WORCESTER SOUTH DIVISION FIRE STATION PROJECT

25 MADISON ST
WORCESTER, MA 01608

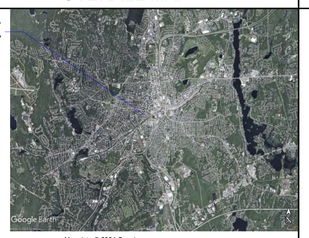
12/19/25
PW PROJECT #157132.000

CONSTRUCTION DOCUMENTS

OWNER	OPM	ARCHITECT	FIREMATIC	STRUCTURAL	MEP/FP/LIGHTING	CIVIL/LANDSCAPE	CODE	DATA/AV/SEC	ENERGY MODEL
CITY OF WORCESTER 455 MAIN ST, WORCESTER, MA 01608	COLLIERS 100 FEDERAL ST, 13TH FL, BOSTON, MA 02110 877-627-3772 (TEL)	PERKINS&WILL 225 FRANKLIN ST, 700, BOSTON, MA 02110 617-478-0300 (TEL)	WENDEL	MITCHELL ASSOCIATES ARCHITECTS 29 THACHER PARK RD, VOORHEESVILLE, NY 12186 518-765-4571 (TEL)	RSE ASSOCIATES 63 PLEASANT ST, WATERTOWN, MA 02471 617-926-9300 (TEL)	ARUP 60 STATE ST, BOSTON, MA 02109 617-864-2987 (TEL)	WESTON & SAMPSON 1 WASHINGTON ST, 10TH FL, BOSTON, MA 02108 617-412-4880 (TEL)	JENSEN HUGHES 33 ARCH ST, BOSTON, MA 02110 508-620-8900	INTROBA 2321 WHITNEY AVE, 501, HAMDEN, CT 06518 1-800-404-7677	ANDELMANLELEK 1408 PROVIDENCE HWY, NORWOOD, MA 02062 781-769-8773 (TEL)

OVERALL MAP

SITE



VICINITY MAP

SITE

SITE MAP

PROJECT INFORMATION

PROJECT DESCRIPTION

A NEW FIRE HOUSE FACILITY LOCATED IN WORCESTER, MASSACHUSETTS. THE PROJECT INVOLVES THE CONSTRUCTION OF A NEW TWO (2) STORY FACILITY FOR THE SOUTH DIVISION OF THE WORCESTER FIRE DEPARTMENT.

APPLICABLE CODES

BUIDING:
MASSACHUSETTS STATE BUILDING CODE (780 CMR) 10TH EDITION (AMENDED VERSION OF THE 2021 INTERNATIONAL BUILDING CODE (IBC)).

ENERGY:
225 CMR 23.00, MASSACHUSETTS STRETCH ENERGY CODE, WHICH ADOPTS AND AMENDS THE 2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC). THIS INCLUDES THE OPT-IN SPECIALIZED STRETCH ENERGY CODE.

ACCESSIBILITY:
MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REGULATIONS (521 CMR), AND THE AMERICANS WITH DISABILITIES ACT (ADA) 2010 STANDARDS FOR ACCESSIBLE DESIGN

ELEVATOR:
MASSACHUSETTS ELEVATOR REGULATIONS, 524 CMR (AMENDED VERSION OF THE 2013 EDITION OF ASME A17.1, SAFETY CODE FOR ELEVATORS AND ESCALATORS).

FIRE PREVENTION:
MASSACHUSETTS COMPREHENSIVE FIRE SAFETY CODE, 527 CMR 1.00 (BASED ON THE 2021 EDITION OF NFPA 1, FIRE CODE).

MECHANICAL:
INTERNATIONAL MECHANICAL CODE (IMC), 2021, AS ADOPTED AND AMENDED BY 780 CMR.

ELECTRICAL:
MASSACHUSETTS ELECTRICAL CODE. 527 CMR 12.00 (AMENDED VERSION OF THE 2023 NATIONAL ELECTRICAL CODE (NFPA 70)).

PLUMBING:
MASSACHUSETTS FUEL GAS AND PLUMBING CODES, 248 CMR

OTHER:
SELECTED NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS AS REFERENCED BY 780 CMR AND 527 CMR,
INCLUDING BUT NOT LIMITED TO:
- NFPA 10, 2021 EDITION, STANDARD FOR PORTABLE FIRE EXTINGUISHERS
- NFPA 13, 2019 EDITION, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS
- NFPA 72, 2019 EDITION, NATIONAL FIRE ALARM CODE

OCCUPANCY CLASSIFICATION

GROUP A-2 CAFETERIA SPACE >735 SF/49 PEOPLE
GROUP B OFFICES, CONFERENCE AND MULTIPURPOSE SPACES ≤735 SF/49 PEOPLE
GROUP R-2 RESIDENTIAL SLEEPING UNITS
GROUP S-2 APPARATUS BAY, STORAGE / MEP SPACES
GROUP U TRAINING TOWER

CONSTRUCTION TYPE

BASED ON THE PROPOSED HEIGHT AND AREA OF THE BUILDING AND USE OF BOTH COMBUSTIBLE AND NONCOMBUSTIBLE MATERIALS, THE MINIMUM AND PROPOSED CONSTRUCTION TYPE FOR THE BUILDING IS IDENTIFIED AS TYPE VB CONSTRUCTION.

HEIGHT AND BUILDING AREA

OCCUPANCY	A-2	B	R-2	S-2	U
ALLOWED HEIGHT (FEET)	60	60	60	60	60
ALLOWED HEIGHT (STORIES)	2	3	3	3	2
AREA PER STORY (SF)	22,500	33,750	26,250	50,625	22,625

FIRE RESISTANCE RATINGS (IN HOURS)

PRIMARY STRUCTURAL FRAME	0
BEARING WALLS (EXTERIOR)	0
BEARING WALLS (INTERIOR)	0
NONBEARING WALLS (EXTERIOR)	0
FLOOR CONSTRUCTION	0
ROOF CONSTRUCTION	0

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REGISTERED ARCHITECT
No. 50254
BOSTON
COMMONWEALTH OF MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

COVER

SHEET NUMBER

G00-00

CONSTRUCTION DOCUMENTS 12/19/25

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12/18/2025 5:35:44 PM Autodesk Docs://City of Worcester - South Division Firehouse/ARCH_City of Worcester_South Division Firehouse.rvt

SHEET NUMBER	SHEET NAME	SD ESTIMATING | 3/14/25	SD | 4/11/25	90% DD ESTIMATE | 6/27/25	DESIGN DEVELOPMENT | 7.28.25	50% CD	90% CD ESTIMATE	100% CD
01-GENERAL								
G00-00	COVER	•	•	•	•	•	•	•
G00-01	INDEX OF DRAWINGS			•	•	•	•	•
G01-01	CODE COMPLIANCE EGRESS PLAN - LEVEL 01	•	•	•	•	•	•	•
G01-02	CODE COMPLIANCE EGRESS PLAN - LEVEL 02	•	•	•	•	•	•	•
G02-01	FIRE RESISTANCE DETAILS AND DIAGRAMS				•	•	•	•
G02-02	FIRE RESISTANCE DETAILS AND DIAGRAMS				•	•	•	•
02-CIVIL								
C0.01	LEGEND & GENERAL NOTES	•	•	•	•	•	•	•
C1.01	SITE DEMO PLAN	•	•	•	•	•	•	•
C2.01	CONSTRUCTION PLAN	•	•	•	•	•	•	•
C3.01	GRADING & DRAINAGE PLAN	•	•	•	•	•	•	•
C4.01	UTILITY PLAN	•	•	•	•	•	•	•
C5.01	PLANTING PLAN	•	•	•	•	•	•	•
C6.01	DETAILS	•	•	•	•	•	•	•
C6.02	DETAILS	•	•	•	•	•	•	•
C6.03	DETAILS	•	•	•	•	•	•	•
C6.04	DETAILS			•	•	•	•	•
C6.05	DETAILS							•
C7.01	TRAFFIC PLAN SHEET 1 OF 2			•	•	•	•	•
C7.02	TRAFFIC PLAN SHEET 2 OF 2							•
C8.01	CONTROL PLAN					•	•	•
04-ARCHITECTURAL								
A00-01	GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS	•	•	•	•	•	•	•
A01-01	ARCHITECTURAL SITE PLAN	•	•	•	•	•	•	•
A11-01	FLOOR PLAN LEVEL 01	•	•	•	•	•	•	•
A11-02	FLOOR PLAN LEVEL 02	•	•	•	•	•	•	•
A11-03	ROOF PLAN	•	•	•	•	•	•	•
A12-01	REFLECTED CEILING PLAN LEVEL 01			•	•	•	•	•
A12-02	REFLECTED CEILING PLAN LEVEL 02			•	•	•	•	•
A13-01	ARCHITECTURAL FURNITURE, EQ, & FINISHES PLAN - LEVEL 1			•	•	•	•	•
A13-02	ARCHITECTURAL FURNITURE, EQ, & FINISHES PLAN - LEVEL 2			•	•	•	•	•
A17-01	FIREMATIC EQUIPMENT PLAN LEVEL 01	•	•	•	•	•	•	•
A17-02	FIREMATIC EQUIPMENT PLAN LEVEL 02	•	•	•	•	•	•	•
A17-11	ENLARGED FIREMATIC EQUIPMENT PLANS AND INTERIOR ELEVATIONS			•	•	•	•	•
A17-12	ENLARGED FIREMATIC EQUIPMENT PLANS AND INTERIOR ELEVATIONS			•	•	•	•	•
A17-13	ENLARGED FIREMATIC EQUIPMENT PLANS AND INTERIOR ELEVATIONS			•	•	•	•	•
A17-14	ENLARGED FIREMATIC EQUIPMENT PLANS AND INTERIOR ELEVATIONS			•	•	•	•	•
A17-15	APPARATUS BAY INTERIOR ELEVATIONS			•	•	•	•	•
A17-16	APPARATUS BAY INTERIOR ELEVATIONS			•	•	•	•	•
A17-20	FIREMATIC FIXTURES AND EQUIPMENT SCHEDULE			•	•	•	•	•
A17-31	DETAILS			•	•	•	•	•
A17-32	DETAILS			•	•	•	•	•
A17-40	TRAINING TOWER PLANS / INTERIOR ELEVATIONS AND DETAILS			•	•	•		
A20-01	EXTERIOR ELEVATIONS	•	•	•	•	•	•	•
A20-02	EXTERIOR BRICK ELEVATIONS				•	•	•	•
A20-03	EXTERIOR VIEWS	•	•	•	•	•	•	•
A21-01	BUILDING SECTIONS	•	•	•	•	•	•	•
A31-01	TYPICAL ROOF DETAILS	•	•	•	•	•	•	•
A32-01	EXTERIOR WALL & ROOF ASSEMBLIES	•	•	•	•	•	•	•
A32-02	EXTERIOR WALL & ROOF ASSEMBLIES	•	•	•	•	•	•	•
A32-11	BUILDING ENCLOSURE SECTION DETAILS - APPARATUS BAY			•	•	•	•	•
A32-12	BUILDING ENCLOSURE SECTION DETAILS - APPARATUS BAY					•	•	•
A32-13	BUILDING ENCLOSURE SECTION DETAILS - BUNKS & ENTRY			•	•	•	•	•
A32-14	BUILIDNG ENCLOSURE SECTION DETAILS - KITCHEN & TRELLIS/ DECK			•	•	•	•	•
A33-01	BUILDING ENCLOSURE PLAN DETAILS - LEVEL 01			•	•	•	•	•
A33-02	BUILDING ENCLOSURE PLAN DETAILS - LEVEL 02							•
A34-01	EXTERIOR GLAZING ELEVATIONS			•	•	•	•	•
A41-01	ENLARGED STAIR A PLANS AND SECTIONS			•	•	•	•	•
A41-02	ENLARGED STAIR B,C,D,E, AND F PLANS AND SECTIONS			•	•	•	•	•
A41-03	TRAINING TOWER PLANS & SECTION			•	•	•	•	•
A41-04	ENLARGED FIRE POLE PLANS AND ELEVATIONS					•	•	•
A41-50	STAIR DETAILS					•	•	•
A42-01	ELEVATOR PLANS AND SECTIONS			•	•	•	•	•
A43-01	ENLARGED TOILET PLANS AND ELEVATIONS			•	•	•	•	•
A44-01	ENLARGED PLANS & ELEVATIONS - EXERCISE AND TRAINING ROOM			•	•	•	•	•
A44-02	ENLARGED PLANS & ELEVATIONS - WATCH ROOM			•	•	•	•	•
A44-03	ENLARGED PLANS & ELEVATIONS - BUNK ROOMS AND OFFICES			•	•	•	•	•
A44-04	ENLARGED PLANS & ELEVATIONS - LEVEL 02 - KITCHEN & STUDY			•	•	•	•	•
A44-05	ENLARGED PLANS & ELEVATIONS - LEVEL 02 - DAYROOM & LAUNDRY			•	•	•	•	•
A44-06	ENTRY SIGNAGE AND BRICK LETTERING - DETAILS AND ELEVATIONS					•	•	•
A45-01	INTERIOR ELEVATIONS - APPARATUS BAY			•	•	•	•	•
A45-02	INTERIOR ELEVATIONS - APPARATUS BAY			•	•	•	•	•
A45-03	INTERIOR ELEVATIONS - LEVEL 01 CORRIDORS					•	•	•
A45-04	INTERIOR ELEVATIONS - LEVEL 02 CORRIDORS					•	•	•
A50-00	CASEWORK ELEVATIONS					•	•	•
A50-01	CASEWORK DETAILS					•	•	•
A50-02	CASEWORK DETAILS					•	•	•
A51-01	CEILING AND INTERIOR DETAILS					•	•	•
A52-00	INTERIOR DETAILS - FWP & PLAM PANELS					•	•	•
A52-01	INTERIOR DETAILS - REVEALS & RECLAIMED WOOD					•	•	•
A61-01	PARTITION TYPE CHARTS			•	•	•	•	•
A61-50	PARTITION DETAILS					•	•	•
A62-01	DOOR SCHEDULE AND DETAILS			•	•	•	•	•
A63-01	ACCESSIBILITY COMPLIANCE - SIGNAGE			•	•	•	•	•
A64-01	ARCHITECTURAL EQ., FURNITURE & FINISHES SCHEDULES AND LEGENDS			•	•	•	•	•

SHEET NUMBER	SHEET NAME	SD ESTIMATING | 3/14/25	SD | 4/11/25	90% DD ESTIMATE | 6/27/25	DESIGN DEVELOPMENT | 7.28.25	50% CD	90% CD ESTIMATE	100% CD
05-STRUCTURAL								
S00-00	GENERAL NOTES				•	•	•	•
S11-01	FOUNDATION PLAN	•	•	•	•	•	•	•
S11-02	LEVEL 2 FRAMING PLAN	•	•	•	•	•	•	•
S11-03	ROOF FRAMING PLAN	•	•	•	•	•	•	•
S11-04	HIGH ROOF FRAMING				•	•	•	•
S20-00	COLUMN SCHEDULE				•	•	•	•
S20-01	MOMENT FRAME ELEVATIONS				•	•	•	•
S20-02	CMU SHEAR WALL ELEVATIONS				•	•	•	•
S20-03	CMU SHEAR WALL ELEVATIONS				•	•	•	•
S20-04	BASE PLATE DETAILS					•	•	•
S30-00	TYPICAL DETAILS				•	•	•	•
S30-01	TYPICAL DETAILS				•	•	•	•
S30-02	TYPICAL DETAILS				•	•	•	•
S30-03	TYPICAL DETAILS				•	•	•	•
S30-04	TYPICAL DETAILS				•	•	•	•
S40-00	FOUNDATION SECTIONS				•	•	•	•
S40-01	FOUNDATION SECTIONS				•	•	•	•
S50-00	SUPERSTRUCTURE SECTIONS				•	•	•	•
S50-01	SUPERSTRUCTURE SECTIONS				•	•	•	•
S50-02	SUPERSTRUCTURE SECTIONS				•	•	•	•
S50-03	SUPERSTRUCTURE SECTIONS						•	•
S50-04	SUPERSTRUCTURE SECTIONS						•	•
S50-05	SUPERSTRUCTURE SECTIONS						•	•
S50-06	ELECTRICAL DETAILS SHEET 6						•	•
06-FIRE PROTECTION								
F00.01	FIRE PROTECTION GENERAL NOTES, LEGEND & SCHEDULE	•	•	•	•	•	•	•
F03.00	FIRE PROTECTION SINGLE LINE DIAGRAM						•	•
F04.01	FIRE PROTECTION FIRST FLOOR PLAN		•	•	•	•	•	•
F04.02	FIRE PROTECTION SECOND FLOOR PLAN		•	•	•	•	•	•
F04.03	FIRE PROTECTION ROOF PLAN		•	•	•	•	•	•
F08.01	FIRE PROTECTION DETAILS SHEET 1		•	•	•	•	•	•
07-PLUMBING								
P00.01	PLUMBING GENERAL NOTES & LEGEND		•	•	•	•	•	•
P01.01	PLUMBING SCHEDULES SHEET		•	•	•	•	•	•
P01.02	PLUMBING STORM RISER DIAGRAM						•	•
P01.03	PLUMBING SANITARY RISER DIAGRAM						•	•
P01.04	PLUMBING WATER RISER DIAGRAM						•	•
P04.00	PLUMBING UNDERGROUND PLAN		•	•	•	•	•	•
P04.01	PLUMBING FIRST FLOOR PLAN		•	•	•	•	•	•
P04.02	PLUMBING SECOND FLOOR PLAN		•	•	•	•	•	•
P04.03	PLUMBING ROOF PLAN		•	•	•	•	•	•
P07.00	PLUMBING ENLARGED PLANS				•	•	•	•
P07.01	PLUMBING ENLARGED PLANS				•	•	•	•
P08.01	PLUMBING DETAILS SHEET 1		•	•	•	•	•	•
08-MECHANICAL								
M00.00	MECHANICAL GENERAL NOTES, SYMBOLS & ABBREVIATIONS		•	•	•	•	•	•
M00.01	MECHANICAL SCHEDULES		•	•	•	•	•	•
M00.02	MECHANICAL SCHEDULES		•	•	•	•	•	•
M00.03	MECHANICAL SCHEDULES					•	•	•
M01.01	MECHANICAL SITE PLAN		•	•	•	•	•	•
M03.01	MECHANICAL SINGLE LINE DIAGRAMS		•	•	•	•	•	•
M03.02	MECHANICAL SINGLE LINE DIAGRAMS		•	•	•	•	•	•
M04.01	MECHANICAL DUCTWORK PLAN FIRST FLOOR		•	•	•	•	•	
M04.01A	MECHANICAL DUCTWORK PLAN FIRST FLOOR - PART A						•	•
M04.01B	MECHANICAL DUCTWORK PLAN FIRST FLOOR - PART B						•	•
M04.01D	MECHANICAL DUCTWORK PLAN FIRST FLOOR - PART D						•	•
M04.02	MECHANICAL DUCTWORK PLAN SECOND FLOOR		•	•	•	•		
M04.02A	MECHANICAL DUCTWORK PLAN SECOND FLOOR - PART A						•	•
M04.02B	MECHANICAL DUCTWORK PLAN SECOND FLOOR - PART B						•	•
M04.02C	MECHANICAL DUCTWORK PLAN SECOND FLOOR - PART C						•	•
M04.02D	MECHANICAL DUCTWORK PLAN SECOND FLOOR - PART D						•	•
M04.03	MECHANICAL DUCTWORK PLAN ROOF		•	•	•	•		
M04.03A	MECHANICAL DUCTWORK PLAN ROOF - PART A						•	•
M04.03B	MECHANICAL DUCTWORK PLAN ROOF - PART B						•	•
M04.03D	MECHANICAL DUCTWORK PLAN ROOF - PART D						•	•
M05.00	MECHANICAL PIPING PLAN UNDER SLAB		•	•	•	•	•	•
M05.01	MECHANICAL PIPING PLAN FIRST FLOOR		•	•	•	•	•	•
M05.02	MECHANICAL PIPING PLAN SECOND FLOOR		•	•	•	•	•	•
M06.01	MECHANICAL CONTROLS PLAN FIRST FLOOR				•	•	•	•
M06.02	MECHANICAL CONTROLS PLAN SECOND FLOOR				•	•	•	•
M08.01	MECHANICAL DETAILS		•	•	•	•	•	•
M08.02	MECHANICAL DETAILS		•	•	•	•	•	•
M08.03	MECHANICAL DETAILS		•	•	•	•	•	•
M08.04	MECHANICAL DETAILS					•	•	•
M08.05	MECHANICAL DETAILS							•
M08.06	MECHANICAL DETAILS							•
M09.00	MECHANICAL CONTROLS		•	•	•	•	•	•
M09.01	MECHANICAL CONTROLS		•	•	•	•	•	•
M09.02	MECHANICAL CONTROLS		•	•	•	•	•	•
M09.03	MECHANICAL CONTROLS		•	•	•	•	•	•
M09.04	MECHANICAL CONTROLS		•	•	•	•	•	•
M09.05	MECHANICAL CONTROLS		•	•	•	•	•	•
M09.06	MECHANICAL CONTROLS		•	•	•	•	•	•

SHEET NUMBER	SHEET NAME	SD ESTIMATING | 3/14/25	SD | 4/11/25	90% DD ESTIMATE | 6/27/25	DESIGN DEVELOPMENT | 7.28.25	50% CD	90% CD ESTIMATE	100% CD
09-ELECTRICAL								
E00.00	ELECTRICAL GENERAL NOTES & LEGEND	•	•	•	•	•	•	•
E00.01	ELECTRICAL SCHEDULES SHEET 1	•	•	•	•	•	•	•
E00.02	ELECTRICAL SCHEDULES SHEET 2				•	•	•	•
E01.00	ELECTRICAL LIGHTING SITE PLAN	•	•	•	•	•	•	•
E01.01	ELECTRICAL SITE POWER PLAN				•	•	•	•
E03.00	ELECTRICAL SINGLE LINE DIAGRAM	•	•	•	•	•	•	•
E03.01	ELECTRICAL GROUNDING SINGLE LINE DIAGRAM					•	•	•
E03.10	ELECTRICAL LIGHTING CONTROL DIAGRAM						•	•
E03.20	ELECTRICAL METERING SCHEMATIC						•	•
E04.01	ELECTRICAL FIRST FLOOR LIGHTING PLAN				•	•	•	•
E04.02	ELECTRICAL SECOND FLOOR LIGHTING PLAN				•	•	•	•
E04.03	ELECTRICAL LIGHTING DETAILS SHEET 1						•	•
E04.04	ELECTRICDAL LIGHTING CONTROLS STRATEGY						•	•
E04.05	ELECTRICDAL LIGHTING CONTROLS STRATEGY						•	•
E05.01	ELECTRICAL FIRST FLOOR POWER PLAN	•	•	•	•	•	•	•
E05.02	ELECTRICAL SECOND FLOOR POWER PLAN	•	•	•	•	•	•	•
E05.03	ELECTRICAL ROOF POWER PLAN	•	•	•	•	•	•	•
E06.01	ELECTRICAL FIRST FLOOR GROUNDING & LIGHTING PROTECTION PLAN	•	•	•	•	•	•	•
E06.03	ELECTRICAL ROOF GROUNDING & LIGHTING PROTECTION PLAN	•	•	•	•	•	•	•
E07.00	ELECTRICAL PART PLANS	•	•	•	•	•	•	•
E08.01	ELECTRICAL DETAILS SHEET 1	•	•	•	•	•	•	•
E08.02	ELECTRICAL DETAILS SHEET 2	•	•	•	•	•	•	•
E08.03	ELECTRICAL DETAILS SHEET 3	•	•	•	•	•	•	•
E08.04	ELECTRICAL DETAILS SHEET 4			•	•	•	•	•
E08.05	ELECTRICAL DETAILS SHEET 5					•	•	•
E08.06	SUPERSTRUCTURE SECTIONS						•	•
E09.01	ELECTRICAL PANEL SCHEDULES				•	•	•	•
E09.02	ELECTRICAL PANEL SCHEDULES				•	•	•	•
E09.03	ELECTRICAL PANEL SCHEDULES						•	•
10-FIRE ALARM								
FA00.01	FIRE ALARM GENERAL NOTES & LEGEND	•	•	•	•	•	•	•
FA03.00	FIRE ALARM SINGLE LINE DIAGRAM	•	•	•	•	•	•	•
FA04.01	FIRE ALARM FIRST FLOOR PLAN	•	•	•	•	•	•	•
FA04.02	FIRE ALARM SECOND FLOOR PLAN			•	•	•	•	•
FA04.03	FIRE ALARM ROOF PLAN			•	•	•	•	•
FA08.01	FIRE ALARM DETAILS SHEET 1			•	•	•	•	•
11-TELECOMMUNICATIONS								
T-000	TECHNOLOGY COVER PAGE			•	•	•	•	•
T-010	STRUCTURED CABLING LEGEND			•	•	•	•	•
T-020	SYNCHRONIZED CLOCK AND OVERHEAD PAGING SYSTEM LEGENDS			•	•	•	•	•
T-030	TECHNOLOGY SYSTEMS RESPONSIBILITY MATRIX			•	•	•	•	•
T-100	TELECOM FLOOR PLAN - LEVEL 01- DISTRIBUTION			•	•	•	•	•
T-101	TELECOM FLOOR PLAN - LEVEL 02 - DISTRIBUTION			•	•	•	•	•
T-200	TELECOM FLOOR PLAN - LEVEL 01 - DEVICES			•	•	•	•	•
T-201	TELECOM FLOOR PLAN - LEVEL 02 - DEVICES			•	•	•	•	•
T-210	TELECOM CEILING PLAN - LEVEL 01			•	•	•	•	•
T-211	TELECOM CEILING PLAN - LEVEL 02			•	•	•	•	•
T-400	SERVER ROOM ENLARGED PLANS AND ELEVATIONS			•	•	•	•	•
T-500	TECHNOLOGY TYPICAL DETAILS			•	•	•	•	•
T-501	TECHNOLOGY TYPICAL DETAILS			•	•	•	•	•
T-502	TECHNOLOGY TYPICAL DETAILS			•	•	•	•	•
T-503	TECHNOLOGY TYPICAL DETAILS			•	•	•	•	•
T-504	STATION ALERTING - PAGING SYSTEM DETAILS					•	•	•
12-SECURITY								
TY-010	SECURITY SYSTEMS LEGEND				•	•	•	•
TY-200	SECURITY FLOOR PLAN - LEVEL 01				•	•	•	•
TY-201	SECURITY FLOOR PLAN - LEVEL 02				•	•	•	•
TY-202	SECURITY FLOOR PLAN - ROOF				•	•	•	•
TY-500	SECURITY ACCESS CONTROL DETAILS				•	•	•	•
TY-501	SECURITY VSS CAMERA DETAILS				•	•	•	•
TY-600	SECURITY SYSTEM SCHEDULES				•	•	•	•
13-PV								
PV04.03	PV ROOF PLAN	•	•	•	•	•	•	•

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REGISTERED ARCHITECT — JOSEPH T. CURRAN — No. 50258 — BOSTON — COMMONWEALTH OF MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

INDEX OF DRAWINGS

SHEET NUMBER

G00-01

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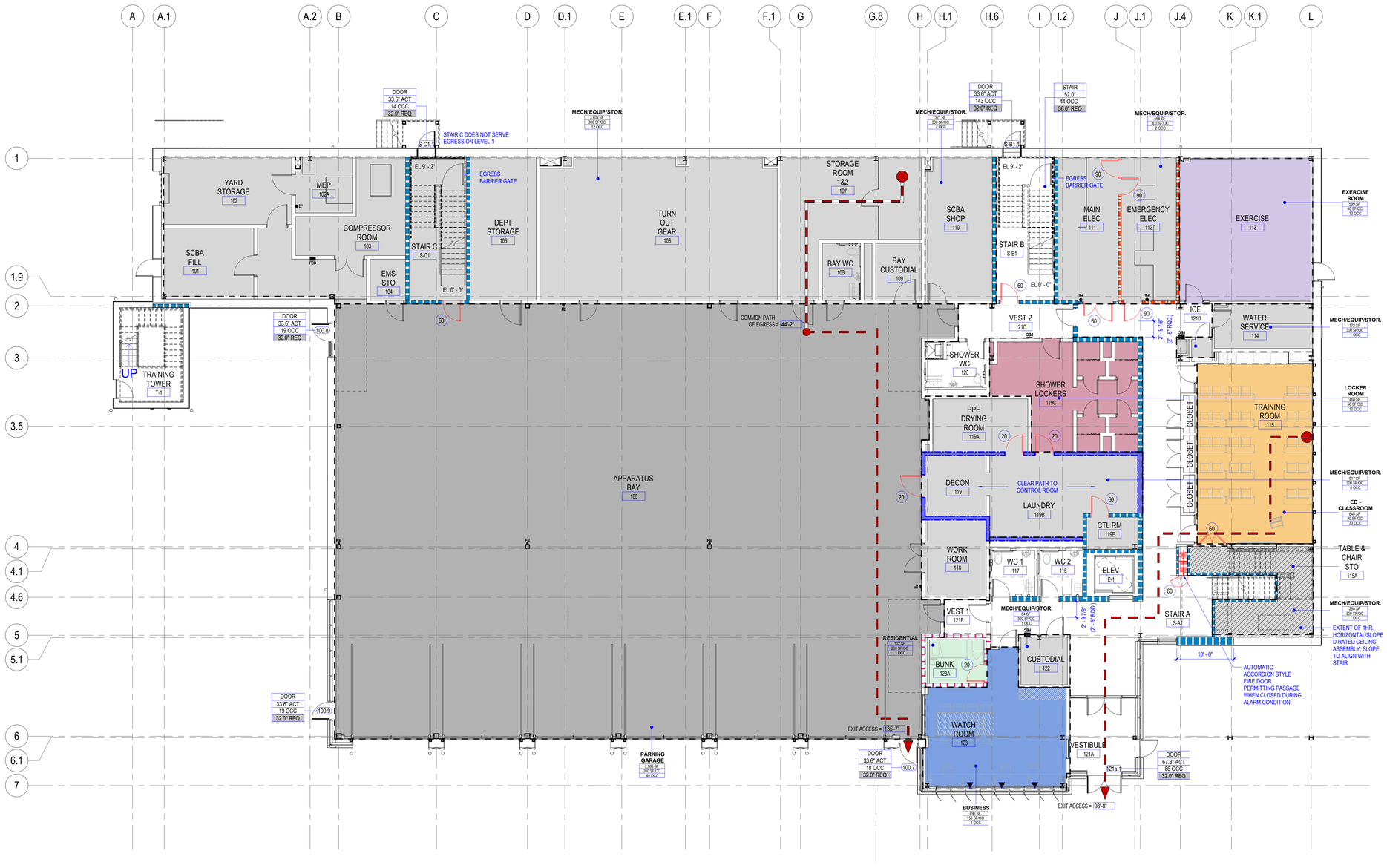

1 CODE PLAN - LEVEL 01

SCALE 1/8" = 1'-0"

EGRESS CAPACITY

EGRESS COMPONENT	MARK	WIDTH FACTOR	ACTUAL OCCUPANCY	MAX OCCUPANCY	WIDTH PROVIDED	WIDTH REQUIRED
DOOR	100.7	0.15	18	224	2' - 9 3/4"	2' - 8"
DOOR	100.8	0.15	19	224	2' - 9 3/4"	2' - 8"
DOOR	100.9	0.15	19	224	2' - 9 3/4"	2' - 8"
DOOR	121a.1	0.15	86	448	5' - 7 1/4"	2' - 8"
DOOR	S-B1.1	0.15	143	224	2' - 9 3/4"	2' - 8"
DOOR	S-C1.1	0.15	14	224	2' - 9 3/4"	2' - 8"
STAIR	STAIR A	0.2	62	230	3' - 10"	3' - 8"

OCCUPANT LOAD CALCULATIONS - LEVEL 1

NAME	AREA (SF)	OCC LOAD FACTOR	OCC LOAD
BUSINESS	496	150.00 SF	4
ED - CLASSROOM	648	20.00 SF	33
EXERCISE ROOM	599	50.00 SF	12
LOCKER ROOM	468	50.00 SF	10
MECH/EQUIP/STOR.	250	300.00 SF	1
MECH/EQUIP/STOR.	172	300.00 SF	1
MECH/EQUIP/STOR.	568	300.00 SF	2
MECH/EQUIP/STOR.	84	300.00 SF	1
MECH/EQUIP/STOR.	3,409	300.00 SF	12
MECH/EQUIP/STOR.	917	300.00 SF	4
MECH/EQUIP/STOR.	321	300.00 SF	2
PARKING GARAGE	7,986	200.00 SF	40
RESIDENTIAL	102	200.00 SF	1
Grand total	16,019		123

FUNCTION OF SPACE LEGEND

- BUSINESS
- ED - CLASSROOM
- EXERCISE ROOM
- LOCKER ROOM
- MECH/EQUIP/STOR.
- PARKING GARAGE
- RESIDENTIAL

CODE COMPLIANCE PLAN GENERAL NOTES

1. ALL WORK IS TO BE DONE IN ACCORDANCE WITH APPLICABLE CODES.
2. FINAL LOCATIONS OF ALL LIFE SAFETY DEVICES AND FIXTURES ARE SUBJECT TO APPROVAL BY THE AUTHORITY HAVING JURISDICTION.

EGRESS COMPONENTS

EGRESS COMPONENTS - PATH OF TRAVEL

- EXIT ACCESS = 999'-11"
- COMMON PATH OF EGRESS = 999'-11"

- FIRE EXTINGUISHER & CABINET SEMI-RECESSED
- FIRE EXTINGUISHER HOOK MOUNTED
- FIRE EXTINGUISHER & CABINET SURFACE MOUNTED

X 3 DOOR 96" ACT 276 OCC 55.2" REQ.

OF IDENTICAL ITEMS TAGGED (IF APPLIES)
EGRESS COMPONENT TYPE
ACTUAL WIDTH PROVIDED
OCCUPANT LOAD
REQUIRED WIDTH FOR OCCUPANT LOAD

AREA TAG

ASSEMBLY - UNCONC. TABLES & CHAIRS 1650 SF ### SF/OC ### OCC

- FUNCTION OF SPACE
- AREA
- OCCUPANT LOAD FACTOR
- OCCUPANTS

FIRE AND SMOKE RATING LEGEND

- NEW NON-RATED CONSTRUCTION
- NEW 1/2HR MINIMUM FIRE PARTITION
- NEW 2HR MINIMUM RATED FIRE BARRIER
- NEW 1HR MINIMUM FIRE BARRIER
- SMOKE RESISTANT
- 60 — DOOR FIRE RATING IN MINUTES
- FIRE RATED DOOR (RED)
- NON FIRE RATED DOOR

<<< Indicates Sheet Keynote on Plan

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CITY OF WORCESTER

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WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

CODE COMPLIANCE EGRESS PLAN - LEVEL 01

SHEET NUMBER

G01-01

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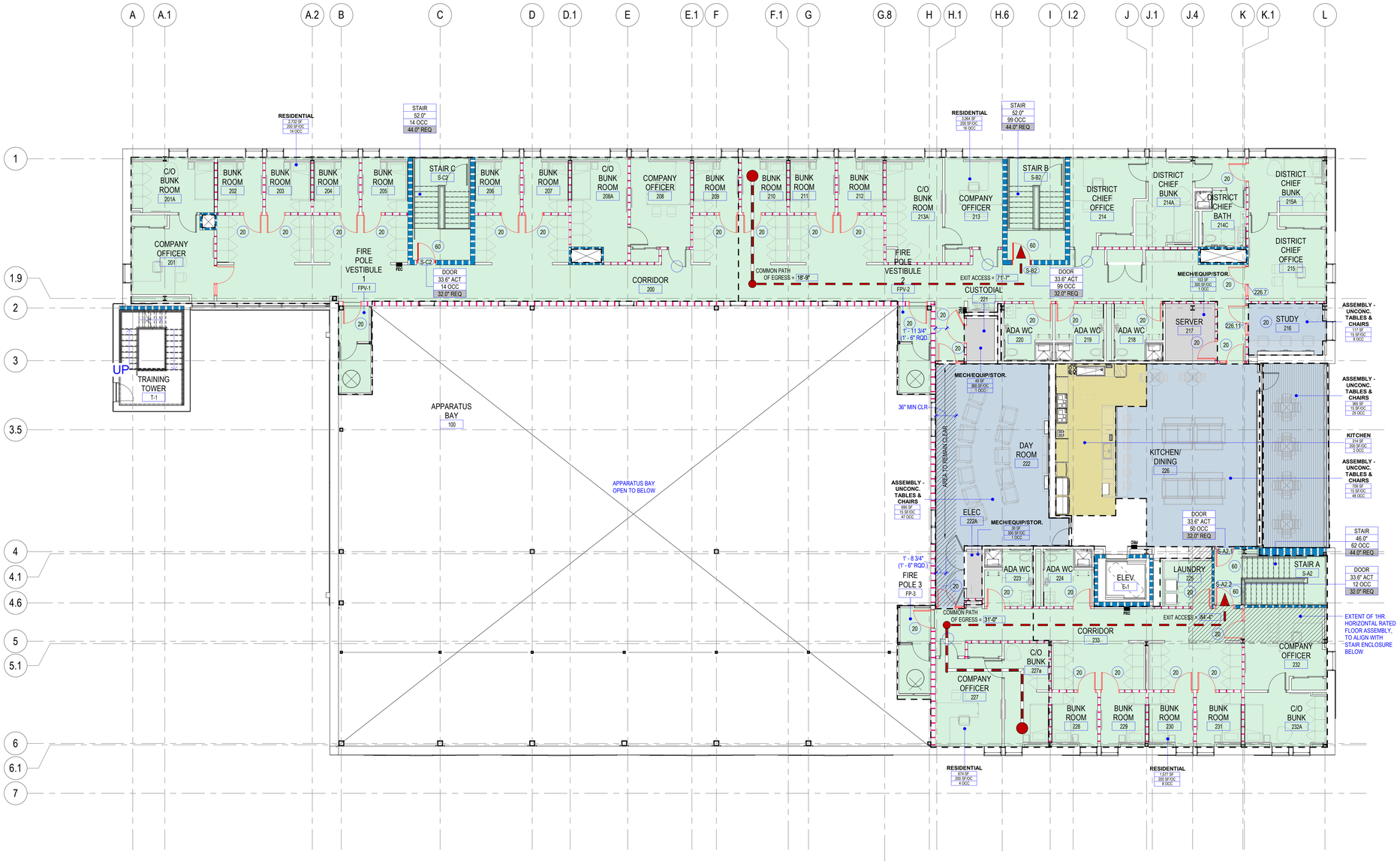

1 CODE PLAN - LEVEL 2
SCALE 1/8" = 1'-0"

EGRESS CAPACITY

EGRESS COMPONENT	MARK	WIDTH FACTOR	ACTUAL OCCUPANCY	MAX OCCUPANCY	WIDTH PROVIDED	WIDTH REQUIRED
DOOR	S-B2	0.15	99	224	2' - 9 3/4"	2' - 8"
DOOR	S-C2	0.15	14	224	2' - 9 3/4"	2' - 8"
STAIR	STAIR A	0.2	62	230	3' - 10"	3' - 8"

OCCUPANT LOAD CALCULATIONS - LEVEL 2

NAME	AREA (SF)	OCC LOAD FACTOR	OCC LOAD
ASSEMBLY - UNCONC. TABLES & CHAIRS	365	15.00 SF	25
ASSEMBLY - UNCONC. TABLES & CHAIRS	695	15.00 SF	47
ASSEMBLY - UNCONC. TABLES & CHAIRS	117	15.00 SF	8
ASSEMBLY - UNCONC. TABLES & CHAIRS	709	15.00 SF	48
KITCHEN	314	200.00 SF	2
MECH/EQUIP/STOR.	49	300.00 SF	1
MECH/EQUIP/STOR.	30	300.00 SF	1
MECH/EQUIP/STOR.	103	300.00 SF	1
RESIDENTIAL	2,732	200.00 SF	14
RESIDENTIAL	1,577	200.00 SF	8
RESIDENTIAL	3,064	200.00 SF	16
RESIDENTIAL	674	200.00 SF	4
Grand total	10,426		175

FUNCTION OF SPACE LEGEND

- ASSEMBLY - UNCONC. TABLES & CHAIRS
- KITCHEN
- MECH/EQUIP/STOR.
- RESIDENTIAL

CODE COMPLIANCE PLAN GENERAL NOTES

1. ALL WORK IS TO BE DONE IN ACCORDANCE WITH APPLICABLE CODES.
2. FINAL LOCATIONS OF ALL LIFE SAFETY DEVICES AND FIXTURES ARE SUBJECT TO APPROVAL BY THE AUTHORITY HAVING JURISDICTION.

EGRESS COMPONENTS

EGRESS COMPONENTS - PATH OF TRAVEL

EXIT ACCESS = 999'-11"

COMMON PATH OF EGRESS = 999'-11"

FEC FIRE EXTINGUISHER & CABINET SEMI-RECESSED

FE FIRE EXTINGUISHER HOOK MOUNTED

FEC FIRE EXTINGUISHER & CABINET SURFACE MOUNTED

X 3
DOOR
96" ACT
276 OCC
55.2" REQ

OF IDENTICAL ITEMS TAGGED (IF APPLIES)
EGRESS COMPONENT TYPE
ACTUAL WIDTH PROVIDED
OCCUPANT LOAD
REQUIRED WIDTH FOR OCCUPANT LOAD

AREA TAG

ASSEMBLY - UNCONC. TABLES & CHAIRS
5555 SF
SF/OC
OCC

FUNCTION OF SPACE
AREA
OCCUPANT LOAD FACTOR
OCCUPANTS

FIRE AND SMOKE RATING LEGEND

- NEW NON-RATED CONSTRUCTION
- NEW 1/2HR MINIMUM FIRE PARTITION
- NEW 2HR MINIMUM RATED FIRE BARRIER
- NEW 1HR MINIMUM FIRE BARRIER
- SMOKE RESISTANT
- 60 DOOR FIRE RATING IN MINUTES
- FIRE RATED DOOR (RED)
- NON FIRE RATED DOOR

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CONSTRUCTION DOCUMENTS 12/19/25

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MARK	ISSUE	DATE

Job Number 157132.000

TITLE

CODE COMPLIANCE EGRESS PLAN - LEVEL 02

SHEET NUMBER

G01-02

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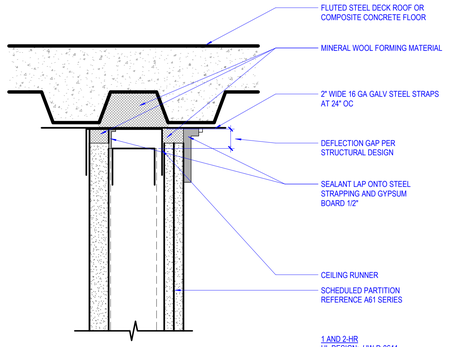
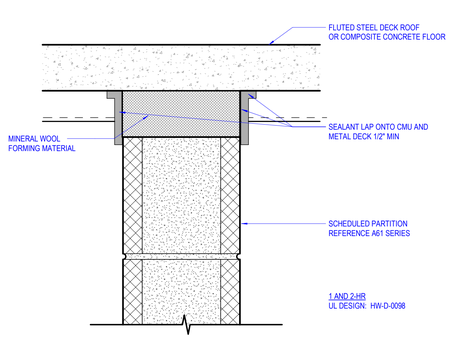


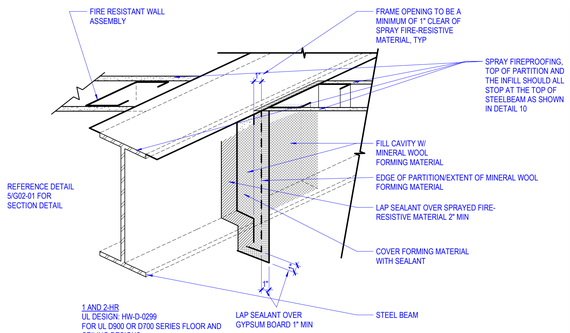
12 TYPICAL 1HR/2HR SHAFT WALL HEAD

3" = 1'-0" | METAL DECK PARALLEL TO PARTITION



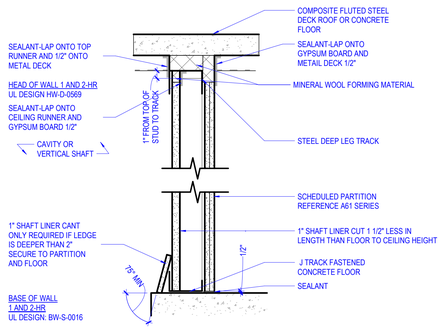
11 TYPICAL 1HR/2HR CMU PARTITION HEAD

3" = 1'-0" | METAL DECK PERPENDICULAR TO PARTITION



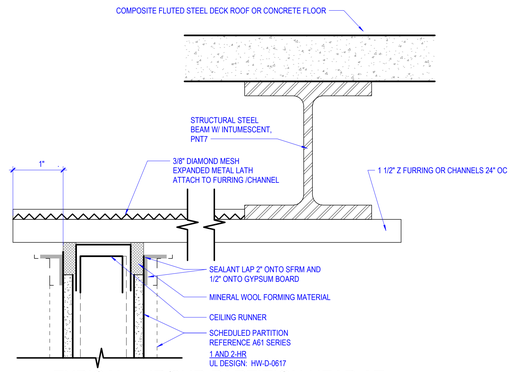
10 TYPICAL 1HR/2HR PARTITION HEAD AT STEEL BEAM INTERSECTION

1 1/2" = 1'-0" |



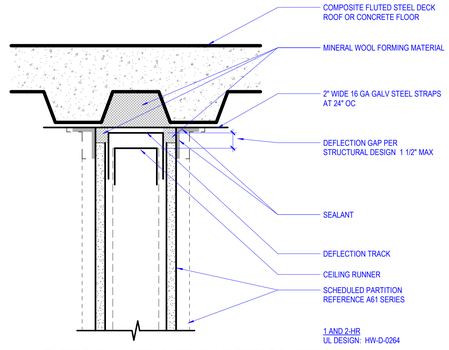
9 TYPICAL 1HR/2HR SHAFT WALL BASE AND HEAD

1 1/2" = 1'-0" | METAL DECK PERPENDICULAR TO PARTITION



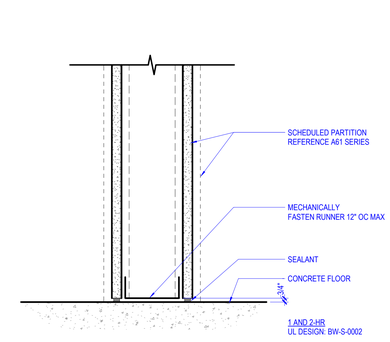
8 TYPICAL 1HR/2HR PARTITION HEAD AT STEEL BEAM

3" = 1'-0" | PARTITION 8" MAX FROM BEAM FLANGE



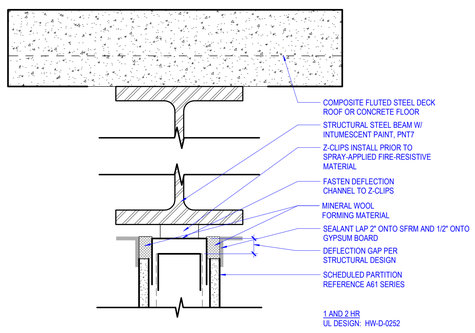
7 TYPICAL 1HR/2HR PARTITION HEAD

3" = 1'-0" | METAL DECK PARALLEL TO PARTITION



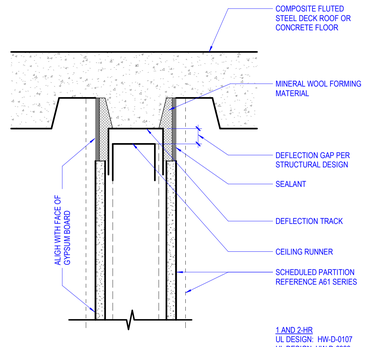
6 TYPICAL 1HR/2HR BASE OF PARTITION

3" = 1'-0" |



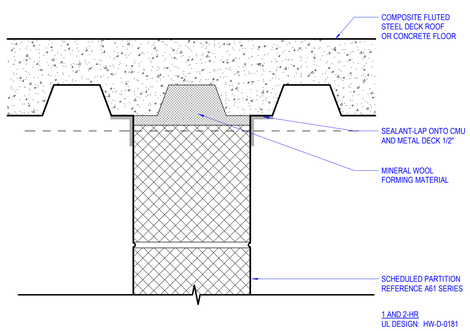
5 TYPICAL 1HR/2HR PARTITION HEAD AT STEEL BEAM

3" = 1'-0" | WALL CENTERED ON STEEL BEAM



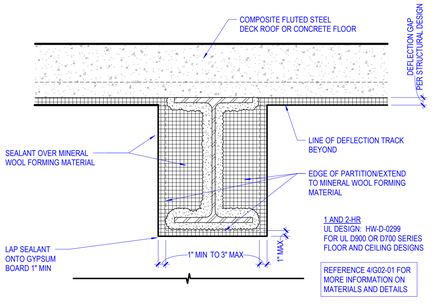
4 TYPICAL 1HR/2HR PARTITION HEAD

3" = 1'-0" | METAL DECK PARALLEL TO PARTITION



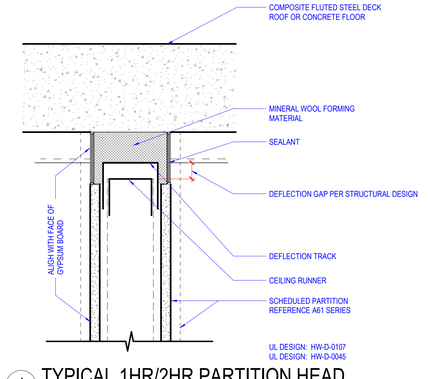
3 TYPICAL 1HR/2HR CMU PARTITION HEAD

3" = 1'-0" | METAL DECK PARALLEL TO PARTITION



2 TYPICAL 1HR/2HR PARTITION HEAD AT STEEL BEAM INTERSECTION

1 1/2" = 1'-0" | METAL DECK PERPENDICULAR TO PARTITION



1 TYPICAL 1HR/2HR PARTITION HEAD

3" = 1'-0" | METAL DECK PERPENDICULAR TO PARTITION

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

FIRE RESISTANCE DETAILS AND DIAGRAMS

SHEET NUMBER

G02-01

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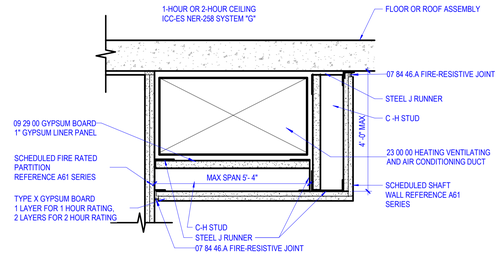
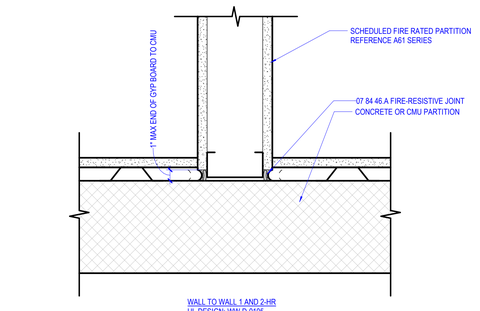


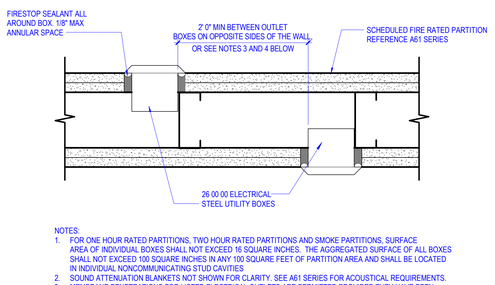
7 HORIZONTAL DUCT PROTECTION

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



6 INTERSECTION OF RATED PARTITION AND CONCRETE OR CMU PARTITION

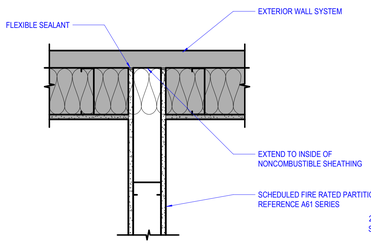
SCALE 3" = 1'-0"



NOTES:
1. FOR ONE HOUR RATED PARTITIONS, TWO HOUR RATED PARTITIONS AND SMOKE PARTITIONS, SURFACE AREA OF INDIVIDUAL BOXES SHALL NOT EXCEED 16 SQUARE INCHES. THE AGGREGATED SURFACE OF ALL BOXES SHALL NOT EXCEED 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF PARTITION AREA AND SHALL BE LOCATED IN INDIVIDUAL NONCOMMUNICATING STUD CAVITIES
2. SOUND ATTENUATION BLANKETS NOT SHOWN FOR CLARITY. SEE A61 SERIES FOR ACOUSTICAL REQUIREMENTS.
3. MEMBRANE PENETRATIONS FOR LISTED ELECTRICAL OUTLETS ARE PERMITTED PROVIDED THEY HAVE BEEN TESTED FOR USE IN FIRE-RESISTANT RATED ASSEMBLIES.
4. UL DESIGN TESTED, BOX PADS MAY BE USED IN LIEU OF SEPARATING THE BOXES BY 24" AND TO PROTECT > 16" SQ BOXES.

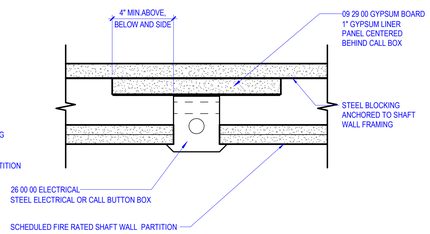
5 NON-LISTED UTILITY BOXES IN RATED PARTITIONS

SCALE 3" = 1'-0"



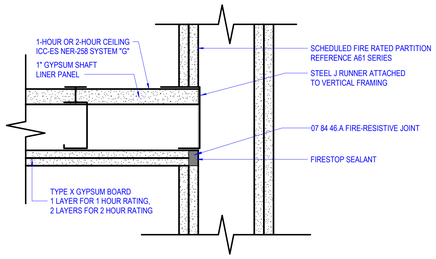
4 PARTITION PRIORITY @ EXTERIOR WALL

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



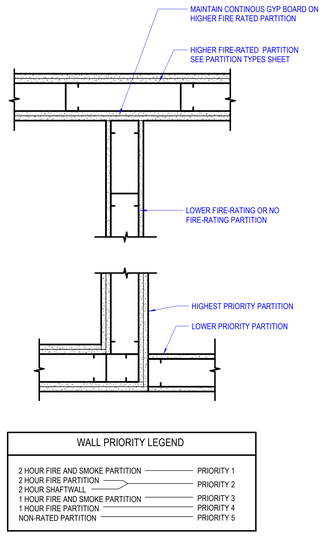
3 SHAFT WALL MEMBRANE PENETRATION

SCALE 3" = 1'-0"



2 HORIZONTAL SHAFTWALL CEILING SYSTEM

SCALE 3" = 1'-0"



WALL PRIORITY LEGEND	
2 HOUR FIRE AND SMOKE PARTITION	PRIORITY 1
2 HOUR FIRE PARTITION	PRIORITY 2
2 HOUR SHAFTWALL	
1 HOUR FIRE AND SMOKE PARTITION	PRIORITY 3
1 HOUR FIRE PARTITION	PRIORITY 4
NON-RATED PARTITION	PRIORITY 5

1 PARTITION PRIORITY DIAGRAM

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

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COMMONWEALTH OF MASSACHUSETTS — REGISTERED ARCHITECT — No. 50254 — BOSTON — MA

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

FIRE RESISTANCE DETAILS AND DIAGRAMS

SHEET NUMBER

G02-02

CONSTRUCTION DOCUMENTS 12/19/25

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GENERAL NOTES:

1. TOPOGRAPHICAL INFORMATION IS BASED ON AN ON THE GROUND SURVEY PERFORMED BY KCI TECHNOLOGIES, INC. IN JUNE OF 2022. WESTON & SAMPSON HAS INCLUDED SUPPLEMENTAL INFORMATION BASED ON FIELD OBSERVATIONS, GIS, AND RECORD DRAWINGS.
2. THE HORIZONTAL COORDINATES ARE BASED ON NAD 83, THE VERTICAL DATUM IS NAVD 88.
3. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL DIG TEST PITS WITH THE LOCATIONS BEING APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF WORK TO EXACTLY LOCATE EXISTING UTILITIES.
4. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
5. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY OWNER. ANY ALTERATIONS SHALL BE INCIDENTAL TO THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY SUPPORT OF ALL UTILITIES TO REMAIN IN PLACE AND SHALL DESCRIBE IN WRITING, TO THE SATISFACTION OF THE ENGINEER, HIS METHOD OF TEMPORARY SUPPORT.
6. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
7. THE TERM "PROPOSED (PROP)" INDICATES WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET (R&R)".
8. ALL EXISTING STATE, COUNTY AND CITY LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED.
9. ALL EXCESS MATERIAL FROM ROADWAY RECONSTRUCTION OR THE EXCAVATION PROCESS SHALL BE REUSED ON SITE OR REMOVED FROM THE SITE AND DISPOSED OF IN A LEGAL AND PROPER MANNER.
10. THE CONTRACTOR SHALL CALL DIGSAFE AT 1-888-344-7233 AT LEAST 72 HOURS, SATURDAYS, AND HOLIDAYS EXCLUDED, PRIOR TO EXCAVATING AT ANY LOCATION. A COPY OF THE DIGSAFE PROJECT REFERENCE NUMBER(S) SHALL BE GIVEN TO THE CITY PRIOR TO EXCAVATION.
11. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATION OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM, THE STRUCTURES SHALL BE ORDERED.
12. JOINTS BETWEEN HOT MIX ASPHALT TRENCH PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH BITUMEN AND BACKSANDED.
13. IF DEEMED NECESSARY DUE TO THE WORK, THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF WORCESTER AND THE ENGINEER FOR APPROVAL OF SHUTTING DOWN ANY EXISTING WATER MAINS AND SHALL ALSO OBTAIN APPROVAL FOR DISRUPTING ANY EXISTING SEWER FLOWS.
14. THE CONTRACTOR SHALL BE AWARE THAT ONLY CITY PERSONNEL ARE ALLOWED TO OPERATE WATER GATES AND HYDRANTS. ANY REQUESTS TO OPERATE THE GATES SHALL BE COORDINATED THROUGH THE CITY.
15. THE CONTRACTOR SHALL COORDINATE ANY WORK FOR THE PROJECT WITH ALL ADJACENT/CONCURRENT PROJECTS AND CONTRACTORS.
16. THE CONTRACTOR SHALL INSTALL PRIOR TO COMMENCEMENT OF WORK, MAINTAIN, AND REMOVE AT THE END OF THE PROJECT INLET SEDIMENT CONTROL BAGS IN ALL CATCH BASINS, WITHIN OR ADJACENT TO THE PROJECT LIMITS. THE CONTRACTOR SHALL ALSO MAINTAIN COMPOST FILTER TUBES AS SHOWN ON THE PLANS THROUGHOUT THE DURATION OF THE PROJECT AND REMOVE AT THE END.
17. ANY GRASS AREAS DISTURBED BY THE WORK SHALL BE RESTORED WITH LOAM AND SEED.
18. ANY LANDSCAPED AREAS DISTURBED BY THE WORK SHALL BE RESTORED TO EXISTING CONDITIONS WITH EXISTING OR NEW GROUND COVER MATERIALS AS DIRECTED BY THE ENGINEER. ANY PLANTS, SHRUBS, OR FLOWERS DISTURBED BY THE WORK SHALL BE RESET TO EXISTING CONDITIONS OR REPLACED WITH NEW PLANTS, SHRUBS, OR FLOWERS AS DIRECTED BY THE ENGINEER. ALL WORK TO RESTORE LANDSCAPE AREAS, NEW GROUND COVER MATERIALS, NEW PLANTS, NEW SHRUBS, OR NEW FLOWERS REQUIRED BY THE ENGINEER SHALL BE INCIDENTAL TO THE PROJECT.
19. CONTRACTOR TO COORDINATE WITH UTILITY POLE OWNERS IN AREAS WHERE UNDERGROUND UTILITY WORK IS WITHIN CLOSE PROXIMITY AND POSSIBLE UTILITY POLE SHORING IS REQUIRED WHILE INSTALLING PROPOSED UTILITIES.
20. RAISE AND ADJUST FRAMES AND GRATES, FRAMES AND COVERS AND GATE BOXES PRIOR TO PAVEMENT OVERLAY, IF REQUIRED.

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
CB	CB	CATCH BASIN
		DRAINAGE MANHOLE
S	S	SEWER MANHOLE
E	E	ELECTRIC MANHOLE
		CABLE MANHOLE
HH	EHH	ELECTRIC HANDHOLE
		LIGHT POLE
GV		GAS VALVE
WV		WATER VALVE
		HYDRANT
		POST SQUARE
		POST CIRCULAR
BHL #	BHL #	BORING HOLE
MW	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		TREE
		SHRUB / BUSH
		MONUMENT
		IRON ROD / IRON PIPE
		SIGN
		CURBING
100	100	CONTOURS
ST		UNDERGROUND DRAIN PIPE
E	E	UNDERGROUND ELECTRIC DUCT
G	G	UNDERGROUND GAS MAIN
S	S	UNDERGROUND SEWER MAIN
T	T	UNDERGROUND TELEPHONE DUCT
W	W	UNDERGROUND WATER MAIN
C	C	UNDERGROUND CABLE LINE
	X	FENCE
		TREE LINE
		SEDIMENT CONTROL BARRIER
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		TOWN OR CITY LAYOUT
	P	PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
	SWL	SOLID WHITE LINE
	SYL	SOLID YELLOW LINE
	DBYL	DOUBLE YELLOW LINE
	SL	STOP LINE

ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
AC	ASBESTOS CEMENT
AD	AREA DRAIN
ADJ	ADJUST
APPROX.	APPROXIMATE
BC	BOTTOM OF CURB
BIT	BITUMINOUS
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOL	BOLLARD
BOS	BOTTOM OF SLOPE
CB	CATCH BASIN
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CIRF	CAPPED IRON ROD FOUND
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CNO	COULD NOT OPEN
CO	CLEANOUT
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
DET	DETENTION
DHV	DESIGN HOURLY VOLUME
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DMH	DRAINAGE MANHOLE
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
F.F.	FINISH FLOOR ELEVATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GG	GAS GATE
GI	GUTTER INLET
GM	GAS METER
GR	GUARDRAIL
GRAN	GRANITE
GRAV	GRAVEL
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INF	INFILITRATION
INV	INVERT
IPF	IRON PIPE FOUND
IRF	IRON ROD FOUND
IRS	IRON ROD SET
L	LENGTH OF CURVE
LP	LIGHT POLE
LT	LEFT
MAG NAIL	MAGNETIC CONCRETE NAIL
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MIN	MINIMUM
MLP	METAL LIGHT POST
MSRW	MASONRY RETAINING WALL
MW	MONITORING WELL
N/F	NOW OR FORMERLY
NO.	NUMBER
OCS	OUTLET CONTROL STRUCTURE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCR	PEDESTRIAN CURB RAMP
PERM	PERMANENT
P.G.L.	PROFILE GRADE LINE
PL	PLASTIC
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PROT	PROTECT
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWW	PAVED WATER WAY

ABBREVIATIONS (cont.)

GENERAL

R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SMH	SEWER MANHOLE
SRW	STONE RETAINING WALL
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SW	SIDEWALK
SWTU	STORMWATER TREATMENT UNIT
T	TANGENT DISTANCE OF CURVE
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TF	TOP OF FRAME
TOB	TOP OF BANK
TOS	TOP OF SLOPE
TYP	TYPICAL
UGND	UNDERGROUND
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
VGC	VERTICAL GRANITE CURB
VP	VENT PIPE
W/F	WOOD FRAMED
WG	WATER GATE
WM	WATER METER/WATER MAIN
WSO	WATER SHUTOFF
WV	WATER VALVE
WW	WALKWAY
X-SECT	CROSS SECTION

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WORCESTER, MA 01605

CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

LEGEND & GENERAL NOTES

SHEET NUMBER

C0.01

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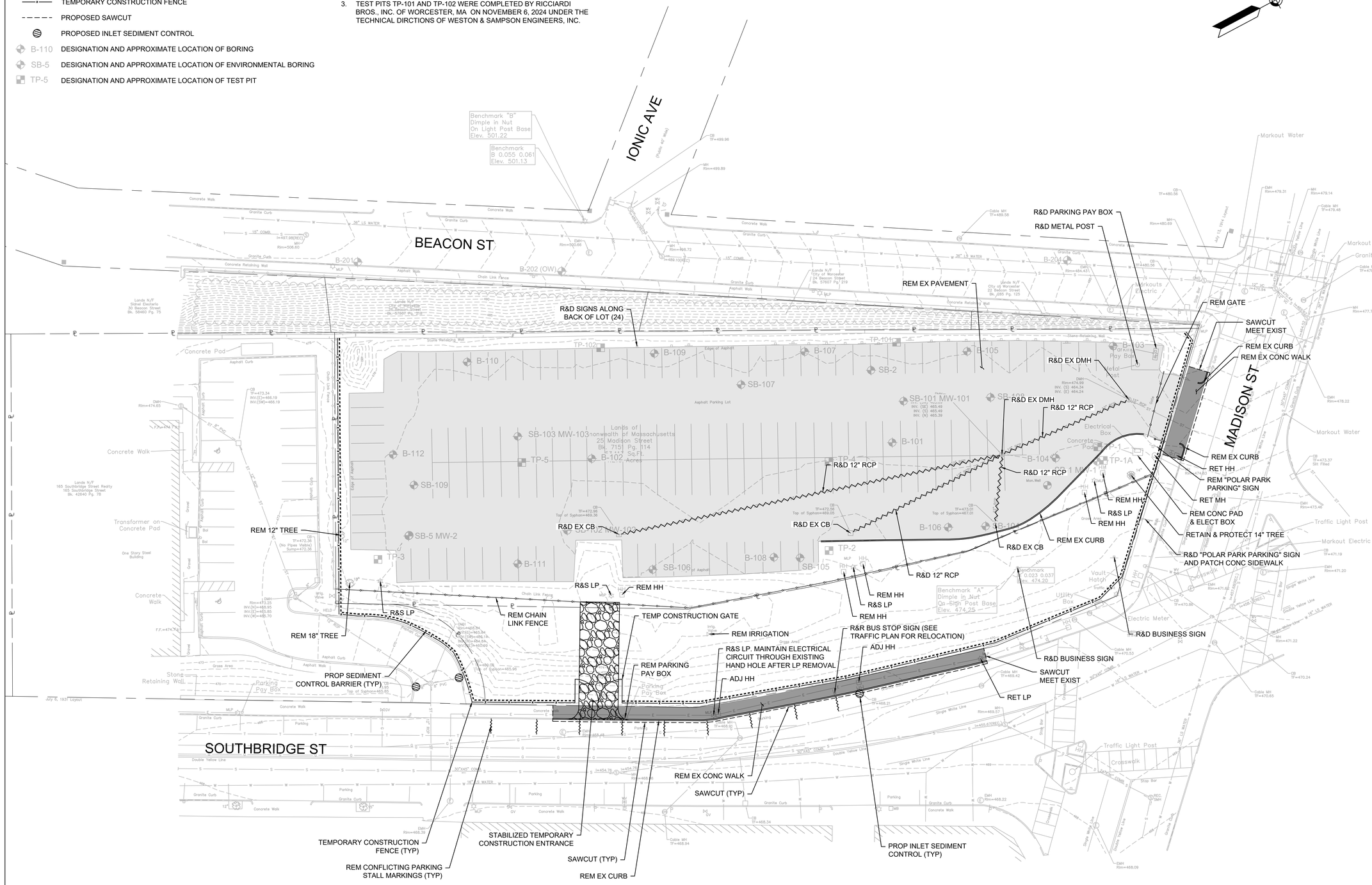
LEGEND

- REMOVE EXISTING PAVEMENT
- REMOVE EXISTING CONCRETE
- REMOVE UNDERGROUND PIPE
- REMOVE PAVEMENT MARKINGS
- PROPOSED SEDIMENT CONTROL BARRIER
- TEMPORARY CONSTRUCTION FENCE
- PROPOSED SAWCUT
- PROPOSED INLET SEDIMENT CONTROL
- B-110 DESIGNATION AND APPROXIMATE LOCATION OF BORING
- SB-5 DESIGNATION AND APPROXIMATE LOCATION OF ENVIRONMENTAL BORING
- TP-5 DESIGNATION AND APPROXIMATE LOCATION OF TEST PIT

NOTES:

1. BORINGS B-101 THROUGH B-112 AND TEST PITS TP-1 THROUGH TP-5, AND TP-1A WERE COMPLETED BY GEOSEARCH, INC. OF STERLING, MA BETWEEN DECEMBER 11 AND 15, 2023 UNDER THE TECHNICAL DIRECTIONS OF WESTON & SAMPSON ENGINEERS, INC.
2. BORINGS B-201, B-202(OW), AND B-204 WERE COMPLETED BY GEOSEARCH, INC. OF STERLING, MA BETWEEN NOVEMBER 5 AND 7, 2024 UNDER THE TECHNICAL DIRECTIONS OF WESTON & SAMPSON ENGINEERS, INC.
3. TEST PITS TP-101 AND TP-102 WERE COMPLETED BY RICCIARDI BROS., INC. OF WORCESTER, MA ON NOVEMBER 6, 2024 UNDER THE TECHNICAL DIRCTIONS OF WESTON & SAMPSON ENGINEERS, INC.



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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

SITE DEMO PLAN

SHEET NUMBER

C1.01

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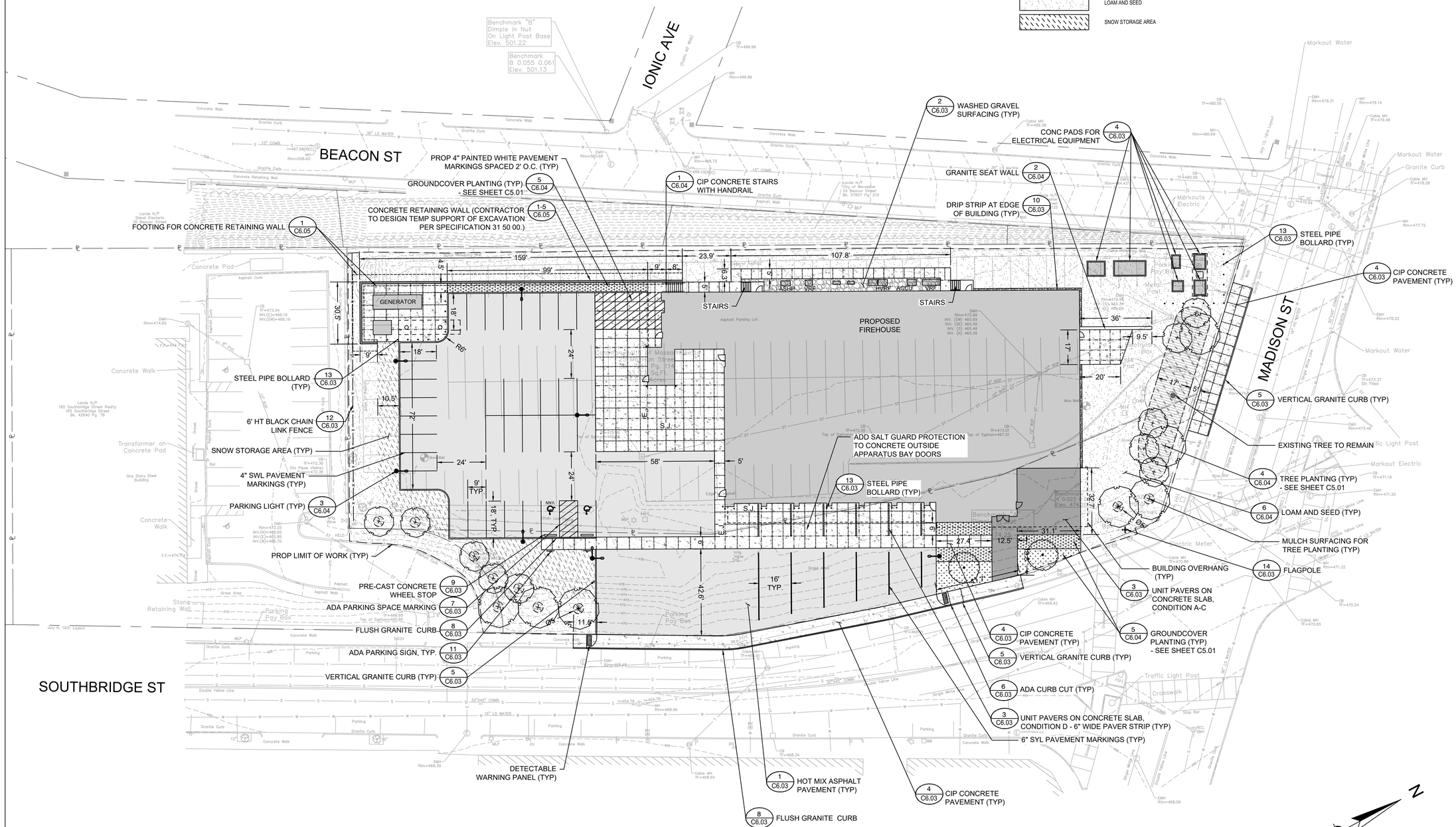
LEGEND

- CONCRETE RETAINING WALL
- GRANITE SEAT WALL
- VERTICAL GRANITE CURB
- FLUSH GRANITE CURB
- 6" WIDE PAVEMENT MARKING
- 6" WIDE PAVER STRIP
- 6' HT BVCL FENCE
- CIP CONCRETE PAVEMENT
- HOT MIX ASPHALT PAVEMENT
- UNIT PAVERS ON CONCRETE SLAB
- GRAVEL SURFACING
- GROUNDCOVER PLANTING
- MULCH SURFACING FOR TREE PLANTING
- LOAM AND SEED
- SNOW STORAGE AREA
- TREE PLANTING
- EXISTING TREE TO REMAIN
- XX'-XX" LAYOUT DIMENSION
- PARKING LIGHT POST
- DETECTABLE WARNING PANEL
- TRAFFIC SIGN POST
- ADA PARKING SIGN POST
- FLAGPOLE
- STEEL PIPE BOLLARD
- PRE-CAST CONCRETE WHEEL STOP
- TYP TYPICAL
- CIP CAST-IN-PLACE
- E.J. EXPANSION JOINT
- S.J. SCORE JOINT



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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

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CONSTRUCTION PLAN

SHEET NUMBER

C2.01

CONSTRUCTION DOCUMENTS 12/19/25

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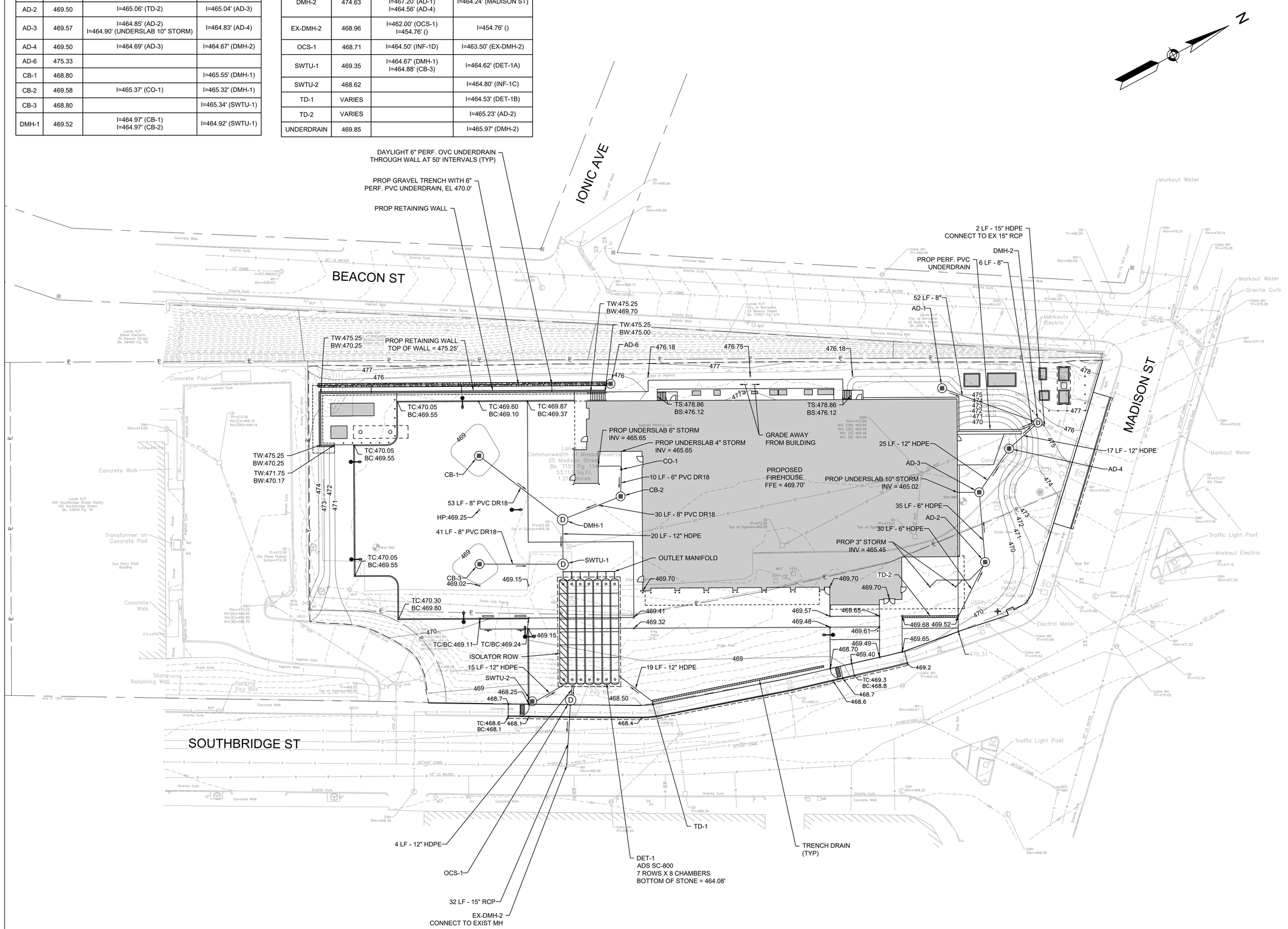
PROPOSED DRAINAGE STRUCTURE TABLE			
ID.	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT
AD-1	474.74		I=470.66' (DMH-2)
AD-2	469.50	I=465.06' (TD-2)	I=465.04' (AD-3)
AD-3	469.57	I=464.85' (AD-2) I=464.90' (UNDERSLAB 10" STORM)	I=464.83' (AD-4)
AD-4	469.50	I=464.69' (AD-3)	I=464.67' (DMH-2)
AD-6	475.33		
CB-1	468.80		I=465.55' (DMH-1)
CB-2	469.58	I=465.37' (CO-1)	I=465.32' (DMH-1)
CB-3	468.80		I=465.34' (SWTU-1)
DMH-1	469.52	I=464.97' (CB-1) I=464.97' (CB-2)	I=464.92' (SWTU-1)

PROPOSED DRAINAGE STRUCTURE TABLE			
ID.	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT
DMH-2	474.63	I=465.83' (UNDERDRAIN) I=467.20' (AD-1) I=464.56' (AD-4)	I=464.24' (MADISON ST)
EX-DMH-2	468.96	I=462.00' (OCS-1) I=454.76' ()	I=454.76' ()
OCS-1	468.71	I=464.50' (INF-1D)	I=463.50' (EX-DMH-2)
SWTU-1	469.35	I=464.67' (DMH-1) I=464.88' (CB-3)	I=464.62' (DET-1A)
SWTU-2	468.62		I=464.80' (INF-1C)
TD-1	VARIES		I=464.53' (DET-1B)
TD-2	VARIES		I=465.23' (AD-2)
UNDERDRAIN	469.85		I=465.97' (DMH-2)

NOTES:
1. CONTRACTOR TO DESIGN TEMPORARY SUPPORT OF EXCAVATION SYSTEM PER SPECIFICATIONS 31 50 00.



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GRADING & DRAINAGE PLAN

SHEET NUMBER

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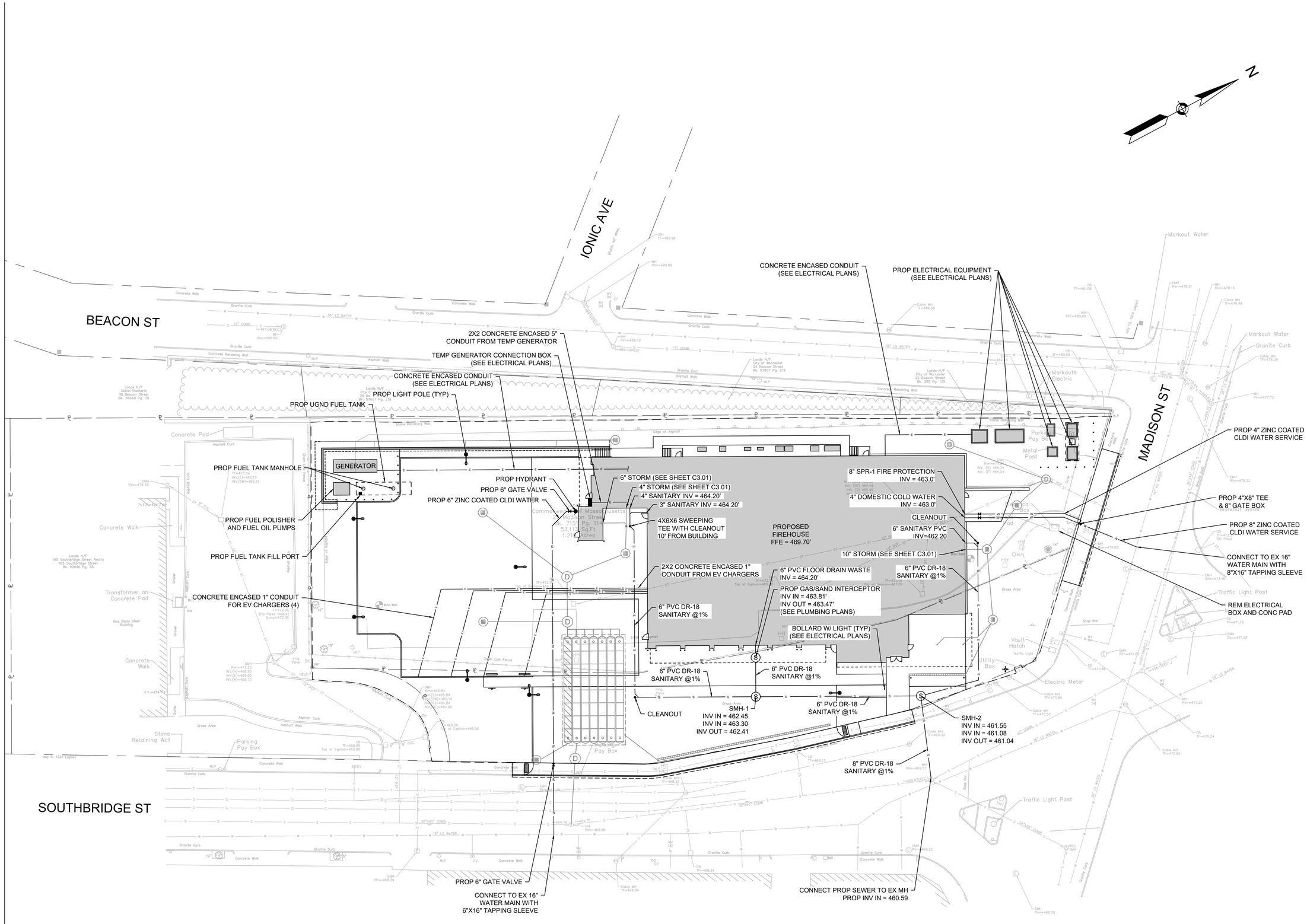

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TITLE

UTILITY PLAN

SHEET NUMBER

C4.01

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TREE SCHEDULE					
INITIAL	NUMBER	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
SM	2	GYMNOCLADUS DIOICUS 'STATELY MANOR'	KENTUCKY COFFEE TREE 'STATELY MANOR'	3-3.5" CAL. B&B	
GD	7	GYMNOCLADUS DIOICUS	KENTUCKY COFFEE TREE	3-3.5" CAL. B&B	
NS	10	NYSSA SYLVATICA 'FIRE STARTER'	FIRE STARTER® BLACK GUM	3-3.5" CAL. B&B	
PERENNIAL SCHEDULE					
INITIAL	**NUMBER**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**NOTES**
AR	677	AJUGA REPTANS 'BLACK SCALLOP'	BLACK SCALLOP CARPET BUGLE	#1 CONT.	PLANT 12" O.C.
LM	853	LIRIOPE MUSCARI 'VARIEGATA'	VARIEGATED LILY TURF	#1 CONT.	PLANT 12" O.C.

LEGEND

- GROUNDCOVER PLANTING
- MULCH SURFACING FOR TREE PLANTING
- LOAM AND SEED
- TREE PLANTING
- EXISTING TREE TO REMAIN

B&B	BALLED AND BURLAPPED
CAL.	CALIPER
CONT.	CONTAINER
HT.	HEIGHT
O.C.	ON CENTER
TYP	TYPICAL

BEACON ST

IONIC AVE

SOUTHBRIDGE ST

GENERATOR

8 SPACES

12 SPACES

8 SPACES

5 + 2 ADA SPACES

PROPOSED FIREHOUSE

Asphalt Parking Lot

Lands N/F Commonwealth Of Massachusetts 25 Madison Street Bk. 715 Pg. 114 53,113 Sq.Ft. 1.21 Acres

Lands N/F City of Worcester 24 Beacon Street Bk. 57607 Pg. 219

Lands N/F City of Worcester 22 Beacon Street Bk. 285 Pg. 125

Lands N/F Sidnei Escterlo 30 Beacon Street Bk. 58460 Pg. 75

Lands N/F 165 Southbridge Street Realty 165 Southbridge Street Bk. 42640 Pg. 78

Markouts Electric

Parking Pay Box

Metal Post

Electrical Box

Concrete Pad

Transformer on Concrete Pad

One Story Steel Building

Stone Retaining Wall

Traffic Light Post

Electric Meter

Crosswalk

Markout Water

Markout Electric

Granite Curb

Concrete Walk

Asphalt Curb

Asphalt Walk

Concrete Retaining Wall

Chain Link Fence

Gravel

Grass Area

Double Yellow Line

Single White Line

Stop Bar

LM	195	
LM	194	
LM	247	
NS	5	
GD	4	
NS	5	
GD	3	
SM	2	
AR	269	
AR	408	
LM	217	
4	C6.04	TREE PLANTING (TYP)
6	C6.04	LOAM AND SEED (TYP)
5	C6.04	GROUNDCOVER PLANTING (TYP)

0 20 50 100

SCALE: 1" = 20'

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12/19/25

PROJECT

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25 MADISON ST
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CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

PLANTING PLAN

SHEET NUMBER

C5.01

CONSTRUCTION DOCUMENTS 12/19/25

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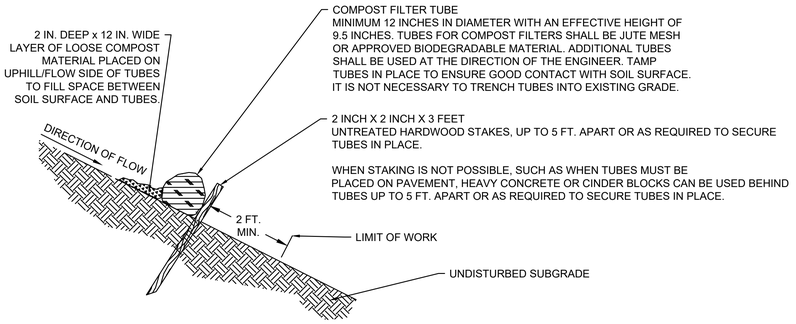
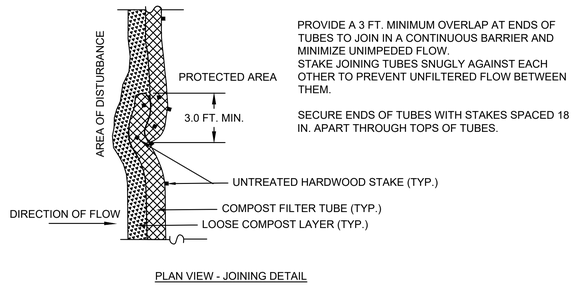
GENERAL NOTES:

1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
4. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.
5. MULCH MATERIAL FOR THE FILTER TUBES SHALL BE WEED-FREE STRAW, WOOD EXCELSIOR, COMPOST, OR WOOD CHIPS, OR COIR. STRAW SHALL BE WEED FREE AND DERIVED FROM THRESHING OF GRAIN CROP.
6. CURVE ENDS UPHILL TO PREVENT DIVERSION OF UNFILTERED RUN-OFF.



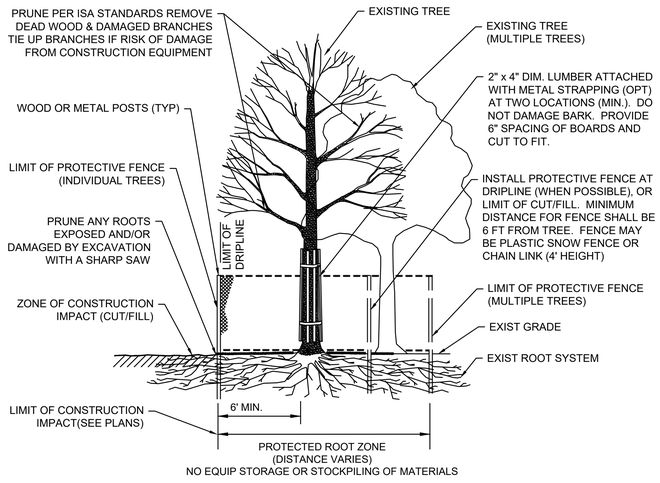


PLAN VIEW - JOINING DETAIL

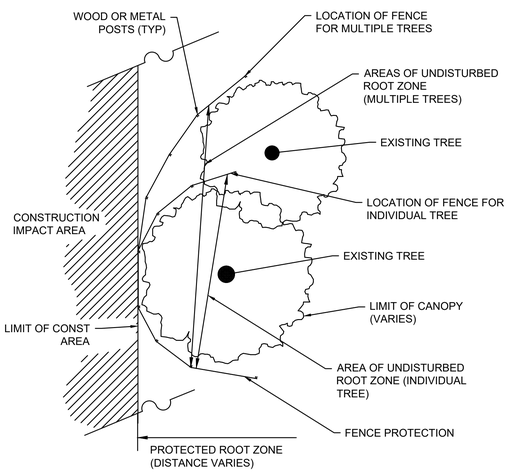
PROVIDE A 3 FT. MINIMUM OVERLAP AT ENDS OF TUBES TO JOIN IN A CONTINUOUS BARRIER AND MINIMIZE UNIMPEDED FLOW.
STAKE JOINING TUBES SNUGLY AGAINST EACH OTHER TO PREVENT UNFILTERED FLOW BETWEEN THEM.

SECURE ENDS OF TUBES WITH STAKES SPACED 18 IN. APART THROUGH TOPS OF TUBES.

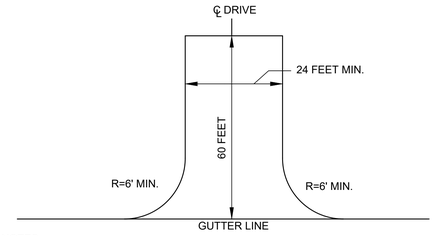
1 SINGLE COMPOST FILTER TUBE DETAIL
SCALE: N.T.S.



2 EXISTING TREE PROTECTION
SCALE: N.T.S.



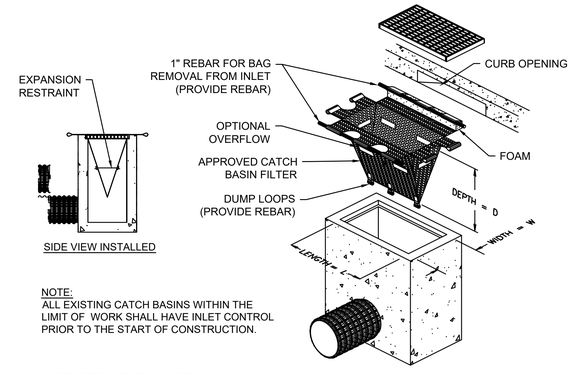
PLAN VIEW



NOTES:

1. AT LEAST ONE CONSTRUCTION ENTRANCE SHALL BE PLACED AT EACH ENTRANCE TO THE SITE, THROUGHOUT CONSTRUCTION.
2. THE LOCATION OF THE CONSTRUCTION ENTRANCE(S) SHALL BE APPROVED BY THE OWNER PRIOR TO PLACEMENT.
3. CONSTRUCTION ENTRANCE(S) SHALL CONSIST OF 2" CRUSHED STONE PLACED AT A DEPTH OF A MINIMUM 8 INCHES PLACED OVER GEOTEXTILE FABRIC.
4. CONTRACTOR IS RESPONSIBLE FOR CLEARING OF ALL VEGETATION, ROOTS AND ALL OBSTRUCTIONS IN PREPARATION FOR GRADING AND COMPACTING PRIOR TO PLACEMENT OF GEOTEXTILE FABRIC AND CRUSHED STONE.
5. CONTRACTOR IS RESPONSIBLE FOR DAILY INSPECTION AND ALL NECESSARY MAINTENANCE OF ALL ENTRANCES.
6. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF SEDIMENTS OR ANY OTHER MATERIALS TRACKED ONTO THE STREET, AS WELL MAINTENANCE OF EROSION CONTROL MEASURES.

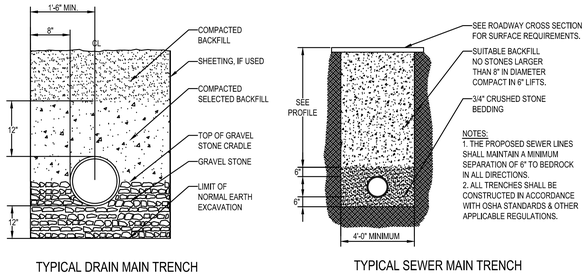
3 STABILIZED TEMPORARY CONSTRUCTION ENTRANCE
SCALE: N.T.S.



SIDE VIEW INSTALLED

NOTE:
ALL EXISTING CATCH BASINS WITHIN THE LIMIT OF WORK SHALL HAVE INLET CONTROL PRIOR TO THE START OF CONSTRUCTION.

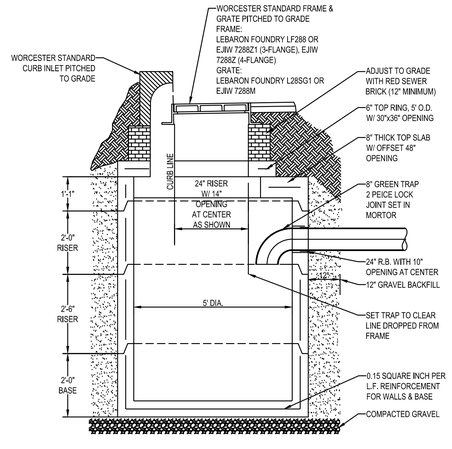
4 INLET SEDIMENT CONTROL
SCALE: N.T.S.



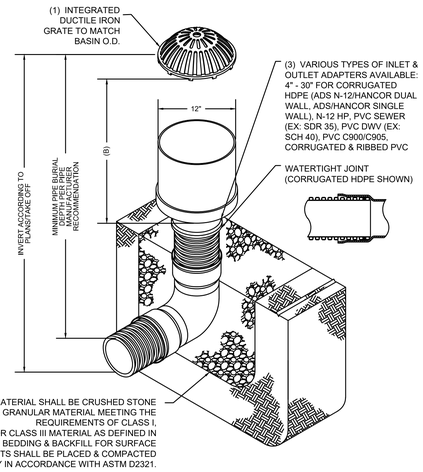
TYPICAL DRAIN MAIN TRENCH

TYPICAL SEWER MAIN TRENCH

6 TYPICAL PIPE TRENCHES
SCALE: N.T.S.



5 CATCH BASIN
SCALE: N.T.S.



THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

NOTES:

1. DOME GRATE SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2. FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
4. DIMENSIONS ARE FOR REFERENCE ONLY. ACTUAL DIMENSIONS MAY VARY.
5. DIMENSIONS ARE IN INCHES
6. DOME GRATES HAVE NO LOAD RATING

7 AREA DRAIN
SCALE: N.T.S.

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REGISTERED PROFESSIONAL ENGINEER
12-19-25

CONSTRUCTION DOCUMENTS 12/19/25

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

DETAILS

SHEET NUMBER

C6.01

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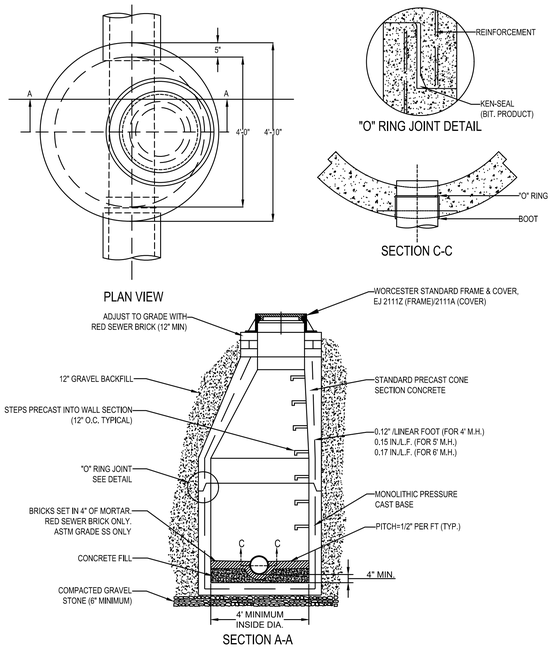
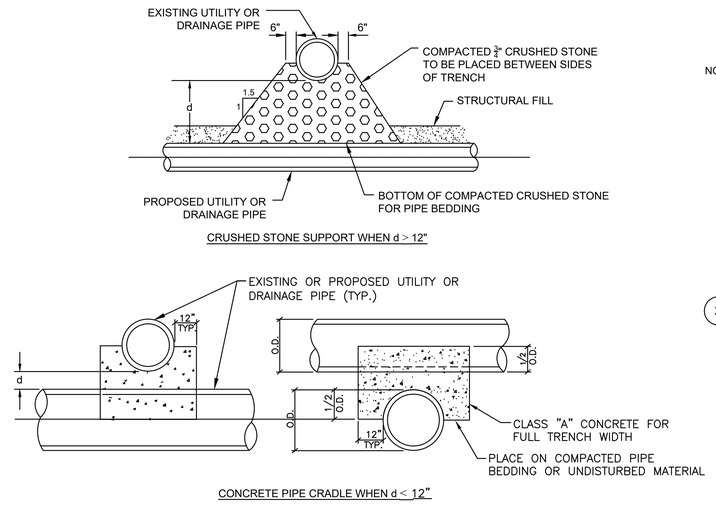
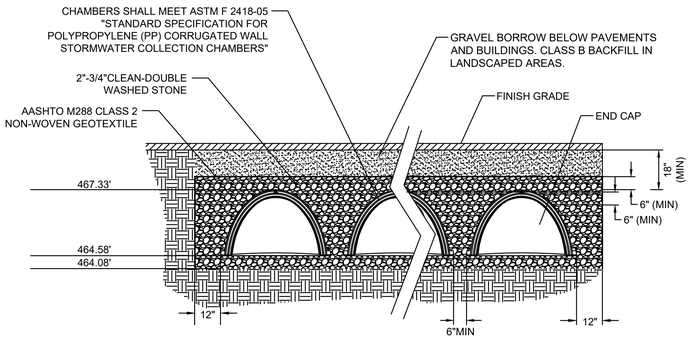


1 TYPICAL PRECAST CONCRETE MANHOLE
SCALE: N.T.S.

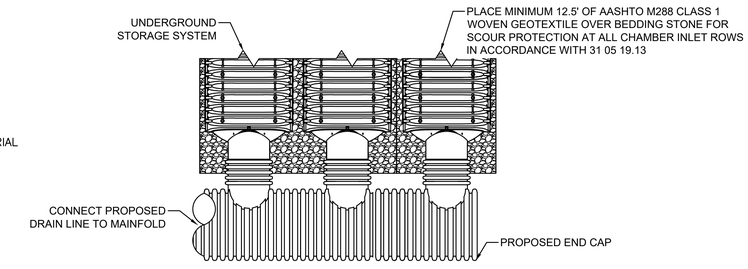


NOTES:
1. d = DISTANCE BETWEEN UTILITY AND DRAINAGE PIPES.
2. SUPPORTS SHALL BE INSTALLED WHERE SPECIFIED ON THE PLANS AND WHERE DIRECTED BY THE ENGINEER.
3. CRUSHED STONE SUPPORTS SHALL BE INCLUDED IN THE COST OF THE PROPOSED UTILITY OR DRAINAGE PIPE AND CONCRETE PIPE CRADLES SHALL BE PAID FOR AS "FIELD CONCRETE".

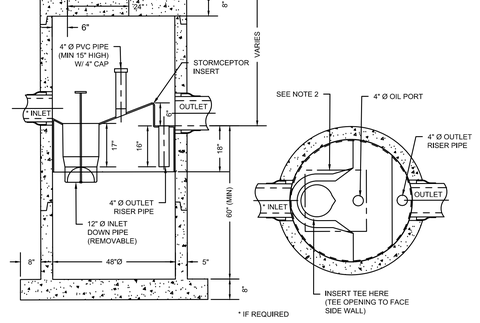
2 TYPICAL UTILITY SUPPORTS
SCALE: N.T.S.



3 INFILTRATION CHAMBER - SECTION
SCALE: N.T.S.

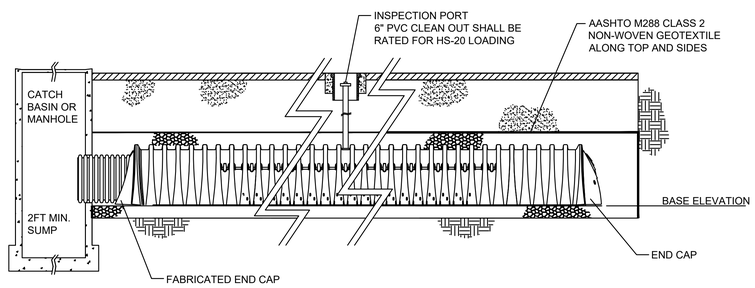


4 INFILTRATION CHAMBER - MANIFOLD CONNECTION
SCALE: N.T.S.

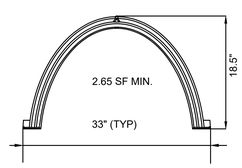


NOTES:
1) THE USE OF FLEXIBLE CONNECTIONS IS RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.
2) THE COVER SHOULD BE POSITIONED OVER THE OUTLET DROP PIPE AND THE OIL PORT.

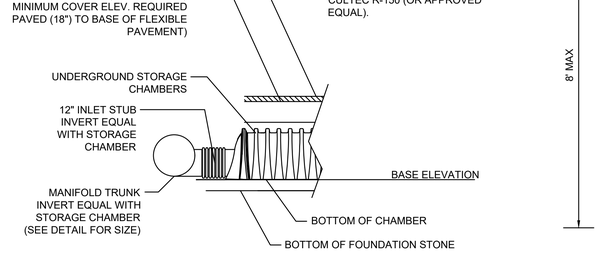
5 STORMWATER TREATMENT UNIT (SWTU)
SCALE: N.T.S.



8 INFILTRATION CHAMBER - PROFILE
SCALE: N.T.S.

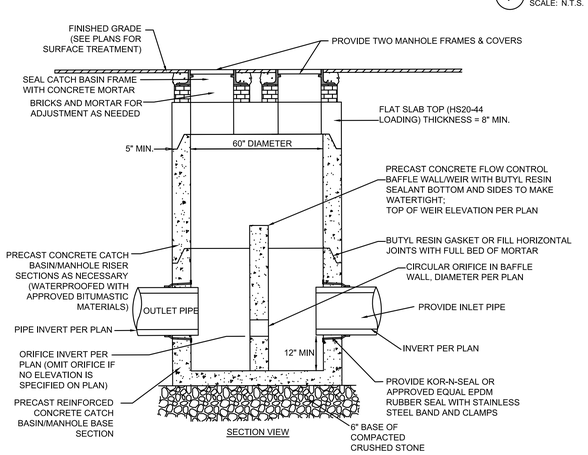


9 CHAMBER UNIT DETAIL
SCALE: N.T.S.

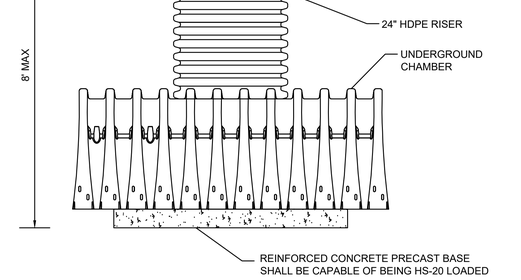


NOTES:
1. UNDERGROUND CHAMBERS SHALL BE COMPRISED OF CULTEC R-150 (OR APPROVED EQUAL).

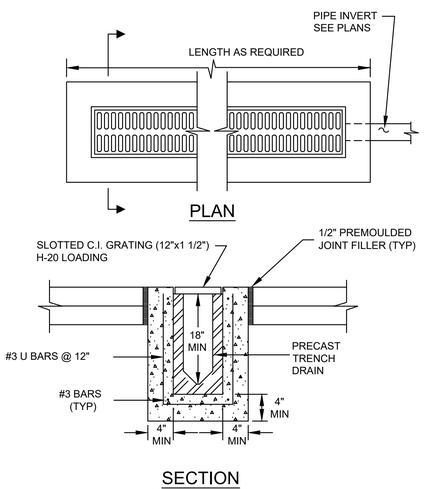
6 UNDERGROUND INFILTRATION CHAMBER
SCALE: N.T.S.



10 OUTLET CONTROL STRUCTURE (OCS)
SCALE: N.T.S.



7 INFILTRATION CHAMBER - 24" HDPE CLEAN OUT WITH CONCRETE COLLAR
SCALE: N.T.S.



11 TRENCH DRAIN
SCALE: N.T.S.

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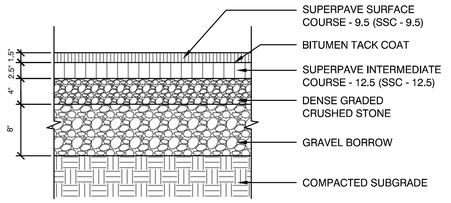
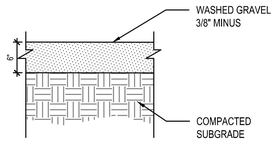


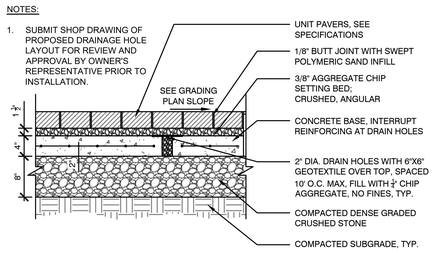
1 HOT MIX ASPHALT PAVEMENT
SCALE: N.T.S.



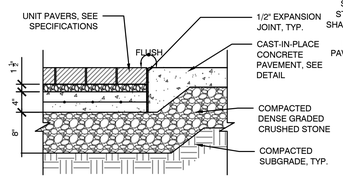
2 WASHED GRAVEL SURFACING
SCALE: N.T.S.

NOTES:

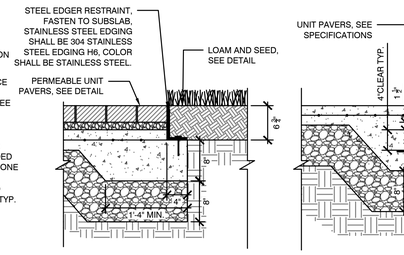
1. SUBMIT SHOP DRAWING OF PROPOSED DRAINAGE HOLE LAYOUT FOR REVIEW AND APPROVAL BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.



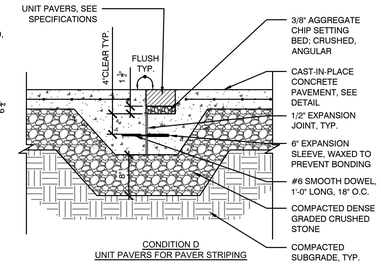
CONDITION A
UNIT PAVERS ON CONCRETE, TYP.



CONDITION B
UNIT PAVERS AT CAST-IN-PLACE CONCRETE PAVEMENT

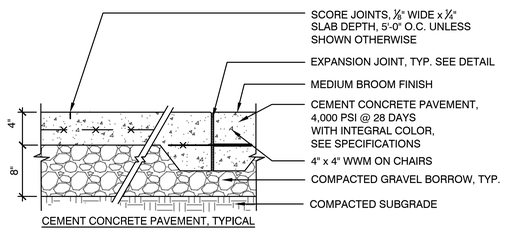


CONDITION C
UNIT PAVERS AT LOAM AND SEED

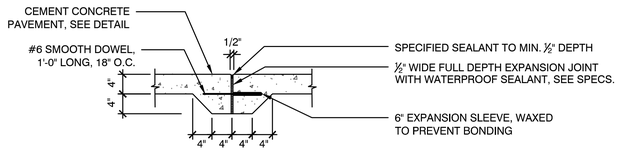


CONDITION D
UNIT PAVERS FOR PAVER STRIPING

3 UNIT PAVERS ON CONCRETE SLAB
SCALE: N.T.S.



CEMENT CONCRETE PAVEMENT, TYPICAL

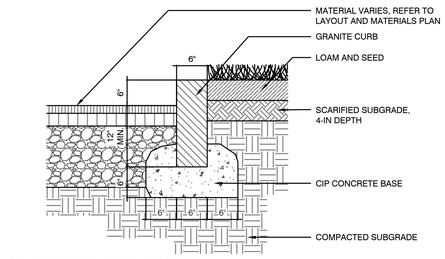


EXPANSION JOINT INSTALLATION NOTES:

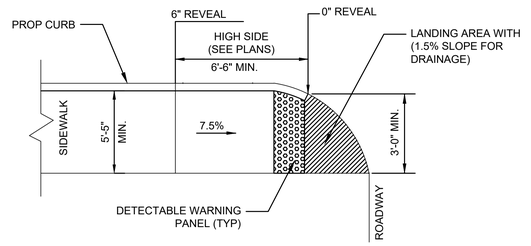
1. DOWEL IS TYPICAL AT ALL EXPANSION JOINTS (18" O.C.) WITHIN CONCRETE PAVING AND BETWEEN NEW CONCRETE PAVING AND EXISTING CONCRETE PAVING TO REMAIN.
1. DELETE EXPANSION SLEEVE AND DOWEL WHERE JOINT ABUTS WALL, CURBS, OR OTHER VERTICAL SURFACES, UNLESS OTHERWISE NOTED.
2. EXPANSION JOINTS MAX. 25'-0" O.C. UNLESS SHOWN OTHERWISE.
3. EXPANSIONS JOINTS SHALL BE PLACED WHERE NEW CEMENT CONCRETE PAVEMENT MEETS EXISTING PAVEMENT OR WALLS TO REMAIN.

EXPANSION JOINT, TYPICAL

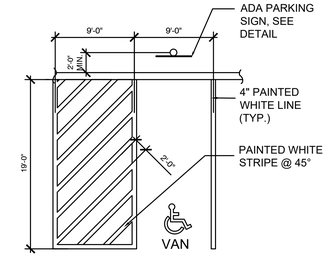
4 CIP CONCRETE PAVEMENT
SCALE: N.T.S.



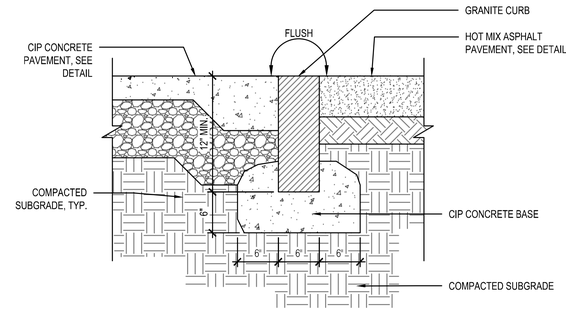
5 VERTICAL GRANITE CURB
SCALE: N.T.S.



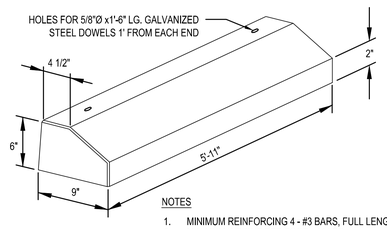
6 ADA CURB CUT
SCALE: N.T.S.



7 ADA PARKING SPACING MARKING
SCALE: N.T.S.



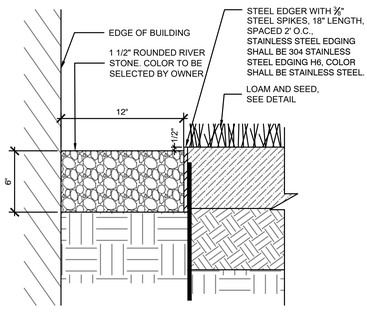
8 FLUSH GRANITE CURB
SCALE: N.T.S.



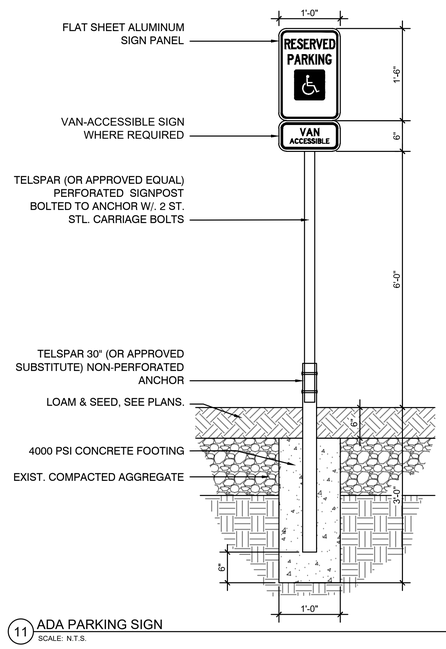
NOTES

1. MINIMUM REINFORCING 4 - #3 BARS, FULL LENGTH
2. MINIMUM WEIGHT PER FOOT - 44 LBS.
3. CURBING TO BE DOWELLED TO ASPHALT PAVING 18" INTO PAVEMENT, MIN.
4. DOWELS TO BE RECESSED 1" AND GROUTED AT TOP.

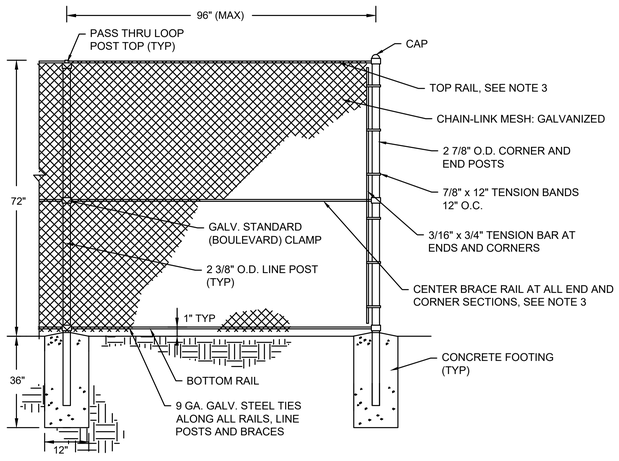
9 PRE-CAST CONCRETE WHEEL STOP
SCALE: N.T.S.



10 DRIP STRIP AT EDGE OF BUILDING
SCALE: N.T.S.

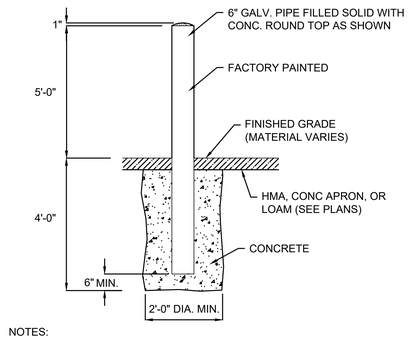


11 ADA PARKING SIGN
SCALE: N.T.S.



NOTES:
1. FENCE TO BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
2. ALL LINE POSTS SHALL BE INSTALLED EQUALLY SPACED BETWEEN END & CORNER POSTS.
3. ALL RAILS SHALL BE 1.66" O.D. PIPE.

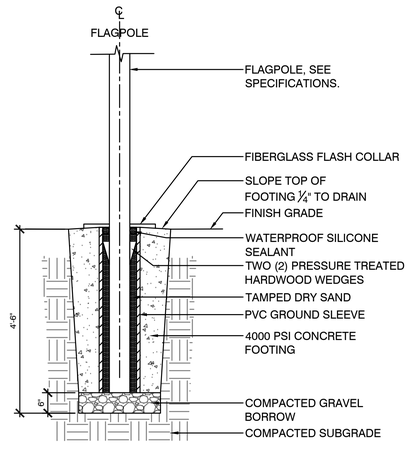
12 6' HT. BVCL FENCE
SCALE: N.T.S.



NOTES:

1. SEE SHEET C2.01 FOR BOLLARD LOCATIONS.
2. BOLLARD FOUNDATION CONCRETE TO BE 3000 PSI MIN.
3. EXACT LOCATION TO BE DETERMINED IN THE FIELD AND APPROVED BY TOWN BEFORE INSTALLATION.
4. 6" GALVANIZED PIPE PROVIDED BY MISC. METALS CONTRACTOR. INSTALLATION AND CONCRETE BY GENERAL CONTRACTOR.

13 STEEL PIPE BOLLARD
SCALE: N.T.S.



14 FLAGPOLE FOOTING
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PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

DETAILS

SHEET NUMBER

C6.03

CONSTRUCTION DOCUMENTS 12/19/25

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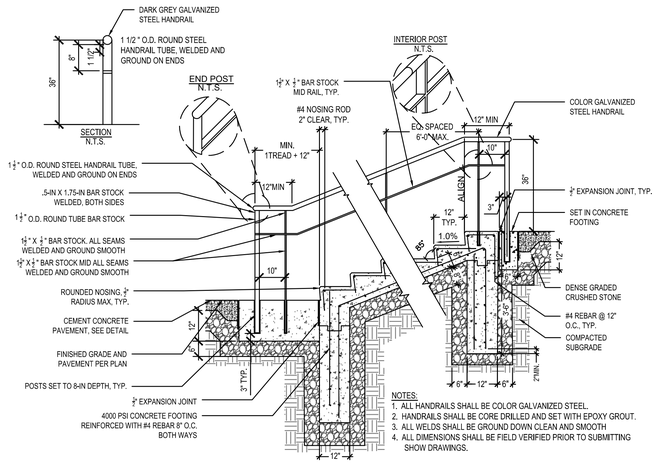
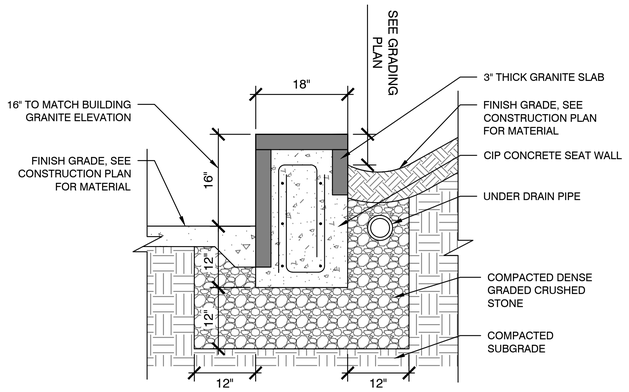


NOTES:
1. ALL HANDRAILS SHALL BE COLOR GALVANIZED STEEL.
2. HANDRAILS SHALL BE CORE DRILLED AND SET WITH EPOXY GROUT.
3. ALL WELDS SHALL BE GROUND DOWN CLEAN AND SMOOTH
4. ALL DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING SHOW DRAWINGS.

