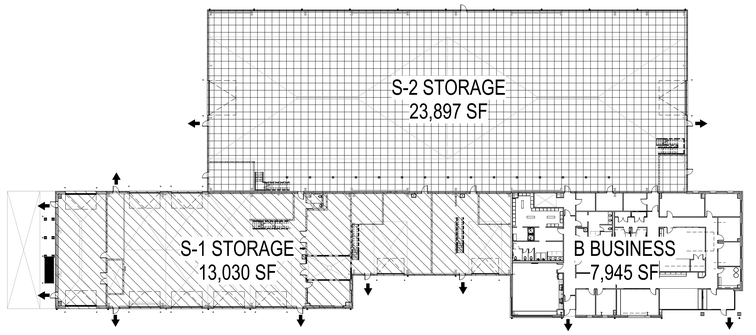
DIVISION 13
13 42 00 – PRE-ENGINEERED METAL BUILDING

DIVISION 21
21 13 13 – WET PIPE SPRINKLER SYSTEMS
21 13 16 – DRY PIPE SPRINKLER SYSTEMS

DIVISION 22
22 11 13 – FACILITY NATURAL-GAS PIPING
- ANCHOR / RESTRAINTS

DIVISION 23
23 05 29 – HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT
23 05 48 – VIBRATIONS AND SEISMIC CONTROLS FOR HVAC
23 21 13 – HYDRONIC PIPING
23 31 13 – METAL DUCTS
23 34 24 – HVAC POWER VENTILATORS
23 52 16 – CONDENSING BOILERS
23 72 00 – AIR TO AIR ENERGY RECOVERY EQUIPMENT
23 74 16.11 – PACKAGED, SMALL CAPACITY ROOFTOP AIR-CONDITIONING UNITS

DIVISION 27
27 05 36 – CABLE TRAYS FOR COMMUNICATIONS SYSTEMS
- ANCHORS AND SUPPORTS FOR CABLE TRAYS



4 CODE PLAN - USE GROUP
1/32" = 1'-0" 1/ A201

PARTITION LETTERING:

1 HOUR FIRE WALL - PROTECT ALL OPENINGS

1 HOUR SMOKE BARRIER - PROTECT ALL OPENINGS

SMOKE BARRIER PARTITIONS - PROTECT ALL OPENINGS

APPLICABILITY:
- APPLY TO OUTSIDE OF FIRE RATED SHAFTS AND TO BOTH SIDES OF PARTITIONS AT INTERVALS NOT TO EXCEED 30'-0" FOR ENTIRE LENGTH OF PARTITION OR WALL OR TWICE ANY PARTITION 30'-0" IN LENGTH OR LESS. MINIMUM 15'-0" FROM EACH END OF PARTITION ALSO.
- LOCATE IDENTIFICATION IN ALL ACCESSIBLE FLOOR, FLOOR-CEILING AND ATTIC SPACES. LOCATE IDENTIFICATION WITHIN 12 - 18 INCHES ABOVE FINISHED CEILINGS
- APPLY STENCILED LETTERING BY SPRAY OR BRUSH OR PROVIDE PERMANENT SIGNAGE. IDENTIFICATION SHALL BE WATERPROOF, FADE-PROOF, AND NON-COMBUSTIBLE. SIGNAGE SHALL BE MECHANICALLY FASTENED OR PERMANENTLY ADHERED TO PARTITION OR SHAFT.
- STENCIL CHARACTER HEIGHT - 2" MINIMUM
- COLOR - EASILY IDENTIFIABLE COLOR, CONTRASTING WITH BACKGROUND ACCEPTABLE TO OWNER

1 CHAPTER 7 CODE RATED WALL LABELS
1 1/2" = 1'-0"

CODE SUMMARY:

THE PROPOSED ACTON DEPARTMENT OF PUBLICS WORKS FACILITY CONSISTS OF A NON-SEPARATED "MIXED-USE" BUILDING PROGRAM, INCLUDING THREE (3) MAIN OPERATIONAL COMPONENTS, AS FOLLOWS:

1. **USE GROUP "B", BUSINESS**: A ONE-STORY ADMINISTRATION WING, CONSISTING OF EMPLOYEE SUPPORT SPACES (E.I. LUNCH/TRAINING ROOM, MEN'S & WOMEN'S LOCKER ROOM ETC.), DIRECTORS' OFFICES, SHARED ADMINISTRATIVE OFFICE, PUBLIC SERVICE COUNTERS AND OFFICE SUPPORT SPACES.

2. **USE GROUP "S-1" MODERATE HAZARD USE**: SINGLE-STORY, DOUBLE-HEIGHT VEHICLE MAINTENANCE AND DEPARTMENT SHOP AREAS AND ADJACENT VEHICLE WASH-BAY. MAINTENANCE AND SHOP AREAS HAVE ASSOCIATED OPEN MEZZANINE SPACE.

3. **USE GROUP "S-2" LOW HAZARD USE**: SINGLE-STORY, MINIMALLY HEATED VEHICLE & EQUIPMENT STORAGE GARAGE AREA.

THE BUILDING IS STEEL-FRAMED WITH CONCRETE SLAB FLOORS AND MEZZANINE LEVEL STEEL DECK AND CONCRETE SLAB. THE BUILDING ENCLOSURE CONSISTS OF A INSULATED STANDING SEAM METAL ROOF SYSTEM, FACTORY FOAMED IN PLACE INDUSTRIAL METAL PANEL WALL SYSTEM AND BRICK VENEER ON METAL STUD BACKUP WALL WITH AN INSULATED CMU BASE WALL. ALUMINUM STOREFRONT GLAZING IS PROVIDED AT THE ADMINISTRATION WING AND TRANSLUCENT PANEL DAYLIGHT SYSTEMS ARE INCORPORATED INTO THE WALL PANEL SYSTEM AT THE INDUSTRIAL SHOP AREAS.

SPECIFIC ASPECTS OF THIS BUILDING TO NOTE ARE AS FOLLOWS:

1. A 2-HOUR FIRE-RESISTANCE RATED FLUID STORAGE ROOM IS PROVIDED TO STORE FLAMMABLE / HAZARDOUS FLUIDS USED FOR THE MAINTENANCE & REPAIR OF VEHICLES.
2. A STANDBY GENERATOR, WHICH IS HOUSED WITHIN A SOUND-ATTENUATED ENCLOSURE IS LOCATED ON THE XXXX SIDE OF THE EXTERIOR OF THE BUILDING AND IS SIZED TO PROVIDE FULL OPERATIONAL POWER TO THE FACILITY.
3. THE BUILDING IS FULLY SPRINKLED PER NFPA 13 REQUIREMENTS, AND WILL HAVE AN EMERGENCY VOICE / ALARM COMMUNICATION SYSTEM.
4. WITH EXCEPTIONS OF MEZZANINES, THE BUILDING AND FACILITY ARE FULLY ACCESSIBLE AND MEET ADA AND CMR 521 MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REGULATIONS.

GENERAL BUILDING INFORMATION:
ALL AREAS ARE SHOWN IN GROSS SQUARE FEET (GSF).

BUILDING FOOTPRINT AREA (NOT INCLUDING VEHICLE CANOPY):	**44,872 GSF**
TOTAL BUILDING SQUARE FOOT AREA (NOT INCLUDING MEZZANINES):	**44,872 GSF**
1. USE GROUP "B" , BUSINESS (ADMINISTRATION / STAFF WING)	**7,945 GSF**
2. USE GROUP "S-1", MODERATE HAZARD STORAGE (VEHICLE MAINTENANCE / WASH / WORKSHOPS):	**13,030 GSF**
3. USE GROUP "S-2", LOW HAZARD STORAGE (VEHICLE & EQUIPMENT STORAGE GARAGE)	**24,897 GSF**
BUILDING HEIGHT (TO ROOF RIDGE AT VEHICLE STORAGE AREA):	**33' - 10"**

APPLICABLE CODES AND STANDARDS:
- MASSACHUSETTS STATE BUILDING CODE & APPROPRIATE AMENDMENTS:
  - 780 CMR NINTH EDITION
  - IBC 2021
- 2015 INTERNATIONAL MECHANICAL CODE (IMC)
- 248 CMR 10.00 UNIFORM STATE PLUMBING CODE (USPC)
- 2023 NATIONAL ELECTRICAL CODE
- 2023 MASSACHUSETTS ENERGY CODE
  - 2021 IECC W/ MA AMENDMENTS
  - 225 CMR 23.00 - MA COMMERCIAL STRETCH ENERGY CODE
  - APPENDIX CC - MA MUNICIPAL OPT-IN SPECIALIZED ENERGY CODE
- 2019 MASSACHUSETTS COMPREHENSIVE FIRE CODE
  - 527 CMR: BOARD OF FIRE PREVENTION REGULATIONS
  - NFPA 1 FIRE CODE, 2015 EDITION
- 271 CMR: BOARD OF EXAMINERS OF SHEET METAL WORKERS
- 521 CMR ARCHITECTURAL ACCESS BOARD REGULATIONS

BUILDING CODE ANALYSIS:

CHAPTER 3 - USE AND OCCUPANCY CLASSIFICATION

(SECT. 304) USE GROUP B (BUSINESS):	**7,945 GSF**
(SECT. 311.2) USE GROUP S-1 (MODERATE-HAZARD STORAGE):	**13,030 GSF**
(SECT. 311.3) USE GROUP S-2 (LOW-HAZARD STORAGE):	**24,897 GSF**
TOTAL BUILDING:	**44,872 GSF**

CHAPTER 5- GENERAL BUILDING HEIGHTS AND AREAS

(SECT. 504.3) ALLOWABLE BUILDING HEIGHT
TYPE IIB CONSTRUCTION
"B" AND "S" OCCUPANCY, SPRINKLED
ALLOWABLE HEIGHT: **75' - 0"**
PROPOSED HEIGHT (COMPLIANT): **33' - 10"**

(SECT. 504.4) ALLOWABLE NUMBER OF STORIES
"S-1" OCCUPANCY (MOST RESTRICTIVE)
ALLOWABLE STORIES: **3 STORIES**
PROPOSED STORIES (COMPLIANT): **1 STORY**

(SECT. 506.2) ALLOWABLE BUILDING AREA
GROUP "S-1" (MOST RESTRICTIVE): **70,000 SF**
(FOR 1-STORY STRUCTURE OF TYPE IIB CONSTRUCTION, W/ SPRINKLER SYSTEM)
PROPOSED AREA FOR TOTAL BUILDING: **44,872 GSF**
PROPOSED HEIGHT FOR TOTAL BUILDING: **1 STORY**

(SECT. 505.2.1) MEZZANINES

MEZZANINE 1: (MAINTENANCE)
MAINTENANCE AREA: = 5,615 SF
ALLOWABLE MEZZANINE AREA: = 5,615 x 1/2 = 2,807 SF
ACTUAL MEZZANINE AREA: = 1,919 SF

MEZZANINE 2-4: (STORAGE)
FLEET STORAGE AREA: = 22,598 SF
ALLOWABLE MEZZANINE AREA: = 22,598 x 1/2 = 11,299 SF
ACTUAL MEZZANINE AREA: = 4,137 SF

MEZZANINE 5: (WORKSHOP)
WORKSHOP AREA: = 1,703 SF
ALLOWABLE MEZZANINE AREA: = 1,703 x 1/2 = 850 SF
ACTUAL MEZZANINE AREA: = 810 SF

MEZZANINE 6: (WORKSHOP)
WORKSHOP AREA: = 1,668 SF
ALLOWABLE MEZZANINE AREA: = 1,100 x 1/2 = 834 SF
ACTUAL MEZZANINE AREA: = 810 SF

(SECT. 508.3.2) MIXED USE AND OCCUPANCY, NON-SEPARATED OCCUPANCIES
GROUP "S-1" (MOST RESTRICTIVE OCCUPANCY)
ALLOWABLE AREA FOR USE GROUP S: **70,000 SF**
ALLOWABLE HEIGHT FOR USE GROUP S: **1 STORY, SPRINKLED**

(SECT. 509) INCIDENTAL USES
AUTOMATIC SPRINKLER SYSTEM PROVIDED
FURNACE ROOM WITH > 400,000 BTUh
BOILER ROOM WITH > 15 PSI AND > 10 HORSEPOWER

INCIDENTAL USES - 1 OR 2 HOUR SEPARATION PROVIDED AT ELECTRICAL ROOM > KVA - AUTOMATIC SPRINKLER SYSTEM AND 1-HOUR SEPARATION PROVIDED AT FLUID STORAGE ROOM.

CHAPTER 6 - TYPES OF CONSTRUCTION

(TABLE 601) FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS

CONSTRUCTION TYPE IIB - BUILDING ELEMENTS

STRUCTURAL FRAME (INC. COLUMNS, GIRDERS AND TRUSSES):	0 HRS
BEARING WALLS - EXTERIOR:	0 HRS
BEARING WALLS - INTERIOR:	0 HRS
NON BEARING WALLS AND PARTITIONS - EXTERIOR:	0 HRS
NON BEARING WALLS AND PARTITIONS - INTERIOR:	0 HRS
FLOOR CONSTRUCTION:	0 HRS
ROOF CONSTRUCTION:	0 HRS

(TABLE 602) FIRE RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE

CONSTRUCTION TYPE IIB
FIRE SEPARATION DISTANCE = X
SEPARATION DISTANCE TO FUELING FACILITY: X > 30
OCCUPANCY USE GROUP S-1: 0 HRS
OCCUPANCY USE GROUP S-2: 0 HRS

(SECT. 602.2) CONSTRUCTION TYPE IIB, NONCOMBUSTIBLE, FULLY SPRINKLED

CHAPTER 9 - FIRE PROTECTION SYSTEMS

(SECT. 903.2.9) USE GROUP S-1
REQUIRE AUTOMATIC SPRINKLER SYSTEMS WHERE FIRE AREAS EXCEED 12,000 SF, OR WHERE FIRE AREAS USED FOR THE STORAGE OR REPAIR OF COMMERCIAL MOTOR VEHICLES EXCEED 5,000 SF.

(SECT. 903.3.1.1) ALTERNATIVE PROTECTION
AN NFPA-13 COMPLIANT AUTOMATIC SPRINKLER SYSTEM WILL BE PROVIDED AT ALL INTERIOR BUILDING AREAS. SHOP AND VEHICLE STORAGE AREA WILL HAVE DRY-PIPE ZONES.

(SECT. 907.5.2.2) EMERGENCY VOICE / ALARM COMMUNICATION SYSTEM
AS REQUIRED UNDER SECTION 505.2.1, EXCEPTION #2, AN NFPA-72 COMPLIANT EMERGENCY VOICE / ALARM COMMUNICATION SYSTEM WILL BE PROVIDED.

CHAPTER 10 - MEANS OF EGRESS

(TABLE 1004.1.2) MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT

STORAGE AREA S-1	= 300 GSF / OCC
STORAGE AREA S-2	= 300 GSF / OCC
BUSINESS / OFFICE AREA B	= 100 GSF / OCC
ASSEMBLY (MUSTER ROOM)	= 15 NSF / OCC
LOCKER ROOM	= 50 GSF / OCC
MEZZANINES (S-1, S-2)	= 300 GSF / OCC
MECHANICAL ROOM	= 300 GSF / OCC

(SECT. 1004) OCCUPANT LOAD

STORAGE AREA S-1 :	13,030 SF (+ 300 SF/OCC)	=	43 OCCUPANTS
MEZZ: 1	1,919 SF (+ 300 SF/OCC)	=	6 OCCUPANT
MEZZ: 5	810 SF (+ 300 SF/OCC)	=	3 OCCUPANTS
MEZZ: 6	810 SF (+ 300 SF/OCC)	=	3 OCCUPANTS
STORAGE AREA S-2:	23,897 SF (+ 300 SF/OCC)	=	80 OCCUPANTS
MEZZ: 2	1,258 SF (+ 300 SF/OCC)	=	4 OCCUPANTS
MEZZ: 3	602 SF (+ 300 SF/OCC)	=	2 OCCUPANTS
MEZZ: 4	2,277 SF (+ 300 SF/OCC)	=	8 OCCUPANTS
BUSINESS / OFFICE AREA B:	7,945 SF (+ 100 SF/OCC)	=	79 OCCUPANTS
MULTI-PURPOSE ROOM:	686 NSF (+ 15 SF/OCC)	=	46 OCCUPANTS
MALE LOCKER ROOM:	768 SF (+ 50 SF/OCC)	=	15 OCCUPANT
FEMALE LOCKER ROOM:	361 SF (+ 50 SF/OCC)	=	7 OCCUPANT
MECHANICAL ROOM:	772 SF (+ 300 SF/OCC)	=	3 OCCUPANT
TOTAL:		=	**299 OCCUPANTS**

(SECT. 1005) MEANS OF EGRESS SIZING

STORAGE AREA S-1 (INCLUDING MEZZANINES AND MECHANICAL ROOM):
DOORWAY WIDTH REQUIRED MIN. 58 OCC @ 0.2 IN. PER OCC = 12 IN
DOORWAY WIDTH PROVIDED 34" (x 7 DOORS) = 238 IN

STORAGE AREA S-2 (INCLUDING MEZZANINE):
DOORWAY WIDTH REQUIRED MIN. 101 OCC @ 0.2 IN. PER OCC = 20 IN
DOORWAY WIDTH PROVIDED 34" (x 2 DOORS) = 68 IN

BUSINESS / OFFICE AREA B:
DOORWAY WIDTH REQUIRED MIN. 150 OCC @ 0.2 IN PER OCC = 30 IN
DOORWAY WIDTH PROVIDED 34" (x 2 DOORS) = 68 IN

(SECT. 1006) NUMBER OF EXITS AND EXIT ACCESS DOORWAYS

(TABLE 1006.2.1) MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (FT)
B AND **S** OCCUPANCIES, WITH SPRINKLER SYSTEM = 100 FT
MAXIMUM PROVIDED = 99FT

(TABLE 1006.2.1) SPACE WITH ONE EXIT
S OCCUPANCY (MOST RESTRICTIVE) MAXIMUM OCCUPANCY = 29
MAXIMUM PROVIDED = 8

(TABLE 1006.3.1) MINIMUM NUMBER OF EXITS PER STORY
REQUIRED FOR 1-500 OCCUPANTS = 2
PROVIDED = 17

(SECT. 1007) EXIT AND EXIT ACCESS DOORWAY CONFIGURATION
1007.1.1 EXCEPTION #2: WHERE A BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM, THE SEPARATION DISTANCE OF THE EXIT DOORS OR EXIT ACCESS DOORWAYS SHALL NOT BE LESS THAN ONE-THIRD OF THE LENGTH OF THE MAXIMUM OVERALL DIAGONAL DIMENSIONS OF THE AREA SERVED.

(SECT. 1016) EGRESS THROUGH INTERVENING SPACES
1016.2.2 EXCEPTION - MEANS OF EGRESS ARE PERMITTED THROUGH ADJOINING OR INTERVENING ROOMS OR SPACES WHEN THE ADJOINING OR INTERVENING ROOMS OR SPACES ARE THE SAME OR LESSER HAZARD OCCUPANCY GROUP.

(SECT. 1017) EXIT ACCESS TRAVEL DISTANCE
EXITS SHALL BE SO LOCATED ON EACH STORY THAT THE MAXIMUM LENGTH OF EXIT ACCESS TRAVEL, MEASURED FROM THE MOST REMOTE POINT WITHIN A STORY ALONG THE NATURAL AND UNOBSTRUCTED PATH OF EGRESS TRAVEL TO THE EXTERIOR EXIT DOOR AT THE LEVEL OF EXIT DISCHARGE SHALL NOT EXCEED THE DISTANCE GIVEN IN TABLE 1017.2.

(TABLE 1017.2) EXIT ACCESS TRAVEL DISTANCE (WITH SPRINKLER SYSTEM)

USE GROUP S-1 ALLOWABLE (MOST RESTRICTIVE): = 250 FT MAX
MAXIMUM PROVIDED: = 80 FT

(TABLE 1020.1) CORRIDORS FIRE-RESISTANCE RATING
OCCUPANCY B AND S, OCCUPANT LOAD > 30 WITH SPRINKLER SYSTEM = 0 HR

FIRE PREVENTION REGULATIONS - CMR 527

SECT. 4: OIL BURNING EQUIPMENT
(SECT. 4.03, 6b) UNENCLOSED TANKS: INSTALLATION INSIDE BUILDINGS
FLUID STORAGE FIRE RESISTANCE RATING: = 2 HR*

*(NOTE: THE AGGREGATED CAPACITY OF ANY UNENCLOSED TANKS, INSTALLED INSIDE A BUILDING SEPARATED FROM ANOTHER PORTION OF A BUILDING BY A FIRE SEPARATION, SHALL BE 1320 GALLONS. THE FIRE SEPARATION WALL SHALL CONSIST OF TWO-HOUR RATED FIRE RESISTIVE ASSEMBLIES WITH OPENING PROTECTION AND CONTINUITY IN CONFORMANCE).

INTERNATIONAL ENERGY CONSERVATION CODE 2021 (IECC)
225 CMR 23 WITH APPENDIX CC - ZONE 5

ENERGY CODE: WALL TYPE VALUES

TABLE C402.1.4 - IECC 2021

CMU VENEER ON CONC BACK-UP WALL

MATERIAL	DEPTH	U-VALUE
CMU VENEER	4.00"	2.27
CAVITY **	1.75"	0.833
CONT. RIGID INSULATION	3.00"	0.066
VAPOR RETARDER	N/A	8.33
CONC BACK-UP WALL *	8.00"	0.74
TOTAL U-VALUE PROVIDED		0.694

REQUIRED U-VALUE = 0.090 FOR A MASS WALL
C402.7.2.1.3 CLADDING SYSTEMS W/ QUALIFYING THERMAL BREAKS WITH A DERATING FACTOR OF 0.80
* BASED ON 1450.52 LB/FT3 DENSITY CONCRETE
** UTILIZING 0.50 EFFECTIVE EMITTANCE AS BASIS FOR VALUE

CMU VENEER ON METAL STUD BACK-UP WALL

MATERIAL	DEPTH	U-VALUE
CMU VENEER	4.00"	2.27
CAVITY	1.75"	0.833
CONT. RIGID INSULATION	3.00"	0.66
TOTAL OF VALUES	8.75"	0.060
VAPOR RETARDER	N/A	8.33
EXTERIOR SHEATHING	0.625"	1.78
MTL FRAMING	6.00"	0.13
* table C402.1.4.2 states an effective R-Value of 7.35 based on 16" o.c. framing		
VAPOR RETARDER	N/A	8.33
GYPSUM BOARD, PAINTED	0.625"	1.78
TOTAL OF VALUES	7.25"	0.103
TOTAL OF U-VALUE PROVIDED	8.75" + 7.25" = 16.00"	0.038

REQUIRED U-VALUE = 0.055 FOR METAL FRAMED
C402.7.2.1.3 CLADDING SYSTEMS W/ QUALIFYING THERMAL BREAKS WITH A DERATING FACTOR OF 0.80
** UTILIZING 0.50 EFFECTIVE EMITTANCE AS BASIS FOR VALUE

INSULATED METAL WALL PANEL ON METAL STUD BACK-UP WALL

MATERIAL	DEPTH	U-VALUE
INSULATED METAL WALL PANEL	4.00"	0.030
FURRING CHANNEL	0.875"	
MTL FRAMING	6.00"	0.13
* table C402.1.4.2 states an effective R-Value of 7.35 based on 16" o.c. framing		
GYPSUM BOARD, PAINTED	0.625"	1.78
TOTAL U-VALUE PROVIDED	11.5"	____

REQUIRED U-VALUE = 0.055 FOR METAL FRAMED
C402.7.2.1.3 CLADDING SYSTEMS W/ QUALIFYING THERMAL BREAKS WITH A DERATING FACTOR OF 0.80

INSULATED METAL WALL PANEL ON GIRTS

MATERIAL	DEPTH	U-VALUE
INSULATED METAL WALL PANEL	4.00"	0.030
TOTAL U-VALUE PROVIDED		0.030

REQUIRED U-VALUE = 0.050 FOR METAL BUILDING WALL
C402.7.2.1.3 CLADDING SYSTEMS W/ QUALIFYING THERMAL BREAKS WITH A DERATING FACTOR OF 0.80

ENERGY CODE: ROOF TYPE VALUES

TABLE C402.1.4 - IECC 2021

STANDING SEAM METAL ROOF W/ THERMAL BLOCKS & LINER SYSTEM

MATERIAL	DEPTH	U-VALUE
STANDING SEAM METAL ROOF PANEL	N / A	0.00
THERMAL BLOCKS (UPPER INSULATION LAYER)	4"	0.76
BATT INSULATION (STRUCTURE LAYER)	8"	0.040
FABRIC LINER SYSTEM	N/A	0.00
TOTAL U-VALUE PROVIDED	12"	0.026

REQUIRED U-VALUE = 0.035 FOR A METAL BUILDING

ENERGY CODE: FLOOR TYPE VALUES

TABLE C402.1.4 - IECC 2021

SLAB ON GRADE - UNHEATED

MATERIAL	DEPTH	U-VALUE
CONCRETE SLAB (MIN. DEPTH USED)	6.00"	N/A
20 MIL VAPOR RETARDER	N/A	N/A
CONT/ RIGID INSULATION	1.00"	5.00
F-FACTOR PROVIDED		0.46

REQUIRED F-FACTOR = 0.52

SLAB ON GRADE - HEATED

MATERIAL	DEPTH	U-VALUE
CONCRETE SLAB (MIN. DEPTH USED)	8.00"	N/A
20 MIL VAPOR RETARDER	N/A	N/A
CONT/ RIGID INSULATION	10.00"	10.00
F-FACTOR PROVIDED		0.55

REQUIRED F-FACTOR = 0.62

ENERGY CODE: FENESTRATION VALUES

TABLE C402.4 - IECC 2021

BUILDING ENVELOPE FENESTRATION - U-FACTORS

MATERIAL	SPECIFIED U-VALUE	MAX ALLOWED U-VALUE
FIXED FENESTRATION	0.16	0.30
OPERABLE FENESTRATION	0.18	0.32
ENTRANCE DOORS (PERSONNEL)	0.25	0.63

SKYLIGHTS	SPECIFIED VALUES	MAX ALLOWED VALUES
U-VALUE	0.40	0.50
SOLAR HEAT GAIN COEFFICIENT (SHGC)	0.40	0.40

0' 6" 1' 2'
SCALE: 1 1/2" = 1'-0"

0' 16' 32' 64'
SCALE: 1/32" = 1'-0"

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TOWN OF ACTON

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Key Plan:

Date: 11/01/2024
Draw By: DRD
Reviewed By: Checker
Approved By: Approver
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Drawing Title:

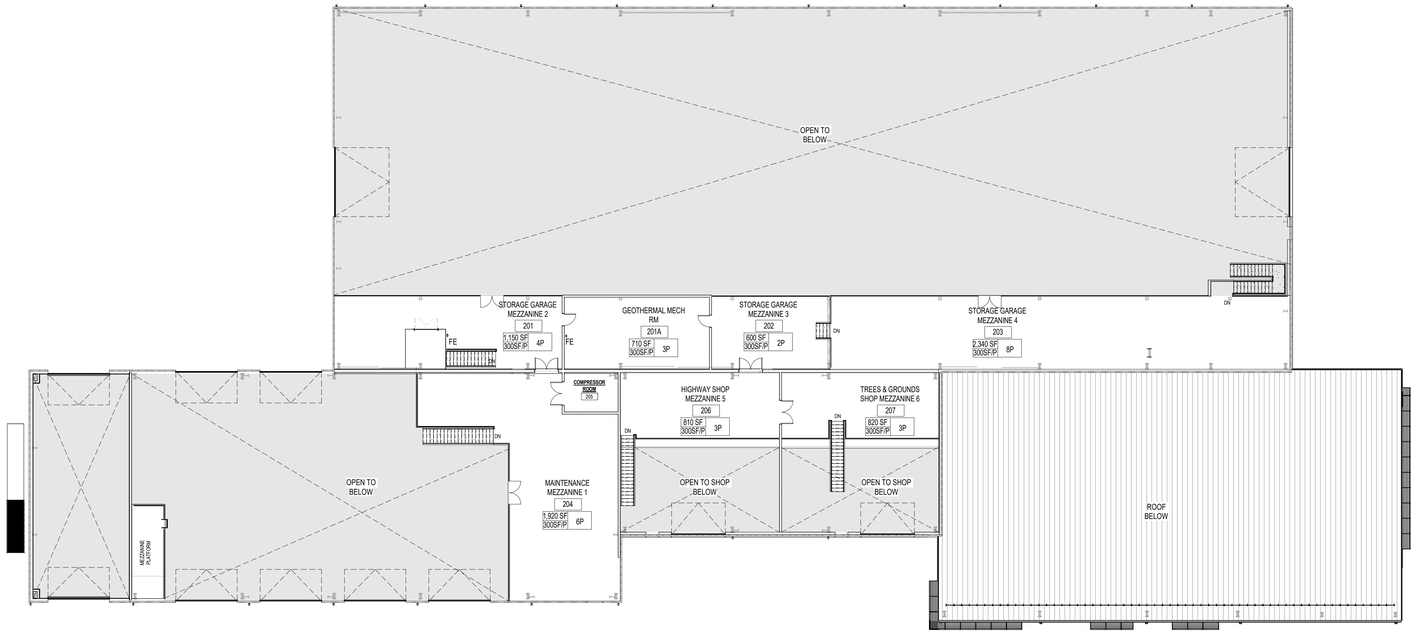
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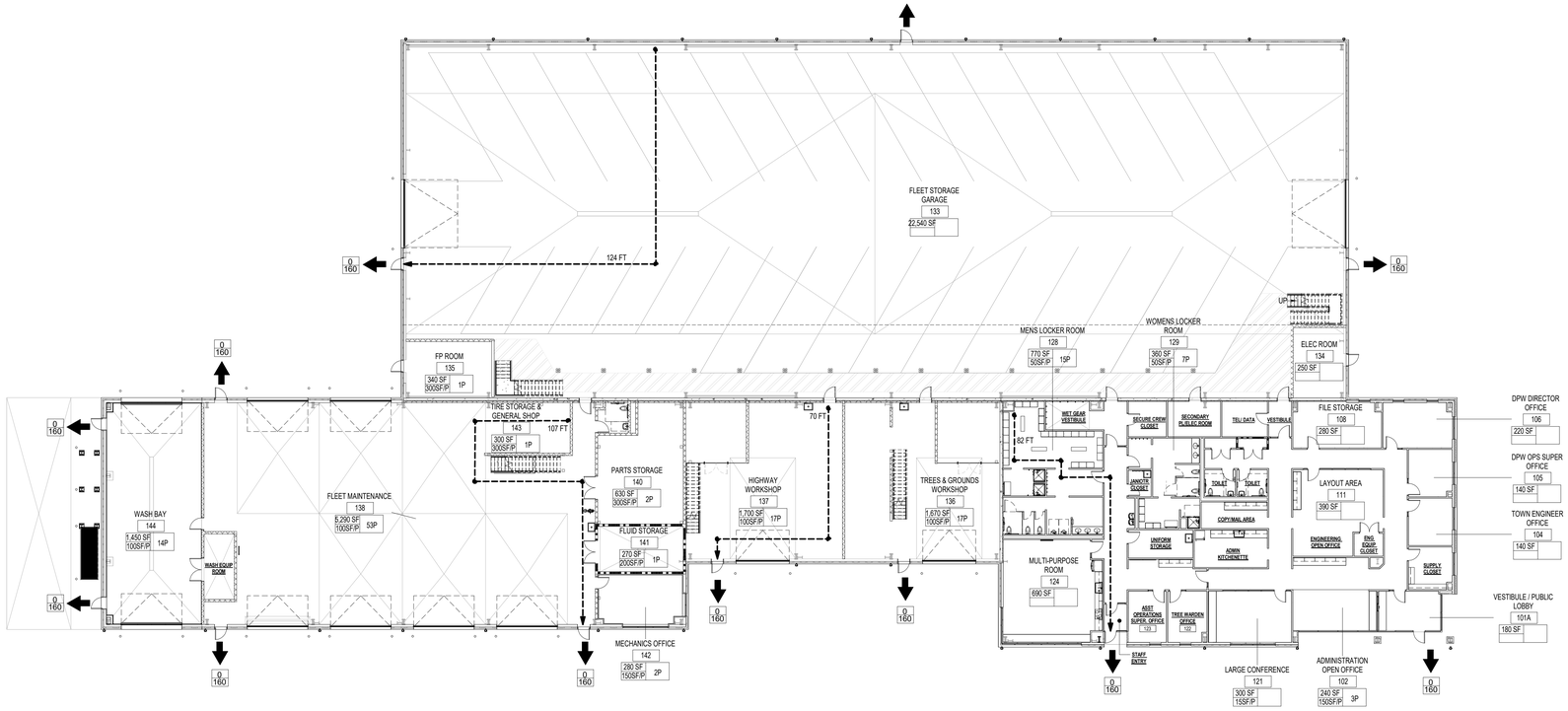
G101

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2 LIFE / SAFETY MEZZANINE PLAN
1/16" = 1'-0" 2/ A201



1 LIFE / SAFETY FLOOR PLAN
1/16" = 1'-0" 1/ A201

CODE PLAN LEGEND

EXIT CAPACITY
- XX / XX — ACTUAL EGRESS OF DOOR OR STAIR / MAXIMUM ALLOWABLE EGRESS CAPACITY OF DOOR OR STAIR

ROOM NAME
- 101 — ROOM NUMBER
- 150 / 50SF/P / 3P — MAXIMUM NUMBER OF ALLOWABLE OCCUPANTS; AREA IN NET SQUARE FEET (GROSS SQUARE FEET); OCCUPANCY LOAD FACTOR
- 115' — PATH OF MAXIMUM TRAVEL DISTANCE TO EXIT
- 15 — DIRECTION OF TRAVEL TO EXIT

FIRE EXTINGUISHERS:
- FE = FIRE EXTINGUISHER, BRACKET MOUNTED
- FEC = FIRE EXTINGUISHER, CABINET MOUNTED (SEMI-RECESSED)

SEPARATIONS ARE DESIGNATED AS FOLLOWS:
- 2 HOUR FIRE-RESISTANCE RATED FIRE BARRIER
- 1 HOUR FIRE-RESISTANCE RATED FIRE BARRIER
- SMOKE RESISTANT SEPARATION

CODE PLAN NOTES

NEW & EXISTING CONSTRUCTION

A. ALL SPACES, FACILITIES AND PROGRAMS REQUIRED BY CODE TO BE ACCESSIBLE TO PHYSICALLY DISABLED PERSONS SHALL BE ACCESSIBLE.

- WHERE A WORKSTATION IS PROVIDED, AN ACCESSIBLE WORKSTATION IS REQUIRED.
- WHERE A SINK IS PROVIDED, AN ACCESSIBLE SINK WITH PIPE PROTECTION IS REQUIRED.
- ALL LABS AND SHOPS SHALL HAVE AN ACCESSIBLE EYE AND BODY WASH.
- ALL ACCESSORIES SHALL MEET REACH RANGES FOR FRONT OR SIDE APPROACH.
- ALL ACCESSIBLE ROUTES THROUGH BUILDING SHALL PROVIDE A MINIMUM 32 INCHES CLEARANCE (DOORWAYS IN PARTICULAR).
- ALL ACCESSIBLE SPACES, FURNISHING FIXTURES AND EQUIPMENT, AND ALL OPERATIONAL AND ACCESSIBLE ROUTE CLEARANCES SHALL MEET REQUIREMENTS OF SECTION 504, REHABILITATION ACT 1973 INCLUDING UNIFORM FEDERAL ACCESSIBILITY STANDARDS (UFAS) AND 504 REGULATIONS. ICC/ANSI A117.1 - 2003, AND THE AMERICANS WITH DISABILITIES ACT, TITLE II, INCLUDING THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) AND ADA REGULATIONS.
- REFER TO A012 FOR MOUNTING HEIGHTS FOR ACCESSIBLE FIXTURES.

B. NEW AND EXISTING SMOKE PARTITIONS, INCLUDING STORAGE ROOMS OVER 100 SQUARE FEET, SHALL HAVE PENETRATIONS AND VOIDS FIRESTOPPED IN ACCORDANCE WITH DIVISION 07 SPECIFICATION SECTION "PENETRATION FIRESTOPPING". ALL HEAD-OF-WALL JOINTS AND FLOOR-TO-WALL JOINTS AT NEW AND EXISTING SMOKE RESISTANT PARTITIONS SHALL BE SEALED IN ACCORDANCE WITH DIVISION 07 SPECIFICATION SECTION "FIRESTOPPING".

C. NEW AND EXISTING FIRE-RESISTANCE RATED WALLS SHALL HAVE PENETRATIONS AND VOIDS FIRESTOPPED IN ACCORDANCE WITH DIVISION 07 SPECIFICATION SECTION "FIRESTOPPING". ALL HEAD-OF-WALL JOINTS AND FLOOR-TO-WALL JOINTS AT NEW AND EXISTING FIRE-RATED WALLS SHALL BE SEALED IN ACCORDANCE WITH DIVISION 07 SPECIFICATION SECTION "FIRESTOPPING".

D. ALL PENETRATIONS THROUGH FLOORS, INCLUDING FLOOR OF DUCTWORK ENCLOSURES, SHALL BE FIRESTOPPED IN ACCORDANCE WITH DIVISION 07 SECTION "FIRESTOPPING". PENETRATIONS THROUGH FLOORS OF RATED ROOMS OR FLOOR SYSTEMS SHALL BE FIRESTOPPED TO MEET RATING OF ROOM OR FLOOR SYSTEM.

FOR INTERIOR FINISHES

INTERIOR FINISHES SHALL BE PROVIDED AND CONFIRMED TO HAVE THE FOLLOWING CLASSIFICATION RATINGS :

WALLS AND CEILINGS (OTHER THAN TEXTILE)
BUSINESS:
- VERTICAL EXITS AND EXIT PASSAGEWAYS - CLASS A
- EXIT ACCESS CORRIDORS AND OTHER EXIT WAYS - CLASS B
- ROOMS AND ENCLOSED SPACES - CLASS C

ASSEMBLY OCCUPANCIES A-3:
- VERTICAL EXITS AND EXIT PASSAGEWAYS - CLASS A
- EXIT ACCESS CORRIDORS AND OTHER EXIT WAYS - CLASS A
- ROOMS AND ENCLOSED SPACES - CLASS C

FLOOR FINISH
- VERTICAL EXITS, EXIT PASSAGEWAYS, AND EXIT ACCESS CORRIDORS - CLASS II
- OTHER AREAS - DOC FF-1 (CPSC 16 CFR, PART 1630)

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

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14 FOREST ROAD, ACTON MA 01720

TOWN OF ACTON

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Scale: As indicated

Key Plan:

NORTH

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Draw By:	DRD
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W&S Project No.:	ENG24-1080
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Drawing Title:

LIFE SAFETY PLANS & LEGENDS

Sheet Number:

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FOREST ROAD

UPL 6

BIT BERM

BIT DRIVE

MAG

WG

8" AC WATER

2" POST

2" CS GAS 1970

PLAN 544 OF 1969

T=59.41'
L=118.60'
R=789.64'
Δ=8°36'20"

T=52.80'
L=105.45'
R=789.64'
Δ=7°39'05"

T=40.92'
L=81.78'
R=789.64'
Δ=5°55'57"

T=34.25'
L=68.33'
R=396.55'
Δ=9°49'23"

T=36.27'
L=72.35'
R=398.55'
Δ=10°24'04"

T=50.02'
L=100.00'
R=1522.64'
Δ=4°19'55"

T=43.85'
L=87.67'
R=1522.64'
Δ=3°17'52"

N46°56'23"E
5.06'

IP

145.00'
S46°56'23"W

255.63'
S46°56'23"W

30.0'

10.0'

WOODS

GRASS

UPL 18-9

UPL 18-10

ULT 18-10

UPL 18

UPL 10-2

ULT 10-3

UPL

GPL

RB

BENCHMARK: RRS BASE IN UTILITY POLE
EL=192.34'

6" DI WATER

UG GAS

MW

GG

ELEC METER

ELEC

FROX

BIT BERM

BIT PARKING LOT

GRASS

EOP

SHIPPING CONTAINERS

UPL

EQUIPMENT SHED

6" METAL POST

6" METAL POST

10" BOL

OVERHANGING AC UNIT

EOP

GRASS

CONC PAD

10" BOL BUILDING OVERHANG

SHED

CONC PAD

WSO

10" BOL

10" BOL

CONC PAD

10" BOL

10" BOL

10" BOL

10" BOL

FF=190.71'

SHED

DPW BUILDING

LSA

VGC

CONC PAD

8 FOREST ROAD
N/F
TOWN OF ACTON
BK. 11701 PG. 501
PROPERTY ID: G4-76

BIT PARKING LOT

CB
R=190.96'
I1=184.86' (12"CMP)

ABANDONED GATE/VALVE

BIT PARKING LOT

CB
R=190.88'
FILLED WITH WATER
I1=NOT VISIBLE (RECORD)
WATER LEVEL=188.08'

SMH
R=190.25'
I1=187.15' (6"DIP)

DMH W/ GAS TRAP
R=190.37'
NO PIPES OBSERVED
WATER LEVEL=187.57'

DMH W/ GAS TRAP
R=190.39'
I1=187.19' (6"DIP)

BOLLARDS

SHIPPING CONTAINER

BIT

FF=191.55'

SAND & SALT SHED

BUILDING OVERHANG

BOLLARDS

6" METAL POST

6" METAL POST

BUILDING OVERHANG

WEIR

METAL SHELTER

DPW STORAGE SHED

FF=195.03'

CRW

4" WF

CONC PAD

CONC BLOCKS

DMH
R=192.51'
I1=179.91" (24"RCP)
I2=179.91" (24"RCP)

BIT

1" PLASTIC WATER LINE

WF#A9

WF#A10

2"X1" REDUCER

GENERATOR/ CONC PAD

GM

WSO

WG

VALVE

SBGR

BUILDING OVERHANG

GRASS

SHIPPING CONTAINER

EOP

6"DIP

1,000 GALLON SEPTIC TANK

CB
R=188.79'
I1=184.79' (12"CMP)
I2=185.19' (12"CMP)

SMH
RIM=190.08'

SMH
RIM=190.15'

SMH
RIM=190.08'

SMH
R=190.26'
SEPTIC LEACHING PIT
NO PIPES OBSERVED

SEPTIC LEACHING MANHOLES

FF=189.71'

4" METAL POST

4" METAL POST

4" METAL POST

4" METAL POST

BUILDING OVERHANG

CONC PAD

SBGR

MW

CB
R=188.27'
I1=180.57" (12"CMP)
I2=180.57" (12"CMP)
I3=180.67" (12"CMP)

CB
R=188.42'
I1=180.72' (12"CMP)
I2=184.62' (10"PVC)

CB
R=188.01'
I1=184.71' (10"PVC)

CB
R=182.89'
I1=180.69' (12"RCP)

CB
R=187.92'
I1=180.22' (24"CMP)
I2=180.32' (12"PVC)
I3=RECORD-NOT OBSERVED

6" POST

6" POST

GRATE

CONCRETE RETAINING WALL

CONC RETWALL

CONC BLOCKS

DMH W/ GAS TRAP
R=182.38'
FILLED

CB
R=188.86'
I1=RECORD DRAIN NOT FOUND
I2=184.96' (12"DIP)

RECORD CB
NOT FOUND
LIKELY UNDER
MATERIAL PILES

TRANSFER STAITON

DMH W/ GAS TRAP
R=181.97'
FILLED

BUILDING OVERHANG

RETAINING WALL

UPL

DONATION BOXES

CONC RETWALL

CONC BLOCKS

CRW

6" WF

BIT

METAL BOXES

JB

SMH
R=190.31'
SEPTIC LEACHING PIT
NO PIPES OBSERVED

PILE

INV 10" PVC
EL=193.17'

T=28.23'
L=45.11'
R=30.00'
Δ=86°10'06"

CRW

UPL 18-10-2X-1

MATERIAL STORAGE

COVERED

OPEN

SHIPPING CONTAINER

SHIPPING CONTAINER

8" METAL POST

METAL POST

GRASS

CRW

PILE

INV 12" CMP
EL=184.49'

INV 12" RCP
EL=182.45'

INV 12" PVC
EL=189.58'

12"CMP

12"RCP

12"PVC

6" CHAIN LINK FENCE

PLAN OF LEASE PLAN

S73°20'17"E
237.85'

Project:
TOWN OF ACTON, MA
NEW PUBLIC WORKS FACILITY

14 FOREST ROAD
ACTON, MA 01720

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Drawn By: RSR
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Approved By:

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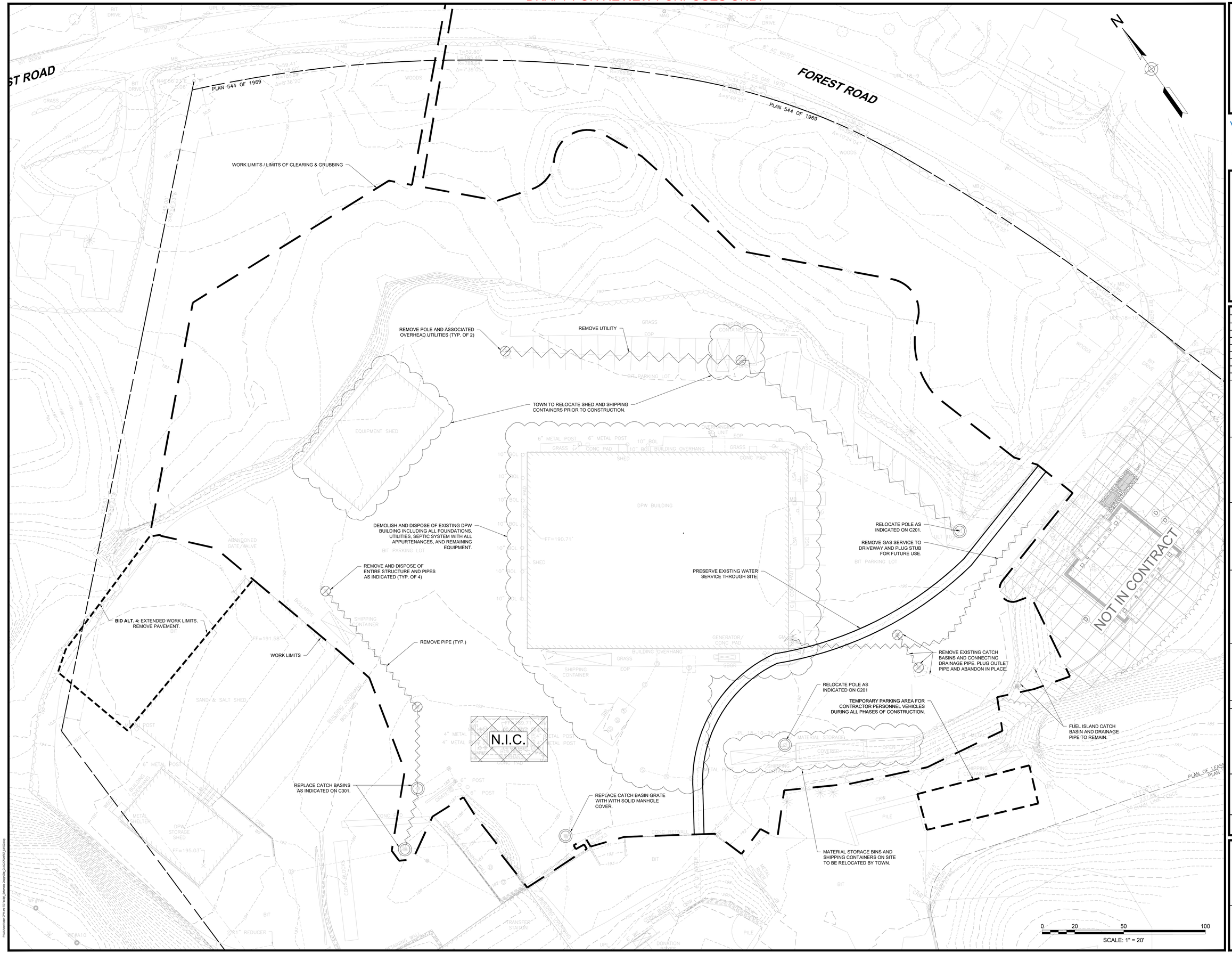
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EXISTING CONDITIONS PLAN

Sheet Number:
C100

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ACTON, MA 01720

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SITE DEMOLITION PLAN

Sheet Number:

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FOREST ROAD

PLAN 544 OF 1969

LIMITS OF CLEARING (TYP.)

EXTENSION OF WATER MAIN. 8" DUCTILE IRON PIPE.

HYDRANT ASSEMBLY WITH 6" DUCTILE IRON PIPE AND GATE VALVE

BID ALT. 3: PRECAST CONC. SOUND & LIGHT BARRIER WALL (MIN. 8' HIGH). DESIGN BY OTHERS.

BIT. BERM

~ BIT. CONC. PVMT. ~ (5" THICK)

FIRE WATER SERVICE 6" DUCTILE IRON PIPE

DOMESTIC WATER SERVICE 4" DUCTILE IRON PIPE

~ VEHICLE STORAGE GARAGE ~ *ROOFTOPS TO BE SOLAR-READY*

DIESEL GENERATOR

TRANSFORMER

OVERHEAD UTILITY FROM EXISTING POLE

UNDERGROUND UTILITY TO PROPOSED BUILDING

BID ALT. 1: VEHICLE WASH BAY

~ VEHICLE MAINTENANCE GARAGE ~ *ROOFTOPS TO BE SOLAR-READY*

6" CAST-IRON WASTEWATER PIPES

GSHP VERTICAL CLOSED-LOOP WELL FIELD (30 WELLS)

OIL/WATER SEPARATOR

~ WORKSHOPS & ADMIN BUILDING ~ *ROOFTOPS TO BE SOLAR-READY*

CONC. SIDEWALK (TYP.)

4" CAST-IRON VENT PIPING

SANITARY SEWER TO SEPTIC 4" CAST-IRON PIPE

4,000 GAL. SEPTIC TANK

DISTRIBUTION BOX

LEACHING TRENCH 60'L x 3'W x 2'D (TYP. OF 4)

WELL FIELD SYSTEM 6" HDPE PIPES

WELL FIELD SYSTEM PIPES

WELL FIELD VAULT

~ BIT. CONC. PVMT. ~ (5" THICK)

HOLDING TANK (10,000 GAL.)

PROPOSED UTILITY POLE

HYDRANT ASSEMBLY

BICYCLE PARKING AREA

STANDARD PARKING SPACES (TYP. OF 30)

ADA SPACES (TYP. OF 2)

4" CAST-IRON VENT PIPING

BIT. CURB (MATCH EXISTING)

INTERIOR LANDSCAPE ISLAND

EV CHARGING SPACES (TYP. OF 8)

PERIMETER ~ LANDSCAPE STRIPS ~

N.I.C.

VEHICLE BARRIER ARM GATE AND ACCESS KEY PAD

BID ALT. 4: CANOPY ADDITION TO EXISTING SALT SHED

LIGHT POLE WITH FULLY SHIELDED LED FIXTURE (TYP. OF 6). ALL FIXTURES SHALL COMPLY WITH ACTON'S OUTDOOR LIGHTING BYLAWS IN ACCORDANCE WITH THE TOWN'S DARK SKIES INITIATIVE.

~ BIT. CONC. PVMT. ~ (5" THICK)

COVERED MATERIAL STORAGE BINS (BY DPW - N.I.C.)

PROPOSED RELOCATION OF UTILITY POLE AND OVERHEAD UTILITIES.

NOT IN CONTRACT

PLAN OF LEASE PLAN

0 20 50 100

SCALE: 1" = 20'

Project:
TOWN OF ACTON, MA
NEW PUBLIC WORKS FACILITY

14 FOREST ROAD
ACTON, MA 01720

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Reviewed By:
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Drawing Title:
SITE LAYOUT & UTILITY PLAN

Sheet Number:
C201

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PIPE TABLE			
PIPE	SIZE & TYPE	LENGTH	SLOPE
P-1	12" CORRUGATED HDPE PIPE	71-LF	0.005
P-2	12" CORRUGATED HDPE PIPE	31-LF	0.005
P-3	12" CORRUGATED HDPE PIPE	13-LF	0.010
P-4	15" CORRUGATED HDPE PIPE	51-LF	0.005
P-5	12" CORRUGATED HDPE PIPE	18-LF	0.010
P-6	18" CORRUGATED HDPE PIPE	88-LF	0.005
P-7	12" CORRUGATED HDPE PIPE	7-LF	0.010
P-8	24" CORRUGATED HDPE PIPE	48-LF	0.005
P-9	12" CORRUGATED HDPE PIPE	4-LF	0.010
P-10	24" CORRUGATED HDPE PIPE	6-LF	0.005
P-11	12" CORRUGATED HDPE PIPE	31-LF	0.010
P-12	30" CORRUGATED HDPE PIPE	5-LF	0.005
P-13	12" CORRUGATED HDPE PIPE	7-LF	0.010

PIPE TABLE			
PIPE	SIZE & TYPE	LENGTH	SLOPE
P-14	12" CORRUGATED HDPE PIPE	9-LF	0.005
P-15	15" CORRUGATED HDPE PIPE	98-LF	0.005
P-16	12" CORRUGATED HDPE PIPE	7-LF	0.010
P-17	12" CORRUGATED HDPE PIPE	7-LF	0.010
P-18	18" CORRUGATED HDPE PIPE	87-LF	0.005
P-19	12" CORRUGATED HDPE PIPE	59-LF	0.005
P-20	18" CORRUGATED HDPE PIPE	74-LF	0.005
P-21	12" CORRUGATED HDPE PIPE	38-LF	0.010
P-22	24" CORRUGATED HDPE PIPE	16-LF	0.005
P-23	24" CORRUGATED HDPE PIPE	8-LF	0.010
P-24	24" CORRUGATED HDPE PIPE	15-LF	0.117
P-25	24" CORRUGATED HDPE PIPE	32-LF	0.007

FOREST ROAD

PLAN 544 OF 1969

PLAN 544 OF 1989

DETENTION BASIN

BLDG FFE = 193.0

BID ALT. 1

BID ALT. 4

INSTALL 12" HDPE ROOF DRAINS (TYP.)

DMH-101
R:193.11
I (I):188.12 (CB-100)
I (O):188.02 (DMH-103)

CB-100
R:191.99
I (O):188.49 (DMH-101)

DMH-103
R:193.11
I (I):187.86 (DMH-101)
I (I):189.03 (CB-102)
I (O):187.61 (DMH-105)

CB-102
R:192.70
I (O):189.20 (DMH-103)

DMH-105
R:192.61
I (I):187.33 (DMH-103)
I (I):188.54 (CB-104)
I (O):187.07 (DMH-107)

DMH-107
R:192.13
I (I):186.61 (DMH-105)
I (I):187.15 (CB-106)
I (I):187.85 (DMH-400)
I (O):186.01 (DMH-109)

CB-104
R:192.26
I (O):188.76 (DMH-105)

DMH-400
R:191.68
I (I):188.18 ()
I (O):188.08 (DMH-107)

DMH-500
R:192.44
I (I):188.74 ()
I (I):188.96 ()
I (O):188.64 ()

CB-108
R:190.00
I (O):186.50 (DMH-109)

CB-106
R:190.76
I (O):187.26 (DMH-107)

DMH-109
R:190.15
I (I):185.74 (DMH-107)
I (I):186.41 (CB-108)
I (O):185.31 (DMH-111)

DMH-111
R:190.24
I (I):185.26 (DMH-109)
I (I):186.01 (CB-110)
I (O):184.41 (DMH-112)

CB-110
R:189.86
I (O):186.36 (DMH-111)

DMH-112
R:190.23
I (I):184.36 (DMH-111)
I (O):181.19 ()
I (O):183.45 (DMH-300)

I (I):181.50

DMH-210
R:190.65
I (I):184.23 (DMH-209)
I (O):183.45 ()
I (O):181.19 ()

DMH-300
R:188.92
I (I):183.45 (DMH-112)
I (I):182.92 ()
I (O):182.92 (DMH-301)

DMH-301
R:189.79
I (I):182.79 (DMH-300)
I (O):182.69 (CB-302)

CB-302
R:188.27
I (I):180.67 (DMH-301)
I (I):180.67 ()
I (O):180.57 (CB-303)

CB-303
R:187.92
I (I):180.32 (CB-302)
I (O):180.22 ()

STORMTECH MC-4500 SUBSURFACE
INFILTRATION CHAMBERS (5x23)
BOT STONE:180.00
BOT CHAMBERS:181.00
TOP CHAMBERS:186.00
TOP STONE:187.00

CB-208
R:189.41
I (O):185.91 (DMH-209)

RESET MANHOLE RIM
TO GRADE WITH SOLID
MANHOLE COVER
R:190.15

DMH-209
R:190.51
I (I):184.83 (DMH-206)
I (I):185.49 (CB-208)
I (O):184.33 (DMH-210)

DMH-206
R:191.80
I (I):185.33 (DMH-205)
I (I):186.49 (CB-207)
I (O):185.23 (DMH-209)

DMH-205
R:191.37
I (I):186.02 (DMH-202)
I (I):187.45 (DMH-204)
I (I):187.45 (DMH-203)
I (O):185.77 (DMH-206)

DMH-203
R:191.04
I (O):187.54 (DMH-205)

CB-207
R:190.33
I (O):186.81 (DMH-206)

CB-200
R:190.38
I (O):186.88 (DMH-202)

DMH-202
R:190.71
I (I):186.76 (CB-201)
I (I):186.79 (CB-200)
I (O):186.51 (DMH-205)

CB-201
R:190.32
I (O):186.82 (DMH-202)

DMH-204
R:191.04
I (O):187.54 (DMH-205)

H.P

NOT IN CONTRACT

N

0 20 50 100

SCALE: 1" = 20'

Project:
TOWN OF ACTON, MA
NEW PUBLIC WORKS FACILITY

14 FOREST ROAD
ACTON, MA 01720

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Consultants:

Revisions:

No.	Date	Description

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Seal:

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W&S Project No.: ENG24-1080
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Drawing Title:
GRADING & DRAINAGE PLAN

Sheet Number:
C301

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DRAFT FOR REVIEW PURPOSES ONLY

1.0 - GENERAL

1.01 THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ALL OTHER CONTRACT DRAWINGS AND SPECIFICATIONS. REFER TO CIVIL, ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR LOCATION, DIMENSIONS, AND DETAILS OF OPENINGS, SLEEVES, EMBEDMENTS, INSERTS, PADS, CURBS, DEPRESSIONS, ANCHOR BOLTS, AND OTHER PROJECT REQUIREMENTS NOT SHOWN ON STRUCTURAL DRAWINGS.

1.02 THE CONTRACTOR IS RESPONSIBLE FOR CHECKING, COORDINATING AND VERIFYING ALL DIMENSIONS IN THE FIELD PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL IMMEDIATELY REPORT ANY DISCREPANCY TO THE ARCHITECT AND ENGINEER AS A REQUEST FOR INFORMATION (RFI) BEFORE PROCEEDING WITH WORK.

1.03 THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING IN THE FIELD THE EXISTENCE AND LOCATION OF OVERHEAD, BURIED AND/OR EMBEDDED UTILITIES, AND DETERMINING LOCATIONS OF ALL EMBEDDED MECHANICAL, ELECTRICAL AND PLUMBING SYSTEMS AFFECTED BY THE WORK OF THIS CONTRACT.

1.04 ALL WORK IS TO CONFORM WITH THE FOLLOWING CODES AND STANDARDS:

(A) "780 CMR: MASSACHUSETTS AMENDMENTS MASSACHUSETTS STATE BUILDING CODE" - 10TH EDITION (MSBC)
(B) INTERNATIONAL BUILDING CODE, (IBC 2021)
(C) "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" - AMERICAN CONCRETE INSTITUTE (ACI 318)
(D) "MANUAL OF STEEL CONSTRUCTION" - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC 360)
(E) "STRUCTURAL WELDING CODE - STEEL" - AMERICAN WELDING SOCIETY (AWS D1.1)
(F) "SEISMIC PROVISION FOR STRUCTURAL STEEL BUILDINGS" -AMERICAN INSTITUTE OF STEEL CONSTRUCTION, (AISC)
(G) "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES" - AMERICAN SOCIETY OF CIVIL ENGINEERS, (ASCE 7-10)

FOR ADDITIONAL CODES AND STANDARDS REFER TO SPECIFICATIONS.

1.05 THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF UNFORESEEN CONDITIONS THAT MAY BE UNCOVERED DURING DEMOLITION AND CONSTRUCTION AS A REQUEST FOR INFORMATION (RFI) BEFORE PROCEEDING WITH WORK.

1.06 PERMANENT STRUCTURAL ELEMENTS TO BE DESIGNED IN ACCORDANCE WITH PERFORMANCE SPECIFICATIONS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

(A) PRE-ENGINEERED METAL BUILDING
(B) MISC. ARCH COMPONENT SEISMIC SUPPORTS
(C) MISC. MECHANICAL AND ELECTRICAL COMPONENT AND SYSTEM SEISMIC SUPPORTS
(D) LIGHT GAUGE COLD FORMED STEEL FRAMING

FOR PERFORMANCE DESIGN REQUIREMENTS OF ELEMENTS LISTED ABOVE, REFER TO ADDITIONAL NOTES ON THESE SHEETS AND IN THE TECHNICAL SPECIFICATIONS. ALL DESIGN SUBMITTAL DRAWINGS AND CALCULATIONS SHALL BE CERTIFIED, SIGNED AND SEALED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE OF MASSACHUSETTS.

1.07 STRUCTURAL REQUIREMENTS TO ACCOMMODATE FIXED EQUIPMENT, INCLUDING BUT NOT LIMITED TO ROOF TOP UNITS ARE INCIDENTAL TO THE REQUIREMENTS OF A SPECIFIC EQUIPMENT MANUFACTURER. ALL WORK SHALL CONFORM TO APPROVED EQUIPMENT MANUFACTURER'S SHOP DRAWINGS AND INSTALLATION INSTRUCTIONS. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL ANY REQUIRED MODIFICATIONS TO ACCOMMODATE APPROVED EQUIPMENT DRAWINGS. SUCH MODIFICATIONS SHALL BE MADE AT NO COST TO THE OWNER.

1.08 DETAILS AND NOTES SHOWN ON STRUCTURAL DRAWINGS SHALL BE APPLICABLE TO ALL PARTS OF THE STRUCTURAL WORK EXCEPT WHERE SPECIFICALLY REQUIRED OTHERWISE BY CONTRACT DOCUMENTS. CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE SHOWN FOR LIKE CONDITIONS AS DETERMINED BY THE ENGINEER.

1.09 IN ACCORDANCE WITH SPECIFICATION SECTION 01 45 23, TESTING AND INSPECTION OF STRUCTURAL WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE COSTS FOR TESTING AND INSPECTIONS WILL BE PAID BY THE CONTRACTOR. PROVIDE TEST RESULTS TO THE ENGINEER IN A TIMELY MANNER.

1.10 THE CONTRACTOR SHALL DESIGN AND PROVIDE ALL REQUIRED SHORING AND TEMPORARY BRACING TO RESIST FORCES ON THE STRUCTURE THROUGHOUT THE CONSTRUCTION PERIOD.

2.0 - FOUNDATIONS

2.01 THE SUBSURFACE CONDITIONS DESCRIBED IN THE DRAWINGS, SPECIFICATIONS, TEST BORINGS AND TEST PITS ARE INCLUDED ONLY TO ASSIST THE CONTRACTOR DURING BIDDING AND SUBSEQUENT CONSTRUCTION AND REPRESENT CONDITIONS ONLY AT THESE SPECIFIC LOCATIONS AT THE TIME THEY ARE MADE.

2.02 THE CONTRACTOR SHALL DESIGN AND PROVIDE ALL TEMPORARY EARTH SUPPORT, SHORING AND BRACING REQUIRED TO PERFORM THE WORK IN ACCORDANCE WITH OSHA, STATE AND LOCAL REQUIREMENTS.

2.03 THE CONTRACTOR SHALL DESIGN AND PROVIDE SHEETING, SHORING, BRACING, AND/OR UNDERPINNING IN ORDER TO PROTECT EXISTING UTILITIES FROM EXCESSIVE MOVEMENTS DURING THE CONSTRUCTION PERIOD, IN ACCORDANCE WITH OSHA, STATE & LOCAL REQUIREMENTS.

2.04 THE CONTRACTOR SHALL CARRY OUT CONTINUOUS CONTROL OF SURFACE AND SUBSURFACE WATER. DEWATER ANY AREAS REQUIRING EXCAVATION IN ADVANCE OF PERFORMING EXCAVATION. MAINTAIN GROUNDWATER LEVELS AT LEAST 2 FEET BELOW PLANNED SUBGRADES.

2.05 ALL SUBGRADES TO RECEIVE FILL MATERIALS, FOUNDATIONS, SLABS OR OTHER CONSTRUCTION SHALL BE FREE OF RUNNING OR STANDING WATER PRIOR TO PLACEMENT.

2.06 SPREAD FOOTINGS AND PIERS AS SHOWN ARE DESIGNED FOR ESTIMATED METAL BUILDING REACTIONS AND ARE APPROXIMATE IN SIZE. THESE ELEMENTS ARE SUBJECT TO CHANGE IN DIMENSION (IF REQUIRED) WITH THE APPROVED METAL BUILDING SUBMITTAL. ANY CHANGES SHALL COME AT NO ADDITIONAL COST TO THE OWNER.

2.07 FOUNDATIONS SHALL BE INSTALLED IN THE GEOMETRY SHOWN IN THE PLANS, ANY ROCK ENCOUNTERED DURING EXCAVATION SHALL BE REMOVED TO CLEAR THE REQUIRED FOUNDATION GEOMETRY.

2.08 SPREAD FOOTING BEARING SURFACES SHALL BE EXCAVATED BY EQUIPMENT WITH A SMOOTH, TOOTHLESS CUTTING EDGE.

2.09 REFER TO THE GEOTECHNICAL REPORT PREPARED BY WESTON & SAMPSON DATED 10/28/2025 FOR ADDITIONAL INFORMATION. THE MAXIMUM ALLOWABLE BEARING CAPACITY IS 5000 PSF.

3.0 - CAST IN PLACE CONCRETE

3.01 CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318) AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301).

3.02 CONCRETE SHALL BE CONTROLLED CONCRETE, PROPORTIONED, MIXED AND PLACED IN THE PRESENCE OF A REPRESENTATIVE OF AN APPROVED TESTING AGENCY.

3.03 UNLESS NOTED OTHERWISE, CONCRETE SHALL BE NORMAL WEIGHT AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH AS FOLLOWS:

(A) FOUNDATIONS: 4500 PSI
(B) INTERIOR SLABS-ON-GRADE, KNEEWALLS, CURBS, AND EQUIPMENT PADS: 4500 PSI
(C) SUSPENDED SLABS: 4000 PSI
(D) EXTERIOR SLABS AND WALKWAYS: 5000 PSI

3.04 ALL PERMANENTLY EXPOSED VERTICAL AND HORIZONTAL CONCRETE SURFACES SHALL BE TREATED OR SEALED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

3.05 CONCRETE WORK SHALL BE COORDINATED WITH ALL METAL BUILDINGS, ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL WORK, AND ALL EQUIPMENT. THE CONTRACTOR SHALL VERIFY INSTALLATION AND LOCATIONS OF ALL EMBEDDED ITEMS INCLUDING BUT NOT LIMITED TO INSERTS, ANCHOR BOLTS, DOWELS, BLOCKOUTS, SLEEVES, EMBEDDED PIPING, AND EMBEDDED CONDUIT PRIOR TO CONCRETE PLACEMENT.

3.06 FOR STRUCTURAL ELEMENTS, THE LOCATIONS AND MAXIMUM SPACING OF VERTICAL JOINTS SHALL BE AS FOLLOWS:

ELEMENT	JOINT TYPE	SPACING, FT.
FOUNDATION WALL	CONTRACTION	30
FOUNDATION WALL	CONSTRUCTION	60

3.07 FOR SLABS-ON-GRADE, LOCATE CONSTRUCTION OR CONTROL JOINTS ALONG COLUMN LINES OR AS SHOWN. PROVIDE JOINTS AT 20FT. MAX. SPACING. SUBMIT JOINT LOCATIONS AND DETAILS FOR APPROVAL.

3.08 SEALANT FOR CONTROL/CONTRACTION JOINTS AND SAW CUT JOINTS SHALL BE SIKADUR 51 MANUFACTURED BY SIKA OR AN APPROVED EQUAL.

3.09 CONCRETE EXPOSED TO WEATHER (FREEZE-THAW CONDITIONS) IN THE FINISHED PROJECT SHALL BE AIR ENTRAINED PER SPECIFICATIONS REQUIREMENTS.

3.10 A MINIMUM OF 72 HOURS SHALL ELAPSE BETWEEN ADJACENT CONCRETE PLACEMENTS.

3.11 CONCRETE SLABS SHALL BE PLACED SO THAT THE SLAB THICKNESS IS AT NO POINT LESS THAN THAT INDICATED ON THE DRAWINGS.

3.12 PROVIDE A 3/4" CHAMFER ON ALL VERTICAL AND HORIZONTAL CORNERS EXPOSED TO VIEW UNLESS NOTED OTHERWISE.

3.13 ALL CONCRETE SHALL BE WATER CURED UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.

3.14 NON-SHRINK, NON-METALLIC, GROUT SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 7,500 PSI (ASTM C842) AND A MINIMUM BOND STRENGTH OF 2,000 PSI AT 28-DAYS (ASTM C882). GROUT MAY BE EXTENDED WITH COARSE AGGREGATE PER THE MANUFACTURER'S RECOMMENDATIONS.

3.15 WHEN NEW CONCRETE IS CAST AGAINST EXISTING CONCRETE SURFACES, UNLESS NOTED OTHERWISE, THE EXISTING CONCRETE SHALL BE ROUGHENED TO 1/4" AMPLITUDE, THOROUGHLY CLEANED BY POWER WASHING OR OTHER MEANS, AND BE A SATURATED SURFACE DRY CONDITION IMMEDIATELY PRIOR TO PLACING CONCRETE.

4.0 - CAST IN PLACE CONCRETE REINFORCEMENT

4.01 REINFORCEMENT DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO "ACI DETAILING MANUAL" - SP-66, "CRSI MANUAL OF STANDARD PRACTICE".

4.02 STEEL REINFORCEMENT, UNLESS NOTED OTHERWISE, SHALL CONFORM TO THE FOLLOWING:

(A) BARS, TIES, AND STIRRUPS___ASTM A615 GRADE 60
(B) WELDED WIRE FABRIC___ASTM A185, FLAT SHEETS

4.03 REINFORCING STEEL SHALL BE UNCOATED AND DEFORMED.

4.04 MINIMUM CONCRETE PROTECTIVE COVERING FOR REINFORCEMENT, UNLESS REQUIRED FOR FIRE PROTECTION OR NOTED OTHERWISE, SHALL BE AS FOLLOWS:

(A) CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:____3"
(B) CONCRETE EXPOSED TO EARTH OR WEATHER:
  (1) NO. 6 THRU NO. 18 BARS____2"
  (2) NO. 5 BAR, W31 OR D31 WIRE AND SMALLER____2"
(C) SURFACES NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
  (1) SLABS, WALLS, JOISTS:
    (a) NO. 14 AND NO 18 BARS____2"
    (b) NO. 11 BARS AND SMALLER____2"
  (2) BEAMS, COLUMNS:
    (a) PRIMARY REINFORCEMENT____2-1/2"
    (b) TIES, STIRRUPS, SPIRALS____2"

4.05 REINFORCING STEEL SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS, CORNERS, AND INTERSECTIONS UNLESS OTHERWISE NOTED. REINFORCING SHALL BE LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS, UNLESS OTHERWISE NOTED.

4.06 FOR REINFORCING STEEL SPLICE LAP LENGTHS REFER TO THE TABLE PROVIDED UNLESS OTHERWISE INDICATED.

4.07 MECHANICAL SPLICES SHALL BE PERMITTED SUBJECT TO APPROVAL BY THE ENGINEER. MECHANICAL SPLICES SHALL DEVELOP AT LEAST 125 PERCENT OF THE SPECIFIED YIELD STRENGTH OF THE BAR. NO WELDED CONNECTIONS ARE PERMITTED.

4.08 WELDED WIRE FABRIC SHALL BE LAPPED (1) SQUARE PLUS (2) INCHES WHERE REQUIRED AND SHALL BE WIRED TOGETHER AT ALL LAPS. WWF SHALL BE SUPPORTED BY CHAIRS AND/OR CARRYING BARS PRIOR TO CONCRETE PLACEMENT.

4.09 REINFORCEMENT SHALL NOT BE TACK WELDED.

4.10 NOTIFY THE TESTING LAB AND ENGINEER A MINIMUM OF 48 HOURS PRIOR TO SCHEDULED CONCRETE PLACEMENT IN ORDER TO ACCOMMODATE INSPECTION OF REINFORCEMENT AND CONCRETE TESTING. NO CONCRETE SHALL BE PLACED WITHIN 48 HOURS OF SUCH NOTIFICATION.

4.11 WHERE REINFORCEMENT IS NOT SHOWN ON DRAWINGS, PROVIDE REINFORCEMENT IN ACCORDANCE WITH APPLICABLE DETAILS AS DETERMINED BY THE ARCHITECT AND ENGINEER. IN NO CASE SHALL REINFORCEMENT BE LESS THAN THE MINIMUM REINFORCEMENT PERMITTED BY THE CODES, NOR LESS THAN THE FOLLOWING:

(A) BEAM STIRRUPS: #3 @ 12"
(B) BEAM STIRRUP SUPPORTS: 1-#5 AT EACH STIRRUP BEND
(C) FACE REINFORCEMENT IN BEAMS OR PORTIONS OF BEAMS #4 @ 12" E.F.
(D) STRUCTURAL SLABS: 0.0020 X GROSS CONCRETE AREA IN EACH DIRECTION
(E) CONCRETE WALLS: 0.0025 X GROSS CONCRETE AREA IN EACH DIRECTION

4.12 WHERE REINFORCEMENT IS REQUIRED IN SECTION, REINFORCEMENT IS CONSIDERED TYPICAL WHEREVER THE SECTIONS APPLIES.

4.13 WHERE THERE IS CONFLICT BETWEEN LOCATIONS OF COLUMN VERTICAL BARS AND BEAM HORIZONTAL BARS, THE COLUMN BARS SHALL REMAIN IN THEIR DESIGNATED POSITIONS AND BEAM BAR LOCATIONS SHALL BE ADJUSTED.

4.14 DOWELS SHALL MATCH BAR SIZE, NUMBER AND SPACING, UNLESS NOTED OTHERWISE.

5.0 - MASONRY CONSTRUCTION

5.01 CLAY (BRICK) AND CONCRETE MASONRY (CMU) CONSTRUCTION SHALL CONFORM TO 'BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES' (TMS402 / 406 - 16).

5.02 MATERIALS STRENGTH SHALL BE AS FOLLOWS:

(A) CONCRETE MASONRY UNITS (CMU) SHALL CONFORM TO ASTM C-90 OF C-145 GRADE N-1.
(B) MORTAR SHALL CONFORM TO ASTM C-270, TYPE M OR S
(C) GROUT SHALL CONFORM TO ASTM C-476 FINE OR COARSE.

5.03 MASONRY SHALL HAVE f'm = 2,750 PSI, f'm IS THE COMPRESSIVE STRENGTH OF THE MASONRY AT 28 DAYS AS DETERMINED BY PRISM TESTS, (SEE SPECIFICATIONS SECTION 04 20 00)

5.04 PRIOR TO GROUTING CELLS, BARS AND CELLS MUST BE INSPECTED BY THE TESTING AGENCY.

5.05 THE DESIGN OF REINFORCED MASONRY CONSTRUCTIONS IS BASED ON ALLOWABLE STRESSES PREDICATED ON 'WITH INSPECTION' PROVISIONS, REQUIRING THAT QUALIFIED MASONRY INSPECTION TAKE PLACE ON A CONTINUOUS BASIS WHENEVER MASONRY IS BEING PLACED.

5.06 REINFORCED MASONRY WALLS SHALL HAVE BOND BEAMS AT THE TOP OF EACH WALL AND SHALL BE CONTINUOUS WITH ALL INTERSECTING BOND BEAMS.

5.07 BONDING METHODS, TIES, LINTELS AND ACCESSORIES SHALL BE APPROVED BY THE ARCHITECT AND ENGINEER. ANCHORS SHALL ONLY BE INSTALLED IN FULLY GROUTED CELLS OF CONCRETE MASONRY.

5.08 MASONRY OPENINGS FOR UTILITIES ARE TO BE CLOSED UP WITH NEW MASONRY WORK AROUND THE UTILITY AND PROPERLY FIRE STOPPED WITH MATERIAL SPECIFIED BY ARCHITECT'S DRAWINGS AND SPECIFICATIONS.

5.09 PROVIDE 1-#5 VERTICAL REINFORCING AT 32" O.C. AT ALL MASONRY WALLS UNLESS NOTED OTHERWISE. THIS REINFORCING SHALL BE CONTINUOUS FULL HEIGHT AND SPLICED 2'-0" ABOVE EACH FLOOR LEVEL.

5.10 PROVIDE W1.7 (9 GAUGE) LADDER TYPE WIRE JOINT REINFORCING AT 16 INCHES VERTICAL SPACING UNLESS NOTED OTHERWISE.

5.11 MASONRY BLOCK CELLS CONTAINING VERTICAL REINFORCING SHALL BE GROUTED SOLID. FILLING CELLS WITH MORTAR IS UNACCEPTABLE. THE COMPRESSIVE STRENGTH OF GROUT AT THE END OF 28 DAYS SHALL BE 3,000 PSI MINIMUM.

5.12 GROUT PLACEMENT SHALL FOLLOW LOW-LIFT GROUTING PROCEDURES. HIGH-LIFT GROUTING MAY BE USED UPON APPROVAL BY THE ENGINEER. SUBMIT HIGH LIFT GROUTING PROCEDURE TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO BEGINNING MASONRY CONSTRUCTION.

5.13 PROVIDE 2-#5 CONTINUOUS HORIZONTAL BARS IN THE TOP COURSE OF WALLS (BOND BEAM) AND AT 4' - 0" O.C. VERT.

5.14 PROVIDE CONTROL JOINTS WITH MAXIMUM SPACING OF THE LESSER OF A LENGTH TO HEIGHT RATIO OF 1.5:1 OR 25 FEET, U.N.O. ON THE STRUCTURAL DRAWINGS. CONTROL JOINTS MUST BE LOCATED TO AVOID INTERFERING WITH LINTEL BEARING. SUBMIT CONTROL JOINT LOCATIONS TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONCRETE CONSTRUCTION.

6.0 - STRUCTURAL STEEL

6.01 STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION SHALL CONFORM TO THE AISC "MANUAL OF STEEL CONSTRUCTION", "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS AND BRIDGES" (ANSI/AISC 360-10), AND "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" (ANSI/AISC 303-10).

6.02 STRUCTURAL STEEL SHALL BE NEW STEEL CONFORMING TO THE FOLLOWING:

(A) WIDE FLANGE SHAPES:_____ASTM A992, MINIMUM YIELD STRENGTH 50 KSI
(B) ANGLES, PLATES AND BRACES:_____ASTM A36, MINIMUM YIELD STRENGTH 36 KSI
(C) HOLLOW STRUCTURAL SECTIONS:_____ASTM A500 GRADE B., MINIMUM YIELD STRENGTH 46 KSI
(D) HEADED STUDS:_____ASTM A108 GRADE 1010 COLD-FINISHED CARBON STEEL
(E) ROOF STEEL JOISTS:_____ASTM A572 OR A529, MINIMUM YIELD STRENGTH 50 KSI

6.03 ALL WELDED CONNECTIONS SHALL BE MADE BY APPROVED CERTIFIED WELDERS AND SHALL CONFORM TO A.W.S. SPECIFICATIONS AMENDED TO DATE. ELECTRODES SHALL BE E70XX.

6.04 BOLTS SHALL CONFORM TO ASTM A325 AND BE INSTALLED SNUG-TIGHT UNLESS NOTED OTHERWISE

6.05 STRUCTURAL STEEL FRAMING SHALL BE WITHIN TOLERANCE BEFORE CONNECTIONS ARE FINALLY BOLTED OR WELDED.

6.06 FIELD CUTTING OF STRUCTURAL STEEL OR ANY FIELD MODIFICATIONS OF STRUCTURAL STEEL SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL BY THE ENGINEER FOR EACH SPECIFIC USE.

6.07 STRUCTURAL STEEL SHAPES AND PLATES EXPOSED TO WEATHER AND AT CANOPIES SHALL BE HOT-DIPPED GALVANIZED PER ASTM A123 U.N.O. FASTENERS SHALL BE HOT-DIPPED GALVANIZED PER ASTM A153 U.N.O. HOT-DIPPED GALVANIZING SHALL ALSO CONFORM TO ASTM A385. THE GALVANIZER SHALL SUBMIT A CERTIFICATE OF CONFORMANCE FOR RECORD.

6.08 PROVIDE FIELD TOUCH-UP AND REPAIR OF GALVANIZING AS REQUIRED PER ASTM A780 USING AN INORGANIC ZINC-RICH PRIMER.

6.09 WHEN DISSIMILAR METALS ARE IN CONTACT (E.G. STAINLESS STEEL IN CONTACT WITH GALVANIZED STEEL), COAT SURFACE WITH EPOXY OR PROVIDE OTHER APPROVED MEANS TO PROVIDE A BARRIER.

6.10 WELDS SHALL BE 1/4" FILLET WELDS MINIMUM UNLESS NOTED OTHERWISE ON THE DRAWINGS.

6.11 PROVIDE TEMPORARY ERECTION BRACING AND SUPPORTS TO HOLD STRUCTURAL STEEL FRAMING SECURELY IN POSITION. SUCH TEMPORARY BRACING AND SUPPORTS SHALL NOT BE REMOVED UNTIL PERMANENT BRACING HAS BEEN INSTALLED.

6.12 SUBMIT SHOP DRAWINGS AND PRODUCT DATA FOR APPROVAL PRIOR TO FABRICATION.

7.0 - PRE-ENGINEERED METAL BUILDING

7.01 THE PRE-ENGINEERED METAL BUILDING STRUCTURAL SYSTEMS SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL PRIMARY, SECONDARY, AND SUPPLEMENTAL FRAMING.

7.02 FOR FRAMED OPENINGS AND OTHER INFORMATION NOT SHOWN ON STRUCTURAL DRAWINGS, REFER TO ARCHITECTURAL, EQUIPMENT, PLUMBING, MECHANICAL, AND ELECTRICAL DRAWINGS.

7.03 FOR ROOF-SUSPENDED AND WALL HUNG HVAC UNITS AND OTHER SUSPENDED MECHANICAL EQUIPMENT, REFER TO MECHANICAL AND EQUIPMENT DRAWINGS.

7.04 THE METAL BUILDING SYSTEMS SHALL INCLUDE ROOF CURBS, SUPPLEMENTAL FRAMING AND/OR SPECIAL PURLIN AND GIRT DESIGNS TO ACCOMMODATE LOCATIONS, DETAILS, AND CONCENTRATED DEAD LOADS OF ALL ROOF-TOP, ROOF-SUSPENDED, LIGHTING AND WALL HUNG EQUIPMENT AND SYSTEMS. THE CONTRACTOR SHALL COORDINATE ALL EQUIPMENT LOCATIONS, ATTACHMENT REQUIREMENTS, AND ACTUAL WEIGHTS WITH THE METAL BUILDING MANUFACTURER. THE CONTRACTOR (OR THE INSTALLING SUBCONTRACTOR) SHALL PROVIDE ALL HANGERS AND SUPPORTS FOR EQUIPMENT AND SYSTEMS INSTALLATION. HANGERS AND SUPPORTS SHALL COMPLY WITH THE PRE-ENGINEERED METAL BUILDING MANUFACTURERS RECOMMENDATIONS AND SUGGESTED DETAILS. IF THE ROOF PURLINS CANNOT SUPPORT THE WEIGHT OF THE BUILDING SYSTEMS AND EQUIPMENT SHOWN IN THESE CONTRACT DOCUMENTS, THEN THE METAL BUILDING MANUFACTURER SHALL PROVIDE SUPPLEMENTAL FRAMING TO SUPPORT THE REQUIRED BUILDING SYSTEMS AND EQUIPMENT LOADS AT NO ADDITIONAL COST TO THE OWNER.

7.05 THE PRE-ENGINEERED METAL BUILDING SHALL BE ERECTED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S ERECTION DRAWINGS AND INSTALLATION INSTRUCTIONS .

7.06 THE PRE-ENGINEERED METAL BUILDING MANUFACTURER, PRIOR TO SUBMITTING FOUNDATION REINFORCING SHOP DRAWINGS, SHALL SUBMIT ANCHOR BOLT PLANS, COLUMN BASE PLATE DETAILS, AND FOUNDATION REACTIONS TO THE ENGINEER FOR APPROVAL. FOUNDATIONS FOR THE PRE-ENGINEERED METAL BUILDING SHALL NOT BE CONSTRUCTED UNTIL THE ANCHOR BOLT PLANS, COLUMN BASE PLATE DETAILS, AND FOUNDATION REACTIONS SHOP DRAWINGS HAVE BEEN APPROVED BY THE ENGINEER.

7.07 THE CONTRACTOR SHALL FURNISH ALL ANCHOR BOLTS FOR THE PRE-ENGINEERED METAL BUILDING. THE ANCHOR BOLT LAYOUT, QUANTITY, SIZE, AND PROJECTION SHALL BE IN ACCORDANCE WITH THE PRE-ENGINEERED METAL BUILDING MANUFACTURER'S APPROVED ANCHOR BOLT PLANS. THE ANCHOR BOLT DETAILS AND EMBEDMENT LENGTH SHALL BE IN ACCORDANCE WITH THE STRUCTURAL DRAWINGS.

7.08 ALL WORK SHALL CONFORM WITH THE APPROVED SHOP DRAWINGS. NO MODIFICATIONS TO THE PRE-ENGINEERED METAL BUILDING SHALL BE MADE WITHOUT AUTHORIZATION BY THE PRE-ENGINEERED METAL BUILDING MANUFACTURER AND APPROVAL OF THE ARCHITECT AND ENGINEER.

7.09 THE PRE-ENGINEERED METAL BUILDING FOUNDATIONS HAVE BEEN DESIGNED AND DETAILED TO ACCOMMODATE THE TYPICAL REQUIREMENTS OF A PRE-ENGINEERED METAL BUILDING. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL ANY REQUIRED MODIFICATIONS TO ACCOMMODATE ANY SPECIFIC REQUIREMENTS OF THE APPROVED PRE-ENGINEERED METAL BUILDING MANUFACTURER. THE COSTS OF SUCH MODIFICATION SHALL BE BORNE BY THE CONTRACTOR.

7.10 ALL PRIMARY, SECONDARY, AND SUPPLEMENTAL FRAMING EXPOSED TO THE WEATHER OR CORROSIVE CONDITIONS (WITHIN LIMITS OF THE WASH BAY AND CANOPIES REGARDLESS OF EXPOSURE) SHALL BE HOT-DIPPED GALVANIZED. THIS INCLUDES BUT IS NOT LIMITED TO SECONDARY FRAMING FOR OVERHEAD DOORS, PERSONNEL DOORS, WINDOWS, AND TRANSLUCENT PANELS AND ALL FASTENERS. ALL OTHER STEEL FRAMING SHALL BE SHOP PRIMED GRAY.

7.11 PROTECT PRE-ENGINEERED METAL BUILDING COMPONENTS FROM WEATHER. REPAIR DAMAGED COATINGS AND AREAS OF RUST.

7.12 METAL BUILDING DESIGN DRIFT LIMITS FOR FRAMING SUPPORTING MEZZANINES SHALL BE LIMITED TO H/200 FOR A 10 YEAR WIND.

7.13 BUILDING DEFLECTION LIMITS SHALL CONFORM TO THE REQUIREMENTS LISTED IN THE MASSACHUSETTS STATE BUILDING CODE, AND THE TABLE ON THIS SHEET, WHICHEVER IS MORE STRINGENT.

7.14 THE METAL BUILDING DESIGNER SHALL PROVIDE SUPPLEMENTAL FRAMING TO BRACE PARTITION WALLS. BRACING SHALL BE PROVIDED AT UNDERSIDE OF THE ROOF LEVEL. ANCHORAGE SHALL PROVIDE OUT-OF-PLANE LATERAL SUPPORT FOR INTERIOR PARTITIONS PER THE MINIMUM SEISMIC REQUIREMENTS OF ASCE 7 OR A LATERAL LOAD OF 5 PSF ON THE TRIBUTARY AREA OF THE ANCHOR, WHICHEVER IS GREATER. MAXIMUM ANCHOR SPACING IS 4'-0". BRACING DETAILS SHALL BE SUBMITTED FOR APPROVAL AND COORDINATION.

8.0 - POST INSTALLED CONCRETE ANCHORS AND REINFORCING DOWELS

8.01 ADHESIVE ANCHORS AND REINFORCING DOWELS SHALL BE HILTI HIT-HY-200 ADHESIVE ANCHORING SYSTEM OR APPROVED EQUAL.

8.02 EXPANSION ANCHORS SHALL BE HILTI KWIK BOLT TZ EXPANSION ANCHORS OR APPROVED EQUAL.

8.03 INSTALL ANCHORS IN STRICT CONFORMANCE WITH THE MANUFACTURER'S REQUIREMENTS.

8.04 HOLES SHALL BE THOROUGHLY CLEANED AND DRY PRIOR TO INSTALLING ANCHORS.

8.05 DO NOT DAMAGE EXISTING REINFORCING. LOCATE REINFORCING WITH PROFOMETER OR OTHER MEANS PRIOR TO DRILLING CONCRETE.

8.06 ANCHORS INSTALLED OVERHEAD SHALL BE PROOF TESTED BY THE MANUFACTURER'S FIELD ENGINEER OR OTHER APPROVED AGENCY. PROOF TEST A MINIMUM OF 25% OF THE ANCHORS OR (2) TOTAL, WHICHEVER IS GREATER.

8.07 POST INSTALLED ANCHORS SHALL ONLY BE USED WHERE SHOWN IN STRUCTURAL DRAWINGS.

9.0 - BUILDING DEFLECTION LIMITS

BUILDING DEFLECTION LIMITS			
CONSTRUCTION	LIVE	SNOW OR WIND (c)	DEAD+LIVE
ROOF MEMBER (d) SUPPORTING PLASTER CEILING SUPPORTING NON PLASTER CEILING NOT SUPPORTING CEILING	(a) L/360 L/240 L/180	(a) L/360 L/240 L/180	L/240 L/180 L/120
FLOOR MEMBERS	(b) L/360	-	L/240
EXTERIOR WALLS AND INTERIOR PARTITIONS WITH MASONRY VENEER ALL OTHER CASES	-	L/600 L/240	-

(a) TOTAL ROOF SNOW LOAD DEFLECTION SHALL NOT EXCEED 1 1/4".
(b) TOTAL FLOOR LIVE LOAD DEFLECTION SHALL NOT EXCEED 1".
(c) WIND DEFLECTIONS MAY BE BASED ON A 10-YEAR WIND.
(d) DEFLECTIONS OF MEMBERS SUPPORTING CRANES SHALL MEET DEFLECTION CRITERIA REQUIRED BY THE CRANE MANUFACTURER OR AS SPECIFIED IN THE ABOVE, WHICHEVER IS MORE STRINGENT.

10.0 - DESIGN LOADS:

10.01 GENERAL DESIGN REQUIREMENTS _____ (IBC 2021, SECTION 1604)
(A) RISK CATEGORY _____ IV (ASCE 7-16, TABLE 1.5-1)
(B) MUNICIPALITY _____ ACTON, MA (780 CMR, TABLE 1604.11)

10.02 DESIGN LOADS TO BE VERIFIED BY PRE-ENGINEERED METAL BUILDING DESIGNER.

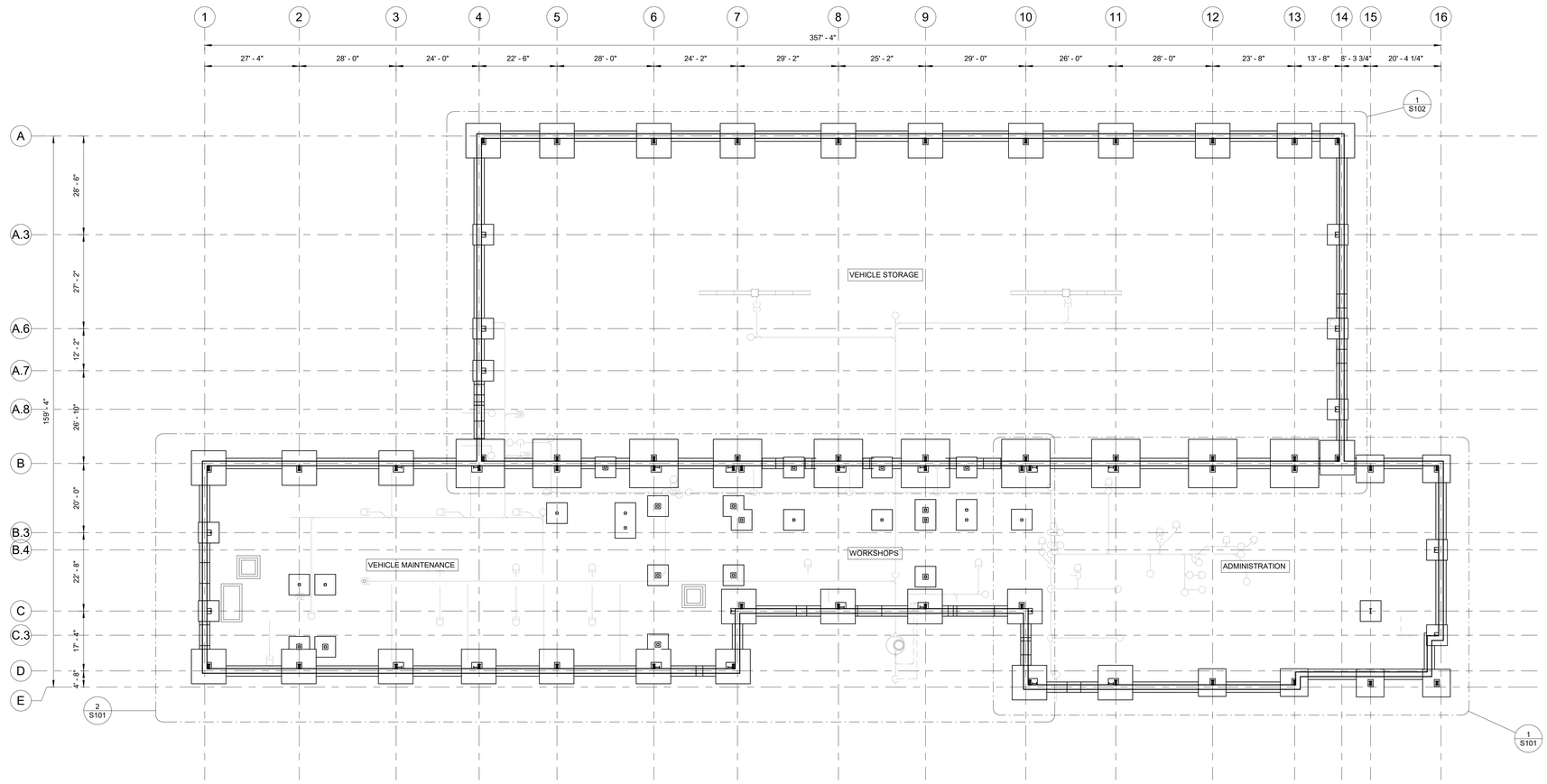
10.03 FLOOR DESIGN LOADING CRITERIA LOADS _____ (IBC 2021, SECTION 1606 & 1607)

OCCUPANCY / USE	SUPERIMPOSED DEAD LOAD [a]	LIVE LOADS	
		UNIFORM	CONCENTRATED
OFFICE + PARTITIONS	20 psf	80 psf	2000 lbs
LOBBIES, 1st FLOOR CORRIDORS, CONFERENCE	20 psf	100 psf	2000 lbs
SLABS-ON-GRADE IN VEHICLE STORAGE, VEHICLE MAINTENANCE, AND SHOPS	ACTUAL WEIGHT OF EQUIPMENT	250 psf OR HS-20 [g]	-
ROOF	16 psf [b]	20 psf [c]	-
MEZZANINE	20 psf	250 psf	3000 lbs
MECHANICAL ROOMS	20 psf	150 psf	-
STAIRS AND EXITS	5 psf	100 psf	300 lbs [d]
MAINTENANCE CATWALKS	5 psf	40 psf	300 lbs [d]
HANDRAIL AND GUARDRAIL SYSTEMS	-	50 lb/ft [e]	200 lbs [f]
INTERMEDIATE RAILS & PANEL FILLERS	-	50 lb/ft [e]	-

NOTE(S):

(a) SUPERIMPOSED DEAD LOADS ARE APPLIED IN ADD

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1 FOUNDATION PLAN

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

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Approved By:	NMS
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

OVERALL FOUNDATION PLAN

Sheet Number:

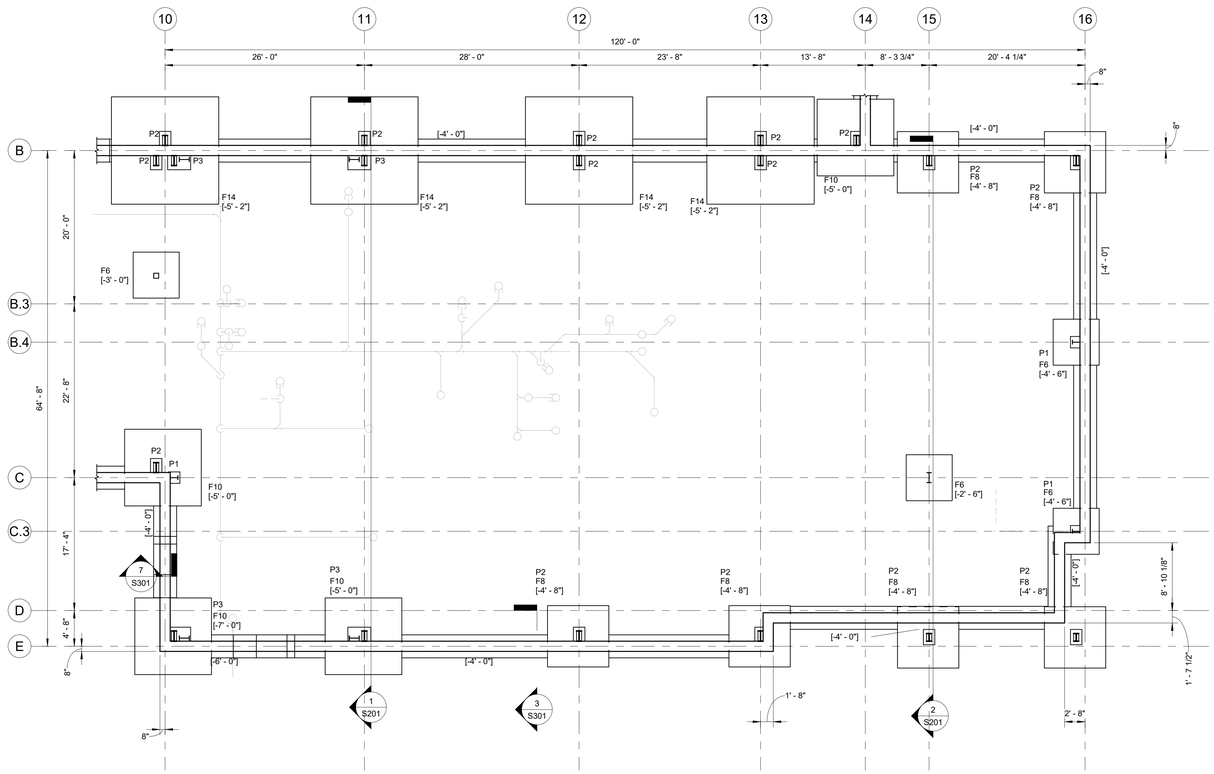
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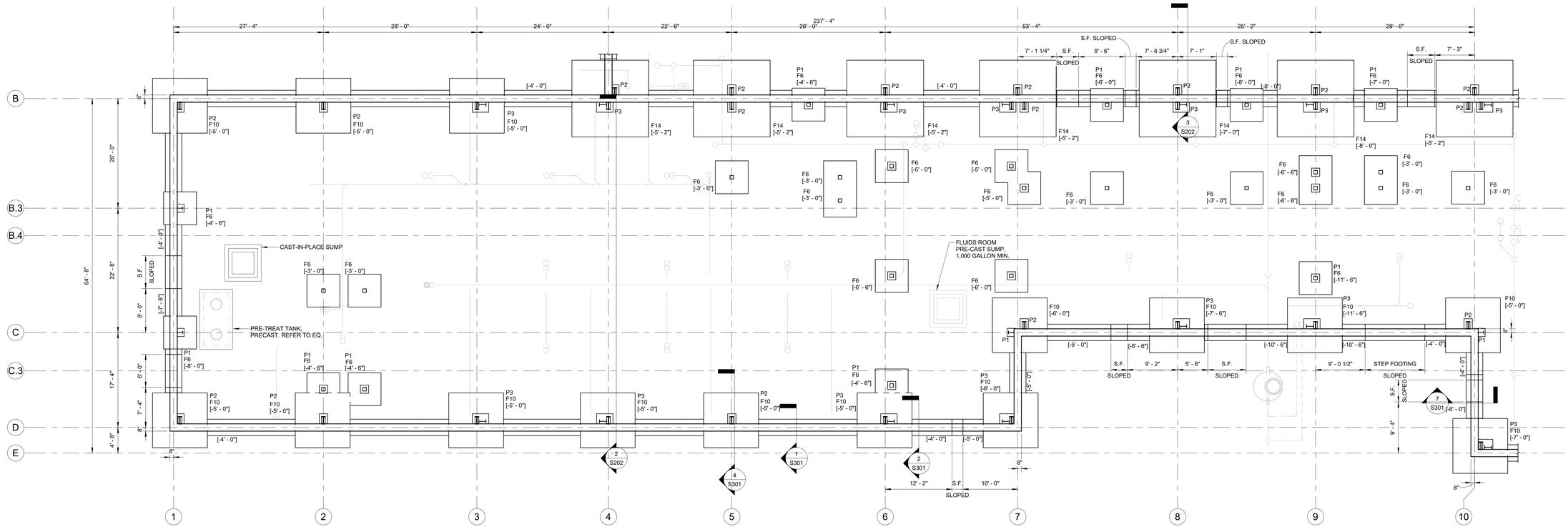
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NOTES:
1. COORDINATE ALL WORK (INCLUDING FLOOR ELEVATIONS, DIMENSIONS, FINISH DETAILS, PENETRATIONS, ETC.) WITH THE ARCHITECTURAL DRAWINGS.
2. [XX-XX"] INDICATES BOTTOM OF FOOTING ELEVATION. ALL EXTERIOR FOOTINGS SHALL BE LOCATED A MINIMUM OF 4'-0" BELOW FINISH GRADE.
3. F# - INDICATES NEW CONCRETE FOOTING TYPE. SEE "FOOTING SCHEDULE" ON SHEET S301.
4. P# - INDICATES NEW CONCRETE PIER TYPE. SEE "PIER SCHEDULE" ON SHEET S301.
5. A RELATIVE ELEVATION OF 0'-0" CORRELATES WITH A PROJECT ELEVATION OF 121.50'.
6. VEHICLE LIFT LOCATIONS SHALL BE COORDINATED WITH EQUIPMENT DRAWINGS AND APPROVED SHOP DRAWINGS.
7. TOP OF PIER ELEVATION [-1'-0"] UNLESS OTHERWISE NOTED.



1 ENLARGED ADMINISTRATION FOUNDATION PLAN
SCALE: 1/8" = 1'-0"



2 ENLARGED SHOPS & MAINTENANCE FOUNDATION PLAN
SCALE: 1/8" = 1'-0"

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Drawing Title:

ENLARGED ADMIN., SHOPS & MAINT. FOUNDATION PLANS

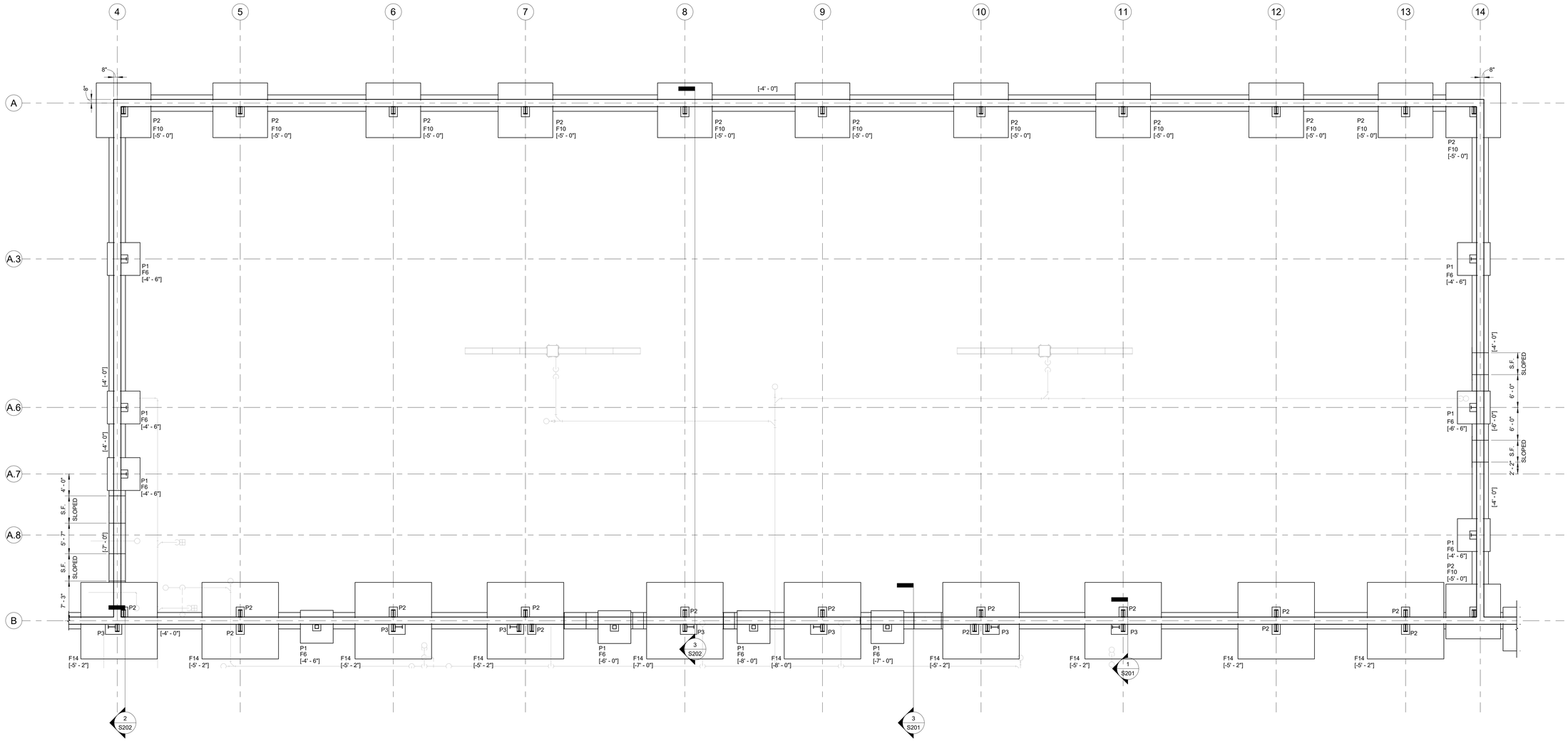
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1 ENLARGED VEHICLE STORAGE FOUNDATION PLAN

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

NOTES
1. COORDINATE ALL WORK (INCLUDING FLOOR ELEVATIONS, DIMENSIONS, FINISH DETAILS, PENETRATIONS, ETC.) WITH THE ARCHITECTURAL DRAWINGS.
2. [XX-XX"] INDICATES BOTTOM OF FOOTING ELEVATION. ALL EXTERIOR FOOTINGS SHALL BE LOCATED A MINIMUM OF 4'-0" BELOW FINISH GRADE.
3. F# - INDICATES NEW CONCRETE FOOTING TYPE. SEE "FOOTING SCHEDULE" ON SHEET S301.
4. P# - INDICATES NEW CONCRETE PIER TYPE. SEE "PIER SCHEDULE" ON SHEET S301.
5. A RELATIVE ELEVATION OF 0'-0" CORRELATES WITH A PROJECT ELEVATION OF 121.50'.
6. VEHICLE LIFT LOCATIONS SHALL BE COORDINATED WITH EQUIPMENT DRAWINGS AND APPROVED SHOP DRAWINGS.
7. TOP OF PIER ELEVATION [-1'-0"] UNLESS OTHERWISE NOTED.

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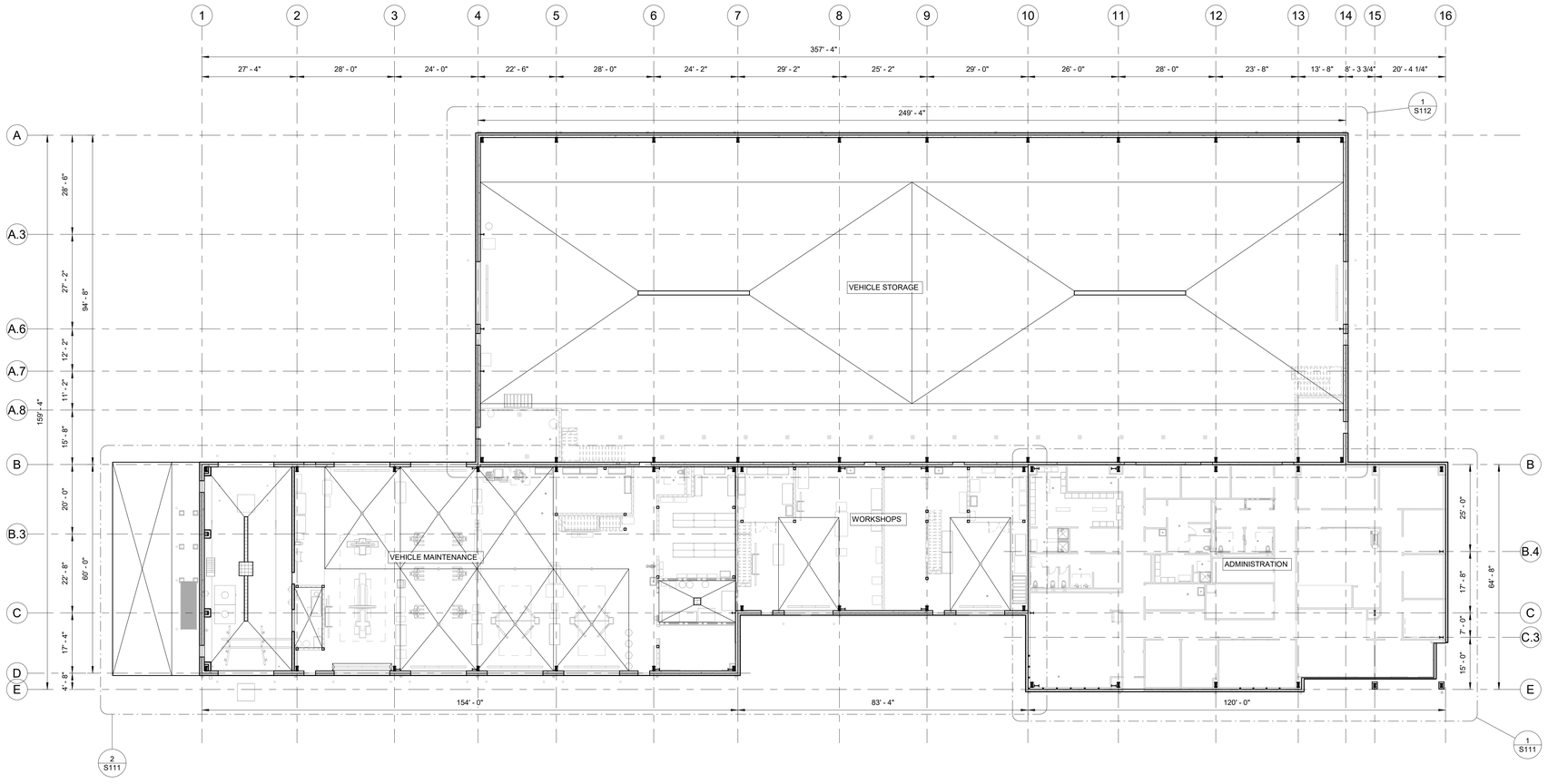
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1 SLAB PLAN

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

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OVERALL SLAB PLAN

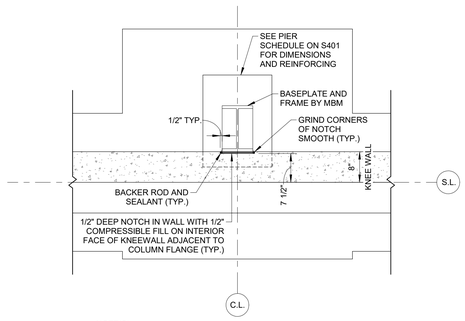
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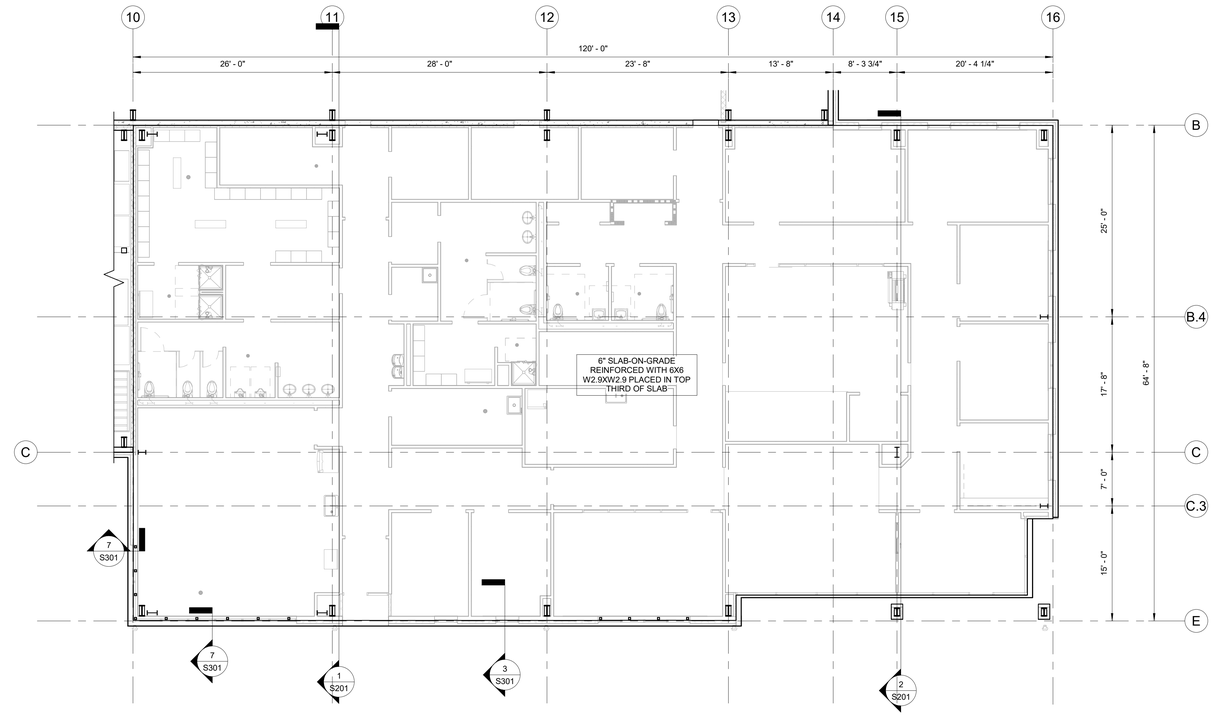
NOTE(S):

1. PROVIDE KNEEWALL NOTCH AND COMPRESSIBLE FILL AT ALL LOCATIONS WHERE THE COLUMN FLANGE IS DIRECTLY ADJACENT TO THE KNEEWALL.
2. PROVIDE UNIFORM NOTCH WIDTH ALONG THE SAME WALL IN THE SAME SPACE.

3 KNEEWALL AT COLUMN

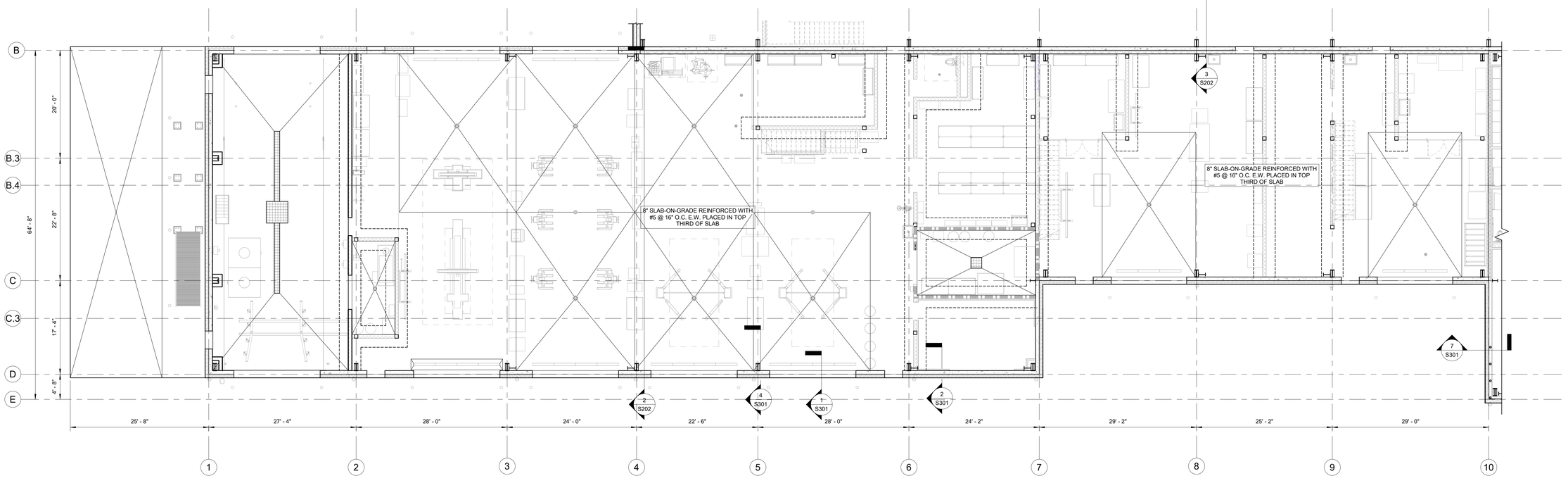
SCALE: 3/4" = 1'-0"

NOTES:
1. COORDINATE ALL WORK WITH (INCLUDING, BUT NOT LIMITED TO, FLOOR ELEVATIONS, DIMENSIONS, FINISH DETAILS, PENETRATIONS, ETC.) WITH ARCHITECTURE, CIVIL/SITE, HVAC, EQUIPMENT AND PLUMBING DRAWINGS.
2. F.D. INDICATES FLOOR DRAIN LOCATIONS, COORDINATE WITH PLUMBING.
3. H.P. DESIGNATES HIGH POINTS IN SLAB AT ELEVATION 0'-0". SLOPE SLAB FROM H.P. TO DRAINS. MAXIMUM SLOPE TO DRAIN IN VEHICLE MAINTENANCE AND SHOP BAYS SHALL BE 1/8" PER FOOT.
4. A RELATIVE ELEVATION OF [0'-0"] CORRELATES WITH A PROJECT ELEVATION OF 121.50'
5. COORDINATE MASONRY WALL LOCATIONS AND WALL OPENINGS (DOORS, VENTS, WINDOWS, ETC.) WITH ARCHITECTURE AND MEP DRAWINGS.
6. LOCATIONS OF CONSTRUCTION JOINTS AND SAW JOINTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REFER TO GENERAL NOTES FOR SPACING REQUIREMENTS. SUBMIT JOINT LOCATIONS TO THE ENGINEER FOR APPROVAL. REFER TO S002 FOR TYPICAL DETAILS.
7. COORDINATE ALL NON-STRUCTURAL WALLS WITH ARCHITECTURE FOR WALL TYPES AND LOCATIONS.
8. L-# INDICATES CONCRETE MASONRY UNITS (CMU) LINTEL TYPE. REFER TO CMU LINTEL SCHEDULE ON S003 FOR LINTEL INFORMATION. STEEL LINTELS SHALL NOT BE USED IN INTERIOR CONCRETE MASONRY WALLS UNLESS OTHERWISE NOTED OTHERWISE ON THE PLANS.
9. COORDINATE LOCATIONS AND DIMENSIONS OF HAUNCHED SLAB WITH APPROVED SHOP DRAWINGS AND LIFT MANUFACTURER. HAUNCH SLAB TO 12" DEPTH. PROVIDE #4 @ 6" BOTH WAYS AT BOTTOM OF SLAB IN THESE LOCATIONS. SLAB REINFORCEMENT TO CONTINUE THROUGH THIS SECTION. HYDRAULIC LINE IS TO BE SET INTO SLAB. PROVIDE DEPRESSION IN SLAB FOR THIS LINE. COORDINATE WITH EQ. DWGS. AND APPROVED SHOP DRAWINGS



1 ENLARGED ADMINISRTATION SLAB PLAN

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



2 ENLARGED SHOPS & MAINTENANCE SLAB PLAN

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

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ENLARGED ADMIN., SHOPS & MAINT. SLAB PLAN

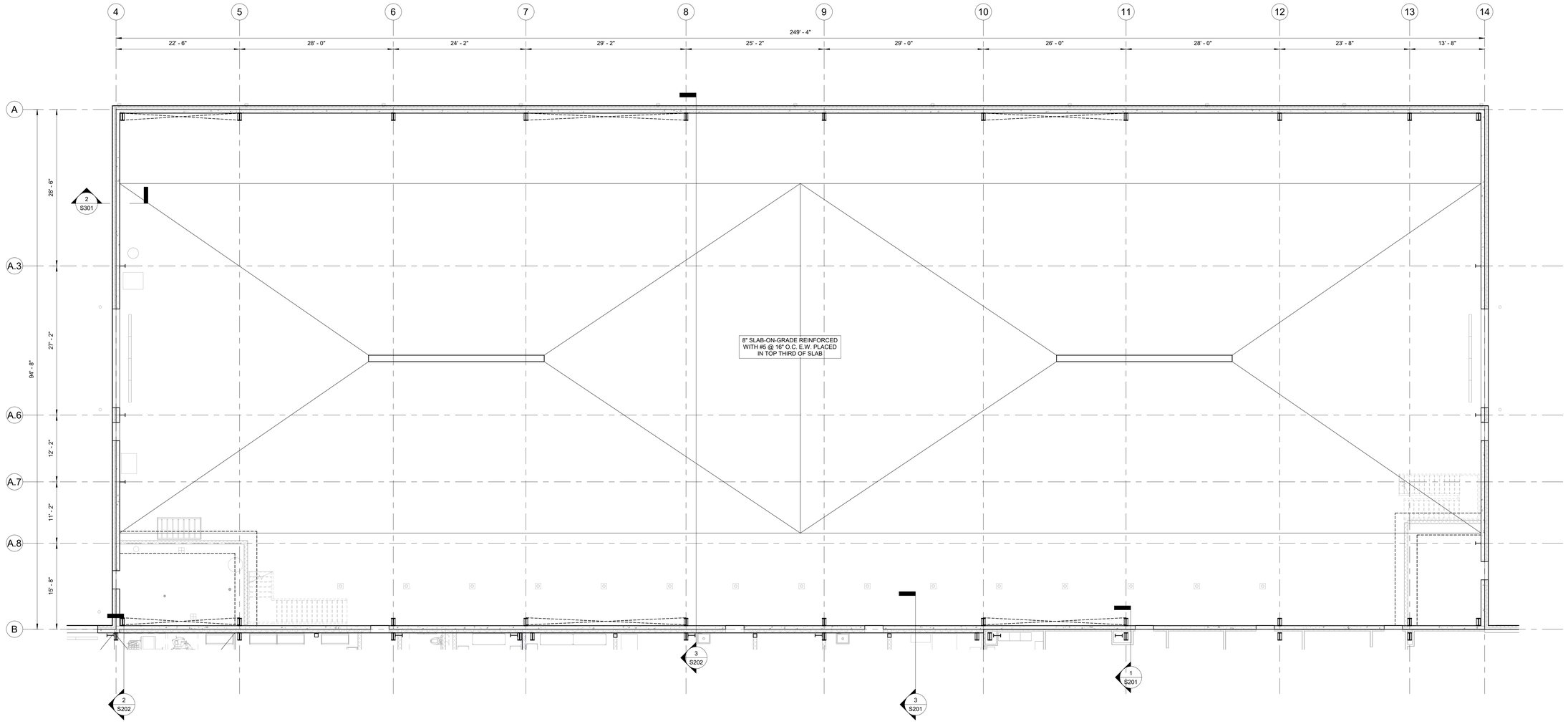
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1 ENLARGED VEHICLE STORAGE SLAB PLAN

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

NOTES
1. COORDINATE ALL WORK WITH (INCLUDING, BUT NOT LIMITED TO, FLOOR ELEVATIONS, DIMENSIONS, FINISH DETAILS, PENETRATIONS, ETC.) WITH ARCHITECTURE, CIVIL/SITE, HVAC, EQUIPMENT AND PLUMBING DRAWINGS.
2. F.D. INDICATES FLOOR DRAIN LOCATIONS, COORDINATE WITH PLUMBING
3. H.P. DESIGNATES HIGH POINTS IN SLAB AT ELEVATION 0'-0". SLOPE SLAB FROM H.P. TO DRAINS. MAXIMUM SLOPE TO DRAIN IN VEHICLE MAINTENANCE AND SHOP BAYS SHALL BE 1/8" PER FOOT.
4. A RELATIVE ELEVATION OF [0'-0"/ CORRELATES WITH A PROJECT ELEVATION OF 121.50"
5. COORDINATE MASONRY WALL LOCATIONS AND WALL OPENINGS (DOORS, VENTS, WINDOWS, ETC.) WITH ARCHITECTURE AND MEP DRAWINGS
6. LOCATIONS OF CONSTRUCTION JOINTS AND SAW JOINTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REFER TO GENERAL NOTES FOR SPACING REQUIREMENTS. SUBMIT JOINT LOCATIONS TO THE ENGINEER FOR APPROVAL REFER TO S002 FOR TYPICAL DETAILS.
7. COORDINATE ALL NON-STRUCTURAL WALLS WITH ARCHITECTURE FOR WALL TYPES AND LOCATIONS.
8. L-# INDICATES CONCRETE MASONRY UNITS (CMU) LINTEL TYPE. REFER TO CMU LINTEL SCHEDULE ON S003 FOR LINTEL INFORMATION. STEEL LINTELS SHALL NOT BE USED IN INTERIOR CONCRETE MASONRY WALLS UNLESS OTHERWISE NOTED OTHERWISE ON THE PLANS

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ENLARGED STORAGE SLAB PLAN

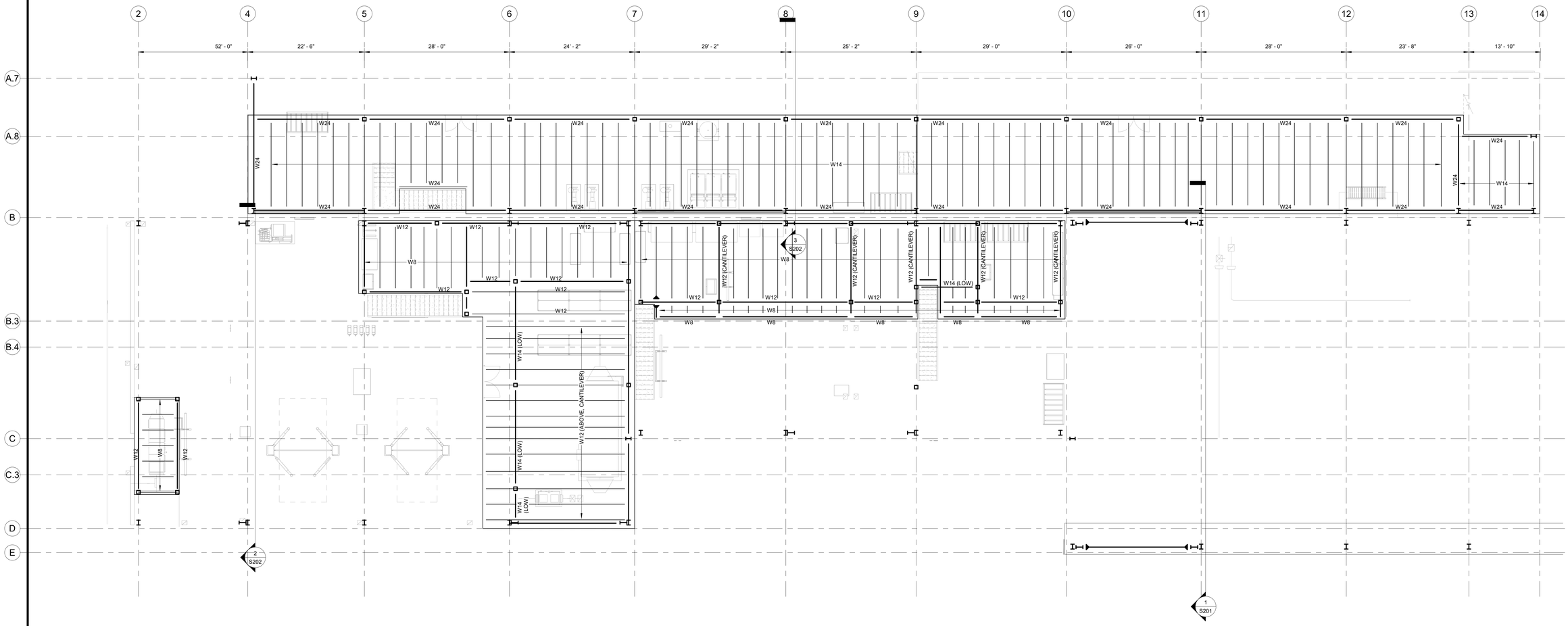
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NOTES:
1. INDICATES SPAN DIRECTION OF 3" N.W. CONCRETE ON 2" COMPOSITE METAL DECK (TOTAL THICKNESS 5").
2. SEE S001 FOR DESIGN LOADS.
3. GUARDRAIL NOT SHOWN, REFER TO ARCHITECTURAL DRAWINGS.
4. STEEL DECK POUR STOPS SHALL BE 3/8" BENT PLATE AT GUARDRAIL AND STAIR INTERFACES, UNLESS NOTED OTHERWISE.
5. STEEL MEZZANINE FRAMING SHOWN SCHEMATICALLY FOR BIDDING PURPOSES. MEZZANINE FRAMING SHALL BE HOT ROLLED WIDE FLANGE AND HSS SECTIONS DESIGNED, FABRICATED, AND INSTALLED BY THE METAL BUILDING MANUFACTURER (MBM).
6. CONSIDER NOMINAL BEAM DEPTHS SHOWN (E.G. W12 = 12") TO BE MAXIMUM DEPTHS. VARY WEIGHTS AS REQUIRED BY DESIGN. COORDINATE WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND EQUIPMENT DRAWINGS.
7. METAL BUILDING MANUFACTURER TO FINALIZE BRACING LOCATIONS AND SUBMIT TO ARCHITECT/ENGINEER FOR REVIEW.
8. COORDINATE AND PROVIDE OPENINGS IN MEZZANINE SLAB-ON-DECK FOR MECH./ELEC./PLUMB./FIRE PROTECTION/COMMUNICATION. REFER TO DETAIL X ON SXXX.