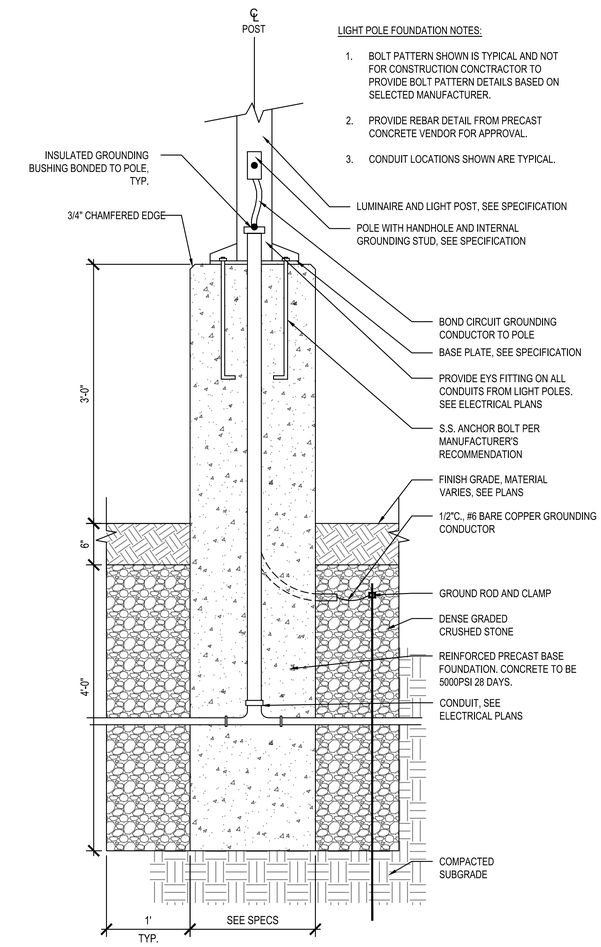
1 CIP CONCRETE STAIRS WITH HANDRAIL
SCALE: N.T.S.



NOTES:

1. CONTRACTOR SHALL FILL VOIDS BETWEEN GRANITE SLABS USING TRAP ROCK. TRAP ROCK SHALL BE SECURELY PLACES TO PREVENT REMOVAL.

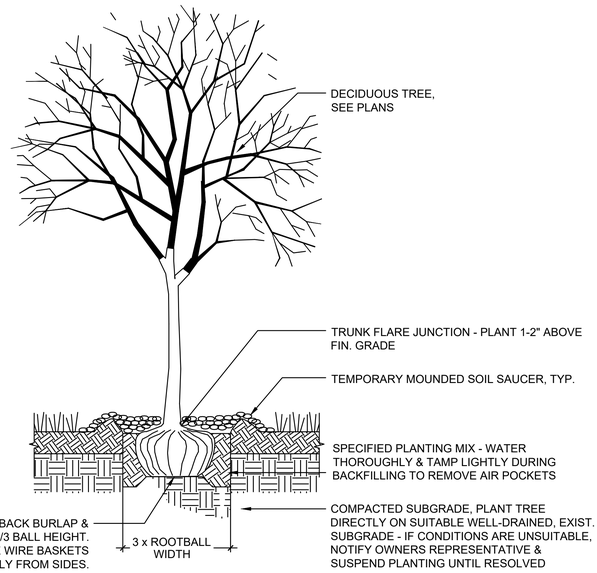
2 GRANITE SEAT WALL
SCALE: N.T.S.



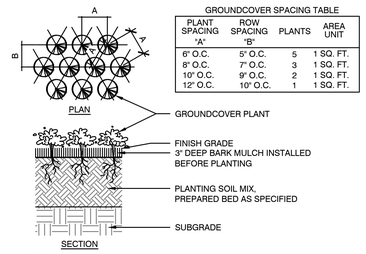
LIGHT POLE FOUNDATION NOTES:

1. BOLT PATTERN SHOWN IS TYPICAL AND NOT FOR CONSTRUCTION CONCTRACTOR TO PROVIDE BOLT PATTERN DETAILS BASED ON SELECTED MANUFACTURER.
2. PROVIDE REBAR DETAIL FROM PRECAST CONCRETE VENDOR FOR APPROVAL.
3. CONDUIT LOCATIONS SHOWN ARE TYPICAL.

3 PARKING LIGHT POST FOOTING
SCALE: N.T.S.



4 TREE PLANTING
SCALE: N.T.S.

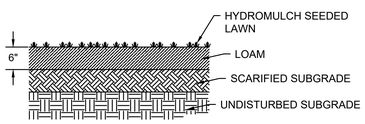


GROUNDCOVER SPACING TABLE

PLANT SPACING "A"	ROW SPACING "B"	PLANTS	AREA UNIT
6" O.C.	5" O.C.	5	1 SQ. FT.
8" O.C.	7" O.C.	3	1 SQ. FT.
10" O.C.	9" O.C.	2	1 SQ. FT.
12" O.C.	10" O.C.	1	1 SQ. FT.

NOTES:
1. ALL GROUNDCOVER TO BE PLANTED IN TRIANGULAR PATTERN. SEE DETAIL PLAN AND GROUNDCOVER SPACING TABLE.
2. JUTE EROSION CONTROL MAT TO BE USED ON ALL SLOPES GREATER THAN 3:1

5 GROUNDCOVER PLANTING
SCALE: N.T.S.



6 LOAM & SEED
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12/19/25

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12-19-25

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
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CITY OF WORCESTER

455 MAIN STREET
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KEY PLAN

CONSTRUCTION DOCUMENTS 12/19/25

ISSUE CHART

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Job Number 157132.000

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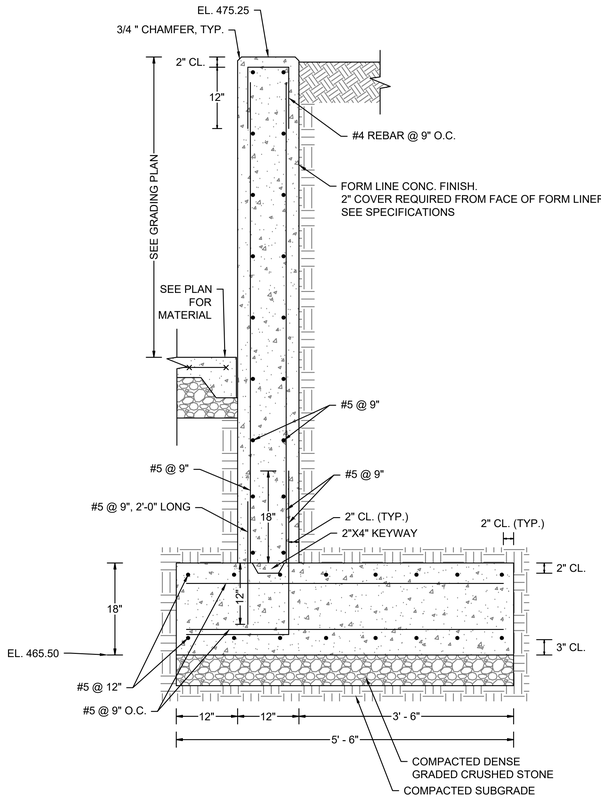
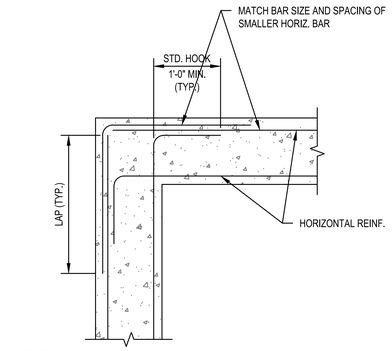


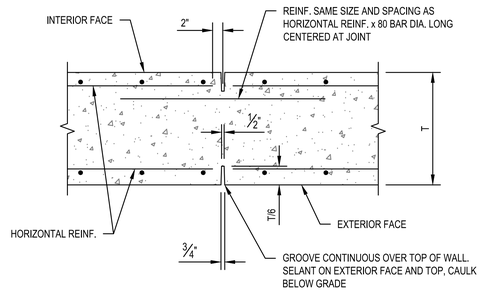
NOTE:
1. CONTROL JOINTS SHALL BE AT 15'-0" O.C. CONSTRUCTION JOINTS SHALL BE AT 30'-0 O.C. EXPANSION JOINTS SHALL BE AT 60'-0" O.C.
2. CONCRETE SHALL BE AIR ENTRAINED AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI.
3. STEEL REINFORCEMENT SHALL CONFORM TO ASTM A 615 GRADE 60, Fy = 60,000 PSI.

1 CIP CONCRETE RETAINING WALL
SCALE: N.T.S.



NOTES:
1. VERTICAL REINFORCING NOT SHOWN FOR CLARITY.
2. REINFORCING APPLIES TO ALL CONCRETE AND MASONRY CORNERS/INTERSECTIONS.
3. REFER TO LAP SPLICE TABLE FOR REQUIRED LENGTH.
4. WHERE BARS OF DIFFERENT SIZE SPLICE, LAP LENGTH SHALL BE AS REQUIRED FOR THE SMALLER BAR.

2 HORIZONTAL WALL REINFORCING PLAN AT CORNERS
SCALE: N.T.S.



4 VERTICAL CONTROL JOINT FOR CIP RETAINING WALL
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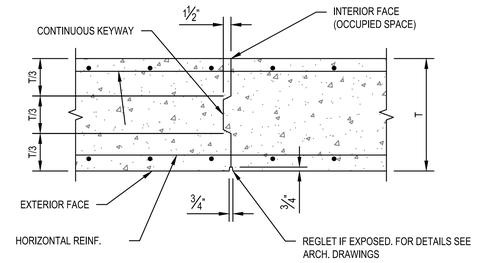

3 VERTICAL CONSTRUCTION JOINT FOR CIP RETAINING WALL
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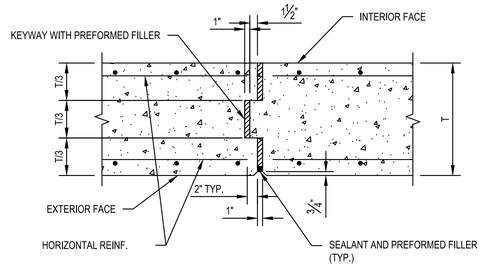

5 VERTICAL EXPANSION JOINT FOR CIP RETAINING WALL
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CITY OF WORCESTER

455 MAIN STREET
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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

DETAILS

SHEET NUMBER

C6.05

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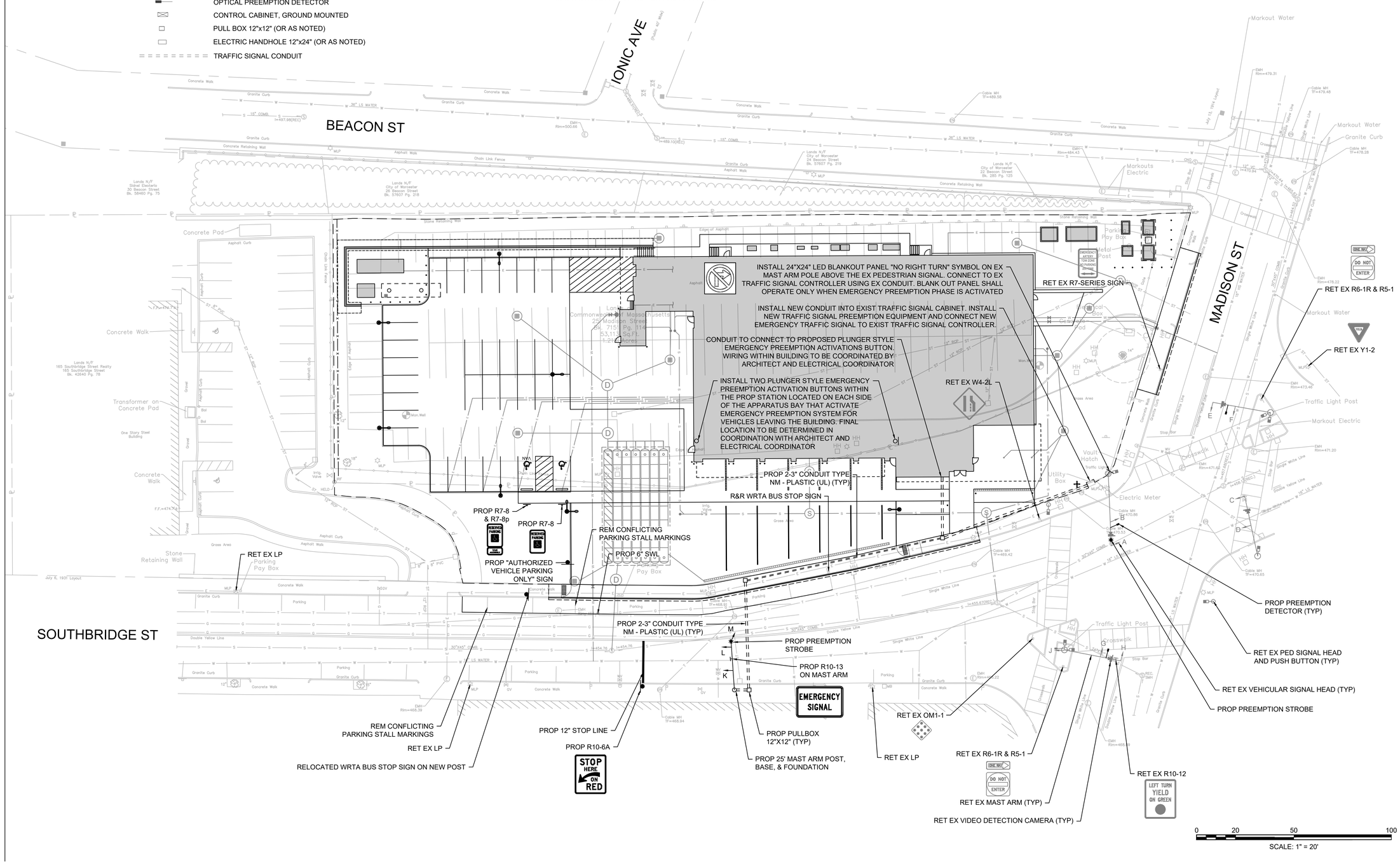
TRAFFIC SYMBOLS

PROPOSED	DESCRIPTION
Ø1	CONTROLLER PHASE ACTUATED
	HYBRID BEACON SIGNAL HEAD
	TRAFFIC SIGNAL HEAD (TWO-SECTION)
	VIDEO DETECTION CAMERA
	PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
	EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
	VEHICULAR SIGNAL HEAD
	PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
	SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
	MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
	SIGN AND POST
	MAST ARM WITH LUMINAIRE
	OPTICAL PREEMPTION DETECTOR
	CONTROL CABINET, GROUND MOUNTED
	PULL BOX 12"x12" (OR AS NOTED)
	ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
	TRAFFIC SIGNAL CONDUIT

TRAFFIC SIGNAL NOTES:

1. DIGSAFE TO BE CONTACTED BEFORE COMMENCING ANY CONSTRUCTION, COORDINATION WITH UTILITY COMPANIES IS REQUIRED.
2. MASSACHUSETTS ELECTRIC COOP TO BE CONTACTED REGARDING POWER SUPPLIES.
3. SEE GENERAL PLAN FOR PROPOSED UTILITY WORK.
4. IF THE CONTRACTOR DAMAGES ANY EXISTING TRAFFIC SIGNAL EQUIPMENT DURING THE INSTALLATION THEN THEY SHALL REPAIR OR REPLACE THE BROKEN EQUIPMENT AT THEIR EXPENSE.
5. CONSTRUCTION OF THE TRAFFIC CONTROL SIGNAL SYSTEM SHALL CONFORM TO THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MASSDOT) "STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES" 2024 EDITION, AS AMENDED, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, THE 2011 FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) LATEST EDITION, AS AMENDED, THE MASSACHUSETTS AMENDMENTS TO THE 2009 MUTCD, AND THE 1968 STANDARD DRAWING FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING.
6. ALL VEHICLE INDICATION SIGNAL HEADS SHALL BE 12" LED MODULES MOUNTED ON MAST ARMS AND SHALL BE FIXED AND EQUIPPED WITH TUNNEL VISORS, CAP VISORS, AND 5" LOUVERED BACKPLATE WITH 3" RETROREFLECTIVE BORDER.
7. POST MOUNTED SIGNALS SHALL BE MOUNTED TO PROVIDE A 2 FOOT MINIMUM CLEARANCE BETWEEN THE VERTICAL PROJECTION OF THE CURB LINE AND SIGNAL VISOR. PROVIDE SPECIAL MOUNTING HARDWARE AS REQUIRED.
8. ALL MAST ARM ANGLES ARE 90 DEGREES UNLESS OTHERWISE NOTED.
9. FOR BIDDING PURPOSES, THE CONTRACTOR MAY USE THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS FOR FOUNDATION SIZING. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE SOIL BORINGS AT EACH MAST ARM LOCATION TO DETERMINE SOIL PROPERTIES TO BE USED IN THE DESIGN OF MAST ARM FOUNDATIONS. AS PART OF THE WORK THE CONTRACTOR SHALL PROVIDE MAST ARM AND FOUNDATION DESIGN DRAWINGS AND CALCULATIONS STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS FOR REVIEW AND APPROVAL.



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12-19-25

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KEY PLAN

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AGENCY	ISSUE	DATE

Job Number 157132.000

TITLE

TRAFFIC PLAN - SHEET 1 OF 2

SHEET NUMBER

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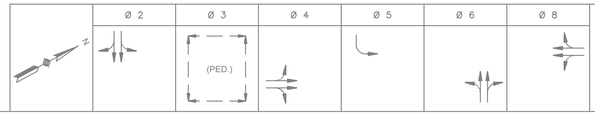


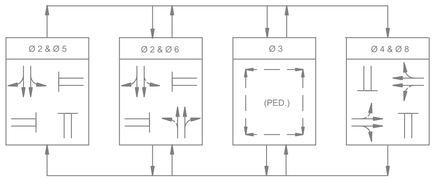
SOUTHBRIDGE STREET & MADISON STREET INTERSECTION SEQUENCE AND TIMING FOR FULL ACTUATED CONTROL (ISOLATED)

STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	FLASH OP
MADISON STREET	EB	G,H	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
SOUTHBRIDGE STREET	NB	C,D	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	FR
MADISON STREET	EB	H	R	R	R	R	R	R	R	R	R	GL	YL	R	R	R	R	R	R	R	FY
MADISON STREET	WB	E,F	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	FY
SOUTHBRIDGE STREET	SB	A,B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	FR
PEDESTRIAN		P1–P8	DW	DW	DW	W	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	OFF
TIMING IN SECONDS																					
MINIMUM GREEN (INITIAL)			10						6			5			10			6			EMERGENCY ONLY
PASSAGE TIME (VEHICLE)			2						2			2			2			2			
MAXIMUM 1 5:30 AM – 12 AM			30						15			6			30			15			
MAXIMUM 2			40						20			6			40			20			
YELLOW CLEARANCE				4						4			3			4			4		
RED CLEARANCE					1			1			1			1			1			1	
WALK (W)						5															
PEDESTRIAN CLEARANCE							15														
RECALL			ON–MIN			OFF			OFF			OFF			ON–MIN						
MEMORY			NON–LOCKING			LOCKING			NON–LOCKING			NON–LOCKING			NON–LOCKING						

NOTES:

1. FLASH OPERATION 12 AM – 5:30 AM
2. RETAIN EXISTING INTERSECTION AND SIGNAL TIMING

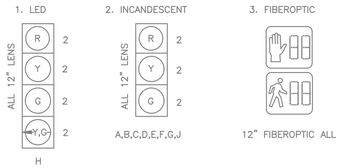
EXISTING PREFERENTIAL PHASING SEQUENCE



NOTES:

1. RETAIN EXISTING PHASING SEQUENCE.

EXISTING SIGNAL IDENTIFICATION



NOTES:

1. ALL SIGNALS SHALL HAVE CAP VISORS.
2. ALL SIGNALS SHALL HAVE 12" LED MODULES WITH 5" LOUVERED BACK PLATES.
3. ALL BACK PLATES SHALL HAVE A 3" RETROREFLECTIVE BORDER
4. ALL PED INDICATORS SHALL HAVE SUN CAP VISORS
5. RETAIN EXISTING SIGNAL HEADS

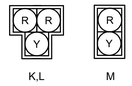
FIRE PREEMPTION SCHEDULE

APPROACH	PREEMPTION PHASE	NEXT PHASE CALLED
EASTBOUND	2+5	2+6
WESTBOUND	6	3
NORTHBOUND	4	2+5
SOUTHBOUND	8	2+5

EMERGENCY VEHICLE PREEMPTION OPERATION:

1. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATED AT INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.
2. PREEMPTION SIGNALS FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS.
3. IN RESPONSE TO A PREEMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR, THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PREEMPTION PHASE UNTIL PREEMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME CLEARANCES AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PREEMPTION SEQUENCES IN THE ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.
4. PREEMPTION MINIMUM GREENS SHALL BE SIX SECONDS.
5. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.
6. ACTUAL TIMMING FOR PREEMPTION SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FIRE DEPARTMENT AND SHALL BE APPROVED BY MHD PRIOR TO OPERATION.

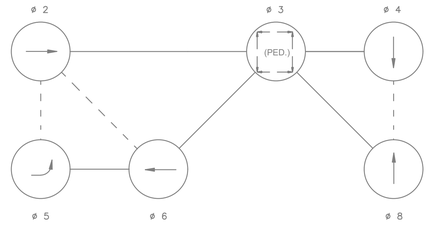
SIGNAL IDENTIFICATION



NOTES:

1. ALL SIGNALS SHALL HAVE CAP VISORS.
2. ALL SIGNALS SHALL HAVE 12" LED MODULES WITH 5" LOUVERED BACK PLATES.
3. ALL BACK PLATES SHALL HAVE A 3" RETROREFLECTIVE BORDER.

EXISTING NEMA DUAL RING PHASING NOTES:



NOTES:

1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.
5. RETAIN EXISTING NEMA DUAL RING PHASING

SEQUENCE AND TIMING CHART FOR EMERGENCY VEHICLE HYBRID BEACONS

APPROACH	DIRECTION	FACE	Ø/Ø	1	2	3	4	5
SOUTHBRIDGE ST	NB	K,L	EM	DK	FY	Y	R	R
FIRE STATION	EB	M	EM	DK	FR	FR	FY	Y
MINIMUM INTERVAL								
VEH EXT								
MAX. I								
MAX. II								
FLASHING YELLOW					4			
SOLID YELLOW						4		
FIRE STATION INTERVAL							2	25*

NOTES:

1. *THERE SHALL BE A MINIMUM OF 25 SEC. INITIAL TIMING UPON PREEMPTION ACTIVATION WITH AN EXTENSION FOR THE DURATION OF THE PREEMPTION ACTIVATION TO A MAXIMUM OF 90 SEC.
2. DK = SIGNAL HEADS ARE DARK
   R = STEADY RED
   FR = FLASHING RED
   AFR = ALTERNATING FLASHING RED
   Y = STEADY YELLOW
   FY = FLASHING YELLOW
3. CONFLICT MODE: MAIN ST SIGNALS SHALL FLASH YELLOW AND FIRE STATION SIGNALS SHALL FLASH RED.

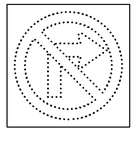
TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
R10-13	36"	24"	EMERGENCY SIGNAL	SEE MUTCD STANDARDS			1	SEE MUTCD STANDARDS			SECURE ON MAST ARM	6	6
R10-6a	24"	30"	STOP HERE ON RED	SEE MUTCD STANDARDS			1	SEE MUTCD STANDARDS			1	5	5
R7-8	12"	18"	RESERVED PARKING	SEE MUTCD STANDARDS			1	SEE MUTCD STANDARDS			2	1.5	3
R7-8p	12"	6"	VAN ACCESSIBLE	SEE MUTCD STANDARDS			1	SEE MUTCD STANDARDS			1	0.5	0.5

MAJOR ITEMS REQUIRED

PAY ITEM	QUANTITY	ITEM
(MASSDOT ITEM 815.01)	1	25' TYPE II GALV. STEEL MAST ARM ASSEMBLY, BASE & FDN
	2	1 WAY, 3 SECTION, SIGNAL HOUSING HYBRID BEACON (12" LED)
	1	1 WAY, 2 SECTION, SIGNAL HOUSING HYBRID BEACON (12" LED)
	2	5" 3 SECTION BACK PLATES (LOUVERED) WITH 3" RETROREFLECTIVE TAPE
	1	5" 2 SECTION BACK PLATES (LOUVERED) WITH 3" RETROREFLECTIVE TAPE
	3	EMERGENCY PREEMPTION RECEIVERS
	2	EMERGENCY PREEMPTION STROBE LIGHT
	2	EMERGENCY PREEMPTION PLUNGER STYLE ACTIVATORS
	8	WIRELESS REMOTE TRANSMITTERS FOR PREEMPTION SYSTEM
(MASSDOT ITEM 811.31)	3	12" x 12" PULL BOX SD2.031
		Plus all necessary duct, cable, labor, miscellaneous material and equipment to complete the installation.

NO RIGHT TURN (R3-1) ELECTRONIC SIGN DETAIL



NOTES:

1. ACTIVE WHEN PHASE 4 PREEMPTION IS ACTIVE.
2. DARK WHEN PHASE 4 PREEMPTION IS NOT ACTIVE.

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COMMONWEALTH OF MASSACHUSETTS — ALYSSA K. PECK — CIVIL — No. 49074 — REGISTERED PROFESSIONAL ENGINEER
12-19-25

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

TRAFFIC PLAN - SHEET 2 OF 2

SHEET NUMBER

C7.02

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Line Table				
Line #	Direction	Length	Start	End
L1	N27°40'53"E	98.00	N: 2919128.84 E: 573650.79	N: 2919215.63 E: 573696.31
L2	N62°19'07"W	18.00	N: 2919120.48 E: 573666.73	N: 2919128.84 E: 573650.79
L3	N27°40'53"E	18.00	N: 2919096.44 E: 573660.89	N: 2919112.38 E: 573669.25
L4	N62°19'07"W	72.00	N: 2919062.99 E: 573724.65	N: 2919096.44 E: 573660.89
L5	S27°40'53"W	18.00	N: 2919078.93 E: 573733.01	N: 2919062.99 E: 573724.65
L6	N62°19'07"W	18.00	N: 2919073.10 E: 573757.05	N: 2919081.46 E: 573741.11
L7	S27°40'53"W	72.00	N: 2919136.86 E: 573790.50	N: 2919073.10 E: 573757.05
L8	N62°19'07"W	41.77	N: 2919114.66 E: 573832.81	N: 2919134.07 E: 573795.81
L9	S62°19'07"E	78.00	N: 2919192.60 E: 573684.23	N: 2919156.37 E: 573753.31
L10	N27°40'53"E	58.28	N: 2919156.37 E: 573753.31	N: 2919207.98 E: 573780.38
L11	S62°19'07"E	42.00	N: 2919207.98 E: 573780.38	N: 2919188.47 E: 573817.58
L12	S27°40'53"W	58.28	N: 2919188.47 E: 573817.58	N: 2919136.86 E: 573790.50
L15	S62°19'07"E	6.00	N: 2919112.95 E: 573777.96	N: 2919110.16 E: 573783.27
L16	N27°40'53"E	27.00	N: 2919110.16 E: 573783.27	N: 2919134.07 E: 573795.81
L17	N27°40'53"E	166.88	N: 2919134.07 E: 573795.81	N: 2919281.85 E: 573873.34
L18	N27°40'53"E	27.42	N: 2919281.85 E: 573873.34	N: 2919306.13 E: 573886.08

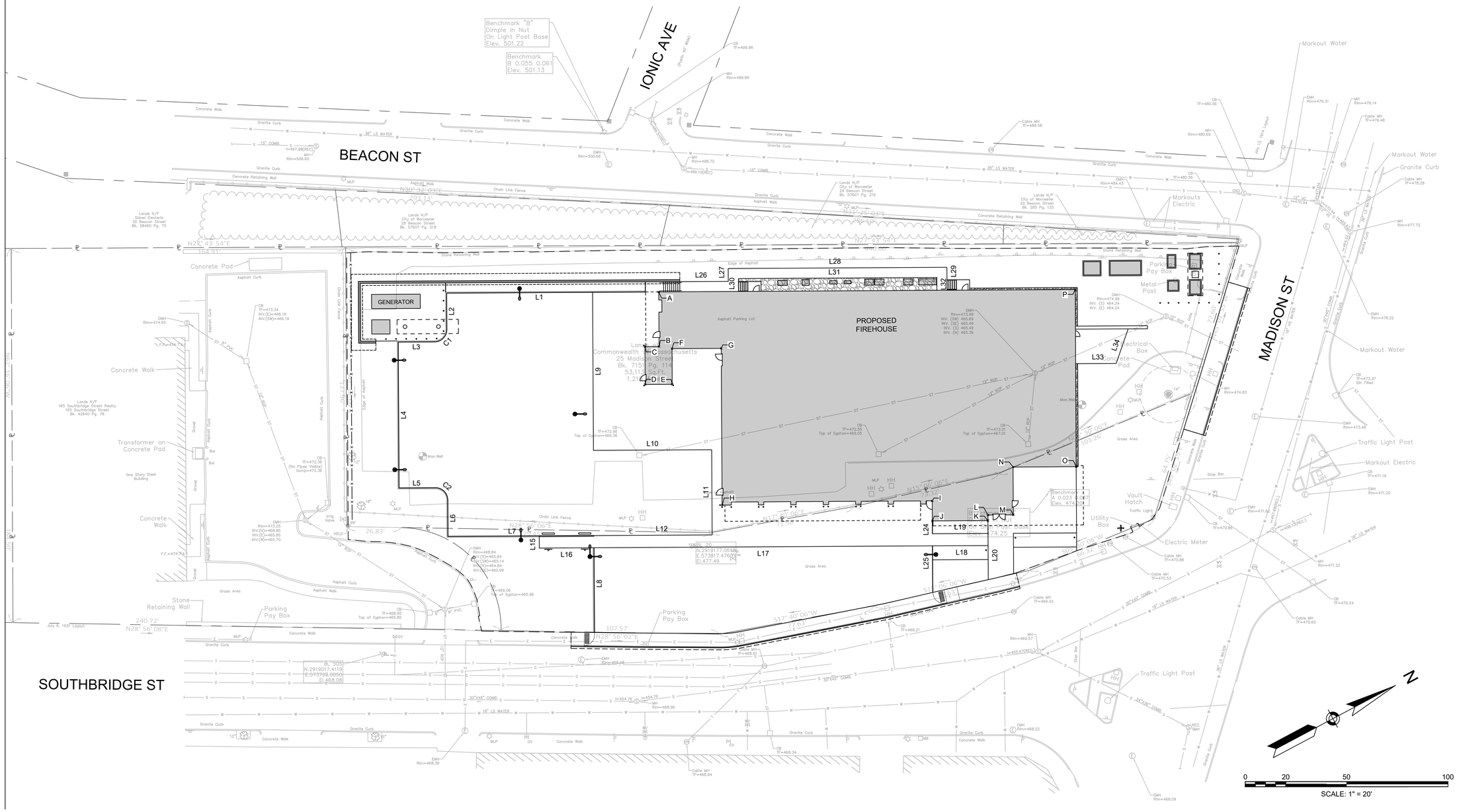
Line Table				
Line #	Direction	Length	Start	End
L19	N27°40'53"E	27.42	N: 2919284.64 E: 573868.03	N: 2919308.92 E: 573880.77
L20	N62°19'07"W	29.12	N: 2919298.33 E: 573900.96	N: 2919311.85 E: 573875.18
L24	N62°19'07"W	6.31	N: 2919284.64 E: 573868.03	N: 2919287.57 E: 573862.44
L25	N62°19'07"W	22.93	N: 2919271.20 E: 573893.65	N: 2919281.85 E: 573873.34
L26	N27°40'53"E	23.88	N: 2919233.03 E: 573699.79	N: 2919254.17 E: 573710.89
L27	N62°19'07"W	6.33	N: 2919254.17 E: 573710.89	N: 2919257.12 E: 573705.28
L28	N27°40'53"E	107.84	N: 2919257.12 E: 573705.28	N: 2919352.62 E: 573755.38
L29	S62°19'07"E	11.33	N: 2919352.62 E: 573755.38	N: 2919347.35 E: 573765.42
L30	N62°19'07"W	6.33	N: 2919256.28 E: 573717.64	N: 2919259.22 E: 573712.03
L31	N27°40'53"E	97.84	N: 2919259.22 E: 573712.03	N: 2919345.87 E: 573757.48
L32	S62°19'07"E	6.33	N: 2919345.87 E: 573757.48	N: 2919342.92 E: 573763.09
L33	N27°40'53"E	20.00	N: 2919386.35 E: 573827.13	N: 2919404.06 E: 573836.42
L34	N42°52'42"W	18.03	N: 2919404.06 E: 573836.42	N: 2919417.27 E: 573824.15

Curve Table					
Curve #	Delta	Radius	Length	Start	End
C1	90°00'00"	6.00	9.42	N: 2919112.38 E: 573669.25	N: 2919120.48 E: 573666.73
C2	90°00'00"	6.00	9.42	N: 2919081.46 E: 573741.11	N: 2919078.93 E: 573733.01

Point Table			
Point #	Northing	Easting	Raw Description
1	2919221.485	573699.386	A
2	2919208.961	573723.259	B
3	2919202.799	573720.027	C
4	2919194.128	573736.557	D
5	2919205.935	573742.751	E
6	2919214.124	573727.144	F
7	2919235.634	573738.428	G
8	2919199.713	573806.901	H
9	2919292.159	573853.692	I
10	2919287.571	573862.437	J
11	2919311.854	573875.176	K
12	2919313.132	573872.741	L
13	2919324.210	573878.553	M
14	2919335.176	573857.650	N
15	2919362.746	573872.113	O
16	2919403.317	573794.776	P

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF SURVEY CONTROL POINTS DURING CONSTRUCTION AND LAYOUT OF ALL PROPOSED WORK. ALL SURVEY AND LAYOUT SHALL BE PREFORMED BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF MASSACHUSETTS.
2. THE CONTRACTOR SHALL ESTABLISH ALL CONSTRUCTION BASELINES UTILIZING EXISTING BOUNDS PROVIDED BY WESTON & SAMPSON. PRIOR TO EXCAVATION FOR BUILDING FOUNDATIONS THE CONTRACTOR WILL BE REQUIRED TO VERIFY THAT EXISTING MONUMENTATION AND SPECIFIC FEATURES TO REMAIN ARE SHOWN CORRECTLY ON THE PLANS.
3. THE CONTRACTOR WILL DEMONSTRATE TO THE ENGINEER THAT THE CONSTRUCTION COORDINATE ARE ESTABLISHED IN THE FIELD CORRECTLY PRIOR TO THE START OF WORK.
4. COORDINATES PROVIDED FOR THE BUILDING ARE USED TO DICTATE BUILDING LOCATION. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR BUILDING DIMENSIONS.



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CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

CONTROL PLAN

SHEET NUMBER

C8.01

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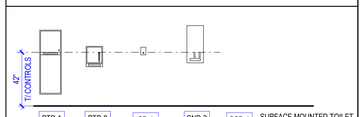
MOUNTING DIMENSIONS

MOUNTING INFORMATION SHOWN HERE IS COMPLIANT WITH REQUIREMENTS OF 521 CMR.



PTD-1 RECESSED PAPER TOWEL DISP & RECEPT

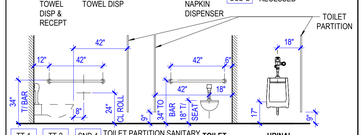
PTD-2 RECESSED PAPER TOWEL DISP

SD-1 SURFACE MTD SOAP DISP

SND-3 RECESSED SANITARY NAPKIN DISPENSER

SCD-1 SURFACE MOUNTED TOILET SEAT COVER DISP

SCD-2 RECESSED



TT-1 TT-2 SND-1 TOILET PARTITION SANITARY NAPKIN DISPOSAL

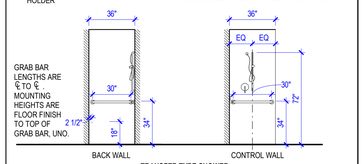
TOILET

URINAL

TT-3 TOILET TISSUE HOLDER

SND-2 RECESSED SANITARY NAPKIN DISPOSAL

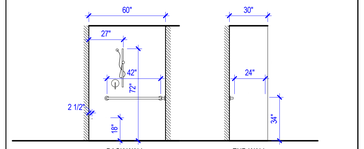
NOTE: ALL DIMS REFERENCE FACE OF WALL FINISH



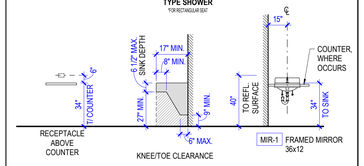
TRANSFER TYPE SHOWER
*1:12R RECTANGULAR SEAT

GB-24 24" GB-42 42" GB-30 30"

SS-1 FOLDING SHR SEAT



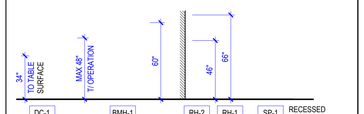
STANDARD ROLL-IN TYPE SHOWER
*1:12R RECTANGULAR SEAT



RECEPTACLE ABOVE COUNTER

KNEE/TOE CLEARANCE

MIR-1 FRAMED MIRROR 36x12



DC-1 FLIP DOWN DIAPER CHANGING UNIT

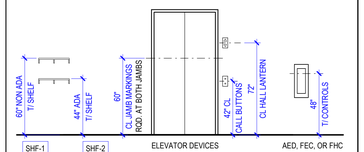
BMH-1 BROOM / MOP HOLDER WITH SHELF

RH-2 ADA COAT, TOWEL, OR ROBE HOOK

RH-1 NON-ADA COAT, TOWEL, OR ROBE HOOK

SP-1 RECESSED SOAP DISH

SP-2 SURFACE MOUNTED SOAP DISH

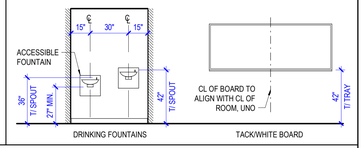


SHF-1 NON-ADA SURFACE MTD SHELF

SHF-2 ADA SURFACE MTD SHELF

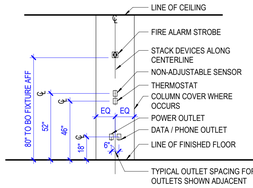
ELEVATOR DEVICES

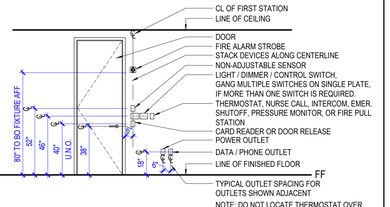
AED, FEC, OR FHC



DRINKING FOUNTAINS

TACK/WHITE BOARD



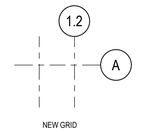


ABBREVIATIONS

APC	ACOUSTICAL PANEL CEILING
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECT(URAL), ARCHITECT
BLDG	BUILDING
CF/CI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CF/OI	CONTRACTOR FURNISHED, OWNER INSTALLED
CFMF	COLD-FORMED METAL FRAMING
CG	CORNER GUARD
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
cm	CENTIMETER
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
COORD	COORDINATE
DBL	DOUBLE
DEG	DEGREE
DEMO	DEMOLISH, DEMOLITION
DIA	DIAMETER
DIM	DIMENSION
DISP	DISPENSER
DS	DOWNSPOUT
DWG	DRAWING
E	EAST
EA	EACH
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST	EXISTING
EXT	EXTERIOR
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FACE
FHC	FIRE HOSE CABINET
FIN	FINISH(ED)
FLR	FLOOR
FP	FIRE PROTECTION/ FIREPROOF
FRTW	FIRE RETARDANT TREATED WOOD
FT	FOOT (FEET)
FTG	FOOTING
FURN	FURNISH, FURNITURE
GA	GAGE
GALV	GALVANIZED
GFRC	GLASS FIBER REINFORCED CONCRETE
GFRG	GLASS FIBER REINFORCED GYPSUM
GL	GLASS
GLU LAM	GLUED LAMINATED WOOD
GYP BD	GYPSUM BOARD
GYP PLAS	GYPSUM PLASTER
H	HIGH
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HIGH POINT
HT	HEIGHT
HVAC	HEATING, VENTILATION, AIR CONDITIONING
ID	INSIDE DIAMETER
INSUL	INSULATION
INT	INTERIOR
L	LONG, LENGTH
LAM	LAMINATE(D)
LF	LINEAR FOOT, (FEET)
LP	LOW POINT
LVR	LOUVER
m	METER
MAX	MAXIMUM
MECH	MECHANICAL
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
mm	MILLIMETER
MO	MASONRY OPENING
MTL	METAL
N	NORTH
NIC	NOT IN CONTRACT
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF/CI	OWNER FURNISHED, CONTRACTOR INSTALLED
OF/OI	OWNER FURNISHED, OWNER INSTALLED
OPH	OPPOSITE HAND
PCC	PRE-CAST CONCRETE
PERF	PERFORATED
PLAM	PLASTIC LAMINATE
PLBG	PLUMBING
PNT	PAINT
PREFAB	PREFABRICATE(D)
PROJ	PROJECT
PROP	PROPERTY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
QTY	QUANTITY
R	RADIUS, RISER
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REINF	REINFORCE, REINFORCING
REQ(D)	REQUIRE, REQUIRED
REV	REVISION
RM	ROOM
RO	ROUGH OPENING
S	SOUTH
SCHED	SCHEDULE
SEC CAM	SECURITY CAMERA
SECT	SECTION
SF	SQUARE FOOT(FEET)
SIM	SIMILAR
SPEC	SPECIFICATION
SST	STAINLESS STEEL
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STRUCT	STRUCTURAL
T	TREAD
T/	TOP OF
T&G	TONGUE & GROOVE
TEMP	TEMPORARY
THK	THICK
TYP	TYPICAL
U	HEAT TRANSFER COEFFICIENT
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W	WEST
W/	WITH
W/O	WITHOUT
WD	WOOD
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH

SYMBOLS LEGEND

COLUMN GRID DESIGNATION

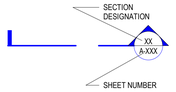


NEW GRID

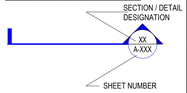
SHEET KEYNOTE TAGS

? SHEET KEYNOTE

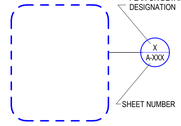
BUILDING SECTION TAG



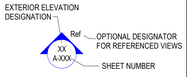
WALL / DETAIL SECTION TAGS



ENLARGED PLAN TAG

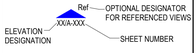


EXTERIOR ELEVATION TAG



INTERIOR ELEVATION TAGS

INTERIOR ELEVATION TAG SINGLE-DIRECTIONAL



DOOR IDENTIFICATION TAG

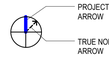
EQUIPMENT DESIGNATION

XXXXX EQUIPMENT TAG
REFER TO A66 SERIES FOR INFORMATION

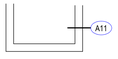
TOILET ACCESSORY TAG

TA-1 TOILET ACCESSORY TAG. REFER TO THIS SHEET FOR LEGEND AND MOUNTING HEIGHTS

NORTH ARROW



PARTITION TAG



REFER TO A61 SERIES FOR PARTITION TYPES

GLAZING TAG

A EXTERIOR GLAZING SYSTEM TAG
REFER TO A33 SERIES FOR SCHEDULE

1 INTERIOR GLAZING SYSTEM TAG
REFER TO A63 SERIES FOR SCHEDULE

GENERAL PROJECT NOTES

1. REFER TO COMPLETE SET OF ISSUED CONTRACT DOCUMENTS FOR APPLICABLE NOTES, ABBREVIATIONS, AND SYMBOLS.
2. DO NOT SCALE THE DRAWINGS. IF DIMENSIONS ARE IN QUESTION OBTAIN CLARIFICATION FROM THE ARCHITECT BEFORE PROCEEDING.
3. DIMENSIONS SHOWN ON THE FLOOR PLANS FOR NEW CONSTRUCTION ARE TO THE FACE OF GYPSUM BOARD FOR PARTITIONS, TO CENTER LINE OF COLUMNS AND TO FACE OF CONCRETE OR MASONRY WALLS UNLESS OTHERWISE INDICATED. DIMENSIONS IN RENOVATED AREAS ARE FROM FINISH FACE OF EXISTING WALLS AND TO FINISH FACE OF GYPSUM BOARD FOR NEW PARTITIONS UNLESS OTHERWISE INDICATED.
4. FIELD MEASURE AND CONFIRM DIMENSIONS FOR OWNER PROVIDED EQUIPMENT AND FURNISHINGS. COORDINATE WITH THE OWNER ON DELIVERY AND INSTALLATION OF OF/CI EQUIPMENT. MINIMUM REQUIRED OPENINGS AND ACCESSIBLE ROUTES TO THE INSTALLATION AREA SHALL BE COORDINATED WITH THE SUPPLIER.
5. FINISH FLOOR ELEVATIONS ARE TO TOP OF STRUCTURAL FLOOR UNLESS OTHERWISE NOTED.
6. PARTITION TYPES AND FIRE RESISTIVE RATINGS INDICATED ON A PARTITION ARE TO BE CONSISTENT FOR THE LENGTH AND HEIGHT OF A PARTITION.
7. OPENINGS IN A RATED WALL, FLOOR, CEILING AND ROOF ASSEMBLIES SHALL BE SEALED WITH A FIRE RESISTANT JOINT SYSTEMS OR PROTECTED WITH A FIRE RATED CHASE.

MATERIALS AT LARGE SCALES

SOIL

GRAVEL, POROUS FILL

CONCRETE

TERRAZZO

CUT STONE

BRICK, COMMON FACE

CONCRETE MASONRY UNIT

STEEL

ALUMINUM / ORNAMENTAL METAL

BLOCKING OR SHIM

FINISH WOODWORK

PLYWOOD

GYPSUM BOARD OR SHEATHING

RIGID INSULATION

BATT INSULATION

ACOUSTICAL CEILING

SPRAY-ON FIREPROOFING OR INSULATION

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PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE

GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS

SHEET NUMBER

A00-01

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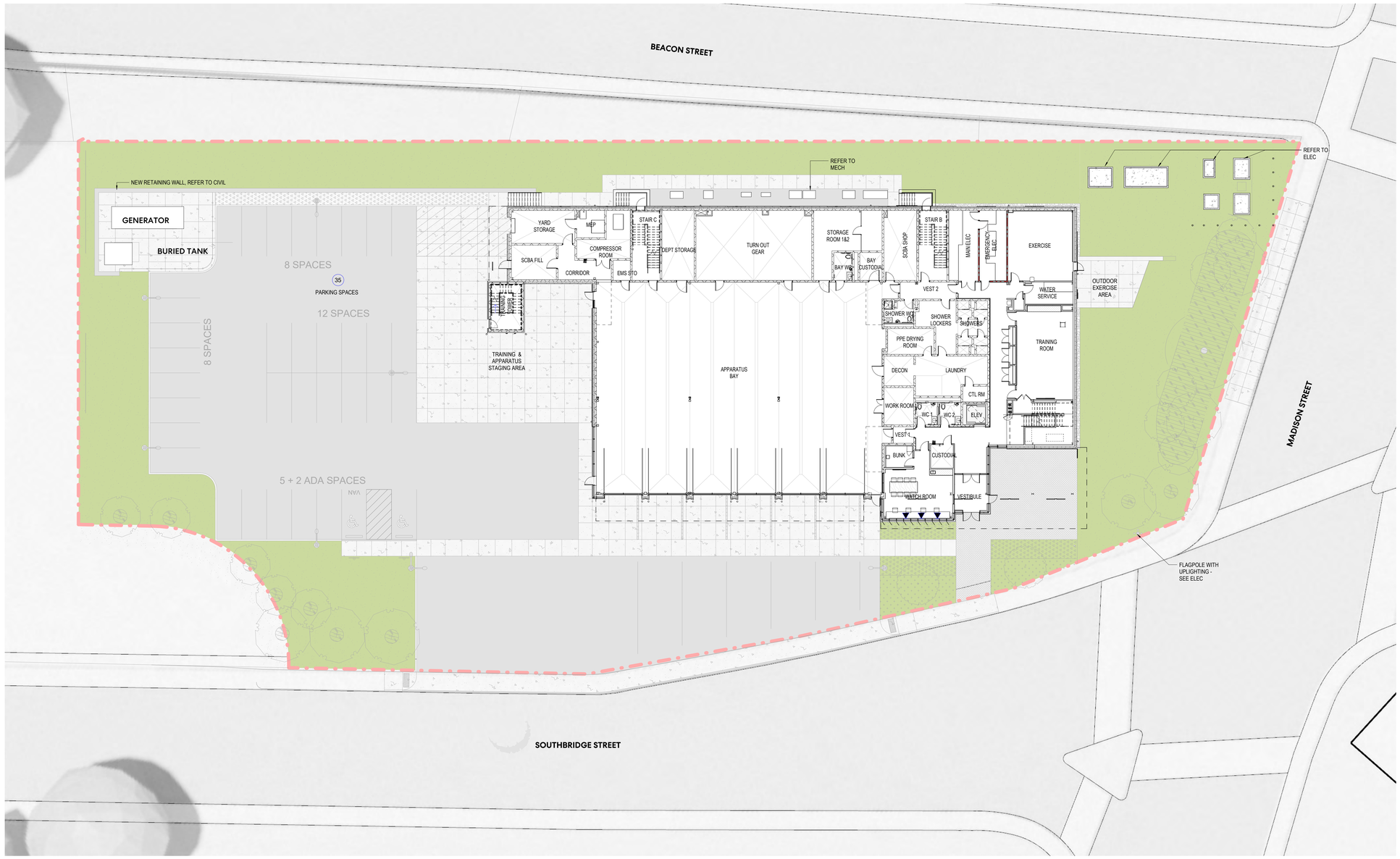
ARCHITECTURAL SITE PLAN LEGEND

PROPERTY LINE

(12) NEW PARKING SPACE COUNT



1 ARCHITECTURAL SITE PLAN
SCALE 1/16" = 1'-0"

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REGISTERED ARCHITECT PATRICK J. CUNNINGHAM No. 50258 BOSTON COMMONWEALTH OF MASSACHUSETTS

PROJECT

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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ARCHITECTURAL SITE PLAN

SHEET NUMBER

A01-01

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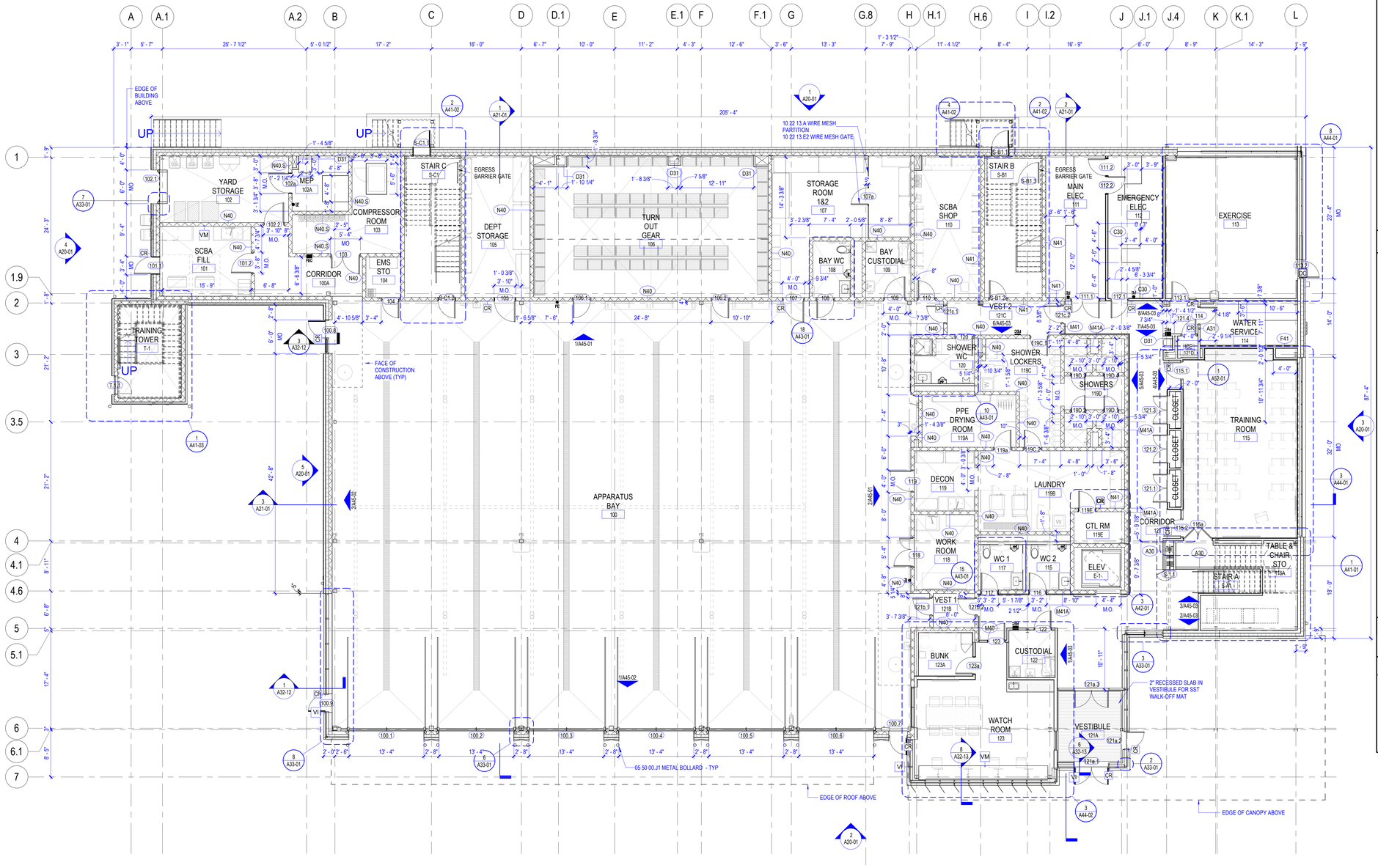

1 LEVEL 01 FLOOR PLAN
SCALE 1/8" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. SEE THE A61 SERIES FOR PARTITION TYPES
2. ALL PARTITIONS ARE TYPE A31 UNLESS NOTED OTHERWISE
3. DOOR DIMENSIONS ARE TO EDGE OF DOOR LEAF UNLESS NOTED OTHERWISE.
4. FOR SWINGING DOORS, THE HINGE SIDE OF OF THE DOOR JAMB SHALL BE LOCATED 4" FROM THE ADJACENT PERPENDICULAR WALL, UNLESS NOTED OTHERWISE
5. REFER TO A32-01 AND A32-02 FOR EXTERIOR ASSEMBLIES
6. PROVIDE 3" (EQUAL TO R-15) UNDERSLAB INSULATION UNDER APPARATUS BAY AND WEST OF STAIR C BETWEEN GRIDLINES 1 AND 2 ON LEVEL 1.
7. INTERIOR MASONRY OPENINGS TO BE 3'-4" UNLESS NOTED OTHERWISE.
8. REFER TO STRUCTURAL FOR SHEAR WALLS LOCATIONS AND REQUIREMENTS.
9. WALL TYPE N40.S IS A FULLY GROUTED MASONRY WALL PROVIDED FOR ACOUSTICS ONLY, REFER TO 04 20 00
10. WALL TYPES M41A & N41A CONTAIN AN ADDITIONAL LAYER OF 5/8" GYPSUM WALL BOARD.
11. ROLLER SHADES, " R" INDICATE RECESSED OR " S" FOR SURFACE MOUNTED

FLOOR PLAN LEGEND

- 270 DEGREE IP SECURITY CAMERA
- FIXED IP SECURITY CAMERA
- VI — VIDEO INTERCOM SUBSTATION
- VM — VIDEO INTERCOM SUBSTATION
- DC — DOOR CONTACT / POSITION SWITCH
- CR — ACCESS CONTROL CARDR READER
- COMMUNICATION OUTLET
- W — WALL PHONE COMMUNICATION OUTLET
- TV — IN-WALL BOX TELEVISION COMMUNICATIONS OUTLET WITH AV INFRASTRUCTURE
- STATUS — STATUS BOARD DATA OUTLET
- DIS — IN-WALL BOX DISPLAY COMMUNICATIONS OUTLET WITH AV INFRASTRUCTURE

FLOOR PLAN KEYNOTES

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KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

FLOOR PLAN LEVEL 01

SHEET NUMBER

A11-01

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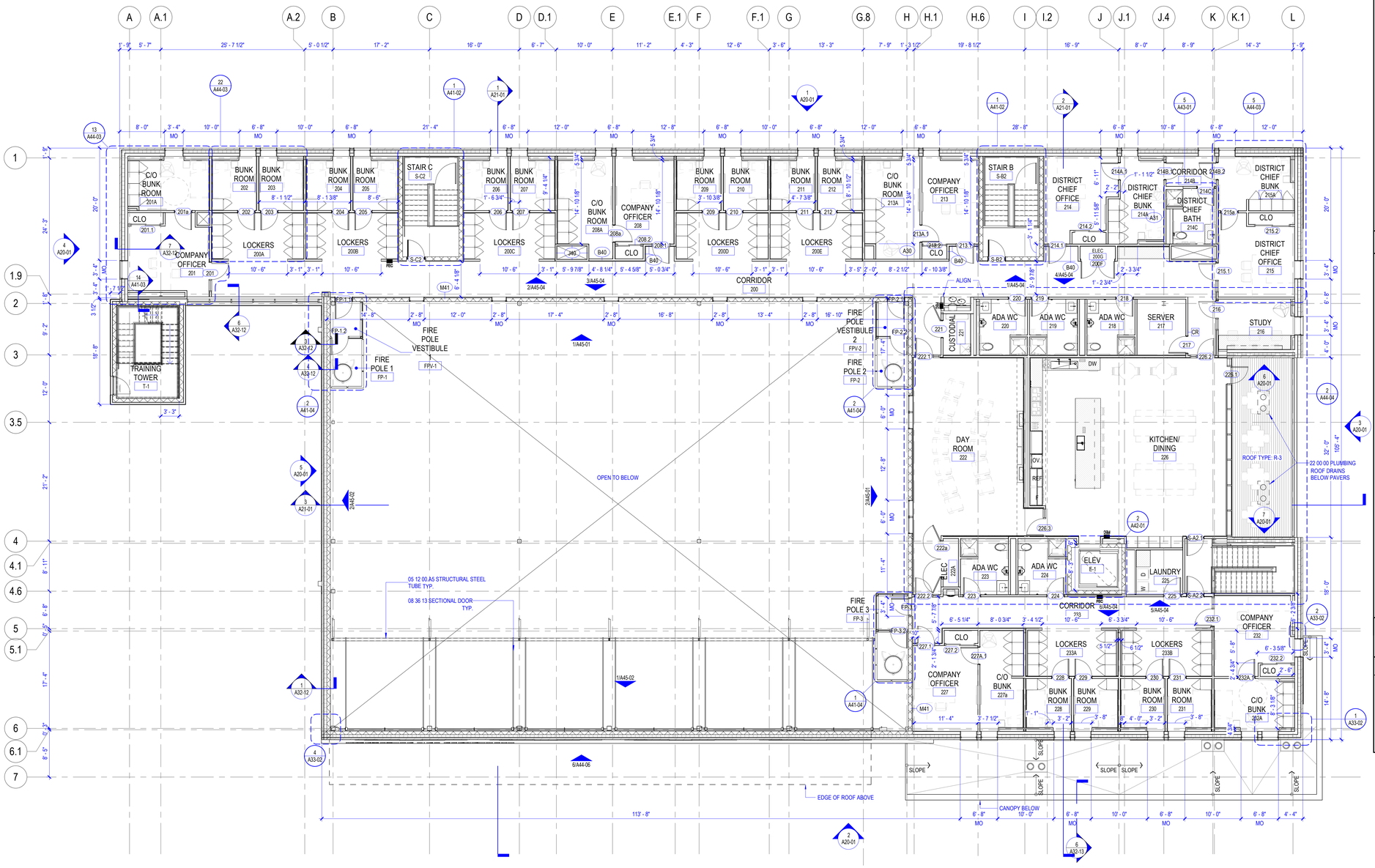

1 LEVEL 02 FLOOR PLAN
SCALE 1/8" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. SEE THE A61 SERIES FOR PARTITION TYPES
2. ALL PARTITIONS ARE TYPE A31 UNLESS NOTED OTHERWISE
3. DOOR DIMENSIONS ARE TO EDGE OF DOOR LEAF UNLESS NOTED OTHERWISE.
4. FOR SWINGING DOORS, THE HINGE SIDE OF OF THE DOOR JAMB SHALL BE LOCATED 4" FROM THE ADJACENT PERPENDICULAR WALL, UNLESS NOTED OTHERWISE
5. REFER TO A32-01 AND A32-02 FOR EXTERIOR ASSEMBLIES
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7. INTERIOR MASONRY OPENINGS TO BE 3'-4" UNLESS NOTED OTHERWISE.
8. REFER TO STRUCTURAL FOR SHEAR WALLS LOCATIONS AND REQUIREMENTS.
9. WALL TYPE N40.S IS A FULLY GROUTED MASONRY WALL PROVIDED FOR ACOUSTICS ONLY, REFER TO 04 20 00
10. WALL TYPES M41A & N41A CONTAIN AN ADDITIONAL LAYER OF 5/8" GYPSUM WALL BOARD.
11. ROLLER SHADES, " R" INDICATE RECESSED OR " S" FOR SURFACE MOUNTED

FLOOR PLAN LEGEND

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- FIXED IP SECURITY CAMERA
- VI — VIDEO INTERCOM SUBSTATION
- VM — VIDEO INTERCOM SUBSTATION
- DC — DOOR CONTACT / POSITION SWITCH
- CR — ACCESS CONTROL CARDR READER
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FLOOR PLAN KEYNOTES

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KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

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FLOOR PLAN LEVEL 02

SHEET NUMBER

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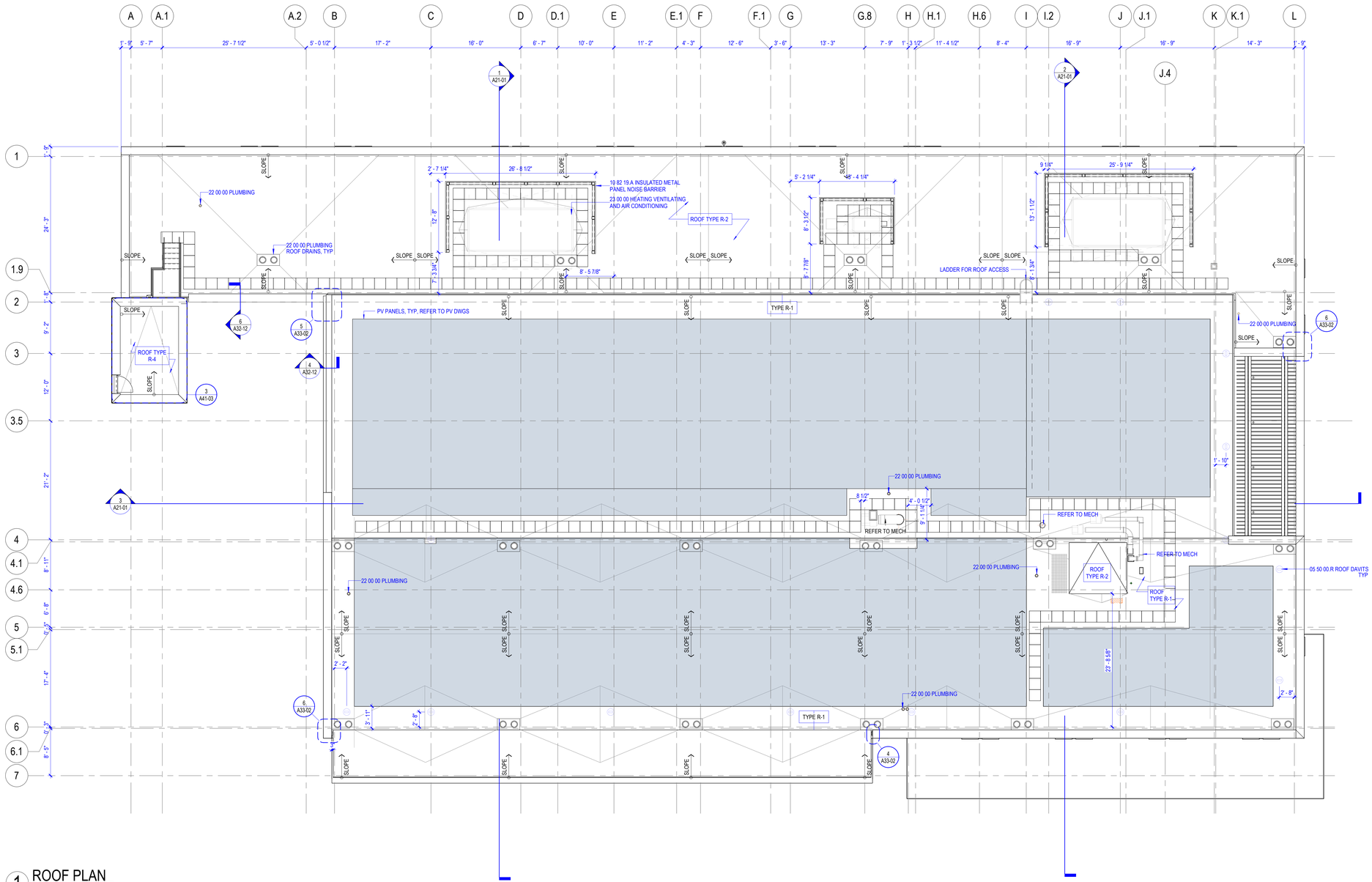

1 ROOF PLAN
SCALE 1/8" = 1'-0"

ROOF PLAN GENERAL NOTES

1. REFER TO STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL FOR LOCATIONS OF OTHER ITEMS ON THE ROOF SURFACE.
2. PAINT EXPOSED ROOF MOUNTED EQUIPMENT, PIPING, ETC., EXCEPT THOSE ITEMS WHICH ARE PREFINISHED OR STAINLESS STEEL. COLOR AS SELECTED BY ARCHITECT.
3. REFER TO PLUMBING DRAWINGS FOR ROOF DRAIN SIZES.
4. PROVIDE ROOF CRICKETS AT ALL MECHANICAL EQUIPMENT AND OTHER ROOFTOP OBSTRUCTIONS TO ENSURE POSITIVE DRAINAGE TO ROOF DRAINS.

ROOF PLAN LEGEND

- NOT IN CONTRACT
- 24"x24" FLEXIBLE WALKWAY
- ROOF DRAIN AND OVERFLOW
- INSULATION SLOPE
- ROOF DAVITS

ROOF PLAN KEYNOTES

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KEY PLAN

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ISSUE CHART

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Job Number 157132.000

TITLE

ROOF PLAN

SHEET NUMBER

A11-03

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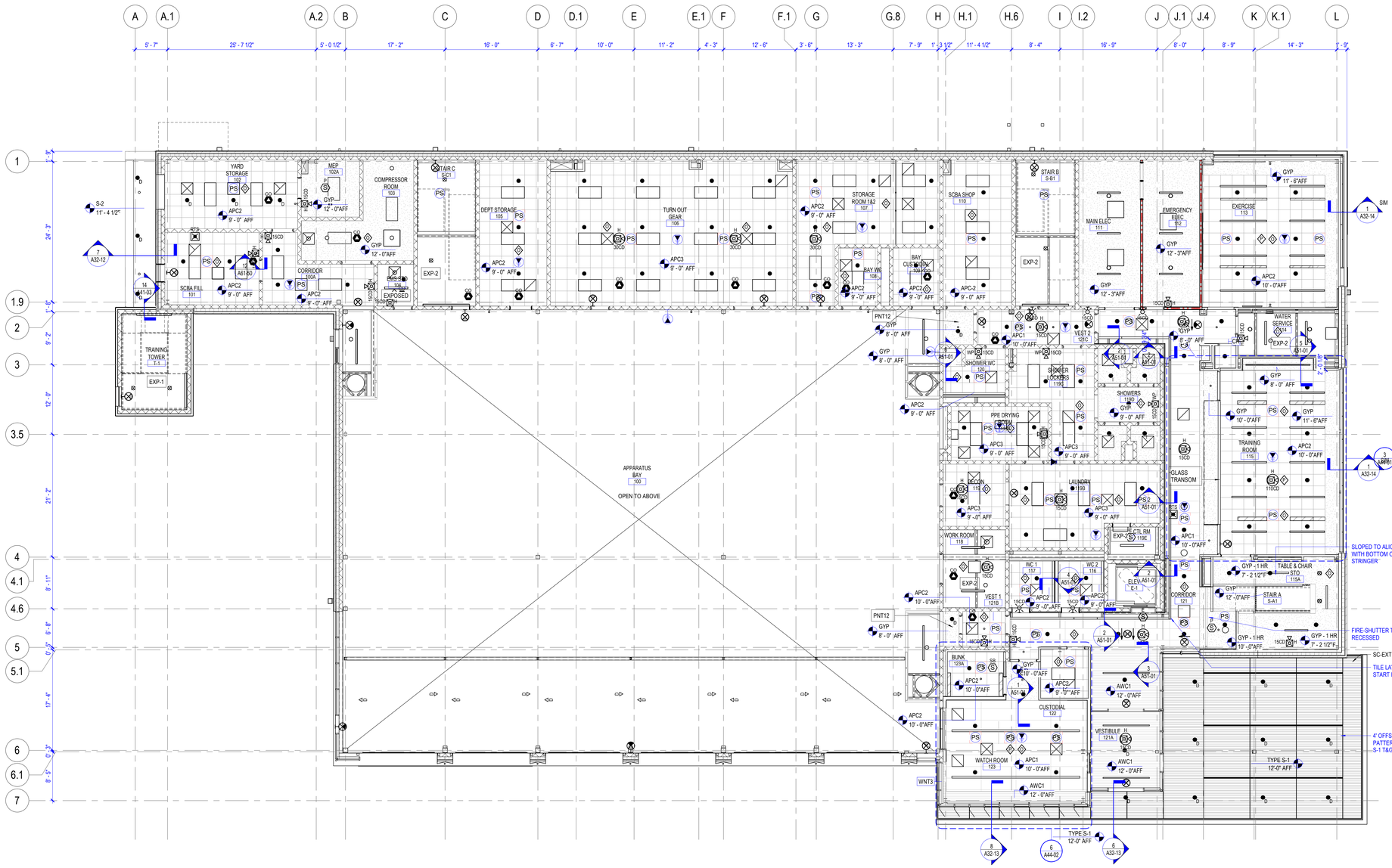

1 LEVEL 1 - REFLECTED CEILING PLAN
SCALE 1/8" = 1'-0"

REFLECTED CEILING PLAN GENERAL NOTES

1. GYPSUM BOARD CEILINGS AND SOFFITS TO BE PAINTED PNT1, UNO.
2. OPEN-TO-STRUCTURE AREAS (NO CEILING), INCLUDING OVERHEAD MEPFP SYSTEMS, SHALL BE PAINTED PNT7, UNO.
3. CENTER FIXTURES, DEVICES AND OTHER ELEMENTS IN ACOUSTIC PANEL(S) IN BOTH DIRECTIONS, UNLESS OTHERWISE NOTED.
4. LIGHTING FIXTURES ARE DIMENSIONED TO CENTER OF FIXTURE, UNLESS NOTED OTHERWISE.
5. LAY DIRECTIONAL PATTERN CEILING PANEL OR TILE ONE WAY WITH PATTERN AS INDICATED BY ARCHITECT UNLESS OTHERWISE NOTED.
6. LOCATE ACCESS PANELS AS INDICATED ON THE DRAWINGS. FOR ACCESS PANELS NOT SHOWN BUT REQUIRED BY PROVISIONS OF THE CONTRACT DOCUMENTS, LOCATE IN ACCORDANCE WITH APPLICABLE CODES. FIELD VERIFY LOCATION OF ACCESS PANELS, AND MARK ON SLAB FOR ARCHITECT'S REVIEW. ENSURE ALL ABOVE-CEILING MEPFP DEVICES WHICH MAY REQUIRE SERVICE OR MAINTENANCE ARE ACCESSIBLE.
7. ALL VISIBLE SURFACES, DEVICES AND EQUIPMENT INSIDE DUCTWORK OR SUPPLY/RETURN REGISTERS SHALL BE PAINTED NON-SPECULAR BLACK.
8. CEILING SUPPORT SYSTEMS ARE NOT DESIGNED OR INTENDED TO SUPPORT THE WEIGHT OF ADDITIONAL EQUIPMENT, CABLE, CONDUIT, LIGHTS, MECHANICAL EQUIPMENT OR OTHER CONSTRUCTION. SUPPORT THESE ITEMS INDEPENDENTLY FROM THE STRUCTURE ABOVE.
9. DO NOT HANG (SUPPORT) ANY ITEMS FROM METAL ROOF DECK AND WOOD DECK.
10. SEE A13-00s FOR ROLLER SHADES LOCATIONS AND TYPES
11. IN ROOMS 100, 222, 225, AND STAIRS, ALL EXPOSED STRUCTURE AND SYSTEMS (INCLUDING BUT NOT LIMITED TO CONDUITS, PIPES, HANGERS, DUCTWORK AND EQUIPMENT) TO BE PAINTED WITH PNT7

LEGEND

- LIGHT FIXTURE
- GYPSUM BOARD CEILING / SOFFIT (GYP)
- ACOUSTICAL PANEL CEILING (APC)
- SOLID WOOD LINEAR CEILING (AWC)
- EXIT SIGN
  - SHADED SIDE(S) INDICATE(S) LIT SIGN FACE
  - SYMBOL ARROWS INDICATE CHEVRON DIRECTIONAL ARROWS ON SIGN FACE(S)
- EXP1 — EXPOSED TO WOOD DECK (WITH STAIN)
- EXP2 — EXPOSED TO METAL DECK (PNT1)
- XXX-X / 1'- 0" AFF — CEILING MATERIAL CODE (REFER TO FINISH SCHEDULES); CEILING HEIGHT
- WT#.# — WINDOW TREATMENT - REFER TO FINISH SCHEDULE AND LEGEND
- CJ — GYPSUM BOARD CONTROL JOINT
- FIXED IP SECURITY CAMERA
- WIRELESS ACCESS POINT OUTLET
- WIRELESS ACCESS POINT WALL MOUNTED OUTLET
- OVERHEAD PAGING SYSTEM ANALOG LOUDSPEAKER - 2'X2' DROP-TILE MOUNTED LOUDSPEAKER
- OVERHEAD PAGING SYSTEM ANALOG LOUDSPEAKER - GYPSUM CEILING MOUNTED LOUDSPEAKER
- OVERHEAD PAGING SYSTEM ANALOG DIRECTIONAL/HORN LOUDSPEAKER - CEILING MOUNTED LOUDSPEAKER
- OVERHEAD PAGING SYSTEM ANALOG DIRECTIONAL/HORN LOUDSPEAKER - WALL MOUNTED LOUDSPEAKER
- MECHANICAL SUPPLY OR RETURN
- SMOKE DETECTOR
- OCCUPANCY SENSOR
- PHOTOCELL CONTROLLER

FIRE AND SMOKE RATING LEGEND

- NEW HOUR RATED CONSTRUCTION
- NEW 1/2HR MINIMUM FIRE PARTITION
- NEW 2HR MINIMUM RATED FIRE BARRIER
- NEW 1HR MINIMUM FIRE BARRIER
- SMOKE RESISTANT
- 60 — DOOR FIRE RATING IN MINUTES
- FIRE RATED DOOR (RED)

REFLECTED CEILING PLAN KEYNOTES

<<< Indicates Sheet Keynote on Plan

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REGISTERED ARCHITECT — PHILIP J. CUNNINGHAM — No. 60258 — BOSTON — COMMONWEALTH OF MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

REFLECTED CEILING PLAN LEVEL 01

SHEET NUMBER

A12-01

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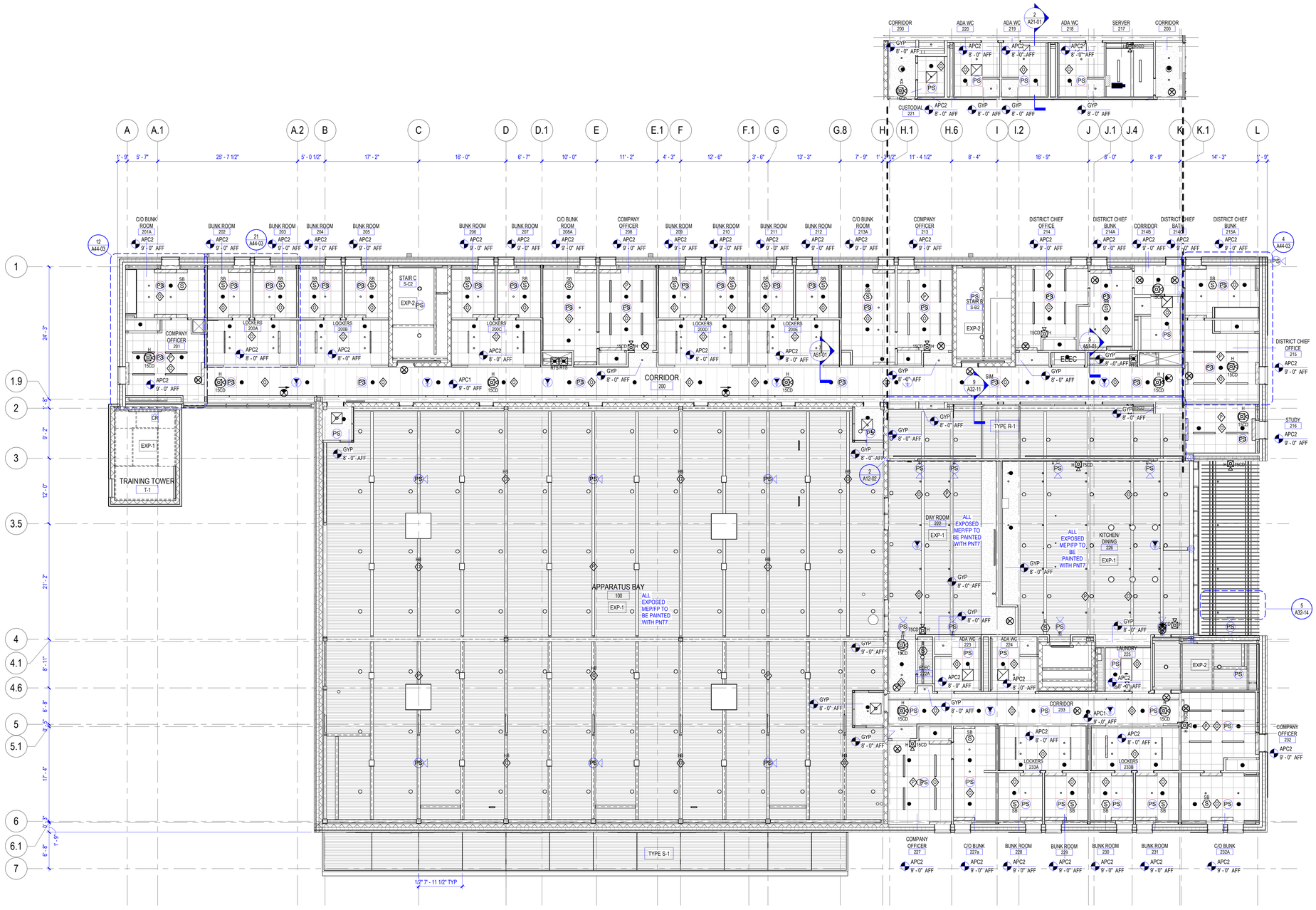

1 LEVEL 2 - REFLECTED CEILING PLAN
SCALE 1/8" = 1'-0"

REFLECTED CEILING PLAN GENERAL NOTES

1. GYPSUM BOARD CEILINGS AND SOFFITS TO BE PAINTED PNT1, UNO.
2. OPEN-TO-STRUCTURE AREAS (NO CEILING), INCLUDING OVERHEAD MEPFP SYSTEMS, SHALL BE PAINTED PNT7, UNO.
3. CENTER FIXTURES, DEVICES AND OTHER ELEMENTS IN ACOUSTIC PANEL(S) IN BOTH DIRECTIONS, UNLESS OTHERWISE NOTED.
4. LIGHTING FIXTURES ARE DIMENSIONED TO CENTER OF FIXTURE, UNLESS NOTED OTHERWISE.
5. LAY DIRECTIONAL PATTERN CEILING PANEL OR TILE ONE WAY WITH PATTERN AS INDICATED BY ARCHITECT UNLESS OTHERWISE NOTED.
6. LOCATE ACCESS PANELS AS INDICATED ON THE DRAWINGS. FOR ACCESS PANELS NOT SHOWN BUT REQUIRED BY PROVISIONS OF THE CONTRACT DOCUMENTS, LOCATE IN ACCORDANCE WITH APPLICABLE CODES. FIELD VERIFY LOCATION OF ACCESS PANELS, AND MARK ON SLAB FOR ARCHITECT'S REVIEW. ENSURE ALL ABOVE-CEILING MEPFP DEVICES WHICH MAY REQUIRE SERVICE OR MAINTENANCE ARE ACCESSIBLE.
7. ALL VISIBLE SURFACES, DEVICES AND EQUIPMENT INSIDE DUCTWORK OR SUPPLY/RETURN REGISTERS SHALL BE PAINTED NON-SPECULAR BLACK.
8. CEILING SUPPORT SYSTEMS ARE NOT DESIGNED OR INTENDED TO SUPPORT THE WEIGHT OF ADDITIONAL EQUIPMENT, CABLE, CONDUIT, LIGHTS, MECHANICAL EQUIPMENT OR OTHER CONSTRUCTION. SUPPORT THESE ITEMS INDEPENDENTLY FROM THE STRUCTURE ABOVE.
9. DO NOT HANG (SUPPORT) ANY ITEMS FROM METAL ROOF DECK AND WOOD DECK.
10. SEE A13-00s FOR ROLLER SHADES LOCATIONS AND TYPES
11. IN ROOMS 100, 222, 225, AND STAIRS, ALL EXPOSED STRUCTURE AND SYSTEMS (INCLUDING BUT NOT LIMITED TO CONDUITS, PIPES, HANGERS, DUCTWORK AND EQUIPMENT) TO BE PAINTED WITH PNT7

LEGEND

- LIGHT FIXTURE
- GYPSUM BOARD CEILING / SOFFIT (GYP)
- ACOUSTICAL PANEL CEILING (APC)
- SOLID WOOD LINEAR CEILING (AWC)
- EXIT SIGN
  - SHADED SIDE(S) INDICATE(S) LIT SIGN FACE
  - SYMBOL ARROWS INDICATE CHEVRON DIRECTIONAL ARROWS ON SIGN FACE(S)
- EXP1 — EXPOSED TO WOOD DECK (WITH STAIN)
- EXP2 — EXPOSED TO METAL DECK (PNT1)
- XXX-X / 1'-0" AFF — CEILING MATERIAL CODE (REFER TO FINISH SCHEDULES); CEILING HEIGHT
- WT#.# — WINDOW TREATMENT - REFER TO FINISH SCHEDULE AND LEGEND
- CJ — GYPSUM BOARD CONTROL JOINT
- FIXED IP SECURITY CAMERA
- WIRELESS ACCESS POINT OUTLET
- WIRELESS ACCESS POINT WALL MOUNTED OUTLET
- PS — OVERHEAD PAGING SYSTEM ANALOG LOUDSPEAKER - 2'X2' DROP-TILE MOUNTED LOUDSPEAKER
- PS — OVERHEAD PAGING SYSTEM ANALOG LOUDSPEAKER - GYPSUM CEILING MOUNTED LOUDSPEAKER
- PS — OVERHEAD PAGING SYSTEM ANALOG DIRECTIONAL/HORN LOUDSPEAKER - CEILING MOUNTED LOUDSPEAKER
- PS — OVERHEAD PAGING SYSTEM ANALOG DIRECTIONAL/HORN LOUDSPEAKER - WALL MOUNTED LOUDSPEAKER
- MECHANICAL SUPPLY OR RETURN
- SPRINKLERS
- S — SMOKE DETECTOR
- O — OCCUPANCY SENSOR
- P — PHOTOCELL CONTROLLER

FIRE AND SMOKE RATING LEGEND

REFLECTED CEILING PLAN KEYNOTES

- NEW/MAINTAIN CONSTRUCTION
- NEW 1/2HR MINIMUM FIRE PARTITION
- NEW 2HR MINIMUM RATED FIRE BARRIER
- NEW 1HR MINIMUM FIRE BARRIER
- SMOKE RESISTANT
- 60 — DOOR FIRE RATING IN MINUTES
- FIRE RATED DOOR (RED)
- NON FIRE RATED DOOR
- <<< Indicates Sheet Keynote on Plan

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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE

REFLECTED CEILING PLAN LEVEL 02

SHEET NUMBER

A12-02

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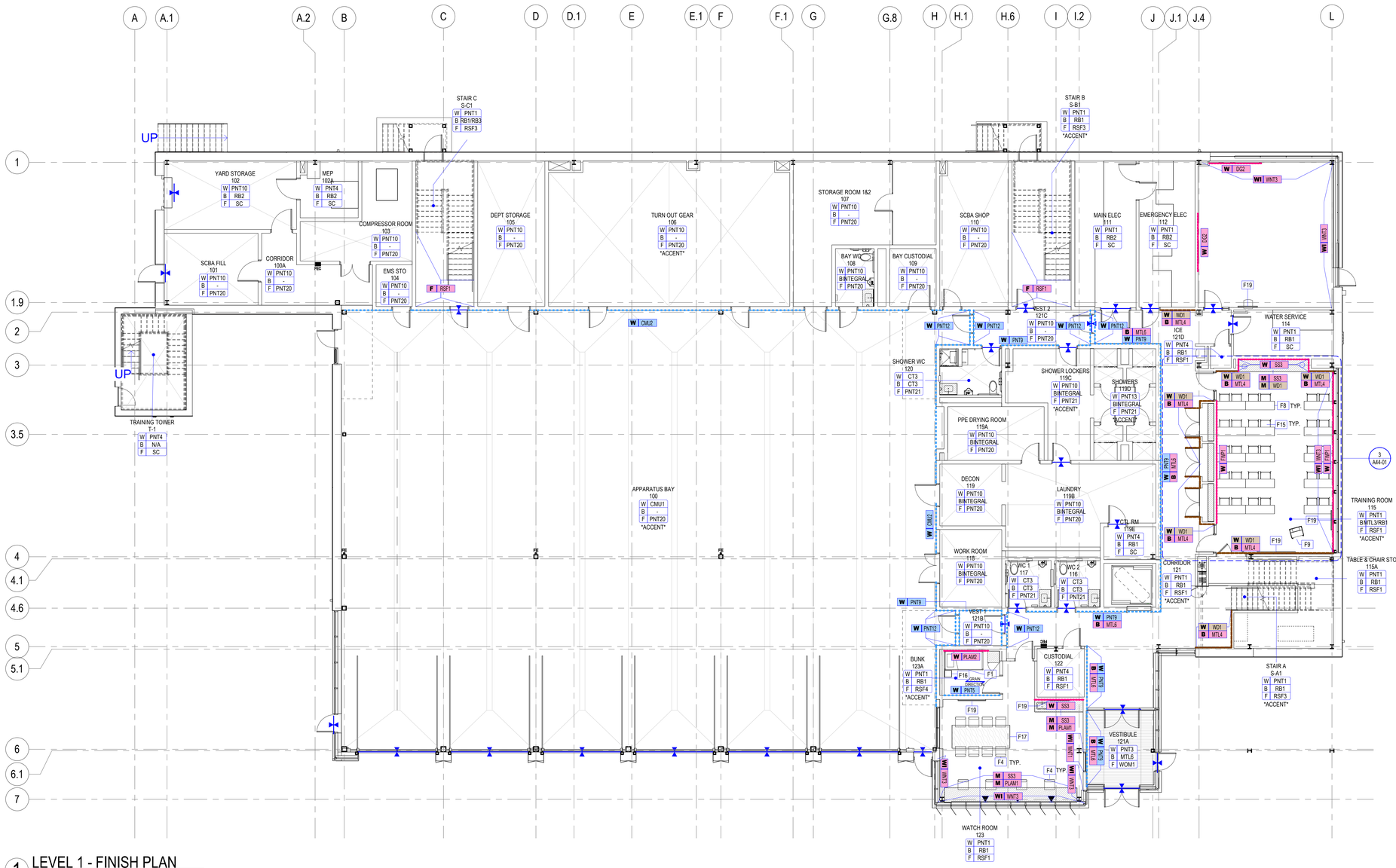
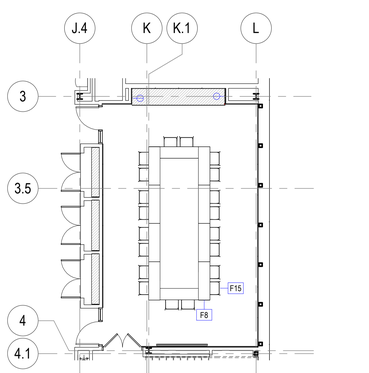
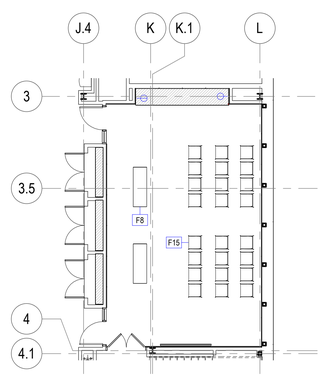


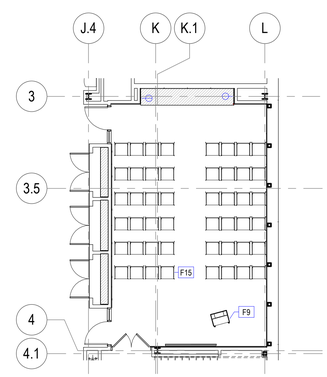
1 LEVEL 1 - FINISH PLAN
SCALE 1/8" = 1'-0"



2 LEVEL 1 - "AFTER ACTION" LAYOUT
SCALE 1/8" = 1'-0"



3 LEVEL 1 - "CPR TRAINING" LAYOUT
SCALE 1/8" = 1'-0"



4 LEVEL 1 - "LECTURE" LAYOUT
SCALE 1/8" = 1'-0"

INTERIOR FINISH PLAN GENERAL NOTES

1. REFER TO INTERIOR FINISH LEGEND IN A60 SERIES FOR INFORMATION.
2. SEE A50 SERIES FOR CASEWORK INFORMATION
3. TYPICAL FLOOR FINISH TO BE RSF1, UNO.
4. TYPICAL WALL FINISH TO BE PNT1, UNO.
5. TYPICAL WALL BASE TO BE RB1, UNO.
6. ALL FINISHES INSIDE COAT AND STORAGE CLOSETS SHALL BE CONSISTENT WITH THE ADJACENT ROOM FINISHES, UNO. FLOOR COVERINGS SHALL CONTINUE FROM ADJACENT ROOM INTO CLOSETS
7. PROVIDE A FINISH AT ALL AREAS THAT ARE EXPOSED BEHIND MILLWORK, FILE CABINETS, PANELING, ETC. DUE TO REVEALS, JOINTS, END CONDITIONS, ETC.
8. SEE ELEVATIONS ON A40 SERIES FOR ADDITIONAL FINISH INFORMATION.

BASE:

9. NEW WALL BASE SHALL BE INSTALLED ON ALL NEW AND EXISTING WALLS AND COLUMNS, UNO.
10. RESILIENT WALL BASE AT ALL HARD SURFACE FLOORS SHALL BE COVED BASE, UNO.

PAINT:

11. PAINT REVEALS AND FILER PANELS TO MATCH ADJACENT FINISHES, UNO.
12. PAINT EXPOSED ELECTRICAL RACEWAYS TO MATCH THE ADJACENT WALL SURFACE. PAINT ALL EXPOSED MISC METAL AND STRUCTURAL STEEL WITH PNT7
13. PROVIDE A PRIME PAINT COAT IN UNEXPOSED AREAS COVERED BY MILLWORK, PANELING, AND OTHER FIXED ARCHITECTURAL ELEMENTS UNO.
14. DOORS TO RECEIVE PAINT SHALL BE PAINTED PNT1, UNO.
15. HOLLOW METAL FRAMES SHALL BE PAINTED PNT1, UNO.
16. FIRE EXTINGUISHER CABINETS SHALL BE PAINTED TO MATCH ADJACENT WALL, UNO.
17. ACCESS PANELS SHALL BE PAINTED TO MATCH ADJACENT SURFACE.
18. GYPSUM BOARD SOFFITS ABUTTING A WALL SHALL BE PAINTED TO MATCH THE WALL. GYPSUM BOARD SOFFITS NOT ABUTTING A WALL SHALL BE PAINTED TO MATCH ADJACENT GYPSUM BOARD CEILING, IF APPLICABLE. GYPSUM BOARD SOFFITS ADJACENT TO ONLY ACOUSTICAL PANEL CEILINGS SHALL BE PAINTED FLAT WHITE.

FLOORING:

19. FLOORING TRANSITIONS AT DOORWAYS SHALL BE ALIGNED WITH THE FACE OF THE FRAME'S STOP FACING THE DOOR.
20. REFER TO SHEET A60 SERIES FOR ADDITIONAL INFORMATION ON FLOORING TRANSITIONS.

WINDOW TREATMENT:

1. ALL BUNK ROOMS TO RECEIVE WNT2 , PRIVATE BATH ROOM AND OFFICES ON L2 TO RECEIVE WNT1, CLERESTORY AT EXERCISE AND TRAINING ROOM TO RECEIVE WNT3, CLERESTORY AT DAY ROOM TO RECEIVE WNT4.
2. WATCH ROOM TO RECEIVE WNT1 AND WNT 3, SEE PLANS.

LEGEND

- DENOTES AREA "NOT IN CONTRACT"
- MILLWORK

ROOM FINISH TAG

Name
101

W	XXX	WALL FINISH
B	XXX	WALL BASE FINISH
F	XXX	FLOOR FINISH

"ACCENT" — IF ACCENT IS PRESENT

FINISH TAG LEGEND

W PNT1 → MATERIAL APPLICATION / FINISH KEY

W	WALL	M	MILLWORK
B	BASE	WI	WINDOW
F	FLOOR	P	PARTITION
C	CEILING (RCP ONLY)	EX	EXISTING TO REMAIN

ACCENT FINISHES

W	ELEV	SEE ELEVATION
		OTHER
		PAINT
		CERAMIC TILE
		WOOD

FINISH SYMBOLS

- FLOOR FINISH TRANSITION
- WP1 — CORNER GUARD TAG. REFER TO A** SERIES FOR INFORMATION.
- WPX — WALL PROTECTION TAG. REFER TO A** SERIES FOR " INFORMATION.
- MATERIAL SEAM
- GRAIN DIRECTION — MATERIAL PATTERN DIRECTION
- PATTERN START POINT

FINISH PLAN KEYNOTES

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CONSTRUCTION DOCUMENTS 12/19/25

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
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CITY OF WORCESTER
455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE
ARCHITECTURAL FURNITURE, EQ. & FINISHES PLAN - LEVEL 1

SHEET NUMBER
A13-01

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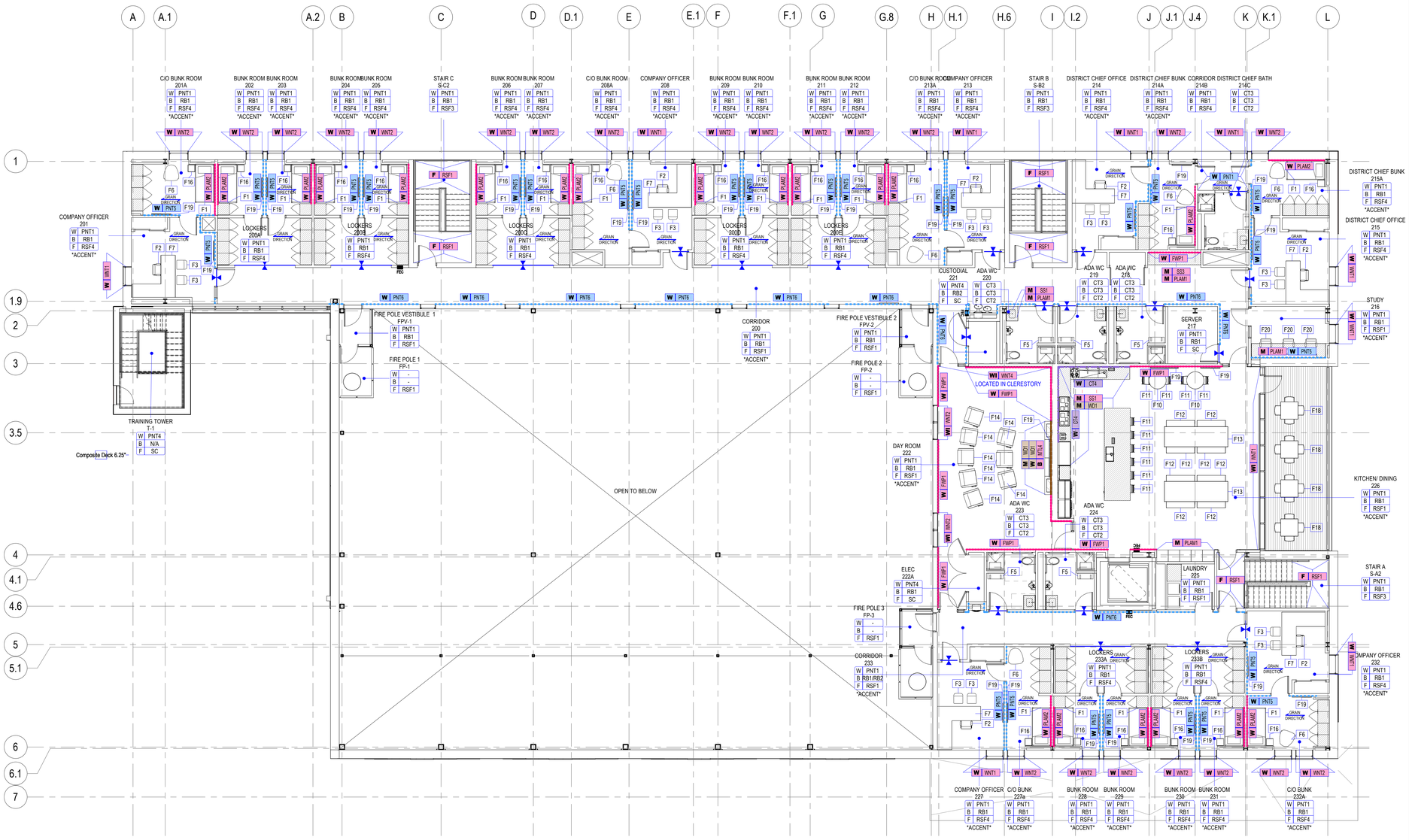

1 LEVEL 2 - FINISH PLAN
SCALE 1/8" = 1'-0"

INTERIOR FINISH PLAN GENERAL NOTES

1. REFER TO INTERIOR FINISH LEGEND IN A60 SERIES FOR INFORMATION.
2. SEE A50 SERIES FOR CASEWORK INFORMATION
3. TYPICAL FLOOR FINISH TO BE RSF1, UNO.
4. TYPICAL WALL FINISH TO BE PNT1, UNO.
5. TYPICAL WALL BASE TO BE RB1, UNO.
6. ALL FINISHES INSIDE COAT AND STORAGE CLOSETS SHALL BE CONSISTENT WITH THE ADJACENT ROOM FINISHES, UNO. FLOOR COVERINGS SHALL CONTINUE FROM ADJACENT ROOM INTO CLOSETS
7. PROVIDE A FINISH AT ALL AREAS THAT ARE EXPOSED BEHIND MILLWORK, FILE CABINETS, PANELING, ETC. DUE TO REVEALS, JOINTS, END CONDITIONS, ETC.
8. SEE ELEVATIONS ON A40 SERIES FOR ADDITIONAL FINISH INFORMATION.

BASE:

9. NEW WALL BASE SHALL BE INSTALLED ON ALL NEW AND EXISTING WALLS AND COLUMNS, UNO.
10. RESILIENT WALL BASE AT ALL HARD SURFACE FLOORS SHALL BE COVED BASE, UNO.

PAINT:

11. PAINT REVEALS AND FILER PANELS TO MATCH ADJACENT FINISHES, UNO.
12. PAINT EXPOSED ELECTRICAL RACEWAYS TO MATCH THE ADJACENT WALL SURFACE. PAINT ALL EXPOSED MISC METAL AND STRUCTURAL STEEL WITH PNT7
13. PROVIDE A PRIME PAINT COAT IN UNEXPOSED AREAS COVERED BY MILLWORK, PANELING, AND OTHER FIXED ARCHITECTURAL ELEMENTS UNO.
14. DOORS TO RECEIVE PAINT SHALL BE PAINTED PNT1, UNO.
15. HOLLOW METAL FRAMES SHALL BE PAINTED PNT1, UNO.
16. FIRE EXTINGUISHER CABINETS SHALL BE PAINTED TO MATCH ADJACENT WALL, UNO.
17. ACCESS PANELS SHALL BE PAINTED TO MATCH ADJACENT SURFACE.
18. GYPSUM BOARD SOFFITS ABUTTING A WALL SHALL BE PAINTED TO MATCH THE WALL. GYPSUM BOARD SOFFITS NOT ABUTTING A WALL SHALL BE PAINTED TO MATCH ADJACENT GYPSUM BOARD CEILING, IF APPLICABLE. GYPSUM BOARD SOFFITS ADJACENT TO ONLY ACOUSTICAL PANEL CEILINGS SHALL BE PAINTED FLAT WHITE.

FLOORING:

19. FLOORING TRANSITIONS AT DOORWAYS SHALL BE ALIGNED WITH THE FACE OF THE FRAME'S STOP FACING THE DOOR.
20. REFER TO SHEET A60 SERIES FOR ADDITIONAL INFORMATION ON FLOORING TRANSITIONS.

WINDOW TREATMENT:

1. ALL BUNK ROOMS TO RECEIVE WNT2 , PRIVATE BATH ROOM AND OFFICES ON L2 TO RECEIVE WNT1, CLERESTORY AT EXERCISE AND TRAINING ROOM TO RECEIVE WNT3, CLERESTORY AT DAY ROOM TO RECEIVE WNT4.
2. WATCH ROOM TO RECEIVE WNT1 AND WNT 3, SEE PLANS.

LEGEND

- DENOTES AREA "NOT IN CONTRACT"
- MILLWORK

ROOM FINISH TAG

Name
101

W	XXX	WALL FINISH
B	XXX	WALL BASE FINISH
F	XXX	FLOOR FINISH

"ACCENT" — IF ACCENT IS PRESENT

FINISH TAG LEGEND

MATERIAL APPLICATION
W | PNT1 — FINISH KEY

W	WALL	M	MILLWORK
B	BASE	WI	WINDOW
F	FLOOR	P	PARTITION
C	CEILING (RCP ONLY)	EX	EXISTING TO REMAIN

ACCENT FINISHES

W	ELEV	SEE ELEVATION
		OTHER
		PAINT
		CERAMIC TILE
		WOOD

FINISH SYMBOLS

- FLOOR FINISH TRANSITION
- WP1 — CORNER GUARD TAG. REFER TO A** SERIES FOR INFORMATION.
- WPX — WALL PROTECTION TAG. REFER TO A** SERIES FOR 'INFORMATION.
- MATERIAL SEAM
- GRAIN DIRECTION — MATERIAL PATTERN DIRECTION
- PATTERN START POINT

FINISH PLAN KEYNOTES

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CITY OF WORCESTER

455 MAIN STREET
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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

CONSTRUCTION DOCUMENTS 12/19/25

Job Number 157132.000

TITLE
ARCHITECTURAL FURNITURE, EQ. & FINISHES PLAN - LEVEL 2

SHEET NUMBER
A13-02

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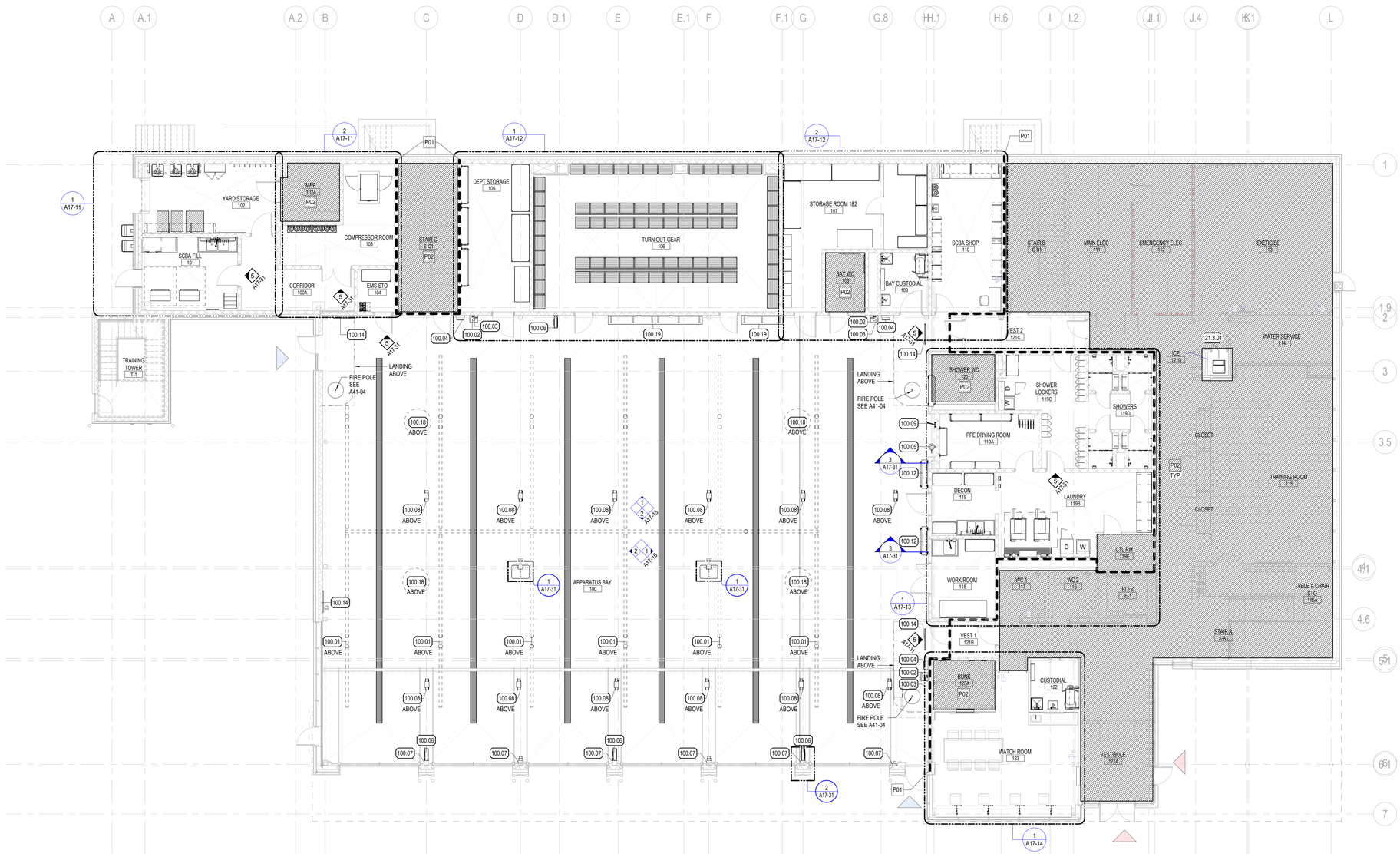
FLOOR PLAN LEGEND

NOT IN CONTRACT

PLAN KEYNOTES

P01	THE WALL BETWEEN THE APPARATUS BAY AND THE BALANCE OF THE BUILDING IS TO BE AS AIRTIGHT AS POSSIBLE.
P02	FOR ALL EQUIPMENT/FURNITURE IN HATCHED AREAS REFER TO ARCHITECTURAL DRAWINGS.



1 LEVEL 01 - FIREMATIC PLAN

SCALE 1/8" = 1'-0"

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25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE

FIREMATIC EQUIPMENT PLAN LEVEL 01

SHEET NUMBER

A17-01

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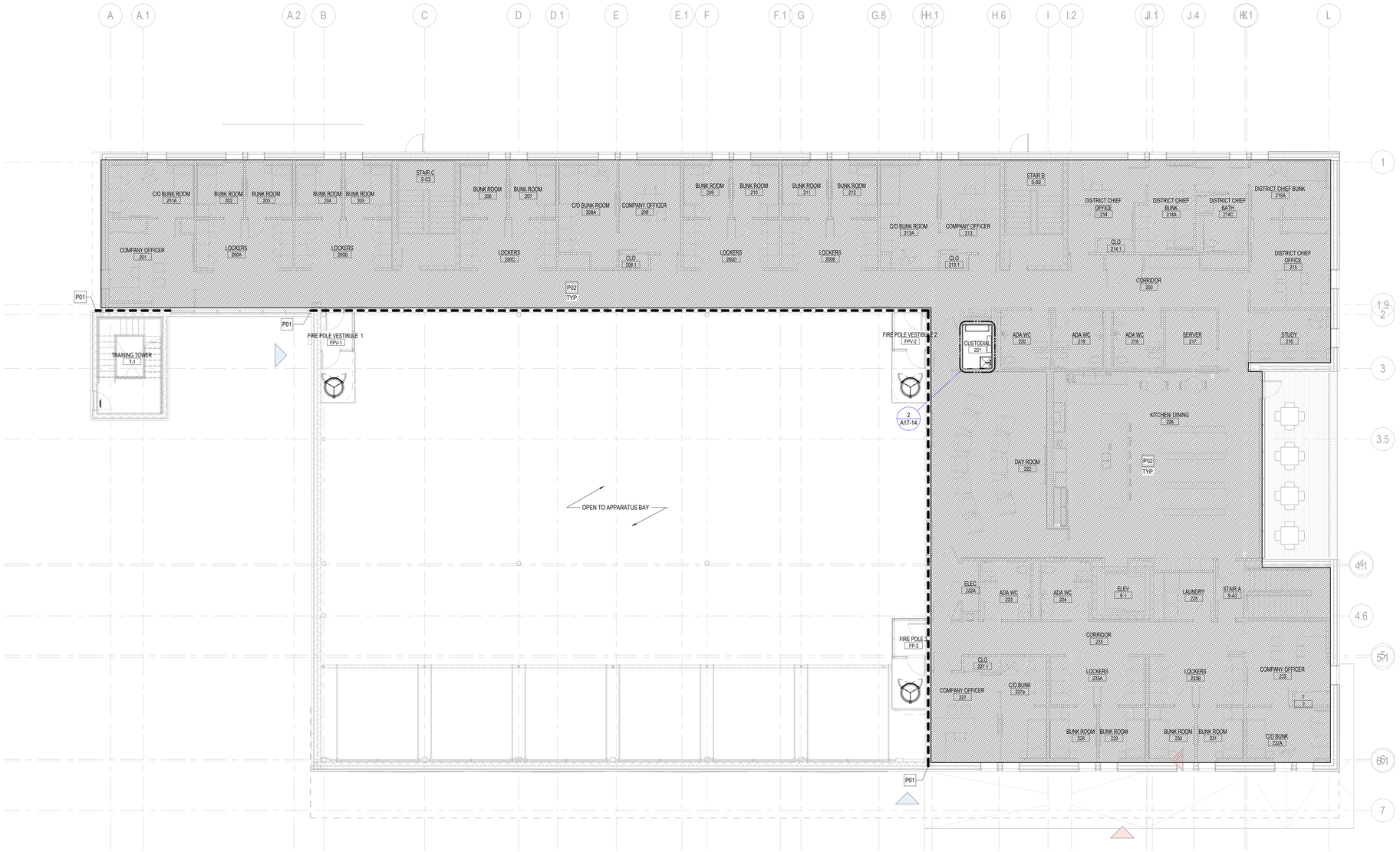

1 LEVEL 02 - FIREMATIC PLAN
SCALE 1/8" = 1'-0"

FLOOR PLAN LEGEND

NOT IN CONTRACT

PLAN KEYNOTES

P01	THE WALL BETWEEN THE APPARATUS BAY AND THE BALANCE OF THE BUILDING IS TO BE AS AIRTIGHT AS POSSIBLE.
P02	FOR ALL EQUIPMENT/FURNITURE IN HATCHED AREAS REFER TO ARCHITECTURAL DRAWINGS.

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ARUP
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ENERGY MODEL
ANDELMANLELEK
1408 PROVIDENCE HWY, NORWOOD, MA 02062

REGISTERED ARCHITECT No. 50258 BOSTON COMMONWEALTH OF MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
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455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

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FIREMATIC EQUIPMENT PLAN LEVEL 02

SHEET NUMBER

A17-02

CONSTRUCTION DOCUMENTS 12/19/25

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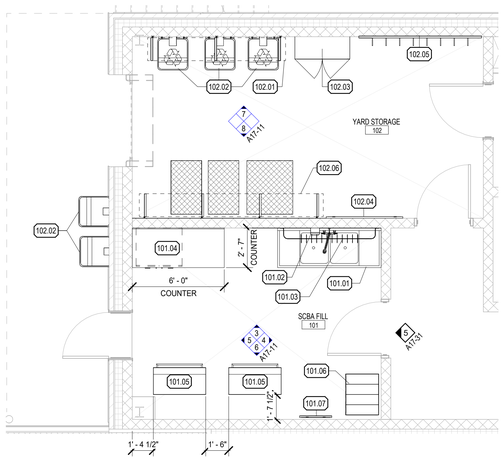
⬡	<<< Indicates Sheet Keynote on Plan
E01	CENTER ON SINK AFTER PLACE OF SINK IS ESTABLISHED



1 ENLARGED FLOOR PLAN (ROOM 101, 102)
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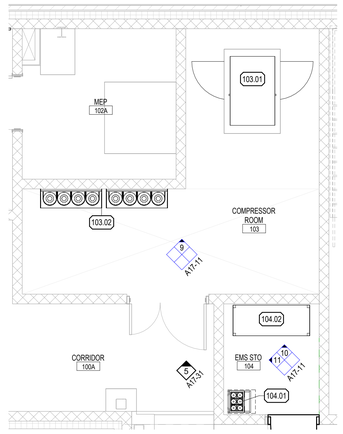

2 ENLARGED FLOOR PLAN (ROOM 103, 104)
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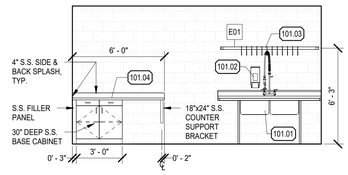

3 101 SCBA FILL - NORTH
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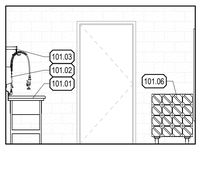

4 101 SCBA FILL - EAST
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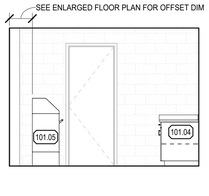

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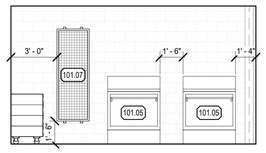

6 101 SCBA FILL - SOUTH
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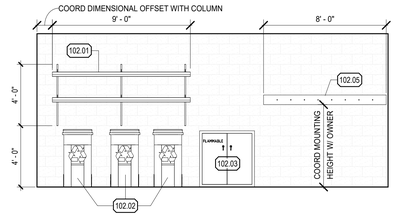

7 102 YARD STORAGE - NORTH
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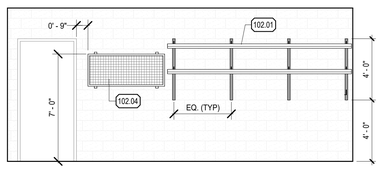

8 102 YARD STORAGE - SOUTH
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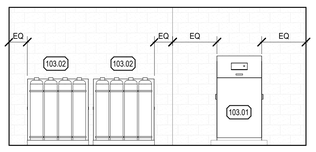

9 103 COMPRESSOR ROOM - NORTH
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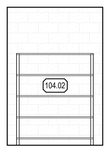

10 104 EMS STORAGE - NORTH
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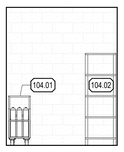

11 104 EMS STORAGE - WEST
SCALE 1/4" = 1'-0"

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REGISTERED ARCHITECT — PHILIP J. CUNNINGHAM — No. 50258 — BOSTON — COMMONWEALTH OF MASSACHUSETTS

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ENLARGED FIREMATIC EQUIPMENT PLANS AND INTERIOR ELEVATIONS

SHEET NUMBER

A17-11

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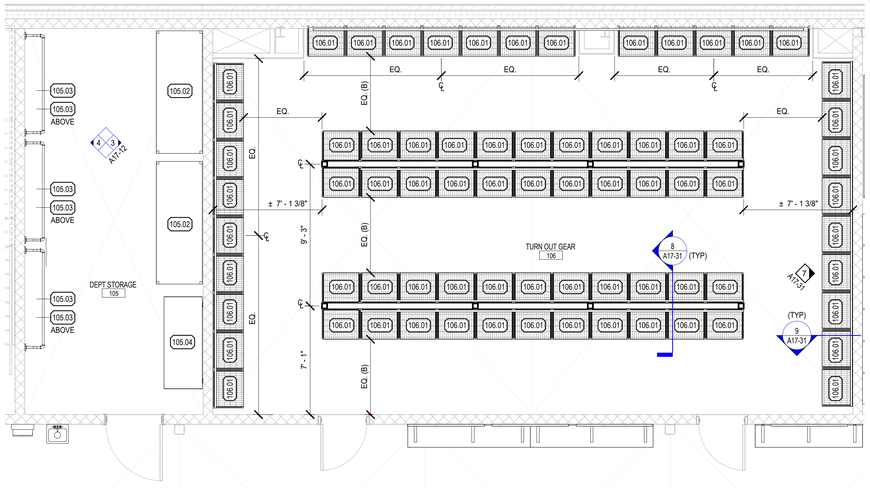

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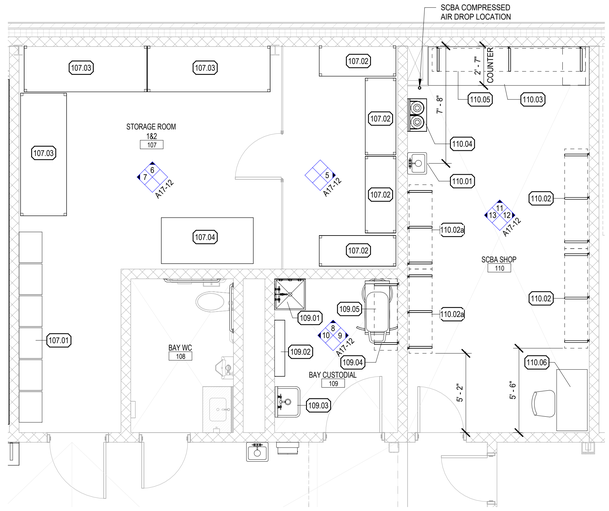

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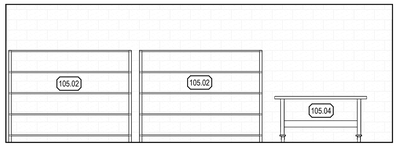

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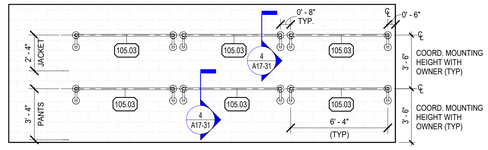

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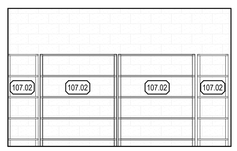

5 107 STORAGE - EAST
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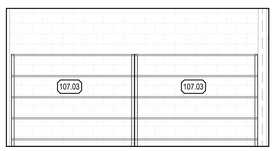

6 107 STORAGE- NORTH
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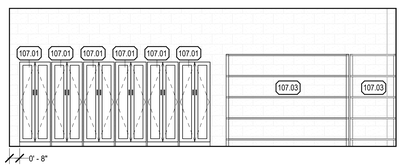

7 107 STORAGE - WEST
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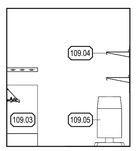
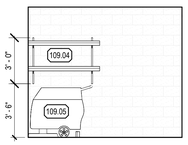


8 109 BAY CUSTODIAL - NORTH
SCALE 1/4" = 1'-0"



9 109 BAY CUSTODIAL - EAST
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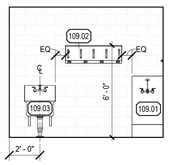

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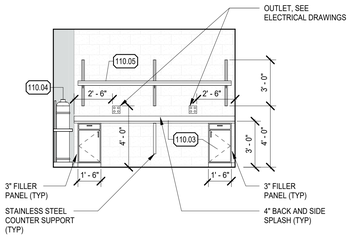

11 110 SCBA SHOP - NORTH
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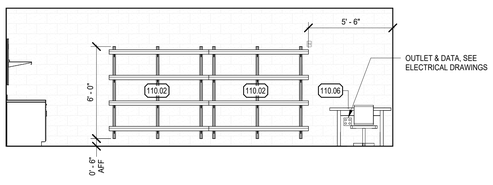

12 110 SCBA SHOP - EAST
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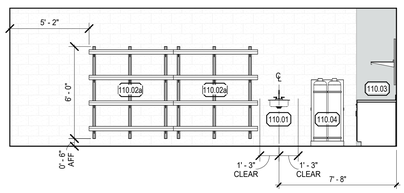

13 110 SCBA SHOP - WEST
SCALE 1/4" = 1'-0"

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ENLARGED FIREMATIC EQUIPMENT PLANS AND INTERIOR ELEVATIONS

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A17-12

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⬡	<<< Indicates Sheet Keynote on Plan
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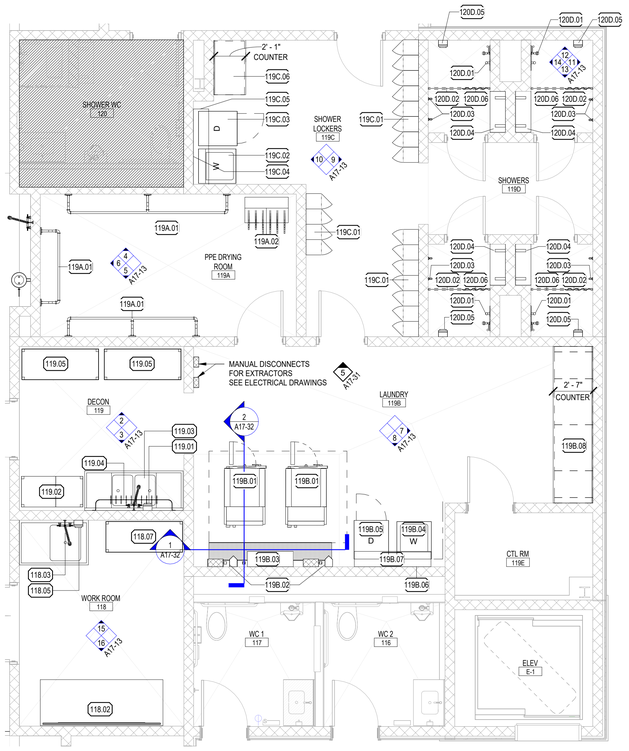

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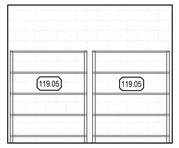

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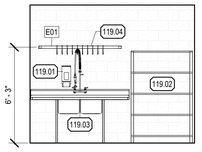

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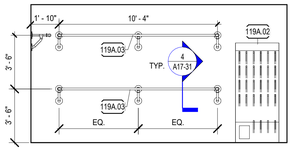

4 119A PPE DRYING ROOM - NORTH
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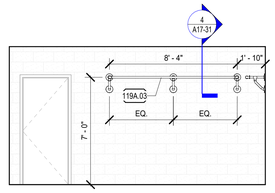

5 119A PPE DRYING ROOM - SOUTH
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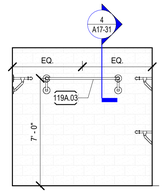

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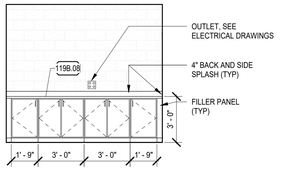

7 119B LAUNDRY - EAST
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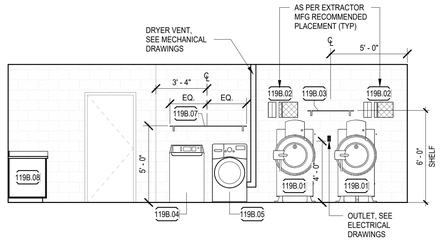

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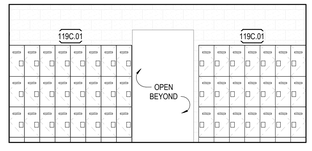

9 119C SHOWER LOCKERS - EAST
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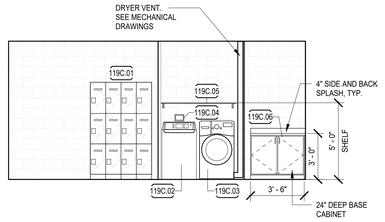

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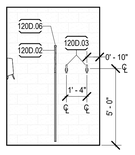

11 120D SHOWER TYP.
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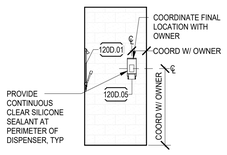

12 120D SHOWER TYP.
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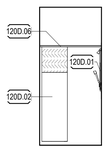
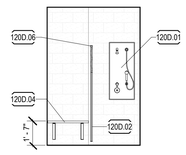
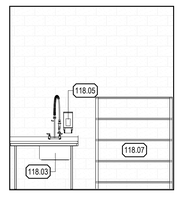


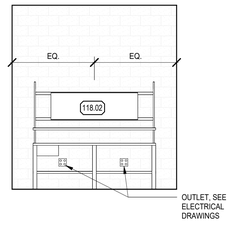
13 120D SHOWER TYP.
SCALE 1/4" = 1'-0"



14 120D SHOWER TYP.
SCALE 1/4" = 1'-0"



15 118 WORK ROOM - NORTH
SCALE 1/4" = 1'-0"



16 118 WORK ROOM - SOUTH
SCALE 1/4" = 1'-0"

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REGISTERED ARCHITECT — No. 50258 — BOSTON — COMMONWEALTH OF MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ENLARGED FIREMATIC EQUIPMENT PLANS AND INTERIOR ELEVATIONS

SHEET NUMBER

A17-13

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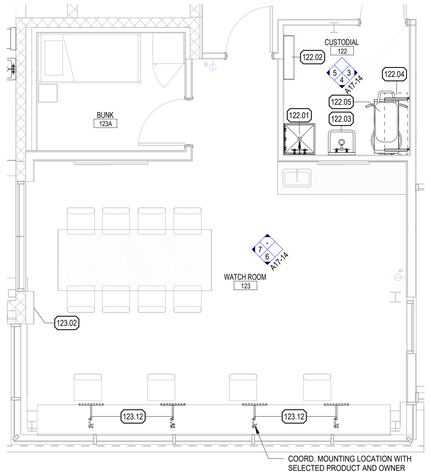
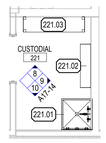


1 ENLARGED FLOOR PLAN (ROOM 122, 123)
SCALE 1/4" = 1'-0"



2 ENLARGED FLOOR PLAN (ROOM 221)
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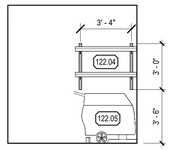
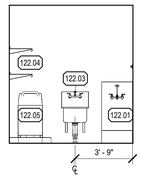
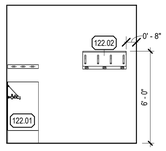


3 122 CUSTODIAL - EAST
SCALE 1/4" = 1'-0"



4 122 CUSTODIAL - SOUTH
SCALE 1/4" = 1'-0"



5 122 CUSTODIAL - WEST
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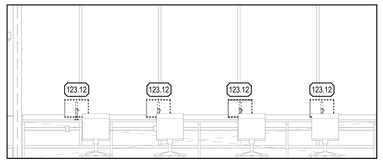
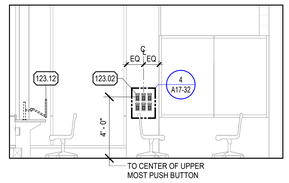
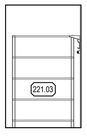


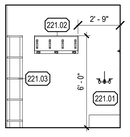
6 123 WATCH ROOM - SOUTH
SCALE 1/4" = 1'-0"



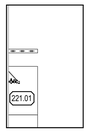
7 123 WATCH ROOM - WEST
SCALE 1/4" = 1'-0"



8 221 CUSTODIAL - NORTH
SCALE 1/4" = 1'-0"



9 221 CUSTODIAL - EAST
SCALE 1/4" = 1'-0"



10 221 CUSTODIAL - SOUTH
SCALE 1/4" = 1'-0"

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ENLARGED FIREMATIC EQUIPMENT PLANS AND INTERIOR ELEVATIONS

SHEET NUMBER

A17-14

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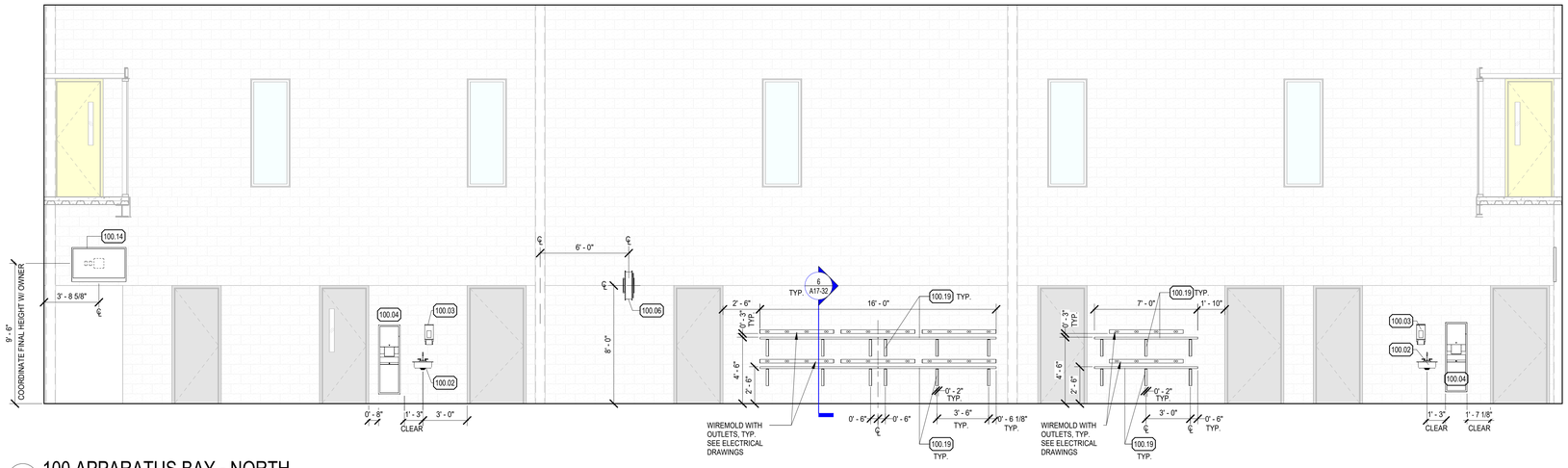
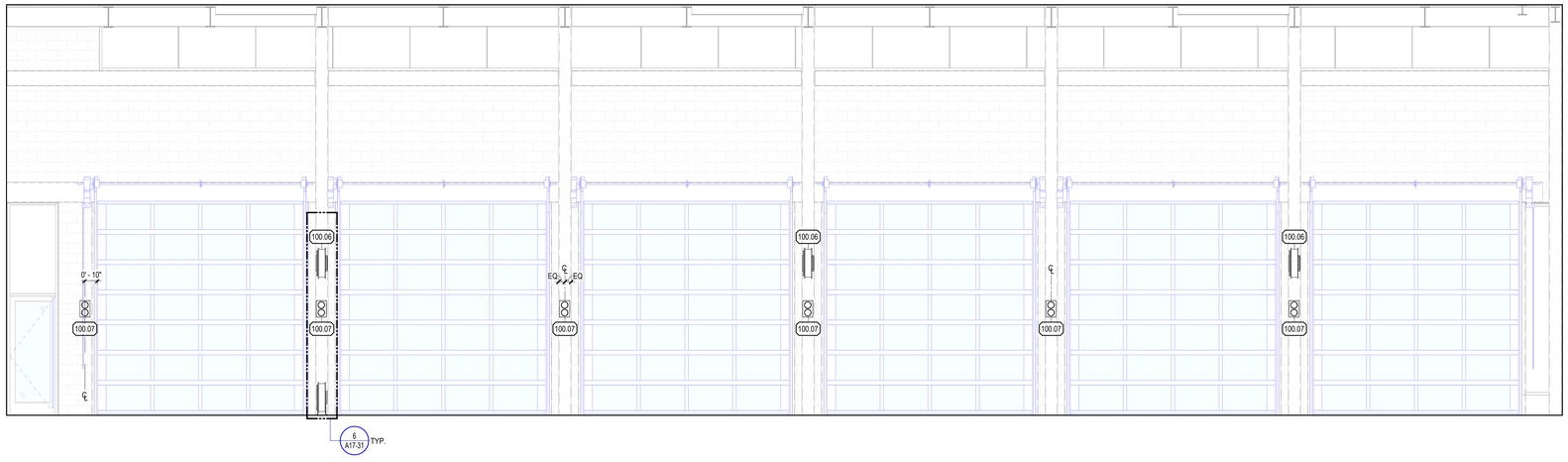


1 100 APPARATUS BAY - NORTH
SCALE 1/4" = 1'-0"



2 100 APPARATUS BAY - SOUTH
SCALE 1/4" = 1'-0"

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ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

APPARATUS BAY INTERIOR ELEVATIONS

SHEET NUMBER

A17-15

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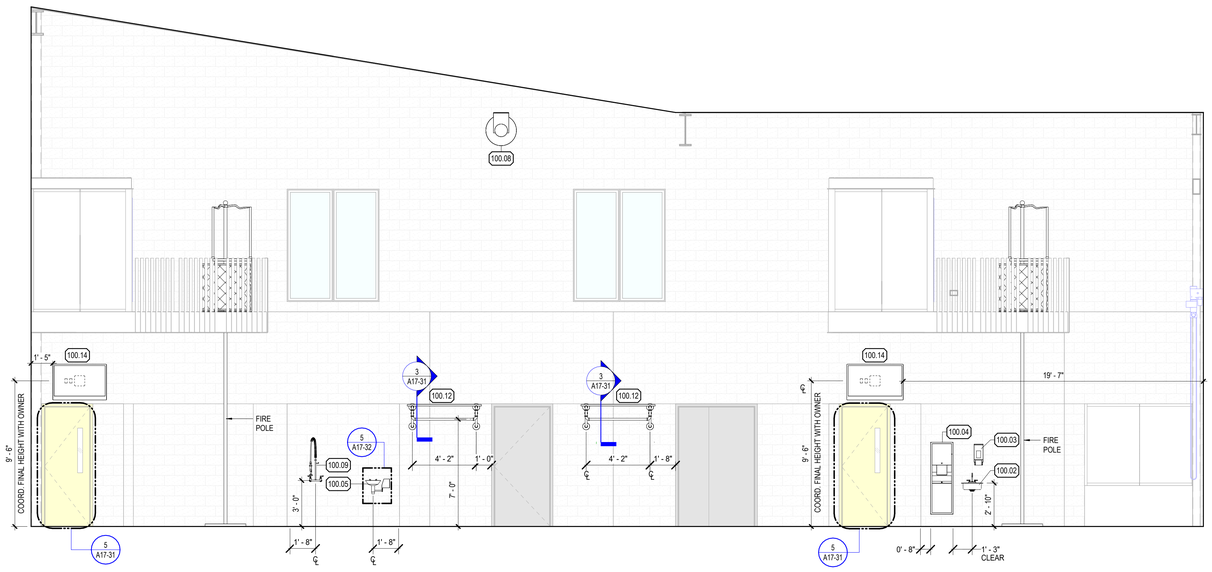

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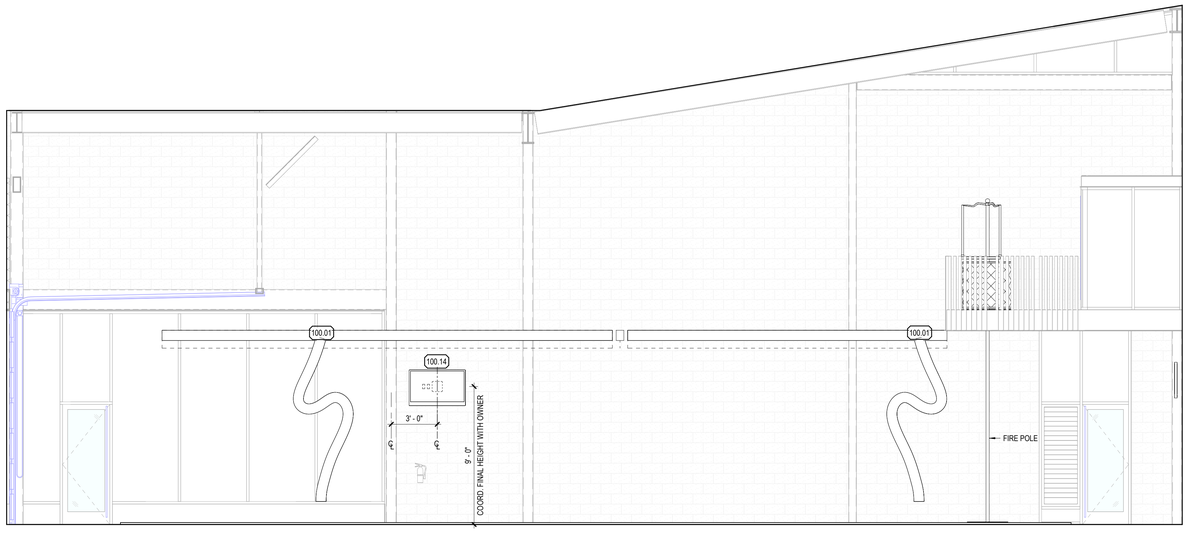

2 100 APPARATUS BAY - WEST
SCALE 1/4" = 1'-0"

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ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

APPARATUS BAY
INTERIOR ELEVATIONS

SHEET NUMBER

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FIREMATIC FF&E SCHEDULE

ROOM NAME	ROOM NUMBER	EQUIP NUMBER	DESCRIPTION	SPEC SECTION	METHOD	PLUMB REQD	MECH REQD	ELEC REQD	NOTES	MFG. & MODEL NO.
APPARATUS BAY	100	100.01	VEHICLE EXHAUST CAPTURE SYSTEM	23 00 00	OF/VI		X		SEE MECHANICAL DRAWINGS	SEE MECHANICAL DRAWINGS
APPARATUS BAY	100	100.02	HAND SINK - SEE PLUMBING DRAWINGS	22 40 00	CF/CI	X			SEE PLUMBING DRAWINGS. SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	ADVANCE TABCO 7-PS-68
APPARATUS BAY	100	100.03	(SOAP DISPENSER) GOJO CHERRY GEL PUMICE HAND CLEANER STARTER KIT	N/A	OF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	GOJO PRO TDX 2000
APPARATUS BAY	100	100.04	TOWEL DISPENSER AND WASTE RECEPTACLE + LINER MATE SURFACE MOUNTED STAINLESS STEEL PAPER TOWEL DISPENSER WITH 15 GALLON RECEPTABLE + LINER MATE GARBAGE BAG HOLDER	N/A	OF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	BOBRICK B-43949
APPARATUS BAY	100	100.05	WALL MOUNTED EYEWASH STATION. SEE PLUMBING DRAWINGS.	22 40 00	CF/CI	X			PLUMBING LINES RUN INTERNALLY IN CMU WALLS SEE 5/A17-32	GUARDIAN G175OP EYE / FACE WASH G6044-XXX TEMPERING UNIT
APPARATUS BAY	100	100.06	WATER HOSE REEL. PROVIDE 70 FEET OF 3/4" HOSE. (PROVIDE PROFESSIONAL GRADE DUTY FIREMANS STYLE WATER REEL NOZZLE)	22 00 00	CF/CI	X			PROVIDE WITH TEMPERED WATER. PROVIDE WATER REEL NOZZEL AT EACH HOSE REEL	HANNAY: #N618-25-26-10.5B-SR GILMOUR: #855032-1001
APPARATUS BAY	100	100.07	STOP-GO LIGHT REDLIGHT/GREENLIGHT SAFETY LIGHTS	26 00 00	CF/CI			X	SEE INTERIOR ELEVATIONS AND ELECTRICAL DRAWINGS	LIFTMASTER RGL24LY
APPARATUS BAY	100	100.08	POWER CHORD REEL WITH RELIEF PLUG ASSEMBLY	26 05 00	CF/CI			X	SEE ELECTRICAL DRAWINGS. VERIFY LOCATIONS WITH CHIEF PRIOR TO FINAL MOUNTING	COXREELS PC SERIES POWER CORD REEL EZ-PC13-5012-A
APPARATUS BAY	100	100.09	SEE PLUMBING DRAWING	22 40 00	CF/CI	X			SEE PLUMBING DRAWINGS. SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	T&S BRASS AND BRONZE WORKS MODEL #PB-8WOSN00PZLUB
APPARATUS BAY	100	100.12	TURNOUT GEAR HANGING RACK (1-1/4" BLACK IRON PIPE & FITTINGS PER DRAWINGS)	05 50 00	CF/CI				SEE INTERIOR ELEVATIONS, ENLARGED FLOOR PLANS AND DETAILS. RACK HEIGHT TO BE BASED ON GEAR LENGTH REQUIREMENTS	
APPARATUS BAY	100	100.14	FLAT SCREEN MONITOR AND WALL BRACKET. EC PROVIDES POWER AND DATA; GC INSTALLS MOUNT/MONITOR	26 05 00	OF/CI			X	EC PROVIDES POWER AND DATA. POWER AND DATA TO BE LOCATED AT MID-MONITOR LEVEL. EC TO COORDINATE MOUNTING HEIGHT WITH OWNER. GC INSTALLS MOUNTS/MONITORS	FLAT SCREEN MONITOR AND MOUNT FOR "EMERGENCY RESPONDER SYSTEM"
APPARATUS BAY	100	100.18	DESTRATIFICATION FAN	22 00 00 23 34 00	CF/CI		X	X	SEE MECHANICAL AND ELECTRICAL DRAWINGS	ENVIROFAN GOLD LINE 160C-7
APPARATUS BAY	100	100.19	304 STAINLESS STEEL 12GA COUNTERTOP (NO BACKSPLASH) (SQUARE EDGE TYPE) (MATTE FINISH) WITH STAINLESS STEEL CHANNEL BACKER FLUSH WITH BOTTOM EDGE . STAINLESS STEEL SUPPORT BRACKETS (14" x 14" x 2" WIDE AND 3/16" THICK	12 36 16	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	BASIS OF DESIGN: STAINLESS SUPPLY
SCBA FILL	101	101.01	(2) COMPARTMENT (2) DRAINBOARD SINK WITH PRE-RINSE FAUCET. SEE PLUMBING DRAWINGS	22 00 00	CF/CI	X			SEE PLUMBING DRAWINGS. SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	Basis of design: Advance Tabco 94-22-40-18 RL
SCBA FILL	101	101.02	[SOAP DISPENSING SYSTEM] GOJO CHERRY GEL PUMICE HAND CLEANER STARTER KIT	10 28 13	OF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	GOJO PRO TDX 2000
SCBA FILL	101	101.03	STAINLESS STEEL SINGLE BAR POT RACK 72" LONG	12 36 16	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	ADVANCE TABCO SW1-72
SCBA FILL	101	101.04	S.S BASE & WALL CABINETS & COUNTERTOP	12 31 01	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	BASIS OF DESIGN: MOTT MANUFACTURING. STAINLESS STEEL CABINETS.
SCBA FILL	101	101.05	3-POSITION SCBA FILL STATION; INSTALLED BY OWNERS VENDOR. DIMS: 41"W X 21"D X 57"H	N/A	OF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS AND DETAILS	BASIS OF DESIGN: BAUER - CFS5.5-3S
SCBA FILL	101	101.06	SCBA MOBILE BOTTLE CART - 16 BOTTLES	N/A	OF/OI					READY RACK VBR - 16
SCBA FILL	101	101.07	WALL MOUNTED TOOL GRID RACK, 72"W UNIT X 25-1/4"H - MOUNT VERTICALLY	10 51 43	CF/CI				PROVIDE SIX (6) SHORT HOOKS IN LIEU OF STANDARD RACK ASSORTMENT / RACK. SEE INTERIOR ELEVATIONS, ENLARGED FLOOR PLANS, AND DETAILS.	GEAR GRID SLINGER TOOL GRID WALL MOUNT
YARD STORAGE	102	102.01	CANTILEVER SHELVING & HARDWARE (3) 4' - 0" LONG UPRIGHTS PER UNIT WITH (2) 9'-0"L x 1'-6"D SHELVES PER UNIT. MOUNT UPRIGHT AT 4'-0" CLEAR FROM FINISH FLOOR. SHELVES ARE TO BE 18GA STAINLESS STEEL	10 56 13	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	E-Z SHELVING SYSTEMS INC.
YARD STORAGE	102	102.02	TRASH & RECYCLE BINS	N/A	OF/OI				ROLLING MODELS: 50 GAL CAPACITY.	RUBBERMAID OR SIM.
YARD STORAGE	102	102.03	FLAMMABLE STORAGE CABINET (YELLOW) 43"W X 18"D X 44"H	N/A	OF/OI				MEETS NFPA AND OSHA STANDARDS	ULINE H-1563M-Y
YARD STORAGE	102	102.04	4' UNIT (3) LARGE TOOL HANGERS (1) FOUR PRONG RACK	10 51 43	OF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	GEAR GRID BROOM CENTER
YARD STORAGE	102	102.05	1-1/2"D X 7-1/2"H X 96"L WALL MOUNTED BOARD WITH (8) 6" LONG PEGS	N/A	OF/OI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS AND DETAILS	
YARD STORAGE	102	102.06	CANTILEVER SHELVING & HARDWARE (4) 4'-0" LONG UPRIGHTS PER UNIT WITH (3) 12'-0"L x 1'-6"D SHELVES PER UNIT. MOUNT UPRIGHT AT 4'-0" CLEAR FROM FINISH FLOOR. SHELVES ARE TO BE 18GA STAINLESS STEEL	10 56 13	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	E-Z SHELVING SYSTEMS INC.
COMPRESSOR ROOM	103	103.01	CUSTOM BAUER COMPRESSOR VERTICUS COMPRESSOR, [CHARGING RATE: 13 SCFM] [NO. OF STAGES: (4)] [MOTOR: 10HP] BAUER ELECTRONIC CARBON MONOXIDE MONITOR WITH CAL KIT AIR SAMPLE (RA01). COMPRESSOR IN-SERVICE TRAINING	N/A	OF/OI			X	MC TO PROVIDE PVC FRESH AIR INTAKE LINE. EC TO PROVIDE POWER / DISCONNECT PER CONTRACT DRAWINGS. INSTALLED BY OWNERS VENDOR. BOLTING TO FLOOR BY GC AND GC TO PROVIDE CORE THRU ROOF.	BASIS OF DESIGN: BAUER VERTICUS ENCLOSED VERTICAL COMPRESSOR VAC 13H-E3
COMPRESSOR ROOM	103	103.02	ASME AIR STORAGE SYSTEM (4) CYLINDER WITH 6000 PSIG ASME TANKS.	N/A	OF/OI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS. INSTALLED BY OWNERS VENDOR. BOLTING TO FLOOR BY GC.	BASIS OF DESIGN: BAUER - SCBA AIR STORAGE SYSTEM ASMEBK-4 RCK-0037
EMS STORAGE	104	104.01	MOBILE BOTTLE STORAGE FOR 6 D OR E CANISTERS	N/A	OF/CI					USA SAFETY MODEL #GCMDE6SC
EMS STORAGE	104	104.02	STAINLESS STEEL SOLID SHELVING 60"W X 24"D X 63"H	N/A	OF/CI				FOUR (4) SHELVES	ULINE H-6816
DEPT STORAGE	105	105.02	HEAVY-DUTY STEEL SHELVING 96"W X 36"D X 72"H	N/A	OF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	ULINE H-10487
DEPT STORAGE	105	105.03	TURNOUT GEAR HANGING RACK (1-1/4" BLACK IRON PUPE & FITTINGS PER DRAWINGS)	05 50 00	CF/CI				SEE INTERIOR ELEVATIONS, ENLARGED PLANS, AND DETAILS. RACK HEIGHT TO BE BASED ON GEAR LENGTH REQUIREMENTS; COORDINATE HEIGHT AFF WITH OWNER.	
DEPT STORAGE	105	105.04	MOBILE WORKBENCH 72" (w) x 30" (d) W/ ADJUSTABLE HEIGHT	N/A	OF/CI					Global Industrial WB183985A
TURN OUT GEAR	106	106.01	STANDARD LOCKERS (74 TOTAL LOCKERS AT 24"D X 30"W FULL HEIGHT) [30 WALL MOUNTED LOCKERS] AND [44 LOCKERS WITH CENTER-ROOM SELF-SUPPORTING FRAME] LOCKERS EQUIPPED WITH NAME PLATE HOLDER AND NAME PLATE, HANGER BAR, 2 HD STAINLESS STEEL HANGERS, AND BOTTOM SHELF.	10 51 43 26 05 00	CF/CI			X	LOCKERS: COLOR: RED SELF SUPPORTING FRAMES: COLOR: BLACK, SEE EQUIPMENT PLAN AND DETAILS. [SEE DETAILS FOR ITEMS FURNISHED BY 26 00 01 - ELECTRIC]	GEAR GRID

FIREMATIC FF&E SCHEDULE

ROOM NAME	ROOM NUMBER	EQUIP NUMBER	DESCRIPTION	SPEC SECTION	METHOD	PLUMB REQD	MECH REQD	ELEC REQD	NOTES	MFG. & MODEL NO.
STORAGE ROOM 1&2	107	107.01	STORAGE CABINET 24"W X 18"D X 66"H	N/A	OF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	ULINE H-6317BL
STORAGE ROOM 1&2	107	107.02	HEAVY-DUTY STEEL SHELVING 60"W X 24"D X 72"H	N/A	OF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	ULINE H-4862
STORAGE ROOM 1&2	107	107.03	HEAVY-DUTY STEEL SHELVING 96"W X 36"D X 72"H	N/A	OF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	ULINE H-10487
STORAGE ROOM 1&2	107	107.04	DOLLY FOR TRUCK TIRE MATS (METAL PLATFORM TRUCK)	N/A	OF/CI				36"W X 72"L	ULINE H-6708
BAY CUSTODIAL	109	109.01	FLOOR MOUNTED MOP SINK 24" X 24" N WITH MOP HNGER OPTION. SEE PLUMBING DRAWINGS	22 40 00	CF/CI	X			SEE PLUMBING DRAWINGS. SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	FIAT_TSB100 W OPTION 889CC MOP HANGER
BAY CUSTODIAL	109	109.02	UTILITY SHELF WITH (5) HOOKS AND (4) MOP AND BROOM HOLDERS; 44"W X 8"D	10 28 13	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	BRADLEY 9934
BAY CUSTODIAL	109	109.03	SERVICE SINK. SEE PLUMBING DRAWINGS	22 40 00	CF/CI	X			SEE PLUMBING DRAWLINGS. SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	ELKAY ESSB2520C
BAY CUSTODIAL	109	109.04	CANTILEVER SHELVING & HARDWARE (2) 3'-0" LONG UPRIGHTS PER UNIT WITH (2) 4'-8"L X 1'-6"D SHELVES PER UNIT. MOUNT UPRIGHT AT 3'-6" CLEAR FROM FINISH FLOOR. SHELVES ARE TO BE 18 GA. STAINLESS STEEL	10 56 13	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	E-Z SHELVING
BAY CUSTODIAL	109	109.05	FLOOR CLEANER / SCRUBBER WITH WATER CONSERVATION FEATURES AND NO NEEDED CHEMICALS	N/A	OF/OI				17" OR 20" DIAMETER CLEANING PATH	
SCBA SHOP	110	110.01	HAND SINK - SEE PLUMBING DRAWINGS	22 40 00	CF/CI	X			SEE PLUMBING DRAWINGS. SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	BASIS OF DESIGN: ADVANCE TABCO 7-PS-68
SCBA SHOP	110	110.02	CANTILEVER SHELVING & HARDWARE (3) 6'-0" LONG UPRIGHTS PER UNIT WITH (4) 6'-6"L X 1'-6"D SHELVES PER UNIT. MOUNT UPRIGHT AT 0'-6" CLEAR FROM FINISH FLOOR. SHELVES ARE TO BE 18 GA. STAINLESS STEEL	10 56 13	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	E-Z SHELVING
SCBA SHOP	110	110.02a	CANTILEVER SHELVING & HARDWARE (3) 6'-0" LONG UPRIGHTS PER UNIT WITH (4) 5'-6"L X 1'-6"D SHELVES PER UNIT. MOUNT UPRIGHT AT 0'-6" CLEAR FROM FINISH FLOOR. SHELVES ARE TO BE 18 GA. STAINLESS STEEL	10 56 13	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	E-Z SHELVING
SCBA SHOP	110	110.03	S.S BASE CABINETS & COUNTERTOP	12 31 01	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	BASIS OF DESIGN: MOTT MANUFACTURING. STAINLESS STEEL CABINETS.
SCBA SHOP	110	110.04	ASME AIR STORAGE SYSTEM W (2) 6000 PSIG ASME TANKS	N/A	OF/OI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	BASIS OF DESIGN: BAUER - SCBA AIR STORAGE SYSTEM ASME6K-2
SCBA SHOP	110	110.05	CANTILEVER SHELVING & HARDWARE (3) 3'-3" LONG UPRIGHTS PER UNIT WITH (1) 10'-0"L x 1'-0"D SHELVES PER UNIT. MOUNT UPRIGHT AT 4'-0" CLEAR FROM FINISH FLOOR. SHELVES ARE TO BE 18GA STAINLESS STEEL	10 56 13	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	E-Z SHELVING SYSTEMS INC.
SCBA SHOP	110	110.06	DESK 48"(L) x 24"(D) & CHAIR	N/A	OF/OI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	
WORKROOM	118	118.02	DELUXE WORKSTATION TABLE MAPLE TOP (96" X 36") ACCESSORIES INCLUDE: (1) SHELF [H-5761], (3) PEGBOARD PANELS [H-5768], (1) LOUVERED PANEL [H5767]	N/A	OF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	ULINE H-5771-MAP
WORKROOM	118	118.03	ONE COMPARTMENT SINK WITH SIDE DRAINBOARD. SEE PLUMBING DRAWINGS	22 40 00	CF/CI	X			SEE PLUMBING DRAWINGS. SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	[SINK] ADVANCE TABCO #FS-1-3624-24L WITH ADVANCE TABCO K116 FAUCET
WORKROOM	118	118.05	[SOAP DISPENSER] GOJO CHERRY GEL PUMICE HAND CLEANER STARTER KIT	10 28 13	OF/OI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	GOJO PRO TDX 2000
WORKROOM	118	118.07	HEAVY-DUTY STEEL SHELVING 60"W X 24"D X 72"H	N/A	OF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	ULINE H-4862
DECON	119	119.01	(SOAP DISPENSER) GOJO CHERRY GEL PUMICE HAND CLEANER STARTER KIT	10 28 13	OF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	GOJO PRO TDX 2000
DECON	119	119.02	HEAVY DUTY STEEL SHELVING 48"W X 24"D X 72"H	N/A	OF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	ULINE H-3913
DECON	119	119.03	TWO COMPARTMENT SINK - WITH (2) DRAINBOARD & PRE-RINSE FAUCET. SEE PLUMBING DRAWINGS	22 40 00	CF/CI	X			SEE PLUMBING DRAWINGS. SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	[SINK] ADVANCE TABCO 94-62-36-18RL [FAUCET] ADVANCE TABCO K116 HEAVY DUTY PRE-RINCE FAUCET (T&S)
DECON	119	119.04	SINGLE BAR POT RACK - 60" LONG	12 36 16	OF/CI				CENTERED ON SINK; DO NOT INSTALL UNTIL SINK LOCATION IS FINALIZED.	ADVANCE TABCO SW1-60
DECON	119	119.05	HEAVY-DUTY STEEL SHELVING 60"W X 24"D X 72"H	N/A	OF/CI				SOLID SHELVING. SEE EQUIPMENT PLAN.	ULINE H-4862
PPE DRYING ROOM	119A	119A.01	TURNOUT GEAR HANGING RACK (1-1/4" BLACK IRON PIPE & FITTINGS PER DRAWINGS)	05 50 00	CF/CI				SEE INTERIOR ELEVATIONS, ENLARGED PLANS, AND DETAILS. RACK HEIGHT TO BE BASED ON GEAR LENGTH REQUIREMENTS; COORDINATE HEIGHT AFF WITH OWNER.	
PPE DRYING ROOM	119A	119A.02	(BOOT AND GLOVE DRYING UNIT) 14 PAIR DRYING SYSTEM, AIR FLOW: 350 CFM, AMPS: 16.5, VOLTS: 120V	26 00 00	OF/CI			X	SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	HEATER CRAFT: CYCLONE DRYING-SYSTEMS MODEL #500-014 V2
PPE DRYING ROOM	119A	119A.03	TURNOUT GEAR HANGING RACK (1-1/4" BLACK IRON PUPE & FITTINGS PER DRAWINGS)	05 50 00	CF/CI				SEE INTERIOR ELEVATIONS, ENLARGED PLANS, AND DETAILS. RACK HEIGHT TO BE BASED ON GEAR LENGTH REQUIREMENTS; COORDINATE HEIGHT AFF WITH OWNER.	
LAUNDRY	119B	119B.01	HARDMOUNT 65LB CAPACITY TURNOUT GEAR WASHER / EXTRACTOR WITH FIRE LINK OPTION	22 13 16 / 26 05 00	OF/CI	X		X	PC TO PROVIDE WATER INLETS AND EXTRACTOR DISCHARGE DRAIN LINES / GC TO INSTALL TROUGH / EC TO PROVIDE HARD WIRED ELECTRICAL SUPPLYS AND DISCONNECTS	UNIMAC MODEL #UW65 SERIES
LAUNDRY	119B	119B.02	WASHER / EXTRACTOR DETERGENT DELIVERY SYSTEM	N/A	OF/CI	X		X	EC TO PROVIDE DUPLEX FOR PUMP POWER SUPPLY. COORDINATE MOUNTING WITH INTERIOR ELEVAIONS, SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS. PC TO PROVIDE WATER REQUIREMENTS.	BASIS OF DESIGN: FIRESOAPS
LAUNDRY	119B	119B.03	12"D X 36"L, 16 GA. STAINLESS STEEL WALL MOUNTED SHELF	12 36 16	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	ADVANCE TABCO WS-12-36-16
LAUNDRY	119B	119B.04	4.7 CU FT HIGH EFFICIENCY RESIDENTIAL TOP-LOAD CLOTHES WASHER 120V; 20A	N/A	OF/CI	X		X	SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	MODEL TBD
LAUNDRY	119B	119B.05	7.4 CU FT HIGH EFFICIENCY RESIDENTIAL FRONT-LOAD CLOTHES DRYER (ELECTRIC)	N/A	OF/CI		X	X	SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	MODEL TBD
LAUNDRY	119B	119B.06	RECESSED WASHING MACHINE OUTLET BOX	22 40 00	CF/CI	X			SEE PLUMBING DRAWINGS, INTERIOR ELEVATIONS, AND ENLARGED FLOOR PLANS	GUY GRAY
LAUNDRY	119B	119B.07	12"D X 60"L, 16 GA STAINLESS STELL WALL MOUNTED SHELF	12 36 16	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	ADVANCE TABCO WS-12-60-16

FIREMATIC FF&E SCHEDULE

ROOM NAME	ROOM NUMBER	EQUIP NUMBER	DESCRIPTION	SPEC SECTION	METHOD	PLUMB REQD	MECH REQD	ELEC REQD	NOTES	MFG. & MODEL NO.
LAUNDRY	119B	119B.08	S.S. BASE, WALL CABINETS, AND COUNTERTOP	12 31 01	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	BASIS OF DESIGN - MOTT MANUFACTURING STAINLESS STEEL CABINETS
SHOWER LOCKERS	119C	119C.01	PHENOLIC LOCKER (THREE TIER) HINGE TYPE: THROUGH BOLT DOOR CUSTOM 12"W X 12"D X 72"H	10 51 25	CF/CI				LOCKERS, COLOR: FORMICA PHENOLIC-NAVY BLUE. SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	SUMMIT LOCKERS
SHOWER LOCKERS	119C	119C.02	4.7 CU FT HIGH EFFICIENCY RESIDENTIAL TOP-LOAD CLOTHES WASHER 120V; 20A	11 30 00	OF/CI	X		X	SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	MODEL TBD
SHOWER LOCKERS	119C	119C.03	7.4 CU FT HIGH EFFICIENCY RESIDENTIAL FRONT-LOAD CLOTHES DRYER (ELECTRIC)	11 30 00	OF/CI		X	X	SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	MODEL TBD
SHOWER LOCKERS	119C	119C.04	RECESSED WASHING MACHINE OUTLET BOX	22 40 00	CF/CI	X			SEE PLUMBING DRAWINGS, AND INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	GUY GRAY
SHOWER LOCKERS	119C	119C.05	12"D X 60"L, 16 GA STAINLESS STEEL WALL MOUNTED SHELF	12 36 16	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	ADVANCE TABCO WS-12-60-16
SHOWER LOCKERS	119C	119C.06	S.S. BASE, WALL CABINETS, AND COUNTERTOP	12 31 01	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	BASIS OF DESIGN - MOTT MANUFACTURING STAINLESS STEEL CABINETS
SHOWERS	120D	120D.01	SHOWER. SEE PLUMBING DRAWINGS	22 40 00	CF/CI	X			SEE PLUMBING DRAWINGS, INTERIOR ELEVATIONS, AND ENLARGED FLOOR PLANS	BRADLEY MODEL #HN200
SHOWERS	120D	120D.02	ANTI-MICROBIAL SHOWER CURTAIN EZE-MESH 20" AT TOP	10 28 13	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	BRADLEY MODEL 9537
SHOWERS	120D	120D.03	STAINLESS STEEL SURFACE MOUNTED COAT HOOK	10 28 13	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	BOBRICK B-682
SHOWERS	120D	120D.04	BENCH 12"D X (CUSTOM LENGTH) (24" x VIF) WITH (2) WALL MOUNTED BRACKETS PER BENCH	10 28 13	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	COLUMBIA - PSISC WALL MOUNTED BENCH
SHOWERS	120D	120D.05	SHAMPOO & SOAP DISPENSER	N/A	OF/CI				COORDINATE FINAL LOCATION WITH OWNER	TBD
SHOWERS	120D	120D.06	SHOWER CURTAIN ROD AND HOOKS	10 28 13	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	BRADLEY #953 BRADLEY #9536
ICE ROOM	121.3	121.3.01	ICE MACHINE: AIR-COOLED UNIT; 24.54"W X 26.27"D X 39"H	22 05 00 26 05 00	OF/CI	X		X	115V/60HZ/1-PHASE WITH CORD SET INCLUDED. ICE MAKER WATER IN 3/8" FPT SUPPLY WITH CONDENSATE LINE BY PC	ICE-O-MATIC: #ICEU220A
CUSTODIAL	122	122.01	FLOOR MOUNTED MOP SINK 24" X 24" WITH MOP HANGER OPTION. SEE PLUMBING DRAWINGS	22 40 00	CF/CI	X			SEE PLUMBING DRAWINGS. SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	FIAT_TSB100 W OPTION 889CC MOP HANGER
CUSTODIAL	122	122.02	UTILITY SHELF WITH (4) HOOKS AND (3) MOP AND BROOM HOLDERS; 34"W X 8"D	10 28 13	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	BRADLEY 9933
CUSTODIAL	122	122.03	SERVICE SINK. SEE PLUMBING DRAWINGS	22 40 00	CF/CI	X			SEE PLUMBING DRAWINGS. SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	ELKAY ESSB2520 SINK
CUSTODIAL	122	122.04	CANTILEVER SHELVING & HARDWARE (2) 3'-0" LONG UPRIGHTS PER UNIT WITH (2) 4'-0"L X 1'-6"D SHELVES PER UNIT. MOUNT UPRIGHT AT 3'-6" CLEAR FROM FINISH FLOOR. SHELVES ARE TO BE 18 GA STAINLESS STEEL	10 56 13	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	E-Z SHELVING
CUSTODIAL	122	122.05	FLOOR CLEANER / SCRUBBER WITH WATER CONSERVATION FEATURES AND NO NEEDED CHEMICALS	N/A	OF/OI				17" OR 20" DIAMETER CLEANING PATH	
WATCH ROOM	123	123.02	OVERHEAD DOOR CONTROL PUSH BUTTON ASSEMBLY	08 33 23 26 05 00	CF/CI			X	SEE ELECTRICAL DRAWINGS AND DETAIL 6/A17.32	
WATCH ROOM	123	123.12	23" DESKTOP SCREEN MONITOR & COMPUTER SYSTEM AND DESK MOUNT ARTICULATING GAS SPRING SINGLE ARM MONITOR STAND	26 05 00	OF/CI			X	GC INSTALLS MONITORS TO ARTICULATING ARMS. EC PROVIDES BOX, CONDUIT, AND PULL STRING FOR POWER AND DATA	BASIS OF DESIGN: MONITOR STAND: HUANNO COMPUTER SYSTEM: TBD
CUSTODIAL	221	221.01	FLOOR MOUNTED MOP SINK 24" X 24" WITH MOP HANGER OPTION. SEE PLUMBING DRAWINGS	22 40 00	CF/CI	X			SEE PLUMBING DRAWINGS. SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	FIAT_TSB100 W OPTION 889CC MOP HANGER
CUSTODIAL	221	221.02	UTILITY SHELF WITH (4) HOOKS AND (3) MOP AND BROOM HOLDERS; 34"W X 8"D	10 28 13	CF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	BRADLEY 9933
CUSTODIAL	221	221.03	STAINLESS STEEL FREE STANDING SHELVING UNIT 48" X 12" X 72"	N/A	OF/CI				SEE INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS	ULINE H-7117

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REGISTERED ARCHITECT — PHILIP J. CUNNIFF — No. 50258 — BOSTON — COMMONWEALTH OF MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

FIREMATIC FIXTURES AND EQUIPMENT SCHEDULE

SHEET NUMBER

A17-20

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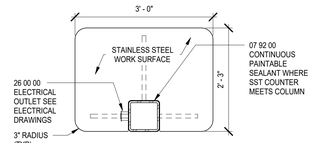
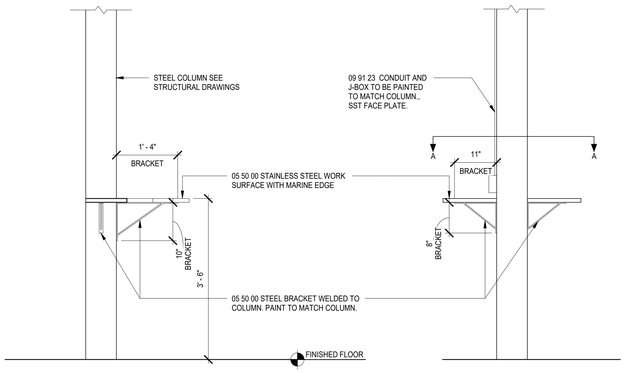
CONSTRUCTION DOCUMENTS 12/19/25

12/5/2025 3:28:48 PM Autodesk Docs://City of Worcester - South Division Firehouse/ARCH-WENDEL-City of Worcester-South Division Firehouse.rvt



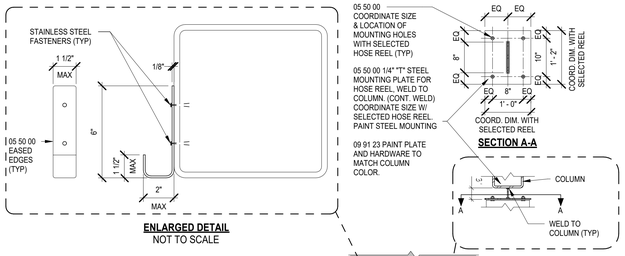
SECTION A-A



SIDE ELEVATION

BACK ELEVATION

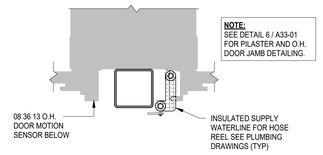
1 COLUMN COUNTER DETAIL
SCALE 3/4" = 1'-0"



ENLARGED DETAIL
NOT TO SCALE

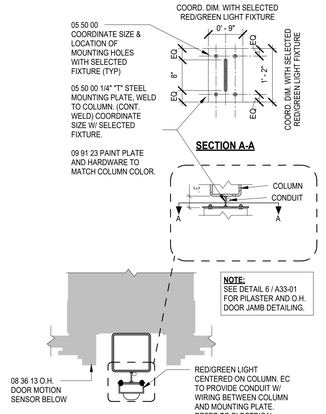
INTERIOR

2 HOSE REEL AT PILASTER
SCALE 3/4" = 1'-0"



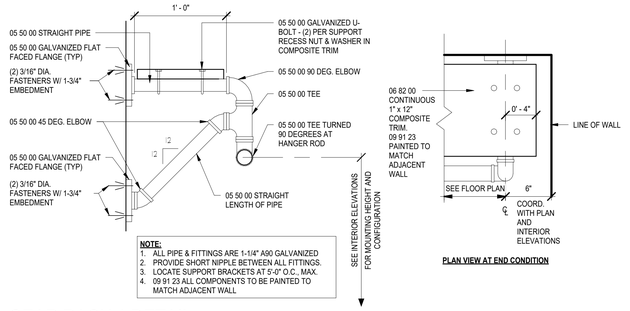
INTERIOR

2A WATERLINE AT PILASTER
SCALE 3/4" = 1'-0"



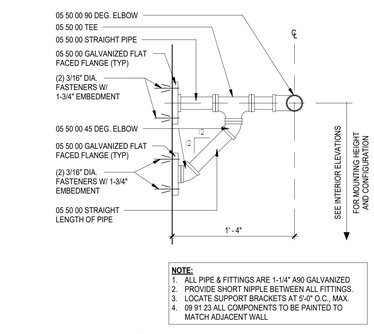
INTERIOR

2B RED/GREEN LIGHT AT PILASTER
SCALE 3/4" = 1'-0"

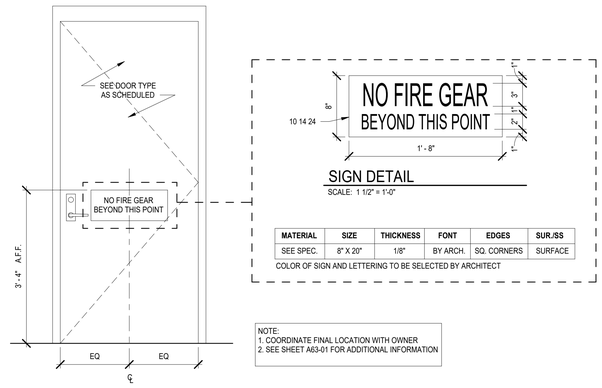


PLAN VIEW AT END CONDITION

3 GEAR RACK 1 DETAIL
SCALE 1 1/2" = 1'-0"



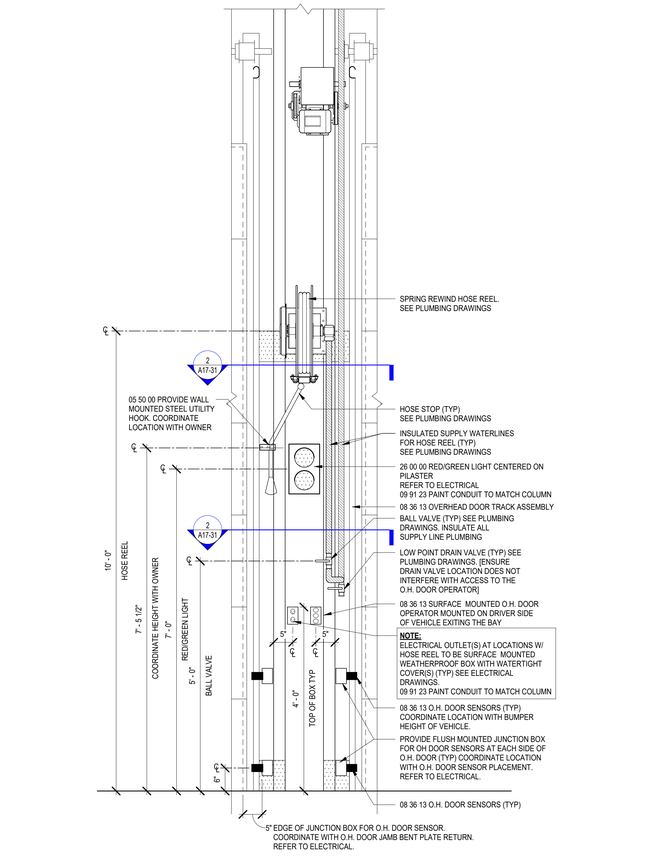
4 GEAR RACK 2 DETAIL
SCALE 1 1/2" = 1'-0"



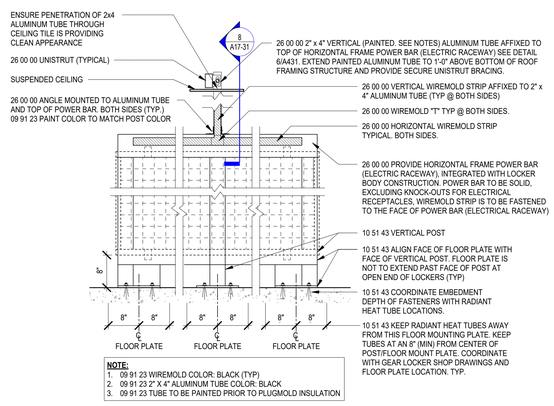
MATERIAL	SIZE	THICKNESS	FONT	EDGES	SUR./SS
SEE SPEC.	8" X 20"	1/8"	BY ARCH.	SQ. CORNERS	SURFACE

COLOR OF SIGN AND LETTERING TO BE SELECTED BY ARCHITECT

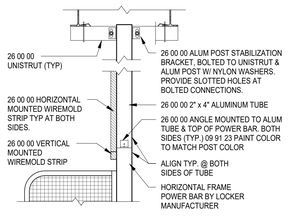
5 DOOR SIGNAGE
SCALE 3/4" = 1'-0"



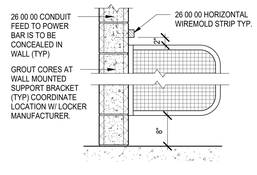
6 INTERIOR ELEVATION AT O.H. DOOR PILASTER
SCALE 3/4" = 1'-0"



7 FREE STANDING TURNOUT GEAR LOCKER ELEVATION DETAIL
SCALE 3/4" = 1'-0"



8 FREE STANDING TURNOUT GEAR LOCKER SECTION DETAIL
SCALE 3/4" = 1'-0"



9 WALL MOUNTED TURNOUT GEAR LOCKER
SCALE 3/4" = 1'-0"

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PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

CONSTRUCTION DOCUMENTS 12/19/25

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

DETAILS

SHEET NUMBER

A17-31

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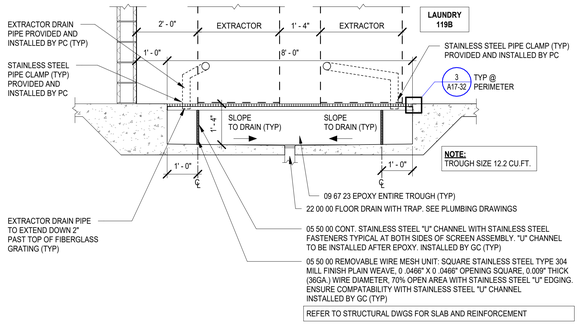
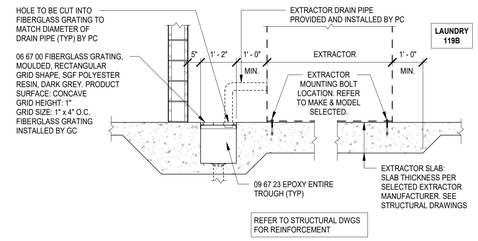


1 EXTRACTOR TROUGH
SCALE 1/2" = 1'-0"



2 EXTRACTOR TROUGH
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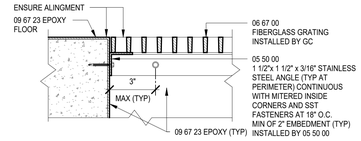
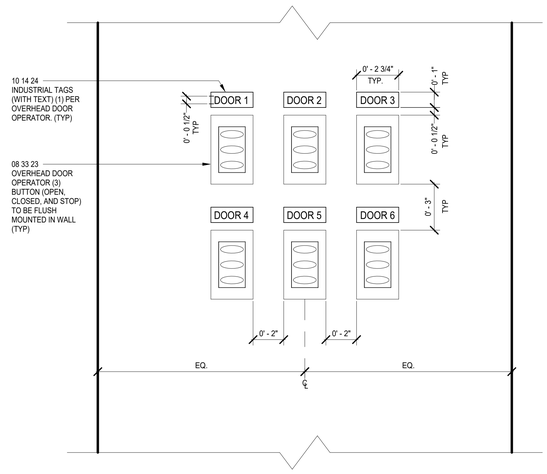
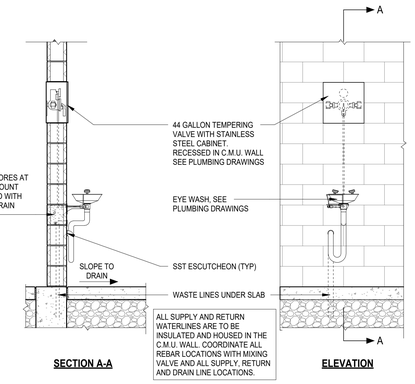


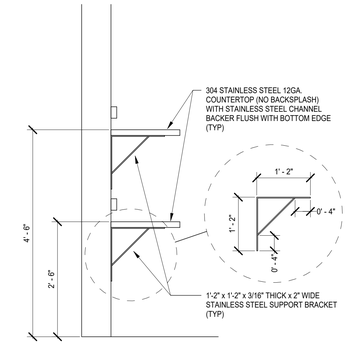
3 EPOXY TERMINATION AT EXTRACTOR TROUGH
SCALE 3" = 1'-0"



4 O.H. DOOR CONTROL PUSH BUTTON ASSEMBLY
SCALE 3" = 1'-0"



5 EYEWASH DETAIL
SCALE 1/2" = 1'-0"



6 APP BAY COUNTER SECTION-100.19
SCALE 3/4" = 1'-0"

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REGISTERED ARCHITECT PHILIP J. CUNNIFF No. 50258 BOSTON MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

DETAILS

SHEET NUMBER

A17-32

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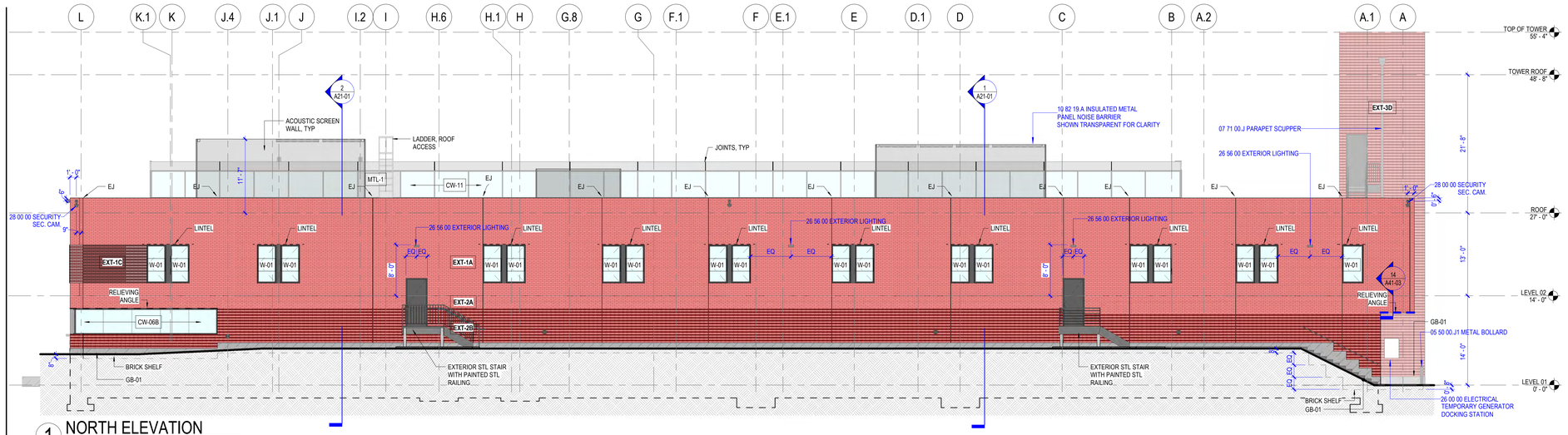
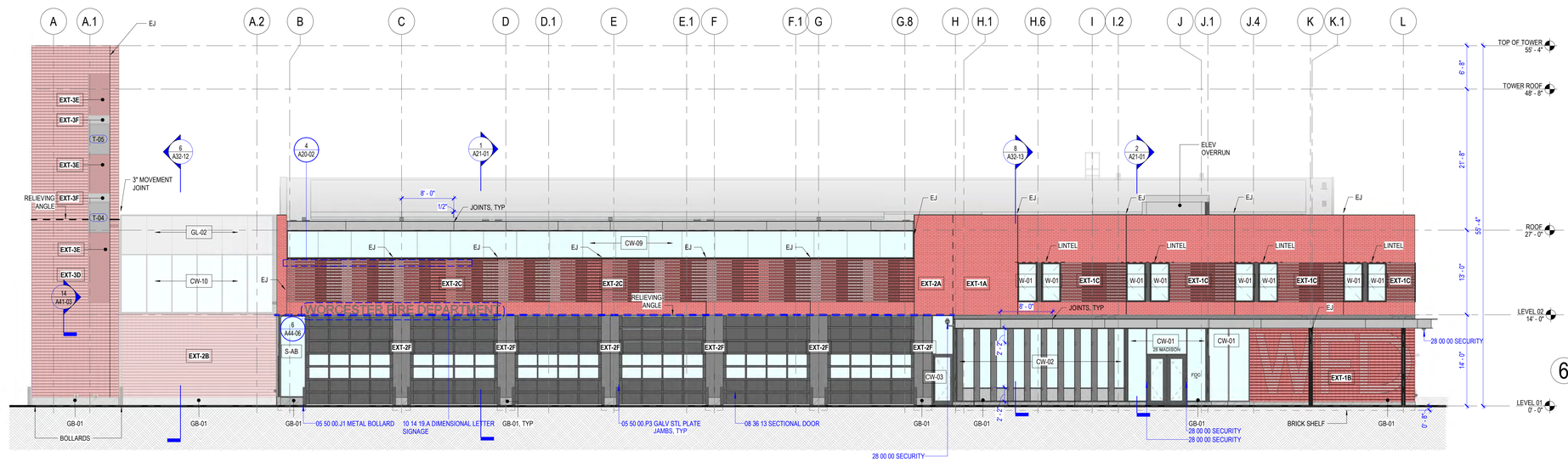
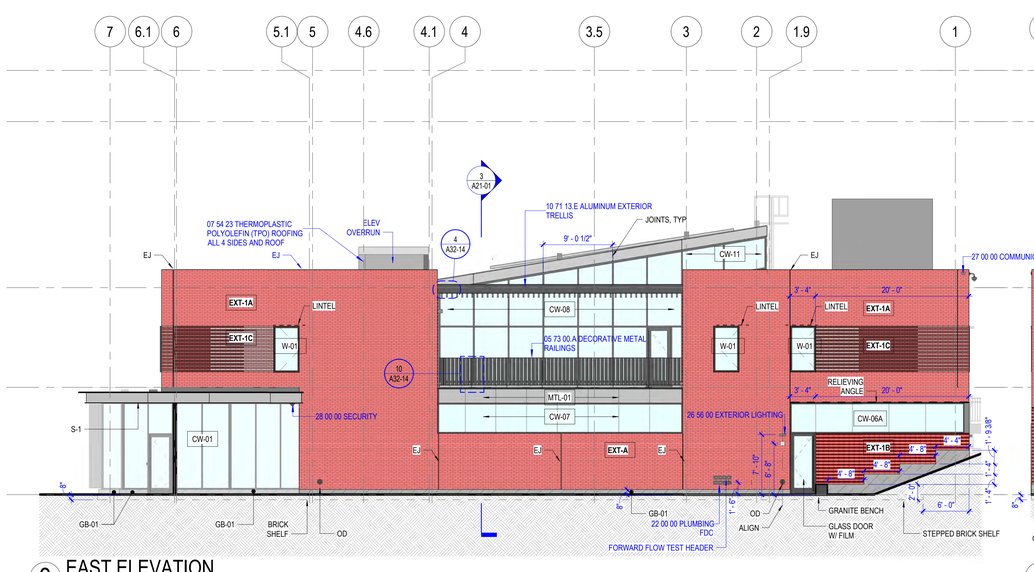


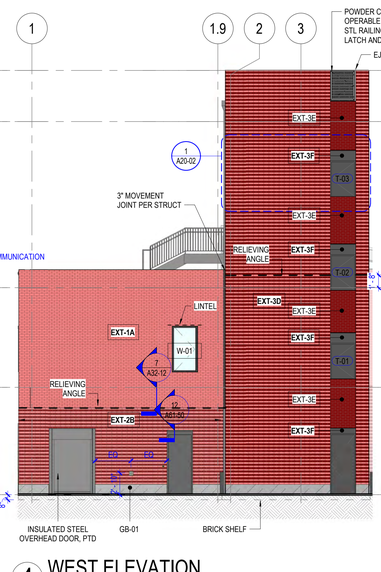
1 NORTH ELEVATION
SCALE 1/8" = 1'-0"



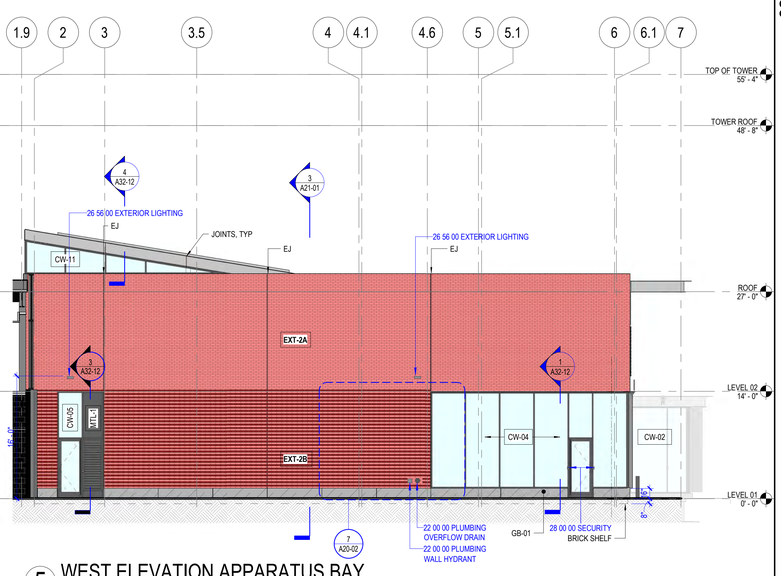
2 SOUTH ELEVATION
SCALE 1/8" = 1'-0"



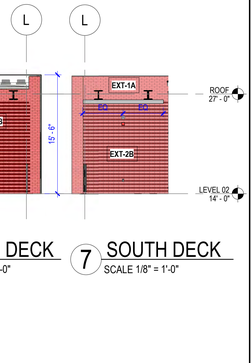
3 EAST ELEVATION
SCALE 1/8" = 1'-0"



4 WEST ELEVATION
SCALE 1/8" = 1'-0"



5 WEST ELEVATION APPARATUS BAY
SCALE 1/8" = 1'-0"



6 NORTH DECK
SCALE 1/8" = 1'-0"

7 SOUTH DECK
SCALE 1/8" = 1'-0"

EXTERIOR ELEVATION GENERAL NOTES

1. MATERIAL SYMBOLS ON ELEVATIONS ARE TO DISPLAY THE EXTENT OF THE MATERIAL ONLY. THEY ARE NOT TO SCALE.
2. FINISH GRADE ELEVATIONS AND TAKEOFFS MAY VARY BASED ON GRADE COORDINATION
3. SEE A32-01 AND A32-02 FOR EXTERIOR WALL & ROOF ASSEMBLIES

EXTERIOR ELEVATION LEGEND

- SMOOTH FACE BRICK
- TEXTURED FACE BRICK
- MTL -01 - METAL PANEL
- GB-01 - GRANITE BASE
- GL-01 - WINDOW GLAZED ASSEMBLY
- GL-02 - SHADOWBOX GLAZED ASSEMBLY

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CITY OF WORCESTER

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WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

EXTERIOR ELEVATIONS

SHEET NUMBER

A20-01

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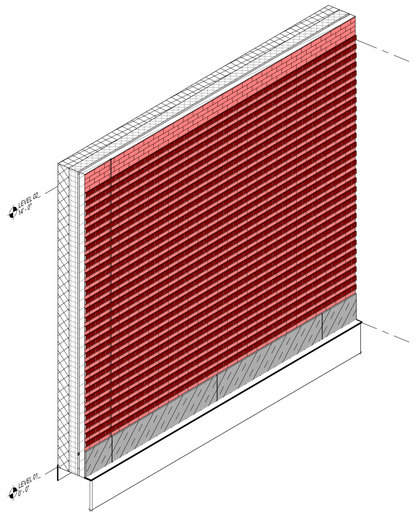
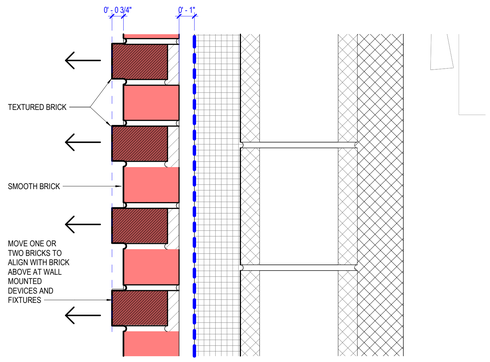


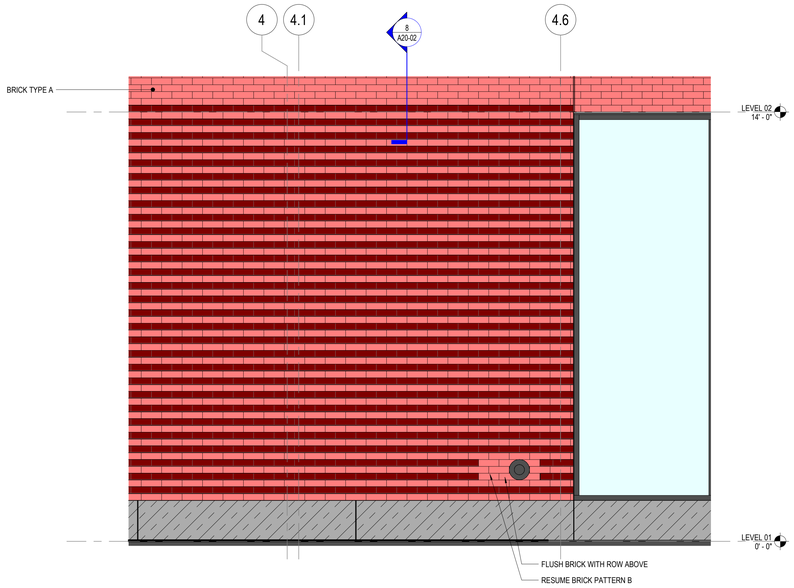
NOTE:

TYPE A: BRICK COLOR 1: RUNNING BOND

TYPE E: BRICK COLOR 2: RUNNING BOND

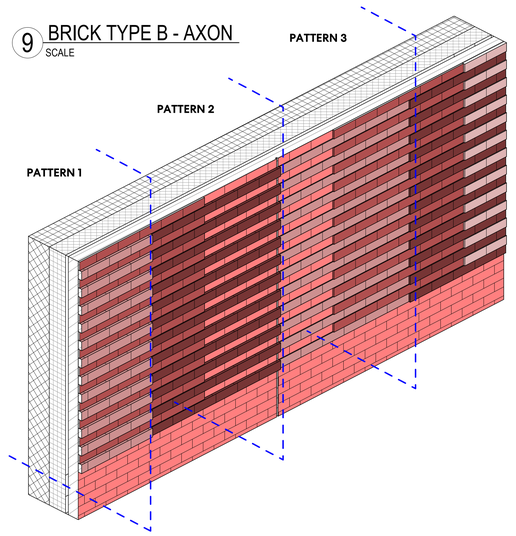


8 BRICK TYPE B - SECTION DETAIL
SCALE 3" = 1'-0"

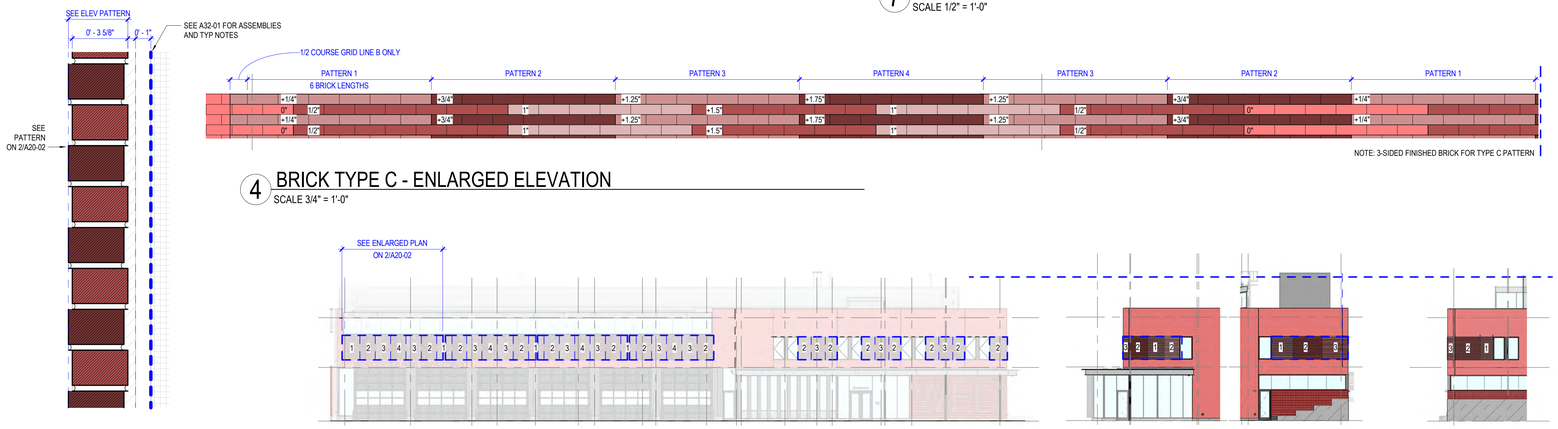


7 BRICK TYPE B - ENLARGED ELEVATION
SCALE 1/2" = 1'-0"

9 BRICK TYPE B - AXON
SCALE



NOTE: ALL BRICKS IN TYPE C ARE SMOOTH, SEE A32-01 FOR WALL ASSEMBLIES



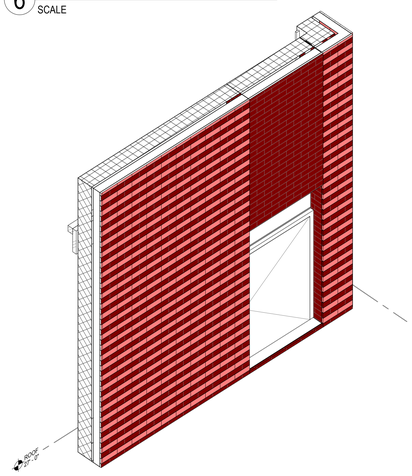
4 BRICK TYPE C - ENLARGED ELEVATION
SCALE 3/4" = 1'-0"

5 SECTION - BRICK TYPE C
SCALE 3" = 1'-0"

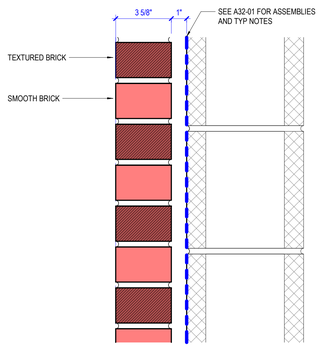
4A KEYPLAN - SOUTH ELEVATION
SCALE 1/16" = 1'-0"

4B KEYPLANS - EAST ELEVATION & NORTH ELEVATION
SCALE 1/16" = 1'-0"

6 BRICK TYPE C - AXON
SCALE

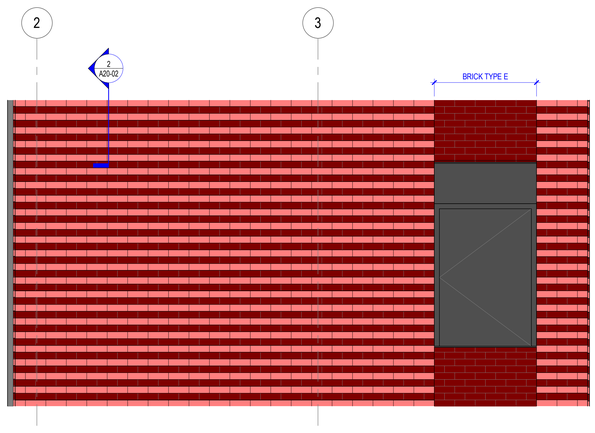


3 BRICK PATTERN D - AXON
SCALE



2 BRICK TYPE D - SECTION
SCALE 3" = 1'-0"

NOTE: ALL ROUGH OPENINGS FOR BRICKS ARE TO BE FURNISHED WITH SOLID BRICK WITH FINISH ON ALL EXPOSED EDGES



1 BRICK TYPE D&E - ENLARGED SOUTH ELEVATION
SCALE 1/2" = 1'-0"

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 15713.2.000

TITLE

EXTERIOR BRICK ELEVATIONS

SHEET NUMBER

A20-02

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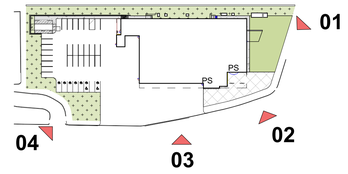

01 VIEW FROM SOUTHBRIDGE STREET

02 VIEW FROM SOUTHBRIDGE AND MADISON STREET

03 VIEW FROM SOUTHBRIDGE STREET

04 APPROACH FROM SOUTHBRIDGE STREET

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE

EXTERIOR VIEWS

SHEET NUMBER

A20-03

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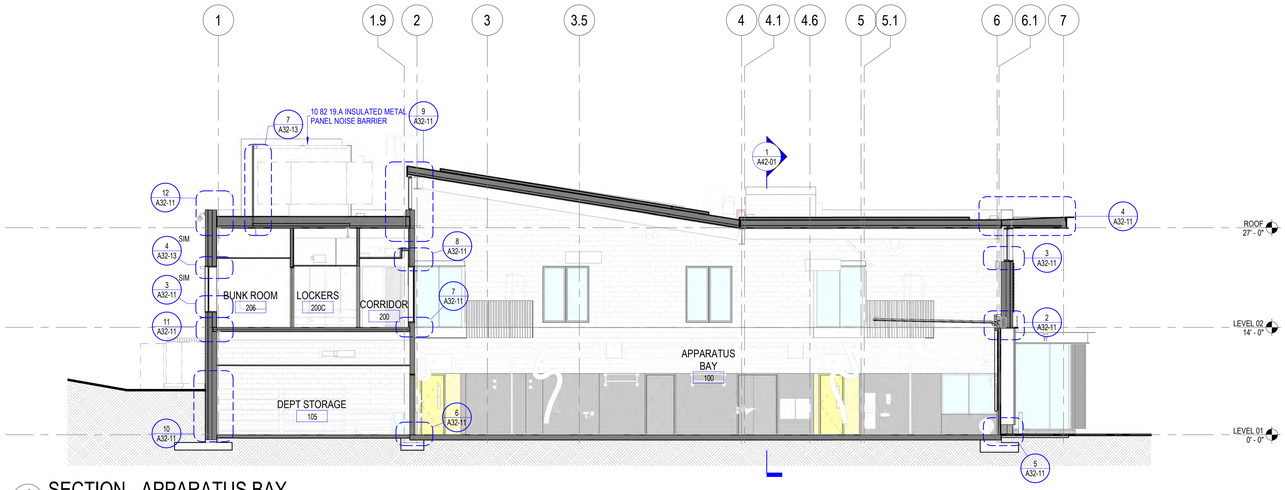
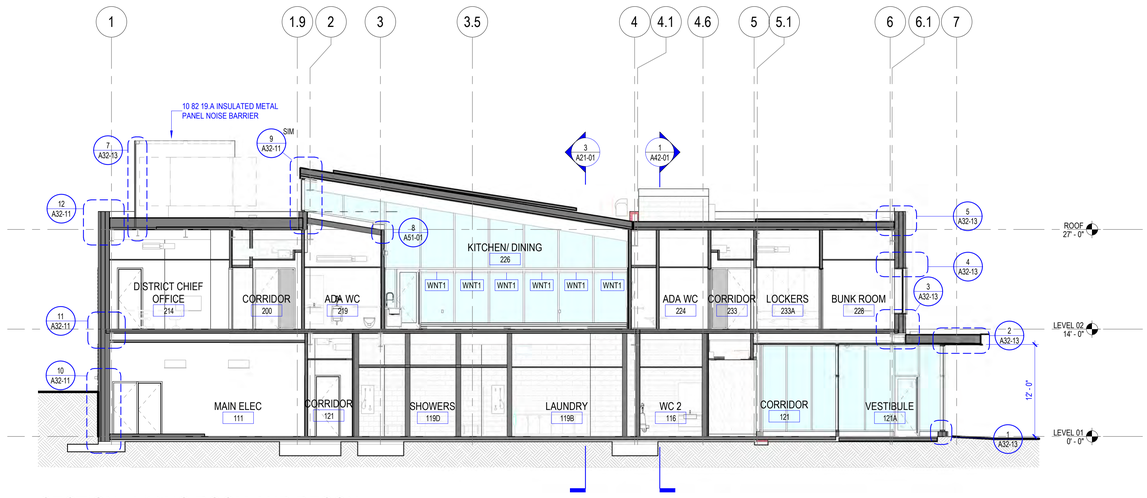
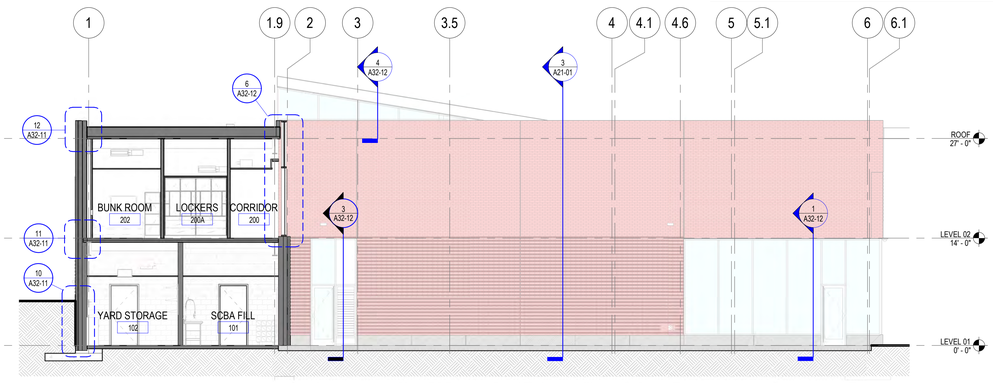


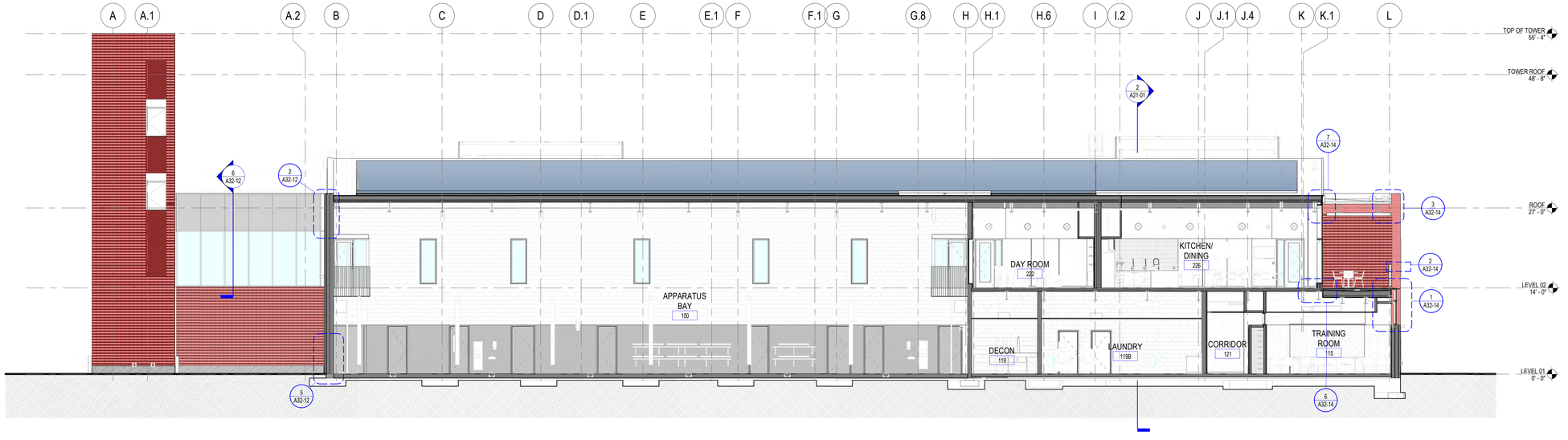
1 SECTION - APPARATUS BAY
SCALE 1/8" = 1'-0"



2 SECTION - LIVING ROOM AND DECON
SCALE 1/8" = 1'-0"



4 SECTION - CORRIDOR
SCALE 1/8" = 1'-0"



3 SECTION - LONGITUDINAL
SCALE 1/8" = 1'-0"

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

BUILDING SECTIONS

SHEET NUMBER

A21-01

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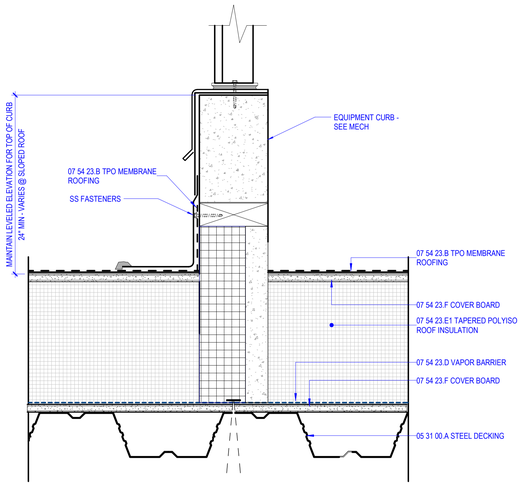
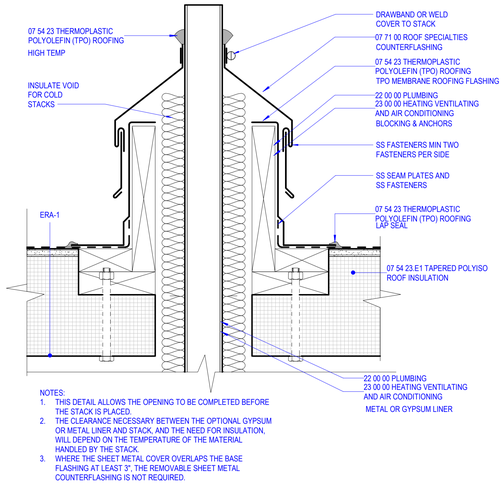
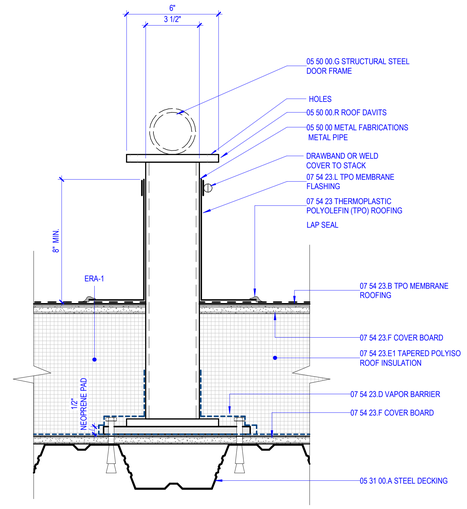


6 EQUIPMENT CURB
SCALE 3" = 1'-0"

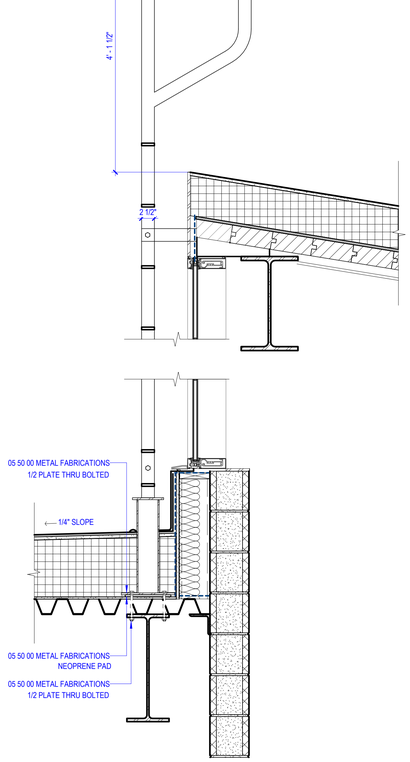


NOTES:
1. THIS DETAIL ALLOWS THE OPENING TO BE COMPLETED BEFORE THE STACK IS PLACED.
2. THE CLEARANCE NECESSARY BETWEEN THE OPTIONAL GYPSUM OR METAL LINER AND STACK, AND THE NEED FOR INSULATION, WILL DEPEND ON THE TEMPERATURE OF THE MATERIAL HANDLED BY THE STACK.
3. WHERE THE SHEET METAL COVER OVERLAPS THE BASE FLASHING AT LEAST 3", THE REMOVABLE SHEET METAL COUNTERFLASHING IS NOT REQUIRED.

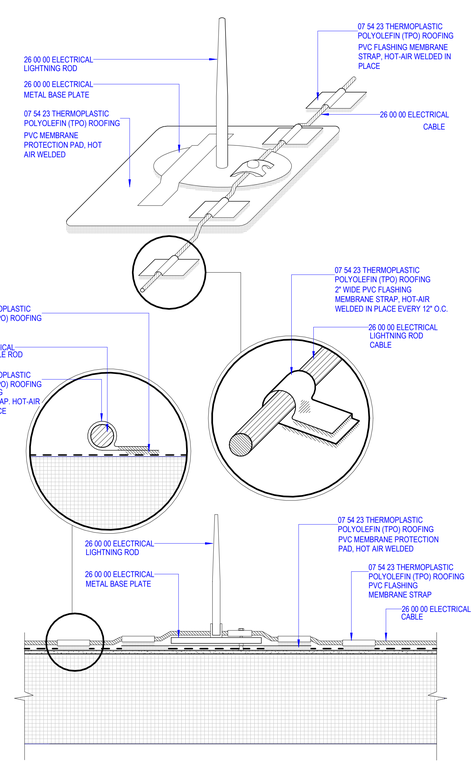
4 TPO SECTION DETAIL AT STACK
SCALE 3" = 1'-0"



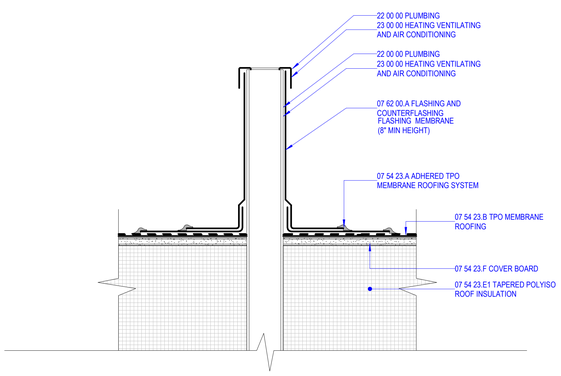
EQUIPMENT & FALL PROTECTION (05 50 00.G) SUPPORT @ ERA 1
SCALE 3" = 1'-0"



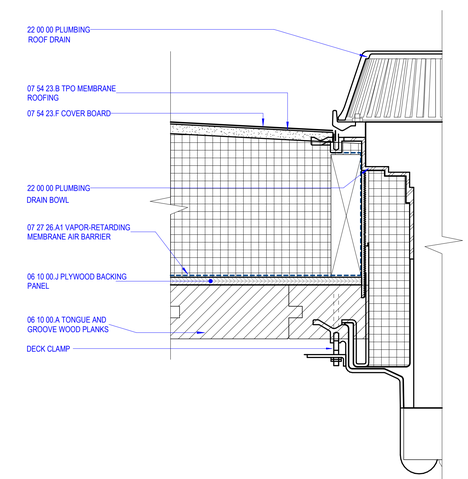
7 LADDER DETAIL
SCALE 1" = 1'-0"



5 LIGHTING ROD BASE
SCALE 1 1/2" = 1'-0"



3 TPO SECTION DETAIL AT VENT
SCALE 3" = 1'-0"



1 TPO SECTION AT ROOF DRAIN
SCALE 3" = 1'-0"

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REGISTERED ARCHITECT PHILIP J. CUNNINGHAM No. 60258 BOSTON COMMONWEALTH OF MASSACHUSETTS

PROJECT

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WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

CONSTRUCTION DOCUMENTS 12/19/25

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

TYPICAL ROOF DETAILS

SHEET NUMBER

A31-01

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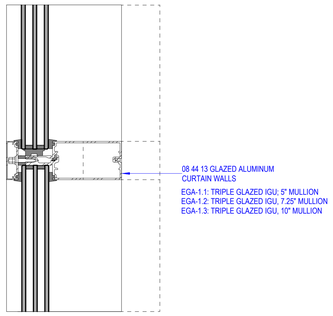
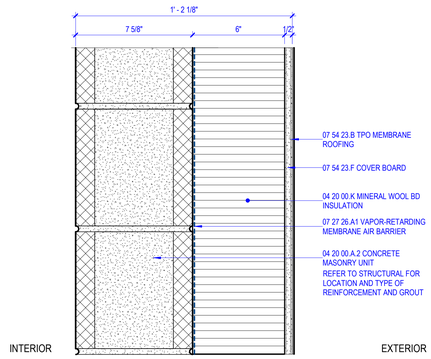
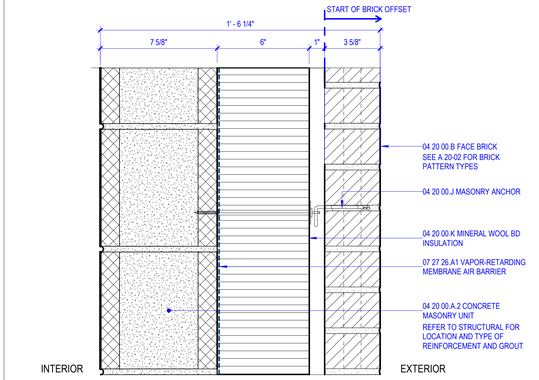


EGA-1.1, 1.2, 1.3 EXTERIOR CURTAIN WALL



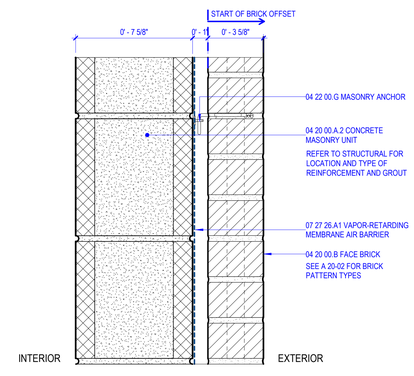
EXT-4 EXT PARAPET WALL

ASSEMBLY		NOTES
INTERIOR AIR FILM		AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
7 5/8" OPEN CELL CMU		
FLUID APPLIED AIR & VAPOR BARRIER		
6" MINERAL WOOL INSULATION		BETWEEN MASONRY TIES, R 4.7 PER INCH
MASONRY TIES		
1/2" COVER BOARD		
TPO ROOFING MEMBRANE		
EXTERIOR AIR LAYER		AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
		CODE MINUMIM (DERATED): U 0.090 / R 11.1



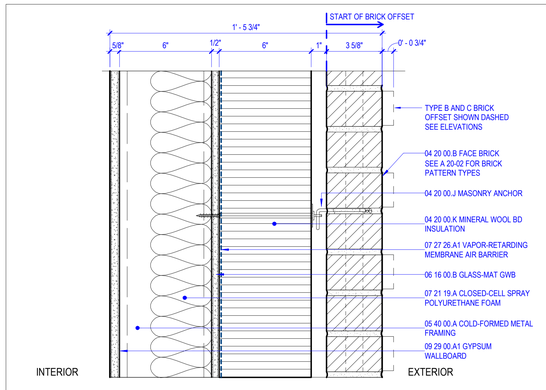
EXT-2 EXT MASONRY WALL W/ MASONRY BACK UP

ASSEMBLY		NOTES
INTERIOR AIR FILM		AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
7 5/8" OPEN CELL CMU		
FLUID APPLIED AIR & VAPOR BARRIER		
6" MINERAL WOOL INSULATION		BETWEEN MASONRY TIES, R 4.7 PER INCH
MASONRY TIES		
1" AIR SPACE		
3 5/8" FACE BRICK		
EXTERIOR AIR LAYER		AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
OVERALL DERATED VALUE	**15.2**	CODE MINUMIM (DERATED): U 0.090 / R 11.1



EXT-3 EXT MASONRY WALL W/ CMU BACK-UP - NO INSULATION

ASSEMBLY		NOTES
INTERIOR AIR FILM		AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
7 5/8" OPEN CELL CMU		
1" AIR SPACE		
3 5/8" FACE BRICK		
EXTERIOR AIR LAYER		AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
OVERALL R VALUE	**4.3**	NON CONDITIONED SPACE



EXT-1 EXT MASONRY WALL W/ LGMF BACK UP

ASSEMBLY		NOTES
INTERIOR AIR FILM		AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
5/8" GYPSUM BOARD		
6" CFMF		
6" SINGLE COMPONENT FOAM INSULATION		BETWEEN STUDS, R 6.7 PER INCH
1/2" GLASS FIBER REINFORCED EXTERIOR SHEATHING		
FLUID APPLIED AIR & VAPOR BARRIER		
6" MINERAL WOOL INSULATION		BETWEEN MASONRY TIES, R 4.7 PER INCH
MASONRY TIES		
1" AIR SPACE		
3 5/8" FACE BRICK		
EXTERIOR AIR LAYER		AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
OVERALL DERATED VALUE	**19.1**	CODE MINUMIM (DERATED): U 0.055 / R 18.2

EXTERIOR ELEVATION LEGEND

MASONRY COLORS:

1: SMOOTH FACE BRICK

2: TEXTURED FACE BRICK

EXT-1,2, & 3 TYPES:

A - SMOOTH RUNNING BOND FACE BRICK

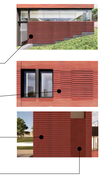
B - OFFSET BANDED FACE BRICK - SEE A20-02

C - ACCENT FACE BRICK - SEE A20-02

D - FLAT BANDED FACE BRICK - SEE A20-02

E - TEXTURED FACE BRICK RUNNING BOND

F - METAL PANEL



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ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

EXTERIOR WALL & ROOF ASSEMBLIES

SHEET NUMBER

A32-01

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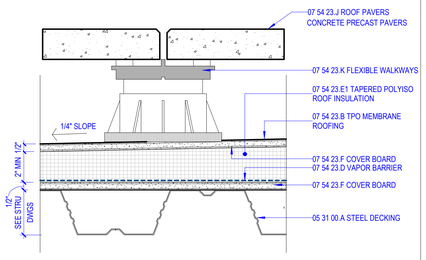
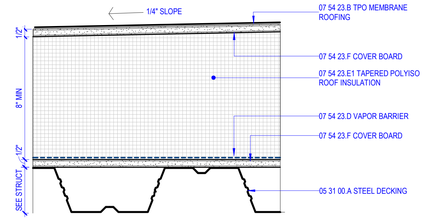


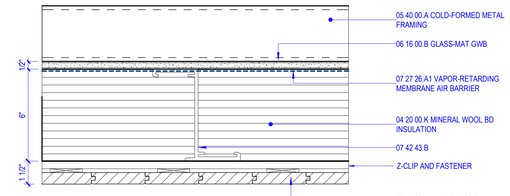
R-4 TPO ROOF AT TOWER

ASSEMBLY	R VALUE	NOTES
INTERIOR AIR FILM	0.68	AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
3" GAL METAL ROOF DECK	0.00	
1/2" COVERBOARD	0.56	
FULLY ADHERED VAPOR BARRIER	0.00	
	1.24	NON CONDITIONED SPACE



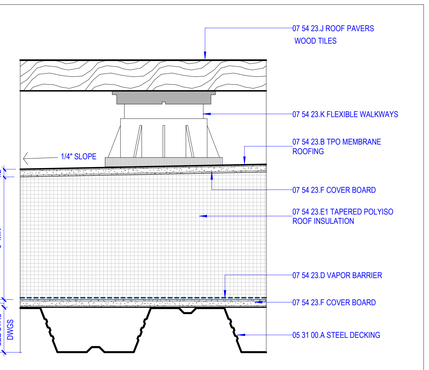
R-2 TPO ROOF W/ STEEL DECKING

ASSEMBLY	R VALUE	NOTES
INTERIOR AIR FILM	0.68	AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
3" GAL METAL ROOF DECK	0.00	
1/2" COVERBOARD	0.56	
FULLY ADHERED VAPOR BARRIER	0.00	
TAPERED POLYISO INSULATION	37.60	DEPTH VARIES, 8" MIN, R4.7 PER INCH
1/2" COVER BOARD	0.56	
TPO ROOFING MEMBRANE	0.00	
EXTERIOR AIR LAYER	0.17	AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
	39.57	CODE MINIMUM: U 0.032 / R 31.25, ROOF DERATING NOT REQ



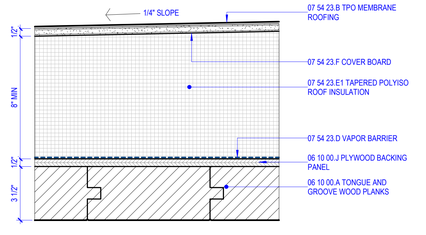
S-1 SOFFIT - LINEAR WOOD CEILING

ASSEMBLY	R VALUE	NOTES
INTERIOR AIR FILM	0.98	AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
CFMF	2.00	
1/2" GLASS FIBER REINFORCED EXTERIOR SHEATHING	0.56	
FLUID APPLIED AIR & VAPOR BARRIER	0.00	
6" MINERAL WOOL INSULATION	19.74	BETWEEN FURRING, R 4.7 PER INCH
THERMAL CLIP	0.00	
1" AIR SPACE	1.01	
LINEAR WOOD CEILING	0.60	
EXTERIOR AIR LAYER	0.46	AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
	24.34	CODE MINUMIM: U 0.057 / R 17.5



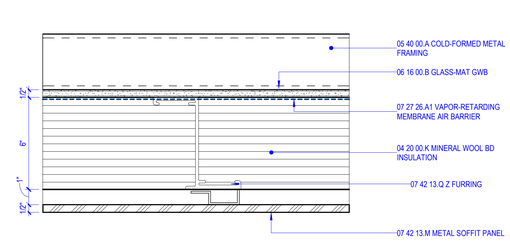
R-3 TPO ROOF AT TERRACE

ASSEMBLY	R VALUE	NOTES
INTERIOR AIR FILM	0.68	AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
3" GAL METAL ROOF DECK	0.00	
1/2" COVERBOARD	0.56	
FULLY ADHERED VAPOR BARRIER	0.00	
TAPERED POLYISO INSULATION	37.60	DEPTH VARIES, 8" MIN, R4.7 PER INCH
1/2" COVER BOARD	0.56	
TPO ROOFING MEMBRANE	0.00	
ADJUSTABLE PEDESTALS	0.00	
ENGINEERED WOOD PLANKS	0.00	
EXTERIOR AIR LAYER	0.17	AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
	39.57	CODE MINIMUM: U 0.032 / R 31.25, ROOF DERATING NOT REQ



R-1 TPO ROOF W/ WOOD DECKING

ASSEMBLY	R VALUE	NOTES
INTERIOR AIR FILM	0.68	AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
3.5" WOOD PLANKS	4.38	R 1.25 PER INCH
PLYWOOD BACKING PANEL	0.56	
FULLY ADHERED VAPOR BARRIER	0.00	
TAPERED POLYISO INSULATION	37.60	DEPTH VARIES, 8" MIN, R4.7 PER INCH
1/2" COVER BOARD	0.56	
TPO ROOFING MEMBRANE	0.00	
EXTERIOR AIR LAYER	0.17	AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
	43.29	CODE MINIMUM: U 0.032 / R 31.25, ROOF DERATING NOT REQ



S-2 SOFFIT - METAL PANEL

ASSEMBLY	R VALUE	NOTES
INTERIOR AIR FILM	0.98	AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
CFMF	2.00	
1/2" GLASS FIBER REINFORCED EXTERIOR SHEATHING	0.56	
FLUID APPLIED AIR & VAPOR BARRIER	0.00	
6" MINERAL WOOL INSULATION	19.74	BETWEEN FURRING, R 4.7 PER INCH
THERMAL CLIP	0.00	
1" AIR SPACE	1.01	
METAL PANEL	0.60	
EXTERIOR AIR LAYER	0.46	AIR LAYER ONLY, NOT PHYSICAL LAYER OF CONSTRUCTION
	24.34	CODE MINUMIM: U 0.057 / R 17.5

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CITY OF WORCESTER

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ISSUE CHART

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Job Number 157132.000

TITLE

EXTERIOR WALL & ROOF ASSEMBLIES

SHEET NUMBER

A32-02

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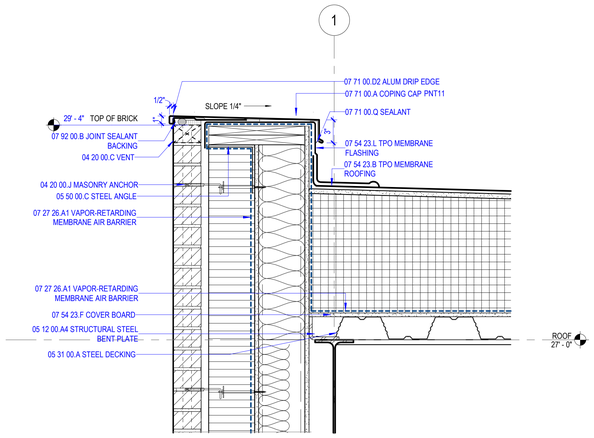
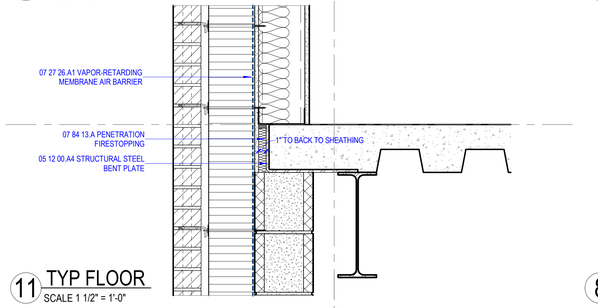
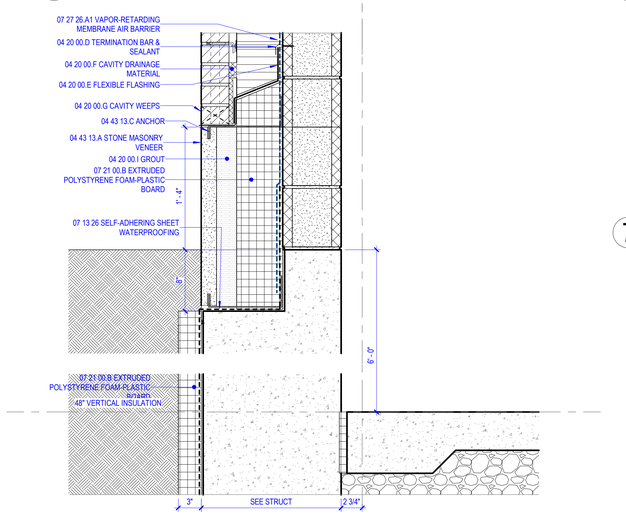


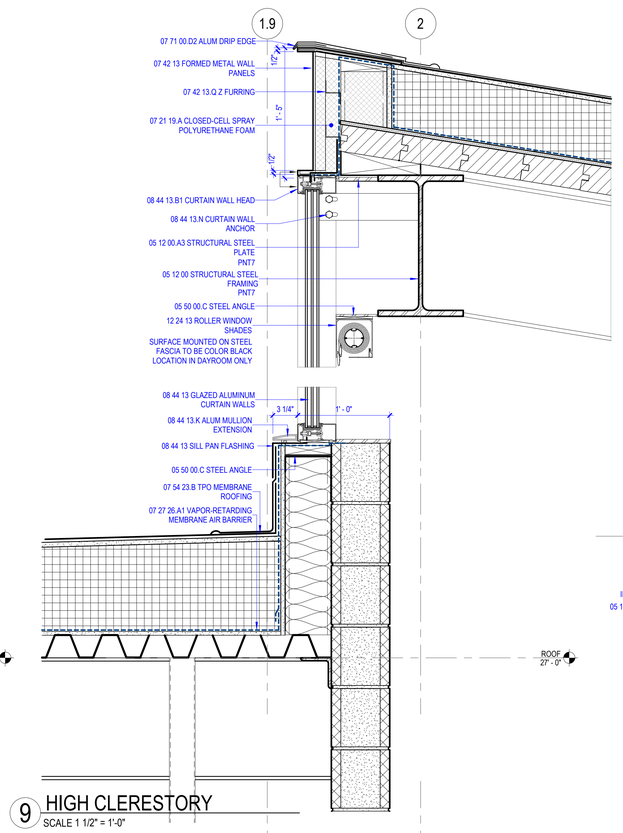
12 TYP PARAPET
SCALE 1 1/2" = 1'-0"



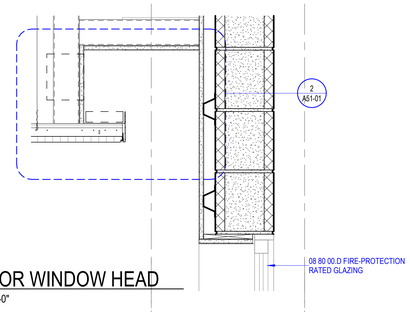
11 TYP FLOOR
SCALE 1 1/2" = 1'-0"



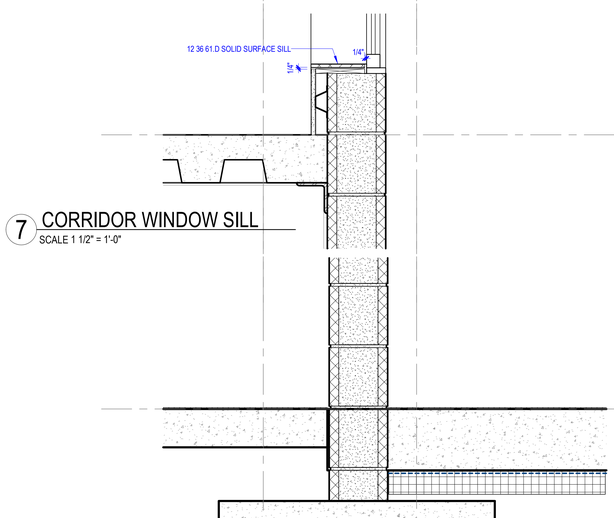
10 TYP WALL BASE AT NORTH
SCALE 1 1/2" = 1'-0"



9 HIGH CLERESTORY
SCALE 1 1/2" = 1'-0"

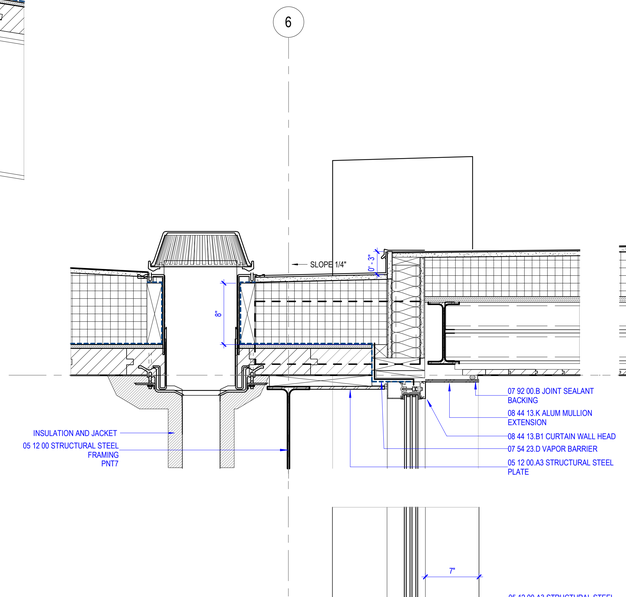


8 CORRIDOR WINDOW HEAD
SCALE 1 1/2" = 1'-0"

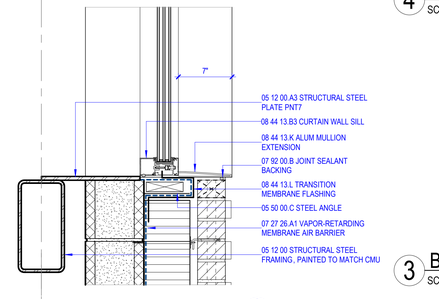


7 CORRIDOR WINDOW SILL
SCALE 1 1/2" = 1'-0"

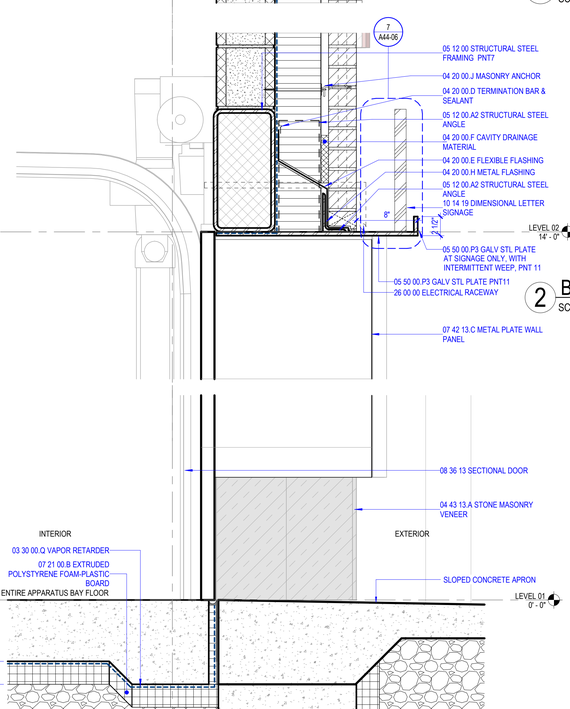
6 SLAB TRANSITION
SCALE 1 1/2" = 1'-0"