1 MEZZANINE FRAMING PLAN

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

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

Key Plan:

NORTH

Date:	03/28/25
Drawn By:	FM/RG
Reviewed By:	SAC
Approved By:	NMS
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

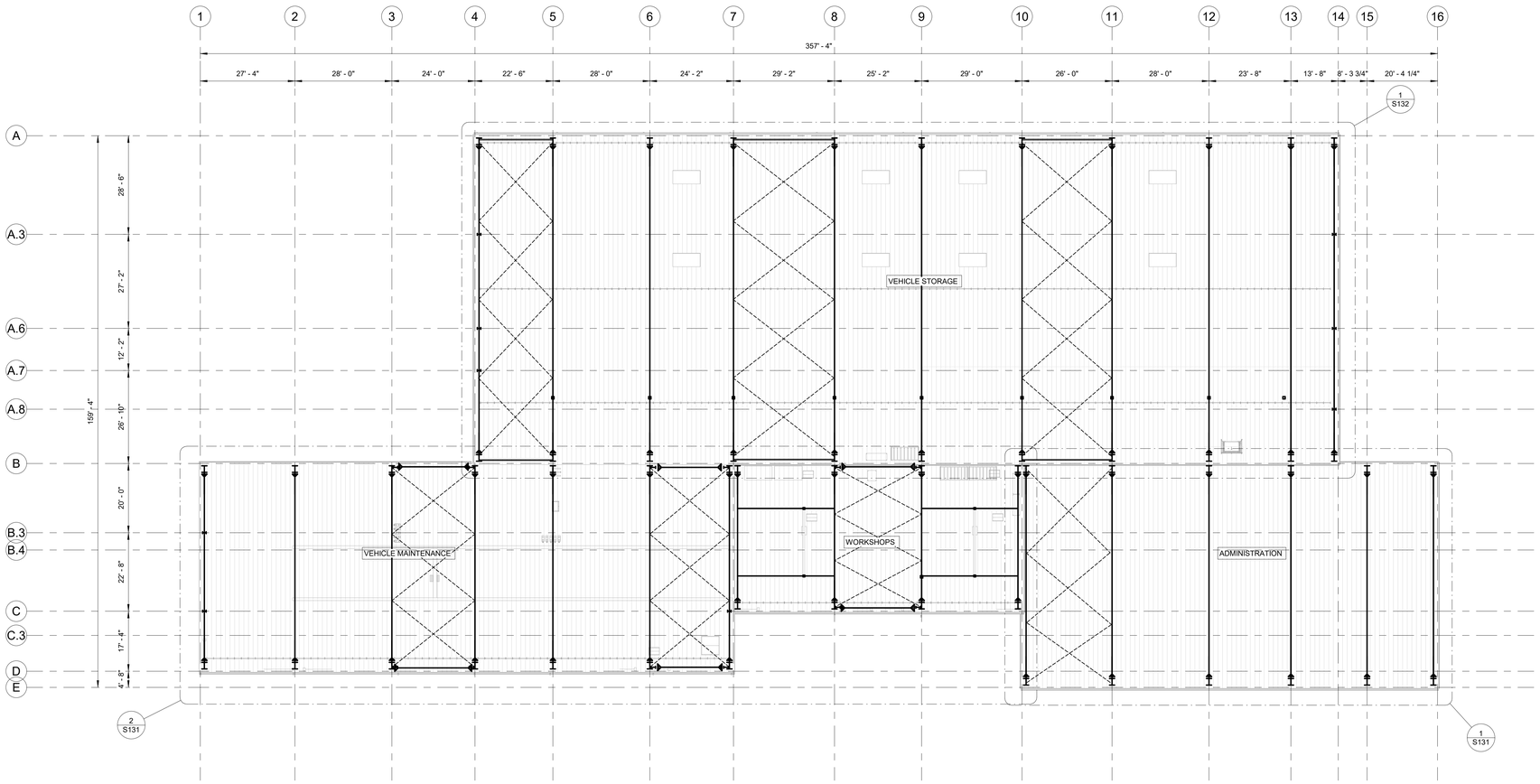
MEZZANINE FRAMING PLAN

Sheet Number:

S120

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1 ROOF FRAMING PLAN
SCALE: 1/16" = 1'-0"

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OVERALL ROOF FRAMING PLAN

Sheet Number:

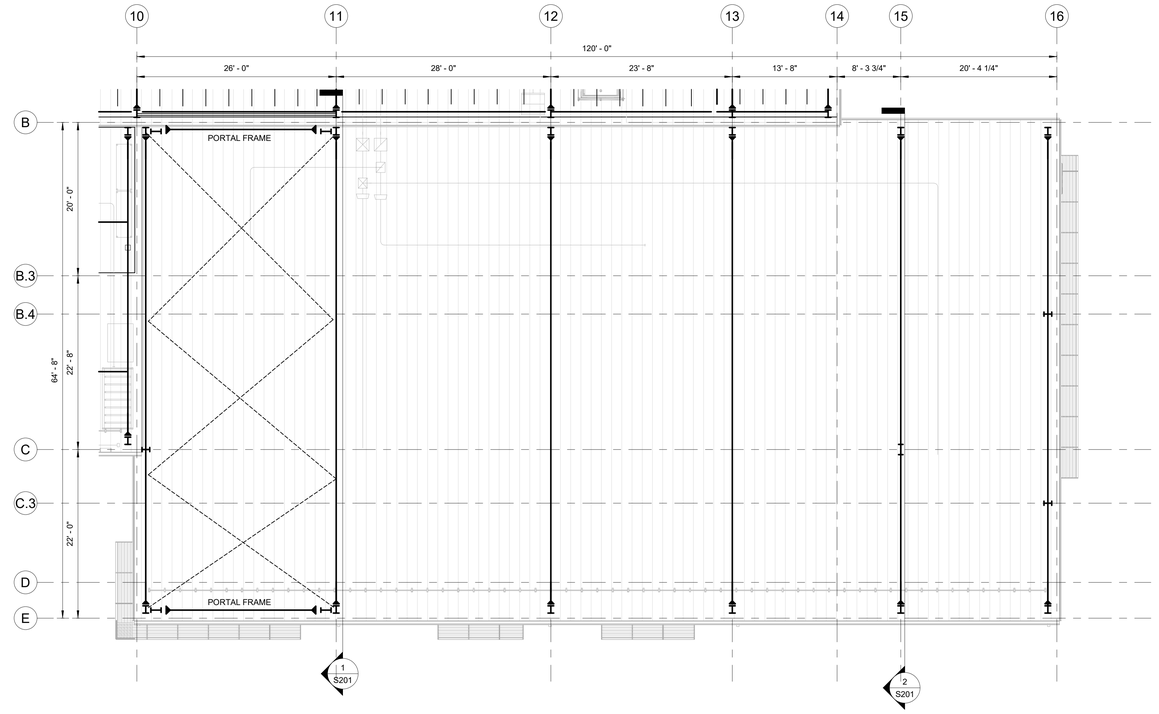
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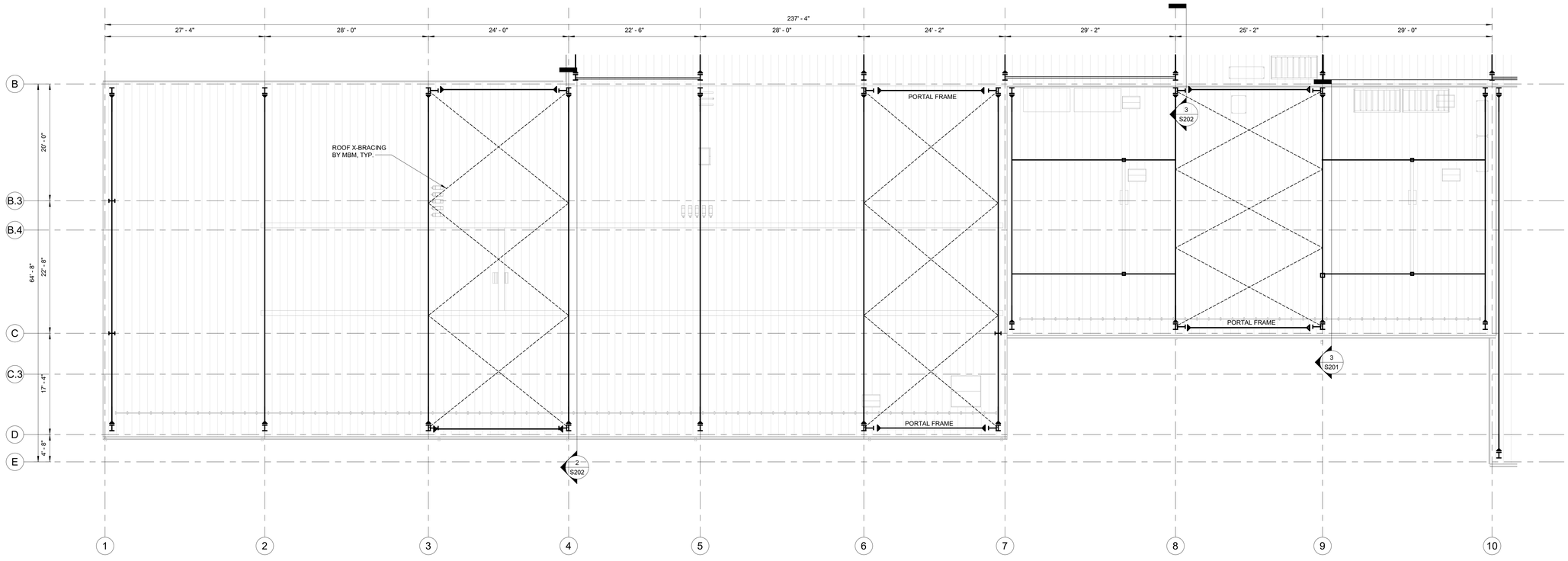
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NOTES:
1. ⌐¬ INDICATES PROPOSED BRACING LOCATIONS. MBM TO SUBMIT FINAL BRACING LOCATIONS TO ENGINEER FOR REVIEW.
2. MBM TO PROVIDE ALL SUPPLEMENTAL SUPPORT/FRAMING FOR ROOF OPENINGS, ROOFTOP EQUIPMENT, ROOF SUSPENDED EQUIPMENT, AND ROOF PENETRATIONS, AS REQUIRED. NOT ALL SUPPLEMENTAL SUPPORT/FRAMING SHOWN ON DRAWINGS. COORDINATE QUANTITIES, WEIGHTS, AND LOCATIONS, WITH ARCHITECTURAL, HVAC, PLUMBING, MECHANICAL, ELECTRICAL, AND EQUIPMENT DRAWINGS.
3. ROOF PURLINS ARE SHOWN IN SCHEMATIC ONLY. QUANTITY, SPACING, LOCATIONS, AND DIMENSIONS OF ROOF PURLINS SHALL BE DESIGNED AND FURNISHED BY METAL BUILDING MANUFACTURER.
4. ALL STEEL HARDWARE LOCATED IN CANOPY(S) SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM 125, ASTM 153, AND ASTM A663 G185 (AS APPLICABLE).
5. MBM TO PROVIDE FRAMING MEMBERS TO SUPPORT EXTERIOR COLD-FORMED METAL FRAMING.



1 ENLARGED ADMINISTRATION ROOF FRAMING PLAN
SCALE: 1/8" = 1'-0"



2 ENLARGED SHOPS & MAINTENANCE ROOF FRAMING PLAN
SCALE: 1/8" = 1'-0"

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Drawing Title:

ENLARGED ADMIN., SHOPS & MAINT. ROOF FRAMING PLAN

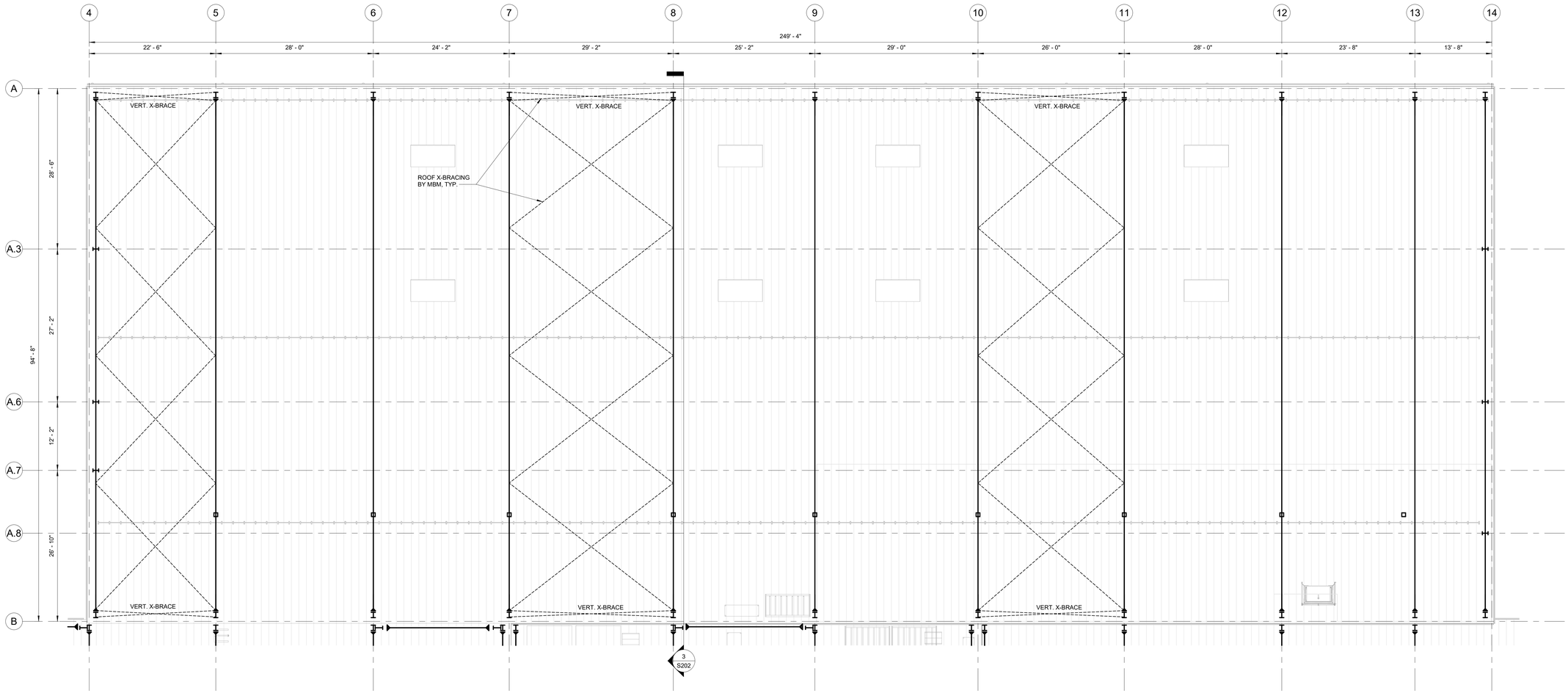
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1 ENLARGED VEHICLE STORAGE ROOF FRAMING PLAN

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

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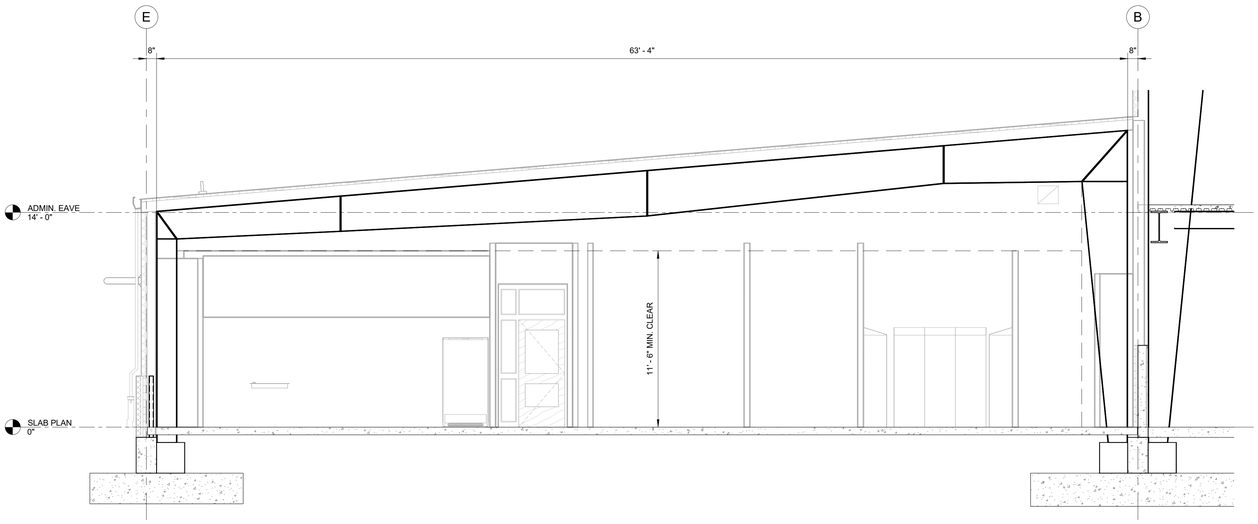
ENLARGED STORAGE ROOF FRAMING PLAN

Sheet Number:

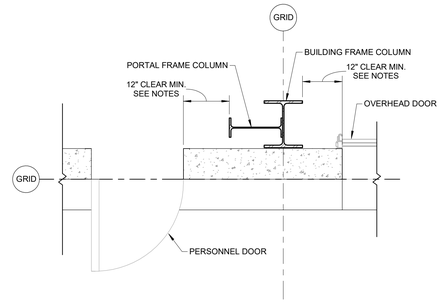
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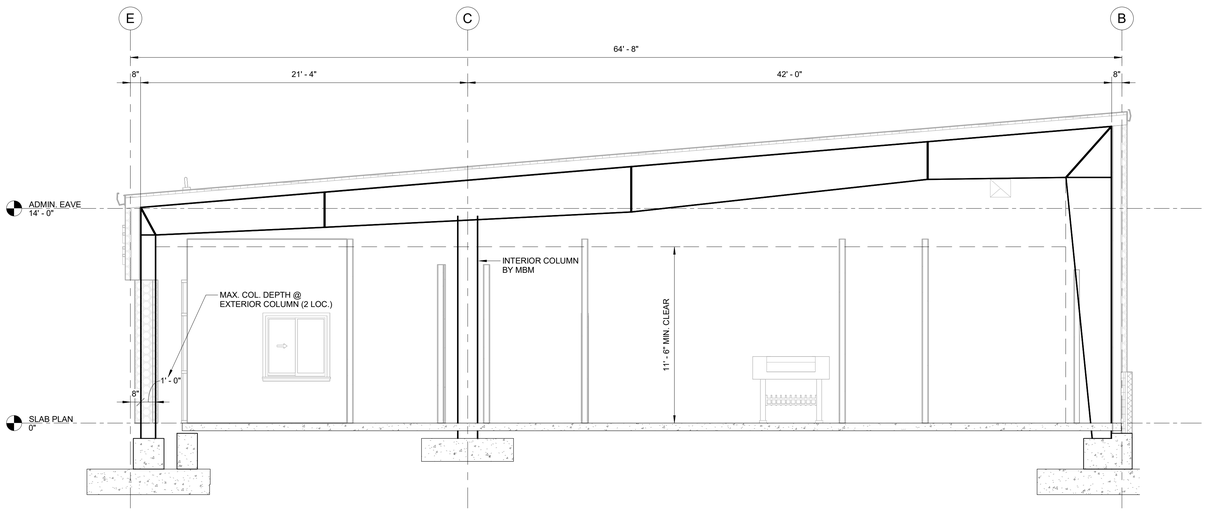


1 ADMINISTRATION FRAME ELEVATION
SCALE: 1/4" = 1'-0"

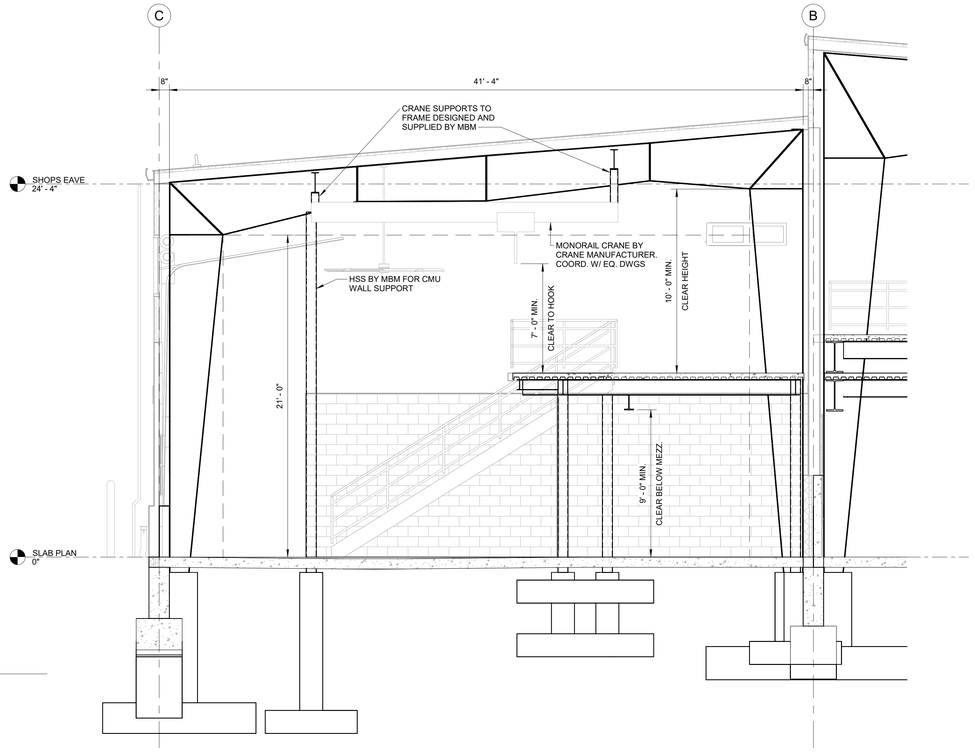


NOTES:
1. PROVIDE MINIMUM CLEARANCES AS SHOWN AT OVERHEAD AND PERSONNEL DOORS. CLEARANCES MAY BE REDUCED TO 6 INCHES ADJACENT TO WINDOWS AND TRANSLUCENT PANELS.
2. COORDINATE CLEARANCES WITH ARCHITECTURAL AND EQUIPMENT DRAWINGS.

4 TYPICAL FRAME CLEARANCES
SCALE: 3/4" = 1'-0"



2 ADMINISTRATION FRAME ELEVATION II
SCALE: 1/4" = 1'-0"



3 SHOPS FRAME ELEVATION
SCALE: 1/4" = 1'-0"

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FRAME ELEVATIONS

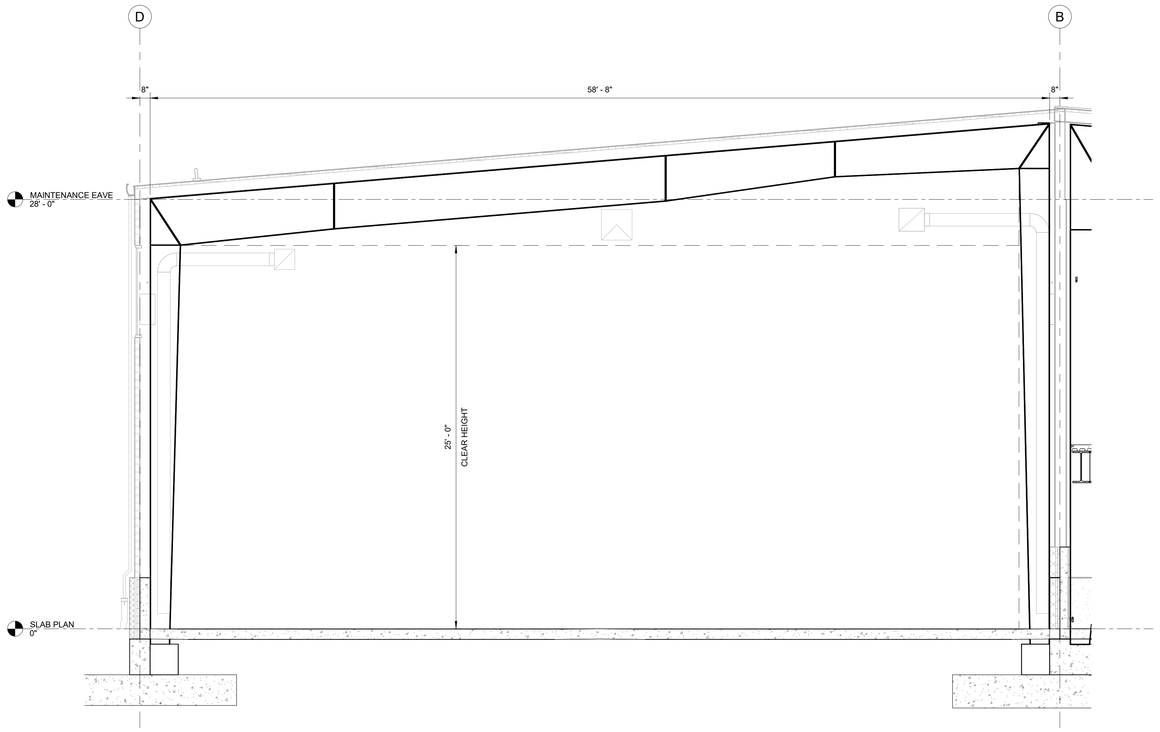
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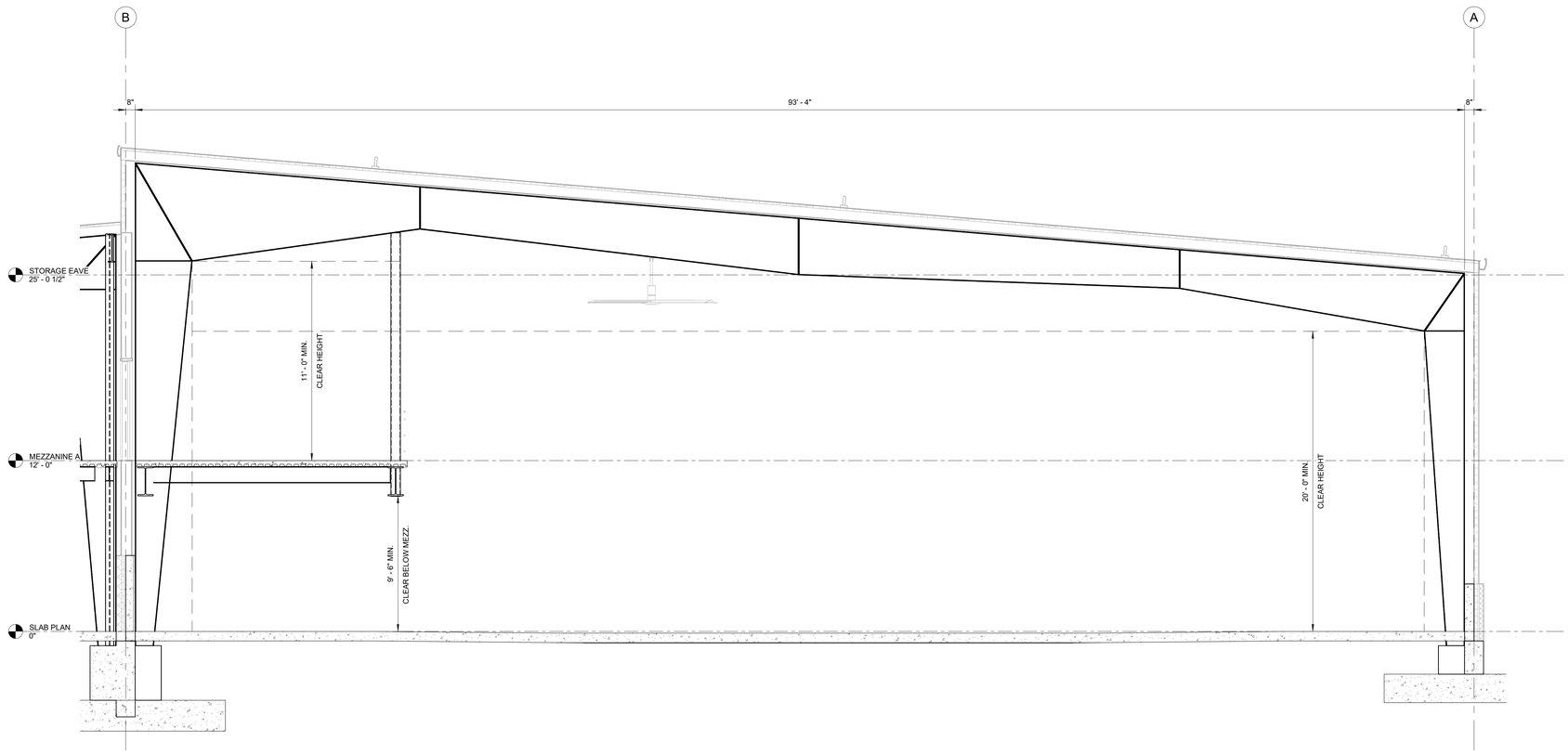
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2 MAINTENANCE FRAME ELEVATION

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



3 STORAGE FRAME ELEVATION

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

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Drawing Title:

FRAME ELEVATIONS

Sheet Number:

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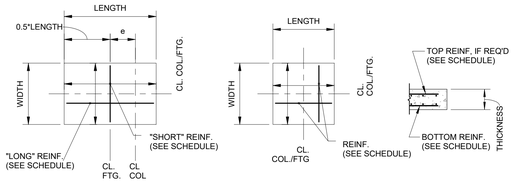
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FOOTING SCHEDULE							
MARK	DIMENSIONS				REINFORCEMENT		TOP REINFORCEMENT
	WIDTH [FT.]	LENGTH [FT.]	THICKNESS [IN.]	ECC. [IN.]	LONG WAY	SHORT WAY	
F6	6.0	6.0	18	0	(7) #5	(7) #5	#6 @ 12" O.C.
F8	8.0	8.0	20	0	(9) #7	(9) #7	#6 @ 12" O.C.
F10	10.0	10.0	24	0	(11) #8	(11) #8	#6 @ 12" O.C.
F14	14.0	14.0	26	0	(15) #8	(15) #8	#6 @ 12" O.C.

FOOTING NOTE(S):

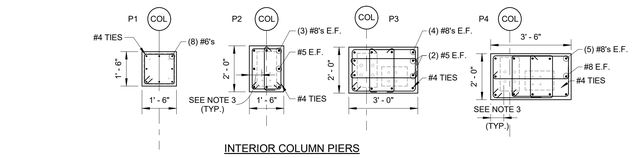
1. SQUARE FOOTINGS SHALL BE CENTERED BELOW COLUMNS U.N.O.
2. RECTANGULAR FOOTINGS SHALL BE ORIENTED AS SHOWN IN PLAN, U.N.O.
3. FOOTINGS SIZES ARE FOR BID PURPOSES ONLY. SIZES WILL BE VERIFIED UPON APPROVAL OF METAL BUILDING SHOP DRAWINGS. FOOTINGS SHALL NOT BE CAST UNTIL METAL BUILDING SHOP DRAWINGS ARE APPROVED AND FOOTINGS SIZES ARE VERIFIED BY THE ENGINEER.
4. WHERE FOOTING INTERSECT IN PLAN, FOOTING SHALL BE CAST INTEGRAL WITH THE REINFORCING AS SPECIFIED IN THE TABLE ABOVE.



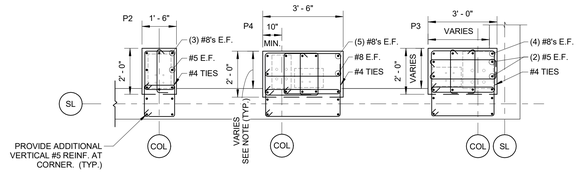
PIER SCHEDULE						
MARK	DIMENSIONS		T.O. PIER ELEVATION	REINFORCEMENT		COMMENTS
	WIDTH [IN.]	LENGTH [IN.]		VERTICAL	TIES	
P1	18	18	-1' - 0"	(8) #6	#4 @ 12" O.C.	(6) #4 TIES IN TOP 12"
P2	18	24	-1' - 0"	(6) #8, (2) #5	#4 @ 12" O.C.	(6) #4 TIES IN TOP 12"
P3	24	36	-1' - 0"	(8) #8, (4) #5	#4 @ 12" O.C.	(6) #4 TIES IN TOP 12"

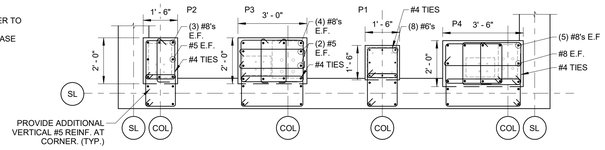
NOTE(S):

1. FINAL LOCATIONS OF PIERS SHALL BE COORDINATED WITH APPROVED METAL BUILDING SHOP DRAWINGS. PIERS SHALL BE CENTERED BELOW COLUMN SECTION AT THE BASE PLATE LEVEL.
2. METAL BUILDING BASE PLATES SHALL BE DESIGNED TO FIT ON AND WITHIN PIER DIMENSIONS SHOWN ABOVE. ANY PIER MODIFICATIONS WILL BE AT COST OF THE CONTRACTOR. THE CONTRACTOR SHALL IDENTIFY ANY PIERS REQUIRING MODIFICATIONS AND SUBMIT TO THE ENGINEER FOR REVIEW.
3. ANCHOR RODS SHALL RESIDE WITHIN REINFORCING TIES AND SHALL BE A MINIMUM OF 7xBOLT DIAMETER FROM EDGE OF PILASTER / FOUNDATION. FINAL ANCHOR BOLT LAYOUT BY METAL BUILDING MANUFACTURER. SEE ANCHOR BOLT SCHEDULE FOR REQUIRED EMBEDMENT DEPTHS. CONTRACTOR/MBM SHALL IDENTIFY PIERS WHERE THIS CRITERIA IS NOT MET.
4. PROVIDE INVERTED #6 U-BARS TO MATCH VERTICAL REINFORCING. VERTICAL LEG TO BE 36" LONG OR FULL DEPTH OF PIER, WHICHEVER IS LESS.
5. WALL REINFORCING SHALL PASS CONTINUOUSLY THROUGH THE PIER.
6. TIES SHALL BE #4 @ 12" VERTICALLY WITH 6 TIES LOCATED WITHIN THE TOP 12" ON THE PIER, UNLESS OTHERWISE NOTED.
7. PIERS SUPPORTING PORTAL FRAMES ARE TURNED 90 DEGREES IN PLAN, SEE PLAN FOR REQUIRED ORIENTATIONS.
8. MEZZANINE COLUMNS MAY BE OFFSET FROM THE FOUNDATION WALL AS APPROVED BY THE ENGINEER TO ACCOMMODATE FRAMING REQUIREMENTS.
9. CENTER PIER BENEATH BASE PLATE. PIER OVERLAP WITH FOUNDATION WALL MAY VARY BASED ON BASE PLATE LOCATION. PIER REINFORCING MUST BE CENTERED UNDER BASE PLATE AND MEET COVER REQUIREMENTS ON S001.
10. BASE PLATES SHOWN IN PLAN ARE SCHEMATIC ONLY. COORDINATE FINAL BASE PLATE SIZES AND LOCATIONS WITH APPROVED ANCHOR ROD DRAWINGS BY METAL BUILDING MANUFACTURER.

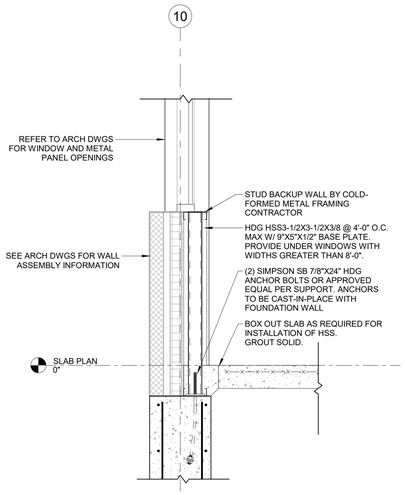


INTERIOR COLUMN PIERS





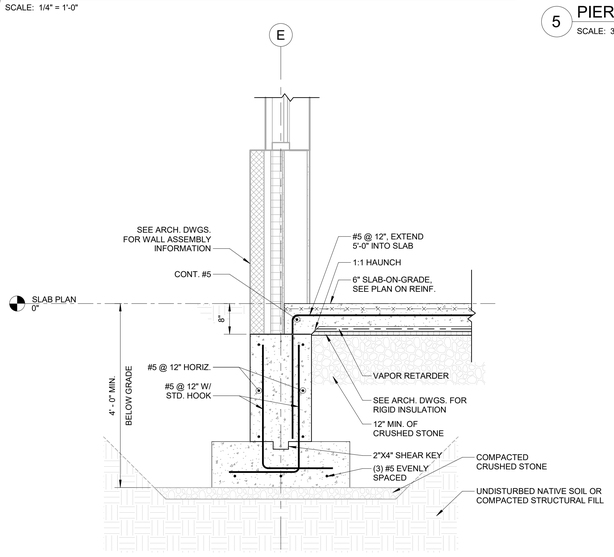
EXTERIOR COLUMN PIERS/PEDESTALS



NOTE:
1. GC TO VERIFY HDG HSS IS REQUIRED WITH COLD-FORMED DESIGNER.

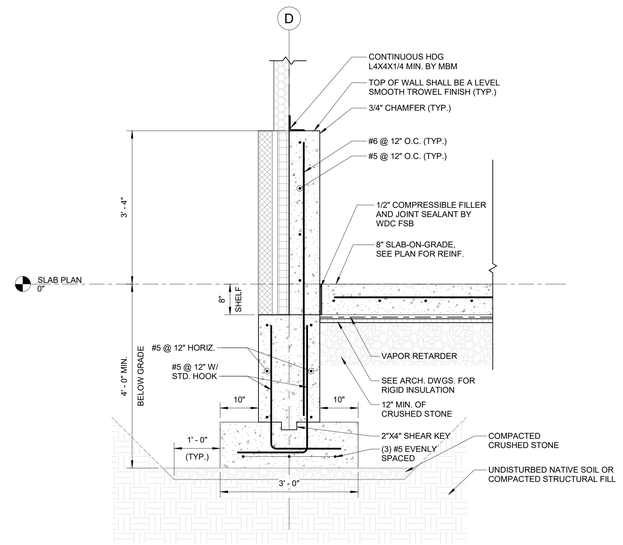
6 FOOTING SCHEDULE

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



5 PIER DETAIL

SCALE: 3/8" = 1'-0"



7 SUPPLEMENTAL WALL FRAMING @ OPENINGS

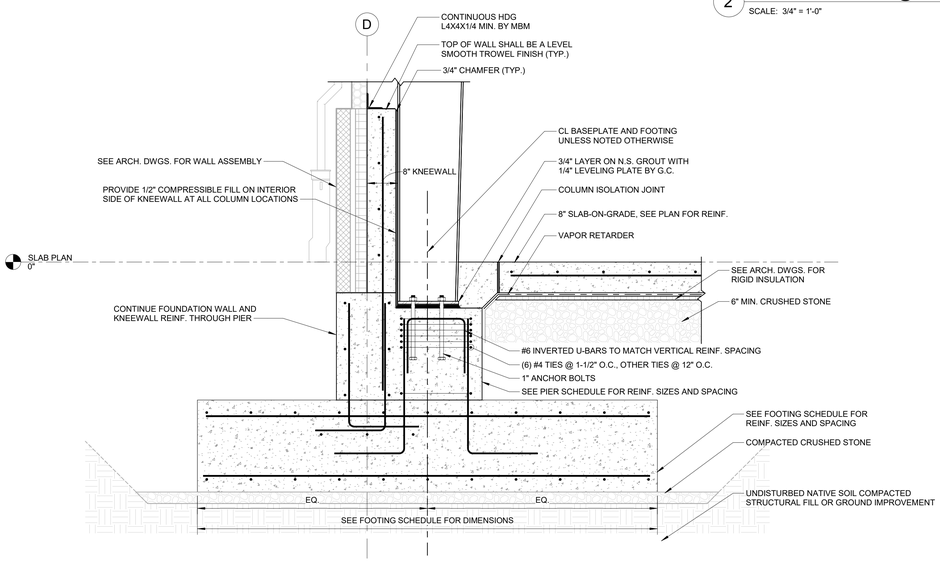
SCALE: 3/4" = 1'-0"

3 TYPICAL SECTION @ ADMINISTRATION

SCALE: 3/4" = 1'-0"

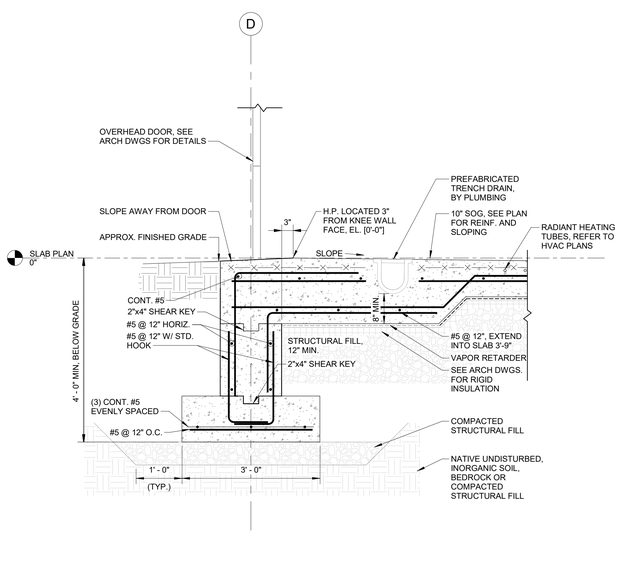
2 TYPICAL SECTION @ VEHICLE STORAGE, SHOPS, & MAINT.

SCALE: 3/4" = 1'-0"



4 TYPICAL SECTION @ PIER

SCALE: 3/4" = 1'-0"



1 TYP. SECTION @ OVERHEAD DOOR W/ TRENCH

SCALE: 3/4" = 1'-0"

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FOUNDATION SECTIONS & DETAILS I

Sheet Number:

S301

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GENERAL NOTES:

1. COORDINATE THE ARCHITECTURAL DRAWINGS WITH STRUCTURAL, PLUMBING, FIRE PROTECTION, MECHANICAL, AND ELECTRICAL / FIRE ALARM DRAWINGS FOR THE VERIFICATION OF ALL PROJECT REQUIREMENTS.
2. FINISH FIRST FLOOR SLAB ELEVATION HIGH POINT IS 0'-0" FOR THIS PROJECT.
3. ALL INTERIOR DIMENSIONS ARE TAKEN FROM FACE OF STUD / FACE OF MASONRY / CENTERLINE OF COLUMN TO FACE OF STUD / FACE OF MASONRY / CENTERLINED OF COLUMN UNLESS SPECIFICALLY NOTED OTHERWISE. DO NOT SCALE DRAWINGS. REFER TO ENLARGED PLANS AND DETAILS FOR FURTHER DIMENSIONING INFORMATION. ALL WORK LINES AND LEVELS SHALL BE LAID OUT BY WRITTEN DIMENSIONS. ANY DEVIATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGNER. ALL DEVIATIONS AND DISCREPANCIES SHALL BE CORRECTED BY THE CONTRACTOR BEFORE HE BEGINS HIS PORTION OF THE WORK.
4. FIRE EXTINGUISHER AND CABINET QUANTITIES AND LOCATIONS TO BE COORDINATED WITH THE TOWN FIRE DEPARTMENT PRIOR TO ORDERING AND INSTALLATION. CONFORM TO THE STATE FIRE REGS AND NFPA.
5. COORDINATE MASTER BOX, KNOX BOX, AND BEACON LOCATIONS WITH THE ELECTRICAL / FIRE ALARM DRAWINGS AND THE TOWN FIRE DEPARTMENT REQUIREMENTS. ELECTRICAL CONTRACTOR TO PROVIDE KNOX BOX THAT MEET THE TOWN FIRE DEPARTMENT REQUIREMENTS.
6. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS & CONDITIONS PRIOR TO THE WORK AND SHALL NOTIFY THE DESIGNER REGARDING ANY DISCREPANCIES.
7. THE CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS, SAMPLES, CATALOG CUTS ETC., INCLUDING COLOR CHARTS FOR PAINTS, FOR ALL INTERIOR FINISHES, TO THE DESIGNER FOR SELECTION, REVIEW AND APPROVAL WITH THE OWNER PRIOR TO FABRICATION OR INSTALLATION. THE COLORS MUST BE SUBMITTED IN A TIMELY MANNER AND TOGETHER FOR REVIEW AND COLOR BOARDS. FAILURE TO DO SO IN A TIMELY MANNER WILL FALL ON THE CONTRACTOR'S RESPONSIBILITY AND NOT ON THE OWNER. REFER TO EACH INDIVIDUAL SPECIFICATIONS FOR SIZE, QUANTITY AND TYPE OF COLOR SELECTION.
8. PERFORM ALL WORK IN ACCORDANCE WITH THE STATE BUILDING CODE, AS WELL AS LOCAL CODES AND ORDINANCES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS, BACKCHARGES AND FEES AS REQUIRED BY THE TOWN.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY REMOVAL AND LEGAL DISPOSAL OF ALL DEBRIS OFF SITE.
11. THE CONTRACTOR SHALL SEAL ALL THROUGH-WALL & FLOOR PENETRATIONS WITH 3M BARRIER CAULK (O.A.E.) AND SEALANT ON USG SAFING 2500 PSI GROUT. U.N.O. INSTALL ANY REQUIRED FIRE RATED PARTITIONS TO UNDERSIDE OF FLOOR AND ROOF DECK, INCLUDING DEFLECTION HEAD FIRE SAFING.
12. INSTALL A CONTINUOUS SEALANT BEAD ON BACKER ROD AT ALL JUNCTURES OF DISSIMILAR MATERIALS (E.G.: METAL TO CMU, STEEL TO ALUMINUM) AND ALL MATERIAL JOINTS AS REQUIRED BY THE MANUFACTURER'S SPECIFICATION AND RECOMMENDATIONS, INDUSTRY STANDARDS AND GOOD PRACTICE.
13. PROVIDE CONTINUOUS GALVANIZED METAL EDGE TRIM AT ALL GWB WORK.
14. THE CONTRACTOR SHALL INSTALL ALL INTERIOR FINISHES AT ALL SURFACES INDICATED ON THE DRAWINGS IN CONFORMANCE TO STATE BUILDING CODE. ALL DOORS SHALL HAVE LEVER HARDWARE TO CONFORM TO 521 CMR.
15. INSTALL USG .093 (OR APPROVED EQUAL) CONTROL JOINTS AT 30'-0" O.C. MAX. OR AS PER MANUFACTURER'S SUGGESTED DETAILS AND SPECIFICATIONS.
16. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A GAP FILLING SYSTEM OR OTHER SYSTEM WHICH SPANS ANY GAP IN THE EXTERIOR WALL SYSTEM WHICH DOES NOT MEET THE MAXIMUM SPAN OF THE APPROVED AIR BARRIER MEMBRANE SYSTEM. THIS SYSTEM SHALL BE PROVIDED TO ALLOW FOR A COMPLETE AIR BARRIER MEMBRANE INSTALLATION. THE SYSTEM SHALL BE COMPATIBLE WITH THE APPROVED AIR BARRIER PRODUCT AND SHALL BE APPROVED BY THE DESIGNER PRIOR TO INSTALLATION.
17. THE ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECT SWITCHES, STARTERS AND ALL LINE VOLTAGE WIRING AND CONDUIT TO OH DOOR OPERATORS. THE HAND-OFF-AUTO SWITCH, PUSH BUTTON CONTROL STATION (MOMENTARY UP-STOP-DOWN) AND CONTROLLER IS FURNISHED BY THE OVERHEAD DOOR MANUFACTURER AND INSTALLED BY THE ELECTRICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR IS TO PROVIDE CONDUIT AND WIRING BETWEEN THE HAND-OFF-AUTO SWITCH, THE PUSH BUTTON CONTROL STATION AND CONTROLLER PER OVERHEAD DOOR MANUFACTURER REQUIREMENTS. FURNISHING AND INSTALLATION OF THE MOTOR UNIT, OPTICAL SENSORS, PNEUMATIC DOOR SAFETY BOTTOM, LOW VOLTAGE WIRING AND ALL OTHER ACCESSORIES ASSOCIATED WITH THE OVERHEAD DOORS SHALL BE THE RESPONSIBILITY OF THE OVERHEAD DOOR CONTRACTOR.
18. ALL STRUCTURAL ELEMENTS WHICH PASS IN FRONT OF WINDOWS / CLERESTORIES SHALL BE BACK PAINTED.
19. ALL STRUCTURAL ELEMENTS SHOWN ON THE ARCHITECTURAL DRAWINGS ARE FOR INFORMATION ONLY. REFER TO STRUCTURAL DRAWINGS FOR EXACT SIZES AND LOCATION OF STRUCTURAL ELEMENTS.
20. THE CONTRACTOR SHALL PROVIDE SUPPLEMENTAL FRAMING AND OR BLOCKING AS NECESSARY TO SUPPORT ALL EXTERIOR WALL MOUNTED ELEMENTS.
21. ALL OPENINGS IN EXTERIOR WALLS FOR PLUMBING, FIRE PROTECTION, MECHANICAL, AND ELECTRICAL / FIRE ALARM SYSTEMS SHALL BE SEALED WEATHER-TIGHT BY THE CONTRACTOR. CONTRACTOR TO PROVIDE FIRE RATED SEALANTS AS REQUIRED AT FIRE RATED WALL, FLOOR, CEILING, AND ROOF ASSEMBLIES.
22. THE CONTRACTOR IS TO FIELD MEASURE OH DOOR OPENINGS TO ENSURE PROPER FIT OF OH DOORS.
23. ALL EXPOSED SURFACES (INCLUDING, BUT NOT LIMITED TO; WALLS, UNDERSIDE OF EXPOSED ROOF AND FLOOR DECK, STRUCTURAL STEEL, MISCELLANEOUS METALS, DOORS/FRAMES, DUCTWORK, CONDUIT, AND PIPING) SHALL BE PRIMED AND PAINTED.
24. BLOCKING SHALL BE PROVIDED FOR ALL WALL MOUNTED EQUIPMENT (INCLUDING, BUT NOT LIMITED TO; PLUMBING FIXTURES, TOILET ACCESSORIES, UTILITY SINKS, FIRE EXTINGUISHER CABINETS, SHELVING, COUNTERS, CASEWORK, CABINETS, MEDIA EQUIPMENT, AND WINDOW TREATMENTS). PROVIDE ADDITIONAL METAL STUD FRAMING AS REQUIRED TO SUPPORT BLOCKING.
26. THE AIR BARRIER MEMBRANE (ABM) SHALL BE CONTINUOUS THROUGH THE BUILDING ENVELOPE AND BETWEEN THE WALL AND ROOF SYSTEMS INSTALLED ON THE WINTER WARM SIDE OF THE INSULATION. OPENINGS AND PENETRATIONS IN THE BUILDING ENVELOPE SHALL BE SEALED WITH SEALANT MATERIALS OR CLOSED WITH GASKETING SYSTEMS WHICH IS COMPATIBLE WITH THE ABM SYSTEM AND MEETS THE PERFORMANCE REQUIREMENTS IN THE SPEC. SYSTEM SHALL BE COMPATIBLE WITH THE CONSTRUCTION MATERIALS AND LOCATION. JOINTS AND SEAMS SHALL BE SEALED IN THE SAME MANNER OR TAPED OR COVERED WITH A MOISTURE VAPOR-PERMEABLE WRAPPING MATERIAL. SEALING MATERIALS SPANNING JOINTS BETWEEN CONSTRUCTION MATERIALS SHALL ALLOW FOR EXPANSION AND CONTRACTION OF THE CONSTRUCTION MATERIALS. AT ALL OH DOOR JAMBS AND HEADERS, THE ABM SHALL TERMINATE AT THE STEEL FACE WHERE THE INSULATION ABUTS STEEL FRAMED OPENINGS. TERMINATE ABM ON THE INSIDE FACE OF EXTERIOR WALL SYSTEM AT DOORS, WINDOWS, LOUVERS, AND CLERESTORIES. THE TERMS VAPOR RETARDER, AND AIR MOISTURE BARRIER ARE SYNONYMOUS WITH ABM.
27. METAL BUILDING SYSTEM SHALL BE A SINGLE SOURCE MANUFACTURED SYSTEM. ALL ACCESSORIES, NOT LIMITED TO; PRIMARY FRAMING, WALLS, ROOF INSULATION, EXTRUSIONS, TRIMS, FASTENERS, GASKETS, SUBGIRT FRAMING, ETC SHALL BE PROVIDED BY THE METAL BUILDING SYSTEM MANUFACTURER. METAL WALL PANEL COLOR TO BE SELECTED BY THE DESIGNER FROM THE MANUFACTURES STANDARD COLOR SELECTION WITH FINISH PROTECTIONS AS SPECIFIED.
28. ALL WALL/PARAPET FLASHING SHALL TERMINATE WITH A MINIMUM 8" VERTICAL LEG TO ALLOW FOR PROPER INTERFACE WITH THE ABM. ABM SHALL BE INSTALLED BEHIND FLASHING AND THE FLASHING SHALL BE INTEGRATED INTO THE ABM SYSTEM USING A SELF-ADHERED MEMBRANE FLASHING WITH MINIMUM OVERLAP REQUIREMENTS PER MANUFACTURER.
29. ALL EXTERIOR AND INTERIOR MATERIAL SURFACE COLOR AND TEXTURES SHALL BE SELECTED BY THE DESIGNER FROM THE MANUFACTURES STANDARD & PREMIUM FINISH / COLOR SELECTIONS. ONCE ALL COLORS HAVE BEEN SUBMITTED, THE OWNER WILL REVIEW AND PROVIDE GUIDANCE ON COLORS FOR INCLUSION IN THE MOCK-UP REFERENCED IN DIVISION 1 OF THE SPECIFICATIONS.
30. DETAILS AND NOTES SHOWN ON THE ARCHITECTURAL DRAWINGS SHALL BE APPLICABLE TO ALL PARTS OF THE ARCHITECTURAL WORK EXCEPT WHERE SPECIFICALLY REQUIRED OTHERWISE BY THE CONTRACT DOCUMENTS. CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE SHOWN FOR LIKE CONDITIONS AS DETERMINED BY THE DESIGNER.
31. PROVIDE ALL ACCESSIBLE FIXTURES, CONTROLS & ACCESSORIES, AND APPROPRIATE CLEARANCES, AS REQUIRED FOR COMPLIANCE W/ STATE BUILDING CODE W/ ALL AMENDMENTS, TYP.
32. SEALANT DEPTH AT ALL EXTERIOR OPENINGS SHALL BE EQUAL TO THE WIDTH OF THE JOINT.
33. THE CONTRACTOR TO PROVIDE CANE PROTECTION AT ALL PANELS IN EGRESS PATHS (AS DETERMINED BY THE DESIGNER) WHICH EXTEND 4" OR MORE FROM FACE OF WALL AND ARE GREATER THAN 27" ABOVE FINISHED FLOOR.
34. FOR SITE LEGEND REFER TO DRAWING SERIES CX.00.
35. FOR STRUCTURAL LEGEND REFER TO DRAWING SERIES SX00.
36. FOR WALL TYPES, REFER TO DRAWING SERIES A000.
37. FOR CEILING LEGEND AND SOFFIT DETAILS REFER TO DRAWING SERIES A100.
38. FOR ROOF DETAILS, REFER TO DRAWING SERIES A600.
39. FOR LARGE SCALE TOILET AND STAIR PLANS, REFER TO DRAWING SERIES A700.
40. FOR INTERIOR ELEVATIONS, REFER TO DRAWING SERIES A700.
41. FOR DOOR NUMBERS AND DETAILS, REFER TO DRAWING SERIES A800.
42. FOR FINISH SCHEDULE, REFER TO DRAWING SERIES A900.
43. FOR CASEWORK ELEVATIONS, REFER TO DRAWING SERIES A900.
44. FOR FIRE PROTECTION LEGEND, REFER TO DRAWING SERIES FPX00.
45. FOR PLUMBING LEGEND, REFER TO DRAWING SERIES PX00.
46. FOR MECHANICAL LEGEND, REFER TO DRAWING SERIES MX00.
47. FOR ELECTRICAL LEGEND, REFER TO DRAWING SERIES EX00.
48. ALL NOTES AND DIMENSIONS DESIGNATED "TYPICAL" APPLY TO ALL LIKE OR SIMILAR CONDITIONS THROUGHOUT THE PROJECT.
49. SIGNAGE TO BE MOUNTED ON THE WALL, ADJACENT TO THE LEVER SIDE OF THE DOOR, AT A HEIGHT OF FIVE (5) FEET A.F.F. REFER TO THE FLOOR PLANS FOR LOCATIONS OF DIRECTIONAL SIGNAGE.
50. CONTRACTOR(S) TO TAKE AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE WORK AND BE RESPONSIBLE FOR COORDINATION OF THE SAME. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF WORK.
51. GENERAL CONTRACTOR TO PROVIDE EXCAVATION & TRENCHING AT ALL UNDERGROUND UTILITIES IN EXISTING AND NEW BUILDINGS AS REQUIRED FOR MEP/FP UTILITIES AND COORDINATION. REFER TO MEP / FP DRAWINGS FOR OVERALL REQUIREMENTS. GENERAL CONTRACTOR TO COORDINATE INVERTS AND COMPACT ALL MATERIALS FOR PLACEMENT OF CONCRETE SLAB INFILL IN ACCORDANCE WITH ASTM D1557. GC TO PROVIDE SOIL COMPACTION, DOWELS, WWF MESH, VAPOR RETARDER AND TIE-INS. CONCRETE PLACEMENT AND ALL REQUIREMENTS TO CLOSE UP TRENCH ONCE MEP/FP SUB-TRADE WORK IS COMPLETE.
52. PROVIDE AN ACCENT WALL AT ALL ROOMS. ARCHITECT / ENGINEER TO PROVIDE LOCATION DURING CONSTRUCTION FOR ACCENT WALL IF NOT IDENTIFIED ON PROJECT PLANS.

ABBREVIATIONS:

A	
A/C	AIR CONDITION
AC	ACOUSTICAL
ACT	ACOUSTICAL CEILING TILE
ADJ	ADJACENT
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
ANC BLT	ANCHOR BOLT
ANOD	ANODIZED
APPROX	APPROXIMATE
ARCH	ARCHITECT
ARGB	ABUSE RESISTANT GYPSUM BOARD
ASPH	ASPHALT
AVB	AIR VAPOR BARRIER
B	
BC	BASE CABINET
BD	BOARD
BF	BRACE FRAME
BITUM	BITUMINOUS
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BENCH MARK
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STEEL
BOTT	BOTTOM
BPL	BEARING PLATE
BRG	BEARING
BRK	BRICK
BS	BRICK SHELF
BSMT	BASEMENT
BVL	BEVELED
C	
CAB	CABINET
CB	CEMENT BOARD / CATCH BASIN
CDM	CAVITY DRAINAGE MATERIAL
CF	CUBIC FEET
CH	CEILING HEIGHT
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CL	CENTER LINE / COLUMN LINE
CL	CLOSET / CHAIN LINK
CLG	CEILING
CLOS	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CNTR	COUNTER
CO	CASED OPENING
COL	COLUMN
COMP	COMPOSITION
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTC	CONTRACTOR
CONV	CONVECTOR
COORD	COORDINATE
CORR	CORRIDOR
CPET	COMMON PATH OF EGRESS TRAVEL
CPT	CARPET
CT	CERAMIC TILE
CTR	CENTER
CW	COLD WATER
CWT	CERAMIC WALL TILE
CY	CUBIC YARD
D	
D	DRYER
D-PART	DEMOUNTABLE PARTITION
DBL	DOUBLE
DEMO	DEMOLITION
DF	DRINKING FOUNTAIN
DH	DOUBLE HUNG
DI	DRAIN INLET
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DL	DRAIN LEADER
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DTL	DETAIL
DW	DISHWASHER
DWG	DRAWING
E	
EA	EACH
EF	EACH FACE
EIFS	EXTERIOR INSULATED FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSURE
EOC	EDGE OF CONCRETE
EP	ELECTRICAL PANEL
EQ	EQUAL
EQUIP	EQUIPMENT
ER	EXISTING TO REMAIN
ES	EXPOSED STRUCTURE
EW	EACH WAY
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
F	
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FAK	FIRST AID KIT
FB	FIRE BLANKET
FC	FILE CABINET
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR
FFE	FINISH FLOOR ELEVATION
FG	FIBERGLASS
FIN	FINISH
FLASH	FLASHING
FLR	FLOOR
FLUOR	FLUORESCENT
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOUND	FOUNDATION
FP	FIREPROOF(ING)
FR	FIRE RETARDANT
FRP	FIBERGLASS REINFORCED WALL PANEL
FRTW	FIRE RETARDANT TREATED WOOD
FSB	FILED SUB BID
FT	FEET
FTG	FOOTING
FUR	FURRING
G	
GA	GAUGE
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GDRL	GUARD RAIL
GL	GLASS
GLAZ	GLAZED BLOCK
GLB	GLASS BLOCK
GN	GOOSENECK
GRT	GROUT
GWB	GYPSUM WALL BOARD
H	
HB	HOSE BIB
HC	HANDICAP
HD	HEAVY DUTY
HDWR	HARDWARE
HM	HOLLOW METAL
HOR	HORIZONTAL
HP	HIGH POINT
HT	HEIGHT
HTR	HEATER
HVAC	HEATING, VENTILATING, & AIR CONDITIONING
HW	HOT WATER
I	
ID	INSIDE DIAMETER
IN	INCH
INCL	INCLUDED
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
INV	INVERT
IRGWB	IMPACT-RESISTANT GWB
J	
JAN	JANITOR
JST	JOIST
JT	JOINT
K	
KD	KNOCK-DOWN
KIP	1,000 LBS
KO	KNOCKOUT
KPLT	KICKPLATE
L	
L	LENGTH
LAM	LAMINATE
LAV	LAVATORY
LBL	LABEL
LC	LEAD COATED
LCC	LEAD COATED COPPER
LGMF	LIGHT-GAUGE METAL FRAMING
LIN	LINOLEUM
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
LSC	LIFE SAFETY CODE
LT	LIGHT
M	
M	METER
MANUF	MANUFACTURER
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MB	MOISTURE BARRIER
MBL	MARBLE
MBM	METAL BUILDING MANUFACTURER
MBR	MEMBER
MC	MEDICINE CABINET
MDF	MEDIUM DENSITY FIBERBOARD
MDO	MEDIUM DENSITY OVERLAY
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
ML	MATCH LINE
MLDG	MOULDING
MO	MASONRY OPENING
MOD	MODULAR
MR	MOISTURE RESISTANT
MRGB	MOISTURE RESISTANT GYPSUM BOARD
MS	METAL STUD
MTD	MOUNTED
MTL	METAL
MTP	METAL TOILET PARTITION
N	
N/A	NOT APPLICABLE
NAT	NATURAL
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
NUM	NUMBER
NW	NEW
O	
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD DOOR
OPNG	OPENING
OPP	OPPOSITE
OPPHAND	OPPOSITE HAND
OSB	ORIENTED STRAND BOARD
OTS	OPEN TO STRUCTURE
OW	OPERABLE WALL
OZ	OUNCE
P	
PART BD	PARTICLE BOARD
PAV	PAVING
PCP	PRECAST CONCRETE PLANK
PERIM	PERIMETER
PL	PROPERTY LINE / PLATE
PLAM	PLASTIC LAMINATE
PLAS	PLASTIC
PLY	PLYWOOD
PMJF	PRE-MOLDED JOINT FILLER
PNT	PAINT
PR	PAIR
PREFIN	PREFINISHED
PRFB	POURED RESIN FLOOR BASE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PTD	PAPER TOWEL DISPENSER
PTN	PARTITION
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
Q	
QT	QUARRY TILE
R	
R	RISER
R & D	REMOVE & DISPOSE
R & R	REMOVE AND REPLACE
R & S	REMOVE AND SALVAGE
RAD	RADIUS
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REF	REFRIGERATOR
REFURB	REFURBISH
REINF	REINFORCEMENT
RELOC	RELOCATED
REM	REMOTE
REQ'D	REQUIRED
RES	RESILIENT
REV	REVISION
RFG	ROOFING
RFI	RIGID FOAM INSULATION
RFS	RESINOUS FLOOR SYSTEM
RH	RIGHT HAND
RL	ROOF LADDER
RM	RUBBER MAT
RM	ROOM
RO	ROUGH OPENING
RT	RUBBER TILE
RTU	ROOF TOP UNIT
RUB	RUBBER
S	
S	SEALANT
S.L.	STRUCTURAL LINE
SACI	SPRAY-APPLIED CELLULOSE INSULATION
SACP	SECURITY ALARM CONTROL PANEL
SAFI	SPRAY-APPLIED FOAM INSULATION
SCHED	SCHEDULE
SCR	SHOWER CURTAIN ROD
SCW	SOLID CORE WOOD
SD	SOAP DISPENSER
SECT	SECTION
SF	SQUARE FEET
SH	SINGLE HUNG
SHR	SHOWER
SIM	SIMILAR
SND	SANITARY NAPKIN DISPENSER
SNV	SANITARY NAPKIN VENDOR
SOLSUR	SOLID SURFACE (COUNTER)
SPC	SPECIAL
SPEC	SPECIFICATION
SQ	SQUARE
SR	SHEET RUBBER
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURE or STRUCTURAL
SUSP	SUSPENDED or SUSPENSION
SV	SHEET VINYL
SYS	SYSTEM(S)
T	
T & B	TOP AND BOTTOM
T & G	TONGUE AND GROOVE
TB	TRASH BARREL
TBA	TO BE ABANDONED
TBB	TILE BACKER BOARD
TBD	TO BE DETERMINED
TBOC	TOP BACK OF CURB
TEL	TELEPHONE
TEMP	TEMPORARY
THK	THICK(NESS)
THRESH	THRESHOLD
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOL	TOP OF LANDING
TOP	TOP OF PLATE
TOS	TOP OF STEEL
TOW	TOP OF WALL
TP	TRANSLUCENT PANEL
TR	TREAD
TS	TUBULAR STEEL
TTD	TOILET TISSUE DISPENSER
TW	TO WEATHER
TYP	TYPICAL
U	
UC	UNDERCUT
UG	UNDERGROUND
UND	UNDERSIDE (OF DECK)
UNFIN	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UV	UNIT VENTILATOR
V	
VB	VINYL BASE / VAPOR BARRIER
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
VPD	VENEER PLASTER BASE
VS	VENT STACK
VT	VINYL TREAD
VTS	VINYL TRANSITION STRIP
VWB	VINYL WALL BASE
VWC	VINYL WALL COVERING
W	
W	WASHER
W/	WITH
W/O	WITHOUT
WB	WOOD BASE
WC	WALL CABINET
WD	WOOD
WDC	WATERPROOFING, DAMPPROOFING, & CAULKING CONTRACTOR
WF	WIRE FABRIC
WG	WIRE GLASS
WH	WALL HUNG
WIN	WINDOW
WP	WATER PROTECTION
WPG	WATERPROOF(ING)
WR	WATER RESISTANT
WS	WATER STOP
WT	WEIGHT
WWF	WELDED WIRE FABRIC

SYMBOLS:

- EXTERIOR ELEVATION (X / AX.XX)
- INTERIOR ELEVATION (1 / A1.01 / 1)
- BUILDING SECTION (X / AX.XX)
- WALL SECTION (X / AX.XX)
- DETAIL (X / AX.XX)
- PARTITION TYPE (X)
- EXTERIOR WALL ASSEMBLY (XX)
- DOOR TYPE or VISION PANEL (VP) (X)
- WINDOW TYPE (X)
- ROOF TYPE (X)
- SPECIFIC DEMOLITION NOTE (X)
- SPECIFIC CONSTRUCTION NOTE (X)
- CHANGE IN PLANE (X)
- LEADER
- DIMENSION (3' - 0")
- CHANGE IN ELEVATION
- CONTROL JOINT (C J)
- ELEVATION or WORK POINT (WP)
- COLUMN GRID (A / 1)
- EXISTING COLUMN GRID (A / 1)
- ALIGN SURFACES (ALIGN)
- REVISION MARKER (X)
- ROOM TAG (ADMINISTRATION / 100)
- DRAWING TITLE (1 View Name / 1/8" = 1'-0" / 1/A201 ORIGINAL TAG REFERENCE LOCATED NEXT TO SCALE)

LEGEND:

- RIGID/SEMI-RIGID INSULATION
- CONCRETE
- SAND / P.C. CONCRETE
- PARTICLE BOARD / MDF
- PLYWOOD/MDO
- FINISH WOOD
- ALUMINUM
- STEEL
- PVC
- FIBER CEMENT
- CONCRETE MASONRY UNIT
- BRICK
- MORTAR
- GROUT
- TERRA COTTA
- EARTH
- GRAVEL
- SPRAY FOAM
- INSULATED METAL PANEL
- WOOD STUDS/FRAMING (DIMENSIONAL LUMBER)
- WOOD BLOCKING
- BATT INSULATION / SOUND ATTENUATION BLANKET
- MATCHLINE

Project:
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ABBREVIATIONS, SYMBOLS, LEGEND & GENERAL NOTES

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DRAFT FOR REVIEW PURPOSES ONLY

FINISH NOTES:

1. FINISH PLANS ARE TO BE READ IN CONJUNCTION WITH THE FINISH SCHEDULE. SHOULD THERE BE ANY DISCREPANCY BETWEEN INFORMATION GIVEN ON THE FINISH/COLOR SCHEDULE AND ANY OTHER DRAWINGS OR SPECIFICATIONS, PROVIDE THE HIGHER QUALITY FINISH.
2. REFER TO REFLECTED CEILING PLANS FOR CEILING TYPES AND HEIGHTS.
3. REFER TO THE FINISH LEGEND AND FINISH FLOOR PLANS FOR DEFINITION, PATTERNS AND EXTENT OF COLORS USED.
4. IN AREAS DESIGNATED WITH NEW CONCRETE FLOORS, PAINT MASONRY WALLS DOWN TO THE FLOOR WHERE NO RUBBER BASE IS PROVIDED. WHERE NO SUSPENDED CEILING IS INSTALLED, WALLS ARE TO BE PAINTED UP TO DECK.
5. PROVIDE THE INTERIOR OF ALL SPACES DESIGNATED "CLOSET" WITH ROD AND SHELF, UNLESS OTHERWISE DESIGNATED TO RECEIVE ADJUSTABLE SHELVES ON STANDARDS SPANNING THE WIDTH OF THE CLOSET.
6. ALL NEW GYPSUM BOARD SOFFITS AND CEILING SHOWN ON REFLECTED CEILING PLANS TO BE PAINTED. REFER TO FINISH NOTES FOR COLOR DESIGNATIONS.
7. ALL NEW HOLLOW METAL FRAMES TO BE PAINTED. REFER TO FINISH NOTES FOR COLOR DESIGNATIONS.
8. ALL NEW STAIR STRINGERS AND RAILINGS TO BE PAINTED. REFER TO FINISH NOTES FOR COLOR DESIGNATIONS.
9. AT ALL WALLS DESIGNATED TO RECEIVE TILED FINISH, TILE BACKING PANELS SHALL BE INSTALLED BEHIND ALL TILED AREAS.
10. ALL EXPOSED TO VIEW CONCRETE ON VERTICAL SURFACES TO RECEIVE SMOOTH FORMED FINISH, CLASS "A".

TOILET ACCESSORY SCHEDULE - DIV 10

FURNISHED BY OWNER - INSTALLED BY CONTRACTOR:

MARK	DESCRIPTION	MFR	QTY
SD	SOAP DISPENSER	OWNER REQ'S	PER PLANS
PTD	PAPER TOWEL DISPENSER	OWNER REQ'S	PER PLANS
TTD	TOILET TISSUE DISPENSER	OWNER REQ'S	PER PLANS
TB	TRASH BARREL	OWNER REQ'S	PER PLANS

VERIFY W/ CLIENT

FURNISHED AND INSTALLED BY CONTRACTOR:

MARK	DESCRIPTION	MFR	QTY
SRWR	SEMI-RECESSED WASTE RECEPTICLE	PER SPEC	PER PLANS
SNV	SANITARY NAPKIN VENDOR	PER SPEC	PER PLANS
SND	SANITARY NAPKIN DISPOSAL	PER SPEC	PER PLANS
CH	COAT / ROBE HOOK	PER SPEC	PER PLANS
GB	GRAB BAR (DIMENSION PER PLANS)	PER SPEC	PER PLANS
MIRR	MIRROR	PER SPEC	PER PLANS
MBH	MOP/BROOM HOLDER	PER SPEC	PER PLANS
JS	JANITOR'S SHELVING	PER SPEC	PER PLANS
SC	SHOWER CURTAIN	PER SPEC	PER PLANS
CR	CURTAIN ROD FOR SHOWER	PER SPEC	PER PLANS

GENERAL NOTES:

1. PROVIDE BULLNOSE TOP COURSE / MTL EDGE TRIM AND CEMENTITIOUS TILE BACK BOARD / CEMENT BOARD AT ALL CERAMIC TILE LOCATIONS, TYPICAL. INSTALLATION OF CERAMIC TILE OVER GYPSUM BOARD EXCEPT FOR A KITCHENETTE BACKSPLASH IS NOT ACCEPTABLE.
2. PROVIDE CONT. BLOCKING AT SHELVING, ACCESS PANELS, DISPLAY MONITORS, MARKER BOARDS ETC. COORDINATE LOCATION IN FIELD.
3. MOISTURE RESISTANT (MR) GYPSUM BOARD TO BE USED IN ALL TOILET ROOM / RESTROOM FACILITIES.
4. PROVIDE PVC SHIMS AS NECESSARY TO MAKE TOILET ROOM ACCESSORIES SUCH AS PTD'S, MIRRORS, SD'S, TOILET PARTITIONS, ETC..., FLUSH ON WALL OVER CERAMIC TILE WAINSCOT. SHIMS TO BE PAINTED BY PAINTING FSB. THICKNESS TO MATCH CERAMIC WALL TILE.

MEZZANINE GENERAL NOTES:

1. AT EACH MEZZANINE SWING GATE LOCATION, PROVIDE 4" H (RED) LETTER SIGNAGE AT MEZZANINE FASCIA TO READ: 200LBS/SF MAXIMUM MEZZANINE LOADING
2. PROVIDE SAFETY CHAIN PER OSHA STANDARDS AT EACH SWING GATE.
3. PROVIDE SAFETY YELLOW PAINT AT MEZZANINE FLOOR AT EACH SWING GATE, AS INDICATED.
4. COORDINATE EXACT LOCATION WITH MECHANICAL, STRUCTURAL AND EQUIPMENT REQUIREMENTS.
5. DO NOT RUN ANY UTILITIES BELOW GATES EXPOSED AND MOUNTED TO WALLS.
6. PROVIDE TIE-OFF POINT FOR OSHA FALL ARREST SYSTEM NEAR MEZZANINE SWING-GATE ON PRIMARY STRUCTURAL ELEMENT.

TYPICAL DEVICE MOUNTING HEIGHTS:

ELECTRICAL EQUIPMENT MOUNTING HEIGHT DIMENSIONS ARE TO CENTER OF DEVICE UNLESS OTHERWISE NOTED:

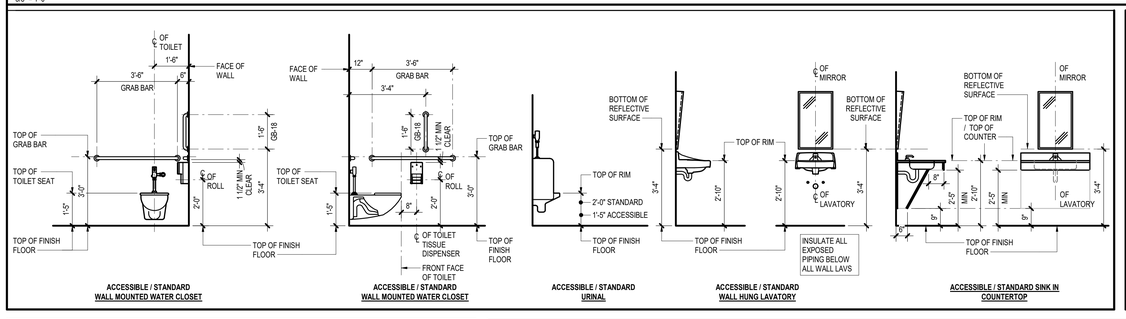
- RECEPTACLES: 18" A.F.F. AT LOCATIONS ABOVE CASEWORK, MOUNT BOTTOM OF RECEPTACLE AT 2" ABOVE BACKSPLASH. AT LOCATIONS BELOW CASEWORK, MOUNT AT 24" A.F.F.
- EXTERIOR RECEPTACLES: 24" A.F.F.
- SWITCHES: 48" A.F.F.
- BOILER EMERGENCY SWITCH: 60" A.F.F.
- DATA/PHONE OUTLETS: 18" A.F.F.
- WALL MOUNTED CLOCKS AND SPEAKERS: COORDINATE LOCATION ABOVE DOOR WITH CEILING HEIGHT. IF THE CLOCK AND SPEAKER DO NOT FIT, PLACE AT 7'-6" A.F.F. NEXT TO DOOR. COORDINATE WITH BLOCK COURSING AS OCCURS. CONSULT DESIGNER IF CONDITIONS DIFFER.
- FIRE ALARM PULL STATIONS: 48" A.F.F.
- AREA OF REFUGE CALL STATION: 48" A.F.F.
- EMERGENCY SHUT-OFF SWITCH/PUSH BUTTON: 48" A.F.F.
- EMERGENCY CALL SWITCH: 36" A.F.F.
- EMERGENCY CALL BELL/LIGHT: 7'-6" A.F.F.
- FIRE ALARM VISUAL/AUDIO INDICATING UNITS: 6'-8" TO BOTTOM OF DEVICE.
- WALL MOUNTED EXIT SIGNS: 8" ABOVE DOOR OR 7'-6" A.F.F.
- EMERGENCY CALL SYSTEM FOR TOILET ROOMS: LOCATE ALARM PULL SWITCH WITHIN 3' OF WATERCLOSET. EXTEND PULL CORD TO WITHIN 12" OF THE FLOOR.

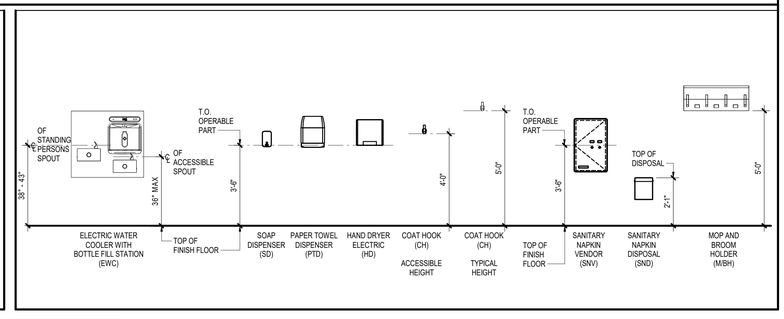
DOOR HARDWARE MOUNTING HEIGHT DIMENSIONS ARE TO CENTER OF HARDWARE:

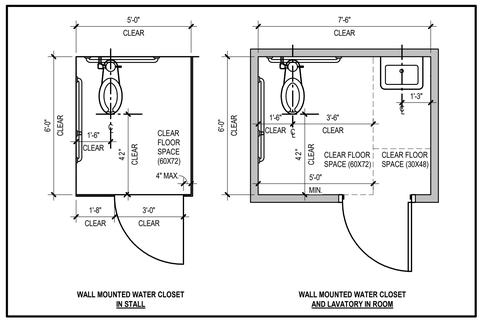
- PULL: 42"
- PUSH PLATE: 45"

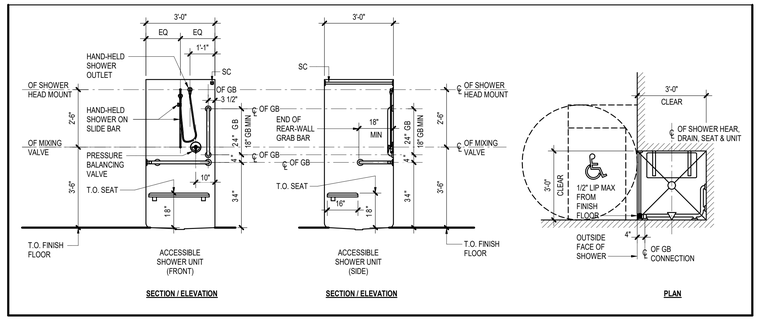
PLUMBING FIXTURE SCHEDULE / MOUNTING HEIGHTS:

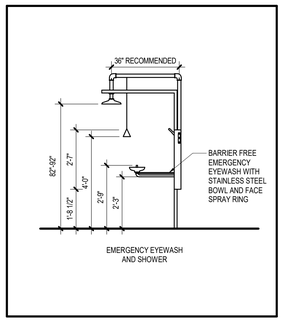
3/8" = 1'-0"

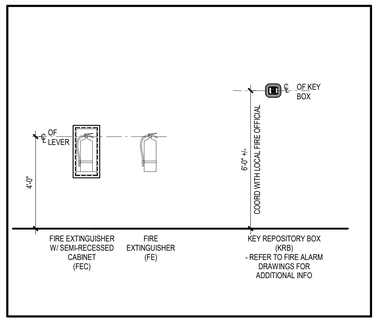












SCALE: 3/8" = 1'-0"

Project:
NEW PUBLIC WORKS FACILITY
14 FOREST ROAD, ACTON MA 01720

TOWN OF ACTON

Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard, Suite 250
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Consultants:

Revisions:

No.	Date	Description

COA:

Seal:

Issued For:
40% DESIGN DEVELOPMENT PRROGRESS SET

Scale: As indicated

Key Plan:

Date: 11/01/2024
Draw By: DRD
Reviewed By: Checker
Approved By: Approver
W&S Project No.: ENG24-1080
W&S File No.: XXX

Drawing Title:
GENERAL NOTES & MOUNTING HEIGHTS

Sheet Number:
A012

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DRAFT FOR REVIEW PURPOSES ONLY

PARTITION TYPE SCHEDULE

WALL TAG	CONSTRUCTION ASSEMBLY TAG SIDE SHEATHING	TAG SIDE SHEATHING HEIGHT	TAG SIDE CORE	OPP. SIDE SHEATHING	OPP. SIDE SHEATHING HEIGHT	ASSEMBLY THICKNESS	FIRE PROTECTION RATING	FIRE PROTECTION UL#	ACOUSTICAL BATT	NOTES	Count	Length	Area
	<varies>	<varies>	<varies>			<varies>			<varies>		23	663' - 1"	8,380 SF
	<varies>	<varies>	<varies>	<varies>	<varies>	<varies>					6	128' - 5"	1,940 SF
1A	1 LAYER GWB	FULL HEIGHT	2 1/2" MS			3 1/8"			•		6	96' - 1"	190 SF
1B	1 LAYER GWB	6" ABV. CEILING	2 1/2" MS			3 1/8"					14	120' - 0"	480 SF
1D	1 LAYER GWB	6" ABV. CEILING	2 1/2" MS			3 1/8"					12	56' - 8"	620 SF
2A	1 LAYER GWB	FULL HEIGHT	3 5/8" MS			4 1/4"			•		11	130' - 8"	1,490 SF
2B	1 LAYER GWB	6" ABV. CEILING	3 5/8" MS			4 1/4"					17	53' - 4"	520 SF
3A	1 LAYER GWB	FULL HEIGHT	3 5/8" MS	1 LAYER GWB	FULL HEIGHT	4 7/8"			•		54	622' - 4"	6,230 SF
3B	1 LAYER GWB	6" ABV. CEILING	3 5/8" MS	1 LAYER GWB	6" ABV. CEILING	4 7/8"					23	212' - 9"	2,160 SF
4B - 2H	2 LAYERS 5/8" TYPE X GWB	FULL HEIGHT	3 5/8" MS	2 LAYER 5/8" TYPE X GWB	FULL HEIGHT	6 1/8"	2HR	U419	•		4	22' - 0"	230 SF
6A	1 LAYER GWB	FULL HEIGHT	6" MS	1 LAYER GWB	FULL HEIGHT	7 1/4"			•		7	193' - 10"	3,140 SF
6C	1 LAYER GWB	FULL HEIGHT	6" MS	1 LAYER GWB	FULL HEIGHT	9 1/4"					1	9' - 9"	80 SF
8A			8" CMU			7 5/8"					25	370' - 4"	3,870 SF
8A - 1H			8" CMU			7 5/8"	1HR	U905			4	71' - 11"	790 SF
10A			8" CONCRETE			8"					7	720' - 10"	1,750 SF
AS1											1	18' - 0"	160 SF
AS2											1	18' - 0"	160 SF
AS3											1	14' - 0"	30 SF
CW1											1	9' - 10"	90 SF
CW2											1	37' - 10"	350 SF
CW3											1	6' - 2"	60 SF
CW4											1	21' - 3"	130 SF
CW5											1	9' - 7"	60 SF
F1						<varies>					2	316' - 0"	4,610 SF
F2						<varies>					4	268' - 8"	2,370 SF
TP1											1	12' - 0"	70 SF
TP2											6	122' - 1"	570 SF
TP3											2	41' - 4"	170 SF
TP4											1	82' - 0"	490 SF
TP5											1	80' - 0"	480 SF
TYPE A-LOWER						8"					7	721' - 4"	2,250 SF
TYPE A-UPPER						4"					24	1038' - 8"	15,770 SF
TYPE B-LOWER						15 1/2"					5	174' - 1"	690 SF
TYPE B-UPPER						11 1/2"					7	238' - 1"	1,970 SF
TYPE C-LOWER		FULL HEIGHT				17 5/8"					3	111' - 9"	320 SF
TYPE C-UPPER		FULL HEIGHT				13 5/8"					3	111' - 1"	2,410 SF
W1											5	15' - 0"	90 SF
W2											4	24' - 0"	140 SF
W3											1	12' - 0"	70 SF
W4											1	6' - 0"	40 SF
W5											1	12' - 0"	70 SF

WALL TYPE NOTES:

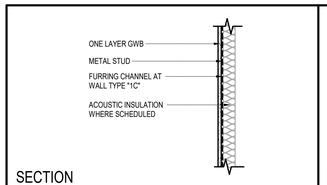
1. WALL TYPES LISTED REPRESENT SEVERAL TYPES OF WALL CONSTRUCTION, ALL OF WHICH MAY NOT BE USED ON THIS PROJECT. REFER TO FLOOR PLANS FOR WALL TYPE DESIGNATIONS.
2. EXTEND ALL METAL STUDS AND GYPSUM BOARD TO UNDERSIDE OF DECK. WHERE ABUSE RESISTANT GYPSUM BOARD (ARGB) IS USED, EXTEND ARGB TO 6" ABOVE FINISH CEILING, CONTINUE WITH GYPSUM BOARD TO UNDERSIDE OF DECK.
3. AT ALL NON-FIRE RATED PARTITIONS, FILL VOIDS WITH SOUND ATTENUATION INSULATION INCLUDING, BUT NOT LIMITED TO, FLUTES IN METAL FLOOR / ROOF DECK, VOIDS BETWEEN PARTITIONS AND STRUCTURAL MEMBERS, PENETRATIONS OF DUCTWORK, ELECTRICAL CONDUIT, PIPING, ETC.
4. GYPSUM BOARD AND ARGB USED IN A ONE, TWO, OR THREE HOUR FIRE-RESISTANCE RATED PARTITION MUST BEAR THE U.L. CLASSIFICATION MARKING.

   SMOKE PARTITIONS:
5. NON-FIRE-RESISTANCE RATED PARTITIONS REQUIRED TO RESIST THE PASSAGE OF SMOKE ARE DESIGNATED AS "SMOKE RESISTANT" WITH AN ASTERISK (*) LOCATED BELOW THE WALL TYPE DESIGNATION. EXTEND ALL SMOKE PARTITIONS TO THE UNDERSIDE OF METAL FLOOR / ROOF DECK AND / OR STRUCTURE ABOVE. PENETRATIONS AND VOIDS SHALL BE FIRESTOPPED IN ACCORDANCE WITH DIVISION 07 SPECIFICATION SECTION "FIRESTOPPING". ALL HEAD-OF-WALL JOINTS AND FLOOR-TO-WALL JOINTS SHALL BE SEALED IN ACCORDANCE WITH SPECIFICATION SECTION "FIRESTOPPING".

   SMOKE BARRIERS:
6. FOR THE PURPOSE OF SUBDIVIDING BUILDING SPACES, SMOKE BARRIERS ARE FIRE-RESISTANCE RATED PARTITIONS, DESIGNATED WITH AN "S" LOCATED ADJACENT TO THE WALL TYPE DESIGNATION.
7. PROVIDE SMOKE DAMPERS AT DUCTWORK PENETRATIONS IN ALL ONE, TWO, AND THREE HOUR FIRE-RESISTANCE RATED SMOKE BARRIERS.
8. REFER TO FIRE-RESISTANCE RATED CONSTRUCTION FOR ADDITIONAL REQUIREMENTS.

   FIRE-RESISTANCE RATED CONSTRUCTION:
9. ALL FIRE-RESISTANCE RATED PARTITIONS RESIST THE PASSAGE OF SMOKE AND ARE CONSIDERED SMOKE RESISTANT WITHOUT THE ASTERISK DESIGNATION. EXTEND ALL FIRE-RESISTANCE RATED PARTITIONS TO THE UNDERSIDE OF METAL FLOOR/ROOF DECK AND/OR STRUCTURE ABOVE. PENETRATIONS AND VOIDS SHALL BE FIRESTOPPED IN ACCORDANCE WITH SPECIFICATION SECTION "FIRESTOPPING". ALL HEAD-OF-WALL JOINTS AND FLOOR-TO-WALL JOINTS SHALL BE SEALED IN ACCORDANCE WITH SPECIFICATION SECTION "FIRE-RESISTIVE JOINT SYSTEMS."

   X — WALL TYPE
   12'-0" A.F.F. — (HEIGHT OF WALL IF APPLICABLE, IF NO DIMENSION, THEN WALL IS TO UNDERSIDE OF DECK)
10. GYPSUM BOARD AT EXTERIOR WALLS IS TO GO TO THE UNDERSIDE OF DECK AND HAVE THE ROOF VAPOR BARRIER / FABRIC LINER EXTEND AND SEALED AGAINST THE BACK SIDE OF THE GYPSUM BOARD.

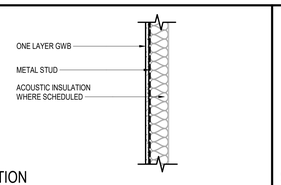


SECTION

PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
1	2 1/2"	5/8"	FULL HEIGHT	3 1/8"	NO	-
1A	2 1/2"	5/8"	FULL HEIGHT	3 1/8"	YES	-
1B	2 1/2"	5/8"	6" ABOVE FINISHED CLG	3 1/8"	NO	-
1C	7/8"	5/8"	6" ABOVE FINISHED CLG	1 1/2"	NO	-

1 — 2 1/2" METAL STUD

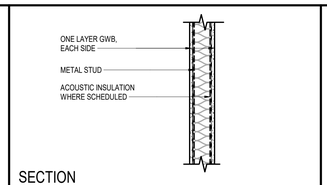


SECTION

PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
2	3 5/8"	5/8"	FULL HEIGHT	4 1/4"	NO	-
2A	3 5/8"	5/8"	FULL HEIGHT	4 1/4"	YES	-
2B	3 5/8"	5/8"	6" ABOVE FINISHED CLG	4 1/4"	NO	-

2 — 3 5/8" METAL STUD - 1 LAYER GWB - 1 SIDE

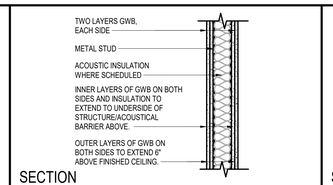


SECTION

PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
3	3 5/8"	5/8"	FULL HEIGHT	4 7/8"	NO	-
3A	3 5/8"	5/8"	FULL HEIGHT	4 7/8"	YES	-
3B	3 5/8"	5/8"	6" ABOVE FINISHED CLG	4 7/8"	NO	-

3 — 3 5/8" METAL STUD - 1 LAYER GWB - BOTH SIDES

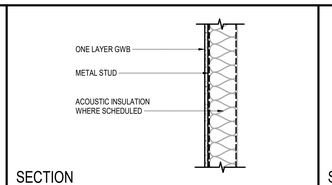


SECTION

PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
4	3 5/8"	(2) 5/8"	FULL HEIGHT	6 1/8"	NO	-
4A	3 5/8"	(2) 5/8"	6" ABOVE FINISHED CLG	6 1/8"	NO	-
4B - 2H	3 5/8"	(2) 5/8"	FULL HEIGHT	6 1/8"	YES	2 HR PARTITION - U419

4 — 3 5/8" METAL STUD - 2 LAYER GWB - BOTH SIDES

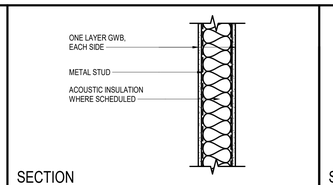


SECTION

PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
5	6"	5/8"	FULL HEIGHT	6 5/8"	NO	-
5A	6"	5/8"	FULL HEIGHT	6 5/8"	YES	-
5B	6"	5/8"	6" ABOVE FINISHED CLG	6 5/8"	NO	-

5 — 6" METAL STUD - 1 LAYER GWB - 1 SIDE

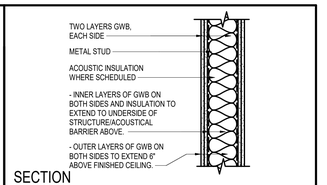


SECTION

PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
6	6"	5/8"	FULL HEIGHT	7 1/4"	NO	-
6A	6"	5/8"	FULL HEIGHT	7 1/4"	YES	-
6B	6"	5/8"	6" ABOVE FINISHED CLG	7 1/4"	NO	-
6C	8"	5/8"	FULL HEIGHT	9 1/4"	NO	-

6 — 6" METAL STUD - 1 LAYER GWB - BOTH SIDES

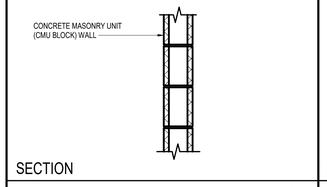


SECTION

PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
7 - 2h	6"	5/8"	FULL HEIGHT	8 1/2"	YES	2 HR PARTITION - U411

7 — 6" METAL STUD - 2 LAYERS GWB - BOTH SIDES

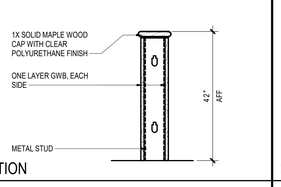


SECTION

PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
8	6" NOM	-	-	5 5/8"	NO	-
8 - 1H	6" NOM	-	-	5 5/8"	NO	1 HR PARTITION - U906
8A	8" NOM	-	-	7 5/8"	NO	-
8A - 1H	8" NOM	-	-	7 5/8"	NO	1 HR PARTITION - U905
8A - 2H	8" NOM	-	-	7 5/8"	NO	2 HR PARTITION - U905
8B	12" NOM	-	-	11 5/8"	NO	-
8B - 1H	12" NOM	-	-	11 5/8"	NO	1 HR PARTITION - U905
8B - 2H	12" NOM	-	-	11 5/8"	NO	2 HR PARTITION - U905

8 — CMU WALLS

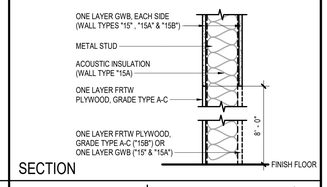


SECTION

PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
9	3 5/8"	5/8"	UP TO 41"	4 7/8"	NO	-

9 — PARTIAL HEIGHT WALLS

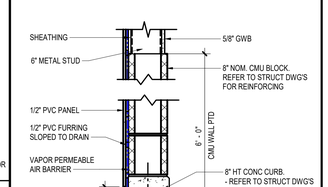


SECTION

PLAN

MARK	SHEATHING	SHEATHING HEIGHT	CORE SIZE	SHEATHING	SHEATHING HEIGHT	ACOUSTIC INSUL
15	PLY - 1 SIDE, GWB OTHER	UP TO 8'-0"	6" MS	GWB ABOVE	FULL HEIGHT	NO
15A	PLY - 1 SIDE, GWB OTHER	UP TO 8'-0"	6" MS	GWB ABOVE	FULL HEIGHT	YES
15B	PLY - 2 SIDES	UP TO 8'-0"	6" MS	GWB ABOVE	FULL HEIGHT	NO
15C	PLY - 1 SIDE	UP TO 8'-0"	6" MS	GWB ABOVE	FULL HEIGHT	RIGID INSULATION

15 — METAL STUD FULL HEIGHT WITH PLYWOOD UP TO 8'-0", GWB ABOVE PLYWOOD TO UNDERSIDE OF STRUCTURE (SEE PLANS FOR THE LOCATION OF GWB / PLYWOOD)

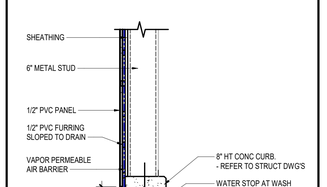


SECTION

PLAN

MARK	ASSEMBLY DESCRIPTION
16	PARTITION CMU WALL

16 — VEHICLE WASH BAY WALL ASSEMBLIES

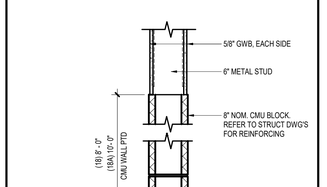


SECTION

PLAN

MARK	ASSEMBLY DESCRIPTION
16A	PARTITION CMU WALL

17 — VEHICLE WASH BAY WALL ASSEMBLIES



SECTION

PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
18	VARIES	5/8"	FULL HEIGHT	VARIES	NO	-
18A	VARIES	5/8"	FULL HEIGHT	VARIES	NO	-

18 — STACKED PARTITION: 8" CMU / 6" METAL STUD - 1 LAYER GWB - BOTH SIDES

0" 6" 1' 2'

SCALE: 1" = 1'-0"

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Project:
NEW PUBLIC WORKS FACILITY
14 FOREST ROAD, ACTON MA 01720

TOWN OF ACTON

Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard, Suite 250
Foxborough, MA 02035
978.532.1900 800.SAMPSON
www.westonandsampson.com

Consultants:

Revisions:

No.	Date	Description

COA:

Seal:

Issued For:

40% DESIGN DEVELOPMENT PRROGRESS SET

Scale: As indicated

Key Plan:

Date: 11/01/2024
Draw By: DRD
Reviewed By: Checker
Approved By: Approver
W&S Project No.: ENG24-1080
W&S File No.: XXX

Drawing Title:

PARTITION TYPES

Sheet Number:

A021

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EXTERIOR WALL ASSEMBLIES:

NOTE: SEE DETAILS ON A6 & A7 SERIES FOR ADDITIONAL INFORMATION.

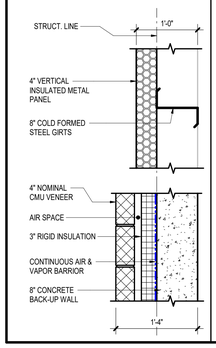
TYPE A

LOWER WALL ASSEMBLY
(UP TO 3'-4" HT)
(1'-4" TOTAL THICKNESS)
EXTERIOR
- 4" NOMINAL CMU VENEER
- AIR SPACE
- 3" RIGID INSULATION
- CONTINUOUS AIR & VAPOR BARRIER
- 8" CONCRETE BACK-UP WALL

INTERIOR

UPPER WALL ASSEMBLY
(1'-0" TOTAL THICKNESS)
EXTERIOR
- 4" VERTICAL INSULATED METAL PANEL, MIN R-26, BREAK METAL TRIM, BY MBM
- 8" COLD FORMED STEEL GIRTS, BY MBM
- STEEL BUILDING FRAME, BY MBM

INTERIOR



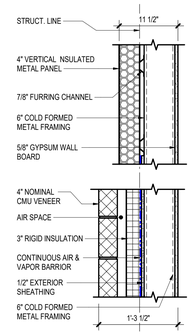
TYPE B

LOWER WALL ASSEMBLY
(UP TO 3'-4" HT)
(1'-3 1/2" TOTAL THICKNESS)
EXTERIOR
- 4" NOMINAL CMU VENEER
- AIR SPACE
- 3" RIGID INSULATION
- CONTINUOUS AIR & VAPOR BARRIER
- 1/2" EXTERIOR SHEATHING
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- 5/8" GYPSUM WALL BOARD

INTERIOR

UPPER WALL ASSEMBLY
(0'-11 1/2" TOTAL THICKNESS)
EXTERIOR
- 4" VERTICAL INSULATED METAL PANEL, MIN R-26, BREAK METAL TRIM, BY MBM
- 7/8" FURRING CHANNEL AT 16" O.C., COORDINATE WITH METAL PANEL FASTENER REQUIREMENTS, BY MBM
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- 5/8" GYPSUM WALL BOARD

INTERIOR



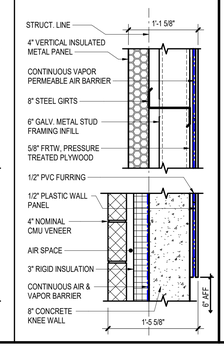
TYPE C

LOWER WALL ASSEMBLY
(UP TO 3'-4" HT)
(1'-4" TOTAL THICKNESS)
EXTERIOR
- 4" NOMINAL CMU VENEER
- AIR SPACE
- 3" RIGID INSULATION
- CONTINUOUS AIR & VAPOR BARRIER
- 8" CONCRETE BACK-UP WALL (3' - 4" HT)
- CONTINUOUS AIR & VAPOR BARRIER
- 1/2" PVC FURRING SLOPED TO DRAIN, SHIM AS NEEDED
- 1/2" PLASTIC WALL PANEL

INTERIOR

UPPER WALL ASSEMBLY
(1'-1 5/8" TOTAL THICKNESS)
EXTERIOR
- 4" VERTICAL INSULATED METAL PANEL, MIN R-26, BREAK METAL TRIM, BY MBM
- 8" COLD FORMED STEEL GIRTS, BY MBM
- 6" GALVANIZED STEEL STUD FRAMING, SPAN BETWEEN HORIZONTAL GIRT FRAMING, TYP.
- 5/8" FIRE RETARDENT TREATED, PRESSURE TREATED A-C PLYWOOD SHEATHING AT ALL WASH BAY WALLS, TYP.
- CONTINUOUS VAPOR PERMEABLE AIR BARRIER
- 1/2" PVC FURRING SLOPED TO DRAIN, SHIM AS NEEDED
- 1/2" PLASTIC WALL PANEL

INTERIOR



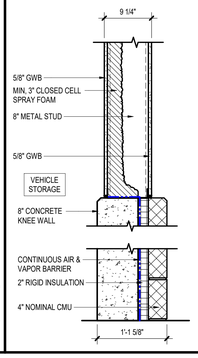
FUME SEPARATION WALL ASSEMBLIES:

TYPE F1

LOWER WALL ASSEMBLY
(UP TO 5'-4" HT)
(1' - 6" TOTAL THICKNESS)

- 8" CONC. KNEE WALL
- CONTINUOUS AIR & VAPOR BARRIER
- 2" RIGID INSULATION
- AIR SPACE
- 8" NOMINAL CMU VENEER

UPPER WALL ASSEMBLY
(1" - 3 5/8" TOTAL THICKNESS)
- 5/8" GYPSUM WALL BOARD
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- MIN. 3" CLOSED CELL SPRAY FOAM BETWEEN STUDS
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- 5/8" GYPSUM WALL BOARD

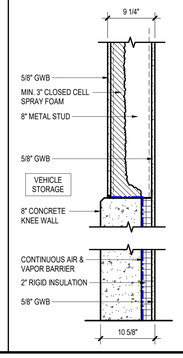


TYPE F2

LOWER WALL ASSEMBLY
(1' - 5" TOTAL THICKNESS)
(**F2**: UP TO 5'-4" HT)

- 8" CONC. KNEE WALL
- CONTINUOUS AIR & VAPOR BARRIER
- 2" RIGID INSULATION
- AIR SPACE
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- 5/8" GYPSUM WALL BOARD

UPPER WALL ASSEMBLY
(1" - 3 5/8" TOTAL THICKNESS)
- 5/8" GYPSUM WALL BOARD
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- MIN. 3" CLOSED CELL SPRAY FOAM BETWEEN STUDS
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- 5/8" GYPSUM WALL BOARD



0" 6" 1' 2'
SCALE: 1" = 1'-0"

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Scale: 1" = 1'-0"

Key Plan:

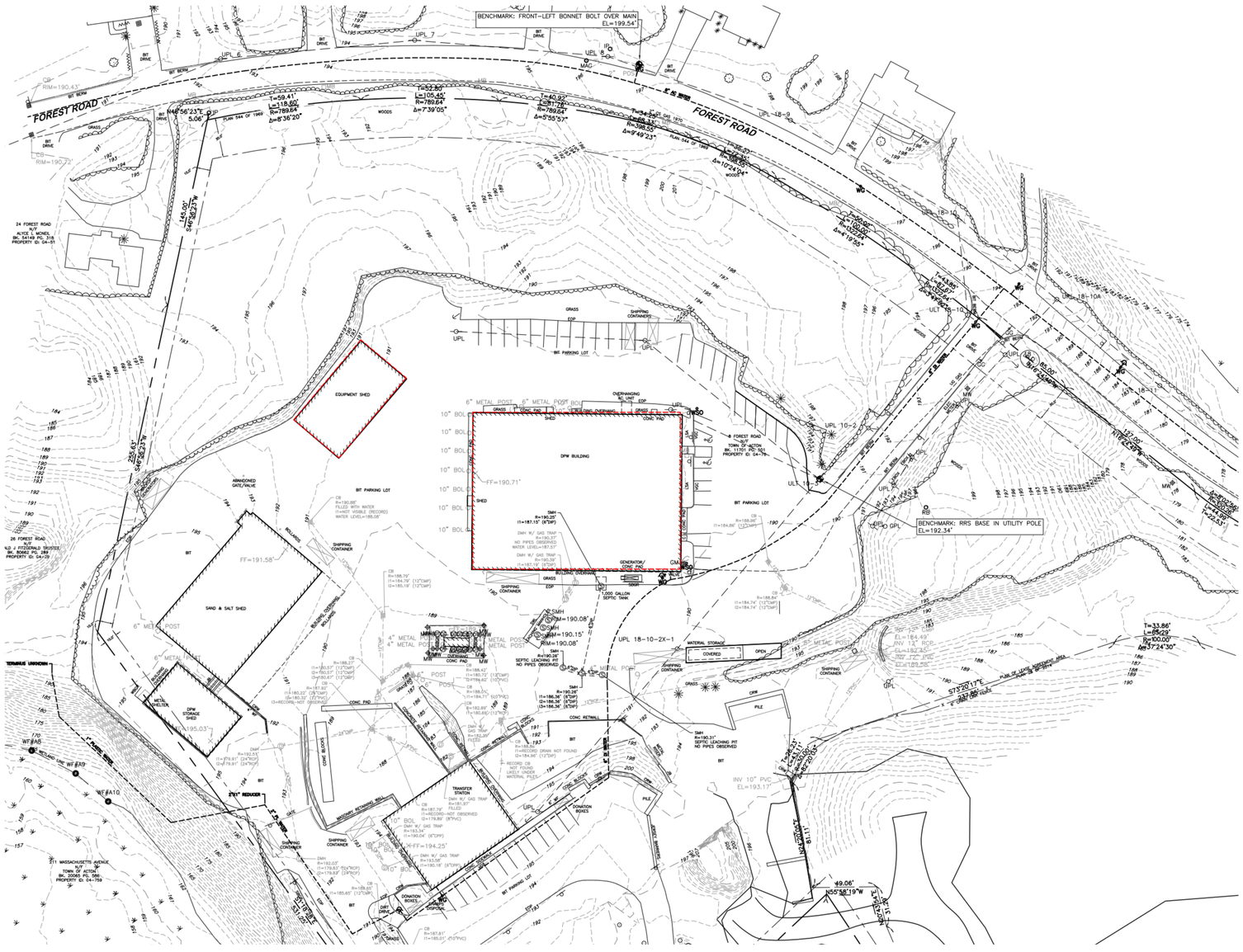
Date:	11/01/2024
Draw By:	DRD
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:
EXTERIOR & FUME SEPARATION WALL ASSEMBLIES

Sheet Number:
A022

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BENCHMARK: FRONT-LEFT BONNET BOLT OVER MAIN
EL=199.54'
FOREST ROAD
FOREST ROAD
BENCHMARK: RRS BASE IN UTILITY POLE
EL=192.34'
DPW BUILDING
FF=190.71'
SAND & SALT SHED
FF=191.58'
DPW STORAGE SHED
FF=195.03'
EQUIPMENT SHED
FF=194.25'
BIT PARKING LOT
SHIPPING CONTAINER
TRANSFER STATION
DONATION BOXES
MATERIAL STORAGE
COVERED
OPEN
1,000 GALLON SEPTIC TANK
SEPTIC LEACHING PIT
NO PIPES OBSERVED
METAL SHELTER
CONC BLOCK
CONC RETAINING WALL
24 FOREST ROAD N/F ALICE S. MCNEIL BK. 54148 PG. 316 PROPERTY ID: 04-51
26 FOREST ROAD N/F LD J FITZGERALD TRUSTEE BK. 80062 PG. 189 PROPERTY ID: 04-29
31 MASSACHUSETTS AVENUE N/F TOWN OF ACTON BK. 20065 PG. 588 PROPERTY ID: 04-159
4 FOREST ROAD N/F TOWN OF ACTON BK. 11701 PG. 501 PROPERTY ID: 04-76
ABANDONED GATE/VALVE
TERMINUS UNKNOWN
WETLAND LINE WF BA9
WF BA10
WF BA8
N46°56'23"E 5.06'
L=59.41'
L=118.60'
R=789.64'
Δ=8°36'20"
L=105.45'
R=789.64'
Δ=7°39'05"
L=40.93'
R=789.64'
Δ=5°55'57"
L=34.39'
R=388.55'
Δ=5°04'13"
L=98.55'
R=388.55'
Δ=14°32'23"
L=100.46'
R=387.55'
Δ=14°51'05"
L=44.39'
R=387.55'
Δ=6°33'54"
L=44.60'
R=432.53'
Δ=5°54'37"
T=33.86'
L=66.09'
R=100.00'
Δ=37°24'30"
S46°56'23"W 145.55'
S46°56'23"W 255.63'
S46°56'23"W 178.62'
S73°20'17"E 337.86'
N55°58'19"W 49.06'
INV 10" PVC EL=193.17'
INV 12" RCP EL=189.85'
INV 12" PVC EL=189.85'
EL=184.49'
INV 12" RCP EL=182.35'
UPL 18-10
UPL 18-10A
UPL 18-10-2X-1
UPL 18-9
UPL 10-2
ULT 18-12
ULT 18-11
UPL 7
UPL 6
MW
CB RIM=190.43'
CB RIM=190.72'
MH RIM=190.08'
MH RIM=190.15'
MH RIM=190.08'
SMH RIM=190.24'
SMH RIM=190.37'
SMH RIM=190.28'
SMH RIM=186.36'
SMH RIM=186.36'
SMH RIM=190.28'
SMH RIM=190.37'
SMH RIM=192.51'
SMH RIM=179.91'
SMH RIM=179.91'
SMH RIM=189.86'
SMH RIM=189.86'
SMH RIM=189.86

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FLOOR PLAN GENERAL NOTES:

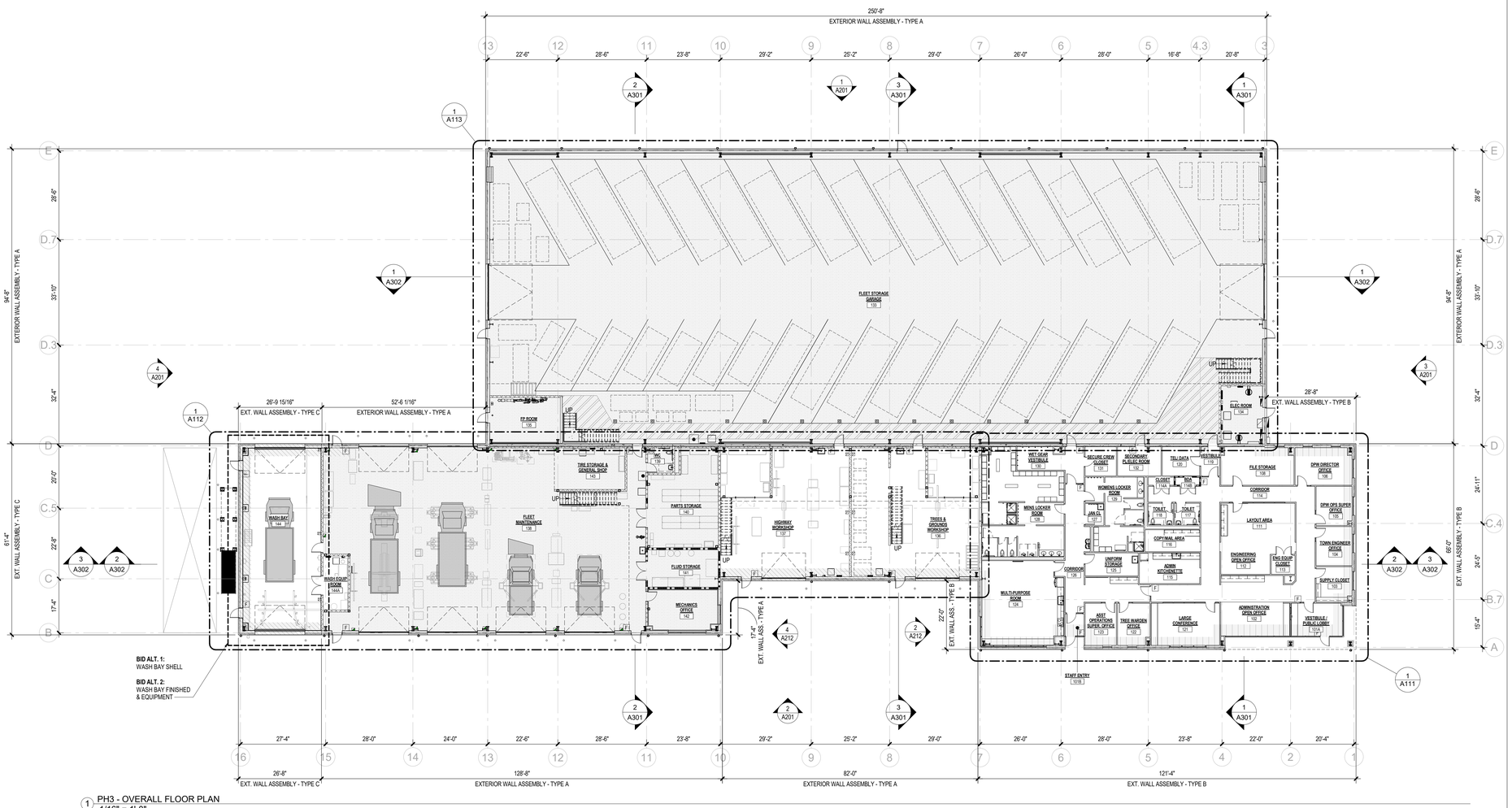
1. EQUIPMENT SHOWN FOR REFERENCE ONLY. SEE EQ DRAWINGS FOR MORE INFO.
2. FURNITURE SHOWN FOR INFORMATION ONLY (N.I.C.). SEE FURNITURE PLAN A921 FOR MORE INFO.
3. F.E. = FIRE EXTINGUISHER.
   F.E.C = FIRE EXTINGUISHER CABINET
   - BRACKET MOUNTED
   - CABINET MOUNTED (SEMI-RECESSED)
4. ALL INTERIOR DIMENSIONS ARE TAKEN FROM FACE OF GYPSUM WALL BOARD TO FACE OF GYPSUM WALL BOARD OR FACE OF CMU UNLESS SPECIFICALLY NOTED OTHERWISE.
5. SEE SHEET A012 FOR PLUMBING FIXTURE SCHEDULE / MOUNTING HEIGHTS.
6. BOLLARDS:
   - EB: EXTERIOR BOLLARD, 6" DIAMETER (SEE CIVIL DWGS)
   - IB: INTERIOR BOLLARD, 6" DIAMETER (SEE DETAIL X / AXXX)
7. FUME SEPARATION PARTITION, SEE A031 - FUME SEPARATION ASSEMBLY, TYPE F1 AND F2.
8. BOX-OUT DIMENSIONS AT STRUCTURAL COLUMNS ARE APPROXIMATE. GENERAL CONTRACTOR TO INSTALL TIGHT TO STRUCTURE, TYPICAL.
9. NOT ALL TV / MONITOR LOCATIONS ARE SHOWN. COORDINATE PROPOSED LOCATIONS WITH ELECTRICAL &TELECOMMUNICATIONS DRAWINGS. PROVIDE BLOCKING AT EACH LOCATION ACCORDINGLY.
10. CG — CORNER GUARD, SEE A901 FOR LOCATIONS.

UNDERSLAB RIGID INSULATION LEGEND:

a) R-10 RIGID INSULATION
- STANDARD COMPRESSIVE STRENGTH (25 PSI)
- 4' - 0" HORIZONTAL FROM FOUNDATION WALL INWARDS
- 2' - 0" VERTICAL ON EXTERIOR SIDE OF FOUNDATION WALL

b) R-10 RIGID INSULATION
- HIGH COMPRESSIVE STRENGTH (60 PSI)
- 4' - 0" HORIZONTAL FROM FOUNDATION WALL INWARDS
- 2' - 0" VERTICAL ON EXTERIOR SIDE OF FOUNDATION WALL

c) R-15 RIGID INSULATION
- HIGH COMPRESIVE STRENGTH (60 PSI)
- COMPLETELY UNDER SLAB
- DOWN TO TOP OF FOOTING ON EXTERIOR SIDE OF FOUNDATION WALL



1 PH3 - OVERALL FLOOR PLAN
1/16" = 1'-0"

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

Project:
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Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

OVERALL FLOOR PLAN

Sheet Number:

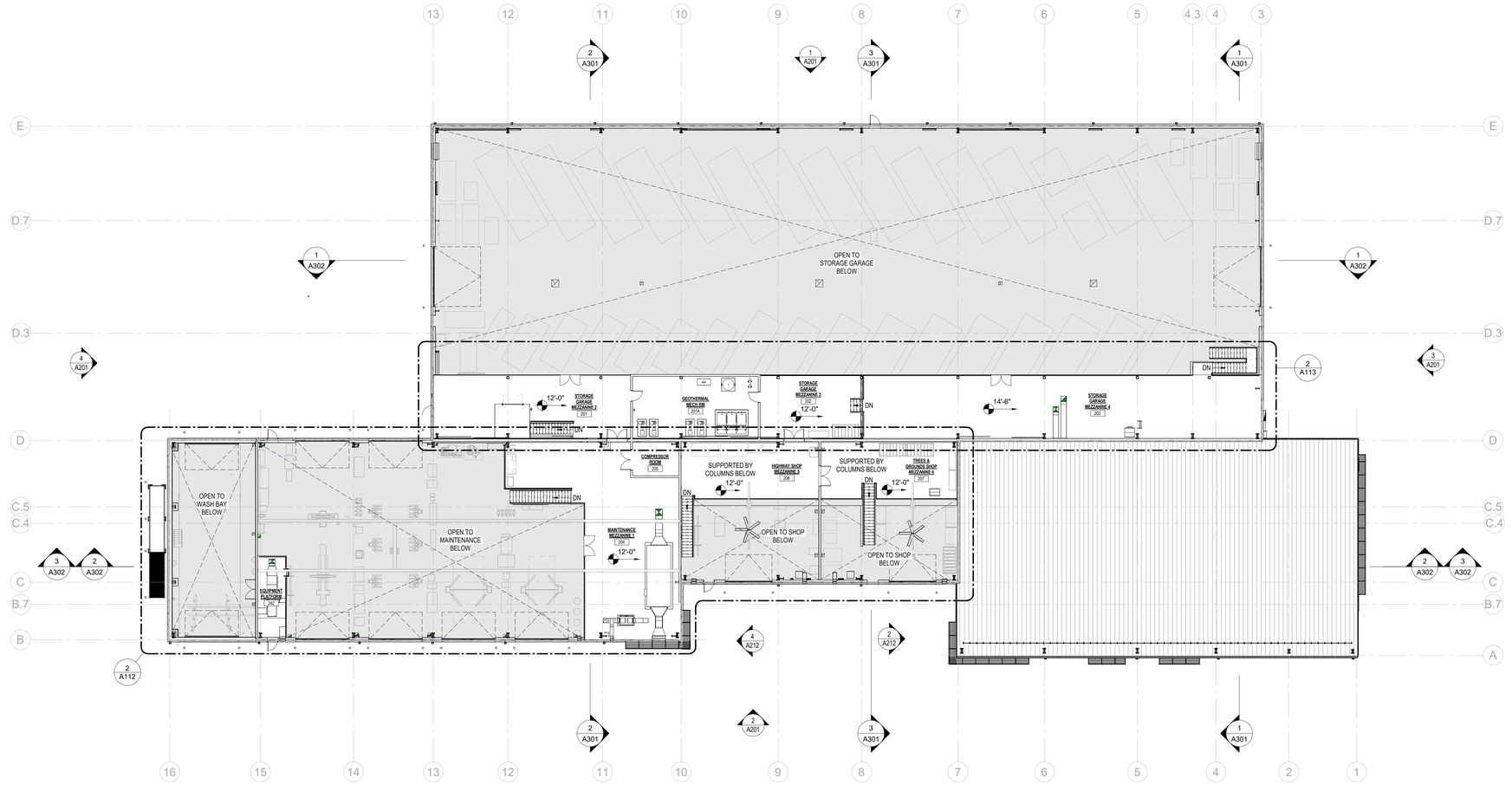
A101

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MEZZANINE GENERAL NOTES:

1. AT EACH MEZZANINE SWING GATE LOCATION, PROVIDE 4" H (RED) LETTER SIGNAGE AT MEZZANINE FASCIA TO READ: 200LBS/SF MAXIMUM MEZZANINE LOADING
2. PROVIDE SAFETY CHAIN PER OSHA STANDARDS AT EACH SWING GATE.
3. PROVIDE SAFETY YELLOW PAINT AT MEZZANINE FLOOR AT EACH SWING GATE, AS INDICATED.
4. COORDINATE EXACT LOCATION WITH MECHANICAL, STRUCTURAL AND EQUIPMENT REQUIREMENTS.
5. DO NOT RUN ANY UTILITIES BELOW GATES EXPOSED AND MOUNTED TO WALLS.
6. PROVIDE TIE-OFF POINT FOR OSHA FALL ARREST SYSTEM NEAR MEZZANINE SWING-GATE ON PRIMARY STRUCTURAL ELEMENT.



1 PH3 - OVERALL MEZZANINE PLAN
1/16" = 1'-0"

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

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Key Plan:

NORTH

Date:	11/01/2024
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W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

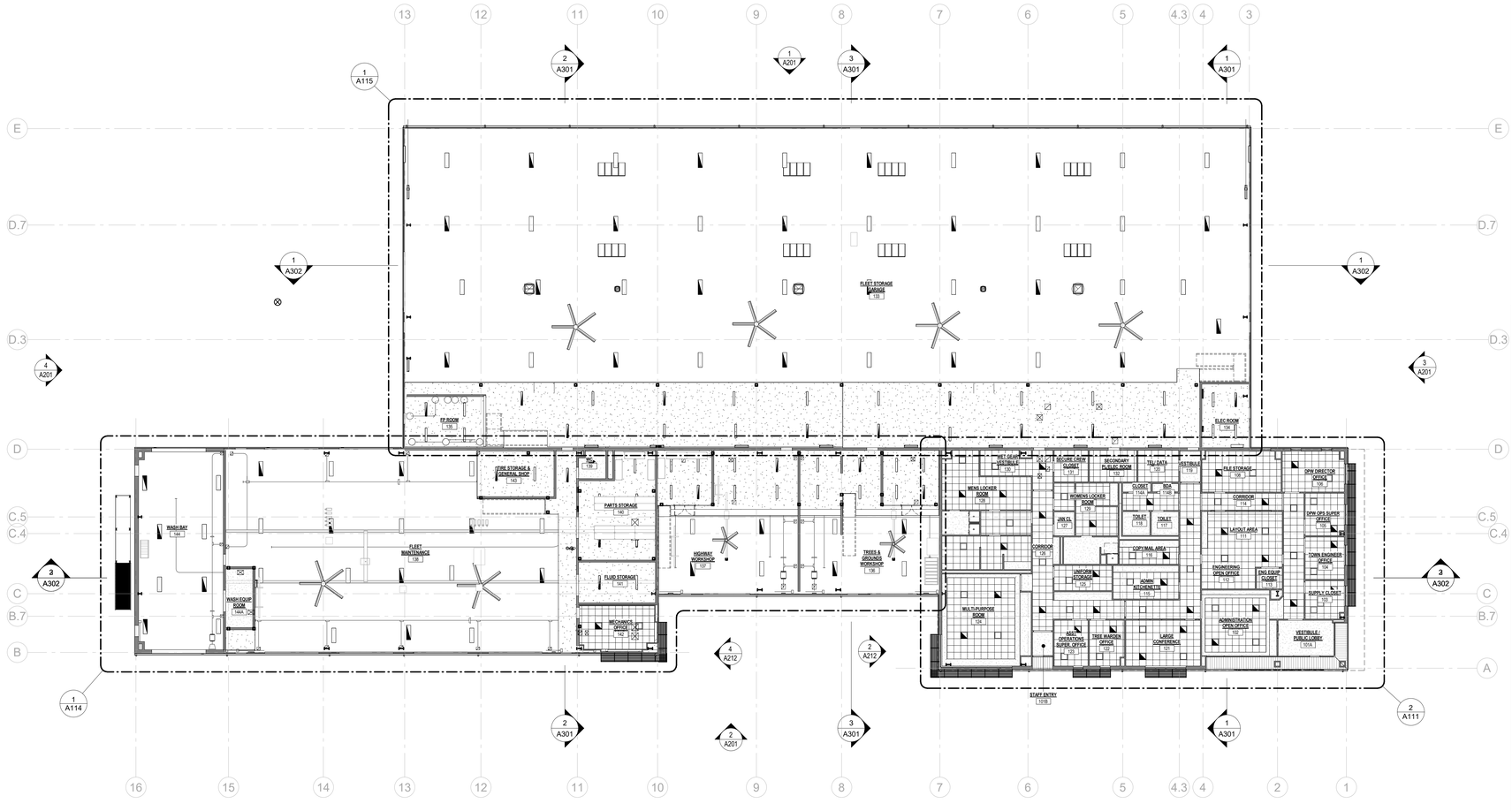
OVERALL MEZZANINE PLAN

Sheet Number:

A102

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1 OVERALL REFLECTED CEILING PLAN - BELOW MEZZANINE
1/16" = 1'-0" 1/ A201

REFLECTED CEILING PLAN NOTES:

1. REFER TO M.E.P / F.P. DRAWINGS FOR LOCATION OF LIGHT FIXTURES, SPRINKLER HEADS, SUPPLIES, RETURNS AND ADDITIONAL CEILING INFORMATION.
2. ALL DIFFUSERS, SPRINKLER HEADS, ETC. AT ACT AREAS TO BE CENTERED ON TILE.
3. SUSPENDED ACT AT 9'-4" AFF UNLESS NOTED OTHERWISE (U.N.O.)
4. ALL GWB CEILINGS AND SOFFITS AT 9'-4" AFF (U.N.O.)
5. COORDINATE QUANTITY AND LOCATION OF LIGHT FIXTURES WITH ELECTRICAL DRAWINGS.
6. LIGHT FIXTURE SYMBOLS ON REFLECTED CEILING PLANS ARE DIAGRAMMATIC FOR REFERENCE ONLY. REFER TO ELECTRICAL DRAWINGS FOR TYPE OF LIGHT FIXTURES. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR QUANTITY OF LIGHT FIXTURES AS INDICATED ON THE ELECTRICAL DRAWINGS.
7. FOR CEILING HEIGHTS AND TYPES, REFER TO REFLECTED CEILING PLAN DRAWINGS.
8. NO SUSPENDED LOADS SHALL BE SUPPORTED BY THE ROOF DECK. THIS INCLUDES PIPING, DUCTWORK, MECHANICAL EQUIPMENT, STAGE RIGGING, CEILING, ETC. ALL STEEL FRAMING MEMBERS PREFERABLY UTILIZING A SYSTEM OF UNISTRUTS, BEAM CLAMPS, AND THREADED RODS. ALL ATTACHMENT DEVICES SHALL BE SUBMITTED FOR REVIEW AND ARE SUBJECT TO APPROVAL OF THE DESIGNER.
9. COORDINATE QUANTITY AND LOCATION FOR EXIT SIGNS WITH ELECTRICAL DRAWINGS.
10. COORDINATE QUANTITY AND LOCATION OF SPRINKLERS WITH FIRE PROTECTION DRAWINGS.

REFLECTED CEILING PLAN LEGEND:

CEILING TYPES:

TYPE A1: 2' x 2' SUSPENDED ACOUSTICAL PANEL

TYPE A2: 2' x 2' SUSPENDED ACOUSTICAL PANEL - MOISTURE RESISTANT

TYPE G1: GYPSUM BOARD CEILING

TYPE G2: GYPSUM BOARD CEILING - MOISTURE RESISTANT

TYPE G3: 2-HR FIRE RATED CEILING UL DESIGN NO. U415

- XX — SOFFIT DETAIL - REFER TO CEILING SERIES
- TYPE / A / X'-X" / HEIGHT — CEILING TAG
- LIGHT FIXTURES
- SURFACE MTD. LIGHT FIXTURE
- TRACK LIGHTING
- SUPPLY DIFFUSER - REF: MECH DWGS
- RETURN VENT - REF: MECH DWGS
- EXHAUST VENT - REF: MECH DWGS
- CLG. MTD. / EXTERIOR SECURITY CAMERA
- R.H. — RADIANT HEATER
- C.U.H. — CABINET UNIT HEATER
- U.H. — UNIT HEATER
- EXIT SIGN
- MOTION DETECTOR
- SD — SMOKE DETECTOR
- OS — OCCUPANCY SENSOR
- PS — CEILING PHOTO SENSOR
- S — CEILING FLUSH MOUNTED SPEAKER
- F — FIRE ALARM SPEAKER / VISUAL SIGNAL
- F CLG — CEILING MOUNTED FIRE ALARM SPEAKER / VISUAL SIGNAL
- F — FIRE ALARM VISUAL SIGNAL
- CEILING MOUNTED SPRINKLER
- WALL MOUNTED SPRINKLER

0' 4' 8' 16'
SCALE: 3/32" = 1'-0"

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NORTH

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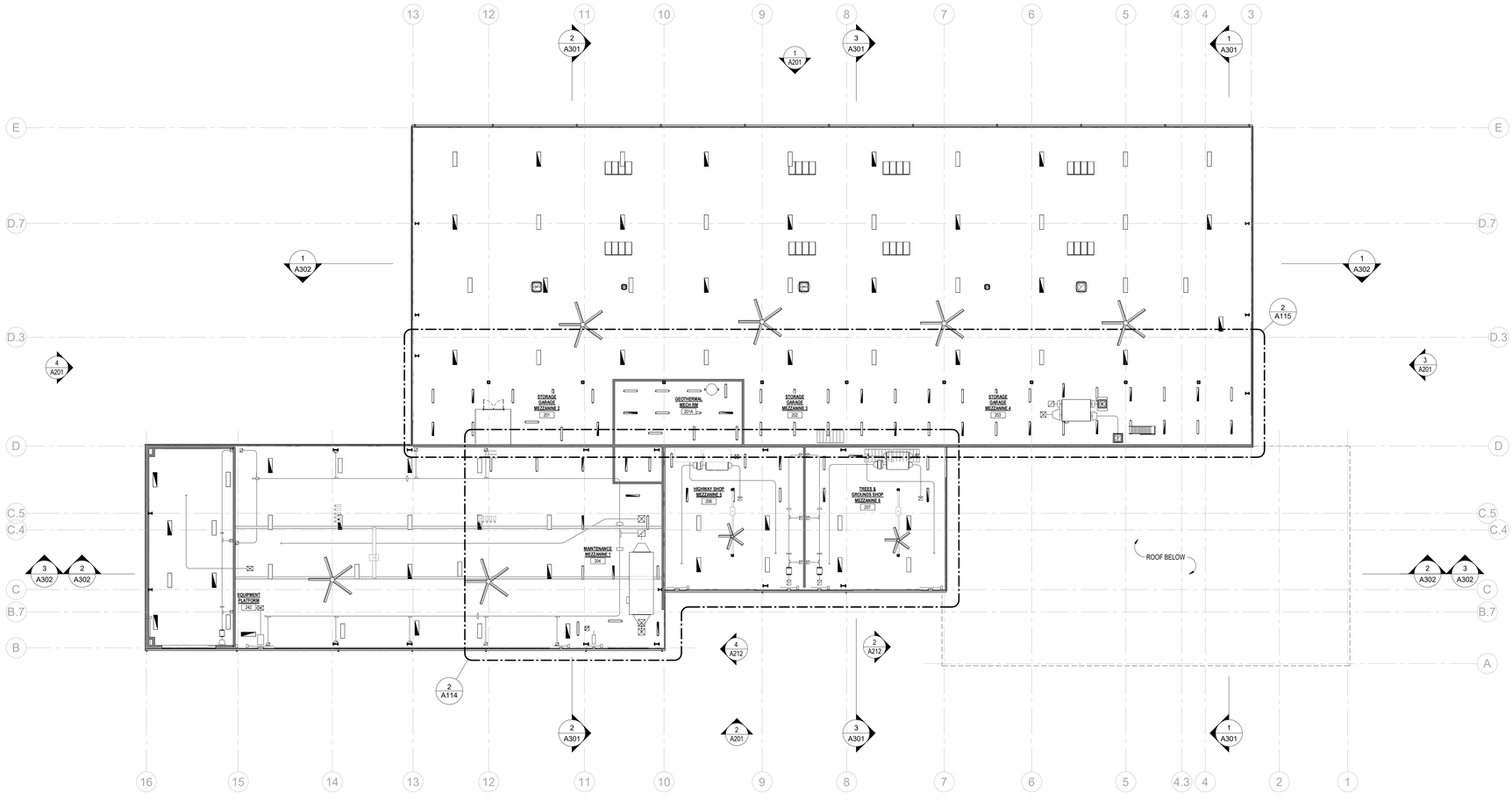
OVERALL REFLECTED CEILING PLAN - BELOW MEZZANINE

Sheet Number:

A103

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1 OVERALL REFLECTED CEILING PLAN - ABOVE MEZZANINE
1/16" = 1'-0" 2/ A201

REFLECTED CEILING PLAN NOTES:

1. REFER TO M.E.P / F.P. DRAWINGS FOR LOCATION OF LIGHT FIXTURES, SPRINKLER HEADS, SUPPLIES, RETURNS AND ADDITIONAL CEILING INFORMATION.
2. ALL DIFFUSERS, SPRINKLER HEADS, ETC. AT ACT AREAS TO BE CENTERED ON TILE.
3. SUSPENDED ACT AT 9'-4" AFF UNLESS NOTED OTHERWISE (U.N.O.)
4. ALL GWB CEILINGS AND SOFFITS AT 9'-4" AFF (U.N.O.)
5. COORDINATE QUANTITY AND LOCATION OF LIGHT FIXTURES WITH ELECTRICAL DRAWINGS.
6. LIGHT FIXTURE SYMBOLS ON REFLECTED CEILING PLANS ARE DIAGRAMMATIC FOR REFERENCE ONLY. REFER TO ELECTRICAL DRAWINGS FOR TYPE OF LIGHT FIXTURES. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR QUANTITY OF LIGHT FIXTURES AS INDICATED ON THE ELECTRICAL DRAWINGS.
7. FOR CEILING HEIGHTS AND TYPES, REFER TO REFLECTED CEILING PLAN DRAWINGS.
8. NO SUSPENDED LOADS SHALL BE SUPPORTED BY THE ROOF DECK. THIS INCLUDES PIPING, DUCTWORK, MECHANICAL EQUIPMENT, STAGE RIGGING, CEILING, ETC. ALL STEEL FRAMING MEMBERS PREFERABLY UTILIZING A SYSTEM OF UNISTRUTS, BEAM CLAMPS, AND THREADED RODS. ALL ATTACHMENT DEVICES SHALL BE SUBMITTED FOR REVIEW AND ARE SUBJECT TO APPROVAL OF THE DESIGNER.
9. COORDINATE QUANTITY AND LOCATION FOR EXIT SIGNS WITH ELECTRICAL DRAWINGS.
10. COORDINATE QUANTITY AND LOCATION OF SPRINKLERS WITH FIRE PROTECTION DRAWINGS.