4 ROOF OVERHANG AT BAY
SCALE 1 1/2" = 1'-0"

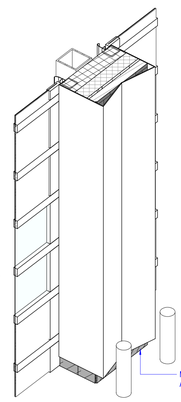


3 BAY CLERESTORY SILL
SCALE 1 1/2" = 1'-0"



2 BAY DOOR HEAD
SCALE 1 1/2" = 1'-0"

5 BAY DOOR SILL
SCALE 1 1/2" = 1'-0"



1 APPARATUS BAY DOOR JAMB
SCALE

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ISSUE CHART

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BUILDING ENCLOSURE SECTION DETAILS - APPARATUS BAY

SHEET NUMBER

A32-11

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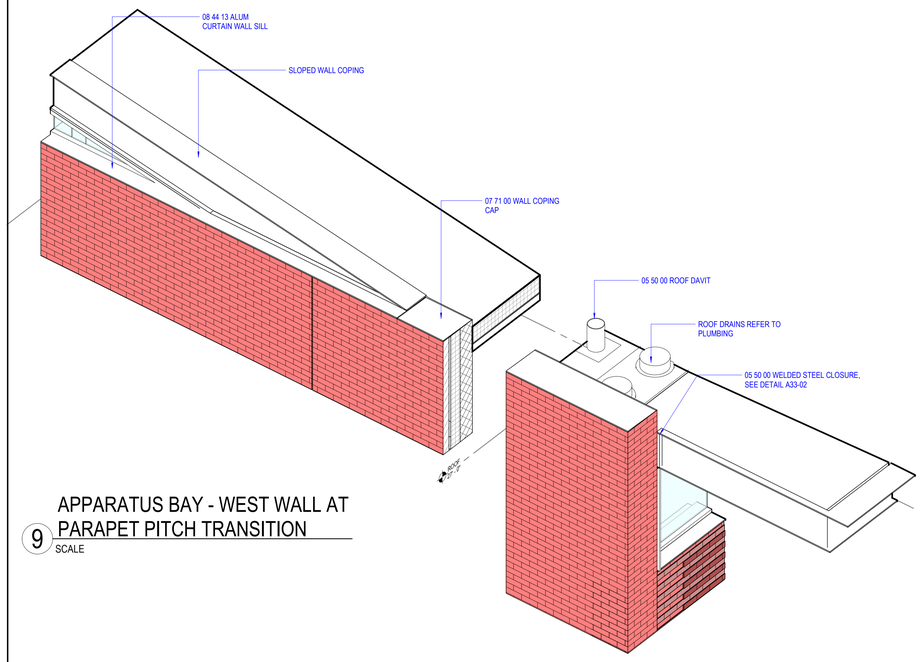
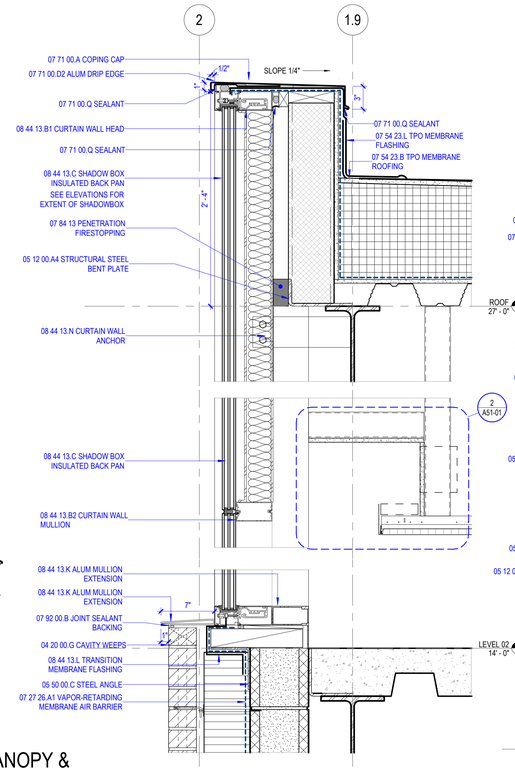
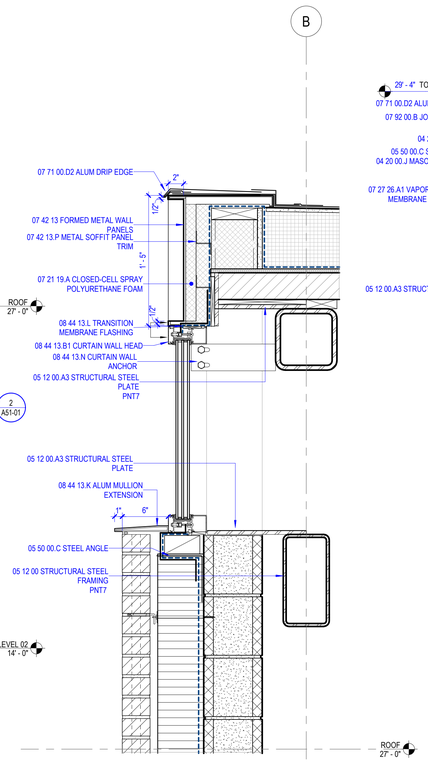


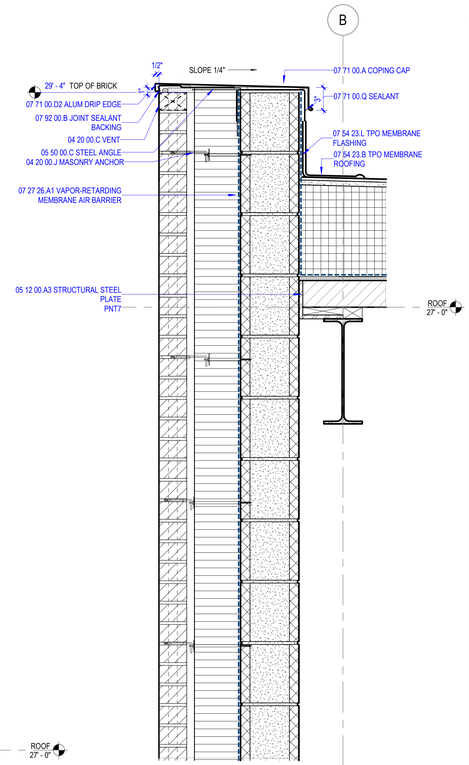
9 APPARATUS BAY - WEST WALL AT PARAPET PITCH TRANSITION
SCALE



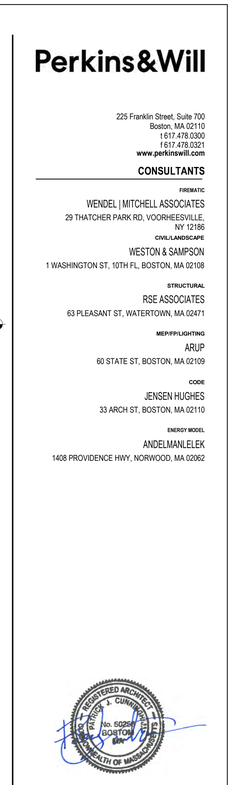
8 APPARATUS BAY - HIGH CANOPY & PARAPET WEST
SCALE



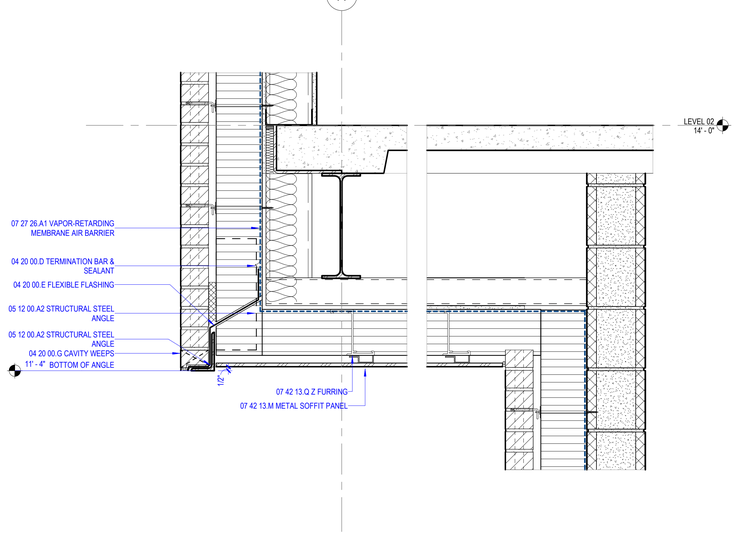
6 SOUTH CURTAIN WALL
SCALE 1 1/2" = 1'-0"



4 APPARATUS BAY CLERESTORY - WEST
SCALE 1 1/2" = 1'-0"



2 TYP APPARATUS BAY PARAPET
SCALE 1 1/2" = 1'-0"



7 TYP METAL PANEL SOFFIT
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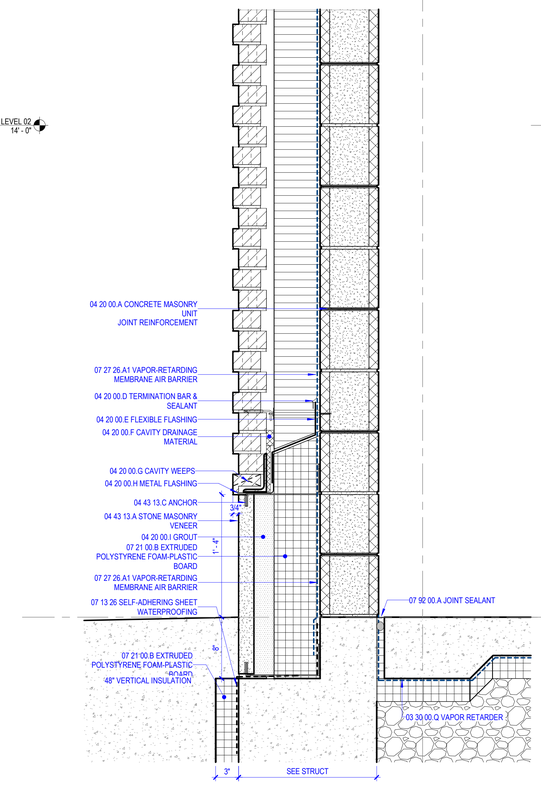
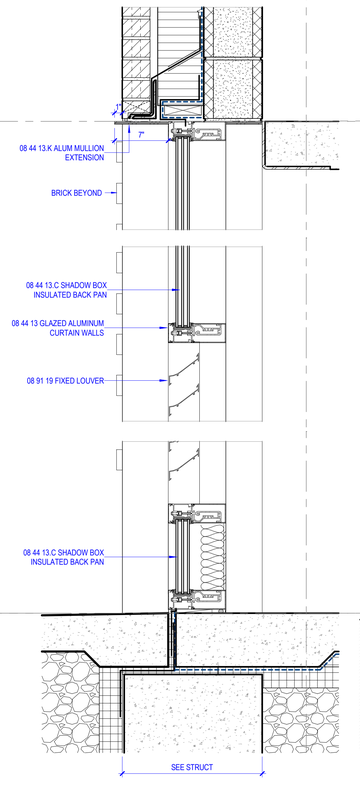


5 TYP APPARATUS BAY WALL BASE
SCALE 1 1/2" = 1'-0"



3 EXTERIOR LOUVER
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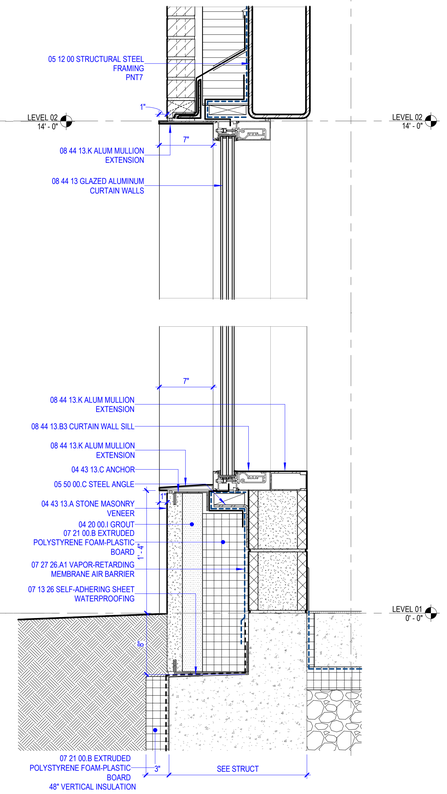

1 CW BASE @ BAY
SCALE 1 1/2" = 1'-0"

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PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

BUILDING ENCLOSURE SECTION DETAILS - APPARATUS BAY

SHEET NUMBER

A32-12

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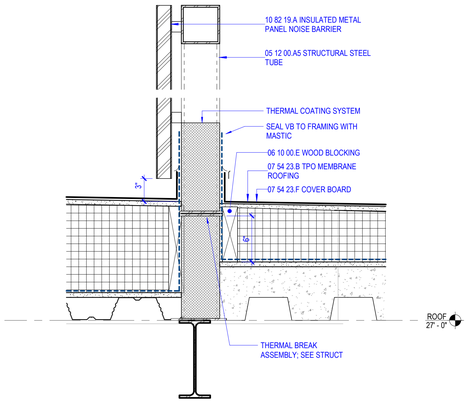

7 ACOUSTICAL SCREEN WALL
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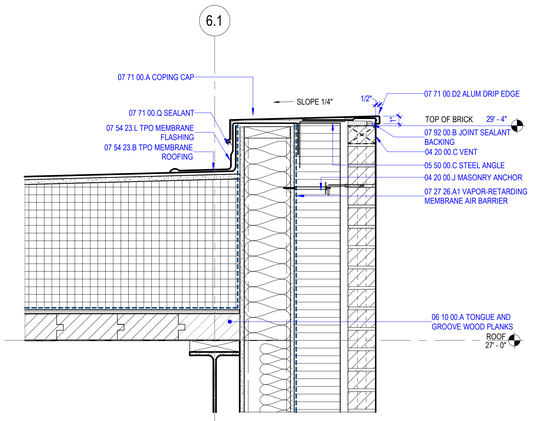
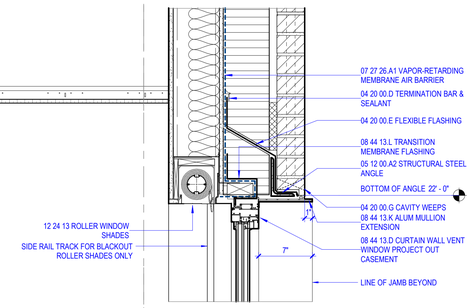


5 TYP PARAPET @ STUD BACK UP
SCALE 1 1/2" = 1'-0"



4 TYP WINDOW HEAD
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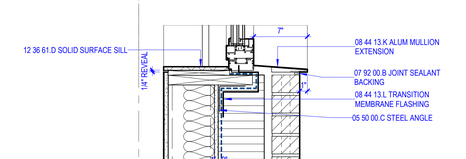
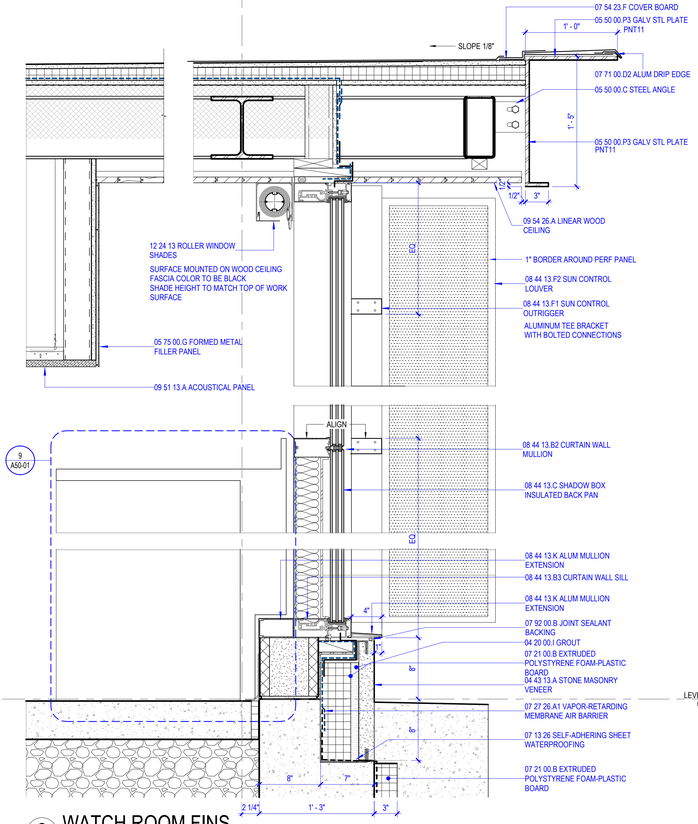


3 TYP WINDOW SILL
SCALE 1 1/2" = 1'-0"

2 ENTRY CANOPY
SCALE 1 1/2" = 1'-0"

7



8 WATCH ROOM FINS
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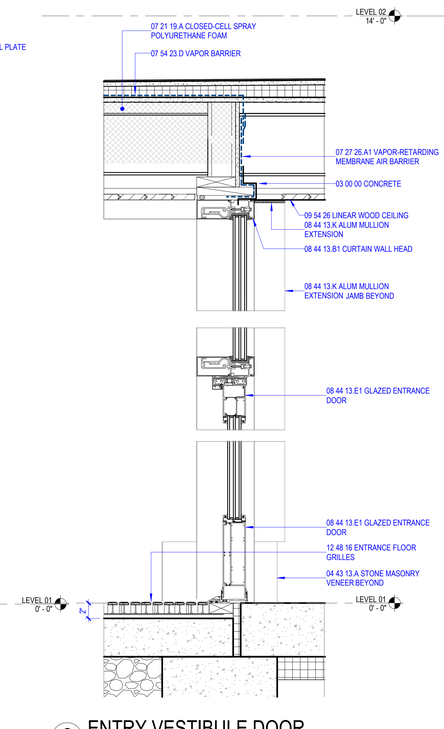
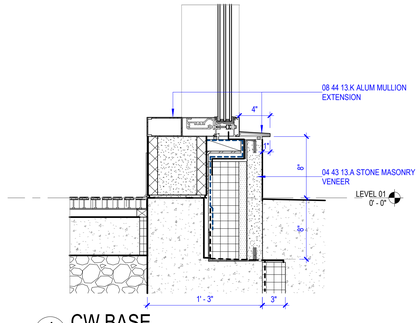


6 ENTRY VESTIBULE DOOR
SCALE 1 1/2" = 1'-0"



1 CW BASE
SCALE 1 1/2" = 1'-0"

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CITY OF WORCESTER

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KEY PLAN

CONSTRUCTION DOCUMENTS 12/19/25

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

BUILDING ENCLOSURE SECTION DETAILS - BUNKS & ENTRY

SHEET NUMBER

A32-13

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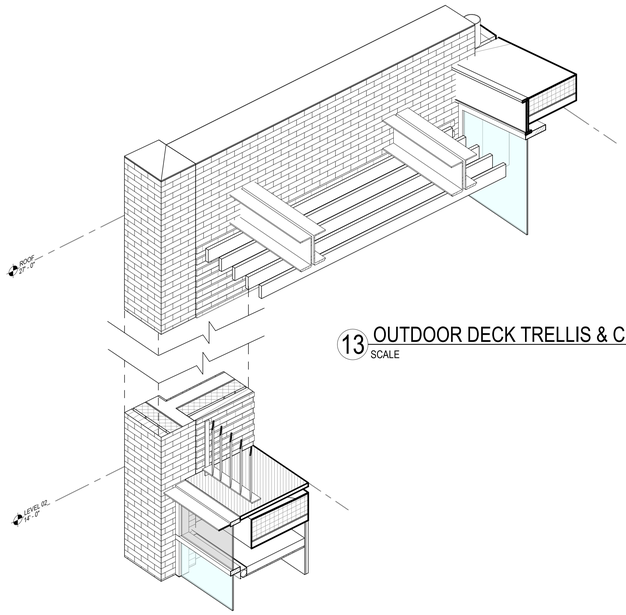
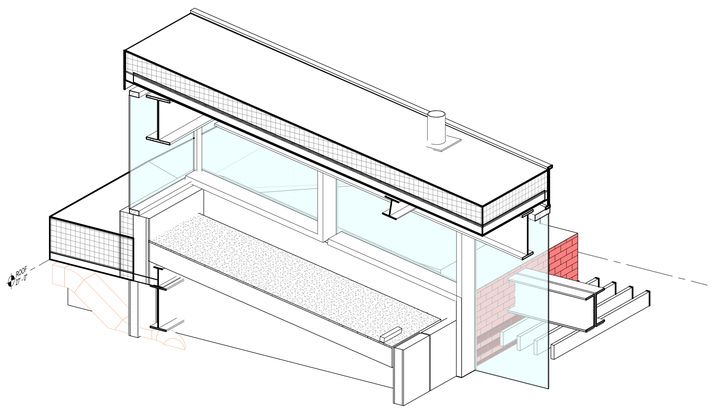
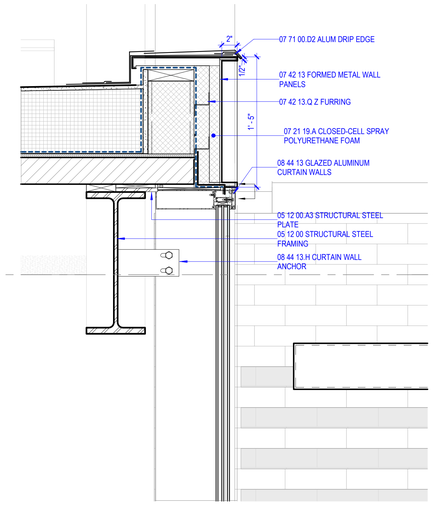


13 OUTDOOR DECK TRELLIS & CURTAIN WALL HEAD TERMINATION
SCALE



12 OUTDOOR DECK ROOFING TERMINATION
SCALE



7 FASCIA DETAIL
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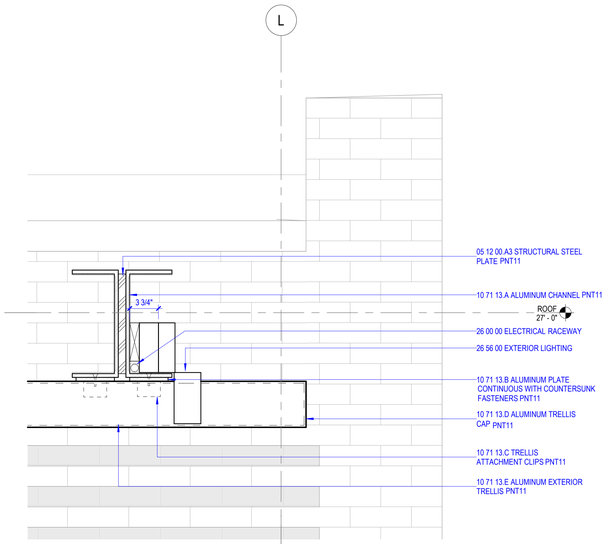

3 TRELLIS SECTION
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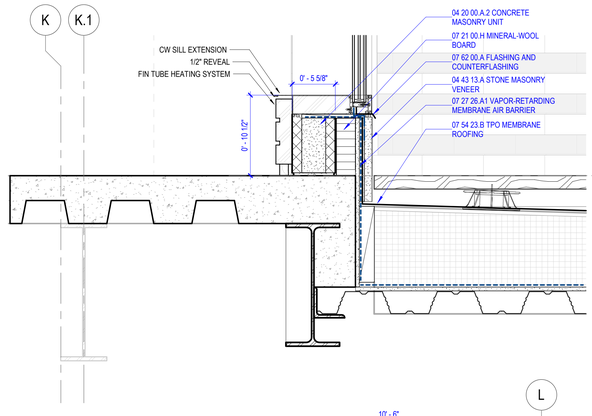
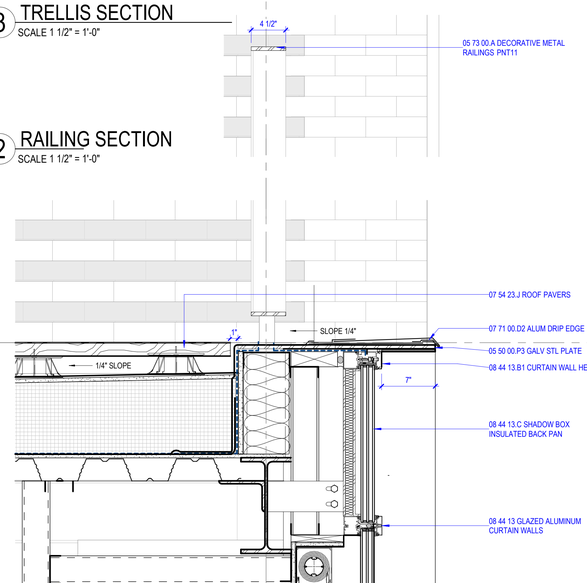


6 PAVERS AT CW SECTION
SCALE 1 1/2" = 1'-0"



2 RAILING SECTION
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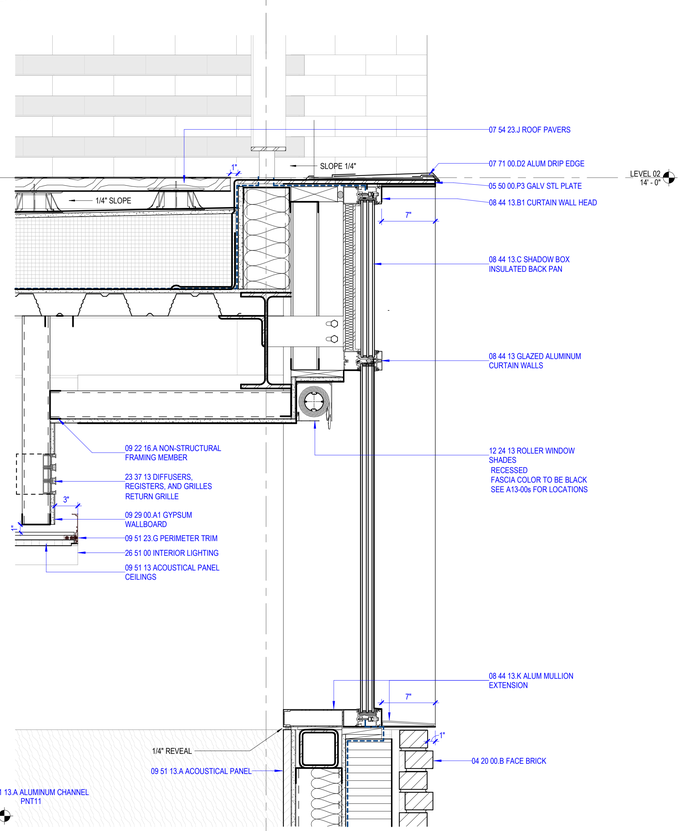

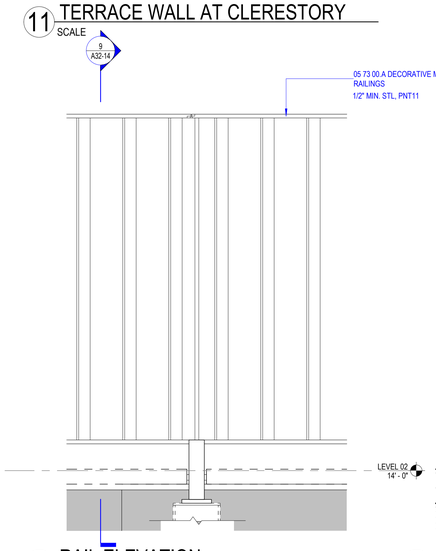

10 RAIL ELEVATION
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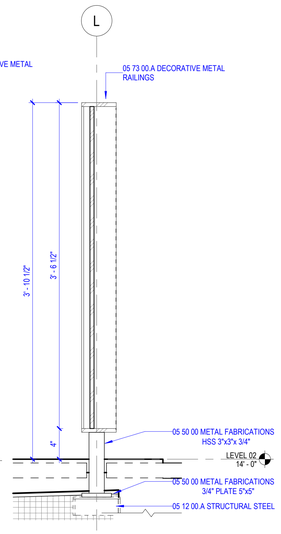

9 RAIL SECTION
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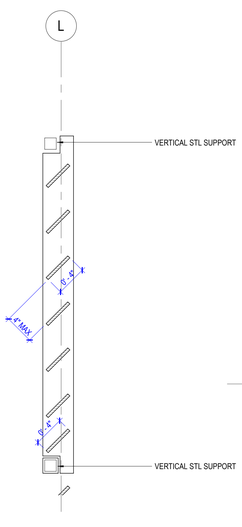

8 RAILING PLAN
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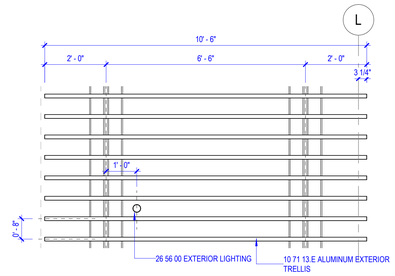

5 TRELLIS RCP
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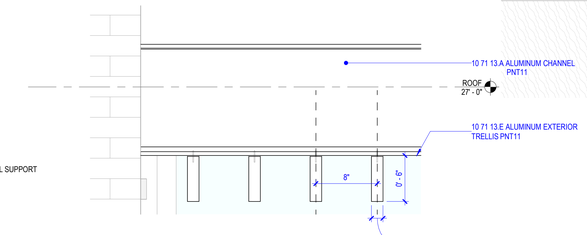

4 ENLARGED TRELLIS DETAIL
SCALE 1 1/2" = 1'-0"

1 HEAD DETAIL ABOVE TRAINING ROOM
SCALE 1 1/2" = 1'-0"

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BOSTON
COMMONWEALTH OF MASSACHUSETTS

PROJECT

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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE
BUILIDNG ENCLOSURE SECTION DETAILS - KITCHEN & TRELLIS/ DECK

SHEET NUMBER
A32-14

CONSTRUCTION DOCUMENTS 12/19/25

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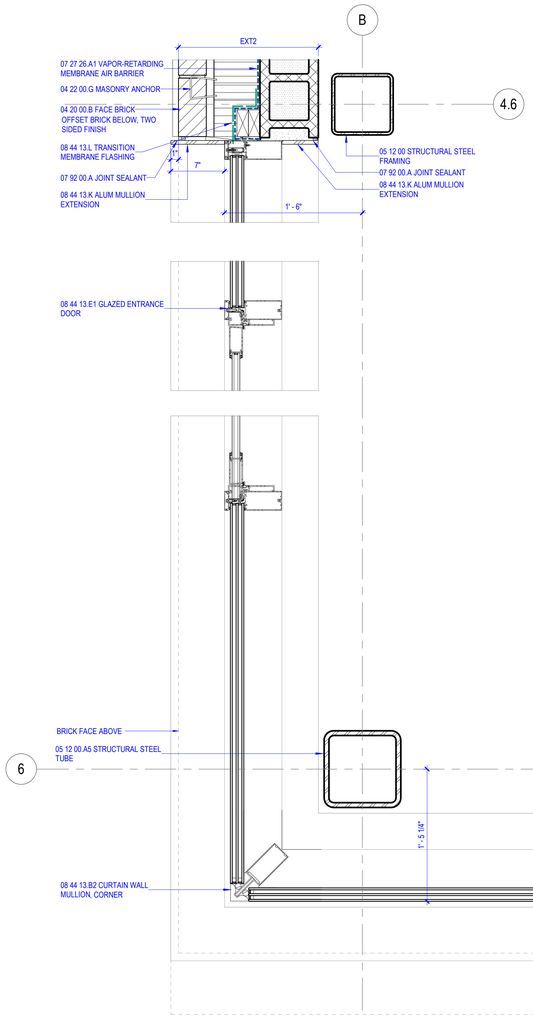
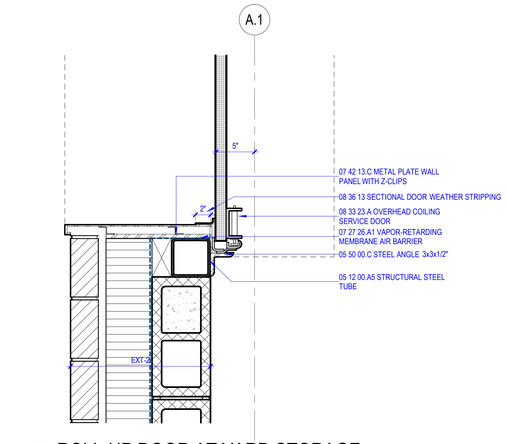
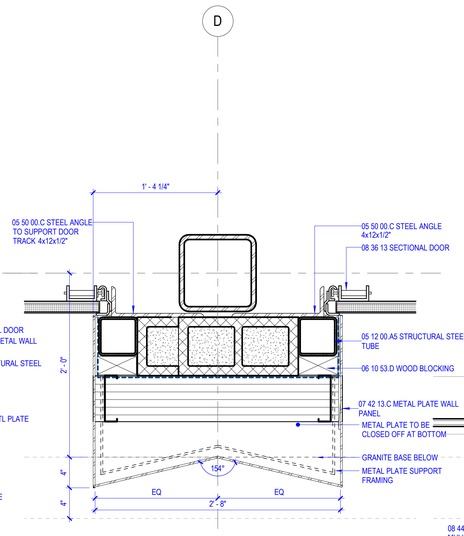


8 SW BAY CORNER DETAIL
SCALE 1 1/2" = 1'-0"



7 ROLL-UP DOOR AT YARD STORAGE
SCALE 1 1/2" = 1'-0"



6 TYP APPARATUS BAY DOOR JAMB
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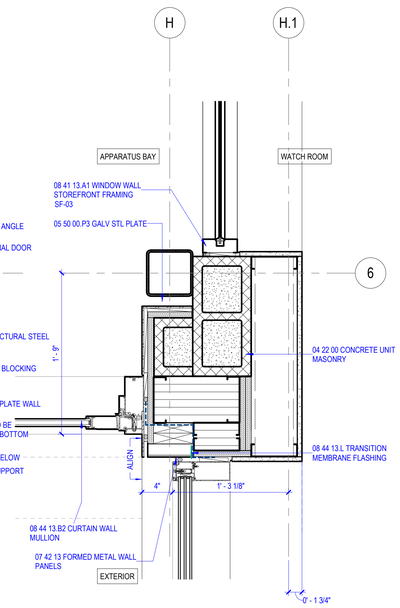
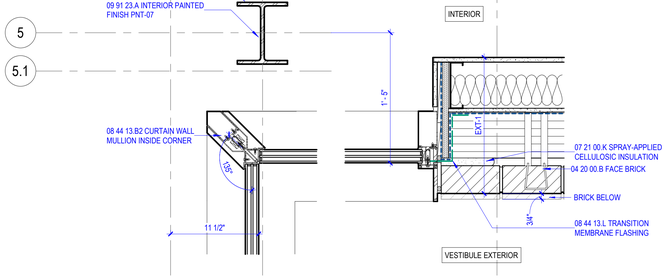
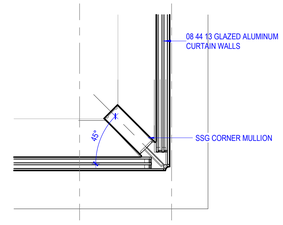


5 APPARATUS BAY INSIDE CORNER
SCALE 1 1/2" = 1'-0"



3 ENTRY VESTIBULE TO BRICK
SCALE 1 1/2" = 1'-0"



2 ENTRY VESTIBULE - GLASS CORNER
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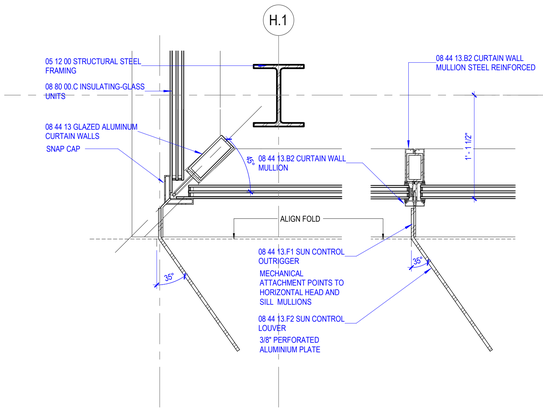

4 VERTICAL FIN MULLION CAP
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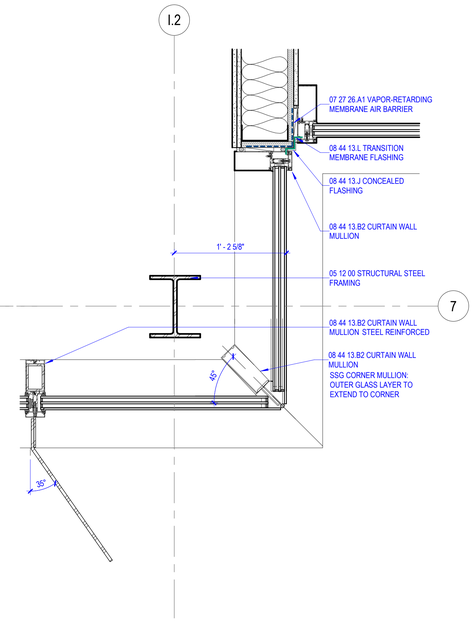

1 WATCH ROOM - SE CORNER
SCALE 1 1/2" = 1'-0"

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CITY OF WORCESTER

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KEY PLAN

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CONSTRUCTION DOCUMENTS 12/19/25

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Job Number	157132.000	

TITLE

BUILDING ENCLOSURE PLAN DETAILS - LEVEL 01

SHEET NUMBER

A33-01

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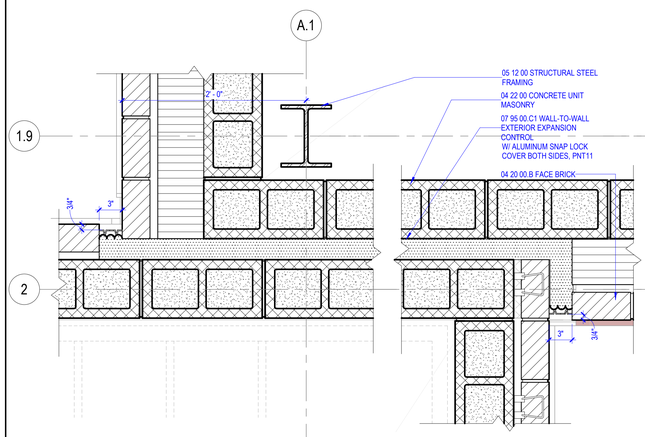

11 TOWER EXPANSION JOINT DETAIL
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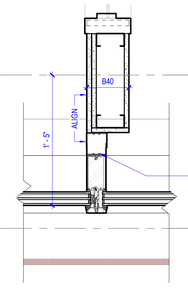

7 LEVEL 02 PARTITION GAP CLOSURE DETAIL
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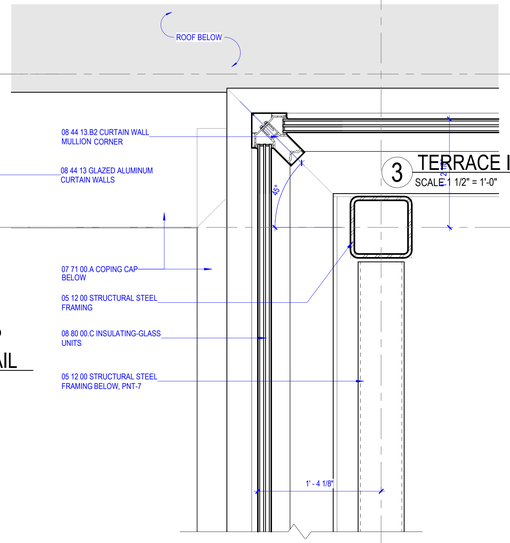
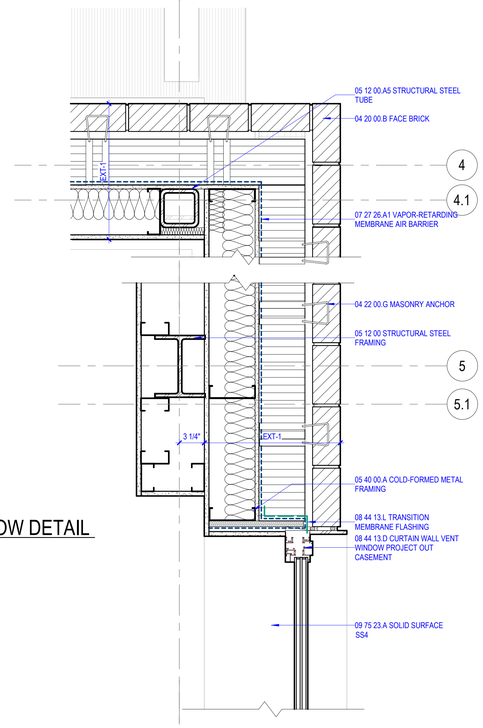
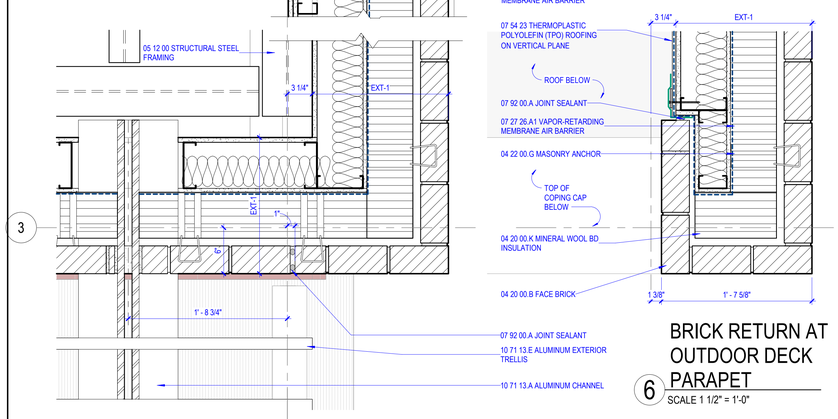


3 TERRACE INSIDE CORNER-
SCALE 1 1/2" = 1'-0"



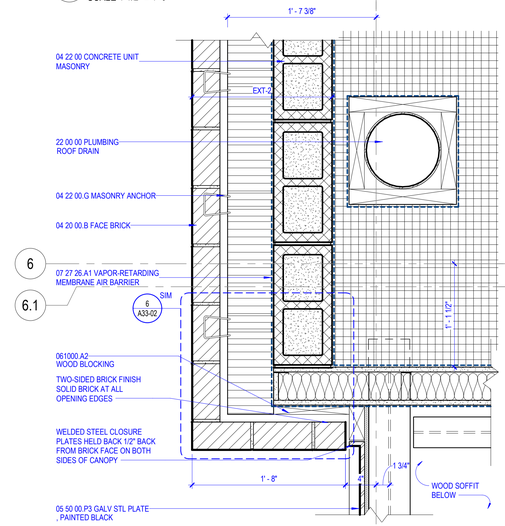
2 BUNK WINDOW DETAIL
SCALE 1 1/2" = 1'-0"

10 EXT DOOR @ EXCERCISE ROOM
SCALE 1 1/2" = 1'-0"



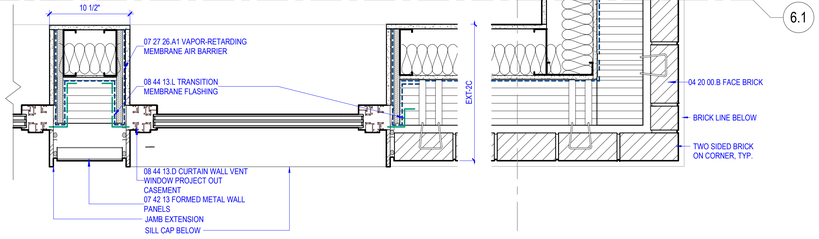
9 DECK STEEL @ BRICK
SCALE 1 1/2" = 1'-0"

6 BRICK RETURN AT OUTDOOR DECK PARAPET
SCALE 1 1/2" = 1'-0"

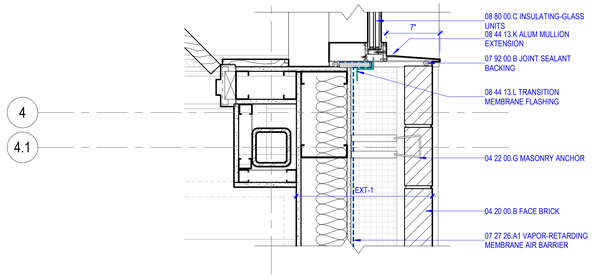


5 INSIDE CORNER AT CORRIDOR
SCALE 1 1/2" = 1'-0"

4 CANOPY EDGE REVEAL AT BRICK
SCALE 1 1/2" = 1'-0"



1 TYPICAL BUNK WINDOW DETAIL & CORNER BRICK
SCALE 1 1/2" = 1'-0"



8 TRAINING ROOM SE CORNER
SCALE 1 1/2" = 1'-0"

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ANDELMANLELEK
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REGISTERED ARCHITECT No. 50258 BOSTON MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE

BUILDING ENCLOSURE PLAN DETAILS - LEVEL 02

SHEET NUMBER

A33-02

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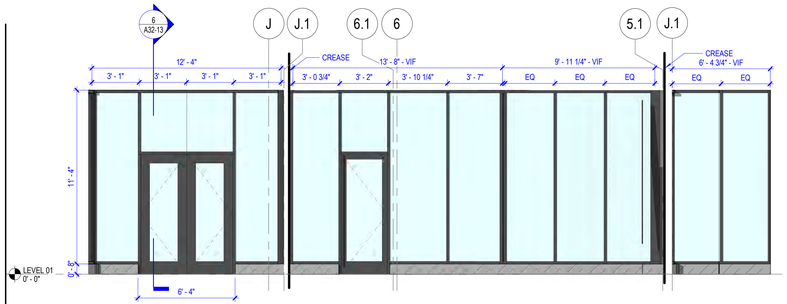

1 CW-01 - ENTRY - UNFOLDED (EGA-1.2)
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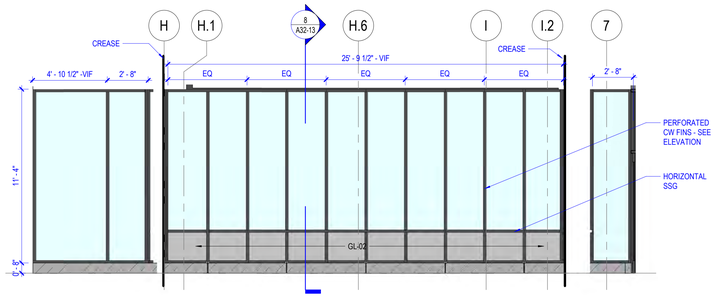

2 CW-02 - WATCH ROOM - UNFOLDED (EGA-1.2)
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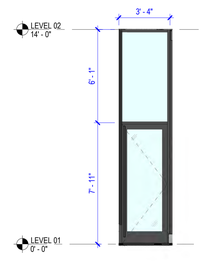
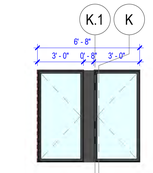
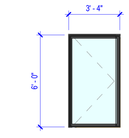


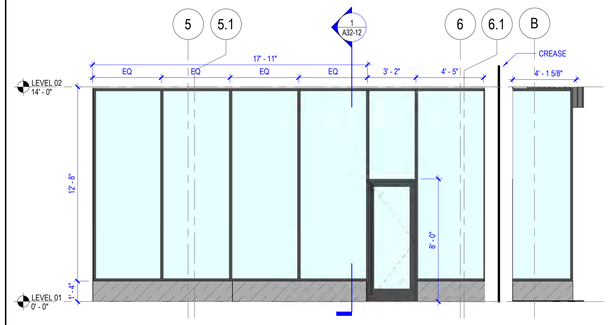
3 CW-03 - APPARATUS BAY ENTRY (EGA-1.2)
SCALE 1/4" = 1'-0"



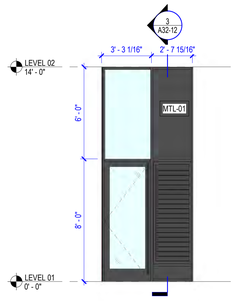
21 CW-21
SCALE 1/4" = 1'-0"



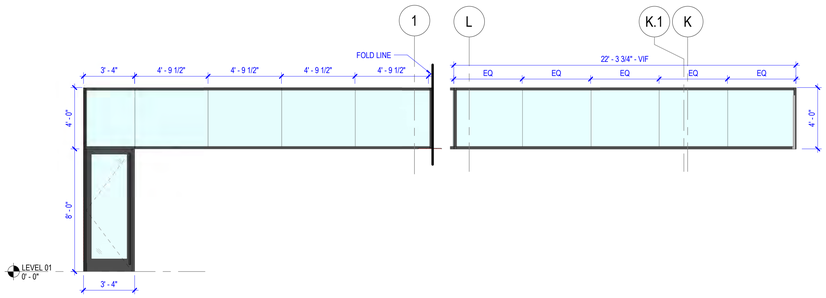
22 CW-22
SCALE 1/4" = 1'-0"



4 CW-04 - APPARATUS BAY - WEST ENTRY (EGA-1.2)
SCALE 1/4" = 1'-0"

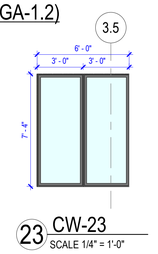


5 CW-05 - NORTH WEST ENTRY (EGA-1.2)
SCALE 1/4" = 1'-0"

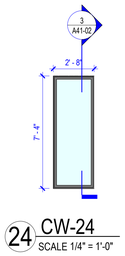


6A CW-06A - FITNESS EAST (EGA-1.1)
SCALE 1/4" = 1'-0"

6B CW-06B - FITNESS NORTH (EGA-1.1)
SCALE 1/4" = 1'-0"

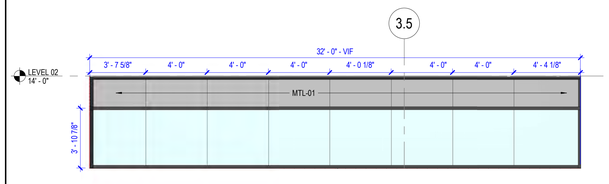


23 CW-23
SCALE 1/4" = 1'-0"

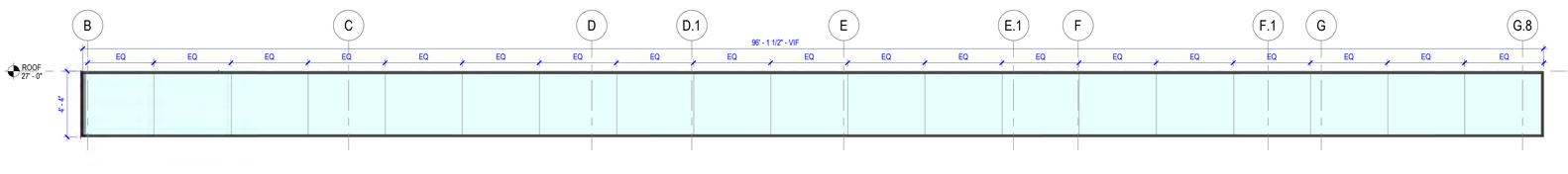


24 CW-24
SCALE 1/4" = 1'-0"

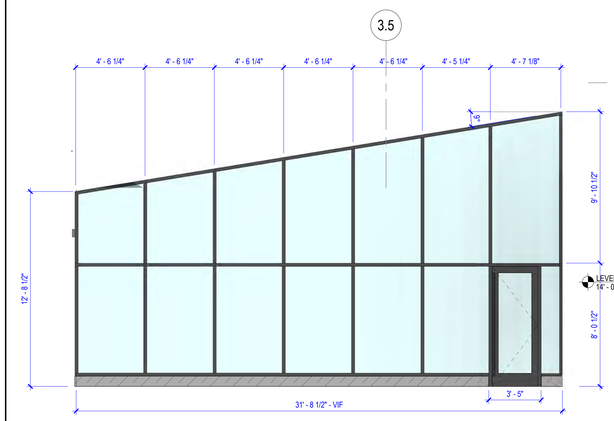
NOTE:
1. SEE A32-01 FOR EXTERIOR GLAZING INFORMATION
2. SEE A45-03 FOR SF-07



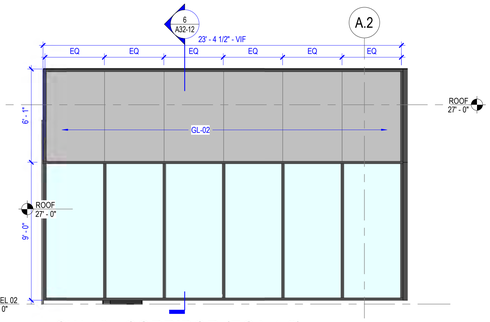
7 CW-07 - TRAINING ROOM (EGA-1.1)
SCALE 1/4" = 1'-0"



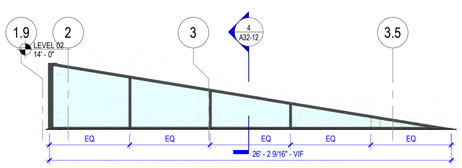
9 CW-09 - SOUTH CLERESTORY (EGA-1.1)
SCALE 1/4" = 1'-0"



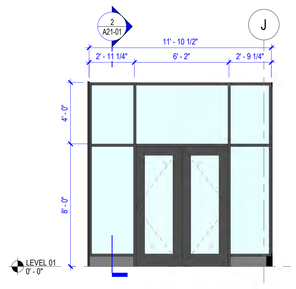
8 CW-08 - KITCHEN (EGA-1.3)
SCALE 1/4" = 1'-0"



10 CW-10 - CORRIDOR (EGA-1.2)
SCALE 1/4" = 1'-0"



11B CW-11B - CLERESTORY WEST (EGA-1.1)
SCALE 1/4" = 1'-0"



12 SF-01 (ENTRY VESTIBULE)
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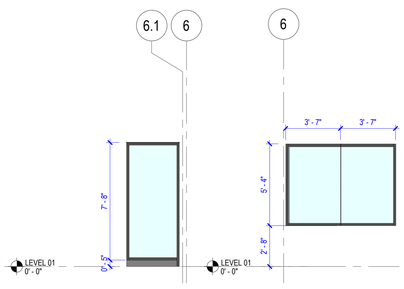

13 SF-02
SCALE 1/4" = 1'-0"

14 SF-03
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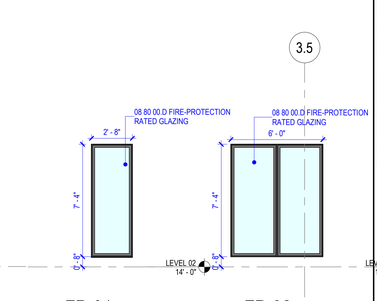
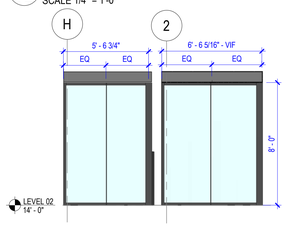
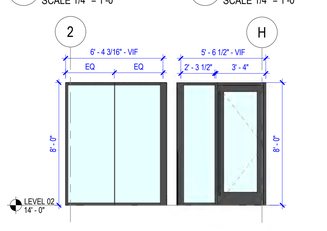


18 FP-01
SCALE 1/4" = 1'-0"

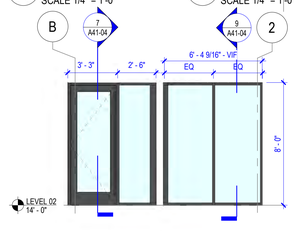
19 FP-02
SCALE 1/4" = 1'-0"



15 SF-04 - UNFOLDED
SCALE 1/4" = 1'-0"



16 SF-05 - UNFOLDED
SCALE 1/4" = 1'-0"



17 SF-06 - UNFOLDED
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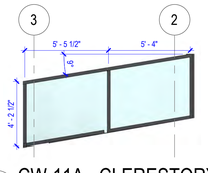
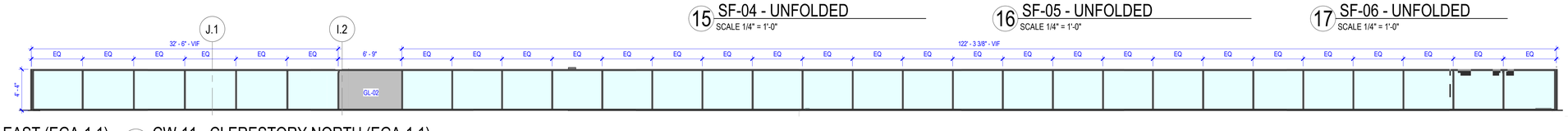
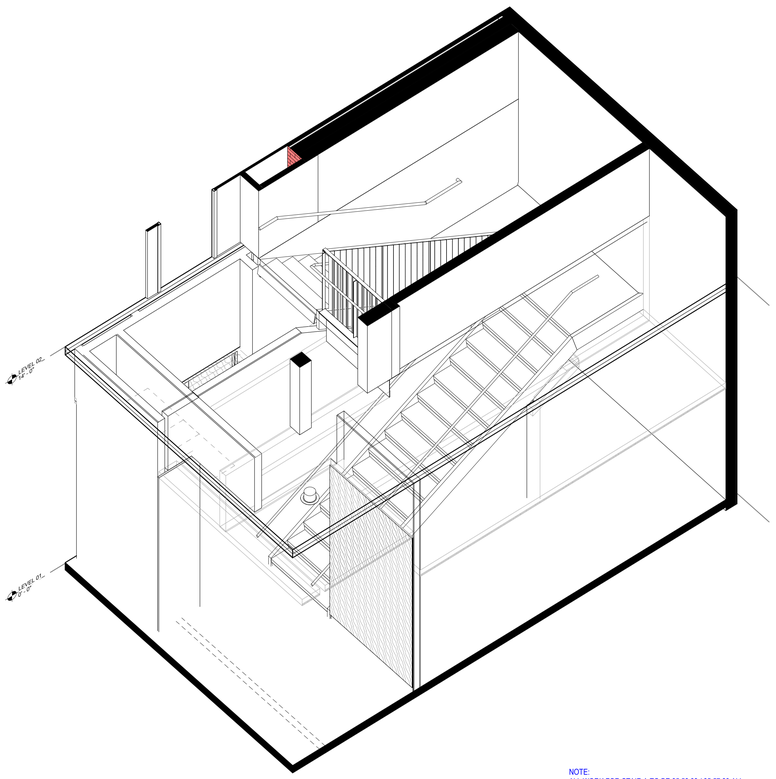


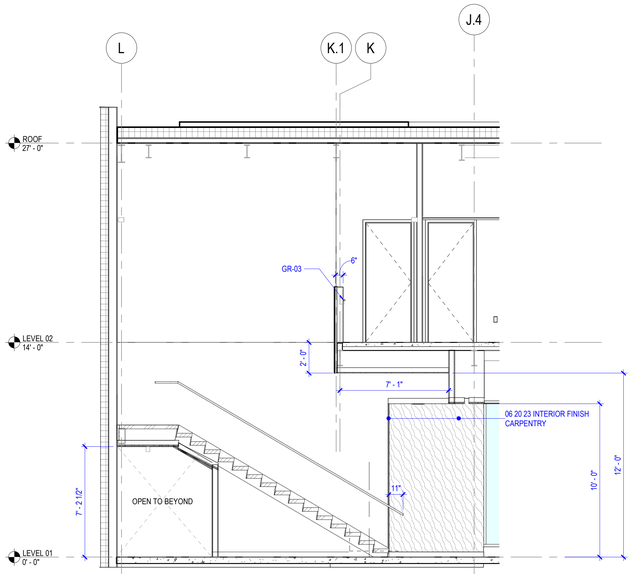
11A CW-11A - CLERESTORY EAST (EGA-1.1)
SCALE 1/4" = 1'-0"


J.1
I.2
32' - 6" - VIF
6' - 9"
122' - 3 3/8" - VIF
EQ
EQ
EQ
EQ
EQ
EQ



NOTE:
ALL WORK FOR STAIR A TO BE 05 50 00 / 05 57 00 ALL EXPOSED STEEL TO BE PAINTED WITH PNT7

9 STAIR A - AXON
SCALE



8 ENLARGED STAIR PLAN NORTH SECTION - STAIR A
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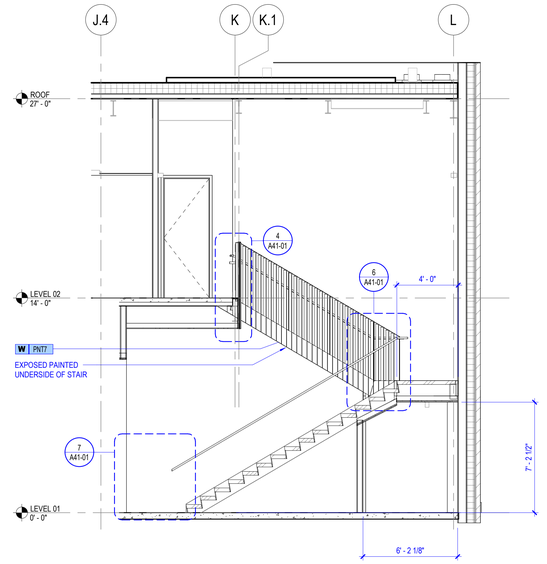
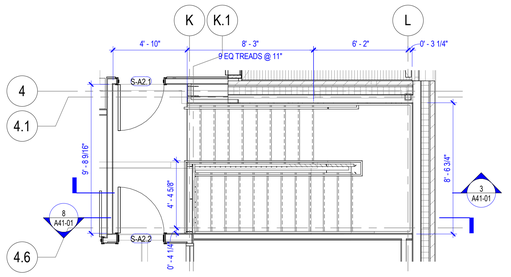
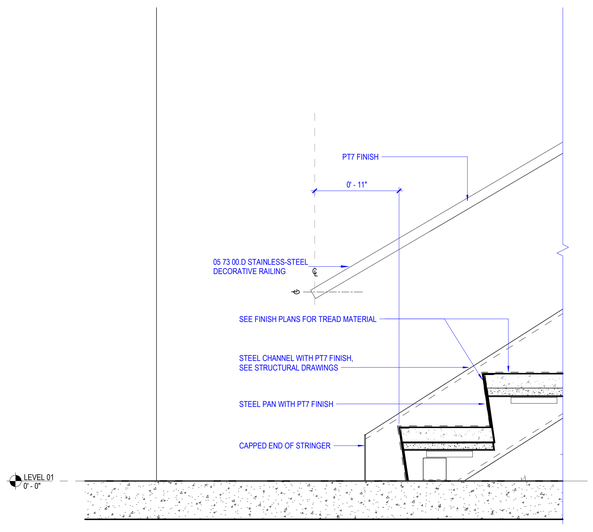


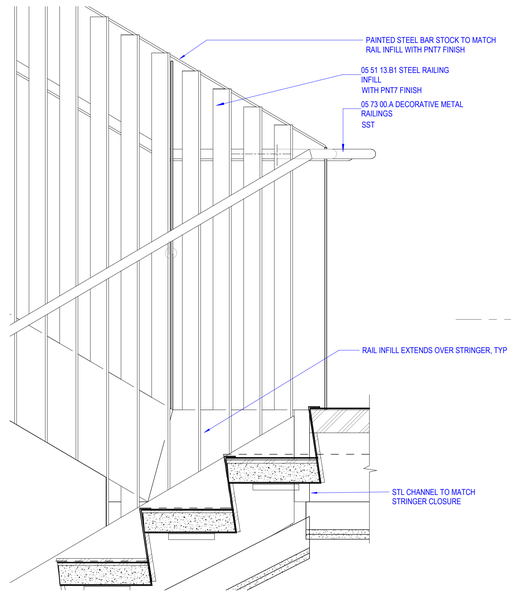
3 ENLARGED STAIR SECTION - STAIR A
SCALE 1/4" = 1'-0"



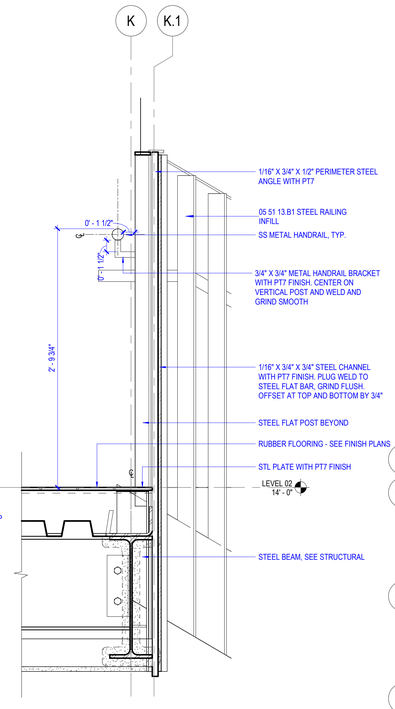
2 ENLARGED PLAN - STAIR A - LEVEL 02
SCALE 1/4" = 1'-0"



7 STAIR A - BOTTOM LANDING
SCALE 1 1/2" = 1'-0"



6 STAIR A - MID-LANDING GUARDRAIL
SCALE 1 1/2" = 1'-0"



4 STAIR A - LEVEL 2 LANDING GUARDRAIL GR-03
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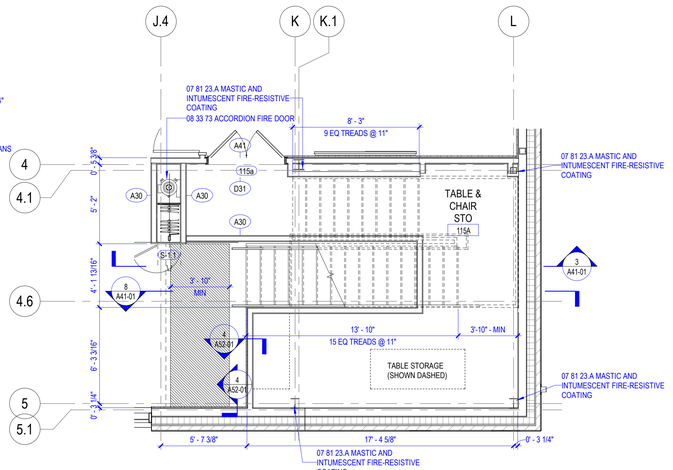

1 ENLARGED PLAN - STAIR A - LEVEL 01
SCALE 1/4" = 1'-0"

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MEP/FP/LIGHTING
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ENERGY MODEL
ANDELMANLELEK
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REGISTERED ARCHITECT
PHILIP J. CUNNINGHAM
No. 60256
BOSTON
COMMONWEALTH OF MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE

ENLARGED STAIR A PLANS AND SECTIONS

SHEET NUMBER

A41-01

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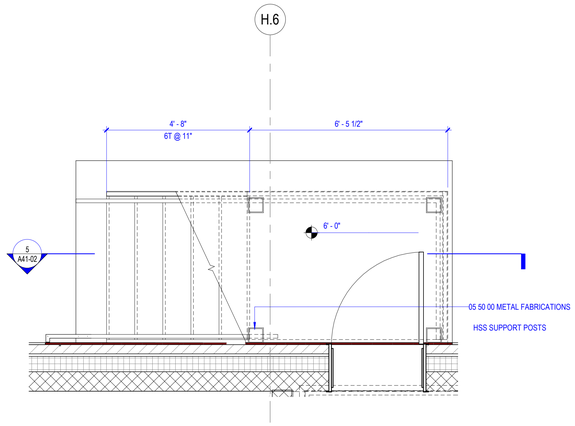
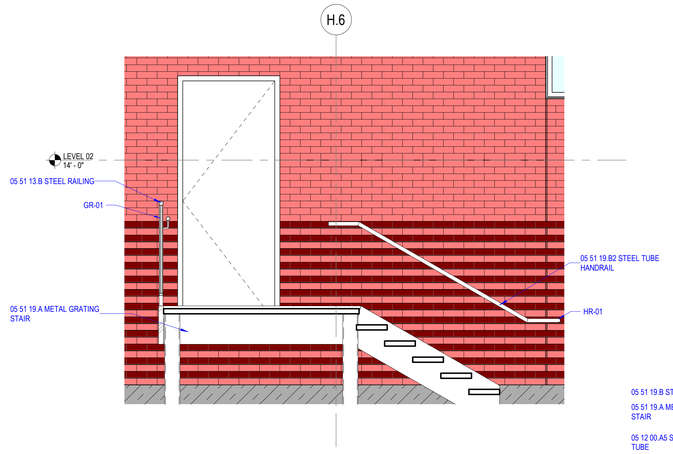
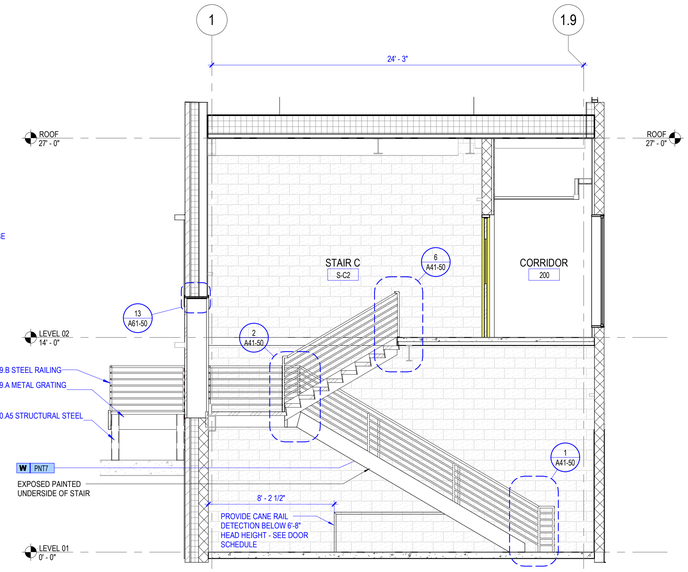


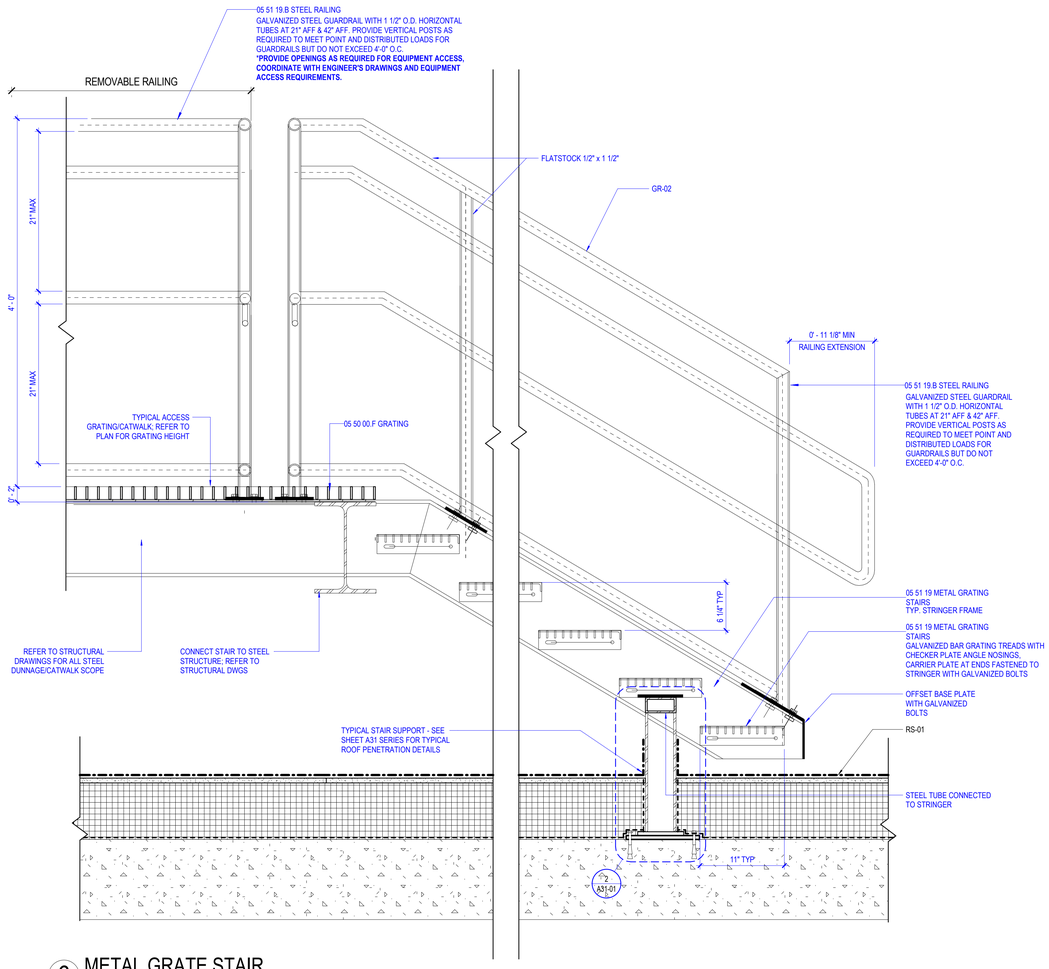
4 LEVEL 01 - TYP. EXTERIOR STAIR
SCALE 1/2" = 1'-0"



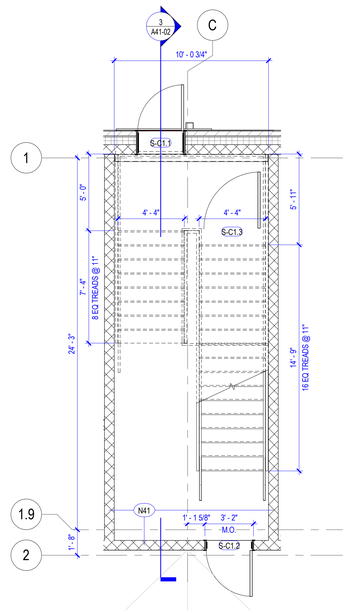
5 ENLARGED TYP. EXTERIOR STAIR SECTION
SCALE 1/2" = 1'-0"



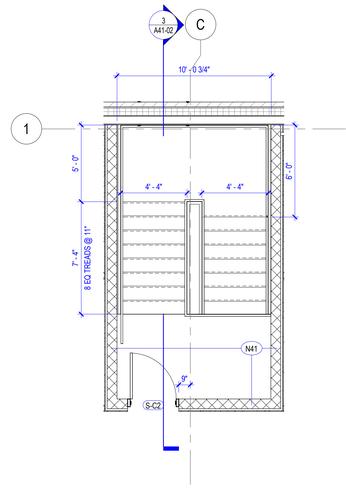
3 ENLARGED STAIR SECTION - STAIR B/C
SCALE 1/4" = 1'-0"



6 METAL GRATE STAIR
SCALE 1 1/2" = 1'-0"



2 ENLARGED PLAN - STAIR B/C - LEVEL 01
SCALE 1/4" = 1'-0"



1 ENLARGED PLAN - STAIR B/C - LEVEL 02
SCALE 1/4" = 1'-0"

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REGISTERED ARCHITECT No. 50258 BOSTON MASSACHUSETTS COMMONWEALTH OF MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ENLARGED STAIR B,C,D,E, AND F PLANS AND SECTIONS

SHEET NUMBER

A41-02

CONSTRUCTION DOCUMENTS 12/19/25

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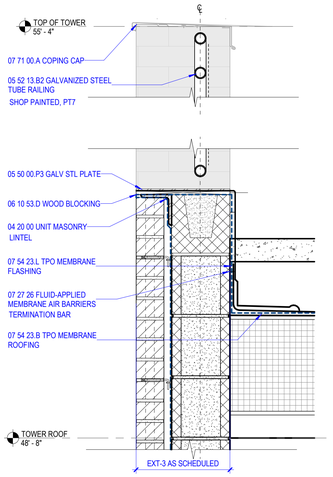
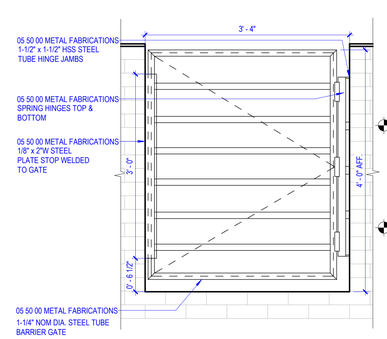


16 TRAINING TOWER GATE SECTION
SCALE 1 1/2" = 1'-0"



13 TRAINING TOWER GATE ELEVATION
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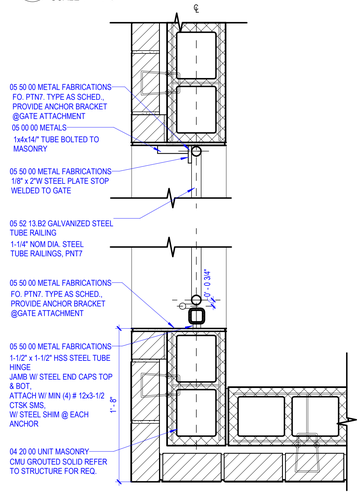

12 TRAINING GATE PLAN DETAIL
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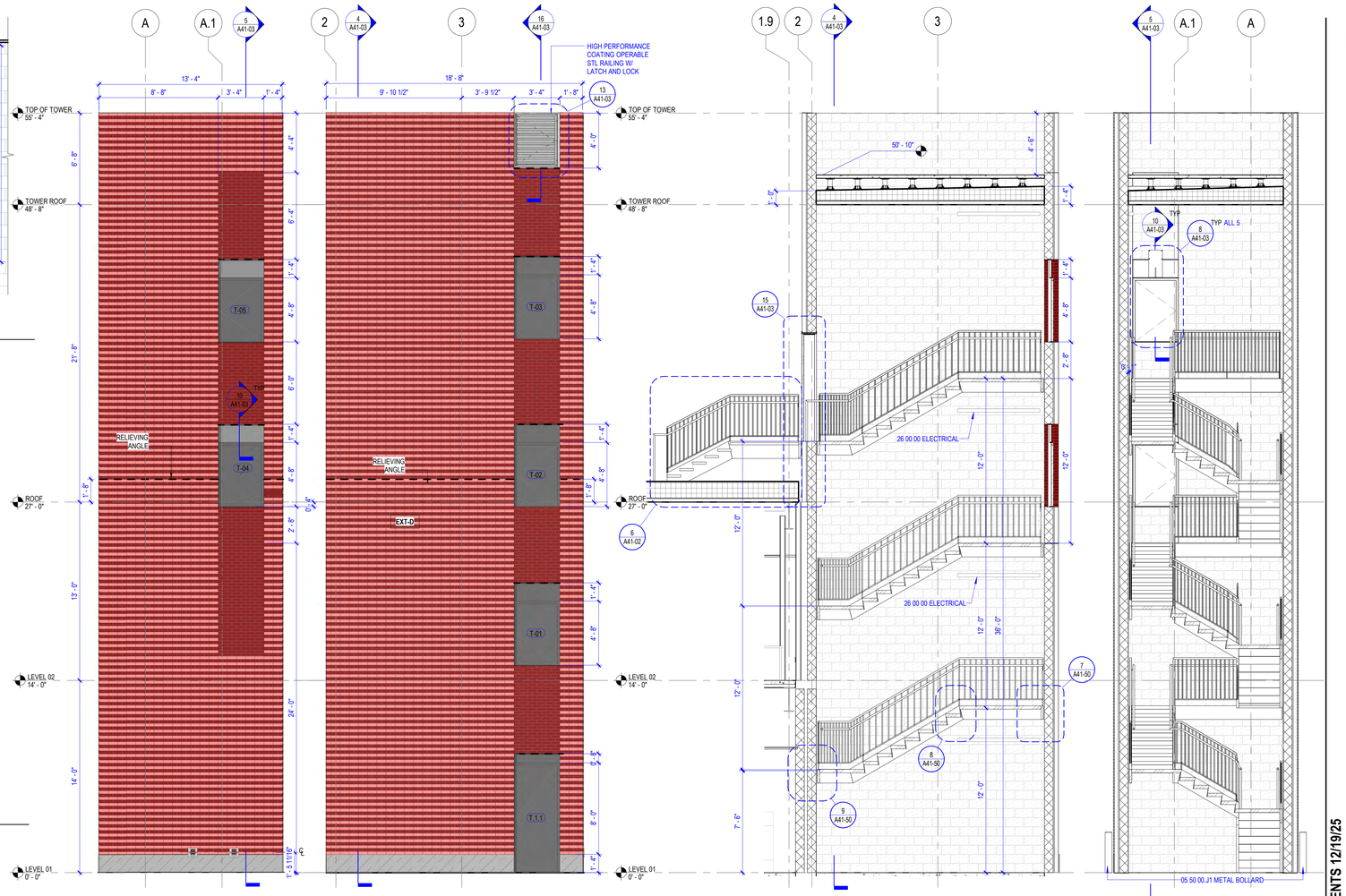
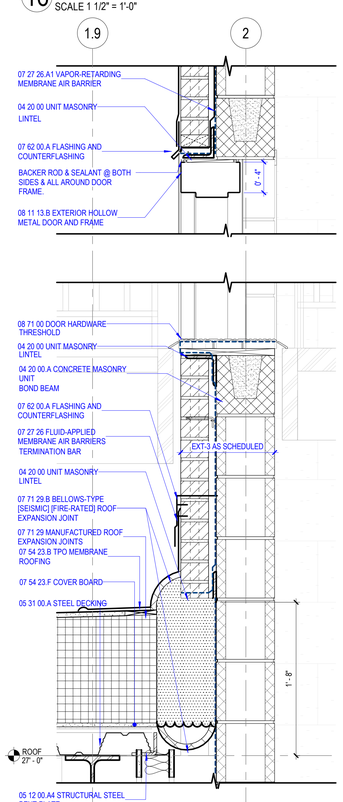


7 TOWER SOUTH ELEVATION
SCALE 1/4" = 1'-0"

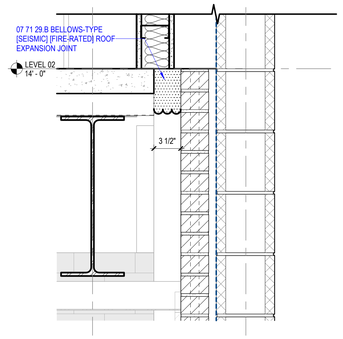
6 TOWER WEST ELEVATION
SCALE 1/4" = 1'-0"

5 TRAINING TOWER SECTION - WEST
SCALE 1/4" = 1'-0"

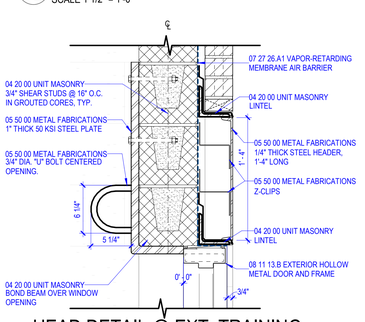
4 TRAINING TOWER SECTION - SOUTH
SCALE 1/4" = 1'-0"



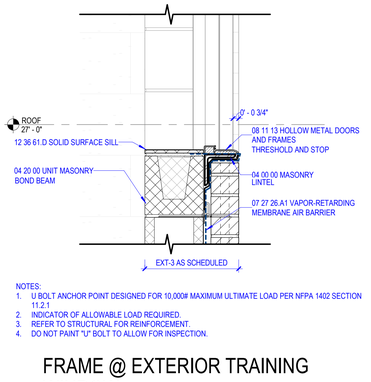
15 DOOR FRAME - TOWER ROOF
SCALE 1 1/2" = 1'-0"



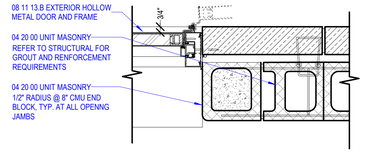
14 EXPANSION JOINT DTL @ FLOOR
SCALE 1 1/2" = 1'-0"



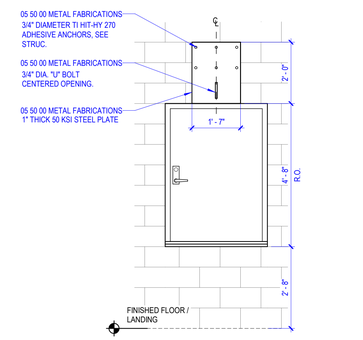
11 HEAD DETAIL @ EXT. TRAINING WINDOW
SCALE 1 1/2" = 1'-0"



10 FRAME @ EXTERIOR TRAINING WINDOW
SCALE 1 1/2" = 1'-0"



9 TRAINING WINDOW JAMB
SCALE 1 1/2" = 1'-0"



8 TRAINING WINDOW - INT. ELEVATIONS
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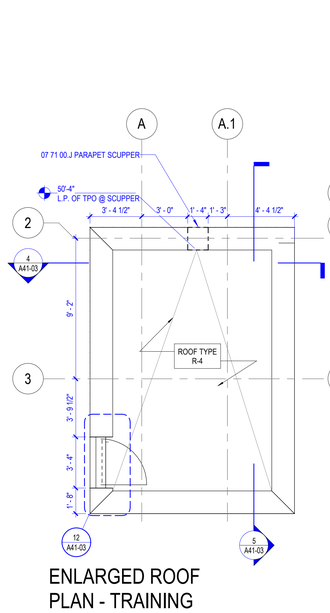
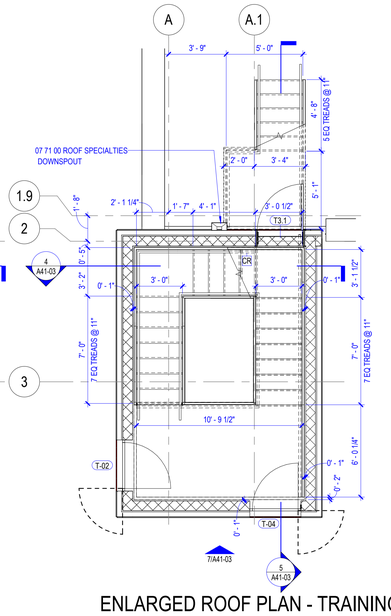
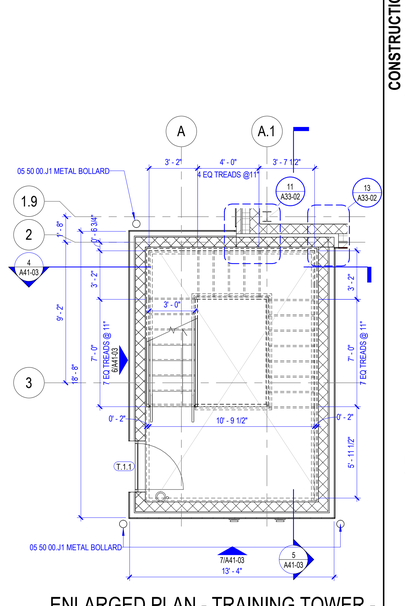


3 ENLARGED ROOF PLAN - TRAINING TOWER
SCALE 1/4" = 1'-0"



2 ENLARGED ROOF PLAN - TRAINING TOWER ROOF LEVEL
SCALE 1/4" = 1'-0"



1 ENLARGED PLAN - TRAINING TOWER - LEVEL 01
SCALE 1/4" = 1'-0"

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KEY PLAN

ISSUE CHART

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Job Number 157132.000

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TRAINING TOWER PLANS & SECTION

SHEET NUMBER

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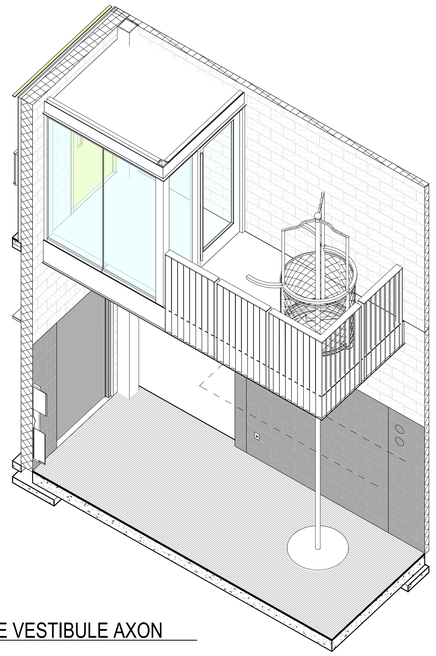
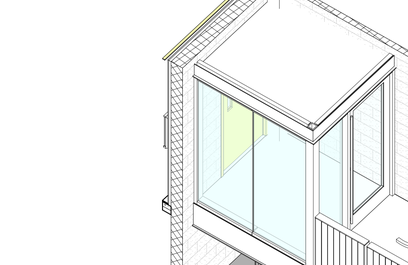


10 FIRE POLE VESTIBULE AXON
SCALE



9 FIRE POLE SECTION DETAIL 01
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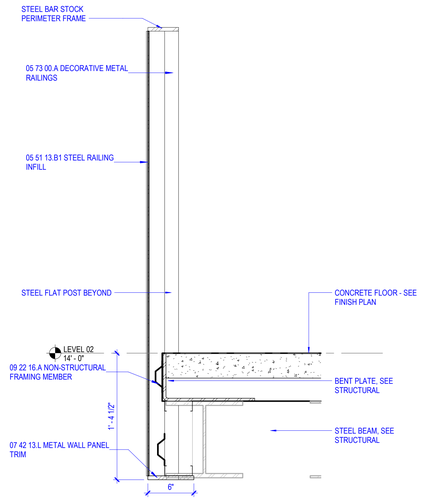
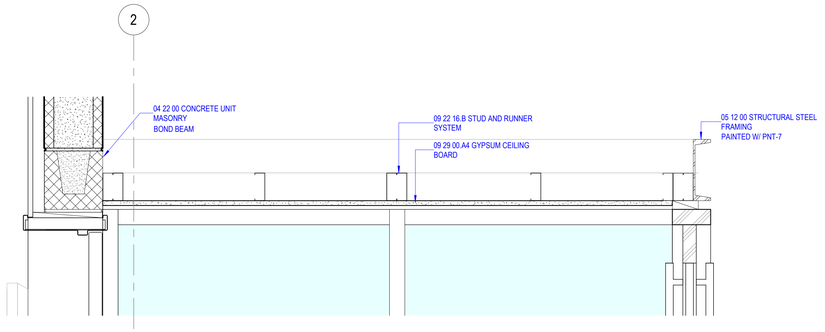


8 FIRE POLE SECTION DETAIL 02
SCALE 1 1/2" = 1'-0"

NOTE: FIREPOLES 1, 2, AND 3 ARE DESIGNED TO BE IDENTICAL WITH TYPICAL DETAILS.



7 FIRE POLE SECTION
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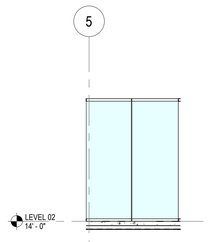
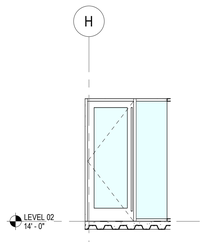


6 FIRE POLE 3 - WEST ELEVATION
SCALE 1/4" = 1'-0"



5 FIRE POLE 3 - SOUTH ELEVATION
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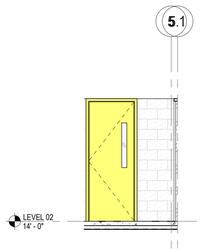

4 FIRE POLE 3 - EAST ELEVATION
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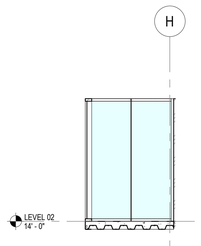

3 FIRE POLE 3 - NORTH ELEVATION
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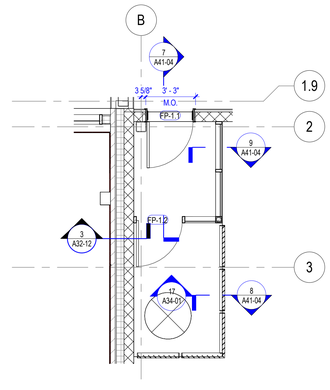

2 LEVEL 2 - FIRE POLE 1 & 2 PLAN
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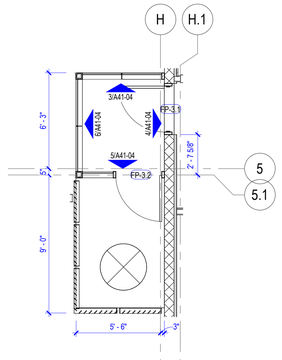

1 LEVEL 2 - FIRE POLE 3 PLAN
SCALE 1/4" = 1'-0"

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KEY PLAN

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Job Number 157132.000

TITLE

ENLARGED FIRE POLE PLANS AND ELEVATIONS

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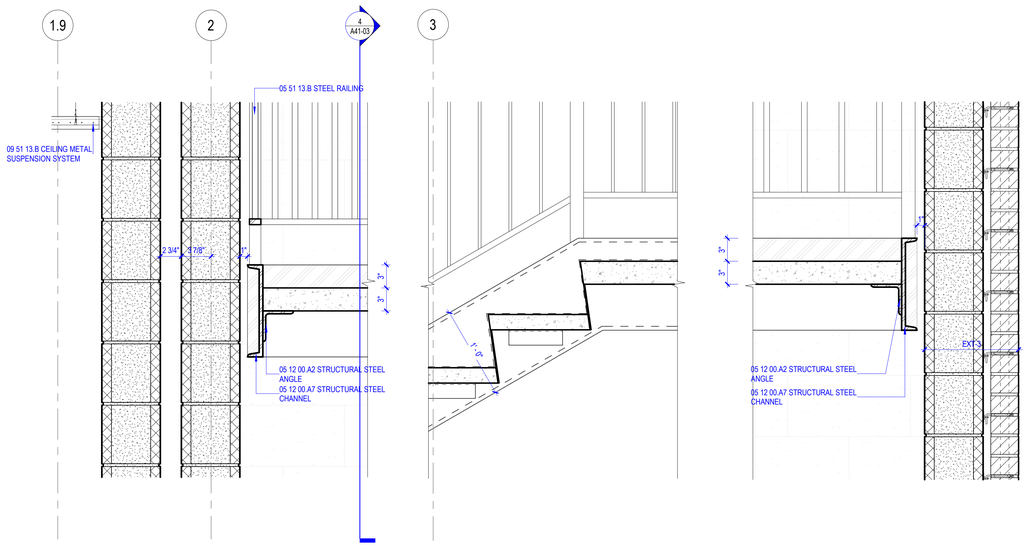


9 TOWER STAIR - TRAINING PLATFORM AT MID LANDING

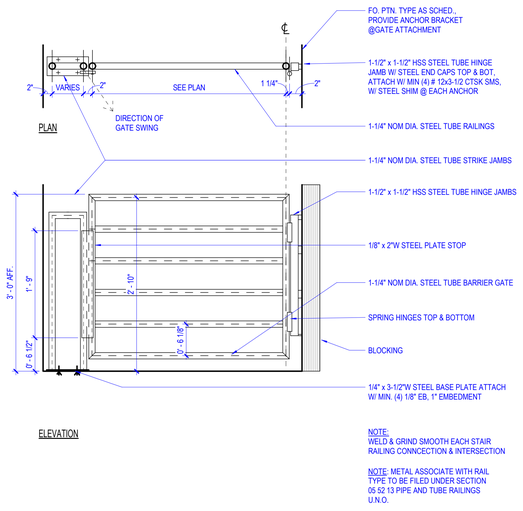
SCALE 1 1/2" = 1'-0"

8 TOWER STAIR - TRAINING PLATFORM

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

7 TOWER STAIR SECTION DETAIL - EXTERIOR WALL

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



5 STAIR BARRIER GATE EXIT LANDING

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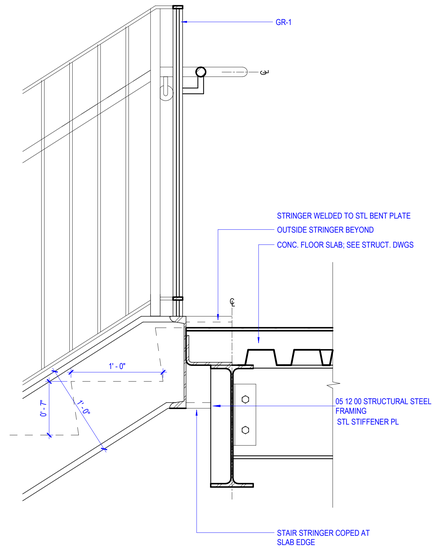

6 STAIR B/C - LEVEL 2 TOP OF LANDING

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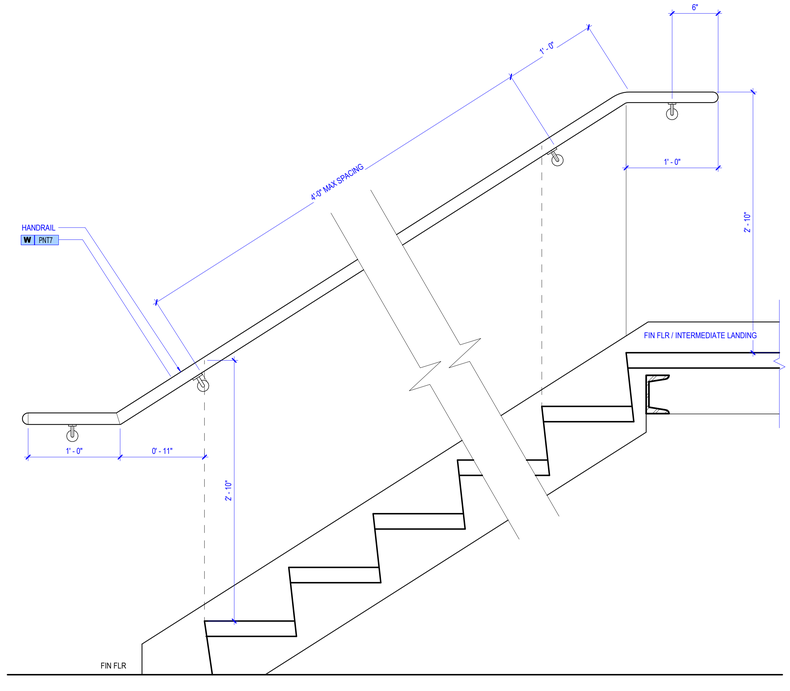

4 HR-01 - TYP HANDRAIL DETAIL

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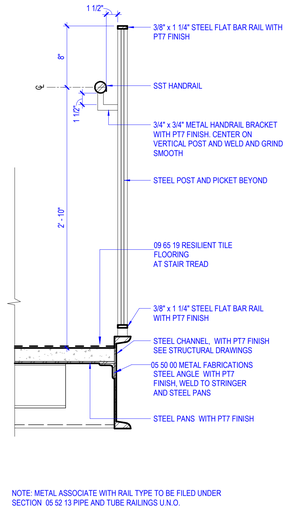

3 GR-01 - TYP. GUARDRAIL DETAIL

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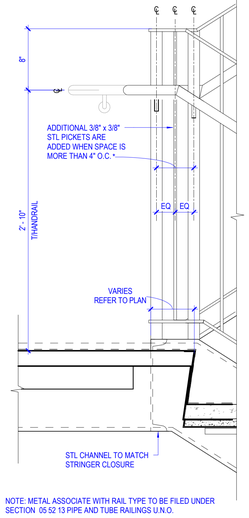

2 STAIR B/C - MID-LANDING GUARDRAIL

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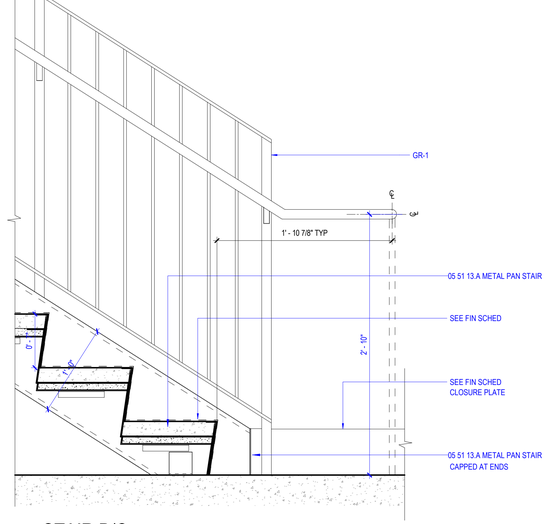

1 STAIR B/C - BOTTOM LANDING

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

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Job Number 157132.000

TITLE

STAIR DETAILS

SHEET NUMBER

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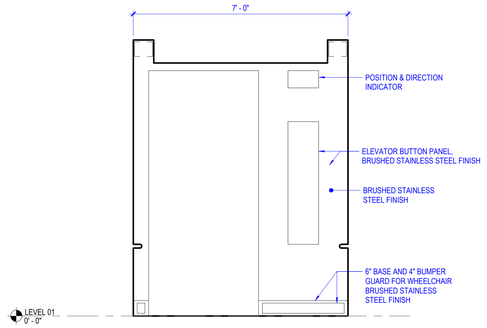
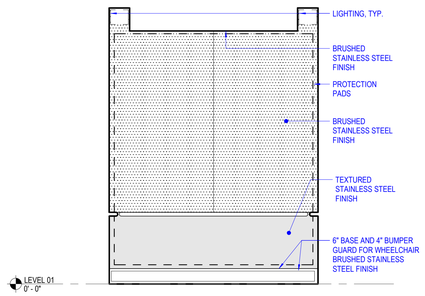
ELEVATOR GENERAL NOTES

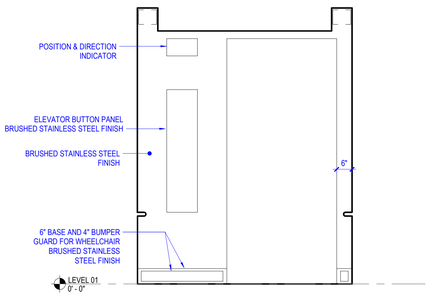
1. ALL WORK FOR THIS ELEVATOR SHEET IS PART OF SECTION 14 21 23 U.N.O.



7 ELEVATOR CAB - NORTH
SCALE 1/2" = 1'-0"



6 ELEVATOR CAB - EAST & WEST
SCALE 1/2" = 1'-0"



5 ELEVATOR CAB - SOUTH
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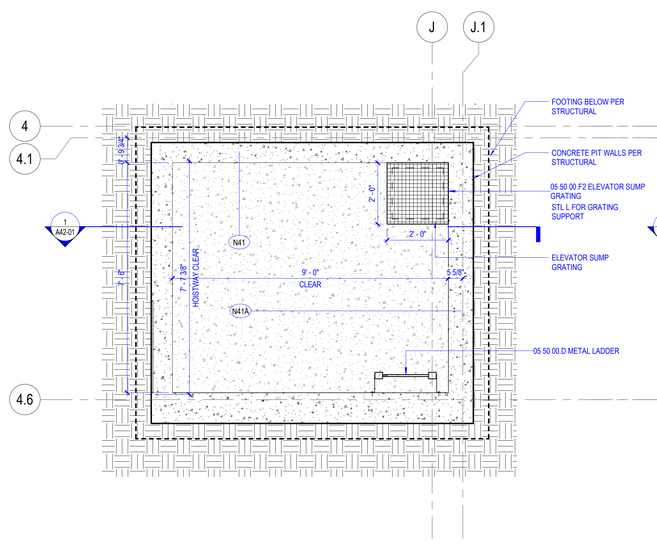
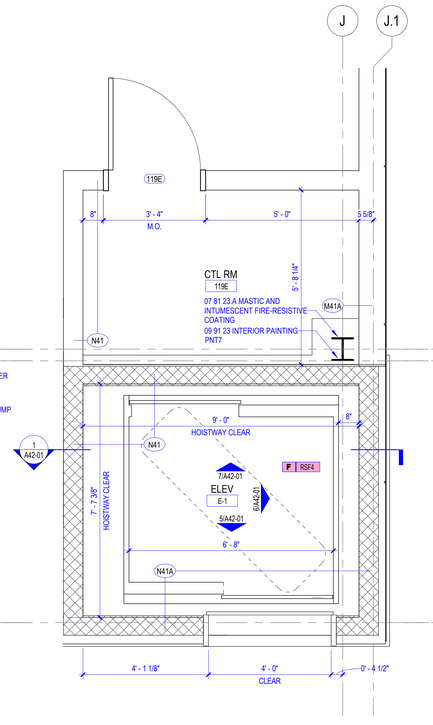


4 ENLARGED PLAN - ELEVATOR PIT PLAN
SCALE 1/2" = 1'-0"



3 ENLARGED PLAN - ELEVATOR - LEVEL 01
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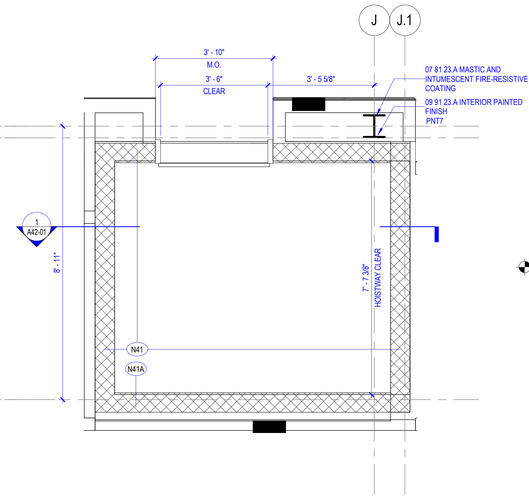
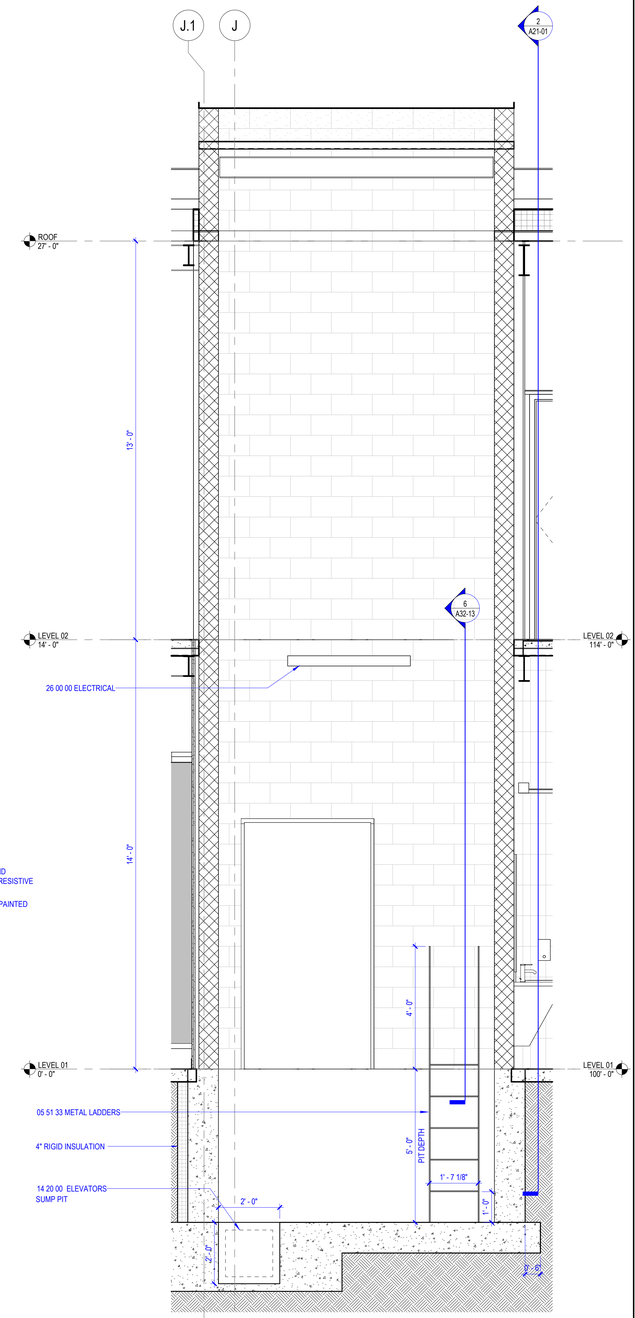


2 ENLARGED PLAN - ELEVATOR - LEVEL 02
SCALE 1/2" = 1'-0"



1 ENLARGED SECTION - STAIR AND ELEVATOR
SCALE 1/2" = 1'-0"

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REGISTERED ARCHITECT PHILIP J. CUNNINGHAM No. 50258 BOSTON COMMONWEALTH OF MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
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CITY OF WORCESTER

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WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELEVATOR PLANS AND SECTIONS

SHEET NUMBER

A42-01

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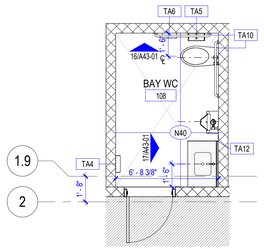
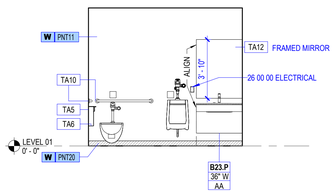
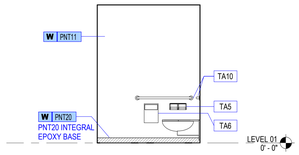


18 ENLARGED PLAN - BAY LAVATORY
SCALE 1/4" = 1'-0"



17 ENLARGED ELEVATION - BAY LAVATORY (EAST)
SCALE 1/4" = 1'-0"



16 ENLARGED ELEVATION - BAY LAVATORY (NORTH)
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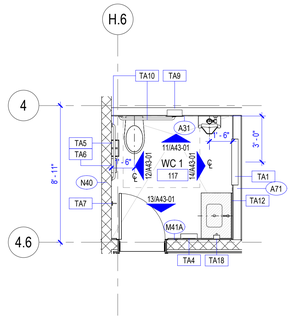
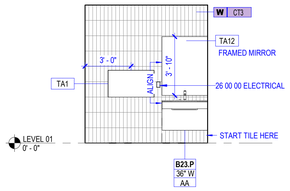
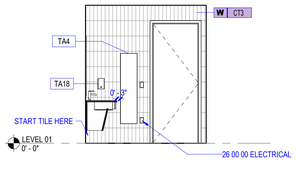


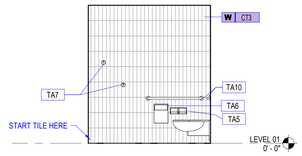
15 ENLARGED PLAN - LAVATORY
SCALE 1/4" = 1'-0"



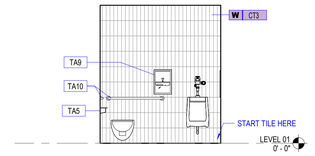
14 ENLARGED ELEVATION - LAVATORY (EAST)
SCALE 1/4" = 1'-0"



13 ENLARGED ELEVATION - LAVATORY (SOUTH)
SCALE 1/4" = 1'-0"



12 ENLARGED ELEVATION - LAVATORY (WEST)
SCALE 1/4" = 1'-0"



11 ENLARGED ELEVATION - LAVATORY (NORTH)
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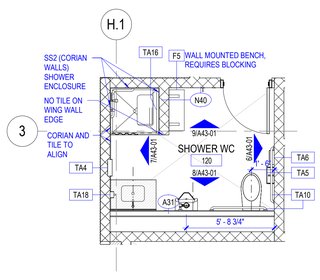
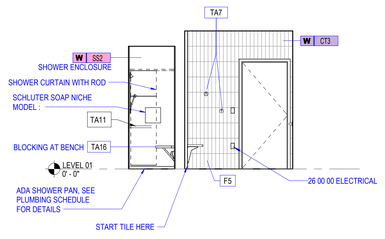


10 ENLARGED PLAN - SHOWER/LAVATORY
SCALE 1/4" = 1'-0"



9 ENLARGED ELEVATION - SHOWER LAVATORY (NORTH)
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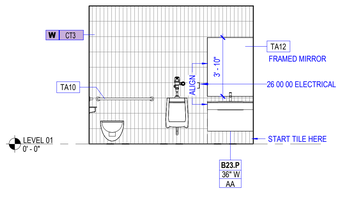

8 ENLARGED ELEVATION - SHOWER LAVATORY (SOUTH)
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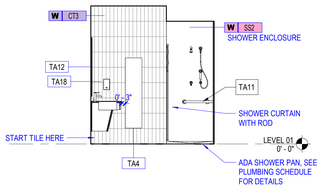
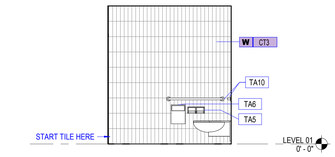


7 ENLARGED ELEVATION - SHOWER LAVATORY (WEST)
SCALE 1/4" = 1'-0"



6 ENLARGED ELEVATION - SHOWER LAVATORY (EAST)
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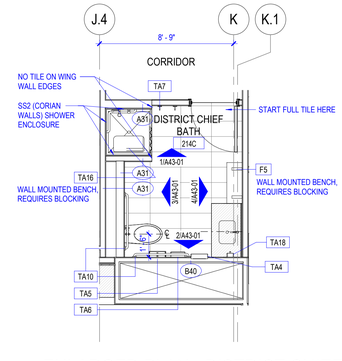
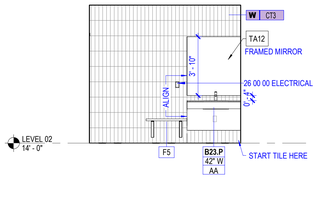
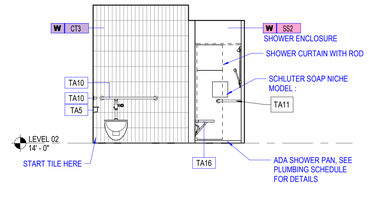


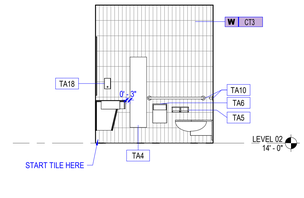
5 ENLARGED PLAN - DISTRICT CHIEF BATHROOM
SCALE 1/4" = 1'-0"



4 ENLARGED ELEVATION - DISTRICT CHIEF BATHROOM (EAST)
SCALE 1/4" = 1'-0"



3 ENLARGED ELEVATION - DISTRICT CHIEF BATHROOM (WEST)
SCALE 1/4" = 1'-0"



2 ENLARGED ELEVATION - DISTRICT CHIEF BATHROOM (SOUTH)
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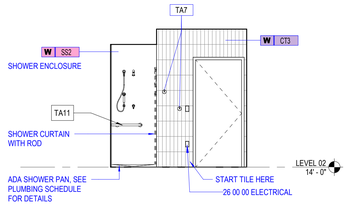

1 ENLARGED ELEVATION - DISTRICT CHIEF BATHROOM (NORTH)
SCALE 1/4" = 1'-0"

PLUMBING LAYOUTS GENERAL NOTES

1. WHEN A SPECIFIC RANGE IS GIVEN FOR AN ACCESSIBLE DIMENSION, TOLERANCES ARE NOT ALLOWED
2. REFER TO A50 SERIES FOR CASEWORK DETAILS
3. REFER TO 64-01 FOR ACCESSORIES AND EQUIPMENT SCHEDULE
4. PROVIDE BLOCKING FOR ALL WALL MOUNTED ACCESSORIES AND EQUIPMENT
5. WALL TILES TO RUN BEHIND WALL MOUNTED ACCESSORIES

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KEY PLAN

CONSTRUCTION DOCUMENTS 12/19/25

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Job Number 157132.000

TITLE

ENLARGED TOILET PLANS AND ELEVATIONS

SHEET NUMBER

A43-01

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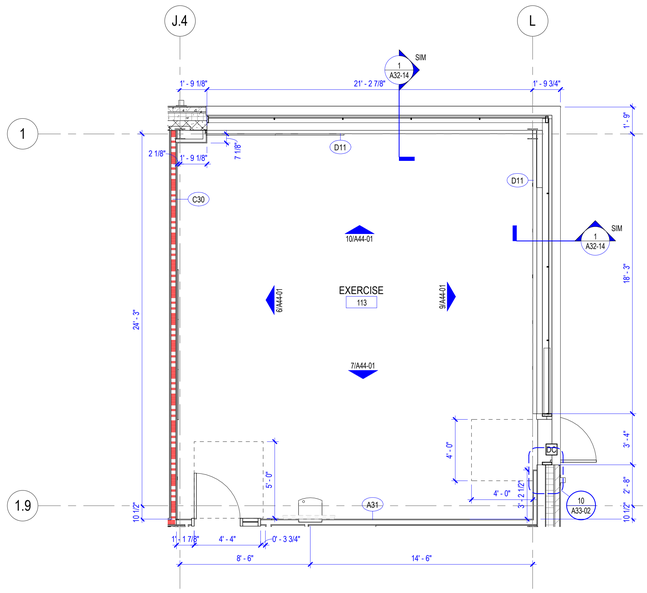
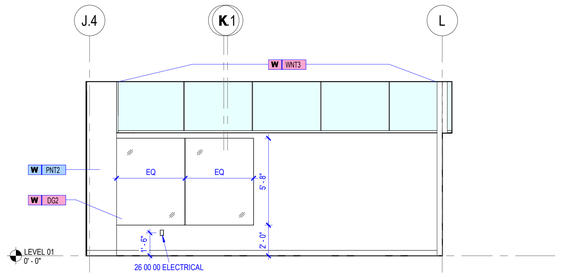
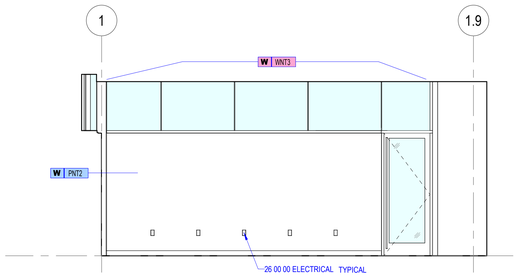


8 ENLARGED PLAN - EXCERCISE ROOM
SCALE 1/4" = 1'-0"



10 ENLARGED ELEVATION - EXCERCISE ROOM (NORTH)
SCALE 1/4" = 1'-0"



9 ENLARGED ELEVATION - EXCERCISE ROOM (EAST)
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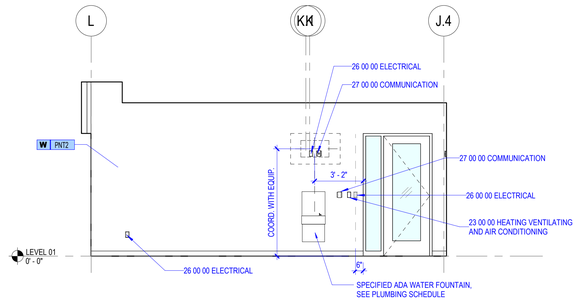

7 ENLARGED ELEVATION - EXCERCISE ROOM (SOUTH)
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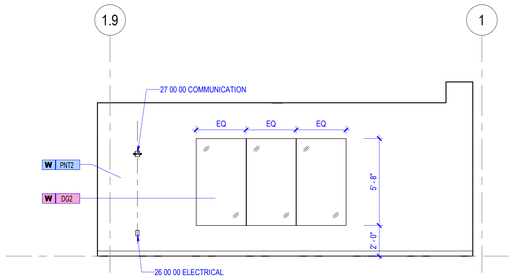

6 ENLARGED ELEVATION - EXCERCISE ROOM (WEST)
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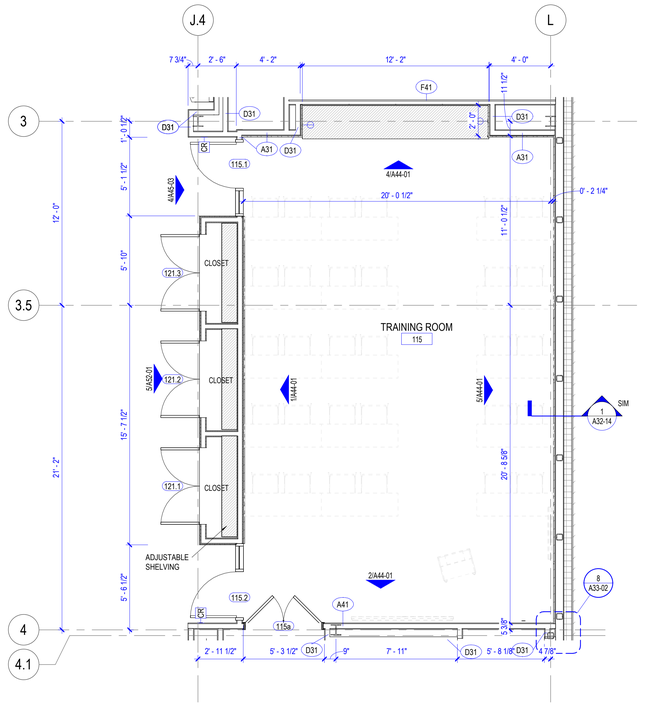
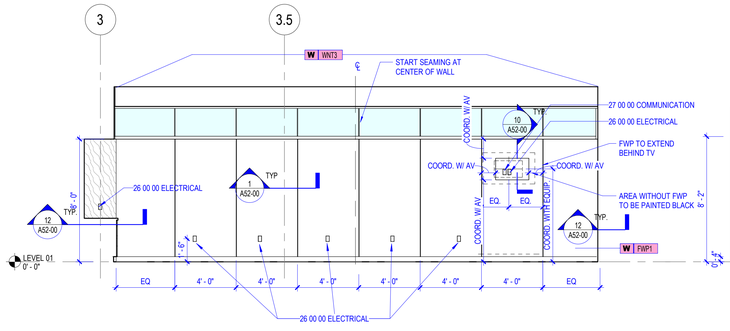