REFLECTED CEILING PLAN LEGEND:

CEILING TYPES:

TYPE A1: 2' x 2' SUSPENDED ACOUSTICAL PANEL

TYPE A2: 2' x 2' SUSPENDED ACOUSTICAL PANEL - MOISTURE RESISTANT

TYPE G1: GYPSUM BOARD CEILING

TYPE G2: GYPSUM BOARD CEILING - MOISTURE RESISTANT

TYPE G3: 2-HR FIRE RATED CEILING UL DESIGN NO. U415

XX — SOFFIT DETAIL - REFER TO CEILING SERIES

TYPE / A / X'-X" / HEIGHT — CEILING TAG

LIGHT FIXTURES

SURFACE MTD. LIGHT FIXTURE

TRACK LIGHTING

SUPPLY DIFFUSER - REF: MECH DWGS

RETURN VENT - REF: MECH DWGS

EXHAUST VENT - REF: MECH DWGS

CLG. MTD. / EXTERIOR SECURITY CAMERA

R.H. — RADIANT HEATER

C.U.H. — CABINET UNIT HEATER

U.H. — UNIT HEATER

EXIT SIGN

MOTION DETECTOR

SD — SMOKE DETECTOR

OS — OCCUPANCY SENSOR

PS — CEILING PHOTO SENSOR

S — CEILING FLUSH MOUNTED SPEAKER

F — FIRE ALARM SPEAKER / VISUAL SIGNAL

F/CLG — CEILING MOUNTED FIRE ALARM SPEAKER / VISUAL SIGNAL

F — FIRE ALARM VISUAL SIGNAL

CEILING MOUNTED SPRINKLER

WALL MOUNTED SPRINKLER

0' 4' 8' 16'
SCALE: 3/32" = 1'-0"

Project:
NEW PUBLIC WORKS FACILITY
14 FOREST ROAD, ACTON MA 01720

TOWN OF ACTON

Weston & Sampson
Weston & Sampson Engineers, Inc.
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No.	Date	Description

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40% DESIGN DEVELOPMENT PRROGRESS SET

Scale: As indicated

Key Plan:

NORTH

Date:	11/01/2024
Draw By:	DRD
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

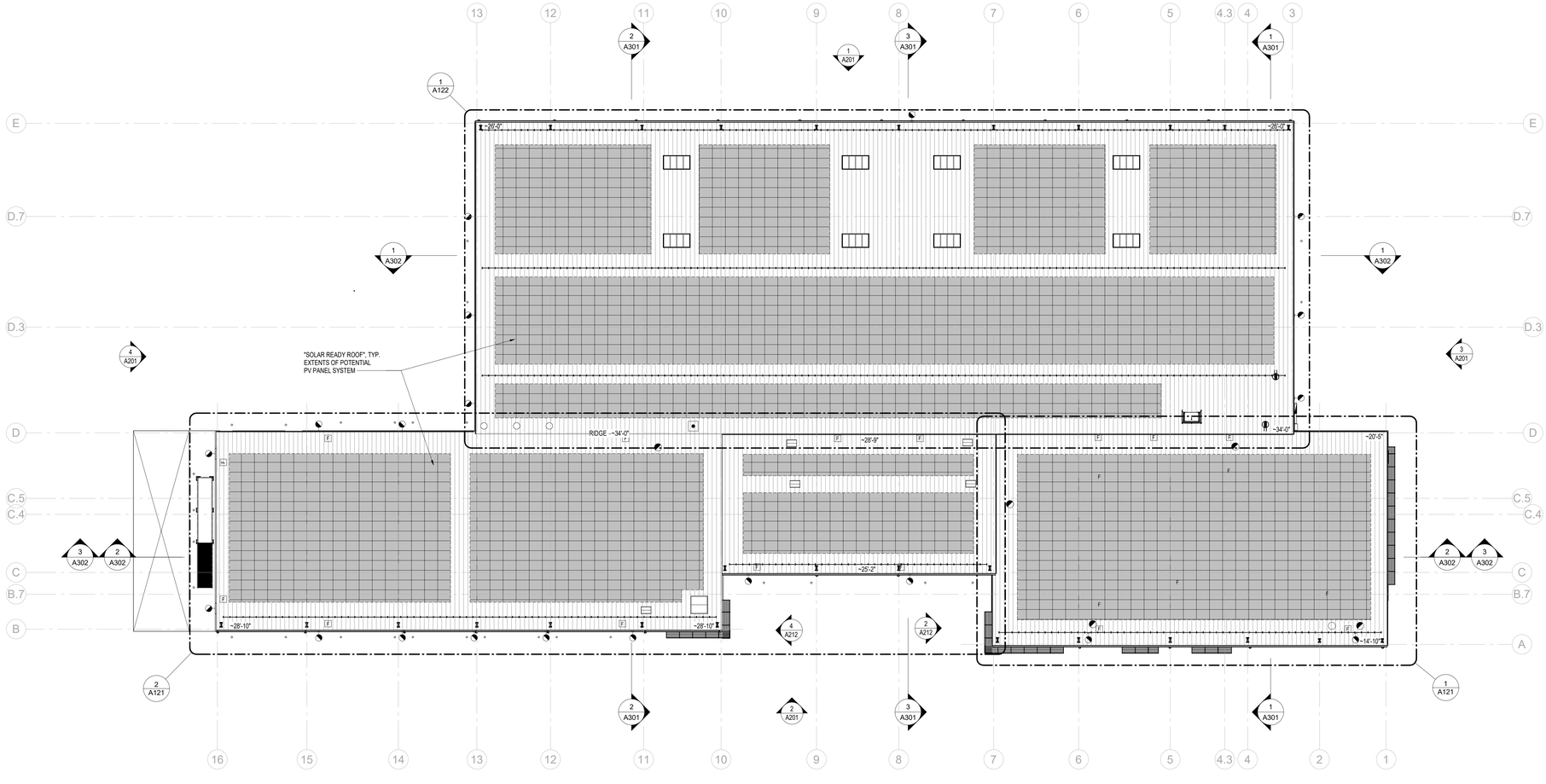
OVERALL REFLECTED CEILING PLAN - ABOVE MEZZANINE

Sheet Number:

A104

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1 OVERALL ROOF PLAN
1/16" = 1'-0" 1/ A201

GENERAL ROOF NOTES - METAL BUILDINGS

1. REFER TO EQUIPMENT, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR ADDITIONAL ROOF PENETRATIONS AND EQUIPMENT NOT SHOWN. ANY DISCREPANCIES REGARDING LOCATION OF EQUIPMENT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR RESOLUTION IN FIELD.
2. ROOF SLOPE = 1'-0" : 12'-0"
3. SEE GENERAL NOTES ON A012
4. ALL GUTTERS TO PITCH TOWARDS DOWNSPOUTS AT A MINIMUM 1/16" PER FOOT AND SUPPORTED AS PER METAL BUILDING MANUFACTURER.
5. ROOF PENETRATIONS TO BE CUT AND FLASHED BY METAL BUILDING MANUFACTURER.
6. PROVIDE ROOF FLASHING AT ALL PENETRATIONS INCLUDING BUT NOT LIMITED TO VENT STACKS, FLUES, AND EXHAUST FANS. REVIEW PLUMBING, EQUIPMENT, MECHANICAL, AND ELECTRICAL DRAWINGS FOR CONSTRUCTION NOT INDICATED ON THIS DRAWING.
7. PROVIDE CRICKETS AT ALL ROOFTOP EQUIPMENT AND PENETRATIONS TO CREATE ADEQUATE ROOF DRAINAGE.
8. SUPPLEMENTAL FRAMING AND CURBS FOR ALL ROOFTOP EQUIPMENT SHALL BE PROVIDED AND INSTALLED BY THE METAL BUILDING MANUFACTURER.

STANDING SEAM METAL ROOF ASSEMBLY (BY MBMI)

- STANDING SEAM METAL ROOF PANEL
- R-5 THERMAL BLOCKS AT PURLINS W/ UNFACED BATT INSULATION BETWEEN THERMAL BLOCKS (UPPER INSULATION LAYER)
- UNFACED BATT INSULATION LAYER BETWEEN PURLINS (STRUCTURE INSULATION LAYER)
- FABRIC LINER / VAPOR RETARDER, TAPE AND SEAL
- ALL PENETRATIONS AND EDGES
- MINIMUM R-VALUE OF 38

0' 4' 8' 16'
SCALE: 3/32" = 1'-0"

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Scale: As indicated

Key Plan:

NORTH

Date:	11/01/2024
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Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

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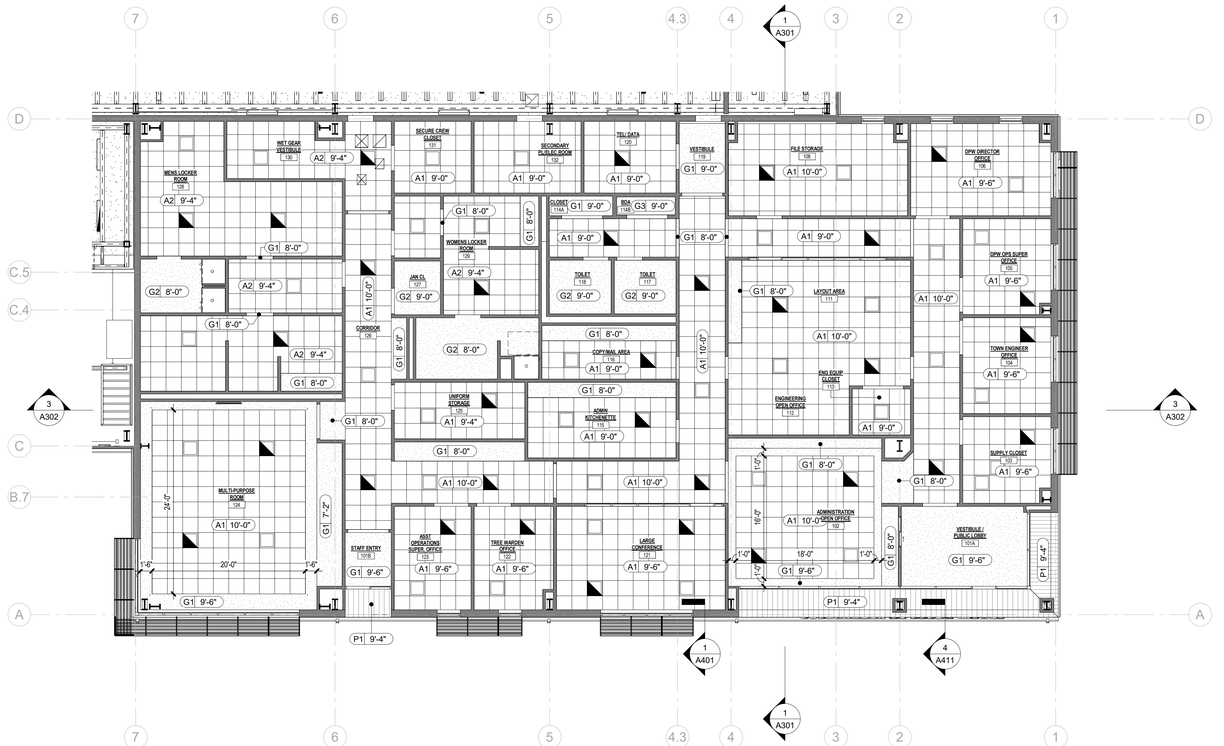
OVERALL ROOF PLAN

Sheet Number:

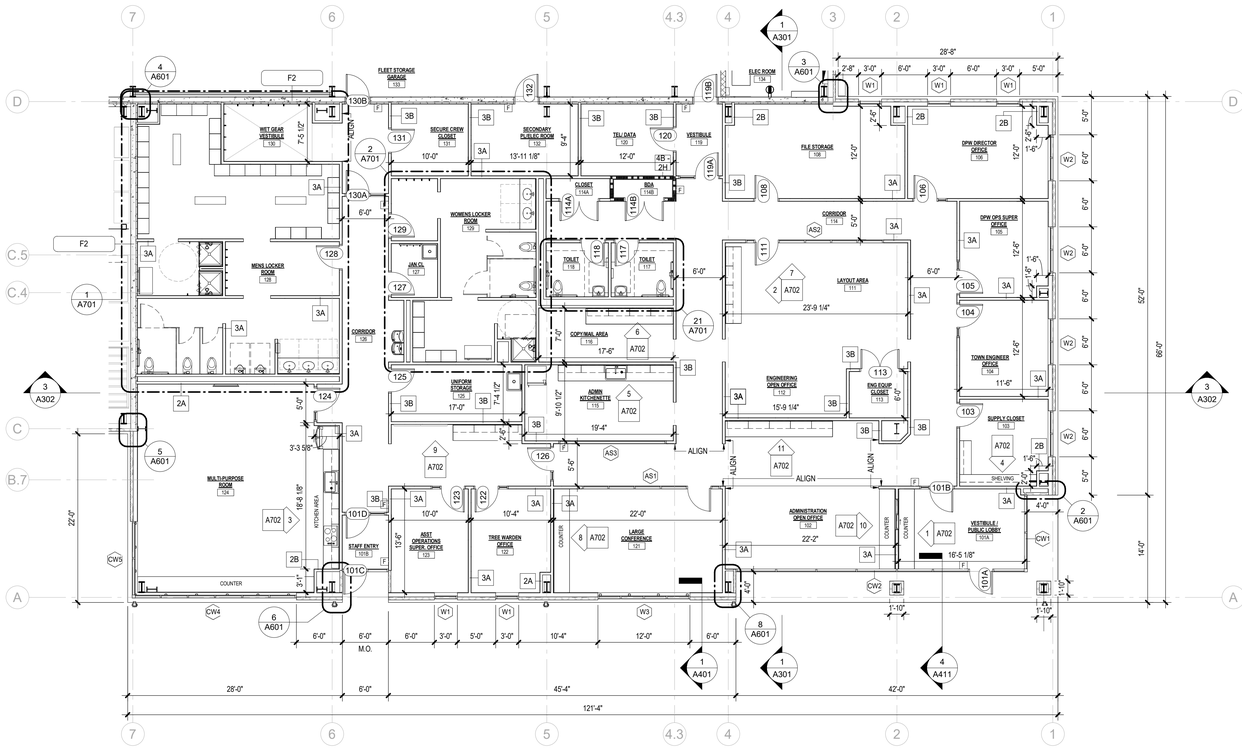
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2 LARGE SCALE REFLECTED CEILING PLAN - ADMIN
1/8" = 1'-0" 1/ A103



1 LARGE SCALE FLOOR PLAN - ADMIN
1/8" = 1'-0" 1/ A101

REFLECTED CEILING PLAN NOTES:

1. REFER TO M.E.P / F.P. DRAWINGS FOR LOCATION OF LIGHT FIXTURES, SPRINKLER HEADS, SUPPLIES, RETURNS AND ADDITIONAL CEILING INFORMATION.
2. ALL DIFFUSERS, SPRINKLER HEADS, ETC. AT ACT AREAS TO BE CENTERED ON TILE.
3. SUSPENDED ACT AT 9'-4" AFF UNLESS NOTED OTHERWISE (U.N.O.)
4. ALL GWB CEILINGS AND SOFFITS AT 9'-4" AFF (U.N.O.)
5. COORDINATE QUANTITY AND LOCATION OF LIGHT FIXTURES WITH ELECTRICAL DRAWINGS.
6. LIGHT FIXTURE SYMBOLS ON REFLECTED CEILING PLANS ARE DIAGRAMMATIC FOR REFERENCE ONLY. REFER TO ELECTRICAL DRAWINGS FOR TYPE OF LIGHT FIXTURES. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR QUANTITY OF LIGHT FIXTURES AS INDICATED ON THE ELECTRICAL DRAWINGS.
7. FOR CEILING HEIGHTS AND TYPES, REFER TO REFLECTED CEILING PLAN DRAWINGS.
8. NO SUSPENDED LOADS SHALL BE SUPPORTED BY THE ROOF DECK. THIS INCLUDES PIPING, DUCTWORK, MECHANICAL EQUIPMENT, STAGE RIGGING, CEILING, ETC. ALL STEEL FRAMING MEMBERS PREFERABLY UTILIZING A SYSTEM OF UNISTRUTS, BEAM CLAMPS, AND THREADED RODS. ALL ATTACHMENT DEVICES SHALL BE SUBMITTED FOR REVIEW AND ARE SUBJECT TO APPROVAL OF THE DESIGNER.
9. COORDINATE QUANTITY AND LOCATION FOR EXIT SIGNS WITH ELECTRICAL DRAWINGS.
10. COORDINATE QUANTITY AND LOCATION OF SPRINKLERS WITH FIRE PROTECTION DRAWINGS.

REFLECTED CEILING PLAN LEGEND:

CEILING TYPES:

TYPE A1: 2' x 2' SUSPENDED ACOUSTICAL PANEL

TYPE A2: 2' x 2' SUSPENDED ACOUSTICAL PANEL - MOISTURE RESISTANT

TYPE G1: GYPSUM BOARD CEILING

TYPE G2: GYPSUM BOARD CEILING - MOISTURE RESISTANT

TYPE G3: 2-HR FIRE RATED CEILING UL DESIGN NO. U415

XX — SOFFIT DETAIL - REFER TO CEILING SERIES

TYPE / A / X'-X" / HEIGHT — CEILING TAG

LIGHT FIXTURES

SURFACE MTD. LIGHT FIXTURE

TRACK LIGHTING

SUPPLY DIFFUSER - REF: MECH DWGS

RETURN VENT - REF: MECH DWGS

EXHAUST VENT - REF: MECH DWGS

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MOTION DETECTOR

SD — SMOKE DETECTOR

OS — OCCUPANCY SENSOR

PS — CEILING PHOTO SENSOR

S — CEILING FLUSH MOUNTED SPEAKER

F / FA — FIRE ALARM SPEAKER / VISUAL SIGNAL

F / CLG — CEILING MOUNTED FIRE ALARM SPEAKER / VISUAL SIGNAL

F — FIRE ALARM VISUAL SIGNAL

CEILING MOUNTED SPRINKLER

WALL MOUNTED SPRINKLER

FLOOR PLAN GENERAL NOTES:

1. EQUIPMENT SHOWN FOR REFERENCE ONLY. SEE EQ DRAWINGS FOR MORE INFO.
2. FURNITURE SHOWN FOR INFORMATION ONLY (N.I.C.). SEE FURNITURE PLAN A921 FOR MORE INFO.
3. F.E. = FIRE EXTINGUISHER.
   F.E.C = FIRE EXTINGUISHER CABINET
   - BRACKET MOUNTED
   - CABINET MOUNTED (SEMI-RECESSED)
4. ALL INTERIOR DIMENSIONS ARE TAKEN FROM FACE OF GYPSUM WALL BOARD TO FACE OF GYPSUM WALL BOARD OR FACE OF CMU UNLESS SPECIFICALLY NOTED OTHERWISE.
5. SEE SHEET A012 FOR PLUMBING FIXTURE SCHEDULE / MOUNTING HEIGHTS.
6. BOLLARDS:
   - EB: EXTERIOR BOLLARD, 6" DIAMETER (SEE CIVIL DWGS)
   - IB: INTERIOR BOLLARD, 6" DIAMETER (SEE DETAIL X / AXXX)
7. FUME SEPARATION PARTITION, SEE A031 - FUME SEPARATION ASSEMBLY, TYPE F1 AND F2.
8. BOX-OUT DIMENSIONS AT STRUCTURAL COLUMNS ARE APPROXIMATE. GENERAL CONTRACTOR TO INSTALL TIGHT TO STRUCTURE, TYPICAL.
9. NOT ALL TV / MONITOR LOCATIONS ARE SHOWN. COORDINATE PROPOSED LOCATIONS WITH ELECTRICAL &TELECOMMUNICATIONS DRAWINGS. PROVIDE BLOCKING AT EACH LOCATION ACCORDINGLY.
10. CG — CORNER GUARD, SEE A901 FOR LOCATIONS.

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

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40% DESIGN DEVELOPMENT PRROGRESS SET

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

Key Plan:

NORTH

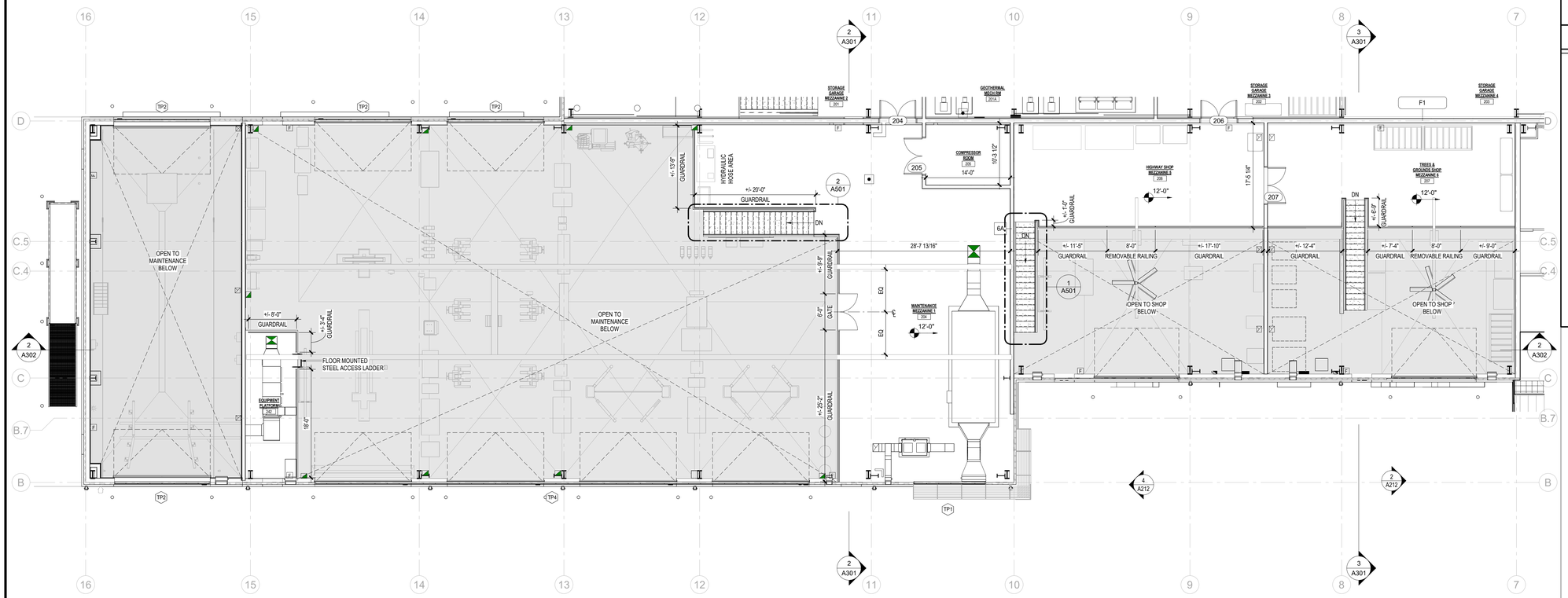
Date:	11/01/2024
Draw By:	DRD
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

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LARGE SCALE FLOOR PLAN & RCP - ADMINISTRATION & EMPLOYEE FACILITIES

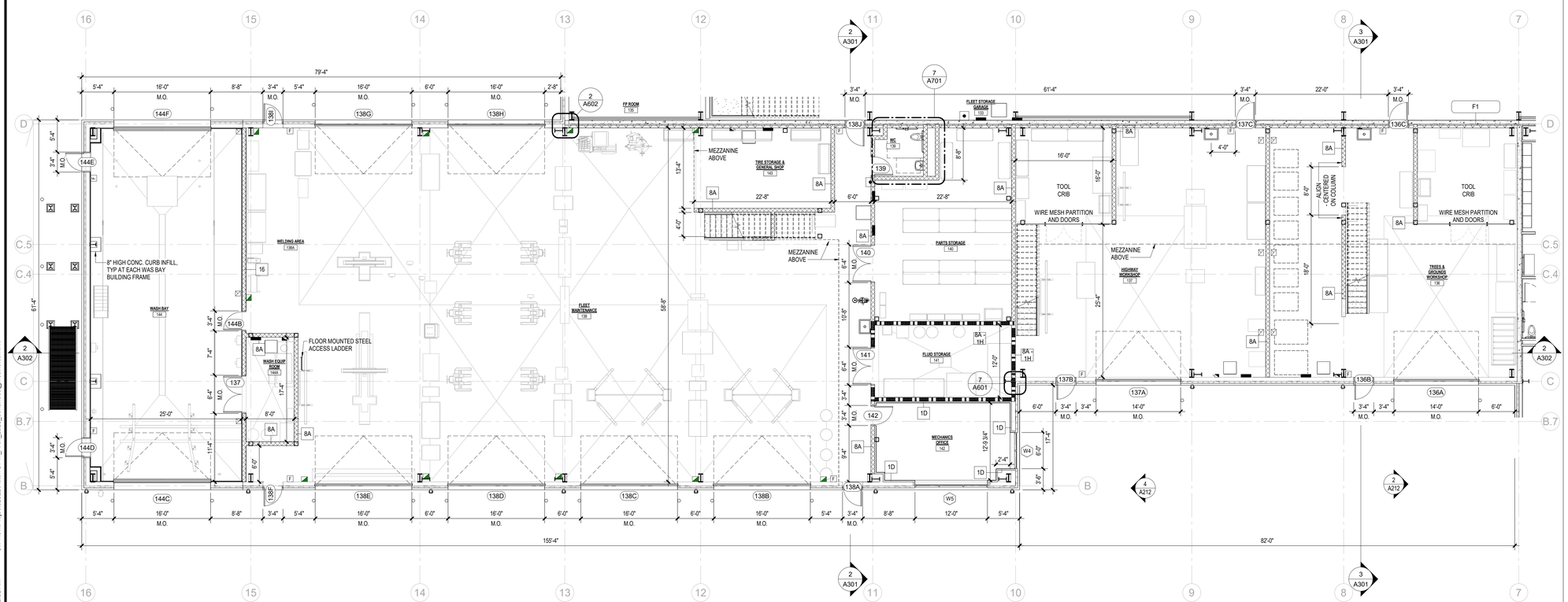
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2 LARGE SCALE MEZZANINE PLAN - FLEET MAINTENANCE
1/8" = 1'-0" 1/ A102



1 LARGE SCALE FLOOR PLAN - FLEET MAINTENANCE
1/8" = 1'-0" 1/ A101

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MEZZANINE GENERAL NOTES:

1. AT EACH MEZZANINE SWING GATE LOCATION, PROVIDE 4" H (RED) LETTER SIGNAGE AT MEZZANINE FASCIA TO READ: 200LBS/SF MAXIMUM MEZZANINE LOADING
2. PROVIDE SAFETY CHAIN PER OSHA STANDARDS AT EACH SWING GATE.
3. PROVIDE SAFETY YELLOW PAINT AT MEZZANINE FLOOR AT EACH SWING GATE, AS INDICATED.
4. COORDINATE EXACT LOCATION WITH MECHANICAL, STRUCTURAL AND EQUIPMENT REQUIREMENTS.
5. DO NOT RUN ANY UTILITIES BELOW GATES EXPOSED AND MOUNTED TO WALLS.
6. PROVIDE TIE-OFF POINT FOR OSHA FALL ARREST SYSTEM NEAR MEZZANINE SWING-GATE ON PRIMARY STRUCTURAL ELEMENT.

FLOOR PLAN GENERAL NOTES:

1. EQUIPMENT SHOWN FOR REFERENCE ONLY. SEE EQ DRAWINGS FOR MORE INFO.
2. FURNITURE SHOWN FOR INFORMATION ONLY (N.I.C.). SEE FURNITURE PLAN A921 FOR MORE INFO.
3. F.E. = FIRE EXTINGUISHER.
   F.E.C = FIRE EXTINGUISHER CABINET
   - BRACKET MOUNTED
   - CABINET MOUNTED (SEMI-RECESSED)
4. ALL INTERIOR DIMENSIONS ARE TAKEN FROM FACE OF GYPSUM WALL BOARD TO FACE OF GYPSUM WALL BOARD OR FACE OF CMU UNLESS SPECIFICALLY NOTED OTHERWISE.
5. SEE SHEET A012 FOR PLUMBING FIXTURE SCHEDULE / MOUNTING HEIGHTS.
6. BOLLARDS:
   - EB: EXTERIOR BOLLARD, 6" DIAMETER (SEE CIVIL DWGS)
   - IB: INTERIOR BOLLARD, 6" DIAMETER (SEE DETAIL X / AXXX)
7. FUME SEPARATION PARTITION, SEE A031 - FUME SEPARATION ASSEMBLY, TYPE F1 AND F2.
8. BOX-OUT DIMENSIONS AT STRUCTURAL COLUMNS ARE APPROXIMATE. GENERAL CONTRACTOR TO INSTALL TIGHT TO STRUCTURE, TYPICAL.
9. NOT ALL TV / MONITOR LOCATIONS ARE SHOWN. COORDINATE PROPOSED LOCATIONS WITH ELECTRICAL &TELECOMMUNICATIONS DRAWINGS. PROVIDE BLOCKING AT EACH LOCATION ACCORDINGLY.
10. CG CORNER GUARD, SEE A901 FOR LOCATIONS.

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

Project:
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Scale: 1/8" = 1'-0"

Key Plan:

Date:	11/01/2024
Draw By:	DRD
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

LARGE SCALE FLOOR & MEZZANINE PLAN - SHOPS & FLEET MAINTENANCE

Sheet Number:

A112

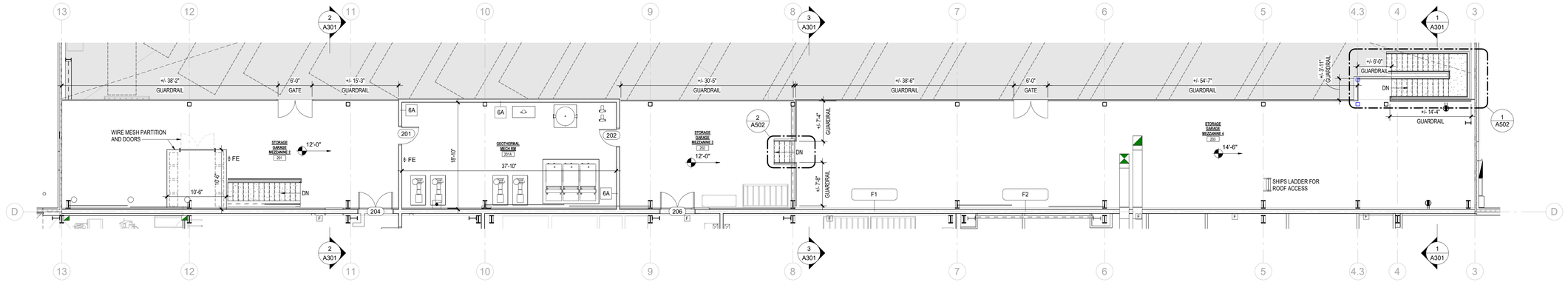
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MEZZANINE GENERAL NOTES:

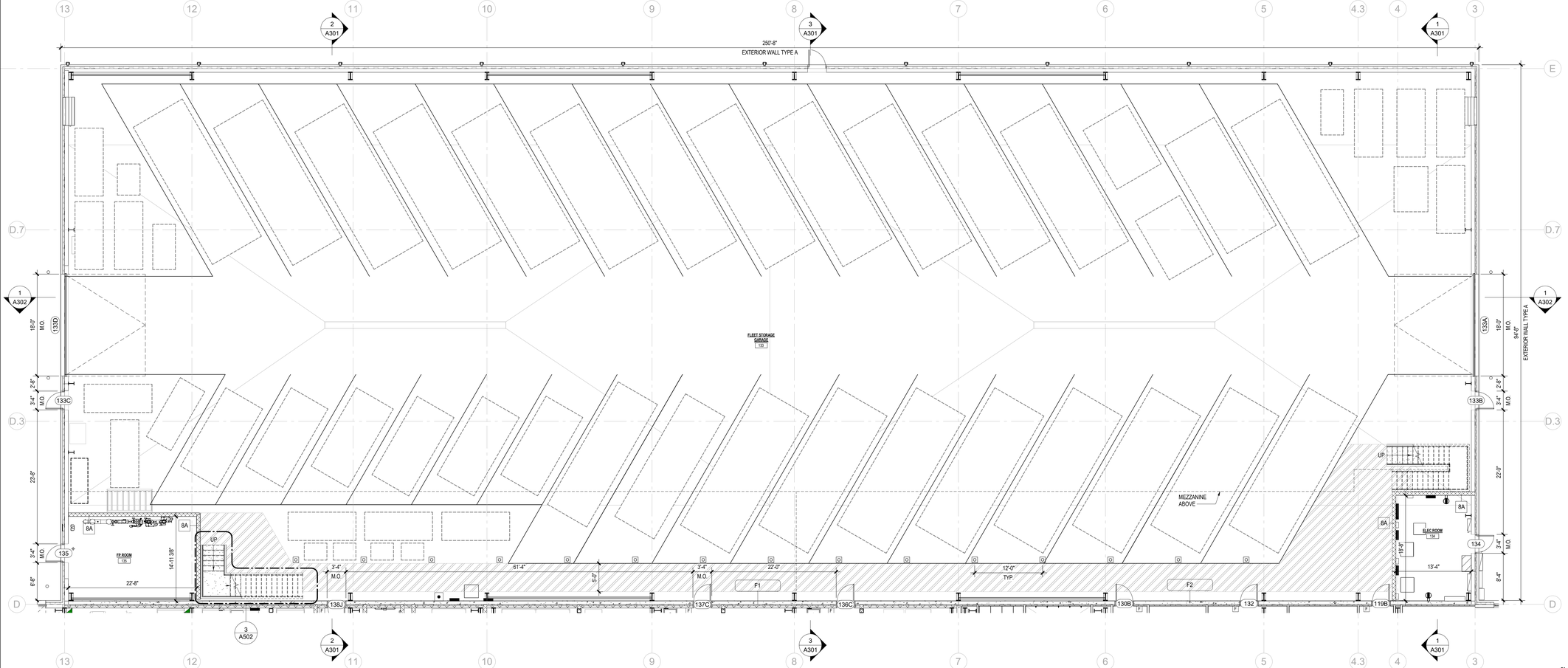
1. AT EACH MEZZANINE SWING GATE LOCATION, PROVIDE 4" H (RED) LETTER SIGNAGE AT MEZZANINE FASCIA TO READ: 200LBS/SF MAXIMUM MEZZANINE LOADING
2. PROVIDE SAFETY CHAIN PER OSHA STANDARDS AT EACH SWING GATE.
3. PROVIDE SAFETY YELLOW PAINT AT MEZZANINE FLOOR AT EACH SWING GATE, AS INDICATED.
4. COORDINATE EXACT LOCATION WITH MECHANICAL, STRUCTURAL AND EQUIPMENT REQUIREMENTS.
5. DO NOT RUN ANY UTILITIES BELOW GATES EXPOSED AND MOUNTED TO WALLS.
6. PROVIDE TIE-OFF POINT FOR OSHA FALL ARREST SYSTEM NEAR MEZZANINE SWING-GATE ON PRIMARY STRUCTURAL ELEMENT.

FLOOR PLAN GENERAL NOTES:

1. EQUIPMENT SHOWN FOR REFERENCE ONLY. SEE EQ DRAWINGS FOR MORE INFO.
2. FURNITURE SHOWN FOR INFORMATION ONLY (N.I.C.). SEE FURNITURE PLAN A921 FOR MORE INFO.
3. F.E. = FIRE EXTINGUISHER.
   F.E.C = FIRE EXTINGUISHER CABINET
   - BRACKET MOUNTED
   - CABINET MOUNTED (SEMI-RECESSED)
4. ALL INTERIOR DIMENSIONS ARE TAKEN FROM FACE OF GYPSUM WALL BOARD TO FACE OF GYPSUM WALL BOARD OR FACE OF CMU UNLESS SPECIFICALLY NOTED OTHERWISE.
5. SEE SHEET A012 FOR PLUMBING FIXTURE SCHEDULE / MOUNTING HEIGHTS.
6. BOLLARDS:
   - EB: EXTERIOR BOLLARD, 6" DIAMETER (SEE CIVIL DWGS)
   - IB: INTERIOR BOLLARD, 6" DIAMETER (SEE DETAIL X / AXXX)
7. FUME SEPARATION PARTITION, SEE A031 - FUME SEPARATION ASSEMBLY, TYPE F1 AND F2.
8. BOX-OUT DIMENSIONS AT STRUCTURAL COLUMNS ARE APPROXIMATE. GENERAL CONTRACTOR TO INSTALL TIGHT TO STRUCTURE, TYPICAL.
9. NOT ALL TV / MONITOR LOCATIONS ARE SHOWN. COORDINATE PROPOSED LOCATIONS WITH ELECTRICAL &TELECOMMUNICATIONS DRAWINGS. PROVIDE BLOCKING AT EACH LOCATION ACCORDINGLY.
10. CG — CORNER GUARD, SEE A901 FOR LOCATIONS.



2 LARGE SCALE MEZZANINE PLAN - FLEET STORAGE
1/8" = 1'-0" 1/ A102



1 LARGE SCALE FLOOR PLAN - FLEET STORAGE
1/8" = 1'-0" 1/ A101

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

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

Key Plan:

Date:	11/01/2024
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W&S Project No.:	ENG24-1080
W&S File No.:	XXX

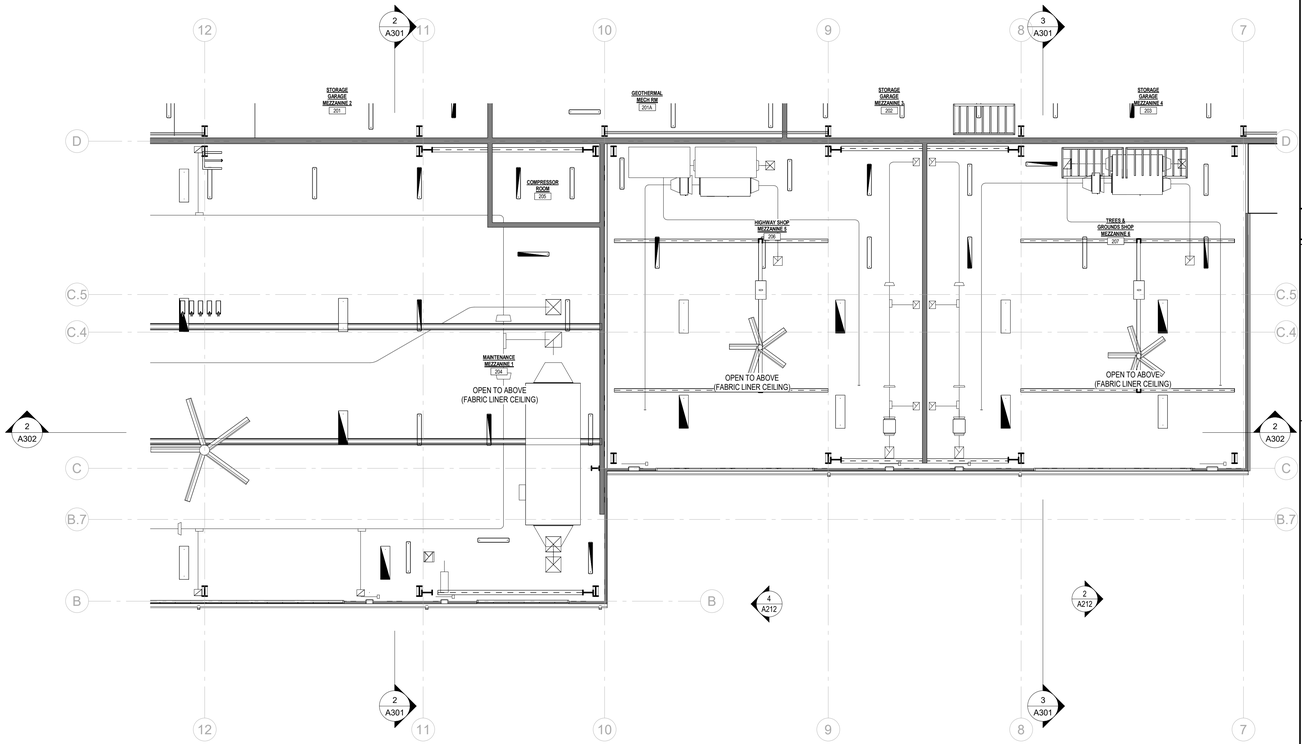
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LARGE SCALE FLOOR & MEZZANINE PLAN - FLEET STORAGE

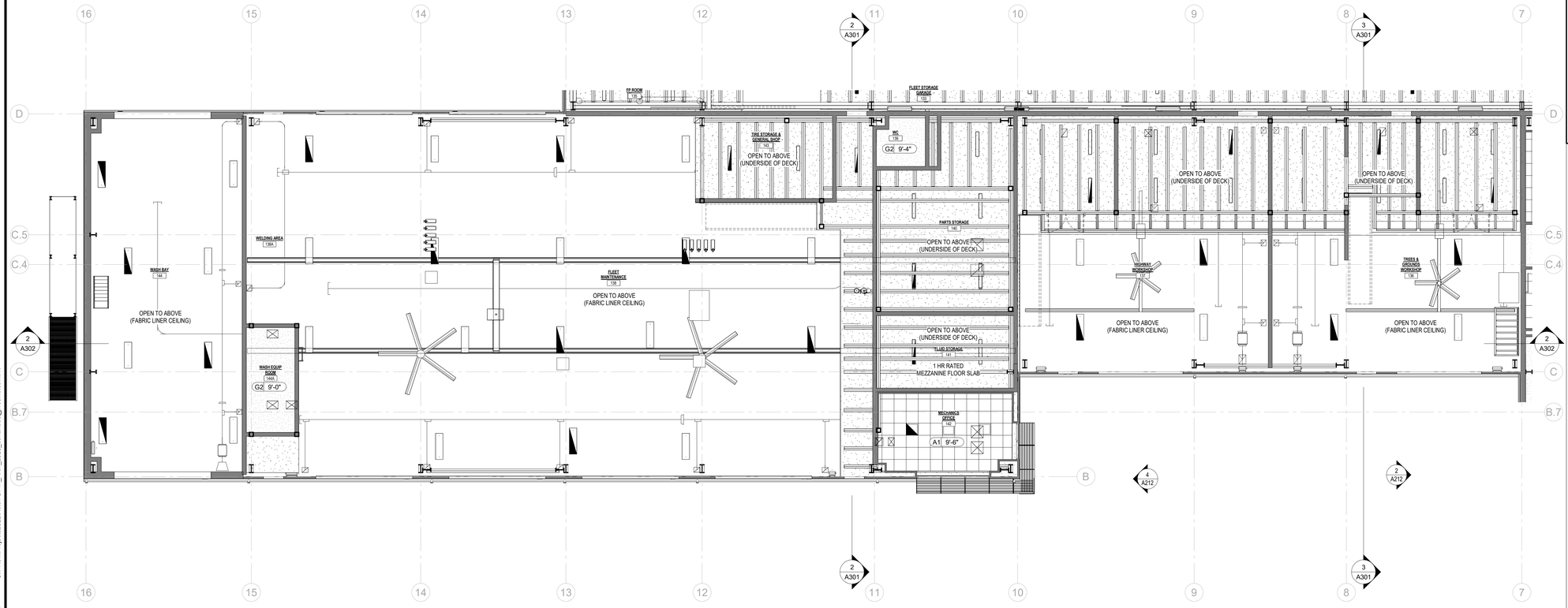
Sheet Number:

A113

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2 LARGE SCALE RCP - ABOVE MEZZANINE - FLEET MAINTENANCE & SHOPS
1/8" = 1'-0" 1/ A104



1 LARGE SCALE REFLECTED CEILING PLAN - FLEET MAINTENANCE & SHOPS
1/8" = 1'-0" 1/ A103

REFLECTED CEILING PLAN NOTES:

1. REFER TO M.E.P / F.P. DRAWINGS FOR LOCATION OF LIGHT FIXTURES, SPRINKLER HEADS, SUPPLIES, RETURNS AND ADDITIONAL CEILING INFORMATION.
2. ALL DIFFUSERS, SPRINKLER HEADS, ETC. AT ACT AREAS TO BE CENTERED ON TILE.
3. SUSPENDED ACT AT 9'-4" AFF UNLESS NOTED OTHERWISE (U.N.O.)
4. ALL GWB CEILINGS AND SOFFITS AT 9'-4" AFF (U.N.O.)
5. COORDINATE QUANTITY AND LOCATION OF LIGHT FIXTURES WITH ELECTRICAL DRAWINGS.
6. LIGHT FIXTURE SYMBOLS ON REFLECTED CEILING PLANS ARE DIAGRAMMATIC FOR REFERENCE ONLY. REFER TO ELECTRICAL DRAWINGS FOR TYPE OF LIGHT FIXTURES. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR QUANTITY OF LIGHT FIXTURES AS INDICATED ON THE ELECTRICAL DRAWINGS.
7. FOR CEILING HEIGHTS AND TYPES, REFER TO REFLECTED CEILING PLAN DRAWINGS.
8. NO SUSPENDED LOADS SHALL BE SUPPORTED BY THE ROOF DECK. THIS INCLUDES PIPING, DUCTWORK, MECHANICAL EQUIPMENT, STAGE RIGGING, CEILING, ETC. ALL STEEL FRAMING MEMBERS PREFERABLY UTILIZING A SYSTEM OF UNISTRUTS, BEAM CLAMPS, AND THREADED RODS. ALL ATTACHMENT DEVICES SHALL BE SUBMITTED FOR REVIEW AND ARE SUBJECT TO APPROVAL OF THE DESIGNER.
9. COORDINATE QUANTITY AND LOCATION FOR EXIT SIGNS WITH ELECTRICAL DRAWINGS.
10. COORDINATE QUANTITY AND LOCATION OF SPRINKLERS WITH FIRE PROTECTION DRAWINGS.

REFLECTED CEILING PLAN LEGEND:

CEILING TYPES:

- **TYPE A1**: 2' x 2' SUSPENDED ACOUSTICAL PANEL
- **TYPE A2**: 2' x 2' SUSPENDED ACOUSTICAL PANEL - MOISTURE RESISTANT
- **TYPE G1**: GYPSUM BOARD CEILING
- **TYPE G2**: GYPSUM BOARD CEILING - MOISTURE RESISTANT
- **TYPE G3**: 2-HR FIRE RATED CEILING UL DESIGN NO. U415

- XX — SOFFIT DETAIL - REFER TO CEILING SERIES
- TYPE / A / X'-X" / HEIGHT — CEILING TAG
- LIGHT FIXTURES
- SURFACE MTD. LIGHT FIXTURE
- TRACK LIGHTING
- SUPPLY DIFFUSER - REF: MECH DWGS
- RETURN VENT - REF: MECH DWGS
- EXHAUST VENT - REF: MECH DWGS
- CLG. MTD. / EXTERIOR SECURITY CAMERA
- R.H. — RADIANT HEATER
- C.U.H. — CABINET UNIT HEATER
- U.H. — UNIT HEATER
- EXIT SIGN
- MOTION DETECTOR
- SD — SMOKE DETECTOR
- OS — OCCUPANCY SENSOR
- PS — CEILING PHOTO SENSOR
- S — CEILING FLUSH MOUNTED SPEAKER
- F — FIRE ALARM SPEAKER / VISUAL SIGNAL
- F/CLG — CEILING MOUNTED FIRE ALARM SPEAKER / VISUAL SIGNAL
- F — FIRE ALARM VISUAL SIGNAL
- CEILING MOUNTED SPRINKLER
- WALL MOUNTED SPRINKLER

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

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

Key Plan:

NORTH

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Draw By:	DRD
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Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:
LARGE SCALE REFLECTED CEILING PLANS - FLEET MAINTENANCE & SHOPS

Sheet Number:
A114

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REFLECTED CEILING PLAN LEGEND:

CEILING TYPES:

TYPE A1: 2' x 2' SUSPENDED ACOUSTICAL PANEL

TYPE A2: 2' x 2' SUSPENDED ACOUSTICAL PANEL - MOISTURE RESISTANT

TYPE G1: GYPSUM BOARD CEILING

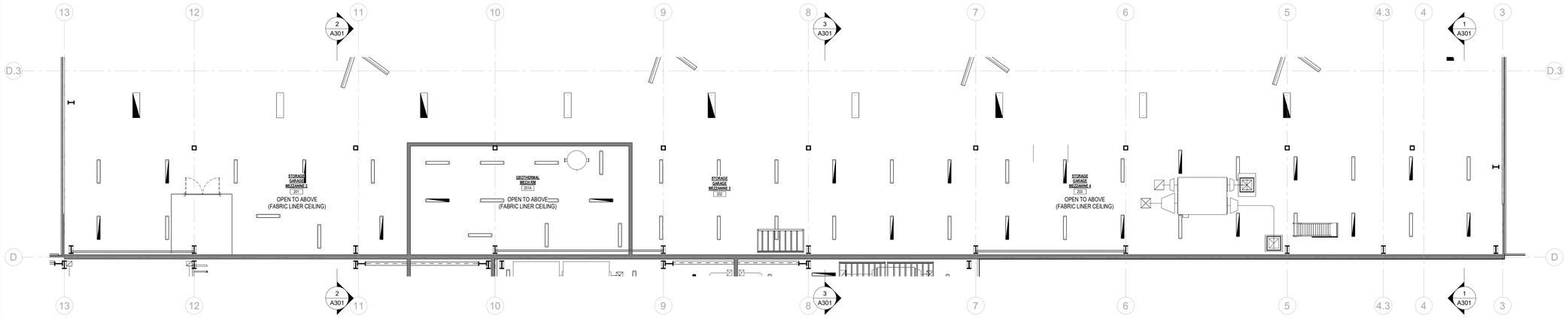
TYPE G2: GYPSUM BOARD CEILING - MOISTURE RESISTANT

TYPE G3: 2-HR FIRE RATED CEILING UL DESIGN NO. U415

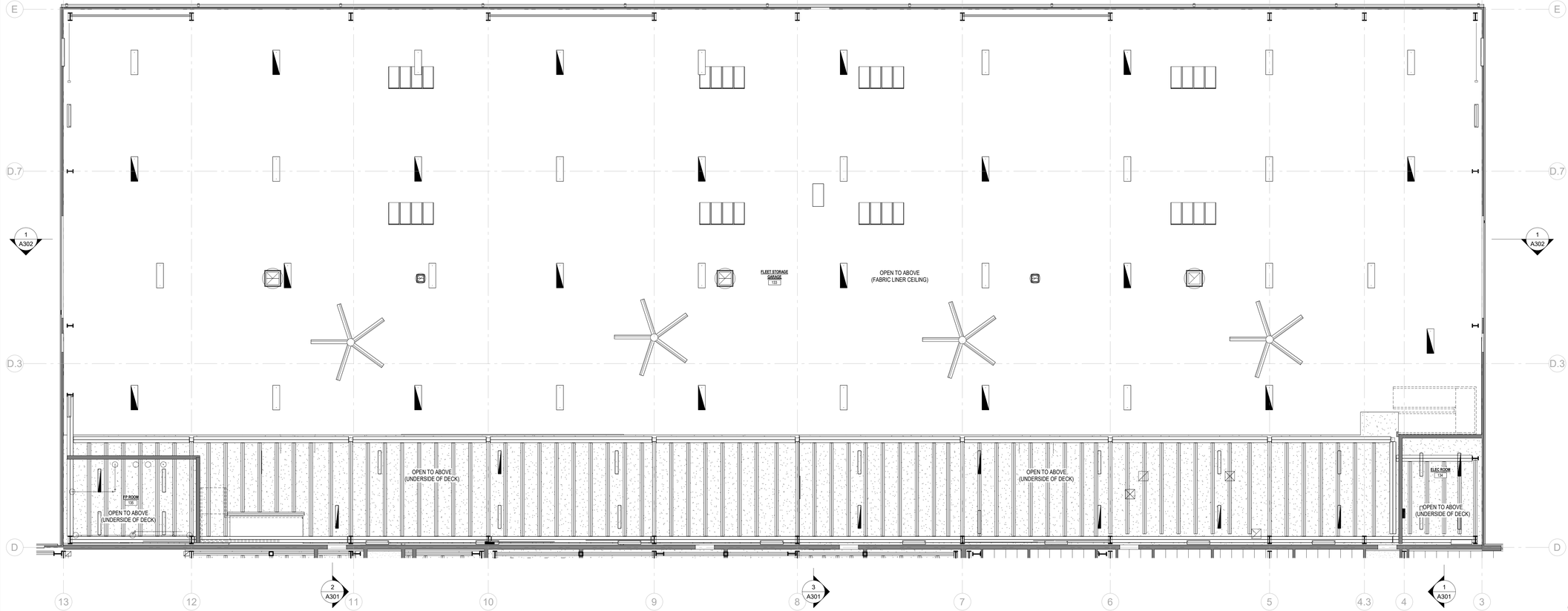
- XX — SOFFIT DETAIL - REFER TO CEILING SERIES
- TYPE / A / X'-X" / HEIGHT — CEILING TAG
- LIGHT FIXTURES
- SURFACE MTD. LIGHT FIXTURE
- TRACK LIGHTING
- SUPPLY DIFFUSER - REF: MECH DWGS
- RETURN VENT - REF: MECH DWGS
- EXHAUST VENT - REF: MECH DWGS
- CLG. MTD. / EXTERIOR SECURITY CAMERA
- R.H. — RADIANT HEATER
- C.U.H. — CABINET UNIT HEATER
- U.H. — UNIT HEATER
- EXIT SIGN
- MOTION DETECTOR
- SD — SMOKE DETECTOR
- OS — OCCUPANCY SENSOR
- PS — CEILING PHOTO SENSOR
- S — CEILING FLUSH MOUNTED SPEAKER
- F — FIRE ALARM SPEAKER / VISUAL SIGNAL
- F CLG — CEILING MOUNTED FIRE ALARM SPEAKER / VISUAL SIGNAL
- F — FIRE ALARM VISUAL SIGNAL
- CEILING MOUNTED SPRINKLER
- WALL MOUNTED SPRINKLER

REFLECTED CEILING PLAN NOTES:

1. REFER TO M.E.P / F.P. DRAWINGS FOR LOCATION OF LIGHT FIXTURES, SPRINKLER HEADS, SUPPLIES, RETURNS AND ADDITIONAL CEILING INFORMATION.
2. ALL DIFFUSERS, SPRINKLER HEADS, ETC. AT ACT AREAS TO BE CENTERED ON TILE.
3. SUSPENDED ACT AT 9'-4" AFF UNLESS NOTED OTHERWISE (U.N.O.)
4. ALL GWB CEILINGS AND SOFFITS AT 9'-4" AFF (U.N.O.)
5. COORDINATE QUANTITY AND LOCATION OF LIGHT FIXTURES WITH ELECTRICAL DRAWINGS.
6. LIGHT FIXTURE SYMBOLS ON REFLECTED CEILING PLANS ARE DIAGRAMMATIC FOR REFERENCE ONLY. REFER TO ELECTRICAL DRAWINGS FOR TYPE OF LIGHT FIXTURES. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR QUANTITY OF LIGHT FIXTURES AS INDICATED ON THE ELECTRICAL DRAWINGS.
7. FOR CEILING HEIGHTS AND TYPES, REFER TO REFLECTED CEILING PLAN DRAWINGS.
8. NO SUSPENDED LOADS SHALL BE SUPPORTED BY THE ROOF DECK. THIS INCLUDES PIPING, DUCTWORK, MECHANICAL EQUIPMENT, STAGE RIGGING, CEILING, ETC. ALL STEEL FRAMING MEMBERS PREFERABLY UTILIZING A SYSTEM OF UNISTRUTS, BEAM CLAMPS, AND THREADED RODS. ALL ATTACHMENT DEVICES SHALL BE SUBMITTED FOR REVIEW AND ARE SUBJECT TO APPROVAL OF THE DESIGNER.
9. COORDINATE QUANTITY AND LOCATION FOR EXIT SIGNS WITH ELECTRICAL DRAWINGS.
10. COORDINATE QUANTITY AND LOCATION OF SPRINKLERS WITH FIRE PROTECTION DRAWINGS.



2 LARGE SCALE RCP - ABOVE MEZZ - FLEET STORAGE
1/8" = 1'-0" 1/ A104



1 LARGE SCALE REFLECTED CEILING PLAN - FLEET STORAGE
1/8" = 1'-0" 1/ A103

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

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Project:
NEW PUBLIC WORKS FACILITY
14 FOREST ROAD, ACTON MA 01720

TOWN OF ACTON

Weston & Sampson Engineers, Inc.
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Foxborough, MA 02035
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Consultants:

Revisions:

No.	Date	Description

COA:

Seal:

Issued For:
40% DESIGN DEVELOPMENT PRROGRESS SET

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

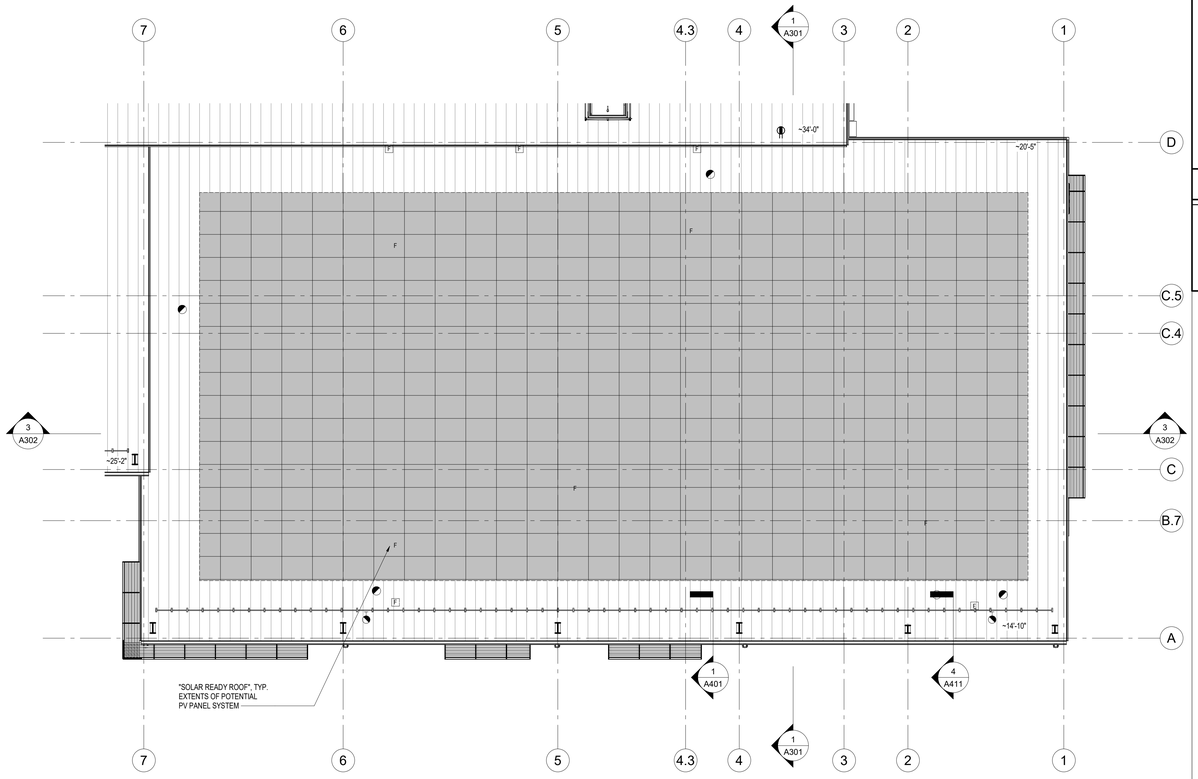
Key Plan:

Date:	11/01/2024
Draw By:	DRD
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

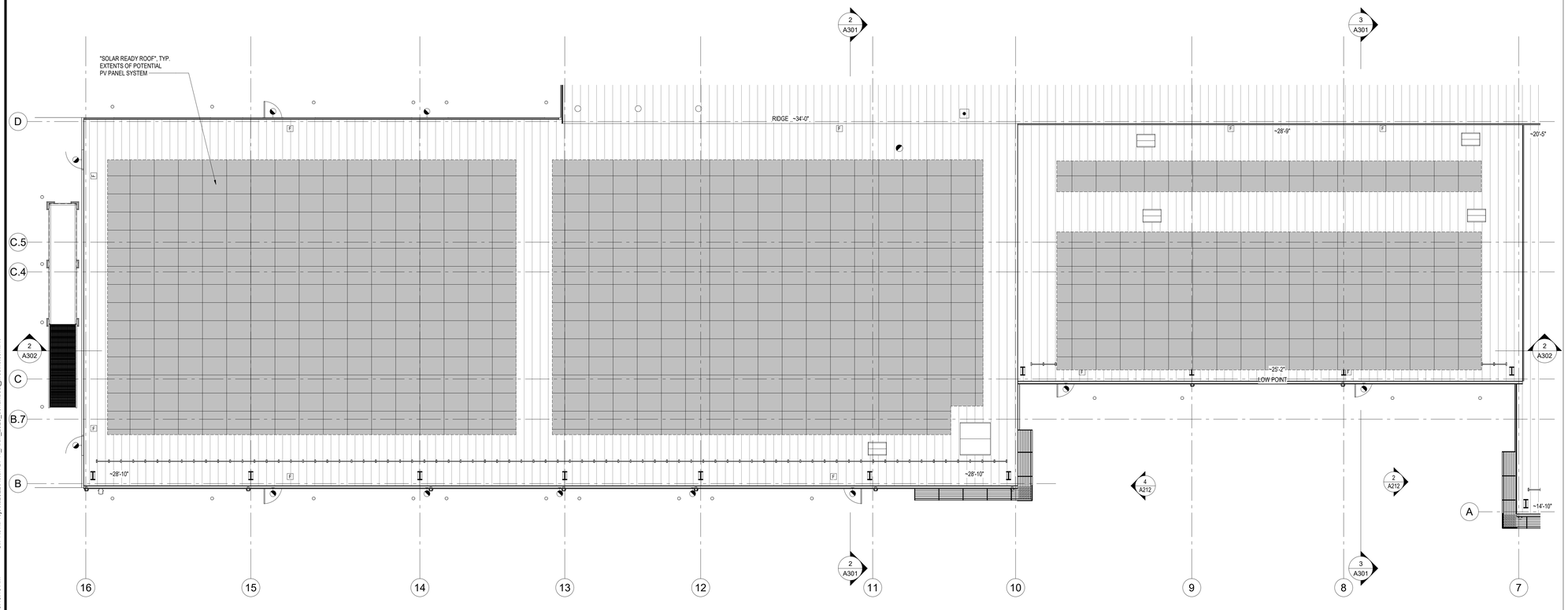
Drawing Title:
LARGE SCALE REFLECTED CEILING PLANS - FLEET STORAGE

Sheet Number:
A115

DRAFT FOR REVIEW PURPOSES ONLY



1 LARGE SCALE ROOF PLAN - ADMIN
1/8" = 1'-0" 1/ A105



2 LARGE SCALE ROOF PLAN - FLEET MAINTENANCE & SHOPS
1/8" = 1'-0" 1/ A105

GENERAL ROOF NOTES - METAL BUILDINGS

1. REFER TO EQUIPMENT, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR ADDITIONAL ROOF PENETRATIONS AND EQUIPMENT NOT SHOWN. ANY DISCREPANCIES REGARDING LOCATION OF EQUIPMENT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR RESOLUTION IN FIELD.
2. ROOF SLOPE = 1'-0" : 12'-0"
3. SEE GENERAL NOTES ON A012
4. ALL GUTTERS TO PITCH TOWARDS DOWNSPOUTS AT A MINIMUM 1/16" PER FOOT AND SUPPORTED AS PER METAL BUILDING MANUFACTURER.
5. ROOF PENETRATIONS TO BE CUT AND FLASHED BY METAL BUILDING MANUFACTURER.
6. PROVIDE ROOF FLASHING AT ALL PENETRATIONS INCLUDING BUT NOT LIMITED TO VENT STACKS, FLUES, AND EXHAUST FANS. REVIEW PLUMBING, EQUIPMENT, MECHANICAL, AND ELECTRICAL DRAWINGS FOR CONSTRUCTION NOT INDICATED ON THIS DRAWING.
7. PROVIDE CRICKETS AT ALL ROOFTOP EQUIPMENT AND PENETRATIONS TO CREATE ADEQUATE ROOF DRAINAGE.
8. SUPPLEMENTAL FRAMING AND CURBS FOR ALL ROOFTOP EQUIPMENT SHALL BE PROVIDED AND INSTALLED BY THE METAL BUILDING MANUFACTURER.

STANDING SEAM METAL ROOF ASSEMBLY (BY MBMI)

- STANDING SEAM METAL ROOF PANEL
- R-5 THERMAL BLOCKS AT PURLINS W/ UNFACED BATT INSULATION BETWEEN THERMAL BLOCKS (UPPER INSULATION LAYER)
- UNFACED BATT INSULATION LAYER BETWEEN PURLINS (STRUCTURE INSULATION LAYER)
- FABRIC LINER / VAPOR RETARDER, TAPE AND SEAL
- ALL PENETRATIONS AND EDGES
- MINIMUM R-VALUE OF 38

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

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40% DESIGN DEVELOPMENT PRROGRESS SET

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

Key Plan:

NORTH

Date:	11/01/2024
Draw By:	DRD
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

LARGE SCALE ROOF PLANS - ADMIN, SHOPS & FLEET MAINTENANCE

Sheet Number:

A121

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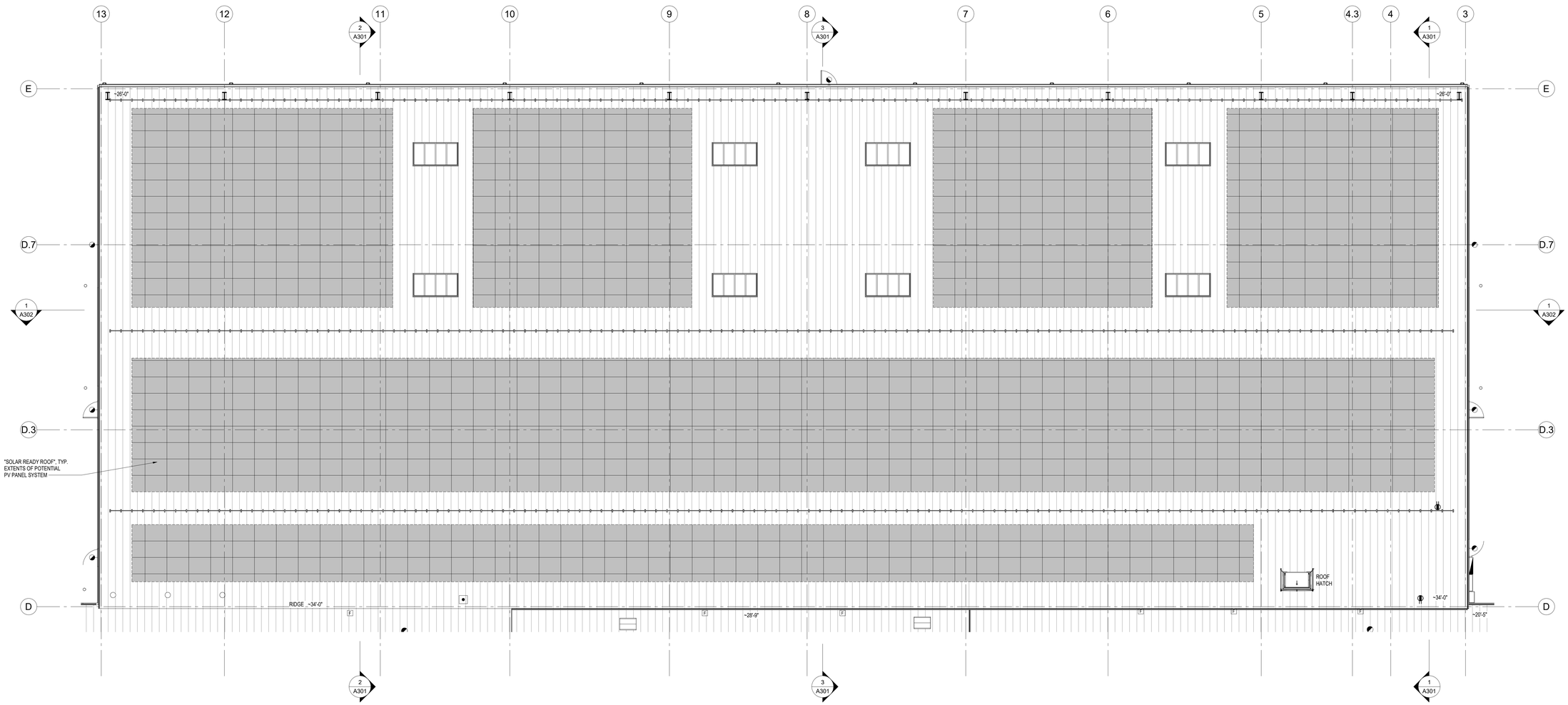
DRAFT FOR REVIEW PURPOSES ONLY

GENERAL ROOF NOTES - METAL BUILDINGS

1. REFER TO EQUIPMENT, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR ADDITIONAL ROOF PENETRATIONS AND EQUIPMENT NOT SHOWN. ANY DISCREPANCIES REGARDING LOCATION OF EQUIPMENT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR RESOLUTION IN FIELD.
2. ROOF SLOPE = 1'-0" : 12'-0"
3. SEE GENERAL NOTES ON A012
4. ALL GUTTERS TO PITCH TOWARDS DOWNSPOUTS AT A MINIMUM 1/16" PER FOOT AND SUPPORTED AS PER METAL BUILDING MANUFACTURER.
5. ROOF PENETRATIONS TO BE CUT AND FLASHED BY METAL BUILDING MANUFACTURER.
6. PROVIDE ROOF FLASHING AT ALL PENETRATIONS INCLUDING BUT NOT LIMITED TO VENT STACKS, FLUES, AND EXHAUST FANS. REVIEW PLUMBING, EQUIPMENT, MECHANICAL, AND ELECTRICAL DRAWINGS FOR CONSTRUCTION NOT INDICATED ON THIS DRAWING.
7. PROVIDE CRICKETS AT ALL ROOFTOP EQUIPMENT AND PENETRATIONS TO CREATE ADEQUATE ROOF DRAINAGE.
8. SUPPLEMENTAL FRAMING AND CURBS FOR ALL ROOFTOP EQUIPMENT SHALL BE PROVIDED AND INSTALLED BY THE METAL BUILDING MANUFACTURER.

STANDING SEAM METAL ROOF ASSEMBLY (BY MBMI)

- STANDING SEAM METAL ROOF PANEL
- R-5 THERMAL BLOCKS AT PURLINS W/ UNFACED BATT INSULATION BETWEEN THERMAL BLOCKS (UPPER INSULATION LAYER)
- UNFACED BATT INSULATION LAYER BETWEEN PURLINS (STRUCTURE INSULATION LAYER)
- FABRIC LINER / VAPOR RETARDER, TAPE AND SEAL
- ALL PENETRATIONS AND EDGES
- MINIMUM R-VALUE OF 38



1 LARGE SCALE ROOF PLAN - FLEET STORAGE
1/8" = 1'-0"

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

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40% DESIGN DEVELOPMENT PRROGRESS SET

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

Key Plan:

NORTH

Date:	11/01/2024
Draw By:	DRD
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

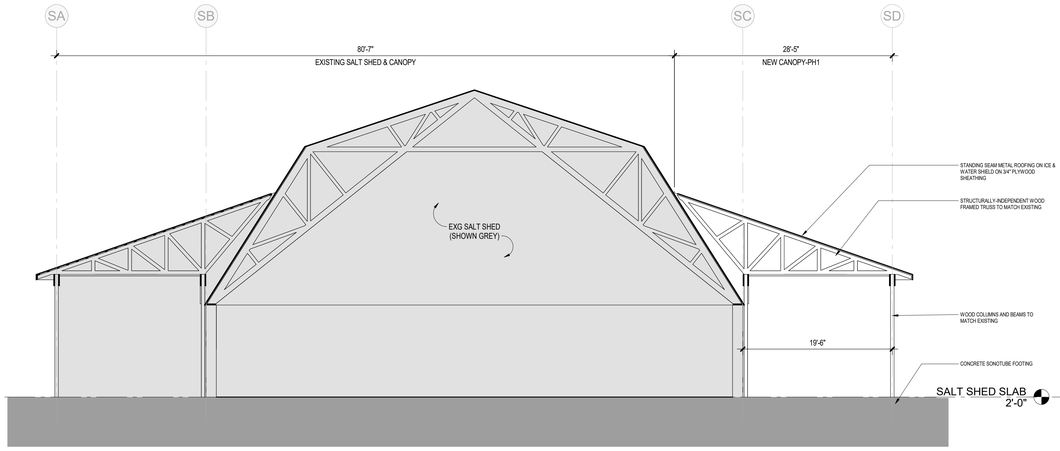
LARGE SCALE ROOF PLAN - FLEET STORAGE

Sheet Number:

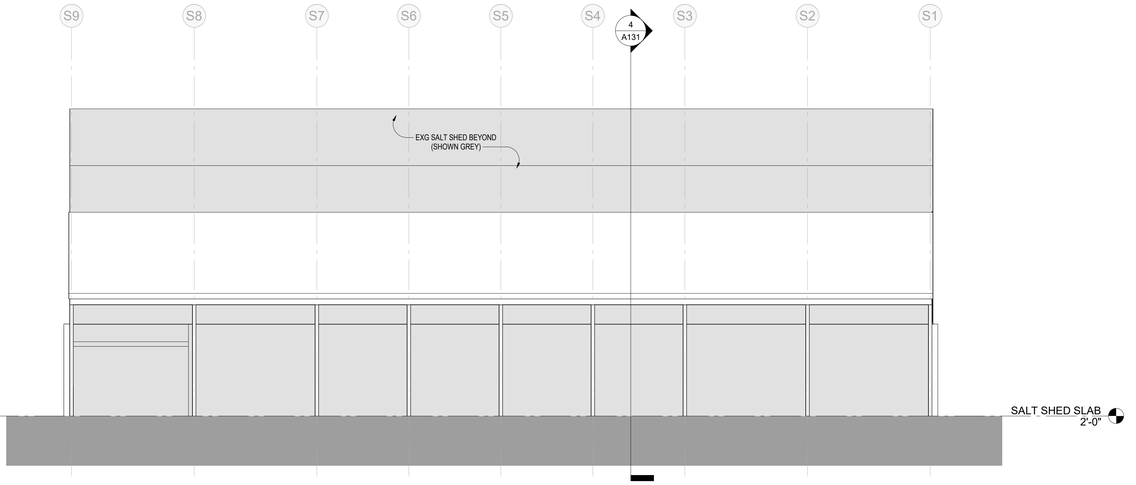
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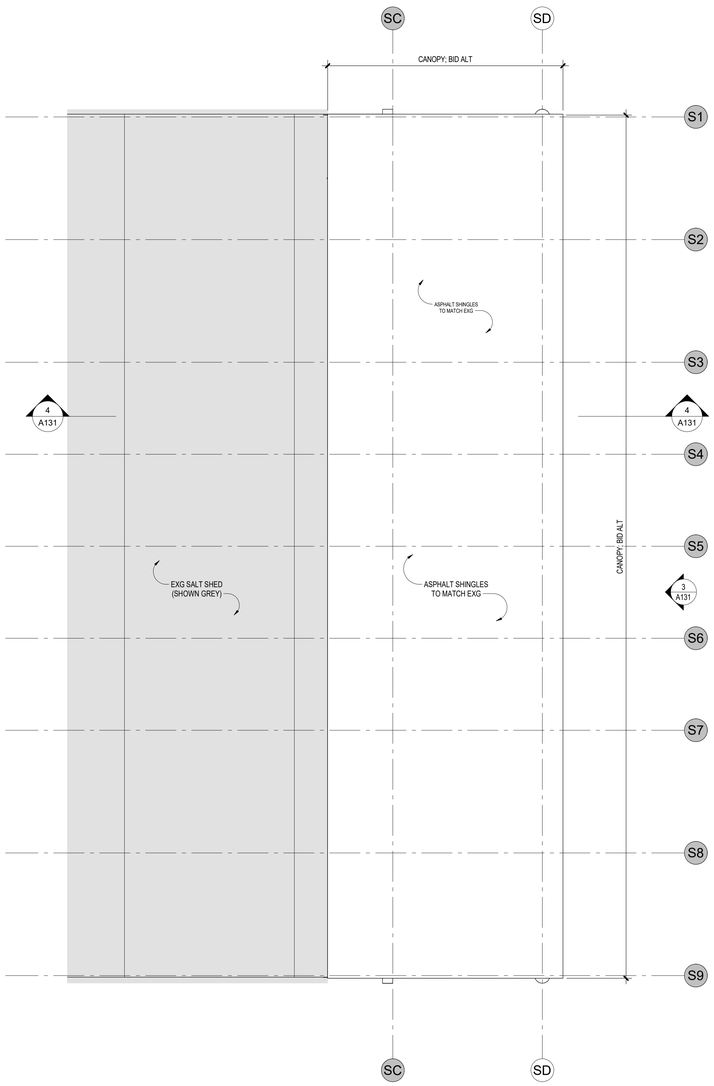
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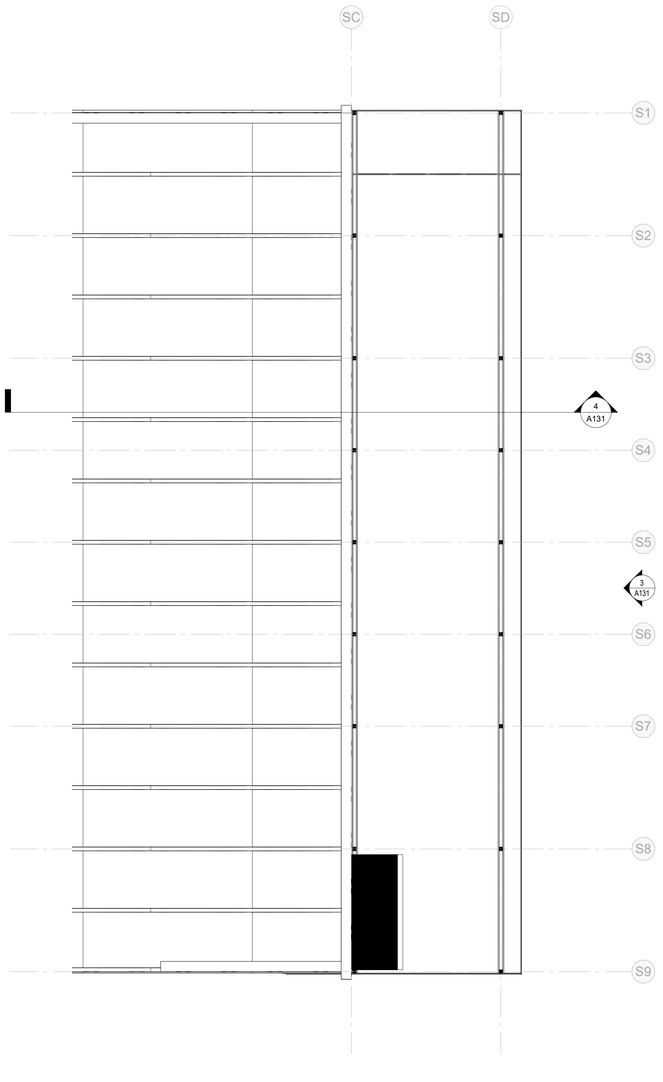
4 STORAGE CANOPY SECTION
1/8" = 1'-0" 1/ A131



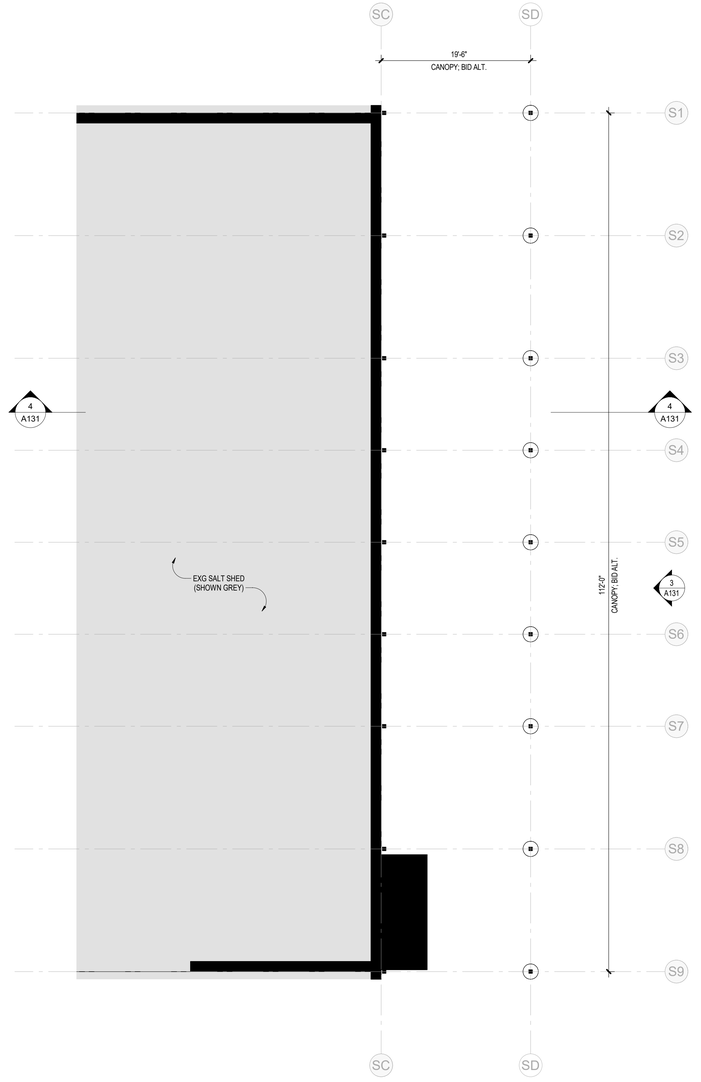
3 STORAGE CANOPY ELEVATION
1/8" = 1'-0" 1/ A131



2 STORAGE CANOPY ROOF PLAN
1/8" = 1'-0" 1/ A201



5 STORAGE CANOPY RCP
1/8" = 1'-0" 3/ A131



1 STORAGE CANOPY FLOOR PLAN
1/8" = 1'-0" 1/ A201

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

Key Plan:

NORTH

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Approved By:	-
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

STORAGE CANOPY PLANS - BID ALT #4

Sheet Number:

A131

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MASONRY VENEER LEGEND:

CONTROL JOINT LOCATION
- REFER TO DETAILS 9 & 10 / A631 FOR ADDITIONAL INFO

TYPE 1 - STANDARD CMU GROUND FACE VENEER BLOCK: 8" X 16"

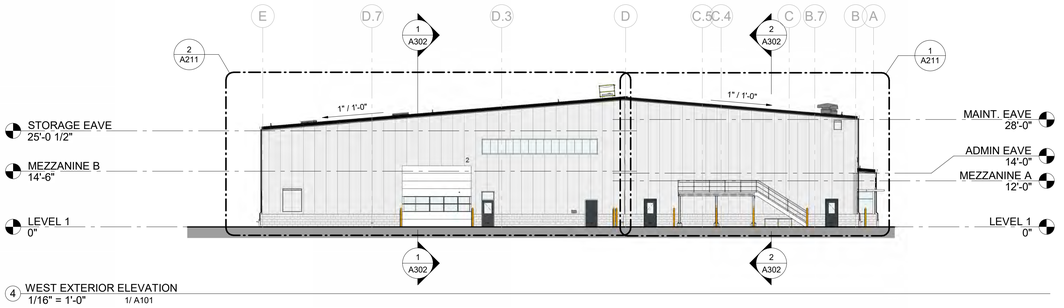
NOTES:
1. COORDINATE OPENINGS NOT SHOWN WITH EQUIPMENT AND MEP/FP DRAWINGS.
2. FOR MOCK-UP REQUIREMENTS, SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

METAL PANEL LEGEND:

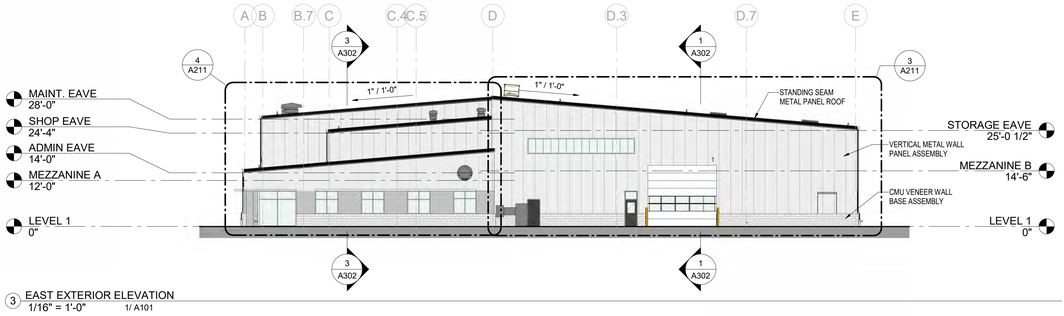
WP-1 42" WIDE INSULATED HORIZONTAL METAL PANEL
BASIS OF DESIGN: KINGSPAN "KS SHADOWLINE"
COLOR "TBD"

WP-2 42" WIDE INSULATED VERTICAL METAL PANEL
BASIS OF DESIGN: KINGSPAN "KS MINI-WAVE"
COLOR: "TBD"

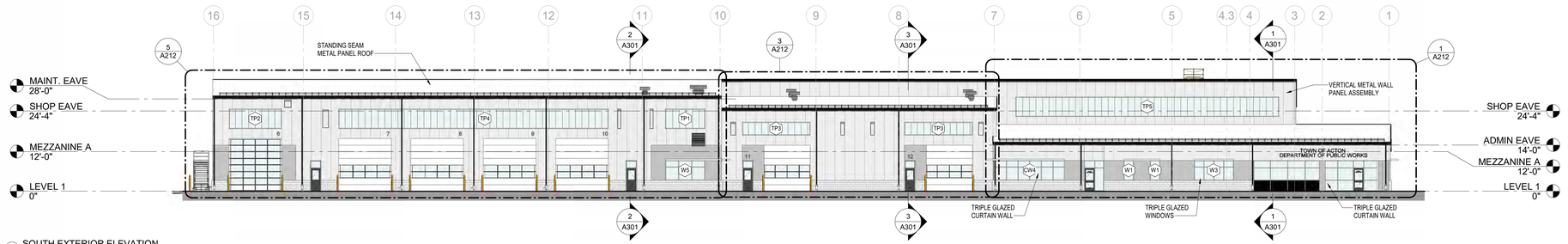
WP-3 36" WIDE VERTICAL METAL PANEL
BASIS OF DESIGN: MBCI "PBU"
COLOR "TBD"



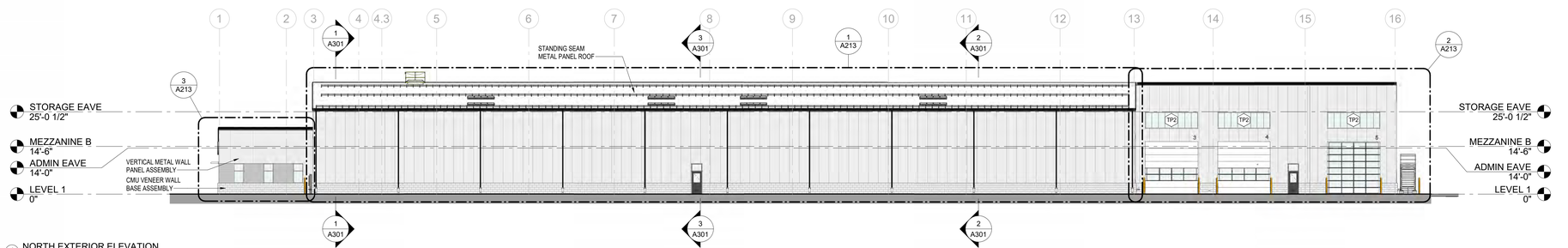
4 WEST EXTERIOR ELEVATION
1/16" = 1'-0" 1/ A101



3 EAST EXTERIOR ELEVATION
1/16" = 1'-0" 1/ A101



2 SOUTH EXTERIOR ELEVATION
1/16" = 1'-0" 1/ A101



1 NORTH EXTERIOR ELEVATION
1/16" = 1'-0" 1/ A101

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

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Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

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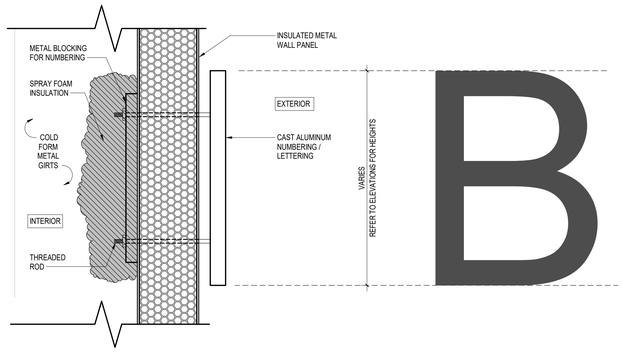
OVERALL ELEVATIONS

Sheet Number:

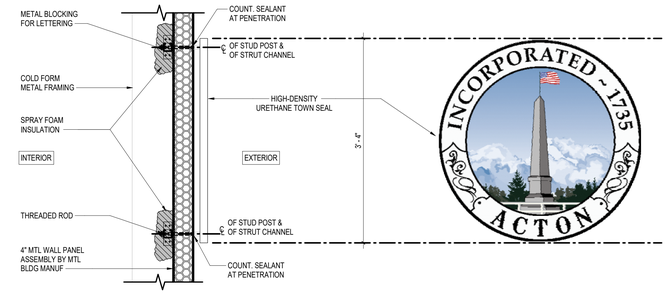
A201

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6 BUILDING LETTERING
3" = 1'-0" 2/ A211



5 EXTERIOR SIGNAGE - TOWN SEAL
1" = 1'-0" 4/ A211

MASONRY VENEER LEGEND:

CONTROL JOINT LOCATION
- REFER TO DETAILS 9 & 10 / A631 FOR ADDITIONAL INFO

TYPE 1 - STANDARD CMU GROUND FACE VENEER BLOCK: 8" X 16"

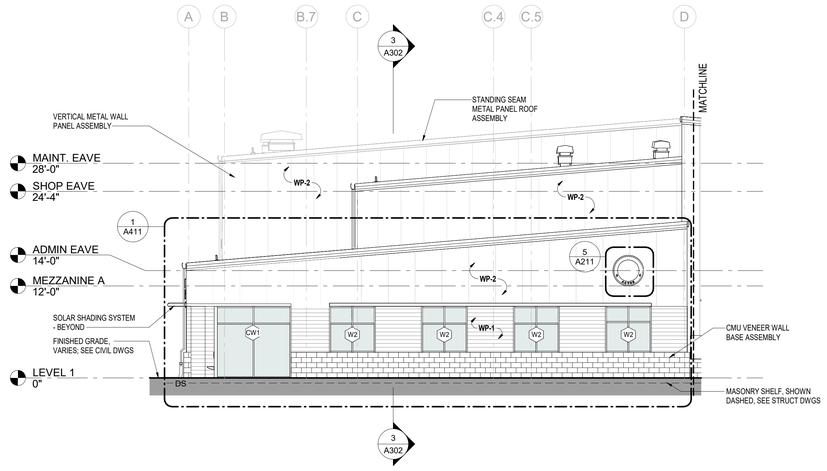
NOTES:
1. COORDINATE OPENINGS NOT SHOWN WITH EQUIPMENT AND MEP/FP DRAWINGS.
2. FOR MOCK-UP REQUIREMENTS, SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

METAL PANEL LEGEND:

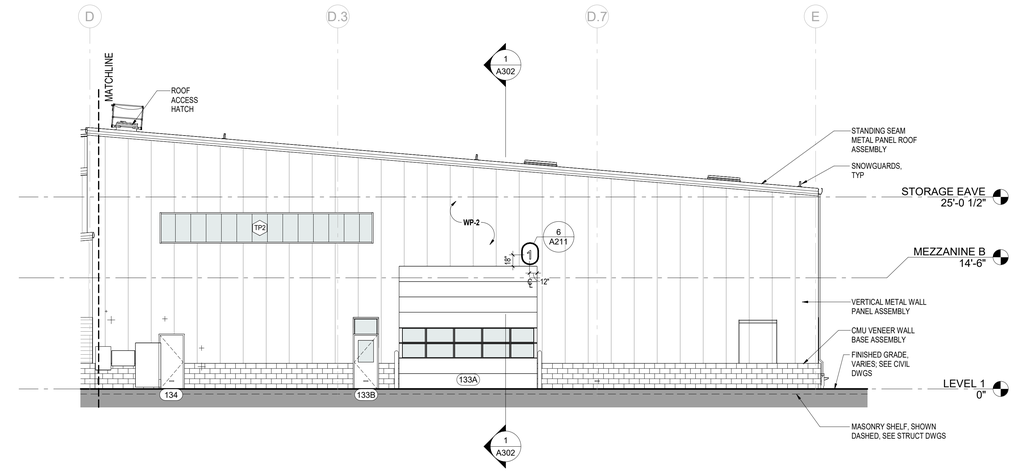
WP-1 42" WIDE INSULATED HORIZONTAL METAL PANEL
BASIS OF DESIGN: KINGSPAN "KS SHADOWLINE"
COLOR: "TBD"

WP-2 42" WIDE INSULATED VERTICAL METAL PANEL
BASIS OF DESIGN: KINGSPAN "KS MINI-WAVE"
COLOR: "TBD"

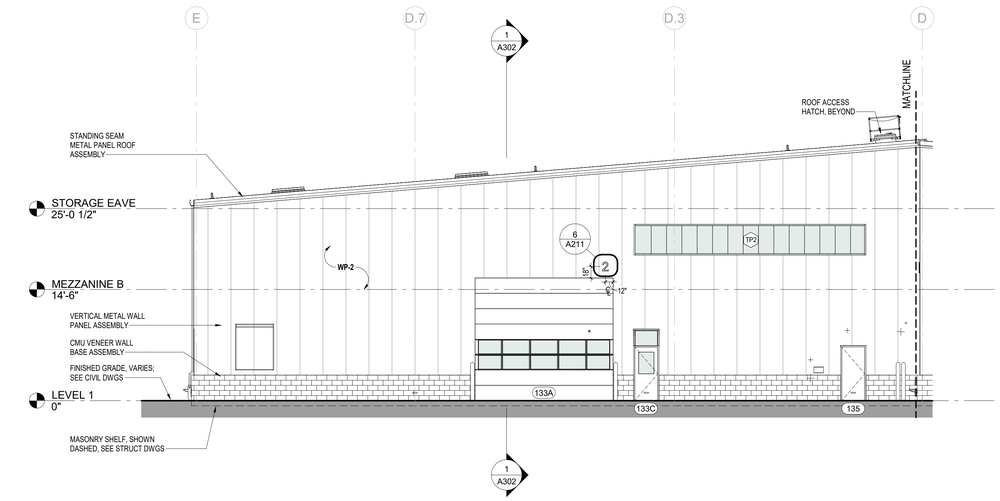
WP-3 36" WIDE VERTICAL METAL PANEL
BASIS OF DESIGN: MBCI "PBU"
COLOR "TBD"



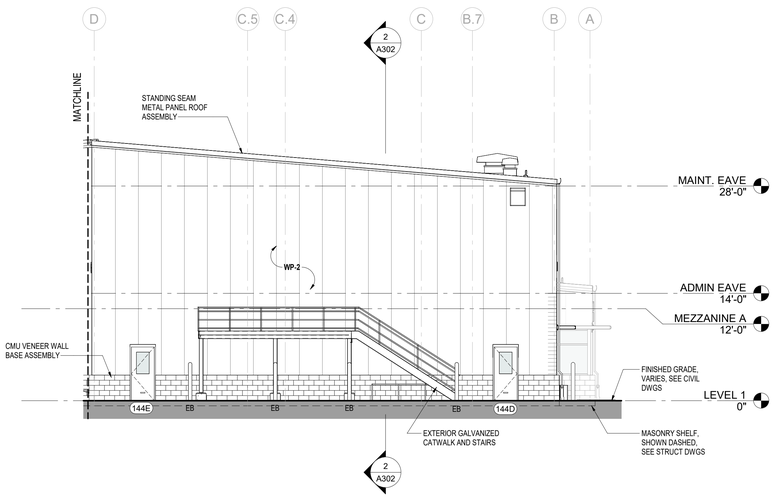
4 PARTIAL EAST EXTERIOR ELEVATION - ADMIN
1/8" = 1'-0" 3/ A201



3 PARTIAL EAST EXTERIOR ELEVATION - FLEET STORAGE
1/8" = 1'-0" 3/ A201



2 PARTIAL WEST EXTERIOR ELEVATIO - FLEET STORAGE
1/8" = 1'-0" 4/ A201



1 PARTIAL WEST EXTERIOR ELEVATION - WASH BAY
1/8" = 1'-0" 4/ A201

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

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Scale: As indicated

Key Plan:

Date:	Issue Date
Draw By:	SSB
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

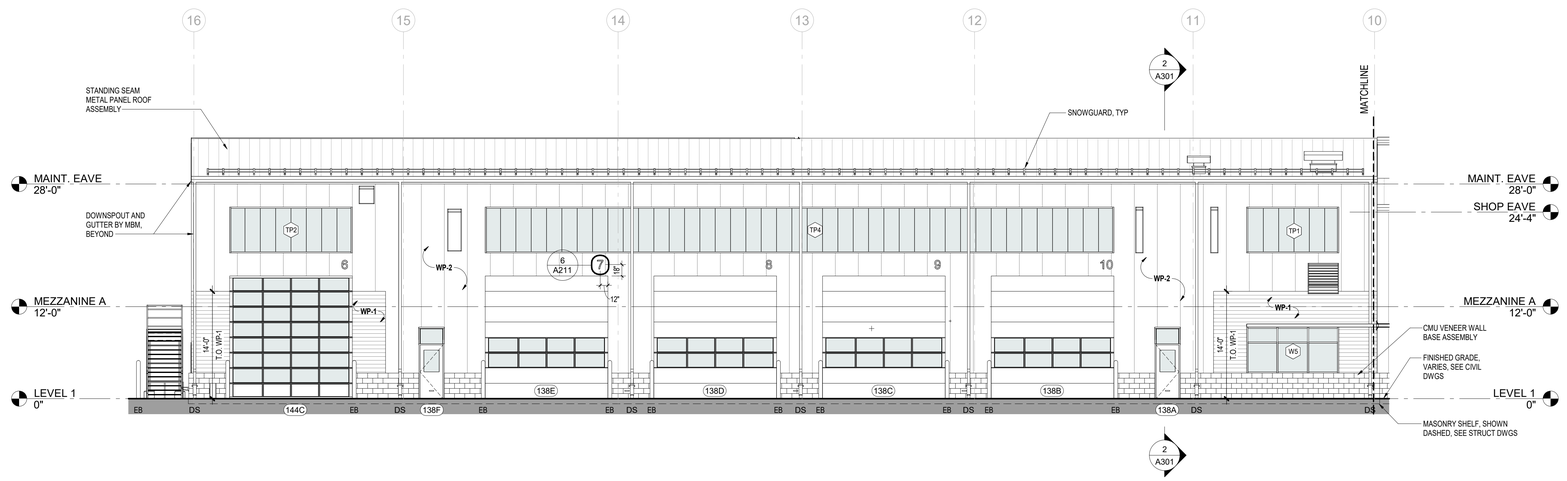
LARGE SCALE PARTIAL EXTERIOR ELEVATIONS

Sheet Number:

A211

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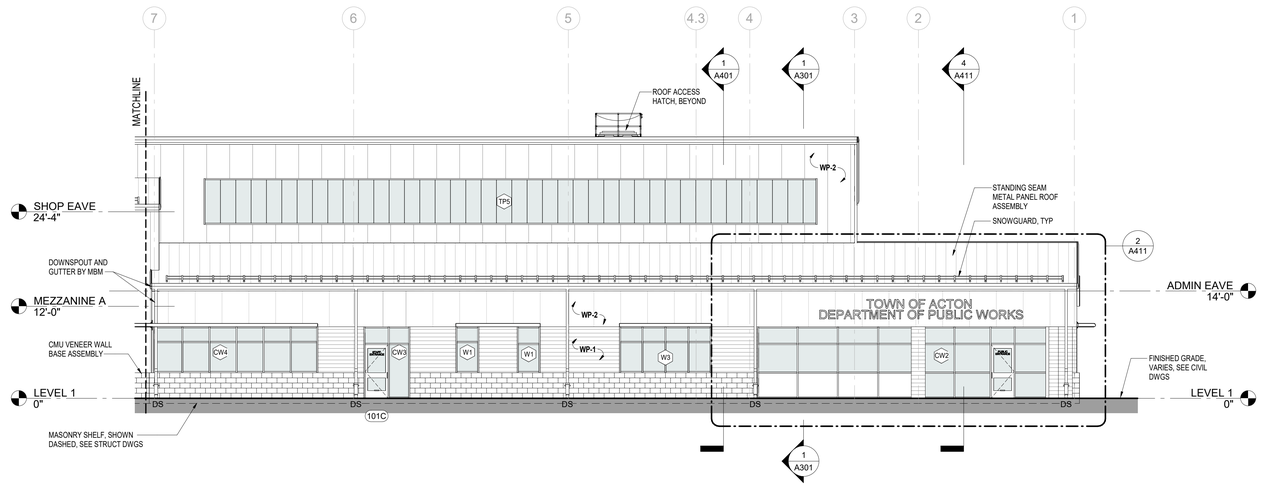


5 PARTIAL SOUTH EXTERIOR ELEVATION - FLEET MAINTENANCE & WASH BAY
1/8" = 1'-0" 2/ A201

4 PARTIAL EAST EXTERIOR ELEVATION - MECHANIC'S OFFICE
1/8" = 1'-0" 1/ A101

3 PARTIAL SOUTH EXTERIOR ELEVATION - SHOPS
1/8" = 1'-0" 2/ A201

2 PARTIAL WEST EXTERIOR ELEVATION - EMPLOYEE FACILITIES
1/8" = 1'-0" 1/ A101



1 PAARTIAL SOUTH EXTERIOR ELEVATION - ADMIN
1/8" = 1'-0" 2/ A201

MASONRY VENEER LEGEND:

CONTROL JOINT LOCATION
- REFER TO DETAILS 9 & 10 / A631 FOR ADDITIONAL INFO

TYPE 1 - STANDARD CMU GROUND FACE VENEER BLOCK: 8" X 16"

NOTES:
1. COORDINATE OPENINGS NOT SHOWN WITH EQUIPMENT AND MEP/FP DRAWINGS.
2. FOR MOCK-UP REQUIREMENTS, SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

METAL PANEL LEGEND:

WP-1 42" WIDE INSULATED HORIZONTAL METAL PANEL
BASIS OF DESIGN: KINGSPAN "KS SHADOWLINE"
COLOR "TBD"

WP-2 42" WIDE INSULATED VERTICAL METAL PANEL
BASIS OF DESIGN: KINGSPAN "KS MINI-WAVE"
COLOR: "TBD"

WP-3 36" WIDE VERTICAL METAL PANEL
BASIS OF DESIGN: MBCI "PBU"
COLOR "TBD"

Project:
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Scale: 1/8" = 1'-0"

Key Plan:

Date:	02/11/25
Draw By:	SSB
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

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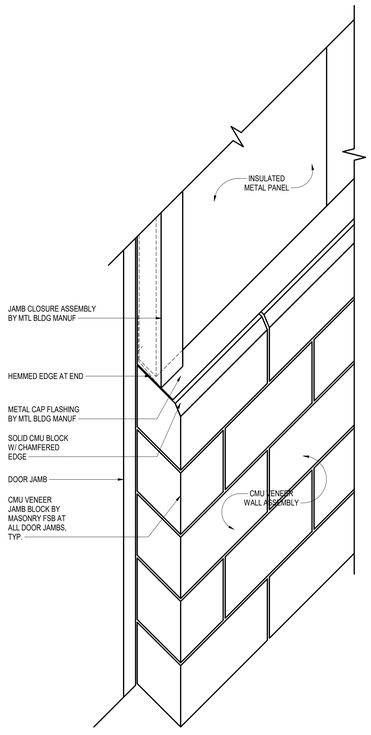
LARGE SCALE PARTIAL EXTERIOR ELEVATIONS

Sheet Number:

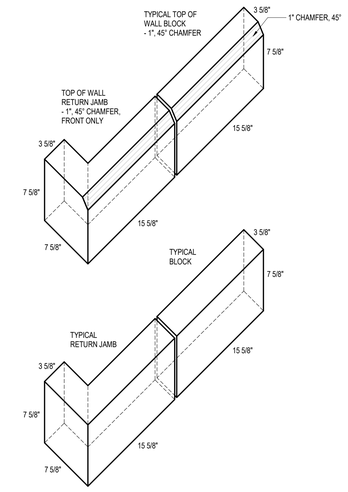
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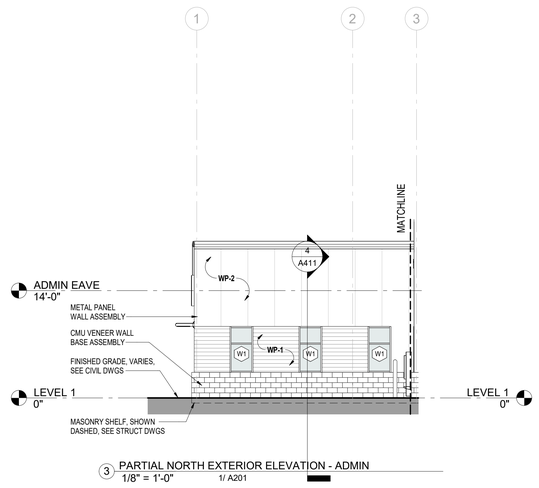
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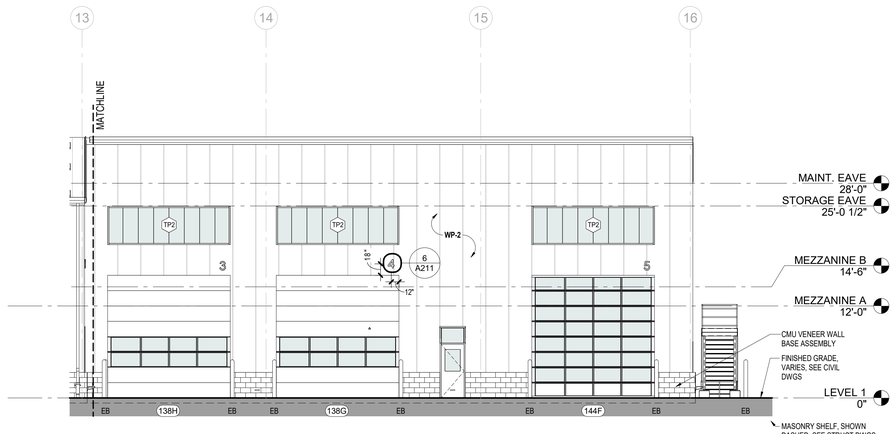
4 FLASHING AT DOOR JAMB DETAIL
1 1/2" = 1'-0"



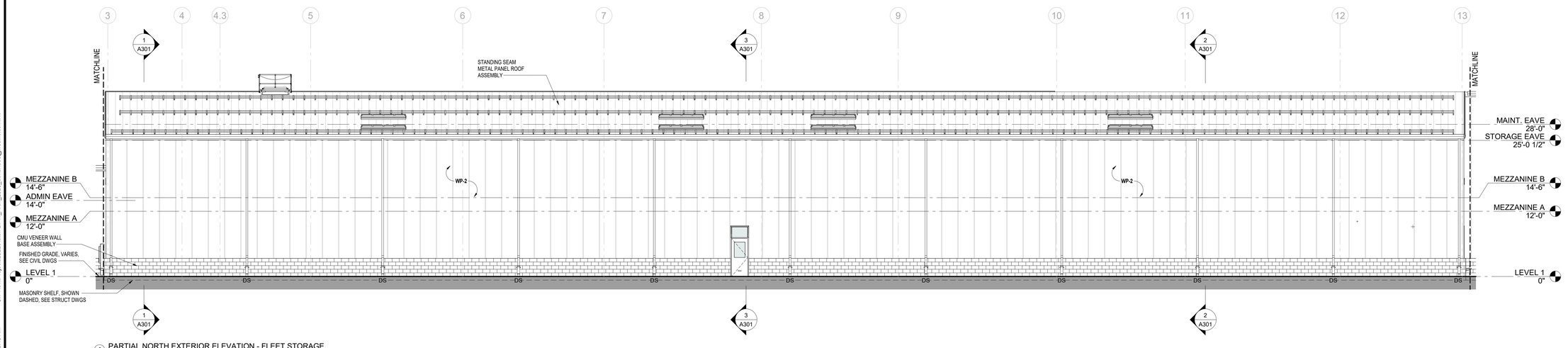
5 CMU SHAPES
1 1/2" = 1'-0"



3 PARTIAL NORTH EXTERIOR ELEVATION - ADMIN
1/8" = 1'-0" 1/ A201



2 PARTIAL NORTH EXTERIOR ELEVATION - FLEET MAINTENANCE & WASH BAY
1/8" = 1'-0" 1/ A201



1 PARTIAL NORTH EXTERIOR ELEVATION - FLEET STORAGE
1/8" = 1'-0" 1/ A201

MASONRY VENEER LEGEND:

CONTROL JOINT LOCATION
- REFER TO DETAILS 9 & 10 / A631 FOR ADDITIONAL INFO

TYPE 1 - STANDARD CMU GROUND FACE VENEER BLOCK: 8" X 16"

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LARGE SCALE PARTIAL EXTERIOR ELEVATIONS

Sheet Number:

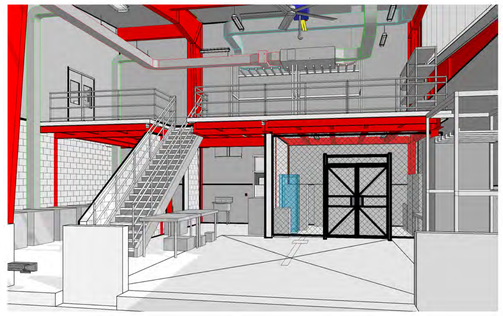
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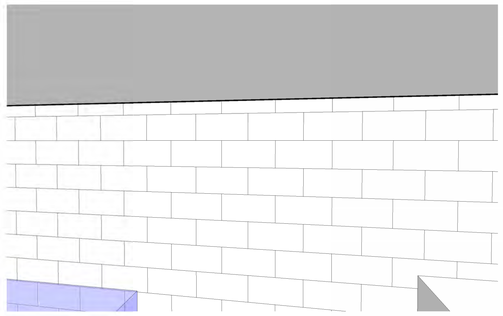
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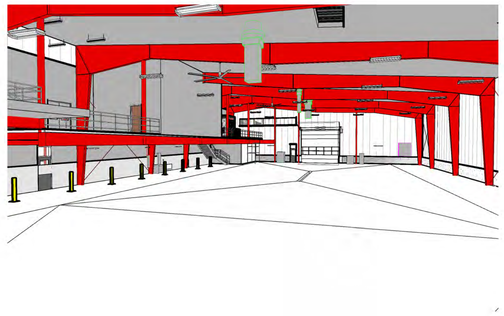
5 INTERIOR 3D VIEW - MULTI-PURPOSE TRAINING ROOM



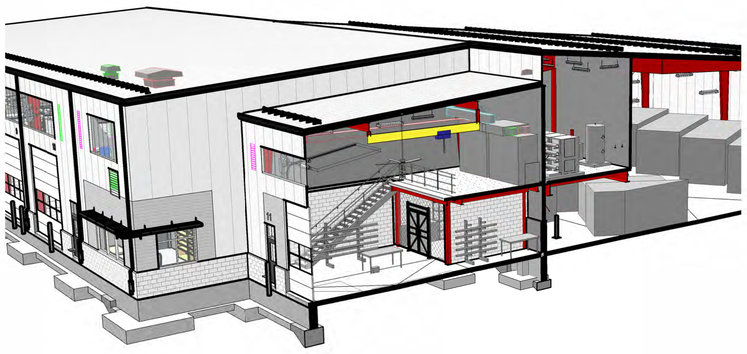
8 INTERIOR 3D VIEW - WORKSHOP



3 INTERIOR 3D VIEW - FLEET MAINTENANCE



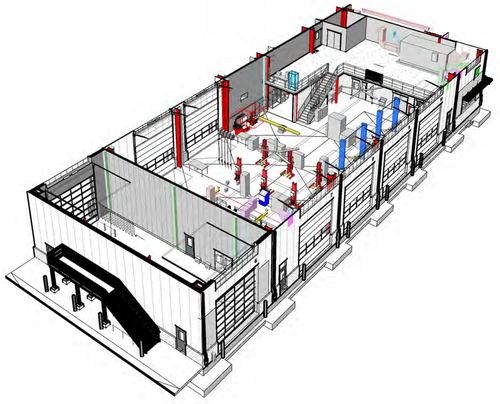
6 INTERIOR 3D VIEW - FLEET STORAGE



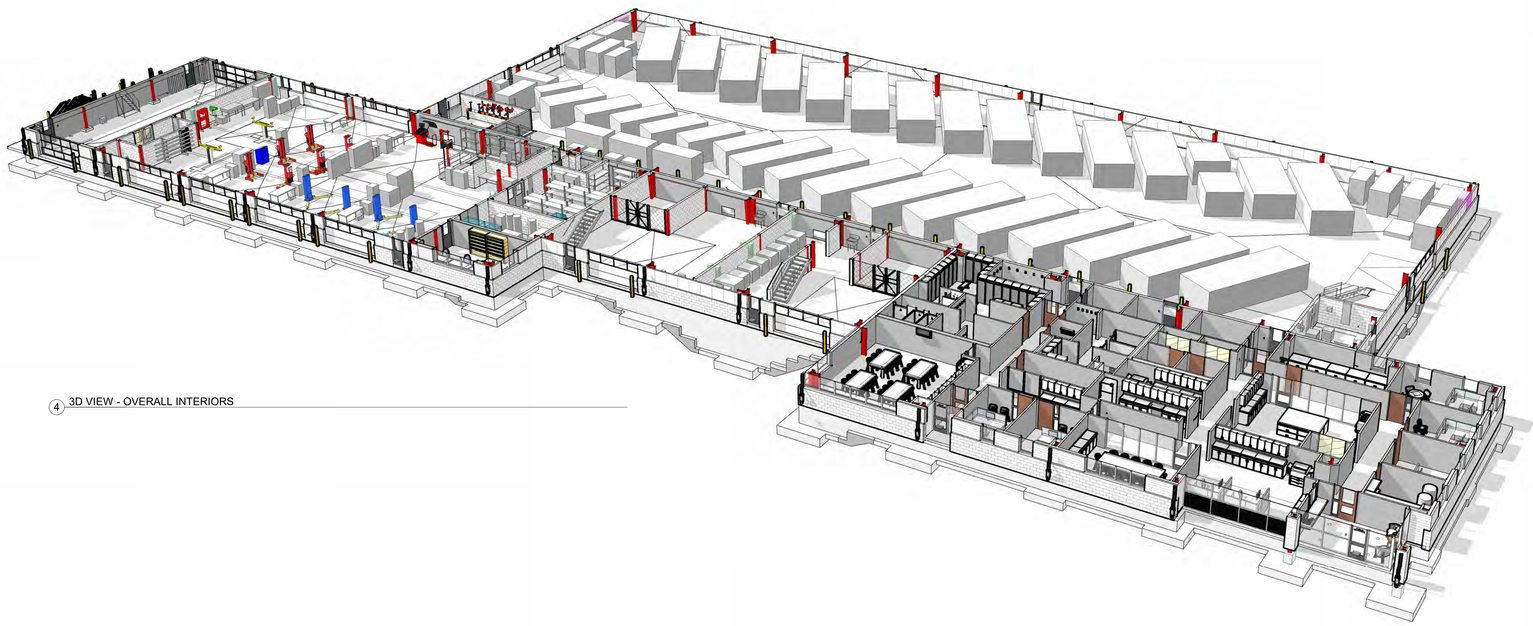
1 3D VIEW - SHOPS & STORAGE - PERSEPCTIVE SECTION CUT



7 3D VIEW FOR PRESENTATION 2



2 3D VIEW - FLEET MAINTENANCE PERSPECTIVE CUT



4 3D VIEW - OVERALL INTERIORS

NOTE: 3D VIEWS ARE PROVIDED FOR REFERENCE ONLY. REFER TO PLANS, ELEVATIONS, SECTIONS, DETAILS AND SCHEDULES FOR BUILDING REQUIREMENTS.

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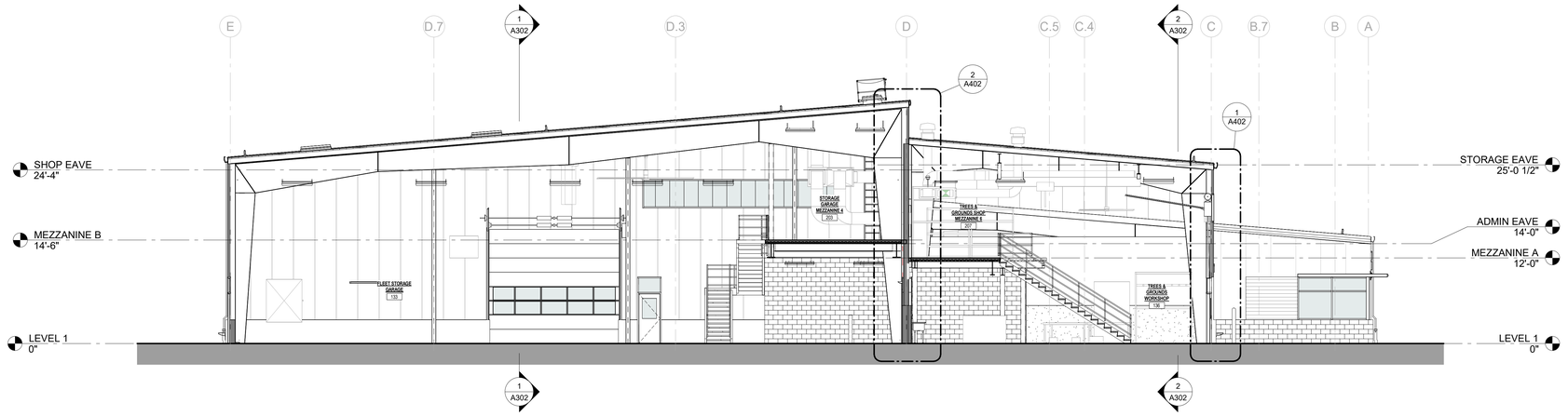
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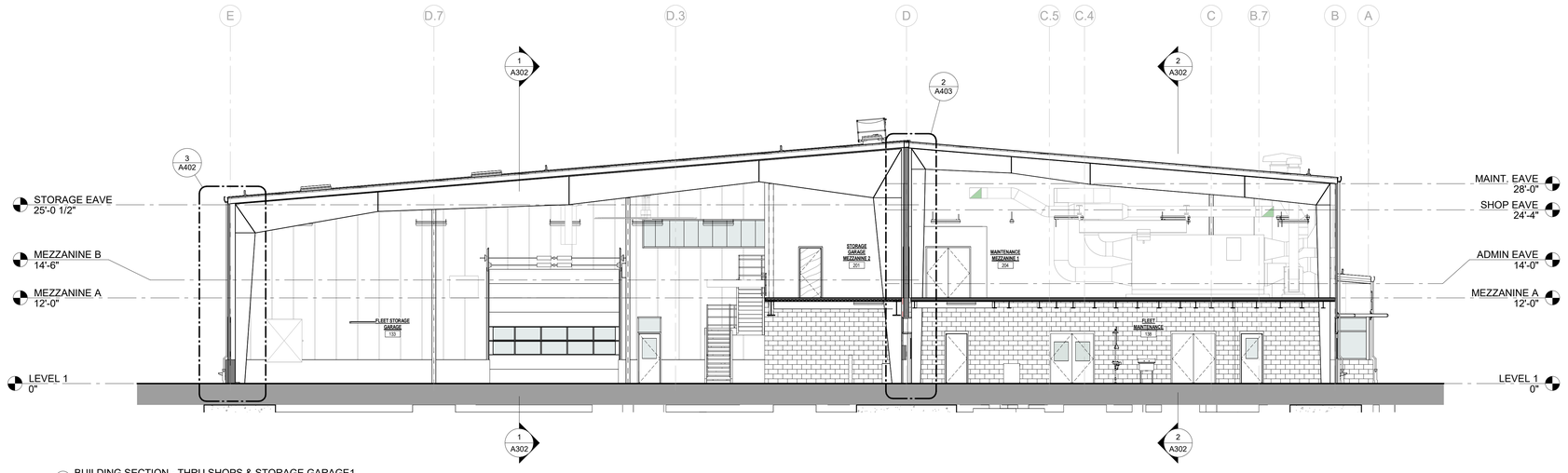
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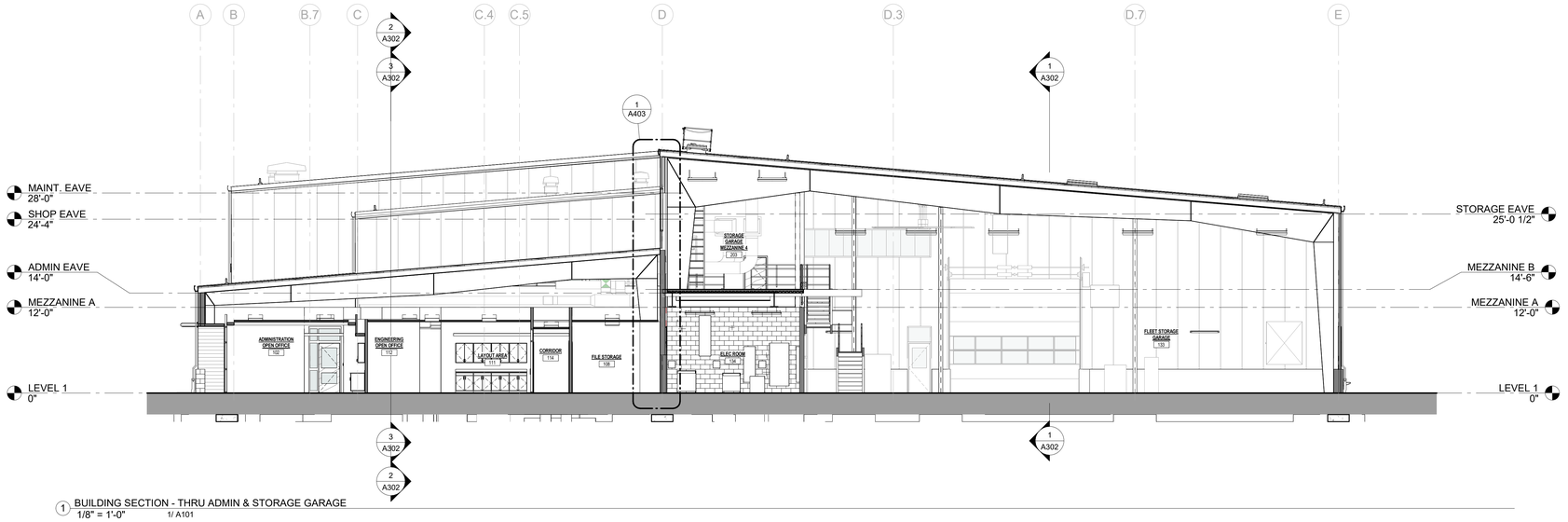
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3 BUILDING SECTION - THRU SHOPS & STORAGE GARAGE
1/8" = 1'-0" 1/ A101



2 BUILDING SECTION - THRU SHOPS & STORAGE GARAGE1
1/8" = 1'-0" 1/ A101



1 BUILDING SECTION - THRU ADMIN & STORAGE GARAGE
1/8" = 1'-0" 1/ A101

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

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Key Plan:

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Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
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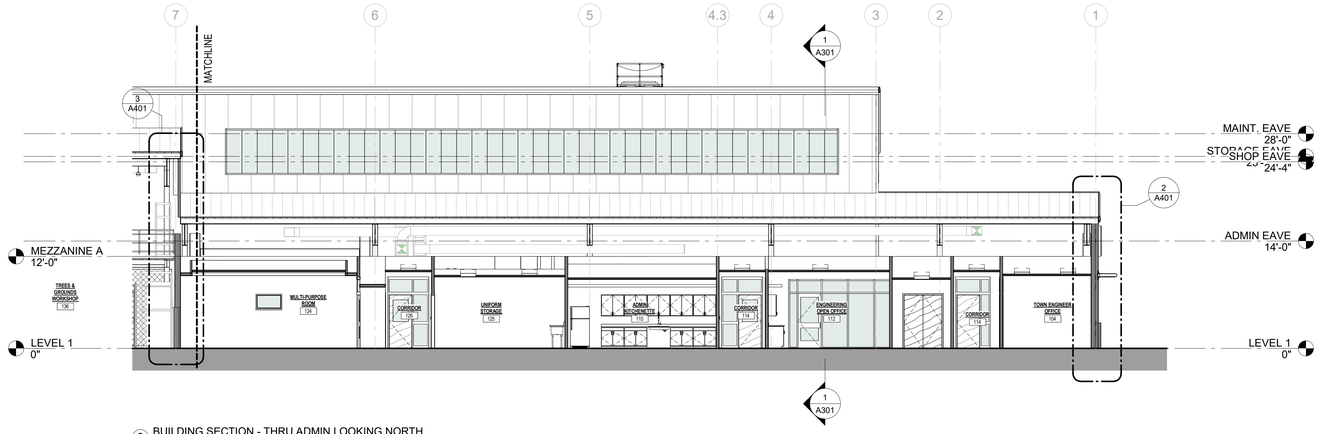
BUILDING SECTIONS

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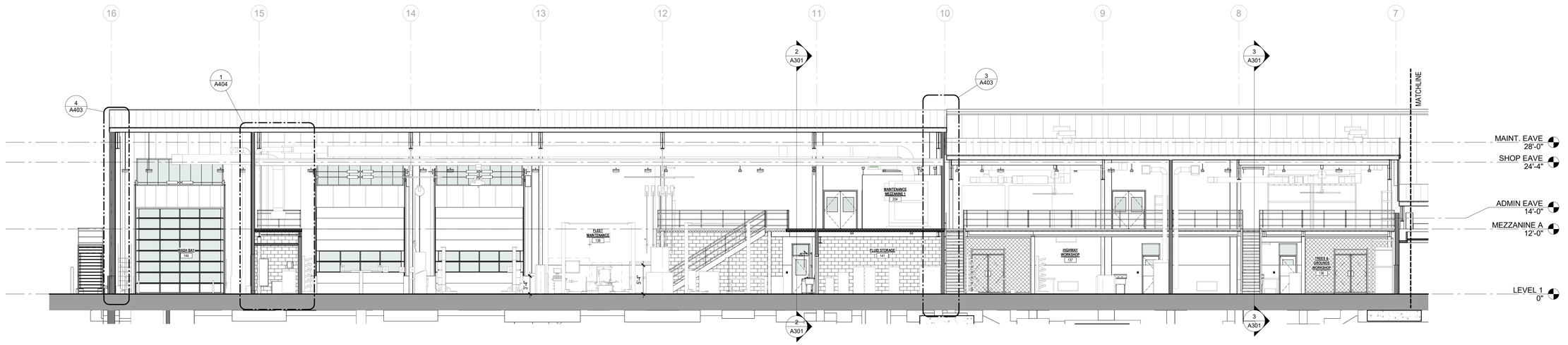
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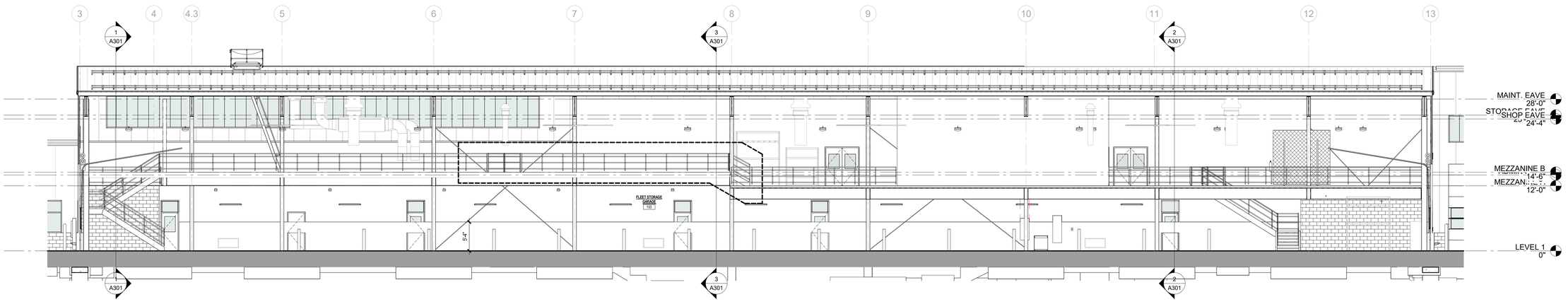
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3 BUILDING SECTION - THRU ADMIN LOOKING NORTH
1/8" = 1'-0" 1/ A101



2 BUILDING SECTION - THRU SHOPS & FLEET MAINTENANCE LOOKING NORTH
1/8" = 1'-0" 1/ A101



1 BUILDING SECTION - THRU FLEET STORAGE LOOKING SOUTH
1/8" = 1'-0" 1/ A101

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

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

Key Plan:

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Approved By:	Approver
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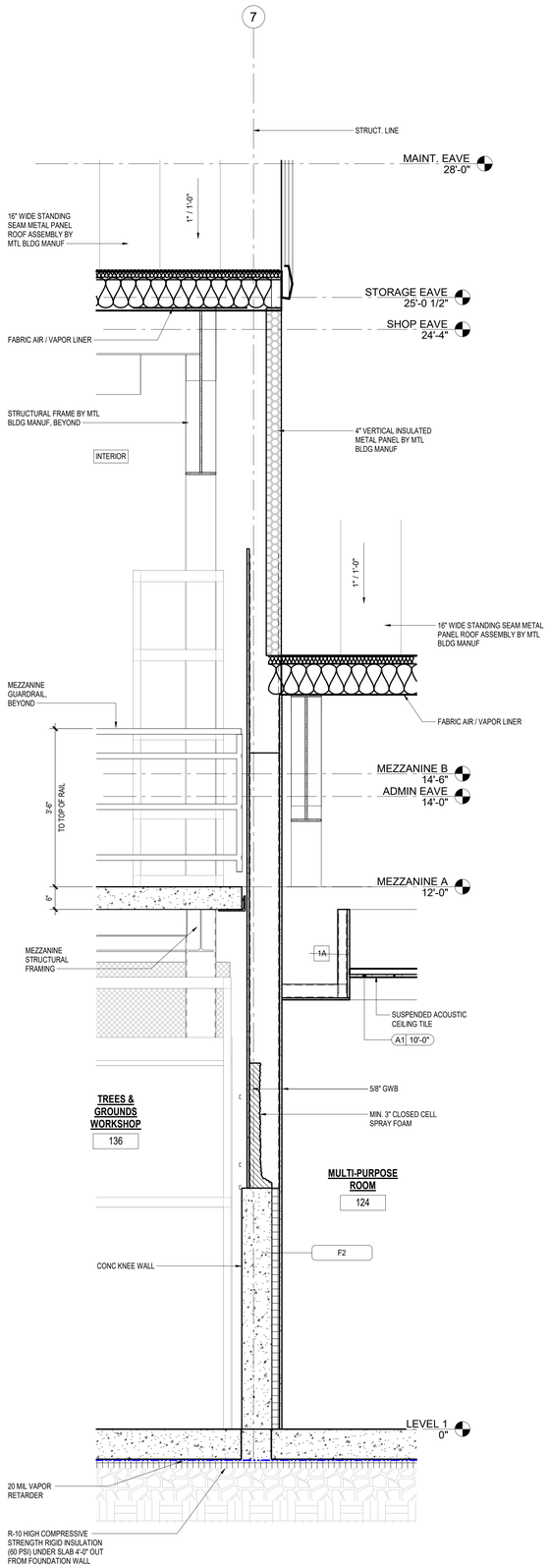
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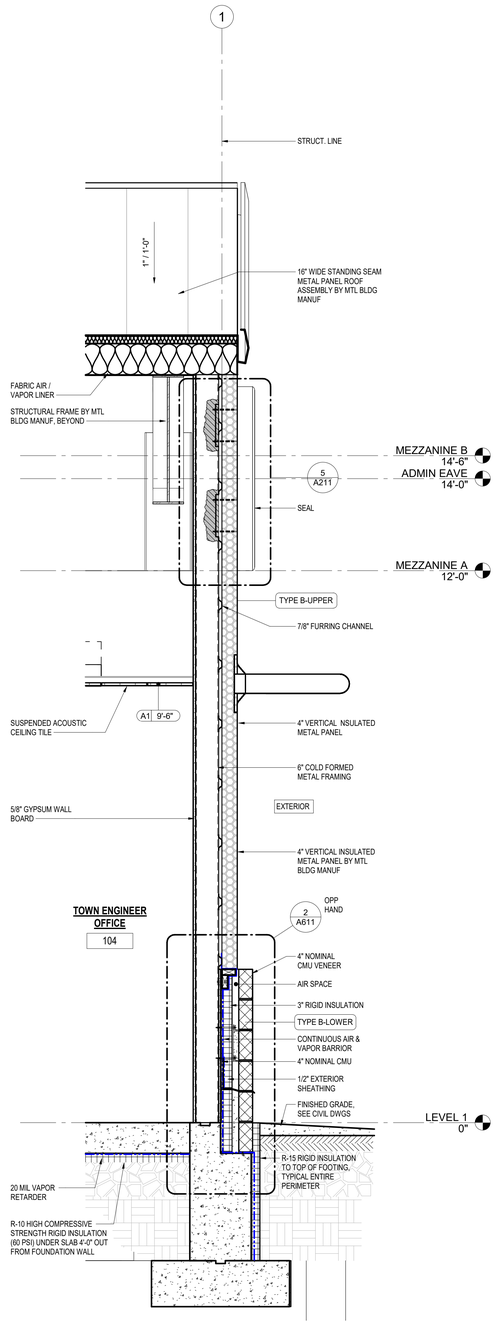
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TYPICAL WALL SECTION NOTES

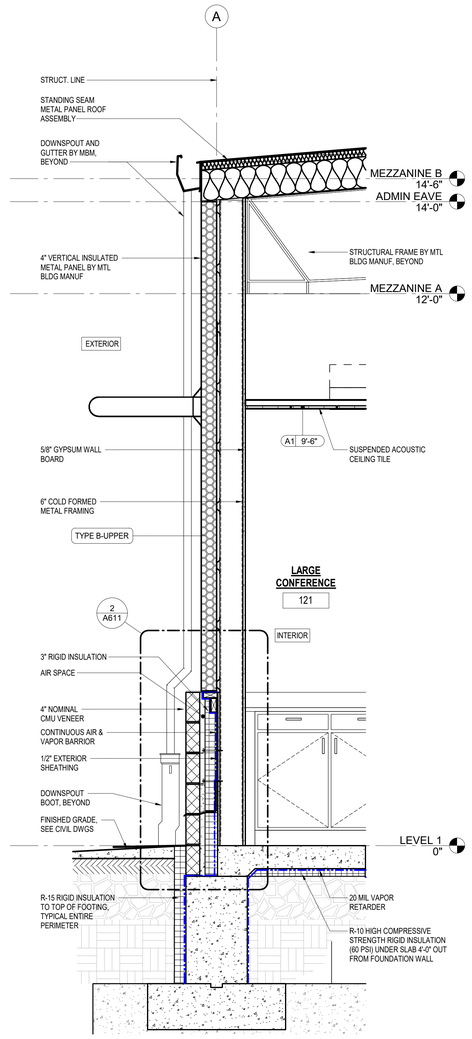
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- AVB SHALL BE SEALED TO ALL ROOF FABRIC AND ANY STRUCTURE OR SYSTEMS WHICH PASSES THRU THE PLANE OF THE AVB TO FORM A CONTINUOUS AIR VAPOR BARRIER BETWEEN SPACES, TYP.
- SEE A031 FOR WALL AND ROOF ASSEMBLY TYPES



3 WALL SECTION - ADMIN TO SHOPS
3/4" = 1'-0" 3/ A302



2 WALL SECTION - TYP. ADMIN RAKE
3/4" = 1'-0" 3/ A302



1 WALL SECTION - TYP. ADMIN EAVE
3/4" = 1'-0" 1/ A111

0' 1' 2' 3'
SCALE: 3/4" = 1'-0"

Project:
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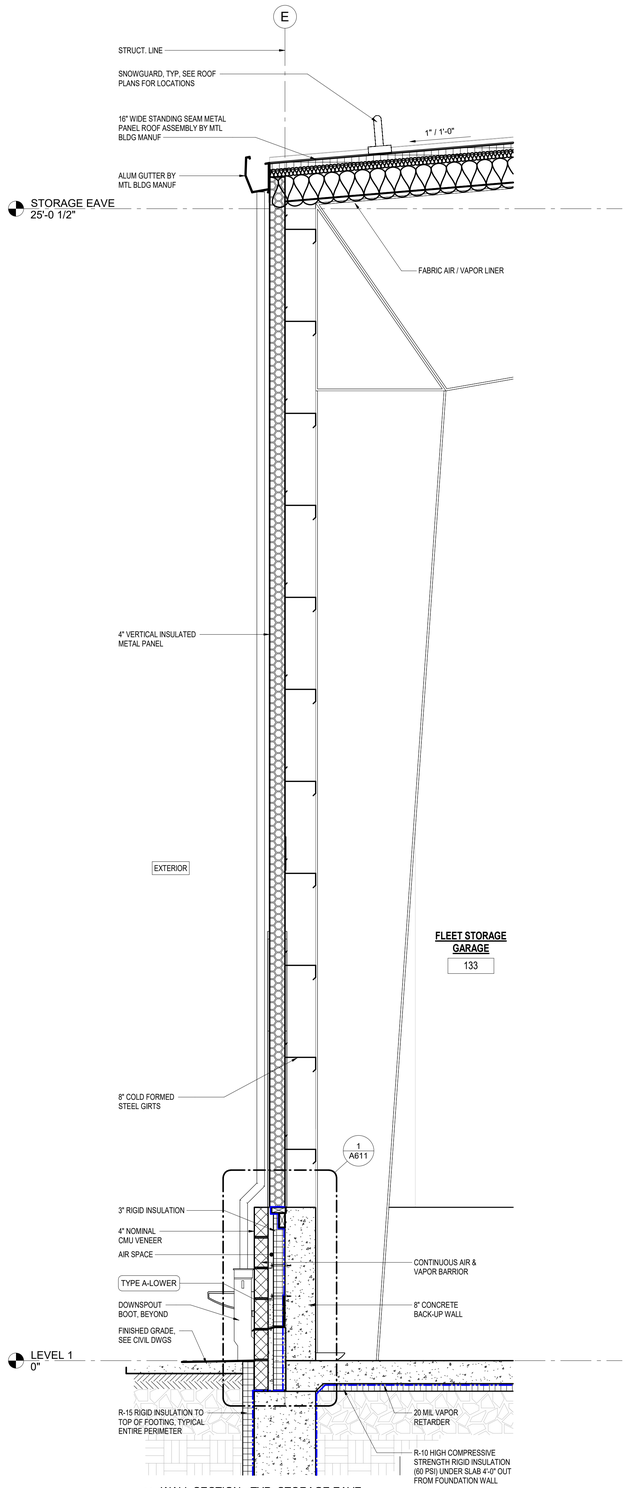
WALL SECTIONS I

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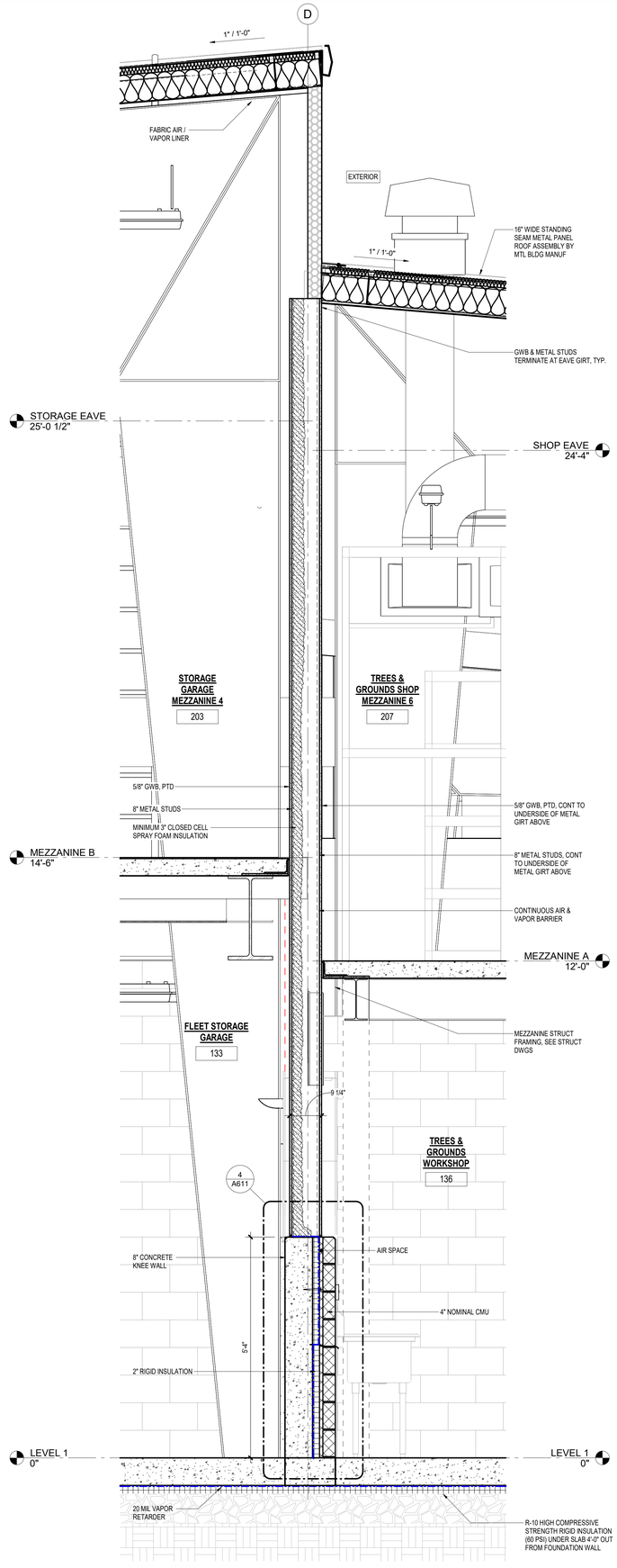
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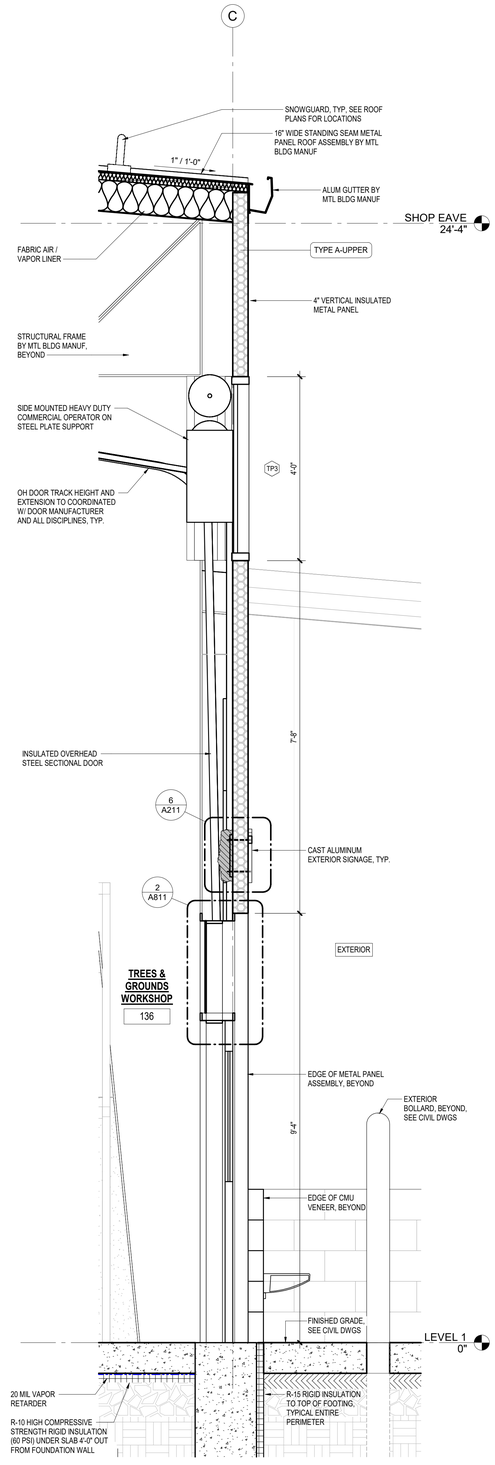
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3 WALL SECTION - TYP. STORAGE EAVE
3/4" = 1'-0" 2/ A301



2 WALL SECTION - SHOPS TO STORAGE RIDGE
3/4" = 1'-0" 3/ A301



1 WALL SECTION - TYP. SHOP EAVE
3/4" = 1'-0" 3/ A301

0' 1' 2' 3'
SCALE: 3/4" = 1'-0"

TYPICAL WALL SECTION NOTES

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- SEE A031 FOR WALL AND ROOF ASSEMBLY TYPES

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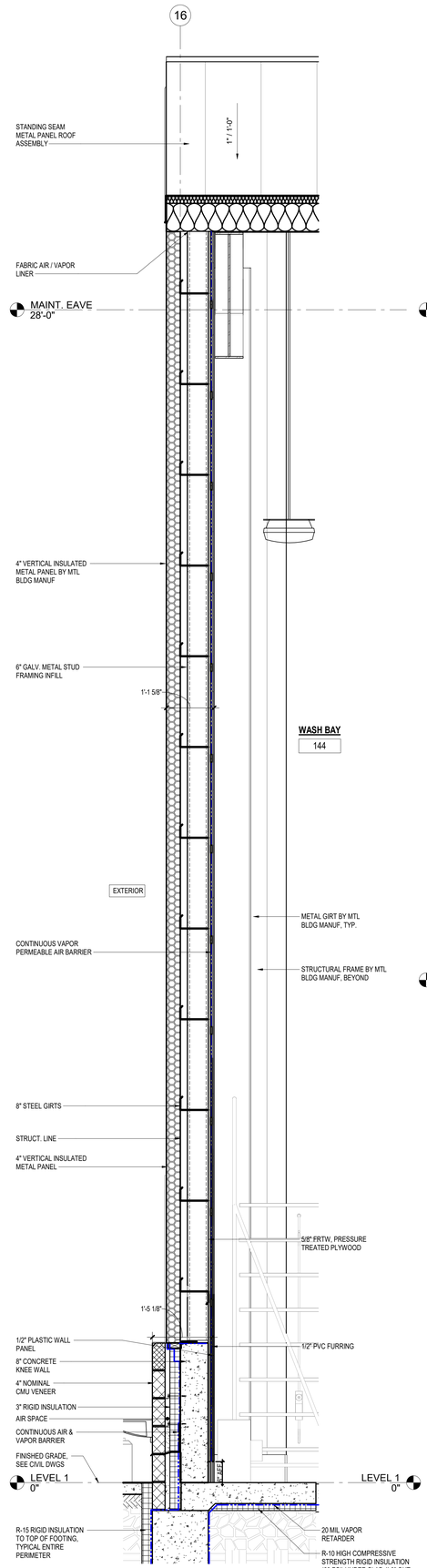
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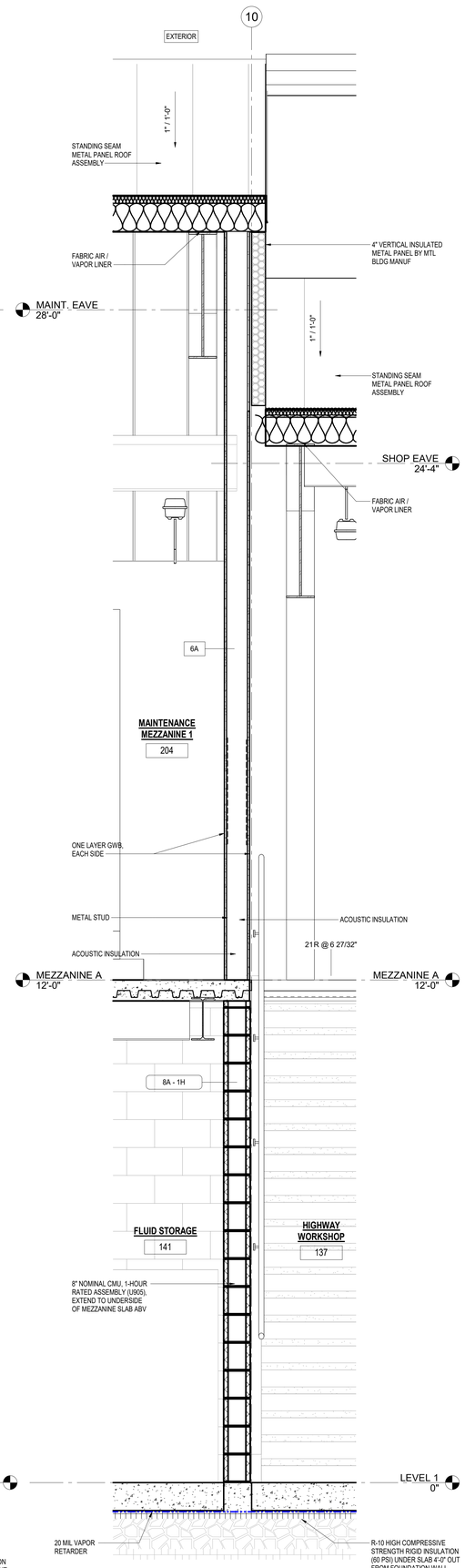
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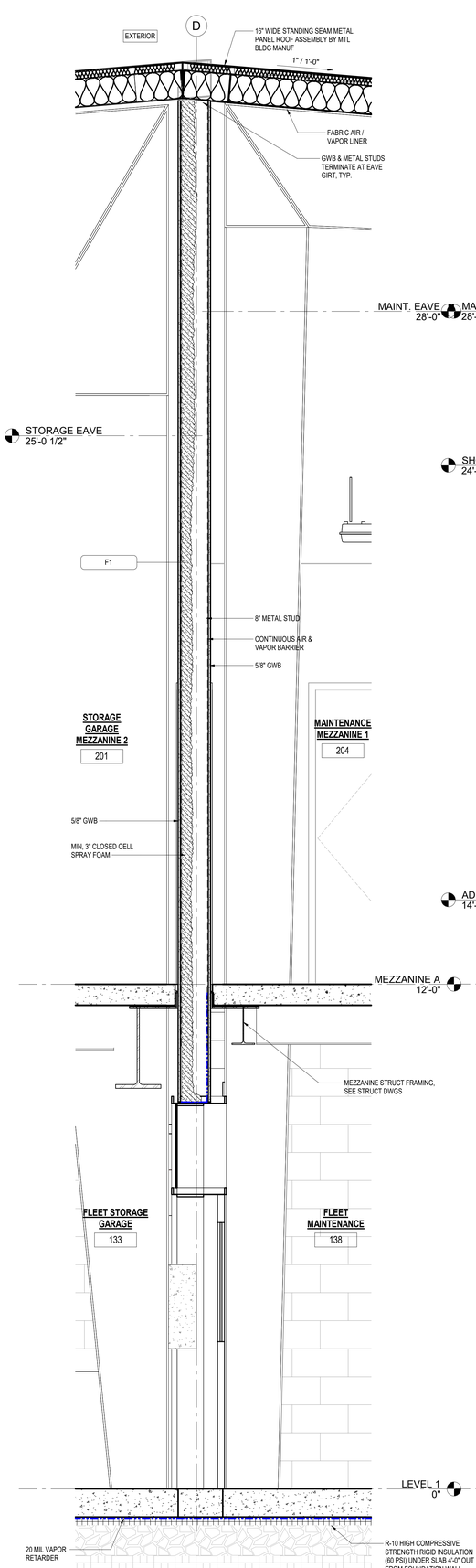
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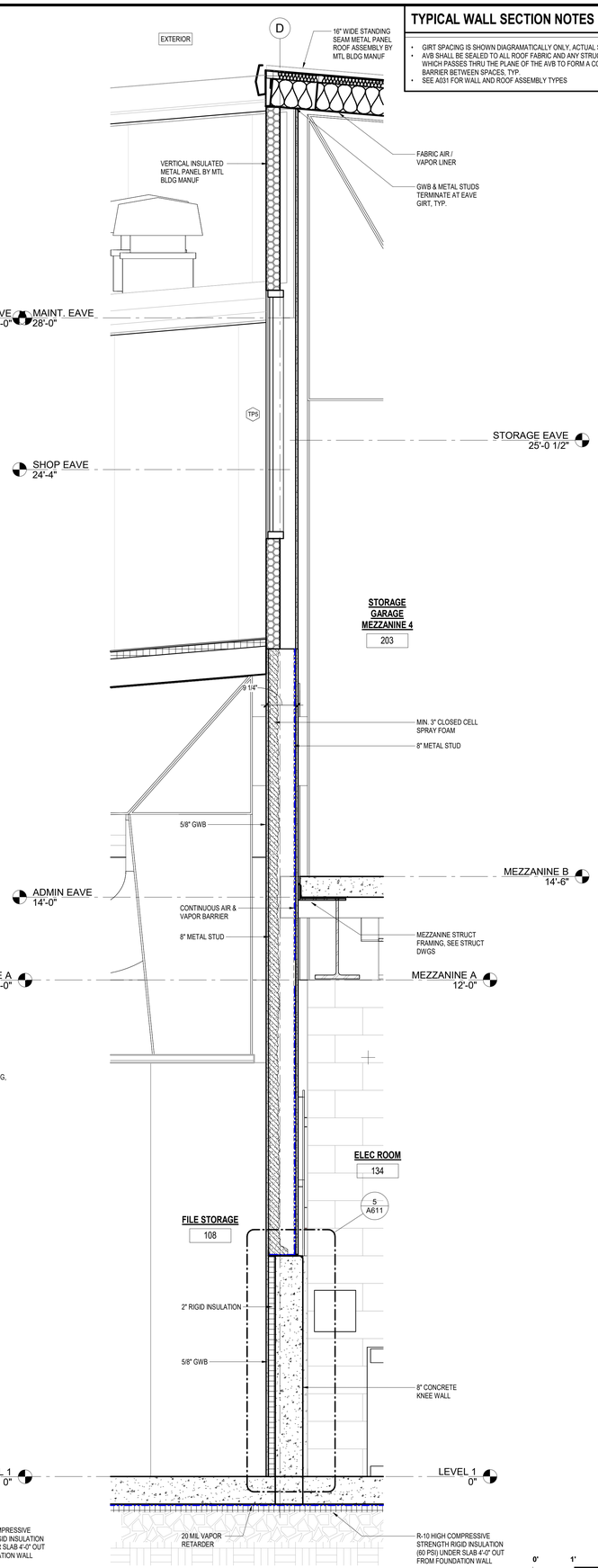
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TYPICAL WALL SECTION NOTES

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- SEE A031 FOR WALL AND ROOF ASSEMBLY TYPES

SCALE: 3/4" = 1'-0"

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Drawing Title:

WALL SECTIONS III

Sheet Number:

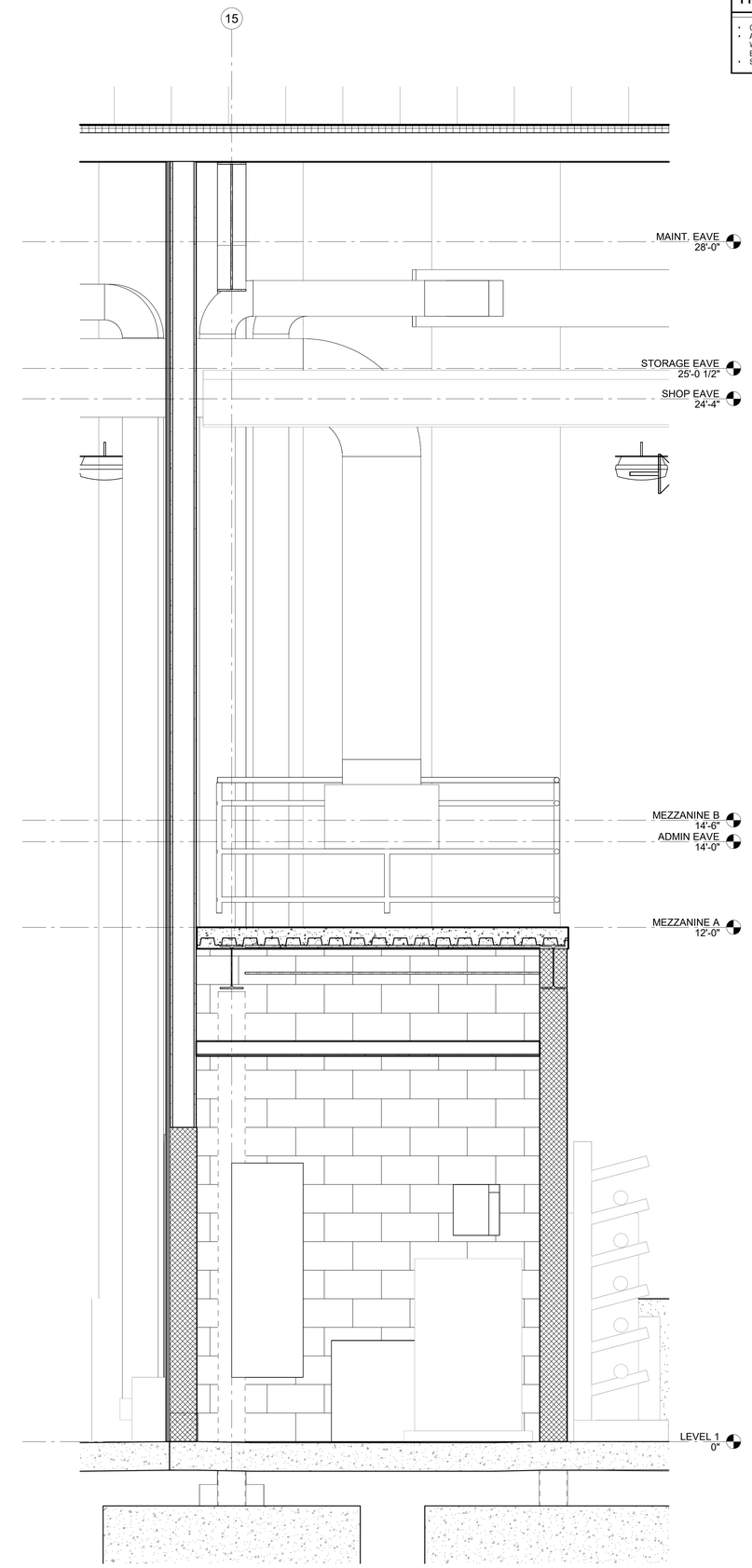
A403

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TYPICAL WALL SECTION NOTES

- GIRT SPACING IS SHOWN DIAGRAMATICALLY ONLY, ACTUAL SPACING WILL BE BY MBM.
- AVB SHALL BE SEALED TO ALL ROOF FABRIC AND ANY STRUCTURE OR SYSTEMS WHICH PASSES THRU THE PLANE OF THE AVB TO FORM A CONTINUOUS AIR VAPOR BARRIER BETWEEN SPACES, TYP.
- SEE A031 FOR WALL AND ROOF ASSEMBLY TYPES



1 WALL SECTION - WASH EQUIP ROOM
3/4" = 1'-0" 2/ A302

0' 1' 2' 3'
SCALE: 3/4" = 1'-0"

Project:
NEW PUBLIC WORKS FACILITY
14 FOREST ROAD, ACTON MA 01720

TOWN OF ACTON

Weston & Sampson
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100 Foxborough Boulevard, Suite 250
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Consultants:

Revisions:

No.	Date	Description

COA:

Seal:

Issued For:

40% DESIGN DEVELOPMENT PRROGRESS SET

Scale: As indicated

Key Plan:

Date:	11/01/2024
Draw By:	SSB
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

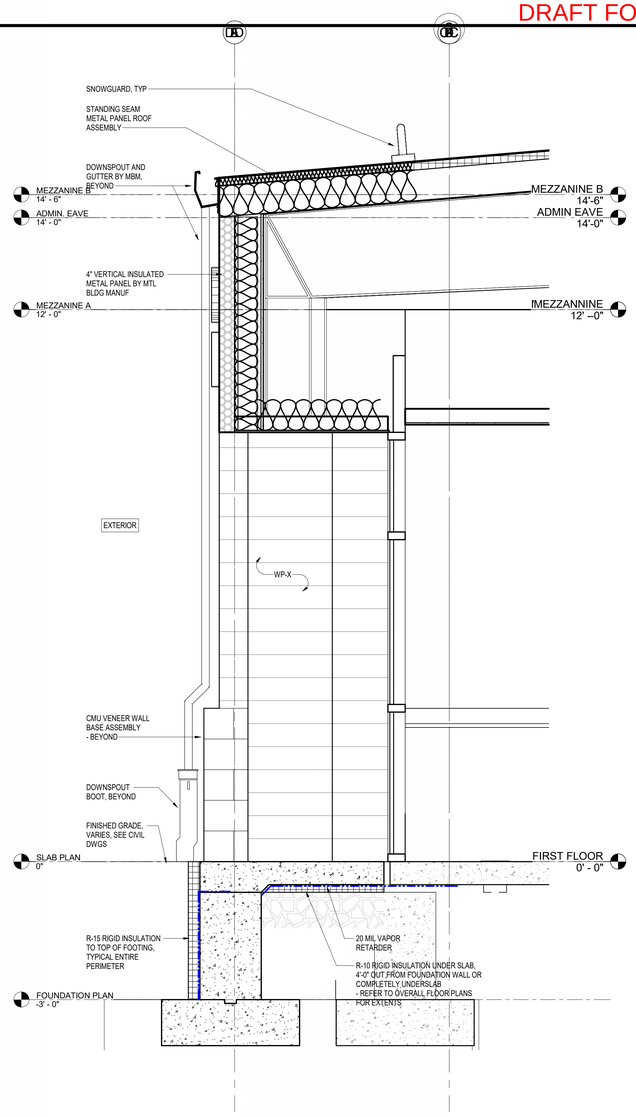
WALL SECTIONS IV

Sheet Number:

A404

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4 WALL SECTION - ADMIN ENTRY OVERHANG
3/4" = 1'-0" 1/ A111

MASONRY VENEER LEGEND:

CONTROL JOINT LOCATION
- REFER TO DETAILS 9 & 10 / A631 FOR ADDITIONAL INFO

TYPE 1 - STANDARD CMU GROUND FACE VENEER BLOCK: 8" X 16"

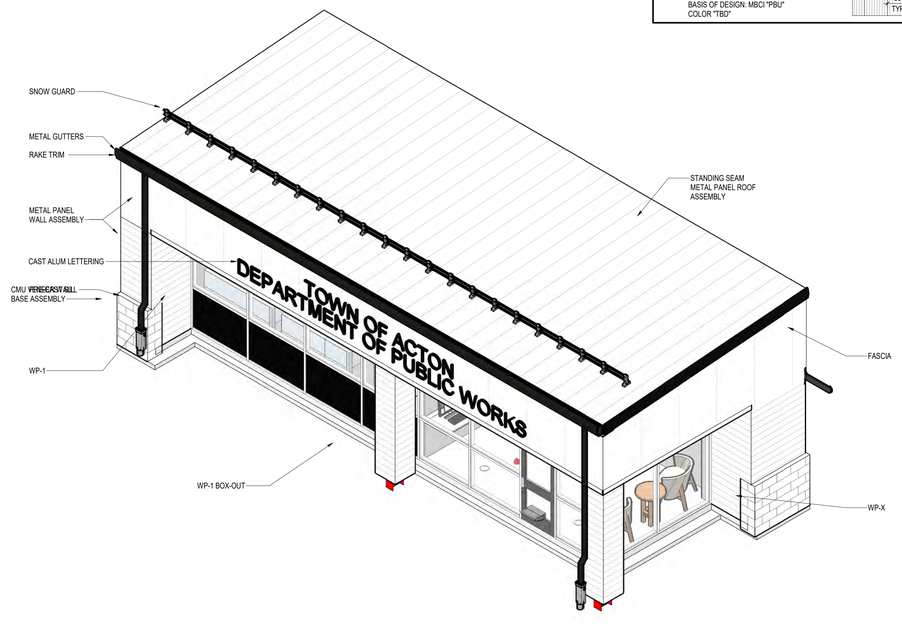
NOTES:
1. COORDINATE OPENINGS NOT SHOWN WITH EQUIPMENT AND MEP/FP DRAWINGS.
2. FOR MOCK-UP REQUIREMENTS, SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

METAL PANEL LEGEND:

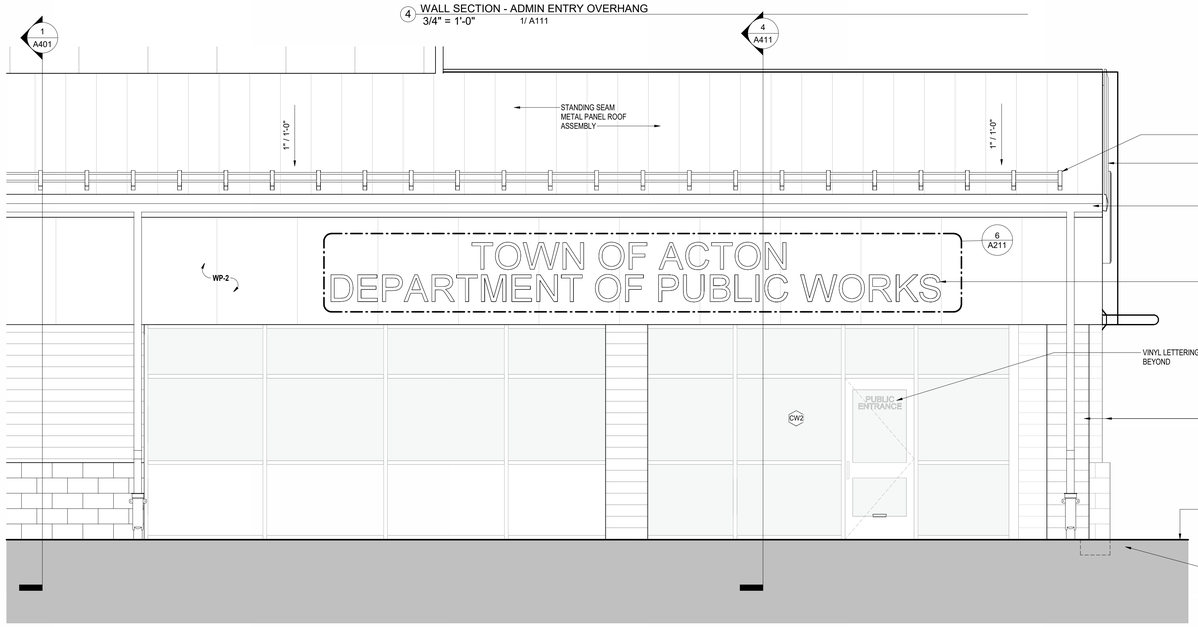
WP-1 42" WIDE INSULATED HORIZONTAL METAL PANEL
BASIS OF DESIGN: KINGSPAN "KS SHADOWLINE"
COLOR "TBD"

WP-2 42" WIDE INSULATED VERTICAL METAL PANEL
BASIS OF DESIGN: KINGSPAN "KS MINI-WAVE"
COLOR: "TBD"

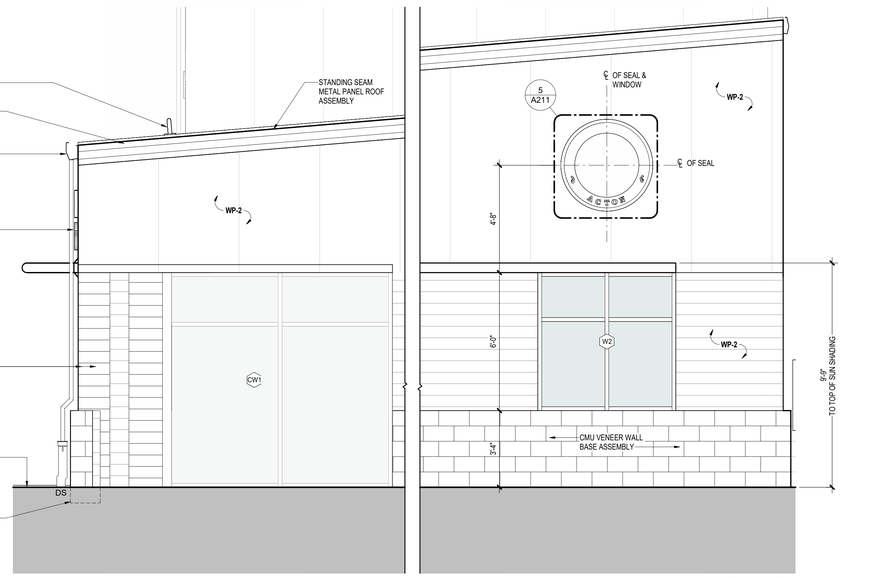
WP-3 36" WIDE VERTICAL METAL PANEL
BASIS OF DESIGN: MBCI "PBU"
COLOR "TBD"



3 MAIN ENTRANCE 3D VIEW



2 PH3 - SOUTH ENLARGED EXTERIOR ELEVATION
3/8" = 1'-0" 1/ A212



1 EAST ENLARGED EXTERIOR ELEVATION
3/8" = 1'-0" 4/ A211

0' 1' 2' 3'
SCALE: 3/4" = 1'-0"

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Draw By:	SSB
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

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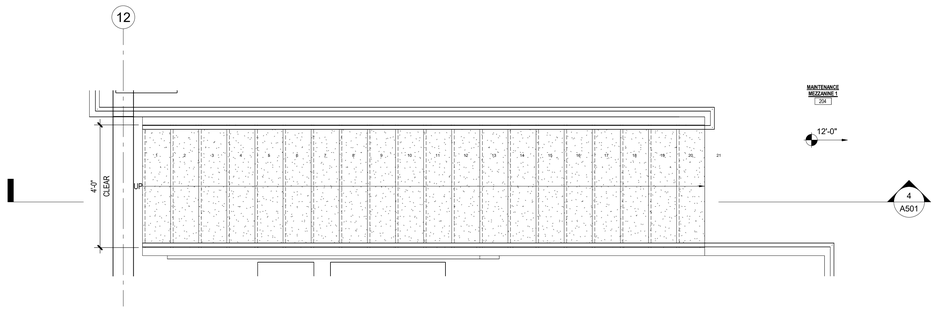
MAIN ENTRANCE 3D VIEWS, ELEVATIONS, AND WALL SECTION

Sheet Number:

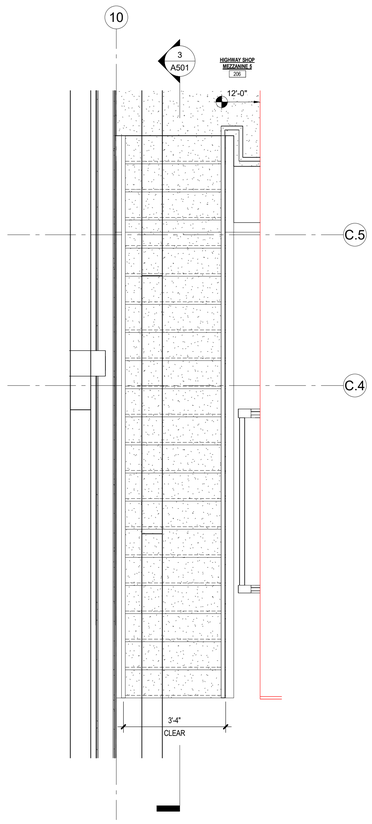
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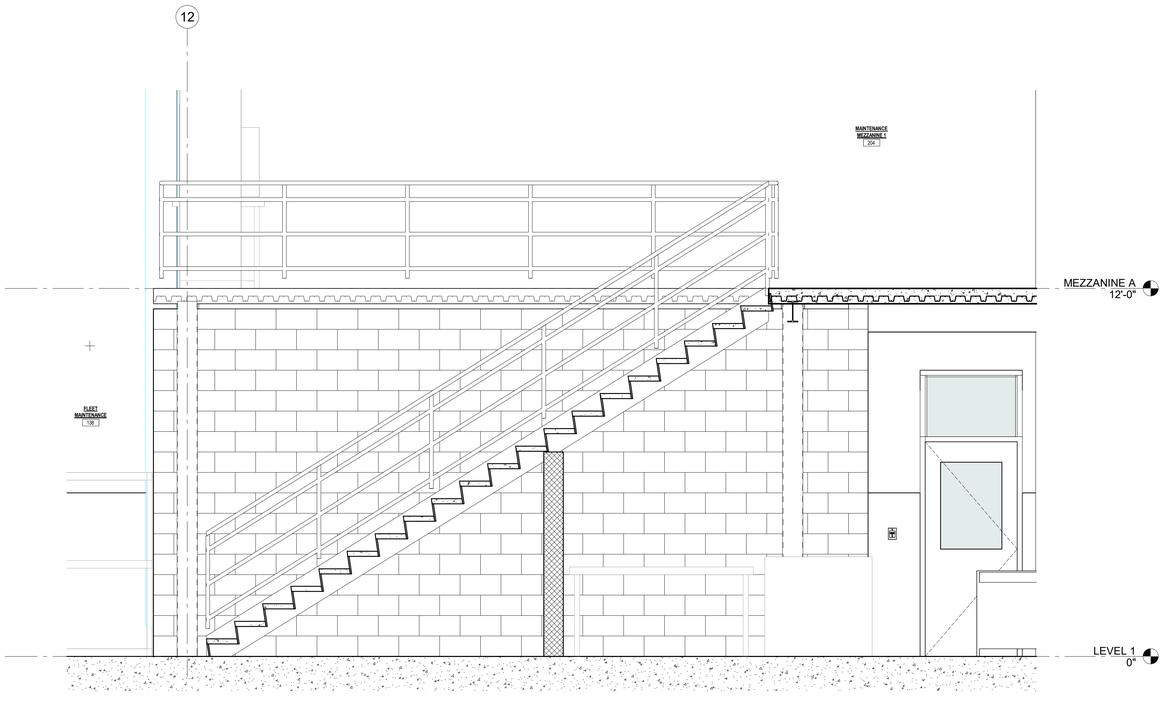
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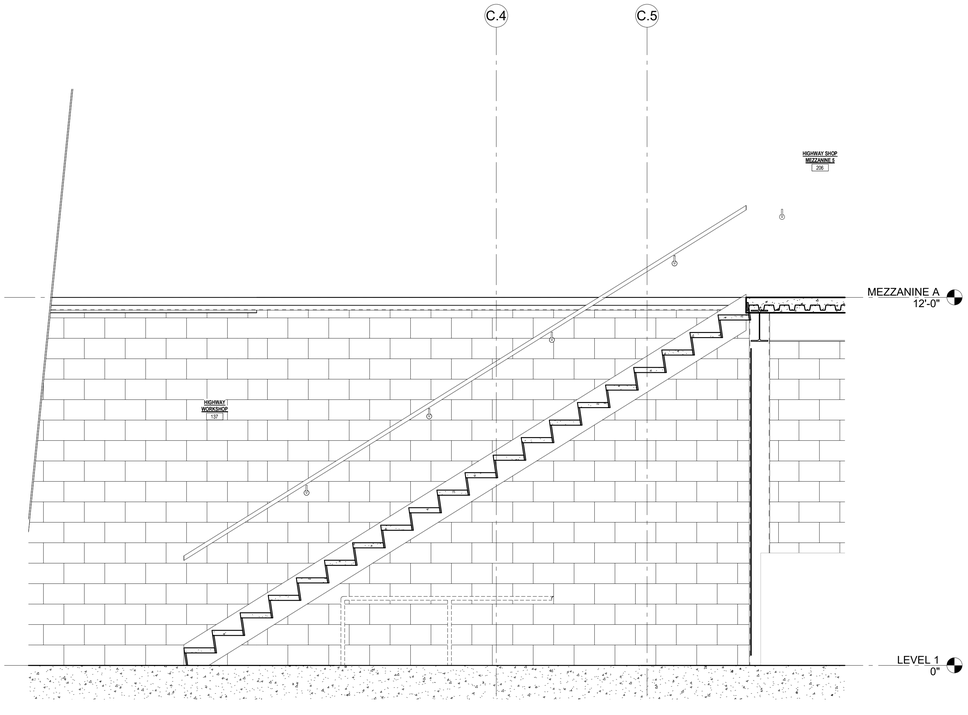
2 LARGE SCALE FLEET MAINTENANCE MEZZANINE PLAN - Callout 2
1/2" = 1'-0" 2/ A112



1 LARGE SCALE FLEET MAINTENANCE MEZZANINE PLAN - Callout 1
1/2" = 1'-0" 2/ A112



4 Section 13
1/2" = 1'-0" 2/ A501



3 Section 12
1/2" = 1'-0" 1/ A501

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

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40% DESIGN DEVELOPMENT PRROGRESS SET

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

Key Plan:

Date:	11/01/2024
Draw By:	DRD
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

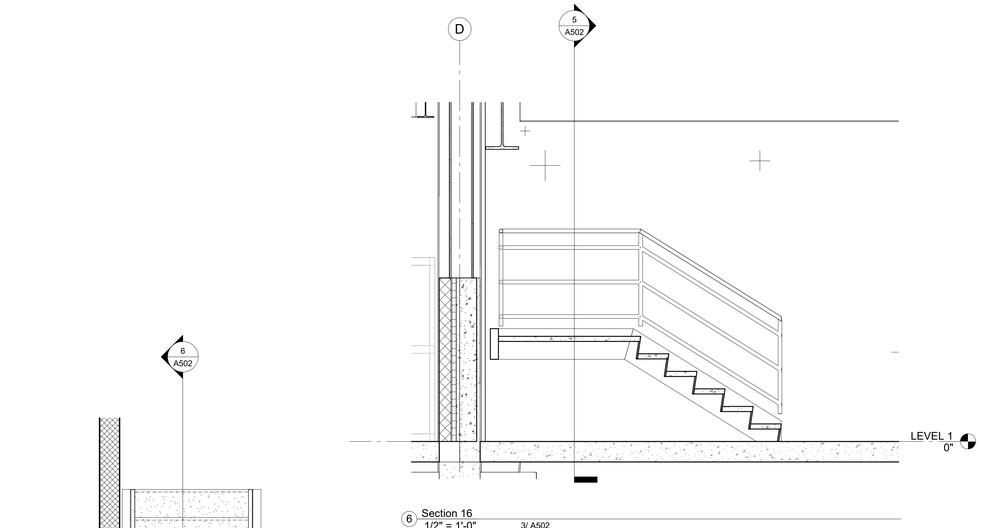
LARGE SCALE STAIR PLANS / SECTIONS

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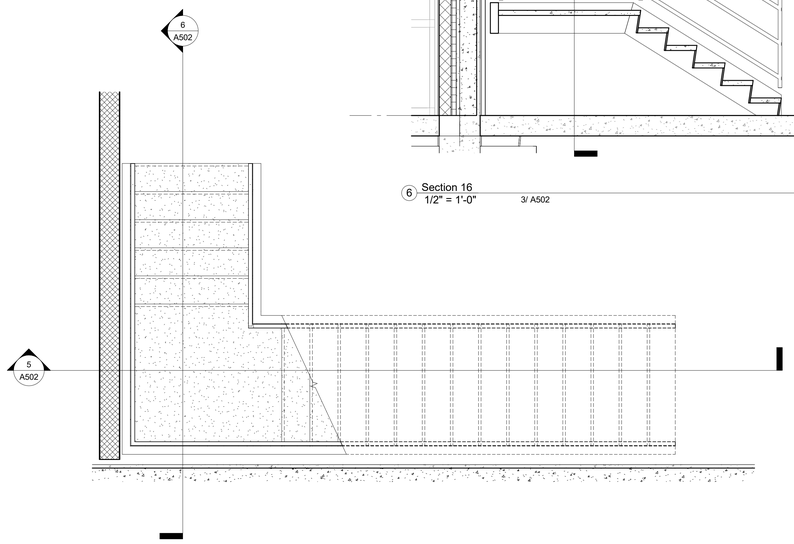
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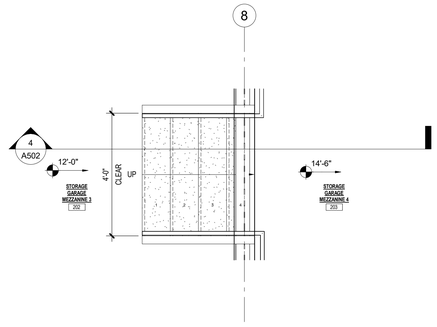
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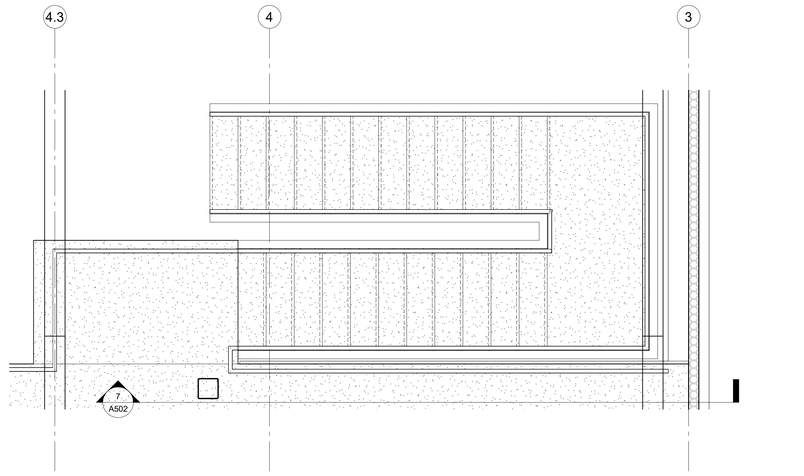
6 Section 16
1/2" = 1'-0" 3/ A502



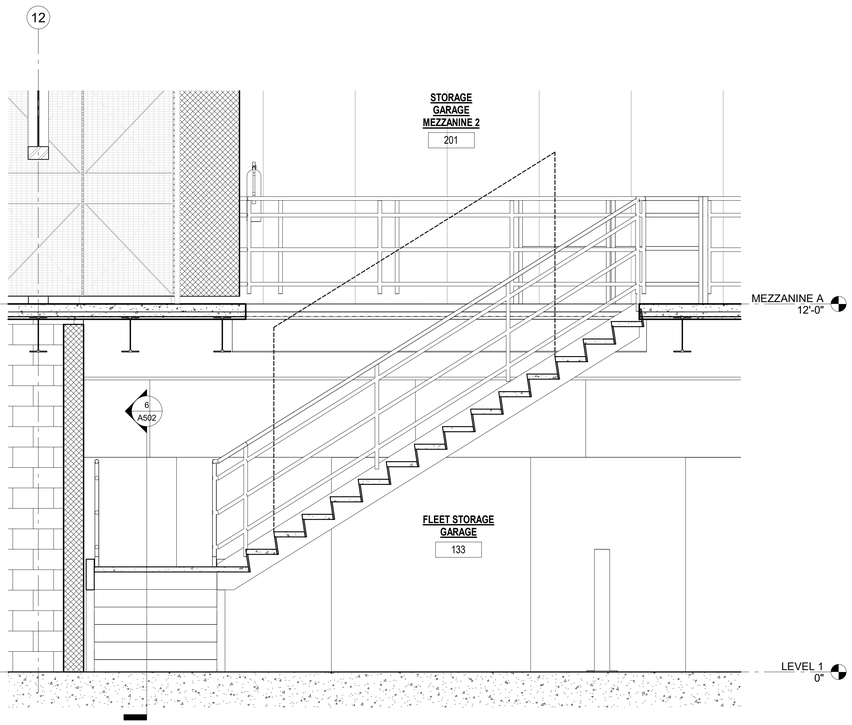
3 OVERALL MEZZANINE PLAN - Callout 2 - Callout 3
1/2" = 1'-0" 1/ A113



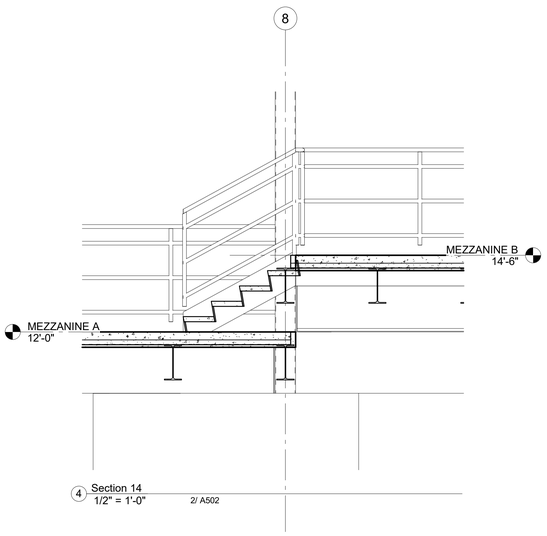
2 OVERALL MEZZANINE PLAN - Callout 2 - Callout 2
1/2" = 1'-0" 2/ A113



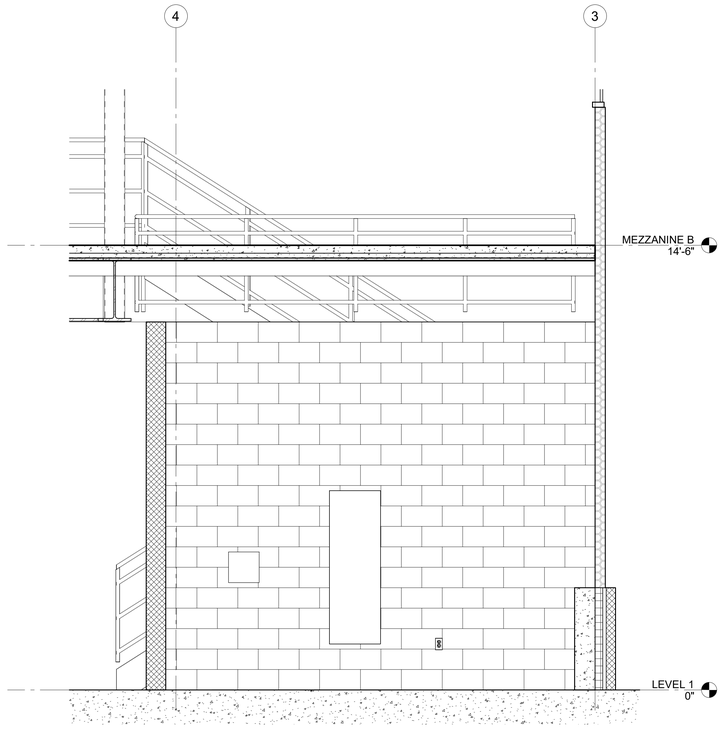
1 OVERALL MEZZANINE PLAN - Callout 2 - Callout 1
1/2" = 1'-0" 2/ A113



5 Section 15
1/2" = 1'-0" 3/ A502



4 Section 14
1/2" = 1'-0" 2/ A502



7 Section 17
1/2" = 1'-0" 1/ A502

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

Project:
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Scale: 1/2" = 1'-0"

Key Plan:

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Draw By:	DRD
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

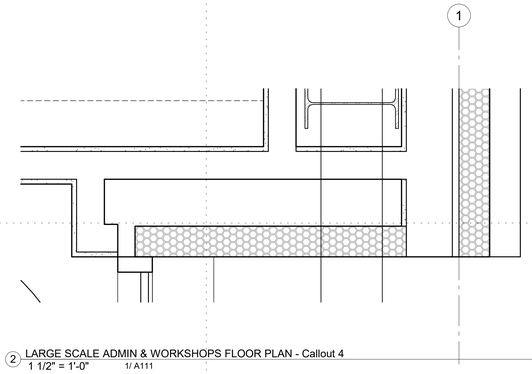
LARGE SCALE STAIR PLANS / SECTIONS

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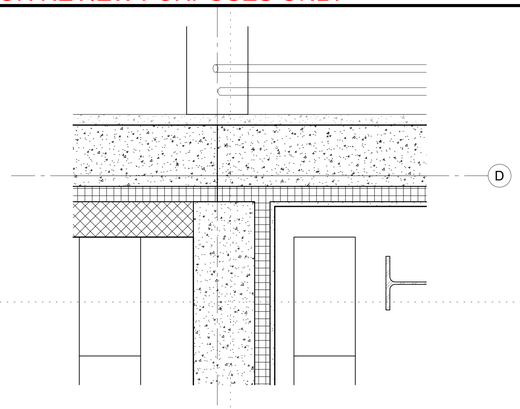
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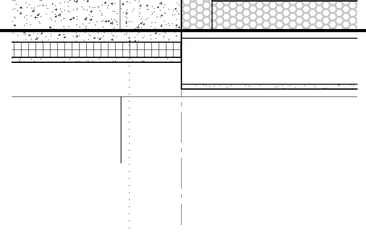
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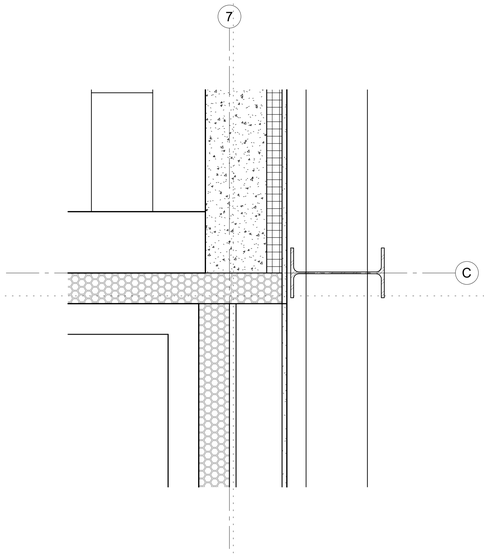
2 LARGE SCALE ADMIN & WORKSHOPS FLOOR PLAN - Callout 4
1 1/2" = 1'-0" 1/ A111



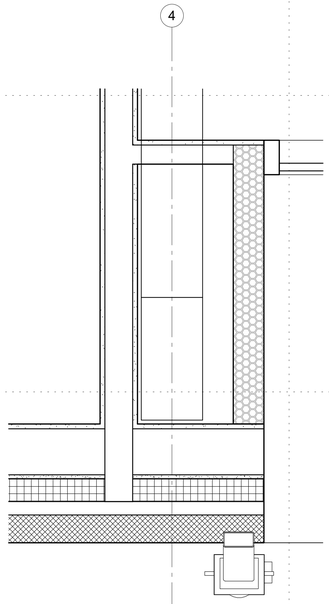
4 LARGE SCALE ADMIN & WORKSHOPS FLOOR PLAN - Callout 6
1 1/2" = 1'-0" 1/ A111



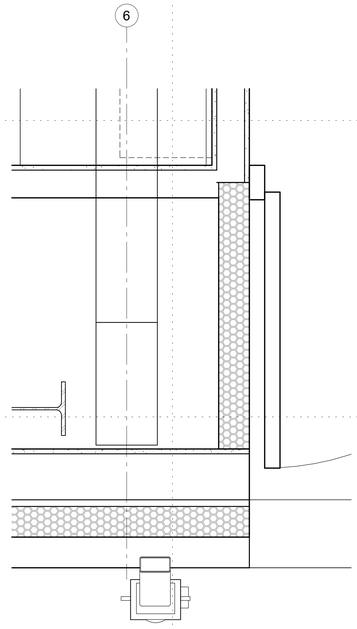
3 LARGE SCALE ADMIN & WORKSHOPS FLOOR PLAN - Callout 5
1 1/2" = 1'-0" 1/ A111



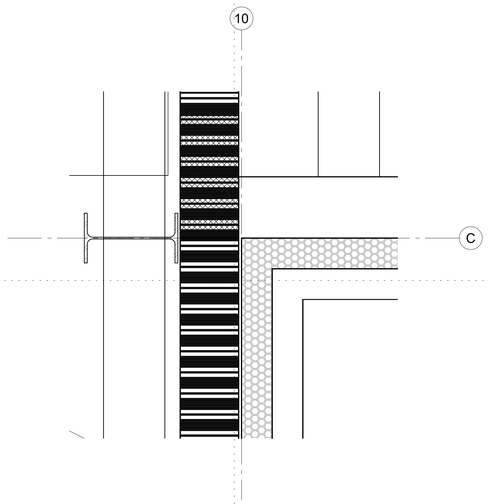
5 LARGE SCALE ADMIN & WORKSHOPS FLOOR PLAN - Callout 7
1 1/2" = 1'-0" 1/ A111



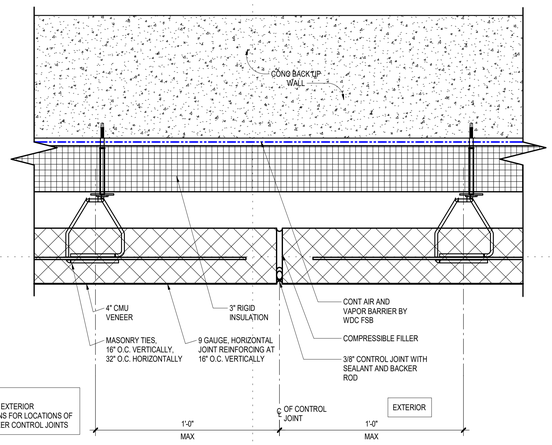
8 LARGE SCALE ADMIN & WORKSHOPS FLOOR PLAN - Callout 3
1 1/2" = 1'-0" 1/ A111



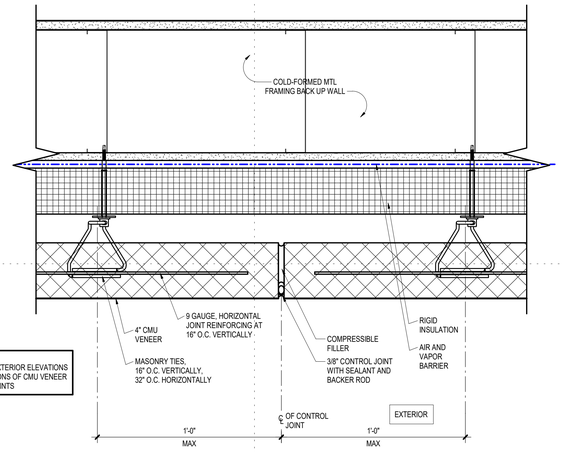
6 LARGE SCALE FLOOR PLAN - ADMIN - Callout 1
1 1/2" = 1'-0" 1/ A111



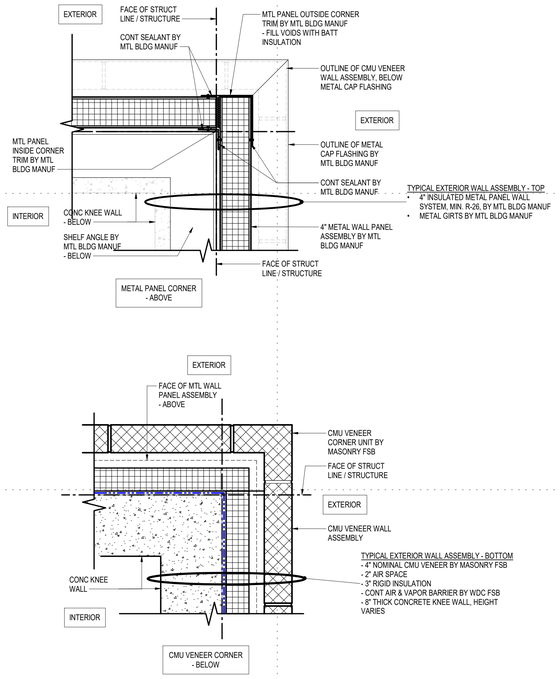
7 LARGE SCALE FLEET MAINTENANCE FLOOR PLAN - Callout 1
1 1/2" = 1'-0" 1/ A112



10 EXTERIOR WALL DETAIL - CMU CONTROL JOINT
3" = 1'-0"



11 EXTERIOR WALL DETAIL - CMU CONTROL JOINT
3" = 1'-0"



1 PLAN DETAIL - CMU VENEER & MTL PANEL CORNER DETAIL
1 1/2" = 1'-0"

0' 6" 1' 2'
SCALE: 1 1/2" = 1'-0"

Project:
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W&S File No.:	XXX

Drawing Title:

PLAN DETAILS

Sheet Number:

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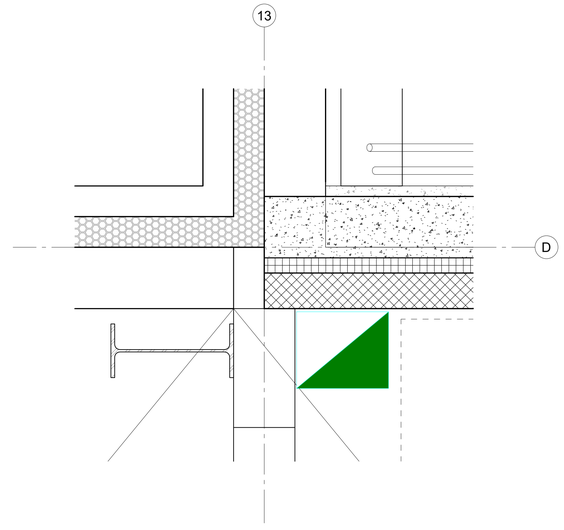
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8 FIRE RATED CMU AT COLUMN - PLAN DETAIL
1 1/2" = 1'-0"

6 MASONRY INTERSECTION AT COLUMN - PLAN DETAIL
1 1/2" = 1'-0"

7 MASONRY INTERSECTION AT COLUMN - PLAN DETAIL
1 1/2" = 1'-0"



2 LARGE SCALE FLEET MAINTENANCE FLOOR PLAN - Callout 2
1 1/2" = 1'-0" 1/ A112

0' 6" 1' 2'
SCALE: 1 1/2" = 1'-0"

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

Key Plan:

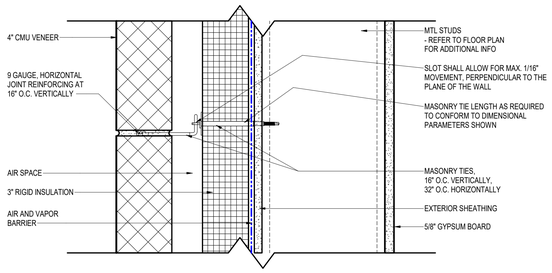
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Date:	Issue Date
Draw By:	Author
Reviewed By:	Checker
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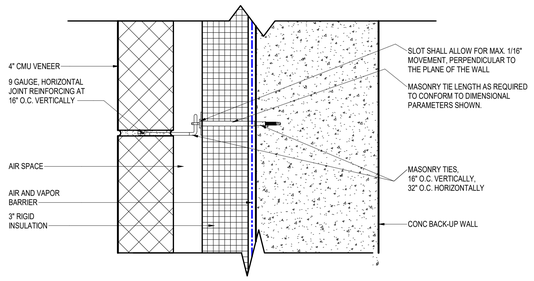
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Sheet Number:
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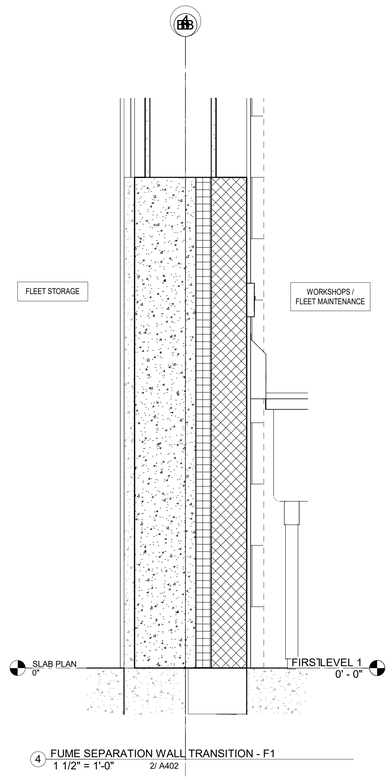
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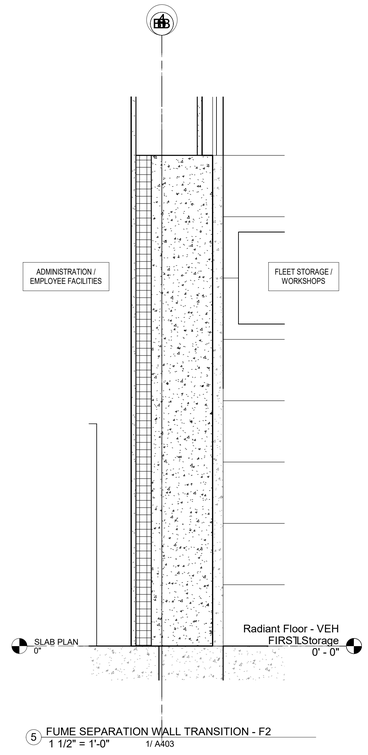
17 EXTERIOR WALL DETAIL - CMU
3" = 1'-0"



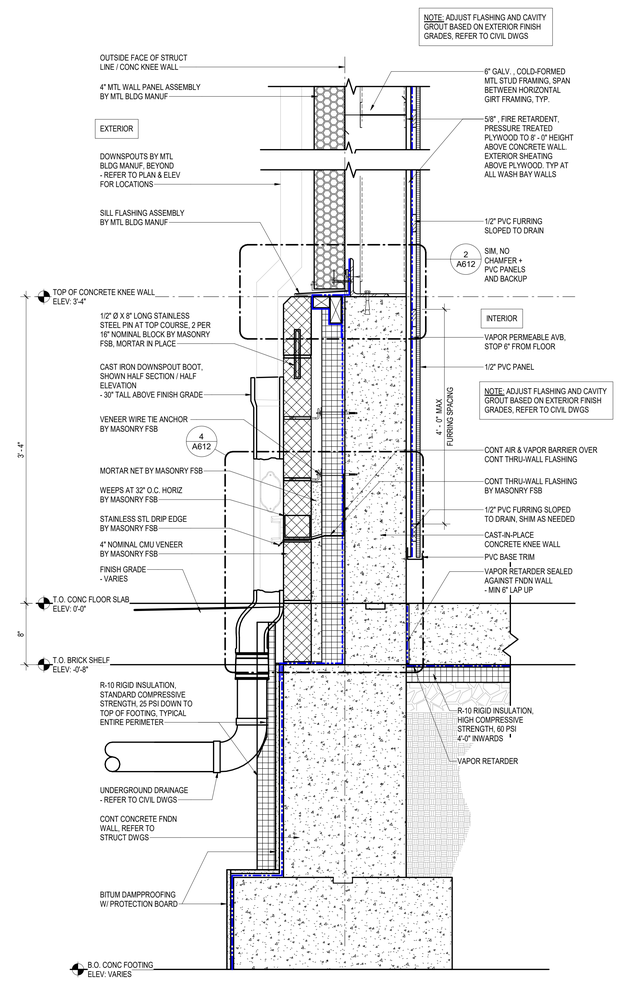
6 EXTERIOR WALL DETAIL - CMU
3" = 1'-0"



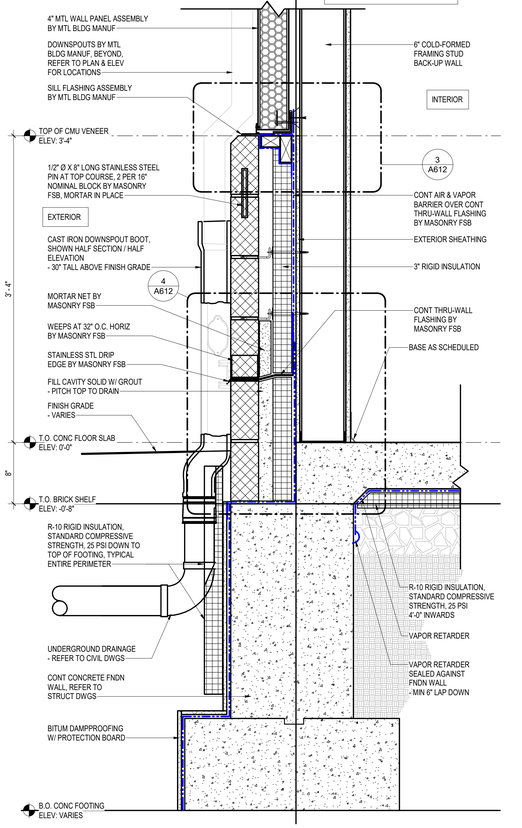
4 FUME SEPARATION WALL TRANSITION - F1
1 1/2" = 1'-0" 2/ A402



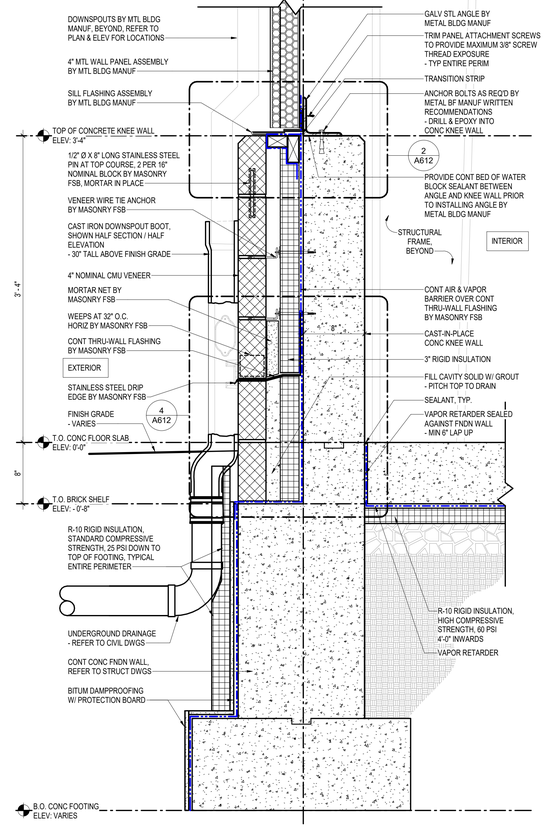
5 FUME SEPARATION WALL TRANSITION - F2
1 1/2" = 1'-0" 1/ A403



3 MTL PANEL TO CMU WALL TRANSITION
1 1/2" = 1'-0"



2 MTL PANEL TO CMU WALL TRANSITION
1 1/2" = 1'-0" 1/ A401



1 MTL PANEL TO CMU WALL TRANSITION
1 1/2" = 1'-0" 1/ A401

0' 6" 1' 2'
SCALE: 1 1/2" = 1'-0"

Project:
NEW PUBLIC WORKS FACILITY
14 FOREST ROAD, ACTON MA 01720

TOWN OF ACTON

Weston & Sampson

Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard, Suite 250
Foxborough, MA 02035
978.532.1900 800.SAMPSON

www.westonandsampson.com

Consultants:

Revisions:

No.	Date	Description

COA:

Seal:

Issued For:

40% DESIGN DEVELOPMENT PRROGRESS SET

Scale: As indicated

Key Plan:

Date:	Issue Date
Draw By:	Author
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

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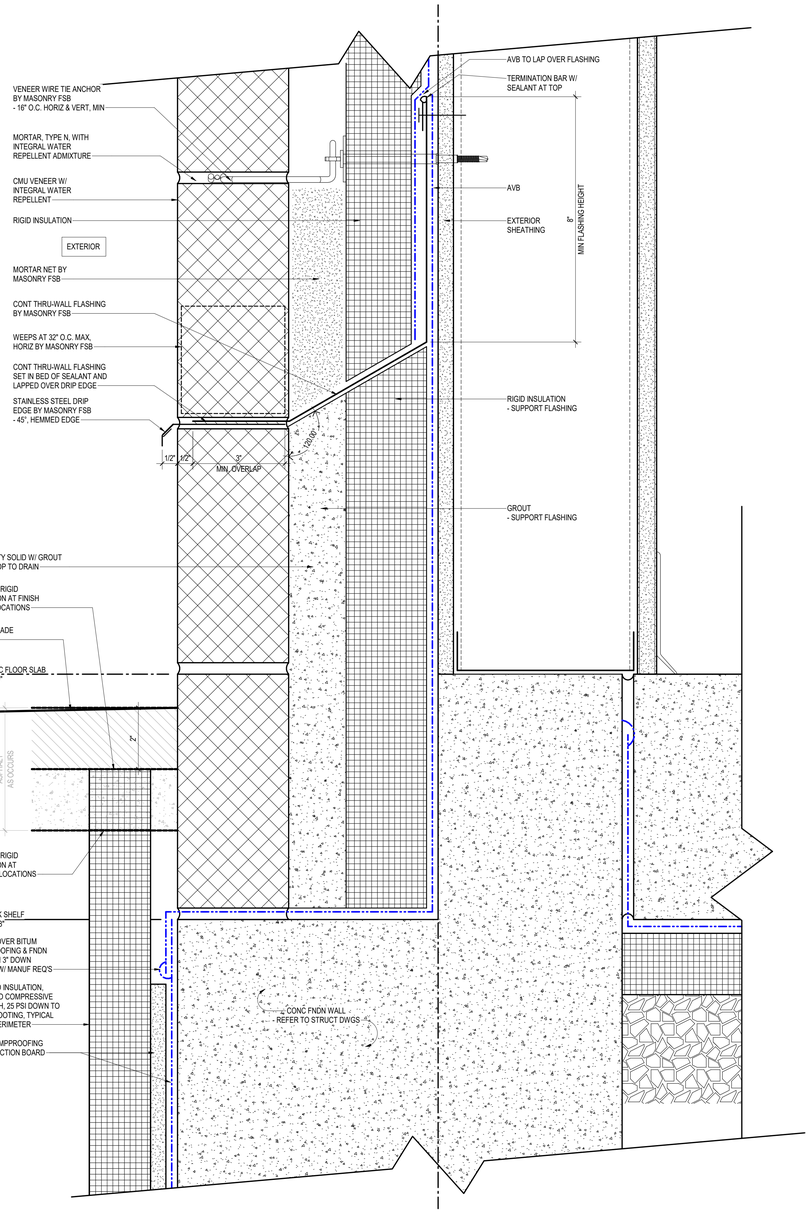
SECTION DETAILS

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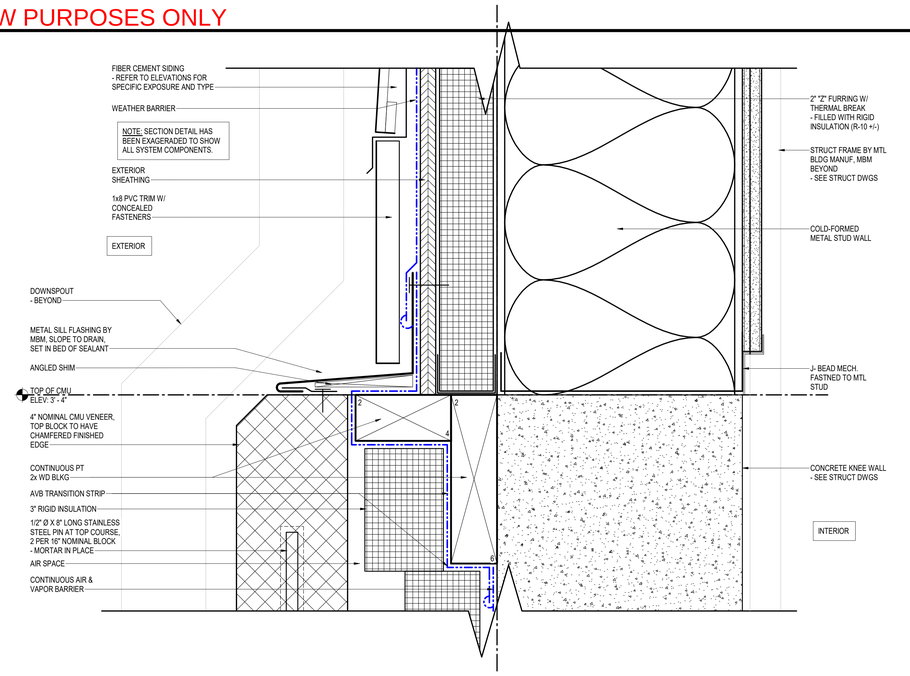
A611

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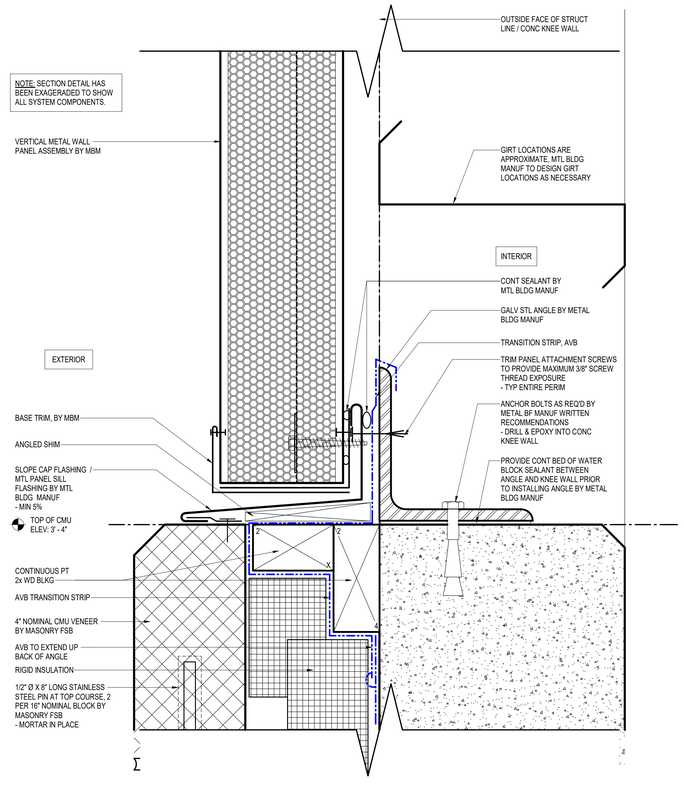
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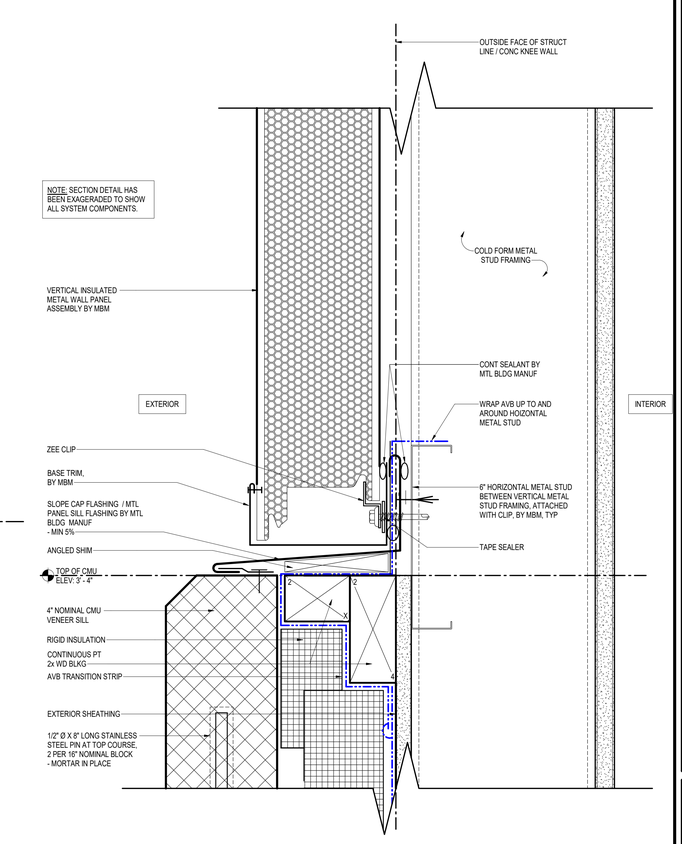
4 BASE OF WALL FLASHING DETAIL
6" = 1'-0" 1/ A611



1 CAP FLASHING TRANSITION DETAIL
6" = 1'-0"



2 CAP FLASHING TRANSITION DETAIL
6" = 1'-0" 1/ A611



3 CAP FLASHING TRANSITION DETAIL
6" = 1'-0" 2/ A611

0' 6" 1' 2'
SCALE: 1 1/2" = 1'-0"

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Project:
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TOWN OF ACTON

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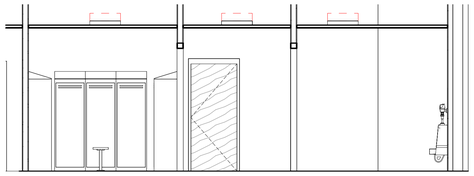
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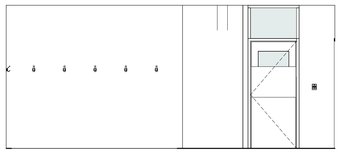
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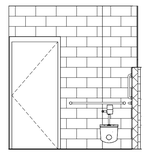
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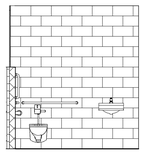
25 INTERIOR ELEVATION - MEN'S LOCKER ROOM 8
1/4" = 1'-0" 1/ A701



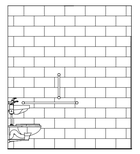
26 INTERIOR ELEVATION - WET GEAR
1/4" = 1'-0" 1/ A701



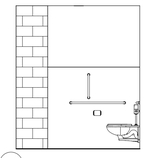
22 INTERIOR ELEVATION - RESTROOM
1/4" = 1'-0" 7/ A701



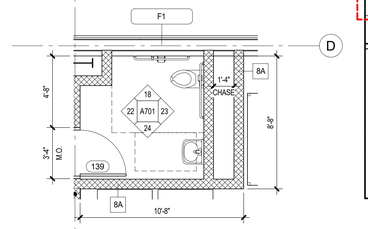
23 INTERIOR ELEVATION - RESTROOM
1/4" = 1'-0" 7/ A701



24 INTERIOR ELEVATION - RESTROOM
1/4" = 1'-0" 7/ A701



11 18 INTERIOR ELEVATION - RESTROOM
1/4" = 1'-0" 7/ A701



7 ENLARGED PLAN - MECHANIC'S RESTROOM
1/4" = 1'-0" 1/ A112

TOILET ACCESSORY SCHEDULE - DIV 10

FURNISHED BY OWNER - INSTALLED BY CONTRACTOR:

MARK	DESCRIPTION	MFR	QTY
SD	SOAP DISPENSER	OWNER REQ'S	PER PLANS
PTD	PAPER TOWEL DISPENSER	OWNER REQ'S	PER PLANS
TTD	TOILET TISSUE DISPENSER	OWNER REQ'S	PER PLANS
TB	TRASH BARREL	OWNER REQ'S	PER PLANS

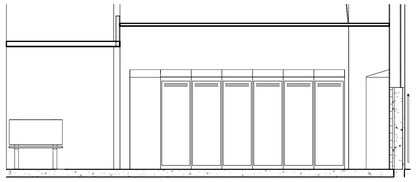
VERIFY W/ CLIENT

FURNISHED AND INSTALLED BY CONTRACTOR:

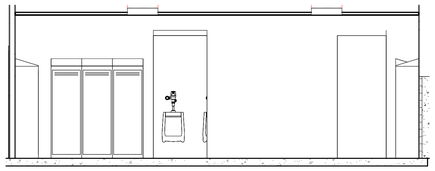
MARK	DESCRIPTION	MFR	QTY
SRWR	SEMI-RECESSED WASTE RECEPTICLE	PER SPEC	PER PLANS
SNV	SANITARY NAPKIN VENDOR	PER SPEC	PER PLANS
SND	SANITARY NAPKIN DISPOSAL	PER SPEC	PER PLANS
CH	COAT / ROBE HOOK	PER SPEC	PER PLANS
GB	GRAB BAR (DIMENSION PER PLANS)	PER SPEC	PER PLANS
MRR	MIRROR	PER SPEC	PER PLANS
M/BH	MOP/BROOM HOLDER	PER SPEC	PER PLANS
JS	JANITOR'S SHELVING	PER SPEC	PER PLANS
SC	SHOWER CURTAIN	PER SPEC	PER PLANS
CR	CURTAIN ROD FOR SHOWER	PER SPEC	PER PLANS

GENERAL NOTES:

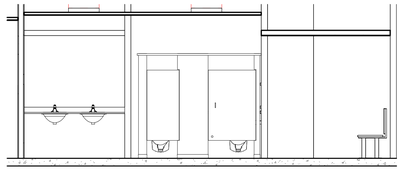
1. PROVIDE BULLNOSE TOP COURSE / MTL EDGE TRIM AND CEMENTITIOUS TILE BACK BOARD / CEMENT BOARD AT ALL CERAMIC TILE LOCATIONS, TYPICAL. INSTALLATION OF CERAMIC TILE OVER GYPSUM BOARD EXCEPT FOR A KITCHENETTE BACKSPLASH IS NOT ACCEPTABLE.
2. PROVIDE CONT. BLOCKING AT SHELVING, ACCESS PANELS, DISPLAY MONITORS, MARKER BOARDS ETC. COORDINATE LOCATION IN FIELD.
3. MOISTURE RESISTANT (MR) GYPSUM BOARD TO BE USED IN ALL TOILET ROOM / RESTROOM FACILITIES.
4. PROVIDE PVC SHIMS AS NECESSARY TO MAKE TOILET ROOM ACCESSORIES SUCH AS PTD'S, MIRRORS, SD'S, TOILET PARTITIONS, ETC... FLUSH ON WALL OVER CERAMIC TILE WAINSCOT. SHIMS TO BE PAINTED BY PAINTING FSB. THICKNESS TO MATCH CERAMIC WALL TILE.



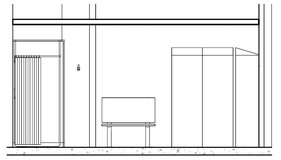
13 INTERIOR ELEVATION - MEN'S LOCKER ROOM 3
1/4" = 1'-0" 1/ A701



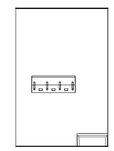
16 INTERIOR ELEVATION - MEN'S LOCKER ROOM 2
1/4" = 1'-0" 1/ A701



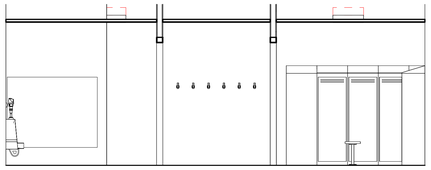
11 3 - d
1/4" = 1'-0" 2/ A701



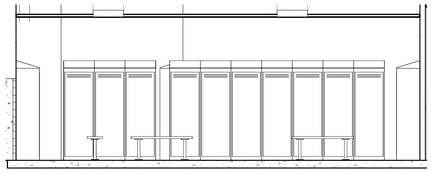
8 3 - a
1/4" = 1'-0" 2/ A701



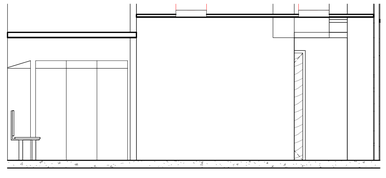
20 INTERIOR ELEVATION - JANITOR CLOSET
1/4" = 1'-0" 2/ A701



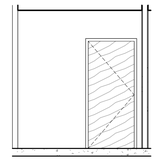
19 INTERIOR ELEVATION - MEN'S LOCKER ROOM WEST
1/4" = 1'-0" 1/ A701



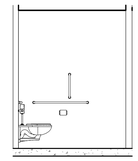
17 INTERIOR ELEVATION - MEN'S LOCKER ROOM 4
1/4" = 1'-0" 1/ A701



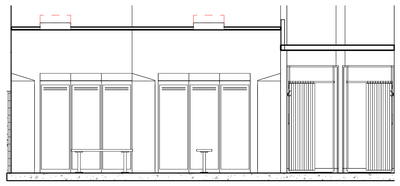
9 3 - b
1/4" = 1'-0" 2/ A701



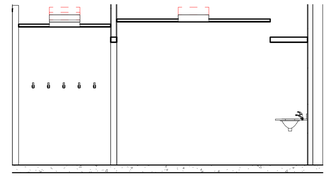
3 1 - a
1/4" = 1'-0" 21/ A701



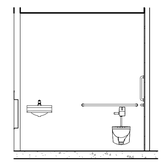
6 1 - d
1/4" = 1'-0" 21/ A701



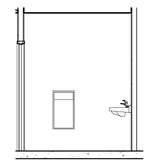
15 INTERIOR ELEVATION - MEN'S LOCKER ROOM 5
1/4" = 1'-0" 1/ A701



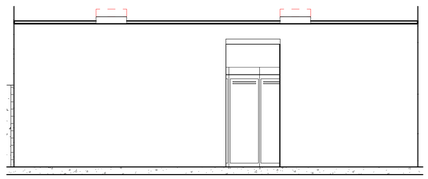
10 3 - c
1/4" = 1'-0" 2/ A701



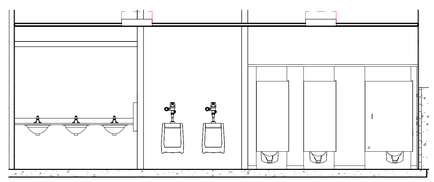
5 1 - c
1/4" = 1'-0" 21/ A701



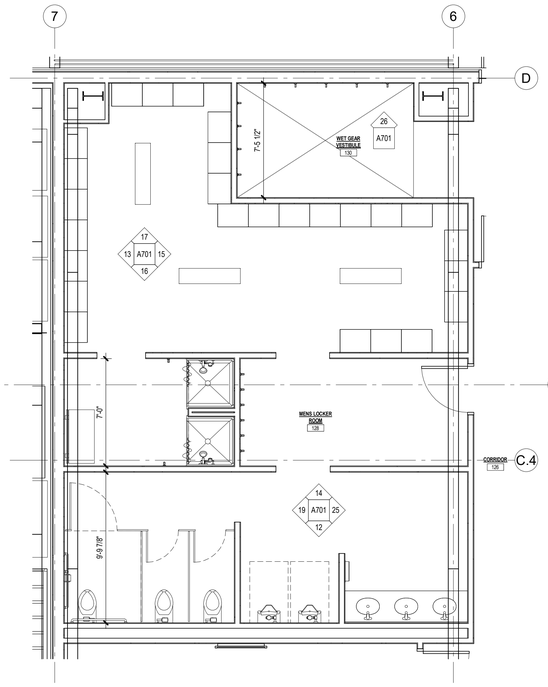
4 1 - b
1/4" = 1'-0" 21/ A701



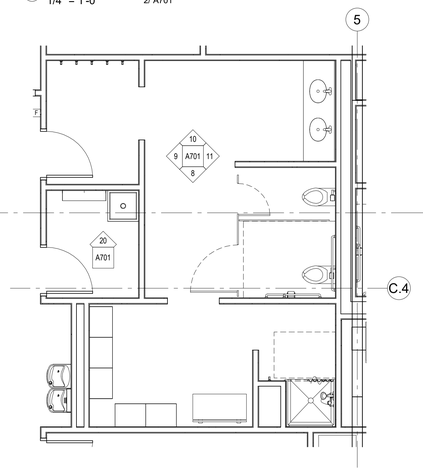
14 INTERIOR ELEVATION - MEN'S LOCKER ROOM 6
1/4" = 1'-0" 1/ A701



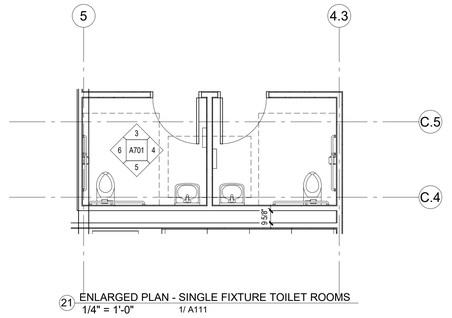
12 INTERIOR ELEVATION - MEN'S LOCKER ROOM 7
1/4" = 1'-0" 1/ A701



1 ENLARGED PLAN - MEN'S LOCKER ROOM
1/4" = 1'-0" 1/ A111



2 ENLARGED PLAN - WOMEN'S LOCKER ROOM & JANITOR CLOSET
1/4" = 1'-0" 1/ A111



21 ENLARGED PLAN - SINGLE FIXTURE TOILET ROOMS
1/4" = 1'-0" 1/ A111

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

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W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

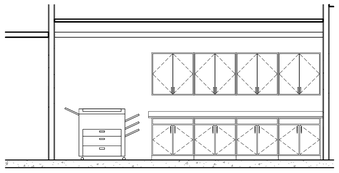
ENLARGED PLANS & INTERIOR ELEVATIONS

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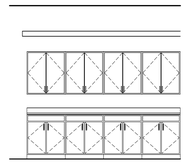
A701

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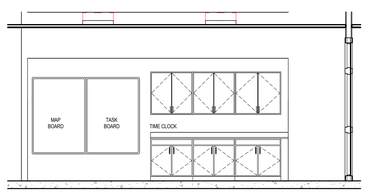
6 INTERIOR ELEVATION - COPY/MAIL AREA CASEWORK
1/4" = 1'-0" 1/ A111



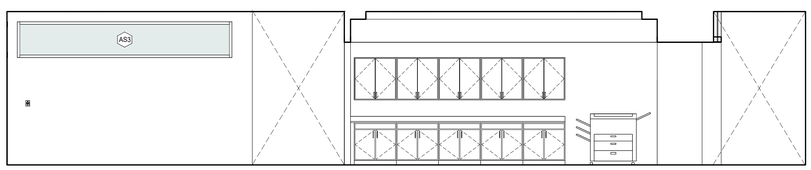
2 INTERIOR ELEVATION - LAYOUT AREA CASEWORK
1/4" = 1'-0" 1/ A111

5 INTERIOR ELEVATION - ADMIN KITCHENETTE CASEWORK
1/4" = 1'-0" 1/ A111

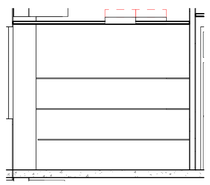
7 INTERIOR ELEVATION - LAYOUT AREA STOREFRONT
1/4" = 1'-0" 1/ A111



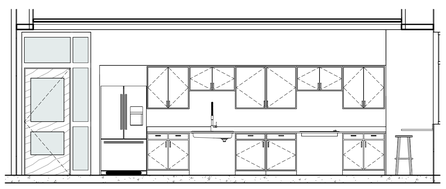
9 INTERIOR ELEVATION - WORKFORCE ALCOVE
1/4" = 1'-0" 1/ A111



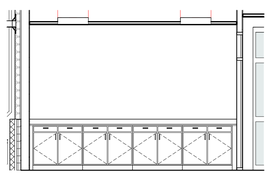
11 INTERIOR ELEVATION - ADMIN OPEN OFFICE CASEWORK
1/4" = 1'-0" 1/ A111



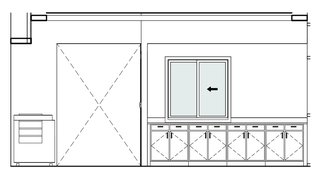
4 INTERIOR ELEVATION - SUPPLY CLOSET
1/4" = 1'-0" 1/ A111



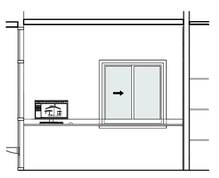
3 INTERIOR ELEVATION - MULTI-PURPOSE ROOM - KITCHEN AREA
1/4" = 1'-0" 1/ A111



8 INTERIOR ELEVATION - CONFERENCE ROOM COUNTER
1/4" = 1'-0" 1/ A111



10 INTERIOR ELEVATION - ADMIN RECEPTION WINDOW
1/4" = 1'-0" 1/ A111



1 INTERIOR ELEVATION - PUBLIC LOBBY
1/4" = 1'-0" 1/ A111

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

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Project:
NEW PUBLIC WORKS FACILITY
14 FOREST ROAD, ACTON MA 01720

TOWN OF ACTON

Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard, Suite 250
Foxborough, MA 02035
978.532.1900 800.SAMPSON

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Revisions:

No.	Date	Description

CDA:

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

Key Plan:

Date:	11/01/2024
Draw By:	DRD
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

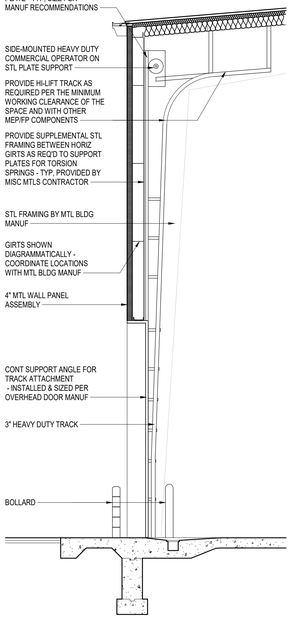
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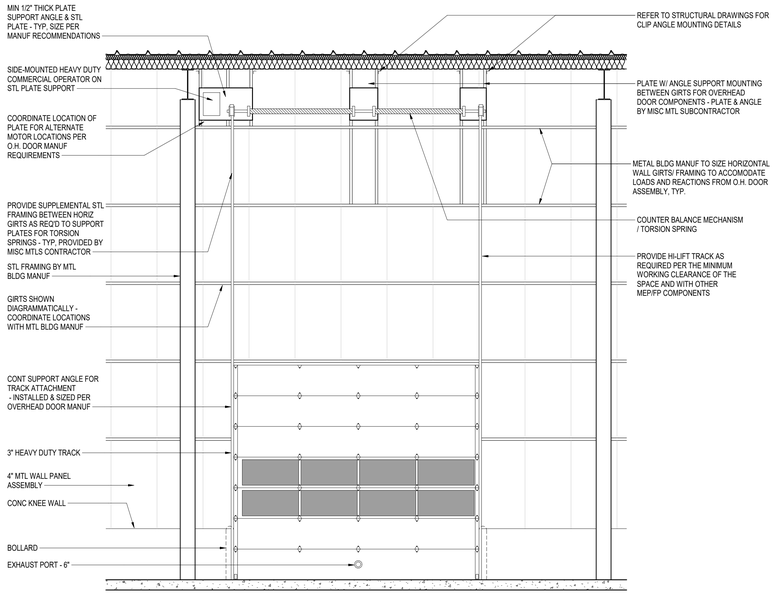
ENLARGED PLANS & INTERIOR ELEVATIONS

Sheet Number:

A702

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GENERAL OVERHEAD DOOR NOTES:

A. SUPPLEMENTAL VERTICAL 3X3 STEEL ANGLES WITH WELD ATTACHED PLATES TO BE PROVIDED AND INSTALLED BY MISC METALS SUBCONTRACTOR.

B. VERTICAL ANGLES TO HAVE WELDED CLIP ANGLES BOLTED TO HORIZONTAL GIRT FRAMING.

C. SIZE AND QUANTITY OF ANGLES AND PLATES TO BE PROVIDED AT ALL LOCATIONS AS NECESSARY FOR COMPLETE INSTALLATION OF SECTIONAL DOORS, TRACKS, MOTORS, AND SPRINGS, TYP.

D. COORDINATE REQUIREMENTS WITH SECTIONAL DOOR MANUF.

E. COORDINATE / APPROVE ATTACHMENT TO BUILDING GIRT FRAMING WITH METAL BUILDING MANUF.

F. LAYOUT OF SUPPLEMENTAL STEEL IS SHOWN FOR DESIGN INTENT ONLY. ACTUAL SIZES AND QUANTITY OF STEEL TO BE REQUIRED / COORDINATED WITH SECTIONAL DOOR MANUF.

G. THE MISC MTLS CONTRACTOR SHALL FURNISH AND INSTALL UP TO (3) TORSION SPRING MOUNTING PLATES AND (1) OPERATOR MOUNTING PLATE AT EACH LOCATION. EACH PLATE SHALL BE SUPPORTED BY STEEL ANGLES. PLATE AND ANGLES SHALL BE PAINTED. COORDINATE PLATE SIZE, LOCATION AND LAYOUT WITH THE OVERHEAD DOOR INSTALLER AND APPROVED SUBMITTAL DRAWINGS, TYPICAL ALL OVERHEAD DOORS.

H. PROVIDE COMPONENTS DESIGNED FOR A MARINE ENVIRONMENT, INCLUDING BUT NOT LIMITED TO TENSION SPRINGS, TRACKS, BOLTS, PANEL CONNECTORS, & MOTOR OPERATOR. ALL ELECTRICAL CONTROLS & CONNECTIONS SHALL BE N.E.M.A 4 RATED IN "VEHICLE WASH BAY".

I. THE ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECT SWITCHES, STARTERS AND ALL LINE VOLTAGE WIRING AND CONDUIT TO OVERHEAD DOOR OPERATORS. THE HAND-OFF-AUTO SWITCH, PUSH BUTTON CONTROL STATION (MOMENTARY UP-STOP-DOWN) AND CONTROLLER IS FURNISHED BY THE OVERHEAD DOOR MANUFACTURER AND INSTALLED BY THE ELECTRICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR IS TO PROVIDE CONDUIT AND WIRING BETWEEN THE HAND-OFF-AUTO SWITCH, THE PUSH BUTTON CONTROL STATION AND CONTROLLER PER OVERHEAD DOOR MANUFACTURER REQUIREMENTS. FURNISHING AND INSTALLATION OF THE MOTOR UNIT, OPTICAL SENSORS , PNEUMATIC DOOR SAFETY BOTTOM, LOW VOLTAGE WIRING AND ALL OTHER ACCESSORIES ASSOCIATED WITH THE OVERHEAD DOORS SHALL BE THE RESPONSIBILITY OF THE OVERHEAD DOOR CONTRACTOR.

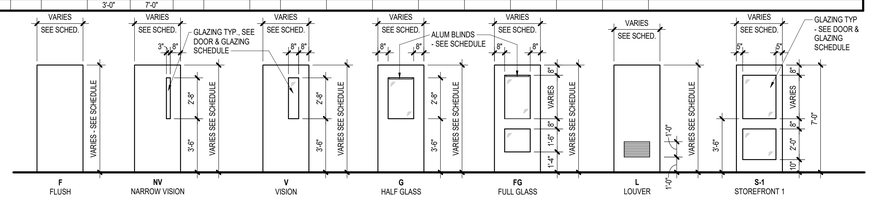
J. METAL BLDG MANUF SHALL PROVIDE SUFFICIENT GIRT FRAMING BETWEEN TRANSLUCENT PANEL FRAMED OPENINGS AND EAVE GIRT / RIDGE FRAMING TO ALLOW MISC METALS CONTRACTOR TO CONNECT SUPPLEMENTAL FRAMING AS SHOWN.

K. ALL SUPPLEMENTAL STEEL TO BE PAINTED BY THE PAINTING CONTRACTOR.

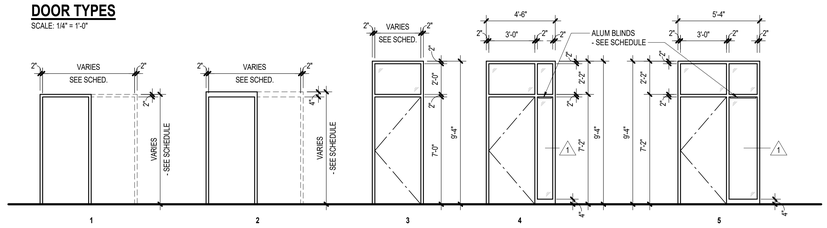
6 OVERHEAD SECTIONAL DOOR MISC METALS
1/4" = 1'-0"

DOOR SCHEDULE

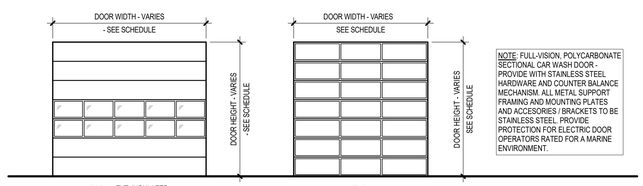
DOOR #	DOORS TYPE	DOORS MATERIAL	DOORS WIDTH	DOORS HEIGHT	FRAMES TYPE	FRAMES MATERIAL	BLINDS	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	GLAZING TYPE	RATING	HDWR SET	CARD READER	DOOR CONTACT	REMARKS
101A	S1	AL	3'-0"	7'-0"		AL				5/A801	3					EXTERIOR DOOR
101B	FG	WD	3'-0"	7'-0"	4	HM		8/A812	7/A812	4/A801						
101C	S1	AL	3'-0"	7'-0"		AL				5/A801	3					EXTERIOR DOOR
101D	FG	WD	3'-0"	7'-0"	5	HM		8/A812	7/A812	4/A801	1					
103	F	WD	3'-0"	7'-0"	1	HM		4/A812	3/A812	4/A801						
104	F	WD	3'-0"	7'-0"	4	HM	•	8/A812	7/A812	4/A801	1					
105	F	WD	3'-0"	7'-0"	4	HM	•	8/A812	7/A812	4/A801	1					
106	F	WD	3'-0"	7'-0"	4	HM	•	8/A812	7/A812	4/A801	1					
108	F	WD	3'-0"	7'-0"	1	HM		4/A812	3/A812	4/A801						
111	S1	AL	3'-0"	7'-2"		AL				4/A801						
113	F	WD	5'-0"	7'-0"	1	HM		4/A812	3/A812	3/A801						DOUBLE DOOR
114	S1	AL	3'-0"	7'-2"		AL				4/A801						
114A	F	WD	5'-0"	7'-0"	1	HM		4/A812	3/A812	4/A801						DOUBLE DOOR
114B	F	WD	5'-0"	7'-0"	1	HM		10/A812	9/A812	4/A801		90min				90min FIRE RATED DOUBLE DOOR
117	F	WD	3'-0"	7'-0"	1	HM		4/A812	3/A812	3/A801						
118	F	WD	3'-0"	7'-0"	1	HM		4/A812	3/A812	3/A801						
119A	G	WD	3'-0"	7'-0"	5	HM		8/A812	7/A812	4/A801	1					
119B	G	HM	3'-0"	7'-0"	3	HM		13/A812	12/A812	2/A801	1					
120	F	HM	3'-0"	7'-0"	1	HM		4/A812	3/A812	4/A801						
122	F	WD	3'-0"	7'-0"	4	HM	•	8/A812	7/A812	4/A801	1					
123	F	WD	3'-0"	7'-0"	4	HM	•	8/A812	7/A812	4/A801	1					
124	FG	WD	3'-0"	7'-0"	4	HM		8/A812	7/A812	4/A801	1					
125	F	WD	3'-0"	7'-0"	1	HM		4/A812	3/A812	4/A801						
126	FG	WD	3'-0"	7'-0"	4	HM		8/A812	7/A812	4/A801	1					
127	F	WD	3'-0"	7'-0"	1	HM		4/A812	3/A812	4/A801						
128	F	WD	3'-0"	7'-0"	1	HM		4/A812	3/A812	3/A801						
129	F	WD	3'-0"	7'-0"	1	HM		4/A812	3/A812	3/A801						
130A	G	WD	3'-0"	7'-0"	5	HM		8/A812	7/A812	4/A801	1					
130B	G	HM	3'-0"	7'-0"	3	HM		13/A812	12/A812	2/A801	1					
131	F	HM	3'-0"	7'-0"	1	HM		4/A812	3/A812	4/A801						
132	F	HM	3'-0"	7'-0"	1	HM		13/A812	12/A812	2/A801						
133A	OHD-1	-	18'-0"	16'-0"	OHD-1	STEEL		5/A811	4/A811	1/A801						OVERHEAD DOOR
133B	G	HM	3'-0"	7'-0"	3	HM		2/A811	1/A811	2/A801	3					EXTERIOR DOOR
133C	G	HM	3'-0"	7'-0"	3	HM		2/A811	1/A811	2/A801	3					EXTERIOR DOOR
133D	OHD-1	-	18'-0"	16'-0"	OHD-1	STEEL		5/A811	4/A811	1/A801						OVERHEAD DOOR
134	F	HM	3'-0"	7'-0"	1	HM		3/A811	1/A811	2/A801						EXTERIOR DOOR
135	F	HM	3'-0"	7'-0"	1	HM		3/A811	1/A811	2/A801						EXTERIOR DOOR
136A	OHD-1	-	14'-0"	14'-0"	OHD-1	STEEL		5/A811	4/A811	1/A801						OVERHEAD DOOR
136B	G	HM	3'-0"	7'-0"	3	HM		2/A811	1/A811	2/A801	3					EXTERIOR DOOR
136C	G	HM	3'-0"	7'-0"	3	HM		13/A812	11/A812	2/A801	1					
137	F	SS	6'-0"	7'-0"	2	SS		6/A812	5/A812	4/A801						
137A	OHD-1	-	14'-0"	14'-0"	OHD-1	STEEL		5/A811	4/A811	1/A801						OVERHEAD DOOR
137B	G	HM	3'-0"	7'-0"	3	HM		2/A811	1/A811	2/A801	3					EXTERIOR DOOR
137C	G	HM	3'-0"	7'-0"	3	HM		13/A812	11/A812	2/A801	1					
138A	G	HM	3'-0"	7'-0"	3	HM		2/A811	1/A811	2/A801	3					EXTERIOR DOOR
138B	OHD-1	-	16'-0"	16'-0"	OHD-1	STEEL		5/A811	4/A811	1/A801						OVERHEAD DOOR
138C	OHD-1	-	16'-0"	16'-0"	OHD-1	STEEL		5/A811	4/A811	1/A801						OVERHEAD DOOR
138D	OHD-1	-	16'-0"	16'-0"	OHD-1	STEEL		5/A811	4/A811	1/A801						OVERHEAD DOOR
138E	OHD-1	-	16'-0"	16'-0"	OHD-1	STEEL		5/A811	4/A811	1/A801						OVERHEAD DOOR
138F	G	HM	3'-0"	7'-0"	3	HM		2/A811	1/A811	2/A801	3					EXTERIOR DOOR
138G	OHD-1	-	16'-0"	16'-0"	OHD-1	STEEL		5/A811	4/A811	1/A801						OVERHEAD DOOR
138H	OHD-1	-	16'-0"	16'-0"	OHD-1	STEEL		5/A811	4/A811	1/A801						OVERHEAD DOOR
138I	G	HM	3'-0"	7'-0"	3	HM		2/A811	1/A811	2/A801	3					EXTERIOR DOOR
138J	G	HM	3'-0"	7'-0"	3	HM		13/A812	11/A812	2/A801	1					
139	F	HM	3'-0"	7'-0"	2	HM		2/A812	1/A812	4/A801						
140	G	HM	6'-0"	7'-0"	2	HM		2/A812	1/A812	4/A801						DOUBLE DOOR
141	F	HM	6'-0"	7'-0"	2	HM		2/A812	1/A812	4/A801		90min				90min FIRE RATED DOUBLE DOOR
142	G	HM	3'-0"	7'-0"	2	HM	•	15/A812	14/A812	2/A801	1					
144B	G	SS	3'-0"	7'-0"	2	SS		6/A812	5/A812	2/A801	1					
144C	OHD-2	-	16'-0"	16'-0"	OHD-2	STEEL		7/A811	6/A811	1/A801						
144D	G	SS	3'-0"	7'-0"	1	SS		9/A811	8/A811	2/A801	3					EXTERIOR DOOR
144E	G	SS	3'-0"	7'-0"	1	SS		9/A811	8/A811	2/A801	3					EXTERIOR DOOR
144F	OHD-2	-	16'-0"	16'-0"	OHD-2	STEEL		7/A811	6/A811	1/A801						
201	F	HM	3'-0"	7'-0"	1	HM		4/A812	3/A812	4/A801						DOUBLE DOOR
202			3'-0"	7'-0"												
204	G	HM	6'-0"	7'-0"	1	HM		13/A812	11/A812	2/A801	1					DOUBLE DOOR
205	F	HM	6'-0"	7'-0"	1	HM		4/A812	3/A812	4/A801						DOUBLE DOOR
206	G	HM	6'-0"	7'-0"	1	HM		13/A812	11/A812	2/A801	1					DOUBLE DOOR
207	G	HM	6'-0"	7'-0"	1	HM		4/A812	3/A812	4/A801	1					DOUBLE DOOR
360			3'-0"	7'-0"												



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

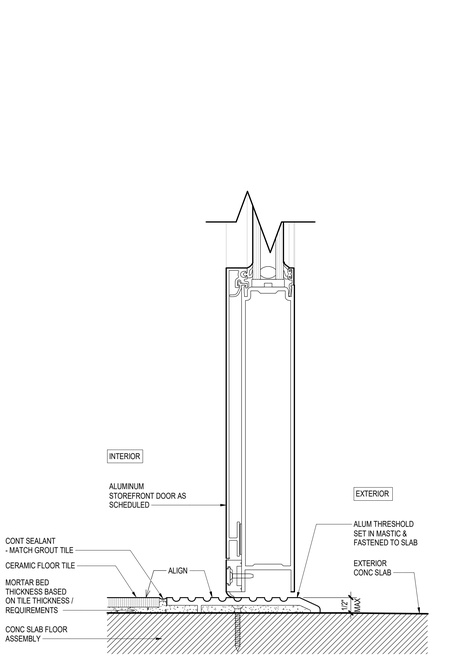


FRAME TYPES
SCALE: 1/4" = 1'-0"

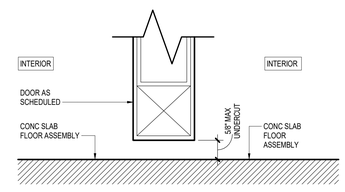


OVERHEAD DOOR TYPES
SCALE: 1/4" = 1'-0"

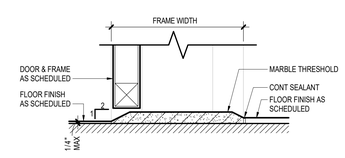
#	GLAZING SCHEDULE - NON-CURTAIN WALL / NON-STOREFRONT	
TYPE	DESCRIPTION	USE IN THESE LOCATIONS
1	1/4" CLEAR TEMPERED	ALL INTERIOR NON-FIRE RATED DOORS AND INTERIOR WINDOWS
2	1/4" CLEAR LAMINATED GLASS	AS INDICATED
3	1" CLEAR INSULATING TEMPERED GLASS	ALL EXTERIOR DOORS, CURTAIN WALL, STOREFRONT, & WINDOWS



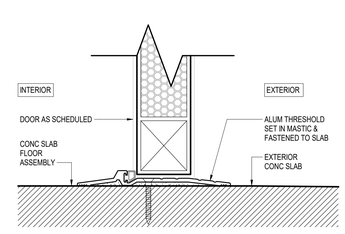
5 SILL - ALUM STOREFRONT DOOR W/ CT
6" = 1'-0"



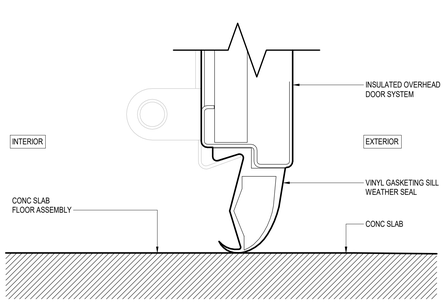
4 TYPICAL INTERIOR DOOR SILL
6" = 1'-0"



3 SILL - MARBLE THRESHOLD
3" = 1'-0"



2 SILL - EXTERIOR DOOR
6" = 1'-0"



1 SILL - OVERHEAD DOOR THRESHOLD DETAIL - FLUSH
6" = 1'-0"

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

Project:
NEW PUBLIC WORKS FACILITY
14 FOREST ROAD, ACTON MA 01720

TOWN OF ACTON

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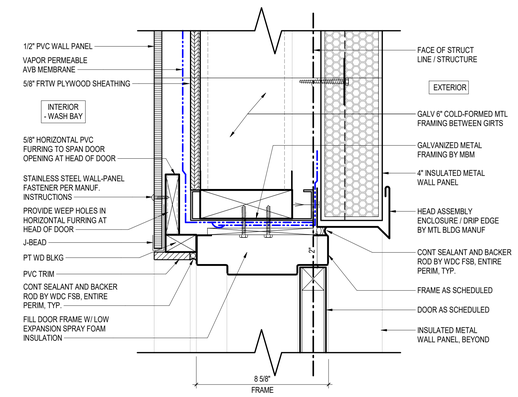
DOOR SCHEDULE & DOOR AND FRAME TYPES, DETAILS

Sheet Number:

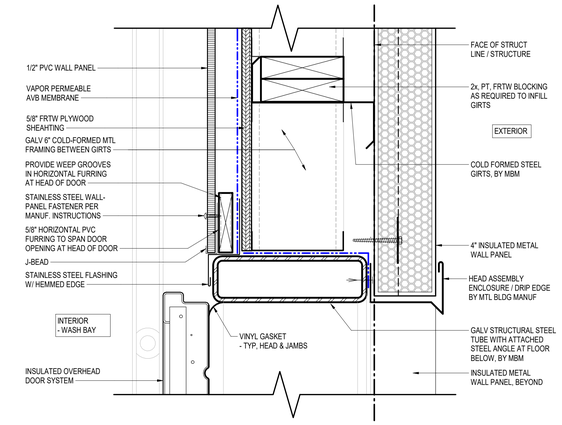
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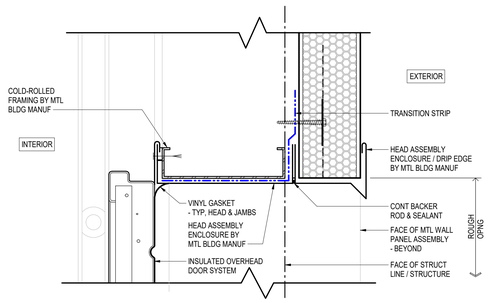
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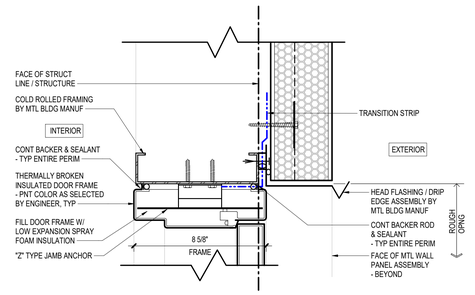
9 HEAD DETAIL - WASH BAY
3" = 1'-0"



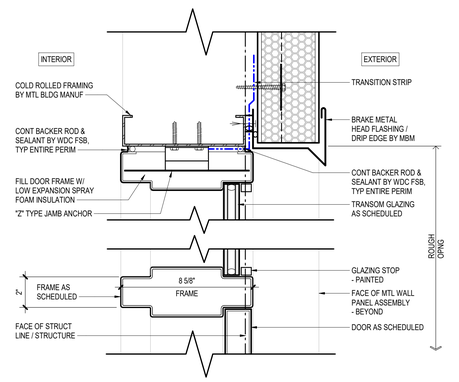
7 WASH BAY - OVERHEAD DOOR - HEAD DETAIL
3" = 1'-0"



5 OVERHEAD DOOR FRAME - METAL PANEL W/ GIRTS/CONC - HEAD
3" = 1'-0"



3 HM DOOR FRAME - METAL PANEL (BRAKE METAL) W/ GIRTS - HEAD DETAIL
3" = 1'-0"



2 HM DOOR FRAME W/ TRANSOM - METAL PANEL (BRAKE METAL) W/ GIRTS - HEAD DETAIL
3" = 1'-0"

8 JAMB DETAIL - WASH BAY
3" = 1'-0"

6 WASH BAY - OVERHEAD DOOR - JAMB DETAIL
3" = 1'-0"

4 OVERHEAD DOOR FRAME - METAL PANEL W/ GIRTS/CONC - JAMB
3" = 1'-0"

1 HM DOOR FRAME - METAL PANEL W/ GIRTS/CONC - JAMB
3" = 1'-0"

0' 3" 6" 9"
SCALE: 3" = 1'-0"

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Key Plan:

Date:	Issue Date
Draw By:	Author
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W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

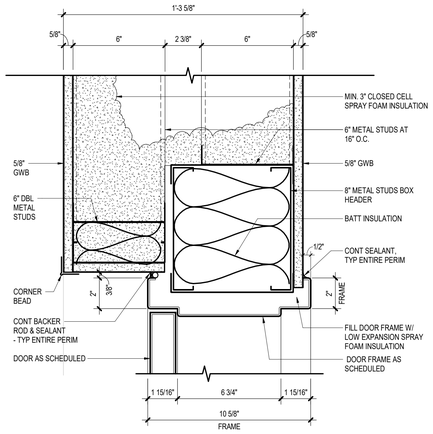
DOOR DETAILS I

Sheet Number:

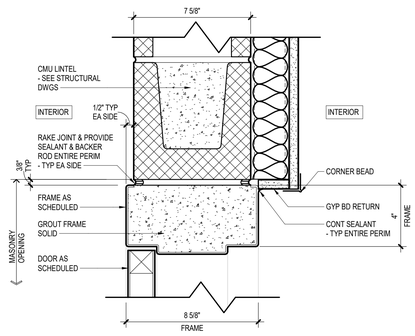
A811

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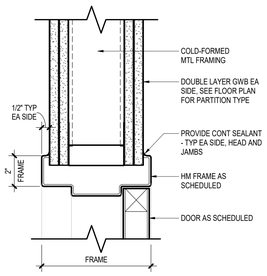
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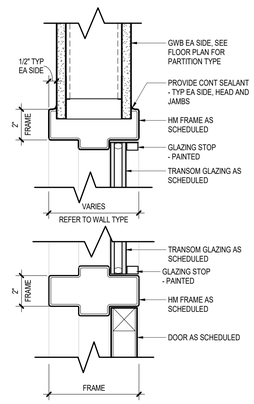
13 FUME SEPARATION WALL (F2 & F3) - DOOR HEAD
3" = 1'-0"



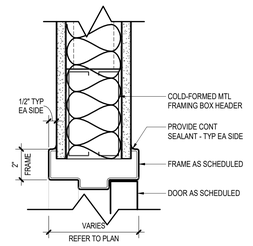
15 CMU / FUR-OUT DOOR HEAD
3" = 1'-0"



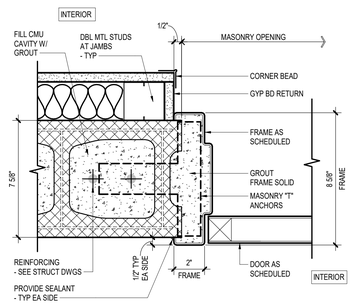
10 TYPICAL RATED GYPSUM WALL - DOOR HEAD
3" = 1'-0"



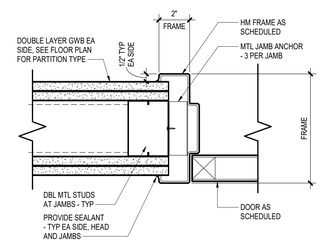
8 TYPICAL GYPSUM WALL - TRANSOM DOOR HEAD
3" = 1'-0"



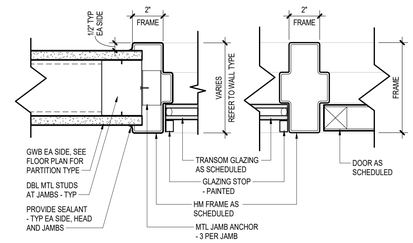
4 TYPICAL GYPSUM WALL - DOOR HEAD
3" = 1'-0"



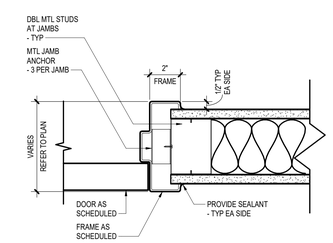
14 CMU / FUR-OUT DOOR JAMB
3" = 1'-0"



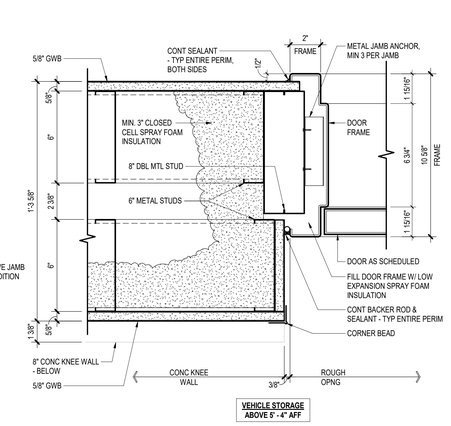
9 TYPICAL RATED GYPSUM WALL - DOOR JAMB
3" = 1'-0"



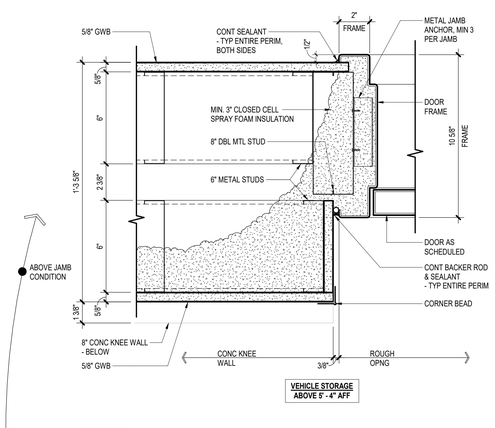
7 TYPICAL GYPSUM WALL - TRANSOM DOOR JAMB
3" = 1'-0"



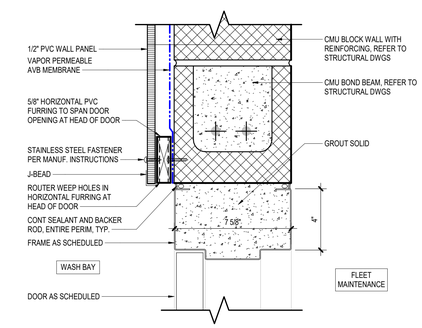
3 TYPICAL GYPSUM WALL - DOOR JAMB
3" = 1'-0"



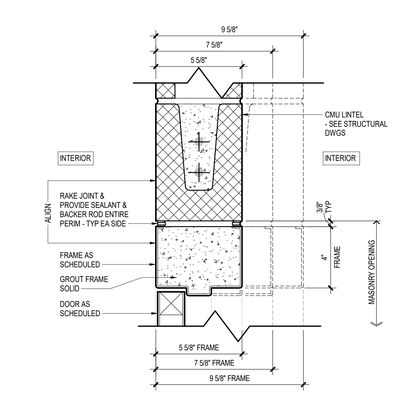
12 FUME SEPARATION WALL (F2) - DOOR JAMB
3" = 1'-0"



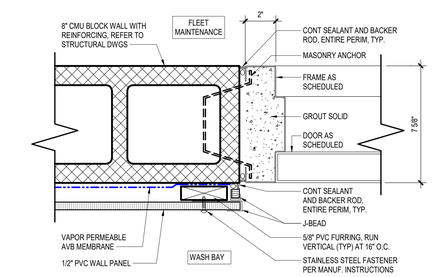
11 FUME SEPARATION WALL (F3) - DOOR JAMB
3" = 1'-0"



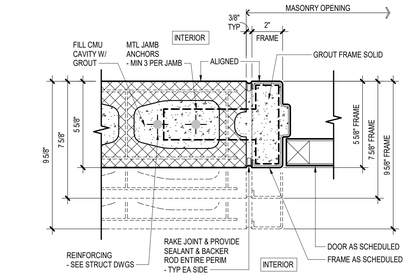
6 WASH BAY - CMU WALL - HEAD
3" = 1'-0"



2 HM DOOR - CMU WALL - HEAD
3" = 1'-0"



5 WASH BAY - CMU WALL - JAMB
3" = 1'-0"



1 HM DOOR - CMU WALL - JAMB
3" = 1'-0"

0' 3" 6" 9"
SCALE: 3" = 1'-0"

Project:
NEW PUBLIC WORKS FACILITY
14 FOREST ROAD, ACTON MA 01720

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Consultants:

Revisions:

No.	Date	Description

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Scale: 3" = 1'-0"

Key Plan:

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Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

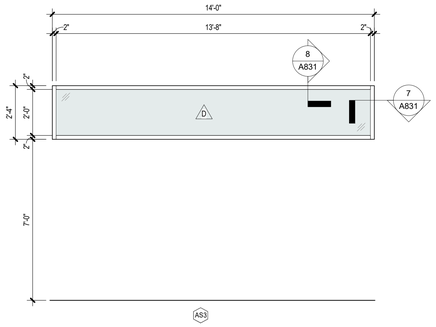
DOOR DETAILS II

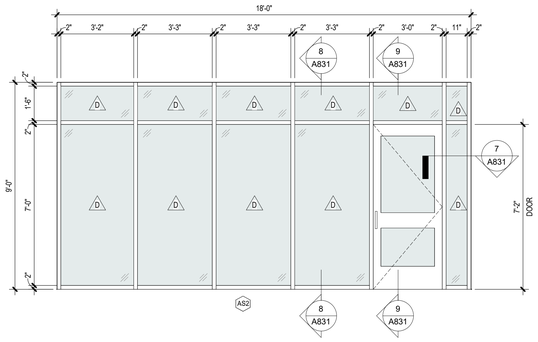
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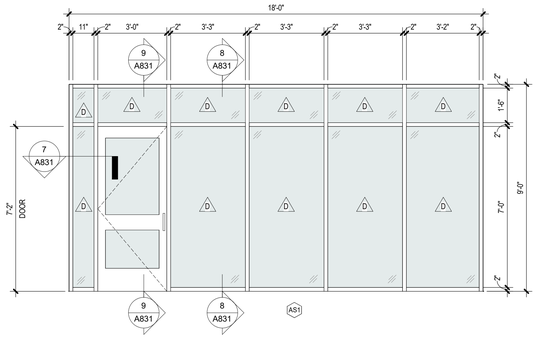
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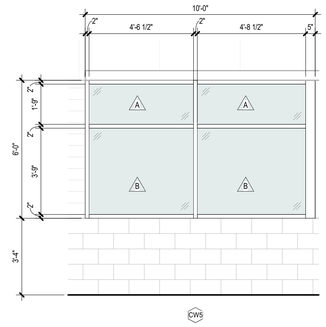
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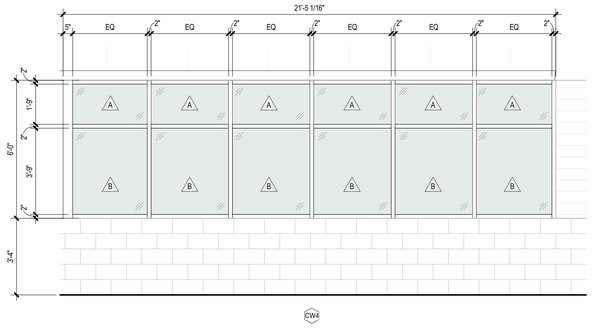


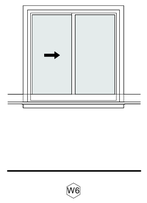




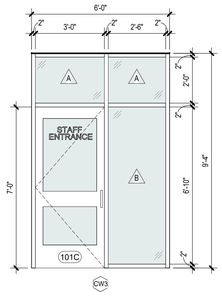
ALUMINUM STOREFRONT TYPES (INTERIOR)
3/8" = 1'-0"

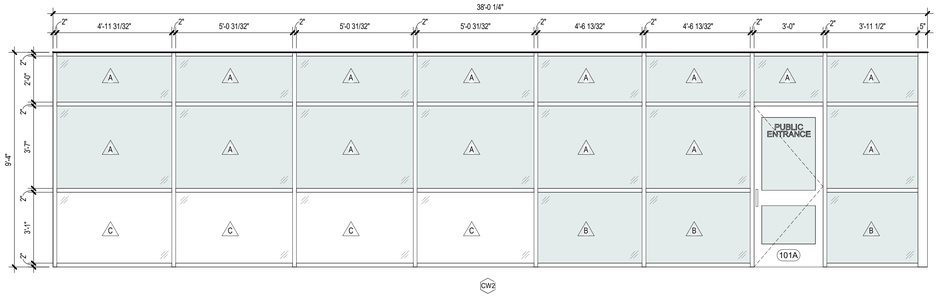


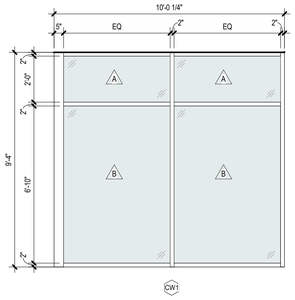




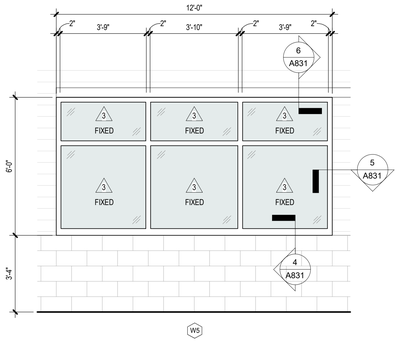
CURTAIN WALL TYPES (EXTERIOR)
3/8" = 1'-0"

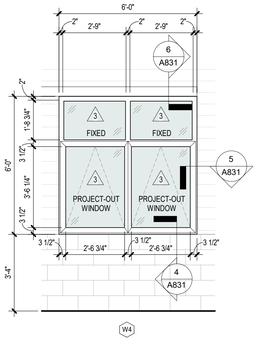


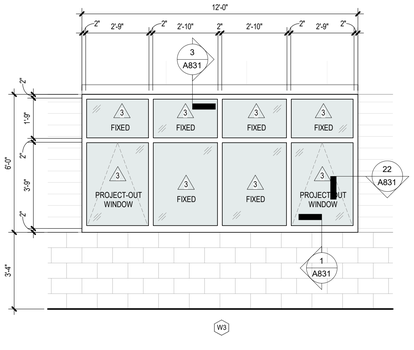


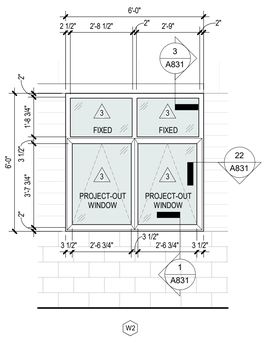


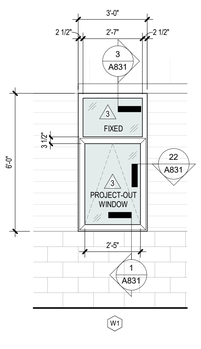
TRIPLE GLAZED CURTAIN WALL TYPES (EXTERIOR)
3/8" = 1'-0"











TRIPLE GLAZED ALUMINUM WINDOW TYPES
3/8" = 1'-0"

#	GLAZING SCHEDULE - CURTAIN WALL & STOREFRONT	
TYPE	DESCRIPTION	USE IN THESE LOCATIONS
A	1" INSULATED EXTERIOR GLAZING	ALL EXTERIOR STOREFRONTS & ALUMINUM WINDOWS
B	1" INSULATED EXTERIOR GLAZING - TEMPERED	AS INDICATED
C	1" INSULATED EXTERIOR SPANDREL GLASS	AS INDICATED
D	1/4" TEMPERED GLAZING	INTERIOR STOREFRONT ASSEMBLIES

#	GLAZING SCHEDULE - NON-CURTAIN WALL / NON-STOREFRONT	
TYPE	DESCRIPTION	USE IN THESE LOCATIONS
1	1/4" CLEAR TEMPERED	ALL INTERIOR NON-FIRE RATED DOORS AND INTERIOR WINDOWS
2	1/4" CLEAR LAMINATED GLASS	AS INDICATED
3	1" CLEAR INSULATING TEMPERED GLASS	ALL EXTERIOR DOORS, CURTAIN WALL, STOREFRONT, & WINDOWS

FENESTRATION GENERAL NOTES:

1. ALL OVERALL DIMENSIONS ARE SHOWN TO ROUGH-OPENING / MASONRY OPENING UNLESS NOTED OTHERWISE. TYP.
2. JOINT SEALANTS REQUIRED PER SPECIFICATION SECTION (07 92 00); PROVIDE BACK ROD AND SEALANT AT PERIMETER OF ALL WALL OPENINGS INCLUDING, BUT NOT LIMITED TO, WINDOWS, DOORS, LOUVERS AND TRANSLUCENT PANELS, AT ALL INTERIOR AND EXTERIOR JOINTS.
3. TYPICAL JOINT WIDTH: 3/8", MAXIMUM JOINT WIDTH: 1/2"
4. ALL AIR VAPOR BARRIERS (AVB) AT OPENINGS SHALL RETURN TO THE INSIDE FACE OF THE ROUGH OPENING (TYP) ON SILL, HEAD, AND JAMB CONDITIONS.
5. GLAZING TAG: #
6. INDICATES GLAZING:

ALUMINUM WINDOW SCHEDULE

TYPE	WIDTH	HEIGHT	COUNT	WINDOW SHADE	COMMENTS
W1	3'-0"		5		
W2	6'-0"		4		
W3	12'-0"		1		
W4	6'-0"		1		
W5	12'-0"		1		

ALUMINUM STOREFRONT SCHEDULE

TYPE	WIDTH	HEIGHT	COUNT	WINDOW SHADE	COMMENTS
AS1	18'-0"		1		
AS2	18'-0"		1		
AS3	14'-0"		1		

ALUMINUM CURTAIN WALL SCHEDULE

TYPE	WIDTH	HEIGHT	COUNT	WINDOW SHADE	COMMENTS
CW1	9'-9 3/4"		1		
CW2	37'-9 3/4"		1		
CW3	6'-2 7/16"		1		
CW4	21'-2 9/16"		1		
CW5	9'-7"		1		

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

Project:
NEW PUBLIC WORKS FACILITY
14 FOREST ROAD, ACTON MA 01720

TOWN OF ACTON

Weston & Sampson Engineers, Inc.
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Scale: As indicated

Key Plan:

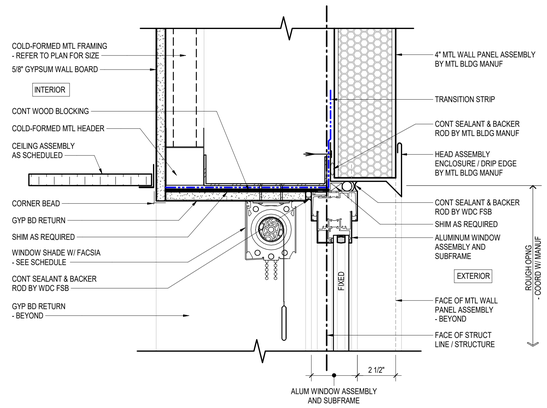
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Draw By:	Author
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:
FENESTRATION TYPES AND DETAILS

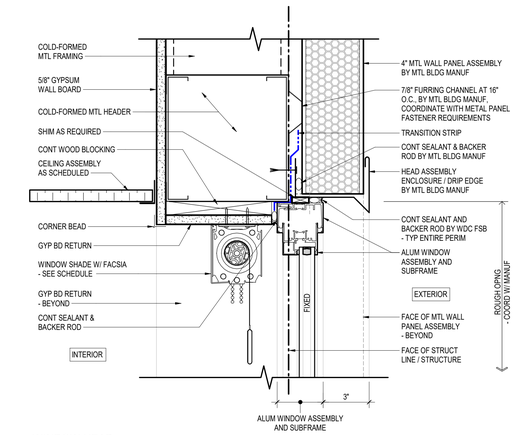
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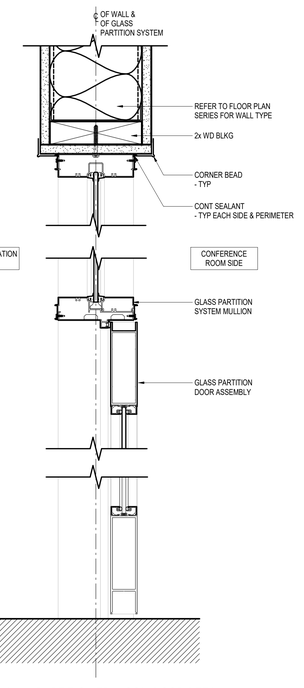
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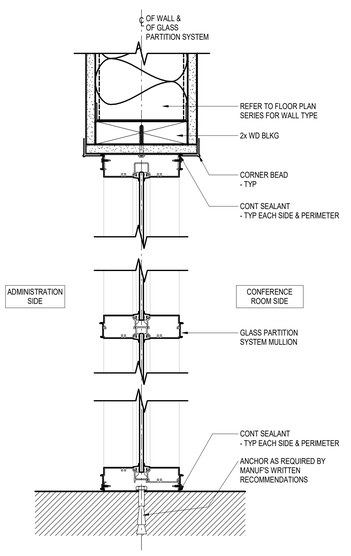
6 WINDOW HEAD - MTL GIRTS BACK-UP WALL
3" = 1'-0"



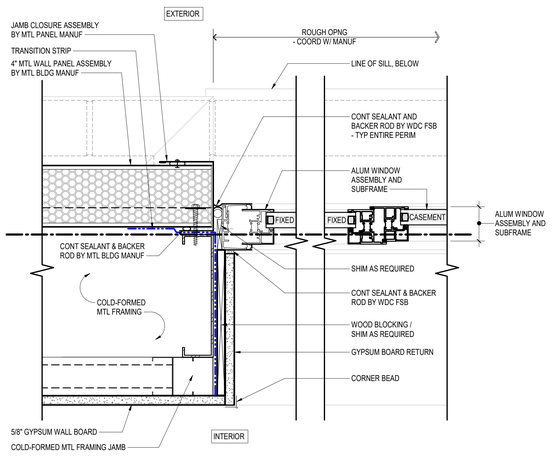
3 WINDOW HEAD
3" = 1'-0"



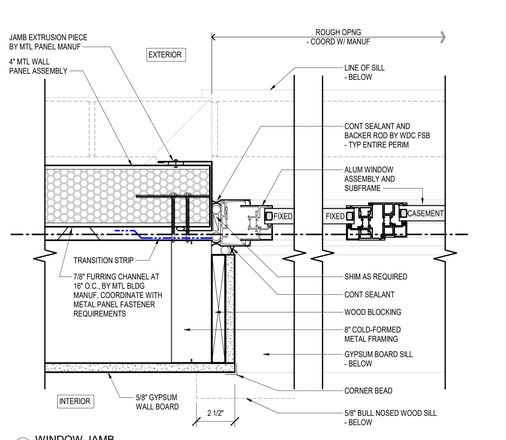
9 GLASS WALL PARTITION TRANSOM DOOR DETAIL
3" = 1'-0" AS1/ A821



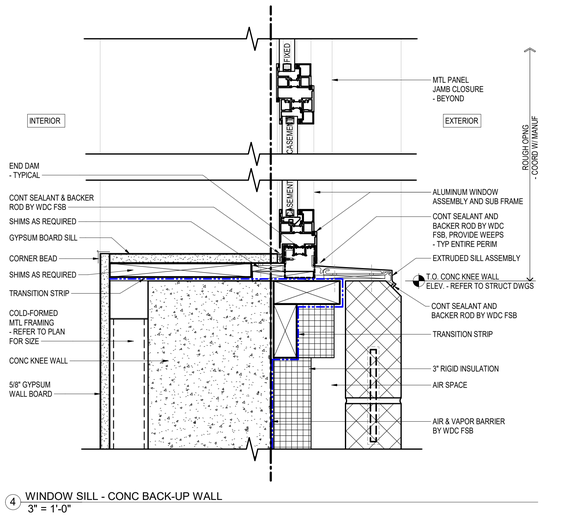
8 GLASS WALL PARTITION HEAD & SILL DETAIL
3" = 1'-0" AS1/ A821



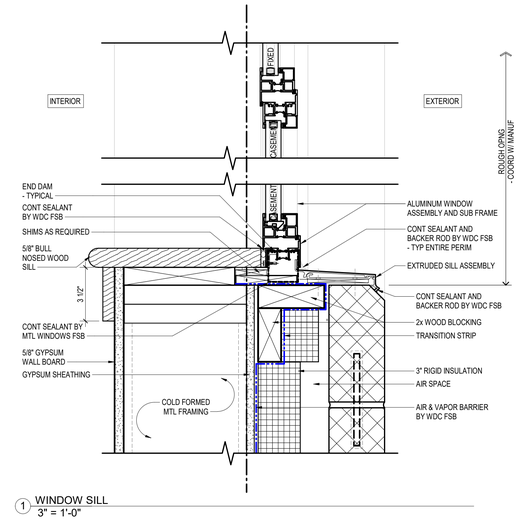
5 WINDOW JAMB - MTL GIRTS BACK-UP WALL
3" = 1'-0"



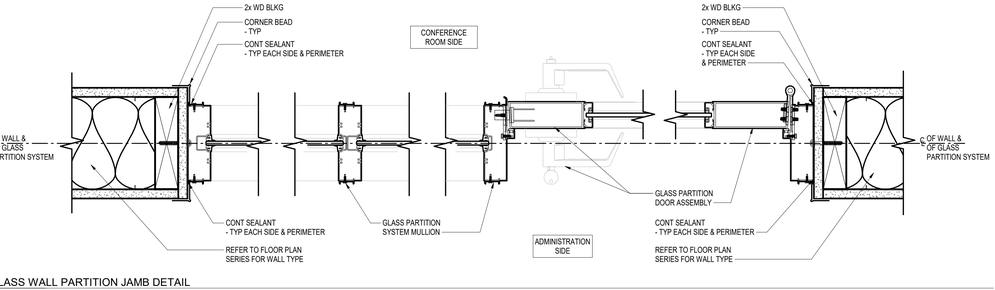
22 WINDOW JAMB
3" = 1'-0"



4 WINDOW SILL - CONC BACK-UP WALL
3" = 1'-0"



1 WINDOW SILL
3" = 1'-0"



7 GLASS WALL PARTITION JAMB DETAIL
3" = 1'-0" AS1/ A821

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

Project:
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FENESTRATION DETAILS

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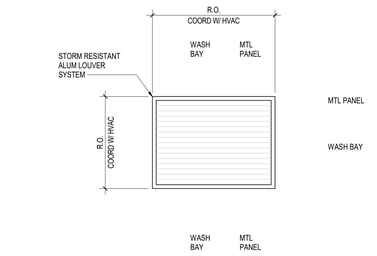
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LOUVER GENERAL NOTES:

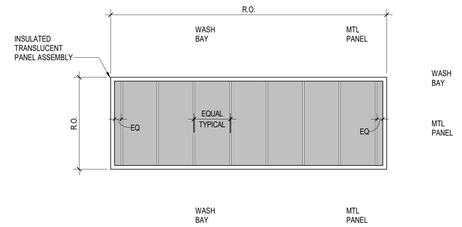
- CONTRACTOR MAY INCREASE SIZE OF LOUVER AS REQUIRED IN ORDER TO ACHIEVE THE REQUIRED FREE AREA OF SIZES LISTED ON HVAC DRAWINGS AT NO ADDITIONAL COST TO THE OWNER.