3 ENLARGED PLAN - TRAINING ROOM
SCALE 1/4" = 1'-0"



5 ENLARGED ELEVATION - TRAINING ROOM (EAST)
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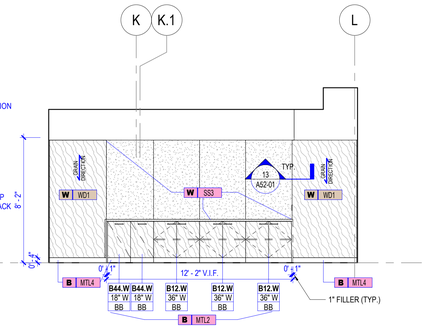
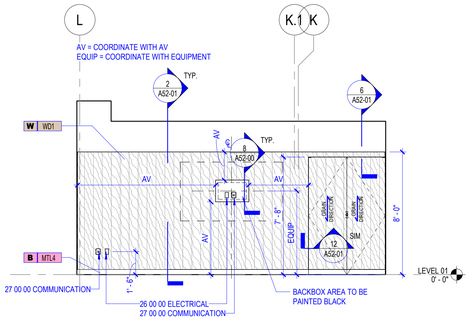


4 ENLARGED ELEVATION - TRAINING ROOM (NORTH)
SCALE 1/4" = 1'-0"



2 ENLARGED ELEVATION - TRAINING ROOM (SOUTH)
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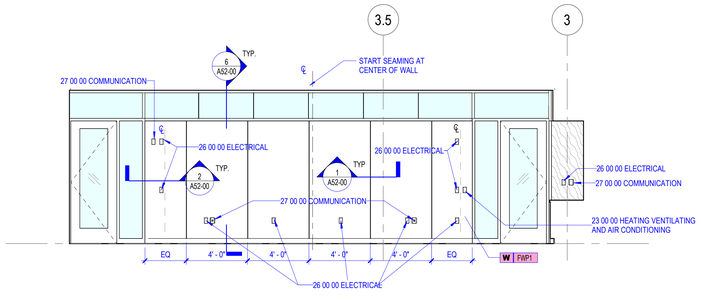

1 ENLARGED ELEVATION - TRAINING ROOM (WEST)
SCALE 1/4" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. SEE THE A61 SERIES FOR PARTITION TYPES
2. ALL PARTITIONS ARE TYPE A31 UNLESS NOTED OTHERWISE
3. DOOR DIMENSIONS ARE TO EDGE OF DOOR LEAF UNLESS NOTED OTHERWISE.
4. FOR SWINGING DOORS, THE HINGE SIDE OF OF THE DOOR JAMB SHALL BE LOCATED 4" FROM THE ADJACENT PERPENDICULAR WALL, UNLESS NOTED OTHERWISE
5. REFER TO A32-01 AND A32-02 FOR EXTERIOR ASSEMBLIES
6. PROVIDE 3" (EQUAL TO R-15) UNDERSLAB INSULATION UNDER APPARATUS BAY AND WEST OF STAIR C BETWEEN GRIDLINES 1 AND 2 ON LEVEL 1.
7. INTERIOR MASONRY OPENINGS TO BE 3'-4" UNLESS NOTED OTHERWISE.
8. REFER TO STRUCTURAL FOR SHEAR WALLS LOCATIONS AND REQUIREMENTS.
9. WALL TYPE N40.S IS A FULLY GROUTED MASONRY WALL PROVIDED FOR ACOUSTICS ONLY, REFER TO 04 20 00
10. WALL TYPES M41A & N41A CONTAIN AN ADDITIONAL LAYER OF 5/8" GYPSUM WALL BOARD.
11. ROLLER SHADES, " R" INDICATE RECESSED OR " S" FOR SURFACE MOUNTED

FLOOR PLAN LEGEND

	270 DEGREE IP SECURITY CAMERA
	FIXED IP SECURITY CAMERA
VI	VIDEO INTERCOM SUBSTATION
VM	VIDEO INTERCOM SUBSTATION
DC	DOOR CONTACT / POSITION SWITCH
CR	ACCESS CONTROL CARDR READER
	COMMUNICATION OUTLET
W	WALL PHONE COMMUNICATION OUTLET
TV	IN-WALL BOX TELEVISION COMMUNICATIONS OUTLET WITH AV INFRATRUCTURE
STATUS	STATUS BOARD DATA OUTLET
DIS	IN-WALL BOX DISPLAY COMMUNICATIONS OUTLET WITH AV INFRATRUCTURE

FLOOR PLAN KEYNOTES

<<< Indicates Sheet Keynote on Plan

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CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE
ENLARGED PLANS & ELEVATIONS - EXERCISE AND TRAINING ROOM

SHEET NUMBER
A44-01

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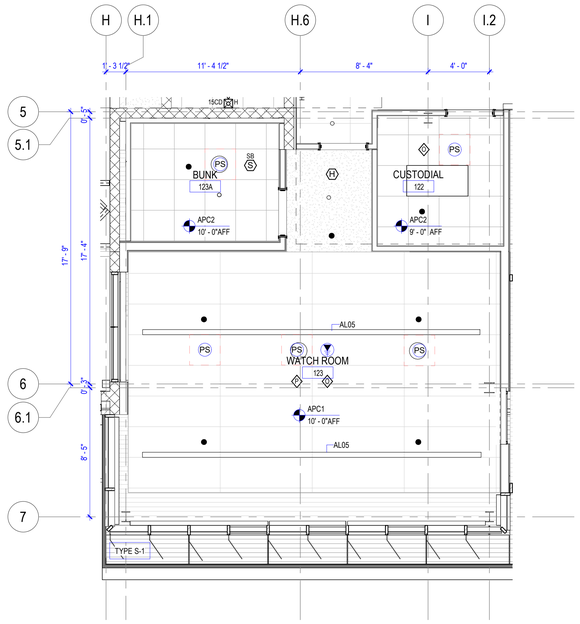

6 ENLARGED REFLECTED CEILING PLAN - WATCH ROOM

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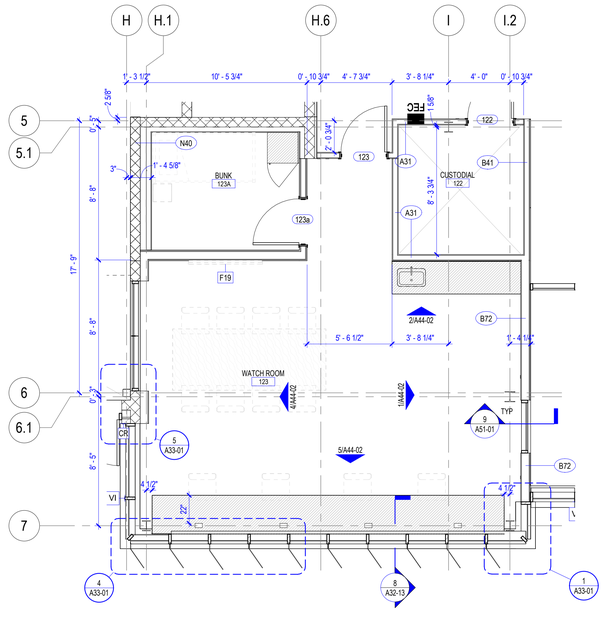
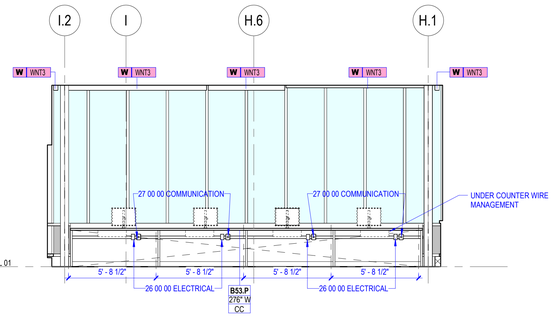


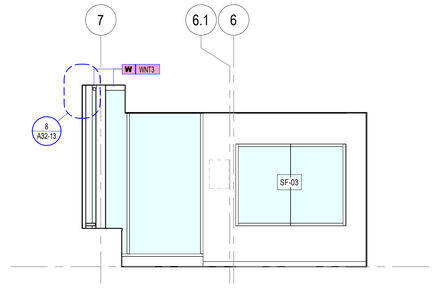
3 ENLARGED PLAN - WATCH ROOM

SCALE 1/4" = 1'-0"



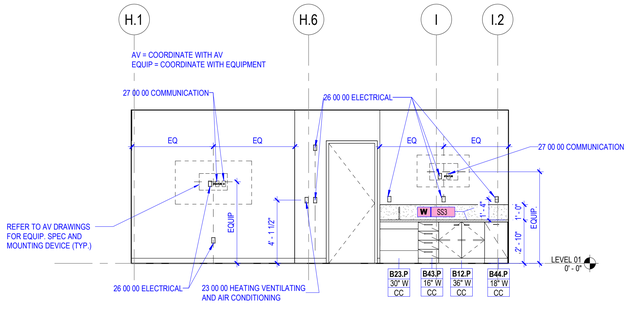
5 ENLARGED ELEVATION - WATCH ROOM (SOUTH)

SCALE 1/4" = 1'-0"



4 ENLARGED ELEVATION - WATCH ROOM (EAST)

SCALE 1/4" = 1'-0"



2 ENLARGED ELEVATION - WATCH ROOM (NORTH)

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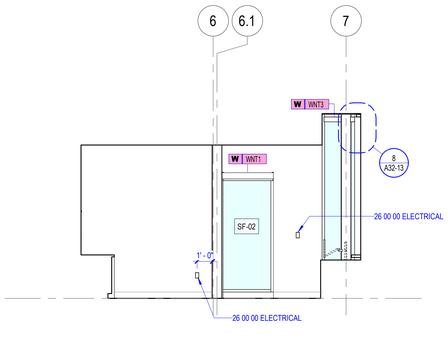

1 ENLARGED ELEVATION - WATCH ROOM (WEST)

SCALE 1/4" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. SEE THE A61 SERIES FOR PARTITION TYPES
2. ALL PARTITIONS ARE TYPE A31 UNLESS NOTED OTHERWISE
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4. FOR SWINGING DOORS, THE HINGE SIDE OF OF THE DOOR JAMB SHALL BE LOCATED 4" FROM THE ADJACENT PERPENDICULAR WALL, UNLESS NOTED OTHERWISE
5. REFER TO A32-01 AND A32-02 FOR EXTERIOR ASSEMBLIES
6. PROVIDE 3" (EQUAL TO R-15) UNDERSLAB INSULATION UNDER APPARATUS BAY AND WEST OF STAIR C BETWEEN GRIDLINES 1 AND 2 ON LEVEL 1.
7. INTERIOR MASONRY OPENINGS TO BE 3'-4" UNLESS NOTED OTHERWISE.
8. REFER TO STRUCTURAL FOR SHEAR WALLS LOCATIONS AND REQUIREMENTS.
9. WALL TYPE N40.S IS A FULLY GROUTED MASONRY WALL PROVIDED FOR ACOUSTICS ONLY, REFER TO 04 20 00
10. WALL TYPES M41A & N41A CONTAIN AN ADDITIONAL LAYER OF 5/8" GYPSUM WALL BOARD.
11. ROLLER SHADES, " R" INDICATE RECESSED OR " S" FOR SURFACE MOUNTED

FLOOR PLAN LEGEND

- 270 DEGREE IP SECURITY CAMERA
- FIXED IP SECURITY CAMERA
- VI — VIDEO INTERCOM SUBSTATION
- VM — VIDEO INTERCOM SUBSTATION
- DC — DOOR CONTACT / POSITION SWITCH
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- TV — IN-WALL BOX TELEVISION COMMUNICATIONS OUTLET WITH AV INFRATRUCTURE
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FLOOR PLAN KEYNOTES

<<< Indicates Sheet Keynote on Plan

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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE

ENLARGED PLANS & ELEVATIONS - WATCH ROOM

SHEET NUMBER

A44-02

CONSTRUCTION DOCUMENTS 12/19/25

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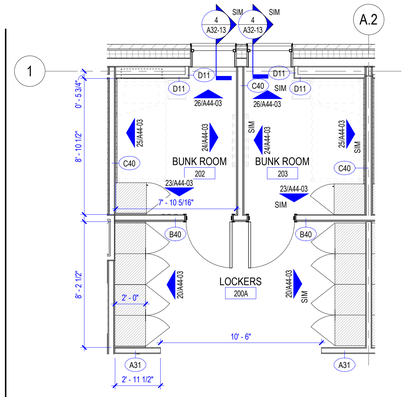
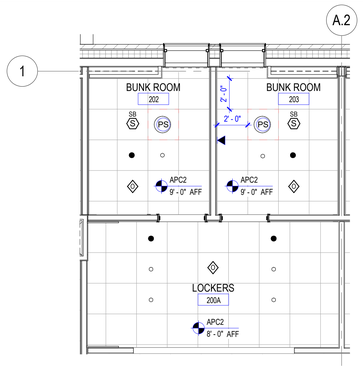


22 ENLARGED PLAN - TYPICAL BUNK ROOM
SCALE 1/4" = 1'-0"



21 ENLARGED REFLECTED CEILING PLAN - TYPICAL BUNK ROOM
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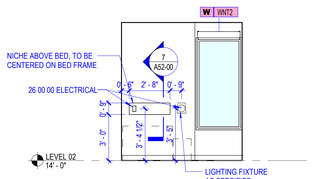

26 ENLARGED ELEVATION - BUNK ROOM (NORTH)
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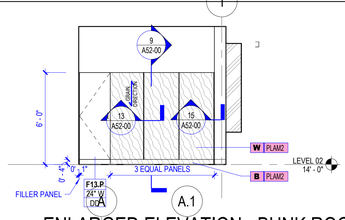

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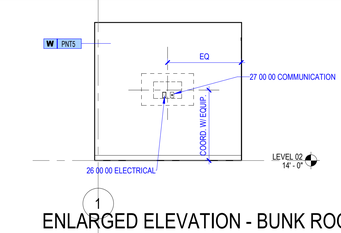

24 ENLARGED ELEVATION - BUNK ROOM (EAST)
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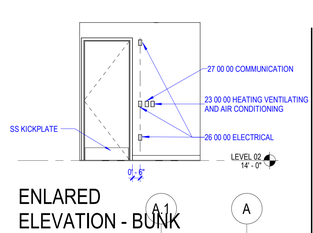

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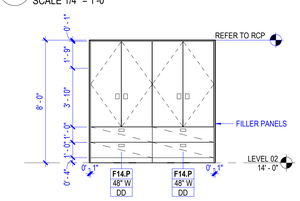

20 ENLARGED ELEVATION - BUNK LOCKERS
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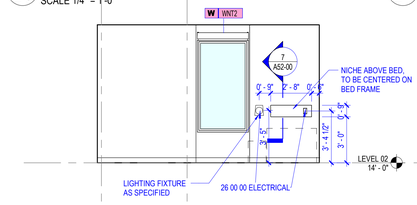

19 ENLARGED ELEVATION - C/O BUNK ROOM (NORTH)
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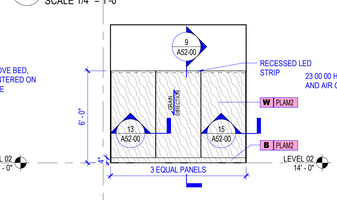

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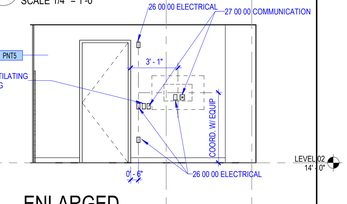

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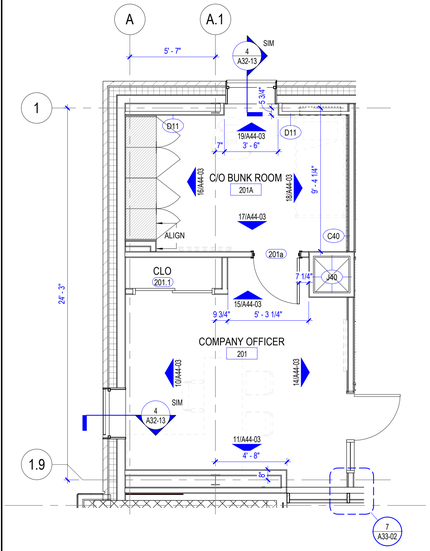
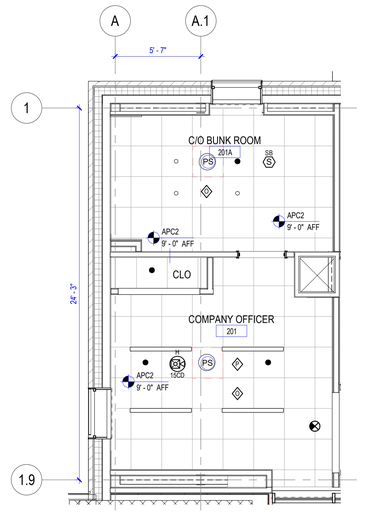


13 ENLARGED PLAN - COMPANY OFFICER BUNK ROOM & OFFICE
SCALE 1/4" = 1'-0"



12 ENLARGED REFLECTED CEILING PLAN - COMPANY OFFICER BUNK ROOM & OFFICE
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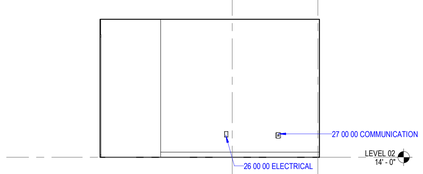

11 ENLARGED ELEVATION - COMPANY OFFICER (SOUTH)
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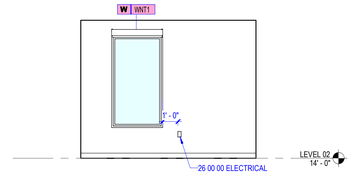
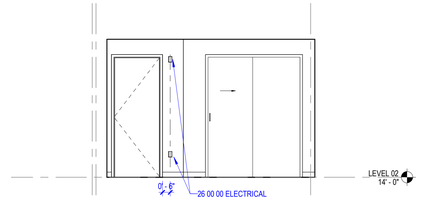


10 ENLARGED ELEVATION - COMPANY OFFICER (WEST)
SCALE 1/4" = 1'-0"



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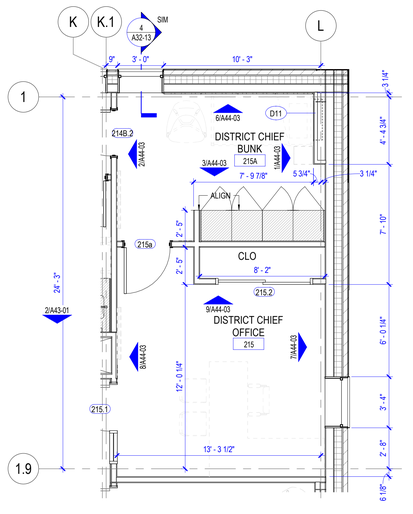
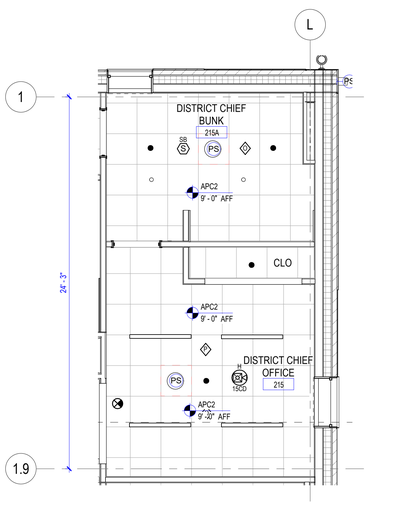


5 ENLARGED PLAN - DISTRICT CHIEF OFFICER BUNK & OFFICE
SCALE 1/4" = 1'-0"



4 ENLARGED REFLECTED CEILING PLAN - DISTRICT CHIEF OFFICER BUNK & OFFICE
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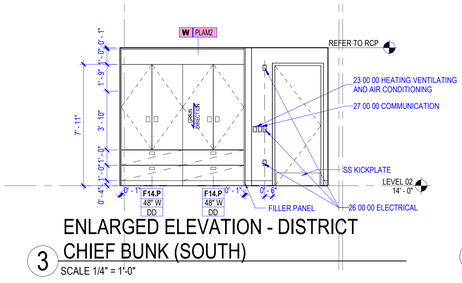

8 ENLARGED ELEVATION - DISTRICT CHIEF OFFICE (WEST)
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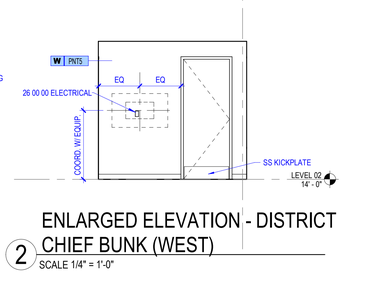

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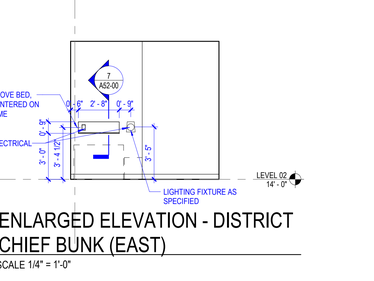

6 ENLARGED ELEVATION - DISTRICT CHIEF BUNK (NORTH)
SCALE 1/4" = 1'-0"

3 ENLARGED ELEVATION - DISTRICT CHIEF BUNK (SOUTH)
SCALE 1/4" = 1'-0"

2 ENLARGED ELEVATION - DISTRICT CHIEF BUNK (WEST)
SCALE 1/4" = 1'-0"

1 ENLARGED ELEVATION - DISTRICT CHIEF BUNK (EAST)
SCALE 1/4" = 1'-0"

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No. 50258
BOSTON
COMMONWEALTH OF MASSACHUSETTS

PROJECT

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CITY OF WORCESTER

455 MAIN STREET
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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ENLARGED PLANS & ELEVATIONS - BUNK ROOMS AND OFFICES

SHEET NUMBER

A44-03

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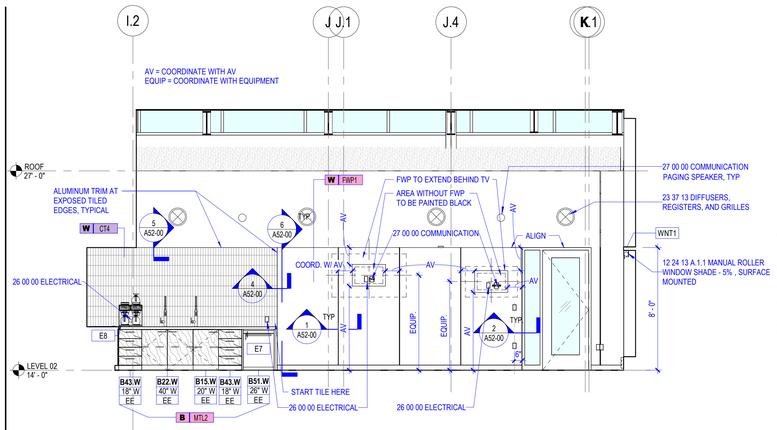
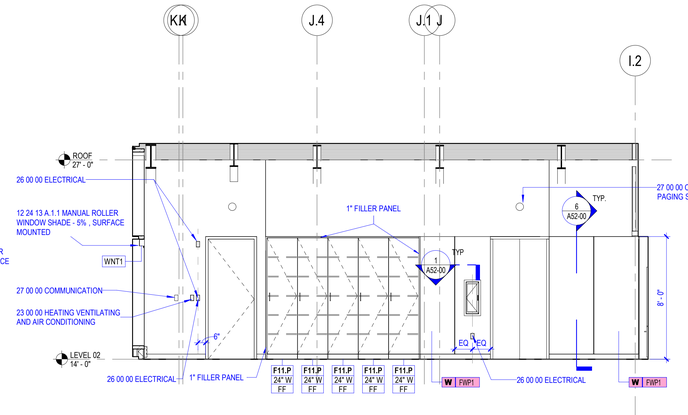


7 KITCHEN/DINING (NORTH)
SCALE 1/4" = 1'-0"



6 KITCHEN/DINING (SOUTH)
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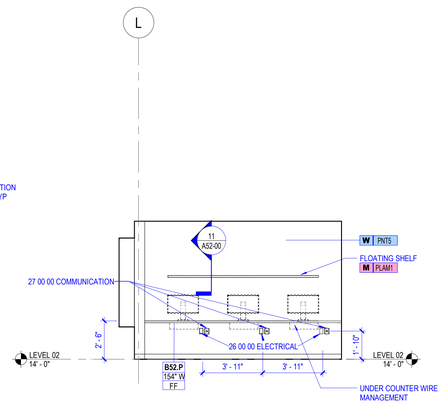
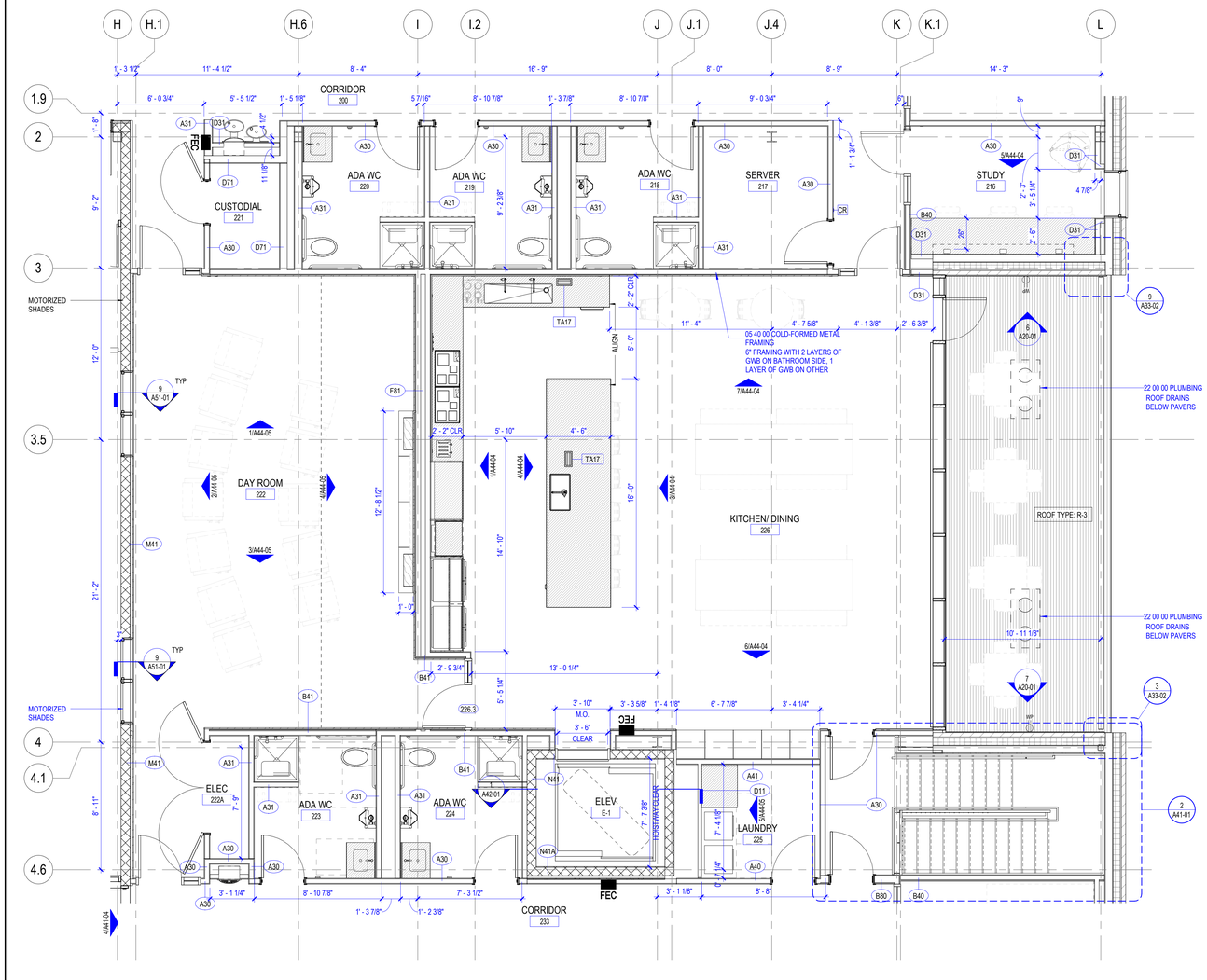


5 STUDY ROOM
SCALE 1/4" = 1'-0"



2 ENLARGED LEVEL 02 FLOOR PLAN
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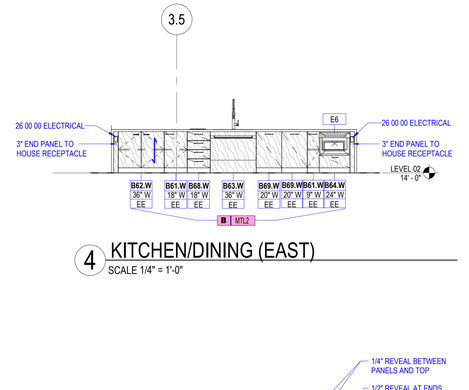
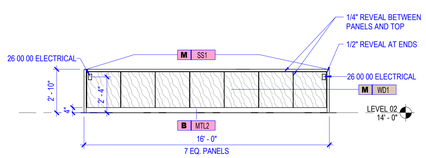
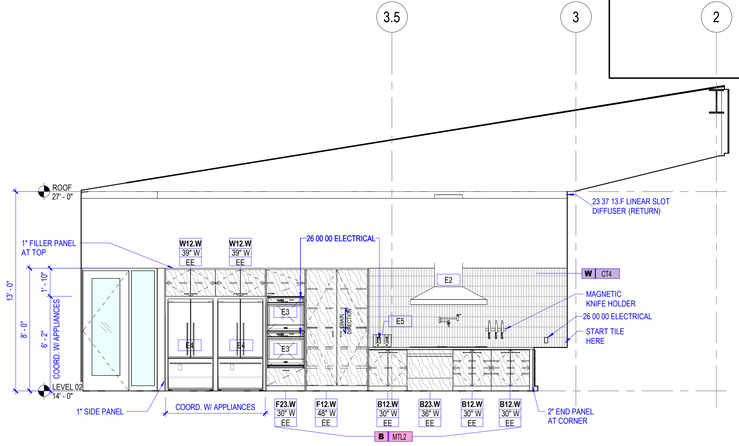


4 KITCHEN/DINING (EAST)
SCALE 1/4" = 1'-0"



3 KITCHEN ISLAND
SCALE 1/4" = 1'-0"



1 KITCHEN/DINING (WEST)
SCALE 1/4" = 1'-0"

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FLOOR PLAN KEYNOTES

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CITY OF WORCESTER

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WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ENLARGED PLANS & ELEVATIONS - LEVEL 02 - KITCHEN & STUDY

SHEET NUMBER

A44-04

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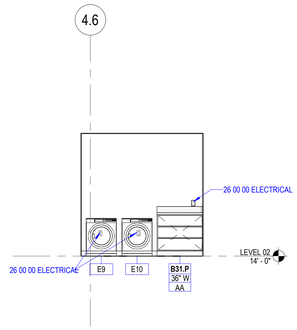
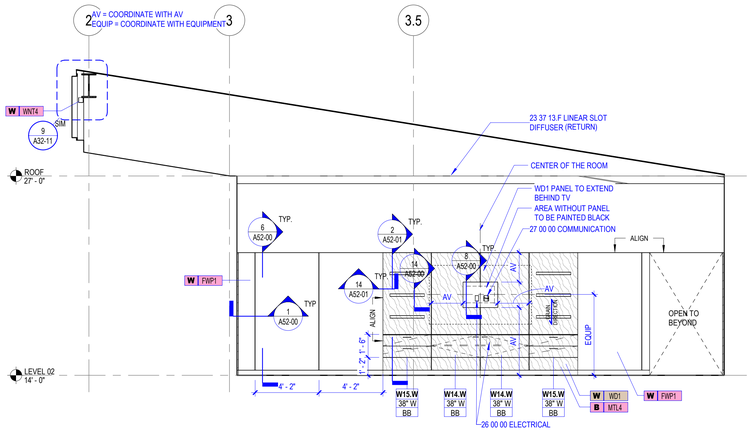


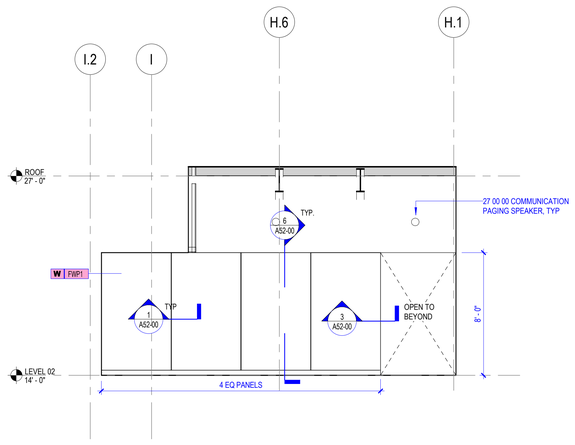
5 ENLARGED ELEVATION - LAUNDRY (WEST)

SCALE 1/4" = 1'-0"



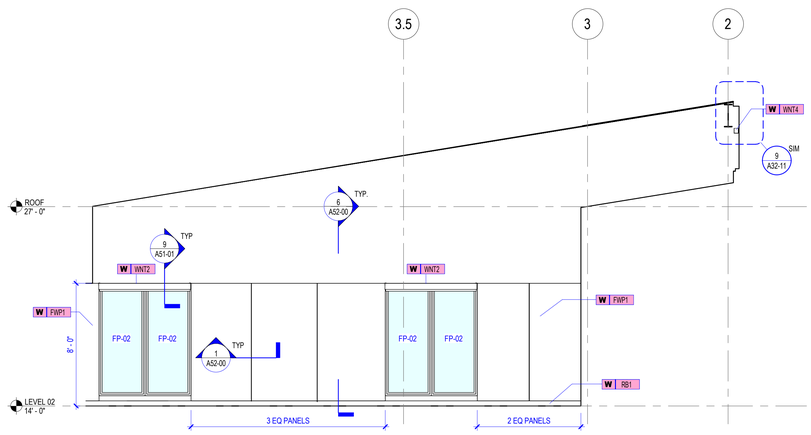
4 ENLARGED ELEVATION - DAY ROOM (EAST)

SCALE 1/4" = 1'-0"



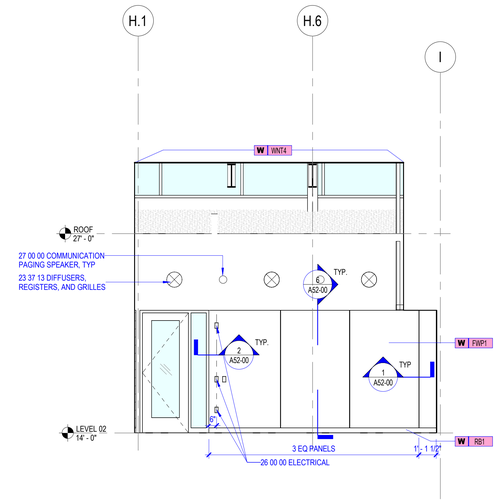
3 ENLARGED ELEVATION - DAY ROOM (SOUTH)

SCALE 1/4" = 1'-0"



2 ENLARGED ELEVATION - DAY ROOM (WEST)

SCALE 1/4" = 1'-0"



1 ENLARGED ELEVATION - DAY ROOM (NORTH)

SCALE 1/4" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. SEE THE A61 SERIES FOR PARTITION TYPES
2. ALL PARTITIONS ARE TYPE A31 UNLESS NOTED OTHERWISE
3. DOOR DIMENSIONS ARE TO EDGE OF DOOR LEAF UNLESS NOTED OTHERWISE.
4. FOR SWINGING DOORS, THE HINGE SIDE OF OF THE DOOR JAMB SHALL BE LOCATED 4" FROM THE ADJACENT PERPENDICULAR WALL, UNLESS NOTED OTHERWISE
5. REFER TO A32-01 AND A32-02 FOR EXTERIOR ASSEMBLIES
6. PROVIDE 3" (EQUAL TO R-15) UNDERSLAB INSULATION UNDER APPARATUS BAY AND WEST OF STAIR C BETWEEN GRIDLINES 1 AND 2 ON LEVEL 1.
7. INTERIOR MASONRY OPENINGS TO BE 3'-4" UNLESS NOTED OTHERWISE.
8. REFER TO STRUCTURAL FOR SHEAR WALLS LOCATIONS AND REQUIREMENTS.
9. WALL TYPE N40.S IS A FULLY GROUTED MASONRY WALL PROVIDED FOR ACOUSTICS ONLY, REFER TO 04 20 00
10. WALL TYPES M41A & N41A CONTAIN AN ADDITIONAL LAYER OF 5/8" GYPSUM WALL BOARD.
11. ROLLER SHADES, ".R" INDICATE RECESSED OR ".S" FOR SURFACE MOUNTED

FLOOR PLAN LEGEND

	270 DEGREE IP SECURITY CAMERA
	FIXED IP SECURITY CAMERA
VI	VIDEO INTERCOM SUBSTATION
VM	VIDEO INTERCOM SUBSTATION
DC	DOOR CONTACT / POSITION SWITCH
CR	ACCESS CONTROL CARDR READER
	COMMUNICATION OUTLET
W	WALL PHONE COMMUNICATION OUTLET
TV	IN-WALL BOX TELEVISION COMMUNICATIONS OUTLET WITH AV INFRATRUCTURE
STATUS	STATUS BOARD DATA OUTLET
DIS	IN-WALL BOX DISPLAY COMMUNICATIONS OUTLET WITH AV INFRATRUCTURE

FLOOR PLAN KEYNOTES

<<< Indicates Sheet Keynote on Plan

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE

ENLARGED PLANS & ELEVATIONS - LEVEL 02 - DAYROOM & LAUNDRY

SHEET NUMBER

A44-05

CONSTRUCTION DOCUMENTS 12/19/25

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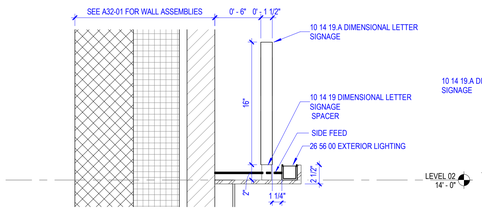

7 SIGNAGE -DETAIL SECTION

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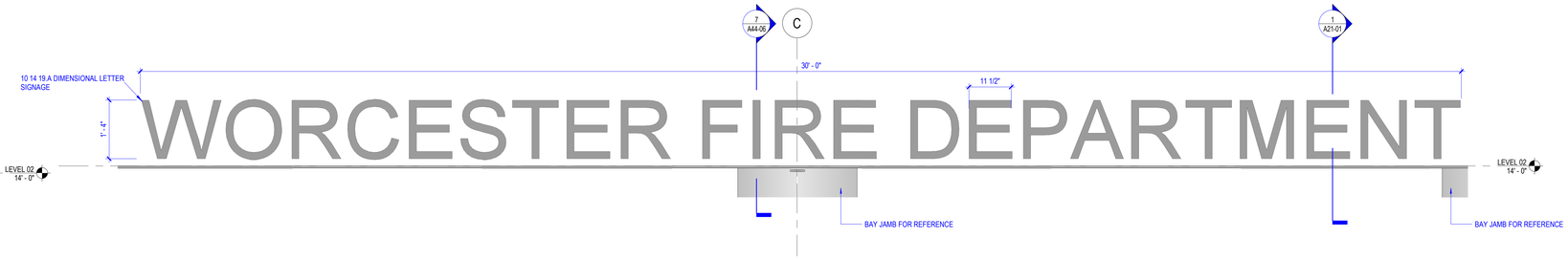

6 SIGNAGE - ELEVATION

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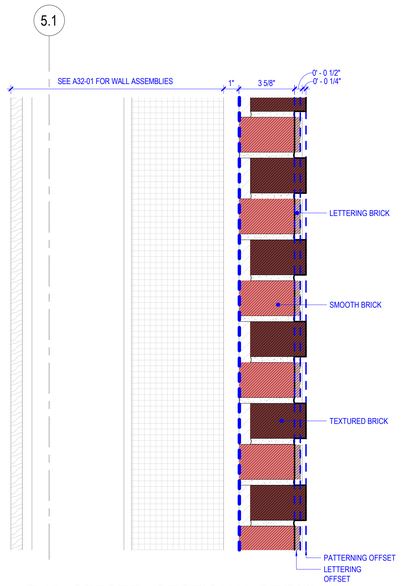

5 TYP. OFFSET - SECTIONAL DETAIL

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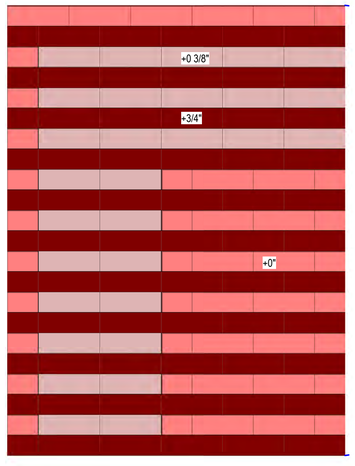
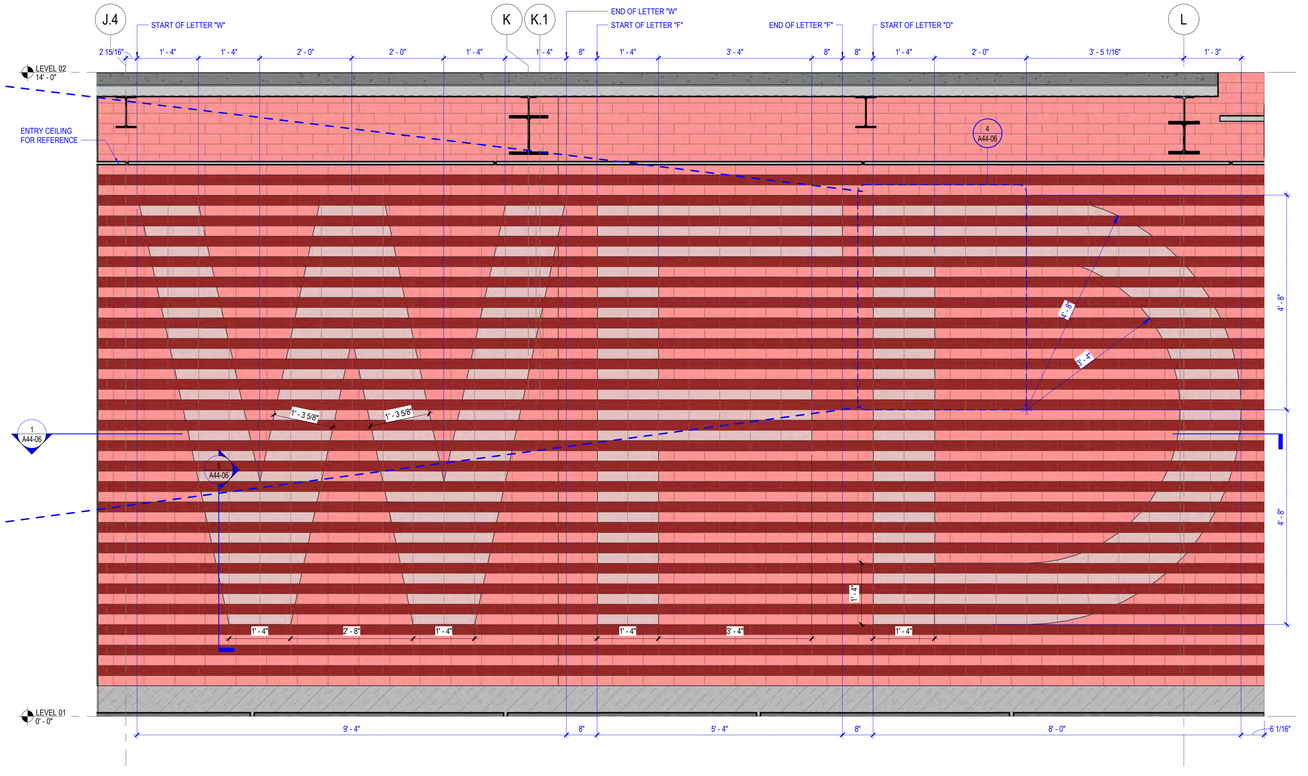


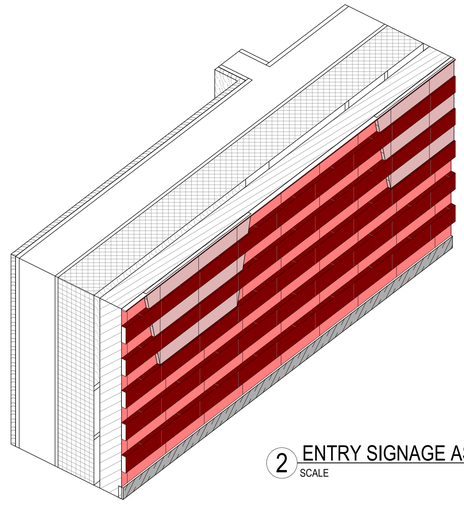
4 ENLARGED ELEVATION - LETTER D

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



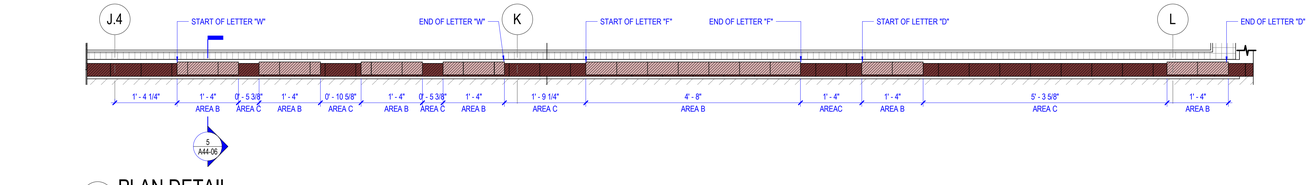
3 ENLARGED SOUTH ELEVATION - MASONRY SIGNAGE WALL

SCALE 3/4" = 1'-0"



2 ENTRY SIGNAGE ASSEMBLY

SCALE



1 PLAN DETAIL

SCALE 3/4" = 1'-0"

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CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ENTRY SIGNAGE AND BRICK LETTERING - DETAILS AND ELEVATIONS

SHEET NUMBER

A44-06

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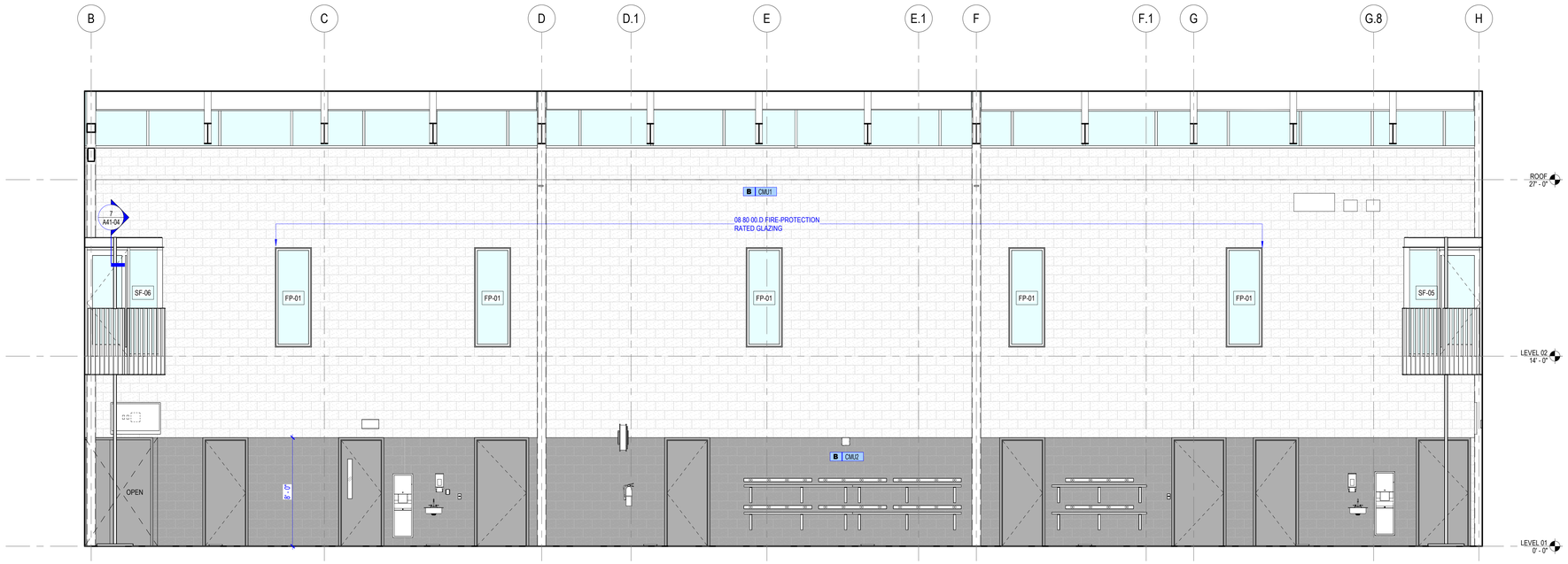
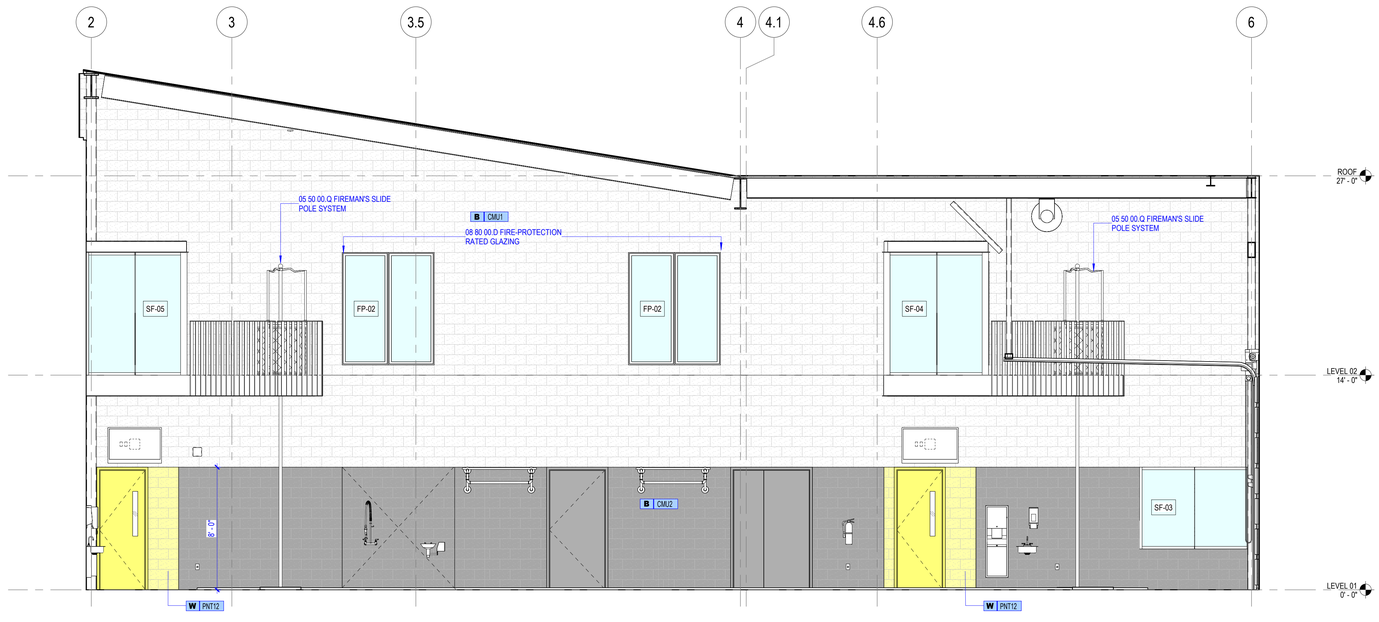


1 APPARATUS BAY - NORTH
SCALE 1/4" = 1'-0"



2 APPARATUS BAY - EAST
SCALE 1/4" = 1'-0"

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ISSUE CHART

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Job Number 157132.000

TITLE

INTERIOR ELEVATIONS - APPARATUS BAY

SHEET NUMBER

A45-01

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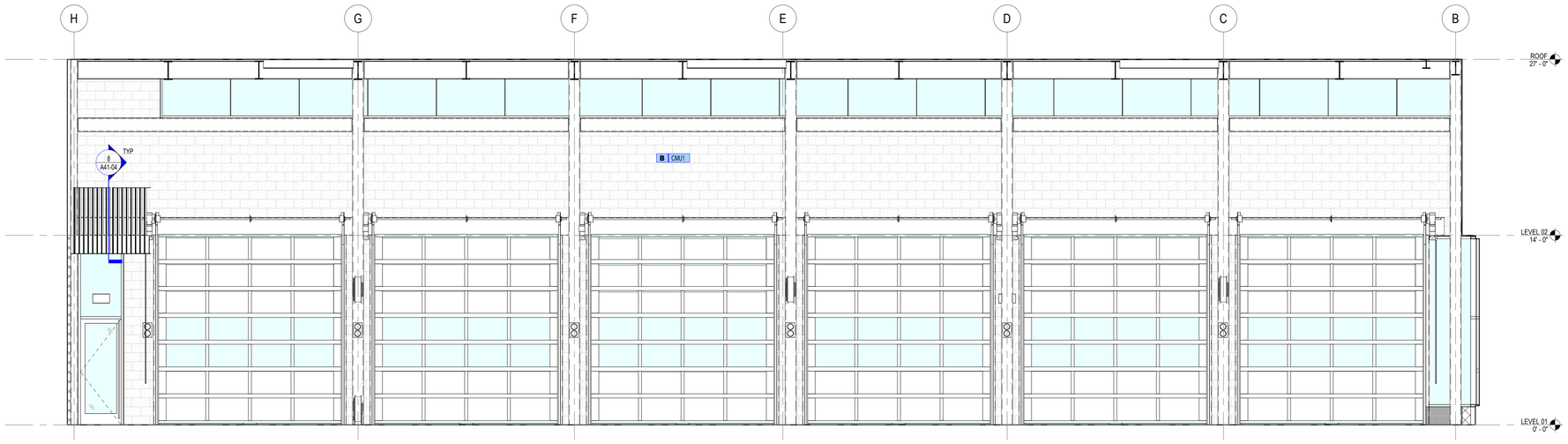
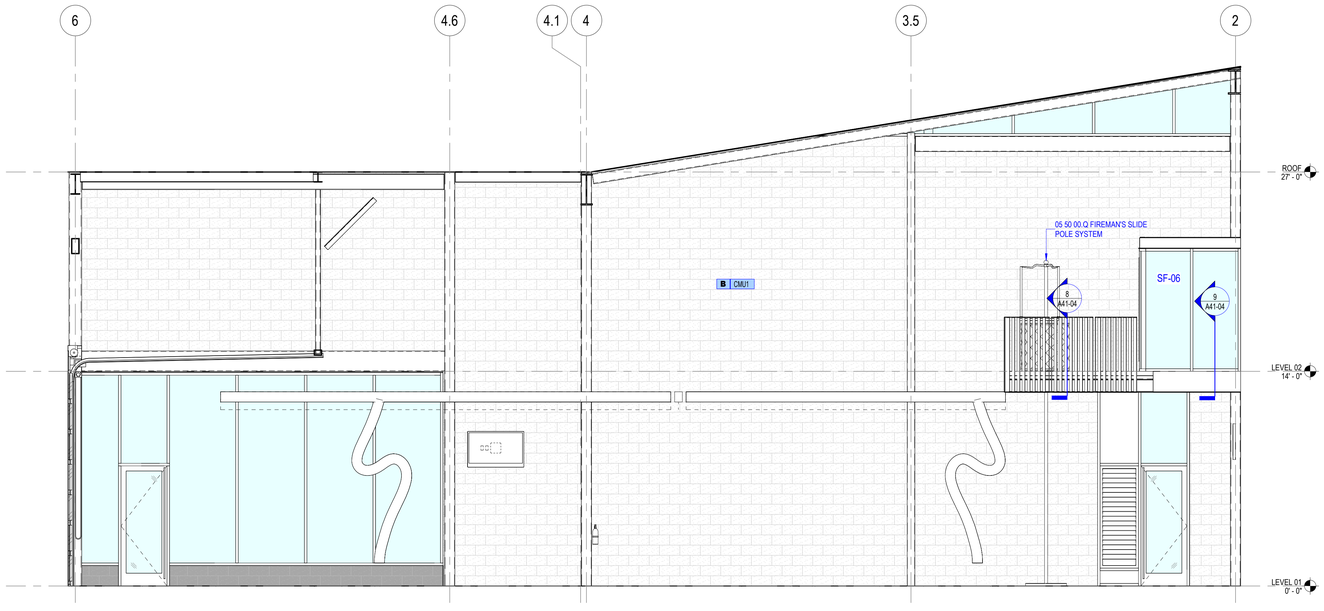


1 APPARATUS BAY - SOUTH
SCALE 1/4" = 1'-0"



2 APPARATUS BAY - WEST
SCALE 1/4" = 1'-0"

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Job Number 157132.000

TITLE

INTERIOR ELEVATIONS - APPARATUS BAY

SHEET NUMBER

A45-02

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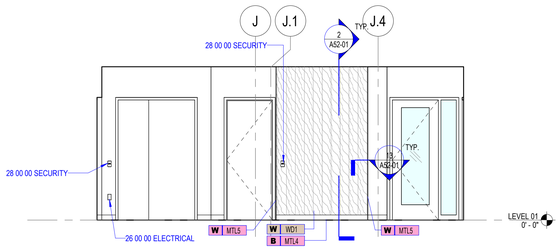
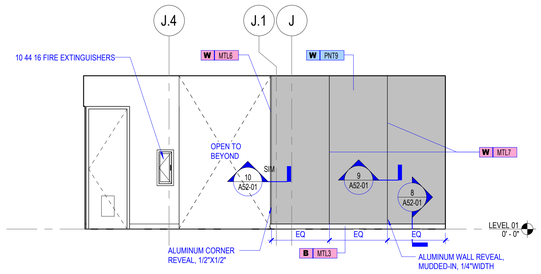
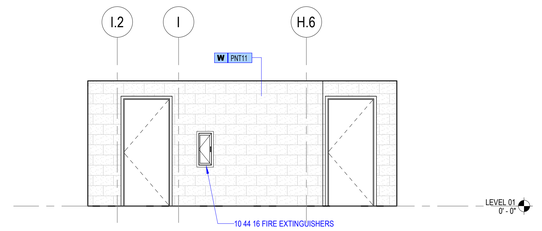


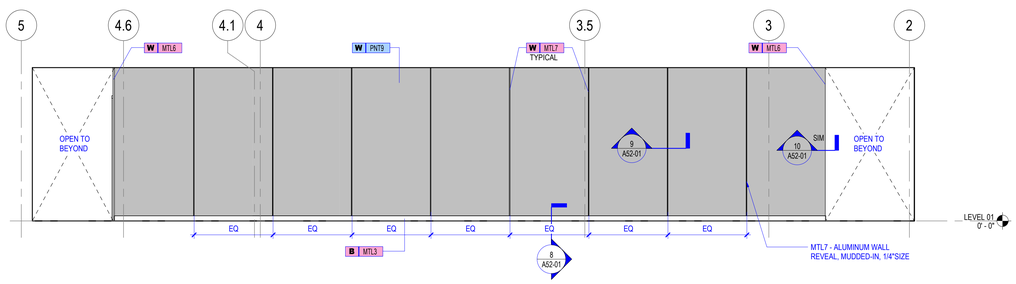
8 ENLARGED ELEVATION - LEVEL 01 CORRIDOR A (NORTH)
SCALE 1/4" = 1'-0"



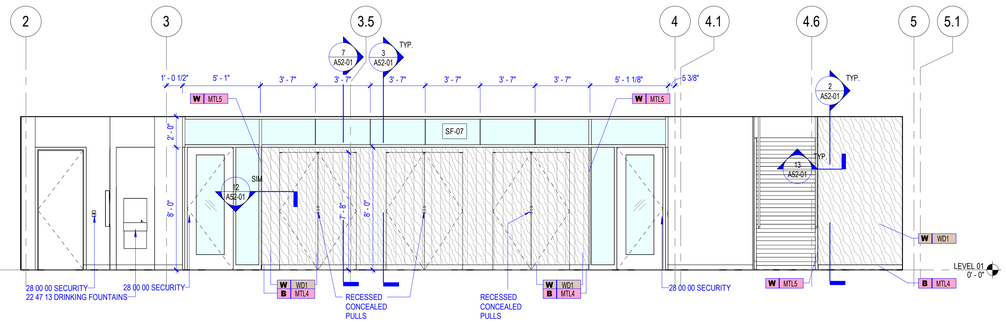
7 ENLARGED ELEVATION - LEVEL 01 CORRIDOR A (SOUTH)
SCALE 1/4" = 1'-0"



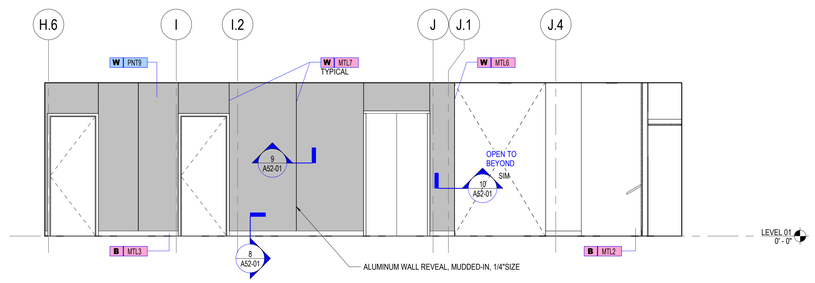
6 ENLARGED ELEVATION - LEVEL 01 VESTIBULE 2 (SOUTH)
SCALE 1/4" = 1'-0"



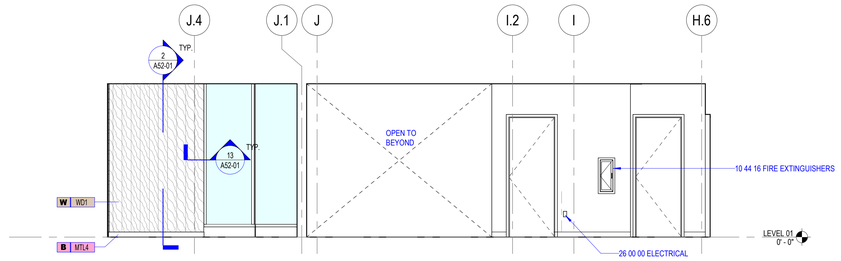
5 ENLARGED ELEVATION - LEVEL 01 CORRIDOR A (EAST)
SCALE 1/4" = 1'-0"



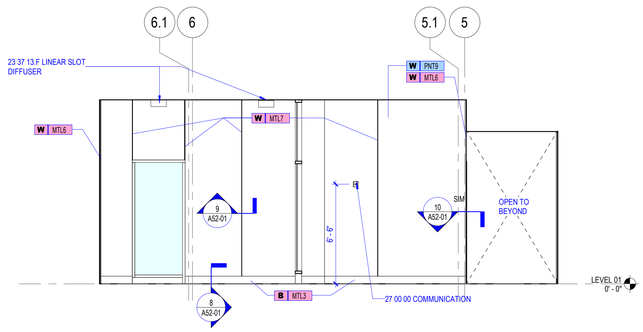
4 ENLARGED ELEVATION - LEVEL 01 VESTIBULE (WEST)
SCALE 1/4" = 1'-0"



3 ENLARGED ELEVATION - LEVEL 01 CORRIDOR B (NORTH)
SCALE 1/4" = 1'-0"



2 ENLARGED ELEVATION - LEVEL 01 CORRIDOR B (SOUTH)
SCALE 1/4" = 1'-0"



1 ENLARGED ELEVATION - LEVEL 01 VESTIBULE (WEST)
SCALE 1/4" = 1'-0"

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KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

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Job Number	157132.000	

TITLE

INTERIOR ELEVATIONS - LEVEL 01 CORRIDORS

SHEET NUMBER

A45-03

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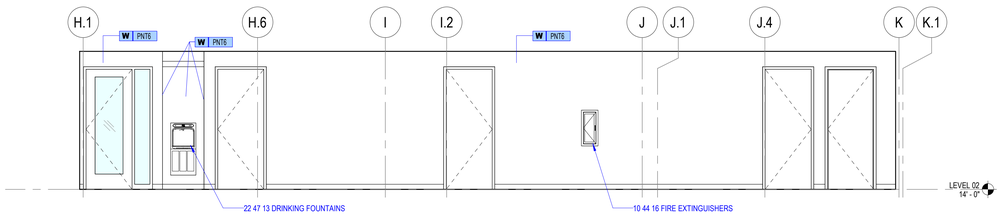
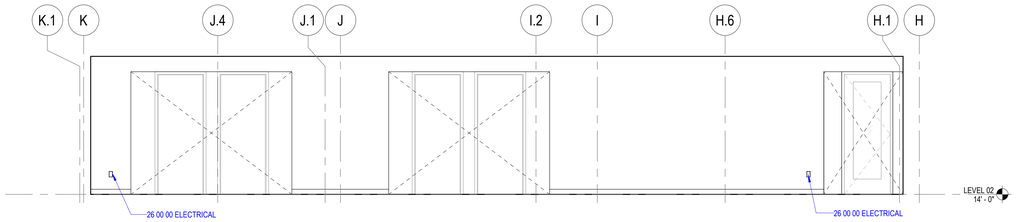


5 ENLARGED ELEVATION - LEVEL 02 CORRIDOR 233 (NORTH)
SCALE 1/4" = 1'-0"



6 ENLARGED ELEVATION - LEVEL 02 CORRIDOR 233 (SOUTH)
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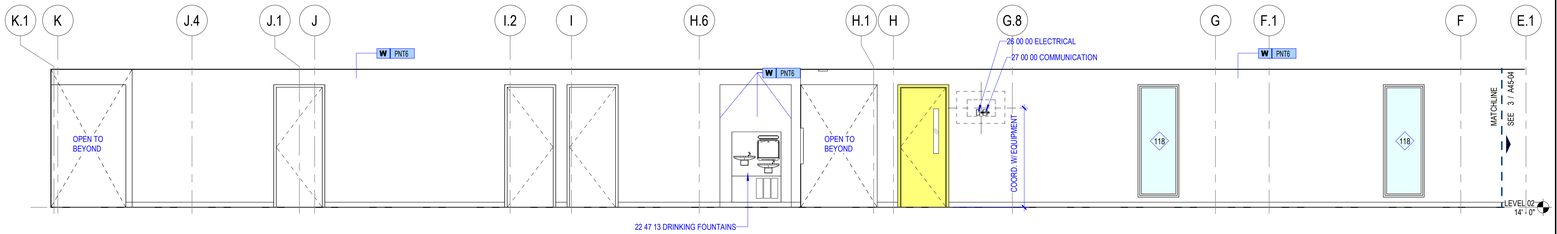
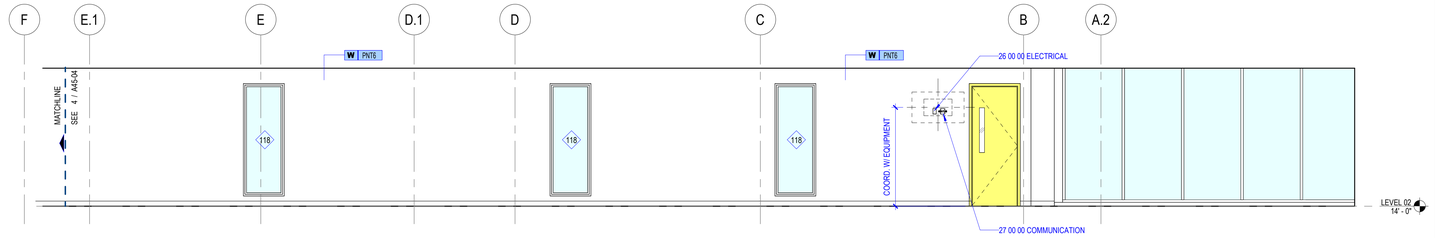
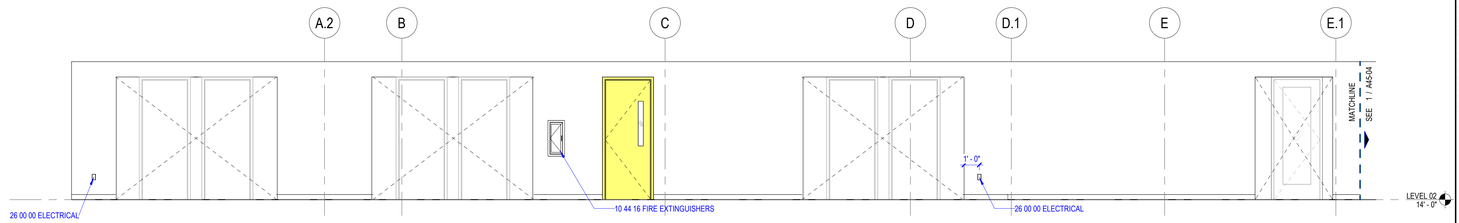


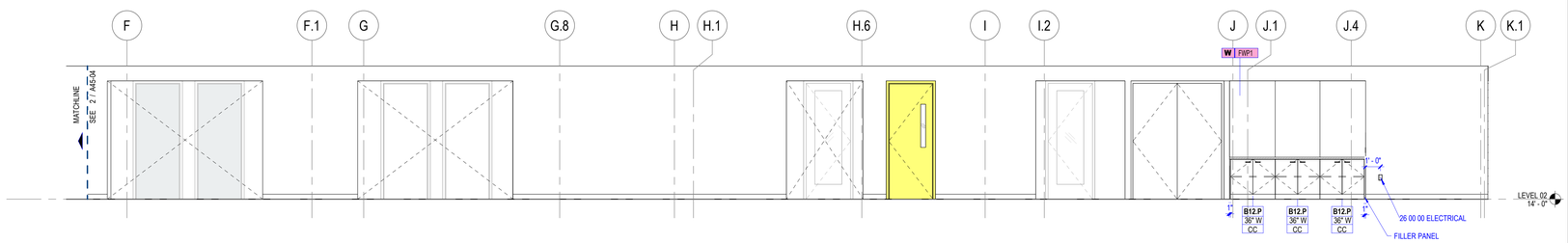
4 ENLARGED ELEVATION - LEVEL 02 CORRIDOR 200 LEFT (SOUTH)
SCALE 1/4" = 1'-0"



3 ENLARGED ELEVATION - LEVEL 02 CORRIDOR 200 RIGHT (SOUTH)
SCALE 1/4" = 1'-0"



2 ENLARGED ELEVATION - LEVEL 02 CORRIDOR 200 LEFT (NORTH)
SCALE 1/4" = 1'-0"



1 ENLARGED ELEVATION - LEVEL 02 CORRIDOR 200 RIGHT (NORTH)
SCALE 1/4" = 1'-0"

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KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

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Job Number 157132.000

TITLE

INTERIOR ELEVATIONS - LEVEL 02 CORRIDORS

SHEET NUMBER

A45-04

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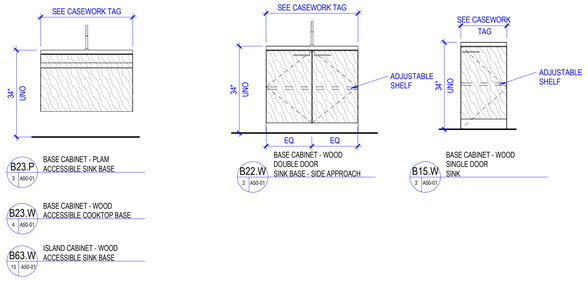
BASE CABINETS WITH SINK/ COOKTOP



B23.P 3 A50-01 BASE CABINET - PLAM ACCESSIBLE SINK BASE

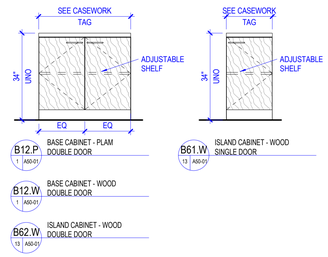
B23.W 4 A50-01 BASE CABINET - WOOD ACCESSIBLE COOKTOP BASE

B63.W 15 A50-01 ISLAND CABINET - WOOD ACCESSIBLE SINK BASE

B22.W 2 A50-01 BASE CABINET - WOOD DOUBLE DOOR SINK BASE - SIDE APPROACH

B15.W 2 A50-01 BASE CABINET - WOOD SINGLE DOOR SINK

BASE CABINETS WITH DOORS



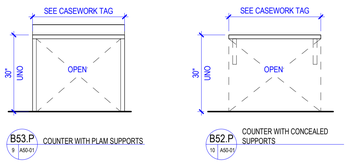
B12.P 1 A50-01 BASE CABINET - PLAM DOUBLE DOOR

B12.W 1 A50-01 BASE CABINET - WOOD DOUBLE DOOR

B62.W 13 A50-01 ISLAND CABINET - WOOD DOUBLE DOOR

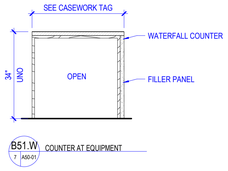
B61.W 13 A50-01 ISLAND CABINET - WOOD SINGLE DOOR

OPEN COUNTERS



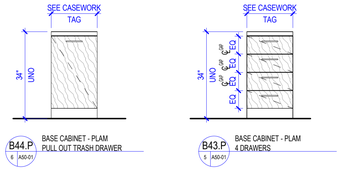
B53.P 9 A50-01 COUNTER WITH PLAM SUPPORTS

B52.P 10 A50-01 COUNTER WITH CONCEALED SUPPORTS



B51.W 7 A50-01 COUNTER AT EQUIPMENT

BASE CABINETS WITH DRAWERS



B44.P 6 A50-01 BASE CABINET - PLAM PULL OUT TRASH DRAWER

B44.W 6 A50-01 BASE CABINET - WOOD PULL OUT TRASH DRAWER

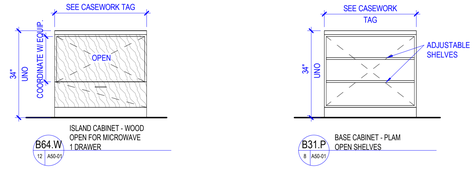
B69.W 14 A50-01 ISLAND CABINET - WOOD PULL OUT TRASH DRAWER

B43.P 5 A50-01 BASE CABINET - PLAM 4 DRAWERS

B43.W 5 A50-01 BASE CABINET - WOOD 4 DRAWERS

B68.W 11 A50-01 ISLAND CABINET - WOOD 4 DRAWERS

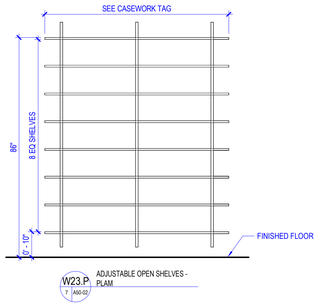
BASE CABINETS WITH OPEN SHELVES



B64.W 12 A50-01 ISLAND CABINET - WOOD OPEN FOR MICROWAVE 1 DRAWER

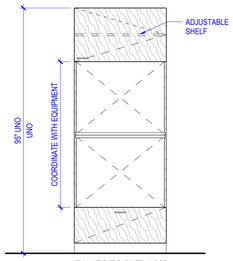
B31.P 8 A50-01 BASE CABINET - PLAM OPEN SHELVES

WALL CABINETS WITH OPEN SHELVES



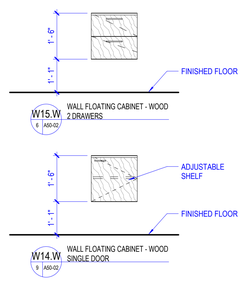
W23.P 7 A50-02 ADJUSTABLE OPEN SHELVES - PLAM

FULL HEIGHT CABINETS WITH OPEN SHELVES



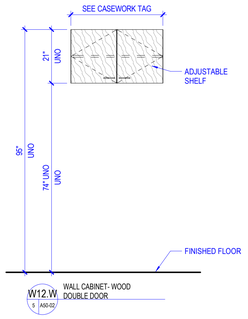
F23.W 1 A50-02 FULL HEIGHT CABINET - WOOD SINGLE DOOR / PULL OUT 2 OVENS

WALL CABINETS WITH DOORS

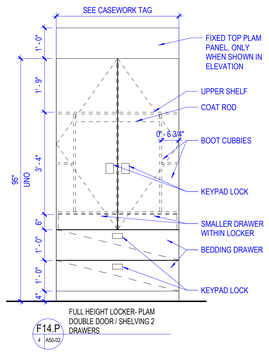


W15.W 6 A50-02 WALL FLOATING CABINET - WOOD 2 DRAWERS

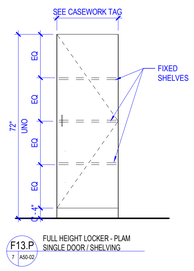
W14.W 9 A50-02 WALL FLOATING CABINET - WOOD SINGLE DOOR



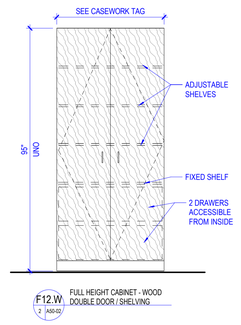
W12.W 5 A50-02 WALL CABINET- WOOD DOUBLE DOOR



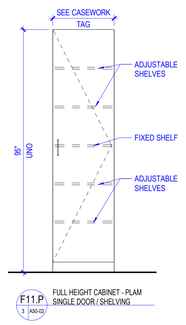
F14.P 4 A50-02 FULL HEIGHT LOCKER- PLAM DOUBLE DOOR / SHELVING 2 DRAWERS



F13.P 7 A50-02 FULL HEIGHT LOCKER - PLAM SINGLE DOOR / SHELVING



F12.W 2 A50-02 FULL HEIGHT CABINET - WOOD DOUBLE DOOR / SHELVING



F11.P 3 A50-02 FULL HEIGHT CABINET - PLAM SINGLE DOOR / SHELVING

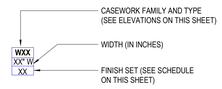
CASEWORK FINISH SCHEDULE

FINISH SET	CABINET FINISH	COUNTER FINISH	BOD: DOOR/DRAWER PULL
AA	06 41 16.PLAM1	06 61 16.SS1	MCOKETT DP128 SERIES - ROUND TOP DRAWER PULL - SSS
BB	06 20 23.WD1	09 75 23.SS3	MCOKETT DP128 SERIES - ROUND TOP DRAWER PULL - SSS
CC	06 41 16.PLAM1	09 75 23.SS3	MCOKETT DP128 SERIES - ROUND TOP DRAWER PULL - SSS
DD	06 41 16.PLAM2	-	MCOKETT DP128 SERIES - ROUND TOP DRAWER PULL - SSS
EE	06 20 23.WD1	06 61 16.SS1	MCOKETT DP128 SERIES - ROUND TOP DRAWER PULL - SSS
FF	06 41 16.PLAM1	-	MCOKETT DP128 SERIES - ROUND TOP DRAWER PULL - SSS
GG	06 20 23.WD1	-	MCOKETT DP128 SERIES - ROUND TOP DRAWER PULL - SSS

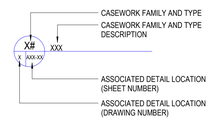
CASEWORK GENERAL NOTES

1. THE CASEWORK TYPES SHOWN ON THIS SHEET REPRESENT THE STANDARD TYPES WHICH FREQUENTLY OCCUR IN PROJECTS OF THIS NATURE. SOME TYPES MAY NOT BE USED.
2. REFER TO A50-01, A50-02 FOR TYPICAL CASEWORK SECTIONS.
3. THE 'CASEWORK TAG' SYMBOLS SPECIFYING THE PARTICULAR MODULES ARE SHOWN ON THE INTERIOR ELEVATIONS.
4. FOR SPECIAL CASEWORK CONFIGURATIONS AND/ OR COMPONENTS REFER TO THE INTERIOR ELEVATIONS.
5. REFER TO THE 'CASEWORK TAG' SHOWN IN THE INTERIOR ELEVATIONS FOR SCHEDULED FINISH MATERIALS.
6. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
7. PROVIDE NECESSARY BACKING, BLOCKING AND OTHER STRUCTURAL SUPPORT.
8. AT END UNITS WITH EXPOSED SIDES PROVIDE FINISH EQUAL TO OTHER EXPOSED SURFACES.
9. AT END UNITS WITH ADDITIONAL SPACE BETWEEN CABINET AND WALL PROVIDE FINISH FILLER PANELS TO MATCH OTHER EXPOSED SURFACES.
10. CABINET HEIGHTS ARE TO BE AS SHOWN ON THIS SHEETS UNLESS INDICATED OTHERWISE IN THE CONTRACT DOCUMENTS.
11. REFER TO CASEWORK FINISH SCHEDULE ON A50-00 FOR CABINET FINISHES, COUNTER TYPE AND HARDWARE.
12. ALL WORK FOR THIS CASEWORK SHEET IS PART OF SECTION 06 20 23, 06 41 13, 06 41 16 U.N.O

CASEWORK TAG



LEGEND



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ARUP
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REGISTERED ARCHITECT PHILIP J. CUNNINGHAM No. 50258 BOSTON COMMONWEALTH OF MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

CASEWORK ELEVATIONS

SHEET NUMBER

A50-00

CONSTRUCTION DOCUMENTS 12/19/25

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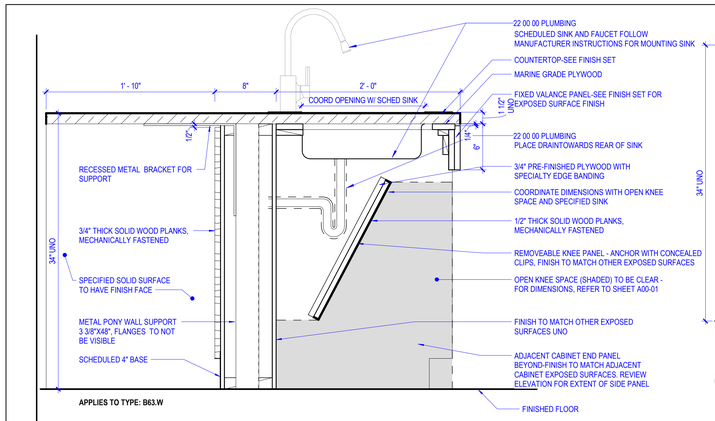
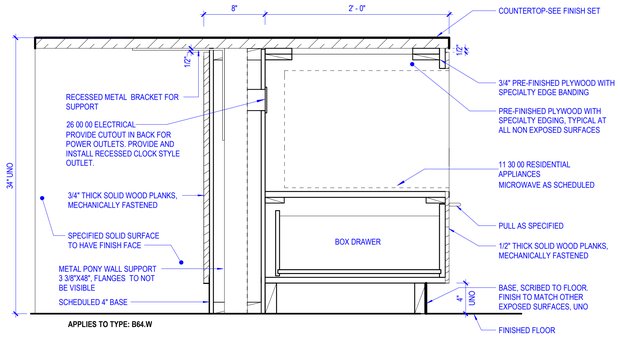
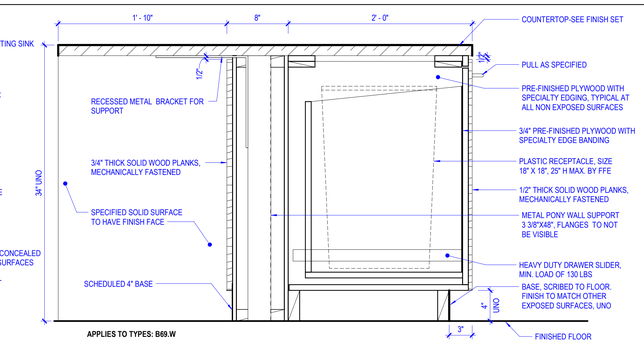


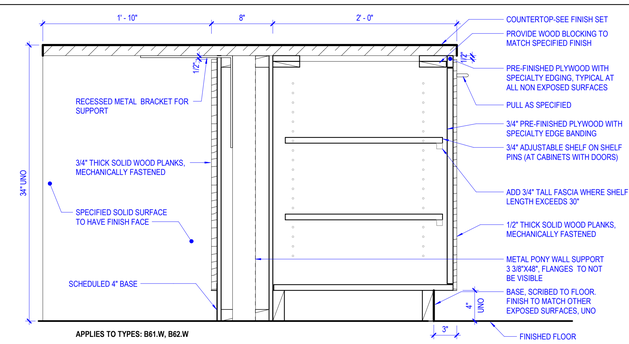
15 SECTION - COUNTER AT SINK
SCALE 1 1/2" = 1'-0"



12 SECTION - ISLAND COUNTER WITH MICROWAVE
SCALE 1 1/2" = 1'-0"



14 SECTION - ISLAND CABINET WITH TRASH PULLOUT
SCALE 1 1/2" = 1'-0"



13 SECTION-ISLAND CABINET
SCALE 1 1/2" = 1'-0"

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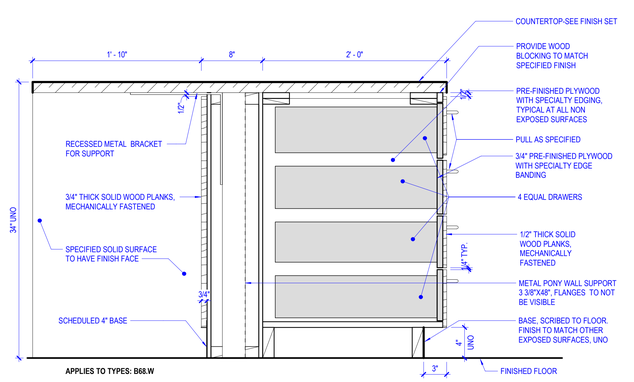

11 SECTION - ISLAND CABINET W/ DRAWERS
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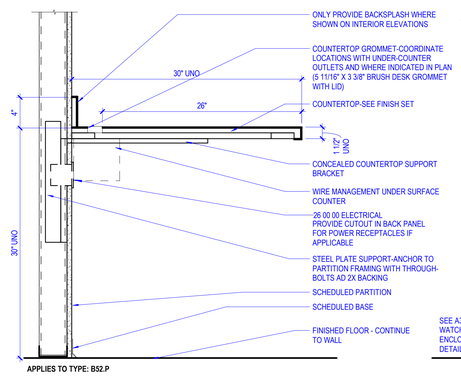
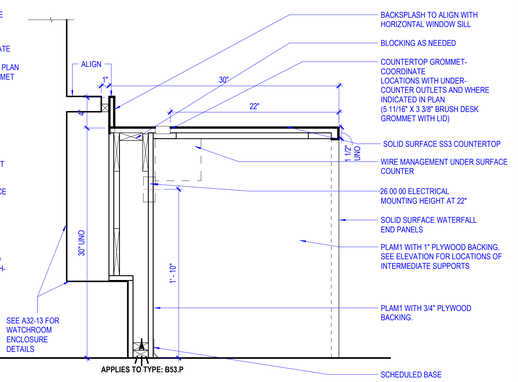


10 SECTION - COUNTER W/ CONCEALED SUPPORTS
SCALE 1 1/2" = 1'-0"



9 SECTION - WATCHROOM WORK COUNTER
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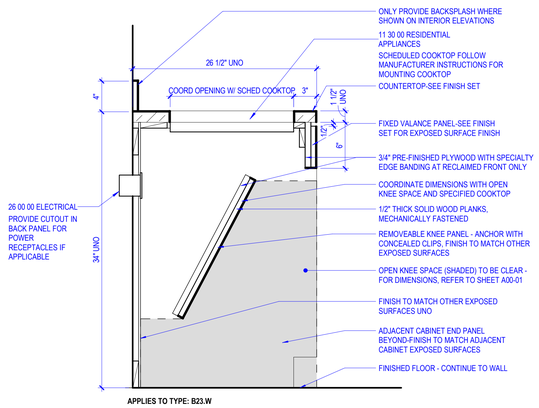
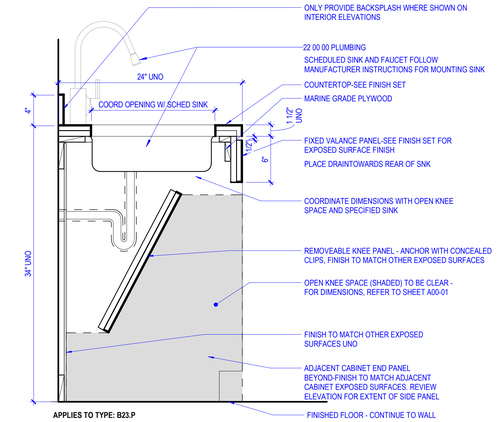
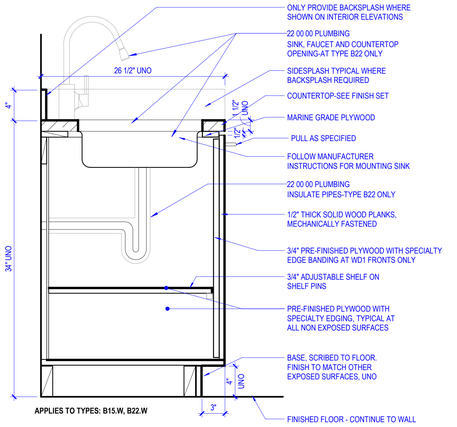


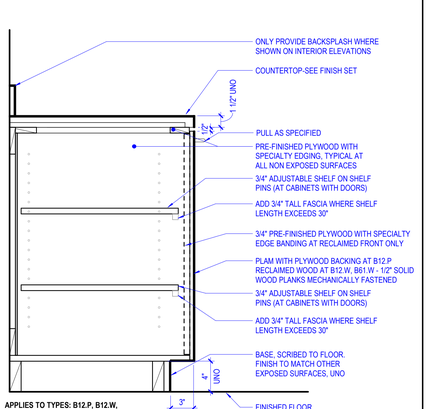
8 SECTION - OPEN BASE CABINET
SCALE 1 1/2" = 1'-0"



7 SECTION - COUNTER AT EQUIP
SCALE 1 1/2" = 1'-0"



6 SECTION - BASE CABINET @TRASH PULLOUT
SCALE 1 1/2" = 1'-0"



5 SECTION - BASE CABINET W/ DRAWERS
SCALE 1 1/2" = 1'-0"

4 SECTION - COUNTER AT COOKTOP
SCALE 1 1/2" = 1'-0"

3 SECTION - COUNTER AT SINK
SCALE 1 1/2" = 1'-0"

2 SECTION - SINK BASE CABINET
SCALE 1 1/2" = 1'-0"

1 SECTION - BASE CABINET
SCALE 1 1/2" = 1'-0"

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CITY OF WORCESTER

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KEY PLAN

CONSTRUCTION DOCUMENTS 12/19/25

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

CASEWORK DETAILS

SHEET NUMBER

A50-01

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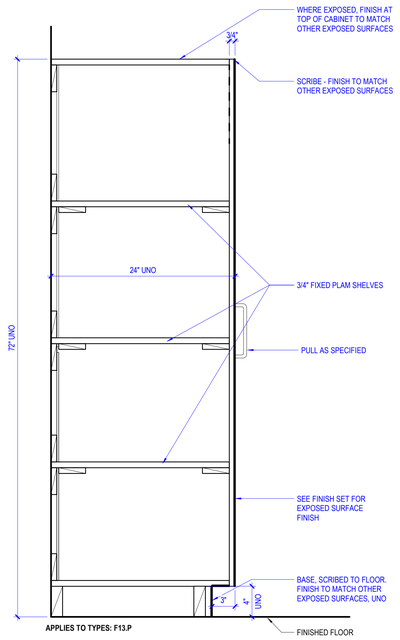
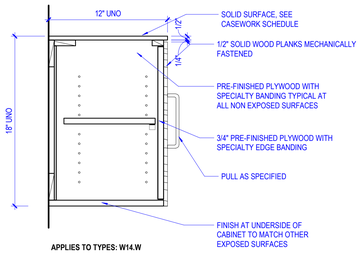


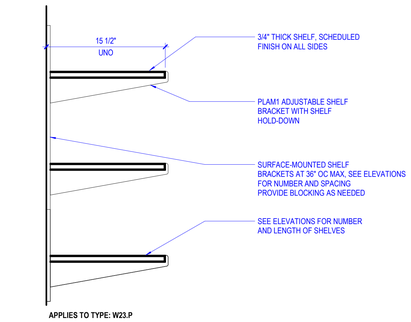
APPLIES TO TYPES: F13.P

8 SECTION - FULL HEIGHT LOCKER
SCALE 1 1/2" = 1'-0"



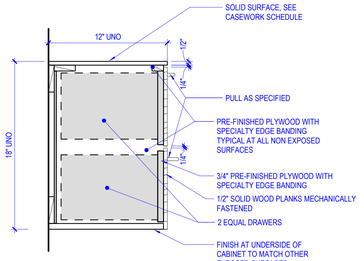
APPLIES TO TYPES: W14.W

9 SECTION - WALL CABINET DAYROOM
SCALE 1 1/2" = 1'-0"



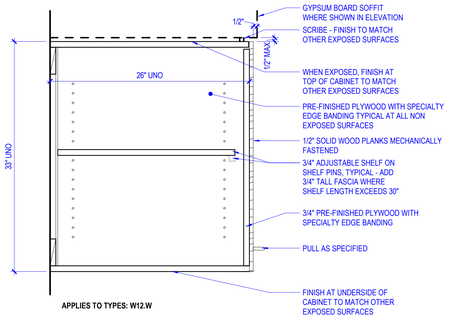
APPLIES TO TYPE: W23.P

7 SECTION - ADJUSTABLE SHELVING
SCALE 1 1/2" = 1'-0"



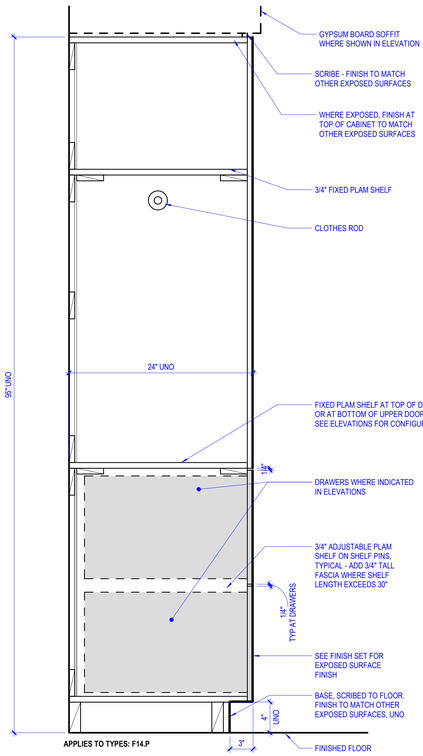
APPLIES TO TYPES: W15.W

6 SECTION - WALL CABINET W/ DRAWERS
SCALE 1 1/2" = 1'-0"



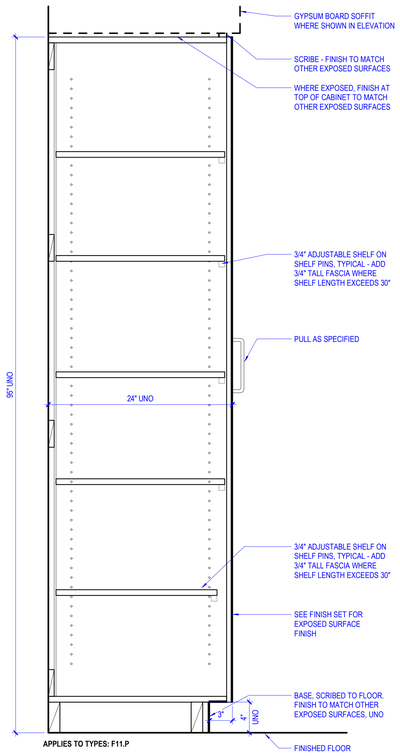
APPLIES TO TYPES: W12.W

5 SECTION - WALL CABINET KITCHEN
SCALE 1 1/2" = 1'-0"



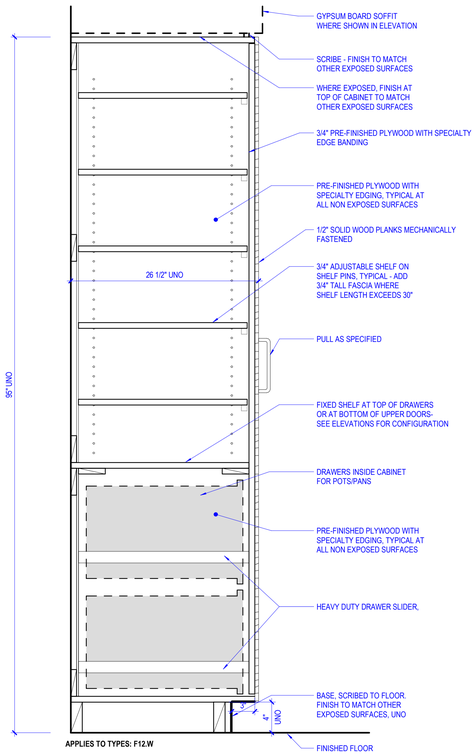
APPLIES TO TYPES: F14.P

4 SECTION - FULL HEIGHT LOCKER W/ DRAWERS
SCALE 1 1/2" = 1'-0"



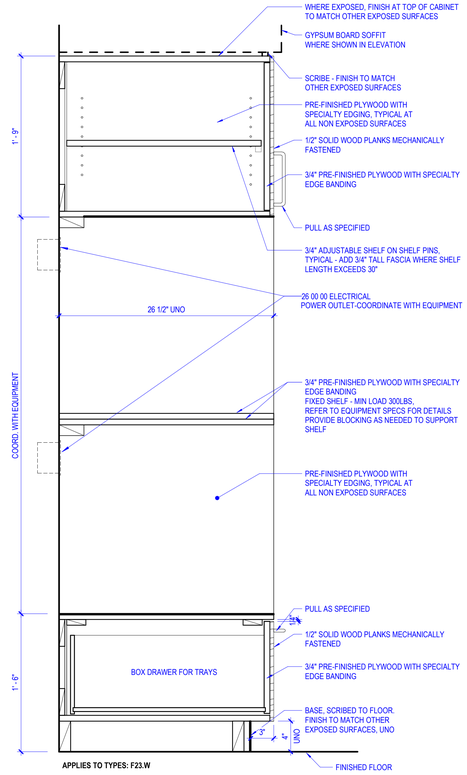
APPLIES TO TYPES: F11.P

3 SECTION - FULL HEIGHT CABINET
SCALE 1 1/2" = 1'-0"



APPLIES TO TYPES: F12.W

2 SECTION - FULL HEIGHT CABINET W/ DRAWERS
SCALE 1 1/2" = 1'-0"



APPLIES TO TYPES: F23.W

1 SECTION - FULL HEIGHT CABINET FOR OVENS
SCALE 1 1/2" = 1'-0"

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REGISTERED ARCHITECT PHILIP J. CUNNINGHAM No. 50258 BOSTON COMMONWEALTH OF MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

CASEWORK DETAILS

SHEET NUMBER

A50-02

CONSTRUCTION DOCUMENTS 12/19/25

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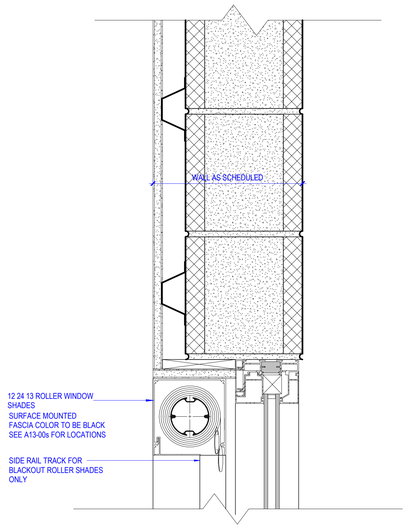
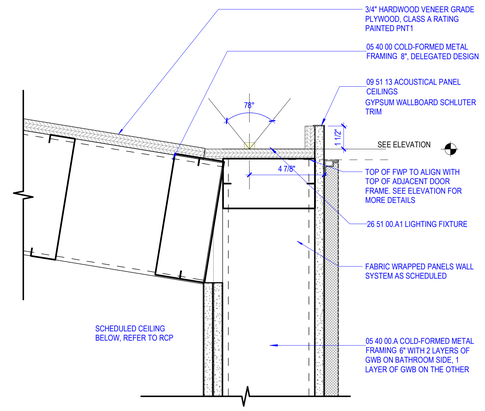


9 SURFACE MOUNTED ROLLER SHADE @ DAYROOM AND WATCHROOM

SCALE 3" = 1'-0"

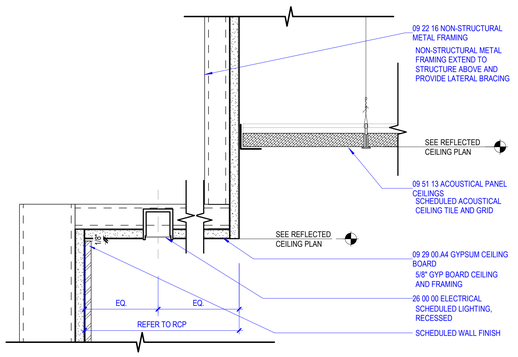


8 LIGHTING DETAIL ABOVE KITCHEN WALL

SCALE 3" = 1'-0"

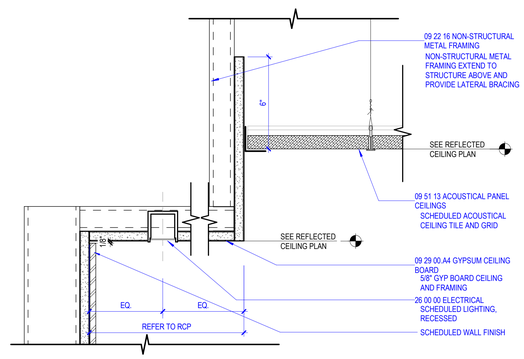
7 GYP. BOARD SOFFIT @ BUNK RM ENTRY

SCALE 3" = 1'-0"



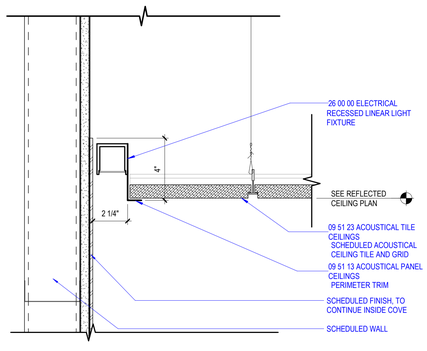
6 GYP. BOARD SOFFIT @ SHOWER ENCLOSURE - TYP.

SCALE 3" = 1'-0"



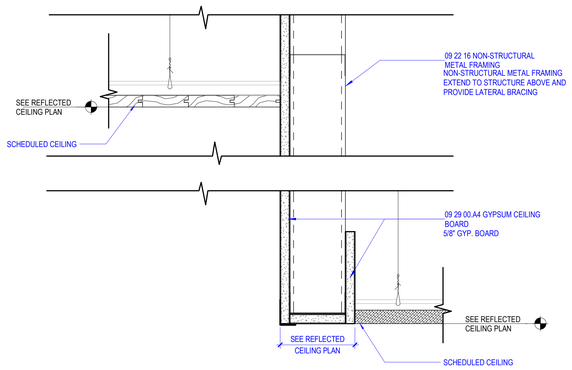
5 GYP. BOARD SOFFIT @ CREDENZA - TYP.

SCALE 3" = 1'-0"



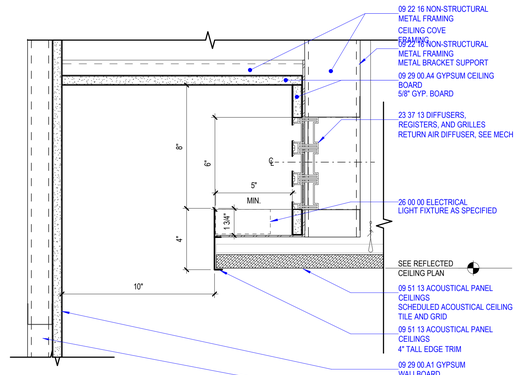
4 TOILET WALLWASHER - TYP.