A LOUVER ELEVATION
3/8" = 1'-0"

LOUVER SCHEDULE

TYPE	WIDTH	HEIGHT	COUNT	HEIGHT A.F.F.	COMMENTS
LV-2	4'-1 1/2"	3 5/8"	1		
LV-2	4'-1 1/2"	3 5/8"	1		
LV-2	4'-1 1/2"	3 5/8"	1		
LV-2	4'-1 1/2"	3 5/8"	1		
LV-2	4'-1 1/2"	3 5/8"	1		
LV-2	4'-1 1/2"	3 5/8"	1		
LV-2	4'-1 1/2"	3 5/8"	1		
LV-2	4'-1 1/2"	3 5/8"	1		



B INSULATED TRANSLUCENT PANEL ELEVATION
3/8" = 1'-0"

INSULATED TRANSLUCENT PANEL ASSEMBLY SCHEDULE

TYPE	WIDTH	HEIGHT	COUNT	HT. AFF (1ST FLR)	COMMENTS
TP1	12'-0"	4'-0"	1	19'-0"	
TP2	<varies>	4'-0"	6	<varies>	
TP3	20'-8"	4'-0"	2	17'-0"	
TP4	82'-0"	4'-0"	1	19'-0"	
TP5	80'-0"	4'-0"	1	22'-8"	

0' 1' 2' 4'
SCALE: 3/8" = 1'-0"

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Project:
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TOWN OF ACTON

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Scale: 3/8" = 1'-0"

Key Plan:

Date:	Issue Date
Draw By:	Author
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

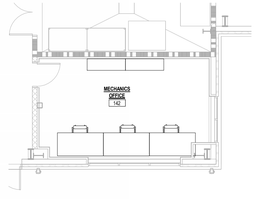
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Sheet Number:
A841

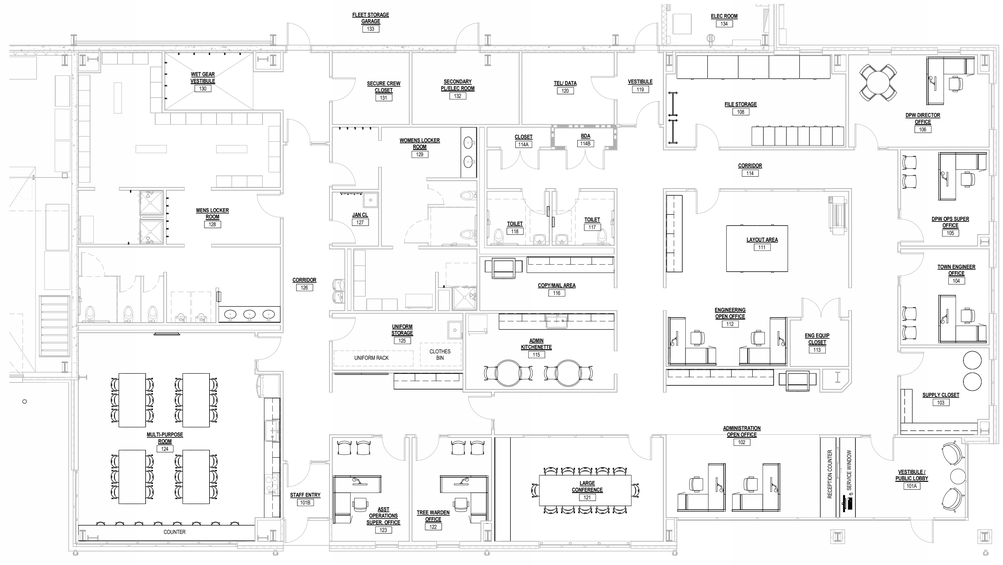
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2 3D VIEW - ADMIN & EMPLOYEE FACILITIES (ORTHO)



3 FURNITURE FLOOR PLAN - MECHANIC'S OFFICE
1/8" = 1'-0" 1/ A201



1 FURNITURE FLOOR PLAN - OFFICES & EMPLOYEE FACILITIES
1/8" = 1'-0" 1/ A201

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

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Date:	11/01/2024
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Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG24-1080
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Drawing Title:

FURNITURE PLAN (FOR REFERENCE ONLY)

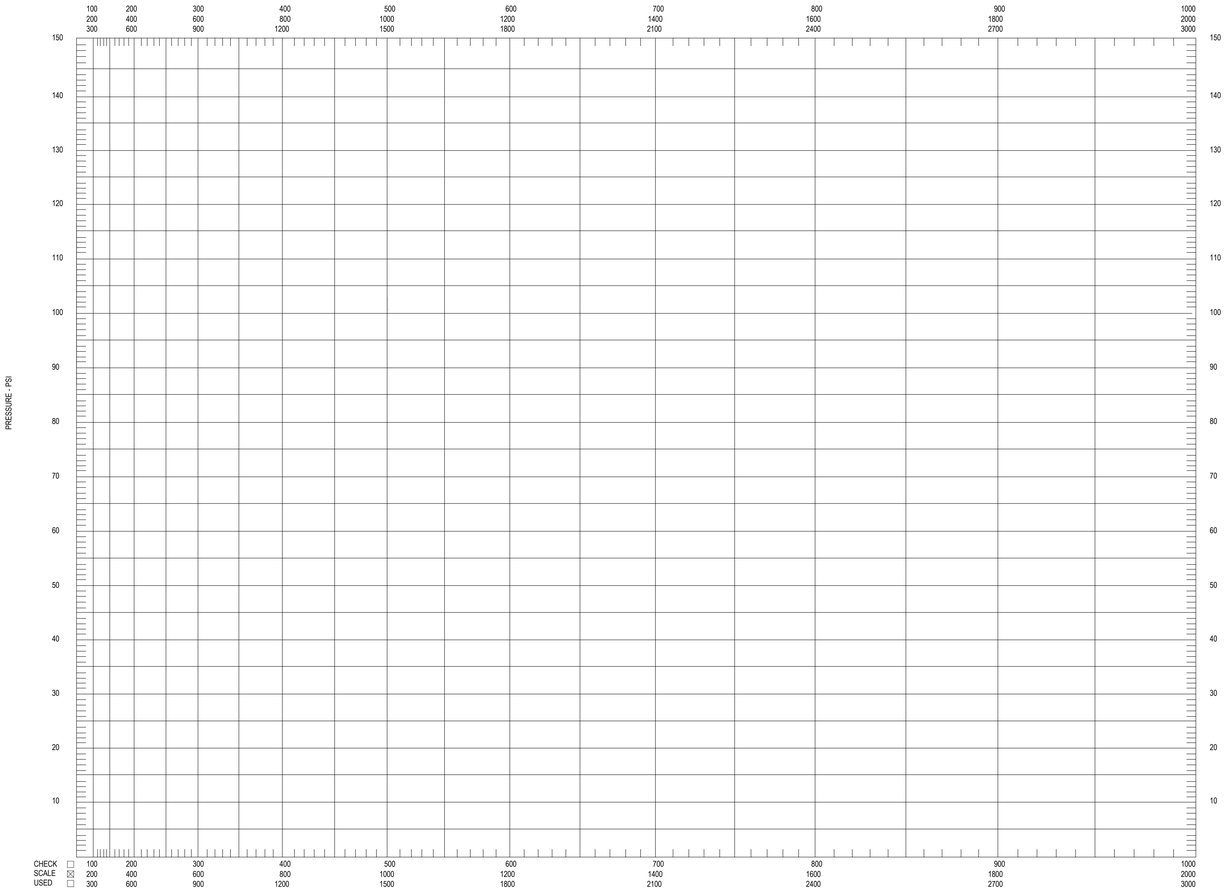
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A921

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WATER SUPPLY GRAPH NO. N^1.85

DATE	BY	LOC #
xxxxxx	xxxxx	xxxxx , MA
PROPERTY OF ACTON DPW		



HYDRAULIC GRAPH

NOT TO SCALE

FIRE PROTECTION NITROGEN GENERATOR SCHEDULE (FOR DRY SYSTEM)

SYMBOL	MANUFACTURER	MODEL	LOCATION	MAINTENANCE CAPACITY (GAL)	SYSTEM CAPACITY (GAL)	AIR TANK SIZE	N2 TANK SIZE (GAL)	COMPRESSOR ELECTRICAL REQUIREMENTS					REMARKS
								VOLTS	PHASE	AMPS	HZ	HP	
NITROGEN COMPRESSOR	GENERAL AIR PRODUCTS	NGP - 1000D - M1 - 4B	FP ROOM 135	3880	925	30	30	480	3	4.6	60	2	THE NITROGEN GENERATOR SHALL COME WITH AN AIR COMPRESSOR TO QUICK FILL THE DRY SYSTEM IN 30 MINUTES.

NOTE:

1. THE NITROGEN COMPRESSOR SHALL BE PROVIDED WITH AUTOMATIC DRAINAGE IN ACCORDANCE WITH THE VENDOR'S RECOMMENDATION.
2. PROVIDE INDIRECT DRAIN PIPE CONNECTION TO THE NEAREST FLOOR DRAIN.
3. COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR THE ELECTRICAL OUTLET LOCATION.

FIRE PROTECTION LEGEND:

	SPRINKLER SYSTEM PIPING (PROPOSED)
WS	SPRINKLER WET SYSTEM PIPING
DS	SPRINKLER DRY SYSTEM PIPING
NG	NITROGEN GENERATOR
⊠	CONCEALED PENDENT SPRINKLER HEAD
○	UPRIGHT SPRINKLER HEAD
◁	HORIZONTAL SIDEWALL SPRINKLER HEAD

FIRE PROTECTION NOTES:

1. THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR SPRINKLER PIPING LAYOUT AND HYDRAULIC CALCULATIONS TO MEET THE REQUIREMENTS OF 2013 EDITION OF NFPA #13. NOTE THAT THE LAYOUTS SHOW ARE CONCEPTUAL; DO NOT COUNT SPRINKLERS OR MEASURE PIPE RUNS.
2. THE FIRE PROTECTION CONTRACTOR SHALL PREPARE INSTALLATION DRAWINGS AND SUBMIT THEM TO THE ENGINEER AND LOCAL OFFICIAL FOR APPROVAL. SHOP DRAWING APPROVAL FROM THE AUTHORITY HAVING JURISDICTION IS REQUIRED PRIOR TO THE START OF SYSTEM INSTALLATION. NOTE THAT THE CONTRACTOR PRICE SHALL INCLUDE ALL NECESSARY SPRINKLERS AND PIPING NEEDED FOR APPROVAL, REGARDLESS OF LAYOUTS PROVIDED, AT NO ADDITIONAL COST TO THE OWNER.
3. ALL FIRE PROTECTION SYSTEMS, EQUIPMENT, PIPING AND VALVES SHALL BE INSTALLED AND TESTED BY A SPRINKLER CONTRACTOR LICENSED BY THE STATE AND EXPERIENCED IN THE INSTALLATION OF SPRINKLER SYSTEMS.
4. THE LOCATION OF THE WATER SERVICE ENTRANCE, FIRE PROTECTION RISERS AND BACKFLOW PREVENTER TEST HEADER SHALL BE AS SHOWN.
5. PIPING SHALL BE RUN CONCEALED THROUGHOUT FINISHED SPACES. REFER TO ARCHITECTURAL PLANS FOR CEILING TYPES, HEIGHTS AND CONSTRUCTION DETAILS. NOTE WHERE UPRIGHT HEADS ARE SHOWN THERE IS TYPICALLY NO FINISHED CEILING.
6. THE SPRINKLER CONTRACTOR SHALL PROVIDE AS PART OF THIS CONTRACT ALL SPRINKLERS BELOW FIXED OBSTRUCTIONS 48" AND LARGER REQUIRED BY NFPA 13, SECTION 8.6.5.3.3. IT IS RESPONSIBILITY OF THE SPRINKLER CONTRACTOR TO PROVIDE THE REQUIRED SPRINKLERS AND ALL ASSOCIATED PIPING FITTINGS, HANGERS, ..ETS. FOR A COMPLETE INSTALLATION.
7. FIRE PROTECTION CONTRACTOR SHALL PROVIDE NECESSARY SUPPLEMENTAL FRAMING BETWEEN PRIMARY FRAMING TO SUPPORT FIRE PROTECTION SYSTEM WHERE WEIGHT OF PIPING, WATER AND EQUIPMENT EXCEED COLLATERAL LOAD LIMITS OF PURLINS. REFER TO STRUCTURAL DRAWINGS.
8. PIPING SHALL NOT BE HUNG FROM ROOF DECK. PIPING SHALL BE SUPPORTED FROM BUILDING STEEL AND ROOF PURLINS .
9. FURNISH AND INSTALL ALL NECESSARY PIPING EQUIPMENT SUPPORTS AND ANY EQUIPMENT NOT SHOWN ON DRAWINGS OR CALLED FOR IN SPECIFICATIONS BUT NECESSARY TO PROVIDE A COMPLETE AND WORKABLE SYSTEM.
10. PROVIDE ACCESS TO ALL EQUIPMENT REQUIRING PERIODIC SERVICE AND MAINTENANCE. PROVIDE AUXILIARY DRAINS AT ALL LOW POINTS.
11. ALL FIRE PROTECTION SYSTEMS SHALL BE SEISMICALLY BRACED ACCORDING TO THE APPLICABLE SECTIONS OF THE STATE BUILDING CODE AND NFPA 13.
12. FINAL FIRE DEPARTMENT CONNECTION LOCATION SHALL BE COORDINATED WITH THE AUTHORITY HAVING JURISDICTION.
13. ALL SPRINKLER PIPING TO BE ROUTED AS HIGH AND TIGHT TO THE STRUCTURE AS POSSIBLE IN EXPOSED AREAS.
14. ALL EXPOSED FIRE PROTECTION PIPES SHALL BE PAINTED WITH ANTI-CORROSION PAINT.
15. MAIN SERVICE FIRE PROTECTION DETAILS CONNECTION REFERS TO CIVIL DRAWINGS.
16. ALL SPRINKLER AND PIPE AND FITTINGS SHALL BE INSTALLED SO THAT THE SYSTEM CAN BE DRAINED.

FIRE PROTECTION DESIGN CRITERIA:

1. PROVIDE COMPLETE HYDRAULIC CALCULATIONS AND DISTRIBUTION SYSTEM DESIGN UTILIZING THE DESIGN CRITERIA ESTABLISHED ON THE CONTRACT DOCUMENTS. SYSTEM DESIGN SHALL BE BASED ON FLOW TEST CONDUCTED ON xxx, xx BYxxx. FLOW AND GAUGE HYDRANTS ARE LOCATED AT xxxSTREET.

   STATIC PRESSURE = xx PSI
   RESIDUAL PRESSURE = xx PSI
   FLOW= xx GPM
   AVAILABLE FLOW @ 20 PSI = xx GPM

2. REQUIRED DESIGN FLOWS:

   A. DESIGN HAZARDS:

   OCCUPANCY HAZARD CLASSIFICATION SCHEDULE

OCCUPANCY HAZARD CLASSIFICATION...		
LOCATION		OCCUPANCY HAZARD CLASSIFICATION SYMBOL
NO.	NAME	

   B. REQUIRED DESIGN DENSITIES:

AUTOMATIC SPRINKLER SYSTEM DESIGN CRITERIA			
SYMBOL	OCCUPANCY HAZARD CLASSIFICATION	DESIGN DENSITY (GPM/SF)	DESIGN AREA
LH	LIGHT HAZARD OCCUPANCY	0.10	1500 SF
OH1	ORDINARY HAZARD, GROUP 1 OCCUPANCY	0.15	1500 SF
OH2	ORDINARY HAZARD, GROUP 2 OCCUPANCY	0.20	1500 SF
EH1	EXTRA HAZARD, GROUP 1	0.30	2500 SF

   C. COVERAGE AREA & SPRINKLER SPACING (MAX):

COVERAGE AREA / SPRINKLER SPACING	
HAZARD	COVERAGE / MAX SPACING
LIGHT HAZARD AREAS	225 S.F. / 15'-0"
ORDINARY HAZARD AREAS	130 S.F. / 15'-0"
SIDEWALL	TABLE 8.7.2.2.1 OF NFPA 13

3. FOLLOW THE HEAD LAYOUT AS SHOWN ON THE DRAWINGS IN FINISHED AREAS. ALL SPRINKLER HEADS SHALL BE LOCATED DEAD CENTER ON THE CEILING TILE AND WING JOINTS MAY BE USED TO MEET THIS REQUIREMENT.
4. HYDRAULIC CALCULATIONS FOR THE SYSTEM SHALL INCLUDE A 10 PSI CUSHION.

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Key Plan:

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W&S Project No.:	ENG24-1080
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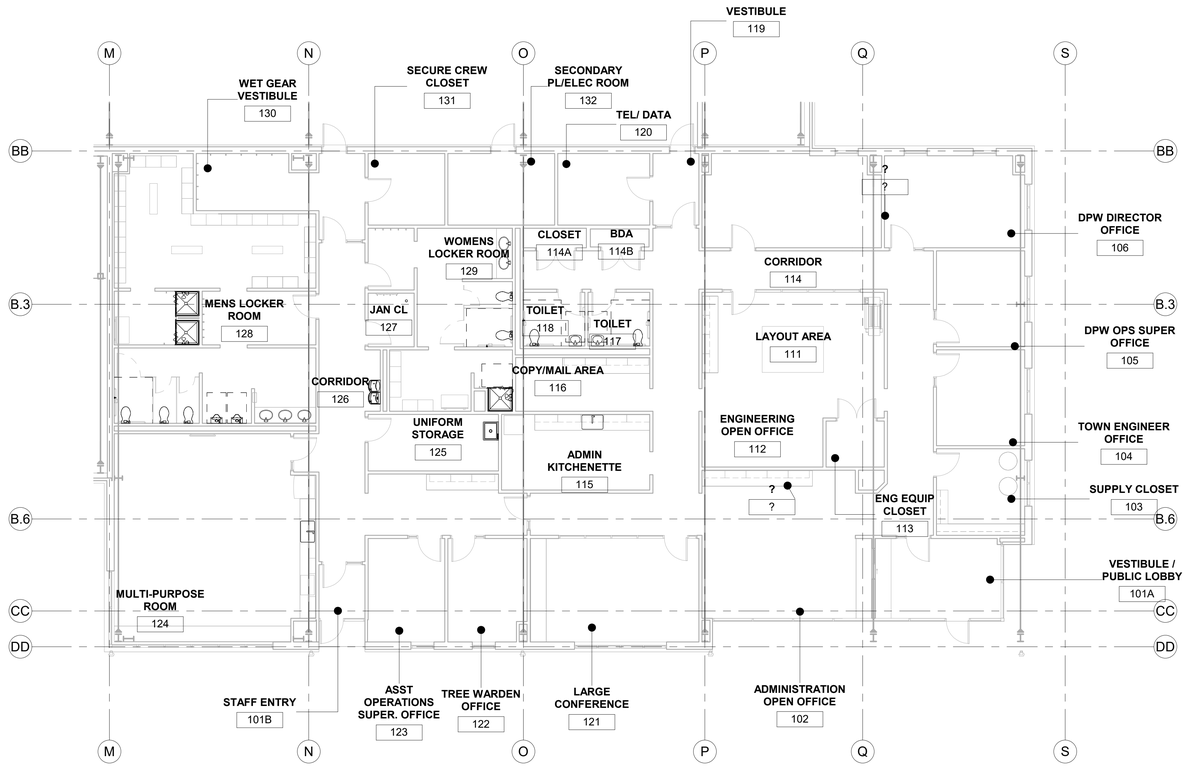
FIRE PROTECTION LEGENDS, NOTES AND ABBREVIATIONS

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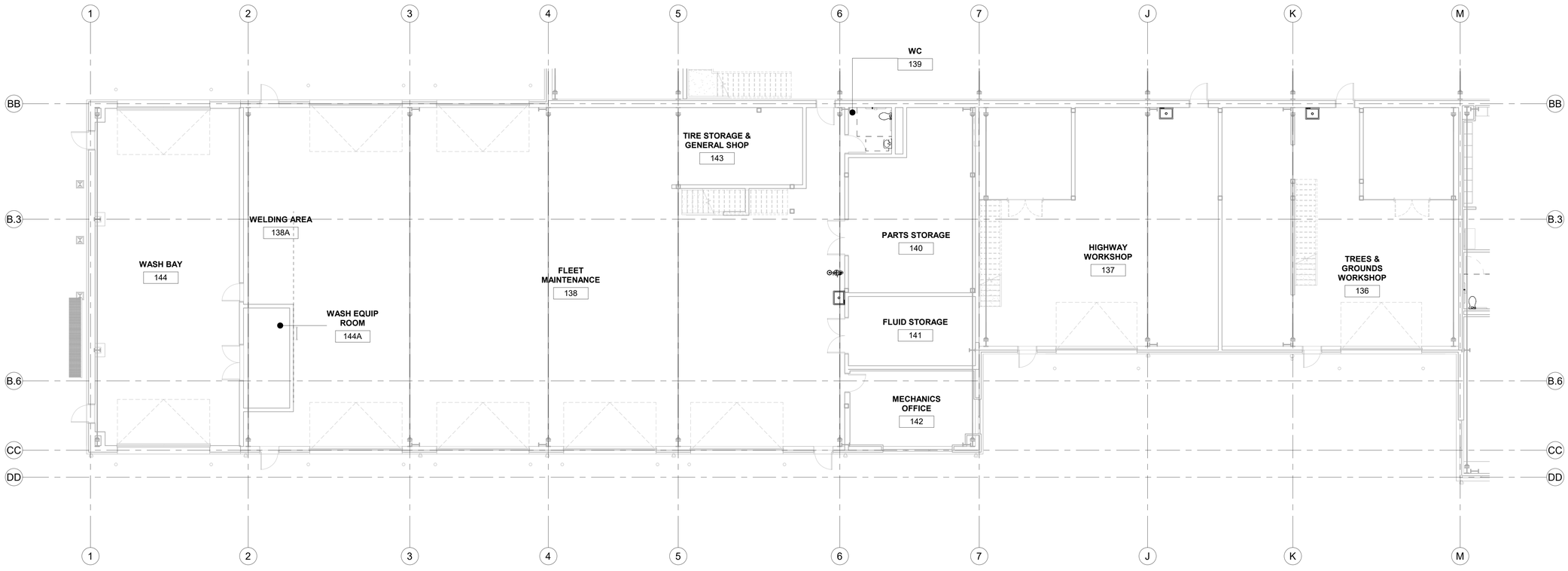
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2 FP101 LEVEL 1_ADMIN
1/8" = 1'-0"
0 6" 1' 2'



1 FP101 LEVEL 1_FLEET MAINTENANCE
1/8" = 1'-0"
0 6" 1' 2'

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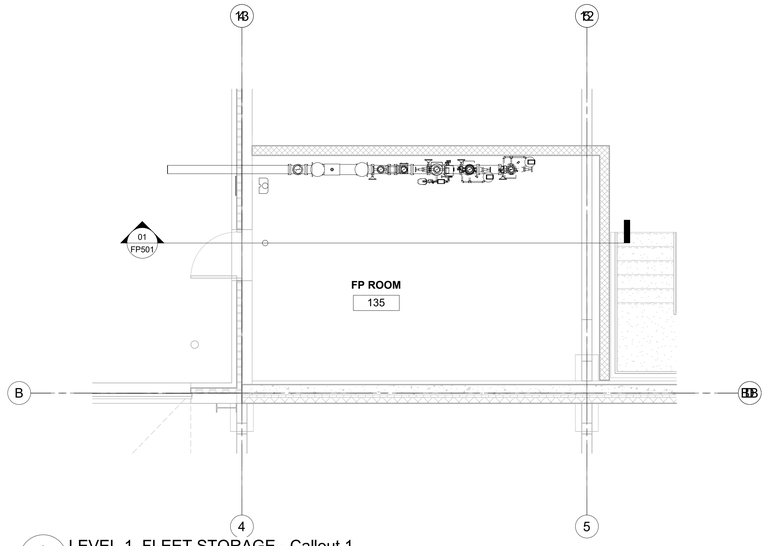
FIRST FLOOR - ADMIN & FLEET MAINTENANCE- FIRE PROTECTION

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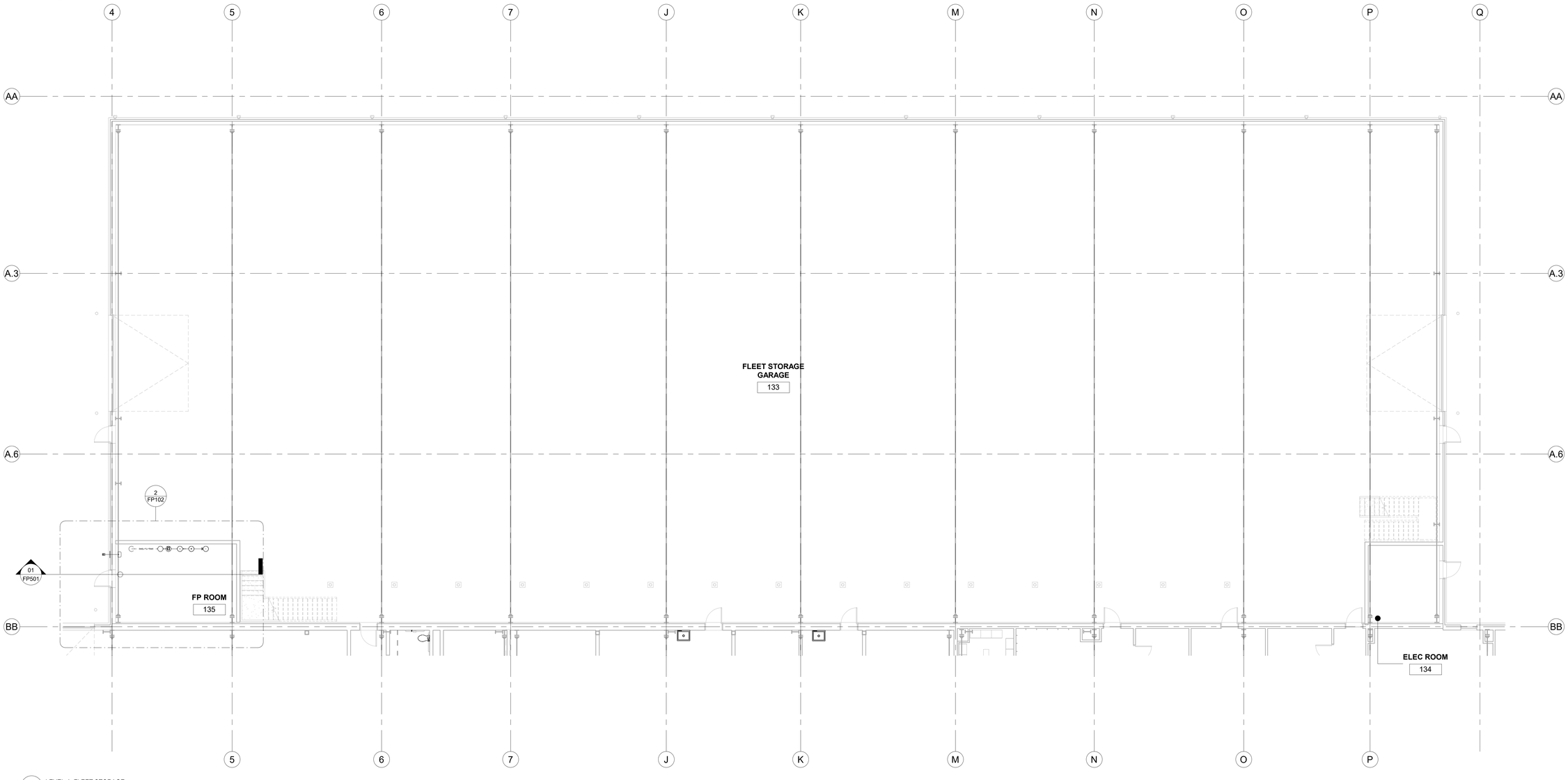
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2 FP102 LEVEL-1_FLEET STORAGE - Callout 1
1/4" = 1'-0"



1 FP102 LEVEL-1_FLEET STORAGE
1/8" = 1'-0"
0 6" 1' 2'

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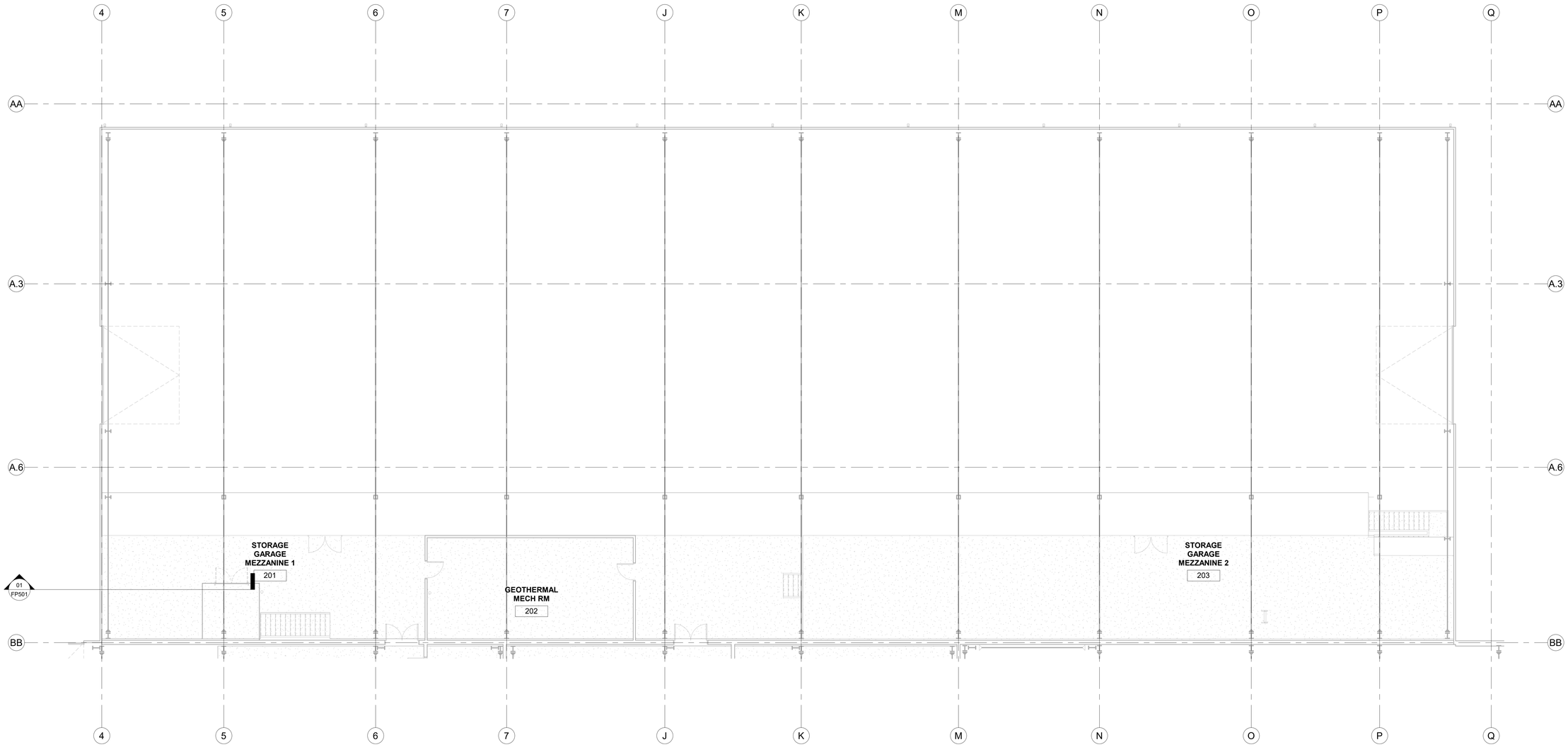
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FIRST FLOOR - FLEET STORAGE - FIRE PROTECTION

Sheet Number:

FP102

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1 FP104 MEZZANINE _ FLEET STORAGE
1/8" = 1'-0"
0 6" 1' 2'

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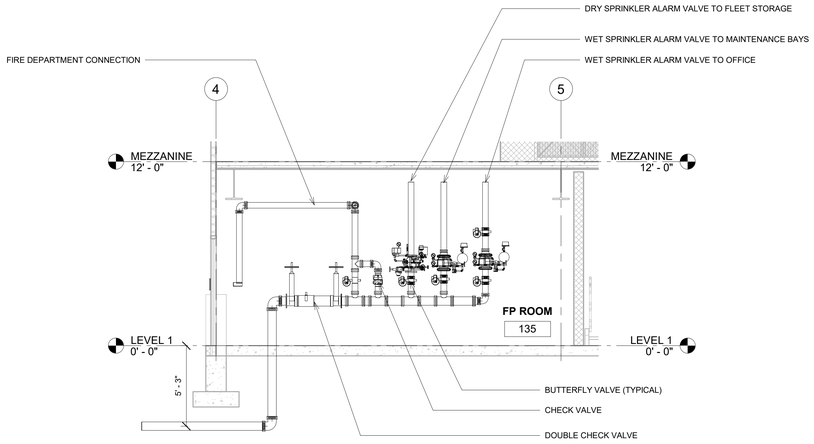
MEZZANINE FLOOR - FLEET STORAGE - FIRE PROTECTION

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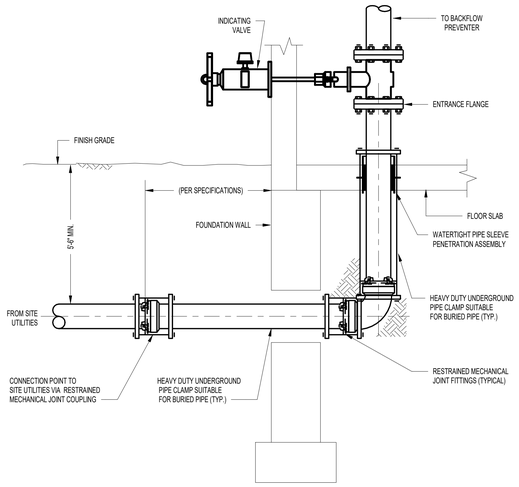
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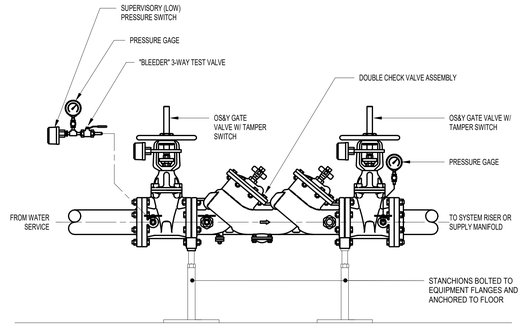
01 FIRE PROTECTION RISERS SECTION DETAIL

FP501 1/4" = 1'-0"



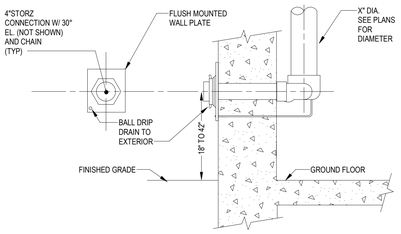
002 FIRE SERVICE ENTRANCE

FP501 12" = 1'-0"



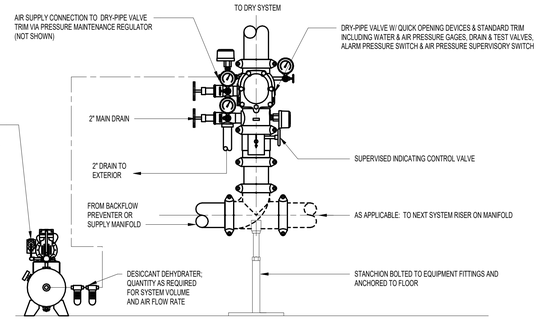
03 DOUBLE CHECK VALVE ASSEMBLY DETAIL

FP501 N.T.S



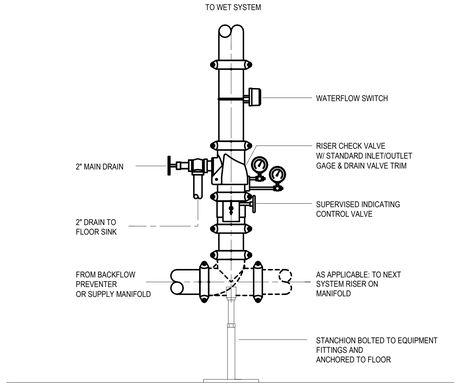
04 FIRE DEPARTMENT CONNECTION DETAIL

FP501 N.T.S



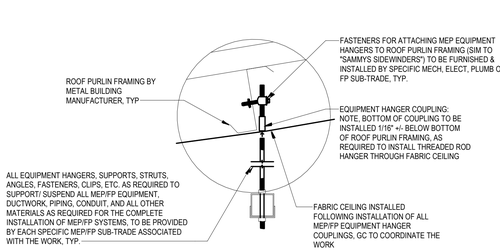
05 DRY SYSTEM RISER

FP501 12" = 1'-0"



06 WET SYSTEM RISER

FP501 12" = 1'-0"

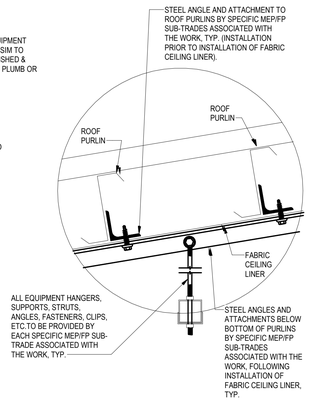


GENERAL NOTES:

1. ALL MECHANICAL, ELECTRICAL, PLUMBING & FIRE-PTROTECTION (MEP/FP), ETC. SUB-TRADES SHALL PROVIDE AND INSTALL ALL SUPPLEMENTAL STEEL SUPPORTS, ANGLES, STRUTS, CLIPS, ATTACHMENTS, ETC. AS NECESSARY FOR THE COMPLETE INSTALLATION AND SUPPORT OF ALL BUILDING MEP/FP SYSTEMS.
2. ALL MEP/FP SUB-TRADES SHALL SIZE ALL SUPPORTS, ANGLES, CONNECTORS, ETC, AS REQUIRED TO SUPPORT THE LOADS OF THE SUSPENDED SYSTEMS AND SHALL COORDINATE SIZES AND LOCATIONS, AND SHALL OBTAIN APPROVAL FROM THE METAL BUILDING MANUFACTURER.
3. ALL FASTENERS, COUPLINGS, ANGLES, ETC. ATTACHED TO THE BUILDING ROOF PURLIN FRAMING ABOVE THE BOTTOM OF THE PURLIN, TO BE INSTALLED PRIOR TO INSTALLATION OF THE CEILING FABRIC LINER. SUSPENDED SUPPORTS INSTALLED BELOW THE BOTTOM OF THE PURLIN FRAMING TO BE INSTALLED FOLLOWING INSTALLATION OF THE CEILING LINER. GENERAL CONTRACTOR SHALL COORDINATE THE SEQUENCE AND INSTALLATION OF THE WORK.
4. ALL EQUIPMENT LOADS/ REACTIONS IMPOSED ON THE METAL BUILDING FRAMING TO BE REVIEWED AND APPROVED BY THE METAL BUILDING MANUFACTURER. ALL SUPPLEMENTAL BUILDING FRAMING MEMBERS, AS REQUIRED TO SUPPORT MECHANICAL/ ELECTRICAL/ FIRE PROTECTION EQUIPMENT, AS DETERMINED BY THE PREFABRICATED METAL BUILDING DESIGN, IN CONSIDERATION OF ALL EQUIPMENT-IMPOSED LOADS TO THE BUILDING, TO BE PROVIDED BY METAL BUILDING MANUFACTURER.

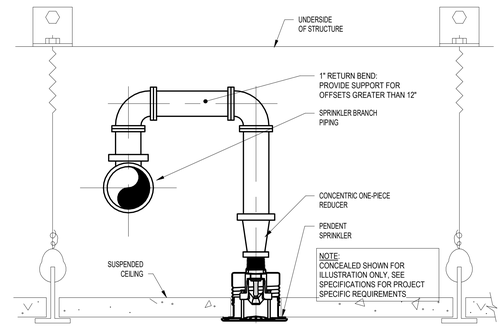
07 ROOF PURLIN

FP501 12" = 1'-0"



08 UPRIGHT SPRINKLER HEAD

FP501 12" = 1'-0"



09 PENDANT SPRINKLER BRANCH

FP501 12" = 1'-0"

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FIRE PROTECTION DETAILS

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ABBREVIATIONS

Ø	DIAMETER	HT	HEIGHT
ABV	ABOVE	HTG	HEATING
ACT	ACOUSTICAL CEILING TILE	HW	HOT WATER
AD	ACCESS DOOR	HWR	HOT WATER RETURN
ADD	ADDENDUM	ID	INSIDE DIAMTER
ADD'L	ADDITIONAL	IN	INCH
AFF	ABOVE FINISHED FLOOR	INV	INVERT
AFR	ABOVE FINISHED ROOF	KW	KILOWATT
ALT	ALTERNATE	L	LENGTH
AP	ACCESS PANEL	LAV	LAVATORY-FIXTURE
ARCH	ARCHITECT/ARCHITECTURAL	LB	POUND
AVG	AVERAGE	LF	LINEAR FEET
BFC	BELOW FINISHED CEILING	LP	LOW POINT
BFF	BELOW FINISHED FLOOR	LPC	LIMIT OF PLUMBING CONTRACTOR
BFP	BACKFLOW PREVENTER	MAX	MAXIMUM
BLDG	BUILDING	MECH	MECHANICAL
BOP	BOTTOM OF PIPE	MEZZ	MEZZANINE
BOS	BOTTOM OF STEEL	MFR	MANUFACTURER
BSMT	BASEMENT	MIN	MINIMUM
CA	COMPRESSED AIR	MISC	MISCELLANEOUS
CI	CAST IRON	MTR	MOTOR
CL	CENTERLINE	MU	MAKE-UP WATER
CLG	CEILING	N/A	NOT APPLICABLE
CO	CLEAN OUT	NB	NICKEL BRONZE
COL	COLUMN	NC	NORMALLY CLOSED
CONC	CONCRETE	NIC	NOT IN CONTRACT
CONT	CONTINUATION	NG	NATURAL GAS
CONTR	CONTRACTOR	NO	NUMBER
CONN	CONNECTION	NO	NORMALLY OPEN
CP	CHROME PLATED	NTS	NOT TO SCALE
CTW	CONNECT TO EXISITNG	OC	ON CENTER
CW	COLD WATER	OCC	OCCUPIED
D	DRAIN	OD	OUTSIDE DIAMETER
DEG	DEGREE	P	PUMP
DIA	DIAMETER	PC	PLUMBING CONTRACTOR
DIM	DIMENSION	PH	PHASE
DN	DOWN	PLBG	PLUMBING
DWG	DRAWING	POS	PROVIDED BY OTHER SECTION
EA	EACH	PRESS	PRESSURE
EC	ELECTRICAL CONTRACTOR	PRV	PRESSURE REDUCING VALVE
ELEC	ELECTRICAL	PSI	POUNDS PER SQUARE INCH
ELEV	ELEVATION	PSIG	PSI GAUGE
EQUIP	EQUIPMENT	PWR	POWER
ET	EXPANSION TANK	QTY	QUANTITY
EVAP	EVAPORATOR	R	RADIUS
EWH	ELECTRIC WATER HEATER	RM	ROOM
EXIST	EXISTING	RPM	REVOLUTIONS PER MINUTE
FA	FREE AREA	SA	SHOCK ABSORBER
FC	FLEXIBLE CONNECTION	SF	SQUARE FOOT
FCO	FLOOR CLEANOUT	SPECS	SPECIFICAITONS
FFE	FINISHED FLOOR ELEVATION	SS	STAINLESS STEEL
P-#	FIXTURE NUMBER	TOP	TOP OF PIPE
FL	FLOOR	TOS	TOP OF STEEL
FS	FLOW SWITCH	TOT	TOTAL
FT	FOOT/FEET	TYP	TYPICAL
FV	FLUSH VALVE	U	URINAL-FIXTURE IDENTIFICATION
G	GAS	UG	UNDERGROUND
GA	GAUGE	UNO	UNLESS NOTED OTHERWISE
GAL	GALLON	V	VENT
GALV	GALVANIZED	V	VENT STACK
GC	GENERAL CONTRACTOR	V	VOLTS
GWH	GAS WATER HEATER	VEL	VELOCITY
GPH	GALLONS PER HOUR	VFD	VARIABLE FREQUENCY DRIVE
GPM	GALLONS PER MINUTE	VTR	VENT THROUGH ROOF
GRD	GRADE	W	WASTE
GWB	GYPSUM WALL BOARD	WH	WALL HYDRANT
HB	HOSE BIB	W	WIDTH
HC	HANDICAPPED	W	WITH
HD	HEAD	W/O	WITHOUT
HP	HORSE POWER	WC	WATER CLOSET-FIXTURE
HP	HIGH POINT	WG	WATER GAUGE
HR	HOUR	°F	DEGREES FAHRENHEIT

NOTE: SOME OR ALL SYMBOLS MAY BE USED ON THIS PROJECT

PLUMBING GENERAL NOTES

1. PLUMBING GENERAL NOTES APPLY TO ALL PLUMBING DRAWINGS. THE WORD "CONTRACTOR" USED IN "PLUMBING" WORK SHALL MEAN THE PLUMBING OR PLUMBING CONTRACTOR.
2. PLUMBING WORK OF THIS PROJECT REQUIRES FILED SUB-BIDS. FOR ADDITIONAL INFORMATION REFER TO SPECIFICATIONS SECTION 22 00 01 - PLUMBING SUB-BID REQUIREMENTS.
3. ALL PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH 248 CMR 10.00: UNIFORM STATE PLUMBING CODE, 248 CMR 4.00: MASSACHUSETTS FUEL GAS CODE, AND OTHER APPLICABLE STATE AND LOCAL CODES AND STANDARDS.
4. ALL PLUMBING EQUIPMENT, FIXTURES AND MATERIALS SHALL BE PRODUCT APPROVED BY THE MASSACHUSETTS BOARD OF REGISTRATION OF PLUMBING AND GAS FITTERS.
5. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND PAY ALL FEES ASSOCIATED WITH THIS WORK PRIOR TO COMMENCEMENT.
6. THE CONTRACTOR SHALL INSPECT THE EXISTING FIELD CONDITIONS AT THE SITE PRIOR TO THE START OF ANY WORK TO DETERMINE WHAT EFFECT THE EXISTING CONDITIONS WILL HAVE ON HIS WORK. POTENTIAL PROBLEM AREAS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
7. PLUMBING CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN ALL SCAFFOLDING, HOISTING EQUIPMENT, DERRICKS, ETC., NECESSARY FOR INSTALLATION WORK.
8. CARE SHALL BE TAKEN DURING THE INSTALLATION TO NOT DAMAGE OR INTERRUPT BUILDING SYSTEMS AND SERVICES THAT ARE ALREADY INSTALLED. DAMAGE TO SUCH SYSTEMS OR EQUIPMENT CAUSED BY THIS CONTRACTOR DURING INSTALLATION SHALL BE REPAIRED AND/OR REPLACED AT THIS CONTRACTOR'S EXPENSE TO THE COMPLETE SATISFACTION OF THE BUILDING OWNER.
9. LOCATIONS OF PIPING AND EQUIPMENT AS INDICATED ON THE DRAWING, ARE APPROXIMATE AND SUBJECT TO MINOR ADJUSTMENTS IN THE FIELD. WORK SHALL BE COORDINATED WITH ALL OTHER TRADES TO AVOID INTERFERENCE IN THE FIELD. OFFSETS IN PIPING AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
10. VERIFY ALL EQUIPMENT AND PLUMBING FIXTURES CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE PIPE TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
11. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, UNLESS SPECIFICALLY INDICATED AS REUSED.
12. ACCESS PANELS SHALL BE PROVIDED TO ALLOW FOR SERVICING TRAP PRIMERS AND ALL CONCEALED PLUMBING EQUIPMENT, CLEANOUTS, AND VALVES. ACCESS PANELS FOR PLUMBING SYSTEMS SHALL BE FURNISHED BY THE PLUMBING CONTRACTOR AND INSTALLED BY THE GENERAL CONTRACTOR.
13. PLUMBING CONTRACTOR SHALL PROVIDE WATERTIGHT SLEEVES AND SEALS FOR ALL PIPING PENETRATIONS THROUGH FLOORS AND OUTSIDE WALLS.
14. IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW ALL PENETRATIONS AND SLEEVES THROUGH FIRE RATED WALLS, FLOORS, AND BARRIERS. THE CONTRACTOR SHALL COORDINATE ALL PENETRATIONS WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR THE RATINGS OF ALL WALLS, FLOORS, AND BARRIERS.
15. THE FIRE PROOFING OF THE BUILDING STRUCTURE IS NOT TO BE REMOVED FOR THE INSTALLATION OF HANGERS, SUPPORTS, PIPING, ETC. IF FIRE PROOFING IS DAMAGED, IT SHALL BE REPAIRED AT THE EXPENSE OF THE TRADE.
16. NO STRUCTURAL MEMBERS SHALL BE CUT OR DRILLED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.
17. THE CONTRACTOR SHALL TEST AND CALIBRATE ALL CONTROLS AND VERIFY ALL ARE FULLY FUNCTIONAL AND SUBMIT DOCUMENTATION.
18. THE CONTRACTOR SHALL PROVIDE AND SUBMIT DOCUMENTATION FOR PIPING PRESSURE AND LEAKAGE TESTS, OPERATING AND MAINTENANCE MANUALS, AND AS BUILT DRAWINGS.
19. MANY EQUIPMENT SCHEDULES DO NOT LIST QUANTITIES. CONTRACTOR SHALL REFER TO ALL DRAWINGS AND PROVIDE THE REQUIRED QUANTITIES FOR ALL COMPONENTS.
20. THE CONTRACTOR SHALL COORDINATE WITH ALL TRADES AND PREPARE COORDINATION DRAWINGS PRIOR TO INSTALLATION. COORDINATION DRAWINGS SHALL BE SUBMITTED TO THE OWNERS REPRESENTATIVE FOR REVIEW PRIOR TO INSTALLATION.
21. FINAL PRODUCT SHALL BE A COMPLETE AND FUNCTIONING SYSTEM, AND SHALL CONFORM TO ALL REQUIREMENTS OF APPLICABLE FEDERAL, STATE, AND LOCAL CODES.
22. ALL PLUMBING VENT TERMINALS SHALL BE LOCATED NO LESS THAN 25 FEET HORIZONTALLY FROM ALL FRESH AIR INTAKES, UNLESS SPECIFICALLY INDICATED OTHERWISE.
23. ALL GAS PRESSURE REGULATOR VENTS TERMINALS SHALL BE LOCATED NO LESS THAN 10 FEET HORIZONTALLY FROM ALL FORCED FRESH AIR INTAKES.
24. REFER TO THE PROJECT SPECIFICATIONS FOR FURTHER REQUIREMENTS.

PLUMBING PIPING NOTES

1. FIELD VERIFY ALL WATER, WASTE, VENT, COMPRESSED AIR, AND GAS PIPING CONNECTIONS AND PROVIDE NEW CONNECTIONS AS REQUIRED FOR PROPERLY OPERATING SYSTEMS.
2. RUN WATER PIPE ON THE WARM SIDE OF BUILDING INSULATION. NO WATER PIPING SHALL BE RUN IN EXTERIOR WALLS.
3. PROVIDE DRAWOFFS WITH BALL VALVE, HOSE END VACUUM BREAKER, CAP AND CHAIN AT ALL DOMESTIC WATER LOW POINTS AND PITCH PIPING TO DRAIN.
4. PROVIDE SHOCK ABSORBERS AS SHOWN ON DRAWINGS AND AS REQUIRED TO AVOID WATER HAMMER. SIZE SHALL CONFORM TO P.D.I. STANDARDS.
5. PROVIDE ISOLATION VALVES AT ALL PLUMBING FIXTURES.
6. HOT WATER TAKEOFFS SHALL HAVE NOT LESS THAN THREE ELBOW SWINGS.
7. ALL PIPING SHALL BE SUPPORTED FROM BUILDING STRUCTURES. INSTALL HORIZONTAL RUNS OF WATER AND COMPRESSED AIR PIPING AS HIGH AS POSSIBLE OR AS INDICATED ON DRAWINGS.
8. ROUTE DOMESTIC WATER AND SANITARY SEWER SERVICES TO SITE UTILITIES 10'-0" FROM BUILDING, UNLESS NOTED OTHERWISE. FIELD VERIFY LOCATION AND INVERTS OF SITE UTILITIES PRIOR TO INSTALLATION OF PIPING.
9. MINIMUM PITCH FOR SANITARY PIPING 4" AND GREATER SHALL BE AT 1/8" PER FOOT. MINIMUM PITCH FOR SANITARY PIPING 3" AND SMALLER SHALL BE AT 1/4" PER FOOT.
10. ALL INVERT ELEVATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY AND SHALL BE DETERMINED IN FIELD IN COORDINATION WITH THE STRUCTURAL AND CIVIL DRAWINGS. REFER TO CIVIL PLANS FOR SITE CONNECTIONS.
11. PLUMBING CONTRACTOR IS RESPONSIBLE FOR OIL WATER SEPARATOR, COORDINATE WITH CIVIL FOR LOCATION. PROVIDE OIL WASTE AND VENT PIPING BETWEEN THE BUILDING AND SEPARATOR.
12. WASTE AND VENT PIPING UNDERGROUND BELOW SLAB AND THROUGH THE SLAB SHALL BE 2" MINIMUM.
13. PROVIDE CLEANOUTS IN ACCESSIBLE LOCATIONS AT THE BASE OF ALL PLUMBING RISERS, WHERE SHOWN ON THE PLANS AND REQUIRED BY THE CODE.
14. DIELECTRIC INSULATING FITTINGS SHALL BE USED WHERE PIPES OF DISSIMILAR METALS ARE CONNECTED.
15. AN AIR GAP OF AT LEAST TWICE THE EFFECTIVE DIAMETER OF THE DRAIN SERVICED SHALL BE PROVIDED ON ALL EQUIPMENT DRAINS PIPED TO FLOOR DRAINS.
16. PROVIDE P-TRAPS AND TRAP PRIMERS FOR ALL FLOOR DRAINS, FLOOR SINKS, AND TRENCH DRAINS, UNLESS INDICATED OTHERWISE. PROVIDE 1/2" COLD WATER TUBING UNDER SLAB FROM TRAP PRIMER TO FLOOR DRAINS (THIS TUBING IS NOT SHOWN ON THE PLANS).
17. FOR ALL PIPING SIZES NOT SHOWN ON PLANS REFER TO DETAILS AND DIAGRAMS. WHEN SECTION OF PIPING IS NOT LABELED FOR SIZE, THE LARGER SIZE INDICATED ON THE CONNECTED PIPE SHALL PREVAIL.

CALLOUT SYMBOLS

- CONNECT TO EXISTING
- LIMIT OF DEMOLITION
- SECTION DESIGNATION (A / H2.0)
- SECTION SHEET NUMBER
- REVISION NUMBER (1)
- REMOVE EXISTING ITEM
- FIXTURE TAG (WC-XX) (REFER TO SCHEDULES FOR DETAILS)

NOTE: SOME OR ALL SYMBOLS MAY BE USED ON THIS PROJECT

PIPING LEGEND

- GATE VALVE (OUTSIDE SCREW AND YOKE UNLESS SPECIFIED OTHERWISE)
- BALL VALVE
- BUTTERFLY VALVE
- DRAIN VALVE WITH CAP AND CHAIN
- PLUG VALVE
- PRESSURE REDUCING VALVE
- CHECK VALVE (SILENT TYPE ON PUMP DISCHARGE)
- STRAINER WITH HOSE END BLOWOFF VALVE, CAP AND CHAIN
- RELIEF/SAFETY VALVE
- UNION
- BLIND FLANGE
- PIPE - CAPPED
- DIRECTION OF FLOW
- FLEXIBLE CONNECTOR
- PIPE CONNECTION - TOP
- PIPE CONNECTION - BOTTOM
- PIPE - DOWN
- PIPE - UP
- R — PITCH OF PIPE - (R) RISE OR (D) DROP
- REDUCER - CONCENTRIC
- REDUCER - ECCENTRIC
- PIPE BREAK (SINGLE LINE)
- DIRT LEG
- CO — CLEANOUT
- PIPE - UP (DOUBLE LINE)
- PIPE - DOWN (DOUBLE LINE)
- PIPE BREAK (DOUBLE LINE)
- FLOOR DRAIN
- TP — TRAP PRIMER
- FCO FLOOR CLEANOUT
- P-TRAP
- HB — HOSE BIBB (INTERIOR)
- WH — WALL HYDRANT (EXTERIOR)
- CAO — COMPRESSED AIR OUTLET

NOTE: SOME OR ALL SYMBOLS MAY BE USED ON THIS PROJECT

PIPING ABBREVIATIONS

CA	COMPRESSED AIR
CW	COLD WATER
G	NATURAL GAS
LPG	LIQUID PROPANE GAS
HW	HOT WATER
HW 140	HOT WATER 140
HW-R	HOT WATER RECIRCULATION
HW-R 140	HOT WATER RECIRCULATION 140
OW	OIL WASTE ABOVE GROUND
OW	OIL WASTE UNDERGROUND
OV	OIL VENT ABOVE GROUND
OV	OIL VENT UNDERGROUND
W	SOIL OR WASTE ABOVE GROUND
W	SOIL OR WASTE UNDERGROUND
SD	STORM DRAINAGE ABOVE GROUND
SD	STORM DRAINAGE UNDERGROUND
OSD	OVERFLOW STORM DRAINAGE
TW	TEMPERED WATER
TWR	TEMPERED WATER RETURN
TP	TRAP PRIMER ABOVE GROUND
TP	TRAP PRIMER UNDERGROUND
V	VENT ABOVE GROUND
V	VENT UNDERGROUND
(NAME)	REMOVE EXISTING PIPING

NOTE: SOME OR ALL SYMBOLS MAY BE USED ON THIS PROJECT

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Approved By:	Approver
W&S Project No.:	ENG22-0604
W&S File No.:	XXX

Drawing Title:

PLUMBING LEGENDS, NOTES AND ABBREVIATIONS

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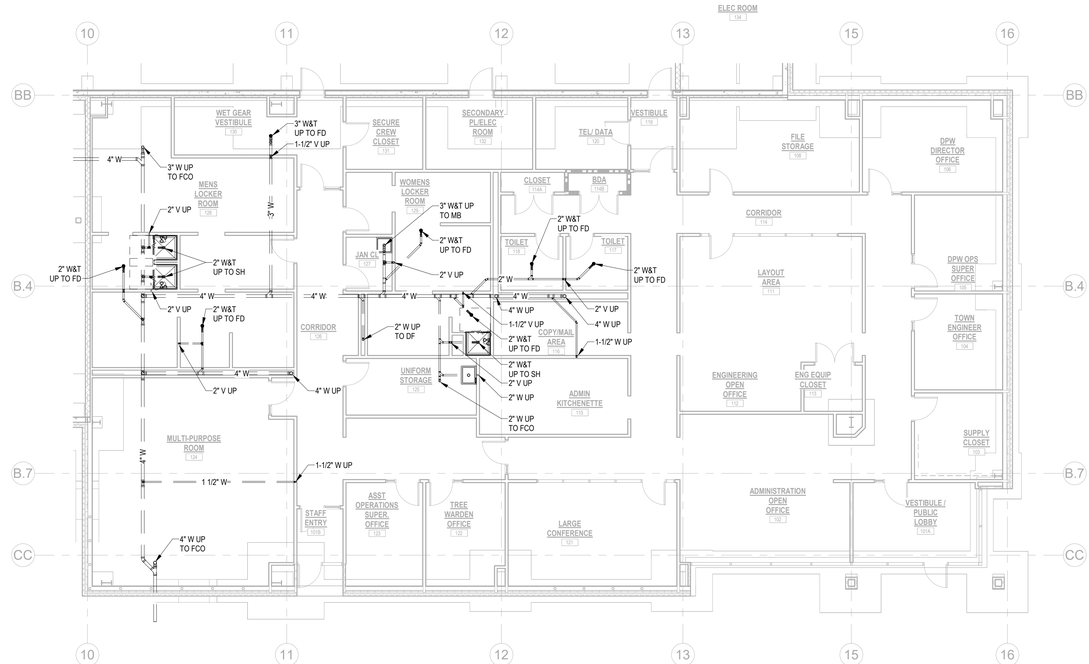
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PLUMBING NEW WORK NOTES

1. NEW WORK NOTES SHALL APPLY TO ALL PLUMBING NEW WORK DRAWINGS.
2. EXISTING PIPE SIZES INDICATED ARE APPROXIMATE. FIELD VERIFY EXISTING PIPE SIZES AFTER INSULATION IS REMOVED. PROVIDE TRANSITIONS FROM EXISTING PIPING TO NEW PIPING AS REQUIRED.
3. REFER TO PLUMBING GENERAL NOTES ON XXX FOR NEW PLUMBING WORK PHASING REQUIREMENTS.
4. LOCATE , PIPING AND PLUMBING EQUIPMENT OUTSIDE OF THE REQUIRED ELECTRICAL CLEARANCES ABOVE/AROUND ELECTRICAL PANELS. TRANSFORMERS, AND OTHER ELECTRICAL EQUIPMENT.
5. FIRE SEAL AROUND PIPING PENETRATIONS OF FIRE RATED WALLS. REFER TO SPECIFICATIONS.
6. PROVIDE SLEEVES AND/OR OPENINGS TO RUN PIPES THROUGH FOUNDATIONS, FLOORS, WALLS, AND ROOF.
7. ADJUST PIPING SIZES TO PROPERLY CONNECT TO PLUMBING EQUIPMENT.
8. PIPE SIZES SHOWN SHALL BE CONTINUED IN THE DIRECTION OF FLOW UNTIL ANOTHER SIZE IS SHOWN.
9. FOR DETAILS, EQUIPMENT CONNECTIONS, AND PIPE SIZES NOT SHOWN ON THE SEGMENTS, REFER TO DETAILS, SCHEDULES, AND SPECIFICATIONS.
10. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE RESPECTIVE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS, AT A LEVEL OF QUALITY AND WORKMANSHIP CONSISTENT WITH THE SPECIFICATIONS.
11. INSTALL ALL SENSORS AND CONTROLS AT LOCATIONS AWAY FROM ANY DEVICE OR EQUIPMENT THAT CAN ADVERSELY IMPACT OPERATION, FUNCTION, OR LONGEVITY OF THE SENSOR AND/OR CONTROL.
12. INSTALL EXPOSED PIPING AS HIGH AS PRACTICAL IN ROOMS WITHOUT CEILINGS.
13. FIELD VERIFY ALL NEW WATER, WASTE, AND VENT PIPING CONNECTIONS AND PROVIDE NEW CONNECTIONS AS REQUIRED FOR PROPERLY OPERATING SYSTEMS.
14. PITCH UNDERFLOOR SANITARY WASTE PIPING AT 1/4" PER FOOT, UNLESS NOTED OTHERWISE.
15. PITCH UNDERFLOOR STORM PIPING 3" AND GREATER AT 1/8" PER FOOT, UNLESS NOTED OTHERWISE. PITCH ALL OTHER STORM PIPING AT 1/4" PER FOOT UNLESS OTHERWISE NOTED.
16. FIELD VERIFY LOCATION AND INVERTS OF SITE UTILITIES PRIOR TO INSTALLATION.
17. ROUTE DOMESTIC WATER, FIRE PROTECTION, SANITARY SEWER, AND STORM SEWER SERVICES TO SITE UTILITIES 5'-0" FROM BUILDING UNLESS NOTED OTHERWISE. REFER TO CIVIL PLANS.
18. WASTE AND VENT PIPING BELOW FLOOR AND THROUGH FLOOR SHALL BE 2" MINIMUM.
19. PROVIDE CLEANOUT IN ACCESSIBLE LOCATION AT THE BASE OF ALL PLUMBING RISERS.
20. PROVIDE ISOLATION VAVLES AT ALL PLUMBING FIXTURES, ALL BRANCHES, AND RISERS/DROPS.



1 UNDERGROUND PLAN - ADMIN
1/8" = 1'-0"

0 4' 8' 16'

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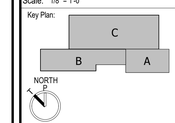
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Scale: 1/8" = 1'-0"

Key Plan:



Date:	02/25/25
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Reviewed By:	AH
Approved By:	MBR
W&S Project No.:	ENG22-0604
W&S File No.:	XXX

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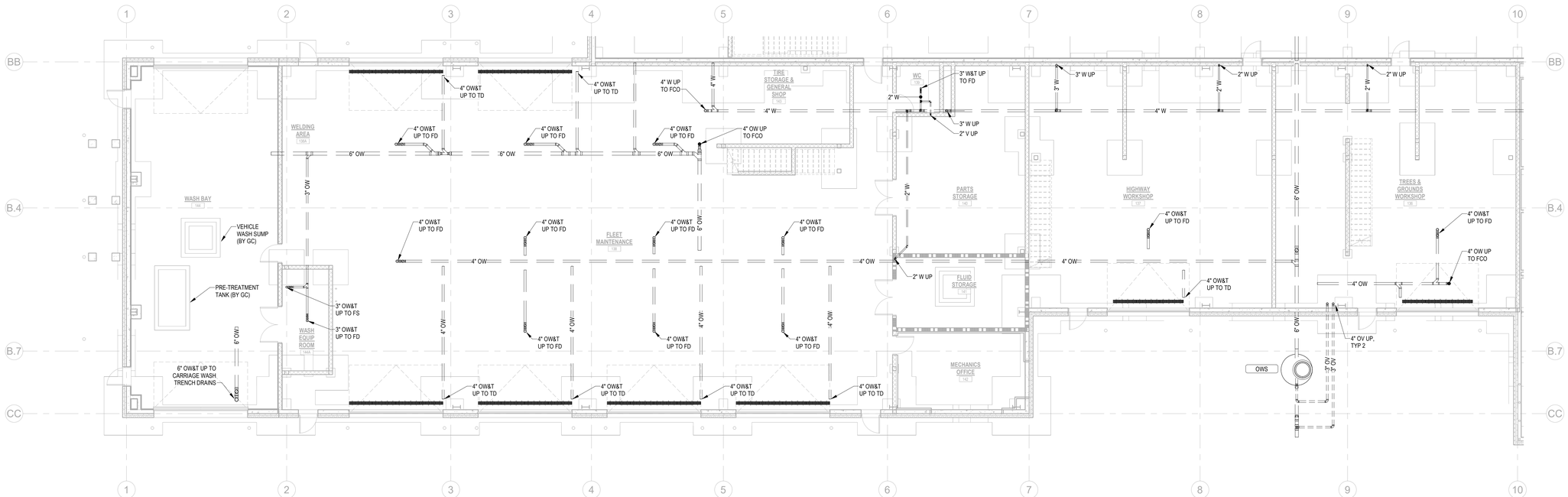
UNDERGROUND ADMIN PLAN - PART A

Sheet Number:

P101

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1 UNDERGROUND PLAN - FLEET MAINTENANCE AND SHOPS
1/8" = 1'-0"

0 4' 8' 16'

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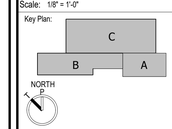
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Key Plan:



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Approved By:	MBR
W&S Project No.:	ENG22-0604
W&S File No.:	XXX

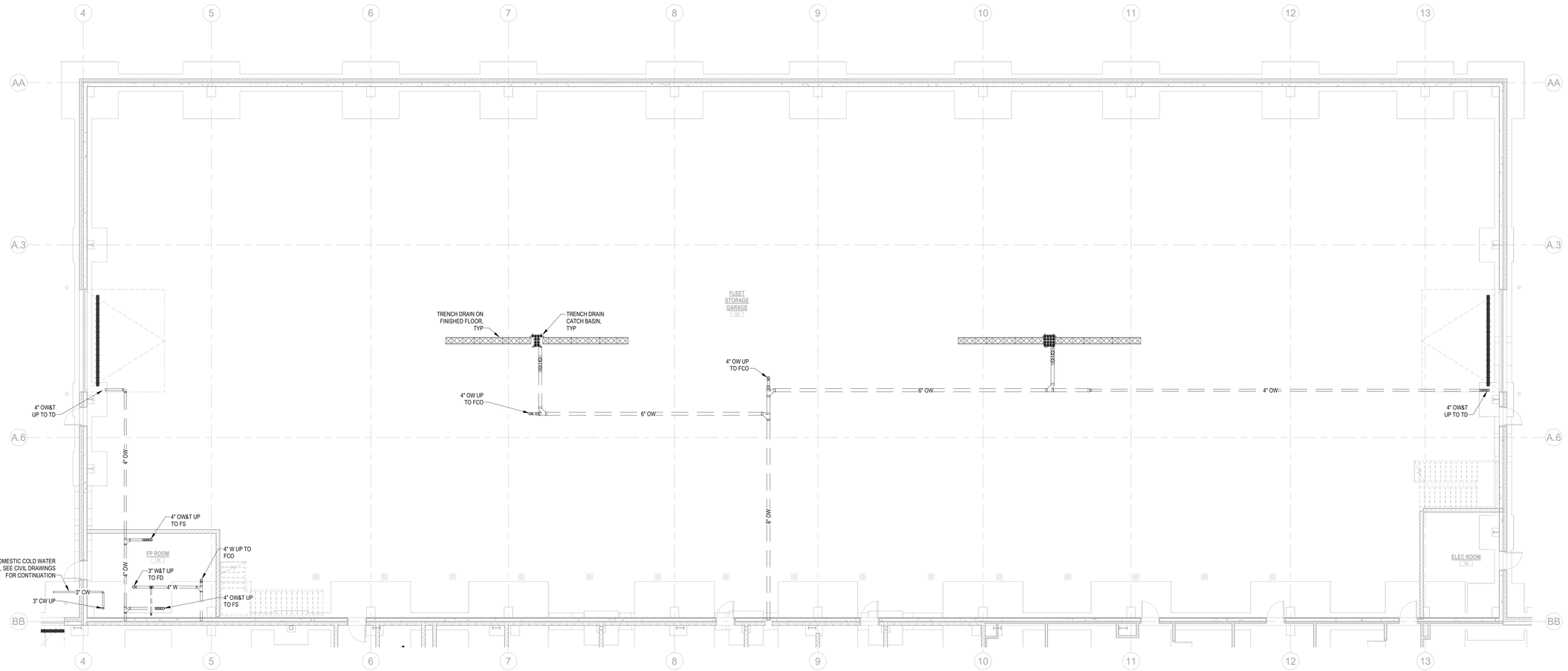
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UNDERGROUND FLEET MAINTENANCE AND SHOPS PLAN - PART B

Sheet Number:

P102

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1 UNDERGROUND PLAN - FLEET STORAGE
1/8" = 1'-0"

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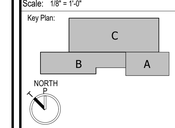
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Scale: 1/8" = 1'-0"

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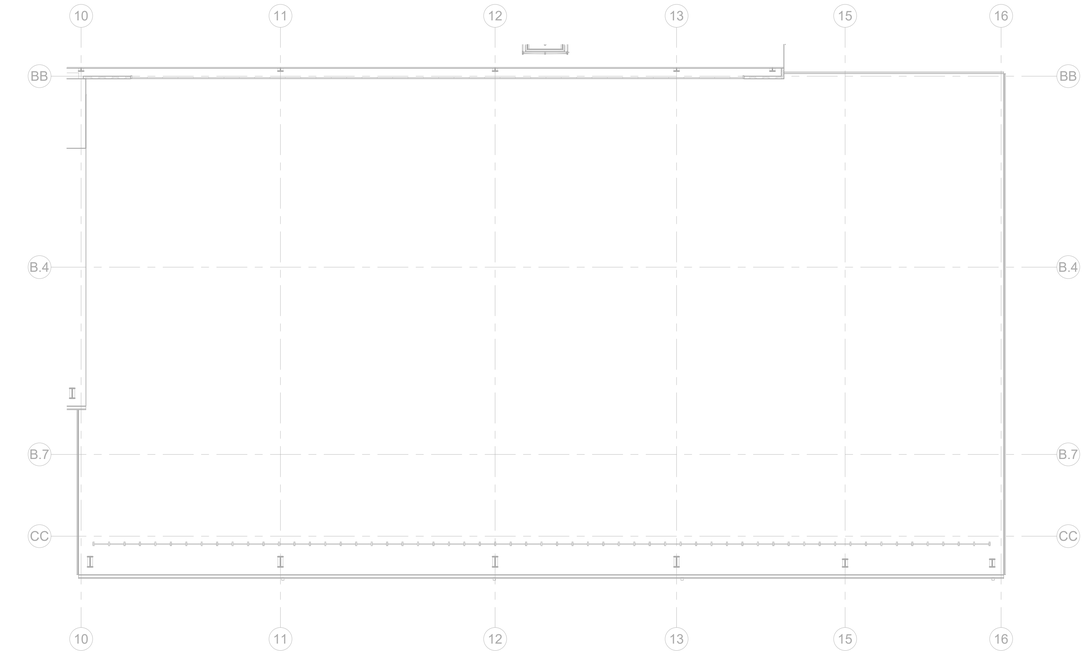
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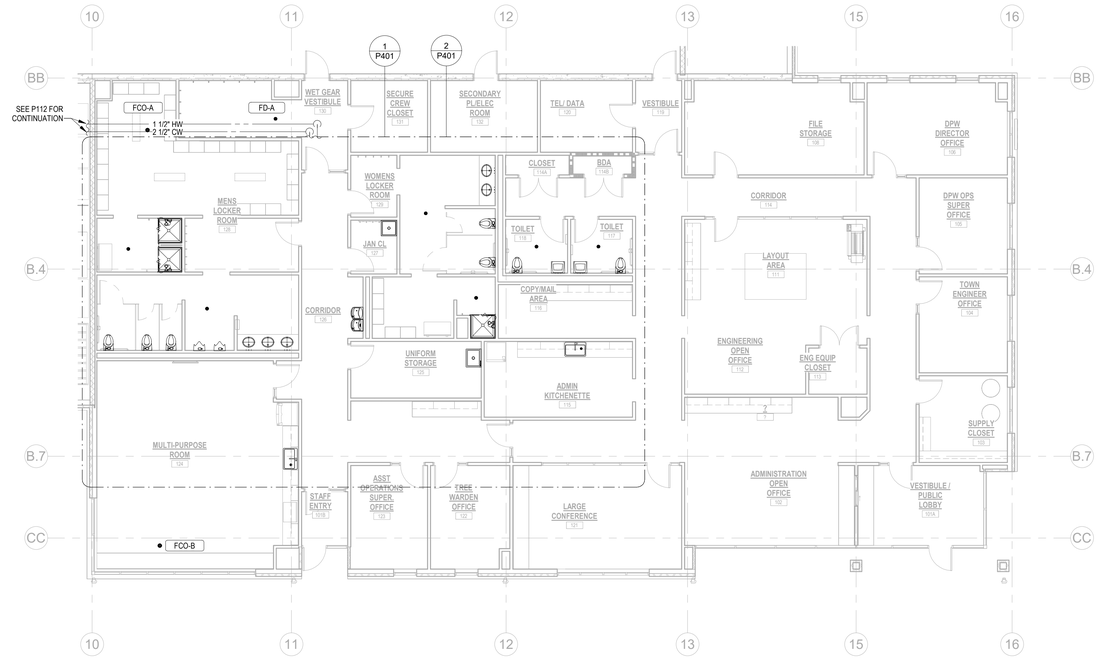
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2 ROOF PLAN - ADMIN
1/8" = 1'-0"



1 FLOOR PLAN - ADMIN
1/8" = 1'-0"

0 4' 8' 16'

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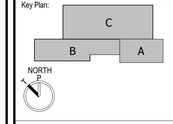
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Scale: 1/8" = 1'-0"

Key Plan:



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Drawing Title:

FIRST FLOOR AND ROOF ADMIN PLAN - PART A

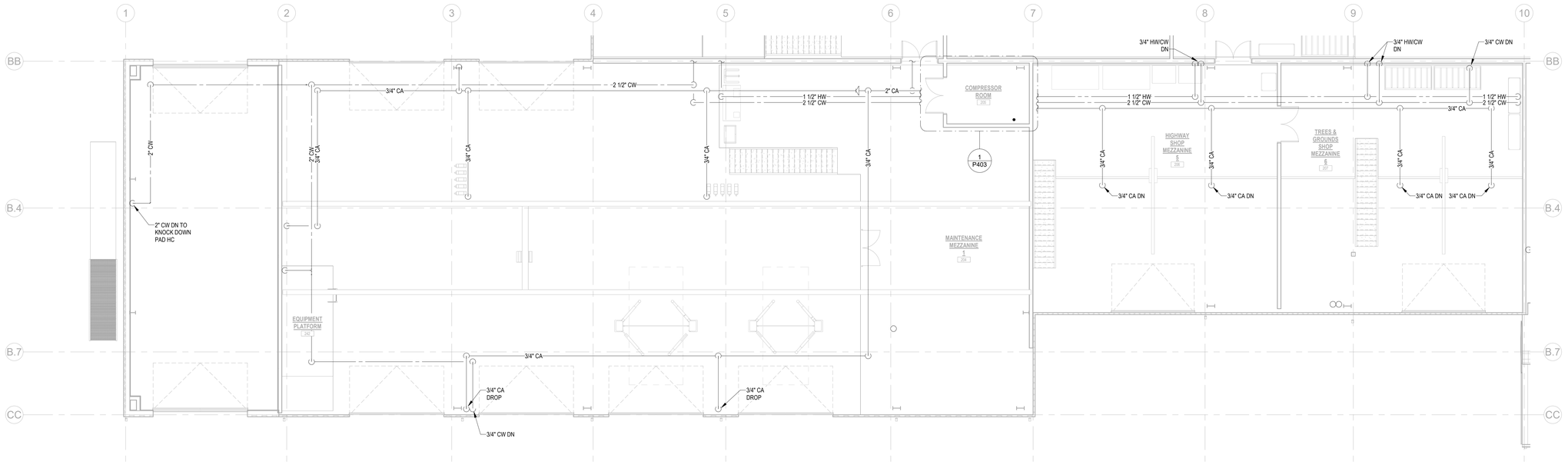
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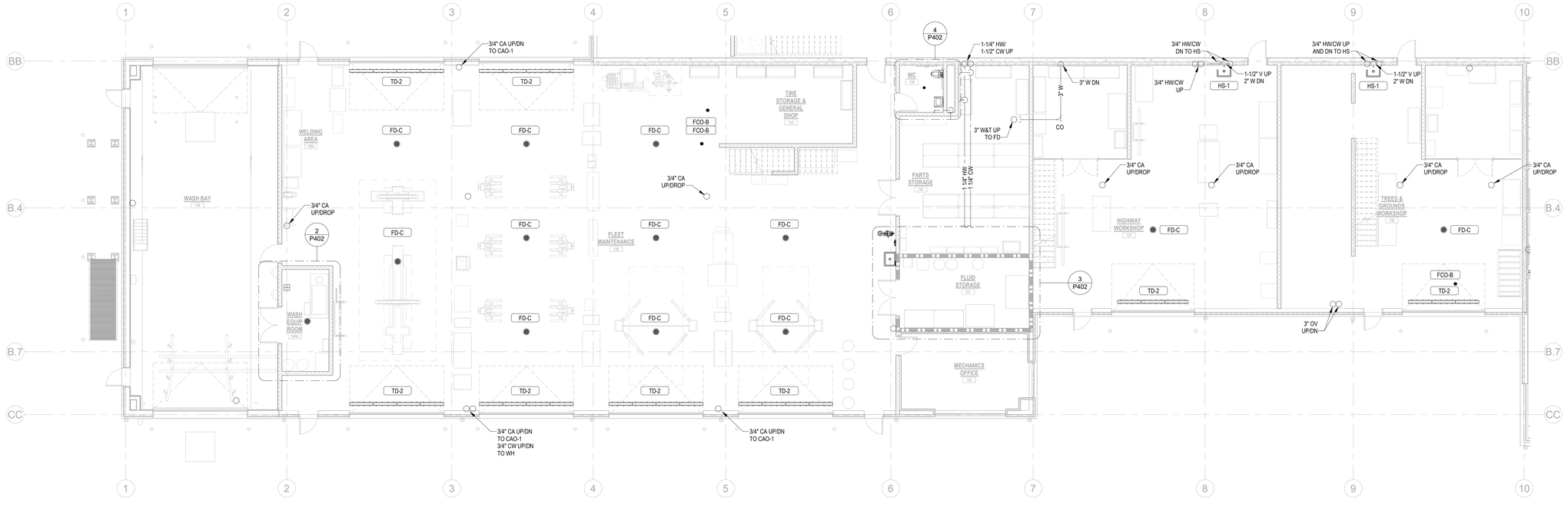
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PLUMBING NOTES

1. FOR THE COMPRESSED AIR DROPS CAO-2 PROVIDE FILTER AND REGULATOR, TERMINATE OUTLET WITH 50 FT HOSE REEL. INSTALL HOSE REEL 7'-8" ABOVE FLOOR. SEE DETAIL 2 ON DRAWING P503.
2. 1/2" CA, STUB NEXT TO TWO POST LIFT MB-3, MB-4 AND PLATFORM LIFT CONTROL CONSOLE MB-1B (BY INDUSTRIAL). PROVIDE TWO OUTLETS - 1/4" CA LIFT & 1/2" CA UTILITY KIT. COORDINATE WITH LIFT INSTALLER ON FINAL LOCATION OF OUTLETS.
3. CA LINES FOR MC-7 & MC-10 SHALL HAVE MOTORIZED BALL VALVE INSTALLED IN THEM, FURNISHED BY FLUID CONTRACTOR, AND INSTALLED BY PLUMBING CONTRACTOR. SEE DETAIL 5 ON DRAWING P503.
4. FOR INDUSTRIAL EQUIPMENT TAG NUMBERS AND DESCRIPTION REFER TO INDUSTRIAL EQUIPMENT DRAWINGS (EQ).
5. COORDINATE LOCATION OF COMPRESSED AIR OUTLETS WITH INDUSTRIAL EQUIPMENT DRAWINGS.
6. PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS AND TRENCH DRAINS. RUN 1/2" CW TUBING UNDER SLAB BETWEEN TRAP PRIMER AND FLOOR DRAIN. TUBING IS NOT SHOWN ON PLANS FOR CLARITY.
7. PROVIDE ONE 2" PVC SCH 40 PIPE AS HYDRAULIC SERVICE SUPPLY CONDUIT RUNNING UNDER SLAB FROM THE CONTROL PANEL TO EACH PLATFORM SERVICE LEG AT THE LOCATION SPECIFIED ON THE PLAN VIEW.
8. PLUMBING CONTRACTOR SHALL COORDINATE VENT PIPES LOCATIONS WITH GENERAL CONTRACTOR (ARCHITECTURAL AND STRUCTURAL).
9. ALL PLUMBING PIPING SUPPORTS IN WASH BAY SHALL BE STAINLESS STEEL.
10. VEHICLE WASH UNDERCARRIAGE TRENCH DRAINS SHALL BE FURNISHED BY THE VEHICLE WASH CONTRACTOR AND INSTALLED BY THE PLUMBING CONTRACTOR.
11. PLUMBING CONTRACTOR SHALL COORDINATE TRENCH DRAIN LENGTH AND LOCATION WITH STRUCTURAL.
12. PROVIDE HOSE ADAPTER WITH VACUUM BREAKER FOR EACH HOSE CONNECTION.



2 MEZZANINE PLAN - FLEET MAINTENANCE AND SHOPS
1/8" = 1'-0"



1 FIRST FLOOR PLAN - FLEET MAINTENANCE AND SHOPS
1/8" = 1'-0"

0 4' 8' 16'

Project:
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Consultants:

Revisions:

No.	Date	Description

CDA:

Seal:

Issued For:

40% PRELIMINARY DESIGN DEVELOPMENT PRICING SET

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

Key Plan: C / B / A

NORTH

Date:	02/25/25
Draw By:	EJ
Reviewed By:	AH
Approved By:	MBR
W&S Project No.:	ENG22-0604
W&S File No.:	XXX

Drawing Title:

FIRST FLOOR AND MEZZANINE FLEET MAINTENANCE AND SHOPS - PART B

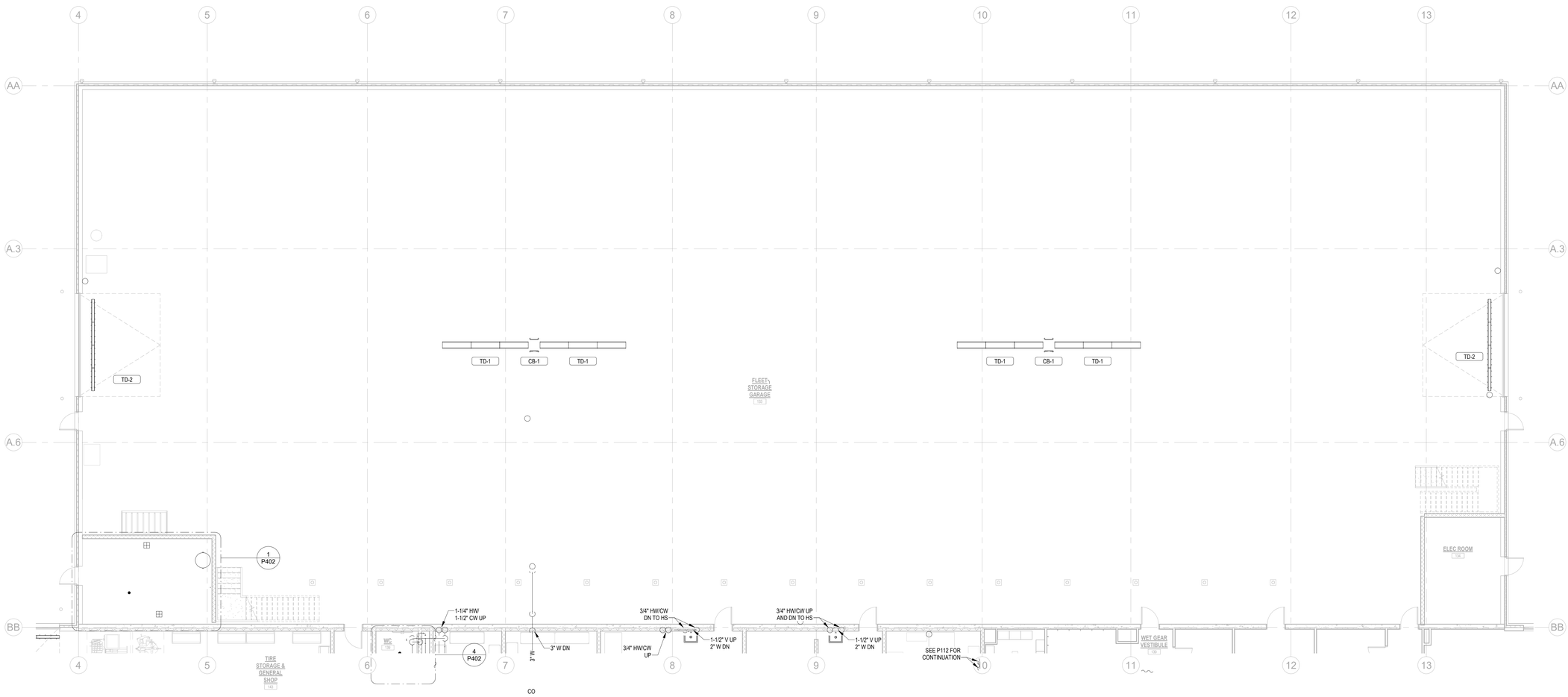
Sheet Number:

P112

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3/28/2025 11:10:19 AM

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1 FIRST FLOOR PLAN - FLEET STORAGE
1/8" = 1'-0"

0 4' 8' 16'

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No.	Date	Description

COA:

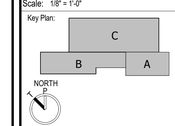
Seal:

Issued For:

40% PRELIMINARY DESIGN DEVELOPMENT PRICING SET

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

Key Plan:



Date:	02/25/25
Draw By:	EJ
Reviewed By:	AH
Approved By:	MBR
W&S Project No.:	ENG22-0604
W&S File No.:	XXX

Drawing Title:

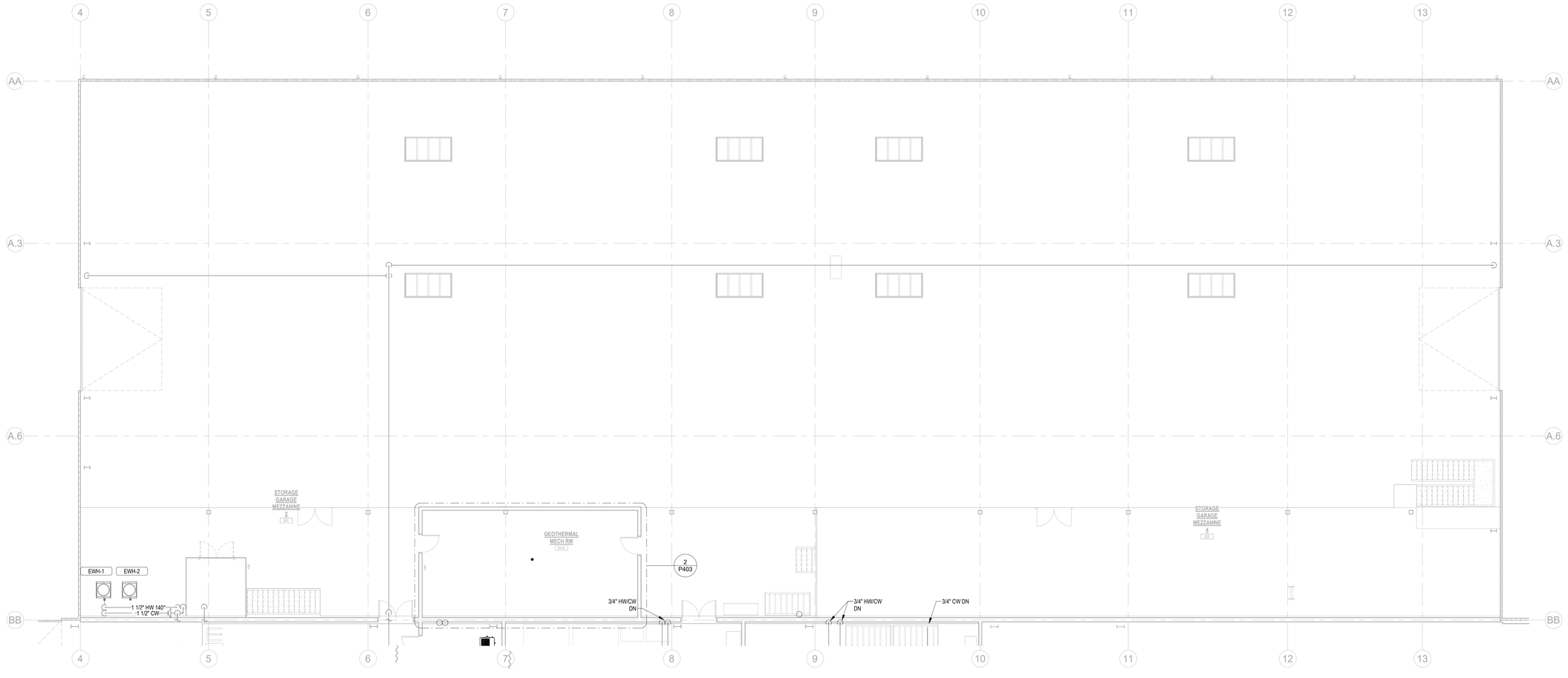
FIRST FLOOR FLEET STORAGE - PART C

Sheet Number:

P113

3/28/2025 11:10:20 AM C:\+Revit\Projects\2022\Acton DPW_Plumbing_v23_Husted Harvey.rvt

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1 MEZZANINE PLAN - FLEET STORAGE
1/8" = 1'-0"

0 4' 8' 16'

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No.	Date	Description

COA:

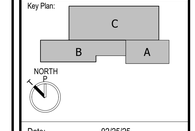
Seal:

Issued For:

40% PRELIMINARY DESIGN DEVELOPMENT PRICING SET

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

Key Plan:



Date:	02/25/25
Draw By:	EJ
Reviewed By:	AH
Approved By:	MBR
W&S Project No.:	ENG22-0604
W&S File No.:	XXX

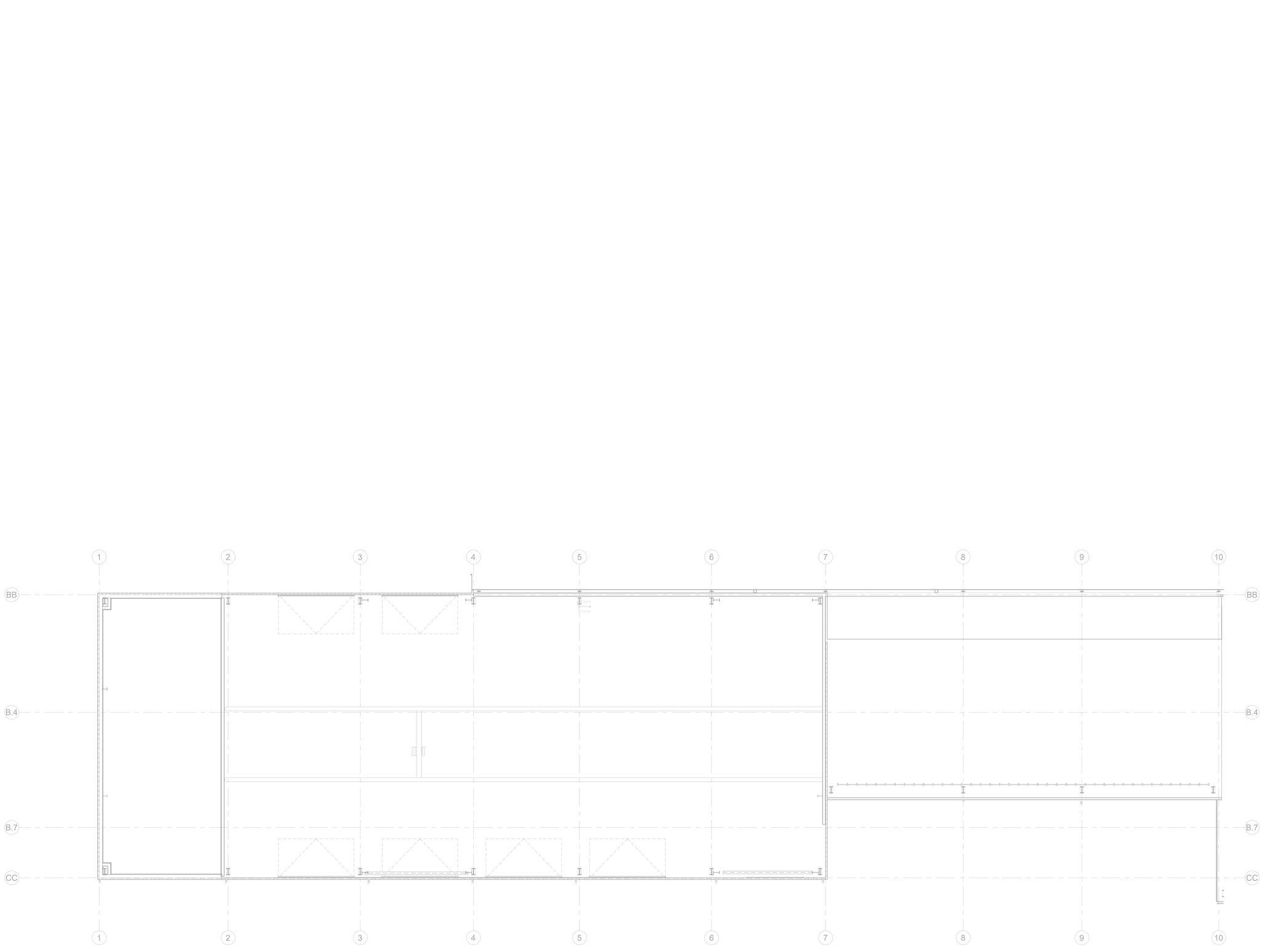
Drawing Title:

MEZZANINE FLEET STORAGE - PART C

Sheet Number:

P114

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1 ROOF PLAN - FLEET MAINTENANCE AND SHOPS
1/8" = 1'-0"

0 4' 8' 16'

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No.	Date	Description

COA:

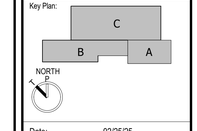
Seal:

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40% PRELIMINARY DESIGN DEVELOPMENT PRICING SET

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

Key Plan:



Date:	02/25/25
Draw By:	EJ
Reviewed By:	AH
Approved By:	MBR
W&S Project No.:	ENG22-0604
W&S File No.:	XXX

Drawing Title:

ROOF FLEET MAINTENANCE AND SHOPS PLAN - PART B

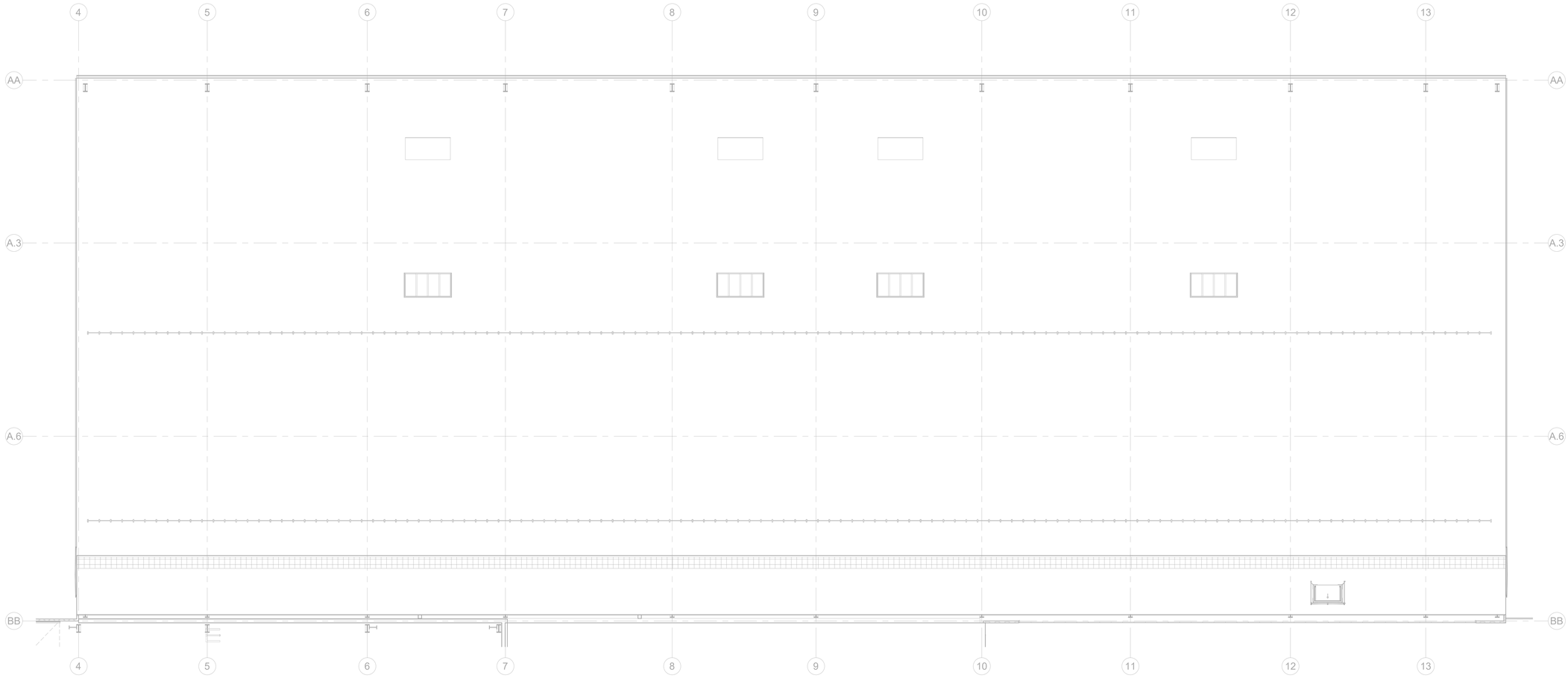
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P121

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3/28/2025 11:10:21 AM

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1 ROOF PLAN - FLEET STORAGE
1/8" = 1'-0"

0 4' 8' 16'

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No.	Date	Description

COA:

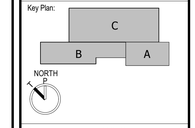
Seal:

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40% PRELIMINARY DESIGN DEVELOPMENT PRICING SET

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

Key Plan:



Date:	02/25/25
Draw By:	EJ
Reviewed By:	AH
Approved By:	MBR
W&S Project No.:	ENG22-0604
W&S File No.:	XXX

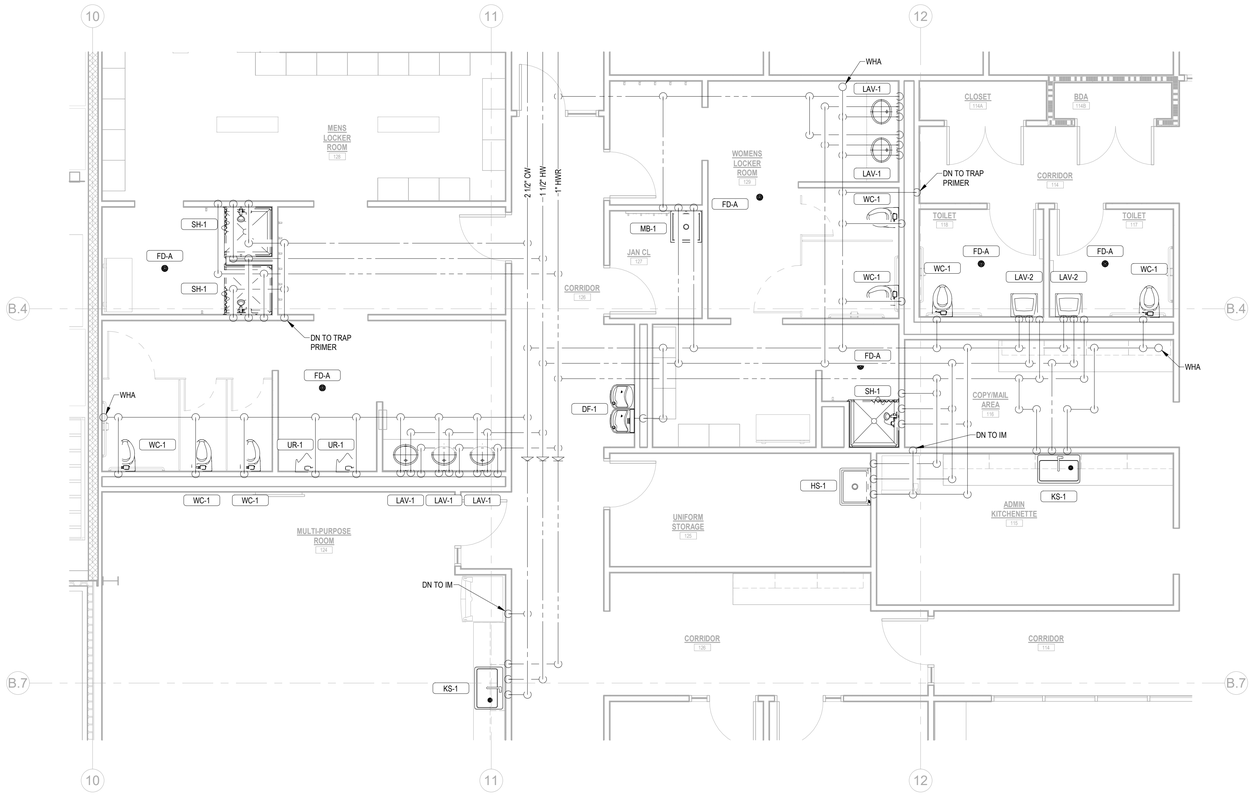
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ROOF FLEET STORAGE PLAN - PART C

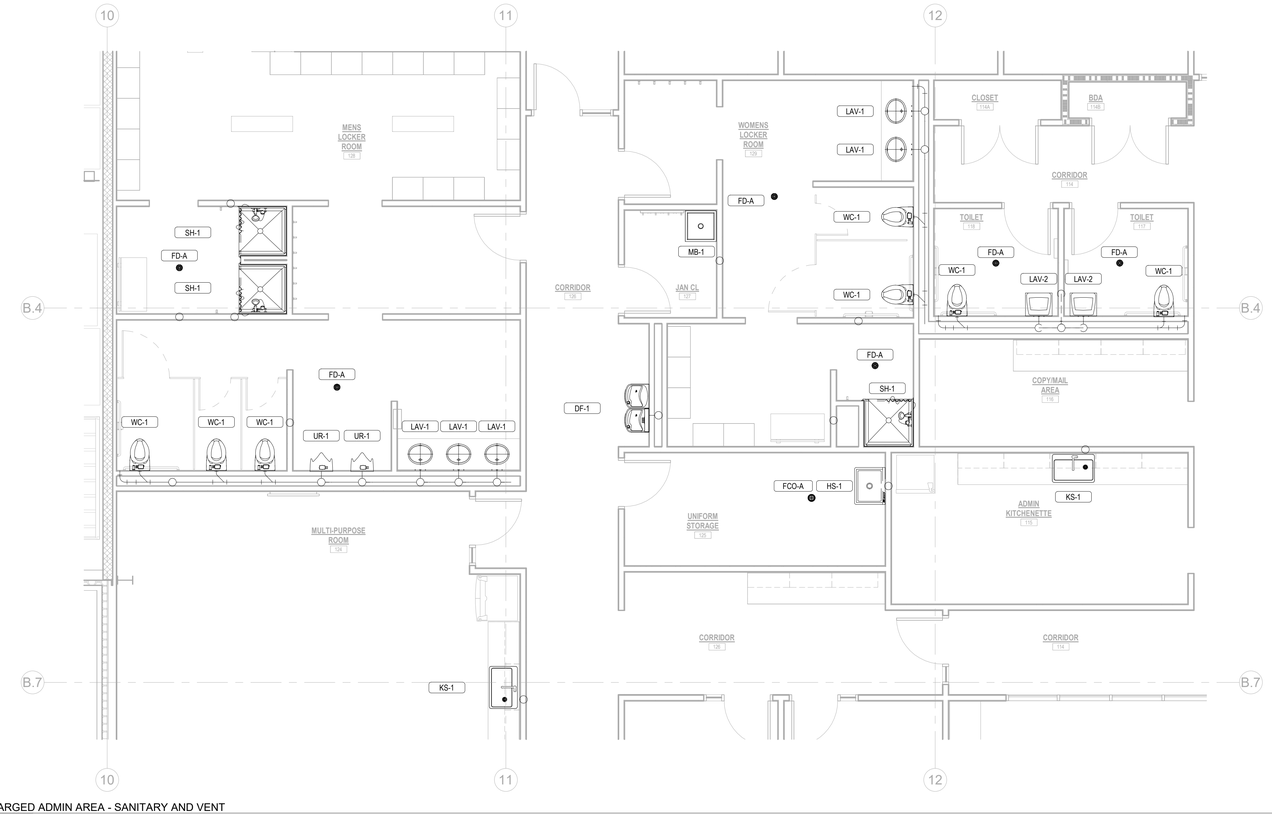
Sheet Number:

P122

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1 ENLARGED ADMIN AREA - DOMESTIC WATER
1/4" = 1'-0" 1/ P111



2 ENLARGED ADMIN AREA - SANITARY AND VENT
1/4" = 1'-0" 1/ P111

0 2' 4' 8'

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COA:

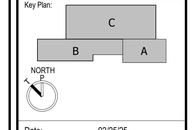
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Scale: 1/4" = 1'-0"

Key Plan:



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Reviewed By:	AH
Approved By:	MBR
W&S Project No.:	ENG22-0604
W&S File No.:	XXX

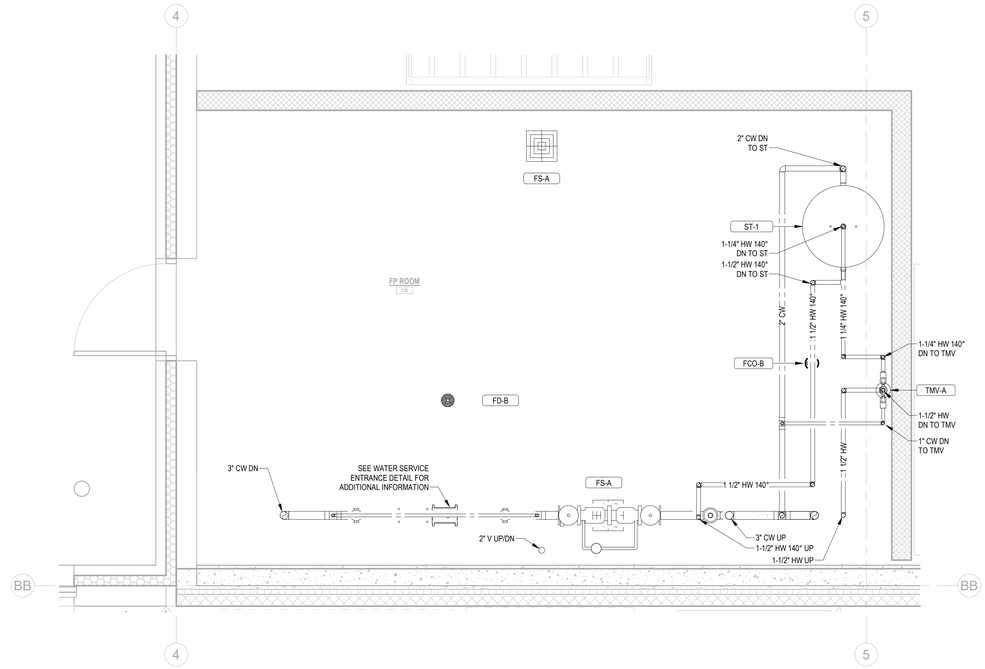
Drawing Title:

ENLARGED FLOOR PLANS

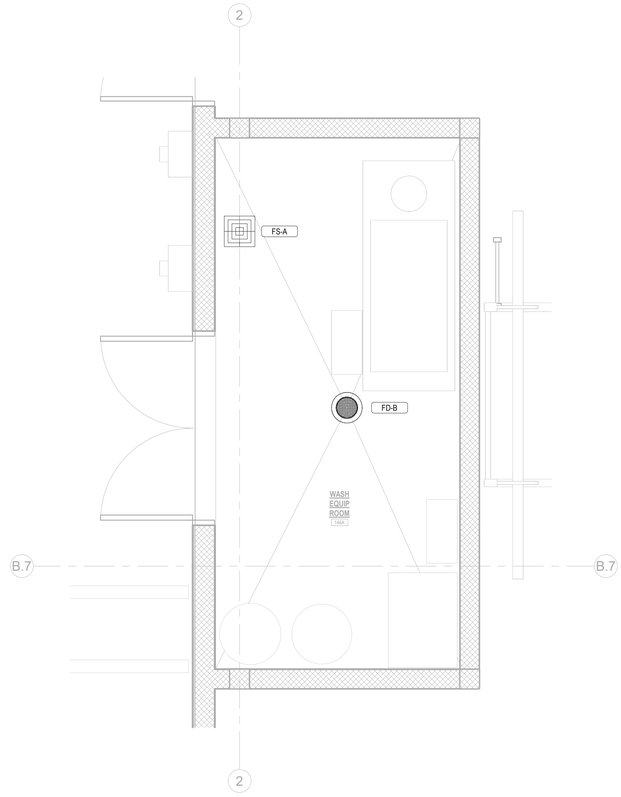
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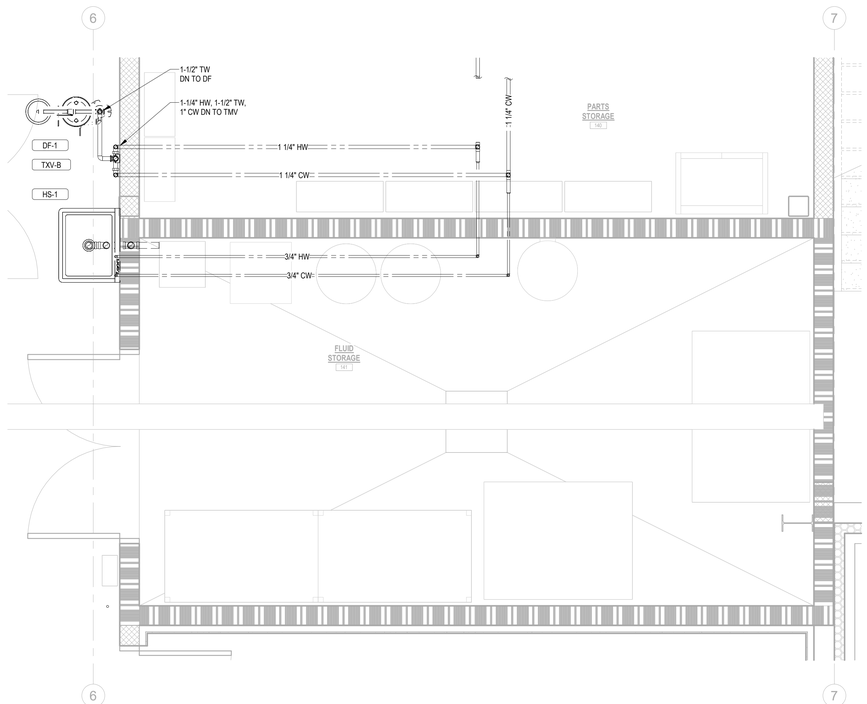
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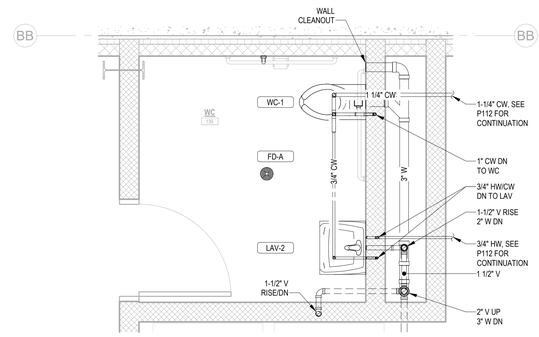
1 ENLARGED FP ROOM
1/2" = 1'-0" 1/ P111



2 ENLARGED WASH EQUIPMENT ROOM
1/2" = 1'-0" 1/ P111



3 ENLARGED FLUID STORAGE ROOM
1/2" = 1'-0" 1/ P111



4 ENLARGED WATER CLOSET ROOM
1/2" = 1'-0" 1/ P111

0 1' 2' 4'

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DESIGN DEVELOPMENT
PRICING SET

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

Key Plan:

Date:	02/25/25
Draw By:	EJ
Reviewed By:	AH
Approved By:	MBR
W&S Project No.:	ENG22-0604
W&S File No.:	XXX

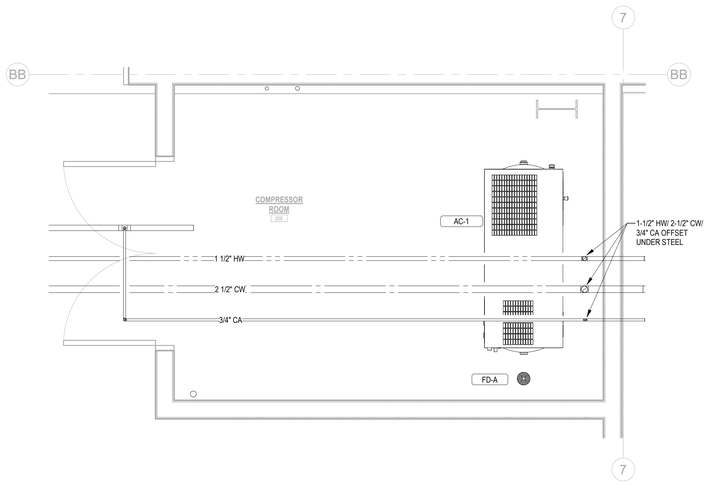
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ENLARGED FLOOR
PLANS

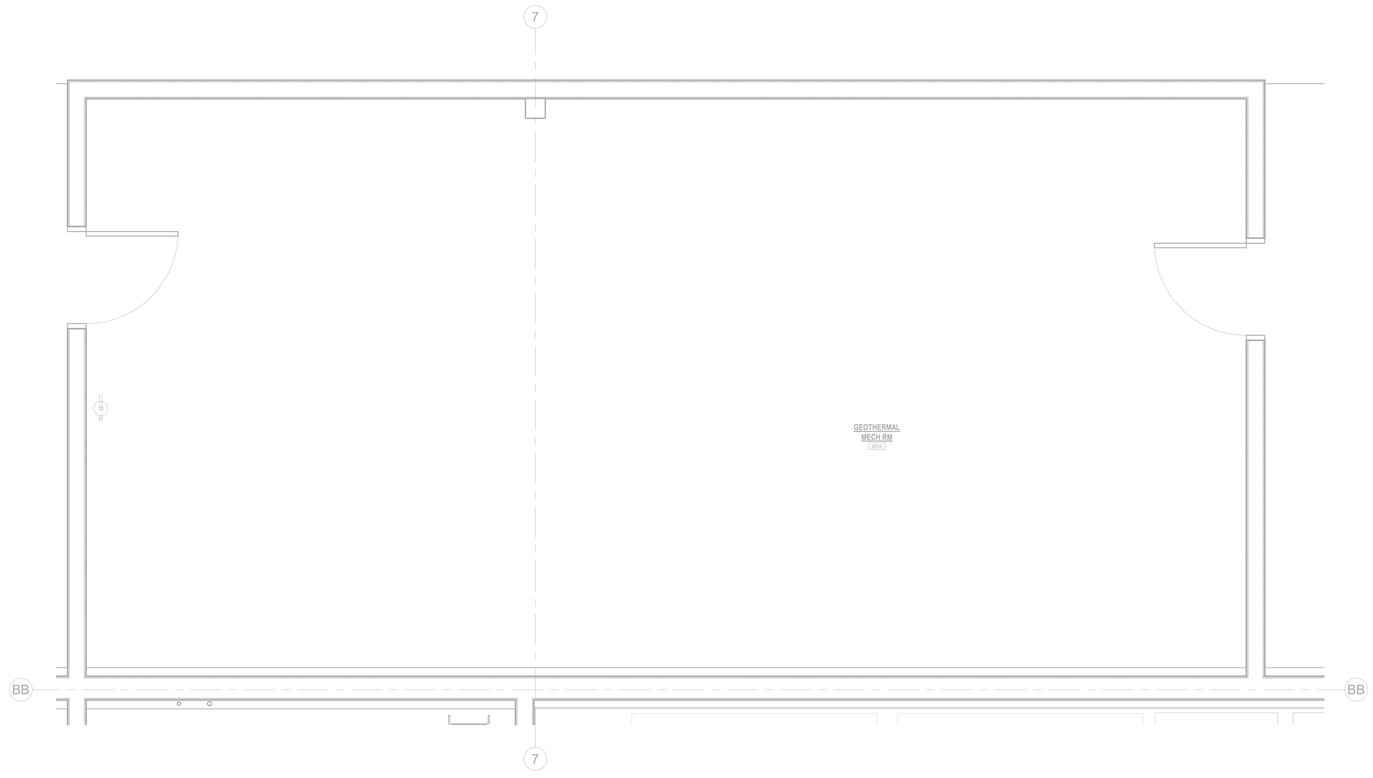
Sheet Number:

P402

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1 ENLARGED COMPRESSOR ROOM
1/2" = 1'-0" 2/ P112



2 ENLARGED MECHANICAL ROOM
1/2" = 1'-0" 2/ P112

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Revisions:

No.	Date	Description

COA:

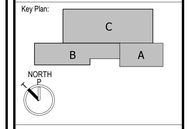
Seal:

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40% PRELIMINARY DESIGN DEVELOPMENT PRICING SET

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

Key Plan:



Date:	03/04/25
Draw By:	EJ
Reviewed By:	AH
Approved By:	MBR
W&S Project No.:	ENG22-0604
W&S File No.:	XXX

Drawing Title:

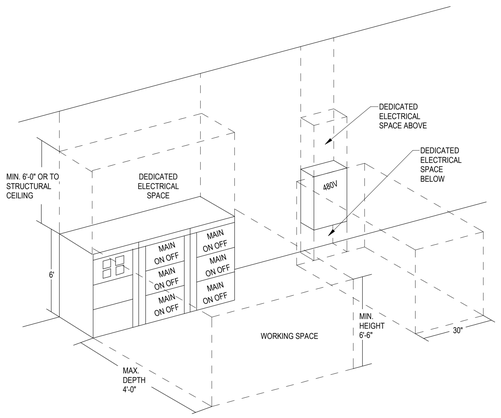
ENLARGED FLOOR PLANS

Sheet Number:

P403

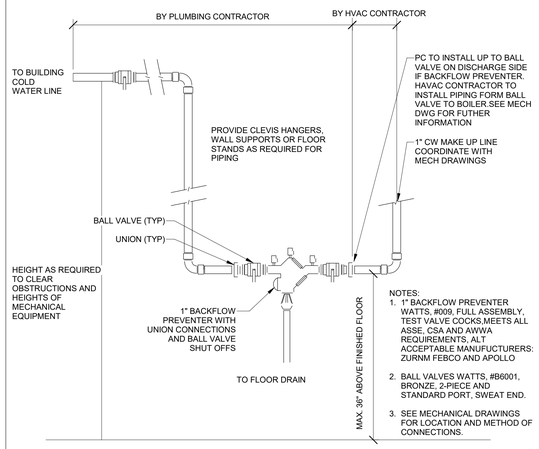
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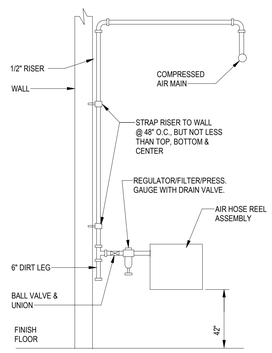
NOTES:
1. NO EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION (PIPING, DUCTS, ETC) SHALL ENTER THE DEDICATED SPACE ABOVE OR BELOW ELECTRICAL POWER EQUIPMENT INCLUDING SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, & MOTOR CONTROL CENTERS.
2. NO EQUIPMENT SHALL PROTRUDE INTO WORKING SPACE.
3. PIPING SYSTEMS INSTALLED ABOVE THE DEDICATED ELECTRICAL SPACE SHALL BE ALLOWED WHERE DRIP PANS ARE INSTALLED TO CAPTURE LEAKS, RUPTURES OR CONDENSATION DRIPS. THE PIPING AND DRIP PANS SHALL BOTH BE OUTSIDE THE DEDICATED SPACE ENVELOPE.

1 / P501 — ELECTRICAL EQUIPMENT CLEARANCES AND DEDICATED SPACE
NOT TO SCALE

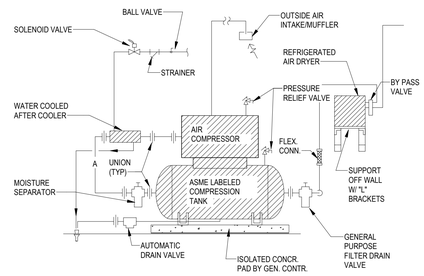


NOTES:
1. 1" BACKFLOW PREVENTER WATTS, #009. FULL ASSEMBLY, TEST VALVE COCKS,MEETS ALL ASSE, CSA AND AWWA REQUIREMENTS, ALT ACCEPTABLE MANUFUCTURERS: ZURNM FEBCO AND APOLLO
2. BALL VALVES WATTS, #B6001, BRONZE, 2-PIECE AND STANDARD PORT, SWEAT END.
3. SEE MECHANICAL DRAWINGS FOR LOCATION AND METHOD OF CONNECTIONS.