SCALE 3" = 1'-0"



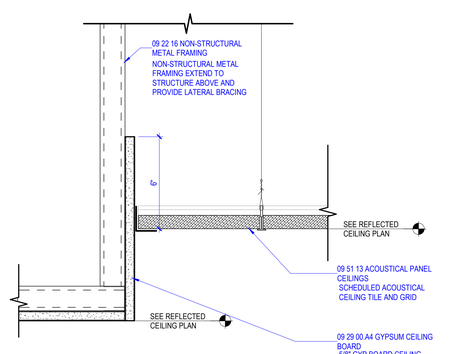
3 VESTIBULE SOFFIT

SCALE 3" = 1'-0"



2 COVE DETAIL

SCALE 3" = 1'-0"



1 GYP. BOARD SOFFIT

SCALE 3" = 1'-0"

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KEY PLAN

CONSTRUCTION DOCUMENTS 12/19/25

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

CEILING AND INTERIOR DETAILS

SHEET NUMBER

A51-01

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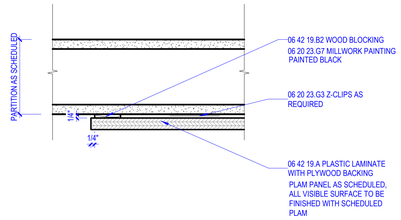
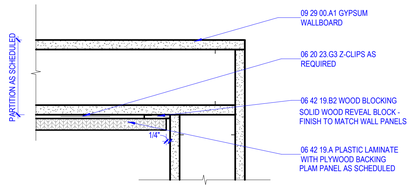
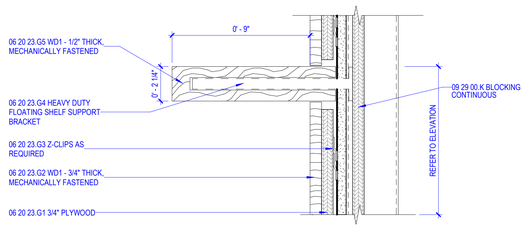


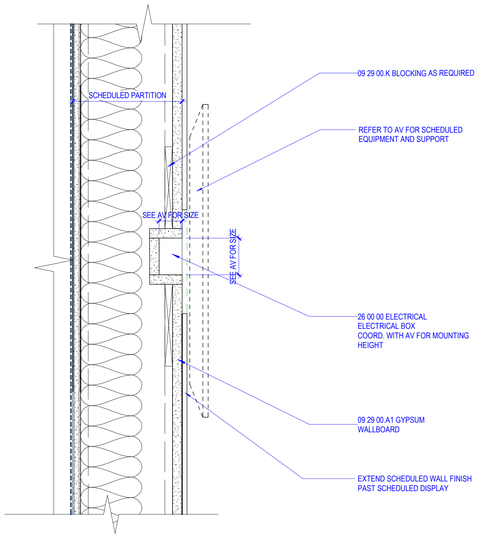
16 PLAN DTL @ TYP PLAM PANEL OUTER CORNER
SCALE 3" = 1'-0"



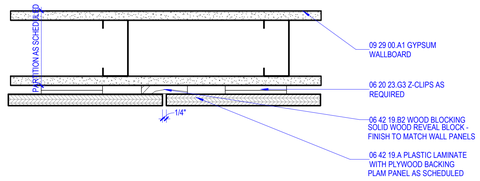
15 PLAN DTL @ TYP PLAM PANEL INNER CORNER
SCALE 3" = 1'-0"



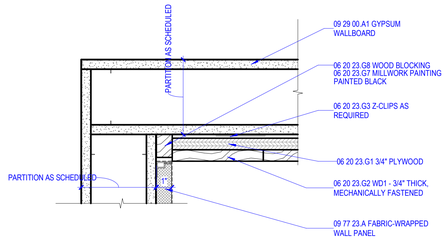
14 SECT DTL - FLOATING SHELF @DAYROOM
SCALE 3" = 1'-0"



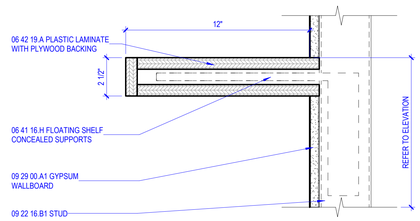
DETAIL SECTION - FLAT SCREEN DISPLAY @ PERIMETER WALL
SCALE 3" = 1'-0"



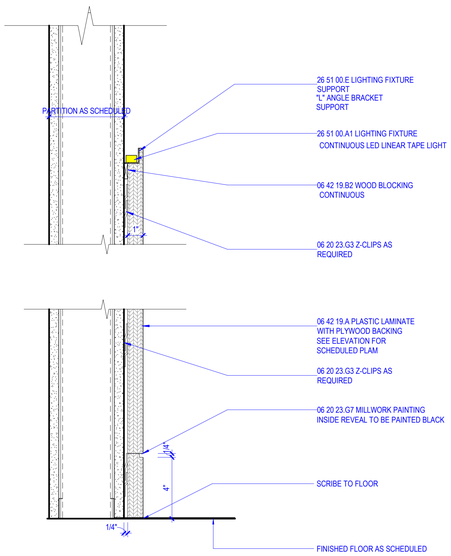
13 PLAN DTL - WALL PANEL REVEAL
SCALE 3" = 1'-0"



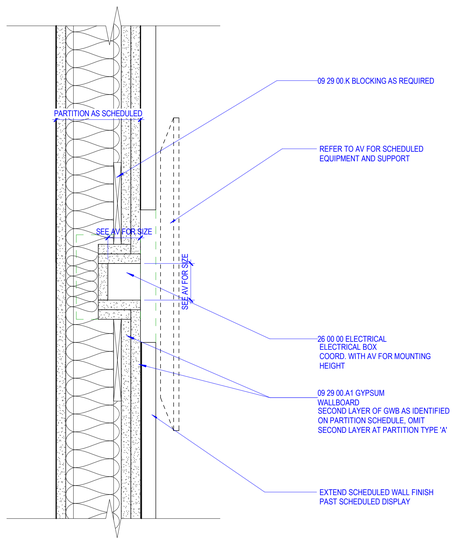
12 PLAN DTL @ TYP WOOD PANEL, FWP INNER CORNER
SCALE 3" = 1'-0"



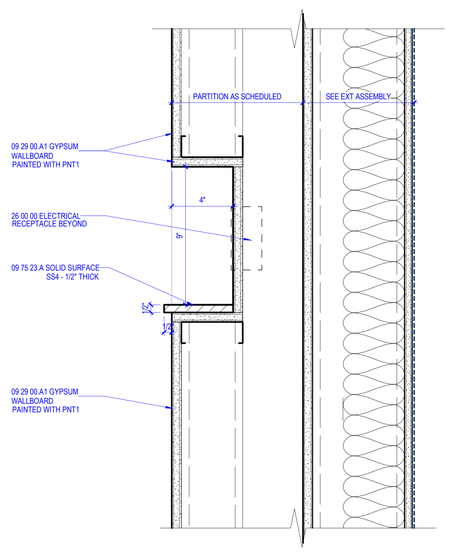
11 SECT DTL - FLOATING SHELF @ STUDY
SCALE 3" = 1'-0"



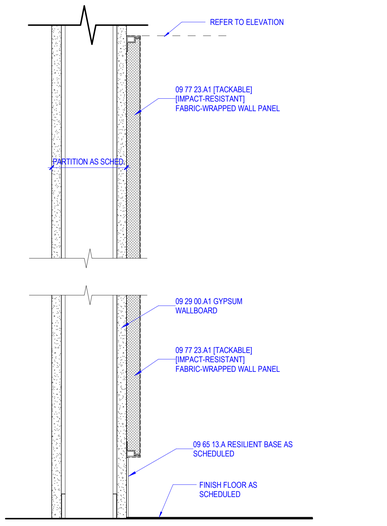
9 SECT DTL @ BUNK ROOM PANELS
SCALE 3" = 1'-0"



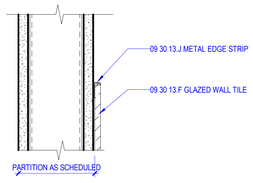
8 DETAIL SECTION - FLAT SCREEN DISPLAY
SCALE 3" = 1'-0"



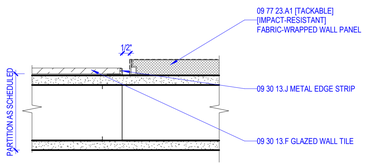
7 BUNK ROOM NICHE TYPICAL DETAIL
SCALE 3" = 1'-0"



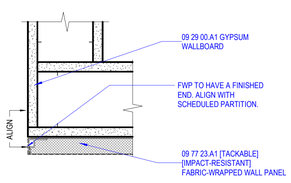
6 SECT DTL @ FABRIC WRAPPED PANEL
SCALE 3" = 1'-0"



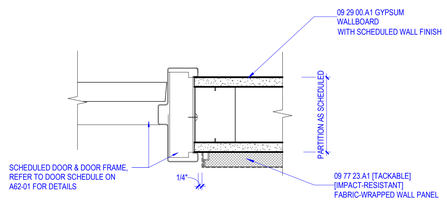
5 TILE EDGE TOP TRANSITION
SCALE 3" = 1'-0"



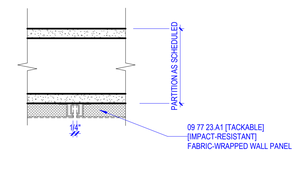
4 TILE EDGE SIDE TRANSITION
SCALE 3" = 1'-0"



3 PLAN DTL - TYP FABRIC PANEL EDGE TRIM
SCALE 3" = 1'-0"



2 PLAN DTL - FWP @ DOOR JAMB
SCALE 3" = 1'-0"



1 FWP @ SEAM (TYP.)
SCALE 3" = 1'-0"

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KEY PLAN

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MARK	ISSUE	DATE
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TITLE

INTERIOR DETAILS - FWP & PLAM PANELS

SHEET NUMBER

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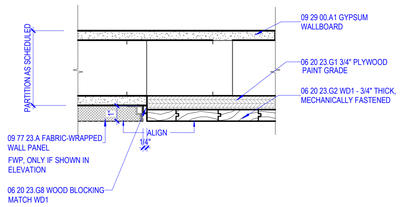
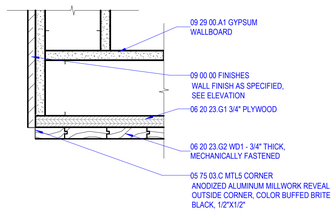
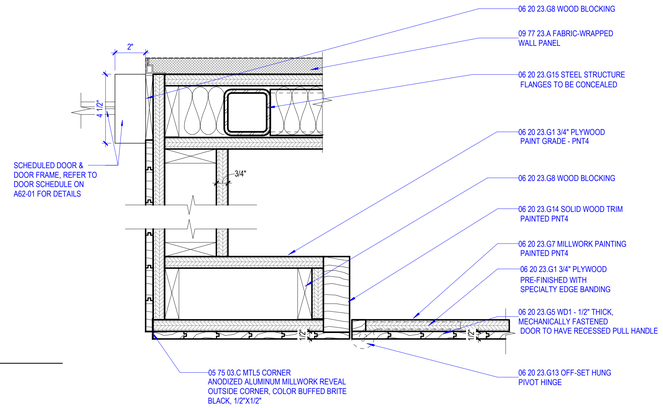


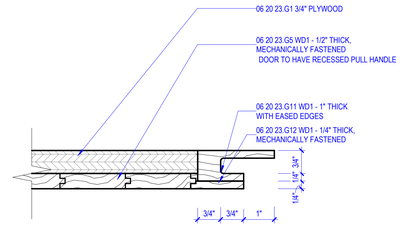
14 PLAN DTL @ TYP WOOD PANEL
SCALE 3" = 1'-0"



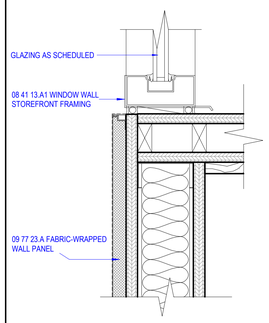
13 PLAN DTL @ TYP WOOD PANEL OUTER CORNER
SCALE 3" = 1'-0"

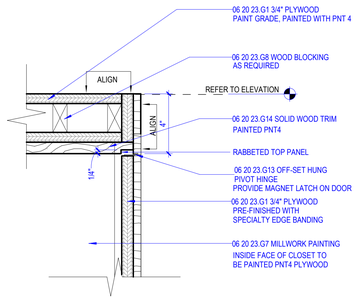


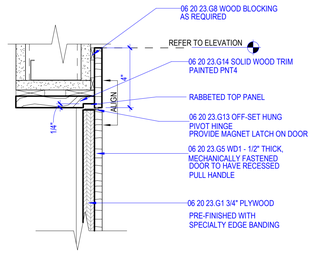
12 PLAN DTL - CLOSET WOOD PANELS AND DOOR
SCALE 3" = 1'-0"

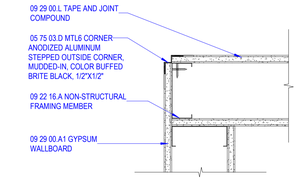


11 PLAN DTL - RECESSED CONCEALED PULLS
SCALE 6" = 1'-0"

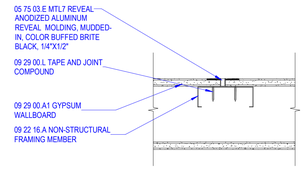




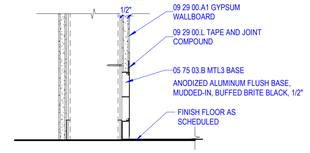




10 PLAN DTL @ TYP CORNER REVEAL
SCALE 3" = 1'-0"



9 PLAN DTL @ TYP INTERMEDIATE REVEAL
SCALE 3" = 1'-0"



8 PLAN DTL @ TYP REVEAL BASE
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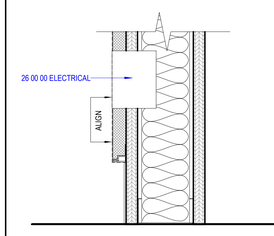
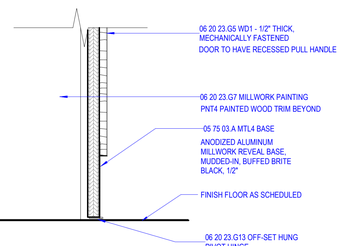
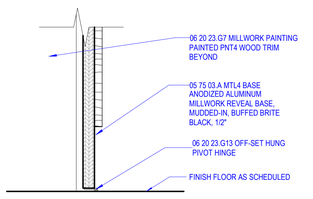
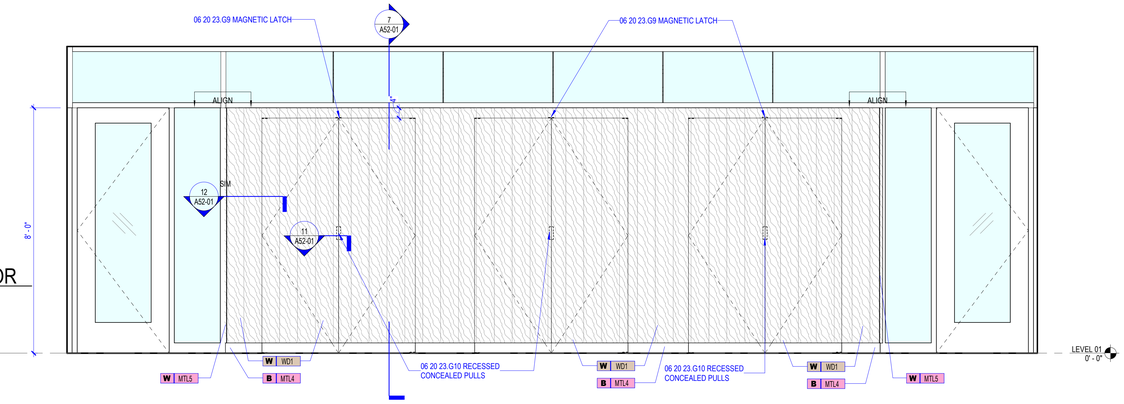




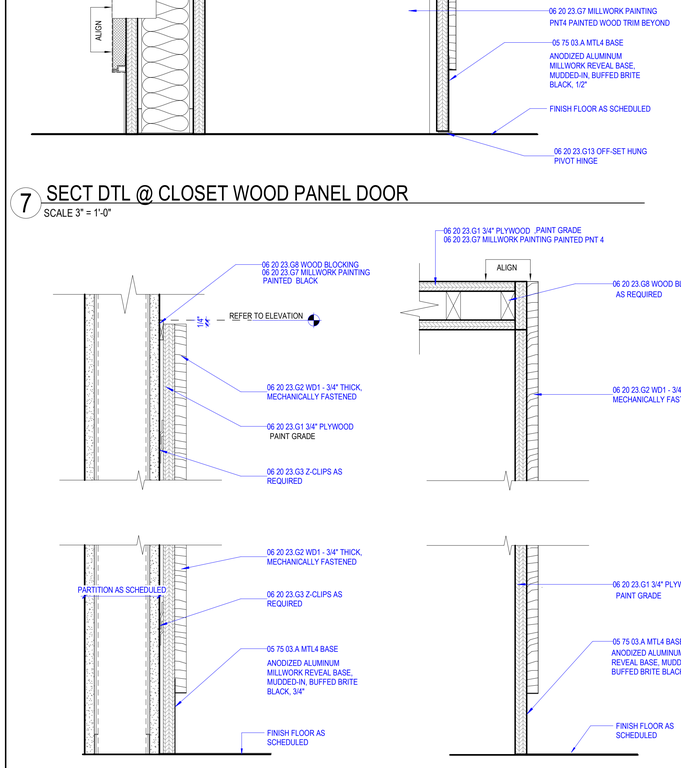
7 SECT DTL @ CLOSET WOOD PANEL DOOR
SCALE 3" = 1'-0"

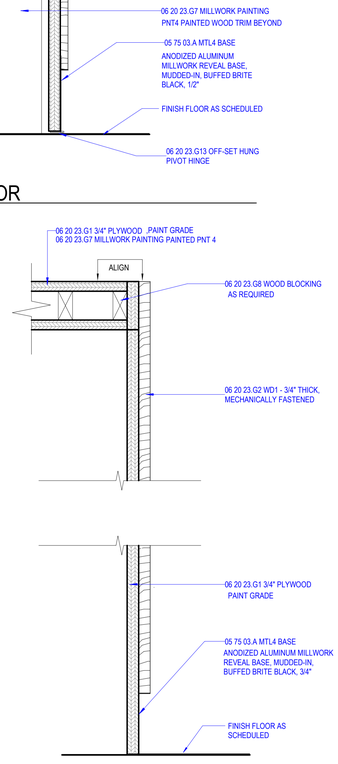


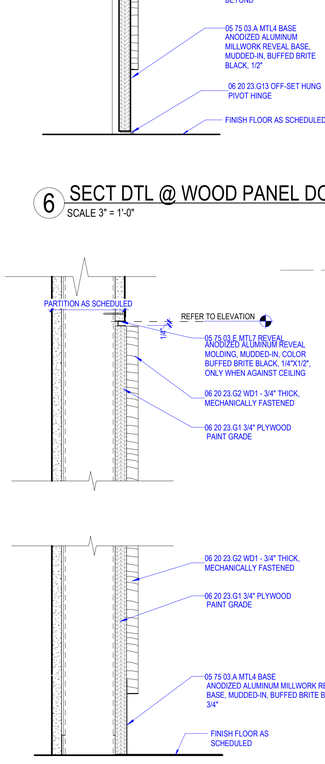
6 SECT DTL @ WOOD PANEL DOOR
SCALE 3" = 1'-0"



5 ENLARGED PLAN - TRAINING ROOM CORRIDOR WALL
SCALE 1/2" = 1'-0"



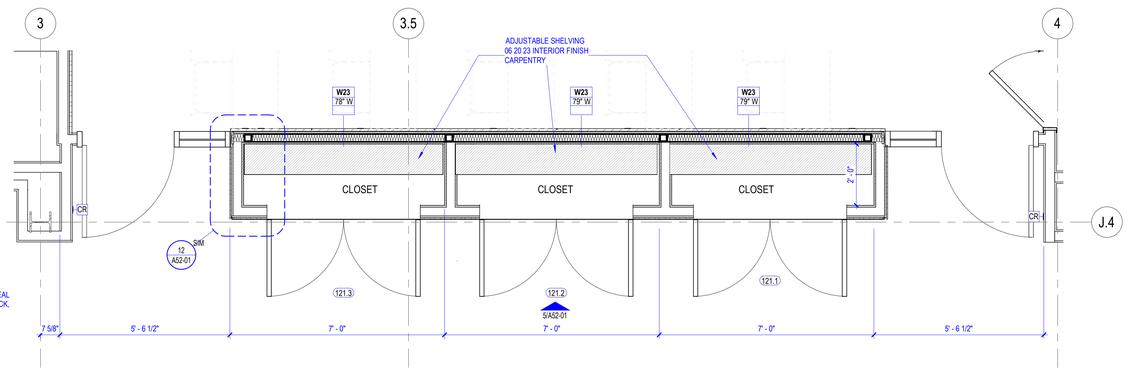




4 SECT DTL @ WOOD PANELS AT STAIR A
SCALE 3" = 1'-0"

3 SECT DTL @ CLOSET WOOD PANEL
SCALE 3" = 1'-0"

2 SECT DTL @ WOOD PANELS IN CORRIDOR & DAYROOM
SCALE 3" = 1'-0"



1 ENLARGED PLAN - TRAINING ROOM CORRIDOR WALL
SCALE 1/2" = 1'-0"

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REGISTERED ARCHITECT No. 50258 BOSTON COMMONWEALTH OF MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

INTERIOR DETAILS - REVEALS & RECLAIMED WOOD

SHEET NUMBER

A52-01

CONSTRUCTION DOCUMENTS 12/19/25

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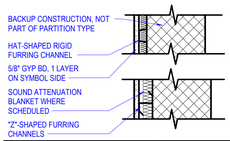
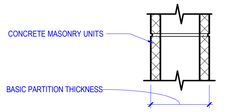


M

	M1_	STC	M2_	STC	M3_	STC	M4_	STC	M5_	STC	M6_	STC	M7_	STC	M8_	STC
NON-RATED WITH GYP BD TO STRUCTURE ABOVE	M11		M21		M31		M41		M51		M61		M71		M81	
NON-RATED WITH GYP BD TO 6" ABOVE CEILING	M12		M22		M32		M42		M52		M62		M72		M82	
NON-RATED WITH GYP BD AND FURRING TO CEILING	M13		M23		M33		M43		M53		M63		M73		M83	
FURRING CHANNEL	7/8"		-		-		-		-		-		-		-	
"Z" CHANNEL	-		1"		1 1/2"		1 1/2"		2"		2"		3"		3"	
BASIC PARTITION THICKNESS. NOTE 1	1 1/2" +		1 5/8" +		2 1/8" +		2 1/8" +		2 5/8" +		2 5/8" +		3 5/8" +		3 5/8" +	
ACOUSTICAL INSULATION	-		YES		-		YES		-		YES		-		YES	

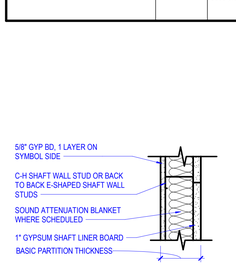
NOTE:
1. ALLOW SPACE FOR SHIMS BETWEEN BACKUP CONSTRUCTION AND FURRING PARTITION



N

WALL TYPE N40.S IS FULLY GROUTED MASONRY WALL PROVIDED FOR ACOUSTICS ONLY. REFER TO 04 20 00

	N2_	STC	N3_	STC	N4_	STC	N5_	STC	N6_	STC
NON-FIRE RATED CMU TO STRUCTURE ABOVE	N20	40	N30	42	N40	44	N50	46	N60	48
1-HR RATED CMU TO STRUCTURE ABOVE			N31	42	N41	44	N51	46	N61	48
2-HR RATED CMU TO STRUCTURE ABOVE			N32	42	N42	44	N52	46	N62	48
3-HR RATED CMU TO STRUCTURE ABOVE					N43	44	N53	46	N63	48
4-HR RATED CMU TO STRUCTURE ABOVE					N44	44	N54	46	N64	48
NON-FIRE RATED CMU TO 6" ABOVE CEILING	N25		N35		N45		N55		N65	
NON-FIRE RATED CMU TO UNDER SIDE OF CEILING	N26		N36		N46		N56		N66	
BASIC PARTITION THICKNESS	3 5/8"		5 5/8"		7 5/8"		9 5/8"		11 5/8"	
NOMINAL MASONRY THICKNESS	4"		6"		8"		10"		12"	
ACOUSTICAL INSULATION	-		-		-		-		-	
FIRE TEST NUMBER	-		UL DESIGN U906 (1&2 HR)		UL DESIGN U905 (1&2 HR) U904 (3 HR) U901 (4 HR)		UL DESIGN U905 (1&2 HR) U904 (3 HR) U901 (4 HR)		UL DESIGN U905 (1&2 HR) U904 (3 HR) U901 (4 HR)	

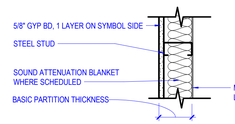


J

	J1_	STC	J2_	STC	J3_	STC	J4_	STC	J5_	STC	J6_	STC
1-HR RATED SHAFT WALL	J10	37	J20	40	J30		J40	47	J50		J60	
STUD SIZE	2 1/2"		2 1/2"		4"		4"		6"		6"	
BASIC PARTITION THICKNESS	3 1/8"		3 1/8"		4 5/8"		4 5/8"		6 5/8"		6 5/8"	
ACOUSTICAL INSULATION	-		YES		-		YES		-		YES	
FIRE TEST NUMBER	UL DES U415 (A)		UL DES U415 (A)		UL DES U415 (A)		UL DES U415 (A)		UL DES U415 (A)		UL DES U415 (A)	

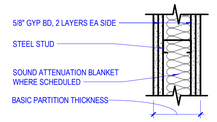
F

	F3_	STC	F4_	STC	F5_	STC	F6_	STC	F7_	STC	F8_	STC	F9_	STC	F10_	STC
1-HR RATED WITH GYP BD TO STRUCTURE ABOVE	F30		F40													
NON-RATED WITH GYP BD TO STRUCTURE ABOVE	F31		F41		F51		F61		F71		F81		F91		F101	
NON-RATED WITH GYP BD TO 6" ABOVE CEILING	F32		F42		F52		F62		F72		F82		F92		F102	
NON-RATED WITH STUDS & GYP BD TO FINISHED CEILING	F33		F43		F53		F63		F73		F83		F93		F103	
STUD SIZE	2 1/2"		2 1/2"		3 5/8"		3 5/8"		4"		4"		6"		6"	
BASIC PARTITION THICKNESS	SEE PLAN		SEE PLAN		SEE PLAN		SEE PLAN		SEE PLAN		SEE PLAN		SEE PLAN		SEE PLAN	
ACOUSTICAL INSULATION	-		YES		-		YES		-		YES		-		YES	
FIRE TEST NUMBER	UL DES U420		UL DES U420		-		-		-		-		-		-	



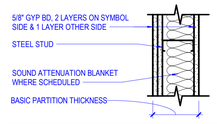
D

	D1_	STC	D2_	STC	D3_	STC	D4_	STC	D5_	STC	D6_	STC	D7_	STC	D8_	STC	D9_	STC
NON-RATED WITH GYP BD TO STRUCTURE ABOVE	D11		D21		D31		D41	34	D51		D61		D71		D81	37	D91	
NON-RATED WITH GYP BD TO 6" ABOVE CEILING	D12		D22		D32		D42		D52		D62		D72		D82		D92	
NON-RATED WITH STUDS & GYP BD TO FINISHED CEILING	D13		D23		D33		D43		D53		D63		D73		D83		D93	
STUD SIZE	2 1/2"		2 1/2"		3 5/8"		3 5/8"		4"		4"		6"		6"		1 1/2"	
BASIC PARTITION THICKNESS	3 1/8"		3 1/8"		4 1/4"		4 1/4"		4 5/8"		4 5/8"		6 5/8"		6 5/8"		2 1/8"	
ACOUSTICAL INSULATION	-		YES		-		YES		-		YES		-		YES		YES	



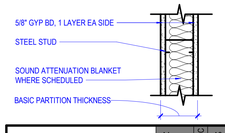
C

	C1_	STC	C2_	STC	C3_	STC	C4_	STC	C5_	STC	C6_	STC	C7_	STC	C8_	STC
2-HR RATED WITH GYP BD TO STRUCTURE ABOVE	C10		C20	55	C30	48	C40	56	C50		C60		C70		C90	57
NON-RATED WITH GYP BD TO STRUCTURE ABOVE	C11		C21	55	C31	48	C41	56	C51		C61		C71		C81	57
STUD SIZE	2 1/2"		2 1/2"		3 5/8"		3 5/8"		4"		4"		6"		6"	
BASIC PARTITION THICKNESS	5"		5"		6 1/8"		6 1/8"		6 1/2"		6 1/2"		8 1/2"		8 1/2"	
ACOUSTICAL INSULATION	-		YES		-		YES		-		YES		-		YES	
FIRE TEST NUMBER	UL DES U411		UL DES U411		UL DES U411		UL DES U411		UL DES U411		UL DES U411		UL DES U411		UL DES U411	



B

	B1_	STC	B2_	STC	B3_	STC	B4_	STC	B5_	STC	B6_	STC	B7_	STC	B8_	STC
1-HR RATED WITH GYP BD TO STRUCTURE ABOVE			B20	50	B30		B40		B50		B60		B70		B80	
NON-RATED WITH GYP BD TO STRUCTURE ABOVE	B11	41	B21	50	B31		B41		B51		B61		B71		B81	
NON-RATED WITH GYP BD TO 6" ABOVE CEILING	B12		B22		B32		B42		B52		B62		B72		B82	
NON-RATED WITH STUDS & GYP BD TO FINISHED CEILING	B13		B23		B33		B43		B53		B63		B73		B83	
STUD SIZE	2 1/2"		2 1/2"		3 5/8"		3 5/8"		4"		4"		6"		6"	
BASIC PARTITION THICKNESS	4 3/8"		4 3/8"		5 1/2"		5 1/2"		5 7/8"		5 7/8"		7 7/8"		7 7/8"	
ACOUSTICAL INSULATION	-		YES		-		YES		-		YES		-		YES	
FIRE TEST NUMBER	-		UL DES U494		UL DES U465		UL DES U465		UL DES U465		UL DES U465		UL DES U465		UL DES U465	



A

	A1_	STC	A2_	STC	A3_	STC	A4_	STC	A5_	STC	A6_	STC	A7_	STC	A8_	STC
1-HR RATED WITH GYP BD TO STRUCTURE ABOVE			A20	47	A30	40	A40	47	A50		A60		A70		A80	49
NON-RATED WITH GYP BD TO STRUCTURE ABOVE	A11		A21	47	A31	40	A41	47	A51		A61		A71		A81	49
NON-RATED WITH GYP BD TO 6" ABOVE CEILING	A12		A22		A32		A42		A52		A62		A72		A82	
NON-RATED WITH STUDS & GYP BD TO FINISHED CEILING	A13		A23		A33		A43		A53		A63		A73		A83	
STUD SIZE	2 1/2"		2 1/2"		3 5/8"		3 5/8"		4"		4"		6"		6"	
BASIC PARTITION THICKNESS	3 3/4"		3 3/4"		4 7/8"		4 7/8"		5 1/4"		5 1/4"		7 1/4"		7 1/4"	
ACOUSTICAL INSULATION	-		YES		-		YES		-		YES		-		YES	
FIRE TEST NUMBER	-		UL DES U494		UL DES U465		UL DES U465		UL DES U465		UL DES U465		UL DES U465		UL DES U465	

INTERIOR PARTITION CHARTS GENERAL NOTES

PARTITION TYPE GENERAL NOTES

1. NOT ALL PARTITION TYPES SHOWN ARE UTILIZED.
2. PARTITION TYPE, FIRE-RESISTANCE RATING AND STC RATING INDICATED FOR A GIVEN PARTITION ARE TO BE CONTINUOUS FOR THE LENGTH AND HEIGHT OF THAT PARTITION UNLESS OTHERWISE NOTED.
3. CONSTRUCT FIRE-RESISTANCE RATED PARTITIONS BEFORE NON-RATED. ABUT NON-RATED PARTITIONS INTO RATED PARTITIONS.
4. ISOLATE NON-LOAD-BEARING FRAMING FROM STRUCTURAL ELEMENTS TO PREVENT THE TRANSFER OF LOAD TO PARTITION FRAMING. UNLESS OTHERWISE NOTED, STOP VERTICAL STUDS ½" BELOW TOP OF CEILING RUNNER (TOP TRACK) TO ALLOW FOR VERTICAL DEFLECTION. DO NOT ATTACH STUDS OR GYPSUM BOARD TO CEILING RUNNER (TOP TRACK). THIS MAY ALSO BE ACHIEVED BY UTILIZING PROPRIETARY SYSTEMS DESCRIBED IN THE SPECIFICATIONS.
5. PROVIDE DOUBLE-STUD FRAMING AT JAMBS OF ALL PARTITION OPENINGS.
6. WHERE CONTROL JOINTS ARE REQUIRED BASED UPON SPECIFIED FREQUENCY, AND ARE NOT SHOWN ON INTERIOR ELEVATIONS, LOCATE CONTROL JOINTS ON BOTH STRIKE AND HINGE SIDES OF DOORS. WHEN PROVIDING CONTROL JOINTS AT DOORS DOES NOT MEET THE SPECIFIED FREQUENCY, PROVIDE DOUBLE-STUD CONTROL JOINT CONSTRUCTION AND VERIFY LOCATION WITH THE ARCHITECT PRIOR TO PROCEEDING.
7. PROVIDE SHEET METAL BLOCKING/BACKING FOR WALL MOUNTED ITEMS SPECIFIED OR SHOWN IN THE DRAWINGS.
8. SHADED TYPES INDICATE A PARTITION TYPE THAT IS NOT USED.

FIRE-RESISTANCE RATED PARTITIONS (THE FOLLOWING NOTES APPLY TO ALL PARTITIONS INDICATED TO HAVE A FIRE-RESISTANCE RATING.)

1. PROVIDE PERMANENTLY STENCILED IDENTIFICATION ABOVE THE CEILING AT 4'-0" OC ON ALL FIRE-RESISTANCE RATED PARTITIONS. THE IDENTIFICATION SHALL BE A MINIMUM OF 4" HIGH AND READ AS FOLLOWS: "FIRE AND SMOKE BARRIER – PROTECT ALL OPENINGS".
2. FIRE-RESISTANCE RATED PARTITIONS SHALL BE CONSTRUCTED FROM THE TOP OF NON-FINISHED FLOOR TO THE UNDERSIDE OF THE FLOOR OR ROOF STRUCTURE ABOVE.
3. THROUGH-PENETRATIONS IN FIRE-RESISTANCE RATED PARTITIONS SHALL BE SEALED WITH MATERIALS AND ASSEMBLIES NECESSARY TO MAINTAIN THE REQUIRED FIRE-RESISTANCE RATING.

ACOUSTICAL PARTITIONS (THE FOLLOWING NOTES APPLY TO ALL PARTITIONS DESIGNATED TO HAVE EITHER SOUND ATTENUATION BLANKETS OR A SOUND TRANSMISSION CLASS (STC) RATING.)

1. SEAL PARTITIONS AT ENTIRE PERIMETER WITH NON-HARDENING ACOUSTICAL SEALANT.
2. SOUND ATTENUATION BLANKETS ARE TO FILL THE DEPTH OF THE FRAMING CAVITY UNLESS OTHERWISE NOTED.
3. DO NOT COMPRESS SOUND ATTENUATION BLANKETS AT BLOCKING OR RECESSED ITEMS.
4. SEAL ALL WALL INTERSECTIONS AND CONTROL JOINTS WITH NON-HARDENING ACOUSTICAL SEALANT.
5. SEAL ALL CONDUIT, STRUCTURAL, DUCT AND PIPE PENETRATIONS WITH NON-HARDENING ACOUSTICAL SEALANT.
6. PROVIDE ACOUSTICAL PADS AROUND ANY ITEMS PENETRATING THE FACE OF PARTITION, INCLUDING ELECTRICAL AND TECHNOLOGY JUNCTION OR DEVICE BOXES.
7. ELECTRICAL/TECHNOLOGY BOXES ON OPPOSITE SIDES OF A PARTITION ARE TO BE SEPARATED BY A MINIMUM OF 1 STUD SPACE.

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REGISTERED ARCHITECT PHILIP J. CUNNINGHAM No. 50258 BOSTON COMMONWEALTH OF MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

PARTITION TYPE CHARTS

SHEET NUMBER

A61-01

CONSTRUCTION DOCUMENTS 12/19/25

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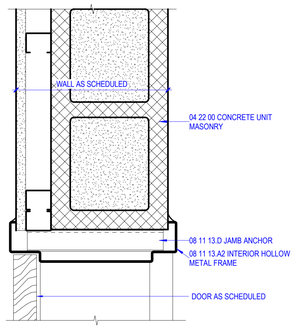
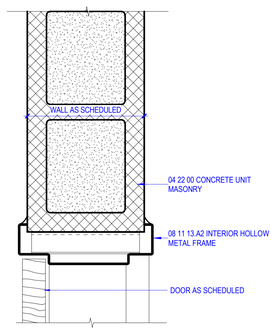
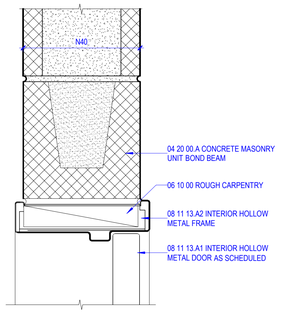


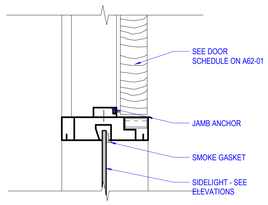
16 TYP DOOR JAMB DETAIL @ FURRED CMU WALL
SCALE 3" = 1'-0"



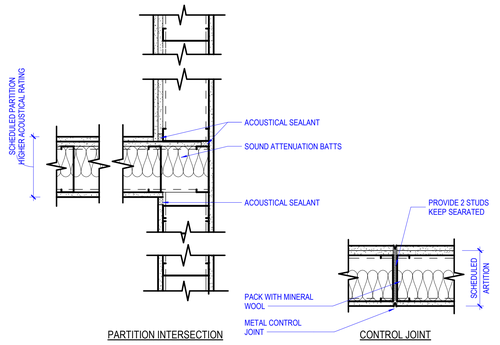
15 TYP DOOR JAMB DETAIL @ CMU WALL
SCALE 3" = 1'-0"



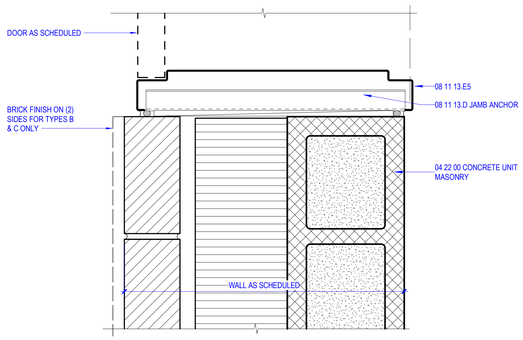
12 TYP DOOR HEAD @ INT CMU
SCALE 3" = 1'-0"



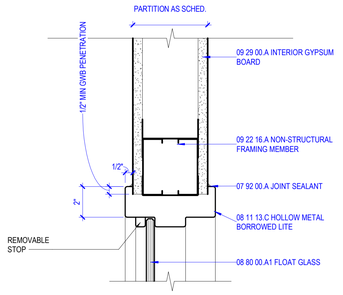
8 TYP. DOOR JAMB @ SIDELIGHT
SCALE 3" = 1'-0"



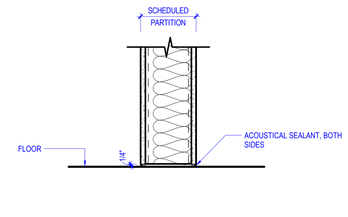
4 ACOUSTICAL PARTITION PLAN DETAILS
SCALE 1 1/2" = 1'-0"



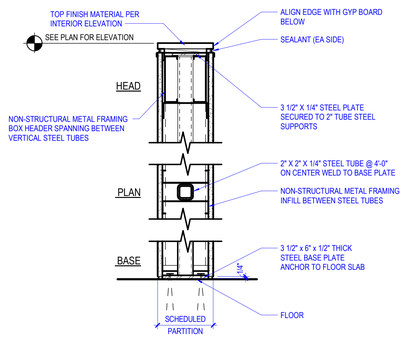
14 TYP. HM DOOR JAMB DETAIL @ CMU/BRICK
SCALE 3" = 1'-0"



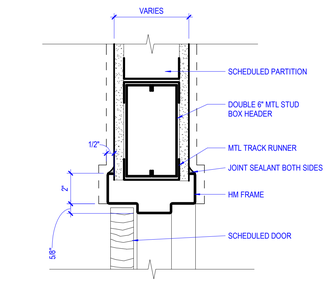
11 TYP SIDELIGHT HEAD DETAIL @ STUD WALL
SCALE 3" = 1'-0"



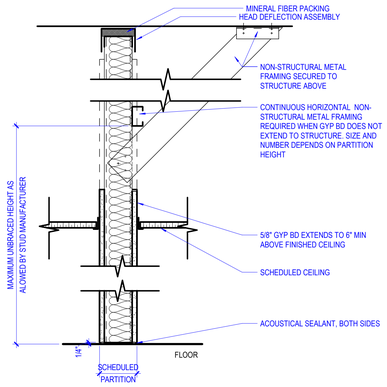
7 ACOUSTICAL PARTITION @ FLOOR
SCALE 1 1/2" = 1'-0"



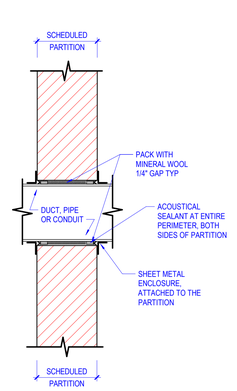
3 PARTIAL HEIGHT PARTITION SECTION
SCALE 1 1/2" = 1'-0"



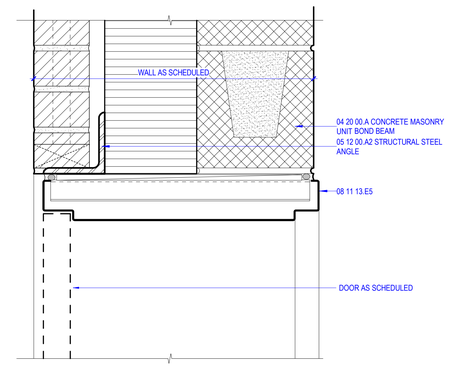
10 TYP HM DOOR HEAD DETAIL @ STUD WALL
SCALE 3" = 1'-0"



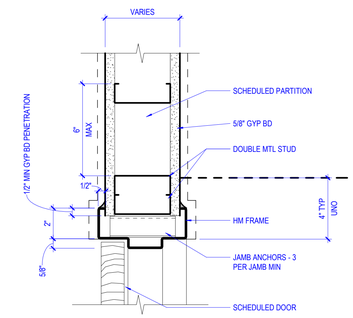
6 PARTITION SECTION
SCALE 1 1/2" = 1'-0"



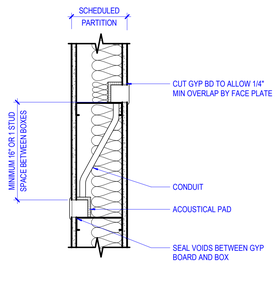
2 ACOUSTICAL SLEEVE SECTION
SCALE 1 1/2" = 1'-0"



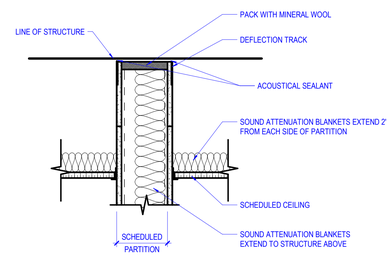
13 DOOR HEAD DETAIL @ EXTERIOR STUD WALL
SCALE 3" = 1'-0"



9 TYP. DOOR JAMB DETAIL @ STUD WALL
SCALE 3" = 1'-0"



5 ACOUSTICAL PARTITION PLAN DETAIL
SCALE 1 1/2" = 1'-0"



1 ACOUSTICAL PARTITION @ CEILING
SCALE 1 1/2" = 1'-0"

Perkins&Will

225 Franklin Street, Suite 700
Boston, MA 02110
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www.perkinswill.com

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ENERGY MODEL
ANDELMANLELEK
1408 PROVIDENCE HWY, NORWOOD, MA 02062

REGISTERED ARCHITECT — PHILIP J. CUNNIFF — No. 50258 — BOSTON — COMMONWEALTH OF MASSACHUSETTS

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

PARTITION DETAILS

SHEET NUMBER

A61-50

CONSTRUCTION DOCUMENTS 12/19/25

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12/19/2025 2:04:28 PM Autodesk Docs://City of Worcester - South Division Firehouse/ARCH_City of Worcester_South Division Firehouse.rvt

DOOR SCHEDULE

MARK	To Room: Number	MARK	FIRE RATING	DOOR SIZE W	DOOR SIZE HT	DOOR SIZE THK	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	FRAME DETAILS HEAD	FRAME DETAILS JAMB	HARDWARE SET NUMBER	REMARKS
DOOR NO		ROOM NAME														
LEVEL 01																
101.2	101	SCBA FILL	-	3' - 6"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
102.2	102	YARD STORAGE	-	3' - 6"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
102a	102	YARD STORAGE	-	3' - 6"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	19.0	
103	103	COMPRESSOR ROOM	-	5' - 0"	7' - 10"	0' - 1 3/4"	FF	HM	PNT3	D	HM	PNT3	12/A61-50	15/A61-50	25.0	STC 35-40
104	104	EMS STO	-	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
105	105	DEPT STORAGE	-	3' - 8"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
106.1	106	TURN OUT GEAR	-	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
106.2	106	TURN OUT GEAR	-	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
107	107	STORAGE ROOM 1&2	-	3' - 8"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	10.0	
107a	107	STORAGE ROOM 1&2	-	3' - 0"	7' - 0"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	19.0	
108	108	BAY WC	-	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	10.0	
109	109	BAY CUSTODIAL	-	3' - 8"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	21.0	
110	110	SCBA SHOP	-	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
111.1	121	CORRIDOR	60	5' - 0"	7' - 10"	0' - 1 3/4"	FF	HM	PNT1	D	HM	PNT1	10/A61-50	9/A61-50	23.0	STC 35-40
111.2	111	MAIN ELEC	90	3' - 0"	7' - 0"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	22.0	
112.1	121	CORRIDOR	90	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	22.0	STC 35-40
112.2	112	EMERGENCY ELEC	90	3' - 0"	7' - 0"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	22.0	
113.1	113	EXERCISE	-	3' - 0"	7' - 10"	0' - 1 3/4"	FG	HM	PNT7	S1L1	HM	PNT7	10/A61-50	9/A61-50	20.0	STC 35-40
114	114	WATER SERVICE	-	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	19.0	STC 35-40
115.1	115	TRAINING ROOM	-	3' - 0"	8' - 0"	0' - 1 3/4"	I	AL	PNT11	S1L1	AL	PNT11	10&11/A61-50	8&9/A61-50	20.0	STC 35-40
115.2	115	TRAINING ROOM	-	3' - 0"	8' - 0"	0' - 1 3/4"	I	AL	PNT11	S1L1	AL	PNT11	10&11/A61-50	8&9/A61-50	20.0	STC 35-40
115a	115	TRAINING ROOM	60	5' - 0"	7' - 8"	0' - 1 3/4"	FF	WD	SEAL	D	HM	PNT3	10/A61-50	9/A61-50	18.0	
116	116	WC 2	-	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	7/A41-04	16/A61-50	10.0	
117	117	WC 1	-	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	7/A41-04	16/A61-50	10.0	
118	118	WORK ROOM	-	5' - 0"	7' - 10"	0' - 1 3/4"	FF	HM	PNT3	D	HM	PNT3	12/A61-50	15/A61-50	25.0	
119	119	DECON	20	3' - 8"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	7.0	
119a	119A	PPE DRYING ROOM	20	3' - 0"	7' - 0"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
119C.1	119C	SHOWER LOCKERS	-	3' - 0"	7' - 0"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	15.0	
119C.2	119C	SHOWER LOCKERS	20	3' - 0"	7' - 0"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	15.0	
119D.1	119D	SHOWERS	-	2' - 6"	7' - 0"	0' - 1 3/4"	F	FB	-	S	FB	-	12/A61-50	15/A61-50	24.0	
119D.2	119D	SHOWERS	-	2' - 6"	7' - 0"	0' - 1 3/4"	F	FB	-	S	FB	-	12/A61-50	15/A61-50	24.0	
119D.3	119D	SHOWERS	-	2' - 6"	7' - 0"	0' - 1 3/4"	F	FB	-	S	FB	-	12/A61-50	15/A61-50	24.0	
119D.4	119D	SHOWERS	-	2' - 6"	7' - 0"	0' - 1 3/4"	F	FB	-	S	FB	-	12/A61-50	15/A61-50	24.0	
119E	119E	CTL RM	60	3' - 0"	7' - 0"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	19.0	
120	120	SHOWER WC	-	3' - 0"	7' - 0"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	10.0	
121.1	121.1	CLOSET	-	5' - 0"	7' - 8"	0' - 1 3/4"	FF	WD	SEAL	S	MW	PNT3	7/A52-01	12/A52-01	18.0	BLIND CUT DOORS - REFER TO A52-01
121.2	215.4	CLOSET	-	5' - 0"	7' - 8"	0' - 1 3/4"	FF	WD	SEAL	S	MW	PNT3	7/A52-01	12/A52-01	18.0	BLIND CUT DOORS - REFER TO A52-01
121.3	121.2	CLOSET	-	5' - 0"	7' - 8"	0' - 1 3/4"	FF	WD	SEAL	S	MW	PNT3	7/A52-01	12/A52-01	18.0	BLIND CUT DOORS - REFER TO A52-01
121.4	121D	ICE	-	2' - 6"	7' - 0"	0' - 1 3/4"	F	HM	PNT1	D	HM	PNT1	10/A61-50	9/A61-50	18.0	
121a.3	121A	VESTIBULE	-	6' - 0"	7' - 10"	0' - 1 3/4"	FGFG	AL	PNT11		AL	PNT11		16/A61-50		
121b.1	121B	VEST 1	-	3' - 0"	7' - 10"	0' - 1 3/4"	N	HM	PNT1	S	HM	PNT1	12/A61-50	15/A61-50	7.0	
121b.2	121B	VEST 1	-	3' - 0"	7' - 10"	0' - 1 3/4"	N	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	8.0	
121c.1	121C	VEST 2	-	3' - 0"	7' - 10"	0' - 1 3/4"	N	HM	PTD	S	HM	PNT1	12/A61-50	15/A61-50	7.0	
121c.2	121C	VEST 2	-	3' - 0"	7' - 10"	0' - 1 3/4"	N	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	8.0	
122	122	CUSTODIAL	-	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	21.0	
123	123	WATCH ROOM	-	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	20.0	
123a	123A	BUNK	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
S-1.1	S-A1	STAIR A	60	1' - 6"	10' - 6"	0' - 3"	AC	HM	PNT1	S	HM	PNT8	1/A41-01	1/A41-01	-	ACCORDION FIRE DOOR - POCKET OPENING
S-B1.2	S-B1	STAIR B	60	3' - 0"	7' - 10"	0' - 1 3/4"	N	HM	PNT8	S	HM	PNT8	12/A61-50	15/A61-50	16.0	
S-B1.3			-	3' - 8"	3' - 0"	0' - 1 3/4"	BG	-	-	-	-	-			-	EGRESS BARRIER GATE
S-C1.2	S-C1	STAIR C	60	3' - 0"	7' - 10"	0' - 1 3/4"	N	HM	PNT8	S	HM	PNT8	12/A61-50	15/A61-50	7.0	
S-C1.3			-	3' - 8"	3' - 0"	0' - 1 3/4"	BG	-	-	-	-	-			-	EGRESS BARRIER GATE
LEVEL 02																
200F	200	CORRIDOR	-	6' - 0"	7' - 10"	0' - 1 3/4"	FF	HM	PNT3	D	HM	PNT3	10/A61-50	9/A61-50		
201	201	COMPANY OFFICER	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	SEAL	S1L1	HM	PNT3	10&11/A61-50	8&9/A61-50	9.0	STC 35-40
201.1	201.1	CLO	-	5' - 0"	7' - 10"	0' - 1 3/4"	S	WD	SEAL	D	HM	PNT3	10/A61-50	9/A61-50	13.0	
201a	201	COMPANY OFFICER		3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	SEAL	S	HM	PNT3	10/A61-50	9/A61-50	11.0	
202	202	BUNK ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	PNT1	SEAL	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
203	203	BUNK ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
204	204	BUNK ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
205	205	BUNK ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
206	206	BUNK ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
207	207	BUNK ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
208.1	208	COMPANY OFFICER		3' - 0"	7' - 10"	0' - 1 3/4"	FG	WD	PNT7	S	HM	PNT7	10/A61-50	9/A61-50	9.0	STC 35-40
208.2	208.1	CLO	-	4' - 0"	7' - 10"	0' - 1 3/4"	S	WD	SEAL	D	HM	PNT3	10/A61-50	9/A61-50	13.0	
208a	208A	C/O BUNK ROOM		3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	
209	209	BUNK ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
210	210	BUNK ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
211	211	BUNK ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
212	212	BUNK ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
213.1	213	COMPANY OFFICER		3' - 0"	7' - 10"	0' - 1 3/4"	FG	HM	PNT7	S	HM	PNT7	10&11/A61-50	8&9/A61-50	9.0	STC 35-40
213.2	213.1	CLO	-	4' - 0"	7' - 10"	0' - 1 3/4"	S	WD	SEAL	D	HM	PNT3	10/A61-50	9/A61-50	13.0	STC 35-40
213A.1	213	COMPANY OFFICER		3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	
214.1	214	DISTRICT CHIEF OFFICE		3' - 0"	7' - 10"	0' - 1 3/4"	FG	HM	PNT7	S	HM	PNT7	10/A61-50	9/A61-50	9.0	
214.2	214.1	CLO	-	5' - 0"	7' - 10"	0' - 1 3/4"	S	WD	SEAL	S	HM	PNT3	10/A61-50	9/A61-50	13.0	
214A.1	214	DISTRICT CHIEF OFFICE	-	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	9.0	STC 35-40
214B.1	214B	CORRIDOR	-	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	12.0	
214B.2	214B	CORRIDOR	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	12.0	
214C	214B	CORRIDOR	-	3' - 0"	7' - 0"	0' - 1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	10.0	
215.1	215	DISTRICT CHIEF OFFICE	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT7	S1L1	HM	PNT7	10&11/A61-50	8&9/A61-50	9.0	STC 35-40
215.2	215.1	CLO	-	6' - 0"	7' - 10"	0' - 1 3/4"	S	WD	SEAL	D	HM	PNT3	10/A61-50	9/A61-50	13.0	
215a	215	DISTRICT CHIEF OFFICE	-	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
216	216	STUDY	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT7	S1L1	HM	PNT7	10/A61-50	9/A61-50	9.0	STC 35-40
217	217	SERVER	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	14.0	
218	218	ADA WC	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	10.0	
219	219	ADA WC	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	10.0	
220	220	ADA WC	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	10.0	
221	221	CUSTODIAL	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	21.0	
222.1	222	DAY ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	FG	HM	PNT7	S1L1	HM	PNT7	10/A61-50	9/A61-50	16.0	STC 35-40
222.2	222	DAY ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	FG	HM	PNT7	S1L1	HM	PNT7	10/A61-50	9/A61-50	16.0	STC 35-40
222a	222A	ELEC	-	6' - 4"	7' - 10"	0' - 1 3/4"	FF	HM	PNT3	D	HM	PNT3	10/A61-50	9/A61-50	17.0	
223	223	ADA WC	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	10.0	
224	224	ADA WC	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	10.0	
225	225	LAUNDRY	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	20.0	STC 35-40
226.2	226	KITCHEN/ DINING	20	3' - 0"	7' - 10"	0' - 1 3/4"	FG	HM	PNT7	S1L1	HM	PNT7	10&11/A61-50	8&9/A61-50	20.0	
226.3	226	KITCHEN/ DINING	-	3' - 0"	7' - 10"	0' - 1 3/4"	FG	HM	PNT7	S1L2	HM	PNT7	10&11/A61-50	8&9/A61-50	20.0	STC 35-40
227.1	227	COMPANY OFFICER		3' - 0"	7' - 10"	0' - 1 3/4"	FG	HM	PNT7	S	HM	PNT7	10/A61-50	9/A61-50	9.0	STC 35-40
227.2	227.1	CLO	-	5' - 0"	7' - 10"	0' - 1 3/4"	S	WD	SEAL	D	HM	PNT3	10/A61-50	9/A61-50	13.0	
227A.1	227	COMPANY OFFICER	-	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	
228	228	BUNK ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
229	229	BUNK ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
230	230	BUNK ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
231	231	BUNK ROOM	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
232.1	232	COMPANY OFFICER	20	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT7	S1L1	HM	PNT7	10/A61-50	9/A61-50	9.0	STC 35-40
232.2	232.1	CLO	-	5' - 0"	7' - 10"	0' - 1 3/4"	S	WD	SEAL	D	HM	PNT3	10&11/A61-50	8&9/A61-50	13.0	
232A.1	232	COMPANY OFFICER	-	3' - 0"	7' - 10"	0' - 1 3/4"	F	WD	PNT1	S	HM	PNT1	7/A41-04	16/A61-50	11.0	
FP-1.1	100	APPARATUS BAY	20	3' - 0"	7' - 10"	0' - 1 3/4"	N	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	16.0	
FP-1.2	100	APPARATUS BAY	-	3' - 0"	7' - 10"	0' - 1 3/4"	FG	AL	PNT8	S	AL	PNT8	7/A41-04	16/A61-50	8.0	
FP-2.1	100	APPARATUS BAY	20	3' - 0"	7' - 10"	0' - 1 3/4"	N	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	16.0	
FP-2.2	100	APPARATUS BAY	-	3' - 0"	7' - 10"	0' - 1 3/4"	FG	AL	PNT8	S	AL	PNT8	7/A41-04	16/A61-50	8.0	
FP-3.1	100	APPARATUS BAY	20	3' - 0"	7' - 10"	0' - 1 3/4"	N	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	16.0	
FP-3.2	100	APPARATUS BAY	-	3' - 0"	7' - 10"	0' - 1 3/4"	FG	AL	PNT8	S	AL	PNT8	7/A41-04	16/A61-50	8.0	
S-A2.1	226	KITCHEN/ DINING	60	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT7	S	HM	PNT7	10/A61-50	9/A61-50	16.0	
S-A2.2	S-A2	STAIR A	60	3' - 0"	7' - 10"	0' - 1 3/4"	F	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	16.0	
S-B2	S-B2	STAIR B	60	3' - 0"	7' - 10"	0' - 1 3/4"	N	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	16.0	
S-C2	S-C2	STAIR C	60	3' - 0"	7' - 10"	0' - 1 3/4"	N	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	16.0	

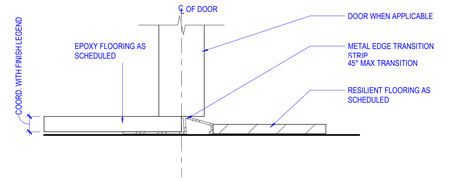
DOOR SCHEDULE - EXTERIOR

MARK	To Room: Number	MARK	FIRE RATING	DOOR SIZE W	DOOR SIZE HT	DOOR SIZE THK	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	FRAME DETAILS HEAD	FRAME DETAILS JAMB	HARDWARE SET NUMBER	REMARKS
DOOR NO		ROOM NAME														
LEVEL 01																
100.1	100	APPARATUS BAY		13' - 4"	14' - 0"	0' - 3"	OH1	STEEL	PNT11	-	STEEL	PNT11	2/A32-11	6&8/A33-01		EXTERIOR
100.2	100	APPARATUS BAY		13' - 4"	14' - 0"	0' - 3"	OH1	STEEL	PNT11	-	STEEL	PNT11	2/A32-11	6&8/A33-01		EXTERIOR
100.3	100	APPARATUS BAY		13' - 4"	14' - 0"	0' - 3"	OH1	STEEL	PNT11	-	STEEL	PNT11	2/A32-11	6&8/A33-01		EXTERIOR
100.4	100	APPARATUS BAY		13' - 4"	14' - 0"	0' - 3"	OH1	STEEL	PNT11	-	STEEL	PNT11	2/A32-11	6&8/A33-01		EXTERIOR
100.5	100	APPARATUS BAY		13' - 4"	14' - 0"	0' - 3"	OH1	STEEL	PNT11	-	STEEL	PNT11	2/A32-11	6&8/A33-01		EXTERIOR
100.6	100	APPARATUS BAY		13' - 4"	14' - 0"	0' - 3"	OH1	STEEL	PNT11	-	STEEL	PNT11	2/A32-11	6&8/A33-01		EXTERIOR
100.7	100	APPARATUS BAY		3' - 0"	7' - 10"	0' - 1 3/4"	H	ALUM	PNT11	-	ALUM	PNT11	13/A61-50	5/A33-01	6.0	EXTERIOR
100.8	100	APPARATUS BAY		3' - 0"	7' - 10"	0' - 1 3/4"	H	ALUM	PNT11	-	ALUM	PNT11	6/A32-13	SIM 10/A33-02	6.0	EXTERIOR
100.9	100	APPARATUS BAY		3' - 0"	7' - 10"	0' - 1 3/4"	H	ALUM	PNT11	-	ALUM	PNT11	6/A32-13	8/A33-01	4.0	EXTERIOR
101.1	101	SCBA FILL		3' - 0"	7' - 10"	0' - 1 3/4"	CCC	HM	PNT3	ST	HM	PNT3	SIM 13/A61-50	14/A61-50	6.0	EXTERIOR; W/ TRANSOM, SEE 4/A20-01
102.1	102	YARD STORAGE		6' - 0"	8' - 8"	0' - 3"	OH2	HM	PNT3	-	HM	PNT3	13/A61-50	7/A33-01		EXTERIOR
113.2	113	EXERCISE	-	3' - 0"	8' - 0"	0' - 1 3/4"	H	AL	PNT11	S	AL	PNT11	6/A32-13	8/A33-01		POSITIONING SENSOR, EXTERIOR
121a.1	121A	VESTIBULE		6' - 0"	7' - 10"	0' - 1 3/4"	FGFG	ALUM	PNT11	-	ALUM	PNT11	6/A32-13	8/A33-01	1.0	EXTERIOR
121a.2	121A	VESTIBULE		3' - 0"	7' - 10"	0' - 1 3/4"	H	ALUM	PNT11	-	ALUM	PNT11	6/A32-13	8/A33-01	2.0	EXTERIOR
S-B1.1	SB-1	STAIR B		3' - 0"	7' - 10"	0' - 1 3/4"	EF	HM	PNT3	S	HM	PNT3	13/A61-50	14/A61-50	4.0	EXTERIOR
S-C1.1	SC-1	STAIR C		3' - 0"	7' - 10"	0' - 1 3/4"	EF	HM	PNT3	S	HM	PNT3	13/A61-50	14/A61-50	4.0	EXTERIOR
T-01	T-1	TRAINING TOWER		3' - 4"	4' - 7 3/4"	0' - 0"	EF	HM	PNT3	S	HM	PNT1	11/A41-03	7/A41-03		EXTERIOR
T-02	T-1	TRAINING TOWER		3' - 4"	4' - 7 3/4"	0' - 0"	EF	HM	PNT3	S	HM	PNT3	11/A41-03	7/A41-03		EXTERIOR
T-03	T-1	TRAINING TOWER		3' - 4"	4' - 7 3/4"	0' - 0"	EF	HM	PNT3	S	HM	PNT3	11/A41-03	7/A41-03		EXTERIOR
T-04	T-1	TRAINING TOWER		3' - 3 3/4"	4' - 7 1/2"	0' - 0"	EF	HM	PNT3	S	HM	PNT3	11/A41-03	7/A41-03		EXTERIOR
T-05	T-1	TRAINING TOWER		3' - 3 3/4"	4' - 7 1/2"	0' - 0"	EF	HM	PNT3	S	HM	PNT3	11/A41-03	7/A41-03		EXTERIOR
T-1.1	T-1	TRAINING TOWER		3' - 4"	8' - 0"	0' - 0"	EF	HM	PNT3	S	HM	PNT3	11/A41-03	7/A41-03		EXTERIOR
LEVEL 02																
226.1	226	KITCHEN/ DINING		3' - 0"	7' - 10"	0' - 1 3/4"	CW1	ALUM	PNT11	ST	ALUM	PNT11	6/A32-13	10/A33-02		EXTERIOR
ROOF																
T3.1	T-1	TRAINING TOWER		3' - 0"	7' - 10"	0' - 1 3/4"	EF	HM	PNT3	-	HM	PNT3	15/A61-03	7/A41-03		EXTERIOR

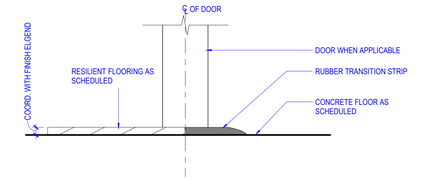
FLOOR TRANSITION GENERAL NOTES

HEIGHT CHANGE RULES
1. UP TO 1/4 INCH: NO ADDITIONAL TREATMENT IS REQUIRED FOR A VERTICAL CHANGE.
2. 1/4 TO 1/2 INCH: THE EDGE MUST BE BEVELED AT A SLOPE NOT STEEPER THAN 1:2 (A 1-TO-2 SLOPE MEANS FOR EVERY 1 INCH OF VERTICAL RISE, THERE IS 2 INCHES OF HORIZONTAL RUN).
3. OVER 1/2 INCH: THE CHANGE MUST BE HANDLED AS A RAMP, FOLLOWING ALL APPLICABLE RAMP SLOPE AND LANDING REGULATIONS.

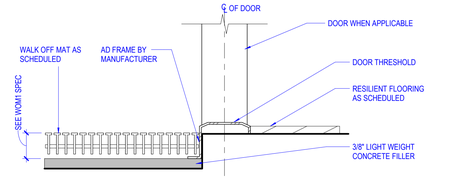
FLOOR TRANSITION DETAILS



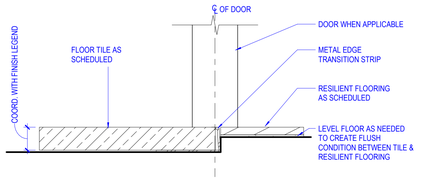
4 EPOXY TO RESILIENT TRANSITION DETAIL
SCALE 12" = 1'-0"



3 RESILIENT TO CONCRETE TRANSITION DETAIL
SCALE 12" = 1'-0"



2 WOM TO RESILIENT TRANSITION DETAIL
SCALE 12" = 1'-0"



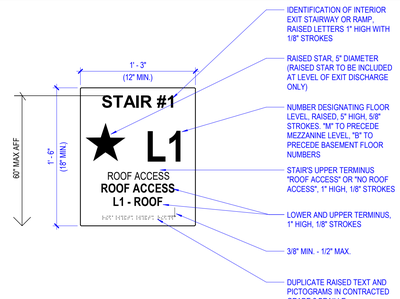
1 TILE TO RESILIENT TRANSITION DETAIL
SCALE 12" = 1'-0"

DOOR SCHE

SIGN TYPE	DESIGNATION
TE-EX	EXIT
TE-TO	TO EXIT
TE-NE	NOT AN EXIT
TE-RA	ROOF ACCESS

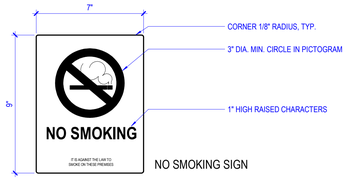
TACTILE EGRESS SIGN DETAIL NOTES:
1. SIGNAGE GENERAL NOTES FOR FURTHER NOTES & REQUIREMENTS
2. SIGNS THAT IDENTIFY EXITS SHALL BE LOCATED ON THE APPROACH SIDE OF THE DOOR AS ONE EXITS THE ROOM OR SPACE.

13 SIGN TYPE 'TE'
SCALE 3" = 1'-0"



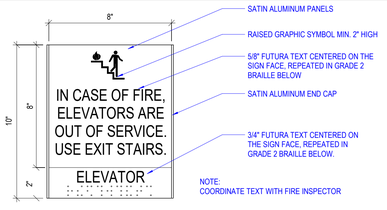
NOTES:
1. WHERE SIGN CANNOT BE LOCATED AS SHOWN IN PLANS OR DETAIL, CONFIRM LOCATION WITH ARCHITECT IN FIELD PRIOR TO PLACEMENT.

12 SIGN TYPE 'FID'
SCALE 1 1/2" = 1'-0"



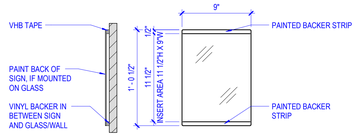
NO SMOKING SIGN

11 SIGN TYPE 'NS'
SCALE 3" = 1'-0"



IN CASE OF FIRE ELEVATOR SIGN

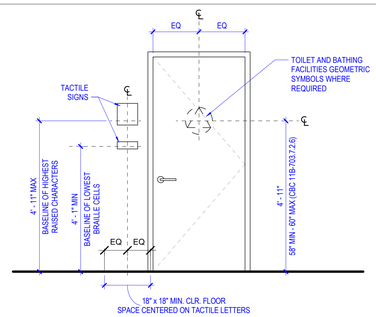
10 SIGN TYPE 'ICF'
SCALE 3" = 1'-0"



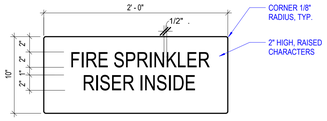
NOTES:
1. 1/8" ACRYLIC BACKER PANEL WITH 1/16" CLEAR NON-GLARE ACRYLIC FACE MOUNTED WITH 1/16" WIDE SLOT.
2. UPPER 1/2" AND LOWER 1/2" BANDS OF CLEAR ACRYLIC TO BE PAINTED TO MATCH BACKER.
3. INSERT BY OWNER
4. SIGNS MOUNT TO WALL SURFACE WITH DOUBLE-FACED TAPE

8 SIGN TYPE 'MISC'
SCALE 1 1/2" = 1'-0"

SIGNAGE MOUNTING



SIGNAGE MOUNTING LOCATIONS DETAIL NOTES:
1. WHERE A TACTILE SIGN IS PROVIDED AT A DOOR, THE SIGN SHALL BE LOCATED ALONGSIDE THE DOOR AT THE LATCH SIDE.
2. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH ONE ACTIVE LEAF. THE SIGN SHALL BE LOCATED ON THE INACTIVE LEAF.
3. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH TWO ACTIVE LEAFS, THE SIGN SHALL BE LOCATED TO THE RIGHT OF THE RIGHT HAND DOOR.
4. WHERE THERE IS NO WALL SPACE AT THE LATCH SIDE OF A SINGLE DOOR OR AT THE RIGHT SIDE OF DOUBLE DOORS, SIGNS SHALL BE LOCATED ON THE NEAREST ADJACENT WALL
5. SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18" MIN. BY 18" MIN., CENTERED ON THE TACTILE CHARACTERS, IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND 45 DEGREE OPEN POSITION. IMMEDIATELY NOTIFY THE GENERAL CONTRACTOR OF ANY OBSTRUCTIONS LOCATED IN THIS AREA INCLUDING, BUT NOT LIMITED TO, THERMOSTATS, SWITCHES, MONITORING EQUIPMENT, ETC.
6. WHERE PROVIDED, SIGNS IDENTIFYING PERMANENT ROOMS AND SPACES SHALL BE LOCATED AT THE ENTRANCE TO, AND OUTSIDE OF THE ROOM OR SPACE.
7. WHERE PROVIDED, SIGNS IDENTIFYING EXITS SHALL BE LOCATED AT THE EXIT DOOR WHEN APPROACHED IN THE DIRECTION OF EGRESS TRAVEL.
8. WHERE SIGNS CANNOT BE LOCATED AS SHOWN IN PLANS OR DETAILS, CONFIRM LOCATION WITH ARCHITECT IN FIELD PRIOR TO PLACEMENT

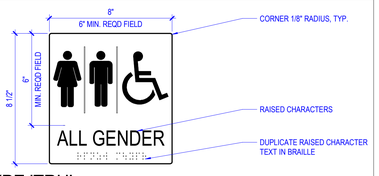


SIGN TYPE	DESIGNATION
TF-FS	FIRE SPRINKLER INSIDE
TF-AUTH	AUTHORIZED PERSONEL ONLY
TF-TTA	TRAINING TOWER ACCESS ONLY
TF-FDCTR	FDC FOR TRAINING PURPOSE ONLY MAIN BUILDING FDC LOCATED AT EAST SIDE

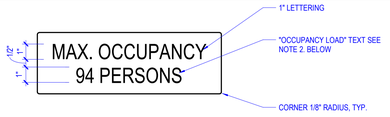
7 SIGN TYPE 'FR'
SCALE 3" = 1'-0"

(ISA) INTERNATIONAL SYMBOL OF ACCESSIBILITY PROPORTIONS
WHITE FIGURE ON BLUE BACKGROUND

6 SIGN TYPE 'ISA'
SCALE 3" = 1'-0"

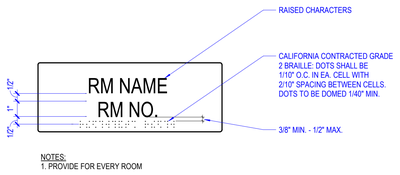


5 SIGN TYPE 'TRU'
SCALE 3" = 1'-0"



NOTES:
1. PROVIDE AT EXIT (S) ONLY.
2. OCCUPANCY LOAD AS DESIGNATED FOR ROOM. SEE CODE COMPLIANCE PLANS FOR OCCUPANCY.

4 SIGN TYPE 'MO'
SCALE 3" = 1'-0"

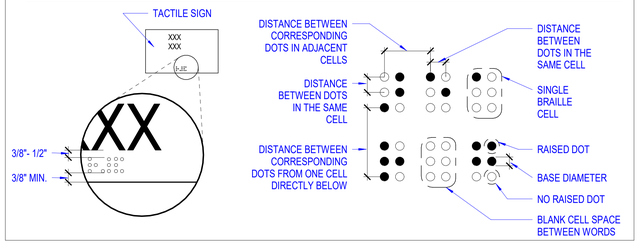


NOTES:
1. PROVIDE FOR EVERY ROOM

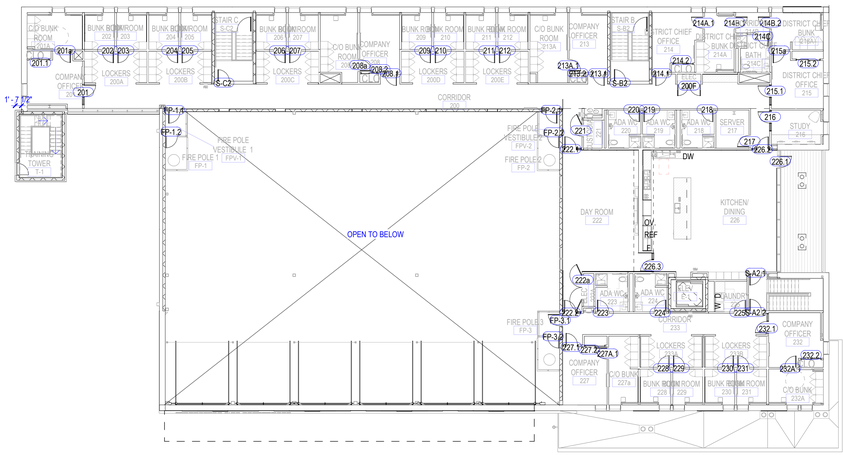
3 SIGN TYPE 'RID'
SCALE 3" = 1'-0"

BRAILLE MEASUREMENTS

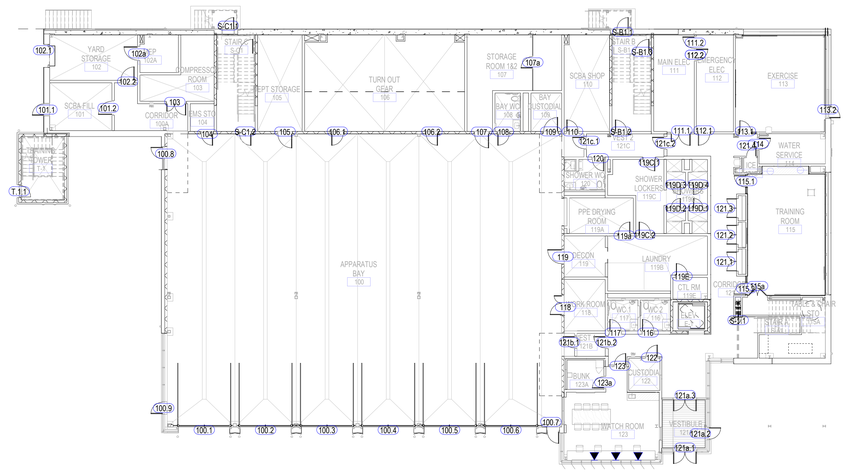
MEASUREMENT RANGE	MIN. TO MAX. IN INCHES
DOT BASE DIAMETER	0.059 (1.5 MM) TO 0.063 (1.6 MM)
DISTANCE BETWEEN TWO DOTS IN THE SAME CELL MEASURED CENTER TO CENTER	0.100 (2.5 MM)
DISTANCE BETWEEN CORRESPONDING DOTS IN ADJACENT CELLS MEASURED CENTER TO CENTER	0.300 (7.6 MM)
DOT HEIGHT	0.025 (0.6 MM) TO 0.037 (0.9 MM)
DISTANCE BETWEEN CORRESPONDING DOTS FROM ONE CELL DIRECTLY BELOW MEASURED CENTER TO CENTER	0.395 (10 MM) TO 0.400 (10.2 MM)



SIGNAGE TYPE KEY



2 LEVEL 02 FLOOR PLAN - SIGNAGE
SCALE 1/16" = 1'-0"



1 LEVEL 01 FLOOR PLAN - SIGNAGE
SCALE 1/16" = 1'-0"

SIGNAGE GENERAL NOTES

1. SIGNAGE CONTRACTOR TO COORDINATE AND INCORPORATE OWNER/CLIENT CORPORATE SIGNAGE STANDARDS WITH THESE REQUIREMENTS, IF APPLICABLE. CODE REQUIREMENTS TAKE PRECEDENCE OVER CORPORATE SIGNAGE STANDARDS. NOTIFY OWNER OF ANY CONFLICTS THAT ARISE BETWEEN CORPORATE STANDARDS AND CODE REQUIREMENTS PRIOR TO SUBMITTAL OF SHOP DRAWINGS AND SIGN FABRICATION.
2. ALL SIGNAGE IS TO CONFORM TO MAAB 521 CMR REQUIREMENTS FOR ACCESSIBLE SIGNAGE.
3. ALL CHARACTERS, PICTOGRAMS AND THE FIELD UPON WHICH THEY ARE PLACED SHALL BE OF A NON-GLARE FINISH AND SHALL CONTRAST WITH THEIR BACKGROUND, EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND.
4. INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA): WHERE THE ISA IS INDICATED IT SHALL CONFORM WITH THE PROPORTIONS OF THE SYMBOL AS DETAILED ON SHEET .
5. ALL SIGNS SHALL HAVE EASED EDGES WITH 1/8" MINIMUM. RADIUS CORNERS.
6. RAISED CHARACTERS, WHERE RAISED CHARACTERS ARE INDICATED THEY SHALL BE:
   A. DEPTH: RAISED 1/32" MINIMUM. ABOVE THEIR BACKGROUND
   B. CASE: CHARACTERS SHALL BE UPPERCASE
   C. STYLE: CHARACTERS SHALL BE SANS SERIF. CHARACTERS SHALL NOT BE IN ITALICS, OBLIQUE, SCRIPT, HIGHLY DECORATIVE, OR OF OTHER UNUSUAL FORMS.
   D. CHARACTER PROPORTIONS: CHARACTERS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 60 PERCENT MINIMUM AND 110 PERCENT MAXIMUM. OF THE HEIGHT OF THE UPPERCASE LETTER 'I'.
   E. CHARACTER HEIGHT: CHARACTER HEIGHT MEASURED VERTICALLY FROM THE BASELINE OF THE CHARACTER SHALL BE 5/8" MINIMUM AND 2" MAXIMUM BASED UPON THE HEIGHT OF THE UPPER CASE 'I'.
   F. STROKE THICKNESS: STROKE THICKNESS OF THE UPPERCASE LETTER "I" SHALL BE 15 PERCENT MAXIMUM OF THE HEIGHT OF THE CHARACTER.
   G. CHARACTER SPACING: CHARACTER SPACING SHALL BE MEASURED BETWEEN THE TWO CLOSEST POINTS OF ADJACENT RAISED CHARACTERS WITHIN A MESSAGE, EXCLUDING WORD SPACES. WHERE CHARACTERS HAVE RECTANGULAR CROSS SECTIONS, SPACING BETWEEN INDIVIDUAL RAISED CHARACTERS SHALL BE 1/8 INCH (3.2 MM) MINIMUM AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH MAXIMUM. WHERE CHARACTERS HAVE OTHER CROSS SECTIONS, SPACING BETWEEN INDIVIDUAL RAISED CHARACTERS SECTIONS, SPACING BETWEEN INDIVIDUAL RAISED CHARACTERS SHALL BE 1/16 INCH (1.6 MM) MINIMUM AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH MAXIMUM AT THE BASED OF THE CROSS SECTION, AND 1/8 INCH (3.2 MM) MINIMUM AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH MAXIMUM AT THE TOP OF THE CROSS SECTIONS. CHARACTERS SHALL BE SEPERATED FROM RAISED BORDERS AND DECORATIVE ELEMENTS 3/8 INCHES (9.5 MM) MINIMUM.
   H. LINE SPACING: SPACING BETWEEN THE BASELINES OF SEPARATE LINES OF RAISED CHARACTERS WITHIN A MESSAGE SHALL BE 135 PERCENT MINIMUM AND 170 PERCENT MAXIMUM OF THE RAISED CHARACTER HEIGHT.
   I. FORMAT: TEXT SHALL BE IN A HORIZONTAL FORMAT.
   J. BRAILLE: WHERE BRAILLE IS REQUIRED OR INDICATED IT SHALL BE CALIFORNIA CONTRACTED GRADE 2 BRAILLE:
   K. DIMENSIONS: BRAILLE DOTS SHALL HAVE A DOMED OR ROUNDED SHAPE & DIMENSIONS SHALL COMPLY WITH THE TABLE FOUND TO THE LEFT.
   L. CAPITALIZATION: THE INDICATION OF AN UPPERCASE LETTER OR LETTERS SHALL ONLY BE USED BEFORE THE FIRST WORD OF SENTENCES, PROPER NOUNS & NAMES, INDIVIDUAL LETTERS OF THE ALPHABET, INITIALS, AND ACRONYMS.
   M. POSITION: BRAILLE SHALL BE POSITIONED BELOW THE CORRESPONDING TEXT IN A HORIZONTAL FORMAT. FLUSH LEFT OR CENTERED. IF TEXT IS MULTI-LINED, BRAILLE SHALL BE PLACED BELOW THE ENTIRE TEXT. BRAILLE SHALL BE SEPARATED 3/8" MINIMUM AND ½" MAXIMUM FROM ANY OTHER TACTILE CHARACTERS AND 3/8" MINIMUM. FROM RAISED BORDERS & DECORATIVE ELEMENTS.

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PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ACCESSIBILITY COMPLIANCE - SIGNAGE

SHEET NUMBER

A63-01

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EQUIPMENT SCHEDULE

TAG	DESCRIPTION	MODEL	FINISH	COMMENTS	Install Code
E1	30" COOKTOP	RECESSED, COUNTER DEPTH		8 COOKING ZONE IN TOTAL, ADA COMPLIANT	1
E2	60" WALL RANGE HOOD	WALL MOUNTED	STAINLESS STEEL	ADA COMPLIANT	1
E3	30" ELECTRIC OVEN	RECESSED, COUNTER DEPTH	STAINLESS STEEL	ADA COMPLIANT	1
E4	FRENCH DOOR REFRIGERATOR, BOTTOM FREEZER	FREE STANDING, COUNTER DEPTH	STAINLESS STEEL		3
E5	ELECTRIC TOASTER	COUNTERTOP	STAINLESS STEEL		3
E6	MICROWAVE	RECESSED DRAWER	STAINLESS STEEL		1
E7	DISHWASHER	RECESSED, COUNTER DEPTH	STAINLESS STEEL	ADA COMPLIANT, QUIET OPERATION	1
E8	COFFEE BREWERS	COUNTERTOP			3
E9	WASHING MACHINE	FREE STANDING			3
E10	DRYER	FREE STANDING			3

FURNITURE SCHEDULE

TAG	DESCRIPTION	INSTALL CODE	COMMENTS
F1	BUNK BED, 39" X 80"	3	METAL FRAME
F2	EXECUTIVE TASK CHAIR - ARMS	3	5-STAR CASTORS BASE, FOR RESILIENT FLOOR
F3	GUEST CHAIR - NO ARM	3	SLED BASE
F4	TASK CHAIR - NO ARM	3	SLED BASE
F5	BATHROOM SEATING 36" x 16"	2	WALL MOUNTED BENCH, STAINLES STEEL BRACKETS, PLAM2 FINISH SEAT
F6	LOUNGE CHAIR	3	
F7	OFFICE DESK WITH RETURN	3	7'-6" x 5'-6"
F8	DESK, 20" x 48"	3	
F10	HIGH TOP TABLE - 36" DIAMETER	3	34" H
F11	COUNTER HEIGHT STOOL	3	
F12	KITCHEN BENCH, 18" x 60"	3	
F13	KITCHEN TABLE, 42" x 132"	3	
F14	RECLINER CHAIR	3	
F15	STACKING TRAINING CHAIR	3	CASTORS OR SLED BASE
F16	BED SIDE TABLE, 30"x30"	3	
F17	CONFERENCE TABLE, 48" x 120"	3	
F18	OUTDOOR TABLE SET WITH (4) CHAIRS,TABLE SIZE 36" x 36"	3	
F19	WALL MOUNTED TV/DISPLAY	3	
F20	TASK CHAIR - ARMS	3	CASTORS OR SLED BASE

ACCESSORY SCHEDULE

TAG	DESCRIPTION	INSTALL CODE	COMMENTS
TA1	WALL MOUNTED BABY CHANGING STATION	1	SEMI-RECESSED, STAINLESS STEEL
TA4	WALL PAPER TOWEL DISPENSER AND WASTE RECEPTACLE	1	SEMI-RECESSED, STAINLESS STEEL
TA5	WALL MOUNTED TOILET TISSUE DISPENSER AND UTILITY SHELF	1	SURFACE-MOUNTED, STAINLESS STEEL
TA6	WALL MOUNTED SANITARY NAPKIN DISPOSAL	1	SURFACE-MOUNTED, STAINLESS STEEL
TA7	COAT HOOK	1	STAINLESS STEEL
TA9	RECESSED SHARP DISPOSAL	1	STAINLESS STEEL
TA10	1-1/2" GRAB BARS WITH SNAP FLANGE, 42" long	1	STAINLESS STEEL
TA11	HORIZONTAL TWO-WALL BAR for Shower Stall	1	STAINLESS STEEL
TA12	MIRROR	1	FRAMED - BRUSHED NICKEL 1/4" DEEP NOSE ALUMINUM J-CHANNEL
TA16	ADA FOLDING SHOWER SEAT	1	PADDED SEAT, WALL MOUNTED REQUIRES WALL BLOCKING
TA17	COUNTER PAPER TOWEL DISPENSER, C-FOLD	1	RECESSED, STAINLESS STEEL
TA18	SOAP DISPENSER	3	WALL MOUNTED, BY OWNER

EQUIPMENT / FURNITURE NOTES:

1. REFER TO A13 SERIES FOR FURNITURE/EQUIP. LOCATIONS
2. FOR FIREMATIC FURNITURE, SEE A17 DRAWING SERIES.

INSTALL CODE KEY

1: FURNISHED & INSTALLED BY CONTRACTOR (CF/CI)
2: FURNISHED BY OWNER; INSTALLED BY CONTRACTOR (OF/CI)
3: FURNISHED & INSTALLED BY OWNER (OF/OI)
4: FURNISHED BY CONTRACTOR & INSTALLED BY OWNER (CF/OI)

FINISH LEGEND

SPEC	TAG	TYPE	MFR	STYLE	COLOR/FINISH	SIZE	COMMENTS
ALUMINUM PANEL/WALL							
07 42 13	MTL1	ALUMINUM PANEL/WALL		WALL ALUMINUM PANEL	TO MATCH PPG - BLACK NOIR		ALUMINUM PANEL
ALUMINUM TRIM/BASE							
05 75 03	MTL2	ALUMINUM TRIM/BASE		ALUMINUM BASE, FLUSH	BLACK MATTE	4"H	ANODIZED ALUMINUM METAL BASE C, 4" H (POWDER COAT FINISH)
05 75 03	MTL3	ALUMINUM TRIM/BASE		ALUMINUM BASE	ALUMINUM, BLACK COLOR	4"H	ANODIZED ALUMINUM METAL BASE A, 4" H (POWDER COAT FINISH)
05 75 03	MTL4	ALUMINUM TRIM/BASE		ALUMINUM BASE	ALUMINUM, BLACK COLOR	4"H	ANODIZED ALUMINUM METAL BASE B, 4" H (POWDER COAT FINISH)
05 75 03	MTL5	ALUMINUM TRIM/BASE		ALUMINUM TRIM / REVEAL / CORNER	ALUMINUM, BLACK COLOR	1/4"	ANODIZED ALUMINUM CORNER (POWDER COAT FINISH)
05 75 03	MTL6	ALUMINUM TRIM/BASE		ALUMINUM TRIM / REVEAL / CORNER	ALUMINUM, BLACK COLOR	1/2"	ANODIZED ALUMINUM CORNER (POWDER COAT FINISH)
05 75 03	MTL7	ALUMINUM TRIM/BASE		ALUMINUM TRIM / REVEAL / CORNER	ALUMINUM, BLACK COLOR	1/4" x 1/2"	ANODIZED ALUMINUM REVEAL MOLDING (POWDER COAT FINISH)
CEILING							
09 51 13	APC1	CEILING		ACOUSTIC PANEL CEILING, 2X6	WHITE	2x6	HIGH NRC, LAY-IN TILE, T GRID, 9/16"
09 51 13	APC2	CEILING		ACOUSTIC PANEL CEILING, 2X2	WHITE	2x2	HIGH NRC, LAY-IN TILE, T GRID, 9/16"
09 51 13	APC3	CEILING		MOISTURE RESISTANT PANEL CEILING, 2X2	WHITE	2x2	HIGH NRC, LAY-IN TILE, T GRID, 9/16"
09 54 26	AWC1	CEILING		LINEAR WOOD CEILING	HEMLOCK, SOLID WOOD CORE	3"x5/8"	TONGUE & GROOVE LINEAR CEILING
CERAMIC TILE							
09 30 13	CT2	CERAMIC TILE		FLOOR TILE	MATTE CERAMIC/PORCELAIN	12"x24"	FOR LAYOUT INSTALLATION SEE ELEVATION. GROUT COLOR TO MATCH TILE
09 30 13	CT3	CERAMIC TILE		WALL TILE	GLOSSY GLAZED CERAMIC	3"x12"	FOR LAYOUT INSTALLATION SEE ELEVATION. GROUT COLOR TO MATCH TILE
09 30 13	CT4	CERAMIC TILE		WALL TILE	GLOSSY GLAZED CERAMIC	2"x6.5"	FOR LAYOUT INSTALLATION SEE ELEVATION. GROUT COLOR: OFF-WHITE
EPOXY							
09 67 23	INTEGRAL BASE	EPOXY		INTEGRAL COVE AT EPOXY FLOORING			SEE DETAIL FOR WALL TRANSITION
FABRIC WRAPPED PANEL							
09 84 33	FWP1	FABRIC WRAPPED PANEL			XOREL WINDSOR 6131 - COLOR 36		UNBACKED TEXTILE, 56 INCH WIDE, 1" MINERAL FIBER CORE
MIRROR							
08 81 13	DG2	MIRROR		MIRROR		7'-8"H	EXERCISE ROOM WALLS
PAINT							
09 91 23	PNT1	PAINT		GENERAL PAINT	BM_OC-57 White Heron		EGGSHELL FOR WALLS AND METAL PAINT FOR DOORS
09 91 23	PNT2	PAINT		ACCENT	BM_HC-151 Whipple Blue		
09 91 23	PNT3	PAINT		METAL PAINT	BM_2121-20 STEEL WOOL		DOORS
09 91 23	PNT4	PAINT		ACCENT	BM_2125-40 Shadow Gray		
09 91 23	PNT5	PAINT		ACCENT	BM_2127-60 Feather Gray		
09 91 23	PNT6	PAINT		ACCENT	BM_2121-30 Pewter		
09 91 23	PNT7	PAINT		STEEL/METAL/MEP/FP PAINT	BM_2126-10 Black Tar		METAL STRUCTURE / STAIRS / RAILINGS/ EXPOSED MEPFP
09 91 23	PNT8	PAINT		METAL PAINT	SW 6905-GOLDFINCH		"YELLOW ZONE" DOOR
09 96 13.13	PNT9	PAINT		HIGH PERFORMANCE, TEXTURED	GOH 34806376		HIGH PERFORMANCE PAINT, TEXTURED. TO MATCH BM_2121-20 Steel Wool
09 91 23	PNT10	PAINT		EPOXY	SW_7671 On he Rocks		CMU WALLS IN LOCKERS ROOMS AND BAY SUPPORT SPACES
08 41 13	PNT11	PAINT		SHOP APPLIED 3-COAT FINISH	TO MATCH PPG - BLACK NOIR		ALUMINUM FRAME, CURTAIN WALL
09 91 23	PNT12	PAINT		EPOXY	TO MATCH SW 6905-GOLDFINCH		CMU - PORTAL ACCENT EPOXY
09 96 56	PNT13	PAINT		EPOXY	LIGHT GREY WITH SMALL CHIPS		MICROFLAKES 1/16"
09 67 23	PNT20	PAINT		EPOXY FLOORING	Medium/Dark Grey		TEXTURED FINISH, HIGH TRAFFIC, APARATUS BAY AREA AND FIREMATIC SPACES
09 67 23	PNT21	PAINT		EPOXY FLOORING W/ INTEGRAL COVE	MEDIUM GREY W/ GREY SPECKLES		LOCKERS AND TOILETS IN FIREMATIC SPACES
09 67 23	PNT22	PAINT		EPOXY PAINT	BRIGTH YELLOW		FLOOR STRIPES AT APARATUS BAY AREA
PLASTIC LAMINATE							
06 41 16	PLAM1	PLASTIC LAMINATE		SOLID COLOR, MATTE	LIGTH GRAY		
06 41 16	PLAM2	PLASTIC LAMINATE		WOOD TEXTURE, WOODBRUSH FINISH	WOOD PATTERN		
PREFACED CMU							
04 20 00	CMU1	PREFACED CMU		PREFACED	WHITE WITH SMALL CHIPS		CMU AT BAY
04 20 00	CMU2	PREFACED CMU		PREFACED	LIGHT GREY WITH SMALL CHIPS		CMU AT BAY
RESILIENT TILE FLOORING							
09 65 19	RSF1	RESILIENT TILE FLOORING		LARGE FORMAT TILE, NO WELDING	MEDIUM GREY W/ GREY SPECKLES	39.45"X39.45"	
09 65 19	RSF4	RESILIENT TILE FLOORING		RESILIENT PLANK	WOOD PATTERN		STAGGERED LAYOUT INSTALLATION
RUBBER ATHLETIC FLOOR							
09 65 66	RSF2	RUBBER ATHLETIC FLOOR		RUBBER TILE, FITNESS	BLACK W/ IVORY SPECKLES		
RUBBER BASE							
09 65 13	RB1	RUBBER BASE		GENERAL BASE	CHARCOAL GREY	4"H, COVE	
RUBBER TREAD/RISER FLOORING							
09 65 66	RSF3	RUBBER TREAD/RISER FLOORING		RUBBER STAIR TREAD/RISER	TO MATCH RSF1 COLOR		
SEALED CONCRETE							
09 61 61	SC	SEALED CONCRETE					
SOLID QUARTZ							
06 61 19	SS1	SOLID QUARTZ		JUMBO SLAB	POLISHED, SMALL WHITE-CHIP PATTERN		3CM
SOLID SURFACE							
09 75 23	SS2	SOLID SURFACE		SHOWER CLADDING, WINDOW SILL	MODERN WHITE		1/2" THICK, WIDESHEET FOR SHOWER CLADDING
09 75 23	SS3	SOLID SURFACE		TRAINING CREDENZA, WATCH ROOM	LIGHT MEDIUM GREY, LEATHER FINISH		1/2" AND 3/4" THICKNESS
09 75 23	SS4	SOLID SURFACE		BUNK NICHE	DARK CHARCOAL/BLACK COLOR		1/2" THICK
WALK OFF MAT							
12 48 13	WOM1	WALK OFF MAT		RECESSED ENTRANCE GRILLE	STAINLESS STEEL		
WINDOW TREATMENT							
12 24 13	WNT1	WINDOW TREATMENT		MANUAL ROLLER WINDOW SHADE - 5%	WHITE/LIGHT GREY		REFER TO DETAIL SHEETS FOR MOUNTING TYPE
12 24 13	WNT2	WINDOW TREATMENT		MANUAL ROLLER WINDOW SHADE - BLACKOUT	WHITE/LIGHT GREY		REFER TO DETAIL SHEETS FOR MOUNTING TYPE
12 24 13	WNT3	WINDOW TREATMENT		MOTORIZED ROLLER WINDOW SHADE - 5%	WHITE/LIGHT GREY		REFER TO DETAIL SHEETS FOR MOUNTING TYPE
12 24 13	WNT4	WINDOW TREATMENT		MOTORIZED ROLLER WINDOW SHADE - BLACKOUT	WHITE/LIGHT GREY		REFER TO DETAIL SHEETS FOR MOUNTING TYPE
WOOD PLANKS							
06 20 23	WD1	WOOD PLANKS		SOLID RUSTIC, RECLAIMED DOUGLAS FIR SPECIES, TONGUE & GROVE	STAINED AND SEALED, LOW SHEEN FINISHED	7" WIDE	REFER TO DETAIL SHEETS FOR PLANK THICKNESS, LENGTH AND PANEL SIZES

PAINT & WALL COVERING NOTES

1. GYPSUM BOARD WALLS SHALL HAVE EGGSHELL FINISH, UNLESS NOTED OTHERWISE.
2. GYPUSM BOARD CEILINGS SHALL HAVE FLAT FINISH, UNLESS NOTED OTHERWISE.
3. ALL DOORS AND FRAMES SCHEDULED TO RECEIVE PAINT SHALL HAVE SATIN FINISH, UNLESS NOTED OTHERWISE.

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CITY OF WORCESTER

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CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ARCHITECTURAL EQ., FURNITURE & FINISHES SCHEDULES AND LEGENDS

SHEET NUMBER

A64-01

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GENERAL NOTES

1. CONTRACTOR SHALL DETERMINE EXISTING CONDITIONS WHERE REQUIRED AND VERIFY ALL FIELD CONDITIONS FOR CLEARANCES, DIMENSIONS AND ELEVATIONS SHOWN ON DRAWINGS. ANY DISCREPANCIES SHALL BE MARKED ON A PRINT OF THE STRUCTURAL DRAWING AND FORWARDED IMMEDIATELY TO THE ENGINEER.

2. THE CONTRACTOR SHALL COMPARE STRUCTURAL DRAWINGS WITH THE ARCHITECTURAL DRAWINGS BEFORE COMMENCING WITH THE WORK AND SHALL NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES REQUIRING CLARIFICATION OR REVISIONS. DO NOT SCALE STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN.

3. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE SPECIFICATIONS AND THE MASSACHUSETTS STATE BUILDING CODE, 10TH EDITION.

4. THE CONTRACTOR SHALL SUBMIT COMPLETE SHOP DRAWINGS FOR THE ENGINEER'S APPROVAL FOR ALL PARTS OF THE WORK, INCLUDING A DESCRIPTION OF DEMOLITION, CONSTRUCTION METHODS, AND SEQUENCING WHERE APPLICABLE. EXISTING FIELD CONDITIONS SHALL BE INCORPORATED INTO SUBMITTALS. NO PERFORMANCE OF THE WORK INCLUDING, BUT NOT LIMITED TO, DEMOLITION OF THE EXISTING STRUCTURE, OR FABRICATION OR ERECTION OF NEW STRUCTURAL ELEMENTS SHALL COMMENCE WITHOUT REVIEW OF THE SHOP DRAWINGS BY THE ENGINEER.

5. IN THE EVENT THAT CERTAIN DETAILS OF THE CONSTRUCTION ARE NOT FULLY SHOWN OR NOTED ON THE DRAWINGS, THEIR CONSTRUCTION SHALL BE OF THE SAME TYPE AS FOR SIMILAR CONDITIONS WHICH ARE SHOWN AND NOTED, SUBJECT TO THE STRUCTURAL ENGINEER'S APPROVAL.

6. SEE THE ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
   A. SIZE AND LOCATION OF ALL INTERIOR AND EXTERIOR NON BEARING PARTITIONS.
   B. SIZE AND LOCATION OF ALL CONCRETE CURBS, FLOOR DRAINS, SLOPES, INSERTS, ETC. EXCEPT AS SHOWN.
   C. SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS EXCEPT AS SHOWN.
   D. FLOOR AND ROOF FINISHES.
   E. FINISHED FLOOR AND EXTERIOR ELEVATIONS.
   F. DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
   G. STAIR FRAMING AND DETAILS.

7. SEE THE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR THE FOLLOWING:
   A. PIPE AND DUCT RUNS, SLEEVES, HANGERS, TRENCHES, WALL AND SLAB OPENINGS, ETC. EXCEPT AS SHOWN OR NOTED.
   B. ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS
   C. CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL, OR PLUMBING FIXTURES.
   D. SIZE AND LOCATION OF MACHINE OR EQUIPMENT BASES, ANCHOR BOLTS FOR MOTOR MOUNTS, EXCEPT AS SHOWN OR NOTED.

8. OPENING, POCKETS, ETC. LARGER THAN 6" SHALL NOT BE PLACED IN CONCRETE SLABS, DECKS, OR WALLS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS. NOTIFY THE STRUCTURAL ENGINEER WHEN DRAWINGS BY OTHERS SHOW OPENINGS, POCKETS, ETC LARGER THAN 6" WHICH ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT WHICH ARE LOCATED IN STRUCTURAL MEMBERS.

9. ALL MECHANICAL SYSTEMS SUSPENDED LOADS EXCEEDING 100 POUNDS SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION UNLESS SPECIFICALLY DETAILED ON THE DRAWINGS.

10. DESIGN BASIS:
    DESIGN IS IN ACCORDANCE WITH THE MASSACHUSETTS STATE BUILDING CODE, 10TH EDITION.

    LIVE LOAD
    SEE DESIGN LOAD SCHEDULE

    SNOW LOAD

Pg	50 PSF
Pf	42 PSF
Ce	1
I	1.2
Ct	1

    WIND LOAD

BASIC WIND SPEED	131 MPH
I/ OCCUPANCY CATEGORY	IV
EXPOSURE	C
INTERNAL PRESSURE COEFFICIENT	±0.18
MWFRS DESIGN LOAD	37 PSF

    DESIGN LOAD

WALL Aeff	EDGE**	FIELD
10 FT²	±60 PSF	±49 PSF
50 FT²	±51 PSF	±44 PSF
100 FT²	±47 PSF	±42 PSF

ROOF Aeff	EDGE**	FIELD
10 FT²	±113 PSF	±45 PSF
50 FT²	±68 PSF	±42 PSF
100 FT²	±49 PSF	±41 PSF

    *TO CONVERT ULTIMATE WIND PRESSURES TO ALLOWABLE, MULTIPLY BY 0.6. TO CONVERT ULTIMATE BASIC WIND SPEED TO ALLOWABLE, MULTIPLY BY √0.6. (IMPORTANCE FACTOR IS ALREADY INCLUDED IN SPEED AND PRESSURES).

    **SEE ASCE 7-10 FIGURE 30.6-1 FOR WIDTHS OF CORNER & EDGE ZONES

    SEISMIC LOAD

I/ OCCUPANCY CATEGORY	1.50 / IV
Ss/S1	0.210/0.060
SITE CLASS	D
SDS/SD1	0.224/0.096
SEISMIC DESIGN CATEGORY	C
SEISMIC-FORCE-RESISTING SYSTEM	INTERMEDIATE REINFORCED CMU SHEAR WALLS AND ORDINARY STEEL MOMENT FRAMES
DESIGN BASE SHEAR	340 KIPS
Cs	0.096
R	3.5
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE

11. SEE ARCHITECTURAL DRAWINGS FOR WATERPROOFING AND DAMPPROOFING DETAILS.
12. THE OWNER WILL RETAIN AN INDEPENDENT TESTING AGENCY TO INSPECT THE FOLLOWING TYPES OF WORK. SEE THE PROJECT SPECIFICATIONS FOR SPECIFIC REQUIREMENTS. THE INDEPENDENT INSPECTOR HAS THE AUTHORITY TO REJECT MATERIALS NOT CONFORMING TO SPECIFICATIONS. THIS DOES NOT RELIEVE THE CONTRACTOR'S REQUIREMENT TO PROVIDE MATERIALS AND WORK CONFORMING TO THE CONTRACT DOCUMENTS.
    A. SUBGRADE, INCLUDING SOLID PREPARATION, COMPACTION AND BEARING CAPACITY
    B. STRUCTURAL FILL
    C. ALL CONCRETE WORK
    D. ALL STRUCTURAL STEEL WELDING AND HIGH STRENGTH BOLTING (EXCEPT METAL STUDS, FURRING, ETC.)
    E. SHOP WELDING PROCEDURES
    F. MASONRY WORK WHERE NOTED ON THE DRAWINGS
    G. INSTALLATION OF EXPANSION AND ADHESIVE ANCHORS
    H. SHORING
    I. STRUCTURAL STABILITY
    J. WIND BEARING OR LOAD BEARING LIGHT GAUGE METAL FRAMING
    K. WHERE INDICATED ON THE DRAWINGS OR PROJECT SPECIFICATIONS.
13. THE FOLLOWING SHALL BE DESIGNED BY A REGISTERED DESIGN PROFESSIONAL (RDP) NOT UNDER THE CONTROL OF THE STRUCTURAL ENGINEER OF RECORD (SER) AND SUBMITTED FOR REVIEW WITH CALCULATIONS PREPARED, STAMPED, AND SIGNED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE PROJECT'S STATE:
    A. LIGHT GAUGE METAL SYSTEMS
    B. CURTAIN WALL
    C. METAL OR CONCRETE STAIRS AND RAILS NOT DETAILED ON STRUCTURAL DRAWINGS
    D. STRUCTURAL STEEL CONNECTIONS NOT FULLY DETAILED IN CONTRACT DRAWINGS (SHEAR CONNECTIONS, MOMENT CONNECTIONS).
    E. TEMPORARY SHORING WORK.
    F. HAND RAILS, GUARDRAILS AND HALF WALLS SERVING AS SUCH.
    G. ALL OTHER SYSTEMS NOTED AS SUCH IN PROJECT SPECIFICATIONS.

    STRUCTURAL DRAWINGS PROVIDED BY SER SUBMITTED FOR PERMIT DO NOT INCLUDE DESIGN OF THE SYSTEMS LISTED ABOVE.

14. SEISMIC BRACING OF NON-STRUCTURAL COMPONENTS
    A. UNLESS OTHERWISE SPECIFIED IN THE MEP CONSULTANT'S CONTRACT DOCUMENTS, DESIGN AND INSTALLATION OF SEISMIC BRACING FOR NON-STRUCTURAL COMPONENTS SHALL BE DELEGATED DESIGN BY THE CONTRACTOR OR SUBCONTRACTOR. REFER TO CHAPTER 13 OF ASCE-7 FOR REQUIREMENTS.
    B. COMPONENT IMPORTANT FACTOR (IP) SHALL BE TAKEN FROM ASCE-7 13.1.3.
    C. MECHANICAL AND ELECTRICAL COMPONENTS ARE EXEMPT FROM SEISMIC BRACING IN SEISMIC DESIGN CATEGORY B. REFER TO ASCE-7 13.1.4 FOR ADDITIONAL EXEMPTIONS.

EXPANSION AND ADHESIVE ANCHOR

1. ALL EXPANSION ANCHORS SHALL BE HILTI KWIK BOLT TZ OR APPROVED EQUAL, UNLESS NOTED OTHERWISE. SUBSTITUTIONS SHALL HAVE A CURRENT ICC EVALUATION REPORT.
2. ALL ADHESIVE ANCHORS SHALL BE THE HILTI HY 200 SYSTEM OR APPROVED EQUAL, UNLESS NOTED OTHERWISE. SUBSTITUTIONS SHALL HAVE A CURRENT ICC EVALUATION REPORT.
3. CONCRETE SHALL ATTAIN MINIMUM DESIGN STRENGTH PRIOR TO INSTALLATION OF THE ANCHORS.
4. INSTALL ANCHORS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND THE INSTRUCTIONS LISTED IN THE ICC REPORT.
5. PRIOR TO ALL EXPANSION ANCHOR DRILLING OPERATIONS IN CONCRETE OR MASONRY, THE CONTRACTOR SHALL LOCATE REINFORCEMENT BY NON-DESTRUCTIVE METHODS. NO REINFORCEMENT SHALL BE DAMAGED BY DRILLING OPERATIONS.
6. THE OWNER SHALL TEST TWENTY-FIVE PERCENT OF EACH GROUP OF ANCHORS USED FOR STRUCTURAL APPLICATIONS FOR THE FULL ALLOWABLE PULLOUT CAPACITY LISTED BY THE MANUFACTURER. IF HALF OF THE TESTED ANCHORS IN A GROUP FAIL THEN ALL OF THE ANCHORS IN THAT GROUP SHALL BE TESTED.

TEMPORARY WORK

1. ALL TEMPORARY WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE MASSACHUSETTS STATE BUILDING CODE, 10TH EDITION.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE PROPER SHORING AND BRACING WHEREVER NECESSARY. SHOP DRAWINGS FOR SUCH SHORING SHALL BE PREPARED BY A PROFESSIONAL ENGINEER RETAINED BY THE CONTRACTOR, IN ACCORDANCE WITH ALL APPLICABLE CURRENT RULES AND REGULATIONS.
3. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH.
4. SHEETING, SHORING AND BRACING FOR THE LATERAL SUPPORT OF EXCAVATION SHALL REMAIN IN PLACE UNTIL ALL PERMANENT STRUCTURAL SYSTEMS AT AND BELOW GROUND LEVEL ARE COMPLETE. FOR FURTHER INFORMATION ON LATERAL SUPPORT OF EXCAVATION, SEE SPECIFICATIONS.

EARTHWORK

1. ALL EARTHWORKS INCLUDING EXCAVATION, FILLING, SUBGRADE PREPARATIONS, AND PROOF ROLLING EXISTING SUBGRADE SHALL BE IN ACCORDANCE WITH THE GENERAL NOTES, SPECIFICATIONS, AND GEOTECHNICAL REPORTS DATED FEBRUARY 28, 2024 BY WESTON & SAMPSON.
2. DO NOT PLACE BACKFILL BEHIND WALLS UNTIL CONCRETE HAS ATTAINED ITS FULL DESIGN STRENGTH. DO NOT BACKFILL WALLS BELOW GRADE UNTIL GROUND LEVEL FLOOR OR OTHER PERMANENT LATERAL SUPPORT SYSTEM IS COMPLETELY IN PLACE AND HAS ATTAINED 80 PERCENT OF FULL STRENGTH.
3. EXCAVATIONS BELOW FOOTINGS OF ALL TYPES AS WELL AS SLABS ON GRADE SHOULD BE MADE SO AS TO PROVIDE A CLEAN SMOOTH BEARING AREA OF UNDISTURBED SOIL. THE BOTTOM THREE INCHES OF EXCAVATIONS FOR FOOTINGS, PILE CAPS, AND GRADE BEAMS SHALL BE FINISHED BY HAND.
4. ALL BEARING SURFACES SHALL BE PROTECTED FROM CHANGES IN MOISTURE CONTENT IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
5. NO RESPONSIBILITY IS ASSUMED BY THE ARCHITECT FOR THE VALIDITY OF THE SUBSURFACE CONDITIONS DESCRIBED ON THE DRAWINGS, SPECIFICATIONS, TEST BORINGS, OR TEST PITS. THIS DATA IS INCLUDED ONLY TO ASSIST THE CONTRACTOR DURING BIDDING AND SUBSEQUENT CONSTRUCTION AND REPRESENT CONDITIONS ONLY AT THESE SPECIFIC LOCATIONS AT THE PARTICULAR TIME THEY WERE MADE.

FOUNDATIONS

1. THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL INVESTIGATION REPORTS PREPARED BY WESTON & SAMPSON DATED FEBRUARY 28, 2024
2. ALLOWABLE SOIL BEARING PRESSURE ASSUMED TO BE 4 KSF.
3. FOUNDATIONS ON THIS PROJECT CONSIST OF SPREAD FOOTINGS, BASEMENT AND FOUNDATION WALLS, AND SLAB ON GRADE.
4. DESIGN ELEVATION FOR GROUNDWATER IS AT 454 FEET AS PER GEOTECHNICAL REPORT.
5. NO FOUNDATION CONCRETE SHALL BE PLACED IN WATER OR ON FROZEN SUBGRADE MATERIAL. WATER SHALL NOT BE ALLOWED TO STAND IN TRENCHES BEFORE OR AFTER CONCRETE IS PLACED. REFER TO GEOTECHNICAL REPORT FOR GUIDELINES ON DEWATERING.
6. IF TRENCHES BECOME SOFTENED DUE TO RAIN OR OTHER WATER BEFORE THE FOOTINGS ARE CAST, THE CONTRACTOR SHALL EXCAVATE THE SOFTENED MATERIAL AND REPLACE WITH CONCRETE.
7. FOUNDATION UNITS SHALL BE CENTERED UNDER SUPPORTED STRUCTURAL MEMBER, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
8. ALL EXCAVATIONS FOR FOUNDATIONS SHALL BE APPROVED BY THE OWNER'S GEOTECHNICAL ENGINEER PRIOR TO PLACING REINFORCEMENT AND CASTING CONCRETE.
9. BACKFILL UNDER ANY PORTION OF THE STRUCTURE SHALL BE COMPACTED IN 6 INCH LIFTS PER SPECIFICATION REQUIREMENTS.
10. ALL SLAB ON GRADE AND FOOTING SUBGRADE LEVELS SHALL BE APPROVED BY OWNERS GEOTECHNICAL ENGINEER.
11. EXTERIOR CONSTRUCTION SHALL BE CARRIED DOWN TO A MINIMUM DEPTH OF 4 FEET BELOW FINISHED EXTERIOR GRADE UNLESS NOTED OTHERWISE. PROTECT IN-PLACE FOUNDATIONS AND SLABS FROM FROST PENETRATION UNTIL THE PROJECT IS COMPLETED.
12. DOWELS FROM FOUNDATIONS INTO PIERS, COLUMNS, BUTTRESSES, OR WALLS ABOVE SHALL BE THE SAME SIZE AND NUMBER AS VERTICAL REINFORCEMENT IN PIERS, COLUMNS, BUTTRESSES, OR WALLS UNLESS NOTED OTHERWISE IN DRAWINGS.

LIGHT GAUGE METAL FRAMING

1. FURNISH ALL LABOR, MATERIALS, SERVICES AND EQUIPMENT NECESSARY TO COMPLETE ALL COLD FORMED STEEL FRAMING WORK SHOWN ON THE DRAWINGS.
2. SUBMIT DRAWINGS FOR REVIEW WHICH INCLUDE:
   A. CROSS SECTIONS, PLANS AND/OR ELEVATIONS DEPICTING COMPONENT TYPES AND LOCATIONS FOR EACH UNIQUE FRAMING APPLICATION;
   B. CONNECTION DETAILS DEPICTING FASTENER TYPE, QUANTITY, LOCATION AND OTHER INFORMATION TO ASSURE PROPER INSTALLATION;
   C. CONTRACTORS ELECTING TO INSTALL PREFABRICATED/PREFINISHED FRAMES, SHALL SUBMIT DRAWINGS DEPICTING PANEL CONFIGURATIONS, DIMENSIONS, COMPONENTS, LOCATIONS AND CONSTRUCTION SEQUENCE.
3. SUBMIT CALCULATIONS FOR REVIEW WHICH INCLUDE:
   A. DESIGN CRITERIA.
   B. STRUCTURAL ANALYSIS FOR EACH UNIQUE FRAMING APPLICATION;
   C. SELECTION OF FRAMING COMPONENTS AND ACCESSORIES AND VERIFICATION OF CONNECTIONS.
4. PRODUCTS AND INSTALLATION SHALL MEET THE REQUIREMENTS OF THE FOLLOWING STANDARDS:
   A. AMERICAN IRON AND STEEL INSTITUTE (AISI) SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS, LATEST EDITION.
   B. AMERICAN WELDING SOCIETY (AWS) SPECIFICATION FOR WELDING SHEET STEEL IN STRUCTURES, D.1.3.
   C. AMERICAN SOCIETY OF TESTING MATERIALS (ASTM) SPECIFICATIONS. A-653 STANDARD SPECIFICATION FOR SHEET STEEL, ZINC-(GALVANIZED) OR ZINC-IRON ALLOY-COATED (GALVANNEALED) BY THE HOT-DIP PROCESS C-955 STANDARD SPECIFICATION FOR LOAD BEARING (TRANSVERSE AND AXIAL) STEEL STUDS, RUNNER (TRACK) AND BRACING AND BRIDGING, FOR SCREW APPLICATION OF GYPSUM BOARD AND METAL PLASTER BASES.
5. ALL STUDS AND JOISTS SHALL BE FORMED FROM STEEL THAT MEETS THE MINIMUM REQUIREMENTS OF THE AISI STANDARDS.
6. ALL GALVANIZED STUDS, JOISTS, TRACK, BRIDGING AND ACCESSORIES SHALL BE FORMED FROM STEEL HAVING A GALVANIZED COATING MEETING THE REQUIREMENTS OF ASTM A 653.
7. PREVENT EXPOSURE TO WEATHER BY IMPERVIOUS COVER OR SHELTER. MATERIAL SHALL BE STORED FLAT AND IN A MANNER TO PREVENT DISTORTION.
8. WELDS:
   A. WELDED CONNECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY (AWS) SPECIFICATION FOR WELDING SHEET STEEL IN STRUCTURES, D1.3.
   B. WELDERS, WELDING OPERATIONS AND WELDING PROCEDURES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS D1.3.
   C. CONSULT APPLICABLE AWS SPECIFICATIONS FOR INFORMATION REGARDING SAFE WELDING PROCEDURES.
   D. WELDS SHALL BE CLEANED AND COATED WITH RUST INHIBITIVE GALVANIZING PAINT.
9. SCREWS:
   A. SCREW PENETRATION THROUGH JOINED MATERIALS SHALL NOT BE LESS THAN THREE EXPOSED SCREW THREADS.
   B. CONTRACTOR SHALL REFER TO INSTALLATION INSTRUCTIONS PUBLISHED BY THE SCREW MANUFACTURER AND ASTM C954 FOR MINIMUM SPACING AND EDGE DISTANCE REQUIREMENTS AND TORQUE REQUIREMENTS.
10. CONTRACTOR SHALL REFER TO INSTALLATION INSTRUCTIONS PUBLISHED BY THE SCREW MANUFACTURER AND ASTM C954 FOR MINIMUM SPACING AND EDGE DISTANCE REQUIREMENTS AND TORQUE REQUIREMENTS.
11. TEMPORARY BRACING SHALL BE PROVIDED AND REMAIN IN PLACE UNTIL WORK IS PERMANENTLY STABILIZED.
12. WHERE SPLICING OF TRACK IS NECESSARY BETWEEN STUD SPACINGS, A PIECE OF STUD SHALL BE PLACED BETWEEN ADJACENT TRACKS AND FASTENED BY WELDS OR SCREWS TO EACH SIDE OF THE TRACK, EACH END.
13. SPLICING OF FRAMING COMPONENTS, OTHER THAN TRACK, IS NOT PERMITTED.
14. A SEALANT SHALL BE APPLIED TO CONCRETE OR MASONRY SURFACES PRIOR TO ANCHORING TRACKS.
15. FOR NON-LOAD BEARING WALLS (CURTAINWALL):
   A. STUDS SHALL BE PLUMBED, ALIGNED, AND SECURED TO THE CONTINUOUS RUNNER TRACKS AT EACH END AND EACH SIDE, UNLESS THE STUD END TERMINATES AT A DEFLECTION TRACK.
   B. MECHANICAL BRIDGING, OF THE TYPE AND SPACING DESCRIBED (IN THE CONTRACT DOCUMENTS OR APPROVED SHOP DRAWINGS) SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF FACING MATERIALS.
   C. INSTALLATION OF SHEATHING, WALLBOARDS, DECKING OR ANY OTHER COLLATERAL MATERIAL SHALL BE PERFORMED IN ACCORDANCE WITH THE PRODUCT MANUFACTURER'S SPECIFICATIONS.
   D. PROVISIONS FOR PRIMARY FRAME MOVEMENTS:
      - PROVIDE COMPONENTS (I.E. DEFLECTION TRACK AND/OR SLIDE CLIPS) AT LOCATIONS DESCRIBED IN THE CONTRACT DOCUMENTS TO ACCOMMODATE POTENTIAL PRIMARY FRAME MOVEMENTS.
      - CONSTRUCTION SHALL ACCOMMODATE A VERTICAL DISPLACEMENT OF 1 INCH. PROVIDE MULTIPLE STUDS AT JAMBS OF WALL OPENINGS. INDIVIDUAL STUDS FORMING THE JAMB SHALL BE ATTACHED TOGETHER AT INTERVALS DESCRIBED (IN THE CONTRACT DOCUMENTS OR APPROVED SHOP DRAWINGS).
16. FOR LOAD BEARING WALLS (AXIAL):
   A. STUDS SHALL BE INSTALLED SEATED SQUARELY AGAINST THE WEB (WITHIN 1/16") OF THE TOP AND BOTTOM TRACK TO ASSURE TRANSFER OF AXIAL LOAD. STUDS SHALL BE PLUMBED, ALIGNED AND SECURED TO THE CONTINUOUS RUNNER TRACKS AT EACH END AND EACH SIDE BEFORE THE INSTALLATION OF COMPONENTS WHICH INDUCE AXIAL LOAD.
   B. TRACK SHALL REST ON A CONTINUOUS BEARING SURFACE. IF NOT PROVIDED, INSTALL FULL SIZE SHIMS BELOW TRACK AT STUD LOCATIONS OR SET BOTTOM TRACK IN HIGH STRENGTH NON-SHRINK GROUT.
   C. BRIDGING, OF THE TYPE AND SPACING DESCRIBED (IN THE CONTRACT DOCUMENTS OR APPROVED SHOP DRAWINGS) SHALL BE INSTALLED BEFORE LOADING.
   D. FRAMED WALL OPENINGS SHALL INCLUDE HEADERS AND SUPPORTING COMPONENTS AS SHOWN (IN THE CONTRACT DOCUMENTS OR APPROVED SHOP DRAWINGS).
   E. WHERE THE FLOOR OR ROOF COMPONENTS DO NOT DIRECTLY ALIGN OVER A STUD, A CONTINUOUS DISTRIBUTION MEMBER SHALL BE PROVIDED AT THE TOP OF THE WALL. DO NOT USE THE TOP TRACK AS A DISTRIBUTION MEMBER UNLESS SPECIFICALLY DESIGNED FOR THAT PURPOSE.
17. FOR JOISTS OR RAFTERS:
   A. PROVIDE WEB STIFFENERS AT SUPPORT LOCATIONS WHERE INDICATED (IN THE CONTRACT DOCUMENTS OR APPROVED SHOP DRAWINGS).
   B. MECHANICAL BRIDGING, OF THE TYPE AND SPACING DESCRIBED (IN THE CONTRACT DOCUMENTS OR APPROVED SHOP DRAWINGS), SHALL BE INSTALLED BEFORE LOADING.
   C. PROVIDE AN ADDITIONAL JOIST UNDER PARALLEL, NON-LOAD BEARING PARTITIONS WHEN THE PARTITION LENGTH EXCEEDS ONE-HALF THE JOIST SPAN. END BLOCKING SHALL BE PROVIDED WHERE JOIST ENDS ARE NOT RESTRAINED AGAINST ROTATION.
   D. PROVIDE ADDITIONAL FRAMING AROUND OPENINGS, AS SHOWN (IN THE CONTRACT DOCUMENTS OR APPROVED SHOP DRAWINGS) WHEN THE WIDTH OF THE OPENING EXCEEDS THE TYPICAL JOIST/RAFTER SPACING.
   E. DURING CONSTRUCTION, THE FLOOR/RAFTER SYSTEM SHALL NOT BE LOADED BEYOND THE LIMITS FOR WHICH IT WAS DESIGNED.

CONCRETE AND REINFORCEMENT

1. ALL CONCRETE CONSTRUCTION TO CONFORM TO THESE NOTES, THE SPECIFICATIONS, THE LATEST EDITION OF ACI 318, AND THE MASSACHUSETTS STATE BUILDING CODE, 10TH EDITION, WHICHEVER IS MOST RESTRICTIVE.
2. CONTRACTOR SHALL SUBMIT CONCRETE MIX TO ENGINEER BEFORE ORDERING CONCRETE TO JOB SITE.
3. SCHEDULE OF STRUCTURAL CONCRETE 28 DAY STRENGTHS AND TYPES:

LOCATION IN STRUCTURE	28 DAY STRENGTH (PSI)	DENSITY (PCF)
SUSPENDED SLABS ON DECK	4000	115
SLABS ON GRADE	4000	150
WALLS AND PIERS	4000	150
FOOTINGS	4000	150
EXPOSED INTERIOR TOPPING SLABS	5000	150

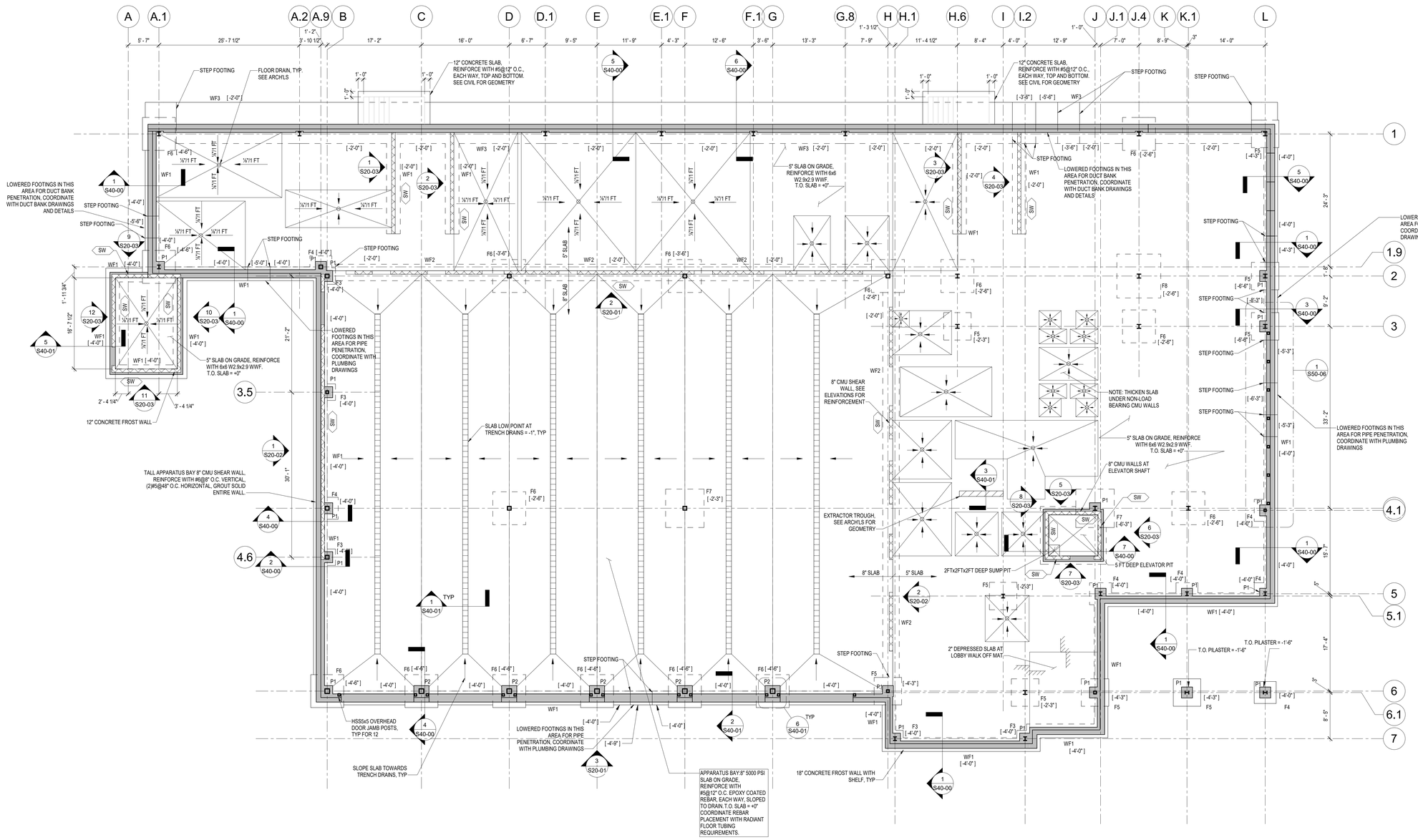
4. CLEAN AND ROUGHEN TO ¼" AMPLITUDE ALL CONCRETE SURFACES AGAINST WHICH NEW CONCRETE IS TO BE PLACED. A MINIMUM OF 72 HOURS SHALL ELAPSE BETWEEN ADJACENT CONCRETE PLACEMENTS.
5. ALL CONSTRUCTION JOINTS SHALL BE IN ACCORDANCE WITH THE TYPICAL DETAILS SHOWN ON THE STRUCTURAL DRAWINGS AND ONLY AT APPROVED LOCATIONS.
6. REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615, GRADE 60. REINFORCING TO BE WELDED SHALL CONFORM TO ASTM A706, GRADE 60.
7. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185 AND SHALL HAVE AN ULTIMATE TENSILE STRENGTH OF 70,000 PSI.
8. ALL REINFORCEMENT SHALL BE DETAILED IN ACCORDANCE WITH THE LATEST EDITION OF THE ACI 315 DETAILING MANUAL.
9. ALL REINFORCING STEEL SHALL BE SECURELY HELD IN PROPER POSITION WHILE POURING CONCRETE. IF REQUIRED, ADDITIONAL BARS AND STIRRUPS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT TO THE REINFORCING STEEL.
10. ALL REINFORCING BARS MARKED CONTINUOUS SHALL BE LAPPED 47 BAR DIAMETERS AT SPLICES, EXCEPT AS OTHERWISE SHOWN ON DRAWINGS. HOOK BARS AT NON-CONTINUOUS ENDS. LAP CONTINUOUS TOP BARS AT CENTER BETWEEN SUPPORTS AND CONTINUOUS BOTTOM BARS AT SUPPORTS.
11. PROVIDE CLEAR COVERAGE OF OUTER REINFORCEMENT AS FOLLOWS:

LOCATION IN STRUCTURE	CLEAR COVERAGE
SURFACE CAST AGAINST AND PERMANENTLY IN CONTACT WITH EARTH	3"
FORMED SURFACES EXPOSED TO EARTH OR WEATHER:	
#5 BAR OR SMALLER	1½"
#6 BAR TO #18 BAR	2"
FORMED SLABS, WALLS AND JOISTS NOT EXPOSED TO EARTH OR WEATHER (#11 BAR OR SMALLER)	¾"
FORMED BEAMS AND COLUMNS NOT EXPOSED TO EARTH OR WEATHER	1½"

12. MINIMUM LAP OF WELDED WIRE FABRIC SHALL BE 6" OR ONE FULL MESH, WHICHEVER IS GREATER, AND SHALL BE WIRED TOGETHER.
13. NO CONCRETE SHALL BE POURED UNTIL ALL REINFORCEMENT AND INSTALLATIONS HAVE BEEN INSPECTED AND APPROVED BY THE OWNER'S TESTING AGENCY. THE CONTRACTOR SHALL NOTIFY THE OWNER'S TESTING AGENCY 48 HOURS BEFORE POURING CONCRETE TO ALLOW FOR ALL NECESSARY INSPECTIONS.
14. FOR CONCRETE SURFACES WHICH ARE TO RECEIVE FINISHES REFER TO ARCHITECTS DRAWINGS.
15. CONTRACTOR SHALL SUBMIT REBAR SHOP DRAWINGS FOR ENGINEER'S APPROVAL.
16. ALL CONCRETE TO BE EXPOSED TO FREEZING TEMPERATURES SHALL BE AIR-ENTRAINED.
17. NO PIPES OR CONDUIT SHALL BE EMBEDDED IN THE STRUCTURAL CONCRETE FLOOR SLABS WITHOUT APPROVAL OF STRUCTURAL ENGINEER.
18. PROVIDE POCKETS IN WALLS TO RECEIVE BEAMS AND SLABS WHERE REQUIRED.
19. PROVIDE VAPOR BARRIER UNDER INTERIOR SLABS CAST ON GRADE.
20. ALL OPENING FOR ELECTRICAL AND TELEPHONE CONDUITS AND ALL PLUMBING SLOTS SHALL BE FILLED WITH CONCRETE TO SAME DEPTH AS FLOOR SLAB AFTER ALL CONDUITS AND PIPING HAVE BEEN INSTALLED.
21. CONCRETE CAST ON SLOPED SURFACES SHALL BEGIN AT THE LOWEST ELEVATION AND CONTINUE MONOLITHICALLY TOWARD THE HIGHER ELEVATION UNTIL THE INTENDED CAST IS COMPLETED.
22. ALL CONSTRUCTION JOINT KEYS SHALL BE CONTINUOUS AND AS SHOWN ON THE DRAWINGS. MINIMUM KEY SIZE TO BE 3½" WIDE BY 1½" DEEP.
23. VERTICAL CONSTRUCTION JOINTS MAY BE MADE AT MIDSPAN OR AT POINTS OF MINIMUM SHEAR IN BEAM OR SLAB WHERE STOP IN CONCRETE WORK IS NECESSARY. SEE TYPICAL DETAILS FOR ADDITIONAL REINFORCING REQUIREMENTS AT CONSTRUCTION JOINTS.
24. CONCRETE FOUNDATION WALLS SHALL BE POURED IN ALTERNATE SECTIONS. EACH POUR SHALL NOT EXCEED 35 FEET IN LENGTH. NO HORIZONTAL JOINTS SHALL BE PERMITTED EXCEPT WHERE SHOWN ON PLAN OR APPROVED BY THE STRUCTURAL ENGINEER. LAYOUT OF ALL CONSTRUCTION AND/OR OTHER JOINTS SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEER FOR APPROVAL.
25. PROVIDE BAR SUPPORTS AND SPACERS WITH NON-CORROSIVE TIPS IN ACCORDANCE WITH ACI 315 FOR ALL REINFORCING INCLUDING WWF.
26. MECHANICAL SPLICES OR WELDED SPLICES ARE GENERALLY USED FOR BARS LARGER THAN #11 DIAMETER, HOWEVER THEY MAY BE USED FOR SMALLER BARS AT CONTRACTORS OPTION.
27. WHERE MECHANICAL SPLICES ARE USED, SPLICES SHALL BE STAGGERED 24 INCHES MINIMUM ALONG LONGITUDINAL AXIS OF MEMBER AND SHALL DEVELOP 125 PERCENT OF SPECIFIED YIELD STRENGTH IN TENSION OR COMPRESSION.
28. WELDING OF REINFORCING SHALL CONFORM TO "STRUCTURAL WELDING CODE - REINFORCING STEEL" AWS D1.4. WELDING STIRRUPS, TIES, INSERTS, OR OTHER SIMILAR ELEMENTS TO LONGITUDINAL REINFORCING SHALL NOT BE PERMITTED. FIELD WELDING OF CROSSING BARS IS NOT PERMITTED WITHOUT THE EXPRESS APPROVAL OF THE ENGINEER.
29. FOR ANY PROPOSED CONCRETE CONSTRUCTION JOINTS IN ELEVATED SLABS ON DECK SUBMIT SHOP DRAWING OF JOINT LOCATIONS FOR REVIEW. JOINTS SHALL NOT BE DIRECTLY OVER STEEL BEAMS AND SHALL BE LOCATED PER CRITERIA ESTABLISHED IN ACI 302.1R SECTION 3.3.8.2.

CONCRETE BLOCK MASONRY

1. MASONRY WORK SHALL CONFORM TO THE REQUIREMENTS OF THESE NOTES, THE SPECIFICATIONS, LATEST EDITION ACI 530 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES, AND THE MASSACHUSETTS STATE BUILDING CODE, 10TH EDITION.
2. CONCRETE BLOCK TO BE LIGHT WEIGHT HOLLOW BLOCK ASTM C90 TYPE 1 GRADE N, NOMINAL 8" TALL x 16" LONG.
3. MORTAR TO BE ASTM C270 TYPE M OR S. ADMIXTURES ARE NOT ALLOWED.
4. GROUT TO CONFORM TO ASTM C476, FINE OR COURSE, WITH A MINIMUM STRENGTH OF 3000 PSI.
5. NET AREA COMPRESSIVE STRENGTH OF MASONRY, f'm, TO BE 2000 PSI UNO, CONSTRUCTED FROM 2000 PSI CMU AND TYPE "M" OR "S" MORTAR.
6. REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615 GRADE 60.
7. JOINT REINFORCEMENT SHALL BE MANUFACTURED WIRE CONFORMING TO ASTM A82.
8. SEE THE ARCHITECTURAL DRAWINGS FOR NON-LO



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

NOTES

1. ALLOWABLE SOIL BEARING CAPACITY = 4000 PSF
2. [X-XX"] INDICATES BOTTOM OF FOOTING ELEVATION
3. SEE MEP AND ARCH'L DRAWINGS FOR LOCATIONS FOR OF HOUSEKEEPING PADS. SEE DETAIL 2 /S30-03 FOR MORE INFO.
4. PROJECT ELEVATION 0'-0" = SURVEY ELEVATION 469.7'

LEGEND:

SW — INDICATES 8" CMU SHEAR WALL, SEE ELEVATIONS FOR REINFORCEMENT

INDICATES DIRECTION OF SLOPE DOWN OF SLAB ON GRADE. MAINTAIN SLAB THICKNESS AT SLOPING SLAB.

FOOTING SCHEDULE

MARK	FOOTING LENGTH	FOOTING WIDTH	FOOTING DEPTH	REINFORCEMENT
F3	3' - 0"	3' - 0"	1' - 0"	(4)#5 BOTTOM, EACH WAY
F4	4' - 0"	4' - 0"	1' - 0"	(5)#5 BOTTOM, EACH WAY
F5	5' - 0"	5' - 0"	1' - 3"	(6)#5 BOTTOM, EACH WAY
F6	6' - 0"	6' - 0"	1' - 6"	(7)#6 BOTTOM, EACH WAY
F7	7' - 0"	7' - 0"	1' - 3"	(9)#7 BOTTOM, EACH WAY
F8	8' - 0"	8' - 0"	1' - 6"	(5)#8 BOTTOM, EACH WAY
WF1	CONT.	2' - 6"	1' - 0"	(4) - #5 BOTTOM, LONG WAY, #5@12" O.C. BOTTOM, TRANSVERSE
WF2	CONT.	3' - 0"	1' - 0"	(5) - #5 BOTTOM, LONG WAY, #5@12" O.C. BOTTOM, TRANSVERSE
WF3	CONT.	7' - 6"	1' - 0"	#4@12" O.C. TOP AND BOT., LONG WAY, #5@12" O.C. TOP AND BOT., TRANSVERSE

CONCRETE PILASTER SCHEDULE

MARK	LENGTH	WIDTH	VERTICAL REINFORCEMENT	TIE REINFORCEMENT
P1	2' - 0"	2' - 0"	(16)#6 BARS	#4@12"
P2	2' - 0"	2' - 9"	(14)#7 BARS	#4@12"

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PROJECT

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KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

FOUNDATION PLAN

SHEET NUMBER

S11-01

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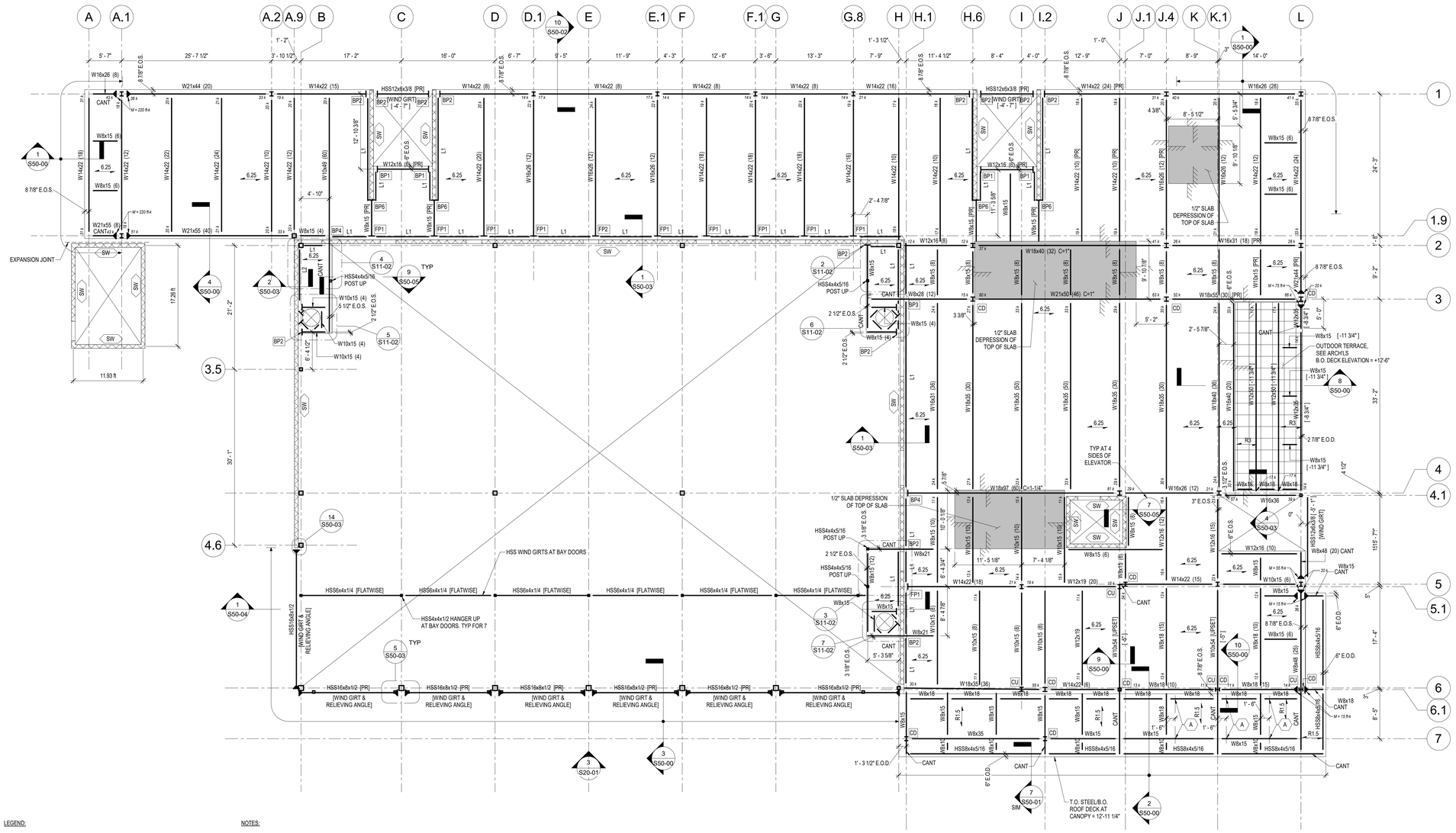


LEVEL 2 FRAMING PLAN
1/8" = 1'-0" 1

LEGEND:

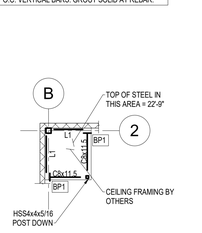
- 6.25" — INDICATES SPAN DIRECTION OF 3¼" LWT CONC ON 3"-18 GA COMPOSITE METAL DECK WITH 6x6 W2.1xW2.1 WWF. TOTAL SLAB THICKNESS = 6½".
- CANT — INDICATES CANTILEVERED STEEL BEAM
- INDICATES MOMENT CONNECTION
- [PR] — INDICATES EXPOSED BEAMS TO BE PRIMED AND PAINTED, SEE ARCH'LS.
- L1 — INDICATES L4X4X5/16, LEDGER ANCHORED TO CMU WITH ½"Ø HILTI HIT-HY 270 ANCHORS @ 16" O.C., 6½" EMBEDMENT
- L2 — INDICATES L6X6X5/8, LEDGER ANCHORED TO CMU WITH ¾"Ø HILTI HIT-HY 270 ANCHORS @ 16" O.C., 6½" EMBEDMENT
- (#) — INDICATES NUMBER OF ¾"Ø x 4½" LONG HEADED SHEAR STUDS UNIFORMLY SPACED ON BEAM. UNLESS INDICATED, PROVIDE 1 STUD EVERY 1 FOOT AT BEAMS SUPPORTING SLAB ON METAL DECK.
- CU CD — INDICATES COLUMN UP OR COLUMN DOWN RESPECTIVELY
- SW — INDICATES 8" CMU SHEAR WALL, SEE ELEVATIONS FOR REINFORCEMENT
- R1.5 — INDICATES SPAN DIRECTION OF 1.5"-18 GA ROOF DECK
- BPx — INDICATES BEAM POCKET INTO CMU CONNECTION PER DETAIL 1 /S30-02
- FPx — INDICATES FACE PLATE CONNECTION TO CMU WALL PER SECTIONS 10 /S50-03 AND 11 /S50-03
- X — INDICATES LOCATION OF BEAM WEB PENETRATION, FOR BEAM PENETRATION SCHEDULE SEE DETAIL 6 /S30-04

NOTES:

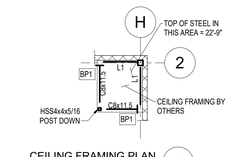
1. T.O. SLAB = 14' - 0"
2. T.O. STEEL = 13'-5½", UNO IN PLAN THUS [+/-X"]

EXTERIOR NON-LOAD BEARING CMU REINFORCEMENT:

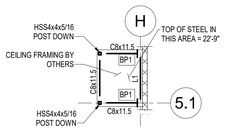
1. FOR CMU WALLS NOT SHOWN ON STRUCTURAL DRAWINGS: SEE ARCHL DRAWINGS FOR EXTERIOR NON-LOAD BEARING CMU WALL LOCATIONS. REINFORCE WITH #5@24" O.C. VERTICAL BARS. GROUT SOLID AT REBAR.



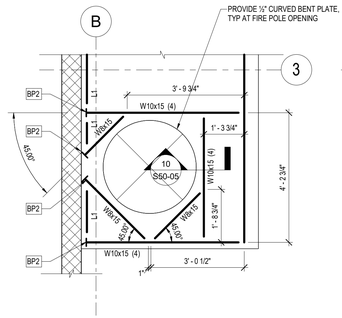
CEILING FRAMING PLAN
1/8" = 1'-0" 4



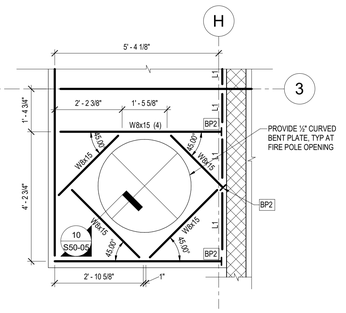
CEILING FRAMING PLAN
1/8" = 1'-0" 2



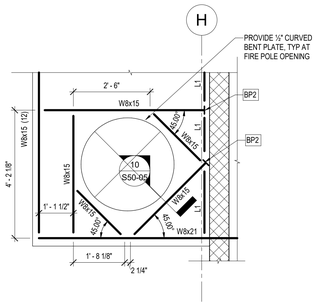
CEILING FRAMING PLAN
1/8" = 1'-0" 3



FIRE POLE OPENING PART PLAN
1/2" = 1'-0" 5



FIRE POLE OPENING PART PLAN
1/2" = 1'-0" 6



FIRE POLE OPENING PART PLAN
1/2" = 1'-0" 7

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CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

LEVEL 2 FRAMING PLAN

SHEET NUMBER

S11-02

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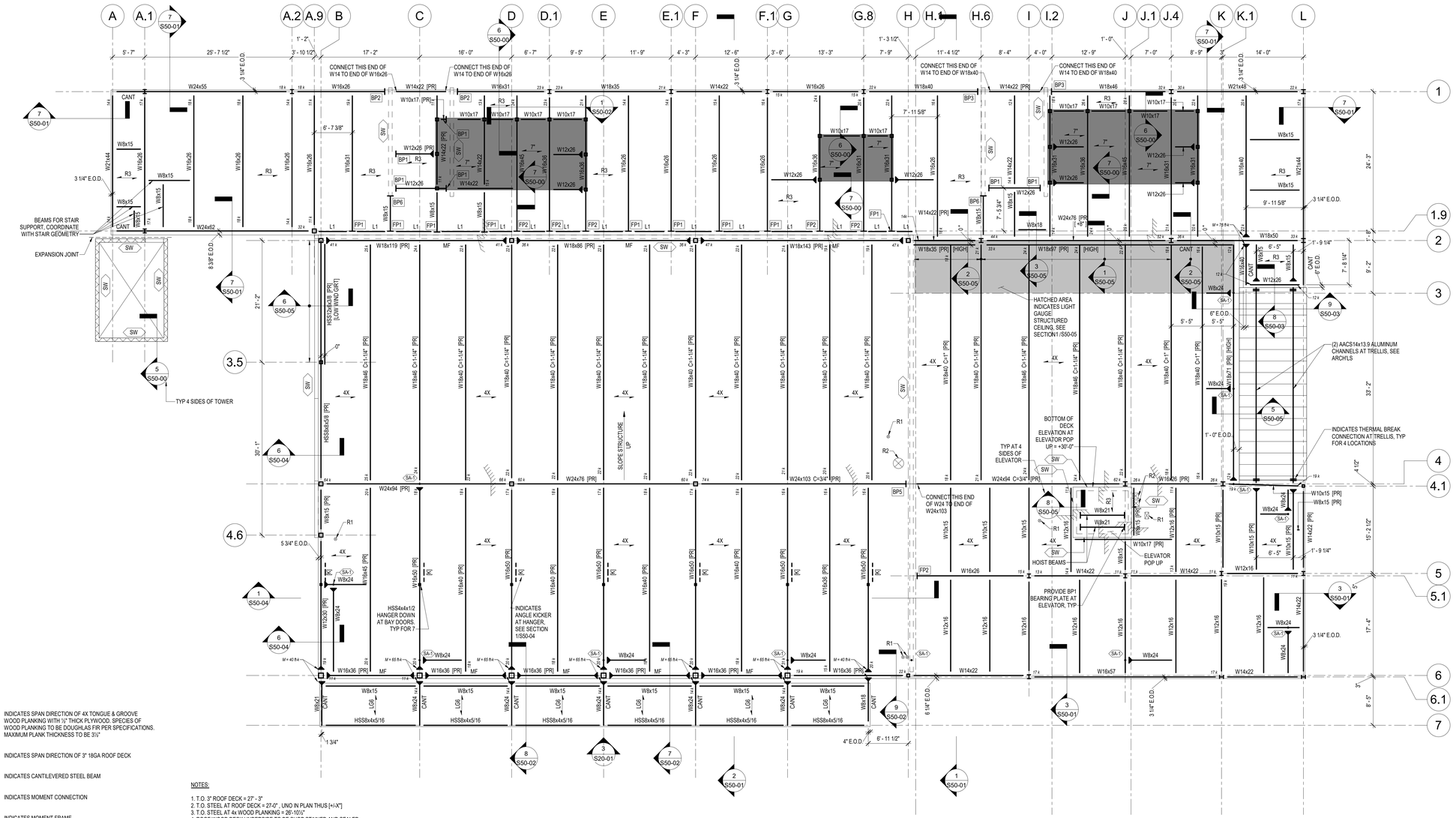

ROOF FRAMING PLAN 1
1/8" = 1'-0"

LEGEND:

- 4X — INDICATES SPAN DIRECTION OF 4X TONGUE & GROOVE WOOD PLANKING WITH ½" THICK PLYWOOD. SPECIES OF WOOD PLANKING TO BE DOUGHLAS FIR PER SPECIFICATIONS. MAXIMUM PLANK THICKNESS TO BE 3½"
- R3 — INDICATES SPAN DIRECTION OF 3" 18GA ROOF DECK
- CANT — INDICATES CANTILEVERED STEEL BEAM
- INDICATES MOMENT CONNECTION
- MF — INDICATES MOMENT FRAME
- [PR] — INDICATES EXPOSED BEAMS TO BE PRIMED AND PAINTED, SEE ARCH'LS.
- PU — INDICATES HSS6x6x½ H-D GALVANIZED MECHANICAL SCREEN POST UP
- 7" — INDICATES SPAN DIRECTION OF 4" NWT CONC ON 3"-18 GA COMPOSITE METAL DECK WITH 6x6 W2.1x2.1 WWF. TOTAL SLAB THICKNESS = 7".
- L1 — INDICATES L4X4X5/16, LEDGER ANCHORED TO CMU WITH ½"Ø HILTI HIT-HY 270 ANCHORS @ 16" O.C., 6½" EMBEDMENT
- LG6 — INDICATES SPAN DIRECTION OF 6" DEEP 600S200-43 CFM JOISTS @ 16" O.C. WITH 1/2" THICK PLYWOOD
- SW — INDICATES 8" CMU SHEAR WALL, SEE ELEVATIONS FOR REINFORCEMENT
- BPx — INDICATES BEAM POCKET INTO CMU CONNECTION PER DETAIL 1 /S30-02
- FPx — INDICATES FACE PLATE CONNECTION TO CMU WALL PER SECTIONS 10 /S50-03AND 11 /S50-03
- SA-1 — INDICATES FALL PROTECTION SAFETY TIE-OFF ANCHOR CENTERED ON AND WELDED TO STEEL BEAM. SEE SECTION 4 /S50-05
- R1 — INDICATES UNREINFORCED ROOF OPENING THROUGH 4X WOOD PLANKING. COORDINATE FINAL LOCATION OF OPENING WITH MECH'L CONTRACTOR.
- R2 — INDICATES ROOF OPENING THROUGH 4X WOOD PLANKING TO BE REINFORCED PER DETAIL 5 /S50-04 . COORDINATE FINAL LOCATION OF OPENING WITH MECH'L CONTRACTOR.

NOTES:

1. T.O. 3" ROOF DECK = 27'-.3"
2. T.O. STEEL AT ROOF DECK = 27'-0" , UNO IN PLAN THUS [+/-X"]
3. T.O. STEEL AT 4x WOOD PLANKING = 26'-10½"
4. ROOF WOOD DECK UNDERSIDE TO BE SHOP STAINED AND SEALED. REFER TO ARCH'LS FOR EXTENT OF SHOP PERFORMED STAIN AND SEALER.

PHOTOVOLTAIC PANEL NOTES:

1. 4x WOOD PLANKING ROOF STRUCTURE HAS BEEN DESIGNED FOR 15 PSF UNIFORM PV SELF WEIGHT.
2. THICKNESS OF STRUCTURE FOR ATTACHMENT = 4" NOMINAL PLANKING + ½" PLYWOOD + 3½"±. FINAL PLANKING THICKNESS TO BE COORDINATED WITH APPROVED SUBMITTALS.
3. MAXIMUM ALLOWABLE POINT LOADING ON WOOD PLANKING TO BE 380 LBS DOWNWARDS AND 380 LBS UPWARDS (ASD). POINT LOAD SHOULD BE REACTION OF PANEL SYSTEM AND INCLUDE SELF WEIGHT, SNOW AND WIND IN APPROPRIATE COMBINATION.

BEAM PENETRATION PRICING NOTES:

SEE FP AND P DRAWINGS FOR LOCATIONS OF BEAM PENETRATIONS. ASSUME 6" DIAMETER, UNREINFORCED, SHOP PERFORMED PENETRATIONS. ASSUME ADDITIONAL 20% PENETRATION QUANTITY FOR PRICING.

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KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE

ROOF FRAMING PLAN

SHEET NUMBER

S11-03

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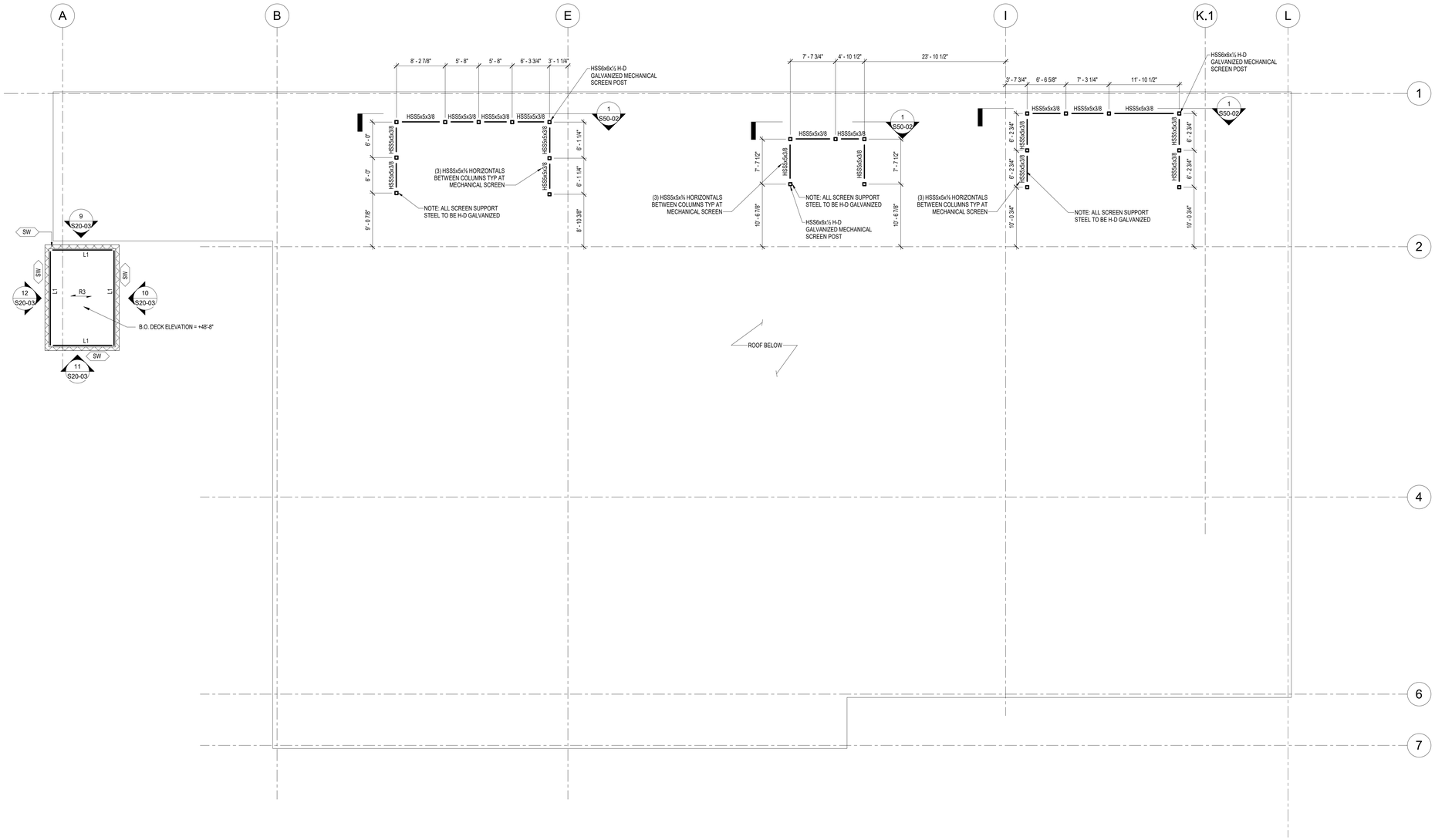

HIGH ROOF FRAMING 1
1/8" = 1'-0"

LEGEND:

- R3 — INDICATES SPAN DIRECTION OF 3" 18GA ROOF DECK
- SW — INDICATES 8" CMU SHEAR WALL, SEE ELEVATIONS FOR REINFORCEMENT
- L1 — INDICATES L4X4X5/16, LEDGER ANCHORED TO CMU WITH ¾"Ø HILTI HIT-HY 270 ANCHORS @ 16" O.C., 6½" EMBEDMENT

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ISSUE CHART

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Job Number 157132.000

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HIGH ROOF FRAMING

SHEET NUMBER

S11-04

CONSTRUCTION DOCUMENTS 12/19/25

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ROOF																														ROOF
27' - 0"					[PR]	[PR]	[PR]	[PR]	[PR]	[PR]		[PR]	[PR]		[PR]		[PR]	[PR]	[PR]	[PR]	[PR]	[PR]					W8x24			27' - 0"
LEVEL 02																														LEVEL 02
14' - 0"	W8x28 [PR]	W8x28 [PR]	W8x28 [PR]	HSS8x8x1/4 [PR]	HSS8x8x1/2 [PR]	HSS8x8x1/4 [PR]	HSS8x8x3/8 [PR]	HSS8x8x3/8 [PR]	HSS10x10x5/8 [PR]	HSS10x10x5/8 [PR]	HSS8x8x1/2	HSS8x8x1/2 [PR]	HSS10x10x5/8	W8x24 [PR]	HSS10x10x5/8	W8x24 [PR]	HSS8x8x1/2	HSS8x8x1/2 [PR]	HSS10x10x5/8	W8x24 [PR]	HSS8x8x1/2 [PR]	HSS10x10x5/8 [PR]	W8x24 [PR]	HSS8x8x1/2 [PR]	HSS8x8x1/4	W8x24 [PR]	W8x31 [PR]	W8x35 [PR]	W8x24	W8x31 [PR]	14' - 0"
LEVEL 01																														LEVEL 01
0"																														0"
BASE PLATE SIZE t x B x N	1"x12"x12"	1"x14½"x14½"	1"x14½x12"	¾"x14½"x14½"	¾"x15"x9"	1"x12"x7"	¾"x15"x9"	¾"x15"x9"	1½"x18"x18"	1½"x18"x18"	¾"x15"x9"	¾"x15"x15"	1½"x18"x18"	1"x14½x12"	1½"x18"x18"	1"x14½x12"	¾"x15"x9"	¾"x15"x15"	1⅜"x18"x18"	1"x14½x12"	1½"x18"x18"	1"x14½x12"	¾"x15"x9"	1"x12"x7"	½"x14½"x14½"	1"x14½"x14½"	¾"x14½"x14½"	¾"x14½"x14½"		¾"x14½"x14½"	
ANCHOR BOLT PATTERN	C	A	B	A	D	D	D	D	E	E	D	F	E	B	E	B	D	F	E	B	E	B	D	D	A	A	A	A		A	
B.O. BASE PLATE ELEVATION	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-10"	-1' - 0"	-10"	-10"	-10"	-10"	-10"		-10"	
Column Locations	A.1-1	A.1-1.9	A.2-1	A.9-1.9	B-2	B-3.5	B-4	B-4.6	B-6	C-6	D-2	D-4	D-6	D.1-1	E-6	E.1-1	F-2	F-4	F-6	F.1-1	G-6	G.8-1	H-2	H-6	H.1-7	H.6-2	H.6-3	I-5.1	I-6	I.2-6.1	

ROOF																		ROOF
27' - 0"			W8x24			[PR]				W8x24							W8x24	27' - 0"
LEVEL 02																		LEVEL 02
14' - 0"	W8x24 [PR]	W8x48 [IP]		HSS8x8x1/4 [PR]	W8x24 [IP]	W8x31 [PR]	W8x48	W8x40	W8x24 [IP]	W8x24 [PR]	W8x31 [IP]	W8x31 [IP]	W8x31	W8x35	HSS5x5x1/2 [IP]	W8x24 [IP]	W8x24	14' - 0"
LEVEL 01																		LEVEL 01
0"																		0"
BASE PLATE SIZE t x B x N	¾"x14½"x14½"	1¼"x14½"x12"		1"x12"x7"	½"x14½"x14½"	1"x14½x12"	1½"x14½"x14½"	1"x14½"x14½"	¾"x14½"x14½"	½"x14½"x14½"	1"x14½"x14½"	½"x12"x12"	½"x14½"x14½"	¾"x14½"x14½"	1"x12"x7"	½"x14½"x14½"	¾"x14½"x14½"	
ANCHOR BOLT PATTERN	A	B		D	A	B	A	A	A	A	A	C	A	A	D	A	A	
B.O. BASE PLATE ELEVATION	-10"	-10"		-10"	-10"	-10"	-10"	-10"	-10"	-1' - 4"	-10"	-10"	-10"	-10"	-10"	-10"	-1' - 4"	
Column Locations	I.2-7	J-4	J-5.1	J-6.1	J.1-5	J.4-1	J.4-2	J.4-3	K-5	K-6.1	K.1-4	L-1	L-2	L-3	L-4.1	L-5	L-6.1	

[PR] INDICATES EXPOSED COLUMN TO BE PRIMED AND PAINTED, SEE ARCH'LS. EXTENT INDICATED PER FLOOR

[IP] INDICATES EXPOSED COLUMN TO BE PRIMED AND PAINTED WITH INTUMESCENT PAINT, SEE ARCH'LS. EXTENT INDICATED PER FLOOR

COLUMN SCHEDULE
1/8" = 1'-0" 1

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KEY PLAN

ISSUE CHART

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Job Number 157132.000

TITLE

COLUMN SCHEDULE

SHEET NUMBER

S20-00

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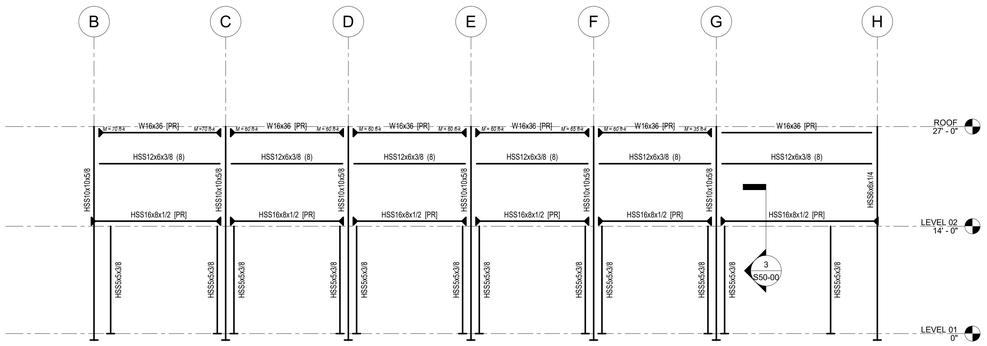
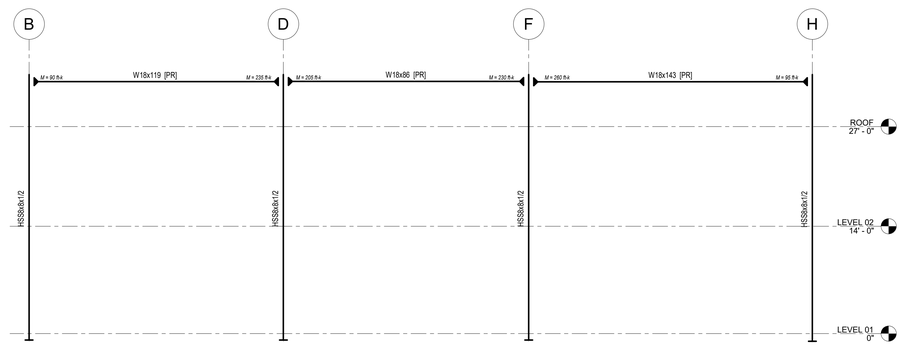


MOMENT FRAME ELEVATION AT GRID 6 (3)
1/8" = 1'-0"



MOMENT FRAME ELEVATION AT GRID 2 (2)
1/8" = 1'-0"

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 15713.2.000

TITLE

MOMENT FRAME ELEVATIONS

SHEET NUMBER

S20-01

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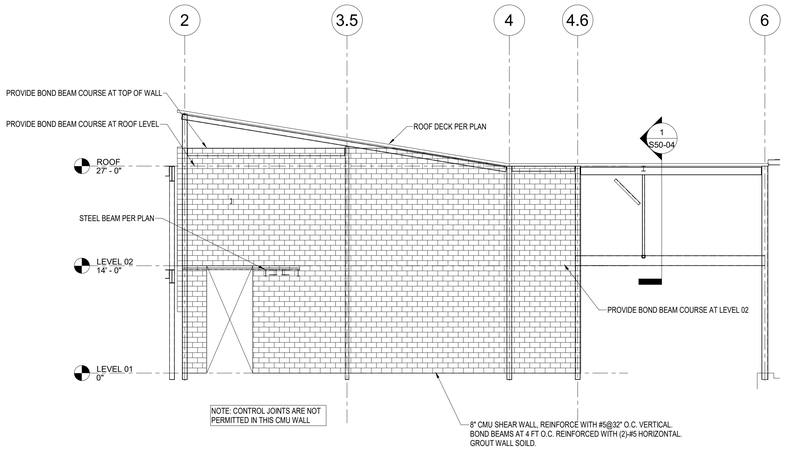
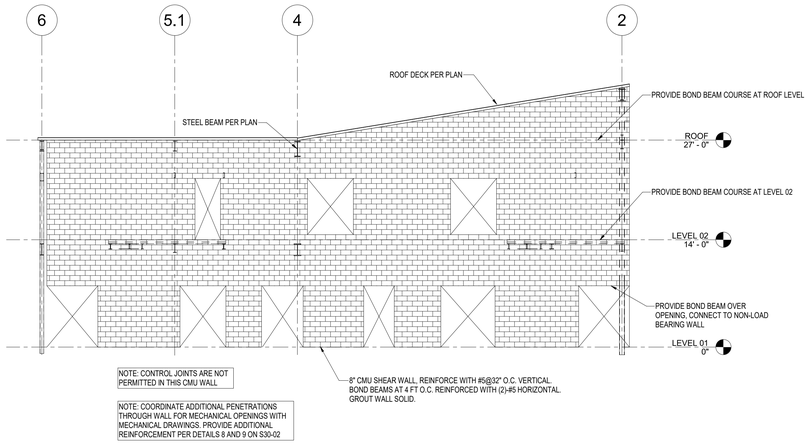
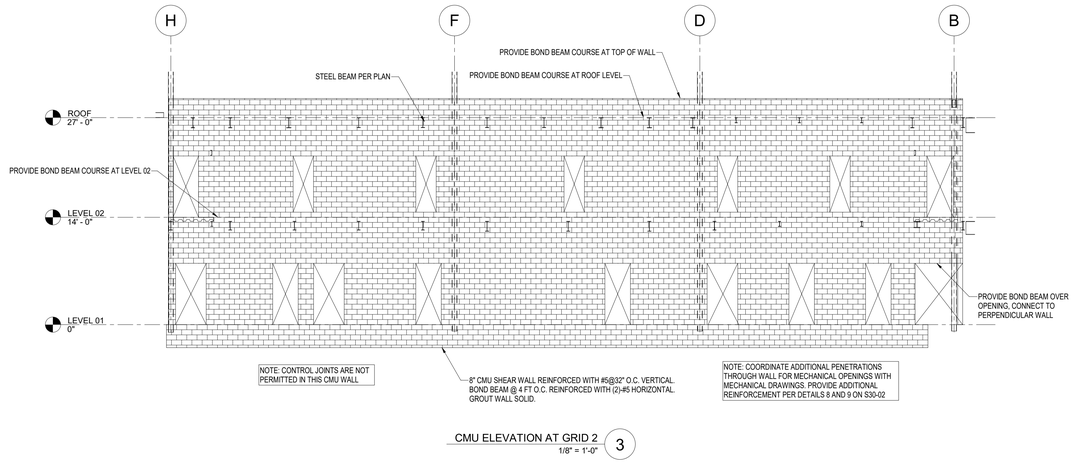


CMU ELEVATION AT GRID B
1/8" = 1'-0"
1



CMU ELEVATION AT GRID H
1/8" = 1'-0"
2



CMU ELEVATION AT GRID 2
1/8" = 1'-0"
3

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CITY OF WORCESTER

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WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

CMU SHEAR WALL ELEVATIONS

SHEET NUMBER

S20-02

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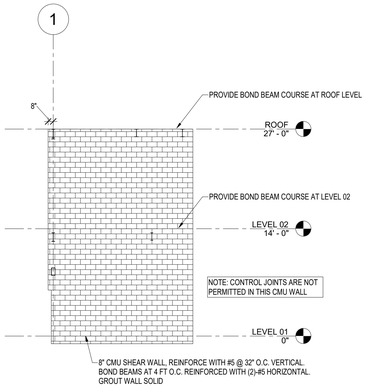
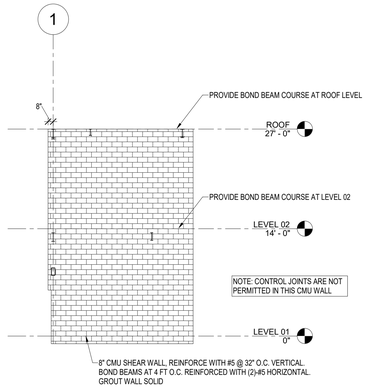


CMU ELEVATION STAIR C WEST WALL 1
1/8" = 1'-0"



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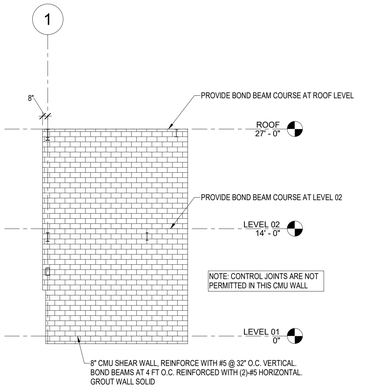
1/8" = 1'-0"



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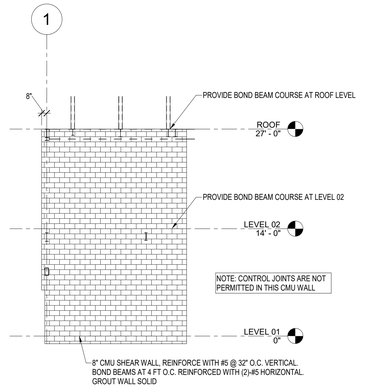

CMU ELEVATION STAIR B EAST WALL 4
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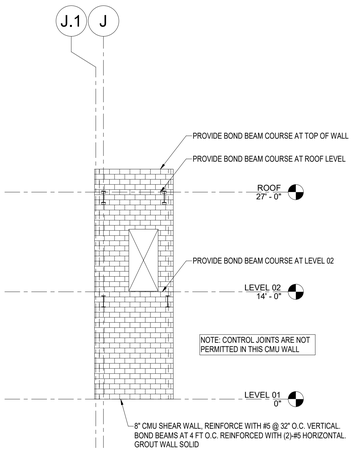
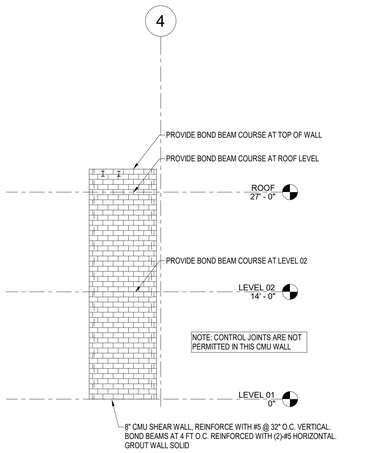
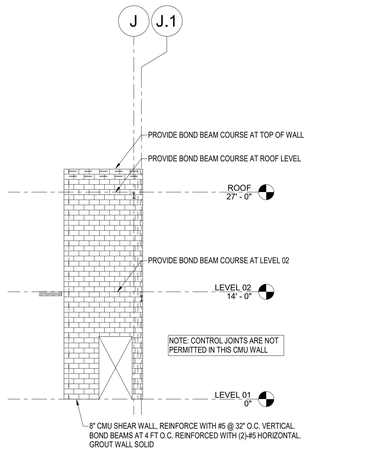


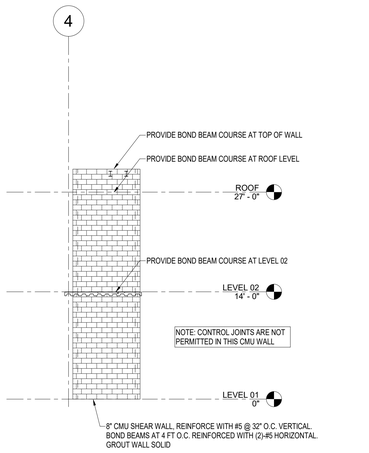
CMU ELEVATION AT GRID 4
1/8" = 1'-0"
5



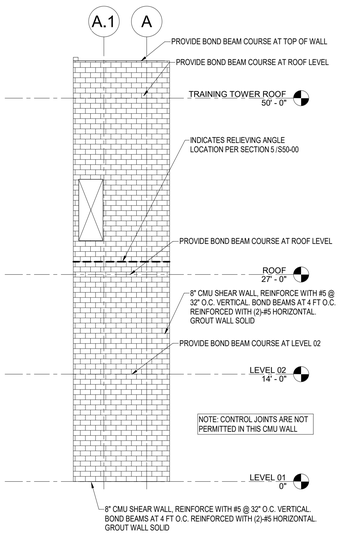
CMU ELEVATION AT GRID J.1
1/8" = 1'-0"
6



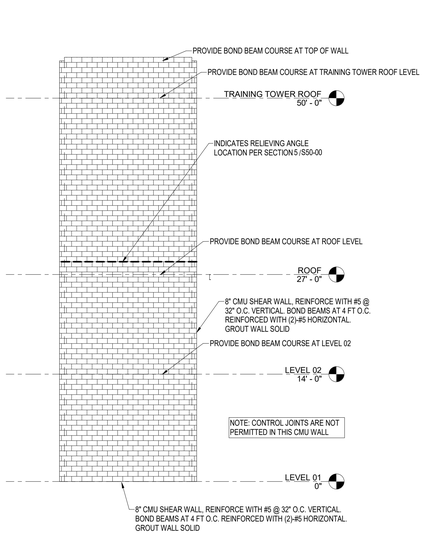
CMU ELEVATION AT GRID 4.6
1/8" = 1'-0"
7



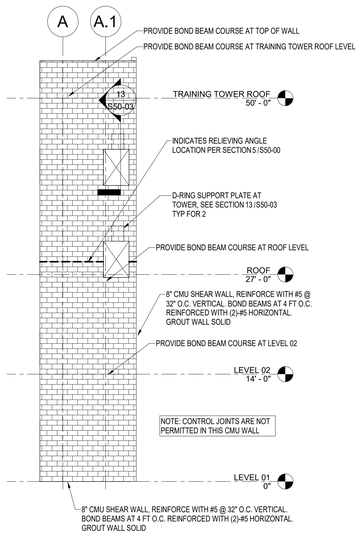
CMU ELEVATION AT ELEVATOR WEST WALL
1/8" = 1'-0"
8



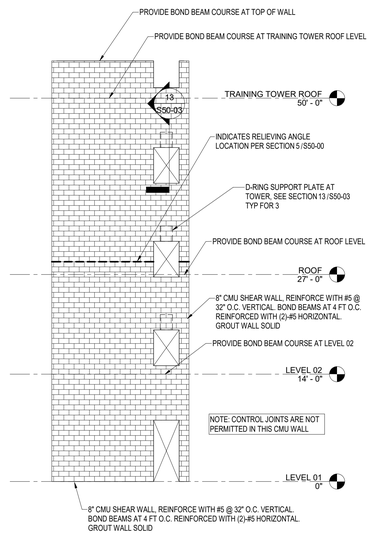
CMU ELEVATION TRAINING TOWER NORTH WALL
1/8" = 1'-0"
9



CMU ELEVATION TRAINING TOWER EAST WALL
1/8" = 1'-0"
10



CMU ELEVATION TRAINING TOWER SOUTH WALL
1/8" = 1'-0"
11



CMU ELEVATION TRAINING TOWER WEST WALL
1/8" = 1'-0"
12

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

CMU SHEAR WALL ELEVATIONS

SHEET NUMBER

S20-03

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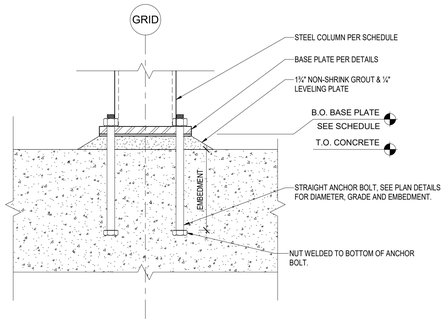
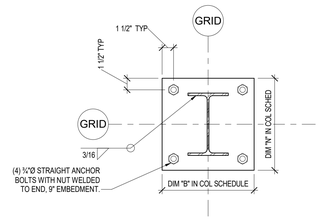
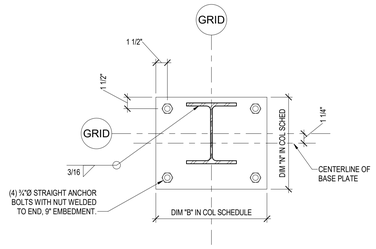


TYPICAL BASE PLATE SECTION 1
1 1/2" = 1'-0"



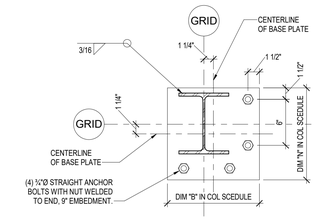
BASE PLATE PLAN DETAIL

ANCHOR BOLT PATTERN "A" 2
1 1/2" = 1'-0"



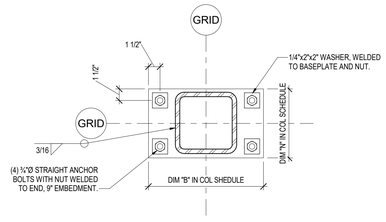
BASE PLATE PLAN DETAIL

ANCHOR BOLT PATTERN "B" 3
1 1/2" = 1'-0"



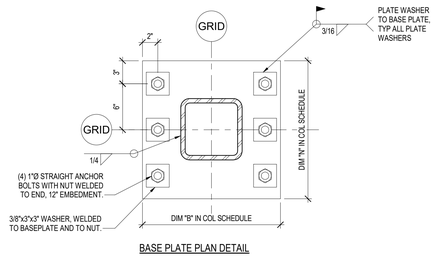
BASE PLATE PLAN DETAIL

ANCHOR BOLT PATTERN "C" 4
1 1/2" = 1'-0"



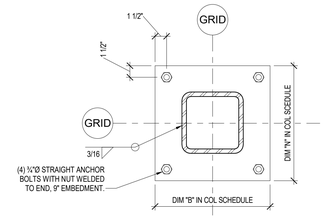
BASE PLATE PLAN DETAIL

ANCHOR BOLT PATTERN "D" 5
1 1/2" = 1'-0"



BASE PLATE PLAN DETAIL

ANCHOR BOLT PATTERN "E" 6
1 1/2" = 1'-0"



BASE PLATE PLAN DETAIL

ANCHOR BOLT PATTERN "F" 7
1 1/2" = 1'-0"

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 15713.2.000

TITLE

BASE PLATE DETAILS

SHEET NUMBER

S20-04

CONSTRUCTION DOCUMENTS 12/19/25

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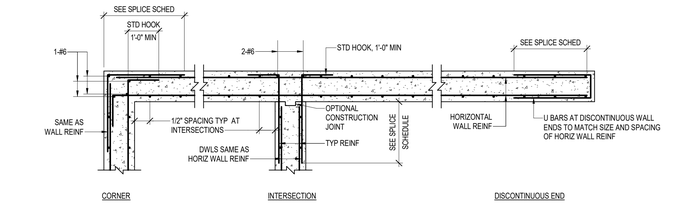
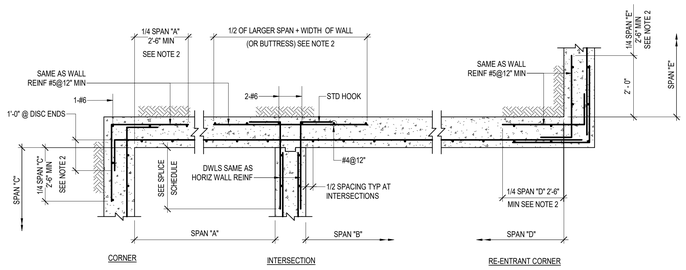


DOUBLE LAYER

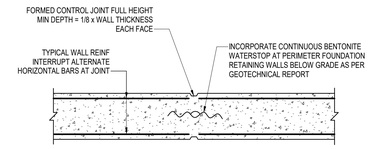


SINGLE LAYER

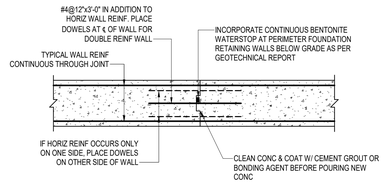
NOTES:

1. FOR WALL REINFORCEMENT, SEE FOUNDATION SECTIONS.
2. IF SPANS ARE LESS THAN 7 FEET, EXTEND REINFORCEMENT INTO ADJACENT SPAN.
3. ALL SPLICE LENGTHS ARE TENSION SPLICES PER CHARTS IN TYPICAL DETAILS.

TYPICAL WALL REINFORCEMENT DETAIL 1



CONTROL JOINT

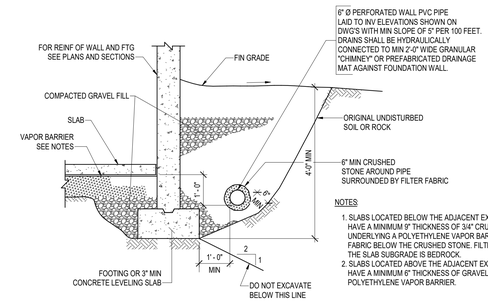


CONSTRUCTION JOINT

NOTE:

1. KEY WIDTH NOT TO EXCEED 1/3 DEPTH OF WALL.
2. VERTICAL CONSTRUCTION JOINTS SHALL BE LOCATED 4'-0" MIN AWAY FROM WALL CORNERS, FACE OF SUPPORTING PIERS OR BUTTRESSES, AND/OR WALL OPENINGS.
3. REFER TO GENERAL NOTES AND SPECIFICATIONS FOR JOINT SPACING REQUIREMENTS. SUBMIT JOINT LOCATIONS FOR APPROVAL.

TYPICAL VERTICAL JOINTS IN CONCRETE WALL 2

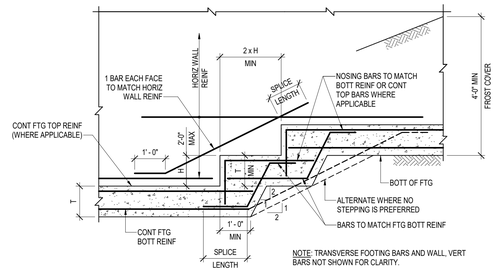


NOTES

1. SLABS LOCATED BELOW THE ADJACENT EXTERIOR GRADE SHALL HAVE A MINIMUM 9" THICKNESS OF 3/4" CRUSHED STONE UNDERLYING A POLYETHYLENE VAPOR BARRIER. PROVIDE A FILTER FABRIC BELOW THE CRUSHED STONE. FILTER FABRIC NOT REQ'D IF THE SLAB SUBGRADE IS BEDROCK.
2. SLABS LOCATED ABOVE THE ADJACENT EXTERIOR GRADE SHALL HAVE A MINIMUM 6" THICKNESS OF GRAVEL FILL UNDERLYING A POLYETHYLENE VAPOR BARRIER.

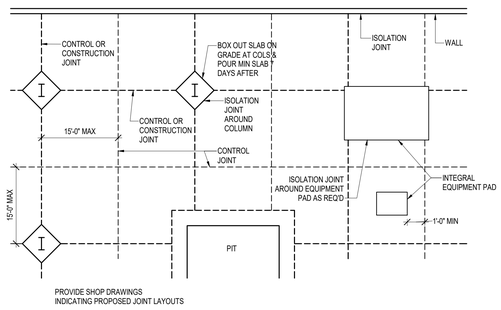
EXTERIOR FOUNDATION WALL

TYPICAL UNDERSLAB FILL AND FOUNDATION DRAIN DETAILS 3

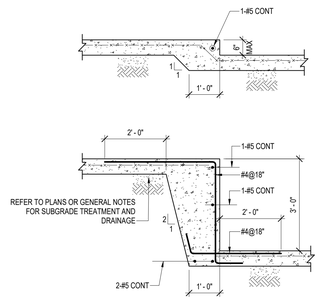


NOTE: TRANSVERSE FOOTING BARS AND WALL, VERT BARS NOT SHOWN FOR CLARITY.

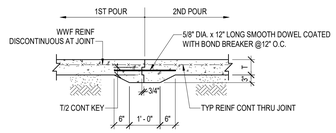
TYPICAL STEPPED FOOTING DETAIL AT FOUNDATION WALLS 4



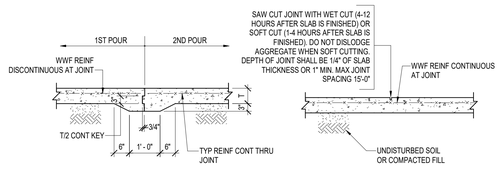
LAYOUT OF CONTROL AND CONSTRUCTION JOINTS IN CONCRETE SLABS ON GRADE 5



TYPICAL STEPPED SLAB ON GRADE DETAILS 7



CONSTRUCTION JOINT AT HEAVY LOADING

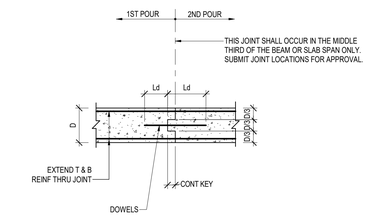


CONSTRUCTION JOINT CONTROL JOINT

NOTE:

1. FILL SAW CUTS WITH RIGID OR SEMI RIGID JOINT FILLER WHERE REQUIRED BY ARCHITECT TO HIDE OR PROTECT JOINT.
2. SEE LAYOUT DETAIL FOR LOCATIONS OF SLAB ON GRADE JOINTS.
3. WWF REINFORCEMENT SHALL BE LOCATED WITHIN UPPER THIRD OF SLAB THICKNESS, OR 2" MAX FROM TOP OF SLAB.

SLAB ON GRADE JOINTS 6



NOTES:

1. FOR BEAM SIZE AND REINF, SEE BEAM SCHEDULE. FOR SLAB SIZE AND REINF, SEE PLAN.
2. THIS DETAIL APPLIES TO HORIZONTAL CONSTRUCTION JOINTS. CONTRACTOR TO SUBMIT PROPOSED JOINT LOCATIONS IN BEAMS AND SLABS FOR RENEW.

TYPICAL BEAM/ SLAB CONSTRUCTION JOINT DETAIL 8

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

TYPICAL DETAILS

SHEET NUMBER

S30-00

CONSTRUCTION DOCUMENTS 12/19/25

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ACI TENSION DEVELOPMENT LENGTHS (Ld) AND CLASS 'A' LAP SPLICE LENGTHS

BAR SIZE	LAP CLASS	f'c=3,000 PSI				f'c=4,000 PSI				f'c=5,000 PSI			
		TOP BARS		OTHER BARS		TOP BARS		OTHER BARS		TOP BARS		OTHER BARS	
		CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2
#3	A	22	32	17	25	19	28	15	22	17	25	13	19
	B	28	42	22	32	24	36	19	28	22	33	17	25
#4	A	29	43	22	33	25	37	19	29	22	33	17	26
	B	37	56	29	43	32	48	25	37	29	43	22	33
#5	A	36	54	28	41	31	47	24	36	28	42	22	32
	B	47	70	36	54	40	60	31	47	36	54	28	42
#6	A	43	64	33	50	37	56	29	43	33	50	26	38
	B	56	84	43	64	48	72	37	56	43	65	33	50
#7	A	63	94	48	72	54	81	42	63	49	73	37	56
	B	81	122	63	94	70	106	54	81	63	94	49	73
#8	A	72	107	55	82	62	93	48	71	55	83	43	64
	B	93	139	72	107	80	121	62	93	72	108	55	83
#9	A	81	121	62	93	70	105	54	81	63	94	48	72
	B	105	157	81	121	91	136	70	105	81	122	63	94
#10	A	91	136	70	105	79	118	61	91	70	105	54	81
	B	118	177	91	136	102	153	79	118	91	137	70	105
#11	A	101	151	78	116	87	131	67	101	78	117	60	90
	B	131	196	101	151	113	170	87	131	101	152	78	117
#14	N/A	121	181	93	139	105	157	81	121	94	140	72	108
#18	N/A	161	241	124	186	139	209	107	161	125	187	96	114

ACI TENSION DEVELOPMENT LENGTHS (Ld) AND CLASS 'A' LAP SPLICE LENGTHS

BAR SIZE	LAP CLASS	f'c=6,000 PSI				f'c=7,000 PSI				f'c=8,000 PSI			
		TOP BARS		OTHER BARS		TOP BARS		OTHER BARS		TOP BARS		OTHER BARS	
		CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2
#3	A	15	23	12	18	14	21	12	16	13	20	12	15
	B	20	30	16	23	18	28	16	21	17	26	16	20
#4	A	20	31	16	24	19	28	15	22	18	26	14	20
	B	26	40	20	31	25	37	19	28	23	34	18	26
#5	A	25	38	20	29	24	35	18	27	22	33	17	25
	B	33	49	25	38	31	46	24	35	29	43	22	33
#6	A	31	46	24	35	28	42	22	33	26	40	20	30
	B	40	59	31	46	37	55	28	42	34	51	26	40
#7	A	44	66	34	51	41	61	32	47	38	58	30	44
	B	58	86	44	66	53	80	41	61	50	75	38	58
#8	A	51	76	39	58	47	70	36	54	44	66	34	51
	B	66	98	51	76	61	91	47	70	57	85	44	66
#9	A	57	85	44	66	53	79	41	61	49	74	38	57
	B	74	111	57	85	69	103	53	79	64	96	49	74
#10	A	64	96	49	74	59	89	46	69	56	83	43	64
	B	83	125	64	96	77	116	59	89	72	108	56	83
#11	A	71	107	55	82	66	99	51	76	62	93	48	71
	B	93	139	71	107	86	128	66	99	80	120	62	93
#14	N/A	86	128	66	99	79	119	61	91	74	111	57	85
#18	N/A	114	171	88	131	106	158	81	122	99	148	76	114

NOTES:

1. TABULATED VALUES ARE BASED ON GRADE 60 REINFORCING BARS AND NORMAL WEIGHT CONCRETE.
2. TENSION DEVELOPMENT LENGTHS OF STANDARD HOOKS ARE CALCULATED PER ACI 318-95, SECTION 318-95, SECTIONS 12.2.2 AND 12.15, RESPECTIVELY. TABULATED VALUES FOR BEAMS OR COLUMNS ARE BASED ON TRANSVERSE REINFORCEMENT AND CONCRETE COVER MEETING MINIMUM CODE REQUIREMENTS. LENGTHS ARE IN INCHES.
3. 'CASES 1 AND 2, WHICH DEPEND ON THE TYPE OF STRUCTURAL ELEMENT, CONCRETE COVER, AND THE CENTER-TO-CENTER SPACING OF THE BARS, ARE DEFINED AS:
   BEAMS OR COLUMNS: CASE 1: COVER AT LEAST 1.0 db AND c-c SPACING AT LEAST 2.0 db
   CASE 2: COVER LESS THAN 1.0 db OR c-c SPACING LESS THAN 2.0 db

   ALL OTHERS: CASE 1: COVER AT LEAST 1.0 db AND c-c SPACING AT LEAST 3.0 db
   CASE 2: COVER LESS THAN 1.0 db OR c-c SPACING LESS THAN 3.0 db
4. LAP SPLICE LENGTHS ARE MULTIPLES OF TENSION DEVELOPMENT LENGTHS; CLASS A = 1.0 ld AND CLASS B = 1.3 ld (ACI 318-95, SECTION 12.15.1).
5. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
6. FOR LIGHTWEIGHT AGGREGATE CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.3.
7. FOR EPOXY-COATED BARS, MULTIPLY THE TABULATED VALUES BY ONE OF THE FOLLOWING FACTORS:

CONCRETE COVER AND SPACING	TOP BARS	OTHER BARS
COVER < 3.0 db OR c-c SPACING < 7.0 db	1.7/1.3 = 1.31	1.50
COVER ≥ 3.0 db AND c-c SPACING ≥ 7.0 db	1.20	1.20

ACI COMPRESSION DEVELOPMENT (Ldc) AND LAP SPLICE LENGTHS

BAR SIZE	COMPRESSION DEVELOPMENT LENGTHS PER f'c (PSI)						COMPRESSION LAP SPLICE LENGTH
	3,000	4,000	5,000	6,000	7,000	8,000	
#3	9	8	8	8	8	8	12
#4	11	10	9	9	9	9	15
#5	14	12	12	12	12	12	19
#6	17	15	14	14	14	14	23
#7	19	17	16	16	16	16	27
#8	22	19	18	18	18	18	30
#9	25	22	21	21	21	21	34
#10	28	24	23	23	23	23	38
#11	31	27	26	26	26	26	43
#14	37	32	31	31	31	31	N/A
#18	50	43	41	41	41	41	N/A

NOTES:

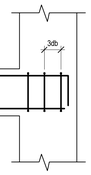
1. TABULATED VALUES ARE BASED ON GRADE 60 REINFORCING BARS AND NORMAL WEIGHT CONCRETE.
2. COMPRESSION DEVELOPMENT LENGTHS AND COMPRESSION LAP SPLICE LENGTHS ARE CALCULATED PER ACI 318-95, SECTIONS 12.3 AND 12.16, RESPECTIVELY. LENGTHS ARE IN INCHES.
3. FOR COMPRESSION DEVELOPMENT LENGTHS, IF BARS ARE ENCLOSED IN SPIRALS OR TIES PER ACI 318-95, SECTION 12.3.3.2 THEN A MODIFICATION FACTOR OF 0.75 MAY BE APPLIED BUT THE LENGTH MUST NOT BE LESS THAT 8 INCHES.
4. FOR COMPRESSION LAP SPLICE LENGTHS:
   A. IF BARS ARE ENCLOSED IN A TIED-REINFORCED COMPRESSION MEMBER PER ACI 318-95, SECTION 12.17.2.4, THEN A MODIFICATION FACTOR OF 0.83 MAY BE APPLIED BUT THE LENGTH MUST NOT BE LESS THAT 12 IN.
   B. IF THE BARS ARE ENCLOSED IN A SPIRALLY-REINFORCED COMPRESSION MEMBER PER ACI 318-95, SECTION 12.17.2.5, THEN A MODIFICATION FACTOR OF 0.75 MAY BE APPLIED BUT THE LENGTH MUST NOT BE LESS THAN 12 INCHES.
   C. THE TABULATED LENGTHS ARE APPLICABLE FOR ALL CONCRETE STRENGTHS OF AT LEAST 3,000 PSI.
5. ACI 318-95 DOES NOT ALLOW LAP SPLICES OF #14 OF #18 BARS, EXCEPT TO #11 OR SMALLER BARS.

ACI HOOK DEVELOPMENT LENGTHS (Ldh)

BAR SIZE	f'c IN PSI					
	3000	4000	5000	6000	7000	8000
#3	9	7	7	6	6	6
#4	11	10	9	8	7	7
#5	14	12	11	10	9	9
#6	17	15	13	12	11	10
#7	19	17	15	14	13	12
#8	22	19	17	16	15	14
#9	25	22	19	18	16	15
#10	28	24	22	20	19	17
#11	31	27	24	22	21	19
#14	37	32	29	27	25	23
#18	50	43	39	35	33	31

NOTES:

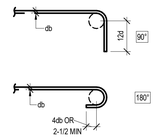
1. TABULATED VALUES ARE BASED ON GRADE 60 REINFORCING BARS AND NORMAL WEIGHT CONCRETE.
2. TENSION DEVELOPMENT LENGTHS OF STANDARD HOOKS ARE CALCULATED PER ACI 318-95, SECTION 318-95, SECTION 12.5. LENGTHS ARE IN INCHES.
3. FOR BAR SIZES #3 THROUGH #11 ONLY:
   A) IF CONCRETE COVER PER ACI 318-95 SECTIONS 12.5.3.2, THEN A MODIFICATION FACTOR OF 0.7 MAY BE APPLIED BUT THE LENGTH MUST NOT BE LESS THAN 8.0 db NOR 6 INCHES.
   B) IF HOOK IS ENCLOSED IN TIES OR STIRRUPS PER ACI 318-95, SECTION 12.5.3.3, THEN A MODIFICATION FACTOR OF 0.8 MAY BE APPLIED BUT THE LENGTH MUST NOT BE LESS THAN 8.0 db NOR 6 INCHES.
4. FOR EPOXY-COATED HOOKS, MULTIPLY THE TABULATED VALUES BY 1.2.



NOTE:
FOR HOOKS WITH BOTH SIDE & TOP OR BOTTOM COVER LESS THAN 2 1/2" ADD ADD'L TIES PER ACI
(AT DISCONTINUOUS MEMBERS ONLY) SEE DETAIL ABOVE

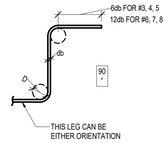
TYPICAL DEVELOPMENT AND LAP LENGTHS 1

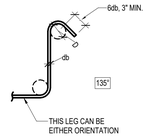
BAR SIZE	db	FINISHED BEND DIA. "D"
#3	9	8
#4	11	8
#5	14	8
#6	17	8
#7	19	16
#8	22	18
#9	25	21
#10	28	23
#11	31	31
#14	37	31
#18	50	41



END HOOKS

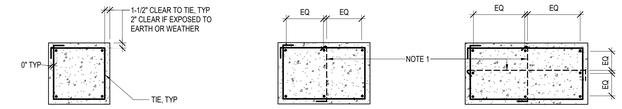
BAR SIZE	db	FINISHED BEND DIA. "D"
#3	3/8"	1-1/2"
#4	1/2"	2"
#5	5/8"	2-1/2"
#6	3/4"	4-1/2"
#7	7/8"	5-1/4"
#8	1"	6"

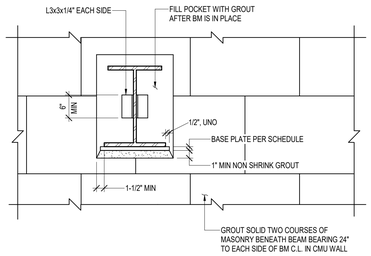




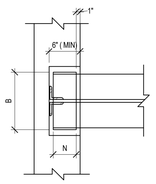
STIRRUP/TIE HOOKS

TYPICAL HOOK DETAILS 2

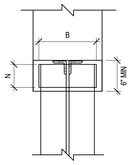

1-1/2" CLEAR TO TIE, TYP
2" CLEAR IF EXPOSED TO
EARTH OR WEATHER
0" TYP
TIE, TYP
EQ
EQ
NOTE 1
EQ
EQ
EQ



SECTION



PLAN

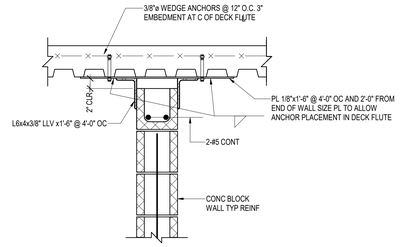


PLAN BP6

BEARING PLATE SCHEDULE

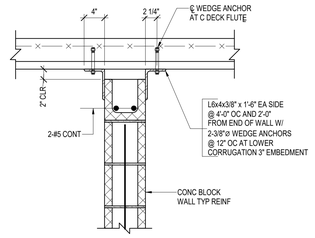
MARK	DIMENSION (BxN)	THICKNESS
BP1	6.5"x6"	¾"
BP2	8"x6"	1"
BP3	10"x6"	1¼"
BP4	17"x6"	2"
BP5	26"x6"	3½"
BP6	6.25"x6"	¾"

BEAM POCKETS 1



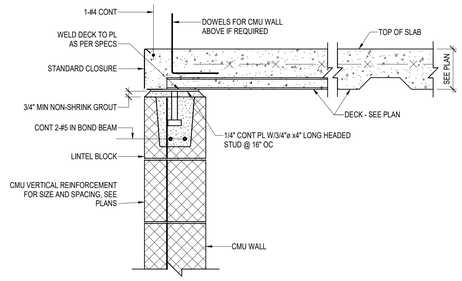
NOTE: AS AN ALTERNATE, PROVIDE PTA-420 PARTITION TOP ANCHORS BY HOHMAN & BARNARD OR EQUAL @ 4'-0" OC

NON-BEARING CMU WALL PARALLEL TO DECK DETAIL 2



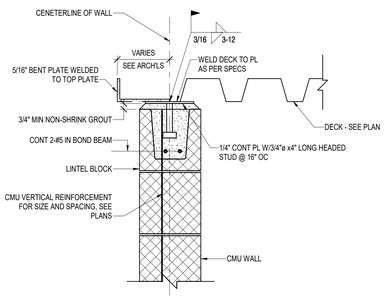
NOTE: AS AN ALTERNATE, PROVIDE PTA-420 PARTITION TOP ANCHORS BY HOHMAN & BARNARD OR EQUAL @ 4'-0" OC

NON-BEARING CMU WALL PERPENDICULAR TO DECK DETAIL 3



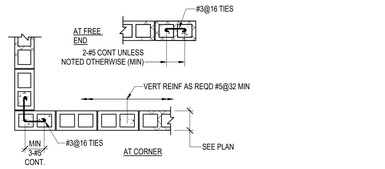
SEE PLANS FOR DECK ORIENTATION

DECK SUPPORT AT CMU WALLS 4



SEE PLANS FOR DECK ORIENTATION

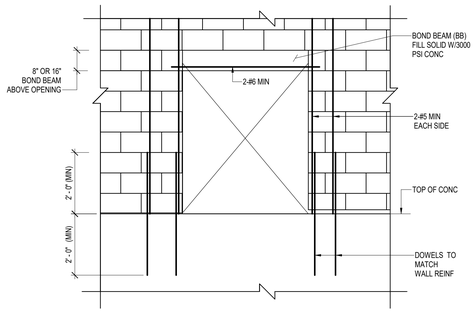
ROOF DECK SUPPORT AT CMU WALLS - EDGE 5



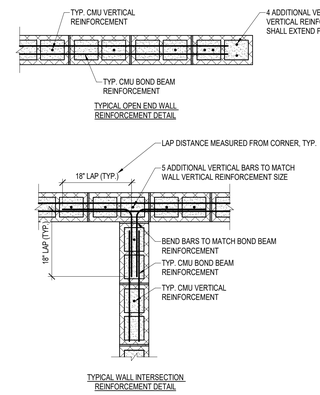
PLAN / CMU WALL

NOTES:

1. SEE SPECS FOR HORIZONTAL REINFORCEMENT REQUIREMENTS.
2. PROVIDE BOND BEAMS WITH MIN 2-#5 CONT BARS AT EACH FLOOR.

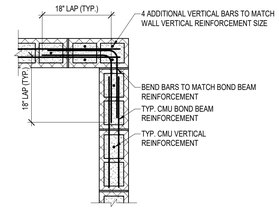


OPENING IN NON-LOAD BEARING CMU WALL 6



TYPICAL OPEN END WALL REINFORCEMENT DETAIL

TYPICAL WALL INTERSECTION REINFORCEMENT DETAIL



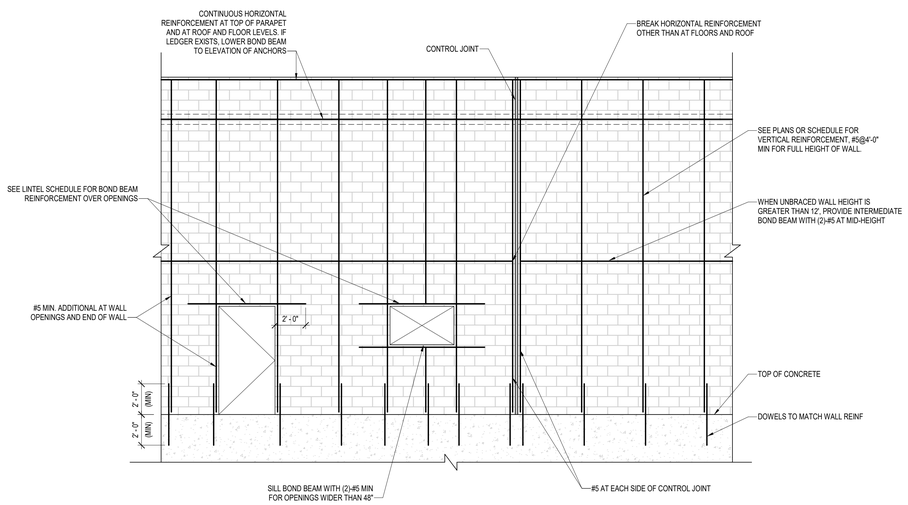
TYPICAL WALL CORNER REINFORCEMENT DETAIL

TYPICAL CMU SHEER WALL PLAN DETAILS 7

CMU BOND BEAM SCHEDULE - 8" CMU

MAX OPENING LENGTH	BOND BEAM DEPTH	HORIZONTAL REINFORCEMENT	SHEAR REINFORCEMENT	MINIMUM BEARING
4' - 0"	8"	(2) #5 BARS BOTTOM	NOT REQ.	6"
7' - 0"	8"	(2) #6 BARS BOTTOM	NOT REQ.	6"
10' - 0"	16"	(2) #6 BARS BOTTOM	NOT REQ.	8"

TYPICAL CMU BOND BEAM SCHEDULE 8



NOTES:

1. CONTROL JOINTS IN CMU TO BE LOCATED 2'-8" MIN FROM EDGE OF OPENING.
2. CENTER VERTICAL BARS IN CELLS UNO.
3. PROVIDE 3,000 PSI GROUT IN CELLS WITH REBAR.
4. PROVIDE CMU SHOP DRAWINGS WITH ALL OPENINGS FOR REVIEW, INCLUDING MEP OPENINGS.
5. PROVIDE LADDER REINFORCEMENT IN HORIZONTAL JOINTS @ 16" OC.

TYPICAL CMU BEARING WALL ELEVATION 9

Perkins&Will

225 Franklin Street, Suite 700
Boston, MA 02110
t 617.478.0300
f 617.478.0321
www.perkinswill.com

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PROJECT

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25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

TYPICAL DETAILS

SHEET NUMBER

S30-02

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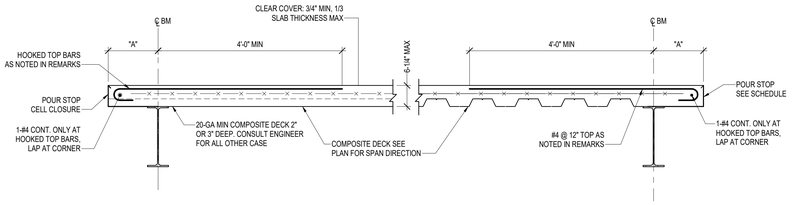
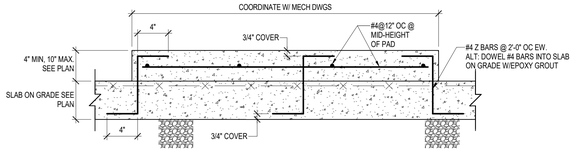


DECK ⊥ TO BEAM	
	REMARKS
A < 10"	
10" ≤ A ≤ 2'-10"	#4 @ 12" TOP

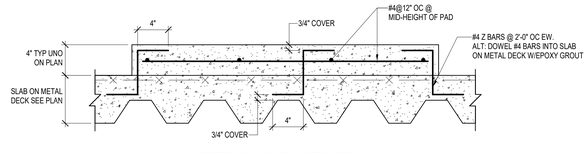
DECK ∥ TO BEAM OR STOPPING AT BEAM		
"A"	POUR STOP PLATE GAGE	REMARKS
A ≤ 6"	14	
6"< A <10"	12	
10"≤ A <12"	10	#4 @ 12" TOP
12"≤ A ≤1'-6"	1/4"	#4 @ 12" TOP

1. SEE PLANS AND ARCHITECT DRAWINGS FOR EDGE OF SLAB DISTANCES.
2. "FOR A > 1'-6" WHERE DECK SPAN IS PARALLEL TO THE BEAM OR A > 2'-10" WHERE DECK IS PERPENDICULAR AND EXTENDS PAST BEAM, NOTIFY ENGINEER.
3. FOR 1/4" THICK POUR STOPS, WELD TO BEAM FLANGE WITH 3/16" FILLET WELD, 3@12, B.S.

TYPICAL EDGE OF SLAB DETAIL 1

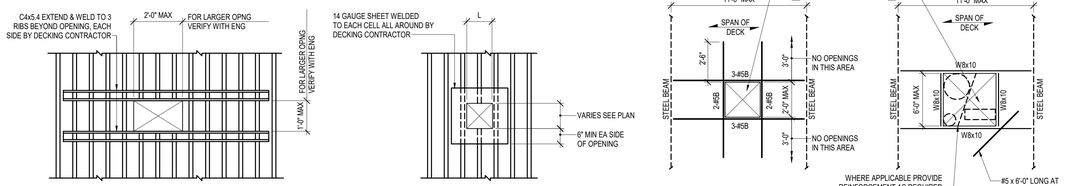


CONCRETE PAD ON SLAB ON GRADE



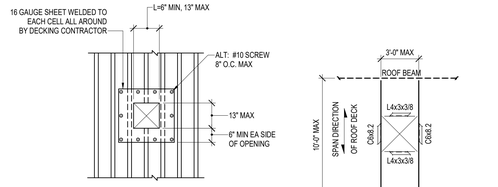
CONCRETE PAD ON SLAB ON METAL DECK

TYPICAL MECHANICAL PAD DETAIL 2

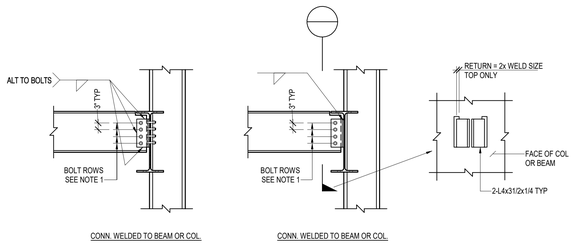


NOTES:
1. FOR OPTION 2, METAL DECK SHALL NOT BE CUT UNTIL CONCRETE HAS CURED.
2. CONTRACTOR SHALL SELECT REINFORCEMENT OPTION BASED ON OPENING SIZE.
3. COORDINATE SIZE, LOCATION AND QUANTITY WITH MECHANICAL AND ARCHITECTURAL DRAWINGS.

REINFORCEMENT AT OPENINGS IN SLABS WITH COMPOSITE METAL DECK 3



FRAMING FOR OPENINGS IN STEEL ROOF DECK (NO CONCRETE) 4



DOUBLE ANGLE CONNECTIONS TO BEAM OR COLUMN

MINIMUM NUMBER OF BOLTS	
BEAM SIZE	"N"
W33	8
W30	8
W27	7
W24	6
W21	5
W18	4
W16	4
W14	3
W12	3
W10	2
W8	2

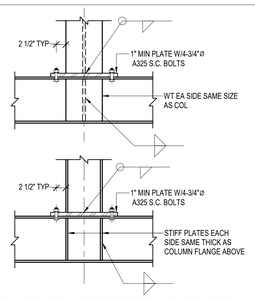
"N" = MINIMUM NUMBER OF BOLT ROWS

NOTE: CONN SIMILAR WHEN CONNECTING TO GIRDER OR COLUMN (SHOWN DASHED)

NOTES:

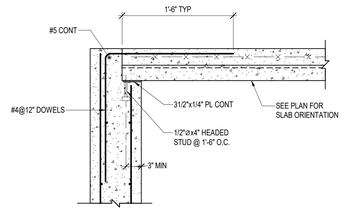
1. SIMPLE SHEAR CONNECTIONS SHALL BE DESIGNED FOR THE REACTION SHOWN ON THE DRAWINGS OR THE GREATEST OF THE FOLLOWING:
   a. REACTION FROM AISC MANUAL OF STEEL TABLES FOR BEAMS FOR APPLICABLE BEAM MATERIAL AS PER GENERAL NOTES.
   b. MINIMUM NUMBER OF BOLTS, SEE TABLE.
2. BOLTS SHALL BE 3/4" DIAMETER A325 MINIMUM U.O.N..
3. PROVIDE WEB REINFORCING AS REQUIRED DUE TO WEB CUTS, COPES ETC..
4. DESIGN OF DOUBLE ANGLE CONNECTIONS SHALL BE BASED ON THE LATEST AISC PROCEDURES SHOWN IN THE AISC MANUAL OF STEEL CONSTRUCTION.
5. FACTOR FOR CONVERSION OF LOADS FROM SERVICE TO ULTIMATE SHALL BE EQUAL TO 1.6.
6. ALTERNATE CONNECTION SYSTEM (SINGLE ANGLE, SEATED, ETC) MAY BE USED ONLY UPON SPECIFIED APPROVAL OF THE ENGINEER OF RECORD. DETAILER SHALL SUBMIT WRITTEN REQUESTS FOR USE OF ALTERNATE CONNECTIONS TO THE ARCHITECT AND ENGINEER OF RECORD.

TYPICAL SIMPLE SHEAR CONNECTION DETAIL 5



NOTE: WELDS MAY BE SUBSTITUTED FOR BOLTS AS REQUIRED TO MEET ARCHITECTURAL CONSTRAINTS.

TYPICAL COLUMN OR POST OVER BEAM 6



TYPICAL SUPPORT OF DECK AT CONCRETE WALL 7

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KEY PLAN

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CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

TYPICAL DETAILS

SHEET NUMBER

S30-03

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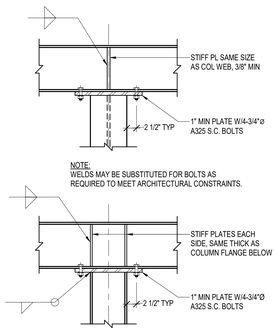
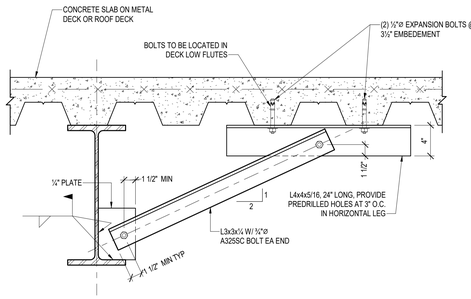
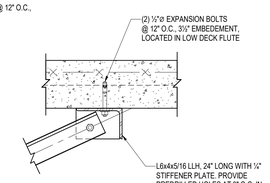


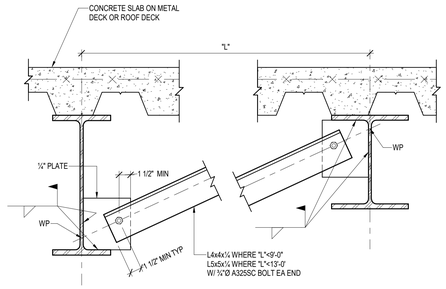
TYPICAL BEAM OVER COLUMN 1



DETAIL 1A - DECK PARALLEL TO BEAM

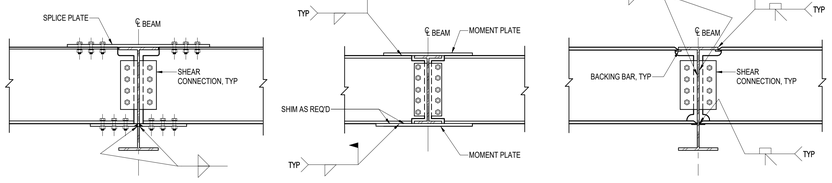


DETAIL 1B - DECK PERPENDICULAR TO BEAM



DETAIL 2 - BEAM TO BEAM KICKER

TYPICAL KICKER CONNECTION DETAIL 2



TYPE A-BOLTED

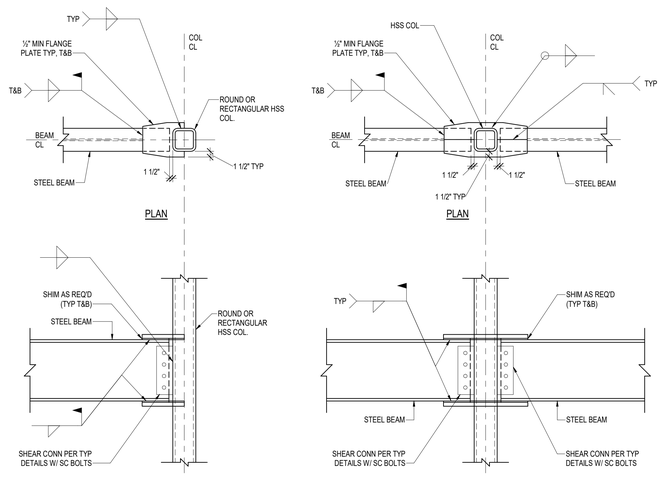
TYPE B-WELDED / EQUAL DEPTH

TYPE C-WELDED

NOTES:

1. SHEAR CONNECTION SHALL BE DESIGNED FOR THE BEAM END REACTIONS PER GENERAL NOTES.
2. DESIGN MOMENT PLATES FOR THE FULL MOMENT CAPACITY OF THE SMALLER BEAM UNLESS NOTED OTHERWISE.

TYPICAL BEAM TO GIRDER MOMENT CONNECTION DETAILS 3



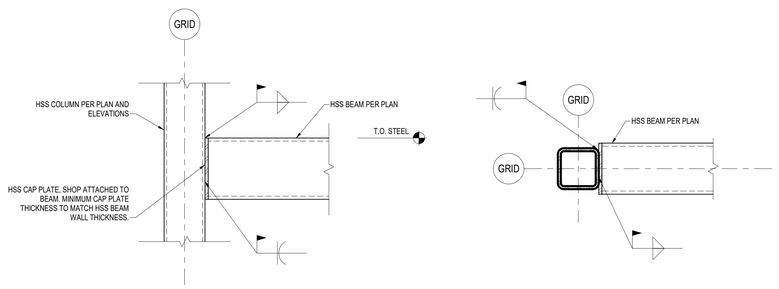
MOMENT CONNECTION ON ONE SIDE

MOMENT CONNECTION ON BOTH SIDES

NOTES:

1. ALTERNATE CONNECTION DETAILS MAY BE SUBMITTED FOR APPROVAL BY SER.
2. ALL MOMENT FRAME CONNECTIONS SHALL BE ENGINEERED AS PART OF THE DELEGATED DESIGN OF CONNECTIONS IN ACCORDANCE WITH SPECIFICATIONS AND DRAWINGS.

TYPICAL BEAM TO HSS COLUMN MOMENT CONNECTION DETAILS 4



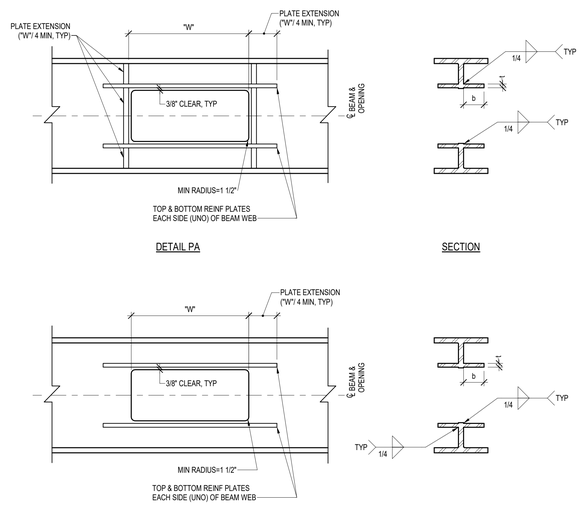
SECTION VIEW

PLAN VIEW

NOTES:

1. DETAIL APPLIES AT ALL HSS BEAM TO HSS COLUMN CONNECTIONS, UNO, INCLUDING MOMENT FRAME AND MOMENT CONNECTION CONDITIONS.
2. CONTRACTOR TO SUBMIT FOR REVIEW CALCULATIONS FOR HSS BEAM CONNECTIONS SIGNED AND STAMPED BY A MASSACHUSETTS LICENSED PROFESSIONAL ENGINEER.
3. CONNECTIONS TO BE DESIGNED FOR THE APPROPRIATE SHEAR, MOMENT, AND AXIAL PASS THRU FORCES AS SHOWN ON FRAMING PLANS. ADDITIONALLY, ALL HSS CONNECTIONS TO BE DESIGNED FOR 18 KIPS ASD OUT OF PLANE SHEAR END REACTION AND 18 K-FT ASD TORSION.

TYPICAL HSS COLUMN TO HSS BEAM CONNECTION 5



BEAM WEB PENETRATION SCHEDULE

MARK	SIZE (WxD)	"b" WIDTH x "t" THICKNESS	REINFORCING DETAIL
A	4"Ø	NA	NO REINFORCEMENT REQUIRED

NOTES:

1. SEE PLAN FOR MARK AND LOCATION.
2. ALL OPENINGS TO BE CENTERED AT BEAM MID-DEPTH.
3. AN ADDITIONAL 2 STUDS PER FOOT (IN ADDITION TO STUDS SHOWN ON PLAN) ARE REQUIRED FOR 3'-0" BEYOND EACH END OF OPENING.
4. CORRDINATE ALL BEAM PENETRATION WITH HVAC, PLUMBING, AND ELECTRICAL CONTRACTORS.

TYPICAL DETAIL OF BEAM WEB PENETRATION 6

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KEY PLAN

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MARK	ISSUE	DATE

Job Number 157132.000

TITLE

TYPICAL DETAILS

SHEET NUMBER

S30-04

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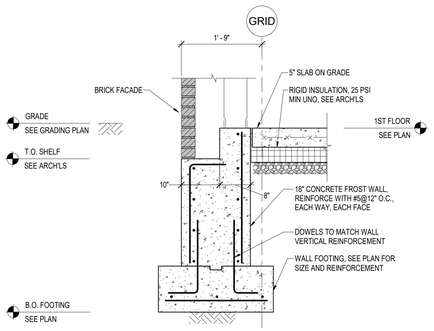
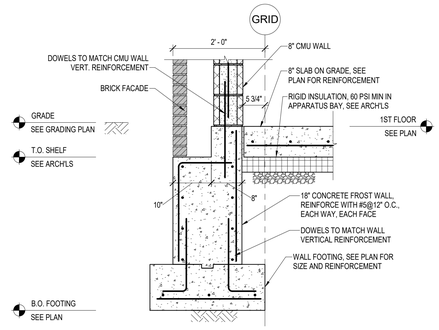
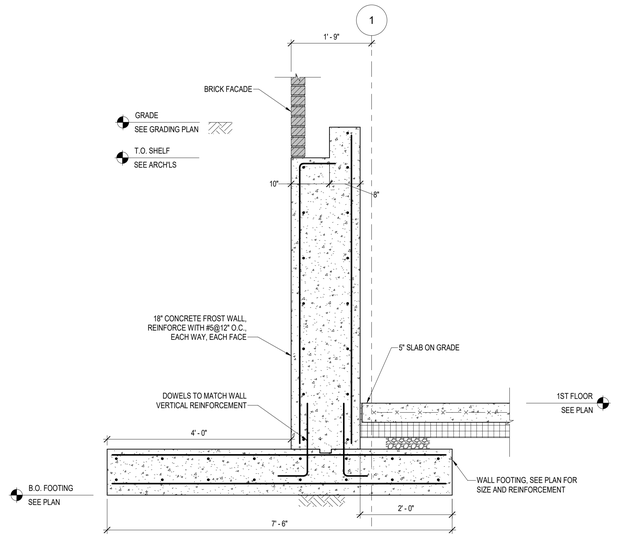


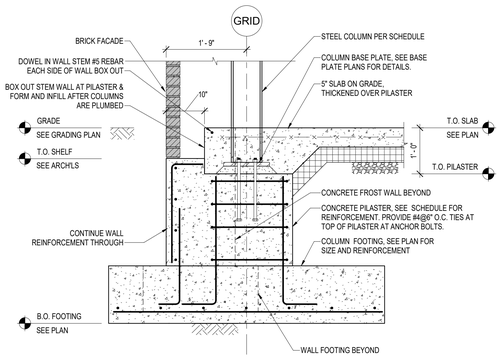
TYPICAL FOUNDATION SECTION 1
3/4" = 1'-0"



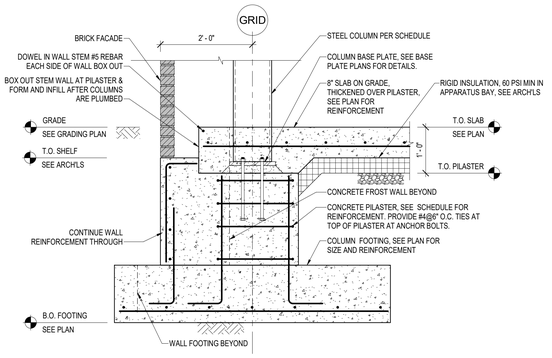
FOUNDATION SECTION AT APPARATUS BAY 2
3/4" = 1'-0"



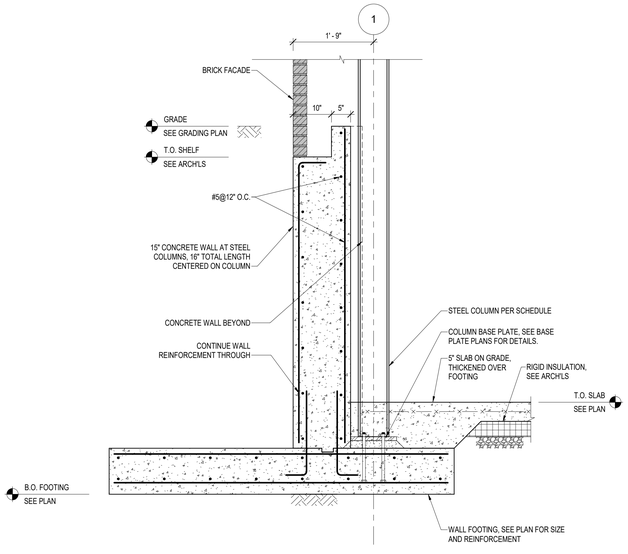
FOUNDATION SECTION AT GRID 1 5
3/4" = 1'-0"



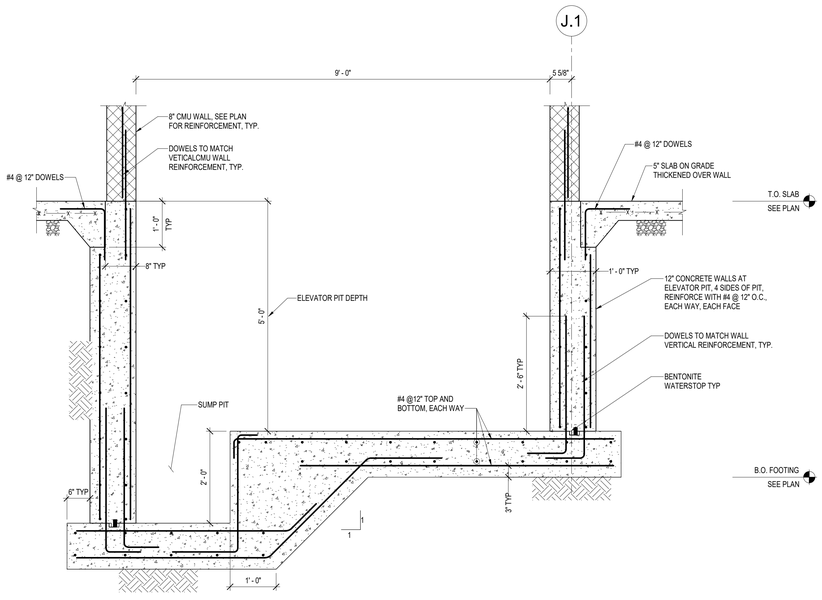
TYPICAL FOUNDATION AT PILASTER 3
3/4" = 1'-0"



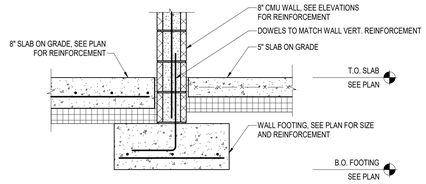
PILASTER SECTION AT APPARATUS BAY 4
3/4" = 1'-0"



FOUNDATION SECTION AT GRID 1 AT COLUMN 6
3/4" = 1'-0"



ELEVATOR PIT SECTION 7
3/4" = 1'-0"



FOUNDATION SECTION AT CMU WALL 8
3/4" = 1'-0"

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

FOUNDATION SECTIONS

SHEET NUMBER

S40-00

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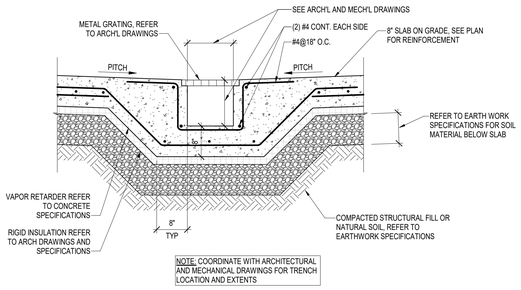
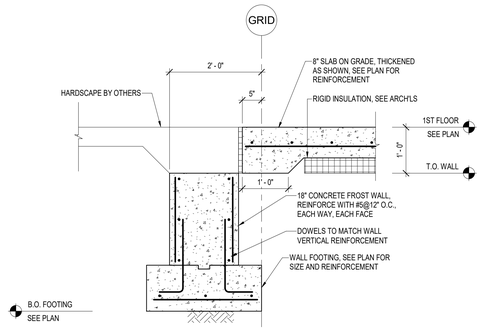
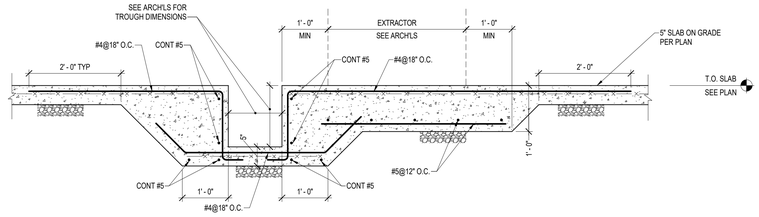


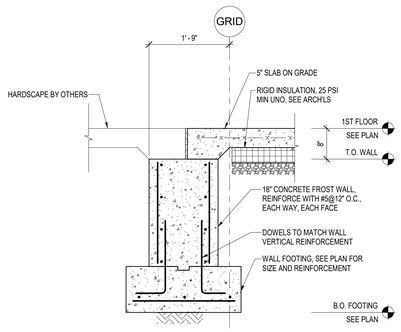
TRENCH DRAIN DETAIL 1
3/4" = 1'-0"



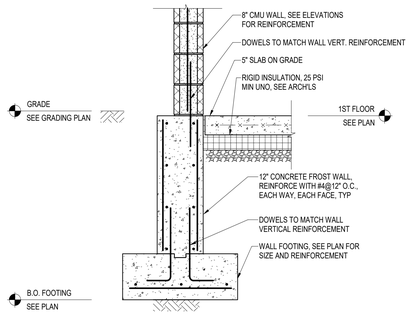
DOOR SECTION AT APPARATUS BAY 2
3/4" = 1'-0"



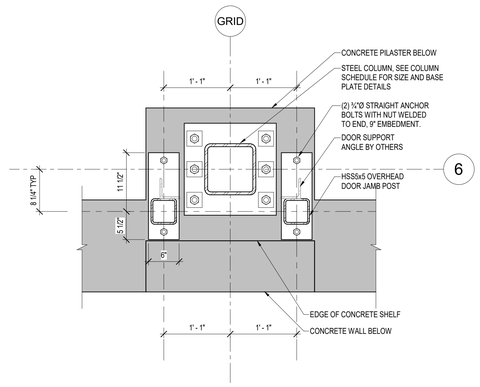
SECTION AT EXTRACTOR TROUGH 3
3/4" = 1'-0"



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



FOUNDATION SECTION AT TOWER 5
3/4" = 1'-0"



PLAN DETAIL AT DOOR JAMB SUPPORT POST BASE 6
1" = 1'-0"

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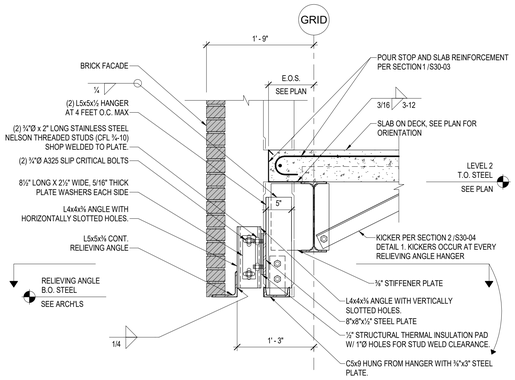
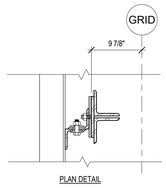


RELIEVING ANGLE SECTION AT LEVEL 2 — 1
1" = 1'-0"

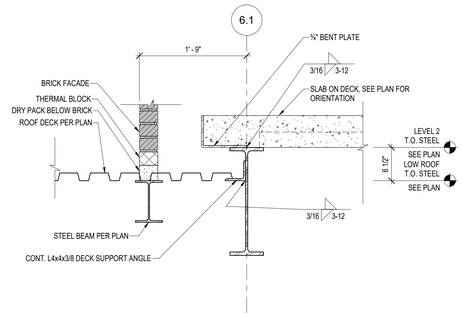


NOTES:

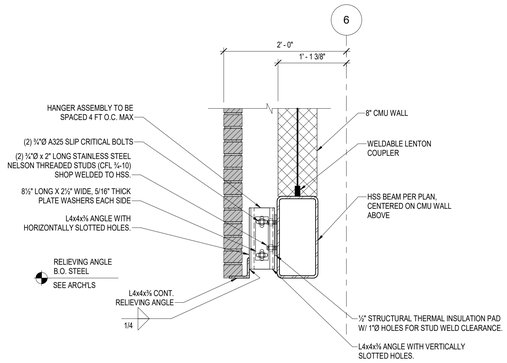
1. ALL STEEL BEYOND STRUCTURAL THERMAL BREAK PAD TO BE HOT DIP GALVANIZED.
2. HANGER ASSEMBLY TO BE SPACED AT 4FT OC MAX.
3. MAXIMUM RELIEVING ANGLE CANTILEVER BEYOND HANGER = 18" EXCEPT AT CORNER CONDITIONS.
4. EACH RELIEVING ANGLE IS TO BE SUPPORTED BY AT LEAST 2 HANGERS WHICH ARE IN A STRAIGHT LINE.

SEQUENCING NOTES:

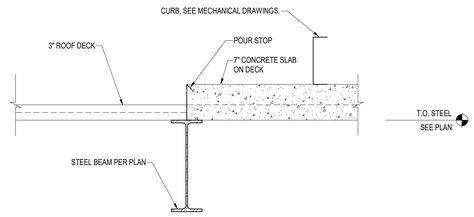
1. AVB TO BE INSTALLED PRIOR TO HANGER ASSEMBLY INSTALLATION, COORDINATE WITH MASON, SEE ARCH'LS.
2. NO WELDING IN CAVITY AFTER AVB HAS BEEN INSTALLED.