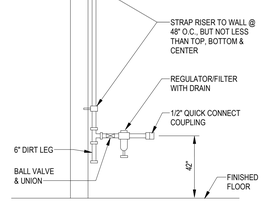
2 / P501 — BOILER MAKE UP WATER DETAIL
NOT TO SCALE



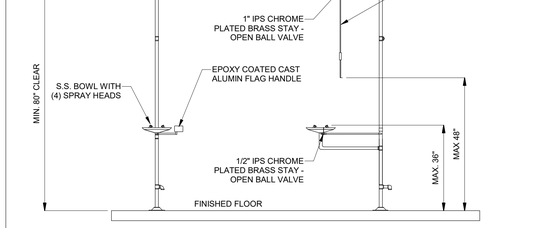
3 / P501 — COMPRESSED AIR HOSE REEL DETAIL
NOT TO SCALE



4 / P501 — SHOP COMPRESSED AIR SYSTEM PIPING DETAIL I
NOT TO SCALE



5 / P501 — COMPRESSED AIR WALL OUTLET
NOT TO SCALE



NOTE:
1. PROVIDE A LOOSE-KEY LOCKSHIELD TYPE SHUT-OFF VALVE IN DOMESTIC WATER SUPPLY DROP TO EYEWASH. LABEL VALVE TO PREVENT UNAUTHORIZED SHUT-OFF.

6 / P501 — EMERGENCY EYEWASH SHOWER
NOT TO SCALE

GENERAL CONSTRUCTION NOTES:

THE SEPARATOR IS TO BE LOCATED OUTSIDE OF A BUILDING WHERE POSSIBLE AND THE COVER IS TO INCORPORATE A CENTER-HOLE.

A SEALED TIGHT COVER IS TO BE USED IF THE SEPARATOR IS LOCATED INSIDE THE BUILDING.

THE COVER SHALL BE NO LESS THAN 24" IN DIAMETER. IHE SEPARATOR SHALL BE LOCATED AND CONSTRUCTED TO PREVENT SURFACE OR SUB SURFACE WATER FROM ENTERING.

THE INLET PIPE SHALL BE NO LESS THAN FOUR INCHES ABOVE WATER LINE LEVEL.

WHEN SEPARATOR IS SUBJECT TO FREEZING IS SHALL BE SET TO A MINIMUM OF THREE FEET BELOW GRADE.

THE SEPARATOR SHALL BE FILLED WITH WATER AND LEAK TESTED BEFORE BEING INTRODUCED INTO SERVICE.

THE NON CORROSIVE STEPS SHALL BE SPACED 18"-INCHES APART. THE CHAMBER VENT AND OUTLET VENT SHALL RETURN TO THE INSIDE OF THE BUILDING AND EXTEND THROUGH THE ROOF.
PIPING MATERIAL NOTES:

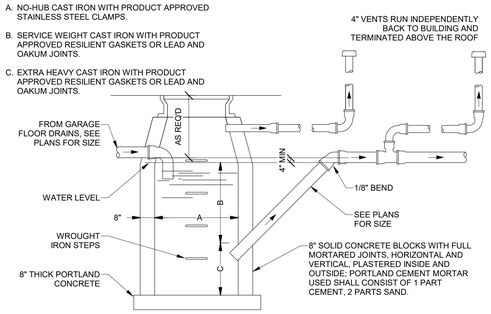
A. NO-HUB CAST IRON WITH PRODUCT APPROVED STAINLESS STEEL CLAMPS.

B. SERVICE WEIGHT CAST IRON WITH PRODUCT APPROVED RESILIENT GASKETS OR LEAD AND OAKUM JOINTS.

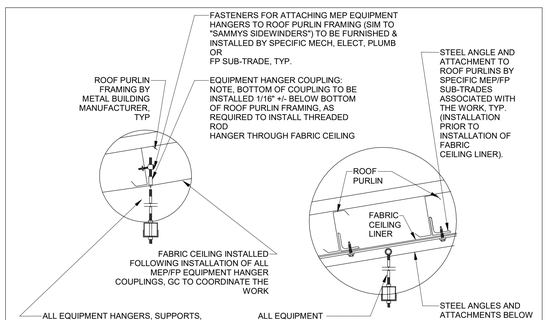
C. EXTRA HEAVY CAST IRON WITH PRODUCT APPROVED RESILIENT GASKETS OR LEAD AND OAKUM JOINTS.

INTERCEPTOR SIZE

INLET	A	B	C
4"	3'-6"	3'-0"	2'-6"
5"	3'-6"	5'-0"	4'-0"
	3'-6"x3'-6"	4'-0"	3'-0"
	4'-0"	3'-6"	3'-0"
	4'-0"x4'-0"	3'-0"	2'-6"
	4'-6"	3'-0"	2'-6"
6"	4'-0"	5'-0"	4'-6"
	4'-0"x4'-0"	4'-0"	3'-6"
	4'-6"	4'-0"	3'-6"
	4'-6"x4'-6"	3'-6"	3'-0"
	5'-0"	3'-6"	3'-0"
	5'-0"x5'-0"	3'-0"	2'-6"
8"	5'-0"	6'-0"	5'-0"
	4'-6"x4'-6"	4'-6"	4'-0"
	6'-0"	4'-0"	3'-6"
	6'-0"x6'-0"	3'-0"	2'-6"
	6'-6"	3'-6"	3'-0"
	6'-6"x6'-6"	3'-0"	2'-6"



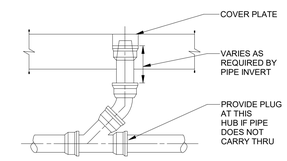
7 / P501 — OIL WATER SEPARATOR
NOT TO SCALE



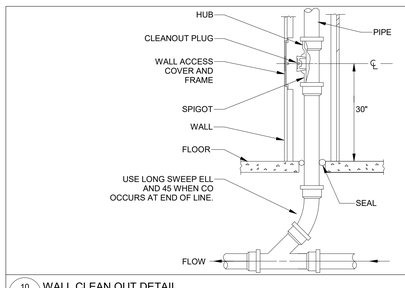
GENERAL NOTES:

1. ALL MECHANICAL, ELECTRICAL, PLUMBING & FIRE-PTROTECTION (MEP/FP), ETC. SUB-TRADES SHALL PROVIDE AND INSTALL ALL SUPPLEMENTAL STEEL SUPPORTS, ANGLES, STRUTS, CLIPS, ATTACHMENTS, ETC. AS NECESSARY FOR THE COMPLETE INSTALLATION AND SUPPORT OF ALL BUILDING MEP/FP SYSTEMS.
2. ALL MEP/FP SUB-TRADES SHALL SIZE ALL SUPPORTS, ANGLES, CONNECTORS, ETC, AS REQUIRED TO SUPPORT THE LOADS OF THE SUSPENDED SYSTEMS AND SHALL COORDINATE SIZES AND LOCATIONS, AND SHALL OBTAIN APPROVAL FROM THE METAL BUILDING MANUFACTURER.
3. ALL FASTENERS, COUPLINGS, ANGLES, ETC. ATTACHED TO THE BUILDING ROOF PURLIN FRAMING ABOVE THE BOTTOM OF THE PURLIN, TO BE INSTALLED PRIOR TO INSTALLATION OF THE CEILING FABRIC LINER. SUSPENDED SUPPORTS INSTALLED BELOW THE BOTTOM OF THE PURLIN FRAMING TO BE INSTALLED FOLLOWING INSTALLATION OF THE CEILING LINER. GENERAL CONTRACTOR SHALL COORDINATE THE SEQUENCE AND INSTALLATION OF THE WORK.
4. ALL EQUIPMENT LOADS/ REACTIONS IMPOSED ON THE METAL BUILDING FRAMING TO BE REVIEWED AND APPROVED BY THE METAL BUILDING MANUFACTURER. ALL SUPPLEMENTAL BUILDING FRAMING MEMBERS, AS REQUIRED TO SUPPORT MECHANICAL/ ELECTRICAL/ FIRE PROTECTION EQUIPMENT, AS DETERMINED BY THE PREFABRICATED METAL BUILDING DESIGN, IN CONSIDERATION OF ALL EQUIPMENT-IMPOSED LOADS TO THE BUILDING, TO BE PROVIDED BY METAL BUILDING MANUFACTURER.

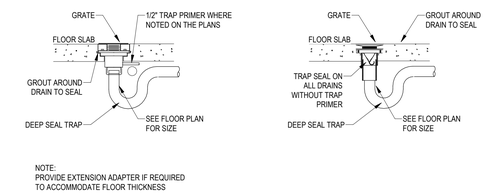
8 / P501 — ROOF PURLIN
NOT TO SCALE



9 / P501 — CLEAN OUT AND PLUGGED RISER
NOT TO SCALE

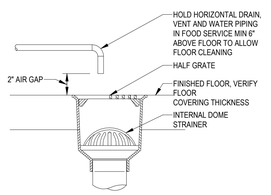


10 / P501 — WALL CLEAN OUT DETAIL
NOT TO SCALE



NOTE:
PROVIDE EXTENSION ADAPTER IF REQUIRED TO ACCOMMODATE FLOOR THICKNESS

11 / P501 — FLOOR DRAIN DETAIL
NOT TO SCALE



12 / P501 — FLOOR SINK
NOT TO SCALE

Project:
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Consultants:

Revisions:

No.	Date	Description

COA:

Seal:

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40% PRELIMINARY DESIGN DEVELOPMENT PRICING SET

Scale:

Key Plan:

Date:	02/25/25
Draw By:	EJ
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Approved By:	MBR
W&S Project No.:	ENG22-0604
W&S File No.:	XXX

Drawing Title:

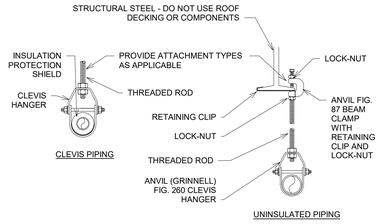
PLUMBING DETAILS

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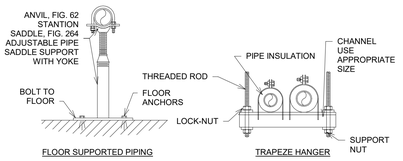
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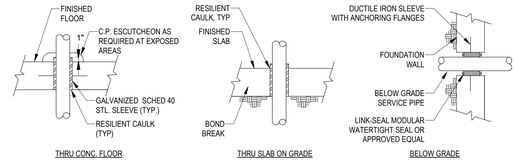


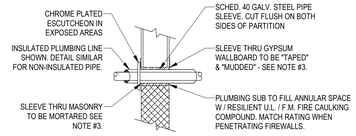
NOTE:
CLAMPS, ATTACHMENTS, ETC. ARE TO BE ATTACHED TO STRUCTURAL SUPPORT ONLY. DO NOT ATTACH, AFFIX OR SUPPORT FROM THE ROOF DECKING OR COMPONENTS.



NOTES:
1. SIZE HANGER RODS AND ANCHORS TO ADEQUATELY SUPPORT LOADS. REFER TO MANUFACTURERS RECOMMENDATIONS.
2. PROVIDE HANGERS SUITABLE FOR AWWA DUCTILE IRON PIPE FOR SANITARY AND STORM PIPING.
3. INSULATION SHEILDS TO BE GALVANIZED STEEL.

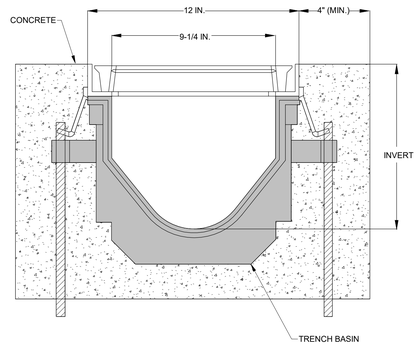
1 TYPICAL PIPE HANGER AND SUPPORT DETAIL
P502 NOT TO SCALE



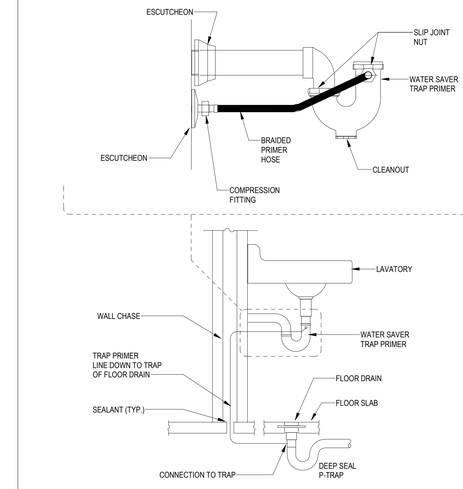


NOTES:
1. ALL PIPING PENETRATING ALL PARTITIONS, WHETHER FIRE OR SMOKE RATED OR NOT, CONCEALED OR EXPOSED, SHALL BE SLEEVED AS DETAILED.
2. WHERE CONC. WALLS, SLABS, ETC., ARE CORE DRILLED, INSTALL SLEEVE FLUSH WITH BOTH SIDES, CAULKED AND LEADED IN PLACE.
3. REFER TO DIVISION 4 & 9 FOR PROCEDURES & METHODS OF PATCHING AROUND SLEEVES AND GYPSUM, PLASTER & MASONRY. REFER TO SPECS FOR DELINEATION OF RESPONSIBILITY.
4. SLEEVES SHALL BE SIZED TO PROVIDE MIN. 1" CLEARANCE BETWEEN PIPE OD & SLEEVE ID.

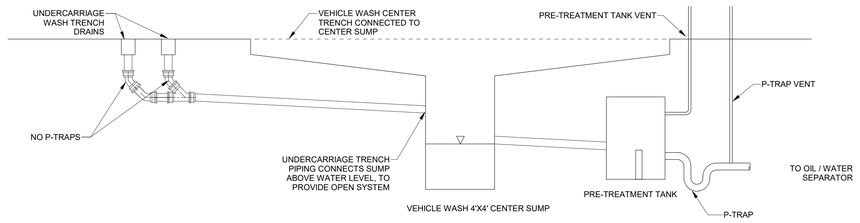
2 TYPICAL PLUMBING SLEEVE CONDITIONS
P502 NOT TO SCALE



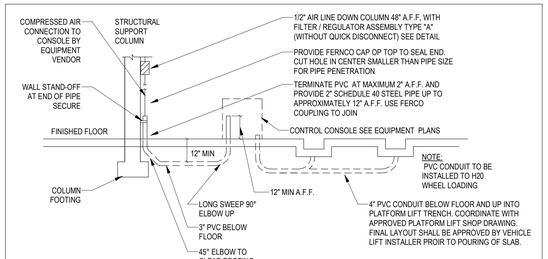
3 VEHICLE WASHBAY SUMP WASTE PIPING
P502 NOT TO SCALE



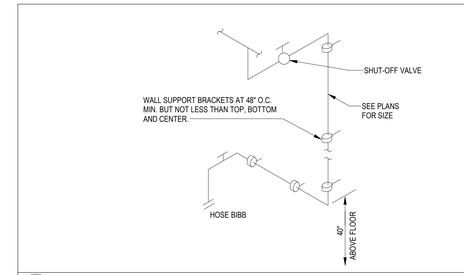
4 VALVE-LESS TRAP PRIMER DETAIL - TOILET ROOMS
P502 NOT TO SCALE



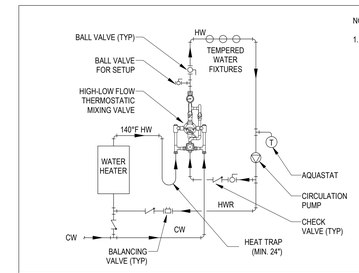
5 VEHICLE WASHBAY SUMP WASTE PIPING
P502 NOT TO SCALE



6 PLATFORM LIFT COMPRESSED AIR
P502 NOT TO SCALE

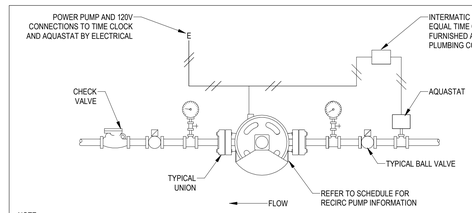


7 INTERIOR HOSE BIBB PIPING RISER
P502 NOT TO SCALE



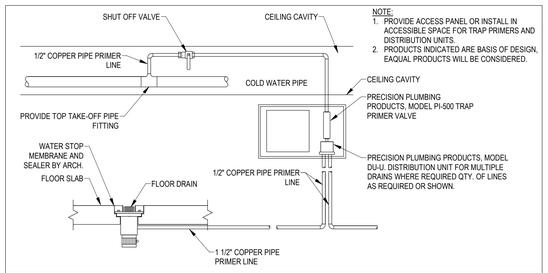
NOTES:
1. FOR MULTIPLE TEMPERED LOOPS INSTALL BALANCING VALVE AND CHECK VALVE ON EACH LOOP AFTER TEMPERED FIXTURES.

8 MIXING VALVE
P502 NOT TO SCALE



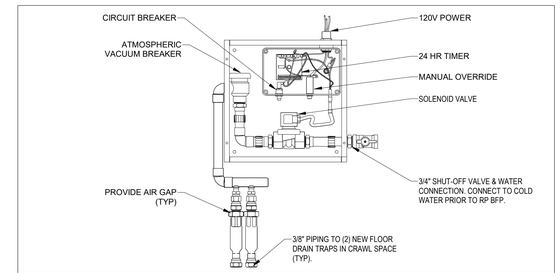
NOTE:
THE HOT WATER RECIRCULATION PUMP IS CONTROLLED VIA WATER TEMPERATURE IN SERIES WITH A TIME CLOCK SUPPLIED AND INSTALLED BY THE PLUMBING CONTRACTOR. PROVIDE 120V BRANCH CIRCUITS AS ILLUSTRATED AND INTERCONNECT THE DEVICES WITH 2#10 AND 1#10G-3/4C.

9 RECIRCULATION PUMP
P502 NOT TO SCALE



NOTE:
1. PROVIDE ACCESS PANEL OR INSTALL IN ACCESSIBLE SPACE FOR TRAP PRIMERS AND DISTRIBUTION UNITS.
2. PRODUCTS INDICATED ARE BASIS OF DESIGN, EAQUAL PRODUCTS WILL BE CONSIDERED.

11 TRAP PRIMER DETAIL
P502 NOT TO SCALE



10 ELECTRONIC TRAP PRIMER
P502 NOT TO SCALE

Project:
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Reviewed By:	AH
Approved By:	MBR
W&S Project No.:	ENG22-0604
W&S File No.:	XXX

Drawing Title:

PLUMBING DETAILS

Sheet Number:

P502

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PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE					FITTING			TRAP	CARRIER	FLOW RATE	REMARKS
	TYPE	MANUFACTURER	MODEL	DESCRIPTION	SIZE	MANUFACTURER	TYPE	SUPPLY				
WC-1	WATER CLOSET	KOHLER	K-4325-SS	WALL MOUNTED VITREOUS CHINA SIPHON JET WATER CLOSET 1.28 GPF ELONGATED BOWL	26-1/2x16-1/2"x13-1/4"	SLOAN ROYAL 111	MANUAL FLUSHOMETER 1.28 GPF	1"	INTEGRAL	JAY R SMITH OR EQUAL	1.28 GPF	ELONGATED BOWL LESS SEAT. CHURCH MODEL 1955FR. REFER TO ARCHITECTURAL PLANS FOR ADA MOUNTING REQUIREMENTS FIXTURES MUST BE WATERSENSE LABELED.
UR-1	URINAL	KOHLER	K-4991-ETSS	WALL MOUNTED VITREOUS CHINA WASHOUT JET URINAL 0.5 GPF	16-1/8"x18"x26-7/8"	SLOAN ROYAL 186 1/8GPF	MANUAL FLUSHOMETER 0.125 GPF	3/4"	INTEGRAL	JAY R SMITH OR EQUAL	0.125 GPF	REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING REGULATIONS. FIXTURES MUST BE WATERSENSE LABELED.
LAV-1	LAVATORY	KOHLER	K-2210	UNDER COUNTER	19-1/4"X16-1/4"	CHICAGO 420-T45E39VPABCP	MANUAL	1/2" CW 1/2" HW	1-1/2" CHROME PLATED BRASS P-TRAP WICO PLUG FOR ADA...	JAY R SMITH OR EQUAL	0.35 GPC	TRAPS AND SUPPLIES TO BE INSULATED WITH TRU-BRO PREFORMED INSULATION KIT PROVIDE ACORN ST70 LAVATORY MIXING VALVE FIXTURES MUST BE WATERSENSE LABELED.
LAV-2	LAVATORY	KOHLER	K-2007	WALL HUNG	21-1/4"x18-1/8"	CHICAGO 420-T45E39VPABCP	MANUAL	1/2" CW 1/2" HW	1-1/2" CHROME PLATED BRASS P-TRAP WICO PLUG FOR ADA...	JAY R SMITH OR EQUAL	0.09 GPC	TRAPS AND SUPPLIES TO BE INSULATED WITH TRU-BRO PREFORMED INSULATION KIT PROVIDE ACORN ST70 LAVATORY MIXING VALVE FIXTURES MUST BE WATERSENSE LABELED.
SH-1	SHOWER	AQUARIUS G3682	N/A	ALCOVE SHOWER	N/A	KOHLER AWAKEN G110	KOHLER K-8304-K PRESSURE BALANCING MIXING VALVE 1.75 GPM FLOW RESTRICTOR	1/2" CW 1/2" HW	2" P-TRAP	N/A	1.75 GPM	REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS OF VALVE ASSEMBLY. FIXTURES MUST BE WATERSENSE LABELED.
HB-1	HOSE BIBB (FINISHED SPACE)	CHICAGO FAUCETS	387-E27CP	N/A	N/A	CHICAGO FAUCETS	CHROME PLATED WALL MOUNTED SILL FITTING W/VB AND T HANDLE	3/4" CW	N/A	N/A	N/A	PROVIDE WITH INTEGRAL VACUUM BREAKER
OB-1	OUTLET BOX	SIOUX CHIEF	696	OUTLET BOX FOR WASHING MACHINE	11-1/2"x7-1/4"x3-1/2"			1/2" CW 1/2" HW	2" OUTLET CONN.			
KS-1	KITCHENETTE SINK	ELKAY	LRAD221950	STAINLESS STEEL DROP IN	22"x19-1/2"x 5" DEEP	ELKAY	KITCHEN FAUCET, CHROME FINISH, SINGLE HANDLE OPERATION, PULL OUT SPRAY	1/2" CW 1/2" HW	2" P-TRAP	N/A	1.5 GPM	
KS-2	KITCHEN SINK SMALL	ELKAY	BCR15	STAINLESS STEEL DROP IN	15"X15"x6-1/8"	ELKAY		1/2" CW 1/2" HW	2" P-TRAP	N/A	1.5 GPM	
MB-1	MOP BASIN	FIAT	MSB 2424	MOLDED-STONE, STAINLESS STEEL BUMPER GUARDS, STAINLESS STEEL SPLASH GUARD	24" X 24"	SPEAKMAN SC-5811-RCP	SERVICE SINK FAUCET, VACUUM BREAKER, PAIL HOOK, THREADED OUTLET	1/2" CW 1/2" HW	2" P-TRAP	N/A	N/A	
WFS-1	WASH FOUNTAIN SINK	SLOANSTONE	EWF-44000	SOLID SURFACE LAVATORY	26" X 46" X 34"	SLOANSTONE	SENORED OPERATED	1/2" CW 1/2" HW	2" P-TRAP	N/A	0.5 GPM	DECK MOUNTED, WRIST BLADE HANDLES WITH COLOR CODED INDIEX DISCS, GOOSENECK FAUCET WITH INTEGRAL VACUUM BREAKER
ES-1	EMERGENCY EYEWASH / SHOWER COMBINATION	GUARDIAN	G19090PCC	COMBINATION WIDE AREA EYE/FACE WASH AND SHOWER AFETY STATION	10" SHOWER HEAD 11-1/8" BOWL	N/A	N/A	1-1/4" TW	N/A	N/A	20 GPM	POLISHED CHROME CONSTRUCTION, POWDER COATED CAST ALUMINUM FLOOR FLANGE, POWDER COATED CAST ALUMINUM FLAG HANDLE. STAINLESS STEEL SHOWER PULL HANDLE, SHOWER HEAD, AND ACTUATING ARM
IM-1	ICE MAKER CONNECTION	SOUIX CHIEF	696-G1010MF	ABS BOX WITH CHROME PLATED BRASS VALVE AND WATER HAMMER ARRESTOR	5-3/4" X 1-1/4"	N/A	N/A	1/2" CW	N/A	N/A	0.4 GPM	NSF-372 COMPLIANT, VALVE MEETS ASME A112.18.1
WH-1	WALL HYDRANT (EXTERIOR)	WOODFORD	B67	BOX TYPE BACKFLOW PROTECTED, FREEZELESS WALL HYDRANT	6-1/2" X 7-1/2" X 7-3/8" DEEP	N/A	N/A	3/4" CW	N/A	N/A	N/A	LOOSE TEE KEY OPERATION. HARDENED STAINLESS STEEL OPERATING STEM.
WH-2	WALL HYDRANT (INTERIOR)	WOODFORD	84	ANTI-SIPHON PROTECTED CLOSE COUPLED WALL HYDRANT	4-1/2" X 2-3/4" X 3-1/4" DEEP	N/A	N/A	3/4" CW	N/A	N/A	N/A	LOOSE TEE KEY OPERATION. HARDENED STAINLESS STEEL OPERATING STEM.
DF-1	DRINKING FOUNTAIN	ELKAY	VRCTLR8WSK	VANDAL RESISTANT BOTTLE FILLING STATION AND BI-LEVEL REVESRE COOLER, NON-FILTERED 8GPH...	36-1/8" X 38-13/16" X 18-5/8" DEEP	N/A	N/A	3/4" CW	1-1/2" P-TRAP	N/A	8 GPH	MECHANICALLY ACTIVATED BUBBLER, LAMINAR FLOW, ELECTRIC SELF CONTAINED REFRIGERANT BASED COOLING SYSTEM, ADJUSTABLE THERMOSTAT
HS-1	HAND SINK	ELKAY	ESSB2520C	STAINLESS STEEL WALL MOUNTED SERVICE SINK	22" X 16" X 12" DEEP	ELKAY LK940GN08T4H	SERVICE SINK FAUCET, DUAL HANDLE, 14.5" H GOOSENECK SWING SPOUT, 8" CENTERS	1/2" CW 1/2" HW	3" P-TRAP	N/A	1.5 GPM	ELKAY MODEL LK173 CAST IRON P-TRAP, FLAT GRID STRAINER, SERVICE STOPS WITH LOOSE KEY, STAINLESS STEEL BRAIDED HOSE (VERIFY LENGTH IN FIELD)
GD-1	GARBAGE DISPOSAL	INSINKERATOR	EVOLUTION COMPACT	COMPACT WASTE DISPOSAL ANTI-VIBRATION MOUNT, TAIL PIPE MOUNT	8-3/4" DIA X 12-1/4"	N/A	N/A	N/A	N/A	N/A	N/A	3/4 HP, 120V, 1PH,8.1 AMPS
SF-1	WALL MOUNTED FAUCET	CHICAGO FAUCETS	835-RCF				SERVICE SINK FAUCET , EXPOSED WALL MOUNT, ROUGH CHROME PLATED 6" CENTERS					

REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION
ALL PLUMBING FIXTURES AND EQUIPMENT SHALL BE MASSACHUSETTS PLUMBING BOARD APPROVED

HEAT PUMP WATER HEATER SCHEDULE

ID	LOCATION NAME	LOCATION NO.	MANUFACTURER	MODEL NO.	TYPE	ELECTRIC HEAT EXCHANGER HEATING CAP (KW)	WATERSIDE RECOVERY GAL	WATERSIDE STORAGE VOL (GAL)	WATERSIDE MAX TEMP RISE (°F)	HEATING ELEMENT QTY	HEATING ELEMENT POWER	HEATING ELEMENT SCR	HEATING ELEMENT COP	REFRIGERANT TYPE	DRY WEIGHT (lb)	ELECTRICAL DATA FLA	MCA	MOCP	V	PH	NOTES
EWH-1			AO SMITH	AHPA60	TANKLESS									R513A	561		22.5	25.0	480	3	
EWH-2			AO SMITH	AHPA60	TANKLESS									R513A	561		22.5	25.0	480	3	

TANK SCHEDULE

ID	LOCATION NAME	LOCATION NO.	MANUFACTURER	MODEL NO.	TYPE	FLUID TYPE	TANK VOLUME	UNIT DIMENSIONS HEIGHT	UNIT DIMENSIONS DIAMETER	WEIGHT (lb)	REMARKS
ST-1			A.O. Smith	TJV-200M	VERTICAL	DHW	200.0	6' - 11"	3' - 0"		1 THRU 5

NOTES:
1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DIAGRAMS FOR ADDITIONAL INFORMATION.
2. TANK SHALL BE RATED FOR MAXIMUM WORKING PRESSURE OF 160 PSIG.
3. PROVIDE WITH FACTORY INSULATION THAT MEETS R12.5.
4. PROVIDE CARBON STEEL CONSTRUCTION WITH FACTORY GLASS LINING. TANK SHALL BE ASME RATED.
5. PROVIDE AUTOMATIC AIR VENT AND PIPE AIR VENT TO NEAREST FLOOR DRAIN.

EXPANSION TANK SCHEDULE

ID	LOCATION NAME	LOCATION NO	MANUFACTURER	MODEL NO.	TYPE	PRESSURE (PSIG) INITIAL TANK AIR CHARGE	PRESSURE (PSIG) PRESS RELIEF	VOLUME (GAL) TANK	VOLUME (GAL) ACCEPTANCE	UNIT DIMENSIONS HEIGHT (IN)	UNIT DIMENSIONS DIAMETER (IN)	DRY WEIGHT (lb)	NOTES

NOTES:
1. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.
2. EXPANSION TANK SHALL BE ACCEPTED BY THE MASSACHUSETTS BOARD OF REGISTRATION OF PLUMBERS AND GAS FITTERS.
3. TANK SHALL BE LEAD FREE, CERTIFIED TO ANSI/NSF 61, AND RATED FOR POTABLE WATER
4. PROVIDE TANK OF DRAWN STEEL CONSTRUCTION WITH FLEXIBLE BUTYL DIAPHRAGM, AND STAINLESS STEEL INLET CONNECTOR.
5. EXPANSION TANK SHALL BE PRE-CHARGED TO 40 PSI (FIELD ADJUSTABLE).

PUMP SCHEDULE

ID	LOCATION NAME	LOCATION NO	MANUFACTURER	MODEL NO.	TYPE	GPM	HEAD (FT)	MOTOR HP	MOTOR RPM	WEIGHT (lb)	ELECTRICAL V	ELECTRICAL PH	NOTES

NOTES:
1. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.
2. PUMP SHALL BE ACCEPTED BY THE MASSACHUSETTS BOARD OF REGISTRATION OF PLUMBERS AND GAS FITTERS.
3. PUMP SHALL BE LEAD FREE, CERTIFIED TO ANSI/NSF 61, AND RATED FOR POTABLE WATER.
4. PROVIDE PUMP OF BRONZE OR STAINLESS STEEL CONSTRUCTION.
5. PROVIDE PREMIUM EFFICIENCY ECM TYPE MOTOR WITH INTEGRAL CONTROLS AND THERMAL AND OVERCURRENT PROTECTION. REFER TO DIVISION 26 FOR DISCONNECT SWITCH.
6. PROVIDE FLEXIBLE CONNECTIONS, SHUT OFF AND CHECK VALVES.
7. RECIRCULATION PUMP SHALL BE CONTROLLED BY THE AQUASTAT.

MIXING VALVE SCHEDULE

SYMBOL	MANUFACTURER	MODEL	LOCATION	INLET TEMPERATURE (°F)	OUTLET TEMPERATURE (°F)	GPM	DELTA P AT GPM	MIN RATED GPM	INLET SIZE	OUTLET SIZE	REMARKS
TMV-A	ACORN	MV17-3	SEE PLANS	140	120	43	10	90	1"	1-1/4"	BRASS VALVE BODY WITH (2) 1" NPT BRASS BALL VAVLES, OUTLET TEMPERATURE GAUGE, INTEGRAL CARTRIDGE STYLE CHECKS WITH SCREEN
TMV-B	GUARDIAN	G3800LF	SEE PLANS	140	60	40	35	56	1"	1-1/4"	BRASS VALVE BODY WITH (2) 1" NPT BRASS BALL VAVLES, OUTLET TEMPERATURE GAUGE, INTEGRAL CARTRIDGE STYLE CHECKS WITH SCREEN, BUILT-IN COLD WATER BYPASS, ADJUSTABLE HIGH TEMPERATURE LIMIT

REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION

PLUMBING DRAIN SCHEDULE

SYMBOL	TYPE	MANUFACTURER	MODEL	OUTLET	STRAINER	LOCATION	REMARKS
FD-A	FLOOR DRAIN	JR SMITH	2005Y-B	NO HUB	5-INCH SQUARE NICKEL BRONZE	TOILET ROOM AND SHOWER	CAST IRON BODY, FLASHING COLLAR, TRAP PRIMER CONNECTION SHOWER DRAIN TO HAVE ROUND STRAINER
FD-B	FLOOR DRAIN	JR SMITH	2110Y-B	NO HUB	8-1/2" ROUND CAST IRON	MECHANCIAL ROOM	CAST IRON BODY, FLASHING COLLAR, TRAP PRIMER CONNECTION
FD-C	FLOOR DRAIN	JR SMITH	2250	NO HUB	15-INCH ROUND DUCTILE IRON	VEHICLE STORAGE / GARAGE	DUCO CAST IRON BODY, HEAVY DUTY WIDE FLANGE FLASHING COLLAR, CAST IRON ADA TRACTOR GRATE AND SEDIMENT BUCKET, QUAD CLOSE TRAP SEAL DEVICE/TRAP PRIMER CONNECTION AS INDICATED ON DRAWINGS
FCO-A	FLOOR CLEANOUT	JR SMITH	4120	NO HUB	MEDIUM DUTY FINISHED FLOOR CLEAN OUT	ADMIN AREAS	CAST IRON BODY, ROUND NICKEL BRONZE TOP WITH THREADED SPANNER WRENCH COVER, TWIST TO FLOOR ADJUSTMENT
FCO-B	FLOOR CLEANOUT	JR SMITH	4220	NO HUB	EXTRA HEAVY DUTY CAST IRON CLEAN OUT	VEHICLE STORAGE	CAST IRON BODY, ROUND NICKEL BRONZE TOP WITH THREADED SPANNER WRENCH COVER, TWIST TO FLOOR ADJUSTMENT
FS-A	FLOOR SINK	WATTS	FS-790	NO HUB	STAINLESS STEEL	MECHANICAL ROOM, WHERE INDICATED	12" SQUARE x 8" DEEP, 14 GAUGE TYPE 304 STAINLESS STEEL SANITARY FLOOR SINK WITH LOOSE SET CAST STAINLESS STEEL GRATE, DOME BOTTOM STRAINER, PROVIDE TRAP PRIMER
TD-A	TRENCH DRAIN	WATTS	DEAD LEVEL D	NO HUB	METAL GRATE PROVIDED BY OTHERS	WASH BAY	6" WIDE PREFORMED POLYPROPYLENE CHANNEL, 4" NO HUB DRAIN. PROVIDE APPROPRIATE QUANTITY TO PROVIDE CONTINUOUSLY SLOPED DRAIN FOR THE DISTANCE SHOWN ON THE PLAN.

NOTES:
1. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION
2. BEFORE SETTING DRAINS, OBTAIN EXACT INFORMATION RELATIVE TO FINISH FLOOR LEVEL, FLOOR CONSTRUCTION AND SET TOP OF DRAINS AT FINISH FLOOR LEVEL.
3. SIZE OF DRAINS IS INDICATED ON THE DRAWINGS.

WATER HAMMER ARRESTOR SCHEDULE

SYMBOL	MANUFACTURER	MODEL	TYPE	PIPE SIZE	FIXTURE UNIT RANGE	VOLUME (CU IN)	REMARKS
WHA-A	SIOUX CHIEF	6562-A	PISTON	1/2"	1 -11	5	POLY PISTON WITH TWO EPDM O-RINGS LUBRICATED WITH FDA APPROVED SILICONE COMPOUND, LEAD FREE SOLDER JOINT, ANSI/ASSE 1010 CERTIFIED
WHA-B	SIOUX CHIEF	653-B	PISTON	3/4"	12 - 32	7	POLY PISTON WITH TWO EPDM O-RINGS LUBRICATED WITH FDA APPROVED SILICONE COMPOUND, LEAD FREE SOLDER JOINT, ANSI/ASSE 1010 CERTIFIED
WHA-C	SIOUX CHIEF	654-C	PISTON	1"	33 - 60	11	POLY PISTON WITH TWO EPDM O-RINGS LUBRICATED WITH FDA APPROVED SILICONE COMPOUND, LEAD FREE SOLDER JOINT, ANSI/ASSE 1010 CERTIFIED
WHA-D	SIOUX CHIEF	655-D	PISTON	1"	61 - 113	20	POLY PISTON WITH TWO EPDM O-RINGS LUBRICATED WITH FDA APPROVED SILICONE COMPOUND, LEAD FREE SOLDER JOINT, ANSI/ASSE 1010 CERTIFIED
WHA-E	SIOUX CHIEF	656-E	PISTON	1"	114 - 154	29	POLY PISTON WITH TWO EPDM O-RINGS LUBRICATED WITH FDA APPROVED SILICONE COMPOUND, LEAD FREE SOLDER JOINT, ANSI/ASSE 1010 CERTIFIED
WHA-F	SIOUX CHIEF	657-F	PISTON	1"	155 - 300	36	POLY PISTON WITH TWO EPDM O-RINGS LUBRICATED WITH FDA APPROVED SILICONE COMPOUND, LEAD FREE SOLDER JOINT, ANSI/ASSE 1010 CERTIFIED

REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION

TRAP PRIMER SCHEDULE

SYMBOL	MANUFACTURER	MODEL	PIPE SIZE	ACTIVATION TYPE	MOUNT TYPE	REMARKS
TP-1	PRECISION PLUMBING PRODUCTS	MP-500-12V	3/4"	ELECTRONIC	SURFACE	BATTERY OPERATED TRAP PRIMER. IF UNIT IS SERVING IS MORE THAN ONE FLOOR DRAIN TRAP PRIMER SHALL BE EQUIPPED WITH (DU) DISTRIBUTION UNIT..
TP-2	PRECISION PLUMBING PRODUCTS	LTP-1500		TAIL PIECE	LAVATORY DRAIN	

REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION

AIR COMPRESSOR SCHEDULE

ID	LOCATION NAME	LOCATION NO	MANUFACTURER	MODEL NO.	TYPE	PUMP DESCRIPTION	PUMP TYPE	PUMP FLOW (CFM)	PUMP DISCHARGE PRESS (PSI)	MOTOR QTY	MOTOR POWER (HP)	RECEIVER SIZE (GAL)	DIMENSIONS (IN) LENGTH	DIMENSIONS (IN) WIDTH	DIMENSIONS (IN) HEIGHT	SOUND PRESSURE (dBa)	WEIGHT (lb)	ELECTRICAL DATA V	ELECTRICAL DATA PH	NOTES
AC-1			QUINCY	QCS-30-TMD	ROTARY SCREW					1	30	120.0		2' - 7"	4' - 0"	68	1076.00	208	3	1 THRU 11

NOTES:
1. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.
2. EQUIPMENT SHALL BE ACCEPTED BY THE MASSACHUSETTS BOARD OF REGISTRATION OF PLUMBERS AND GAS FITTERS.
3. PROVIDE AIR COMPRESSOR WITH 120 GALLON HORIZONTAL AIR RECEIVER.
4. PROVIDE INTEGRATED REFRIGERATED AIR DRYER WITH SEPARATE ELECTRICAL CONNECTION (115 V, 1 PH, 60 HZ).
5. PROVIDE PROGRAMMABLE CONTROLLER WITH BUILT-IN INTERNET MONITORING CAPABILITY.
6. INSTALL AIR COMPRESSOR ON 4" HIGH CONCRETE PAD.
7. INSTALL AIR COMPRESSOR WITH CLEARANCE REQUIRED FOR PROPER VENTILATION.
8. CONDENSATE SHALL BE FILTERED BEFORE DRAINING TO SEWAGE SYSTEM. FOLLOW CODES AND LOCAL REGULATIONS FOR CONDENSATE DISPOSAL.
9. THE COMPRESSED AIR SUPPLY LINE SHALL BE PLUMBED INTO THE TOP OF THE HEADER.
10. PROVIDE EQUIPMENT WITH A 5-YEAR WARRANTY.

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NEW PUBLIC WORKS FACILITY
14 FOREST RD, ACTON, MA 01720

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Consultants:

Revisions:

No.	Date	Description

CDA:

Seal:

Issued For:

40% PRELIMINARY DESIGN DEVELOPMENT PRICING SET

Scale:

Key Plan:

Date: 02/25/25
Draw By: EJ
Reviewed By: AH
Approved By: MBR
W&S Project No.: ENG22-0604
W&S File No.: XXX

Drawing Title:

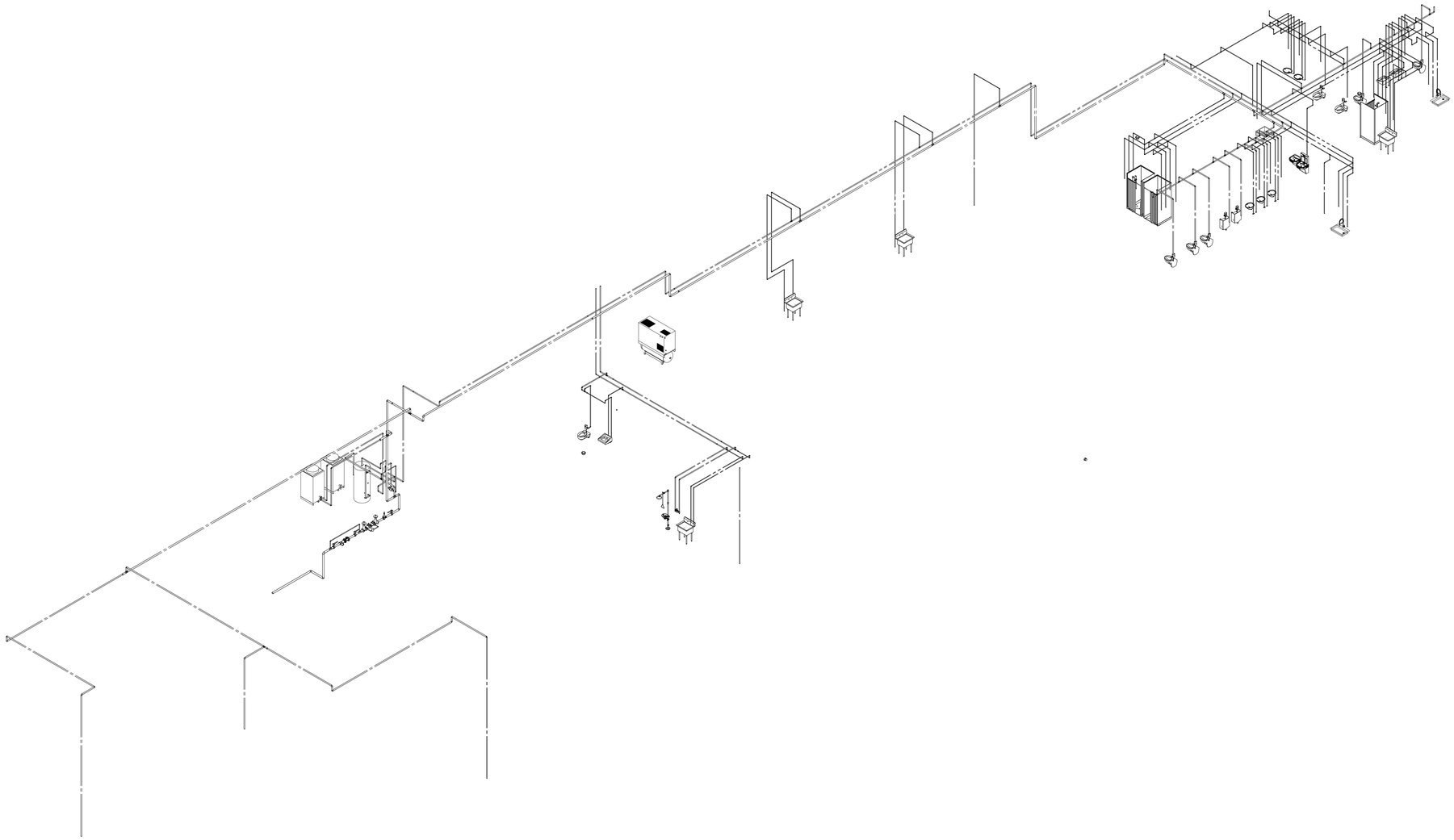
PLUMBING SCHEDULES

Sheet Number:

P601

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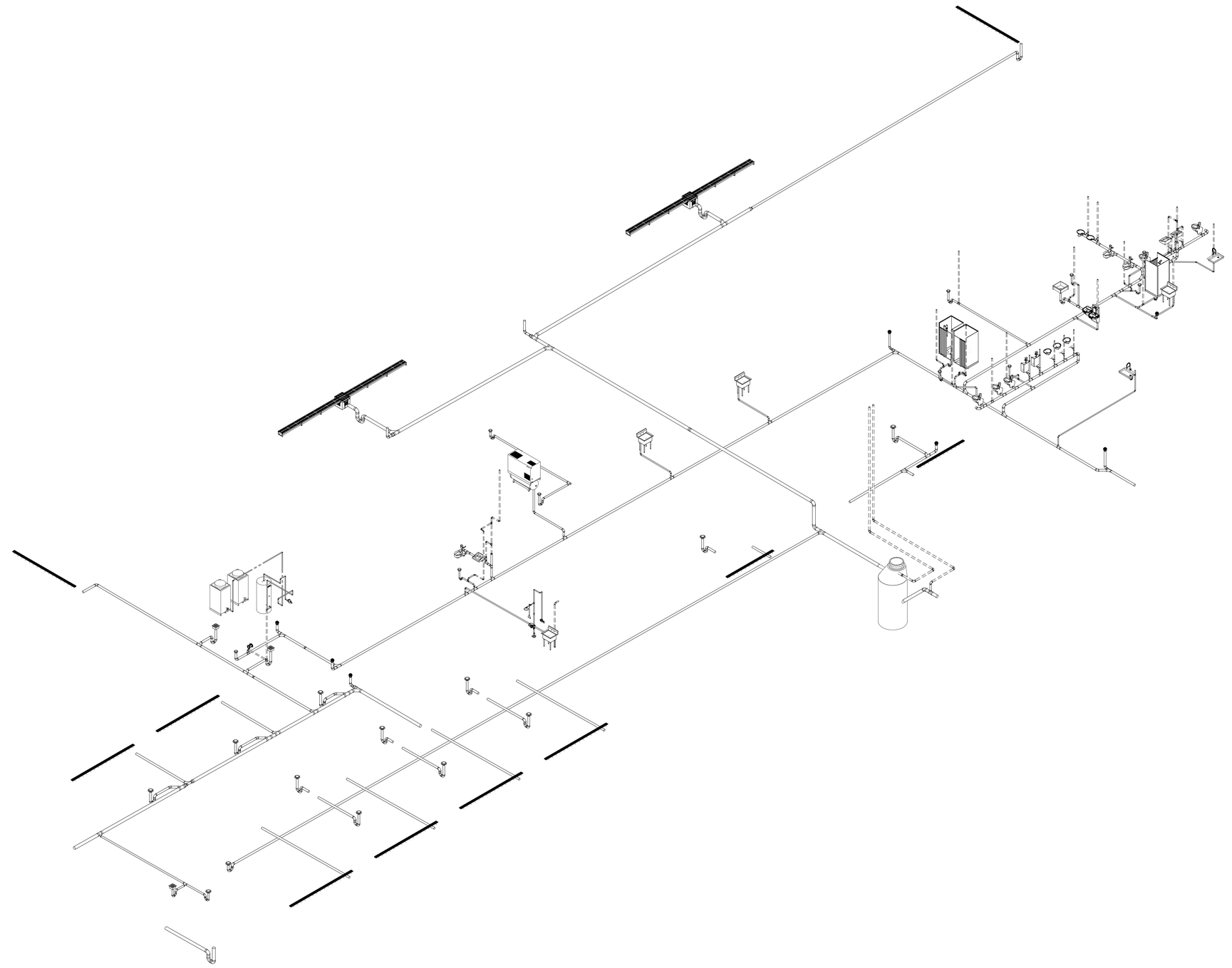
DOMESTIC WATER RISER DIAGRAM

Sheet Number:

P701

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WASTE AND VENT RISER DIAGRAM

Sheet Number:

P702

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ABBREVIATIONS

Ø	ROUND/DIAMETER	ID	INDIRECT
ABV	ABOVE	ID	INSIDE DIAMETER
AC	AIR CONDITIONING	IEER	INTEGRATED EER
ACCU	AIR COOLED CONDENSING UNIT	IN	INCH
ACD	AUTOMATIC CONTROL DAMPER	IN WC	INCHES WATER COLUMN
ACT	ACOUSTICAL CEILING TILE	IN WG	INCHES WATER GAUGE
ACU	AIR CONDITIONING UNIT	INV	INVERT
AD	ACCESS DOOR	KW	KILOWATT
ADD	ADDENDUM	L	LENGTH
ADD'L	ADDITIONAL	LAT	LEAVING AIR TEMPERATURE
AF	AIR FOIL	LB	POUND
AFF	ABOVE FINISHED FLOOR	LB/HR	POUNDS PER HOUR
AFMS	AIR FLOW MONITORING STATION	LD	LINEAR DIFFUSER
AFR	ABOVE FINISHED ROOF	LF	LINEAR FEET
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	LP	LOW POINT
AHU	AIR HANDLING UNIT	LP	LOW PRESSURE
AL	ACOUSTIC DUCT LINER	LVG	LEAVING
ALT	ALTERNATE	LVR	LOUVER
AMB	AMBIENT	LWT	LEAVING WATER TEMPERATURE
AMP	AMPERE	M/A	MIXED AIR
AP	ACCESS PANEL	MAX	MAXIMUM
APD	AIR PRESSURE DROP	MAV	MANUAL AIR VENT
ARCH	ARCHITECT/ARCHITECTURAL	MBH	ONE THOUSAND BTU PER HOUR
AS	AIR SEPARATOR	MCA	MINIMUM CIRCUIT AMPACITY
AS	AIR STREAM	MCF	ONE THOUSAND CUBIC FEET
ATC	AUTOMATIC TEMPERATURE CONTROL	MD	MOTORIZED DAMPER
ATM	ATMOSPHERE	MECH	MECHANICAL
AVG	AVERAGE	MEZZ	MEZZANINE
BDD	BACKDRAFT DAMPER	MFR	MANUFACTURER
BFC	BELOW FINISHED CEILING	MIN	MINIMUM
BFF	BELOW FINISHED FLOOR	MISC	MISCELLANEOUS
BFP	BACKFLOW PREVENTER	MOCP	MAXIMUM OVER CURRENT PROTECTION
BI	BACKWARD INCLINED	MTR	MOTOR
BLDG	BUILDING	MU	MAKE-UP WATER
BOD	BOTTOM OF DUCT	N/A	NOT APPLICABLE
BOP	BOTTOM OF PIPE	NC	NOISE CRITERIA
BOS	BOTTOM OF STEEL	NC	NORMALLY CLOSED
BTU	BRITISH THERMAL UNITS	NIC	NOT IN CONTRACT
BTUH	BRITISH THERMAL UNITS PER HOUR	NO	NUMBER
CAP	CAPACITY	NO	NORMALLY OPEN
CAV	CONSTANT AIR VOLUME	NTS	NOT TO SCALE
CC	COOLING COIL	O	OXYGEN
CD	CONDENSATE DRAIN	O/A	OUTSIDE AIR
CENT	CENTRIFUGAL	OAI	OUTDOOR AIR INTAKE
CF	CUBIC FEET	OBD	OPPOSED BLADE DAMPER
CFM	CUBIC FEET PER MINUTE	OC	ON CENTER
CH	CHILLER	OCC	OCCUPIED
CHW	CHILLED WATER	OD	OUTSIDE DIAMETER
CHWR	CHILLED WATER RETURN	ODP	OPEN DRIP PROOF
CHWS	CHILLED WATER SUPPLY	OED	OPEN END DUCT
CL	CENTERLINE	OV	OUTLET VELOCITY
CLG	CEILING	P	PUMP
CLG	COOLING	PAD	PRIMARY AIR DAMPER
CO	CLEAN OUT	PD	PRESSURE DROP
CO	CARBON MONOXIDE	PD	PRESSURE DIFFERENCE
CO2	CARBON DIOXIDE	PH	PHASE
COL	COLUMN	PHC	PREHEAT COIL
CONC	CONCRETE	PHX	PLATE AND FRAME HEAT EXCHANGER
CONN	CONNECTION	PLBG	PLUMBING
CP	CONDENSATE PUMP	POS	PROVIDED BY OTHER SECTION
CSF	CHEMICAL SHOT FEEDER	PRESS	PRESSURE
CU	CONDENSING UNIT	PRV	PRESSURE REDUCING VALVE
CUH	CABINET UNIT HEATER	PSI	POUNDS PER SQUARE INCH
CW	COLD WATER	PSIA	PSI ABSOLUTE
CW	CONDENSER WATER	PSID	PSI DIFFERENTIAL
CWR	CONDENSER WATER RETURN	PSIG	PSI GAUGE
CWS	CONDENSER WATER SUPPLY	PWR	POWER
D	DRAIN	QTY	QUANTITY
D	DEPTH	R	RADIUS
DB	DRY BULB	R/A	RETURN AIR
DC	DRY COOLER	RD	REFRIGERANT DISCHARGE
DDC	DIRECT DIGITAL CONTROLS	REC	RECESSED
DEG	DEGREE	RED	REDUCER
DH	DUCT HEATER	RET	RETURN
DIA	DIAMETER	RF	RETURN FAN
DIM	DIMENSION	RH	RELATIVE HUMIDITY
DN	DOWN	RHC	REHEAT COIL
DOV	DRAIN OFF VALVE	RL	REFRIGERANT LIQUID
DP	DIFFERENTIAL PRESSURE	RLA	RUNNING LOAD AMPS
DX	DIRECT EXPANSION	RL/A	RELIEF AIR
EA	EACH	RLF	RELIEF
E/A	EXHAUST AIR	RM	ROOM
EAT	ENTERING AIR TEMPERATURE	RPM	REVOLUTIONS PER MINUTE
EER	ENERGY EFFICIENCY RATIO	RS	REFRIGERANT SUCTION
EF	EXHAUST FAN	S/A	SUPPLY AIR
EFF	EFFICIENCY	SA	SOUND ATTENUATOR
EHC	ELECTRIC HEATING COIL	SCHE	SIMULTANEOUS COOLING & HEATING EFF
ELEC	ELECTRICAL	SCR	SCREEN
ELEV	ELEVATION	SD	SMOKE DAMPER
ERU	ENERGY RECOVERY UNIT	SDET	SMOKE DETECTOR
ERV	ENERGY RECOVERY VENTILATOR	SEER	SEASONAL ENERGY EFFICIENCY RATING
EQUIP	EQUIPMENT	SENS	SENSIBLE
ESP	EXTERNAL STATIC PRESSURE	SF	SQUARE FOOT
ET	EXPANSION TANK	SF	SUPPLY FAN
EVAP	EVAPORATOR	SFD	COMBINATION SMOKE FIRE DAMPER
EUH	ELECTRIC UNIT HEATER	SHC	SENSIBLE HEAT CAPACITY
EWT	ENTERING WATER TEMPERATURE	SHR	SENSIBLE HEAT RATIO
EWH	ELECTRIC WATER HEATER	SM	SURFACE MOUNT
EXH	EXHAUST	SP	STATIC PRESSURE
EXP	EXPANSION	SPECS	SPECIFICATIONS
EXT	EXTERNAL	SS	STAINLESS STEEL
EXIST	EXISTING	SUP	SUPPLY
F	DEGREES FAHRENHEIT	T	THERMOSTAT
FA	FREE AREA	T/A	TRANSFER AIR
FC	FLEXIBLE CONNECTION	TAV	THERMOSTATIC AIR VENT
FCU	FAN COIL UNIT	TD	TEMPERATURE DROP
FD	FIRE DAMPER	TEFC	TOTALLY ENCLOSED FAN COOLED
FL	FLOOR	TEMP	TEMPERATURE
FLA	FULL LOAD AMPS	TOD	TOP OF DUCT
FPM	FEET PER MINUTE	TOP	TOP OF PIPE
FPS	FEET PER SECOND	TOS	TOP OF STEEL
FS	FLOW SWITCH	TOT	TOTAL
FT	FOOT/FEET	TR	TRANSFER
GA	GAUGE	TSP	TOTAL STATIC PRESSURE
GAL	GALLON	TYP	TYPICAL
GALV	GALVANIZED	UG	UNDERGROUND
GC	GENERAL CONTRACTOR	UH	UNIT HEATER
GFU	GLYCOL FEED UNIT	UNO	UNLESS NOTED OTHERWISE
GMU	GLYCOL MAKE UP	UNOCC	UNOCCUPIED
GPH	GALLONS PER HOUR	V	VENT
GPM	GALLONS PER MINUTE	V	VOLTS
GRD	GRADE	VAR	VARIABLE
GV	GRAVITY VENTILATOR	VAV	VARIABLE AIR VOLUME
GWB	GYPSUM WALL BOARD	VD	VOLUME DAMPER
HB	HOSE BIB	VEL	VELOCITY
HD	HEAD	VENT	VENTILATION
HP	HORSE POWER	VFD	VARIABLE FREQUENCY DRIVE
HP	HIGH POINT	VTR	VENT THROUGH ROOF
HR	HOUR	W	WATT
HRU	HEAT RECOVERY UNIT	W	WIDTH
HRV	HEAT RECOVERY VENTILATOR	W/	WITH
HT	HEIGHT	W/O	WITHOUT
HTG	HEATING	WB	WET BULB
HTR	HEATER	WC	WATER COLUMN
HV	HEATING AND VENTILATION UNIT	WG	WATER GAUGE
HW	HOT WATER	WMS	WIRE MESH SCREEN
HWC	HOT WATER HEATING COIL	WPD	WATER PRESSURE DROP
HWR	HOT WATER RETURN	WTD	WATER TEMPERATURE DIFFERENCE
HWS	HOT WATER SUPPLY	ΔP	CHANGE IN PRESSURE
HX	HEAT EXCHANGER	ΔT	CHANGE IN TEMPERATURE
HZ	HERTZ	°F	DEGREES FAHRENHEIT

NOTE: SOME OR ALL SYMBOLS MAY BE USED ON THIS PROJECT

SCOPE OF WORK
(INCLUDING BUT NOT LIMITED TO)

1. PROVIDE INSTALLATION OF NEW DUCTWORK FOR THE NEW HVAC EQUIPMENT AS INDICATED ON THE PLANS.
2. PROVIDE INDOOR BASE MOUNTED HEAT RECOVERY UNIT WITH DUEL TEMPERATURE COIL (HW/CHW) FOR THE FLEET MAINTENANCE BAYS AND SHOPS.
3. PROVIDE RADIANT FLOOR HEATING FOR THE FLEET MAINTENANCE BAYS, SHOPS, AND FLEET STORAGE.
4. PROVIDE INDOOR BASE MOUNTED ENERGY RECOVERY UNIT WITH DUEL TEMPERATURE COIL (HW/CHW) FOR HYDRONIC FAN COIL TERMINAL UNITS FOR THE ADMIN AREA.
5. PROVIDE INDOOR BASE MOUNTED HEATING AND VENTILATING UNITS WITH HW HEATING COILS AND ALUMINUM CONSTRUCTION FOR THE WASHBAY.
6. PROVIDE GROUND SOURCE HEAT PUMPS AND ASSOCIATED APPURTENANCES (PUMPS, ET, AS, GFU, ETC.).
7. PROVIDE HW TYPE UNIT HEATERS IN MECHANICAL SPACES AND ELECTRIC TYPE UNIT HEATER IN THE ELECTRIC ROOM.
8. PROVIDE HW CABINET UNIT HEATERS AT EACH ENTRANCE VESTIBULE.
9. PROVIDE DUCTLESS SPLIT SYSTEM FOR TEL/DATA ROOM.
10. PROVIDE EXHAUST FANS FOR LOCKER/BATHROOMS, STORAGE SPACES, AND MECHANICAL SPACES.

HVAC GENERAL NOTES

1. MECHANICAL GENERAL NOTES APPLY TO ALL MECHANICAL DRAWINGS. THE WORD "CONTRACTOR" USED IN "HVAC" OR "MECHANICAL" WORK SHALL MEAN THE HVAC FILED SUB-BIDDER OR MECHANICAL CONTRACTOR.
2. FINAL PRODUCT SHALL BE A COMPLETE AND FUNCTIONING SYSTEM INCLUDING ALL INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE HVAC WORK COMPLETE AND READY FOR OPERATION. FINAL PRODUCT SHALL CONFORM TO ALL REQUIREMENTS OF APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING BUT NOT LIMITED TO THE INTERNATIONAL BUILDING CODE AND INTERNATIONAL MECHANICAL CODE.
3. CARE SHALL BE TAKEN DURING THE INSTALLATION TO NOT DAMAGE OR INTERRUPT BUILDING SYSTEMS AND SERVICES THAT ARE ALREADY INSTALLED. DAMAGE TO SUCH SYSTEMS OR EQUIPMENT CAUSED BY THIS CONTRACTOR DURING INSTALLATION SHALL BE REPAIRED AND/OR REPLACED AT THIS CONTRACTOR'S EXPENSE TO THE COMPLETE SATISFACTION OF THE BUILDING OWNER.
4. LOCATIONS OF PIPING, DUCTWORK AND EQUIPMENT AS INDICATED ON THE DRAWING, ARE APPROXIMATE AND SUBJECT TO MINOR ADJUSTMENTS IN THE FIELD. WORK SHALL BE COORDINATED WITH ALL OTHER TRADES TO AVOID INTERFERENCE IN THE FIELD.
5. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED, INCLUDING BUT NOT LIMITED TO DIV 21, 22, AND 26. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
6. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT AND/OR PIPE TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
7. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR TERMINAL DEVICES.
8. ALL MATERIALS AND EQUIPMENT UNLESS SPECIFICALLY INDICATED AS REUSED, SHALL BE NEW.
9. DUCTWORK SHALL NOT RUN ALONG FULL HEIGHT PARTITIONS.
10. ACCESS PANELS SHALL BE FURNISHED TO ALLOW FOR CLEANING OF COILS AND SERVICING OF DAMPERS, HEATERS, VALVES, AND ALL CONCEALED MECHANICAL EQUIPMENT TO BE INSTALLED BY THE GENERAL CONTRACTOR.
11. THE INSIDE OF ALL DUCTWORK VISIBLE THROUGH A GRILLE OR DIFFUSER SHALL BE PAINTED FLAT BLACK IN ACCORDANCE WITH DIVISION 9.
12. INSTALL NEW AND RELOCATED ROOM THERMOSTATS AND SENSORS 4 FEET AFF OR AS DIRECTED OTHERWISE BY ARCHITECT.
13. WHEN SECTION OF DUCTWORK IS NOT LABELED FOR SIZE, THE LARGER SIZE INDICATED ON THE CONNECTED DUCT SHALL PREVAIL. SIZE OF DUCT RUN-OUTS TO DIFFUSER SHALL EQUAL DIFFUSER NECK SIZE.
14. THE FIRE PROOFING OF THE BUILDING STRUCTURE IS NOT TO BE REMOVED FOR THE INSTALLATION OF HANGERS, SUPPORTS, DUCTWORK, ETC. IF FIRE PROOFING IS DAMAGED, IT SHALL BE REPAIRED AT THE EXPENSE OF THE TRADE.
15. THE CONTRACTOR SHALL TEST AND CALIBRATE ALL CONTROLS AND VERIFY ALL ARE FULLY FUNCTIONAL AND SUBMIT DOCUMENTATION. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
16. THE CONTRACTOR SHALL PROVIDE AND SUBMIT DOCUMENTATION FOR TESTING AND BALANCING OF ALL AIR AND WATER SYSTEMS. DUCT AND PIPING PRESSURE AND LEAKAGE TESTS, OPERATING AND MAINTENANCE MANUALS, AND AS BUILT DRAWINGS. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
17. THE CONTRACTOR SHALL COORDINATE ALL FRESH AIR INTAKE, FLUE TERMINATION, AND EXHAUST TERMINATION LOCATIONS WITH ALL OTHER TRADES BASED ON CLEARANCE REQUIREMENTS INDICATED IN THE IMC AND ALL OTHER APPLICABLE FEDERAL, STATE, AND LOCAL CODES.
18. REFER TO THE PROJECT SPECIFICATIONS FOR FURTHER REQUIREMENTS.
19. MANY EQUIPMENT SCHEDULES DO NOT LIST QUANTITIES. CONTRACTOR SHALL REFER TO ALL DRAWINGS AND PROVIDE THE REQUIRED QUANTITIES FOR ALL COMPONENTS.
20. IN ACCORDANCE WITH SPECIFICATION FOR DIVISION 23, THE CONTRACTOR SHALL COORDINATE WITH ALL TRADES AND PREPARE COORDINATION DRAWINGS PRIOR TO INSTALLATION. COORDINATION DRAWINGS SHALL BE SUBMITTED TO THE OWNERS REPRESENTATIVE FOR REVIEW PRIOR TO INSTALLATION.
21. MINIMAL CONTROL POWER HAS BEEN IDENTIFIED ON THE ATC DRAWINGS. IF ANY ADDITIONAL POWER IS REQUIRED BASED ON SYSTEMS DESIGN BY THE CONTROLS CONTRACTOR THE ATC/BAS CONTRACTOR SHALL BE RESPONSIBLE TO SUPPLY THAT POWER. COORDINATE ALL POWER REQUIREMENTS WITH DIV 26.

DESIGN CONDITIONS

CODES/STANDARDS

2021 INTERNATIONAL MECHANICAL CODE
MASSACHUSETTS STATE BUILDING CODE, TENTH EDITION
MASSACHUSETTS STRETCH ENERGY CODE 2021

OUTDOOR AIR TEMPERATURE

ASHRAE - HANSCOM AFB
WINTER 2.3°F DB/ 0.5°F WB
SUMMER 90.8°F DB/ 73.2°F WB

INDOOR CONDITIONS (°F)

SPACE	WINTER	SUMMER
OFFICES	72	75
CONFERENCE ROOMS	72	75
BATHROOM	72	75
LOCKER ROOM	72	75
STORAGE/MECH	60	-
CORRIDOR	72	75
MUSTER/TRAINING ROOM	72	75
MAINTENANCE BAYS	60	76
SHOPS	60	76
VEHICLE STORAGE	50	-
VEHICLE WASH	60	-
LUBE ROOM	60	76
PARTS STORAGE	60	76
COMPRESSOR ROOM	60	95***

MINIMUM VENTILATION

SPACE	CFM/PERSON	CFM/SF	CFM	
OFFICES	5	0.06		
CONFERENCE ROOMS	5	0.06		
BATHROOM	0	0	100*	
LOCKER ROOM	0	0.25	100*	
STORAGE/MECH	0	0.12		
CORRIDOR	0	0.06		
MUSTER/TRAINING ROOM	7.5	0.06		
MAINTENANCE BAYS	0	1		
SHOPS W/ ENGINE REPAIR	0	0.75**		
SHOPS	0	0.5/0.75**		
VEHICLE STORAGE	0	0.05/0.75**		
VEHICLE WASH	0	0.05/0.75**		
LUBE ROOM	0	1		
PARTS STORAGE	0	1		
COMPRESSOR ROOM	0	0.12	0***	

* PER FIXTURE (INCLUDING SHOWERS) CONTINUOUS EXHAUST
** EXHAUST FOR GAS DETECTION PURGE
*** CFM TO BE CALCULATED BASED ON COMPRESSOR HP OR AIRFLOW

CALLOUT SYMBOLS

- CONNECT TO EXISTING
- A / H2.0 — SECTION DESIGNATION / SECTION SHEET NUMBER
- 1 — REVISION NUMBER
- T — THERMOSTAT/TEMPERATURE SENSOR, DUCT MOUNTED
- T — THERMOSTAT, WALL MOUNTED
- S — SENSOR, WALL MOUNTED
- CO2 — CARBON DIOXIDE SENSOR
- CO — CARBON MONOXIDE SENSOR
- NO2 — NITROGEN DIOXIDE SENSOR
- MS — MANUAL SWITCH, WALL MOUNTED
- H — HORN/STROBE AUDIO/VISIBLE ALARM
- SA(100) — S = SUPPLY A = SCHEDULED DIFFUSER (100) - CFM TO BALANCE TO
- RA(100) — R = RETURN A = SCHEDULED DIFFUSER (100) - CFM TO BALANCE TO
- EA(100) — E = EXHAUST A = SCHEDULED DIFFUSER (100) - CFM TO BALANCE TO
- TA(100) — T = TRANSFER A = SCHEDULED DIFFUSER (100) - CFM TO BALANCE TO
- VAV-XX — EQUIPMENT TAG (REFER TO SCHEDULES FOR DETAILS)

NOTE: SOME OR ALL SYMBOLS MAY BE USED ON THIS PROJECT

DUCTWORK

SINGLE LINE		DOUBLE LINE
WxD	RECTANGULAR DUCT W = WIDTH, D = DEPTH	WxD / 10x6
DIA/Ø	ROUND DUCT (DIA = INSIDE DIAMETER)	DIA/Ø / 10"Ø
	ROUND DUCT UP	
	RECTANGULAR SUPPLY DUCT UP	
	RECTANGULAR RETURN/EXHAUST DUCT UP	
	RECTANGULAR SUPPLY DUCT DN	
	RECTANGULAR RETURN/EXHAUST DUCT DN	
	STANDARD RADIUS ELBOW (R = W) SUPPLY/RETURN/EXHAUST	R
	FULL LENGTH SPLITTER VANES (R < W) SUPPLY/RETURN/EXHAUST	W R
	HORIZONTAL OFFSET SUPPLY/RETURN/EXHAUST	
R/D	CHANGE OF ELEVATION (R) RISE OR (D) DROP SUPPLY/RETURN/EXHAUST	R/D
	45° TAP TAKE-OFF	
	90° TAP TAKE-OFF (45°, SQUARE TO ROUND, 45°TAKE-OFF TRANSITION TO ROUND, AND BELLMOUTH, RESPECTIVLEY)	L2
	SPLIT TAKE-OFF	
	RECTANGULAR WYE W/ RADIUS ELBOWS	
	RECTANGULAR WYE W/ 45° TAKE-OFFS	
10x6 / 6"Ø	RECTANGULAR TO ROUND TRANSITION	10x6 / 6"Ø
	ACOUSTICALLY LINED DUCTWORK	
	FLEXIBLE DUCTWORK	
	OPEN END DUCT W/ 1/2"x1/2" WMS	

NOTE: SOME OR ALL SYMBOLS MAY BE USED ON THIS PROJECT

DIFFUSERS

SINGLE LINE	ALL DIMENSIONS IN INCHES UNLESS NOTED OTHERWISE	DOUBLE LINE
VD	TAKE-OFF TO DIFFUSER/GRILLE	VD
VD	TAKE-OFF W/ FLEXIBLE DUCT TO DIFFUSER/GRILLE	VD / HARD ELBOW
VD	CEILING DUCT MOUNTED DIFFUSER/GRILLE	VD
	SIDEWALL DUCT MOUNTED DIFFUSER/GRILLE	VD
VD VD	SIDEWALL SUPPLY LINEAR DIFFUSER (W/ SHEETMETAL PLENUM, LINING, & BRANCH CONNECTION FOR EVERY 4' OF LINEAR)	VD VD
VD VD	CEILING SUPPLY LINEAR DIFFUSER (W/ SHEETMETAL PLENUM, LINING, & BRANCH CONNECTION FOR EVERY 4' OF LINEAR)	VD VD / PLENUM BY LD MFR

NOTE: SOME OR ALL SYMBOLS MAY BE USED ON THIS PROJECT

DUCTWORK/RGD SYMBOLS

- F — FIRE DAMPER - SELF CLOSING W/ACCESS DOOR
- S — SMOKE DAMPER - AUTOMATIC W/ ACCESS DOOR
- C — COMBINATION FIRE/SMOKE DAMPER W/ ACCESS DOOR
- V — MANUAL VOLUME DAMPER
- B — BACKDRAFT DAMPER
- M — MOTORIZED DAMPER - AUTOMATIC W/ ACCESS DOOR
- SLIDE GATE DAMPER
- SDET — SMOKE DETECTOR
- AIRFLOW MONITORING STATION
- STANDARD 4-WAY BLOW SUPPLY DIFFUSER
- 3-WAY BLOW SUPPLY DIFFUSER
- OR — 2-WAY BLOW SUPPLY DIFFUSER
- 1-WAY BLOW SUPPLY DIFFUSER
- RETURN OR EXHAUST GRILLE OR REGISTER
- UNDER CUT DOOR (1")
- RETURN OR EXHAUST AIRFLOW
- SUPPLY AIRFLOW

NOTE: SOME OR ALL OF THE SYMBOLS MAY BE USED ON THIS PROJECT

PIPING ABBREVIATIONS

A	COMPRESSED AIR
ATV	ATMOSPHERIC VENT
CHEM	CHEMICAL FEED
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CD	CONDENSATE DRAIN
D	DRAIN
GMU	GLYCOL MAKE-UP
GR	GLYCOL RETURN
GS	GLYCOL SUPPLY
HCR	DUAL TEMPERATURE RETURN
HCS	DUAL TEMPERATURE SUPPLY
HPWR	HEAT PUMP WATER RETURN
HPWS	HEAT PUMP WATER SUPPLY
HTWR	HIGH TEMPERATURE HOT WATER RETURN
HTWS	HIGH TEMPERATURE HOT WATER SUPPLY
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
MU	MAKE-UP WATER
NG	NATURAL GAS
PC	PUMPED CONDENSATE
PCHWR	PRIMARY CHILLED WATER RETURN
PCHWS	PRIMARY CHILLED WATER SUPPLY
PRCHWR	PROCESSED CHILLED WATER RETURN
PRCHWS	PROCESSED CHILLED WATER SUPPLY
RD	REFRIGERANT DISCHARGE
RG	REFRIGERANT GAS
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
SCHWR	SECONDARY CHILLED WATER RETURN
SCHWS	SECONDARY CHILLED WATER SUPPLY
TCHWR	TERTIARY CHILLED WATER RETURN
TCHWS	TERTIARY CHILLED WATER SUPPLY
V	VENT

NOTE: SOME OR ALL SYMBOLS MAY BE USED ON THIS PROJECT

PIPING LEGEND

- GATE VALVE (OUTSIDE SCREW AND YOKE UNLESS SPECIFIED OTHERWISE)
- GLOBE VALVE (OUTSIDE SCREW AND YOKE UNLESS SPECIFIED OTHERWISE)
- BALL VALVE
- BUTTERFLY VALVE
- DRAIN VALVE WITH CAP AND CHAIN
- PLUG VALVE
- PRESSURE REDUCING VALVE
- ANGLE VALVE (SECTION VIEW)
- ANGLE VALVE (PLAN VIEW)
- GLOBE ANGLE VALVE
- CHECK VALVE (SILENT TYPE ON PUMP DISCHARGE)
- STRAINER WITH HOSE END BLOWOFF VALVE, CAP AND CHAIN
- SD — SUCTION DIFFUSER/STRAINER (NON-REDUCING) WITH BLOWOFF
- STRAINER, BASKET TYPE WITH DRAIN VALVE, HOSE BIBB AND CAP
- STRAINER, DUPLEX BASKET
- SOLENOID VALVE
- 2-WAY MODULATING PRESSURE INDEPENDENT ACV
- 2-WAY AUTOMATIC CONTROL VALVE (MODULATING)
- 2-WAY AUTOMATIC CONTROL VALVE (TWO POSITION)
- 3-WAY AUTOMATIC CONTROL VALVE (MODULATING)
- 3-WAY AUTOMATIC CONTROL VALVE (TWO POSITION)
- AUTOMATIC FLOW LIMITING VALVE (PRESSURE INDEPENDENT)
- COMBINATION FLOW METER/SHUT-OFF/BALANCING VALVE (CIRCUIT SETTER)
- TRIPLE DUTY PUMP VALVE, CHECK, BALANCING (FLOW METER), SHUT-OFF
- BTU — BTU METER (HOT TAP TYPE WITH VALVE)
- FMT — FLOW METER/TRANSMITTER (HOT TAP TYPE WITH VALVE)
- VENTURI FLOW METER
- ORIFICE FLOW METER
- FS — FLOW SWICTH
- RELIEF/SAFETY VALVE
- THERMOSTATIC RADIATOR VALVE
- UNION
- BLIND FLANGE
- PIPE - CAPPED
- PRESSURE GAUGE (W/ BALL VALVE(S), SNUBBER, AND FOR STEAM, SIPHON)
- PS — PRESSURE SWITCH
- THERMOMETER
- VB — VACUUM BREAKER
- PT — PRESSURE GAUGE/THERMOMETER WELL
- AV — AIR VENT - AUTOMATIC
- MV — AIR VENT - MANUAL
- DIRECTION OF FLOW
- EXPANSION LOOP
- EJ — EXPANSION JOINT
- FLEXIBLE CONNECTOR
- PIPE ANCHOR
- PIPE GUIDE
- PIPE CONNECTION - TOP
- PIPE CONNECTION - BOTTOM
- PIPE - DOWN
- PIPE - UP
- R — PITCH OF PIPE - (R) RISE OR (D) DROP
- REDUCER - CONCENTRIC
- REDUCER - ECCENTRIC
- PIPE BREAK (SINGLE LINE)
- DIRT LEG
- CO — CLEANOUT FOR CONDENSATE DRAIN PIPE
- PIPE - UP (DOUBLE LINE)
- PIPE - DOWN (DOUBLE LINE)
- PIPE BREAK (DOUBLE LINE)

NOTE: SOME OR ALL SYMBOLS MAY BE USED ON THIS PROJECT

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Key Plan:

Date:	03/28/25
Draw By:	EFJ
Reviewed By:	JCG
Approved By:	SEH
W&S Project No.:	ENG24-1080
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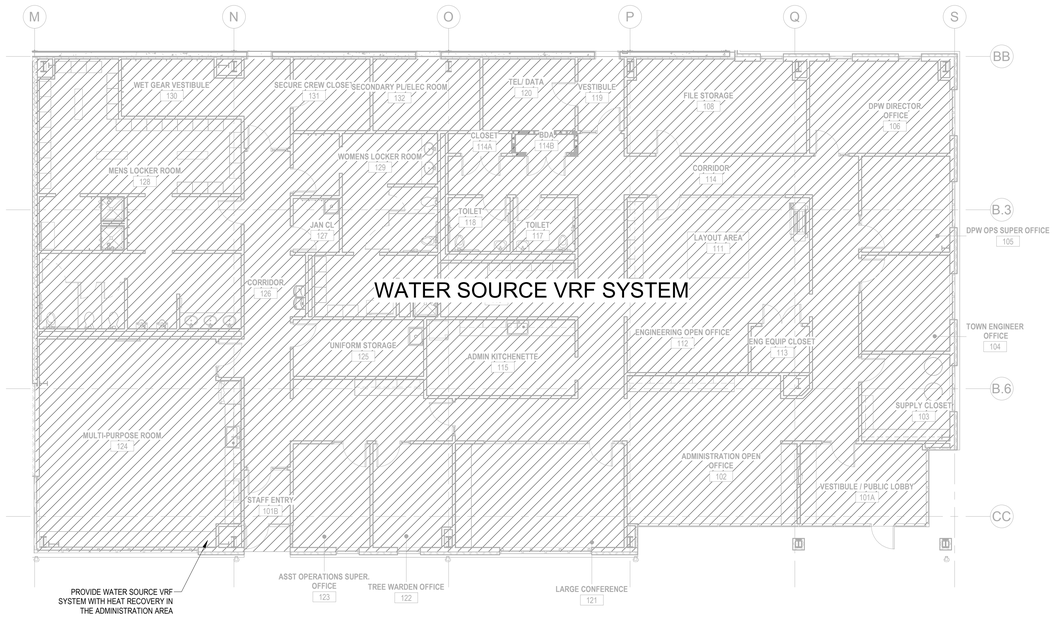
LEGENDS, NOTES, AND ABBREVIATIONS

Sheet Number:

H001

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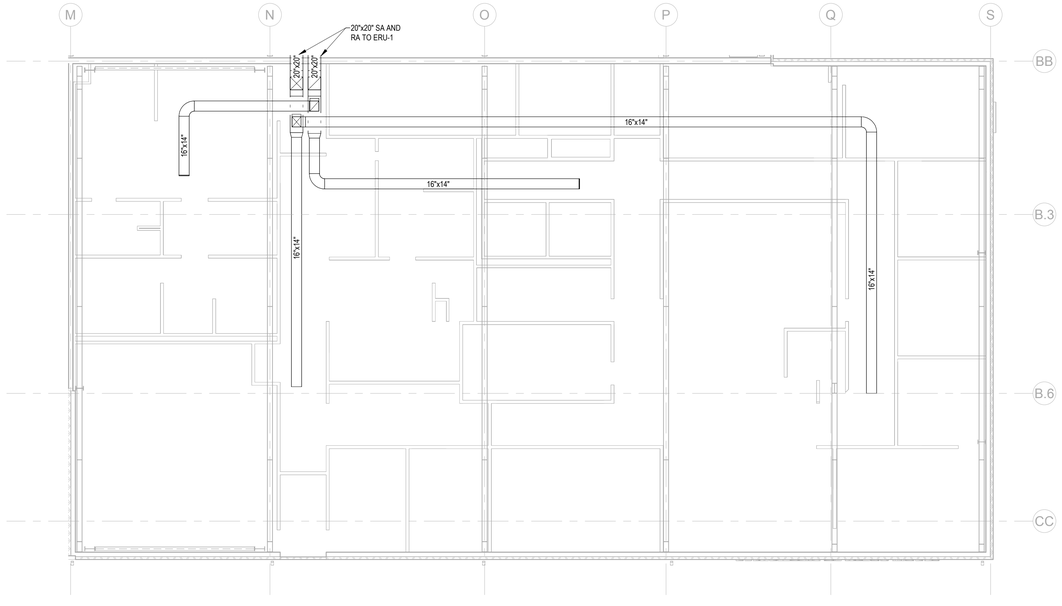
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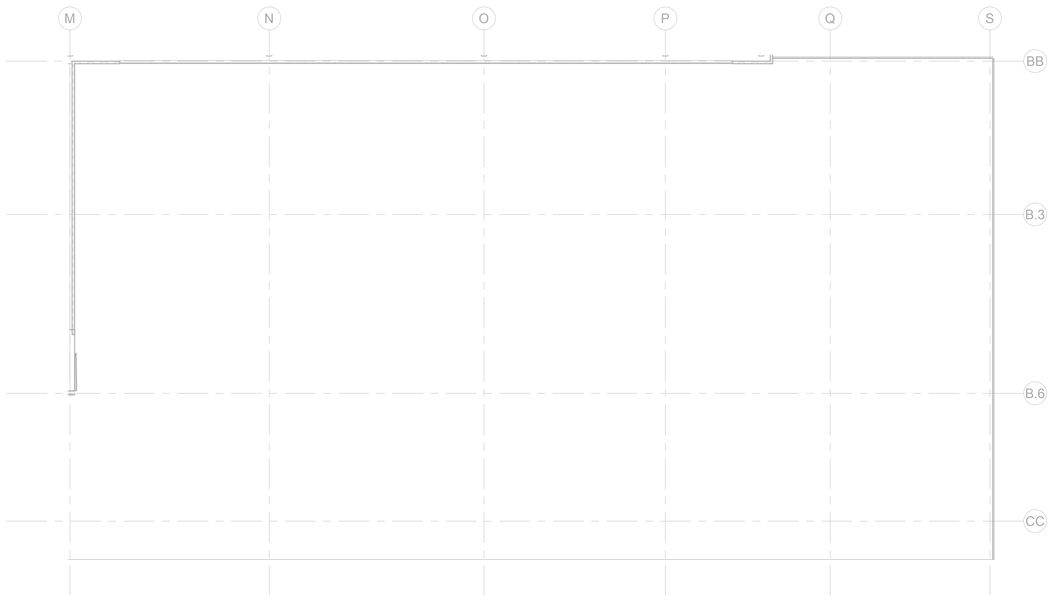
1 ADMIN AREA FIRST FLOOR NEW WORK DUCT PLAN
1/8" = 1'-0"

HVAC NEW WORK NOTES

1. NEW WORK NOTES SHALL APPLY TO ALL HVAC NEW WORK DRAWINGS.
2. 1" FILTER MEDIA SHALL BE TEMPORARILY INSTALLED OVER ALL SUPPLY AIR DIFFUSERS AND REGISTERS PRIOR TO STARTING UP THE NEW AIR HANDLING EQUIPMENT. AFTER THE NEW AIR HANDLING EQUIPMENT HAS RUN FOR A SHORT PERIOD OF TIME, THE MECHANICAL CONTRACTOR SHALL REMOVE THE FILTER MEDIA. THE GENERAL CONTRACTOR SHALL PROVIDE ALL REQUIRED LADDERS AND BATTERY OPERATED LIFTS.
3. BALANCE DIFFUSERS, REGISTERS, GRILLES, AND EQUIPMENT TO FLOWS INDICATED.
4. REFER TO HVAC GENERAL NOTES ON H001 FOR SCOPE OF WORK.
5. EQUIPMENT LOCATED ABOVE THE CEILING REQUIRING ACCESS SHALL BE A MAXIMUM OF 2'-0" ABOVE THE CEILING.
6. ALL ROOF MOUNTED EQUIPMENT SHALL BE A MINIMUM 10'-0" FROM EDGE OF ROOF.
7. CONSTRUCT AND INSTALL ALL DUCTWORK IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA STANDARDS.
8. LOCATE DUCTWORK, PIPING AND MECHANICAL EQUIPMENT OUTSIDE OF THE REQUIRED ELECTRICAL CLEARANCES ABOVE/AROUND ELECTRICAL PANELS. TRANSFORMERS, AND OTHER ELECTRICAL EQUIPMENT.
9. FIRE SEAL AROUND DUCT AND PIPING PENETRATIONS OF FIRE RATED WALLS. PROVIDE FIRE DAMPERS AND ACCESS PANELS AT ALL FIRE RATED ASSEMBLIES AND FLOOR PENETRATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR ASSEMBLY LOCATIONS. REFER TO SPECIFICATIONS.
10. PROVIDE SLEEVES AND/OR OPENINGS TO RUN PIPES AND DUCTS THROUGH FOUNDATIONS, FLOORS, WALLS, AND ROOF.
11. ADJUST PIPING SIZES TO PROPERLY CONNECT TO MECHANICAL EQUIPMENT. PROVIDE SHUTOFF VALVES IN THE SUPPLY AND RETURN PIPING TO ALL EQUIPMENT TO ALLOW FOR SERVICING. UNIONS OR FLANGES SHALL BE ARRANGED SUCH THAT EQUIPMENT CAN BE SERVICED WITHOUT CUTTING AND MINIMAL DISRUPTION OF PIPING SERVING THE EQUIPMENT.
12. MINIMUM SIZE OF HOT WATER SUPPLY, HOT WATER RETURN, AND CONDENSATE DRAIN PIPING SHALL BE 3/4" UNLESS OTHERWISE NOTED.
13. PROVIDE ISOLATION VALVES IN SUPPLY AND RETURN PIPING ON EACH FLOOR AND IN BRANCH PIPE SERVING MORE THAN ONE PIECE OF EQUIPMENT. PIPE SIZES SHOWN SHALL BE CONTINUED IN THE DIRECTION OF FLOW UNTIL ANOTHER SIZE IS SHOWN.
14. ALL REFRIGERANT AND CONDENSATE PIPING SHALL BE CONCEALED IN THE WALL. FOR ANY PIPING THAT MUST BE EXPOSED, THE REFRIGERANT AND CONDENSATE PIPING SHALL BE INSTALLED IN A LINE HIDE SET.
15. FOR DETAILS, EQUIPMENT CONNECTIONS, AND PIPE SIZES NOT SHOWN ON THE SEGMENTS, REFER TO DETAILS, SCHEDULES, AND SPECIFICATIONS.
16. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE RESPECTIVE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS, AT A LEVEL OF QUALITY AND WORKMANSHIP CONSISTENT WITH THE SPECIFICATIONS.
17. INSTALL ALL SENSORS AND CONTROLS AT LOCATIONS AWAY FROM ANY DEVICE OR EQUIPMENT THAT CAN ADVERSELY IMPACT OPERATION, FUNCTION, OR LONGEVITY OF THE SENSOR AND/OR CONTROL.
18. INSTALL EXPOSED PIPING AND DUCTWORK AS HIGH AS PRACTICAL IN ROOMS WITHOUT CEILINGS.
19. ADJUST DUCTWORK SIZES TO PROPERLY CONNECT TO MECHANICAL EQUIPMENT. PROVIDE MANUAL VOLUME DAMPERS AT POINTS ON ALL DUCTED SYSTEMS WHERE BRANCHES EXTEND FROM LARGER DUCTS.
20. PROVIDE LOW-VOLTAGE WIRING FROM ELECTRICAL SOURCE TO MISCELLANEOUS ATC DEVICES. REFER TO AND COORDINATE WITH DIVISION 26.
21. THE CONTRACTOR SHALL PROVIDE MINIMUM OF 20 LINEAR FEET OF 1" DUCT LINING FROM NEW AIR HANDING UNITS AND NEW TERMINAL BOXES, WHERE POSSIBLE.
22. COORDINATE WITH THE GENERAL CONTRACTOR FOR ALL REQUIRED CUTTING AND PATCHING FOR WORK INDICATED. PROVIDE PATCHING FOR VOIDS LEFT BY THE REMOVAL OF EXISTING CONTROLS (INCLUDING EXISTING THERMOSTATS AND SENSORS). PATCHING SHALL BE PROVIDED FOR FLOORS, WALLS AND CEILINGS. PATCHING SHALL BE MADE WITH SIMILAR MATERIALS TO MATCH EXISTING CONDITIONS AND PAINTED TO MATCH ADJACENT SURFACES.



4 ADMIN AREA MEZZANINE NEW WORK DUCT PLAN
1/8" = 1'-0"



2 ADMIN AREA ROOF NEW WORK DUCT PLAN
1/8" = 1'-0"

0 8' 16' 32'

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

Key Plan:

NORTH

Date:	03/28/25
Draw By:	EFJ
Reviewed By:	JCG
Approved By:	SEH
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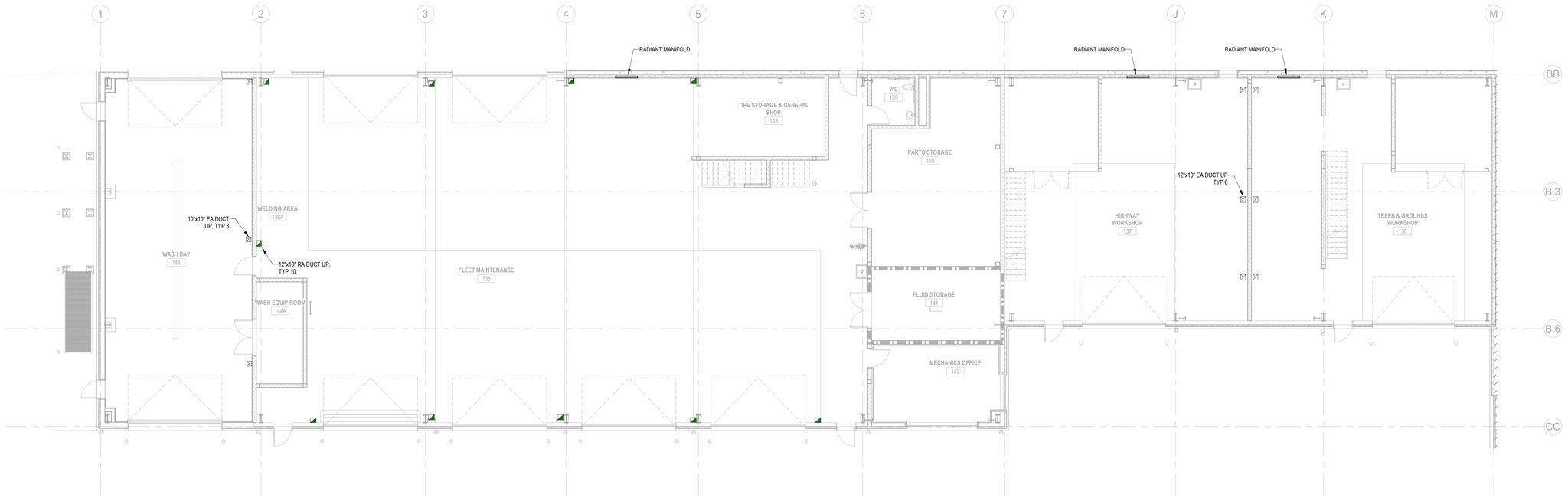
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ADMIN AREA NEW WORK DUCT PLAN

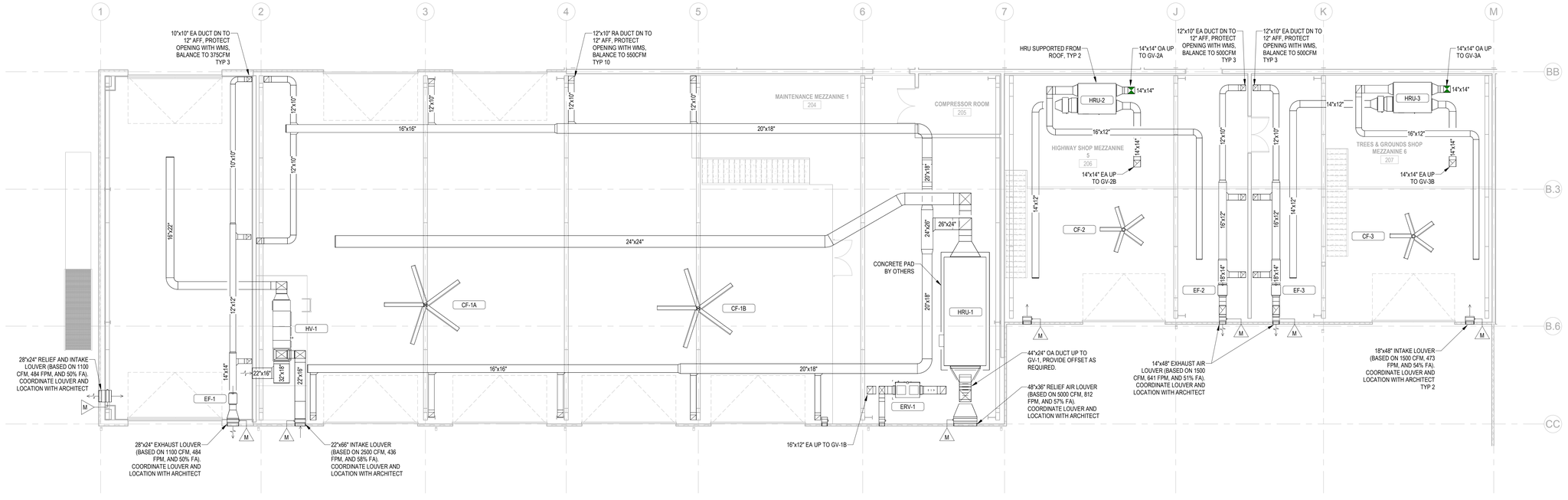
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H101

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1 FLEET MAINTENANCE AND SHOPS FIRST FLOOR NEW WORK DUCT PLAN
1/8" = 1'-0"



2 FLEET MAINTENANCE AND SHOPS MEZZANINE NEW WORK DUCT PLAN
1/8" = 1'-0"

0 8' 16' 32'

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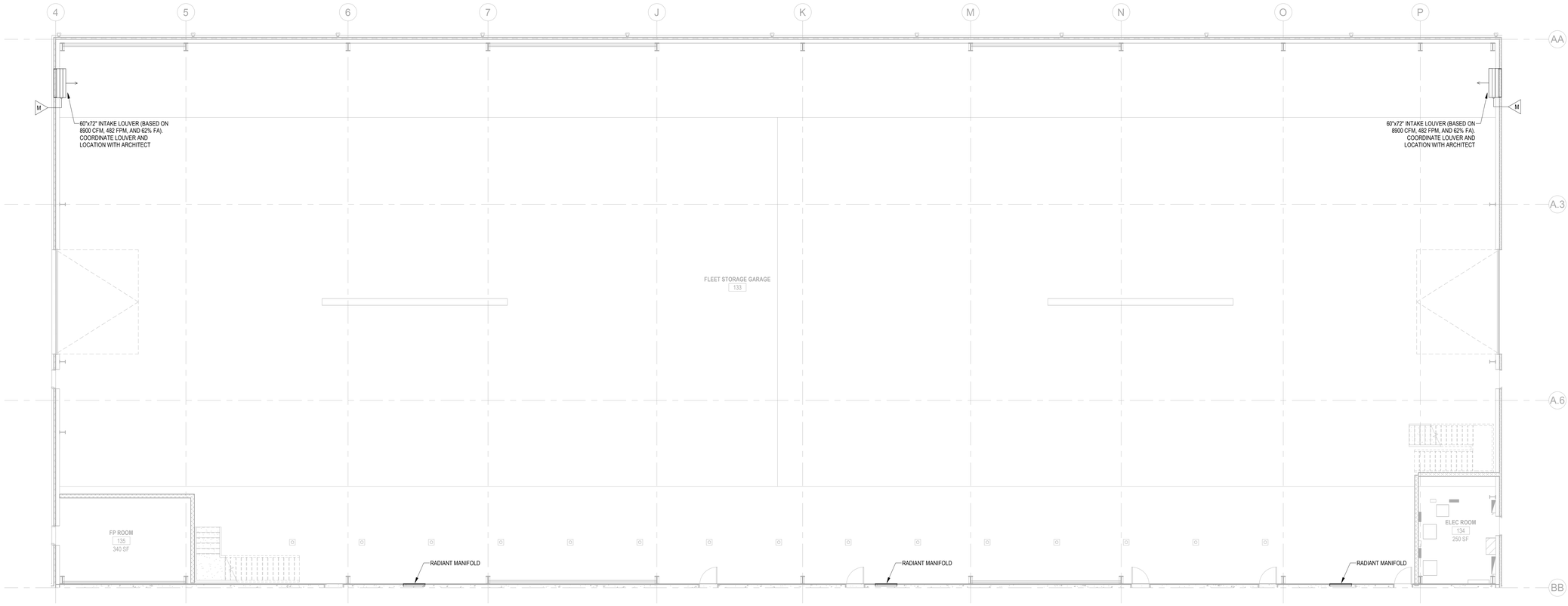
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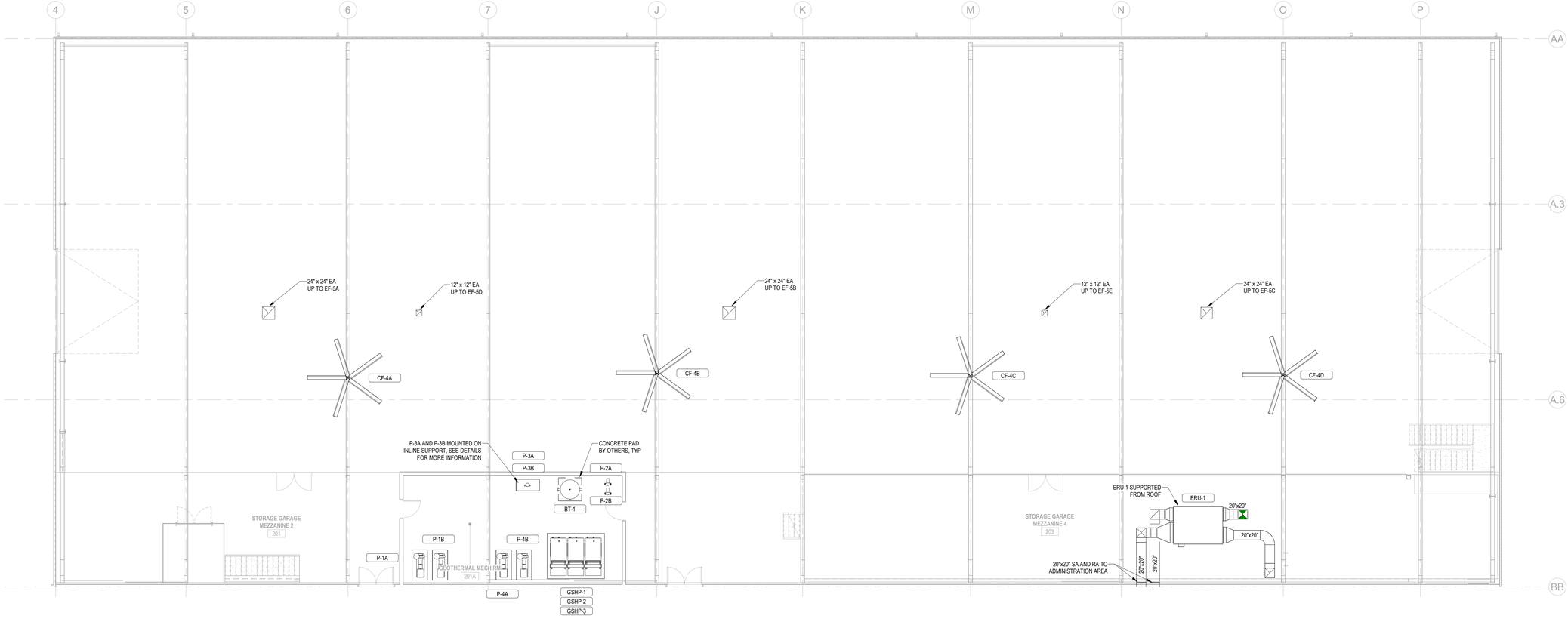
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H102

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1 FLEET STORAGE FIRST FLOOR NEW WORK DUCT PLAN
1/8" = 1'-0"



2 FLEET STORAGE MEZZANINE LEVEL NEW WORK DUCT PLAN
1/8" = 1'-0"

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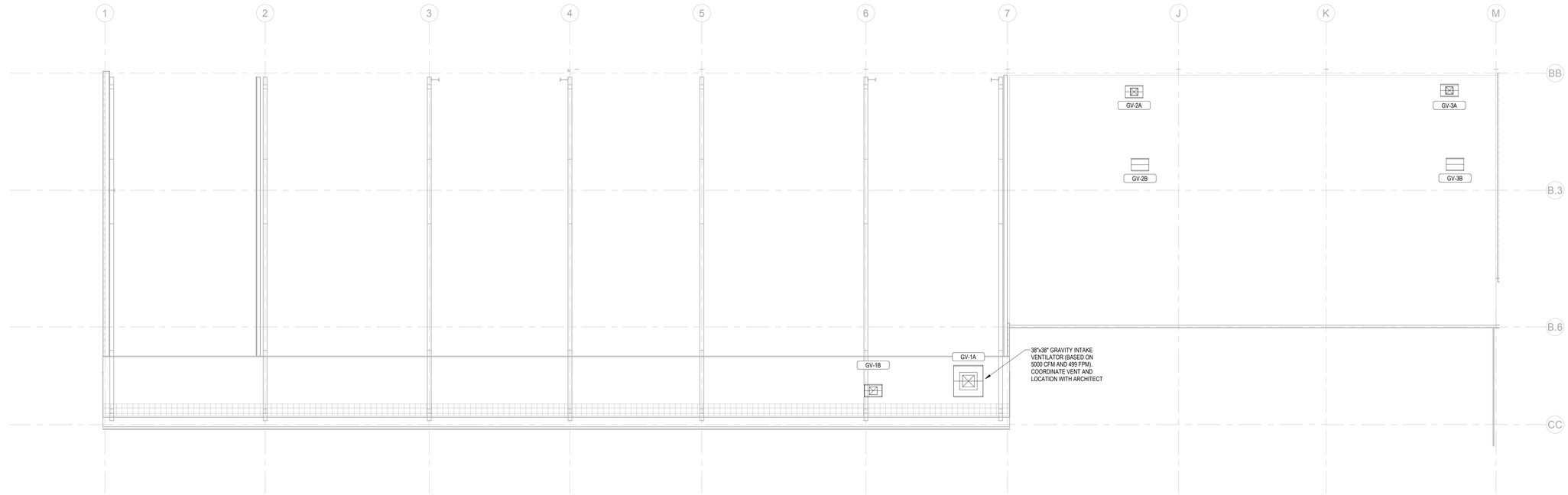
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FLEET STORAGE NEW WORK PLAN

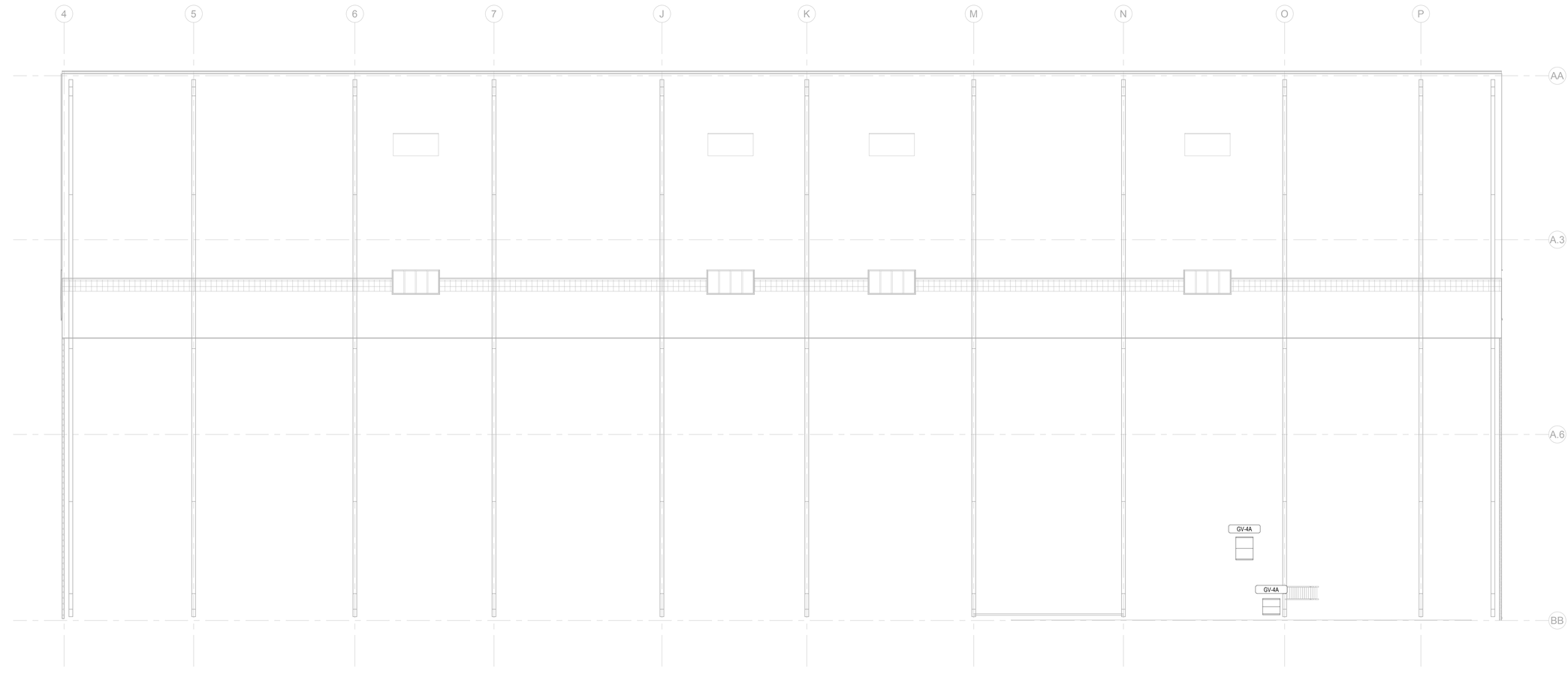
Sheet Number:

H103

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1 FLEET MAINTENANCE AND SHOPS ROOF LEVEL NEW WORK DUCT PLAN
1/8" = 1'-0"



2 FLEET STORAGE ROOF LEVEL NEW WORK DUCT PLAN
1/8" = 1'-0"

0 8' 16' 32'

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

Key Plan:

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Date:	03/28/25
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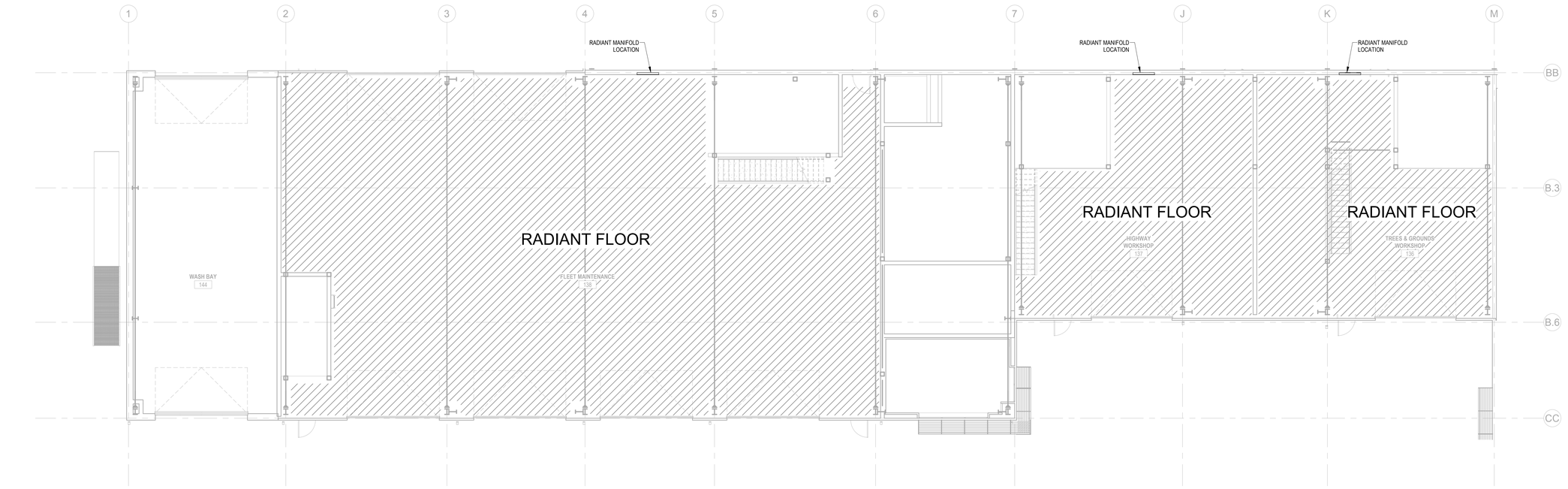
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FLEET STORAGE / FLEET MAINTENANCE AND SHOPS ROOF LEVEL NEW WORK DUCT PLAN

Sheet Number:

H104

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1 SHOPS AND FLEET MAINTENANCE RADIANT FLOOR UNDERSLAB PIPING PLAN
1/8" = 1'-0"



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W&S File No.:	---

Drawing Title:

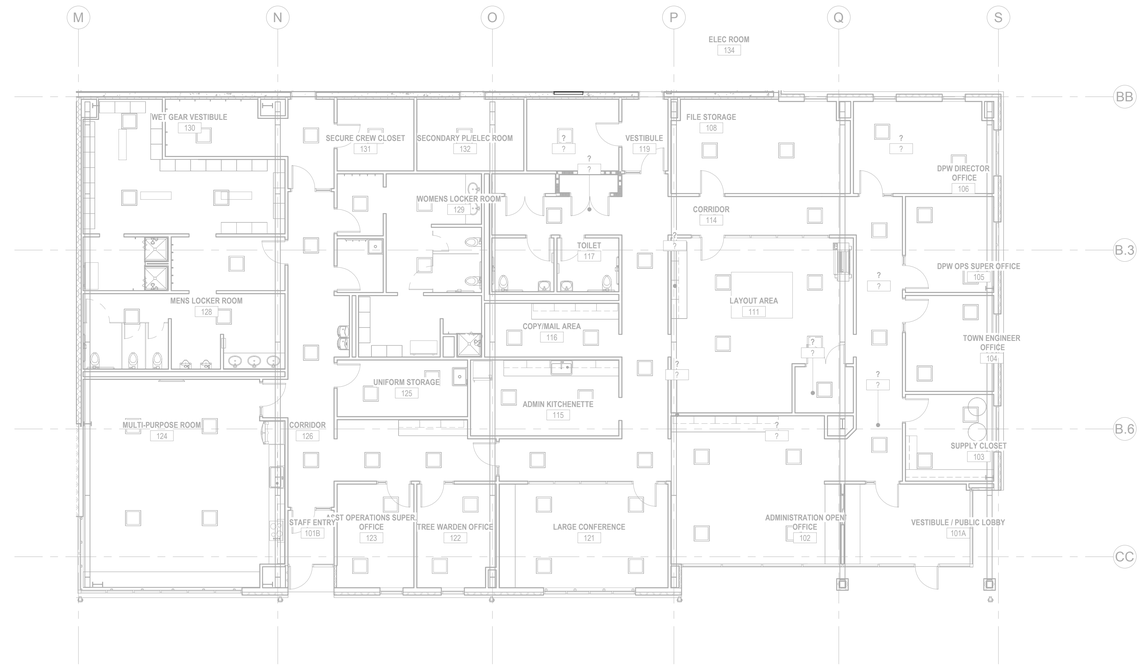
RADIANT FLOOR PIPING PLAN

Sheet Number:

H200

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DRAFT FOR REVIEW PURPOSES ONLY



1 FIRST FLOOR NEW WORK PIPING PLAN - ADMINISTRATION
1/8" = 1'-0"

0 8' 16' 32'

3/28/2025 12:38:34 PM C:\~Revit\Projects\2023\Acton DPW_HVAC_2023_Gotham Cole.rvt

Project:
NEW PUBLIC WORKS FACILITY 14
FOREST RD, ACTON, MA 01720

TOWN OF ACTON

Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard, Suite 250
Foxborough, MA 02035
978.532.1900 800.SAMPSON

www.westonandsampson.com

Consultants:

Revisions:

No.	Date	Description

COA:

Seal:

Issued For:

40% PRELIMINARY DESIGN DEVELOPMENT PRICING SET

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

Key Plan:

NORTH

Date:	03/28/25
Draw By:	EFJ
Reviewed By:	JCG
Approved By:	SEH
W&S Project No.:	ENG24-1080
W&S File No.:	---

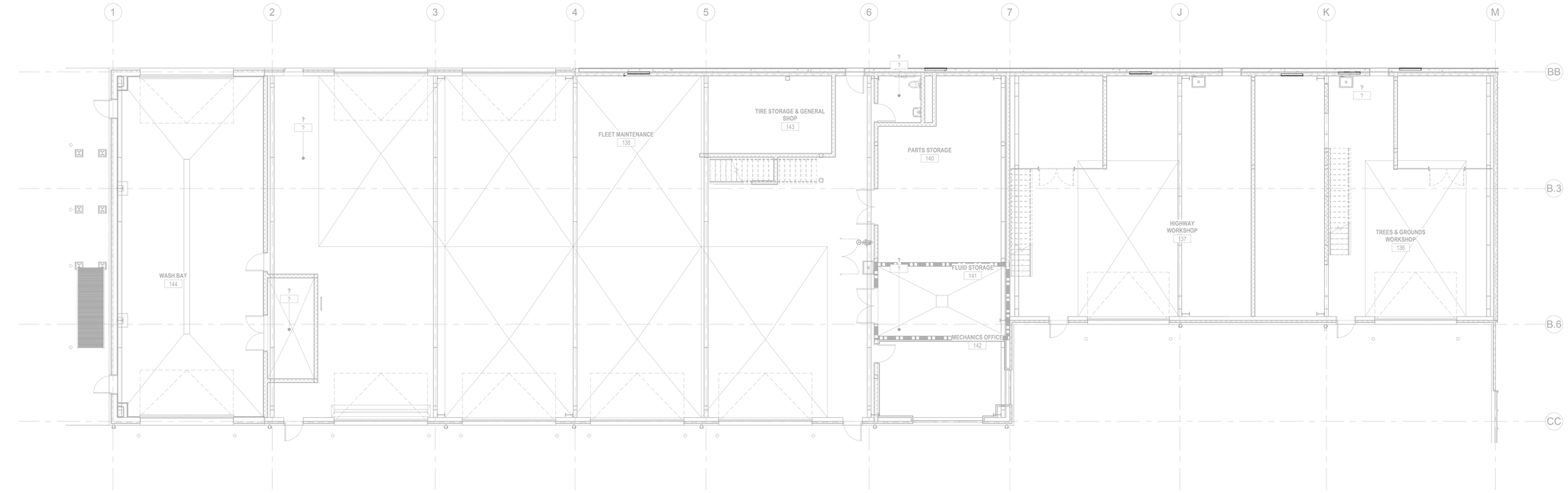
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ADMIN AREA FIRST FLOOR NEW WORK PIPING PLAN

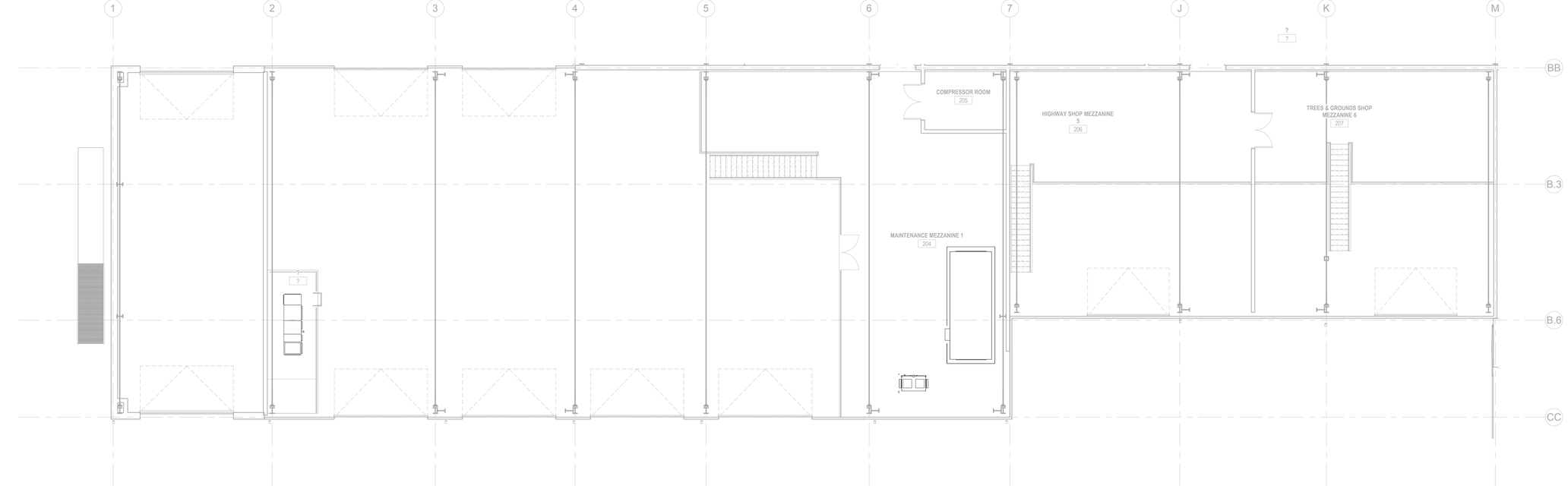
Sheet Number:

H201

DRAFT FOR REVIEW PURPOSES ONLY



1 FLEET MAINTENANCE AND SHOPS FIRST FLOOR NEW WORK PIPING PLAN
1/8" = 1'-0"



2 FLEET MAINTENANCE AND SHOPS MEZZANINE NEW WORK PIPING PLAN
1/8" = 1'-0"

0 8' 16' 32'

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Project:
NEW PUBLIC WORKS FACILITY 14
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Scale: 1/8" = 1'-0"

Key Plan:

NORTH

Date:	03/28/25
Draw By:	EFJ
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W&S Project No.:	ENG24-1080
W&S File No.:	---

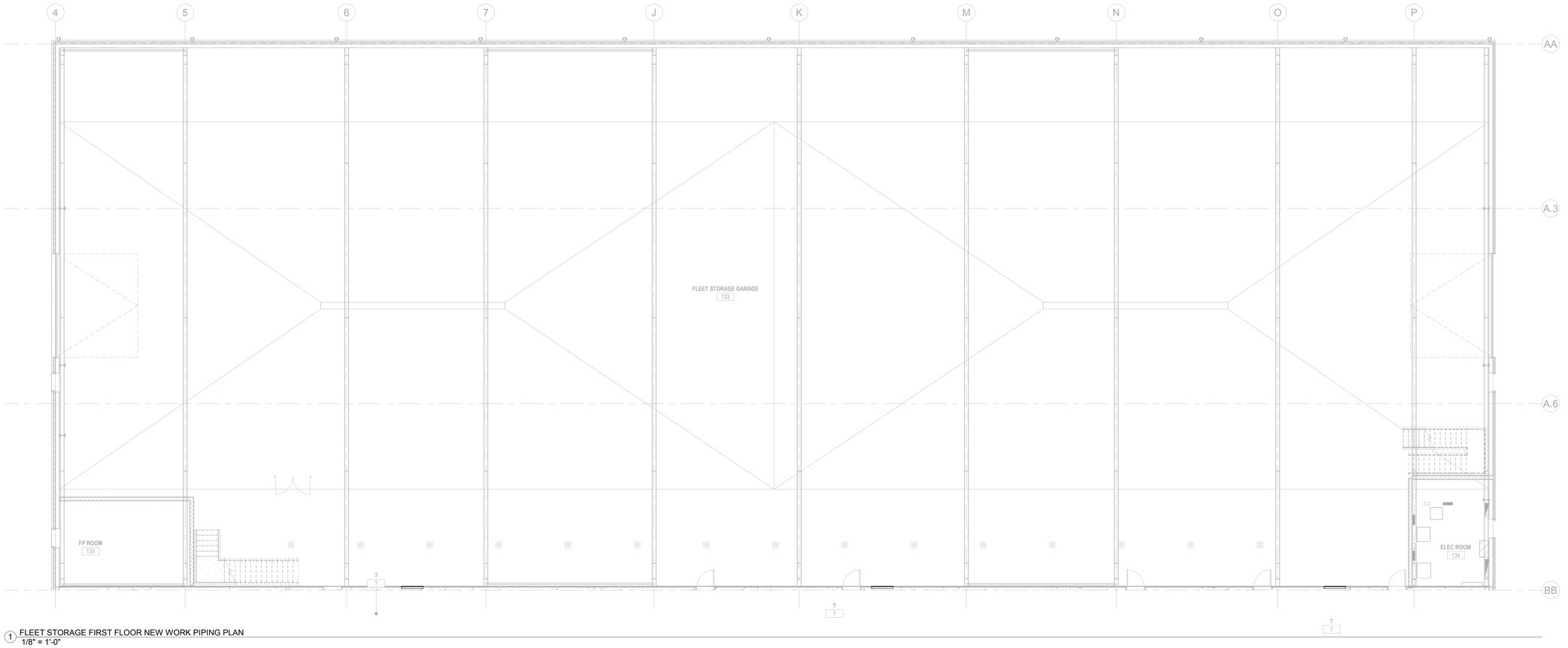
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FLEET MAINTENANCE AND SHOPS NEW WORK PIPING PLAN

Sheet Number:

H202

DRAFT FOR REVIEW PURPOSES ONLY



1 FLEET STORAGE FIRST FLOOR NEW WORK PIPING PLAN
1/8" = 1'-0"



2 FLEET STORAGE MEZZANINE NEW WORK PIPING PLAN
1/8" = 1'-0"

0 8' 16' 32'

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Project:
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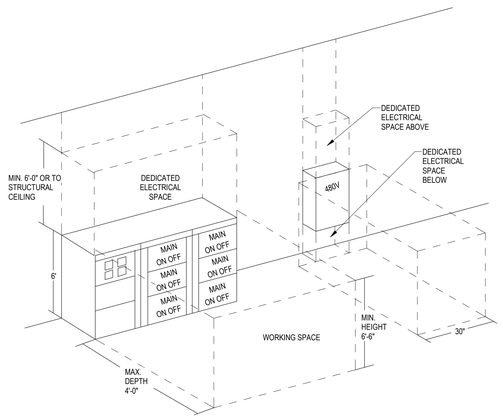
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FLEET STORAGE NEW WORK PIPING PLAN

Sheet Number:

H203

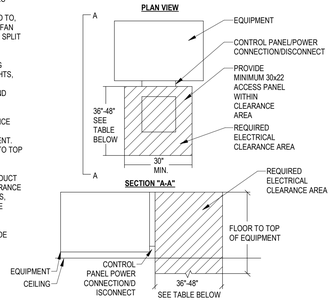
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NOTES:
1. NO EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION (PIPING, DUCTS, ETC) SHALL ENTER THE DEDICATED SPACE ABOVE OR BELOW ELECTRICAL POWER EQUIPMENT INCLUDING SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, & MOTOR CONTROL CENTERS.
2. NO EQUIPMENT SHALL PROTRUDE INTO WORKING SPACE.
3. PIPING SYSTEMS INSTALLED ABOVE THE DEDICATED ELECTRICAL SPACE SHALL BE ALLOWED WHERE DRIP PANS ARE INSTALLED TO CAPTURE LEAKS, RUPTURES OR CONDENSATION DRIPS. THE PIPING AND DRIP PANS SHALL BOTH BE OUTSIDE THE DEDICATED SPACE ENVELOPE.

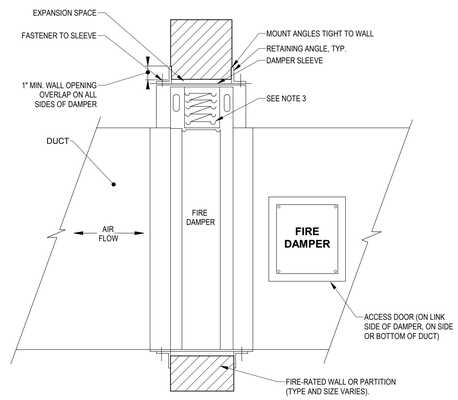
2 H501 ELECTRICAL EQUIPMENT CLEARANCES AND DEDICATED SPACE
NOT TO SCALE

NOTES:
1. DETAIL APPLIES TO ALL MECHANICAL EQUIPMENT LOCATED ABOVE A CEILING THAT REQUIRES POWER, INCLUDING CONTROL POWER. EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, FAN POWERED BOXES, VAV BOXES, FANS, FAN COIL UNITS, HEAT PUMPS, CRAC UNITS, DX SPLIT SYSTEMS, DUCT HEATERS, ETC.
2. ELECTRICAL CLEARANCE AREA (INCLUDING WITHIN CEILING) MUST BE FREE FROM LIGHTS, SPRINKLER HEADS, FIRE ALARM DEVICES, SPEAKERS, PIPING, DUCTWORK, BEAMS AND OTHER OBSTRUCTIONS.
3. THE HEIGHT OF THE ELECTRICAL CLEARANCE SHALL BE AS REQUIRED TO INSTALL AND PERFORM MAINTENANCE ON THE EQUIPMENT. MINIMUM HEIGHT SHALL BE FROM FLOOR TO TOP OF EQUIPMENT.
4. REFER TO SPECIFIC MANUFACTURER PRODUCT DATA FOR ADDITIONAL ACCESS AND CLEARANCE REQUIREMENTS FOR FANS, COMPRESSORS, VALVES, DAMPERS, FILTERS, ETC. PROVIDE ACCESS PANELS AS REQUIRED.
5. COORDINATE WITH ALL TRADES TO PROVIDE THESE MINIMUM REQUIRED CLEARANCES



MINIMUM ELECTRICAL CLEARANCES (NEC 2021 COMPLIANCE)			
VOLTAGE TO GROUND (SINGLE PHASE VOLTAGE)	CONDITION 1	CONDITION 2	CONDITION 3
0-150	36"	36"	36"
151-600	36"	42"	48"
CONDITION 1 - EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARRTS ON BOTH SIDES OF THE WORKING SPACE THAT ARE EFFECTIVELY GUARDED BY INSULATING MATERIALS. CONDITION 2 - EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE. CONCRETE BRICK, OR TILE WALLS SHALL BE CONSIDERED AS GROUNDED CONDITION 3 - EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE NOTE: CLEARANCE WIDTH SHALL BE 30" OR THE WIDTH OF THE CONTROL PANEL/POWER CONNECTION, WHICHEVER IS GREATER			

1 H501 ELECTRICAL CLEARANCE ABOVE CEILING
NOT TO SCALE

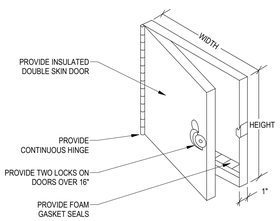


NOTES:
1. WALL OPENING SHALL BE SIZED TO MAINTAIN MANUFACTURER'S REQUIRED EXPANSION SPACE AROUND DAMPER.
2. DAMPER BLADES SHALL BE OUT OF AIRSTREAM TYPE "3A,3B,7 OR 8" (SEE SMACNA FIRE DAMPER AND HEAT STOP GUIDE - 2ND EDITION PAGE 9 OR NEWER VERSION IF APPLICABLE) WHEN OPEN 100% FREE AREA IS REQUIRED. WHEN DUCT DIMENSIONS ARE LARGER THEN THE LARGEST AVAILABLE CURTAIN TYPE DAMPER (SHOWN), PROVIDE BLADE TYPE DAMPERS (SIMILAR TO FIRE/SMOKE DAMPERS). IF POWERED ACTIVATORS ARE REQUIRED, THE WIRING SHALL BE INCLUDED IN THE MECHANICAL CONTRACTOR'S COST.
3. PROVIDE SPRING LOADED CLOSURE FOR ALL FIRE DAMPERS.
4. WHEN DUCTWORK IS INSULATED OR LINED, PROVIDE INSULATED ACCESS DOOR.
5. ACCESS DOOR SHALL BE 12"x12" OR LARGER IF REQUIRED FOR FUSIBLE LINK REPLACEMENT.
6. TYPE "1" OR "2" FIRE DAMPERS (BLADES OR FROM IN AIR STREAM) MAY BE SUBSTITUTED FOR TYPE "3A OR 3B" WHERE VELOCITIES ARE UNDER 500 FPM IN LOW PRESSURE DUCT SYSTEMS ONLY.
7. INSTALLATION SHOWN AS AN EXAMPLE. SPECIFIC INSTALLATION REQUIREMENTS, INCLUDING BREAKAWAY CONNECTIONS, SHALL CONFORM WITH MANUFACTURER'S UL APPROVED INSTRUCTIONS.
8. NEW FIRE DAMPERS INSTALLATION IN EXISTING CONCRETE FLOORS SHALL BE RATED FOR "OUT OF FLOOR" APPLICATIONS WITH MINIMUM 18 GAUGE SLEEVE EXTENSION WITH INSULATION PROVIDED BY THE FIRE DAMPER MANUFACTURER.

3 H501 FIRE DAMPER
NOT TO SCALE

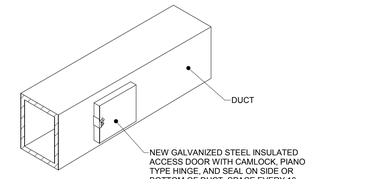
SCHEDULE FOR DUCTWORK ACCESS DOOR SIZES	
DUCT WIDTH (INCHES)	ACCESS DOOR SIZE (INCHES)
< = 10	10 x 6
12 - 16	12 x 8
OVER 16	18 x 24

NOTES:
1. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION.
2. PROVIDE AT ALL DAMPERS, SMOKE DETECTORS, AND WHERE SPECIFIED FOR CLEANOUTS.

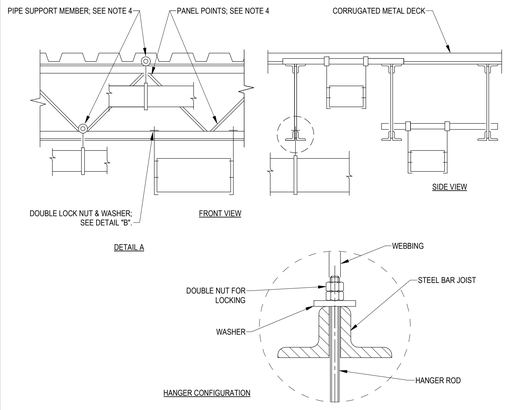


4 H501 TYPICAL CLEANOUT/ ACCESS DOOR FOR RECTANGULAR DUCT
NOT TO SCALE

NOTE:
REFER TO SPECIFICATIONS FOR CAMLOCK/HINGE REQUIREMENTS BASED ON SIZE OF ACCESS DOOR

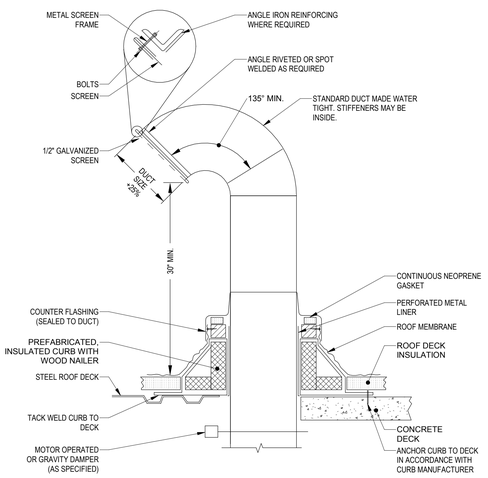


5 H501 DUCT CLEANING ACCESS PANELS
NOT TO SCALE

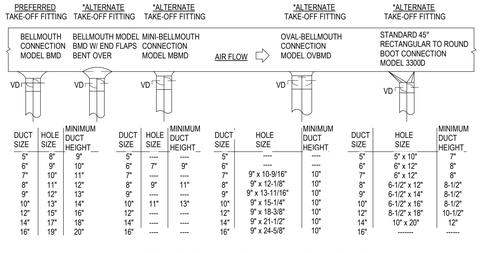


NOTES:
1. ALL DETAILS SHOWN SHALL BE SUBMITTED AS SHOP DRAWINGS AND SHALL BE REVIEWED BY THE RIGISTERED STRUCTURAL ENGINEER.
2. WHERE POSSIBLE ALL HANGERS SHALL BE SUSPENDED FROM WF BEAMS IN LIEU OF FROM JOIST.
3. EQUIPMENT SHALL NOT BE HUNG FROM STEEL DECK OR FROM BRIDGING ANGLES.
4. HANGERS & SUPPORTING MEMBERS SUCH AS PIPES & UNISTRUT SHALL BE LOCATED AT PANEL POINTS OF JOIST & SHALL BE SUPPORTED BY BAR JOISTS & NOT DIRECTLY BY WEBBING; COORDINATE WITH STRUCTURAL ENGINEER.
5. THE SUM OF ALL BUILDING TRADES HANGER LOADS SHALL NOT EXCEED 250 LBS. PER JOIST. WHEN THIS MAXIMUM IS EXCEEDED A DETAIL OF PROPOSED METHOD OF HANGING SHALL BE SUBMITTED FOR APPROVAL.
6. THIS CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES CONCERNED.
7. PROVIDE APPROVED TYPE PIPE OR CHANNEL MEMBERS TO SUPPORT DUCTWORK AND OTHER EQUIPMENT LOADS.
8. ECCENTRIC BEAM CLAMPS WILL NOT BE ALLOWED.
9. AT FIRE RATED PARTITIONS, ADD ADDITIONAL LAYER OF FIRE SAFIN INSULATION AROUND PENETRATION SO AS TO FILL CAVITY.
10. DUCT PENETRATIONS THRU CORRIDOR WALLS ABOVE THE CEILING ARE TO BE "FIRE STOPPED" AROUND THE PENETRATION.

6 H501 OPEN WEB JOIST DUCT SUPPORT
NOT TO SCALE



7 H501 GOOSENECK DETAIL
NOT TO SCALE



DUCT SIZE	HOLE SIZE	MINIMUM DUCT HEIGHT
5"	8"	9"
6"	9"	10"
7"	10"	11"
8"	11"	12"
9"	12"	13"
10"	13"	14"
12"	15"	16"
14"	17"	18"
16"	19"	20"

DUCT SIZE	HOLE SIZE	MINIMUM DUCT HEIGHT
5"	----	----
6"	7"	9"
7"	----	----
8"	9"	11"
9"	----	----
10"	11"	13"
12"	----	----
14"	----	----
16"	----	----

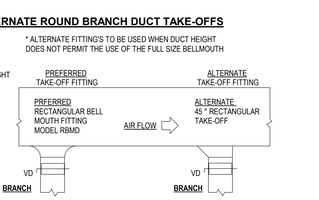
DUCT SIZE	HOLE SIZE	MINIMUM DUCT HEIGHT
5"	----	----
6"	----	----
7"	9" x 10-9/16"	10"
8"	9" x 12-1/8"	10"
9"	9" x 13-11/16"	10"
10"	9" x 15-1/4"	10"
12"	9" x 18-3/8"	10"
14"	9" x 21-1/2"	10"
16"	9" x 24-5/8"	10"

DUCT SIZE	HOLE SIZE	MINIMUM DUCT HEIGHT
5"	5" x 10"	7"
6"	6" x 12"	8"
7"	6" x 12"	8"
8"	6-1/2" x 12"	8-1/2"
9"	6-1/2" x 14"	8-1/2"
10"	6-1/2" x 16"	8-1/2"
12"	8-1/2" x 18"	10-1/2"
14"	10" x 20"	12"
16"	------	------

ALTERNATE ROUND BRANCH DUCT TAKE-OFFS

* ALTERNATE FITTINGS TO BE USED WHEN DUCT HEIGHT DOES NOT PERMIT THE USE OF THE FULL SIZE BELLMOUTH

DUCT SIZE	HOLE SIZE	MINIMUM DUCT HEIGHT
6 x 4	7.5 x 5.5	7.5
10 x 4	11.5 x 5.5	7.5
16 x 4	17.5 x 5.5	7.5
24 x 4	25.5 x 5.5	7.5
6 x 5	7.5 x 6.5	8.5
10 x 5	11.5 x 6.5	8.5
16 x 5	17.5 x 6.5	8.5
24 x 5	25.5 x 6.5	8.5
6 x 6	7.5 x 7.5	9.5
10 x 6	11.5 x 7.5	9.5
16 x 6	17.5 x 7.5	9.5
24 x 6	25.5 x 7.5	9.5
8 x 8	9.5 x 9.5	11.5
16 x 8	17.5 x 9.5	11.5
24 x 8	25.5 x 9.5	11.5
10 x 10	11.5 x 11.5	13.5
16 x 10	17.5 x 11.5	13.5
24 x 10	25.5 x 11.5	13.5



ALTERNATE RECTANGULAR BRANCH DUCT TAKE-OFF

NOTES:
ALL ROUND AND RECTANGULAR BELLMOUTH FITTINGS SHALL BE INCLUDED WITH THE FOLLOWING STANDARD FEATURES:
1. NEOPREME GASKERT TO MINIMIZE AIR LEAKAGE.
2. PRE-DRILLED HOLES FOR WUICK MOUNTING.
3. CONSTRUCTED OF HEAVY GALVANIZED STEEL.
4. 26 GAUGE GALV. QUADRANT VOLUME DAMPER W/ TIGHT FITTING GASKETING TO MINIMIZE LEAKAGE AT DAMPER PIVOT POINTS. (FOR LOW PRESSURE DUCTWORK)

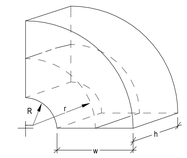
8 H501 TYPICAL DUCT TAKE-OFF
NOT TO SCALE

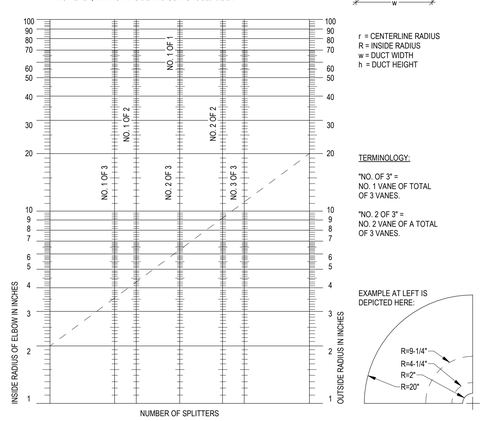
RADIUS ELBOW AND SPLITTER VANE REQUIREMENTS

r/w RATIO:	NO. OF VANES FOR 1 ELBOW:	NO. OF VANES WHEN 2 ELBOWS ARE WITHIN 2 EQUIV. DIA.:
r/w >= 1.50	0	0
1.5 > r/w >= 0.70	1	1
0.7 > r/w >= 0.60	2	2
0.6 > r/w >= 0.55	3	3

EQUIVALENT DIAMETER = (w+h)/2

NOTES: r/w = 0.5 IS A SQUARE THROAT ELBOW! HOWEVER, MINIMUM INSIDE RADIUS R SHOULD BE 2".





r = CENTERLINE RADIUS
R = INSIDE RADIUS
w = DUCT WIDTH
h = DUCT HEIGHT

TERMINOLOGY:

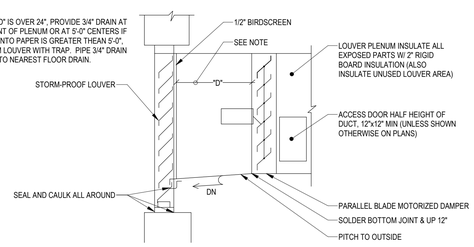
"NO. OF 3" = NO. 1 VANE OF TOTAL OF 3 VANES.

"NO. 2 OF 3" = NO. 2 VANE OF A TOTAL OF 3 VANES.

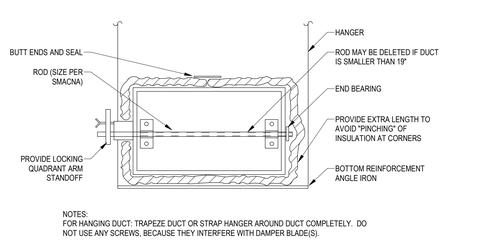
EXAMPLE AT LEFT IS DEPICTED HERE:

9 H501 NUMBERING & SPACING OF DUCT SPLITTER VANES
NOT TO SCALE

NOTE:
WHEN "D" IS OVER 24", PROVIDE 3/4" DRAIN AT MIDPOINT OF PLENUM OR AT 5'-0" CENTERS IF DEPTH INTO PAPER IS GREATER THEAN 5'-0", 6" FROM LOUVER WITH TRAP. PIPE 3/4" DRAIN PIPING TO NEAREST FLOOR DRAIN.

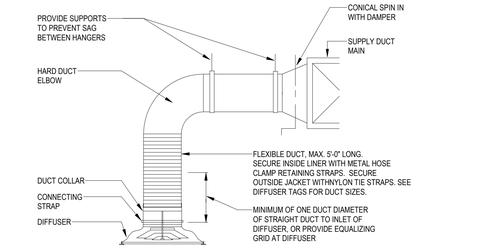


10 H501 LOUVER CONNECTION
NOT TO SCALE



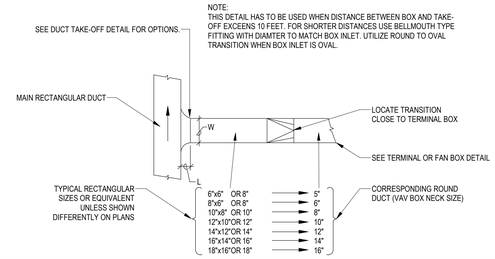
NOTES:
FOR HANGING DUCT: TRAPEZE DUCT OR STRAP HANGER AROUND DUCT COMPLETELY. DO NOT USE ANY SCREWS, BECAUSE THEY INTERFERE WITH DAMPER BLADE(S).

11 H501 TYPICAL DUCT INSTALLATION & SUPPORT NEAR VOLUME DAMPER
NOT TO SCALE



12 H501 DIFFUSER FLEXIBLE DUCT CONNECTION
NOT TO SCALE

NOTE:
THIS DETAIL HAS TO BE USED WHEN DISTANCE BETWEEN BOX AND TAKE-OFF EXCEENS 10 FEET. FOR SHORTER DISTANCES USE BELLMOUTH TYPE FITTING WITH DIAMTER TO MATCH BOX INLET. UTILIZE ROUND TO OVAL TRANSITION WHEN BOX INLET IS OVAL.



13 H501 TAKE-OFFS TO TERMINAL UNITS
NOT TO SCALE

Project:
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W&S File No.:	---

Drawing Title:

DETAILS

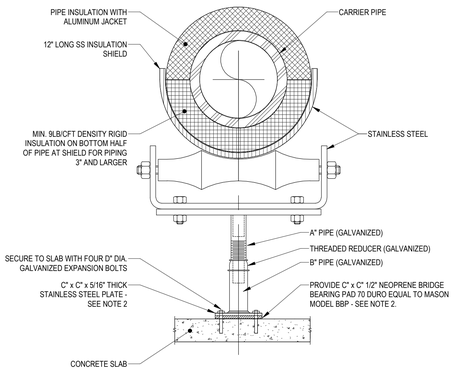
Sheet Number:

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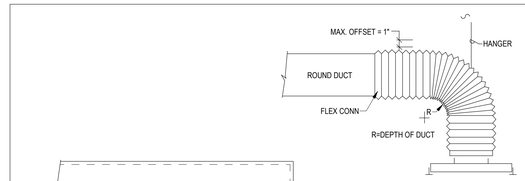
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	PIPE SIZES (IN)		PLATE INFO (IN)	
SIZE (IN)	A (MIN)	B (MIN)	C (MIN)	D (MIN)
UP TO 3	2	2 1/2	9	1/2
4 TO 12	2 1/2	3	9	5/8
14 TO 16	3	4	11	3/4
18 AND LARGER	4	6	13 1/2	1

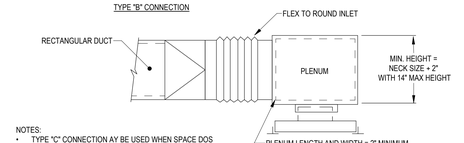


NOTES:
1. ADJUST HEIGHT OF SUPPORTS FOR ZERO STRESS ON ADJACENT FLANGES.
2. FOR SUPPORTS FOR PIPING WITHIN 10 FEET OF EQUIPMENT, PROVIDE A SECOND LAYER OF STAINLESS STEEL PLATE AND PAD.
3. PIPE ROLLER AND HARDWARE SHALL BE STAINLESS STEEL.

1 ADJUSTABLE FLOOR PIPE ROLLER SUPPORT
H502 NOT TO SCALE



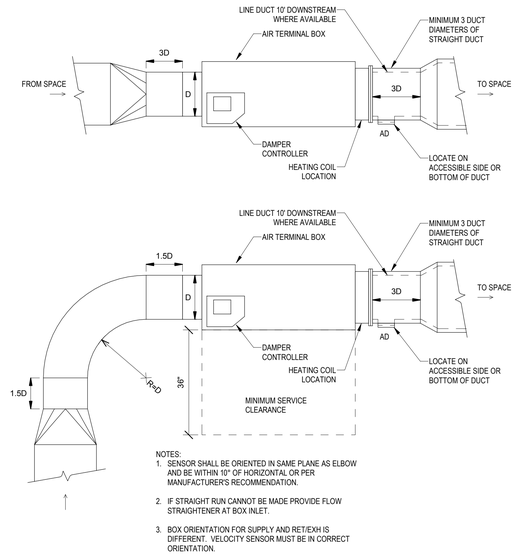
NOTE:
TYPE "B" CONNECTION MAY BE USED WHEN SPACE DOES NOT ALLOW TYPE "A" CONNECTION.



NOTES:
- TYPE "C" CONNECTION AY BE USED WHEN SPACE DOS NOT ALLOW TYPE "A" OR "B" CONNECTIONS.
- BUCKLY ASSOCIATES DIFFUSER CONNECTION BOOT TRANSITION DCBTR MAY BE USED.

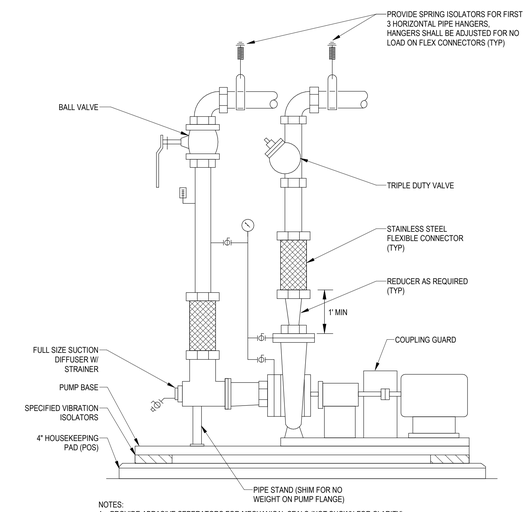
NOTES:
1. THESE DETAILS ALLOW DUCTWORK TO BE PROVIDED BEFORE CEILING GRID IS INSTALLED THEN DIFFUSER / REGISTER CAN BE POSITIONED INTO GRID.
2. PROVIDE INSULATED TRANSITION ROUND TO SQUARE IF REQUIRED AT DIFFUSER.
3. PROVIDE NYLON TY-WRAP TOOL OR REUSABLE SS DRAW BAND PER SPECS.
4. FLEX DUCT SHALL NOT HAVE MORE THAN 1/2" SAG PER FOOT.
5. LENGTH OF FLEX DUCT SHALL NOT EXCEEN 6'-0".
6. PROVIDE DUCT MOUNTED VOLUME DAMPER WHENEVER POSSIBLE. TRY TO AVOID NECK DAMPERS.

2 TYPICAL SUPPLY DIFFUSER/REGISTER DUCTWORK & CONNECTION
H502 NOT TO SCALE



NOTES:
1. SENSOR SHALL BE ORIENTED IN SAME PLANE AS ELBOW AND BE WITHIN 10° OF HORIZONTAL OR PER MANUFACTURER'S RECOMMENDATION.
2. IF STRAIGHT RUN CANNOT BE MADE PROVIDE FLOW STRAIGHTENER AT BOX INLET.
3. BOX ORIENTATION FOR SUPPLY AND RET/EXH IS DIFFERENT. VELOCITY SENSOR MUST BE IN CORRECT ORIENTATION.

3 AIR TERMINAL BOX CONNECTIONS (HARD DUCTED)
H502 NOT TO SCALE



NOTES:
1. PROVIDE ABRASIVE SEPERATORS FOR MECHANICAL SEALS (NOT SHOWN FOR CLARITY).

4 SMALL END SUCTION PUMP
H502 NOT TO SCALE

NOTES:
1. AT FIRE RATED PARTITIONS ADD ADDITIONAL LAYER OF FIRE SAFIN INSULATION AROUND PENETRATIONS SO AS TO FILL CAVITY.
2. DUCT AND PIPE PENETRATIONS THROUGH CORRIDOR WALLS ABOVE THE CEILING ARE TO BE FIRE STOPPED AROUND THE PENETRATION.

5 DUCT & PIPE WALL PENETRATIONS
H502 NOT TO SCALE

HANGER STRAPS OR RODS		
MAX DUCT DIA	HANGER	MAX SPACING FEET
20"	ONE 1" X 22 GA STRAP	10
36"	ONE 1" X 18 GA STRAP	10
60"	TWO 3/8" DIA RODS	10
84"	TWO 1/2" DIA RODS	10

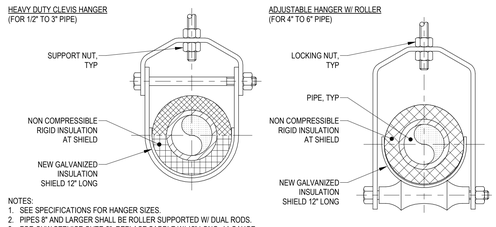
NOTES:
1. ALL SUPPORTS SHALL BE GALVANIZED STEEL FOR STEEL DUCT, STAINLESS STEEL FOR STAINLESS STEEL DUCT, OR ALUMINUM FOR ALUMINUM DUCT.
2. HANGERS MUST NOT DEFORM DUCT SHAPE.
3. ATTACHEMENTS TO STRUCTURE SHALL BE PER SMACNA.

6 ROUND METAL DUCT HANGERS
H502 NOT TO SCALE

NOTES:
1. ON DUCTS OVER 48" WIDE, BOTTOM SHALL BE BRACED BY ANGLE. FOR CROSS SECTION AREA MORE THEN 8 SQ FT, DUCT SHALL BE BRACED BY ANGLES ON ALL FOUR SIDES.
2. CUTTING AND PATCHING SHALL BE LIMITED TO A MINIMUM AS REQUIRED FOR PROPER INSTALLATION.
3. SUPPORTS SHALL BE SPACED AND SIZED AS PER SMACNA.

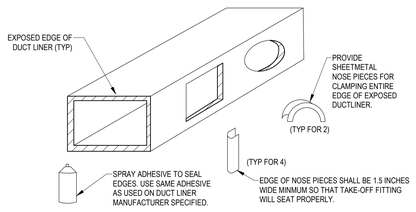
7 DUCT HANGER SUPPORT
H502 NOT TO SCALE

8 CLOSED COUPLED SUPPLY DUCT & REGISTER
H502 NOT TO SCALE

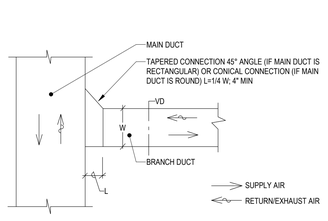


NOTES:
1. SEE SPECIFICATIONS FOR HANGER SIZES.
2. PIPES 8" AND LARGER SHALL BE ROLLER SUPPORTED W/ DUAL RODS.
3. FOR CHW SERVICE OVER 3", REPLACE SADDLE W/ 12" LONG, 14 GAUGE SHIELD WITH RIGID INSULATION BETWEEN THE PIPE AND SHIELD. PROTECT WITH CONTINUOUS VAPOR BARRIER.

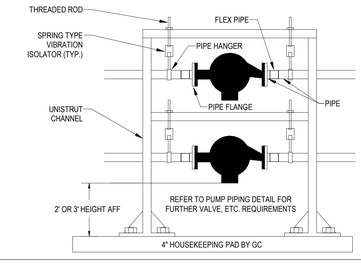
9 PIPE HANGER SUPPORT
H502 NOT TO SCALE



10 SEALING & SECURING EXPOSED DUCTLINER
H502 NOT TO SCALE



11 BRANCH TAKE-OFFS
H502 NOT TO SCALE



12 INLINE PUMP INSTALLATION DETAIL
H502 NOT TO SCALE

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W&S Project No.:	ENG24-1080
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Drawing Title:

DETAILS

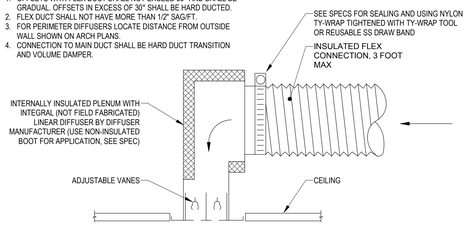
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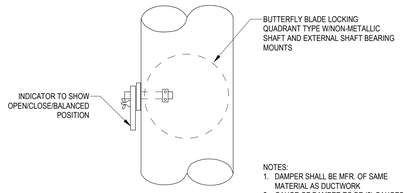
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NOTES:
1. OFFSETS WITH FLEX DUCT SHALL NOT EXCEED 30" AND SHALL BE GRADUAL. OFFSETS IN EXCESS OF 30" SHALL BE HARD DUCTED.
2. FLEX DUCT SHALL NOT HAVE MORE THAN 1/2" SAG/FT.
3. FOR PERIMETER DIFFUSERS LOCATE DISTANCE FROM OUTSIDE WALL SHOWN ON ARCH PLANS.
4. CONNECTION TO MAIN DUCT SHALL BE HARD DUCT TRANSITION AND VOLUME DAMPER.

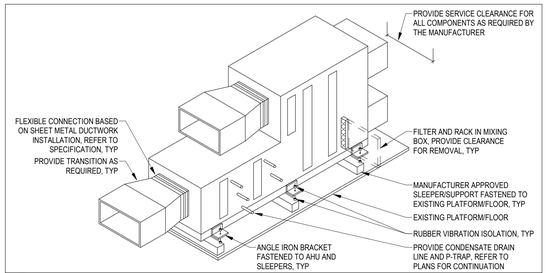


1 H503 LINEAR DIFFUSER CONNECTION
NOT TO SCALE

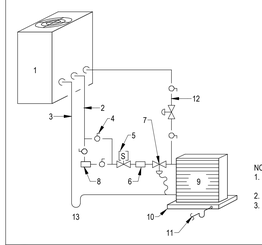


NOTES:
1. DAMPER SHALL BE MFR. OF SAME MATERIAL AS DUCTWORK
2. GAUGE OF DAMPER TO BE (2) GAUGES HEAVIER THAN DUCTWORK

2 H503 ROUND VOLUME DAMPER BELOW 14"ø - LOW PRESSURE
NOT TO SCALE



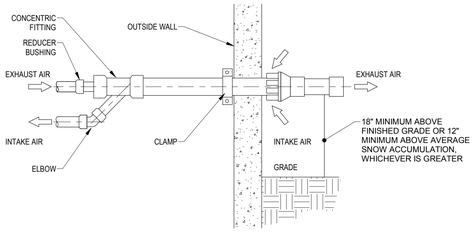
3 H503 DOAS MOUNTING
NOT TO SCALE



1. CONDENSING UNIT
2. LIQUID LINE
3. INSULATED SUCTION LINE
4. BALL SHUT-OFF VALVES
5. SOLENOID VALVE
6. SIGHT GLASS
7. THERMAL EXPANSION VALVE WITH EQUILIZER LINE
8. FILTER DRYER
9. COOLING COIL
10. DRAIN PAN
11. DRAIN LINE-TRAP & ROUTE TO NEAREST DRAIN
12. HOT GAS BYPASS LINE AND VALVE
13. TRAP

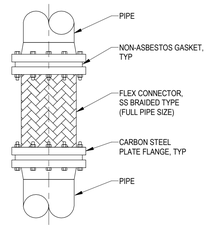
NOTES:
1. PIPING SHOWN IS FOR LEAD CIRCUIT. ADDITIONAL CIRCUITS ARE SIMILAR, EXCEPT NO HOT GAS BYPASS.
2. PIPE SIZING WITH UNIT MANUFACTURER BASED ON ACTUAL FIELD ROUTING.
3. PROVIDE BYPASS CIRCUIT, CONTROL EQUIPMENT, ANY REQUIRED DOUBLE SECTION RISERS TRAPS, AND APPURTENANCES AS RECOMMENDED SIZED AND DIAGRAMMED BY THE UNIT MANUFACTURER AND SUBMITTED, ALONG WITH CALCULATIONS AND SIZING CHARTS FOR ENGINEERS REVIEW.

4 H503 REFRIGERANT COMPONENT PIPING
NOT TO SCALE

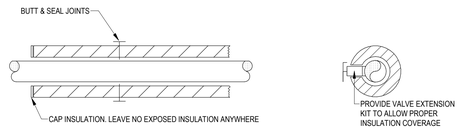


5 H503 CONCENTRIC TERMINATION THRU ROOF
NOT TO SCALE

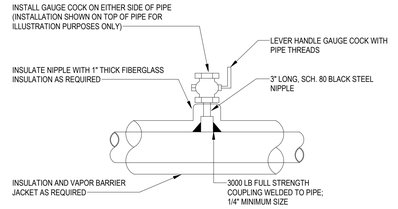
NOTES:
1. SEE SPECIFICATION FOR ADDITIONAL INFORMATION.
2. SEE PLANS AND DETAILS FOR FLEXIBLE CONNECTION LOCATIONS.
3. PROVIDE SS BRAIDED TYPE FLEXIBLE CONNECTOR FOR ALL SIZES. PROVIDE DOUBLE SPHERE EPDM TYPE FLEXIBLE CONNECTOR IF THE LEAD TIME FOR THE SS BRAIDED TYPE FLEIBLE CONNECTOR IS LONGER THAN 6 WEEKS.



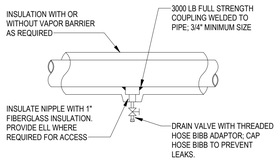
6 H503 FLEXIBLE CONNECTORS, UP TO 16"
NOT TO SCALE



7 H503 TYPICAL PIPE INSULATION & VALVE HANDLE EXTENSION
NOT TO SCALE



8 H503 GAUGE COCK INSTALLATION
NOT TO SCALE



9 H503 DRAIN VALVE INSTALLATION
NOT TO SCALE

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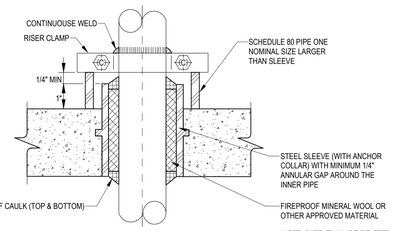
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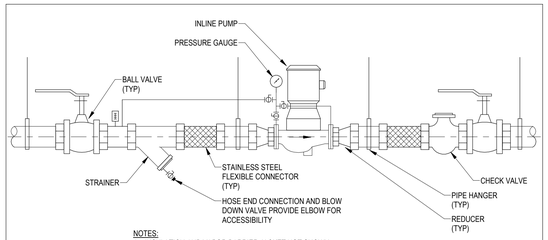
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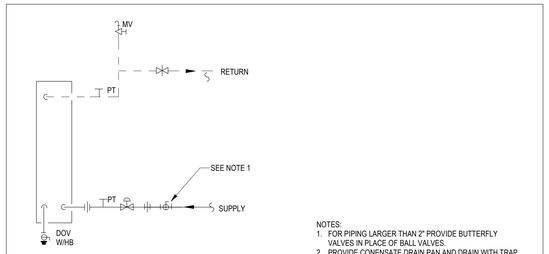
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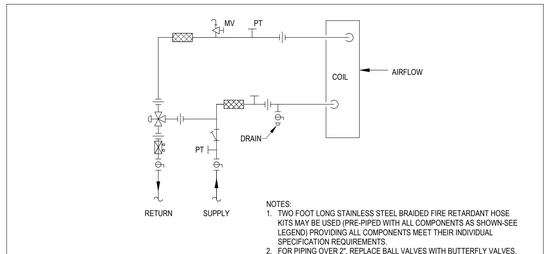
1 H504 PIPE RISER SUPPORT
NOT TO SCALE



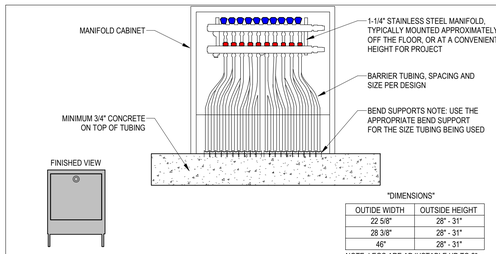
2 H504 HORIZONTAL INLINE PUMP PIPING
NOT TO SCALE



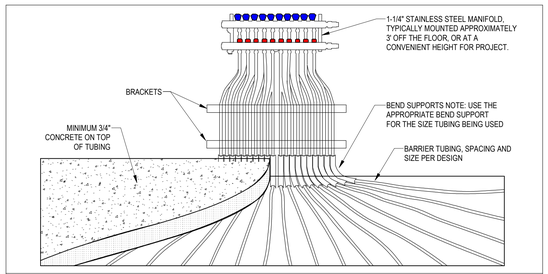
3 H504 HW COILS WITH 2-WAY CONTROL VALVE (VAVs)
NOT TO SCALE



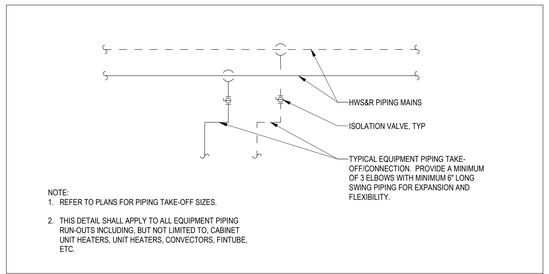
4 H504 DUCT MOUNTED COIL W/ 3-WAY VALVE
NOT TO SCALE



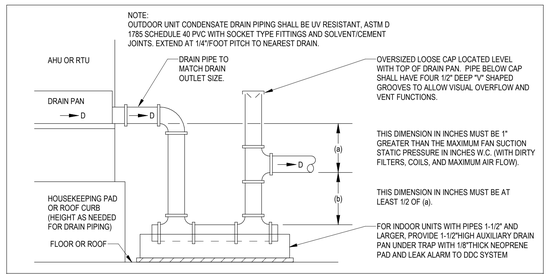
5 H504 RADIANT MANIFOLD CABINET DETAIL
NOT TO SCALE



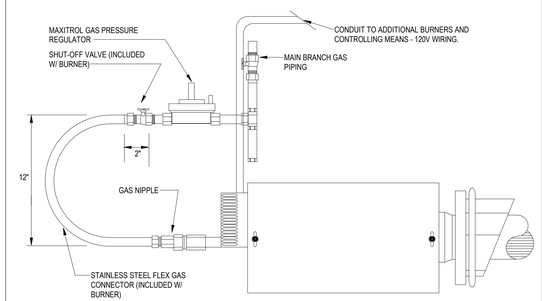
6 H504 RADIANT MANIFOLD PIPING
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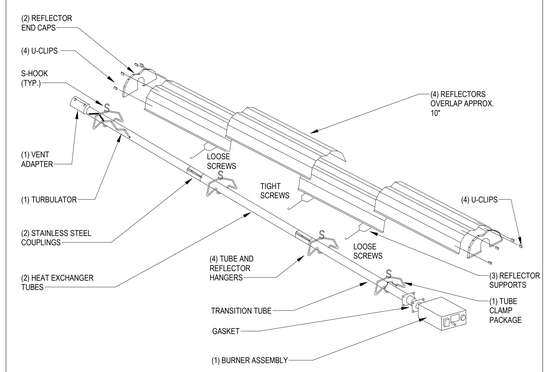
7 H504 SWING JOINT
NOT TO SCALE



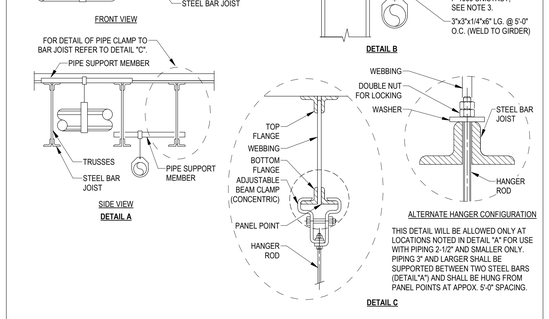
8 H504 DRAW THRU UNIT CONDENSATE TRAP
NOT TO SCALE



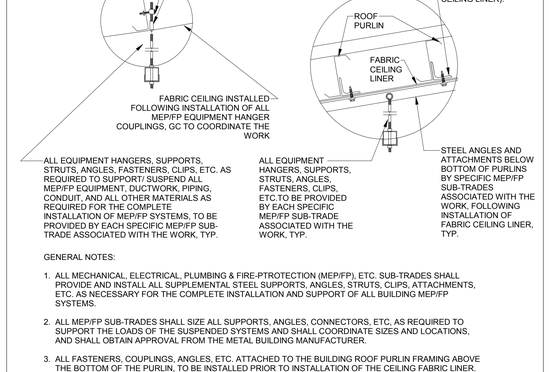
9 H504 INFRARED DETAIL 6
NOT TO SCALE



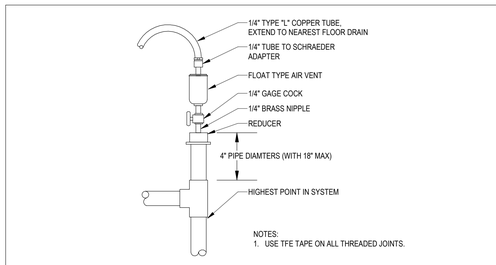
10 H504 INFRARED DETAIL 1
NOT TO SCALE



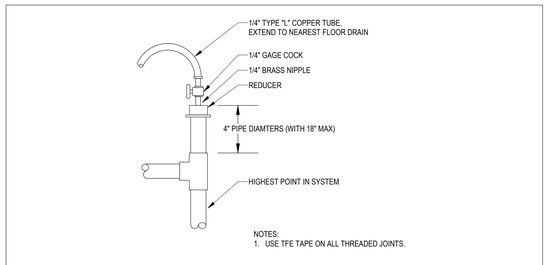
11 H504 OPEN WEB JOIST PIPE SUPPORT
NOT TO SCALE



12 H504 ROOF PURLIN
NOT TO SCALE



13 H504 AUTOMATIC AIR VENT ASSEMBLY
NOT TO SCALE



14 H504 MANUAL AIR VENT ASSEMBLY
NOT TO SCALE

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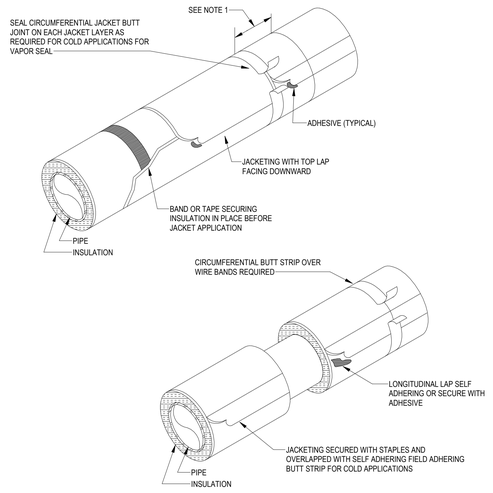
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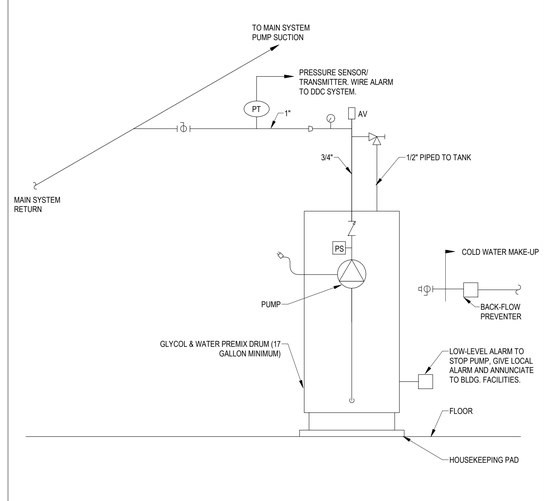
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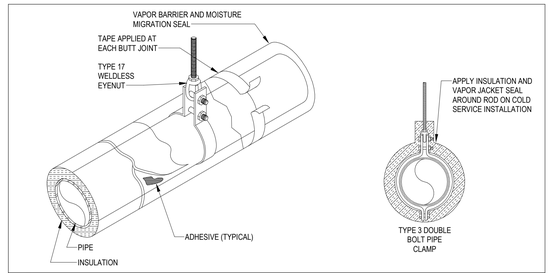
NOTES:
1. OVERLAP JACKET MINIMUM OF 1-1/2".
2. LONGITUDINAL JACKETING SEAMS SHALL BE POSITIONED AT 3 O'CLOCK OR 9 O'CLOCK ONLY WITH TOP LAP FACING DOWNWARD FOR WEATHER PROTECTION.

1 H505 FACTORY AND FIELD APPLIED PIPE JACKETING OVER PIPE INSULATION
NOT TO SCALE

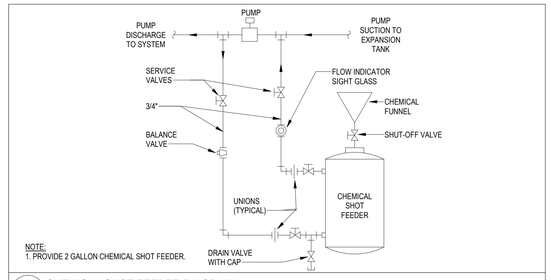


NOTES:
1. FILL SHALL BE AUTOMATICALLY CONTROLLED, WHEN HOA SWITCH IS IN "AUTO" POSITION. PRESSURE SWITCH (SET @ 5 PSI ABOVE EXPANSION TANK PRECHARGE PRESSURE) WITH 10 PSI ADJUSTABLE DIFFERENTIAL, SHALL OPERATE MAKE-UP PUMP UNTIL PRESSURE SWITCH IS SATISFIED. PUMP SHALL THEN BE DE-ENERGIZED.

2 H505 GLYCOL CHARGING W/ SINGLE PUMPS
NOT TO SCALE

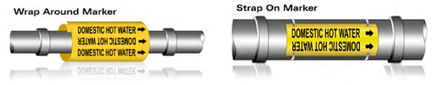


3 H505 PIPE HANGER, INSULATION AND VAPOR JACKET
NOT TO SCALE



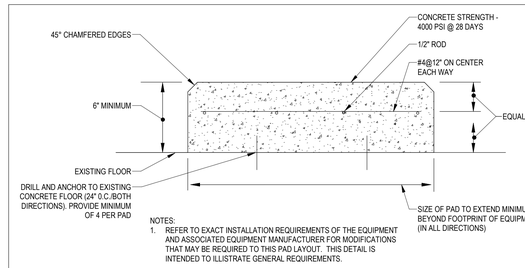
NOTE:
1. PROVIDE 2 GALLON CHEMICAL SHOT FEEDER.

5 H505 CHEMICAL SHOT FEEDER DIAGRAM
NOT TO SCALE



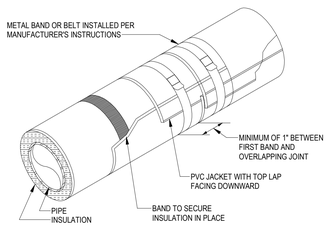
NOTES:
1. PROVIDE SEMI-RIGID PLASTIC WRAP AROUND TYPE PIPE IDENTIFICATION ON PIPES 6" AND SMALLER (INCLUDING INSULATION).
2. PROVIDE SEMI-RIGID PLASTIC STRAP-ON TYPE PIPE IDENTIFICATION ON PIPES 6" (INCLUDING ANY INSULATION). PROVIDE NYLON TIES (MIN OF 2) AS REQUIRED.
3. ADHESIVE LABELS ARE NOT ACCEPTABLE.
4. IDENTIFICATION MARKS SHOWN ABOVE ARE SHOWN FOR SAMPLE PURPOSES. PROVIDE APPROPRIATE IDENTIFICATION AS INDICATED IN THE SPECIFICATIONS.

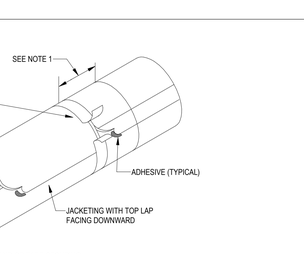
4 H505 PIPE IDENTIFICATION DETAIL
NOT TO SCALE



NOTES:
1. REFER TO EXACT INSTALLATION REQUIREMENTS OF THE EQUIPMENT AND ASSOCIATED EQUIPMENT MANUFACTURER FOR MODIFICATIONS THAT MAY BE REQUIRED TO THIS PAD LAYOUT. THIS DETAIL IS INTENDED TO ILLISTRATE GENERAL REQUIREMENTS.

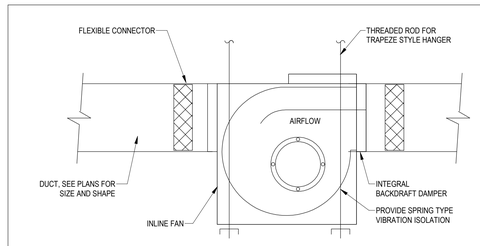
6 H505 HOUSEKEEPING PAD
NOT TO SCALE



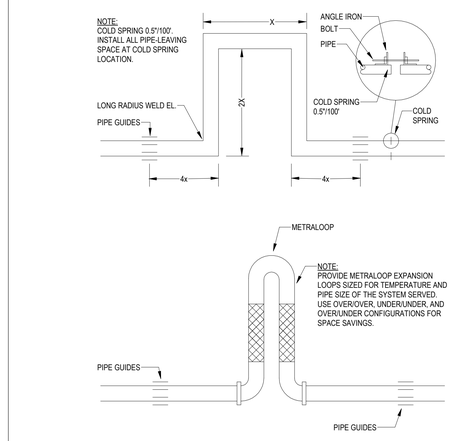


NOTES:
1. OVERLAP JACKET MINIMUM OF 1-1/2" WITH WELDED ADHESIVE ACROSS ENTIRE JOINT OVERLAP TO EFFECT TOTAL MOISTURE BARRIER.
2. LONGITUDINAL JACKETING SEAMS SHALL BE POSITIONED AT 3 O'CLOCK OR 9 O'CLOCK ONLY WITH TOP LAP FACING DOWNWARD FOR WEATHER PROTECTION.

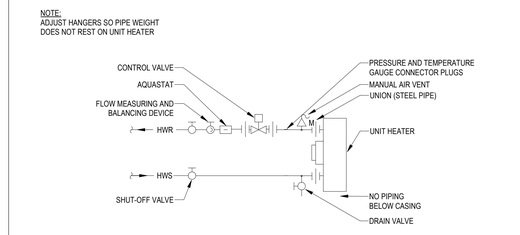
7 H505 FIELD APPLIED PVC PIPE JACKETING OVER PIPE INSULATION
NOT TO SCALE



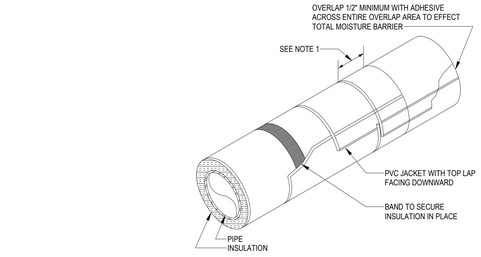
8 H505 INLINE CABINET FAN
NOT TO SCALE



10 H505 EXPANSION LOOP PIPING DETAIL
NOT TO SCALE

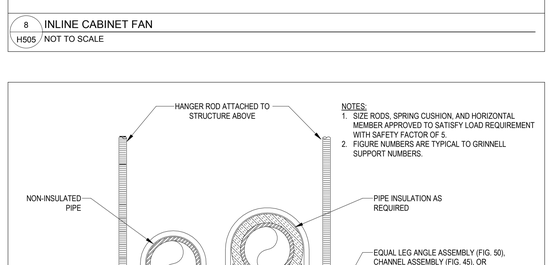


11 H505 HOT WATER UNIT HEATER PIPING DETAIL W/2-WAY VALVE I
NOT TO SCALE

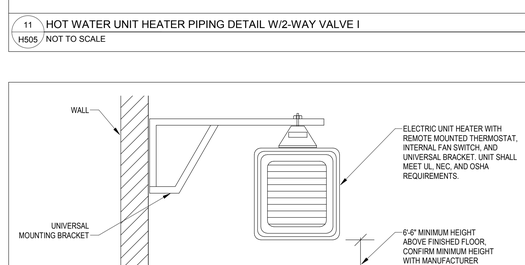


NOTE:
FIGURE NUMBERS ARE TYPICAL TO GRINNELL SUPPORT NUMBERS.

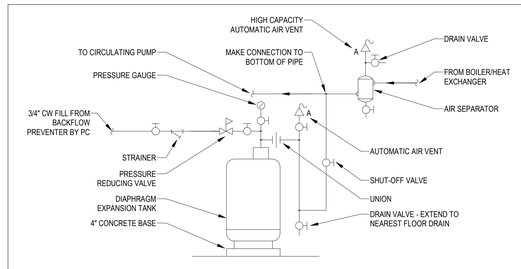
13 H505 PIPE CLAMPS
NOT TO SCALE



9 H505 TRAPEZE TYPE PIPE SUPPORT, UP TO 3"
NOT TO SCALE



12 H505 ELECTRIC UNIT HEATER MOUNTING
NOT TO SCALE



14 H505 EXPANSION TANK PIPING DETAIL
NOT TO SCALE

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Consultants:

Revisions:

No.	Date	Description

COA:

Seal:

Issued For:

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Scale: NO SCALE

Key Plan:

Date: 03/28/25
Draw By: EFJ
Reviewed By: JCG
Approved By: SEH

W&S Project No.: ENG24-1080
W&S File No.: ---

Drawing Title:

DETAILS

Sheet Number:

H505

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CEILING FAN SCHEDULE

ID	LOCATION NAME	LOCATION NO.	MANUFACTURER	MODEL NO.	TYPE	FAN AIRFLOW (CFM)	FAN RPM	FAN MAX RPM	FAN BLADE DIA (FT)	FAN POWER (W)	SOUND PRESS LEVEL (dBA)	WEIGHT (lb)	ELECTRICAL DATA FLA	V	PH	REMARKS
CF-1A	FLEET MAINTENANCE	138	Greenheck	DC-5-14-13LV	CEILING	37850	53	76	14'	86.00	36	118	5	120	1	
CF-1B	FLEET MAINTENANCE	138	Greenheck	DC-5-14-13LV	CEILING	37850	53	76	14'	86.00	36	118	5	120	1	
CF-2	HIGHWAY WORKSHOP	137	Greenheck	DC-5-8-13LV	CEILING	11425	83	184	8'	41.00	32	101	5	120	1	
CF-3	TREES WORKSHOP	136	Greenheck	DC-5-8-13LV	CEILING	11425	83	184	8'	41.00	32	101	5	120	1	
CF-4A	FLEET STORAGE	133	Greenheck	DC-5-14-13LV	CEILING	55300	52	101	16'	126.00	33	154	3	460	3	
CF-4B	FLEET STORAGE	133	Greenheck	DC-5-14-13LV	CEILING	55300	52	101	16'	126.00	33	154	3	460	3	
CF-4C	FLEET STORAGE	133	Greenheck	DC-5-14-13LV	CEILING	55300	52	101	16'	126.00	33	154	3	460	3	
CF-4D	FLEET STORAGE	133	Greenheck	DC-5-14-13LV	CEILING	55300	52	101	16'	126.00	33	154	3	460	3	

NOTES:
1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DIAGRAMS FOR ADDITIONAL INFORMATION.
2. PROVIDE FACTORY WALL MOUNTED CONTROLLER TO ALLOW FOR MULTIPLE FAN CONTROL.
3. PROVIDE APPROPRIATE CEILING MOUNTING AND GUY WIRE KIT. PROVIDE EXTENTION TUBES AS REQUIRED FOR INSTALLATION. COORDINATE FINAL MOUNTING HEIGHT AND LOCATION WITH ALL TRADES AND EQUIPMENT INSTALLATION.
4. PROVIDE FACTORY FIRE ALARM RELAY AND WIRING PIGTAIL. PROVIDE WITH FACTORY BACNET CONNECTION.
5. PROVIDE WITH 10 YEAR UNIT WARRANTY.

EXHAUST FAN SCHEDULE

ID	LOCATION NAME	LOCATION NO.	MANUFACTURER	MODEL NO.	TYPE	FAN AIRFLOW DESIGN (CFM)	FAN VELOCITY OUTLET (FPM)	FAN PRESS ESP (INWC)	FAN RPM	FAN WHEEL TYPE	FAN WHEEL DIA (IN)	FAN DRIVE TYPE	FAN MOTOR BHP	FAN MOTOR HP	FAN MOTOR ECM	SOUND PRESS LEVEL (dBA)	WEIGHT (lb)	ELECTRICAL DATA FLA	V	PH	REMARKS
EF-1	WASH BAY	142	Greenheck	SQ-100-VG	ROOF	1100	840	0.50	1602	BI	11 1/4"	DIRECT	0.20	0.25	Yes	60	55	2.9	115	1	
EF-2	HIGHWAY WORKSHOP	133	Greenheck	SQ-120-VG	ROOF	1500	872	0.50	1576	BI	13 1/8"	DIRECT	0.35	0.50	Yes	63	60	6.4	115	1	
EF-3	TREES WORKSHOP	131	Greenheck	SQ-120-VG	ROOF	1500	872	0.50	1576	BI	13 1/8"	DIRECT	0.35	0.50	Yes	63	60	6.4	115	1	
EF-4A	FLEET STORAGE	135	Greenheck	G-240-B	ROOF	5500	1444	0.50	730	BI	24 1/2"	DIRECT	1.06	2.00	Yes	63	196	12.5	208	1	
EF-4B	FLEET STORAGE	135	Greenheck	G-240-B	ROOF	5500	1444	0.50	730	BI	24 1/2"	DIRECT	1.06	2.00	Yes	63	196	12.5	208	1	
EF-4C	FLEET STORAGE	135	Greenheck	G-240-B	ROOF	5500	1444	0.50	730	BI	24 1/2"	DIRECT	1.06	2.00	Yes	63	196	12.5	208	1	
EF-4D	FLEET STORAGE	135	Greenheck	G-095-E	ROOF	600	517	0.50	1530	BI	10 7/8"	DIRECT	0.11	0.17	Yes	57	33	2.2	115	1	
EF-4E	FLEET STORAGE	135	Greenheck	G-095-E	ROOF	600	517	0.50	1530	BI	10 7/8"	DIRECT	0.11	0.17	Yes	57	33	2.2	115	1	

NOTES:
1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DIAGRAMS FOR ADDITIONAL INFORMATION.

INLINE
1. PROVIDE GALVANIZED STEEL HOUSING WITH BOLTED ACCESS PANELS.
2. PROVIDE WITH ECM TYPE MOTOR WITH MOTOR MOUNTED SPEED CONTROL DIAL. PROVIDE ECM MOTOR WITH 0-10 VDC INPUT SIGNAL FOR 2 SPEED OPERATION.
3. PROVIDE FLEXIBLE CONNECTOR BETWEEN EXHAUST FAN AND DUCT CONNECTION.
4. PROVIDE WITH SINGLE POINT POWER AND FACTORY TOGGLE TYPE DISCONNECT SWITCH.
5. PROVIDE HANGING SPRING TYPE VIBRATION ISOLATION.

DOWNBLAST
1. PROVIDE A 24" HIGH FACTORY INSULATED PITCHED ROOF CURB.
2. PROVIDE WITH BIRD SCREEN.
3. PROVIDE ULTRA LOW LEAKAGE MOTORIZED DAMPER WITH LOW VOLTAGE DAMPER ACTUATOR.
4. PROVIDE WITH ECM TYPE MOTOR WITH MOTOR MOUNTED SPEED CONTROL DIAL.
5. PROVIDE FLEXIBLE CONNECTOR BETWEEN EXHAUST FAN AND DUCT CONNECTION.
6. PROVIDE WITH SINGLE POINT POWER AND FACTORY TOGGLE TYPE DISCONNECT SWITCH..

VEHICLE EXHAUST (UTILITY STYLE)
1. PROVIDE FLEXIBLE CONNECTOR BETWEEN EXHAUST FAN AND DUCT CONNECTION.
2. PROVIDE BELT DRIVES AND METAL BELT GUARDS FOR THE FAN MOTOR. PROVIDE 2 SPARE BELTS. PROVIDE MOTOR COVER.
3. PROVIDE EXTENDED LUBE LINES.
4. PROVIDE WITH FACTORY FAN SUPPORT PLATFORM WITH VIBRATION RAILS.
5. PROVIDE 25 FT, 8" DIAMETER HOSE ON HOSE STORAGE REEL WITH EXTENDED LENGTH DRUM AND POWER OPERATOR (PROVIDE SEPARATE 120V CIRCUIT, COORDINATE WITH DIV 26). PROVIDE PUSH BUTTON OPERATOR 4' AFF (WALL OR PENDANT?).
6. PROVIDE FACTORY ACCESSORIES: HOSE ADAPTER (SERIES RDS OR EQUAL), ALUMINUM DIESEL CANE, DUAL PIPE ADAPTER (ADJACENT AND OPPOSITE).

PUMP SCHEDULE

ID	LOCATION NAME	LOCATION NO.	SERVES	MANUFACTURER	MODEL NO.	FLUID TYPE	FLUID TEMP (°F)	FLUID TYPE	FLUID %	GPM	HEAD (FT)	SHUT-OF F HD	IMPELLER SIZE	MOTOR BHP	MOTOR HP	MOTOR RPM	UNIT WEIGHT (lb)	ELECTRICAL V	ELECTRICAL PH	REMARKS
P-1A	GEOTHERMAL MECH	202	GS LOOP	Bell & Gossett	6 BD	BASE MOUNT END SUCTION									50.00			460	3	
P-1B	GEOTHERMAL MECH	202	GS LOOP	Bell & Gossett	6 BD	BASE MOUNT END SUCTION									50.00			460	3	
P-2A	GEOTHERMAL MECH	202	PRIMARY LOOP	Bell & Gossett	ecocirc XL 110-180	INLINE									3.00			460	3	
P-2B	GEOTHERMAL MECH	202	PRIMARY LOOP	Bell & Gossett	ecocirc XL 110-180	INLINE									3.00			460	3	
P-3A	GEOTHERMAL MECH	202	SECONDARY LOOP	Bell & Gossett	1AAB	INLINE									5.00			460	3	
P-3B	GEOTHERMAL MECH	202	SECONDARY LOOP	Bell & Gossett	1AAB	INLINE									5.00			460	3	
P-4A	GEOTHERMAL MECH	202	GS TO HP LOOP	Bell & Gossett	6 BD	BASE MOUNT END SUCTION									5.00			460	3	
P-4B	GEOTHERMAL MECH	202	GS TO HP LOOP	Bell & Gossett	6 BD	BASE MOUNT END SUCTION									5.00			460	3	

NOTES:
1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DIAGRAMS FOR ADDITIONAL INFORMATION.
2. PROVIDE PREMIUM EFFICIENCY MOTOR, CAST BRONZE IMPELLOR, AND STEEL SHAFT.
3. PROVIDE FACTORY FLOOR MOUNT AND NEOPRENE TYPE VIBRATION ISOLATION.
4. PROVIDE PREMIUM EFFICIENCY, VFD COMPATIBLE MOTOR WITH SHAFT GROUNDING RINGS. PROVIDE FACTORY MOUNTED AND WIRED VFD.
5. PROVIDE PREMIUM EFFICIENCY ECM TYPE MOTOR WITH INTEGRAL CONTROLS AND THERMAL AND OVERCURRENT PROTECTION. PROVIDE WITH STAINLESS STEEL IMPELLOR AND SHAFT. REFER TO DIV 26 FOR DISCONNECT SWITCH.

BUFFER TANK SCHEDULE

ID	LOCATION NAME	LOCATION NO.	MANUFACTURER	MODEL NO.	TYPE	FLUID TYPE	FLUID %	TANK VOLUME	UNIT DIMENSIONS HEIGHT	UNIT DIMENSIONS DIAMETER	WEIGHT (lb)	REMARKS
BT-1	GEOTHERMAL MECH	202	Lochinvar	BVU300	VERTICAL	PG	30	300.0	6' - 8"	3' - 4"	1290	

NOTES:
1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DIAGRAMS FOR ADDITIONAL INFORMATION.
2. TANK SHALL BE RATED FOR MAXIMUM WORKING PRESSURE OF 125 PSIG. PROVIDE WITH FLANGED CONNECTIONS.
3. PROVIDE WITH FACTORY 1/2" THICK ARMAFLEX INSULATION.
4. PROVIDE CARBON STEEL CONSTRUCTION. TANK SHALL BE ASME RATED.
5. PROVIDE AUTOMATIC AIR VENT AND PIPE AIR VENT TO NEAREST FLOOR DRAIN.

GROUND SOURCE HEAT PUMP SCHEDULE

ID	LOCATION NAME	LOCATION NO.	MANUFACTURER	MODEL NO.	TYPE	ARRANGEMENT	EVAPORATOR COOLING HEAT EXCHANGER: COOLING CAP (MBH)	LOAD: CHILLED WATER FLOW (GPM) DESIGN	MIN	EWT (°F)	LWT (°F)	PD (FT HD)	VOL (GAL)	COOLING PLANT GLYCOL TYPE	%	CONDENSER REJECTION HEAT EXCHANGER: REJECTION CAP (MBH)	SOURCE: CONDENSER WATER FLOW (GPM) DESIGN	MIN	EWT (°F)	LWT (°F)	PD (FT HD)	VOL (GAL)	REJECTION PLANT GLYCOL TYPE	%	CONDENSER HEATING HEAT EXCHANGER: HEATING CAP (MBH)	LOAD: HEATING WATER FLOW (GPM) DESIGN	MIN	EWT (°F)	LWT (°F)	HEATING PLANT GLYCOL TYPE	%	EVAPORATOR ABSORBING HEAT EXCHANGER: ABSORBING CAP (MBH)	SOURCE: EVAPORATOR WATER FLOW (GPM) DESIGN	MIN	EWT (°F)	LWT (°F)	COMPRESSOR REFRIGERANT TYPE	REFRIGERANT CIRCUIT QTY	UNLOADING STEPS	MOTOR QTY	MOTOR RLA	EER	IEER	COP	SOUND PRESS (dBa)	WEIGHT (lb)	ELECTRICAL DATA FLA	MCA	MOCP	V	PH	REMARKS
GSHP-1	GEOTHERMAL MECH	202	WATER FURNACE	T5RS040SN24AACH	DUAL SCROLL	BANKED	500.0																		500.0											SCROLL	R-454B										3092	65	74	100	460	3	
GSHP-2	GEOTHERMAL MECH	202	WATER FURNACE	T5RS040SN24AACH	DUAL SCROLL	BANKED	500.0																		500.0											SCROLL	R-454B										3092	65	74	100	460	3	
GSHP-3	GEOTHERMAL MECH	202	WATER FURNACE	T5RS040SN24AACH	DUAL SCROLL	BANKED	500.0																		500.0											SCROLL	R-454B										3092	65	74	100	460	3	

NOTES:
1. WATER SOURCE VRF SYSTEM WITH HEAT RECOVERY TO SERVE ADMIN AREA.

ENERGY RECOVERY UNIT SCHEDULE

| ID | LOCATION NAME | LOCATION NO. | SERVES | MANUFACTURER | MODEL NO. | TYPE | ARRANGEMENT | SUPPLY FAN AIRFLOW SUPPLY (CFM) | SUPPLY FAN AIRFLOW OA (CFM) | SUPPLY FAN TYPE | SUPPLY FAN PRESS ESP (IN WC) | SUPPLY FAN PRESS TSP (IN WC) | SUPPLY FAN MOTOR QTY | SUPPLY FAN MOTOR POWER (BHP) | SUPPLY FAN MOTOR HP | SUPPLY FAN MOTOR RPM | EXHAUST FAN CFM | EXHAUST FAN TYPE | EXHAUST FAN PRESS ESP (IN WC) | EXHAUST FAN PRESS TSP (IN WC) | EXHAUST FAN MOTOR QTY | EXHAUST FAN MOTOR POWER (BHP) | EXHAUST FAN MOTOR HP | EXHAUST FAN MOTOR RPM | SUMMER DESIGN ENERGY RECOVERY OUTSIDE AIR EAT DB (°F) | SUMMER OUTSIDE AIR EAT WB (°F) | SUMMER OUTSIDE AIR LAT DB (°F) | SUMMER OUTSIDE AIR LAT WB (°F) | SUMMER DESIGN ENERGY RECOVERY EXHAUST AIR EAT DB (°F) | SUMMER EXHAUST AIR EAT WB (°F) | SUMMER EXHAUST AIR LAT DB (°F) | SUMMER EXHAUST AIR LAT WB (°F) | WINTER DESIGN ENERGY RECOVERY OUTSIDE AIR EAT DB (°F) | WINTER OUTSIDE AIR EAT WB (°F) | WINTER OUTSIDE AIR LAT DB (°F) | WINTER OUTSIDE AIR LAT WB (°F) | WINTER DESIGN ENERGY RECOVERY EXHAUST AIR EAT DB (°F) | WINTER EXHAUST AIR EAT WB (°F) | WINTER EXHAUST AIR LAT DB (°F) | WINTER EXHAUST AIR LAT WB (°F) | HEATING COIL CAP (MBH) | HEATING COIL AIRSIDE EAT DB (°F) | HEATING COIL AIRSIDE LAT DB (°F) | HEATING COIL AIRSIDE PD (IN WG) | HEATING COIL WATERSIDE FLOW (GPM) | HEATING COIL WATERSIDE EWT (°F) | HEATING COIL WATERSIDE LWT (°F) | HEATING COIL WATERSIDE PD (FT H2O) | COOLING COIL CAP (MBH) | COOLING COIL AIRSIDE EAT (°F) | COOLING COIL AIRSIDE LAT (°F) | COOLING COIL AIRSIDE PD (IN WG) | COOLING COIL WATERSIDE FLOW (GPM) | COOLING COIL WATERSIDE EWT (°F) | COOLING COIL WATERSIDE LWT (°F) | COOLING COIL WATERSIDE PD (FT H2O) | TYPE | % | SOUND PRESS (dBa) | WEIGHT (lb) | ELECTRICAL DATA FLA | MCA | MOCP | V | PH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

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PIPE INSULATION

MINIMUM INSULATION THICKNESS IN INCHES FOR INDOOR PIPE SIZES (SEE NOTES BELOW)

PIPING SYSTEM TYPES	FLUID TEMPERATURE RANGE (°F)	<1"	1" & 1-1/4"	1-1/2" - 3"	4" - 6"	8" AND UP	K-FACTOR (BTU-INCH/°F-HR-SF) AT AVG TEMPERATURE (°F)
HIGH PRESSURE OR SUPERHEATED STEAM OR ENGINE EXHAUST	601-1200	4.5	5	5	6	6	0.53-0.59 @ 500°F
STEAM OR HIGH TEMPERATURE HEATING	351-600	4.5	5	5	5	5	0.32-0.34 @ 250°F
STEAM OR HIGH TEMPERATURE HEATING	251-350	3	4	4.5	4.5	1.5	0.29-0.32 @ 200°F
LOW PRESSURE STEAM OR ANY STEAM CONDENSATE OR HOT WATER OVER 200°F	201-250	2.5	2.5	2.5	3	3	0.27-0.30 @ 150°F
LOW TEMPERATURE HEATING	141-200	1.5	1.5	2	2	2	0.25-0.29 @ 125°F
FULLY CONDENSING BOILERS	105-140	1	1	1.5	1.5	1.5	0.22-0.28 @ 100°F
CHILLED WATER OR GLYCOL HEAT RECOVERY OR INDOOR FREE COOLING CWS OR REFRIGERANT OR COOLING COIL CONDENSAT...	<60	0.5	1	1	1	1	0.20-0.27 @ 75°F

NOTES:

1. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.
2. FOR MINIMUM THICKNESS OF ALTERNATIVE INSULATION TYPES OUTSIDE THE STATED CONDUCTIVITY RANGE, SEE TEST METHOD FOR STEADY STATE HEAT TRANSFER PROPERTIES OF HORIZONTAL PIPE INSULATIONS, ASTM C 335-95, AND THE STATE ENERGY CODE.
3. FOR DUAL TEMPERATURE SYSTEMS (HEATING AND COOLING) USE THE THICKER INSULATION VALUE REQUIRED FOR EITHER HEATING OR COOLING AND PROVIDE VAPOR BARRIER JACKET.
4. FOR OUTDOOR CHILLED WATER, GLYCOL, AND BRINE PIPING, ADD MINIMUM 50% TO THICKNESS LISTED. FOR OUTDOOR AND UNDERGROUND STEAM, HEATING WATER, AND STEAM CONDENSATE PIPING, ADD MINIMUM 50% TO THICKNESS LISTED. AN EXCEPTION TO THE 50% INCREASE IN THICKNESS IS ALLOWED FOR PIPING WITHIN RTU/AHU PIPE ENCLOSURES AND VESTIBULES.
5. FOR OUTDOOR COOLING TOWER AND CONDENSER WATER PIPING PROVIDE DOUBLE INSULATION THICKNESS LISTED FOR CHILLED WATER PIPING.
6. ALL OUTDOOR REFRIGERANT PIPING SHALL BE PROVIDED WITH 3/4" THICK INSULATION WITH PVC JACKETING.

MINIMUM DUCT INSULATION R-VALUES

LOCATION	SUPPLY	RETURN	RAW OUTDOOR AIR	EXHAUST	
				W/ ENERGY RECOVERY	W/O ENERGY RECOVERY
ATTIC TYPE SPACE (EXPOSED ROOF AREA)	R-8	R-8	R-4	R-8	R-6*
OUTDOORS	R-8	R-8	-0-	R-8	R-8*
CRAWL SPACE	R-5	R-5	R-4	R-5	-0-
BELOW GRADE	R-5	R-5	-0-	R-5	-0-
UNCONDITIONED SPACE (SHAFT OR CEILING WITH DUCTED RETURNS)	R-5	R-5	R-4	R-5	-0-
RETURN AIR PLENUM	R-4	-0-	R-4	-0-	-0-
EXPOSED IN MECHANICAL ROOM	R-5	R-5	R-5	R-5	-0-
EXPOSED IN ZONE SERVED (**ONLY DUCTS THAT PROVIDE COOLING)	R-4**	-0-	R-4	-0-	-0-

* R-VALUE SHOWN IS ONLY IF AREA OF BUILDING BEING EXHAUSTED IS HUMIDIFIED. IF NOT HUMIDIFIED, NO INSULATION (-0-), UNLESS FIRE WRAP OR LINING IS NEEDED.

DUCT LINING SCOPE: ACOUSTIC DUCT LINING OF THE TYPE AND THICKNESS SPECIFIED SHALL BE INSTALLED ON ALL SUPPLY, RETURN, AND EXHAUST DUCTWORK WITHIN 20 FEET OF ALL TYPES OF AIR HANDLING UNITS (INCLUDING RTU, ERU, FCU, MUA, ETC., AND ALL BRANCHES WITHIN 20') ALL FANS (INCLUDING BRANCHES), ALL LOW PRESSURE DUCTWORK DOWNSTREAM OF ALL TYPES OF SUPPLY VOLUME BOXES (CV, VAV, FPVAV, ETC.), AND WHERE DETAILED OR SHOWN ON DRAWINGS. LINING SHALL NOT BE USED ON DUCTWORK SERVING VEHICLE WASH BAYS OR SURGICAL SUITES, DELIVERY ROOMS, INTENSIVE CARE UNITS AND ISOLATION AREAS OF HOSPITALS AND MEDICAL FACILITIES OR ON KITCHEN AND FUME HOOD EXHAUST AND WET/HUMID EXHAUST SUCH AS DISHWASHER,...

NOTES: (SEE SPECIFICATIONS FOR R-VALUES OF VARIOUS DUCT INSULATION AND LINERS)

1 REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.

2 R-VALUES SHOWN MAY BE OBTAINED BY ADDING THE R-VALUES OF BOTH THE LINING (WHERE SHOWN OR USED) AND EXTERNAL DUCT INSULATION.

3 R-VALUES SHOWN ARE AS INSTALLED. USE R-VALUES FOR 25% COMPRESSION FOR NON-RIGID INSULATION.

DUCTWORK PRESSURE CLASS AND SEAL CLASS

PRESSURE CLASS	STATIC PRESSURE CLASS	SMACNA SEAL CLASS	SMACNA LEAKAGE CLASS		DESIGN VELOCITY LIMITS
			RECTANGULAR	ROUND	
6"	6" POS OR NEG	A	6	3	4500 FPM OR LESS
4"	4" POS OR NEG	A	6	3	3000 FPM OR LESS
3"	3" POS OR NEG	A	6	3	2500 FPM OR LESS
2"	2" POS OR NEG	A	6	3	2000 FPM OR LESS

UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS, USE THE FOLLOWING PRESSURE CLASSIFICATIONS FOR THE TYPES OF DUCTWORK LISTED...

4" (POS) CLASS::	ALL SUPPLY DUCTWORK BETWEEN THE DISCHARGE OF AIR SUPPLY UNITS TO THE INLETS OF SUPPLY TERMINAL VOLUME BOXES.
4" (NEG AND POS):	ALL SUCTION AND DISCHARGE FUME HOOD, KITCHEN EXHAUST DUCTWORK AND FOR MEDIUM PRESSURE EXHAUST AND RETURN SYSTEMS, ALL DUCTWORK BETWEEN AIR EXHAUST AND RETURN UNITS TO OUTLETS OF EXHAUST AND RETURN TERMINAL VOLUME BOXES.
2" CLASS	ALL OTHER DUCTWORK

NOTES

1 REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.

2 CONTRACTOR SHALL LEAK TEST (SUBMIT REPORT) A MINIMUM OF 25% OF THE SURFACE AREA FOR ALL DUCTWORK ABOVE PRESSURE CLASS 3" AND 100% OF ALL DUCTWORK LOCATED OUTDOORS.

3 FOR NEGATIVE PRESSURE OVER 3"W.G., REFER TO SMACNA ROUND AND RECTANGULAR INDUSTRIAL DUCT CONSTRUCTION STANDARDS FOR JOINT AND INTERMEDIATE REINFORCEMENT REQUIREMENTS.

4 FOR ROUND DUCTWORK, NEGATIVE PRESSURE OVER 2"W.G., REFER TO SMACNA ROUND INDUSTRIAL DUCT CONSTRUCTION STANDARDS AND BUILD TO NEGATIVE RATING SPECIFIED (-4"W.G. MIN.).

5 LEAKAGE CLASS AND THE ASSOCIATED DUCT SEALING FOR DUCTWORK SERVING LABORATORIES, HOSPITAL OPERATING ROOMS, AND CLEAN ROOMS SHALL ALLOW FOR 1/2 THE LEAKAGE LISTED.

REGISTER, GRILLE, & DIFFUSER SCHEDULE

TAG	AIRFLOW RANGE (CFM)	NECK SIZE (IN)	OVERALL SIZE (IN)	MATERIAL	SERVICE	MOUNTING	TYPE	PD (IN WG)	NC	MANUFACTURER	MODEL	REMARKS
SA	0 - 100	6"ø	12" x 12"	STEEL	SUPPLY	LAY-IN OR SURFACE	PLAQUE	0.08	<16	PRICE	SPD	1 THRU 6
SB	101 - 200	8"ø	24" x 24"	STEEL	SUPPLY	LAY-IN OR SURFACE	PLAQUE	0.04	<19	PRICE	SPD	1 THRU 6
SC	201 - 325	10"ø	24" x 24"	STEEL	SUPPLY	LAY-IN OR SURFACE	PLAQUE	0.06	<18	PRICE	SPD	1 THRU 6
SD	326 - 550	12"ø	24" x 24"	STEEL	SUPPLY	LAY-IN OR SURFACE	PLAQUE	0.13	21	PRICE	SPD	1 THRU 6
SE	551 - 750	14"ø	24" x 24"	STEEL	SUPPLY	LAY-IN OR SURFACE	PLAQUE	0.17	23	PRICE	SPD	1 THRU 6
S1	0 - 145	8" x 4"	10" x 6"	ALUMINUM	SUPPLY	SIDEWALL	DOUBLE DEFLECTION	0.12	17	PRICE	22	1 THRU 6
S2	146 - 240	10" x 6"	12" x 8"	ALUMINUM	SUPPLY	SIDEWALL	DOUBLE DEFLECTION	0.08	17	PRICE	22	1 THRU 6
S3	241 - 320	14" x 6"	16" x 8"	ALUMINUM	SUPPLY	SIDEWALL	DOUBLE DEFLECTION	0.08	18	PRICE	22	1 THRU 6
S4	321 - 485	16" x 8"	18" x 10"	ALUMINUM	SUPPLY	SIDEWALL	DOUBLE DEFLECTION	0.06	16	PRICE	22	1 THRU 6
S5	486 - 710	24" x 8"	26" x 10"	ALUMINUM	SUPPLY	SIDEWALL	DOUBLE DEFLECTION	0.06	17	PRICE	22	1 THRU 6
LD1	0 - 150	6"ø	48" x 4" 2 SLOT/1"...	ALUMINUM	SUPPLY	LAY-IN OR SURFACE	LINEAR	0.09	15	PRICE	TBD3	1 THRU 7
LD2	151 - 310	8"ø	48" x 8" 4 SLOT/1"...	ALUMINUM	SUPPLY	LAY-IN OR SURFACE	LINEAR	0.10	18	PRICE	TBD3	1 THRU 7
DR1	0 - 350	12" x 6"	14" x 8"	STEEL	SUPPLY	DUCT	HIGH CAPACITY DRUM LOUVER	0.21	30	PRICE	HCD	1 THRU 6, 8
DR2	351 - 525	18" x 6"	20" x 8"	STEEL	SUPPLY	DUCT	HIGH CAPACITY DRUM LOUVER	0.18	32	PRICE	HCD	1 THRU 6, 8
DR3	526 - 875	30" x 6"	32" x 8"	STEEL	SUPPLY	DUCT	HIGH CAPACITY DRUM LOUVER	0.16	33	PRICE	HCD	1 THRU 6, 8
DRA1	0 - 350	12" x 6"	14" x 8"	ALUMINUM	SUPPLY	DUCT	HIGH CAPACITY DRUM LOUVER	0.21	30	PRICE	AHCD	1 THRU 6, 8
DRA2	351 - 525	18" x 6"	20" x 8"	ALUMINUM	SUPPLY	DUCT	HIGH CAPACITY DRUM LOUVER	0.18	32	PRICE	AHCD	1 THRU 6, 8
RA OR EA	0 - 100	6"ø	12" x 12"	ALUMINUM	RETURN OR EXHAUST	LAY-IN OR SURFACE	PERFORATED FACE	0.04	<16	PRICE	APDDR	1 THRU 6
RB OR EB	101 - 210	8"ø	24" x 24"	ALUMINUM	RETURN OR EXHAUST	LAY-IN OR SURFACE	PERFORATED FACE	0.06	<18	PRICE	APDDR	1 THRU 6
RC OR EC	211 - 325	10"ø	24" x 24"	ALUMINUM	RETURN OR EXHAUST	LAY-IN OR SURFACE	PERFORATED FACE	0.06	<16	PRICE	APDDR	1 THRU 6
RD OR ED	326 - 470	12"ø	24" x 24"	ALUMINUM	RETURN OR EXHAUST	LAY-IN OR SURFACE	PERFORATED FACE	0.06	<16	PRICE	APDDR	1 THRU 6
RE OR EE	471 - 620	14"ø	24" x 24"	ALUMINUM	RETURN OR EXHAUST	LAY-IN OR SURFACE	PERFORATED FACE	0.06	<18	PRICE	APDDR	1 THRU 6
R1 OR E1	0 - 90	6" x 6"	8" x 8"	ALUMINUM	RETURN OR EXHAUST	SIDEWALL	DOUBLE DEFLECTION	0.01	25	PRICE	60	1 THRU 6
R2 OR E2	91 - 155	8" x 8"	10" x 10"	ALUMINUM	RETURN OR EXHAUST	SIDEWALL	DOUBLE DEFLECTION	0.01	24	PRICE	60	1 THRU 6
R3 OR E3	156 - 240	10" x 10"	12" x 12"	ALUMINUM	RETURN OR EXHAUST	SIDEWALL	DOUBLE DEFLECTION	0.01	26	PRICE	60	1 THRU 6
R4 OR E4	241 - 270	12" x 12"	14" x 14"	ALUMINUM	RETURN OR EXHAUST	SIDEWALL	DOUBLE DEFLECTION	0.01	21	PRICE	60	1 THRU 6
R5 OR E5	271 - 350	14" x 14"	16" x 16"	ALUMINUM	RETURN OR EXHAUST	SIDEWALL	DOUBLE DEFLECTION	0.01	23	PRICE	60	1 THRU 6

NOTES

1. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.
2. RUNOUTS TO DIFFUSERS SHALL BE THE SAME SIZE AS THE INLET/NECK SIZE.
3. PROVIDE APPROPRIATE BORDER FOR INSTALLATION TYPE.
4. PROVIDE FACTORY POWDER COAT FINISH. COORDINATE FINAL COLOR WITH ARCHITECT/OWNER
5. COORDINATE BLOW PATTERN WITH MECHANICAL PLANS.
6. CONTRACTOR SHALL VERFIY QUANTITY OF REGISTERS, GRILLES, AND DIFFUSERS REQUIRED.
7. PROVIDE FACTORY PLENUM.
8. SET DRUM ANGLE TO 30° TOWARDS FLOOR. PROVIDE ALUMINUM CONSTRUCTION FOR WASH BAY DIFFUSERS.

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CONTROL POINT DESCRIPTOR LEGEND

TAG	ATC CONTRACTOR PROVIDED DDC POINT AND HARDWARE
TAG	CONTROL DEVICE FURNISHED BY ELECTRICAL OR PLUMBING CONTRACTOR BUT INTERFACED TO DDC SYSTEM BY ATC CONTRACTOR (ELEC SHOWN)
TAG	ATC CONTRACTOR INTERFACE TO EQUIPMENT MANUFACTURER'S HARDWARE
TAG	ATC CONTRACTOR PROVIDED LOCAL CONTROL POINT

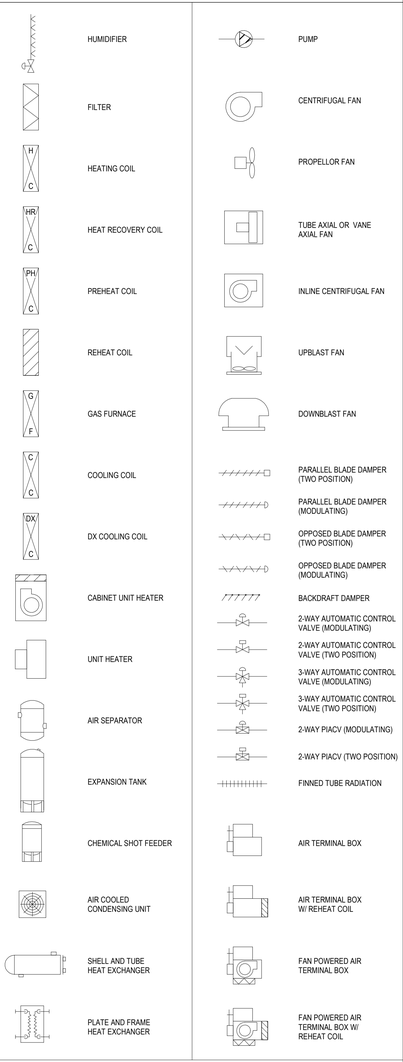
CONTROL ABBREVIATIONS

ACD	AUTOMATIC CONTROL DAMPER
ACV	AUTOMATIC CONTROL VALVE
AFMS	AIR FLOW MEASURING STATION
ALM	ALARM
ATC	AUTOMATIC TEMPERATURE CONTROL
AQS	AQUASTAT
BCV	BASEBOARD CONTROL VALVE
BDD	BACKDRAFT DAMPER W/ ADJ
	COUNTERWEIGHT
BV	BYPASS VALVE
CO2	CARBON DIOXIDE SENSOR
CAP	CAPACITY CONTROL
CCLT	COOLING COIL LEAVING AIR TEMP SENSOR
CLT	COIL LAT SENSOR
CHRT	CHILLED WATER RETURN TEMP SENSOR
CHST	CHILLED WATER SUPPLY TEMP SENSOR
CHWRT	CHILLED WATER RESET TEMPERATURE
CO	CARBON MONOXIDE SENSOR
CRT	CONDENSER WATER RET TEMP SENSOR
CST	CONDENSER WATER SUP TEMP SENSOR
CT	CURRENT TRANSFORMER
	(STATUS FEEDBACK)
CV	COOLING COIL CONTROL VALVE
DAT	DISCHARGE AIR TEMPERATURE SENSOR
DDC	DIRECT DIGITAL CONTROL
DDCFP	DIFFERENTIAL PRESSURE SWITCH
DL	DEMAND LIMIT
DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE
	SENSOR/TRANSMITTER
DPV	DIFFERENTIAL PRESSURE BYPASS VALVE
DSP	DISCHARGE STATIC PRESSURE SENSOR
EAD	EXHAUST AIR DAMPER
EAT	ENTERING AIR TEMPERATURE
ECM	ELECTRONICALLY COMMUTATED MOTOR
ERW	ENERGY RECOVERY WHEEL
ES	END SWITCH
FA	FAULT ALARM
FDPS	FILTER DIFFERENTIAL PRESSURE SWITCH
FMT	FLOW METER/TRANSMITTER
FS	FLOW SWITCH
FZ	FREEZESTAT
H	RELATIVE HUMIDITY SENSOR
HCV	HEATING COIL CONTROL VALVE
HCLT	HEATING COIL LEAVING AIR TEMP SENSOR
HE	HEAT EFFICIENCY
HEGA	HE GAS ABSORBER FILTER
HEPA	HE PARTICULATE AIR FILTER
HGB	HOT GAS BYPASS
HHL	HIGH HUMIDITY LIMIT SENSOR
HLH	HIGH/LOW HUMIDITY LIMIT SENSOR
HOA	HANDS-OFF AUTOMATIC SWITCH
HS	HAND SWITCH
HPS	HIGH LIMIT PRESSURE SENSOR
HSPS	HIGH STATIC PRESSURE SWITCH
HV	HEATING CONTROL VALVE
HWRT	HOT WATER RETURN TEMP SENSOR
HWST	HOT WATER SUPPLY TEMP SENSOR
IFBD	INTEGRAL FACE AND BYPASS
IGV	INLET GUIDE VANES
LAT	LEAVING AIR TEMP SENSOR
LEL	LOW EXPLOSIVE LIMIT
LLSV	LIQUID LINE SOLENOID VALVE
LSPS	LOW STATIC PRESSURE SWITCH
LS	LEVEL SENSOR
LSI	LIGHT SWICH INTERFACE
LSHA	LEVEL SENSOR HIGH ALARM
LSHS	LEVEL SENSOR HIGH SWITCH
LSLA	LEVEL SENSOR LOW ALARM
LSLS	LEVEL SENSOR LOW SWITCH
MAT	MIXED AIR TEMP SENSOR
MUWW	MAKE-UP WATER VALVE
MD	MOTION DETECTOR
NC	NORMALLY CLOSED (ON LOSS OF POWER)
NO	NORMALLY OPEN (ON LOSS OF POWER)
NO2	NITROGEN DIOXIDE SENSOR
OAD	OUTSIDE AIR DAMPER
OAH	OUTSIDE AIR HUMIDITY SENSOR (WB)
OAT	OUTSIDE AIR TEMPERATURE SENSOR (DB)
PAD	PRIMARY AIR DAMPER
PIACV	PRESSURE INDEPENDANT ACV
PPM	PARTS PER MILLION
PR	PRESSURE SENSOR
PROP	PROPANE SENSOR
RAD	RETURN AIR DAMPER
RAH	RETURN AIR HUMIDITY SENSOR
RAT	RETURN AIR TEMPERATURE SENSOR
RV	REHEAT CONTROL VALVE
RH	RELATIVE HUMIDITY
RI	RUN INDICATOR
RSID	RETURN SMOKE ISOLATION DAMPER
S	SWITCH
SAD	SUPPLY AIR DAMPER
SD	SMOKE DAMPER
SDET	SMOKE DETECTOR
SFT	SMOKE/FIRE DETECTOR
SP	STATIC PRESSURE SENSOR
SPD	SPEED CONTROL
S/S	START/STOP
S/SH	START/STOP HIGH SPEED/CAPACITY
S/SL	START/STOP LOW SPEED/CAPACITY
SSID	SUPPLY SMOKE ISOLATION DAMPER
SSP	SUCTION STATIC PRESSURE SENSOR
T	THERMOSTAT
TAD	TRANSFER AIR DAMPER
TS	TEMPERATURE SENSOR
VFD	VARIABLE FREQUENCY DRIVE
VFDS	VFD SPEED
VFDO	VFD OUTPUT (FEEDBACK)
VS	VIBRATION SWITCH

GENERAL ATC NOTES

1. PROVIDE NEW DDC AUTOMATIC TEMPERATURE CONTROL SYSTEM INCLUDING OPERATOR WORKSTATION. CONTROL SOFTWARE TO ALLOW GRAPHIC REPRESENTATION OF THE HVAC SYSTEM WITH "POINT AND CLICK" SELECTION OF ALL EQUIPMENT. ALL TEMPERATURE SETPOINT CHANGES, SCHEDULING, ETC. SHALL BE ADJUSTABLE THROUGH THE USE OF A MOUSE. PROVIDE GRAPHIC REPRESENTATION OF ALL FLOOR PLANS SHOWING HVAC EQUIPMENT, VALVES, DAMPERS, TEMPERATURE SENSORS, HUMIDITY SENSORS, ETC.
2. OPERATOR WORKSTATION SHALL CONSIST OF CURRENT GENERATION MULTI-CORE INTEL PROCESSOR OPERATING AT 2.4 GHZ MINIMUM SPEED. INCLUDE 2GB RAM AND A MINIMUM OF (1) 160GB SOLID STATE HARD DISK DRIVE. PROVIDE A X16 PCIE GRAPHICS CARD, FOUR USB 2.0 PORTS, 100/1000 BASE-T NETWORK CARD, AND 16X DVD±RW DRIVE. PROVIDE 19IN. LCD FLAT SCREEN MONITOR.
3. NEW DDC CONTROL SYSTEM SHALL BE CONNECTED TO AND CONTROL NEW AIR HANDLING UNITS, AIR COOLED CONDENSING UNITS, FANS, VAV TERMINAL UNITS, PUMPS, ETC.
4. OPERATOR WORKSTATION TO BE INSTALLED IN THE MAINTENANCE OFFICE. FINAL LOCATION TO BE DETERMINED BY THE OWNER. PROVIDE SECURITY ACCESS/PASSWORD PROGRAMMING FOR DDC CONTROL SYSTEM.
5. ALL ATC CONTROLS SHALL BE HARDWIRED. NO WIRELESS TECHNOLOGY SHALL BE ALLOWED UNLESS CONFIRMED WITH THE OWNER. ALL EXPOSED WIRING IN THE SHOPS, MAINTENANCE OR STORAGE AREAS SHALL BE INSTALLED IN MINIMUM 1/2 INCH GALVANIZED EMT CONDUIT. ALL EXPOSED WIRING IN A CLASS 1 DIVISION 1 SPACE SHALL BE INSTALLED IN MINIMUM 1/2" PVC COATED RIGID STEEL.
6. INSTALL ALL NEW CONTROL WIRING FOR OFFICES AND OTHER SIMILAR OCCUPIED SPACES IN THE WALLS.
7. ALL DDC CONTROLLERS CONTROLLING THE H&V UNITS SHALL BE PROVIDED WITH AN OPERATOR DISPLAY/INTERFACE ALLOWING THE USER TO PERFORM OPERATIONS TASKS ON THE ATC SYSTEM. PROVIDE PASSWORD PROTECTION.
8. THE CONTRACTOR SHALL CARRY 16 HOURS OF ADDITIONAL ON-SITE PROGRAMMING (ABOVE BASE CONTRACT) TO ALLOW FOR FIELD MODIFICATIONS THAT MAY BE NEEDED TO OPTIMIZE THE VARIOUS SYSTEMS TO FULLY CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS, SEQUENCE OF CONTROLS AND WORK WITH THE ACTUAL OPERATING CONDITIONS AS INSTALLED. THIS WORK SHALL BE DONE AT NO ADDITIONAL COST,
9. ON-SITE TRAINING SHALL ALSO INCLUDE A MINIMUM OF 24 HOURS OF HANDS ON INSTRUCTION GEARED TOWARD OPERATION AND MAINTENANCE OF THE SYSTEMS, PRIOR TO TRAINING, THE NECESSARY LESSON PLANS, TRAINING DOCUMENTS, HANDOUTS, ETC. SHALL BE PROVIDED WITH THE CURRICULUM OUTLINE, WHICH SHALL INCLUDE AS A MINIMUM:
   A. INITIAL SESSION - 8 HRS
   B. 2ND SESSION, 2 WEEKS LATER - 8 HRS
   C. REMAINING 8 HRS TO BE SCHEDULED BY THE OWNER AS NEEDED.
10. ALL TRAINING SHALL BE RECORDED AND COPIED TO DVD BY THE ATC CONTRACTOR. THREE COPIES OF THE RECORDED SESSIONS SHALL BE SUBMITTED TO THE OWNER FOR THEIR USE.
11. PROVIDE WIRING FROM ELECTRICAL SOURCE TO MISCELLANEOUS ATC DEVICES. REFER TO HVAC PLANS, HVAC MECHANICAL ROOM PLANS, AND ELECTRICAL PLANS FOR LOCATION OF POWER SOURCES FOR ATC SYSTEM.
12. SUBMIT ACCEPTANCE TESTING PLAN, PRE-FUNCTIONAL PERFORMANCE TEST FORMS/NARRATIVES AND FUNCTIONAL TEST FORMS/NARRATIVES TO ENGINEER FOR REVIEW AND APPROVAL.
13. PROVIDE DEMOLITION OF EXISTING CONTROL COMPONENTS WHICH ARE BEING REPLACED BY THE NEW ATC CONTROL SYSTEM.
14. ALL MOTOR RATED RELAYS FOR FANS, ETC. SHALL BE FURNISHED BY DIVISION 23 AND TURNED OVER TO DIVISION 26 FOR INSTALLATION.
15. THE HVAC SYSTEM SHALL BE INDEXED TO HEATING WHEN HOT WATER IS AVAILABLE (GENERALLY BETWEEN THE MONTHS OF OCTOBER AND APRIL). THE HVAC SYSTEM SHALL BE INDEXED TO COOLING WHEN DX IS AVAILABLE (GENERALLY BETWEEN THE MONTHS OF MAY AND SEPTEMBER).
16. LOCATION OF ALL NEW DDC CONTROL PANELS SHALL BE FIELD VERIFIED WITH THE FIELD CONDITIONS BY THE CONTRACTOR AND COORDINATED WITH DIVISION 26.

DIAGRAM EQUIPMENT SYMBOLS



NOTE: SOME OR ALL SYMBOLS MAY BE USED ON THIS PROJECT

DDC MATRIX

DDC CONTROL MATRIX

EQUIPMENT CATEGORY	CONTROLS BY: MFR	ATC
BOILERS	X	
HWP-X		X
RTU-X	X	
H&V-X		X
HRV-X		X
EXHAUST FANS		X
VAV BOXES		X
UH & CUH		X
SPLIT SYSTEMS	X	
CEILING FANS	X	
GAS DETECTION	X	
RADIANT FLOOR		X

1. LOCATE ATC PANELS IN MECHANICAL ROOM. COORDINATE LOCATION OF PANELS.
2. EQUIPMENT PROVIDED WITH PACKAGED CONTROL WILL BE PROVIDED WITH BACNET COMMUNICATION ACCESSORIES TO INTEGRATED INTO BMS. MECHANICAL CONTRACTOR SHALL COORDINATE WITH ATC CONTRACTOR AND EQUIPMENT MANUFACTURERS.

GLOBAL POINTS

TS	GLOBAL OUTDOOR AIR TEMPERATURE AND RELATIVE HUMIDITY SENSORS.
RH	

ENERGY MANAGEMENT STRATEGIES

SYSTEM (AIR SIDE)	SYSTEM ABBREVIATION	OPTIMUM START/STOP (1)	SUPPLY AIR TEMPERATURE RESET (2)	STATIC PRESSURE RESET (3)	TIME OF DAY PROGRAMMING
HEAT RECOVERY VENTILATOR UNITS (NO COOLING, HW) - 100% OA	HRU	X	X		X
ENERGY RECOVERY VENTILATOR UNITS (HW, DX)	ERU	X	X		X
ENERGY RECOVERY VENTILATORS (NO COOLING OR HEATING)	ERV	X	X		X
HEATING AND VENTILATION UNITS (NO COOLING, HW)	HV	X	X		X
ENERGY RECOVERY UNITS (NO HEATING OR COOLING)	ERV	X	X		X
AIR HANDLING UNITS CONSTANT VOLUME	AHU	X	X		X
AIR HANDLING UNITS VARIABLE VOLUME	AHU	X	X	X	X
ROOFTOP UNITS (DX, HW, GAS) CONSTANT VOLUME	RTU	X	X		X
ROOFTOP UNITS (DX, HW, GAS) VARIABLE VOLUME	RTU	X		X	X
DEHUMIDIFICATION UNITS (DX)	DHU	X	X		X
VARIABLE AIR VOLUME AIR TERMINAL UNITS (W/O HEAT)	VAV	X			X
VARIABLE AIR VOLUME AIR TERMINAL UNITS (W/ HW REHEAT)	VAV	X			X
AIR CONDITIONING UNITS (DUCTED, DX, HW)	AC	X			X
AIR CONDITIONING UNITS (DUCTLESS, DX)	AC	X			X
AIR CONDITIONING UNITS (VARIABLE REFRIGERANT FLOW DX)	AC	X			X
HEAT PUMP UNITS (DUCTED, DX)	AC	X			X
HEAT PUMP UNITS (DUCTLESS, DX)	AC	X			X
HEAT PUMP UNITS (VARIABLE REFRIGERANT FLOW DX)	AC	X			X
DEDICATED OUTSIDE AIR UNITS (DX, HW) - 100% OA	DOAS	X	X		X
EXHAUST FANS	EF				X
VEHICLE EXHAUST FANS / HOSE REELS	VEF				
CABINET UNIT HEATER / UNIT HEATER (HW)	CUH / UH				X
UNIT HEATER (GAS)	GUH				X
UNIT HEATER (ELECTRIC)	EUH				X
FINNED TUBE RADIATION	FTR	X			X

SYSTEM (WATER SIDE)	SYSTEM ABBREVIATION	OPTIMUM START/STOP (1)	HOT WATER TEMPERATURE RESET (4)	CHILLED WATER TEMPERATURE RESET (5)	DIFFERENTIAL PRESSURE RESET (6)
BOILER (HEATING HOT WATER) CONDENSING	B	X	X		
HEATING PUMPS (SYSTEM)	HWP	X	X		X
RADIANT FLOOR PUMP	RP	X	X		
CHILLER (DX)	CH	X		X	
CHILLER (CW)	CH	X		X	
COOLING TOWER	CT	X			
CHILLED WATER PUMPS	CHWP	X			X

NOTES:

1. OPTIMUM START/STOP - THE BMS SHALL LEARN, COMPARING OUTSIDE AIR CONDITIONS WITH SPACE SETBACK CONDITIONS WITH HOW MUCH TIME IN ADVANCE THE HEATING OR COOLING SYSTEM SHALL BE STARTED TO ACHIEVE THE OCCUPIED SET POINT WHEN THE BUILDING/SPACE IS SCHEDULED TO BE OCCUPIED.
2. SUPPLY AIR TEMPERATURE RESET (SAT) - FOR AIRSIDE COOLING EQUIPMENT THE SAT SETPOINT, WHEN OUTSIDE AIR AND SPACE WET BULB IS LESS THAN 52ºF (ADJ), THE SAT SHALL RESET TO THE HIGHEST TEMPERATURE POSSIBLE TO MEET THE SPACE COOLING LOAD.
3. STATIC PRESSURE RESET - FOR AIRSIDE VAV EQUIPMENT, WHEN THE SYSTEM STATIC PRESSURE SETPOINT IS EXCEEDED, THE SUPPLY FAN STATIC PRESSURE SHALL RESET TO THE LOWEST STATIC PRESSURE TO SATISFY THE ZONE REQUIRING THE MOST PRESSURE. NOTE: MIN AIRFLOW REQUIREMENTS AT THE SUPPLY FAN AND/OR COILS SHALL BE MAINTAINED AT ALL TIMES.
4. HEATING HOT WATER RESET - FOR WATERSIDE HEATING EQUIPMENT THE HOT WATER TEMPERATURE RESET SET POINT, WHEN OUTSIDE AIR TEMPERATURE DRY BULB IS LESS THAN 60ºF (ADJ), THE HEATING HOT WATER TEMPERATURE SHALL RESET TO THE COOLEST TEMPERATURE POSSIBLE TO MEET THE SPACE HEATING LOAD.
5. CHILLED WATER RESET - FOR WATERSIDE COOLING EQUIPMENT THE CHILLED WATER TEMPERATURE RESET SET POINT, WHEN OUTSIDE AIR TEMPERATURE DRY BULB IS LESS THAN 70ºF (ADJ), THE CHILLED WATER TEMPERATURE SHALL RESET TO THE WARMEST TEMPERATURE POSSIBLE TO MEET THE SPACE COOLING LOAD.
6. DIFFERENTIAL PRESSURE RESET - FOR WATER SIDE VARIABLE VOLUME PUMPS, WHEN THE DIFFERENTIAL PRESSURE SETPOINT IS EXCEEDED, THE PUMP SPEED SHALL RESET TO THE LOWEST SPEED TO SATISFY THE HIGHEST WATER FLOW DEMAND. NOTE: MIN WATER FLOW REQUIREMENTS AT THE PUMPS SHALL BE MAINTAINED AT ALL TIMES.

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AUTOMATIC TEMPERATURE CONTROLS

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ELECTRICAL ABBREVIATIONS LIST

1P	1 POLE (2P, 3P, 4P, ETC.)	AS	AMP SWITCH	CMPR	COMPRESSOR	DS	SAFETY DISCONNECT SWITCH	FIXT	FIXTURE	HTG	HEATING	LTG	LIGHTING	MOA	MULTIOUTLET ASSEMBLY	PA	PUBLIC ADDRESS	RM	ROOM
A	AMPERE	AT	AMP TRIP	CONN	CONNECTION	DT	DOUBLE THROW	FLR	FLOOR	HTR	HEATER	LTNG	LIGHTNING	MSP	MOTOR STARTER PANELBOARD	PB	PULL BOX OR PUSHBUTTON	RSC	RIGID STEEL CONDUIT
AC	ABOVE COUNTER OR AIR CONDITIONER	ATS	AUTOMATIC TRANSFER SWITCH	CONST	CONSTRUCTION	DWG	DRAWING	FLUOR	FLUORESCENT	HV	HIGH VOLTAGE	LV	LOW VOLTAGE	MSBD	MAIN SWITCHBOARD	PE	PNEUMATIC ELECTRIC	RTU	ROOF TOP UNIT
		AUTO	AUTOMATIC	CONT	CONTINUATION OR CONTINUOUS	EC	ELECTRICAL CONTRACTOR	FU	FUSE	HVAC	HEATING, VENTILATING AND AIR CONDITIONING	MAX	MAXIMUM	MT	MOUNT	PED	PEDESTAL	SC	SURFACE CONDUIT
ACLG	ABOVE CEILING	AUX	AUXILIARY	CONTR	CONTRACTOR	ELEC	ELECTRIC, ELECTRICAL	FUDS	FUSED SAFETY DISCONNECT SWITCH			MAG.S	MAGNETIC STARTER	MT.C	EMPTY CONDUIT	PF	POWER FACTOR	SEC	SECONDARY
ADO	AUTOMATIC DOOR OPENER	AV	AUDIO VISUAL	CONV	CONVECTOR	ELEV	ELEVATOR	GA	GAUGE	HWP	HYDRONIC WATER PUMP	MC	MOMENTARY CONTACT	MTS	MANUAL TRANSFER SWITCH	PH	PHASE	SHT	SHEET
AF	AMP FRAME	AWG	AMERICAN WIRE GAUGE	CP	CIRCULATING PUMP	EM	EMERGENCY	GAL	GALLON	IC	INTERRUPTING CAPACITY	MC	MECHANICAL CONTRACTOR	MTR	MOTOR, MOTORIZED	PIV	POST INDICATING VALVE	SIM	SIMILAR
AFF	ABOVE FINISHED FLOOR	BATT	BATTERY	CRT	CATHODE-RAY TUBE	EMS	ENERGY MANAGEMENT SYSTEM	GALV	GALVANIZED	IG	ISOLATED GROUND	MCB	MAIN CIRCUIT BREAKER	N.C.	NORMALLY CLOSED	PNL	PANEL	S/N	SOLID NEUTRAL
AFG	ABOVE FINISHED GRADE	BD	BOARD	CT	CURRENT TRANSFORMER	EMT	ELECTRICAL METALLIC TUBING	GC	GENERAL CONTRACTOR	IMC	INTERMEDIATE METAL CONDUIT	MCC	MOTOR CONTROL CENTER	NEC	NATIONAL ELECTRICAL CODE	PP	POWER POLE	SPEC	SPECIFICATION
AFI	ARC FAULT CIRCUIT INTERRUPTER	BLDG	BUILDING	CTR	CENTER	EP	ELECTRIC PNEUMATIC	GEN	GENERATOR	INCAND	INCANDESCENT	MDC	MAIN DISTRIBUTION CENTER	NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION	PR	PAIR	SPKR	SPEAKER
		BMS	BUILDING MANAGEMENT SYSTEM	CU	COPPER	EQUIP	EQUIPMENT	GFI	GROUND FAULT CIRCUIT INTERRUPTER	IR	INFRARED	MDP	MAIN DISTRIBUTION PANEL			PRI	PRIMARY	SP	SPARE
AHU	AIR HANDLING UNIT	C	CONDUIT	DCP	DOMESTIC WATER CIRCULATING	EWC	ELECTRIC WATER COOLER	GFP	GROUND FAULT PROTECTOR	IW	INTERLOCK WITH	MFR	MANUFACTURER	NFDS	NON-FUSED SAFETY DISCONNECT	PROJ	PROJECTION	SR	SURFACE RACEWAY
AL	ALUMINUM	CAB	CABINET	PUMP		EXIST	EXISTING	GND	GROUND	J-BOX	JUNCTION BOX	MFS	MAIN FUSED DISCONNECT SWITCH			PRV	POWER ROOF VENTILATOR	SS	STAINLESS STEEL
ALT	ALTERNATE	CAT	CATALOG	DEPT	DEPARTMENT	EXH	EXHAUST	GRS	GALVANIZED RIGID STEEL (CONDUIT)	KV	KILOVOLT	MH	MANHOLE	NIC	NOT IN CONTRACT	PT	POTENTIAL TRANSFORMER	SSW	SELECTOR SWITCH
AMP	AMPERE	CATV	CABLE TELEVISION	DET	DETAIL	EXP	EXPLOSION PROOF	GYP BD	GYPSUM BOARD	KVA	KILOVOLT-AMPERE	MIC	MICROPHONE	NL	NIGHT LIGHT	PVC	POLYVINYL CHLORIDE (CONDUIT)	S/S	STOP/START PUSHBUTTONS
AMPL	AMPLIFIER	CB	CIRCUIT BREAKER	DIA	DIAMETER	FA	FIRE ALARM	HOA	HANDS-OFF-AUTOMATIC SWITCH	KVAR	KILOVOLT-AMPERE REACTIVE	MIN	MINIMUM	N.O.	NORMALLY OPEN	PWR	POWER	STA	STATION
ANNUN	ANNUNCIATOR	CCTV	CLOSED CIRCUIT TELEVISION	DISC	DISCONNECT	FABP	FIRE ALARM BOOSTER POWER	HORIZ	HORIZONTAL	KW	KILOWATT	MISC	MISCELLANEOUS	NPF	NORMAL POWER FACTOR	QUAN	QUANTITY	STD	STANDARD
APPROX	APPROXIMATELY	CKT	CIRCUIT	DIST	DISTRIBUTION			HP	HORSEPOWER	KWH	KILOWATT HOUR	MLO	MAIN LUGS ONLY	NTS	NOT TO SCALE	RCPT	RECEPTACLE	SURF	SURFACE MOUNTED
AQ-STAT	AQUASTAT	CLG	CEILING	DN	DOWN	FACP	FIRE ALARM CONTROL PANEL	HPF	HIGH POWER FACTOR	LOC	LOCATE OR LOCATION	MMS	MANUAL MOTOR STARTER	OH	OVERHEAD	REQD	REQUIRED	SW	SWITCH
ARCH	ARCHITECT, ARCHITECTURAL	COMB	COMBINATION	DPR	DAMPER	FCU	FAN COIL UNIT	HT	HEIGHT	LT	LIGHT	MOA	MULTIOUTLET ASSEMBLY	OL	OVERLOADS	RM	ROOM	SWBD	SWITCHBOARD

UTIL	UTILITY	V	VOLT
UTP	UNDERGROUND TELEPHONE	VA	VOLT-AMPERES
UV	UNIT VENTILATOR OR ULTRAVIOLET	VDT	VIDEO DISPLAY TERMINAL
		VERT	VERTICAL
		VFD	VARIABLE FREQUENCY DRIVE
		VOL	VOLUME
		W	WATT
		W/	WITH
		WG	WIRE GUARD
		WH	WATER HEATER
		W/O	WITHOUT
		WP	WEATHERPROOF
		XFMR	TRANSFORMER
		XFR	TRANSFER

∠	ANGLE
@	AT
Δ	DELTA
'	FEET
"	INCHES
#	NUMBER
Ø	PHASE
C	CENTER LINE
P	PLATE

RACEWAY AND WIRING

LP1B-1,3 — HOMERUN TO PANELBOARD, PROVIDE 3/4" , 2#12 & 1#12GND, NUMERALS 1 AND 3 INDICATE CIRCUITS IN PANELBOARD. RACEWAYS LARGER THAN 3/4" AND CONDUCTORS LARGER THAN #12 AWG SHALL BE INDICATED ON THE DRAWINGS.

RACEWAY RUN UNDERGROUND OR UNDER SLAB

RACEWAY RUN ABOVE GROUND OR EXPOSED

LIGHTING LEGEND

A 1,a — 2'x4' LED FIXTURE "A" DENOTES FIXTURE TYPE, NUMERAL DENOTES CIRCUIT NUMBER. "a" SUBSCRIPT DENOTES SWITCH CONTROL WHERE SHOWN.

AE 1,a — EMERGENCY LED FIXTURE WITH EMERGENCY BATTERY BACKUP BALLAST. PROVIDE THIRD WIRE FOR EMERGENCY MODE BYPASS IF SWITCHED (TYPICAL). "AE" DENOTES FIXTURE TYPE; NUMERAL DENOTES CIRCUIT NUMBER. "a" SUBSCRIPT DENOTES SWITCH CONTROL WHERE SHOWN

D 1,a — 2'x2' LED FIXTURE "D" DENOTES FIXTURE TYPE; NUMERAL DENOTES CIRCUIT NUMBER. "a" SUBSCRIPT DENOTES SWITCH CONTROL WHERE SHOWN.

DE 1,a — 2' X 2' EMERGENCY LED FIXTURE WITH EMERGENCY BATTERY BACKUP BALLAST. PROVIDE THIRD WIRE FOR EMERGENCY MODE BYPASS IF SWITCHED (TYPICAL). "DE" DENOTES FIXTURE TYPE; NUMERAL DENOTES CIRCUIT NUMBER. "a" SUBSCRIPT DENOTES SWITCH CONTROL WHERE SHOWN

B 1,b — SURFACE OR RECESSED LED DOWNLIGHT FIXTURE. "B" DENOTES FIXTURE TYPE, NUMERAL DENOTES CIRCUIT NUMBER, "b" SUBSCRIPT DENOTES SWITCH CONTROL WHERE SHOWN.

BE 1,b — SURFACE OR RECESSED EMERGENCY LED FIXTURE WITH EMERGENCY BATTERY BACKUP BALLAST. PROVIDE THIRD WIRE FOR EMERGENCY MODE BYPASS IF SWITCHED (TYPICAL). "BE" DENOTES FIXTURE TYPE; NUMERAL DENOTES CIRCUIT NUMBER. "b" SUBSCRIPT DENOTES SWITCH CONTROL WHERE SHOWN

W 1,c — WALL MOUNTED LED FIXTURE. "W" DENOTES FIXTURE TYPE, NUMERAL DENOTES CIRCUIT NUMBER, "c" SUBSCRIPT DENOTES SWITCH CONTROL WHERE SHOWN.

WE 1,c — WALL MOUNTED EMERGENCY LED FIXTURE WITH EMERGENCY BATTERY BACKUP BALLAST. PROVIDE THIRD WIRE FOR EMERGENCY MODE BYPASS IF SWITCHED (TYPICAL). "WE" DENOTES FIXTURE TYPE; NUMERAL DENOTES CIRCUIT NUMBER. "c" SUBSCRIPT DENOTES SWITCH CONTROL WHERE SHOWN

A 1,a — 1' X 4' PENDANT OR SURFACE MOUNTED LED FIXTURE. "A" DENOTES FIXTURE TYPE; NUMERAL DENOTES CIRCUIT NUMBER. "a" SUBSCRIPT DENOTES SWITCH CONTROL WHERE SHOWN

AE 1,a — 1' X 4' PENDANT OR SURFACE MOUNTED EMERGENCY LED FIXTURE WITH EMERGENCY BATTERY BACKUP BALLAST. PROVIDE THIRD WIRE FOR EMERGENCY MODE BYPASS IF SWITCHED (TYPICAL). "AE" DENOTES FIXTURE TYPE; NUMERAL DENOTES CIRCUIT NUMBER. "a" SUBSCRIPT DENOTES SWITCH CONTROL WHERE SHOWN

W 1,a — 1' X 4' WALL MOUNTED LED FIXTURE. "A" DENOTES FIXTURE TYPE, NUMERAL DENOTES CIRCUIT NUMBER, "a" SUBSCRIPT DENOTES SWITCH CONTROL WHERE SHOWN

WE 1,a — 1' X 4' WALL MOUNTED EMERGENCY LED FIXTURE WITH EMERGENCY BATTERY BACKUP BALLAST. PROVIDE THIRD WIRE FOR EMERGENCY MODE BYPASS IF SWITCHED (TYPICAL). "WE" DENOTES FIXTURE TYPE; NUMERAL DENOTES CIRCUIT NUMBER. "a" SUBSCRIPT DENOTES SWITCH CONTROL WHERE SHOWN

SP 1,a — POLE MOUNTED LED SITE LIGHTING FIXTURE. NUMBER OF FIXTURE AS SHOWN ON PLANS. "SP" DENOTES FIXTURE TYPE; NUMERAL DENOTES CIRCUIT NUMBER. "a" SUBSCRIPT DENOTES SWITCH CONTROL WHERE SHOWN

EXIT 5 — EXIT SIGN CEILING OR PENDANT MOUNTED. ARROWS DENOTE DIRECTION OF EGRESS. NUMERAL DENOTES CIRCUIT NUMBER. SHADED CHEVRONS DENOTE EXIT FACES.

EXIT 5 — WALL MOUNTED EXIT SIGN. ARROWS DENOTE DIRECTION OF EGRESS. NUMERAL DENOTES CIRCUIT NUMBER. SHADED CHEVRONS DENOTE EXIT FACES.

7 — EMERGENCY LIGHTING BATTERY UNIT, TWIN OR SINGLE LAMP HEAD. NUMERAL DENOTES CIRCUIT NUMBER

RECEPTACLE LEGEND
(MOUNT 18" AFF TO CENTER LINE UNLESS NOTED OTHERWISE)

DUPLEX CONVENIENCE OUTLET MOUNTED 18" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE NEXT TO OUTLET ON DRAWINGS.
WP = WEATHERPROOF

DOUBLE DUPLEX CONVENIENCE OUTLET MOUNTED 18" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE NEXT TO OUTLET ON DRAWINGS.
WP = WEATHERPROOF

DUPLEX CONVENIENCE GROUND FAULT CIRCUIT INTERRUPTER (GFCI) OUTLET MOUNTED 18" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE NEXT TO OUTLET ON DRAWINGS.
WP = WEATHERPROOF

A — SPECIAL PURPOSE OUTLET RATING AS NOTED ADJACENT TO SYMBOL MOUNTING HEIGHT 18"AFF UNLESS OTHERWISE NOTED.

A - 30A,125V,2P,3W, TWIST LOCK, NEMA L5-30R

B - 20A,250V,2P,3W, TWIST LOCK, NEMA L6-20R

C - 50A,250V,2P,3W, NEMA 6-50R

D - 20A,120V,2P,3W, NEMA L5-20R

ONE-LINE POWER DIAGRAM SYMBOLS

CIRCUIT BREAKER

GROUND - SYSTEM AND/OR EQUIPMENT

3 PHASE, 3 WIRE DELTA CONNECTION

3 PHASE, 3 WIRE WYE CONNECTION (UNGROUNDED)

3 PHASE, 4 WIRE WYE CONNECTION (GROUNDED NEUTRAL)

CM — CHECK METER

WATTHOUR METER

G KW — EMERGENCY GENERATOR

AUTOMATIC TRANSFER SWITCH

POWER LEGEND

DISTRIBUTION PANEL

P4G1 — PANELBOARD-SURFACE MOUNTED
P = PANEL
4 = 480V
2 = 208V
G = GENERAL
L = LIGHTING
M = MECHANICAL
1 = PANEL NUMBER

T# — DRY TYPE TRANSFORMER

GB — GROUND BUS WALL MOUNTED CHATSWORTH MODEL NO. 10624-020 EXTEND A 12"C. 1-#6 INSULATED GROUND TO THE BUILDING GROUND SYSTEM

SAFETY SWITCH - RATING AND TYPE AS NOTED ON THE DRAWING.

30AS 30AF — FUSIBLE SAFETY SWITCH - RATING AND TYPE AS NOTED ON THE DRAWING. (30 AMP, 20 AMP FUSE, 3 POLE)

MAGNETIC STARTER OR CONTACTOR - RATING AND SIZE AS NOTED ON THE DRAWING.

COMBINATION UNFUSED DISCONNECT SWITCH AND MAGNETIC STARTER OR CONTACTOR. RATING AND SIZE AS NOTED ON THE DRAWING.

100A-3P — ENCLOSED CIRCUIT BREAKER - SIZE AS INDICATED (100A - 3 POLE).

1 — MOTOR, NUMERAL DENOTES HORSE POWER

T — WALL MOUNTED LINE VOLTAGE THERMOSTAT MOUNTED 54"AFF. THERMOSTAT FURNISHED BY HVAC AND INSTALLED BY ELECTRICAL CONTRACTOR.

EWH — ELECTRIC WATER HEATER

ATC — AUTOMATIC TEMPERATURE CONTROL PANEL

HOA — HAND-OFF-AUTOMATIC SELECTOR SWITCH

PS — PRESSURE SWITCH

THREE FUNCTION PUSHBUTTON SWITCH (UP/DOWN/STOP)

ON/OFF PUSHBUTTON STATION

LS — LIMIT SWITCH

FS — FLOAT SWITCH

CP — PACKAGE CONTROL PANEL FOR EQUIPMENT

D — MOTORIZED DAMPER

J — WALL MOUNTED JUNCTION BOX WITH BLANK COVERPLATE, SIZE AS REQUIRED BY N.E.C.

J CLG — CEILING MOUNTED JUNCTION BOX WITH BLANK COVER PLATE, SIZE AS REQUIRED BY N.E.C.

PB — PULL BOX. TYPE AS NOTED ON THE DRAWINGS OR AS REQUIRED BY N.E.C.

SV — SOLENOID VALVE

TS — TIME SWITCH

VFD — VARIABLE SPEED DRIVE

V — MOTORIZED VALVE

ATS — AUTOMATIC TRANSFER SWITCH

GENERAL ELECTRICAL NOTES

1. DRAWINGS ARE DIAGRAMMATIC ONLY. THE EXACT LOCATION, MOUNTING HEIGHTS, SIZE OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
2. THE EXACT LOCATION AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES LOCATED IN MECHANICAL/ELECTRICAL EQUIPMENT SPACES SHALL BE COORDINATED IN THE FIELD BY THE ELECTRICAL CONTRACTOR BEFORE INSTALLATION OF SAME, SO AS TO AVOID INTERFERENCE WITH DUCTS, PIPING AND OTHER MECHANICAL/ELECTRICAL EQUIPMENT.
3. REFLECTED CEILING PLANS FOR ANY AND ALL AREAS PREPARED BY THE ARCHITECT SHOWING THE LOCATION OF LIGHTING FIXTURES SHALL TAKE PRECEDENCE OVER THE LOCATIONS OF SAME SHOWN ON THE LIGHTING DRAWINGS. THE ELECTRICAL CONTRACTOR SHALL INSTALL THE LIGHTING FIXTURES IN ANY GIVEN AREA TO AGREE WITH THE ARCHITECT'S REFLECTED CEILING PLANS.
4. ALL STRAIGHT FEEDER, BRANCH CIRCUIT AND AUXILIARY SYSTEM CONDUIT RUNS SHALL BE PROVIDED WITH SUFFICIENT PULL BOXES TO LIMIT THE MAXIMUM LENGTH OF ANY SINGLE CABLE PULL TO 150 FEET. EXACT SIZES OF PULL BOXES AND LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ELECTRICAL CONTRACTOR.
5. FURNISH ALL REQUIRED ACCESS PANELS AS REQUIRED TO SUIT FIELD CONDITIONS FOR THE PROPER OPERATION AND MAINTENANCE OF THE ELECTRICAL SYSTEM. THE EXACT SIZES AND PHYSICAL LOCATIONS SHALL BE TO SUIT ACCESSIBILITY AND CONSTRUCTION CONDITIONS. ALL ACCESS PANELS PROVIDED BY THE ELECTRICAL CONTRACTOR SHALL MATCH EXACTLY THE ACCESS PANELS FURNISHED AND INSTALLED BY THE GENERAL CONTRACTOR. THE ACCESS PANELS WILL BE INSTALLED BY THE TRADE CONTRACTOR UNDER THE APPROPRIATE SECTION OF THE SPECIFICATIONS FOR THE SURFACE IN WHICH THE PANELS ARE LOCATED.
6. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE HVAC, FIRE PROTECTION, PLUMBING, AND GENERAL CONTRACTORS AS APPLICABLE AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT; THE POWER WIRING, CONTROL WIRING AND ALL ELECTRICAL CONNECTIONS AND CONDUIT TURN-UPS SHALL BE COORDINATED WITH THE RESPECTIVE CONTRACTORS BEFORE THE START OF CONSTRUCTION IN THE FIELD.
7. SLEEVES ARE TO BE UTILIZED FOR PASSAGE OF CONDUITS THROUGH FLOORS OR WALLS. CONDUITS AND BOXES ARE TO BE SUPPORTED BY THE USE OF PRESET FASTENERS INSTALLED IN FLOORS, WALLS OR COLUMNS. CONDUITS AND BOXES ARE TO BE INSTALLED CONCEALED IN MASONRY WALLS AND ABOVE HUNG CEILINGS. ALL SLEEVES ARE TO BE SEALED WITH APPROVED FIRE STOPPING SEALANT.
8. ALL LIGHTING FIXTURES, ELECTRICAL DEVICES, CABLES AND RACEWAYS ARE TO BE INDEPENDENTLY SUPPORTED OF THE CEILING SYSTEM. FIXTURES ARE TO BE SUPPORTED FROM THE STRUCTURE BY THE USE OF JACK CHAIN, THREADED ROD OR OTHER MEANS APPROVED BY THE ENGINEER. CEILING SYSTEM TIE WIRES AND GRID ARE NOT TO BE UTILIZED FOR THE SUPPORT OF ELECTRICAL DEVICES, CABLES AND RACEWAYS. APPROVED SUPPORTS, HANGERS, CLIPS, ETC. ARE TO BE UTILIZED.
9. THE LOCATION AND MOUNTING HEIGHTS OF ALL POWER, LIGHTING, COMMUNICATIONS AND AUXILIARY SYSTEM DEVICES SHOWN ON THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER THE LOCATIONS SHOWN ON THE ELECTRICAL DRAWINGS. THE ELECTRICAL CONTRACTOR SHALL INSTALL ALL POWER, LIGHTING, COMMUNICATIONS AND AUXILIARY SYSTEM DEVICES TO AGREE WITH THE ARCHITECTURAL DRAWINGS.
10. COMBINED HOMERUNS OF TWO (2) OR THREE (3) CIRCUITS MAY BE UTILIZED. HOWEVER, THE NEUTRAL CONDUCTOR IS TO BE INCREASED TO #10AWG. COMBINED HOMERUNS ARE TO BE LIMITED TO 20A, LIGHTING AND POWER CIRCUITS.
11. INSTALLATION OF BACK TO BACK DEVICES ARE TO BE AVOIDED. ALLOW ONE WALL FRAMING MEMBER BETWEEN EACH BACK TO BACK DEVICE AS A MINIMUM.
12. WORK SHALL CONFORM TO THE 2023 NATIONAL ELECTRICAL CODE WITH MASSACHUSETTS AMENDMENTS, 2021 MASSACHUSETTS BUILDING CODE, NFPA AND REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION.
13. THE WORD "CONTRACTOR" AS USED IN THE "ELECTRICAL WORK" SHALL MEAN THE ELECTRICAL SUBCONTRACTOR.
14. CONTRACTOR SHALL PAY FOR ALL PERMITS, INSURANCE AND TESTS, AND SHALL PROVIDE LABOR AND MATERIAL TO COMPLETE THE ELECTRICAL WORK SHOWN.
15. OWNER SHALL PAY ELECTRIC UTILITY COMPANY BACKCHARGES
16. CONTRACTOR SHALL PROVIDE ALL REQUIRED COORDINATION WITH ELECTRIC, TELEPHONE, AND INTERNET UTILITIES.
17. ELECTRIC UTILITY WORK ORDER NUMBER FOR THIS PROJECT IS #XXXXXXXXXX.
18. EXCEPT AS OTHERWISE NOTED, THE ELECTRICAL WORK SHALL INCLUDE DEMOLITION, PANELBOARDS, CIRCUIT BREAKERS, FEEDERS, WIRING, RACEWAYS, LIGHTING FIXTURES, DEVICES, TELEPHONE AND DATA OUTLETS, SAFETY SWITCHES, FIRE ALARM AND NURSE CALL SYSTEMS, TRANSFORMERS AND CONNECTION NECESSARY TO OPERATE MOTORS AND OTHER EQUIPMENT.
19. AUTOMATIC TEMPERATURE CONTROLS SHALL BE PROVIDED AND INSTALLED BY THE MECHANICAL SUBCONTRACTOR.
20. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY LIGHTING AND POWER AND THE GENERAL CONTRACTOR SHALL PAY ALL ENERGY CHARGES FOR TEMPORARY POWER AND LIGHTING.
21. DURING CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL KEEP HIS PORTION OF THE WORK NEAT, CLEAN AND ORDERLY.
22. ALL SYSTEMS SHALL BE TESTED FOR SHORT CIRCUIT AND GROUNDS PRIOR TO ENERGIZING AND ANY DEFECTS SHALL BE CORRECTED.
23. ALL CUTTING AND PATCHING REQUIRED FOR ELECTRICAL WORK SHALL BE INCLUDED AS PART OF THIS SECTION.
24. COMPLETE SHOP DRAWINGS SHALL BE SUBMITTED FOR ELECTRICAL EQUIPMENT. WHERE SPECIFIED ELECTRICAL EQUIPMENT IS SUBSTITUTED, THE ELECTRICAL CONTRACTOR SHALL SUBMIT COMPLETE SPECIFICATIONS ON THE SUBSTITUTE AS WELL AS THE ITEM ORIGINALLY SPECIFIED.
25. MATERIALS SHALL BE SPECIFICATION GRADE AND UL LISTED.
26. WHERE MATERIAL IS CALLED OUT IN THE LEGEND BY MANUFACTURER, TYPE OR CATALOG NUMBER, SUCH DESIGNATIONS ARE TO ESTABLISH STANDARDS OR DESIRED QUALITY. ACCEPTANCE OR REJECTIONS OF PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER.
27. WORK SHALL BE COORDINATED WITH THAT OF OTHER TRADES TO ELIMINATE INTERFERENCES.
28. ELECTRICAL WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL COMPLETION.
29. WORK SHALL BE GROUNDED IN ACCORDANCE WITH CODE REQUIREMENTS. COMPLETE EQUIPMENT (INSULATED GREEN WIRE) GROUNDING SYSTEM SHALL BE INSTALLED.
30. WIRING METHODS: (MUST BE EDITED ANS COORDINATED WITH SPEC)
    A. EXTERIOR UNDERGROUND FEEDERS SHALL BE PVC SCHEDULE 80 FOR DIRECT BURIED AND PVC SCHEDULE 40 FOR CONCRETE ENCASED.
    B. EXTERIOR ABOVE GRADE FEEDERS SHALL BE RGS CONDUIT.
    C. INTERIOR FEEDERS EXPOSED OR BURIED IN CONCRETE WALLS/SLABS SHALL BE RGS CONDUIT.
    D. INTERIOR LIGHTING AND RECEPTACLE BRANCH CIRCUITS IN PARTITIONS SHALL BE MC CABLE.
    E. INTERIOR BRANCH CIRCUITS ABOVE HUNG CEILINGS SHALL BE EMT CONDUIT OR MC CABLE.
    F. INTERIOR BRANCH CIRCUITS FOR HVAC, PLUMBING AND FIRE PROTECTION EQUIPMENT SHALL BE EMT OR RGS.
    G. LIGHTING FIXTURE CONNECTIONS SHALL BE MC CABLE.
    H. EMERGENCY, CRITICAL AND LIFE/SAFETY BRANCH LIGHTING CIRCUITRY SHALL BE EMT CONDUIT.
    I. EQUIPMENT CONNECTIONS SHALL BE LIQUID TIGHT FLEXIBLE METAL CONDUIT.
    J. FIRE ALARM SYSTEM WIRING RUN EXPOSED OR IN CONCRETE WALLS/SLABS SHALL BE EMT CONDUIT.
    K. FIRE ALARM SYSTEM WIRING ABOVE HUNG CEILINGS OR IN PARTITIONS SHALL BE EMT OR FIRE RATED MC CABLE.
    L. TELEPHONE AND DATA SHALL BE EMPTY EMT W/PULL WIRE.
31. ALL RACEWAYS WITHIN MAINTENANCE BAYS, SHOPS, GARAGE AREAS AND WASHBAYS SHALL BE RUN OVERHEAD AND CONCEALED IN CONCRETE WALLS. NO CONDUITS OR DEVICES SHALL BE RUN SURFACE MOUNTED OR IN SLAB WITHIN THESE SPACES WITHOUT ENGINEER APPROVAL OR NOTED OTHERWISE ON PLANS. RACEWAYS SHALL BE RUN CONCEALED IN ALL FINISHED AREAS.
32. NO CONDUIT OR WIRE SHALL BE RUN IN OR BELOW SLAB WITHOUT ENGINEER APPROVAL OR NOTED OTHERWISE ON THE PLANS.
33. CONDUIT AND TUBING SHALL BE SUPPORTED ON GALVANIZED WALL BRACKETS. TRAPEZE HANGERS OR PIPE STRAPS SECURED BY MEANS OF TOGGLE BOLTS OR INSERTS IN WOOD CONSTRUCTION.
34. FEEDERS SHALL BE ROUTED TIGHT TO THE UNDERSIDE OF THE BUILDING STRUCTURE. CONDUIT SHALL BE INSTALLED PARALLEL AND PERPENDICULAR TO MAIN BUILDING SUPPORTS.
35. CONDUIT PASSING THROUGH FIRE RATED WALLS AND FLOORS SHALL BE PROVIDED WITH ALL NECESSARY MATERIALS TO ENSURE THAT THE FIRE RATED INTEGRITY IS MAINTAINED.
36. FEEDER TAPS WILL NOT BE ALLOWED IN PANELBOARD GUTTERS.
37. CONTRACTOR SHALL CHECK EXISTING CONDITIONS TO DETERMINE EXACT EXTENT OF WORK TO BE PERFORMED PRIOR TO BIDDING. DIMENSIONS RELEVANT TO EXISTING WORK SHALL BE VERIFIED IN THE FIELD.
38. IN AREAS NOT AFFECTED BY THIS RENOVATION, THIS SUBCONTRACTOR SHALL MAINTAIN CONTINUITY OF ELECTRIC SERVICE.
39. WHERE CONNECTIONS ARE MADE IN EXISTING PANELS, THE PANEL INDEX SHALL BE REVISED TO INDICATE THE NEW LOADS SERVED. NEW CIRCUIT BREAKERS ADDED TO EXISTING PANELS SHALL BE THE SAME FRAME SIZE, VOLTAGE RATING AND INTERRUPTING CAPACITY AS EXISTING PANEL AND CIRCUIT BREAKERS.
40. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED POWER SUPPLIES, APPURTENANCES, FINAL CONNECTIONS, TESTING AND WORK REQUIRED FOR ADDITIONS TO THE EXISTING FIRE ALARM SYSTEM. PAY ALL COSTS ARISING THERE FROM, FOR A COMPLETE AND OPERATIONAL SYSTEM.
41. ELECTRICAL SHUTDOWN SHALL BE AT A TIME AND DATE APPROVED BY THE OWNER.
42. PROVIDE AS-BUILT "CADD" DRAWINGS AT THE COMPLETION OF THE PROJECT.
43. ALL RECEPTACLES LOCATED WITHIN THE MAINTENANCE BAY'S AND GARAGE AREAS SHALL BE GFI TYPE OUTLETS.
44. ELECTRICAL CONTRACTOR SHALL LABEL ALL ELECTRICAL DEVICES INCLUDING BUT NOT LIMITED TO RECEPTACLES, TEL/DATA OUTLETS, DISCONNECT SWITCHES, THERMAL MOTOR SWITCHES, ENCLOSED CIRCUIT BREAKERS, PANELBOARDS, CONTROL PANELS, JUNCTION BOXES, ETC.
    A. RECEPTACLES - PANEL NAME AND CIRCUIT DESIGNATION
    B. TEL/DATA OUTLETS - NUMBER OF DATA AND TELEPHONE PORTS
    C. DISCONNECTS - PANEL NAME, CIRCUIT DESIGNATION AND EQUIPMENT SERVING.
    D. THERMAL MOTOR SWITCHES - PANEL NAME, CIRCUIT DESIGNATION AND EQUIPMENT SERVING.
    E. ENCLOSED CIRCUIT BREAKERS - PANEL NAME, CIRCUIT DESIGNATION AND EQUIPMENT SERVING.
    F. PANELBOARDS - PANEL NAME, VOLTAGE, AMPERAGE, PHASE AS WELL AS PANEL AND CIRCUIT IT IS FED FROM.
    G. CONTROL PANEL - PANEL NAME AND CIRCUIT DESIGNATION
    H. JUNCTION BOXES - PANEL NAME AND CIRCUIT DESIGNATION
45. ADDRESS QUESTIONS TO THE ENGINEER IN WRITING BEFORE AWARD OF CONTRACT, OTHERWISE ENGINEER INTERPERTATION OF MEANING AND INTENT OF DRAWINGS SHALL BE FINAL.
46. DUCT SMOKE DETECTORS SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR, INSTALLED BY THE MECHANICAL CONTRACTOR, WIRED BY THE ELECTRICAL CONTRACTOR. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION.

ELECTRICAL DEMOLITION NOTES

1. THE ELECTRICAL CONTRACTOR WILL WORK IN CONJUNCTION WITH THE GENERAL CONTRACTOR TO DEMOLISH THE EXISTING ELECTRICAL SYSTEM. THE ELECTRICAL CONTRACTOR IS TO DEACTIVATE, DISCONNECT AND REMOVE THOSE SYSTEMS WHICH WILL BE DEMOLISHED. THE ELECTRICAL CONTRACTOR WILL REMOVE AND DISPOSE OF ALL ELECTRICAL SYSTEM MATERIALS INCLUDING DEVICES, FIXTURES, RACEWAYS, CABLE, MOTOR CONTROLS AND APPURTENANCES. SYSTEMS REQUIRING TOTAL AND/OR PARTIAL DEMOLITION SHALL CONSIST OF BUT NOT BE LIMITED TO THE FOLLOWING:
    A. POWER DISTRIBUTION SYSTEM
    B. NORMAL AND EMERGENCY POWER BRANCH CIRCUIT SYSTEM
    C. NORMAL LIGHTING SYSTEM
    D. EMERGENCY AND EXIT LIGHTING SYSTEM
    E. EXTERIOR LIGHTING SYSTEM
    F. HVAC AND PLUMBING SYSTEMS AND POWER WIRING
    G. COMMUNICATIONS SYSTEM
    H. FIRE ALARM SYSTEM
    I. SECURITY SYSTEM
2. SYSTEMS WHICH PASS THROUGH THE AREA BEING DEMOLISHED BUT CONTINUE TO AREAS NOT WITHIN THE DEMOLITION SCOPE ARE TO REMAIN. THE ELECTRICAL CONTRACTOR IS TO IDENTIFY (SPRAY PAINT OR EQUIVALENT) AND PROTECT THOSE SYSTEMS WHICH ARE ACTIVE AND ARE TO REMAIN.
3. ALL EXISTING CAST IN PLACE RECEPTACLE, PULL, JUNCTION AND OTHER DEVICE BOXES WHICH CANNOT BE REMOVED OR EFFECTIVELY COVERED ARE TO BE PROVIDED WITH FINISHED PLATES AS APPROVED BY THE ARCHITECT.
4. ALL CONDUIT AND WIRE WHICH IS NO LONGER IN USE IS TO BE REMOVED. CONDUIT AND WIRE IS TO BE REMOVED BACK TO ITS SOURCE OR NEAREST DEVICE WHICH IS SCHEDULED TO REMAIN. COORDINATE THE REMOVAL OF ALL COMMUNICATIONS CONDUIT AND WIRE WITH THE COMMUNICATIONS CONTRACTOR. FIRE ALARM CABLING IS TO BE RETURNED TO THE NEAREST DEVICE SCHEDULED TO REMAIN, CONTROL PANEL, TERMINAL CABINET, ETC. UNDER NO CIRCUMSTANCES ARE ABANDONED CONDUIT AND WIRE OR SYST

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1 ELECTRICAL DEMOLITION SITE /PLAN

SCALE: 1" = 20'-0"

0' 10' 20' 40'

SCALE: 1" = 20'

P:\Wk\Acton-DPW and TS Facility\CAD\Sheets\ED001 Electrical Demo Site Plan.dwg

Project:
TOWN OF ACTON, MA
NEW PUBLIC WORKS FACILITY

14 FOREST ROAD
ACTON, MA 01720

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DESIGN DEVELOPMENT
PRICING SET

Scale:	AS NOTED
Date:	3/28/2025
Drawn By:	DCH
Reviewed By:	DNM
Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	

Drawing Title:

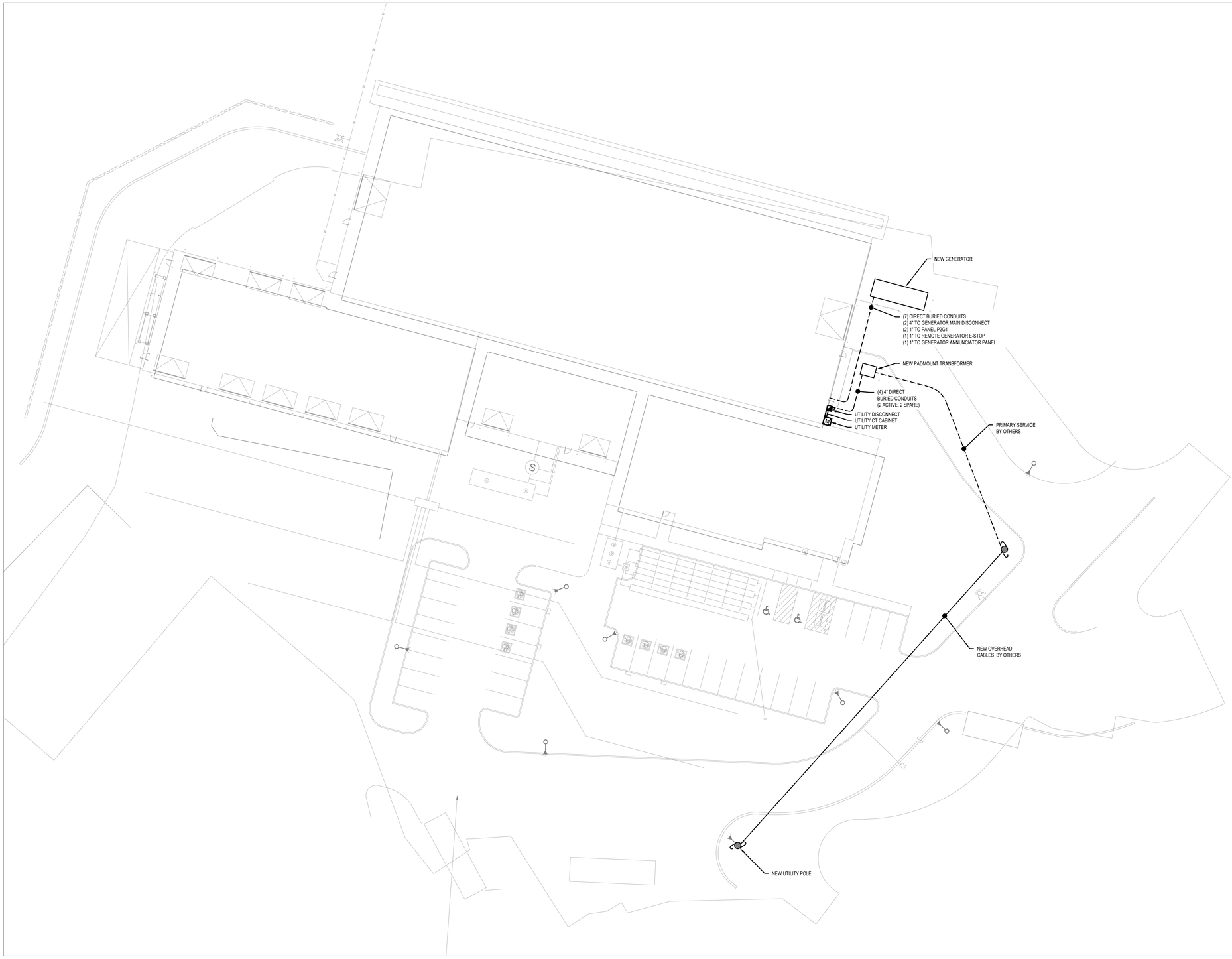
ELECTRICAL
DEMOLITION
SITE PLAN

Sheet Number:

ED001

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1 ELECTRICAL NEW SITE /PLAN

SCALE: 1" = 20'-0"

0' 10' 20' 40'

SCALE: 1" = 20'

P:\WA\Acton\Acton_DPW and FD Facility\CAD\Drawings\E002 Electrical Site Plan.dwg

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DESIGN DEVELOPMENT
PRICING SET

Scale:	NO SCALE
Date:	3/28/2025
Drawn By:	HIA
Reviewed By:	DNM
Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	

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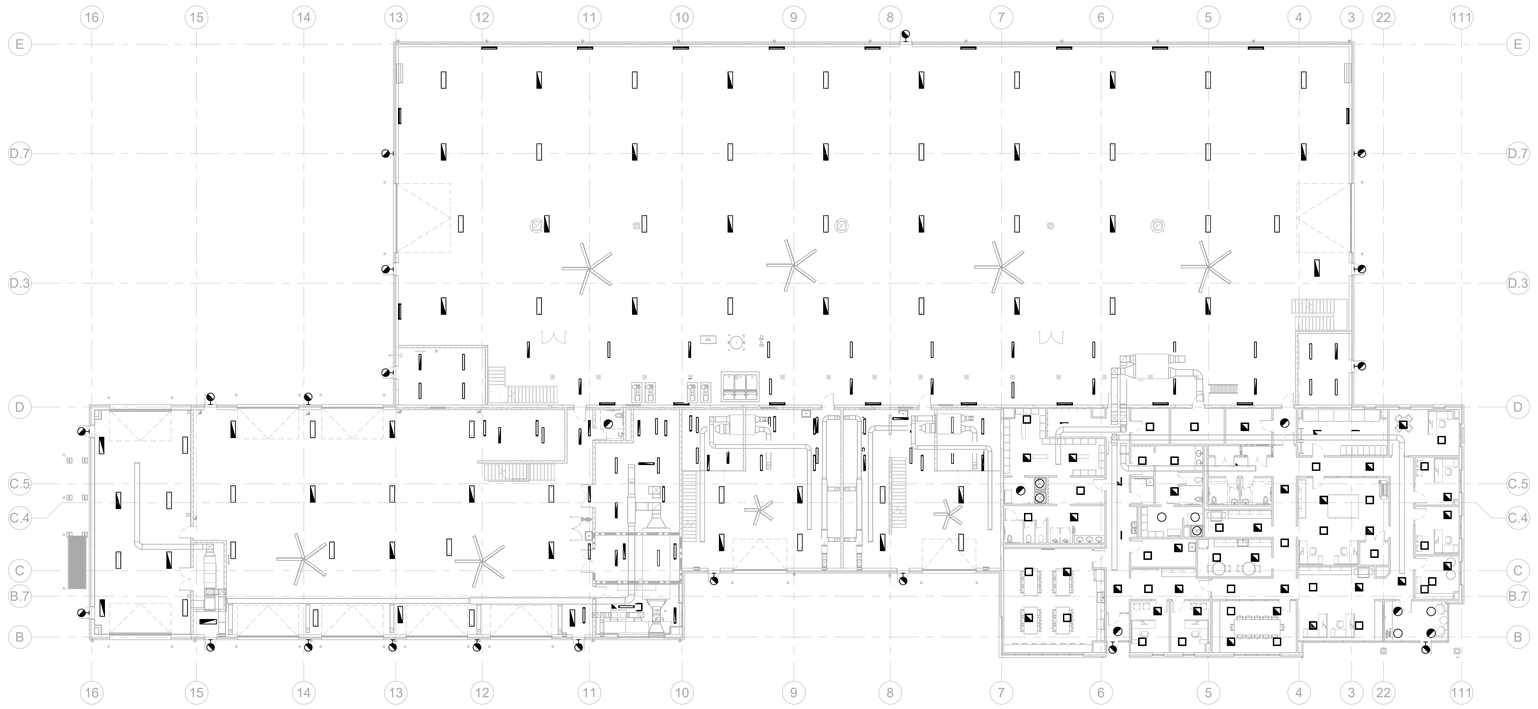
ELECTRICAL
SITE PLAN

Sheet Number:

E002

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1 OVERALL LIGHTING PLAN
1/16" = 1'-0"

Project:
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Scale: 1/16" = 1'-0"

Key Plan:

NORTH

Date:	03/28/2025
Draw By:	DCH
Reviewed By:	DNM
Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

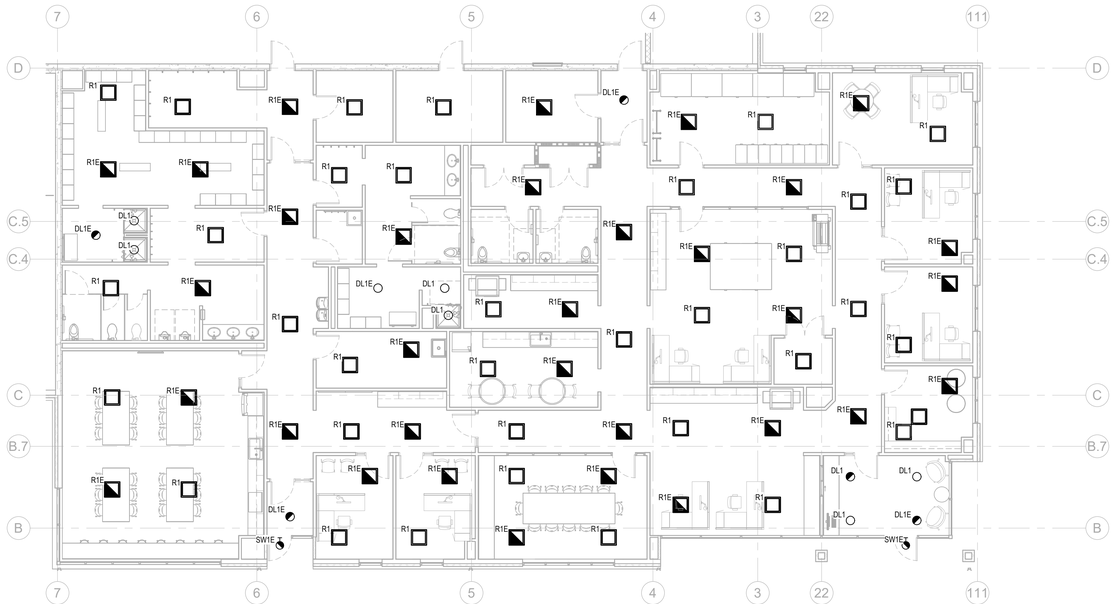
OVERALL LIGHTING PLAN

Sheet Number:

E100

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3 ADMIN AREA LIGHTING PLAN
1/8" = 1'-0"

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

Key Plan:

NORTH

Date:	03/28/2025
Draw By:	DCH
Reviewed By:	DNM
Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	-

Drawing Title:

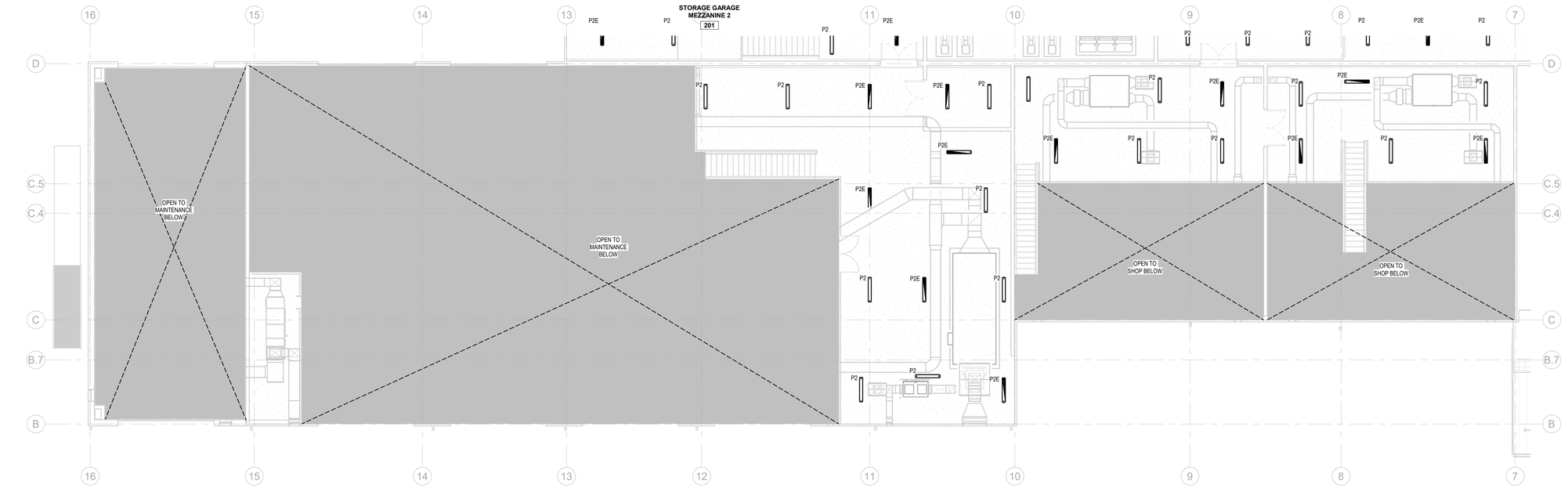
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Sheet Number:

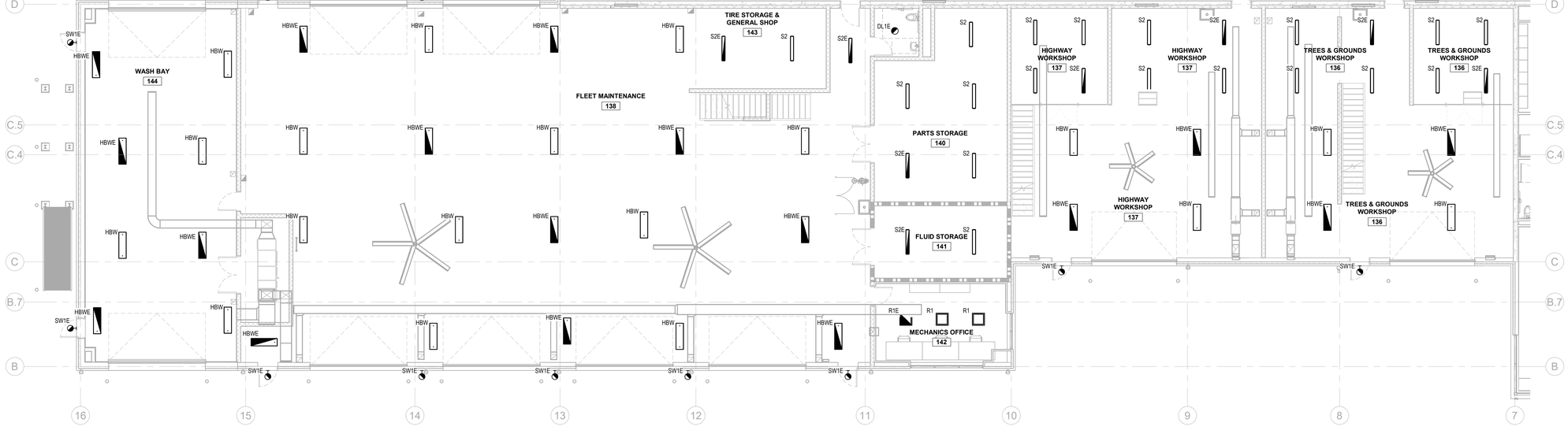
E101

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2 SHOPS AND FLEET MAINTENACE
MEZZANINE LIGHTING PLAN
1/8" = 1'-0"



1 SHOPS AND FLEET MAITENANCE
LIGHTING PLAN
1/8" = 1'-0"

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

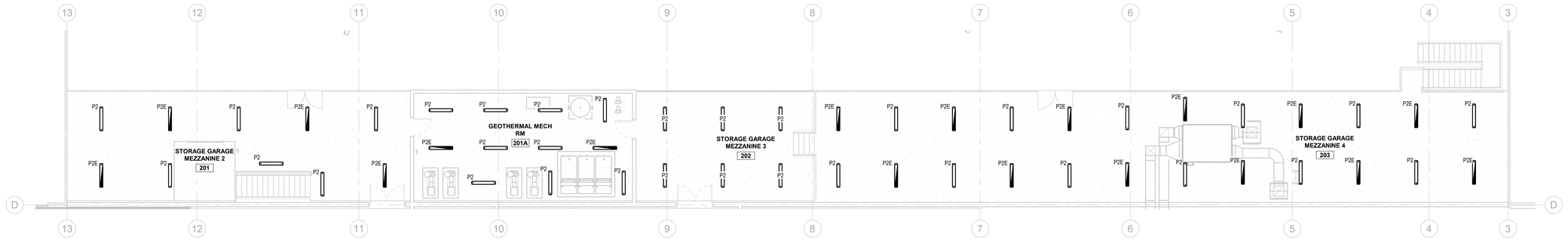
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Date:	03/28/2025
Draw By:	DCH
Reviewed By:	DNM
Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	-

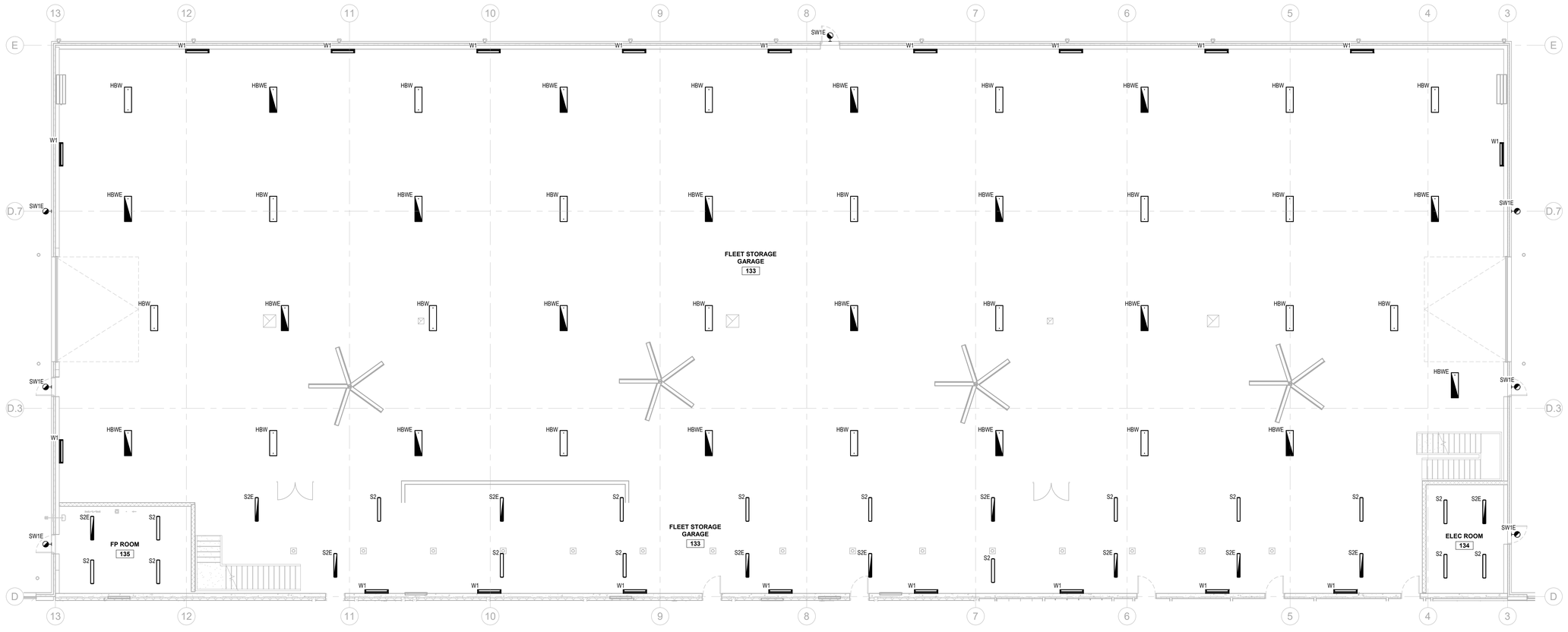
Drawing Title:
SHOPS AND FLEET MAINTENANCE LIGHTING PLANS

Sheet Number:
E102

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2 FLEET STORAGE GARAGE MEZZANINE LIGHTING PLAN
1/8" = 1'-0"



1 FLEET STORAGE GARAGE LIGHTING PLAN
1/8" = 1'-0"

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

Key Plan:

Date:	03/28/2025
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Reviewed By:	DNM
Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

FLEET STORAGE GARAGE LIGHITNG PLANS

Sheet Number:

E103

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1 OVERALL POWER PLAN
1/16" = 1'-0"

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

Key Plan:

NORTH

Date:	03/28/2025
Draw By:	DCH
Reviewed By:	DNM
Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

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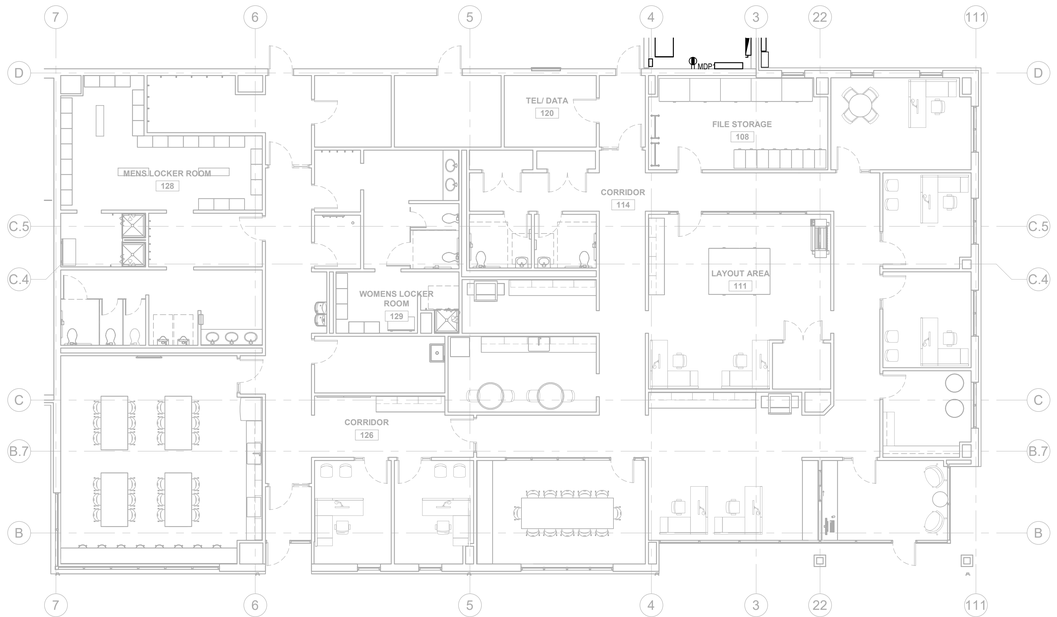
OVERALL POWER PLAN

Sheet Number:

E200

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1 ADMIN AREA POWER PLAN
1/8" = 1'-0"

NOTES:

1. REFER TO DRAWING E001 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
2. REFER TO DRAWING E601 FOR ONE LINE DIAGRAM.
3. REFER TO DRAWING E602 FOR PANELBOARD SCHEDULES.

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

Project:
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Scale: 1/8" = 1'-0"

Key Plan:

Date:	03/28/2025
Draw By:	DCH
Reviewed By:	DNM
Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

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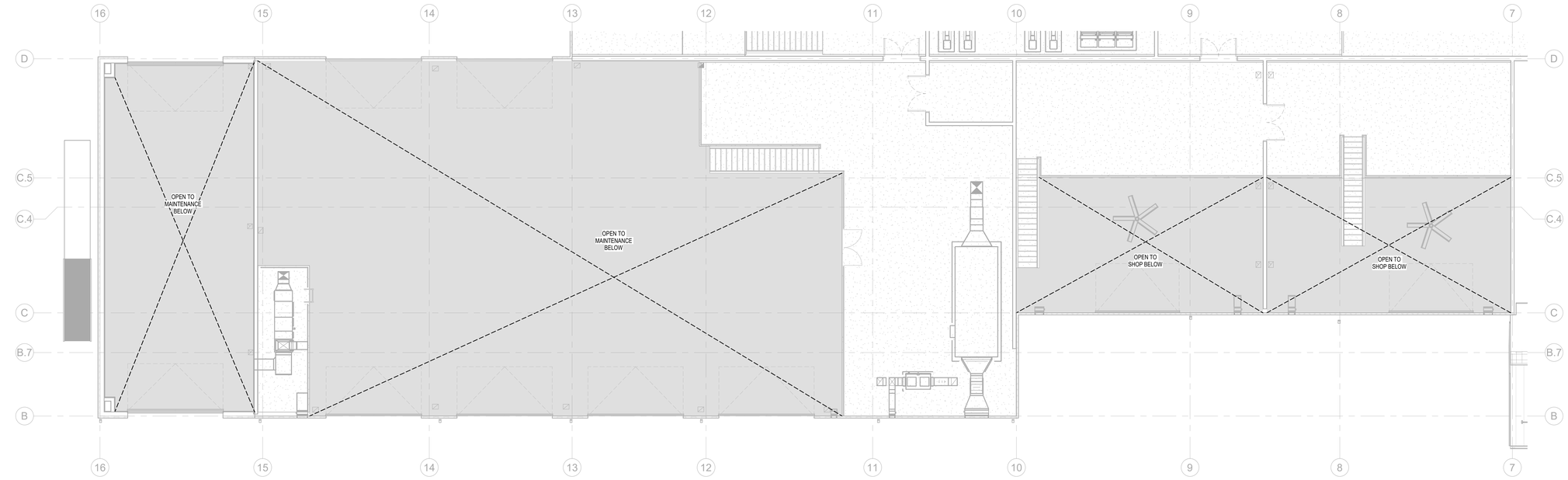
ADMIN AREA POWER PLAN

Sheet Number:

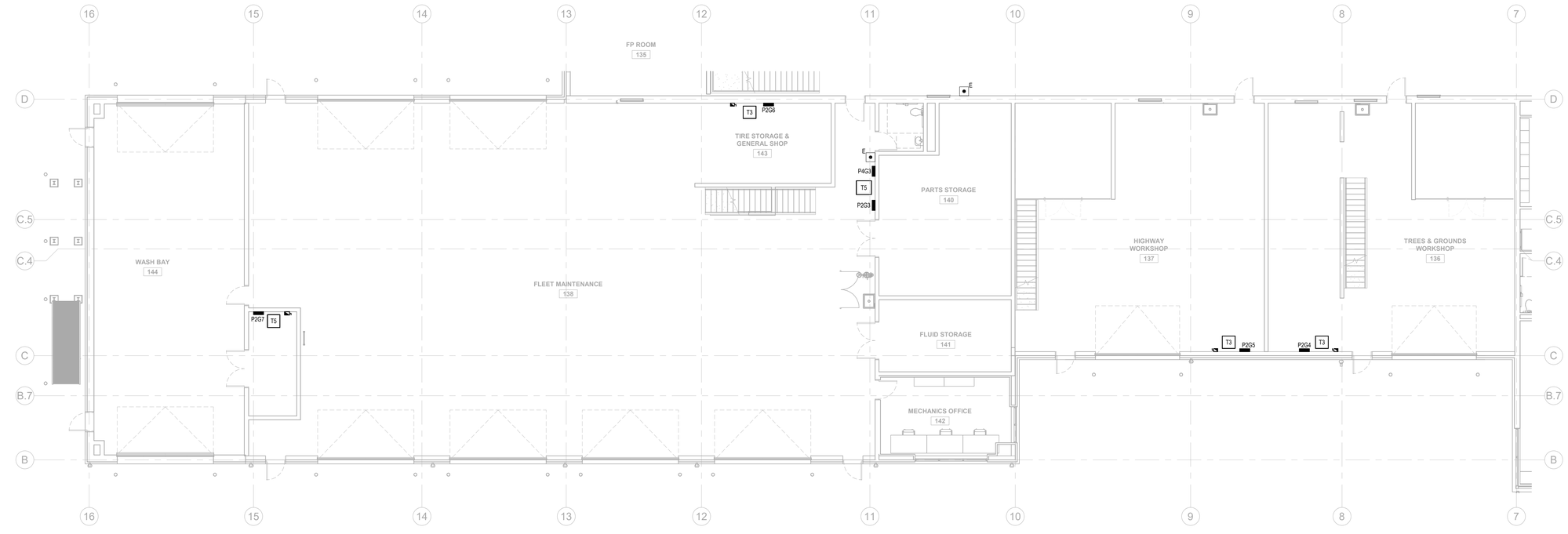
E201

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2 SHOPS AND FLEET MAINTENANCE
MEZZANINE POWER PLAN
1/8" = 1'-0"



1 SHOPS AND FLEET MAINTENANCE
POWER PLAN
1/8" = 1'-0"

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

Key Plan:

NORTH

Date:	03/28/2025
Draw By:	DCH
Reviewed By:	DNM
Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

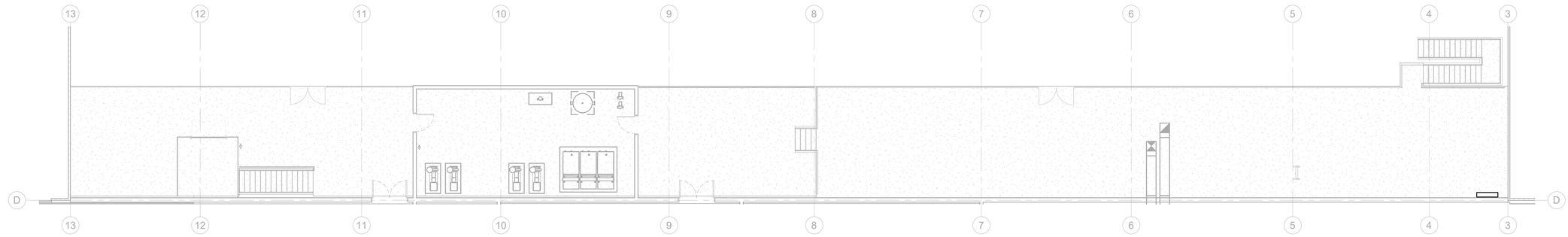
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SHOPS AND FLEET MAINTENANCE POWER PLANS

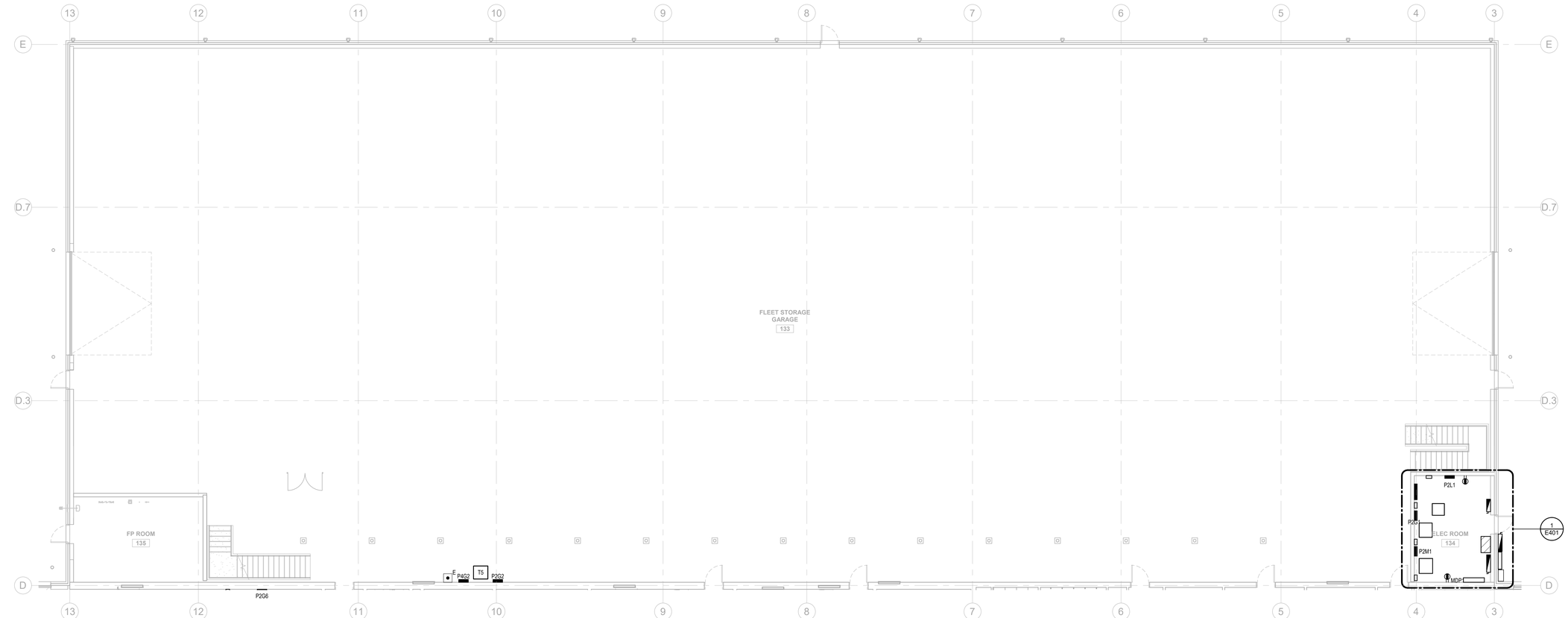
Sheet Number:

E202

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FLEET STORAGE GARAGE MEZZANINE POWER PLAN
1/8" = 1'-0"



FLEET STORAGE GARAGE POWER PLAN
1/8" = 1'-0"

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

Key Plan:

NORTH

Date:	03/28/2025
Draw By:	DCH
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Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

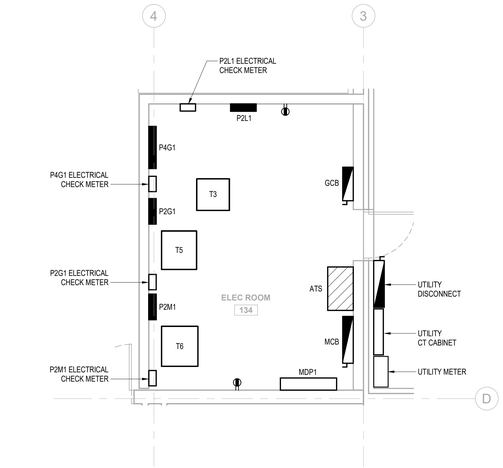
Drawing Title:

FLEET STORAGE GARAGE POWER PLANS

Sheet Number:

E203

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1 ELECTRICAL ROOM ENLARGED POWER PART PLAN
1/4" = 1'-0"

NOTES:

1. REFER TO DRAWING E001 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
2. REFER TO DRAWING E602 FOR PANELBOARD SCHEDULES.
3. REFER TO DRAWING E602 FOR LIGHTING FIXTURE SCHEDULE.

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

Project:
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40% PRELIMINARY DESIGN DEVELOPMENT PRICING SET

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

Key Plan:

Date:	03/28/2025
Draw By:	DCH
Reviewed By:	DNM
Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

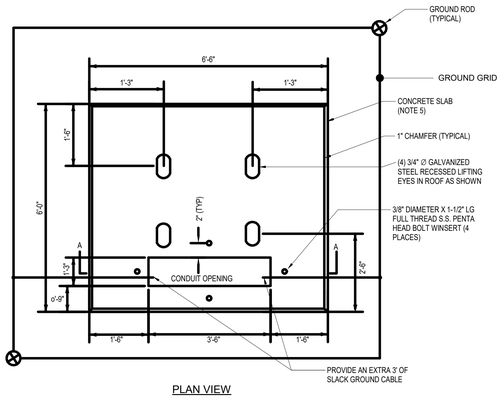
ENLARGED POWER PLANS

Sheet Number:

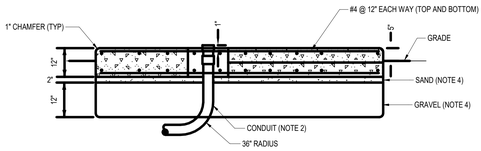
E401

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PLAN VIEW



SECTION A-A

1 PAD MOUNTED TRANSFORMER DETAIL (UP TO 300kVA) NOT TO SCALE

PADMOUNT - FOUNDATION NOTES:

1. SCOPE - THIS STANDARD COVERS SPECIFICATIONS FOR THE CONSTRUCTION OF PADMOUNT TRANSFORMER FOUNDATIONS AND GROUNDING FOR EVERSOURCE
2. CONDUIT BY ELECTRICAL CONTRACTOR - INSTALL AS SHOWN BEFORE SLAB IS POURED. USE 36" RADIUS BENDS, WITH COUPLINGS, NIPPLES AND BUSHINGS AS REQUIRED. (MATERIAL MAY BE GALVANIZED STEEL, BLACK IRON, OR TYPE II FIBER OR PLASTIC.) TERMINATIONS OF CONDUITS SHALL BE LOCATED EXACTLY AS SHOWN, SOLID OR DOTTED, DEPENDING UPON NUMBER OF DUCTS. THE NIPPLE AND BUSHING SHOULD BE INSTALLED AFTER THE TRANSFORMER IS PLACED AND BEFORE THE CABLES ARE PULLED.
3. GROUND GRID BY ELECTRICAL CONTRACTOR -INSTALL #1/0 S.D. 7 STRAND BARE COPPER WIRE LOOP 1'-0" BELOW GRADE. BOND TO ALL EXPOSED METALLIC CONDUIT AND LEAVE 3'-0" OF WIRE ABOVE PAD FOR GROUNDING TRANSFORMER AT TWO OPPOSITE POINTS IN THE CABLE CONDUIT OPENINGS. 3.A. PHOS-COPPER BRAZE CONNECTIONS, CADWELD, OR USE TWO APPROVED CONNECTORS PER JOINT. INSTALL TWO 8 FT. GALVANIZED STEEL (3/4") GROUND RODS WHERE SHOWN. LEAVE GRID EXPOSED UNTIL INSPECTED BY THE UTILITY COMPANY.
4. GRAVEL & SAND BY GENERAL CONTRACTOR -SHALL BE PLACED AS SHOWN IN FIGS. 1 AND 2; THE GRAVEL BEING COMPACTED AND THE SAND THOROUGHLY WETTED JUST BEFORE PLACING THE CONCRETE.
5. CONCRETE SLAB BY GENERAL CONTRACTOR. CONCRETE IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS. REINFORCE WITH 1/2" RODS LOCATED ON A 12" X 12" GRID AND LOCATED IN THE MIDDLE OF THE SLAB.
6. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY FOR ALL INSTALLATION REQUIREMENTS PRIOR TO THE START OF ANY WORK.

EVERSOURCE MINIMUM PAD REQUIREMENTS

CONCRETE MINIMUM STRENGTH, 5000 PSI @ 28 DAYS.

STEEL REINFORCEMENT - ASTM A615, GRADE 60.

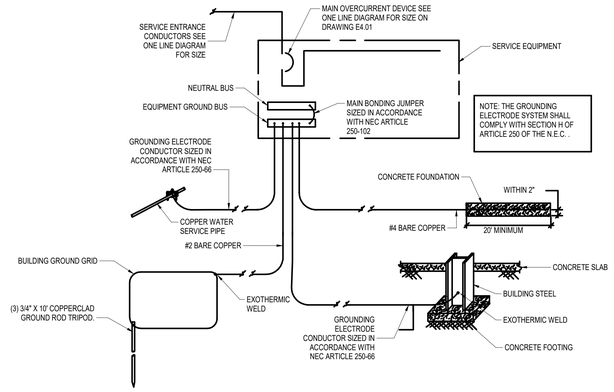
MINIMUM STEEL COVER, 1-1/2 INCHES.

DESIGN LOADING – AASHTO HS20-44.

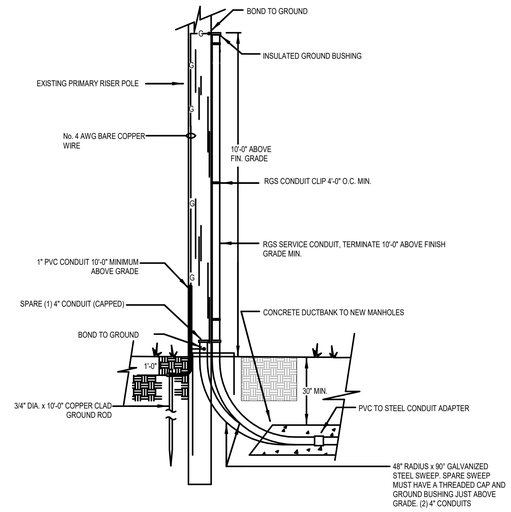
DESIGN SPECIFICATIONS – ACI 318 & AASHTO LOAD FACTOR DESIGN METHOD.

REINFORCED TO SUPPORT H-20 WHEEL LOAD.

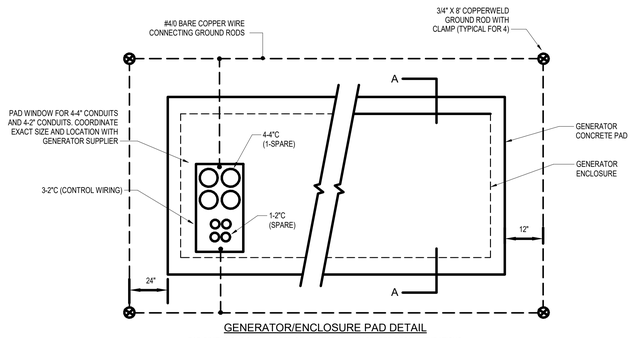
MANUFACTURERS NAME TO BE STENCILED ON VERTICAL WALL OF CUTOUT OPENING.



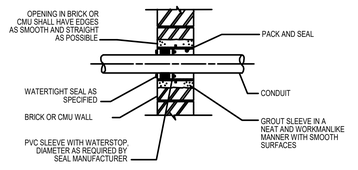
2 Service Grounding Detail NOT TO SCALE



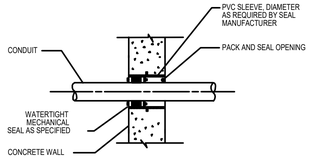
3 Typical Riser Pole Detail NOT TO SCALE

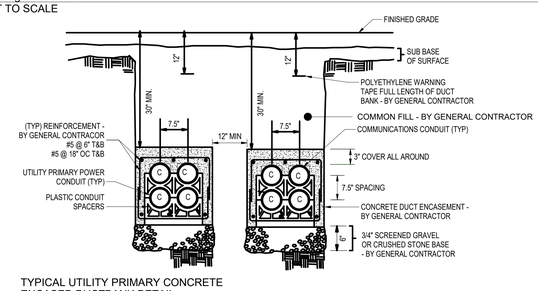


4 GENERATOR/ENCLOSURE PAD DETAIL NOT TO SCALE



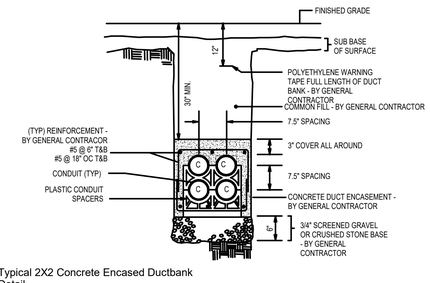
5 Watertight Conduit Penetration NOT TO SCALE



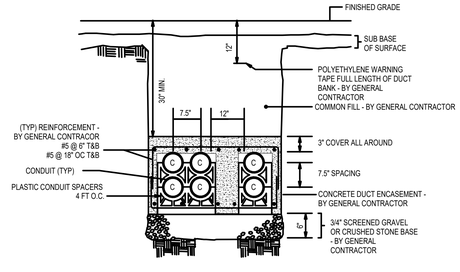


TYPICAL UTILITY PRIMARY CONCRETE ENCASED DUCTBANK DETAIL

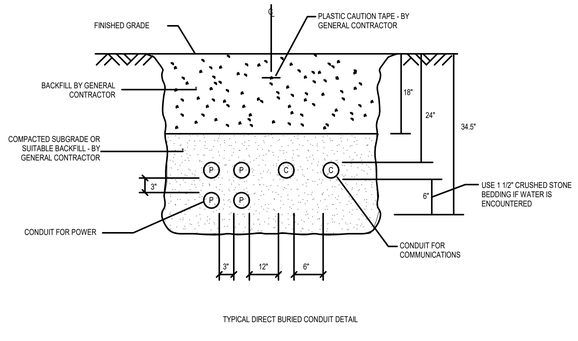
6 NOT TO SCALE



7 Typical 2X2 Concrete Encased Ductbank Detail NOT TO SCALE

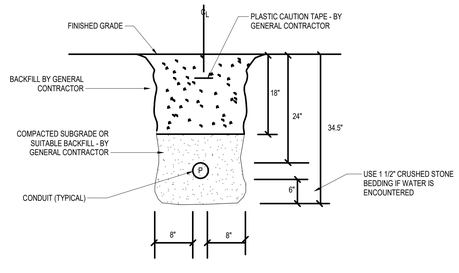


8 Typical 2X2 Concrete Encased Ductbank with Communications NOT TO SCALE



TYPICAL DIRECT BURIED CONDUIT DETAIL

9 Typical 2x2 Direct Buried Ductbank with Communications NOT TO SCALE



10 Typical 1x1 Direct Buried Ductbank NOT TO SCALE

Project:
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14 FOREST ROAD, ACTON MA 01720

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Scale: As indicated

Key Plan:

NORTH

Date:	03/28/2025
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Reviewed By:	DNM
Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	-

Drawing Title:

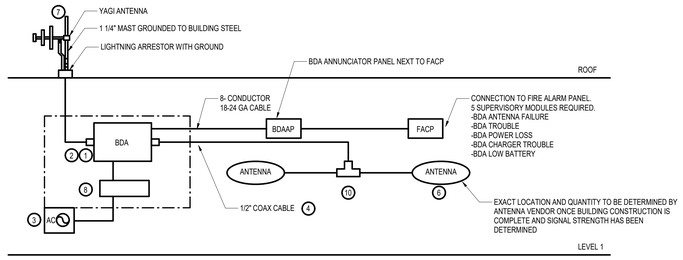
ELECTRICAL DETAILS SHEET I

Sheet Number:

E501

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EQUIPMENT LIST:

1. TRX MODEL 61-71-50-A0.51-G1 80dB ADJUSTABLE GAIN BI-DIRECTIONAL SIGNAL AMPLIFIER (BDA) OR EQUIVALENT HONEYWELL MODEL OR APPROVED EQUAL
2. BDA HOUSED IN LOCKABLE NEMA 4X WEATHERPROOF HOUSING COLORED FIRE ENGINE RED AND MARKED " FIRE AND POLICE DEPT RADIO".
3. DC POWER EVERT WITH BACKUP BATTERY AND CHARGER: SC-49 SMART CHARGER AND WERKER WKA12-80C/FR BATTERY OR APPROVED EQUAL
4. ANDREW LDF4-50, HELIAX 1/2" FIRE RETARDANT COAX CABLE 50 OHM OR APPROVED EQUAL
5. ANDREW 540EZNMV 1/2" CONNECTORS OR APPROVED EQUAL
6. PCTEL MLPV450 IN BUILDING ANTENNA OR APPROVED EQUAL
7. OCTEL MYA4706 480 MHZ YAGI ANTENNA OR APPROVED EQUAL
8. TERRAWAVE NEMA 4 BATTERY BOX OR APPROVED EQUAL
9. AXELL WIRELESS DIRECTIONAL COUPLER OR APPROVED EQUAL
10. MINI CIRCUITS RF POWER SPLITTER

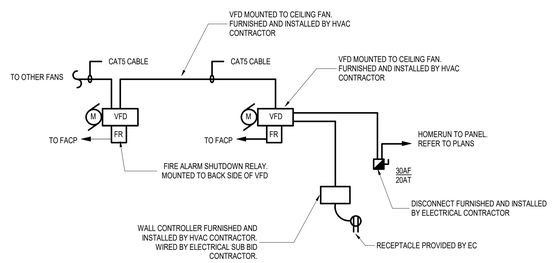
PERMISSIBLE IN-BUILDING RADIO SYSTEM:

1. THE DOWNLINK AND UPLINK (FROM AND TO THE FIRE DEPARTMENT) PASS BAND OF THE BDA SHALL HAVE A CENTER OF FREQUENCY AS REQUIRED BY THE FIRE DEPARTMENT
2. THE SYSTEM INSTALLED MUST COMPLY WITH APPLICABLE SECTIONS OF FCC RULES PART 22, PART 90 AND PART 101.
3. ALL IN BUILDING RADIO SYSTEMS SHALL BE COMPATIBLE WITH BOTH ANALOG AND DIGITAL COMMUNICATIONS SIMULTANEOUSLY AT THE TIME OF INSTALLATION
4. PERMANENT EXTERNAL FILTERS OR ATTACHMENTS SHALL NOT BE PERMITTED

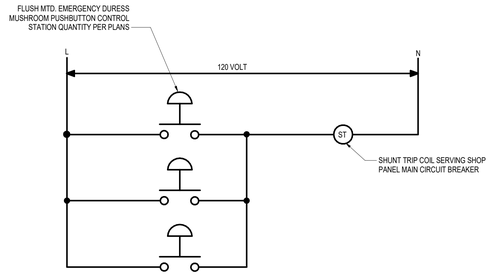
ACCEPTANCE TESTING

1. THE MINIMUM ACCEPTABLE DELIVERED AUDIO QUALITY (DAQ) IS 4.
2. DELIVERED AUDIO QUALITY (DAQ) TESTING TO THE FIRE DEPARTMENT RADIO PERSONNEL TO ENSURE THAT TWO WAY RADIO COVERAGE, ON ENTIRE BUILDING MEETS MINIMUM COVERAGE REQUIREMENTS. AT LEAST FIVE (5) BUSINESS DAYS NOTICE IS REQUIRED PRIOR TO THE TEST BEING CONDUCTED. AT THE TIME OF THIS TEST, THE FOLLOWING ARE ALSO REQUIRED:
   a. THE RADIO TECHNICIAN SHALL CERTIY THAT THE IN-BUILDING RADIO SYSTEM WAS INSTALLED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT THE FIRE DEPARTMENT IN BUILDING RADIO SPECIFICATIONS.
   b. A RADIO SERVICE COMPANY SHALL CERTIFY THAT A MAINTENANCE CONTRACT IN EFFECT THAT PROVIDE 24 HOUR BY 7 DAY RESPONSE ON CASE OF NOTIFICATION OF A SYSTEM PROBLEM. THIS CONTRACT MUST BE FOR A PERIOD OF AT LEAST 1 YEAR
   c. RF PLOTTING (GRID TESTS) RESULTS, GAIN VALUES OF ALL AMPLIFIERS, AS BUILT DRAWIGNS (BDA MANUFACTURER, MODEL NUMBER, FCC CERTIFICATION NUMBER) AND A LINK BUDGET MUST BE SUBMITTED.

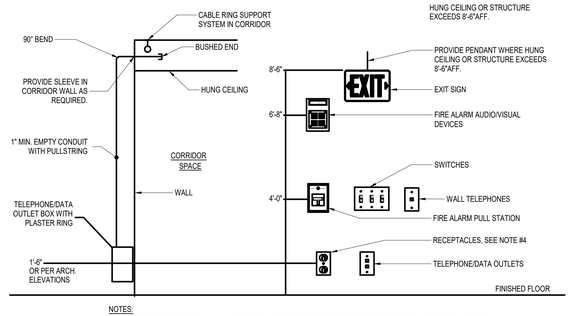
1 BIDIRECTIONAL AMPLIFIER SYSTEM DETAIL
NOT TO SCALE



2 CEILING FAN WIRING DETAIL
NOT TO SCALE



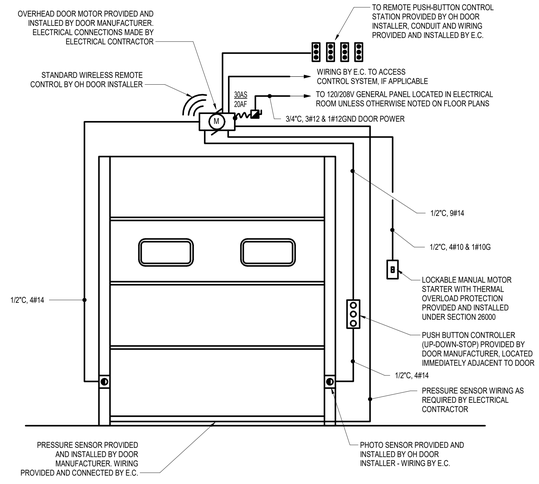
3 Emergency Duress Pushbutton Wiring Diagram
NOT TO SCALE



NOTES:

1. ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE EXCEPT EXIT SIGNS.
2. DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.
3. ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL UNLESS OTHERWISE NOTED ON ARCH. ELEVATIONS & DETAILS.

4 Typical Device Mounting Height Detail
NOT TO SCALE

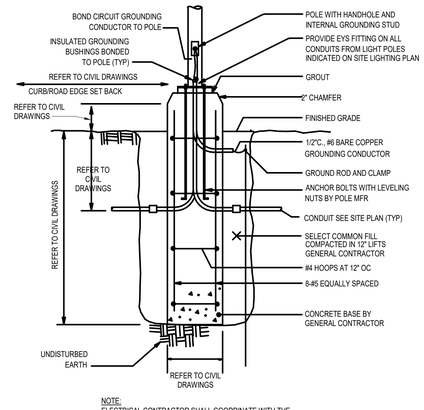


TYPICAL OVERHEAD DOOR

NOTES:

1. ALL CONDUIT SHALL BE RIGID STEEL, RIGID LFMC WHERE VIBRATION ISOLATION REQUIRED, UNLESS OTHERWISE NOTE ON THE FLOOR PLAN.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL ELECTRICAL POWER AND CONTROL WIRING. COORDINATE EXACT WIRE REQUIREMENTS/TERMINATIONS WITH DOOR MANUFACTURER.
3. EXACT LOCATIONS OF EQUIPMENT SHALL BE DETERMINED IN THE FIELD.
4. REFER TO FLOOR PLANS FOR PANEL AND CIRCUIT NUMBER.

5 Overhead Door Detail
NOT TO SCALE



NOTE:
ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR, ALL EXCAVATION, BACKFILL & CONCRETE SHALL BE BY GENERAL CONTRACTOR

6 Typical Light Pole Base Detail
NOT TO SCALE

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W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

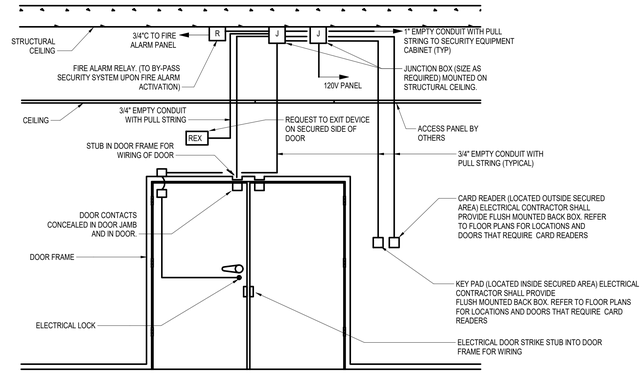
ELECTRICAL DETAILS SHEET II

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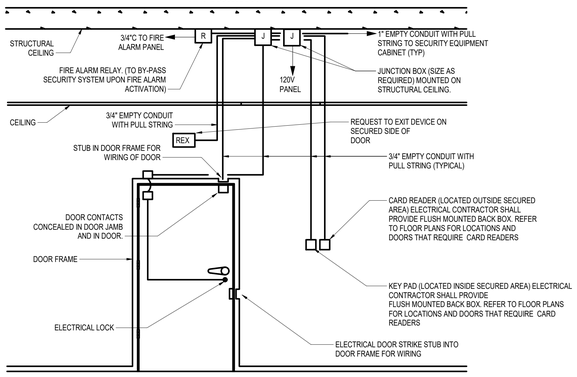
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TYPICAL DOUBLE DOOR

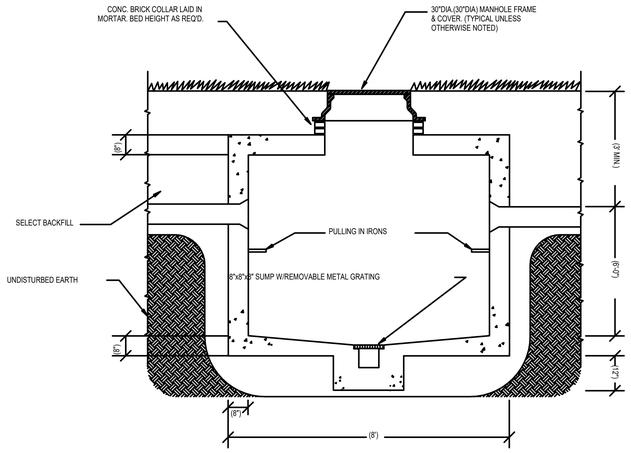


TYPICAL SINGLE DOOR

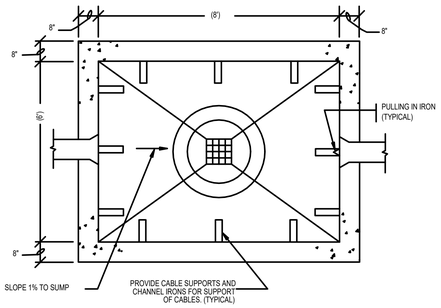
NOTES:

1. ALL LOW VOLTAGE WIRING AND SECURITY EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY SECURITY SYSTEM SUPPLIER.
2. COORDINATE EXACT LOCATION AND MOUNTING REQUIREMENTS OF ALL DEVICES WITH ARCHITECTURAL DRAWINGS.
3. PROVIDE INSULATED BUSHINGS ON ALL CONDUITS. VERIFY DOOR HARDWARE CONNECTIONS WITH MANUFACTURERS INSTALLATION MANUAL
4. CONNECT NEW CARD READERS & KEY PADS TO EXISTING SECURITY SYSTEM. REPROGRAM SYSTEM, ADD POWER SUPPLIES, SIGNAL
5. MODULES AS REQUIRED, TO ACCOMMODATE ADDITIONS. INSTALLATION SHALL CONFORM TO BUILDING STANDARDS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARYEQUIPMENT AND FINAL CONNECTIONS, PROGRAMMING AND PERFORM ALL TESTING.

1 Security Door Detail (Double/Single)
NOT TO SCALE

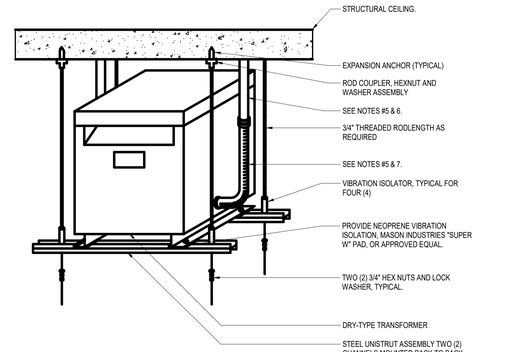


SECTION



PLAN

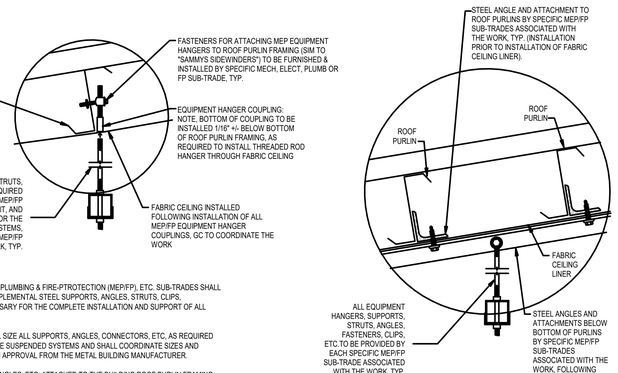
2 MANHOLE DETAIL
NOT TO SCALE



NOTES:

1. COORDINATE THREADED ROD AND METAL CHANNEL SIZING WITH STRUCTURAL ENGINEER.
2. REFER TO SEISMIC REQUIREMENTS FOR PROPER MOUNTING
3. COORDINATE MOUNTING HEIGHT ABOVE FINISHED FLOOR WITH PANEL AND MISCELLANEOUS EQUIPMENT.
4. TRANSFORMER SHALL BE BOLTED TO UNISTRUT ASSEMBLY AT A MINIMUM OF FOUR (4) LOCATIONS. UTILIZE BOLTS AND SPRING NUTS.
5. FEEDER ASSEMBLY SHOWN IS TYPICAL FOR THE PRIMARY AND SECONDARY. EXACT ARRANGEMENT SHALL BE DETERMINED IN THE FIELD.
6. EMT CONDUIT WITH COMPRESSION FITTING OR AS OTHERWISE REQUIRED BY SPECIFICATION.
7. LIQUID-TIGHT FLEXIBLE CONDUIT 18" LONG MINIMUM.

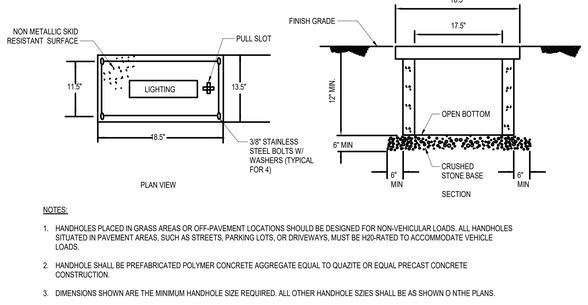
3 TRAPEZE MOUNTED TRANSFORMER
NOT TO SCALE



GENERAL NOTES:

1. ALL MECHANICAL, ELECTRICAL, PLUMBING & FIRE-PTROTECTION (MEP/FP), ETC. SUB-TRADES SHALL PROVIDE AND INSTALL ALL SUPPLEMENTAL STEEL SUPPORTS, ANGLES, STRUTS, CLIPS, ATTACHMENTS, ETC. AS NECESSARY FOR THE COMPLETE INSTALLATION AND SUPPORT OF ALL BUILDING MEP/FP SYSTEMS.
2. ALL MEP/FP SUB-TRADES SHALL SIZE ALL SUPPORTS, ANGLES, CONNECTORS, ETC, AS REQUIRED TO SUPPORT THE LOADS OF THE SUSPENDED SYSTEMS AND SHALL COORDINATE SIZES AND LOCATIONS, AND SHALL OBTAIN APPROVAL FROM THE METAL BUILDING MANUFACTURER.
3. ALL FASTENERS, COUPLINGS, ANGLES, ETC. ATTACHED TO THE BUILDING ROOF PURLIN FRAMING ABOVE THE BOTTOM OF THE PURLIN, TO BE INSTALLED PRIOR TO INSTALLATION OF THE CEILING FABRIC LINER. SUSPENDED SUPPORTS INSTALLED BELOW THE BOTTOM OF THE PURLIN FRAMING TO BE INSTALLED FOLLOWING INSTALLATION OF THE CEILING LINER. GENERAL CONTRACTOR SHALL COORDINATE THE SEQUENCE AND INSTALLATION OF THE WORK.
4. ALL EQUIPMENT LOADS/ REACTIONS IMPOSED ON THE METAL BUILDING FRAMING TO BE REVIEWED AND APPROVED BY THE METAL BUILDING MANUFACTURER. ALL SUPPLEMENTAL BUILDING FRAMING MEMBERS, AS REQUIRED TO SUPPORT MECHANICAL/ ELECTRICAL/ FIRE PROTECTION EQUIPMENT, AS DETERMINED BY THE PREFABRICATED METAL BUILDING DESIGN, IN CONSIDERATION OF ALL EQUIPMENT-IMPOSED LOADS TO THE BUILDING, TO BE PROVIDED BY METAL BUILDING MANUFACTURER.

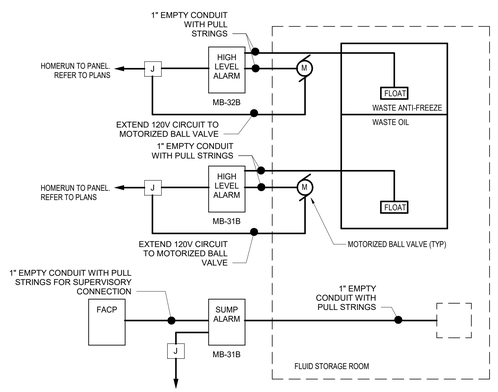
4 Roof Purlain Attachment Detail
NOT TO SCALE



NOTES:

1. HANDHOLES PLACED IN GRASS AREAS OR OFF-PAVEMENT LOCATIONS SHOULD BE DESIGNED FOR NON-VEHICULAR LOADS. ALL HANDHOLES SITUATED IN PAVEMENT AREAS, SUCH AS STREETS, PARKING LOTS, OR DRIVEWAYS, MUST BE H20-RATED TO ACCOMMODATE VEHICLE LOADS.
2. HANDHOLE SHALL BE PREFABRICATED POLYMER CONCRETE AGGREGATE EQUAL TO QUAZITE OR EQUAL PRECAST CONCRETE CONSTRUCTION.
3. DIMENSIONS SHOWN ARE THE MINIMUM HANDHOLE SIZE REQUIRED. ALL OTHER HANDHOLE SZIES SHALL BE AS SHOWN O NTHE PLANS.

5 HANDHOLE DETAIL
NOT TO SCALE



NOTE:

1. COORDINATE FINAL CONDUIT ROUTING FOR ALARMS WITH THE LUBE CONTRACTOR. ALARMS TO BE PROVIDED BY LUBE SYSTEM CONTRACTOR.

6 WASTE ANTI-FREEZE/WASTE OIL WIRING DETAIL
NOT TO SCALE

Project:
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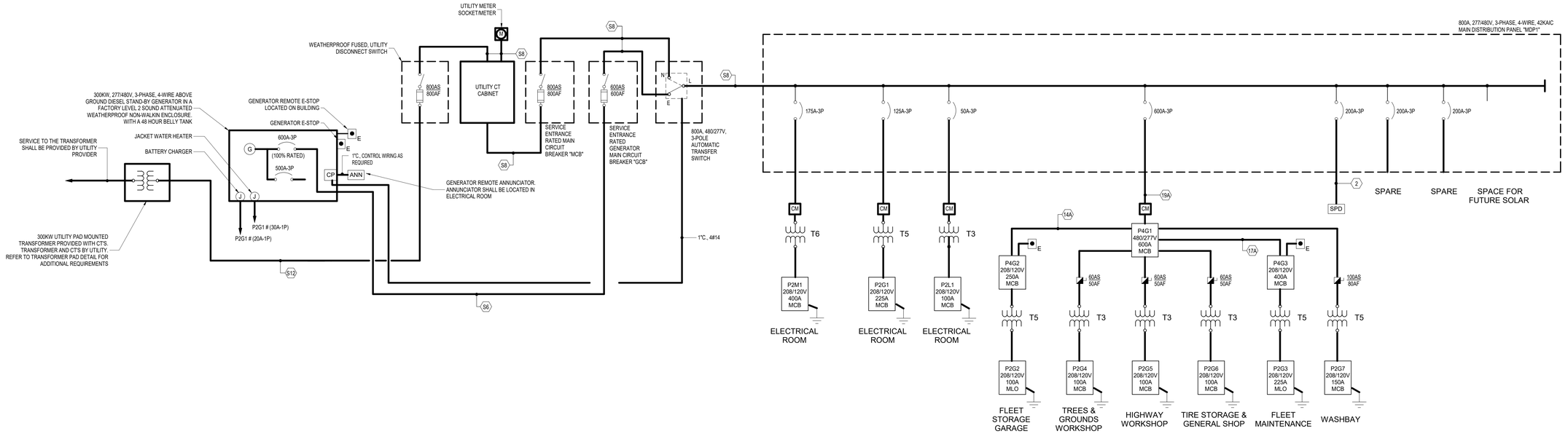
ELECTRICAL DETAILS SHEET III

Sheet Number:

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1 ELECTRICAL ONE-LINE RISER DIAGRAM
NOT TO SCALE

	LEGEND OF FEEDER SIZES - COPPER CONDUCTORS				
FEEDER SYMBOL	CONDUCTORS (3 PHASE, 3 WIRE) WITH GROUND	RACEWAY SIZE	CONDUCTORS (3 PHASE, 4 WIRE) WITH GROUND	RACEWAY SIZE	NOMINAL AMPERE RATING
(1)	3#12 & 1#12 GND.	3/4"			20
(1A)			4#12 & 1#12 GND.	3/4"	
(2)	3#10 & 1#10 GND.	3/4"			30
(2A)			4#10 & 1#10 GND.	3/4"	
(3)	3#8 & 1#10 GND.	1"			40
(3A)			4#8 & 1#10 GND.	1"	
(4)	3#6 & 1#10 GND.	1"			60
(4A)			4#6 & 1#10 GND.	1"	
(5)	3#4 & 1#8 GND.	1"			70
(5A)			4#4 & 1#8 GND.	1-1/4"	
(6)	3#4 & 1#8 GND.	1"			80
(6A)			4#4 & 1#8 GND.	1-1/4"	
(7)	3#3 & 1#8 GND.	1-1/4"			90
(7A)			4#3 & 1#8 GND.	1-1/4"	
(8)	3#3 & 1#8 GND.	1-1/4"			100
(8A)			4#3 & 1#8 GND.	1-1/4"	
(9)	3#1 & 1#6 GND.	1-1/2"			125
(9A)			4#1 & 1#6 GND.	1-1/2"	
(10)	3#1/0 & 1#6 GND.	1-1/2"			150
(10A)			4#1/0 & 1#6 GND.	2"	
(11)	3#2/0 & 1#6 GND.	2"			175
(11A)			4#2/0 & 1#6 GND.	2"	
(12)	3#3/0 & 1#6 GND.	2"			200
(12A)			4#3/0 & 1#6 GND.	2"	
(13)	3#4/0 & 1#4 GND.	2"			225
(13A)			4#4/0 & 1#4 GND.	2-1/2"	
(14)	3-250 kcmil & 1#4 GND.	2-1/2"			250
(14A)			4-250 kcmil & 1#4 GND.	3"	
(15)	3-350 kcmil & 1#4 GND.	3"			300
(15A)			(4)350 kcmil & 1#4 GND.	3"	
(16)	3-500 kcmil & 1#3 GND.	3"			350
(16A)			4-500 kcmil & 1#4 GND.	4"	
(17)	3-600 kcmil & 1#3 GND.	3"			400
(17A)			4-600 kcmil & 1#3 GND.	4"	
(18)	2 SETS OF (250 kcmil & 1#2 GND)	(2) 2-1/2"			500
(18A)			2 SETS OF (250 kcmil & 1#2 GND)	(2) 4"	
(19)	2 SETS OF (350 kcmil & 1#1 GND)	(2) 4"			600
(19A)			2 SETS OF (350 kcmil & 1#1 GND)	(2) 4"	
(20)	2 SETS OF (3-600 kcmil & 1#1/0 GND.)	(2) 4"			800
(20A)			2 SETS OF (600 kcmil & 1#1/0 GND)	(2) 4"	

	LEGEND OF SERVICE FEEDER SIZES - COPPER CONDUCTORS				
FEEDER SYMBOL	CONDUCTORS (3 PHASE, 3 WIRE) WITH GROUND	RACEWAY SIZE	CONDUCTORS (3 PHASE, 4 WIRE) WITH GROUND	RACEWAY SIZE	NOMINAL AMPERE RATING
(S1)	3-600 kcmil & 1#3 GND.	3"			400
(S2)			4-600 kcmil & 1#3 GND.	3-1/2"	
(S3)	2 SETS OF (3-250 kcmil & 1#1/0 GND.)	(2) 4"			500
(S4)			2 SETS OF (4-250 kcmil & 1#1/0 GND.)	(2) 4"	
(S5)	2 SETS OF (3-350 kcmil & 1#2/0 GND.)	(2) 4"			600
(S6)			2 SETS OF (4-350 kcmil & 1#2/0 GND.)	(2) 4"	
(S7)	2 SETS OF (3-600 kcmil & 1#3/0 GND.)	(2) 4"			800
(S8)			2 SETS OF (4-600 kcmil & 1#3/0 GND.)	(2) 4"	
(S9)	3 SETS OF (3-400 kcmil & 1#3/0 GND.)	(3) 4"			1000
(S10)			3 SETS OF (4-400 kcmil & 1#3/0 GND.)	(3) 4"	
(S11)	3 SETS OF (3-600 kcmil & 1#3/0 GND.)	(3) 4"			1200
(S12)			3 SETS OF (4-600 kcmil & 1#3/0 GND.)	(3) 4"	
(S13)	4 SETS OF (3-600 kcmil & 1#3/0 GND.	(4) 4"			1600
(S14)			4 SETS OF (4-600 kcmil & 1#3/0 GND.)	(4) 4"	

DRY TYPE TRANSFORMER SCHEDULE 480-120/208V								
SIZE	KVA	PRIMARY AMPS	SECONDARY AMPS	480 VOLT OVERCURRENT	208 VOLT OVERCURRENT	480V FEEDER CODE	120/208V FEEDER CODE	GROUND SIZE
T1	9	11	25	20A, 3P	30A, 3P	3/4"C., 3#12 & 1#12GND	3/4"C., 4#10 & 1#10GND	#8-3/4"C
T2	15	18	42	30A, 3P	50A, 3P	3/4"C., 3#10 & 1#10GND	1"C., 4#6 & 1#8GND	#8-3/4"C
T3	30	36	83	50A, 3P	100A, 3P	3/4"C., 3#10 & 1#10GND	1 1/4"C., 4#3 & 1#8GND	#8-3/4"C
T4	45	54	125	80A, 3P	150A, 3P	1"C., 3#4 & 1#8GND	2"C., 4#1/0 & 1#6GND	#6-3/4"C
T5	75	90	208	125A, 3P	250A, 3P	1 1/2"C., 3#1 & 1#6GND	3"C., 4-250KCMIL & 1#4GND	#4-3/4"C
T6	112.5	135	313	175A, 3P	400A, 3P	2"C., 3#3/0 & 1#6GND	4"C., 4-500KCMIL & 1#1/0GND	#1/0-3/4"C
T7	150	181	417	250A, 3P	500A, 3P	2 1/2"C., 3#250 KCMIL & 1#4GND	2 SETS OF (3"C., 4-250KCMIL & 1#2GND)	#1/0-3/4"C
T8	225	270	625	400A, 3P	800A, 3P	3 1/2"C/, 3#500 KCMIL & 1#3GND	2 SETS OF (4"C., 4-600KCMIL & 1#1/0GND)	#2/0-1"C
T9	300	360	833	500A, 3P	1000A, 3P	2 SETS OF (3"C., 4-250KCMIL & 1#2GND)	3 SETS OF (4"C., 4-500KCMIL & 1#2GND)	#3/0-1"C
T10	500	600	1400	800A, 3P	1600A, 3P	2 SETS OF (3-500- KCMIL & 1#1/0GND)	4 SETS OF (4"C., 4-600KCMIL & 1#4/0GND)	#3/0-1"C.

Project:
NEW PUBLIC WORKS FACILITY
14 FOREST ROAD, ACTON MA 01720

TOWN OF ACTON

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Consultants:

Revisions:

No.	Date	Description

COA:

Seal:

40% PRELIMINARY DESIGN DEVELOPMENT PRICING SET

Scale:

Key Plan:

Date: 03/28/2025
Draw By: DCH
Reviewed By: DNM
Approved By: RFM
W&S Project No.: ENG24-1080
W&S File No.: XXX

Drawing Title:
ELECTRICAL DIAGRAMS

Sheet Number:
E601

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PANELBOARD: P2L1

LOCATION: ELEC ROOM 134 **VOLTAGE:** 208Y/120 V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100 A MAIN CB **SPECIAL:**
BUS AMPS: 100 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
			1				2			
			3				4			
			5				6			
			7				8			
			9				10			
			11				12			
			13				14			
			15				16			
			17				18			
			19				20			
			21				22			
			23				24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
	TOTAL LOAD:			0 kVA	0 kVA	0 kVA				
	TOTAL AMPS:			0 A	0 A	0 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	0 VA
				ESTIMATED DEMAND:	0 VA
				CONNECTED CURRENT:	0 A
				EST. DEMAND CURRENT:	0 A

NOTES:

PANELBOARD: P2M1

LOCATION: ELEC ROOM 134 **VOLTAGE:** 208Y/120 V. 3 ø 4 W.
MOUNTING: SURFACE Type 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 400 A MAIN CB **SPECIAL:**
BUS AMPS: 400 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
			1				2			
			3				4			
			5				6			
			7				8			
			9				10			
			11				12			
			13				14			
			15				16			
			17				18			
			19				20			
			21				22			
			23				24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
	TOTAL LOAD:			0 kVA	0 kVA	0 kVA				
	TOTAL AMPS:			0 A	0 A	0 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	0 VA
				ESTIMATED DEMAND:	0 VA
				CONNECTED CURRENT:	0 A
				EST. DEMAND CURRENT:	0 A

NOTES:

PANELBOARD: P2G1

LOCATION: ELEC ROOM 134 **VOLTAGE:** 208Y/120 V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 225 A MAIN CB **SPECIAL:**
BUS AMPS: 225 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
			1				2			
			3				4			
			5				6			
			7				8			
			9				10			
			11				12			
			13				14			
			15				16			
			17				18			
			19				20			
			21				22			
			23				24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
	TOTAL LOAD:			0 kVA	0 kVA	0 kVA				
	TOTAL AMPS:			0 A	0 A	0 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	0 VA
				ESTIMATED DEMAND:	0 VA
				CONNECTED CURRENT:	0 A
				EST. DEMAND CURRENT:	0 A

NOTES:

PANELBOARD: P4G1

LOCATION: ELEC ROOM 134 **VOLTAGE:** 480Y/277 V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 600 A MAIN CB **SPECIAL:**
BUS AMPS: 600 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
			1				2			
			3				4			
			5				6			
			7				8			
			9				10			
			11				12			
			13				14			
			15				16			
			17				18			
			19				20			
			21				22			
			23				24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
	TOTAL LOAD:			0 kVA	0 kVA	0 kVA				
	TOTAL AMPS:			0 A	0 A	0 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	0 VA
				ESTIMATED DEMAND:	0 VA
				CONNECTED CURRENT:	0 A
				EST. DEMAND CURRENT:	0 A

NOTES:

PANELBOARD: P4G2

LOCATION: FLEET STORAGE... **VOLTAGE:** 480Y/277 V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 14,000 AMPS SYMMETRICAL
MAIN DEVICE: 250 A MAIN CB **SPECIAL:**
BUS AMPS: 250 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
			1				2			
			3				4			
			5				6			
			7				8			
			9				10			
			11				12			
			13				14			
			15				16			
			17				18			
			19				20			
			21				22			
			23				24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
	TOTAL LOAD:			0 kVA	0 kVA	0 kVA				
	TOTAL AMPS:			0 A	0 A	0 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	0 VA
				ESTIMATED DEMAND:	0 VA
				CONNECTED CURRENT:	0 A
				EST. DEMAND CURRENT:	0 A

NOTES:

PANELBOARD: P4G3

LOCATION: FLEET MAINTENANCE... **VOLTAGE:** 480Y/277 V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 14,000 AMPS SYMMETRICAL
MAIN DEVICE: 400 A MAIN CB **SPECIAL:**
BUS AMPS: 400 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
			1				2			
			3				4			
			5				6			
			7				8			
			9				10			
			11				12			
			13				14			
			15				16			
			17				18			
			19				20			
			21				22			
			23				24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
	TOTAL LOAD:			0 kVA	0 kVA	0 kVA				
	TOTAL AMPS:			0 A	0 A	0 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	0 VA
				ESTIMATED DEMAND:	0 VA
				CONNECTED CURRENT:	0 A
				EST. DEMAND CURRENT:	0 A

NOTES:

PANELBOARD: P2G2

LOCATION: FLEET STORAGE... **VOLTAGE:** None V. Not...
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100 A MLO **SPECIAL:**
BUS AMPS: 100 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
			1				2			
			3				4			
			5				6			
			7				8			
			9				10			
			11				12			
			13				14			
			15				16			
			17				18			
			19				20			
			21				22			
			23				24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
	TOTAL LOAD:			0 kVA	0 kVA	0 kVA				
	TOTAL AMPS:									

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	0 VA
				ESTIMATED DEMAND:	0 VA
				CONNECTED CURRENT:	Not Computed
				EST. DEMAND CURRENT:	Not Computed

NOTES:

PANELBOARD: P2G3

LOCATION: FLEET MAINTENANCE... **VOLTAGE:** 480Y/277 V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 14,000 AMPS SYMMETRICAL
MAIN DEVICE: 100 A MAIN CB **SPECIAL:**
BUS AMPS: 100 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
			1				2			
			3				4			
			5				6			
			7				8			
			9				10			
			11				12			
			13				14			
			15				16			
			17				18			
			19				20			
			21				22			
			23				24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
	TOTAL LOAD:			0 kVA	0 kVA	0 kVA				
	TOTAL AMPS:			0 A	0 A	0 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	0 VA
				ESTIMATED DEMAND:	0 VA
				CONNECTED CURRENT:	0 A
				EST. DEMAND CURRENT:	0 A

NOTES:

PANELBOARD: P2G4

LOCATION: TREES & GROUNDS... **VOLTAGE:** None V. Not...
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100 A MAIN CB **SPECIAL:**
BUS AMPS: 100 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
			1				2			
			3				4			
			5				6			
			7				8			
			9				10			
			11				12			
			13				14			
			15				16			
			17				18			
			19				20			
			21				22			
			23				24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
	TOTAL LOAD:			0 kVA	0 kVA	0 kVA				
	TOTAL AMPS:									

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	0 VA
				ESTIMATED DEMAND:	0 VA
				CONNECTED CURRENT:	Not Computed
				EST. DEMAND CURRENT:	Not Computed

NOTES:

PANELBOARD: P2G5

LOCATION: HIGHWAY WORKSHOP... **VOLTAGE:** None V. Not...
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100 A MAIN CB **SPECIAL:**
BUS AMPS: 100 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
			1				2			
			3				4			
			5				6			
			7				8			
			9				10			
			11				12			
			13				14			
			15				16			
			17				18			
			19				20			
			21				22			
			23				24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
	TOTAL LOAD:			0 kVA	0 kVA	0 kVA				
	TOTAL AMPS:									

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	0 VA
				ESTIMATED DEMAND:	0 VA
				CONNECTED CURRENT:	Not Computed
				EST. DEMAND CURRENT:	Not Computed

NOTES:

PANELBOARD: P2G6

LOCATION: TIRE STORAGE &... **VOLTAGE:** None V. Not...
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100 A MAIN CB **SPECIAL:**
BUS AMPS: 100 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
			1				2			
			3				4			
			5				6			
			7				8			
			9				10			
			11				12			
			13				14			
			15				16			
			17				18			
			19				20			
			21				22			
			23				24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
	TOTAL LOAD:			0 kVA	0 kVA	0 kVA				
	TOTAL AMPS:									

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	0 VA
				ESTIMATED DEMAND:	0 VA
				CONNECTED CURRENT:	Not Computed
				EST. DEMAND CURRENT:	Not Computed

NOTES:

PANELBOARD: P2G7

LOCATION: WASH EQUIP ROOM... **VOLTAGE:** None V. Not...
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 150 A MAIN CB **SPECIAL:**
BUS AMPS: 200 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
			1				2			
			3				4			
			5				6			
			7				8			
			9				10			
			11				12			
			13				14			
			15				16			
			17				18			
			19				20			
			21				22			
			23				24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
	TOTAL LOAD:			0 kVA	0 kVA	0 kVA				
	TOTAL AMPS:									

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	0 VA
				ESTIMATED DEMAND:	0 VA
				CONNECTED CURRENT:	Not Computed
				EST. DEMAND CURRENT:	Not Computed

NOTES:

Project:
NEW PUBLIC WORKS FACILITY
14 FOREST ROAD, ACTON MA 01720

TOWN OF ACTON

Weston & Sampson

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Consultants:

Revisions:

No.	Date	Description

COA:

Seal:

Issued For:

40% PRELIMINARY DESIGN DEVELOPMENT PRICING SET

Scale:

Key Plan:

NORTH

Date:	03/28/2025
Draw By:	DCH
Reviewed By:	DNM
Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	-

Drawing Title:

ELECTRICAL SCHEDULES SHEET I

Sheet Number:

E602

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LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MFR	CATALOG NUMBER	LAMP COLOR	LAMP LUMENS	MOUNTING	VOLTAGE	WATT	NOTE
DL1	6" RECESSED LED DOWNLIGHT	COOPER LIGHTING	HC620D010	3500K		RECESSED	120 V	23 W	
DL1E	6" RECESSED LED DOWNLIGHT WITH INTEGRAL EMERGENCY BACKUP	COOPER LIGHTING	HC620D010REM14	3500K		RECESSED	120 V	14 W	
HBW	2X2 FIXTURE	COOPER LIGHTING LITHONIA MAF 3	22CZ-LD5-24-S-UNV-L835-CD1-U 28LT2 20L ADP MVOLT LP835 X	LED/ 2400 LUMENS/ 3500K LED/ 2000 LUMENS/ 3500K X		PENDANT	120 V	104 W	
HBWE	2X2 FIXTURE	COOPER LIGHTING LITHONIA MAF 3	22CZ-LD5-24-S-UNV-L835-CD1-U 28LT2 20L ADP MVOLT LP835 X	LED/ 2400 LUMENS/ 3500K LED/ 2000 LUMENS/ 3500K X		PENDANT	120 V	104 W	
P2	1' X 4' PENDANT MOUNTED ENCLOSED AND GASKETED, VAPORTIGHT LED FIXTURE	COOPER LIGHTING	4VT2-LD5-4-DR-UNV-L835-CD1-WL-U-VT2-CHAIN/SET-U	3500K		PENDANT	120 V	30 W	
P2E	1' X 4' PENDANT MOUNTED ENCLOSED AND GASKETED, VAPORTIGHT LED FIXTURE WITH EMERGENCY LED DRIVER	COOPER LIGHTING	4VT2-LD5-4-DR-UNV-EL10W-L835-CD1-WL-U-VT2-CHAIN/SET-U	3500K		PENDANT	120 V	30 W	
R1	2X2 RECESSED LED FIXTURE	COOPER LIGHTING	2CZ-LD5-24-S-UNV-L835-CD1-U	3500K		RECESSED	120 V	22 W	
R1E	2X2 RECESSED LED FIXTURE WITH INTEGRAL LED EMERGENCY DRIVER	COOPER LIGHTING	22CZ-LD5-24-S-UNV-EL14W-L835-CD1-U	3500K		RECESSED	120 V	22 W	
S2	1 X 4 ENCLOSED AND GASKETED LED FIXTURE WITH INTEGRAL EMERGENCY LED DRIVER	COOPER LIGHTING	4VT2-LD5-6-DR-UNV-EL10W-L835-CD1-WL-U	3500K		SURFACE	120 V	56 W	
S2E	1 X 4 ENCLOSED AND GASKETED LED FIXTURE WITH INTEGRAL EMERGENCY LED DRIVER	COOPER LIGHTING	4VT2-LD5-4-DR-UNV-EL10W-L835-CD1-WL-U	3500K		SURFACE	120 V	30 W	
SW1E	WALL MOUNTED EXTERIOR FIXTURE	COOPER LIGHTING	GLEON-SA1-B-740-U-T3-WM-BZ	4000K		EXTERIOR WALL	120 V	44 W	MOUNT 8'-6" AFG
W1	1X4 LED WALL MOUNTED FIXTURE	COOPER LIGHTING	4SLSTP4035DD-UNV	3500K		WALL	120 V	60 W	

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Drawing Title:

ELECTRICAL
SCHEDULES SHEET II

Sheet Number:

E603

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ELECTRICAL
SCHEDULES SHEET III

Sheet Number:

E604

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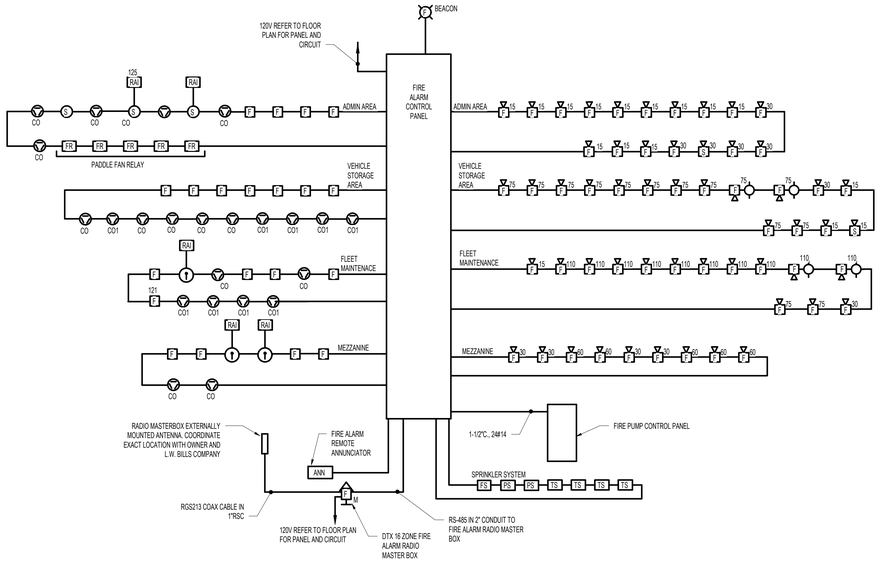
ELECTRICAL
SCHEDULES SHEET IV

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E605

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1 FIRE ALARM RISER DIAGRAM
NOT TO SCALE

FIRE ALARM DIAGRAM NOTES :

1. REFER TO DRAWING E001 FOR LEGEND, SYMBOLS AND GENERAL NOTES THAT MAY PERTAIN TO THIS DRAWING.
2. REFER TO THE FLOOR PLANS FOR THE EXACT QUANTITY AND LOCATION OF EQUIPMENT.
3. COORDINATE DIGITAL DIALER REQUIREMENTS WITH TOWN FIRE OFFICIALS.
4. ALL COMMON AREA PANELS OR EXTERIOR DEVICE LOCATIONS SHALL BE COORDINATED WITH THE ARCHITECT AND TOWN FIRE OFFICIALS.
5. DISTRIBUTOR SHALL PROVIDE AN INSTALLATION WIRING DIAGRAM SHOWING EACH AND EVERY DEVICE.
6. EXACT WIRING SHALL BE PER MANUFACTURER'S REQUIREMENTS.
7. WIRING FOR INITIATION AND NOTIFICATION CIRCUITS SHALL BE CLASS A* UNLESS OTHERWISE NOTED.
8. WIRING SHALL BE TYPE MC FIRE ALARM CABLE ABOVE HUNG CEILINGS AND IN PARTITIONS. EMT SHALL BE PROVIDED IN UNFINISHED AREAS UNLESS OTHERWISE NOTED, NO PVC CONDUIT SHALL BE UTILIZED.
9. MINIMUM WIRE SIZE SHALL BE #18 AWG. (ADDRESSABLE LOOP) #16 AWG FOR HORN AND LIGHT CIRCUITS. LARGER CONDUCTORS SHALL BE PROVIDED IF SO SPECIFIED BY THE MANUFACTURER.
10. EACH INITIATING DEVICE CONNECTED TO THE ADDRESSABLE LOOP SHALL BE ANNUNCIATED SEPARATELY.
11. ADDRESSABLE LOOP SHALL BE DESIGNED WITH 30% SPARE CAPACITY (ANALOG AND MONITOR/CONTROL POINTS).
12. HORNS AND STROBE LIGHTS SHALL BE SYNCHRONIZED, EACH CIRCUIT DESIGNED WITH 30% SPARE CAPACITY. HORN SILENCE CAPABILITY SHALL BE PROVIDED IF REQUIRED BY THE AHJ.
13. MC CABLE FOR FIRE ALARM SERVICE SHALL HAVE A RED IDENTIFIER ALONG ITS ENTIRE LENGTH. JUNCTION BOX COVERS AND CONDUIT COUPLINGS FOR ALL FIRE ALARM WIRING RACEWAYS SHALL BE PAINTED RED PRIOR TO INSTALLATION.

FIRE ALARM LEGEND

H	FIRE ALARM SYSTEM HEAT DETECTOR (135°F RATE OF RISE)
H F	FIRE ALARM SYSTEM HEAT DETECTOR. "F" INDICATES FIXED TEMPERATURE 190°F.
S	FIRE ALARM SMOKE DETECTOR. E - ELEVATOR RECALL BSU - BEAM SMOKE DETECTOR SENDING UNIT B - BEAM SMOKE DETECTOR RECEIVING UNIT D - DUCT SMOKE DETECTOR V - INDICATES INTEGRAL AUDIO/VISUAL ALARM SC - SINGLE STATION SELF-CONTAINED 120 VOLT SMOKE DETECTOR - WITH BATTERY BACK-UP SB - INDICATES SOUNDER BASE
F	FIRE ALARM SYSTEM MANUAL PULL STATION
F 15	ADA COMPLIANT FIRE ALARM AUDIO/VISUAL ALARM DEVICE. NUMERAL SHOWN DENOTES CANDELA RATING.
S	ADA COMPLIANT FIRE ALARM VISUAL ALARM UNIT ONLY
H	ADA COMPLIANT FIRE ALARM AUDIO ALARM UNIT ONLY
S	FIRE ALARM SYSTEM FLUSH CEILING MOUNTED SPEAKER
	LED PILOT LIGHT FOR SMOKE/HEAT DETECTORS
RTS	FIRE ALARM REMOTE TEST STATION FOR DUCT MOUNTED SMOKE DETECTORS
RAI	FIRE ALARM REMOTE ALARM INDICATOR FOR LIMITED ACCESS SPACE SMOKE DETECTORS
FAEP	FIRE ALARM SYSTEM NOTIFICATION APPLIANCE EXTENDER PANEL
FATC	FIRE ALARM SYSTEM TERMINAL CABINET
FM	FIRE ALARM MASTER BOX
FACP	FIRE ALARM CONTROL PANEL
TS	FIRE PROTECTION TAMPER SWITCH. FURNISHED BY FIRE PROTECTION MANUFACTURER, WIRED BY E.C.
FS	FIRE PROTECTION WATER FLOW SWITCH. FURNISHED BY FIRE PROTECTION MANUFACTURER, WIRED BY E.C.
PS	FIRE PROTECTION WATER PRESSURE SWITCH FURNISHED BY FIRE PROTECTION CONTRACTOR WIRED BY ELECTRICAL CONTRACTOR
DC	DOOR CONTACTOR. FURNISHED AND INSTALLED BY THE GENERAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR.
MM	MONITOR MODULE
CR	CONTROL MODULE
SCD	SMOKE CONTROL DAMPER. CONNECT TO JOHNSON CONTROLS FIRE ALARM CIRCUIT FOR CONTROL CIRCUIT.
F	FIRE ALARM BELL AND LIGHT
F	FIRE ALARM CHIME AND LIGHT
FCT	FIRE ALARM CODED TRANSMITTER
SCC	FIRE ALARM STATUS COMMUNICATION PANEL
T	FIREFIGHTER'S TELEPHONE
F	FIREFIGHTER'S PHONE JACK
TPR	FIRE ALARM TRANSPONDER
EOLD	END OF LINE DEVICE
FD	MOTOR OPERATED FIRE/SMOKE DUCT DAMPER, FURNISHED AND INSTALLED BY THE HVAC CONTRACTOR, WIRED BY THE ELECTRICAL CONTRACTOR.
F S	FIRE ALARM SYSTEM SPEAKER/VISUAL ALARM NOTIFICATION UNIT. NUMERAL ADJACENT TO THE UNIT DENOTES STROBE INTENSITY.
F	FIRE ALARM SYSTEM MINI HORN AND STROBE ALARM NOTIFICATION UNIT
ZAM	FIRE ALARM SYSTEM ZONE ADAPTER MODULE
PIV	FIRE ALARM SYSTEM POST INDICATOR VALVE FOR FIRE PROTECTION SYSTEM
TPR	FIRE ALARM SYSTEM TRANSPONDER
IAM	FIRE ALARM SYSTEM INDIVIDUAL ADDRESSABLE MODULE
BATT	FIRE ALARM SYSTEM BATTERY CABINET
EVAC	FIRE ALARM SYSTEM VOICE EVACUATION PANEL
DK	FIRE ALARM SYSTEM DRILL SWITCH, KEY OPERATED
FT	FIRE ALARM SYSTEM CODED TRANSMITTER
KB	KEY REPOSITORY (KNOX BOX)
	FIRE ALARM SYSTEM EXTERIOR MOUNTED WEATHERPROOF RED ROTATING LOCATOR BEACON
CR	FIRE ALARM SYSTEM CONTROL RELAY
GD	GAS DETECTOR (TYPE DENOTED) CO - CARBON MONOXIDE DETECTOR FIRE ALARM SYSTEM CO1 - CARBON MONOXIDE DETECTOR GAS DETECTION SYSTEM NO - NITROGEN DETECTOR GAS DETECTION SYSTEM
FR	FIRE ALARM SHUT DOWN RELAY

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Drawing Title:

FIRE ALARM RISER DIAGRAM

Sheet Number:

FA001

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1 OVERALL FIRE ALARM PLAN
1/16" = 1'-0"

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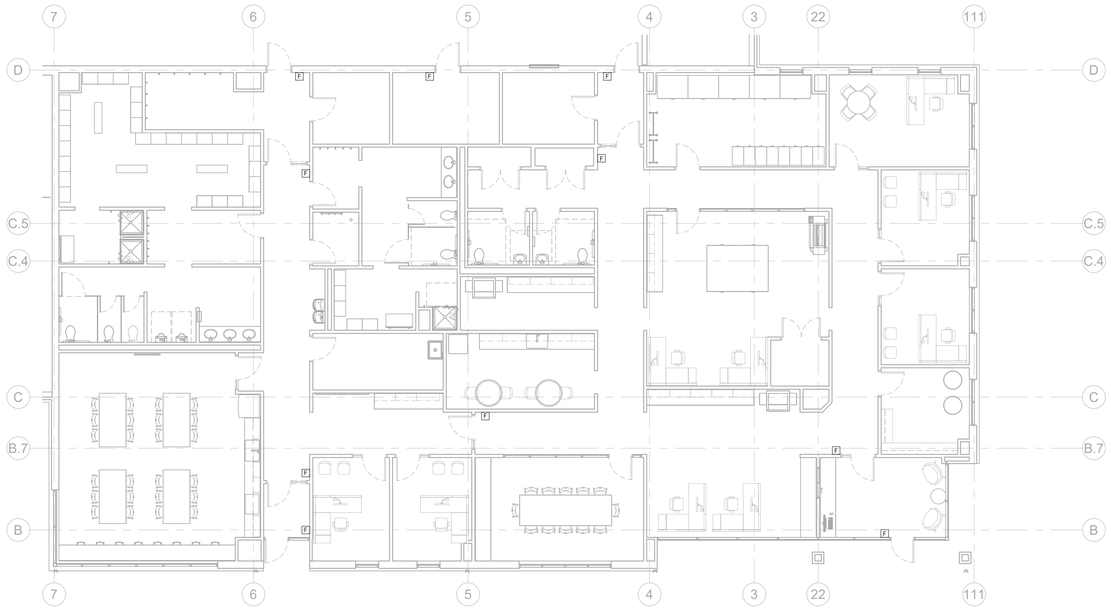
OVERALL FIRE ALARM PLAN

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FA100

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1 ADMIN AREA FIRE ALARM PLAN
1/8" = 1'-0"

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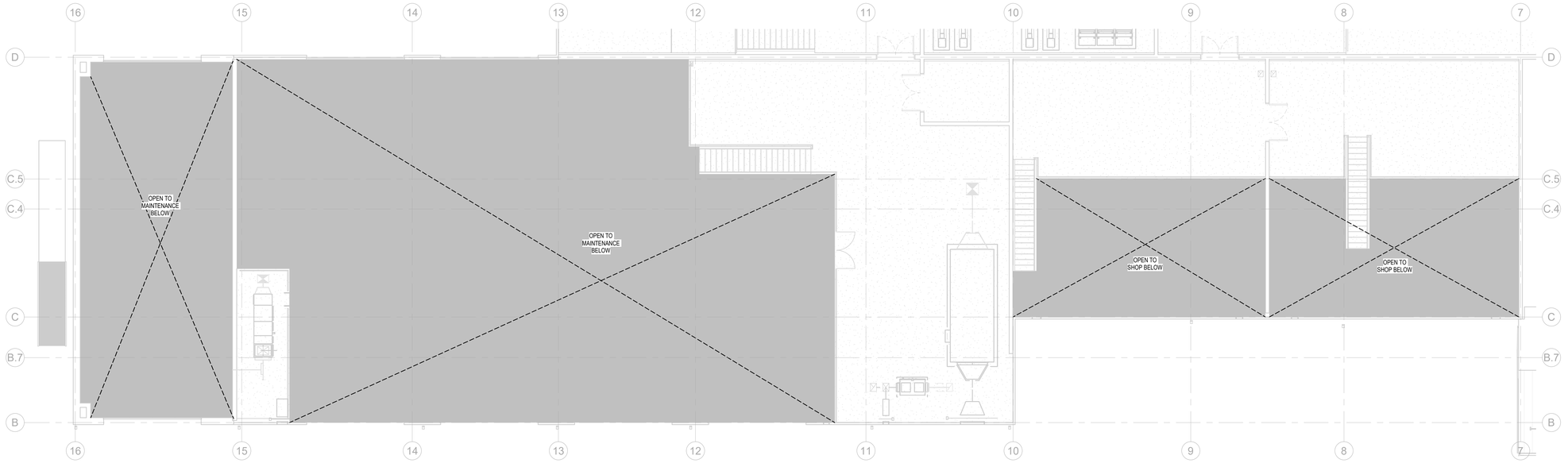
ADMIN AREA FIRE ALARM PLAN

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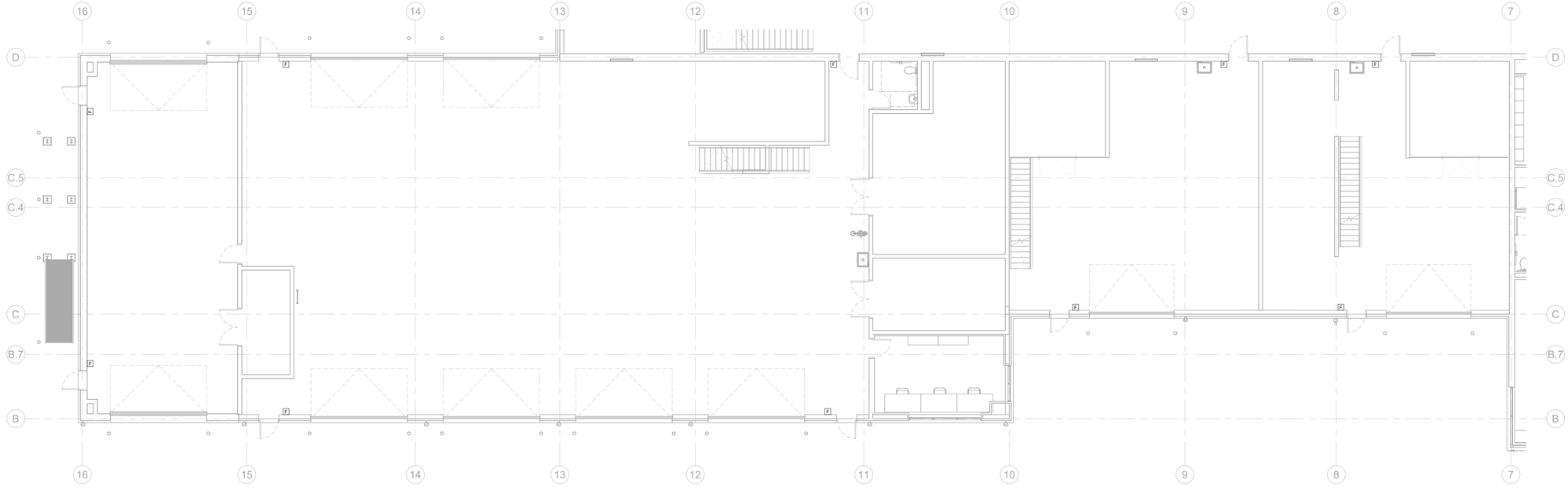
FA101

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2 SHOPS AND FLEET MAINTENANCE MEZZANINE FIRE ALARM PLAN
1/8" = 1'-0"



1 SHOPS AND FLEET MAINTENANCE FIRE ALARM PLAN
1/8" = 1'-0"

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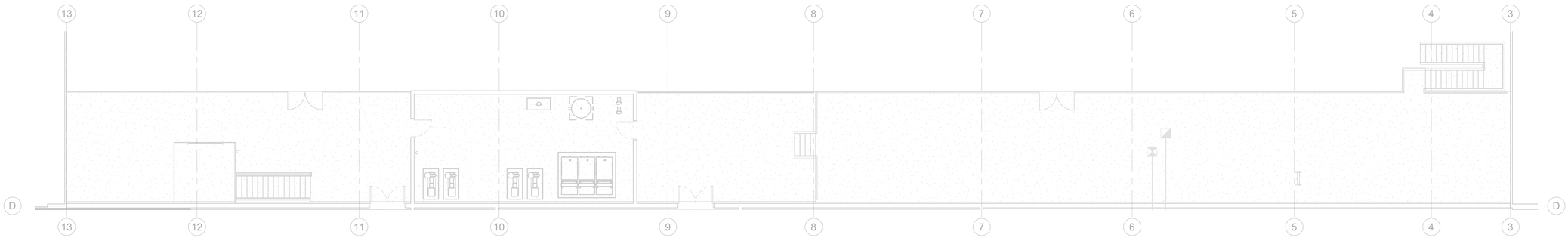
SHOPS AND FLEET MAINTENANCE FIRE ALARM PLANS

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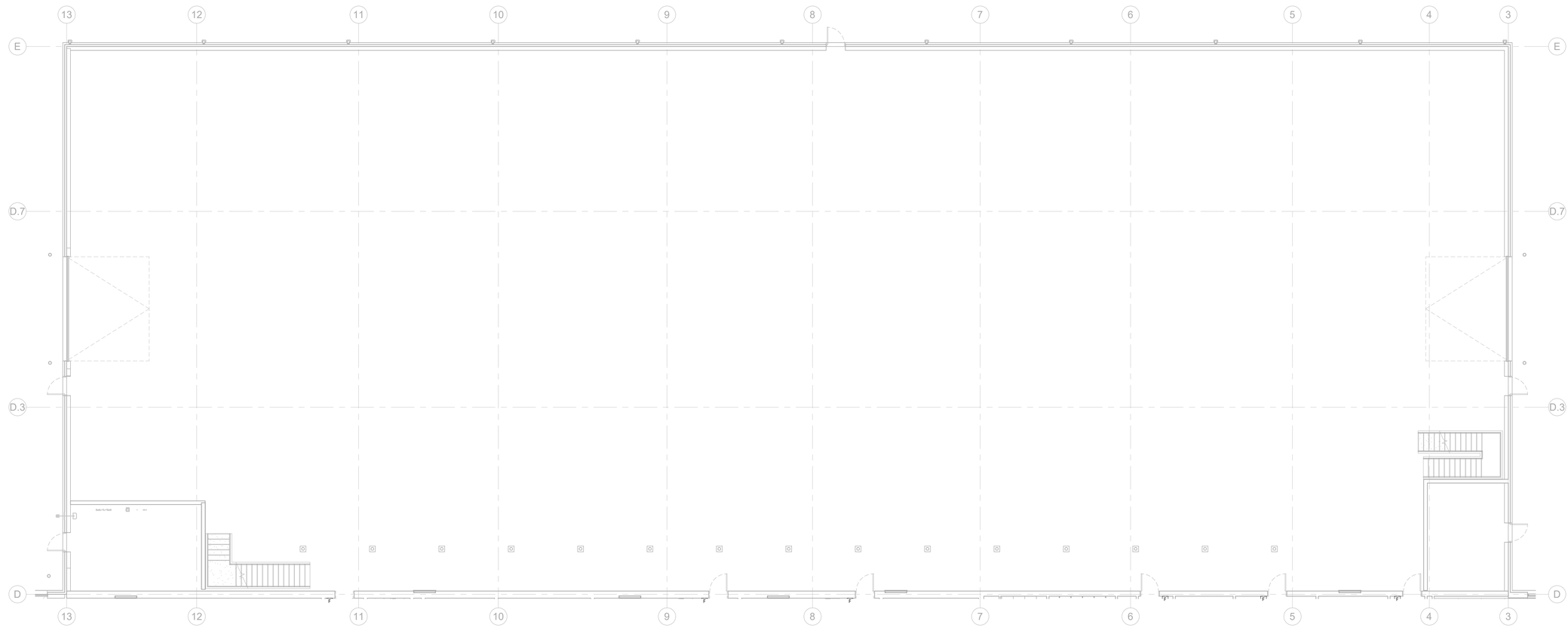
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FLEET STORAGE GARAGE MEZZANINE
FIRE ALARM PLAN
1/8" = 1'-0"



FLEET STORAGE GARAGE FIRE ALARM
PLAN
1/8" = 1'-0"

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FLEET STORAGE
GARAGE FIRE ALARM
PLANS

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SECURITY LEGEND

CR — PROXIMITY CARD READER. PROVIDE 4" SQUARE BACKBOX, SINGLE GANG REDUCER AND 1" CONDUIT TO ACCESSIBLE CEILING OR SURFACE MOUNTED BY DIVISION 26. MOUNT AT 48" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.

REX — REQUEST TO EXIT. PROVIDE 4" SQUARE BACKBOX, SINGLE GANG REDUCER AND 1" CONDUIT TO ACCESSIBLE CEILING OR SURFACE MOUNTED BY DIVISION 26

DC — INDUSTRIAL DOOR CONTACT (SURFACE MOUNT). PROVIDE 4" SQUARE BACKBOX, SINGLE GANG REDUCER AND 1" CONDUIT TO ACCESSIBLE CEILING OR SURFACE MOUNTED BY DIVISION 26.

ES — ELECTRIC STRIKE LOCKING DEVICE. REFER TO TYPICAL SECURITY DEVICES WIRING DETAIL ON DRAWING E6.02 FOR ADDITIONAL INFORMATION.

PTZ — PAN-TILT-ZOOM (PTZ) CAMERA. FURNISHED AND INSTALLED BY OWNER. ELECTRICAL CONTRACTOR TO PROVIDE (2) DOUBLE GANG BACK BOXES. PROVIDE (2) 1" CONDUIT WITH PULL STRING TO TEL/DATA ROOM. USE (1) CONDUIT FOR ELECTRICAL POWER AND PROVIDE (2#10 & 1#10G WIRING).

FIXED CCTV CAMERA. FURNISHED AND INSTALLED BY OWNER. ELECTRICAL CONTRACTOR TO PROVIDE DOUBLE GANG BACK BOX. PROVIDE (2) 1" CONDUIT WITH PULL STRING TO TEL/DATA ROOM.

360 DEGREE CEILING MOUNTED CCTV CAMERA. FURNISHED AND INSTALLED BY OWNER. ELECTRICAL CONTRACTOR TO PROVIDE DOUBLE GANG BACK BOX. PROVIDE (2) 1" CONDUIT WITH PULL STRING TO TEL/DATA ROOM. PROVIDE 1/2"C., 2#12 & 1#12GND TO 120V PANEL LOCATED IN THE ELECTRICAL ROOM.

SACP — SECURITY SYSTEM CONTROL PANEL

KP — SECURITY KEY PAD. PROVIDE BACK BOX, SINGLE GANG PLASTER RING AND 1" EMT RACEWAY TO THE SECURE SIDE OF DOOR UNLESS OTHERWISE NOTED RACEWAY TO BE TERMINATED WITH A 90° SWEEP AND INSULATED BUSHING.

LR — WALL MOUNTED SECURITY SYSTEM LONG RANGE READER. PROVIDE BACK BOX, SINGLE GANG PLASTER RING AND 1" EMT RACEWAY TO THE ABOVE CEILING RACEWAY TO BE TERMINATED WITH A 90° SWEEP AND INSULATED BUSHING.

PIR — SECURITY SYSTEM MOTION SENSOR. PROVIDE BACK BOX, SINGLE GANG PLASTER RING AND 1" EMT RACEWAY TO ABOVE CEILING RACEWAY TO BE TERMINATED WITH A 90° SWEEP AND INSULATED BUSHING.

TELECOMMUNICATIONS

2D/1V — WALL MOUNTED DATA/VOICE RECEPTACLE LOCATED 18"AFF UNLESS OTHERWISE NOTED. SINGLE GANGE FACEPLATE WITH DATA AND VOICE JACKS (QUANTITY AS INDICATED BY NUMBER NEXT TO DEVICE). 4" SQUARE BACKBOX WITH SINGLE GANG REDUCER AND 1" CONDUIT TO ACCESSIBLE CEILING AND/OR SURFACE MOUNTED RACEWAY AS REQUIRED BY DIVISION 26. PROVIDE CAT6 DATA CABLE BACK TO TEL/DATA ROOM TERMINATED ON PATCH PANEL
SPECIAL DESIGNATIONS:
"1D/1V" - ONE DATA AND 1 VOICE JACK PER FACEPLATE
"2D/1D" - TWO DATA AND 1 VOICE JACKS PER FACEPLATE
"2D/2D" - TWO DATA AND 2 VOICE JACKS PER FACEPLATE

2D — WALL MOUNTED DATA RECEPTACLE LOCATED 18"AFF UNLESS OTHERWISE NOTED. SINGLE GANGE FACEPLATE WITH DATA JACK (QUANTITY AS INDICATED BY NUMBER NEXT TO DEVICE). 4" SQUARE BACKBOX WITH SINGLE GANG REDUCER AND 1" CONDUIT TO ACCESSIBLE CEILING AND/OR SURFACE MOUNTED RACEWAY AS REQUIRED BY DIVISION 26. PROVIDE CAT6 DATA CABLE BACK TO TEL/DATA ROOM TERMINATED ON PATCH PANEL
SPECIAL DESIGNATIONS:
"1D" - ONE DATA JACK PER FACEPLATE
"2D" - TWO DATA JACKS PER FACEPLATE
"3D" - THREE DATA JACKS PER FACEPLATE
"4D" - FOUR DATA JACKS PER FACEPLATE

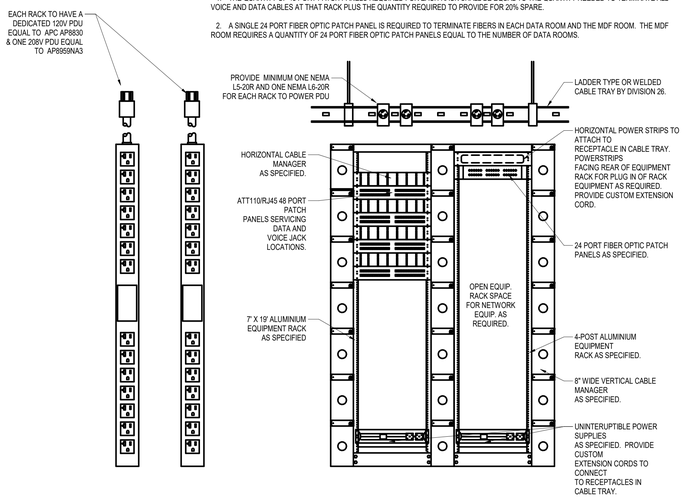
TELEVISION SYSTEM

TV — TV OUTLET - REFER TO DETAIL XX ON DRAWING TCXXX. HEIGHT AS SHOWN ON PLANS

VOICE/DATA EQUIPMENT RACK GENERAL NOTES:

1. THE QUANTITY OF 48 PORT PATCH PANELS REQUIRED FOR EACH RACK SHALL BE EQUAL TO THE QUANTITY NEEDED TO TERMINATE ALL VOICE AND DATA CABLES AT THAT RACK PLUS THE QUANTITY REQUIRED TO PROVIDE FOR 20% SPARE.

2. A SINGLE 24 PORT FIBER OPTIC PATCH PANEL IS REQUIRED TO TERMINATE FIBERS IN EACH DATA ROOM AND THE MDF ROOM. THE MDF ROOM REQUIRES A QUANTITY OF 24 PORT FIBER OPTIC PATCH PANELS EQUAL TO THE NUMBER OF DATA ROOMS.



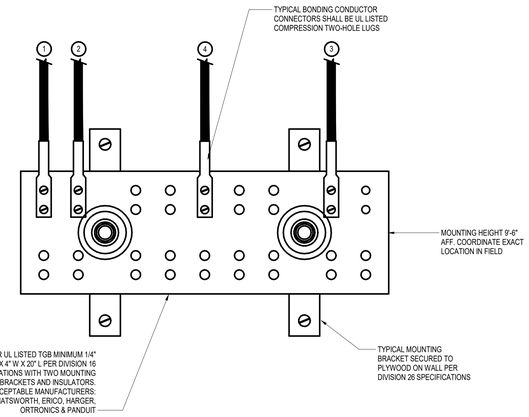
2 Telecommunications Rack Detail
NOT TO SCALE

GROUNDING & BONDING DETAIL NOTES

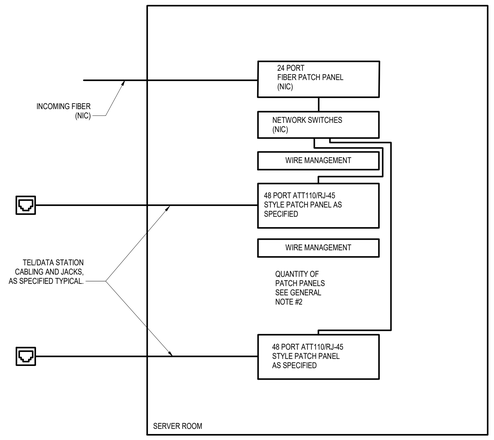
1. REFER TO GROUNDING AND BONDING DIVISION 26 SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. BONDING CONDUCTORS SHALL BE #3/0 AWG COLOR GREEN INSULATED COPPER CONDUCTOR PER "SIZING OF THE TELECOMMUNICATIONS BONDING BACKBONE" CHART IN ANSI-J-STD-607-A IN PATHWAY.
3. FASTENING BONDING CONNECTOR LUGS TO ALL BUSBARS SHALL BE CLEANED AND APPLY AN ANTI-OXIDANT TO THE CONTACT AREA OF BOTH THE CONNECTOR LUG AND THE BUSBAR.
4. BONDING CONDUCTORS AND BUSBARS SHALL BE LABELED WITH IDENTIFICATION IN ACCORDANCE WITH THE REQUIREMENTS OF ANSI/TIA/EIA-606-A.
5. BONDING CONDUCTORS SHALL BE LABELED WITH IDENTIFICATION LABEL NOTED BELOW AND SECURED WITH CABLE TIE TO EACH CONDUCTOR. (ANSI J-STD-607-A)
"IF THIS CONNECTOR OR CABLE IS LOOSE OR MUST BE REMOVED, PLEASE CALL THE BUILDING TELECOMMUNICATIONS MANAGER".
6. COORDINATE AND CONFIRM THE TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB) INSTALLATION WITHIN THE TEL/DATA ROOM.
7. COORDINATE AND CONFIRM THE BONDING CONDUCTOR FOR TELECOMMUNICATIONS CONNECTION TO THE BUILDING GROUNDING ELECTRODE FROM THE TMGB AT THE TEL/DATA ROOM.
8. COORDINATE AND CONFIRM THE BONDING CONDUCTOR TO NEAREST BUILDING METALLIC DOMESTIC COLD WATER PIPE CONNECTION, IF APPLICABLE FROM THE TMGB.

1. BONDING CONDUCTOR TO NEAREST BUILDING STEEL STRUCTURE. IF APPLICABLE. UTILIZE EXOTHERMIC WELDING CONNECTION TO BUILDING STEEL.
2. BONDING CONDUCTOR TO NEAREST BUILDING ELECTRICAL PANELBOARD GROUND BAR. UTILIZE LISTED COMPRESSION TWO-HOLE LUGS TO PANELBOARD GROUND BAR.
3. TELECOMMUNICATION BONDING BACKBONE (TBB) FOR GROUNDING EQUALIZER (GE), IF APPLICABLE.
4. TYPICAL BONDING CONDUCTOR TO TELECOMMUNICATIONS CABLE PATHWAY(S), RACK(S), CABINET(S) AND APPLICABLE EQUIPMENT. DAISY CHAINING OF BONDING CONDUCTORS AT RELAY IS NOT ACCEPTABLE. EACH RACK IS TO HAVE A DEDICATED BONDING CONDUCTOR BACK TO THE TELECOMMUNICATIONS GROUND BUS.

BONDING CONDUCTOR SIZING CHART	
LENGHT (FEET)	SIZE (AWG)
LESS THAN (<) 13'	# 6
14' - 20'	# 4
21' - 26'	# 3
27' - 33'	# 2
34' - 41'	# 1
42' - 52'	# 1/0
53' - 66'	# 2/0
GREATER THAN (>) 66'	# 3/0



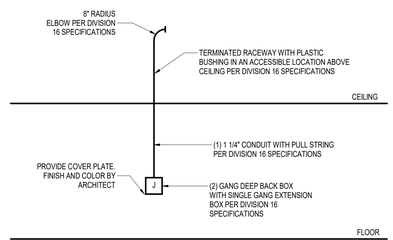
TELECOMMUNICATIONS GROUNDING BUSBAR IN SERVER ROOM
1 NOT TO SCALE



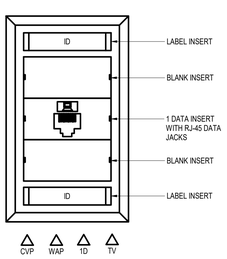
GENERAL NOTES:

1. ITEMS SHOWN WITH THE NOTATION "NIC" ARE NOT IN THE CONTRACT.
2. QUANTITY OF 48 PORT PATCH PANELS PER RACK SHALL EQUAL THE NUMBER REQUIRED TO TERMINATE ALL DATA AND VOICE CABLES IN THE TEL/DATA ROOM SERVICES PLUS 20% SPARE PORTS.
3. CONTRACTOR TO PROVIDE DATA PATCH CORDS AS SPECIFIED.

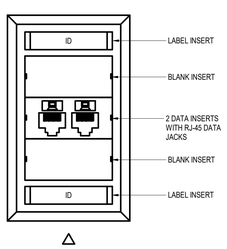
3 TYPICAL DATA SYSTEM ONE LINE DIAGRAM
NOT TO SCALE



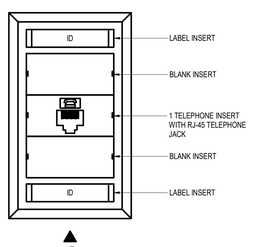
4 VOICE/DATA/AUDIO/VIDEO RECESSED OUTLET RACEWAY DETAIL
NOT TO SCALE



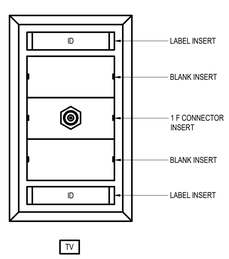
5 TYPICAL 1 DATA RECESSED OUTLET DETAIL
NOT TO SCALE



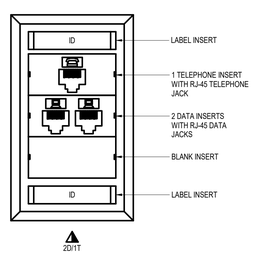
6 TYPICAL 2 DATA RECESSED OUTLET DETAIL
NOT TO SCALE



7 TYPICAL 1 TELEPHONE RECESSED OUTLET DETAIL
NOT TO SCALE



8 TYPICAL COAXIAL CATV OUTLET DETAIL
NOT TO SCALE



9 TYPICAL 2 DATA / 1 TELEPHONE RECESSED OUTLET DETAIL
NOT TO SCALE

Project:
NEW PUBLIC WORKS FACILITY
14 FOREST ROAD, ACTON MA 01720

TOWN OF ACTON

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Scale: NOT TO SCALE

Key Plan:

NORTH

Date: 03/28/2025
Draw By: DCH
Reviewed By: DNM
Approved By: RFM
W&S Project No.: ENG24-1080
W&S File No.: -

Drawing Title:

SYSTEMS LEGEND AND DETAILS

Sheet Number:

TC001

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1 OVERALL SYSTEMS PLAN
1/16" = 1'-0"

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

Key Plan:

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Reviewed By:	DNM
Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	-

Drawing Title:

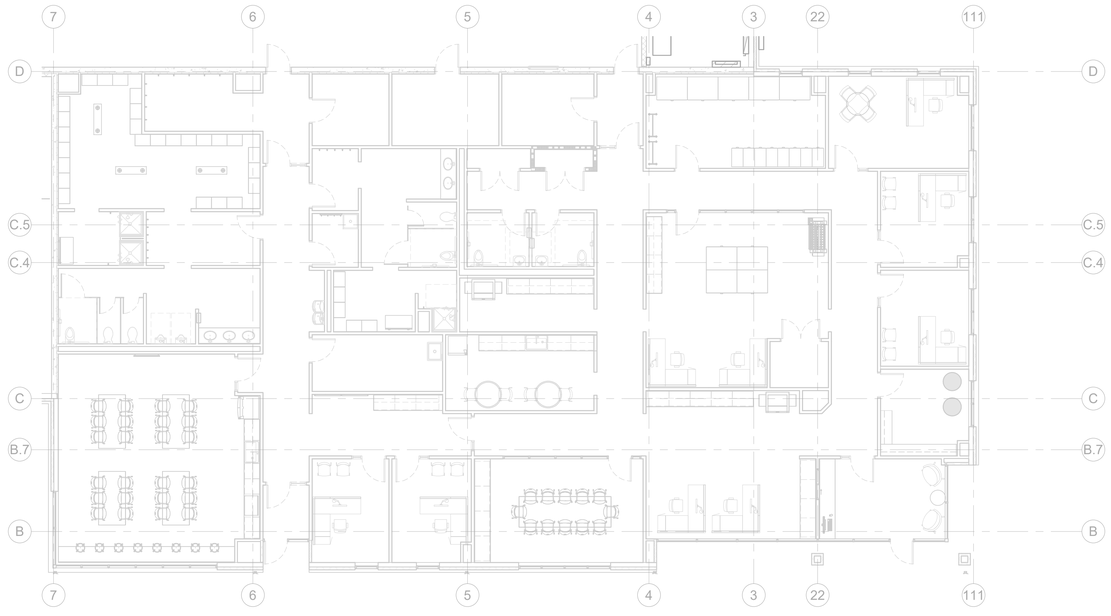
OVERALL SYSTEMS PLAN

Sheet Number:

TC100

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1 ADMIN AREA SYSTEMS PLAN
1/8" = 1'-0"

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Key Plan:

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Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

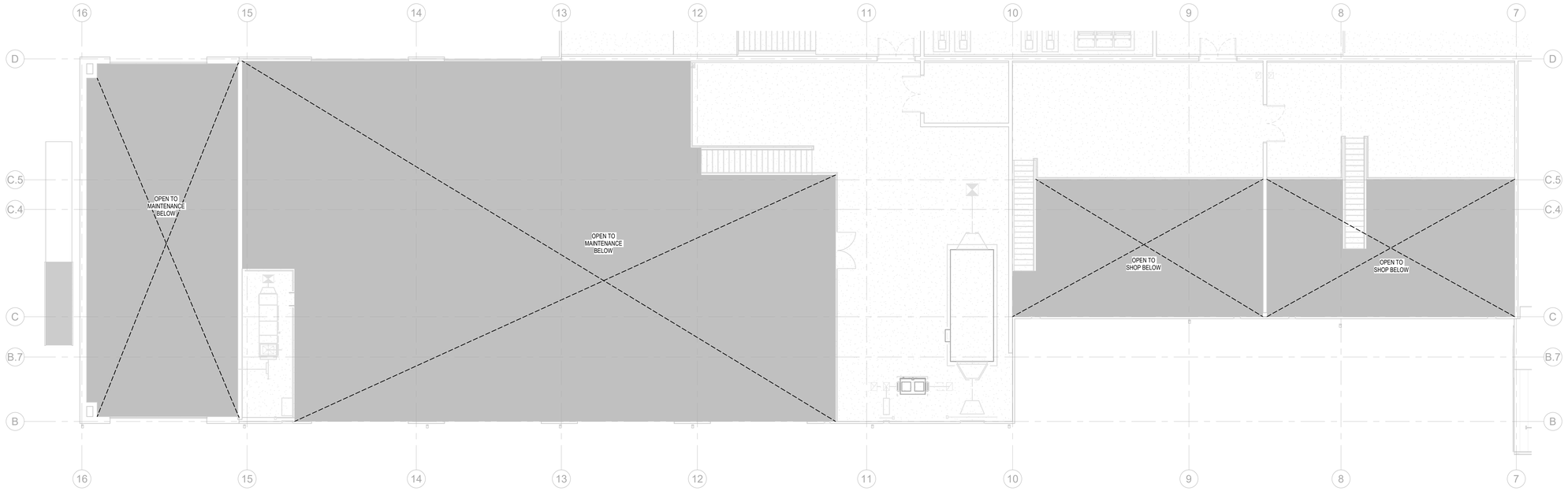
ADMIN AREA SYSTEMS PLAN

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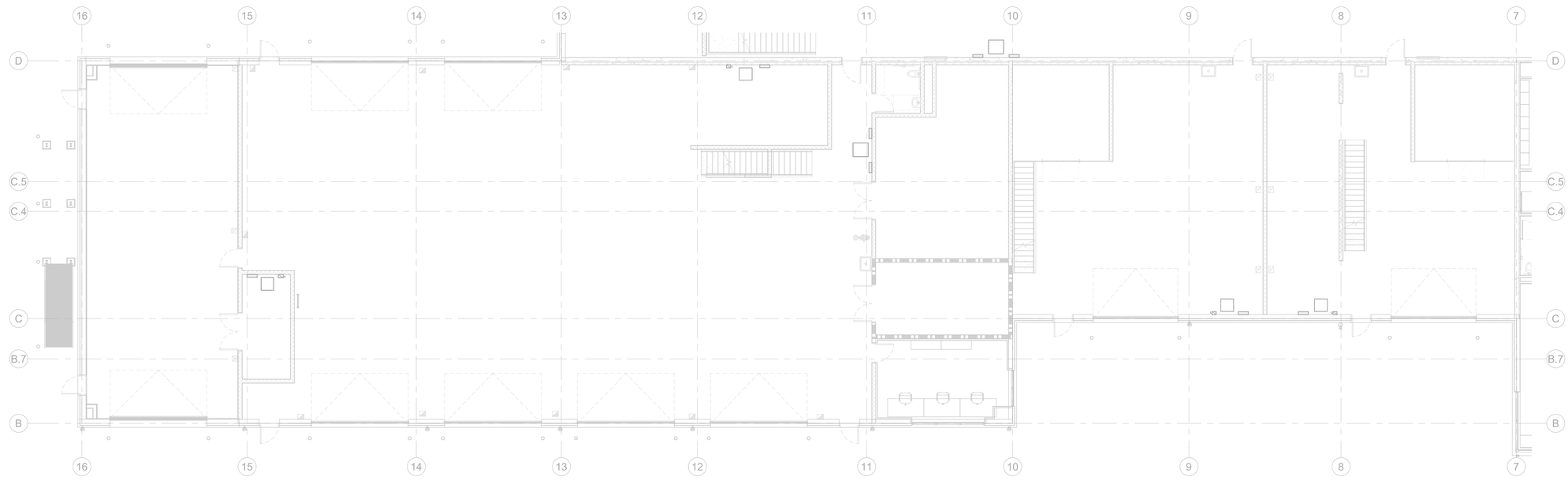
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② SHOPS AND FLEET MAINTENANCE
MEZZANINE SYSTEMS PLAN
1/8" = 1'-0"



① SHOPS AND FLEET MAINTENANCE
SYSTEMS PLAN
1/8" = 1'-0"

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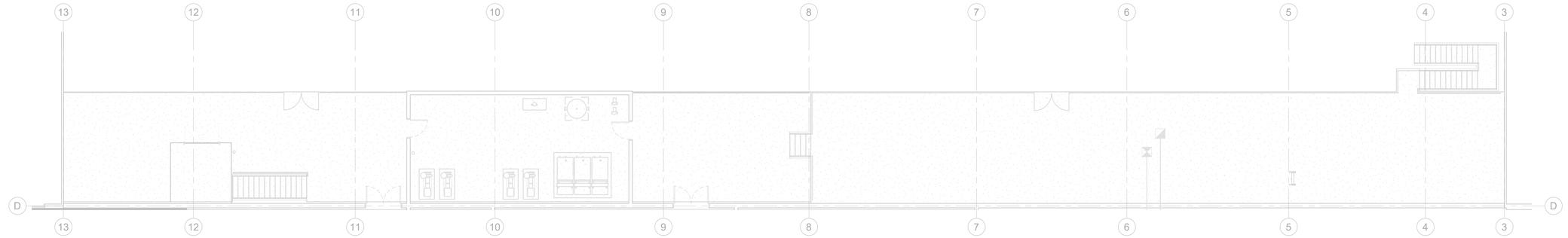
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SHOPS AND FLEET MAINTENANCE SYSTEMS PLANS

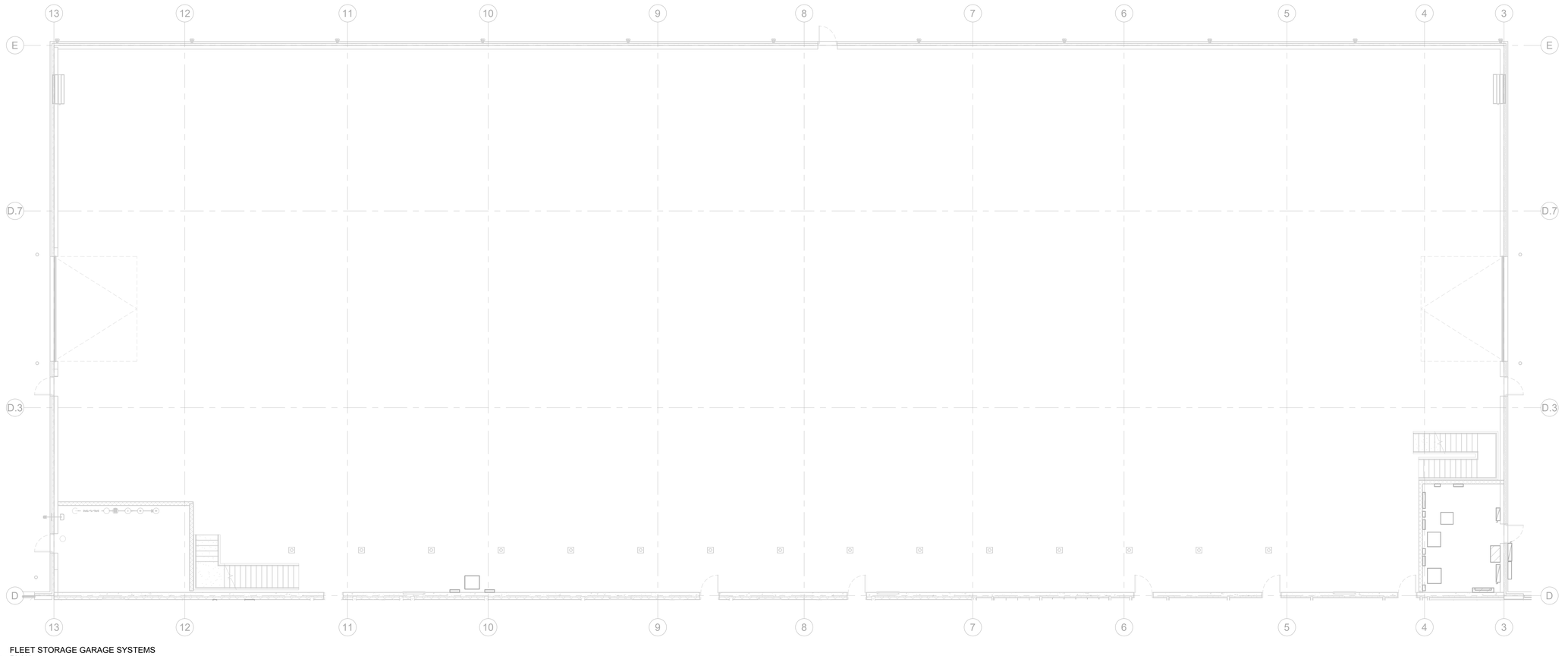
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TC102

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FLEET STORAGE MEZZANINE SYSTEMS
PLAN
1/8" = 1'-0"



FLEET STORAGE GARAGE SYSTEMS
PLAN
1/8" = 1'-0"

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Approved By:	RFM
W&S Project No.:	ENG24-1080
W&S File No.:	XXX

Drawing Title:

FLEET STORAGE GARAGE SYSTEMS PLANS

Sheet Number:

TC103

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