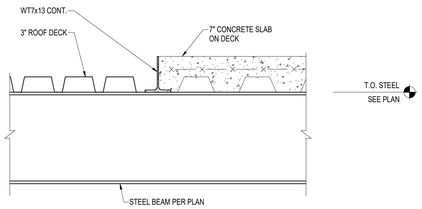
RELIEVING ANGLE AT LOW ROOF — 2
1" = 1'-0"



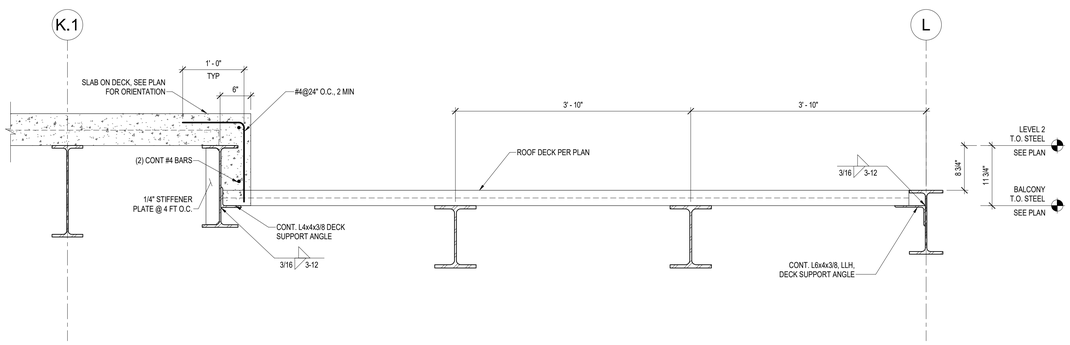
RELIEVING ANGLE AT HSS WIND GIRT — 3
1" = 1'-0"



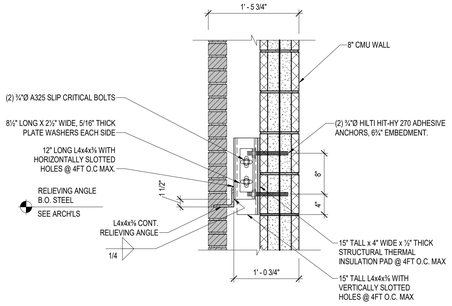
CONCRETE PAD AT MECHANICAL UNITS SECTION — 6
1" = 1'-0"



CONCRETE PAD AT MECHANICAL UNITS SECTION — 7
1" = 1'-0"

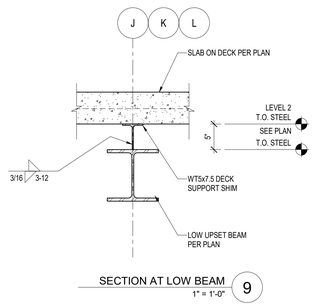


TYPICAL EXTERIOR EDGE OF SLAB SECTION — 4
1" = 1'-0"

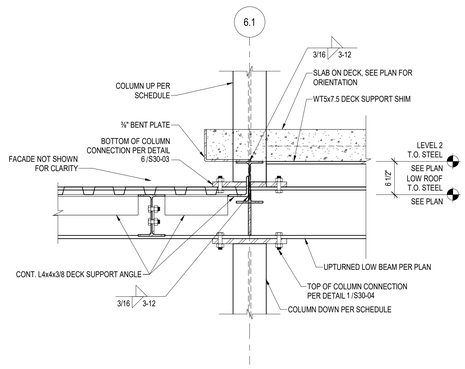


RELIEVING ANGLE SECTION AT TOWER — 5
1" = 1'-0"

SECTION AT PATIO — 8
1" = 1'-0"



SECTION AT LOW BEAM — 9
1" = 1'-0"



SECTION AT CANOPY — 10
1" = 1'-0"

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COMMONWEALTH OF MASSACHUSETTS — JENNIFER McCLAIN — STRUCTURAL — No. 41716 — REGISTERED PROFESSIONAL ENGINEER

CONSTRUCTION DOCUMENTS 12/19/25

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CITY OF WORCESTER

455 MAIN STREET
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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

SUPERSTRUCTURE SECTIONS

SHEET NUMBER

S50-00

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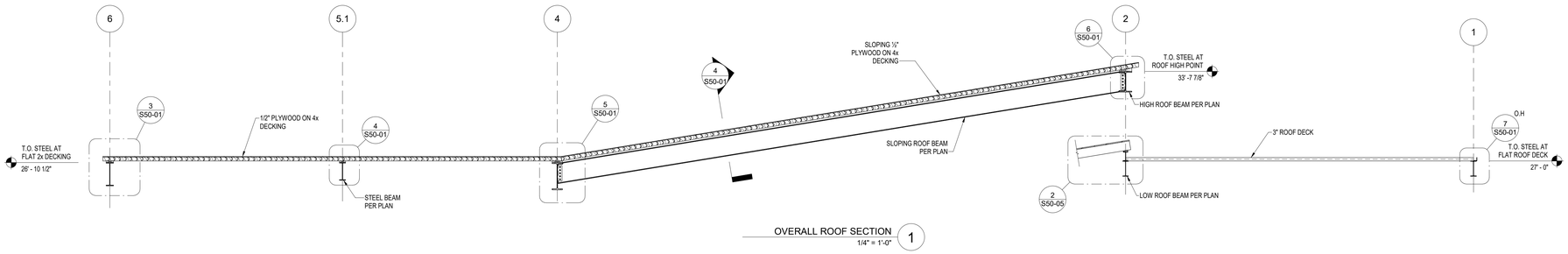
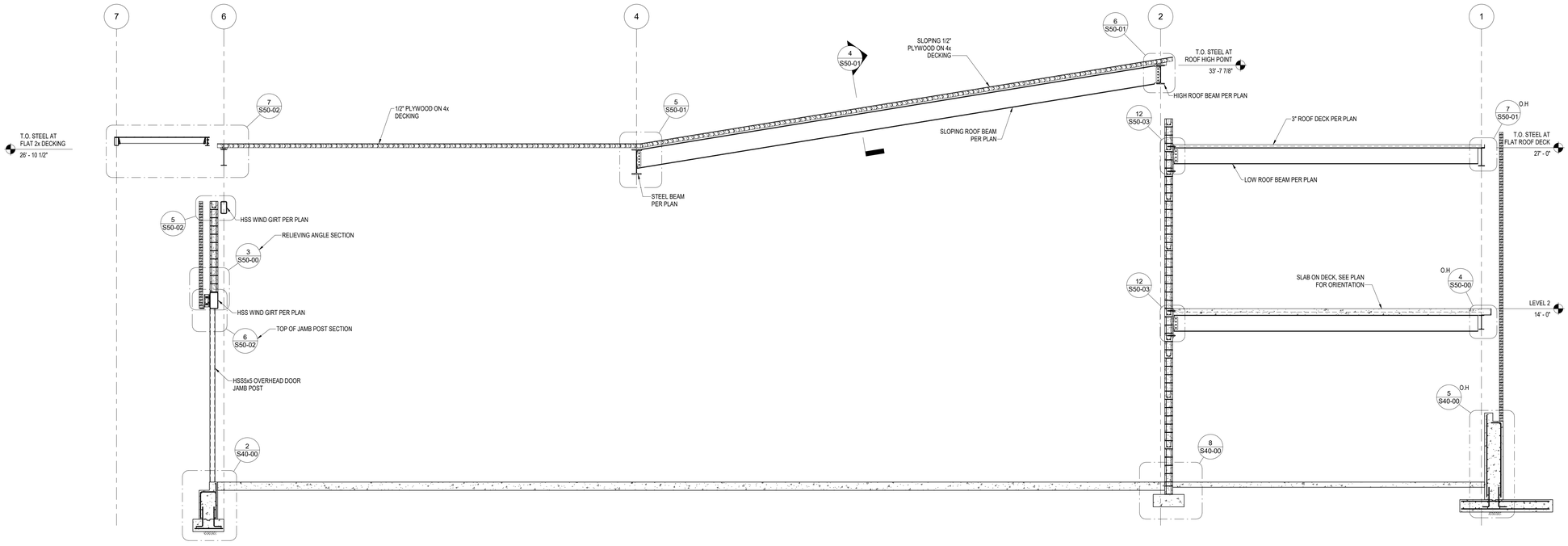
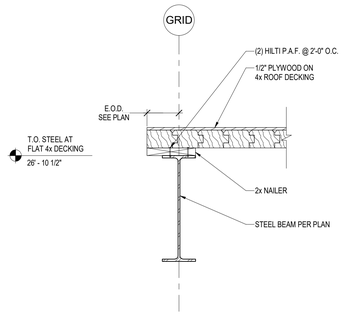


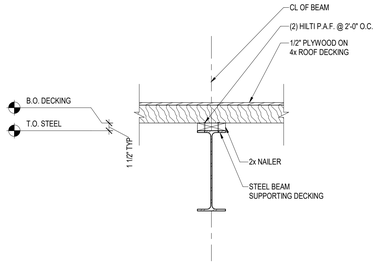
OVERALL ROOF SECTION 1
1/4" = 1'-0"



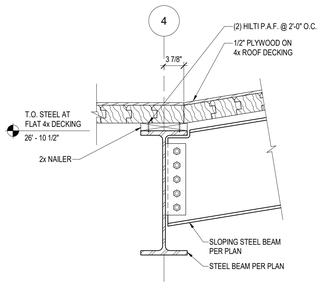
OVERALL BUILDING SECTION 2
1/4" = 1'-0"



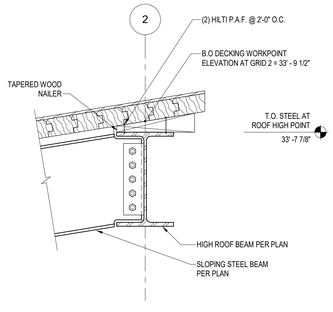
TYPICAL ROOF EDGE SECTION AT 4x DECKING 3
1" = 1'-0"



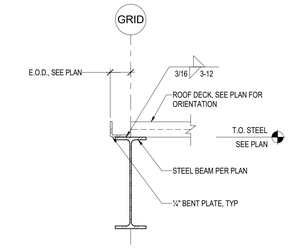
TYPICAL SECTION AT BEAM SUPPORTING DECKING 4
1" = 1'-0"



SECTION AT ROOF SLOPE LOW POINT 5
1" = 1'-0"



SECTION AT ROOF SLOPE HIGH POINT 6
1" = 1'-0"



TYPICAL ROOF EDGE SECTION AT ROOF DECK 7
1" = 1'-0"

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KEY PLAN

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Job Number 157132.000

TITLE

SUPERSTRUCTURE SECTIONS

SHEET NUMBER

S50-01

CONSTRUCTION DOCUMENTS 12/19/25

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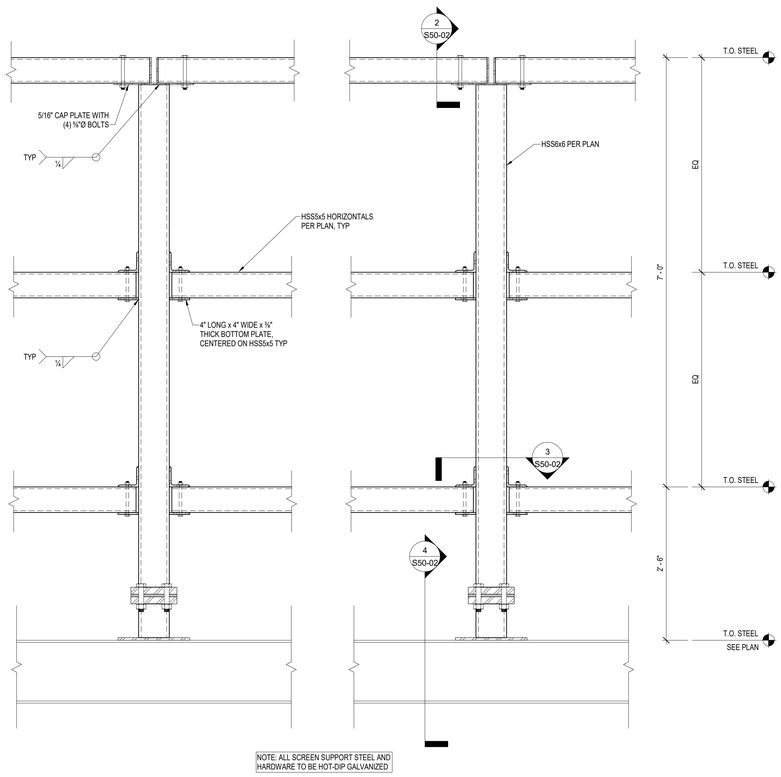
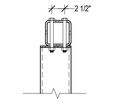
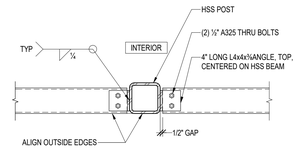


NOTE: ALL SCREEN SUPPORT STEEL AND HARDWARE TO BE HOT-DIP GALVANIZED

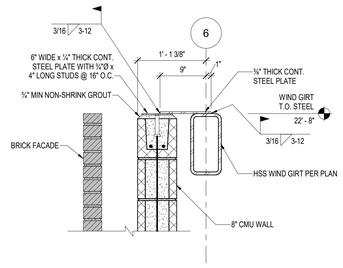
MECHANICAL SCREEN ELEVATION 1" = 1'-0" 1



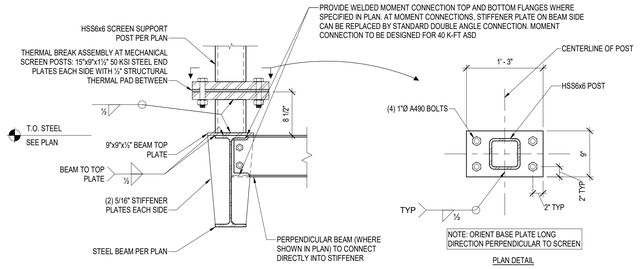
SECTION 1" = 1'-0" 2



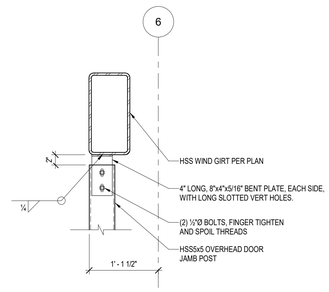
SECTION 1" = 1'-0" 3



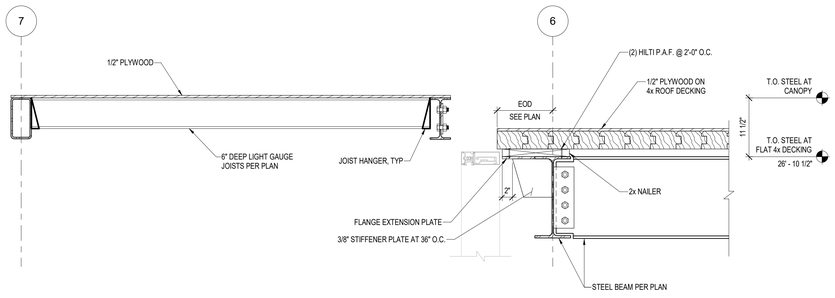
TOP OF CMU AT GRID 6 SECTION 1" = 1'-0" 5



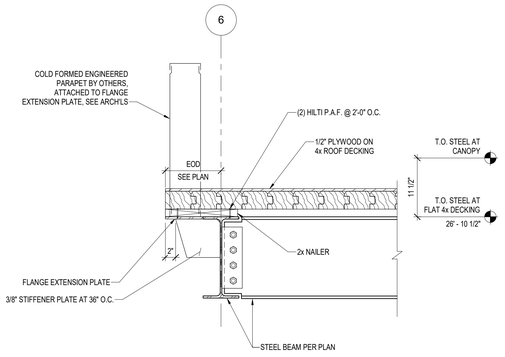
MECHANICAL SCREEN POST BASE CONNECTION 1" = 1'-0" 4



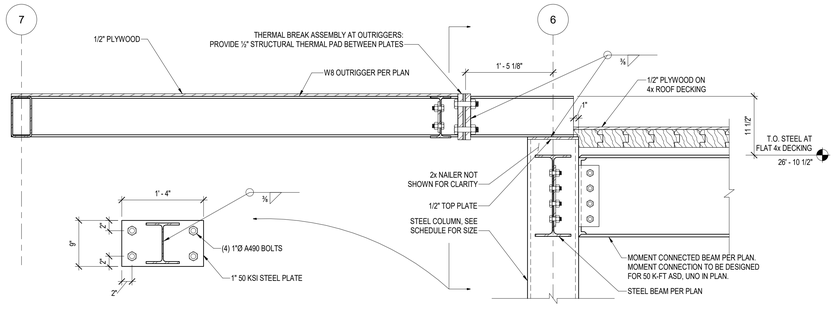
TOP OF JAMB POST SECTION 1" = 1'-0" 6



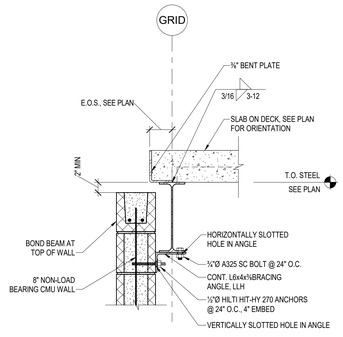
SECTION AT ROOF CANOPY 1" = 1'-0" 7



SECTION AT PARAPET 1" = 1'-0" 9



SECTION AT ROOF CANOPY 1" = 1'-0" 8



EXTERIOR SECTION AT CMU WALL 1" = 1'-0" 10

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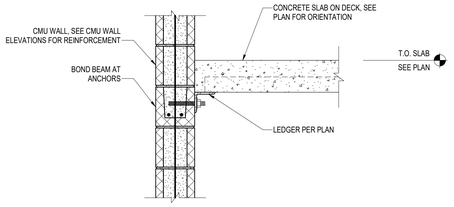
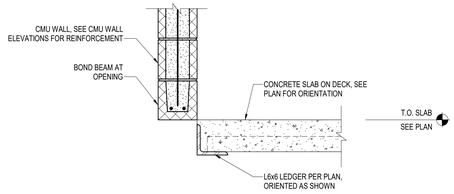
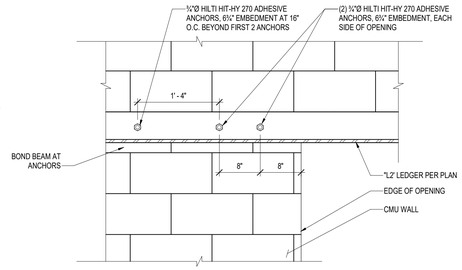


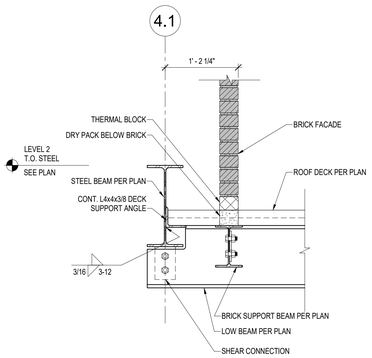
SECTION AT "L1" LEDGER
1" = 1'-0" 1



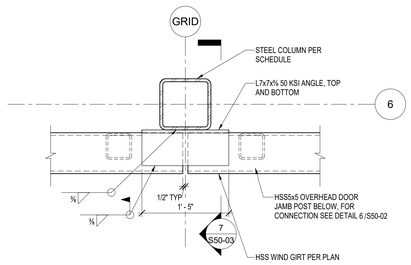
SECTION AT "L2" LEDGER
1" = 1'-0" 2



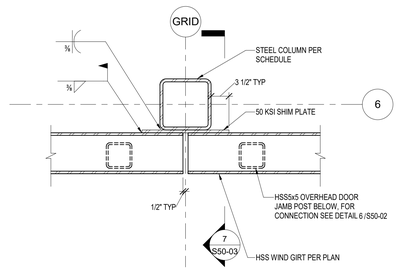
SECTION AT "L2" LEDGER
1" = 1'-0" 3



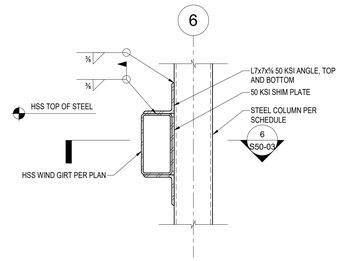
SECTION AT BALCONY
1" = 1'-0" 4



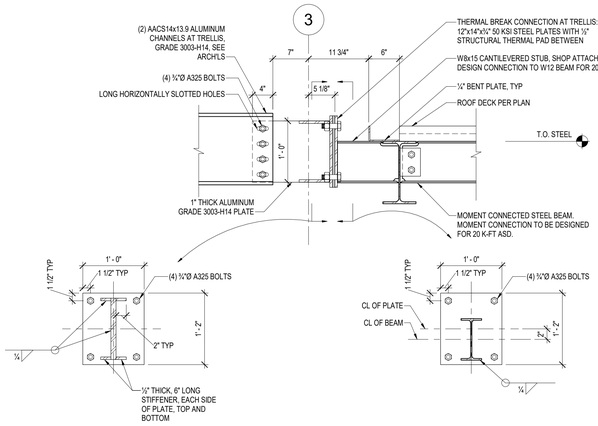
OFFSET HSS COLUMN CONNECTION
1" = 1'-0" 5



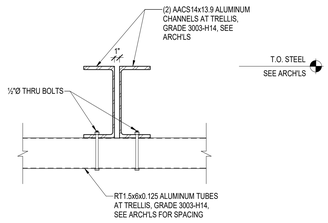
OFFSET HSS COLUMN CONNECTION
1" = 1'-0" 6



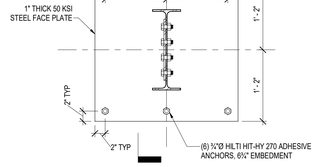
OFFSET HSS COLUMN CONNECTION
3/4" = 1'-0" 7



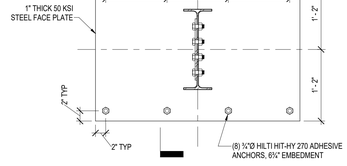
THERMAL BREAK SECTION AT TRELLIS
1" = 1'-0" 8



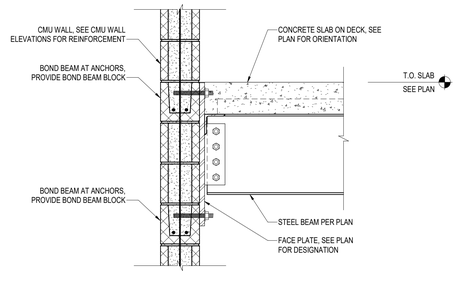
SECTION AT TRELLIS
1" = 1'-0" 9



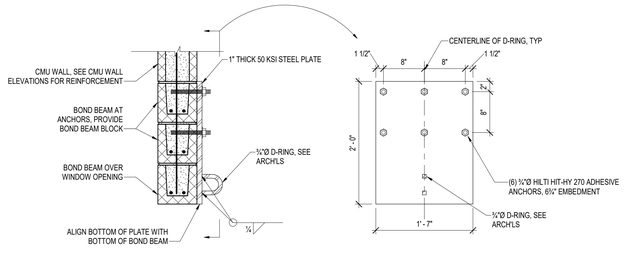
"FP1" SECTION
1" = 1'-0" 10



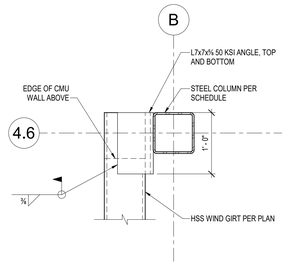
"FP2" SECTION
1" = 1'-0" 11



SECTION AT FACE PLATE
1" = 1'-0" 12



D-RING AT TRAINING TOWER SECTION
1" = 1'-0" 13



OFFSET HSS COLUMN CONNECTION
1" = 1'-0" 14

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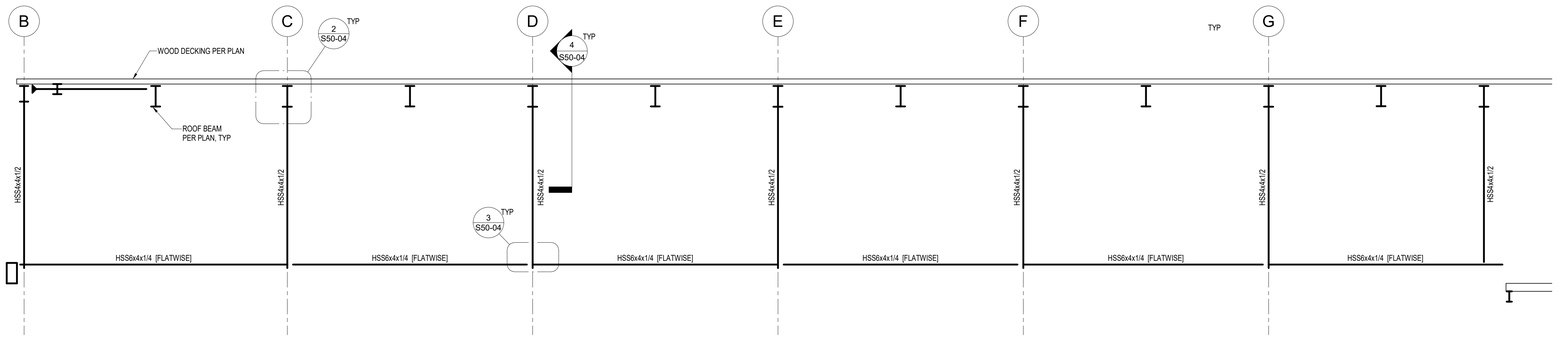
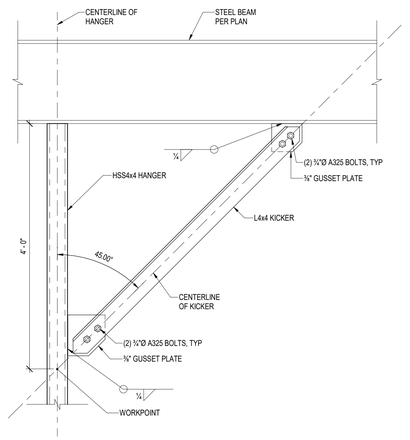
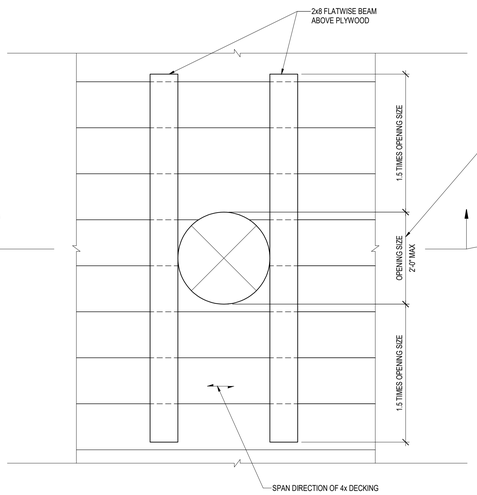


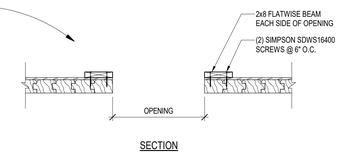
BAY DOOR HANGER ELEVATION
1/4" = 1'-0" 1



KICKER SECTION AT BAY DOORS
1" = 1'-0" 4

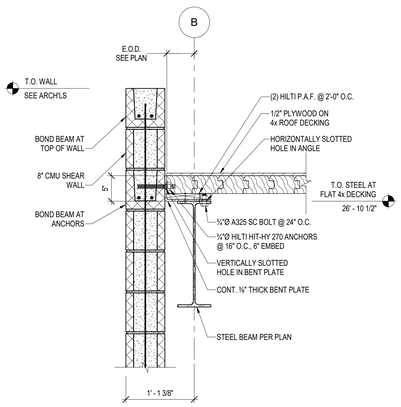


PLAN VIEW

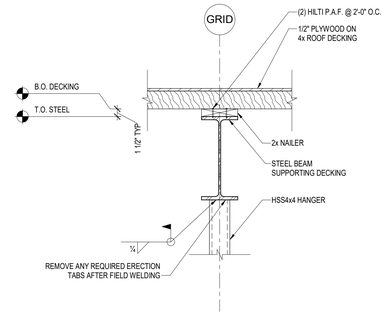


SECTION

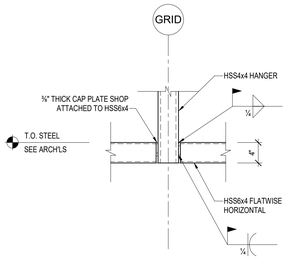
TYPICAL OPENINGS IN 4x DECKING DETAIL
3/4" = 1'-0" 5



EXTERIOR SECTION AT GRID B
1" = 1'-0" 6



TOP OF HANGER CONNECTION
1" = 1'-0" 2



HANGER TO HORIZONTAL CONNECTION
1" = 1'-0" 3

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

SUPERSTRUCTURE SECTIONS

SHEET NUMBER

S50-04

CONSTRUCTION DOCUMENTS 12/19/25

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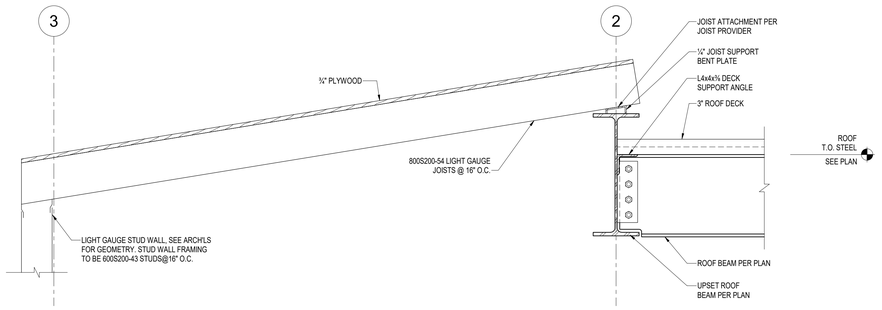
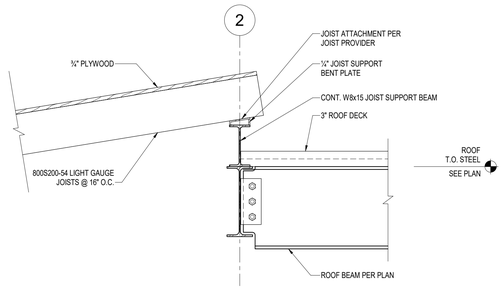
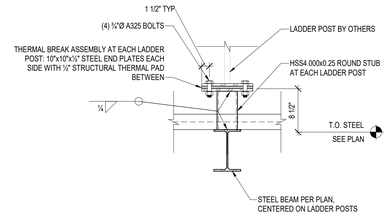


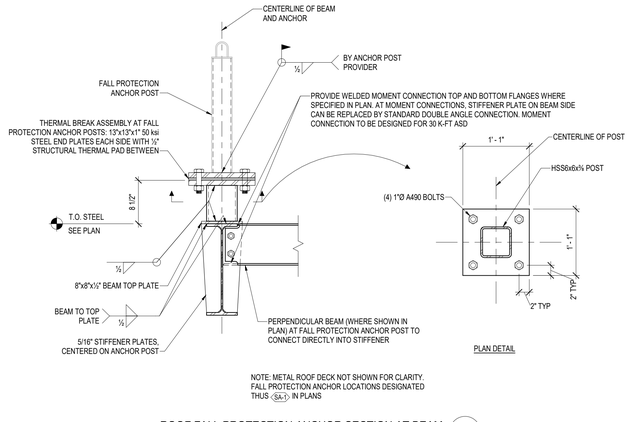
ROOF SECTION 1
1" = 1'-0"



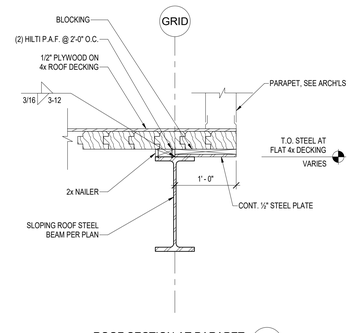
ROOF SECTION 2
1" = 1'-0"



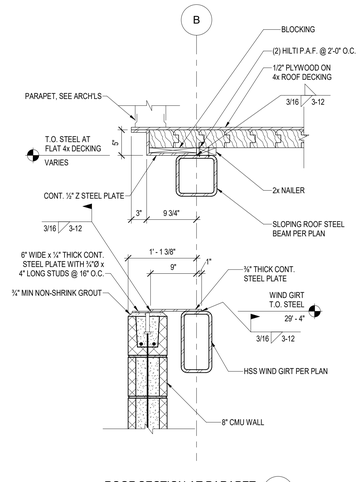
LADDER SUPPORT BEAM SECTION 3
1" = 1'-0"



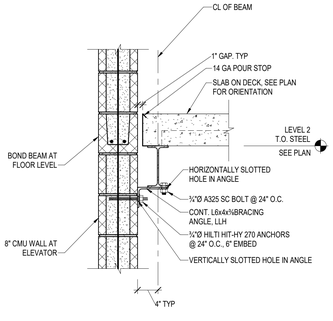
ROOF FALL PROTECTION ANCHOR SECTION AT BEAM 4
1" = 1'-0"



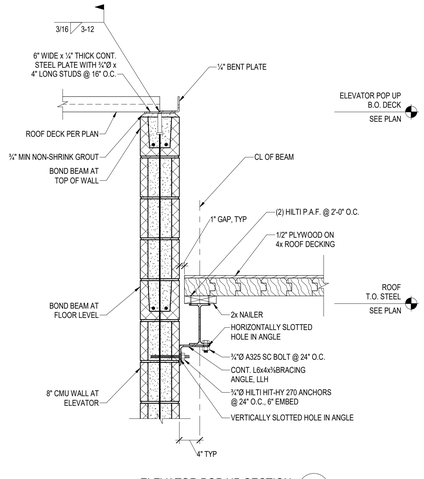
ROOF SECTION AT PARAPET 5
1" = 1'-0"



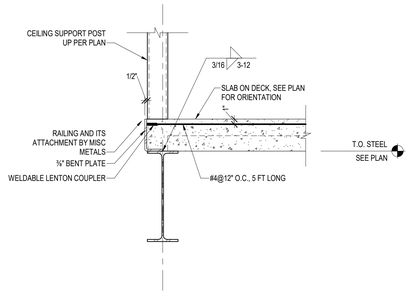
ROOF SECTION AT PARAPET 6
1" = 1'-0"



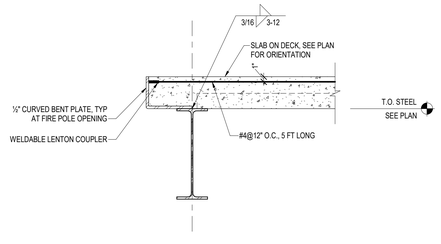
STEEL BEAM AT ELEVATOR SECTION 7
1" = 1'-0"



ELEVATOR POP UP SECTION 8
1" = 1'-0"



FIRE POLE EDGE OF SLAB SECTION 9
1" = 1'-0"



FIRE POLE EDGE OF SLAB SECTION 10
1" = 1'-0"

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KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

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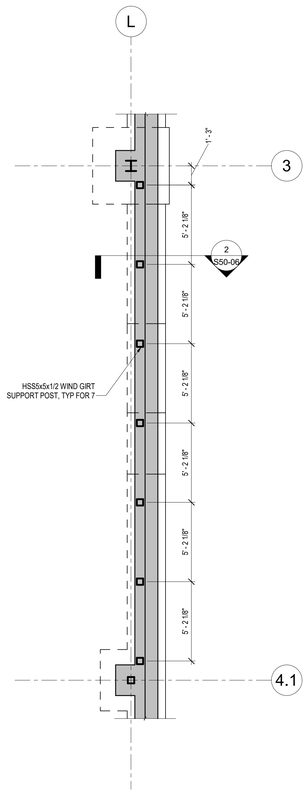
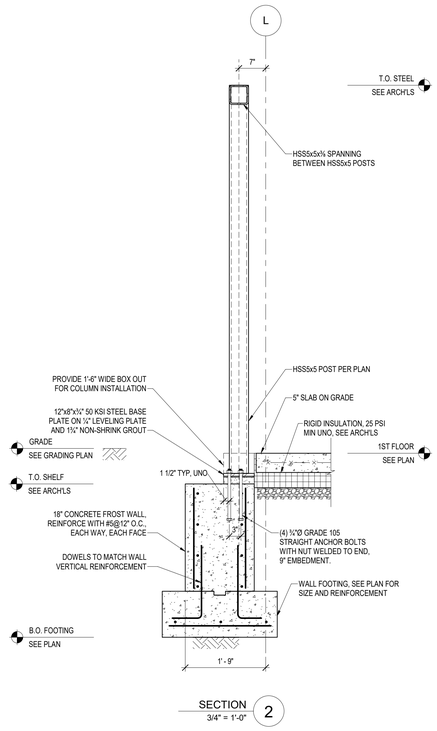


FOUNDATION PLAN PART PLAN 1
1/4" = 1'-0"



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

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KEY PLAN

ISSUE CHART

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Job Number 15713.2.000

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SUPERSTRUCTURE SECTIONS

SHEET NUMBER

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SYMBOLS

SYMBOL	DESCRIPTION
F	FIRE MAIN
DST	MANUAL DRY FIRE STANDPIPE
CSP	COMBINATION STANDPIPE
SPR	SPRINKLER PIPING (WET)
DR	DRAIN PIPING
DSP	DRY SPRINKLER SYSTEM PIPING
PA	PREACTION SPRINKLER PIPING
DL	DELUGE SPRINKLER PIPING
	SHUT-OFF VALVE
	CHECK VALVE
	CHECK VALVE WITH ABD
	PRESSURE REDUCING VALVE
	OS & Y VALVE
	OS & Y VALVE IN VERTICAL
	ANGLE HOSE VALVE
G	PIPE DROP, RISE OR DOWN
	PIPE CONNECTION, TOP
S	PIPE CONNECTION, BOTTOM
	PIPE UP
E	CAPPED OUTLET
	PRESSURE GAUGE W/VALVE
	DELUGE VALVE ASSEMBLY
	PREACTION VALVE ASSEMBLY
	DRY VALVE ASSEMBLY
	SPRINKLER ALARM CHECK VALVE ASSEMBLY
	SPRINKLER CONTROL ASSEMBLY
FHR(FHC)	FIRE HOSE RACK/CABINET
	FIRE HOSE RACK/CABINET (RISER)
	FIRE DEPARTMENT CONNECTION
	FREE STANDING FIRE DEPARTMENT CONNECTION
	DIRECTION OF FLOW
	PIPE BREAK
SP #	RISER DESIGNATION
#	EQUIPMENT DESIGNATION

SYMBOLS

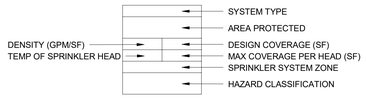
SYMBOL	DESCRIPTION
	ELECTRIC HEAT TRACING
	EXISTING PIPING TO BE REMOVED
	EXISTING PIPING TO BE ABANDONED
	EXISTING SPRINKLER CONTROL ASSEMBLY
	POINT OF DISCONNECTION FOR EXISTING WORK
	POINT OF CONNECTION NEW PIPE TO EXISTING
WM	WATER MIST PIPING
FW	FOAM WATER PIPING
CG	CLEAN AGENT GASEOUS PIPING
FS	FLOW SWITCH
TS	TAMPER SWITCH
	OS & Y VALVE WITH TAMPER SWITCH
	BACKFLOW PREVENTER
	FIRE HOSE VALVE IN CABINET (RISER)
FVC	FIRE HOSE VALVE CABINET
	MANIFOLD VALVE
	SIDEWALL SPRINKLER HEAD
E	EXTENDED COVERAGE SIDEWALL SPRINKLER HEAD
	DRY TYPE SIDEWALL SPRINKLER HEAD
	CONCEALED PENDENT SPRINKLER HEAD
I	INTERMEDIATE TEMPERATURE CONCEALED PENDENT SPRINKLER HEAD
	UPRIGHT SPRINKLER HEAD
E	EXTENDED COVERAGE UPRIGHT SPRINKLER HEAD
	UPRIGHT SPRINKLER HEAD (UNDER DUCT/EQUIPMENT)
	PENDENT SPRINKLER HEAD
E	EXTENDED COVERAGE PENDENT SPRINKLER HEAD
D	DRY TYPE PENDENT SPRINKLER HEAD
	RECESSED PENDENT SPRINKLER HEAD
E	EXTENDED COVERAGE RECESSED PENDENT SPRINKLER HEAD
	OPEN SPRINKLER HEAD
	WINDOW SPRINKLER HEAD
	SPRINKLER WITH GUARD
	ZONE BOUNDARY
	SPRINKLER ZONE
	WATERTIGHT PIPE SLEEVE, BEAM PENETRATION

ABBREVIATIONS

SYMBOL	DESCRIPTION
ABD	AUTOMATIC BALL DRIP
ARCH	ARCHITECTURAL
BLDG	BUILDING
CA	COMPRESSED AIR PIPING
CLG	CEILING
CONN	CONNECTION
CONT	CONTINUATION
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DR	DRAIN
DSP	DRY SPRINKLER PIPING
DWG	DRAWING
EA	EACH
EL	ELEVATION
EQ	EQUAL
EXIST	EXISTING
FCA	FLOOR CONTROL ASSEMBLY
FDC	FIRE DEPARTMENT CONNECTION
FE	FIRE EXTINGUISHER
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FHV	FIRE HOSE VALVE
F.F.	FINISH FLOOR
FFTH	FORWARD-FLOW TEST HEADER
FL	FLOOR
FS	FLOW SWITCH
GAL	GALLON
GPM	GALLON PER MINUTE
I.E.	INVERT ELEVATION
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
PA	PREACTION SPRINKLER PIPING
PRV	PRESSURE REDUCING VALVE
SP	SPRINKLER
TS	TAMPER SWITCH
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VIF	VERIFY IN FIELD
VLV	VALVE
W/	WITH
W/O	WITHOUT

DESIGN CRITERIA LEGEND

THE CONTRACTOR IS RESPOSIBLE FOR SIZING ALL SPRINKLER SYSTEM PIPING BASED ON HYDRAULIC CALCULATIONS IN ACCORDANCE WITH NFPA 13 AND 14 REQUIREMENTS.



SPRINKLER HEAD SCHEDULE

CEILING CONDITION	TYPE	MANUFACTURER	MODEL NUMBER	K-FACTOR	RESPONSE	COVERAGE TYPE	TEMPERATURE RATING	NOTES
<varies>	DRY CONCEALED PENDENT	RELIABLE	G5-56 DRY	5.6	QUICK RESPONSE	STANDARD	165 °F	COVER PLATE 135 °F
NO CEILING - BELOW APPARATUS BAY DOOR	DRY HORIZONTAL SIDEWALL	RELIABLE	F3QR80 DRY	8	QUICK RESPONSE	STANDARD	155 °F	EXPOSED SPRINKLERS IN OCCUPIED SPACES WITH EXPOSED WOOD DECK SHALL BE BLACK FINISH - REFER TO ARCHITECT FOR COLOR. EXPOSED SPRINKLERS IN OTHER OCCUPIED SPACES SHALL BE CHROME FINISH. PROVIDE GUARDS ON ALL SPRINKLERS INSTALLED 7'-0" AFF OR LOWER. NO ESCUTCHEON.
ACT AND GYP CEILINGS	PENDENT CONCEALED	RELIABLE	G5-56	5.6	QUICK RESPONSE	STANDARD	165 °F	COVER PLATE 135 °F
<varies>	UPRIGHT	RELIABLE	F1FR-56	5.6	QUICK RESPONSE	STANDARD	155 °F	<varies>
NO CEILING	UPRIGHT IN APPARATUS BAY	RELIABLE	F1FR-80	8	QUICK RESPONSE	STANDARD	175 °F	EXPOSED SPRINKLERS IN OCCUPIED SPACES WITH EXPOSED WOOD DECK SHALL BE BLACK FINISH - REFER TO ARCHITECT FOR COLOR. EXPOSED SPRINKLERS IN OTHER OCCUPIED SPACES SHALL BE CHROME FINISH. EXPOSED SPRINKLERS IN OCCUPIED SPACES SHALL BE CHROME FINISH. PROVIDE GUARDS ON UPRIGHTS ON ALL SPRINKLERS INSTALLED 7'-0" AFF OR LOWER.
NO CEILING	UPRIGHT W/GUARD	RELIABLE	F1FR-56	5.6	QUICK RESPONSE	STANDARD	155 °F	EXPOSED SPRINKLERS IN OCCUPIED SPACES WITH EXPOSED WOOD DECK SHALL BE BLACK FINISH - REFER TO ARCHITECT FOR COLOR. EXPOSED SPRINKLERS IN OTHER OCCUPIED SPACES SHALL BE CHROME FINISH. EXPOSED SPRINKLERS IN OCCUPIED SPACES SHALL BE CHROME FINISH. PROVIDE GUARDS ON ALL SPRINKLERS INSTALLED 7'-0" AFF OR LOWER. INSTALL 175 °F IN ALL MECHANICAL SPACES AND SHOWER SPACES.

FIRE PROTECTION VALVE SCHEDULE

ITEM TYPE	ITEM NO.	DESCRIPTION	SIZE [IN]	MANUFACTURER	MODEL NO.	NOTES
ACV	1	ALARM CHECK VALVE	6"	TYCO	AV-1-300	
DCVA	1	DOUBLE CHECK VALVE ASSEMBLY	8"	WATTS	LF709	
DPV	1	DRY PIPE VALVE	2"	TYCO	DPV-1	SERVES THE TRAINING TOWER SPRINKLER SYSTEM AND LOADING DOOR OVERHANG
DPV	2	DRY PIPE VALVE	2 1/2"	TYCO	DPV-1	SERVES LEVEL 1 ENTRY OVERHANG DRY SYSTEM
DPV	3	DRY PIPE VALVE	4"	TYCO	DPV-1	SERVES THE APARATUS BAY DRY SPRINKLER SYSTEM

NITROGEN GENERATION SCHEDULE

ITEM TYPE	ITEM NO.	EQUIPMENT DESCRIPTION	LOCATION	MANUFACTURER	MODEL NO.	NOTES
NG	1	NITROGEN GENERATOR	LEVEL 1 - WATER SERVICE ROOM	ENGINEERED CORROSION SOLUTIONS	AG-2000	

GENERAL NOTES
1. THE APPLICABLE GOVERNING LAWS, CODES AND STANDARDS INCLUDE THE FOLLOWING: MASSACHUSETTS STATE BUILDING CODE 10TH EDITION (2021 INTERNATIONAL BUILDING CODE AS MODIFIED BY 780 CMR), MASSACHUSETTS STATE FIRE CODE (527 CMR), MGL 148 – MASSACHUSETTS FIRE LAWS (MFL), NFPA 13 2019 ED., NFPA 14 2019 ED., NFPA 25 2020 ED., AND NFPA 72 2019 EDITION.
2. THE TERM "OWNER" SHALL REFER TO THE CITY OF WORCESTER.
3. THE TERM "CONTRACTOR" SHALL REFER TO THE CONTRACTOR OR THEIR SUBCONTRACTORS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL OF THE WORK INDICATED IN THE CONTRACT DOCUMENTS.
4. PROVIDE COMPLETE AUTOMATIC SPRINKLER AND STANDPIPE PROTECTION THROUGHOUT AS INDICATED ON THE DRAWINGS AND SPECIFICATIONS. SYSTEM SHALL INCLUDE ALL WATERFLOW ALARM SWITCHES, TAMPER SWITCHES, CHECK VALVES, CONTROL VALVES, FIRE HOSE VALVES, FIRE HOSE VALVE CABINETS, PIPING, HANGERS, SPRINKLERS, AND ALL OTHER ASSOCIATED EQUIPMENT.
5. DRAWINGS ARE INDICATIVE IN NATURE. CONTRACTOR IS RESPONSIBLE FOR FINAL DESIGN, LAYOUT, AND COORDINATION WITH OTHER TRADES, WITH FINAL APPROVAL BY THE OWNER AND ENGINEER, INSPECTIONAL SERVICES DIVISION, AND WORCESTER FIRE DEPARTMENT.
6. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES RELATING TO WORK TO VERIFY SPACE IN WHICH WORK WILL BE INSTALLED.
7. PIPE SIZES AND LAYOUTS AS INDICATED ON THE PLANS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW DESIGN INTENT. FIRE SPRINKLER CONTRACTOR SHALL PREPARE AND SUBMIT ALL NECESSARY DRAWINGS, HYDRAULIC CALCULATIONS, AND DOCUMENTS FOR THE PROVISION AND INSTALLATION OF A FULLY AUTOMATIC FIRE SPRINKLER SYSTEM THROUGHOUT THE BUILDING, IN ACCORDANCE WITH AND SUBJECT TO NFPA 13 AND ALL OTHER APPLICABLE CODES, REGULATIONS, AND APPROVALS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CREATING DETAILS AND THOSE DETAILS SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. DETAILS SHALL MINIMALLY INCLUDE TYPICAL PIPE HANGER AND SPRINKLER ARRANGEMENTS, FLOOR CONTROL ASSEMBLY DETAILS, AND OTHER DETAILS PERTINENT TO THE INSTALLATION OF THE SYSTEM.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL SPRINKLERS IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS (WHERE INDICATED). COORDINATE LOCATIONS OF ALL SPRINKLER HEADS WITH THE ARCHITECTURAL REFLECTED CEILING PLANS, HVAC DIFFUSER LAYOUT, AND ELECTRICAL LIGHTING LAYOUT. SUBMIT LAYOUT DRAWINGS PRIOR TO FABRICATION FOR APPROVAL. ALL SPRINKLERS SHALL BE LOCATED CENTER OF TILE WHERE APPLICABLE. ARCHITECT SHALL APPROVE FINAL LAYOUT. DO NOT PROCEED WITH INSTALLATION OF SPRINKLER HEADS UNTIL THE ARCHITECT HAS APPROVED THE FINAL LAYOUT.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING PLACEMENT OF PIPE, VALVES, AND ALL OTHER COMPONENTS TO PROVIDE REQUIRED CLEARANCES FROM OBSTRUCTIONS IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS AND CITY REQUIREMENTS.
11. MAINTENANCE LABELS SHALL BE AFFIXED TO ALL FIRE PROTECTION EQUIPMENT AND A MAINTENANCE MANUAL SHALL BE PROVIDED TO THE OWNER.
12. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE CODES. PROVIDE ALL FITTINGS, TRANSITIONS, VALVES, AND OTHER DEVICES REQUIRED FOR A COMPLETE APPROVED OPERATING INSTALLATION.
13. DO NOT CONNECT TO UNDERGROUND PIPING UNTIL ALL TESTS AND FLUSHING OF UNDERGROUND PIPING HAVE BEEN COMPLETED AND ACCEPTED BY THE ENGINEER OF RECORD AND THE AUTHORITIES HAVING JURISDICTION.
14. CONTRACTOR SHALL PROVIDE TEMPORARY HEAT, TEMPORARY POWER, AND TEMPORARY PROTECTION IN A WORKMANLIKE MANNER AND AS REQUIRED BY THE OWNER, AND GOOD PRACTICES.
15. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A TEMPORARY STANDPIPE DURING CONSTRUCTION AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION AND MSBC 905.10.
16. SPARE SPRINKLERS AND CABINETS SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 13
18. SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR BRINGING THE FIRE MAIN SERVICE INTO THE BUILDING FROM WITHIN 10 FT OF THE FOUNDATION WALL.

INSTALLATION NOTES
1. THE SPRINKLER TYPES AND LAYOUT SHALL BE IN ACCORDANCE WITH THE SPECIFICATION UNLESS OTHERWISE INDICATED ON THESE DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF SPRINKLERS AND THEIR LAYOUT SHALL BE COORDINATED WITH OTHER SERVICES, TRADES, AND ARCHITECTURAL CEILING PLANS.
2. MAINTAIN HEADROOM, REQUIRED AND RECOMMENDED CLEARANCES (INCLUDING WORKING CLEARANCES FOR ELECTRICAL EQUIPMENT) AND SPACE CONDITIONS AT ALL TIME.
3. SPRINKLERS SHALL BE OF THE QUICK RESPONSE TYPE IN ALL LIGHT HAZARD OCCUPANCIES, EXCEPT AS NOTED.
4. SPRINKLERS INSTALLED IN EQUIPMENT ROOMS, CLOSETS AND OTHER AREAS SUSCEPTABLE TO DAMAGE (AT OR BELOW 9'-0" AFF) SHALL BE EQUIPPED WITH LISTED SPRINKLER GUARDS TO PROVIDE PROTECTION AGAINST ACCIDENTAL DAMAGE.
5. SPRINKLERS SHALL NOT BE LOCATED DIRECTLY ABOVE ELECTRICAL EQUIPMENT. ALL SPRINKLERS PROTECTING ELECTRICAL EQUIPMENT SHALL BE OF HIGH TEMPERATURE RATING AND EQUIPPED WITH GUARDS.
6. SPRINKLERS LOCATED NEAR HEAT SOURCES SUCH AS UNIT HEATERS AND SKYLIGHTS SHALL HAVE ACTIVATION TEMPERATURES APPROPRIATE FOR ELEVATED TEMPERATURES PER NFPA 13.
7. SPRINKLER LAYOUTS SHALL FOLLOW THE OBSTRUCTION RULES IN NFPA 13 AND THOSE PROVIDED BY THE MANUFACTURER. SPRINKLERS SHALL BE LOCATED UNDER FIXED OBSTRUCTIONS GREATER THAN 4 FT IN WIDTH IN ACCORDANCE WITH NFPA 13. PROVIDE LISTED GUARDS IN ACCORDANCE WITH NFPA 13 WHERE APPLICABLE. SPRINKLERS SHOWN ON THE DRAWINGS UNDER FIXED OBSTRUCTIONS ARE INDICATIVE. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND PROVIDING SPRINKLERS UNDER WIDE FIXED OBSTRUCTIONS WHERE REQUIRED BY NFPA 13.
8. SPRINKLERS SHALL NOT BE LOCATED CLOSER THAN 6 FT (OR 8 FT FOR EXTENDED COVERAGE SPRINKLERS) FROM OTHER SPRINKLERS UNLESS A BAFFLE HAS BEEN PROVIDED. BAFFLES, IF REQUIRED, SHALL BE PROVIDED BY THE FIRE PROTECTION SYSTEMS CONTRACTOR. WHERE SPRINKLERS ARE LOCATED CLOSER THAN THIS, THE SHOP DRAWINGS SHALL CLEARLY INDICATE THE REASON FOR THIS INSTALLATION.
9. SPRINKLERS SHALL BE PROVIDED IN ALL CEILING POCKETS IN ACCORDANCE WITH NFPA 13. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING SPRINKLER LOCATIONS ACCORDINGLY WITH FINAL CEILING PLANS. CEILING DEPRESSIONS THAT ARE 12" DEEP OR LESS WITH SPRINKLERS ON THE LOWER CEILING LOCATED WITHIN 12" OF THE HIGHER CEILING SHALL NOT BE REQUIRED TO BE CLASSIFIED AS UNPROTECTED CEILING POCKETS.
10. CONTRACTOR SHALL SIZE PIPING IN STRICT ACCORDANCE WITH NFPA 13, 14.
11. ALL SPRINKLER DRAIN PIPING SHALL BE SCHEDULE 40 STEEL PIPING.
12. WHERE MECHANICAL TEES ARE CUT ON-SITE, THE 'KEY' OR CUT-OUT PIECE THAT ARE CUT SHALL BE ATTACHED TO THE PIPE DIRECTLY ADJACENT TO THE MECHANICAL TEE. IF NOT PROVIDED, THE CONTRACTOR MAY BE REQUIRED TO REMOVE THE TEE TO VERIFY THAT THE HOLE WAS CUT AS REQUIRED AND THE CUT-OUT WAS REMOVED.
13. STEEL PIPE BENDING IS NOT RECOMMENDED. WHERE PIPE BENDING IS NECESSARY, IT SHALL COMPLY WITH THE LIMITATIONS AND REQUIREMENTS OF NFPA 13. THE ENGINEER SHALL BE INFORMED PRIOR TO ANY BENDING. HEATING THE PIPE TO BEND IS NOT PERMITTED. IF ANY PIPE IS HEATED, THE CONTRACTOR SHALL BE REQUIRED TO REMOVE AND REPLACE THE HEATED LENGTH OF PIPE.
14. AUXILIARY DRAINS REQUIRED TO DRAIN ANY TRAPPED SECTIONS OF PIPING SHALL BE PROVIDED WITH VALVES, HOSE CONNECTIONS, AND CAPS. ALL TRAPPED SECTIONS OF PIPE SHALL MEET THE CRITERIA OF NFPA 13.
15. INSTALL SPRINKLER AND DRY MANUAL STANDPIPE RISERS AND DRAIN RISERS WITHIN STAIRWELLS SO AS TO NOT OBSTRUCT THE REQUIRED MEANS OF EGRESS AND ACCESSIBILITY CLEARANCES.
16. PROVIDE FLEXIBLE COUPLINGS FOR PIPING THAT CROSSES BUILDING EXPANSION JOINTS IN ACCORDANCE WITH NFPA 13 AND NFPA 14.
17. PENETRATIONS SHALL BE PROVIDED IN A WORKMANLIKE MANNER WITH PROPER CLEARANCES IN ACCORDANCE WITH NFPA 13.
18. PIPING PASSING THROUGH FIRE-RATED SEPARATIONS SHALL BE PROPERLY FIRESTOPPED WITH RATED MATERIALS FOR THE SYSTEM. REFER TO ARCHICTECTURAL PLANS FOR RATED SEPARATIONS.
19. SPRINKLER PIPING SHALL NOT PENETRATE ANY DUCTS UNLESS IT IS TO PROVIDE REQUIRED PROTECTION WITHIN THE DUCTS.
20. ALL FIRE PROTECTION CONTROL VALVES SHALL BE ELECTRICALLY SUPERVISED UNLESS OTHERWISE NOTED.
21. THE DIRECTION OF WATER FLOW SHALL BE CLEARLY LABELED ON ALL CHECK VALVES.
22. PROVIDE AN ISOMETRIC VALVE DIAGRAM WITHIN THE FIRE PUMP ROOM INDICATING THE LOCATION OF ALL CONTROL VALVES FOR THE ENTIRE BUILDING.
23. PROVISIONS SHALL BE MADE FOR FLUSHING THE SYSTEM IN ACCORDANCE WITH NFPA 13. READILY REMOVABLE FITTINGS SHALL BE PROVIDED AT THE END OF ALL CROSS MAINS IN ACCORDANCE WITH NFPA 13.
24. VALVES AND OTHER ASSOCIATED SPRINKLER SYSTEM EQUIPMENT REQUIRING PERIODIC MAINTENANCE SHALL BE INSTALLED IN SUCH A MANNER THAT WILL FACILITATE EASE OF ACCESS AND MAINTENANCE. VALVES AND OTHER ASSOCIATED EQUIPMENT SHALL NOT BE LOCATED IN AREAS THAT ARE DIFFICULT TO ACCESS FOR MAINTENANCE. FOR LOCATIONS THAT MIGHT BE DIFFICULT TO ACCESS, THE CONTRACTOR SHALL REQUEST DESIGN DIRECTION FROM THE ENGINEER.
25. IN ALL CASES WHEN FIRE PROTECTION VALVES ARE INSTALLED BEHIND OPAQUE ACCESS PANELS, ABOVE CEILINGS, IN CLOSED ROOMS, OR IN OTHER LOCATIONS THAT ARE NOT READILY VISIBLE FROM THE FLOOR, PROVIDE SIGNAGE INDICATING THE SPECIFIC EQUIPMENT IN THAT LOCATION. SIGNS SHALL BE PERMANENTLY ATTACHED. TEXT SHALL CONTRAST WITH ITS BACKGROUND AND SHALL BE AT LEAST 2" IN HEIGHT. THE HEIGHT-TO-WIDTH RATIO OF THE TEXT SHALL ALLOW THE TEXT TO BE EASILY READ FROM A DISTANCE OF 10 FT IN ACCORDANCE WITH 780 CMR 901.8.

SEISMIC DESIGN
1. THE BUILDING'S SEISMIC DESIGN CATEGORY IS CLASSIFIED CATEGORY C. PIPES SHALL BE SUPPORTED AND BRACED PER NFPA 13 "PROTECTION OF PIPING AGAINST DAMAGE WHERE SUBJECT TO EARTHQUAKES" AND MSBC REQUIREMENTS. CLEARANCE SHALL BE PROVIDED AROUND PIPING, OR FLEXIBLE COUPLINGS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13.
2. BRANCHLINES SHALL BE LATERALLY AND VERTICALLY RESTRAINED IN ACCORDANCE WITH NFPA 13.

HYDRAULIC BASIS OF DESIGN
1. DRAWINGS HAVE BEEN BASED ON A HYDRANT FLOW TEST ON DECEMBER 17, 2024 OF HYDRANTS AT THE CORNER OF MADISON STREET AND BEACON STREET. THE RESULTS INDICATE THE FOLLOWING:
   STATIC: 100 PSI
   RESIDUAL: 98 PSI
   FLOW: 1,455 GPM
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING A SEPARATE AND MORE RECENT HYDRANT FLOW TEST IN ACCORDANCE WITH NFPA 291 AND NFPA 13. THE ENGINEER AND OWNER SHALL BE NOTIFIED NOT FEWER THAN 3 BUSINESS DAYS BEFORE THE SCHEDULED HYDRANT FLOW TEST. ALL SYSTEM DESIGN INCLUDING FINAL PUMP SIZING SHALL BE BASED UPON THE LESSER OF THE CONTRACTOR'S FLOW TEST RESULTS AND THE RESULTS LISTED ABOVE.
3. THE ENTIRE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY CALCULATED IN ACCORDANCE WITH NFPA 13 AND NFPA 14. EACH RISER/FLOOR CONTROL ASSEMBLY SHALL BE CAPABLE OF SUPPLYING THE REMOTE HYDRAULIC DEMAND FOR EACH FLOOR. CALCULATIONS SHALL INDICATE FLOW THROUGH ONLY THE MOST REMOTE RISER.
4. HYDRAULIC CALCULATIONS SHALL BE CALCULATED TO THE CONNECTION TO WATER SUPPLY IN THE STREET.

COORDINATION WITH OTHER TRADES
1. ALL FIRE ALARM CONNECTIONS SHALL BE COORDINATED WITH THE FIRE ALARM CONTRACTOR. SPRINKLER CONTRACTOR SHALL PROVIDE AND INSTALL ALL FLOW SWITCHES, TAMPER SWITCHES, AND PRESSURE SWITCHES. FIRE ALARM CONTRACTOR SHALL PROVIDE ALL MONITOR MODULES AND MAKE ALL CONNECTIONS AS REQUIRED PER NFPA 72.
2. COORDINATE FIRE PROTECTION SYSTEMS WITH THE WORK OF ALL OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. PROVIDE ALL FITTINGS, OFFSETS, AND TRANSITIONS AS REQUIRED FOR A COMPLETE WORKABLE INSTALLATION. READ THESE PLANS IN CONJUNCTION WITH ALL OTHER DISCIPLINES.
3. COORDINATE LOCATIONS OF ALL SPRINKLER HEADS WITH THE ARCHITECTURAL REFLECTED CEILING PLANS, HVAC DIFFUSER LAYOUT, AND ELECTRICAL LIGHTING LAYOUT. ARCHITECTURAL REFLECTED CEILING PLANS SHOW DESIGN INTENT, BUT DO NOT TAKE PRECEDENCE OVER NFPA 13 SPACING REQUIREMENTS.
4. COORDINATE RECEIVERS FOR FIRE PROTECTION SYSTEM DRAINS WITH PLUMBING CONTRACTOR.

SUPPORT OF PIPEWORK AND EQUIPMENT
1. PLATFORMS, CURBS, AND FLASHING FOR FIRE PROTECTION EQUIPMENT SHALL BE AS INDICATED ON THE STRUCTURAL AND ARCHITECTURAL PLANS, UNLESS NOTED OTHERWISE. COORDINATE EXACT SIZES OF REQUIRED OPENINGS AND SUPPORTS FOR FURNISHED EQUIPMENT.
2. ONLY LISTED HANGERS AND SUPPORTS SHALL BE USED FOR FIRE PROTECTION EQUIPMENT. FOR CASES WHERE A UNIQUE OR SPECIAL SUPPORT HANGER OR BRACE IS REQUIRED, THE SPRINKLER CONTRACTOR SHALL HAVE A STRUCTURAL ENGINEER PROVIDE CALCULATIONS AND CERTIFY THAT THE UNIQUE DESIGN IS APPROPRIATE FOR THE APPLICATION.
3. HANGERS FOR SPRINKLER PIPE SHALL ONLY BE USED FOR SUPPORTING SPRINKLER PIPE. OTHER MECHANICAL SYSTEMS AND EQUIPMENT SHALL NOT BE SUPPORTED BY SPRINKLER SUPPORTS. SPRINKLER SUPPORTS SHALL BE DIRECTLY CONNECTED TO THE STRUCTURE. SUPPORTS SHALL NOT BE CONNECTED TO OTHER EQUIPMENT, EQUIPMENT SUPPORTS, OR TRAPEZE HANGERS WHICH ARE NOT DEDICATED FOR THE SOLE USE OF SPRINKLER SYSTEMS.
4. WHERE ADJUSTABLE SWIVEL HANGERS ARE USED ON STEEL PIPE, THE THREADED ROD SHALL BE THREADED THROUGH THE HANGER TO THE TOP OF THE SPRINKLER PIPE TO REDUCE THE AMOUNT OF SPRINKLER UP LIFT WHEN THE SPRINKLER IS ACTIVATED.
5. UNSUPPORTED LENGTHS OF PIPE SHALL BE WITHIN THE LIMITATIONS OF NFPA 13.
6. HANGER LOCATIONS SHALL BE PER NFPA 13 AND WHERE GROOVED COUPLINGS ARE USED, THEY SHALL ALSO MEET THE MANUFACTURER'S REQUIREMENTS.

DRY-PIPE SPRINKLER SYSTEM NOTES
1. THE POWER CIRCUIT FOR AIR COMPRESSORS SHALL BE CLEARLY LABELED.
2. DRY-PIPE VALVES SHALL BE LOCATED IN A HEATED LOCATIONS THAT ARE NOT SUBJECT TO FREEZING TEMPERATURES.
3. CLEARANCE AROUND DRY-PIPE VALVES SHALL BE PROVIDED FOR ROUTINE MAINTENANCE IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTRUCTIONS.
4. ALL DRY-PIPE SPRINKLER PIPING, FITTINGS, GROOVED COUPLINGS, HANGERS, AND SUPPORTS SHALL BE SCHEDULE 40 BLACK STEEL. GROOVED COUPLINGS SHALL USE FLUSH SEAL GASKETS.
5. HYDRAULIC CALCULATIONS FOR DRY-PIPE FIRE SUPPRESSION SYSTEM SHALL INCLUDE A CALCULATION FOR WATER FLOW TO THE MOST REMOTE SPRINKLER. WATER FLOW TIMES SHALL BE PER NFPA 13. CONTRACTOR SHALL BE REQUIRED TO MODIFY DESIGN IF THE WATER FLOW DOES NOT MEET THE NFPA 13 REQUIREMENTS.
6. DRY-PIPE SPRINKLER PIPING SHALL BE SLOPED TO FACILITATE DRAINAGE IN ACCORDANCE WITH NFPA 13.
7. PROVIDE INSPECTORS TEST CONNECTION IN HYDRAULICALLY REMOTE PORTION OF SYSTEM. TEST CONNECTION SHALL BE IN ACCESSIBLE LOCATION. COORDINATE LOCATION WITH ARCHITECT. ROUTE TEST CONNECTION TO NEAREST DRAIN.

TESTING, ACCEPTANCE, AND APPROVALS
1. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND PROVIDE ALL ASSOCIATED FEES.
2. CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FROM THE FIRE MARSHAL AND AUTHORITIES HAVING JURISDICTION FOR THE SPRINKLER SYSTEM PRIOR TO INSTALLATION.
3. CONTRACTOR SHALL TEST ALL EQUIPMENT PER THE APPLICABLE GOVERNING LAWS, CODES AND STANDARDS, MANUFACTURER RECOMMENDATIONS, SPECIFICATIONS, AND AUTHORITY HAVING JURISDICTION REQUIREMENTS.
4. CONTRACTOR SHALL PERFORM HYDROSTATIC TESTS AND FLUSHING AS REQUIRED BY NFPA 13, AND NFPA 20, AND FURNISH ALL REQUIRED TEST EQUIPMENT. FURNISH COPIES OF ALL TEST CERTIFICATES TO THE OWNER AND ENGINEER.
5. CONTRACTOR SHALL PROVIDE TESTING CERTIFICATE IN ACCORDANCE WITH APPLICABLE GOVERNING LAWS, CODES AND STANDARDS.COMPLETION OF THE FIRE PROTECTION SYSTEMS INSTALLATION DOES NOT CONSTITUTE AN ACCEPTANCE OF THE WORK BY THE OWNER. FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS DEMONSTRATED THAT THE WORK FULFILLS THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS, AND THE MANUFACTURER, AND HAS FURNISHED ALL REQUIRED CERTIFICATES OF APPROVAL FROM THE AUTHORITIES HAVING JURISDICTION.

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Fire Protection
No. 47339
REGISTERED PROFESSIONAL ENGINEER
12-19-2025

CONSTRUCTION DOCUMENTS 12/19/25

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

FIRE PROTECTION GENERAL NOTES, LEGEND & SCHEDULE

SHEET NUMBER

F00.01

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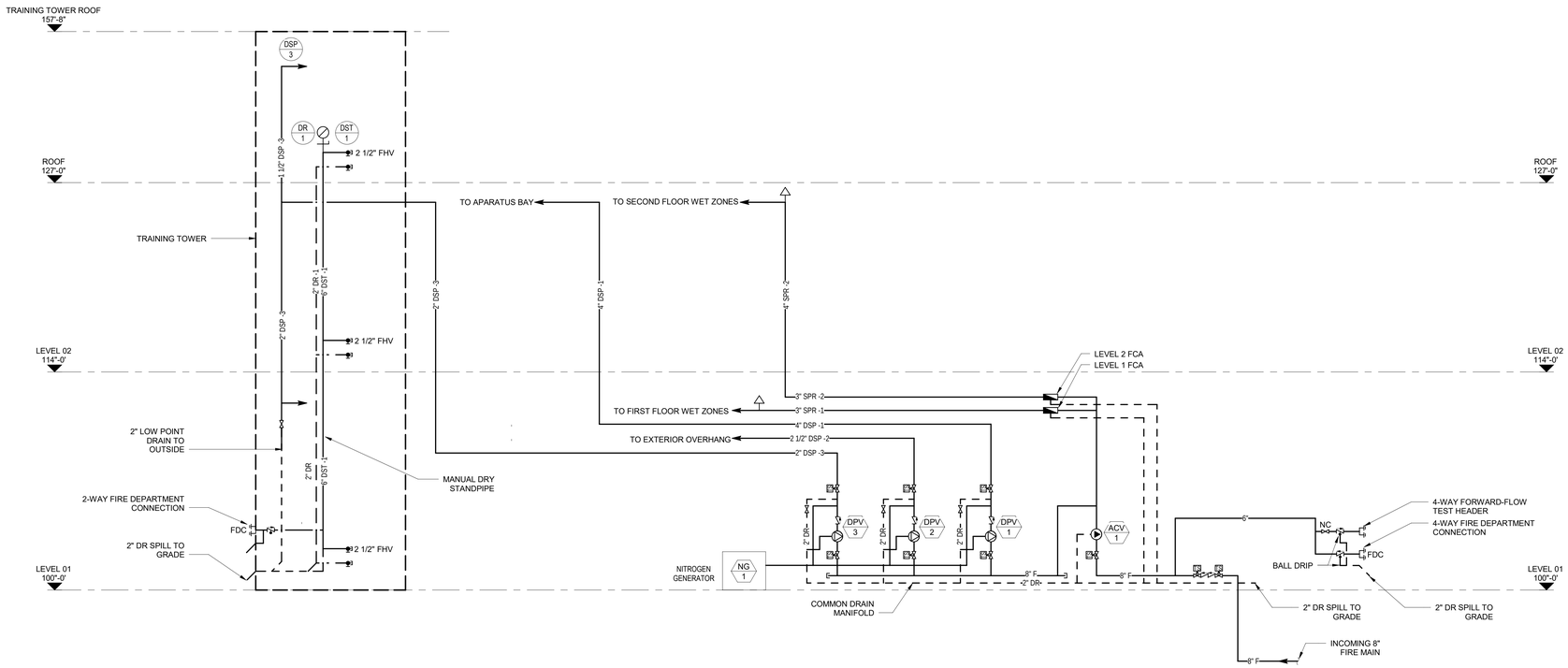
GENERAL NOTES
1. CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL DESIGN AND CALCULATIONS.
2. ALL CONTROL AND SHUTOFF VALVES SHALL BE EQUIPPED WITH TAMPER SWITCHES AND SUPERVISED BY THE FIRE ALARM SYSTEM.
3. THIS RISER DIAGRAM SHALL BE READ IN CONJUNCTION WITH ALL FLOORPLANS, DETAILS, AND SPECIFICATIONS. FOR CLARITY NOT ALL EQUIPMENT IS SHOWN HERE



1 FIRE PROTECTION RISER DIAGRAM

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KEY PLAN

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CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

FIRE PROTECTION SINGLE LINE DIAGRAM

SHEET NUMBER

F03.00

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GENERAL NOTES

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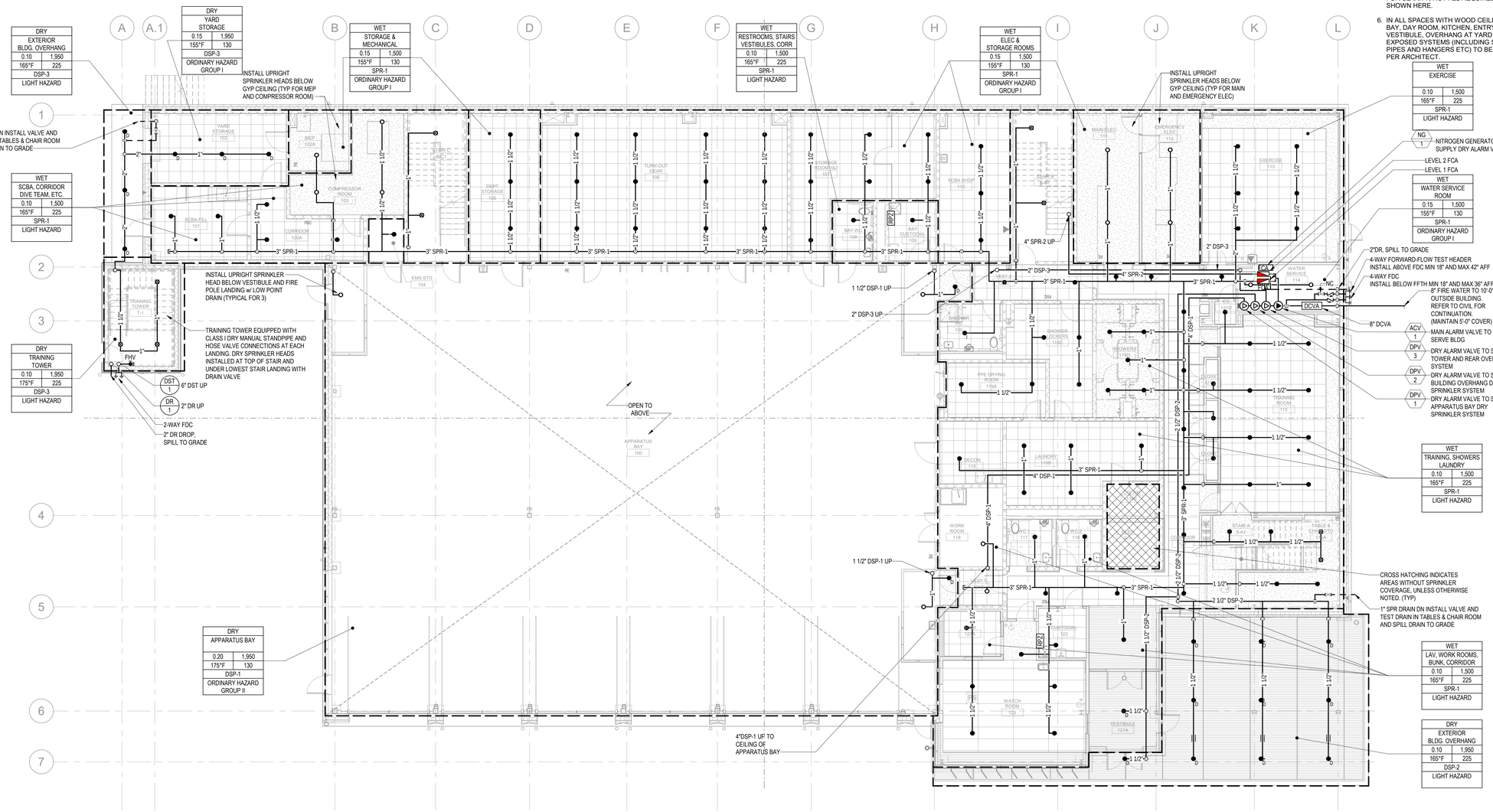
2. AUXILIARY DRAINS SHALL BE PROVIDED AS NECESSARY TO ALLOW COMPLETE SYSTEM DRAINAGE IN ACCORDANCE WITH NFPA 13.
3. SPRINKLER PIPING AND SPRINKLER HEADS SHALL NOT BE LOCATED DIRECTLY ABOVE ELECTRICAL AND IT EQUIPTMENT.
4. INSTALL INTERMEDIATE TEMPERATURE SPRINKLER HEADS NEAR SHOWERS.
5. THIS FLOOR PLAN SHALL BE READ IN CONJUNCTION WITH THE RISER, DETAILS, AND SPECIFICATIONS. FOR CLARITY, NOT ALL REQUIRED EQUIPMENT IS SHOWN HERE.
6. IN ALL SPACES WITH WOOD CEILINGS (APPARATUS BAY, DAY ROOM, KITCHEN, ENTRY CANOPY, VESTIBULE, OVERHANG AT YARD STORAGE ETC) ALL EXPOSED SYSTEMS (INCLUDING SPRINKLER HEADS, PIPES AND HANGERS ETC) TO BE PAINTED BLACK PER ARCHITECT.



1 FIRE PROTECTION FIRST FLOOR PLAN
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CITY OF WORCESTER

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WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

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FIRE PROTECTION FIRST FLOOR PLAN

SHEET NUMBER

F04.01

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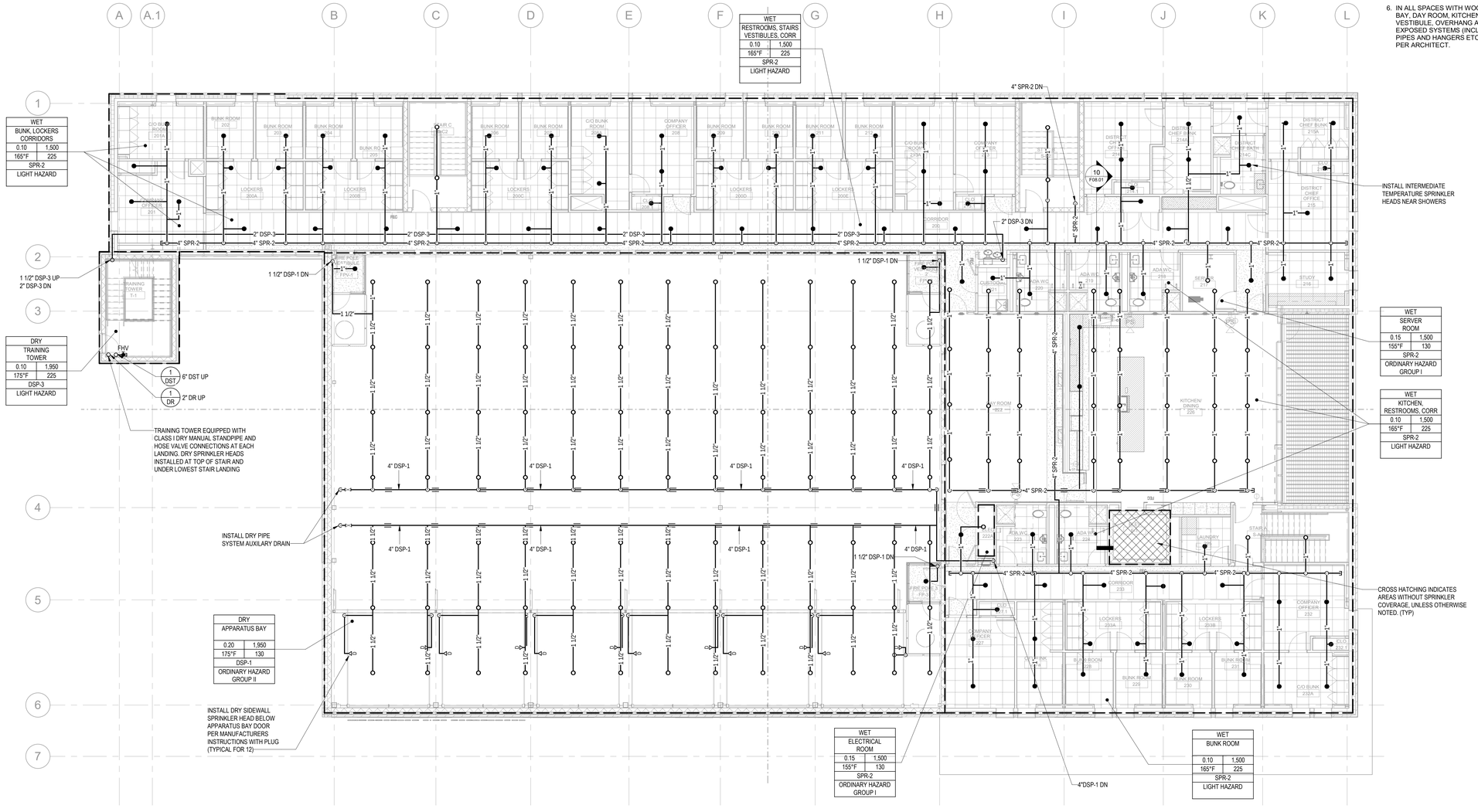

1 FIRE PROTECTION SECOND FLOOR PLAN
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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

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FIRE PROTECTION SECOND FLOOR PLAN

SHEET NUMBER

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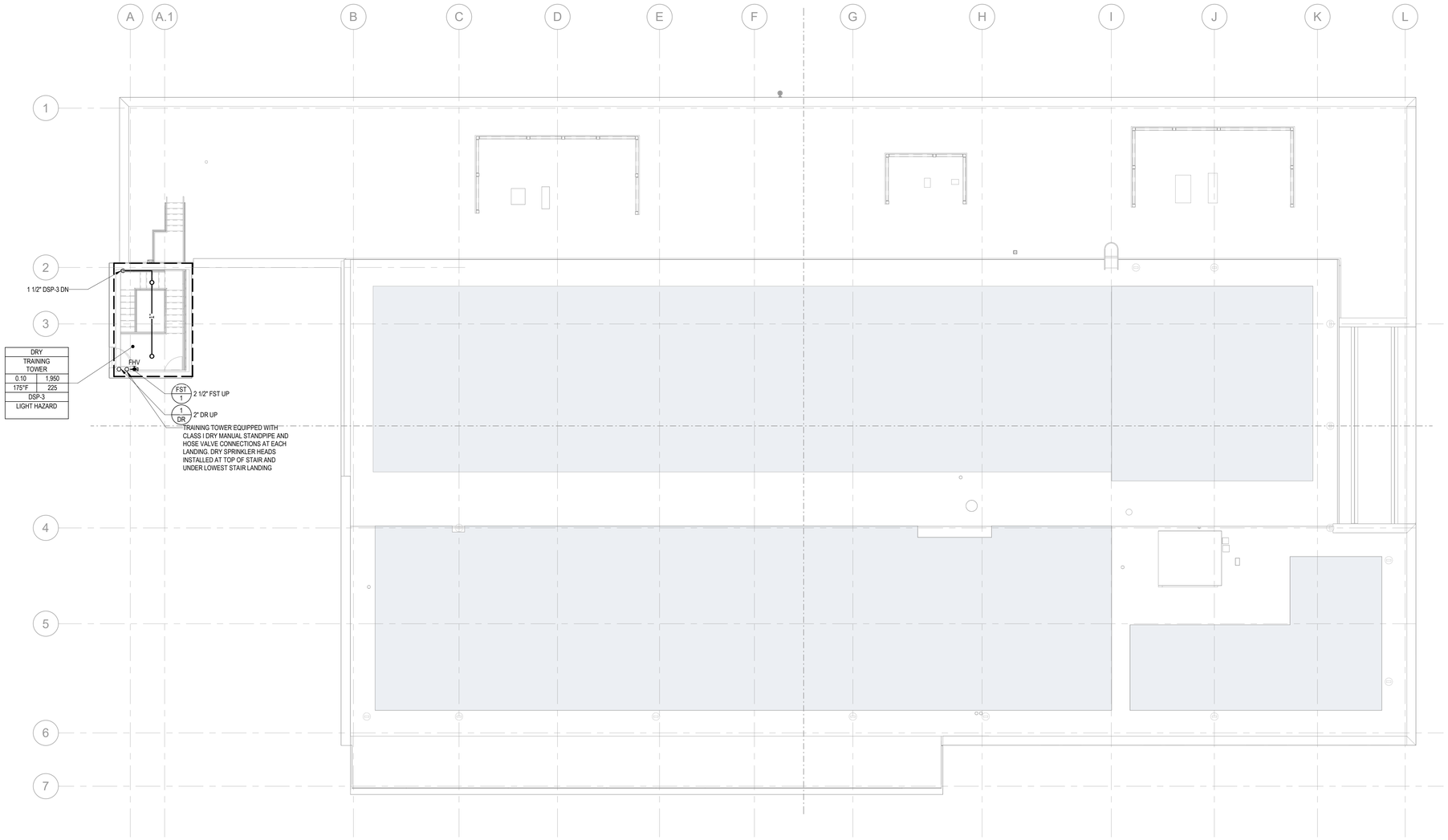
2. AUXILIARY DRAINS SHALL BE PROVIDED AS NECESSARY TO ALLOW COMPLETE SYSTEM DRAINAGE IN ACCORDANCE WITH NFPA 13.



1 FIRE PROTECTION ROOF PLAN
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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

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FIRE PROTECTION ROOF PLAN

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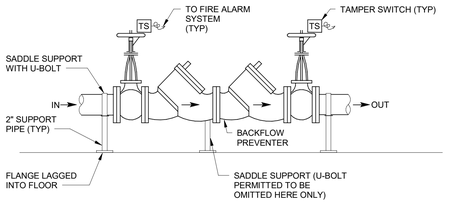
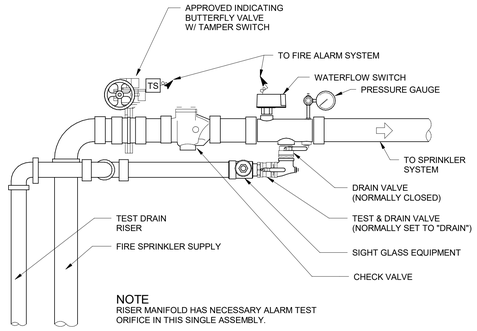


NOTES

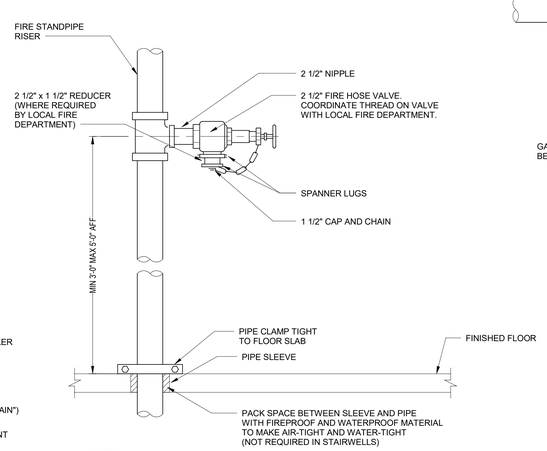
1. INSTALLATION SHALL BE IN ACCORDANCE WITH LOCAL WATER DEPARTMENT REGULATIONS. CONTRACTOR TO COORDINATE REQUIREMENTS WITH LOCAL WATER DEPARTMENT.

1 DOUBLE CHECK BACKFLOW PREVENTER
NTS



NOTE
RISER MANIFOLD HAS NECESSARY ALARM TEST ORIFICE IN THIS SINGLE ASSEMBLY.

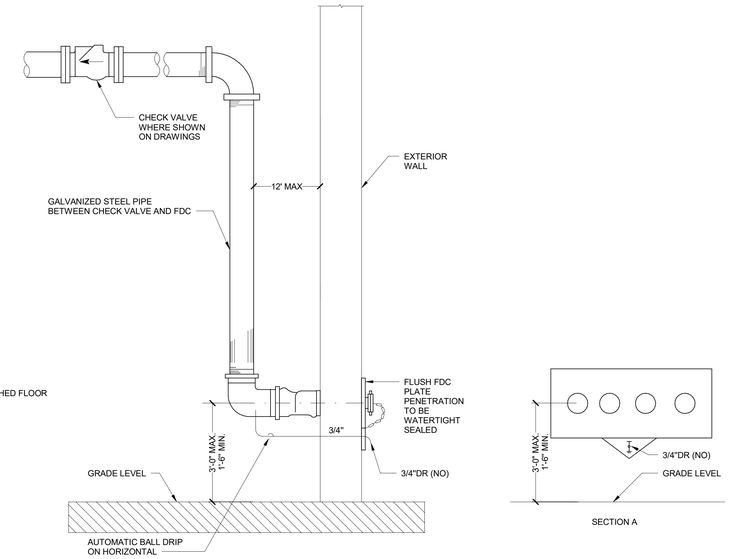
2 SPRINKLER FLOOR CONTROL ASSEMBLY
NTS



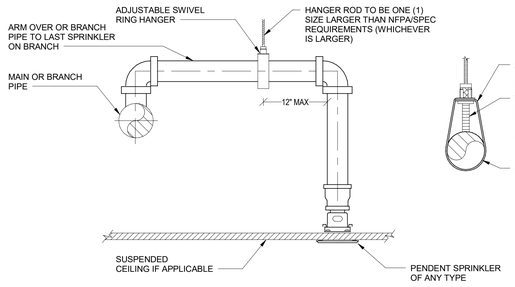
NOTES

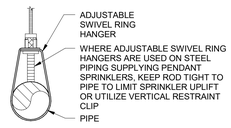
1. COORDINATE FIRE HOSE VALVE LOCATIONS WITH EGRESS PATH WITHIN STAIRWELLS.
   VALVE SHALL NOT ENCROACH UPON REQUIRED EGRESS WIDTHS.

3 FIRE HOSE VALVE
NTS

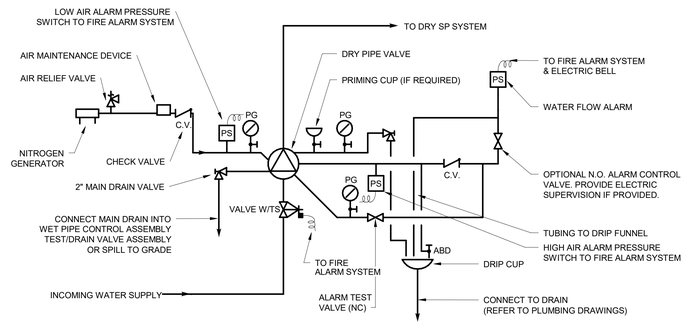


4 FDC (WALL MOUNT FLUSH)
NTS

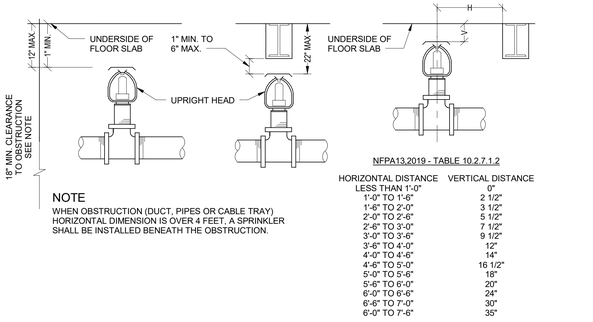




5 PENDENT SPRINKLERS
NTS



6 DRY PIPE SYSTEM SCHEMATIC
NTS

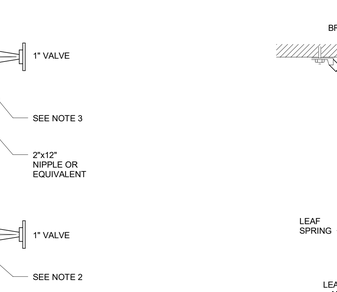


NFPA13.2019 - TABLE 10.2.7.1.2

HORIZONTAL DISTANCE	VERTICAL DISTANCE
LESS THAN 1'-0"	0"
1'-0" TO 1'-6"	2 1/2"
1'-6" TO 2'-0"	3 1/2"
2'-0" TO 2'-6"	5 1/2"
2'-6" TO 3'-0"	7 1/2"
3'-0" TO 3'-6"	9 1/2"
3'-6" TO 4'-0"	12"
4'-0" TO 4'-6"	14"
4'-6" TO 5'-0"	16 1/2"
5'-0" TO 5'-6"	18"
5'-6" TO 6'-0"	20"
6'-0" TO 6'-6"	24"
6'-6" TO 7'-0"	30"
6'-0" TO 7'-6"	35"

NOTE
WHEN OBSTRUCTION (DUCT, PIPES OR CABLE TRAY) HORIZONTAL DIMENSION IS OVER 4 FEET, A SPRINKLER SHALL BE INSTALLED BENEATH THE OBSTRUCTION.

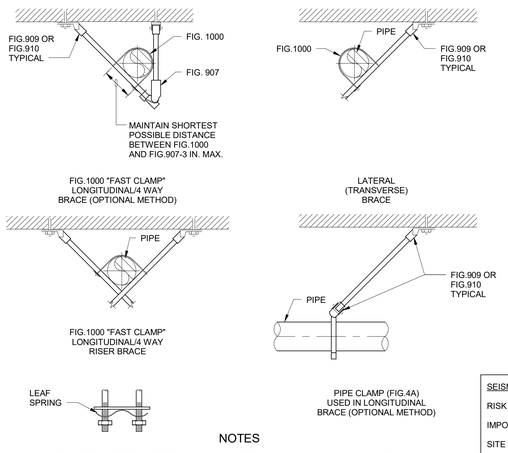
7 TYPICAL UPRIGHT SPRINKLER
NTS



NOTES

1. PROVIDE A SIGN/TAG LABELED "DRY-PIPE AUXILIARY DRAIN."
2. ROUTE TO FLOOR DRAIN OR PROVIDE THREADED HOSE CONNECTION WITH CAP.

8 DRY PIPE SYSTEM AUXILIARY DRAIN
NTS



NOTES

1. TO ASSURE MINIMUM REQUIRED TORQUE - TIGHTEN HEX NUTS UNTIL LEAF SPRING IS FLAT.
2. ALL ITEMS LISTED ARE MANUFACTURED BY TOLCO. APPROVED EQUAL PRODUCT MAY ALSO BE CONSIDERED.
3. CONTRACTOR TO PROVIDE SEISMIC CALCULATIONS AND DRAWINGS INCLUDING THE ABOVE BRACING BASED UPON THE SEISMIC DESIGN DATA.
4. VERIFY INDICATED DESIGN DATA WITH STRUCTURAL DRAWINGS.

SEISMIC DESIGN DATA

RISK CATEGORY - IV

IMPORTANCE FACTOR - 1.5

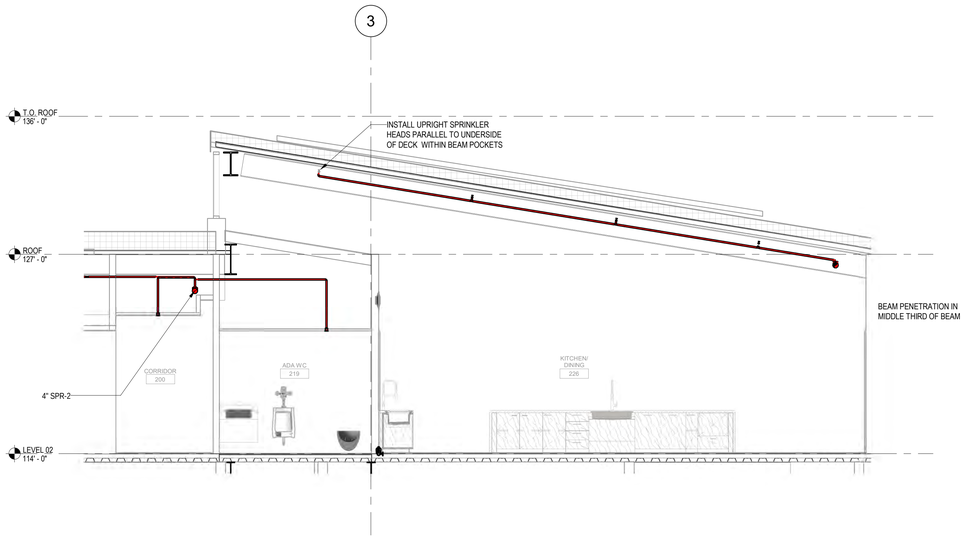
SITE CLASS - D

SEISMIC DESIGN CATEGORY - C

SDs - 0.21

SD1 - 0.06

9 TYPICAL SEISMIC BRACE COMPONENTS
NTS



10 LEVEL 2 - KITCHEN AND RESTROOM SECTION VIEW
1/4" = 1'-0"

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COMMONWEALTH OF MASSACHUSETTS
MATTHEW A. JOHANN
Fire Protection
No. 47339
REGISTERED
PROFESSIONAL ENGINEER
12-19-2025

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

FIRE PROTECTION DETAILS SHEET 1

SHEET NUMBER

F08.01

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SYMBOLS

SYMBOL	DESCRIPTION
S	SANITARY PIPING BELOW GRADE
S	SANITARY PIPING ABOVE GRADE
V	VENT PIPING
ST	STORM DRAINAGE PIPING
ST	STORM DRAINAGE PIPING BELOW GRADE
	COLD WATER PIPING
	HOT WATER PIPING
	HOT WATER RETURN PIPING
GW	APPARATUS BAY GARAGE WASTE PIPING
	SHUT-OFF VALVE
	CHECK VALVE
	PRESSURE REDUCING VALVE
	BALANCING VALVE ASSEMBLY
	COCK VALVE
	VALVE IN VERTICAL
	CURB VALVE
	MIXING VALVE
	PIPE DROP, RISE OR DOWN
	PIPE CONNECTION, TOP
	PIPE CONNECTION, BOTTOM
	PIPE UP
	"P" TRAP
	CLEANOUT
	CLEANOUT DECK PLATE
	CAPPED OUTLET
	DIELECTRIC UNION
	VENT THROUGH ROOF
	FLOOR DRAIN, AREA DRAIN
	FLOOR SINK
	ROOF DRAIN, OVERFLOW DRAIN
	YARD HYDRANT
	HOSE BIBB
	WALL HYDRANT
VB	VACUUM BREAKER ASSEMBLY
	THERMOMETER
	PRESSURE GAUGE W/VALVE
BFP	BACKFLOW PREVENTER
	FLOOR, AREA DRAIN (RISER)
	ROOF DRAIN (RISER)
	WATER HAMMER ARRESTOR
	FRESH AIR INLET (FAI)
M	METER
F	WATER FILTER
	PUMP
	DIRECTION OF FLOW
	PIPE BREAK
P #	RISER DESIGNATION
ST #	LEADER DESIGNATION
* #	EQUIPMENT DESIGNATION

SYMBOLS

SYMBOL	DESCRIPTION
AV	ACID VENT PIPING
AW	ACID WASTE PIPING
CA	COMPRESSED AIR PIPING (INSTRUMENT GRADE)
GRW	GRAY WATER PIPING
EPD	EJECTOR PUMP DISCHARGE PIPING
FAI	FRESH AIR INLET
GW	GARAGE WASTE PIPING
IW	INDIRECT WASTE PIPING
SPD	SUMP PUMP DISCHARGE PIPING
OD	OVERFLOW DRAINAGE PIPING
TW	TEPID WATER PIPING
NP	NON-POTABLE WATER PIPING
CO2	CARBON DIOXIDE PIPING
TP	TRAP PRIMER PIPING
	ELECTRIC HEAT TRACING
RPZ	REDUCED PRESSURE VALVE DEVICE
	MOTOR VALVE
	SOLENOID VALVE
	DIAPHRAGM VALVE
	BALANCING VALVE
	ANGLE VALVE
	OS & Y VALVE
	OS & Y VALVE IN VERTICAL
	GAS PRESSURE REGULATOR
	AUTOMATIC AIR VENT VALVE
	T & P RELIEF VALVE
	BACKWATER VALVE
TP	TRAP PRIMER
	HOUSE TRAP
	AQUASTAT
EJ	EXPANSION JOINT
	FLEXIBLE CONNECTION
	EXPANSION LOOP
	CONCENTRIC REDUCER
	STRAINER Y-TYPE
	BASKET STRAINER
	STANDPIPE (RISER)
	WATERTIGHT PIPE SLEEVE, BEAM PENETRATION
GD	GUTTER DRAIN (RISER)
	FUNNEL DRAIN (RISER)
FS	FLOOR SINK (RISER)
MS	MOP SINK (RISER)
SH	SHOWER DRAIN (RISER)

ABBREVIATIONS

SYMBOL	DESCRIPTION
AD	AREA DRAIN
ARCH	ARCHITECTURAL
BFP	BACKFLOW PREVENTER
BLDG	BUILDING
CA	COMPRESSED AIR
CLG	CEILING
CO	CLEANOUT
CODP	CLEANOUT DECK PLATE
COWP	CLEANOUT WALL PLATE
CONN	CONNECTION
CONT	CONTINUATION
CW	DOMESTIC COLD WATER
DCV	DOUBLE CHECK VALVE
DET	DETAIL
DFU	DRAINAGE FIXTURE UNIT
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DR	DRAIN
DWG	DRAWING
EA	EACH
EJ	EXPANSION JOINT
EL	ELEVATION
EQ	EQUAL
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXIST	EXISTING
FAI	FRESH AIR INLET
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FS	FLOOR SINK
F.F.E.	FINISH FLOOR ELEVATION
FL	FLOOR
GAL	GALLON
GD	GUTTER DRAIN
GH	GROUND HYDRANT
GPM	GALLON PER MINUTE
GW	GARAGE WASTE (APPARATUS BAY)
HB	HOSE BIBB
HW	DOMESTIC HOT WATER
HWR	DOMESTIC HOT WATER RETURN
I.E.	INVERT ELEVATION
INV. ELEV.	INVERT ELEVATION
IW	INDIRECT WASTE
LG	LOW PRESSURE GAS
MAX	MAXIMUM
MECH	MECHANICAL
MG	MEDIUM PRESSURE GAS
MH	MANHOLE
MIN	MINIMUM
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OD	OVERFLOW DRAIN
PRV	PRESSURE REDUCING VALVE
RD	ROOF DRAIN
RPZ	REDUCED PRESSURE ZONE
S	SANITARY WASTE
SF	SQUARE FEET
ST	STORM DRAINAGE
TD	TRENCH DRAIN
TP	TRAP PRIMER
TYP	TYPICAL
V	VENT
UON	UNLESS OTHERWISE NOTED
VIF	VERIFY IN FIELD
VLV	VALVE
VTR	VENT THROUGH ROOF
W	WASTE
W/	WITH
WC	WATER CLOSET
WCO	WALL CLEANOUT
W/O	WITHOUT
WH	WALL HYDRANT
WHA	WATER HAMMER ARRESTOR
YH	YARD HYDRANT

GENERAL NOTES

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO 248CMR, 780CMR AND ALL APPLICABLE LOCAL CODES AND REGULATIONS.
2. ALL MATERIALS AND EQUIPMENT SHALL BE APPROVED BY THE MASSACHUSETTS BOARD OF REGISTRATION OF PLUMBERS AND GAS FITTERS. SHALL BE UL LISTED, AND SHALL MEET ALL OTHER APPLICABLE STANDARDS.
3. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES RELATING TO WORK TO VERIFY SPACE IN WHICH WORK WILL BE INSTALLED. MAINTAIN HEADROOM AND SPACE CONDITIONS AT ALL TIMES.
4. CONTRACTOR SHALL REFER TO ALL THE ARCHITECTURAL DRAWINGS, FIREMATIC EQUIPMENT DOCUMENTS, FOR PLUMBING RELATED WORK AND COORDINATION.
5. PRIOR TO START OF INSTALLATION OF BELOW SLAB PIPING, COORDINATE LOCATIONS OF PIPING AND STRUCTURAL FOOTINGS, GRADE BEAMS, ETC. WITH STRUCTURAL ENGINEER.
6. COORDINATE PLUMBING SYSTEMS AND EQUIPMENT SPACES WITH WORK OF ALL OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. PROVIDE ALL FITTINGS, OFFSETS, AND TRANSITIONS AS REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
7. PLATFORMS, PITS, AND FLASHING FOR PLUMBING EQUIPMENT SHALL BE AS INDICATED ON THE STRUCTURAL AND ARCHITECTURAL PLANS, UNLESS NOTED OTHERWISE. COORDINATE EXACT SIZES OF REQUIRED OPENINGS AND SUPPORTS FOR FURNISHED EQUIPMENT.
8. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE CODES. PROVIDE ALL FITTINGS, TRANSITIONS, VALVES, AND OTHER DEVICES REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
9. COORDINATE ALL FLOOR AND WALL PENETRATIONS WITH STRUCTURAL ENGINEER PRIOR TO STARTING WORK. SUBMIT FULLY COORDINATED SLEEVE AND CORE DRILL PLANS FOR REVIEW.
10. MAINTENANCE LABEL SHALL BE AFFIXED TO ALL PLUMBING EQUIPMENT AND A MAINTENANCE MANUAL SHALL BE PROVIDED TO OWNER.
11. PLUMBER SHALL INSTALL ALL PLUMBING PIPING IN A NEAT WORKMAN LIKE MANNER.
12. INSTALL SHUT-OFF VALVES ON ALL BRANCH SUPPLY LINES AND AT THE BASE OF HOT AND COLD WATER RISERS. PROVIDE ACCESS PANEL AT FINISHED CEILINGS.
13. PRIOR TO INSTALLATION OF ANY SURFACE MOUNTED OR RECESSED PLUMBING COMPONENTS (I.E.: WALL HYDRANTS, ROOF DRAINS, OVERFLOW DOWNSPOUT COVERS, ETC.) ON EXTERIOR OF BUILDING, COORDINATE THEIR EXACT LOCATION WITH ARCHITECT. REFER TO ARCHITECTURAL PLANS FOR FLASHING AT ALL ROOF PENETRATIONS.
14. PROVIDE DRAINAGE FOR SPRINKLER PIPING IN ACCORDANCE WITH NFPA 13.
15. FOR ALL PIPING SUPPORTS, ISOLATE COPPER PIPES FROM STEEL SUPPORTS AND STEEL PIPING. SUPPORTS FOR COPPER PIPING SHALL BE COPPER-PLATED.
16. PIPES SHALL BE SUPPORTED AND BRACED PER SMACNA GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS INCLUDING BUT NOT LIMITED TO ENTERING MANHOLES, USE OF WATER FROM LOW PRESSURE HYDRANTS ETC. PRIOR TO COMMENCING OF WORK.
18. ANY EQUIPMENT, DEVICES, PIPING, AND OTHER PLUMBING COMPONENTS WHICH ARE INSTALLED CONTRARY TO THE REQUIREMENTS OF THE APPLICABLE CODES AND REGULATIONS (INCLUDING, BUT NOT LIMITED TO, THOSE MENTIONED ABOVE), MANUFACTURER RECOMMENDATIONS, ETC. SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
19. INSTALL WATER HAMMER ARRESTORS WITH ACCESS DOORS IN ACCORDANCE WITH PDI-WH201, REVISED 2010.
20. COORDINATE VENT THROUGH ROOF LOCATIONS WITH HVAC AIR INTAKES (MIN. 25'-0" CLEARANCE).
21. CONTRACTOR TO PROVIDE DRAIN VALVES AT ALL LOW POINTS OF THE SYSTEMS INCLUDING AT THE BASE OF RISERS AND ALSO PROVIDE AUTOMATIC AIR VENTS AT THE TOP OF ALL RISERS.

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12/19/25

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WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

PLUMBING GENERAL NOTES & LEGEND

SHEET NUMBER

P00.01

CONSTRUCTION DOCUMENTS 12/19/25

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PLUMBING FIXTURE SCHEDULE (BOD, REFER TO SPECS FOR ADDITIONAL INFO)

DESIGNATION	DESCRIPTION	FIXTURE MANUFACTURER	FIXTURE MODEL	FAUCET/TRIM MANUFACTURER	FAUCET/TRIM MODEL	WASTE	VENT	CW	HW	HW TEMPERATURE	FLOW RATE	NOTES
HB	HOSE BIBB	-	-	ZURN	Z1350	-	-	¾"	-	-	-	-
HR	HOSE REEL	-	-	GILMOUR	855032-1001	-	-	1½"	-	-	-	-
P-1	WALL HUNG WATER CLOSET	SLOAN	ST-2459-STG	ROYAL	111 ESS-1.28-SF-TMO-HW	4"	2"	1½"	-	-	1.28 GPF	FLUSHOMETER BRUSHED STAINLESS FINISH. AMERICAN STANDARD TOILET SET MODEL 5901.100
P-1A	WALL HUNG WATER CLOSET (ADA)	SLOAN	ST-2459-STG	ROYAL	111 ESS-1.28-SF-TMO-HW	4"	2"	1½"	-	-	1.28 GPF	FLUSHOMETER BRUSHED STAINLESS FINISH. AMERICAN STANDARD TOILET SET MODEL 5901.100
P-2	WALL HUNG PUBLIC URINAL	SLOAN	SU-1009-STG	SLOAN	186 ESS-0.125-SF-TMO-HW	2"	2"	¾"	-	-	0.125 GPF	-
P-2B	WALL HUNG PRIVATE URINAL	SLOAN	SU-1009-STG	SLOAN	186 ESS-0.5-SF-TMO-HW	2"	2"	¾"	-	-	0.5 GPF	-
P-2C	WALL HUNG PRIVATE URINAL (ADA)	SLOAN	SU-1009-STG	SLOAN	186 ESS-0.5-SF-TMO-HW	2"	2"	¾"	-	-	0.5 GPF	-
P-3	UNDERMOUNT PUBLIC LAVATORY	SLOAN	SS-3021-STG	SLOAN	EAF-750-BAT-ISM-SF-0.5GPM -MLM-IQ-FCT	1¼"	1½"	½"	½"	110°F	0.5 GPM	-
P-3B	UNDERMOUNT PRIVATE LAVATORY (ADA)	SLOAN	SS-3021-STG	SLOAN	EAF-750-BAT-ISM-SF-1.0GPM -MLM-IQ-FCT	1¼"	1½"	½"	½"	110°F	1.0 GPM	-
P-3C	DROP IN PRIVATE LAVATORY (ADA)	SLOAN	SS-3021-STG	SLOAN	EAF-750-BAT-ISM-SF-1.0GPM -MLM-IQ-FCT	1¼"	1½"	½"	½"	110°F	1.0 GPM	-
P-4	STAINLESS STEEL WALL HUNG HAND SINK	ADVANCE TABCO	7-PS-68	INTEGRAL TO SINK	INTEGRAL TO SINK	2"	1½"	½"	½"	110°F	1.0 GPM	-
P-4A	DROP IN KITCHENETTE SINK	ELKAY	ELUHAD141455PD	KOHLER	K-22034	2"	1½"	½"	½"	110°F	1.5 GPM	-
P-4B	2 BOWL SCBA FILL SINK	ADVANCED TABCO	94-22-40-18RL	T&S BRASS	5PR-8W12	2"	1½"	½"	½"	110°F	1.15 GPM	-
P-4C	2 BOWL DECON SINK	ADVANCE TABCO	94-62-36-18RL	ADVANCE TABCO	K116	2"	1½"	½"	½"	110°F	1.16 GPM	-
P-4D	WORK ROOM SINK	ADVANCE TABCO	FS-1-3624-24L	ADVANCE TABCO	K116	2"	1½"	½"	½"	110°F	1.16 GPM	-
P-4F	KITCHEN ISLAND SINK	ELKAY	ECTRUAD301755	ELKAY	LKAV2061	2"	1½"	½"	½"	120°F	1.5 GPM	-
P-4G	KITCHEN SINK AT COUNTER	ELKAY	CS60BPK	ELKAY	LKAV2061	2"	1½"	½"	½"	120°F	1.5 GPM	-
P-4H	POT FILLER	-	-	ELKAY	LKAV4091	-	-	½"	-	-	3.2 GPM	-
P-5	DUAL STATION DRINKING FOUNTAIN W/ BOTTLE FILLER	ELKAY	LZSTL12WSSP-PF	-	-	2"	1½"	½"	-	-	12 GPH	-
P-5A	BOTTLE FILLER	ELKAY	LZSWSM12K	-	-	2"	1½"	½"	-	-	12 GPH	-
P-6	MOP SERVICE BASIN	FIAT PRODUCTS	TSB100	T&S	B-0665-BSTR	1½"	1½"	½"	-	-	2.5 GPM	-
P-6A	SERVICE SINK	ELKAY	ESSB2520C	-	-	2"	2"	½"	½"	110°F	1.5 GPM	-
P-8A	WASHING MACHINE BOX	-	-	-	-	2"	2"	1/2"	1/2"	110°F	-	-
P-9	DECON AREA SHOWER	TILE IN PLACE	-	WILLOUGHBY	CWRS-FA-ADA-WH SERIES	2"	1½"	½"	½"	110°F	2.0 GPM	PROVIDE WITH SHOWER DRAIN MODEL JR SMITH 2005
P-9A	SHOWER (ADA)	FREEDOM SHOWERS	APF3838BFPANRRF	SYMMONS	552SH	2"	1½"	½"	½"	110°F	2.0 GPM	INTEGRAL SHOWER DRAIN, INSTALL TO MEET ADA REQUIREMENTS
P-10	EMERGENCY EYEWASH	GUARDIAN	G175OP	-	-	1-1/4"	-	½"	½"	110°F	13 GPM	USE THERMOSTATIC MIXING VALVE G6020. WASTE TO SPILL TO FLOOR PER CUT SHEET
P-11	WASH DOWN FAUCET	-	-	T&S	PB-8WOSN00PZLUB	1½"	1½"	½"	½"	110°F	1.5 GPM	-
RH-1	ROOF HYDRANT	-	-	FREEZE FLOW	2131R	-	-	¾"	-		-	NON-FREEZE VENTURI ROOF HYDRANT
WH-1	WALL HYDRANT	-	-	ZURN	Z1321-CXL	-	-	½"	-	-	-	NON-FREEZE WALL HYDRANT

DRAIN SCHEDULE

ITEM TYPE	ITEM NO.	DESCRIPTION	BASIS OF DESIGN MANUFACTURER	MODEL	BODY MATERIAL	TOP COVER	GRATE OR STRAINER MATERIAL	DUTY	NOTES
AD	1	YARD STORAGE ROOM DRAIN	ZURN	Z1189-12	DUCO CAST IRON	11 3/8"x 12 3/8" RECTANGLE	CAST IRON	MEDIUM	W/ INTEGRAL OIL/SEDIMENT INTERCEPTOR
FD	1	BATHROOM FLOOR DRAIN	JR SMITH	2005	DUCO CAST IRON	6"x6" SQUARE	NICKLE BRONZE	LIGHT	W/ TRAP PRIMER CONNECTION, FREE AREA 12 SQ IN
FD	2	MECHANICAL ROOM FLOOR DRAIN	JR SMITH	2110-S	DUCO CAST IRON	6"x6" SQUARE	CAST IRON	MEDIUM	W/ TRAP PRIMER CONNECTION, FREE AREA 14.25 SQ IN
FD	3	TRAINING TOWER FLOOR DRAIN	JR SMITH	2290	DUCO CAST IRON	12"x12" SQUARE	CAST IRON	MEDIUM	FREE AREA 45 SQ IN
FD	4	ICE MAKER HUB DRAIN	JR SMITH	3970	DUCO CAST IRON	12" ROUND	CAST IRON	MEDIUM	NO-HUB
RD	A	ROOF DRAIN	JR SMITH	1010	DUCO CAST IRON	15" ROUND	CAST IRON	MEDIUM	
RD	B	OVERFLOW ROOF DRAIN	JR SMITH	1080	DUCO CAST IRON	15" ROUND	CAST IRON	MEDIUM	
TD	1	APPARATUS BAY TRENCH DRAIN	ZURN	Z882	HDPE	96"x12" RECTANGLE	CAST IRON	HEAVY	(4) TRENCH DRAIN BODY PER GARAGE WASTE OUTLET REFER TO FLOOR PLANS. TWO TRAPS SHALL BE PROVIDED WITH 1/2" TRAP PRIMER WATER SUPPLY AND THE REMAINING TEN TRAPS SHALL BE PROTECTED WITH BARRIER TYPE FLOOR DRAIN TRAP SEAL PROTECTION DEVICE SIMILAR TO ZSHIELD BARRIER TRAP SEAL DEVICE Z1072-4
TD	2	DECON/LAUNDRY ROOM TRENCH DRAIN	STRIEM	TT-10	POLYETHEYLENE	120"x18" RECTANGLE	CAST IRON	MEDIUM	W/ TRAP PRIMER CONNECTION. LAUNDRY TROUGH REFER TO ARCHITECT FOR EXACT LOCATION

WATER HEATER SCHEDULE

ITEM TYPE	ITEM NO.	EQUIPMENT DESCRIPTION	LOCATION	MANUFACTURER	MODEL	DIMENSIONS [IN]	STORAGE [GAL]	RECOVERY [GPH]	TEMP. IN [°F]	TEMP. OUT [°F]	ELECTRICAL POWER [kW]	ELECTRICAL VOLTAGE [V]	ELECTRICAL PHASE [PH]	NOTES
DWH	1	WATER HEATER	WATER ROOM	AO SMITH	DRE-120A	29-1/2"	120	148	40	140	54	480	3	
DWH	2	WATER HEATER	WATER ROOM	AO SMITH	DRE-120A	29-1/2"	120	148	40	140	54	480	3	

PLUMBING PUMP SCHEDULE

ITEM TYPE	ITEM NO.	EQUIPMENT DESCRIPTION	MOTOR HP	MOTOR RPM	MOTOR V	MOTOR PH	CAPACITY [GPM]	PUMP HEAD [FT WC]	MANUFACTURER	MODEL	NOTES
ESP	1	ELEVATOR SUMP PUMP	0.5	3450	480	3	50	20.00	STANCOR	SV-50	WEIL 1456
HWP	1&2	RECIRULATION PUMP	1.0	830	115	1	10	10.00	TACO	0034eP-SF2	

PLUMBING EQUIPMENT SCHEDULE

ITEM TYPE	ITEM NO.	EQUIPMENT DESCRIPTION	LOCATION	MANUFACTURER	MODEL	SYSTEM SERVED	NOTES
EPO	1	EMERGENCY POWER OFF SWITCH	OUTSIDE WATER ROOM	-	-	DOMESTIC WATER HEATERS POWER	COORDINATE REQUIREMENTS WITH ELECTRICAL.
ET	1	EXPANSION TANK	WATER ROOM	AMTROL	ST-42VC-DD	DOMESTIC WATER	
G/S	1	GAS AND SAND INTERCEPTOR	APPARATUS BAY	SCITUATE CONCRETE PRODUCTS	CAST CONCRETE	APPARATUS BAY WASTE	6" INLET AND OUTLET
M	1	DOMESTIC WATER METER	WATER ROOM	NEPTUNE	TRUFLO COMPOUND	DOMESTIC COLD WATER	PROVIDE WITH REMOTE READ. MFR TO PROVIDE METER ACCESSORIES AS NEEDED FOR BMS INTEGRATION, NEPTUNE "SCADAMETRICS" OR EQUAL
PRV	1	PRESSURE REGULATING VALVE	WATER ROOM	CAL-VAL	90-48	DOMESTIC COLD WATER	LOW-FLOW BYPASS IN PARALLEL. SET TO 75 PSI
PRV	2	PRESSURE REGULATING VALVE	WATER ROOM	CAL-VAL	90-48	DOMESTIC COLD WATER	LOW-FLOW BYPASS IN PARALLEL. SET TO 75 PSI
TMV	1	THERMOSTATIC MIXING VALVE	WATER ROOM	WATTS	INTELLISTATION 2		INSTALL PER MANUFACTURERS RECOMMENDATIONS.
TP	1	TRAP PRIMER DISTRIBUTION UNIT	SEE PLANS	PPP	MP-500-115V-DU	FLOOR DRAINS	RECESSED TYPE UNIT WITH ACCESS PANEL

BACKFLOW PREVENTION SCHEDULE

ITEM TYPE	ITEM NO.	DESCRIPTION	SERVICE	LOCATION	SIZE [IN]	MANUFACTURER	MODEL NO.	APPROVALS	NOTES
RPZ	1	REDUCED PRESSURE BACKFLOW PREVENTER	DOMESTIC WATER	CUSTODIAL SPACES	3/4"	WATTS	009-QT-FS	ASSE	INSTALL 3/4" RPZ ON HOT AND COLD WATER SUPPLY AT MOP SERVICE BASIN TO CONNECT TO CHEMICAL DISPENSER
RPZ	2	REDUCED PRESSURE BACKFLOW PREVENTER	DOMESTIC WATER	COFFEE STATION	1/2"	WATTS	LF7R	ASSE	
RPZ	3	REDUCED PRESSURE BACKFLOW PREVENTER	DOMESTIC WATER	DECON LAUNDRY EXTRACTOR	2"	WATTS	LF909QT	ASSE	INSTALL 3/4" RPZ ON HOT AND COLD WATER SUPPLY AT MOP SERVICE BASIN TO CONNECT TO DECON EQUIPMENT

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HILARY G WILLIAMS
MECHANICAL
NO. 55379
REGISTERED PROFESSIONAL ENGINEER
12/19/25

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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

PLUMBING SCHEDULES SHEET

SHEET NUMBER

P01.01

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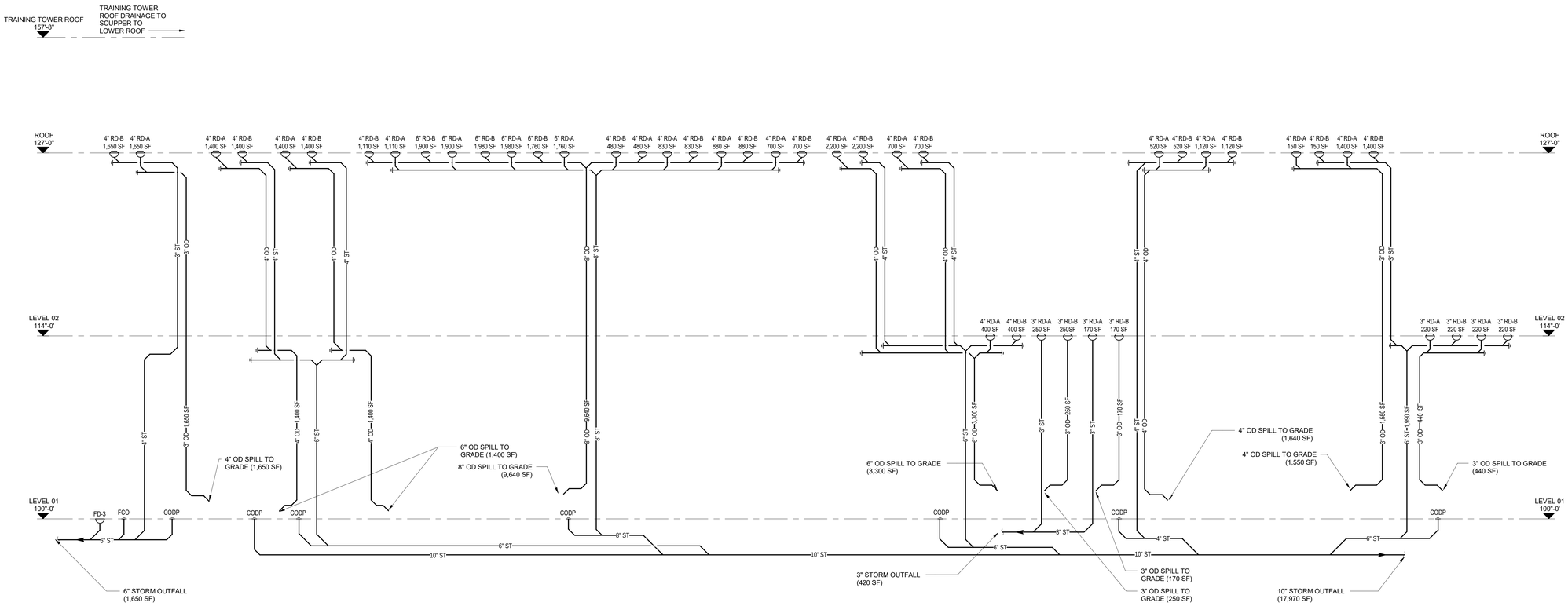

1 STORM RISER DIAGRAM

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ISSUE CHART

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PLUMBING STORM RISER DIAGRAM

SHEET NUMBER

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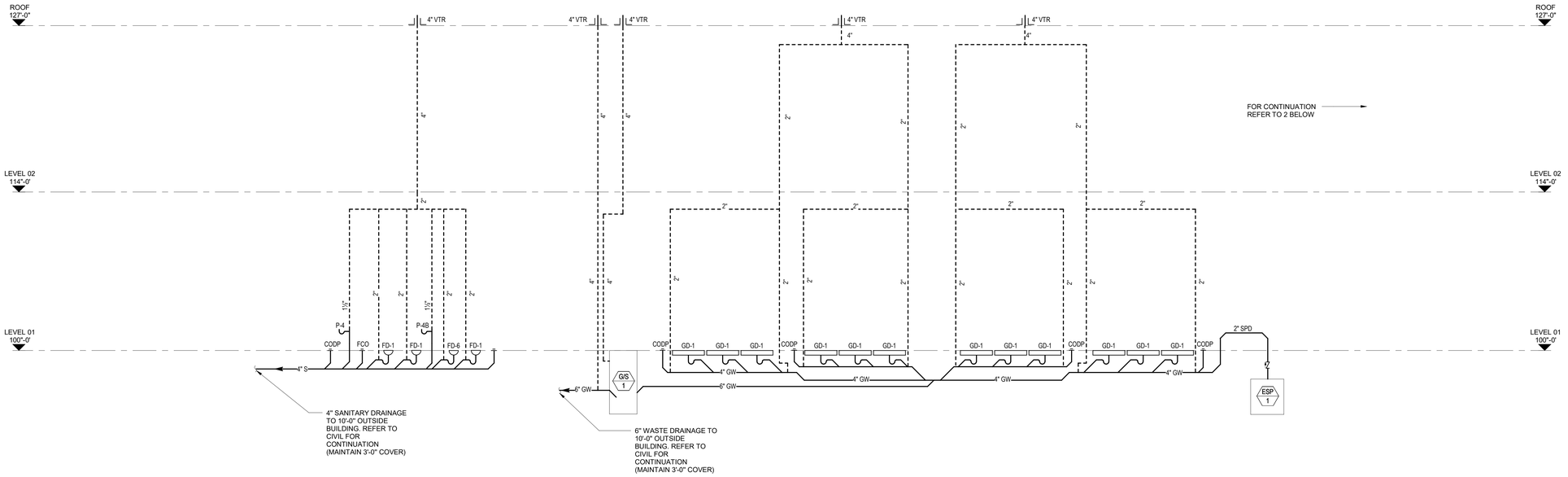
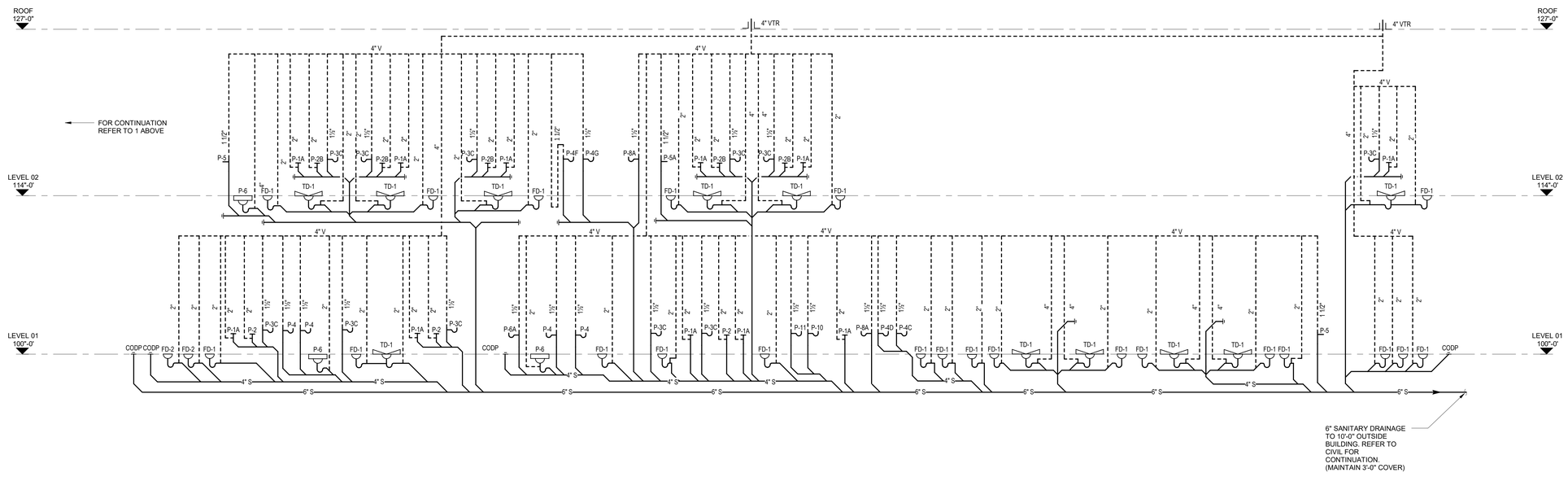


1 SANITARY RISER DIAGRAM

12" = 1'-0"



2 SANITARY RISER DIAGRAM

12" = 1'-0"

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PLUMBING SANITARY RISER DIAGRAM

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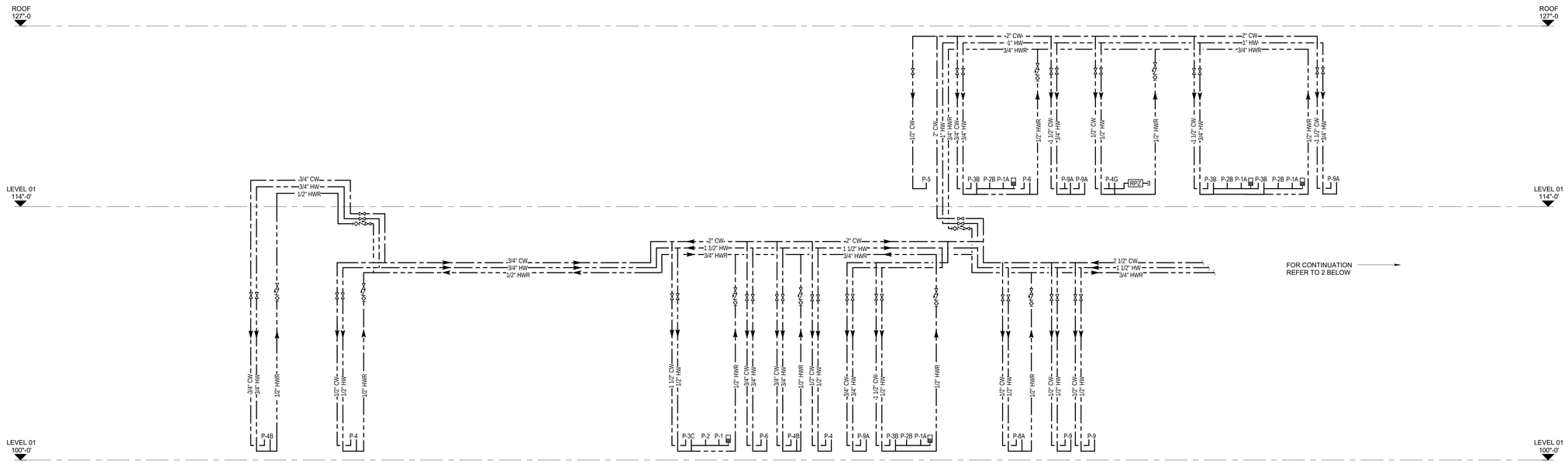
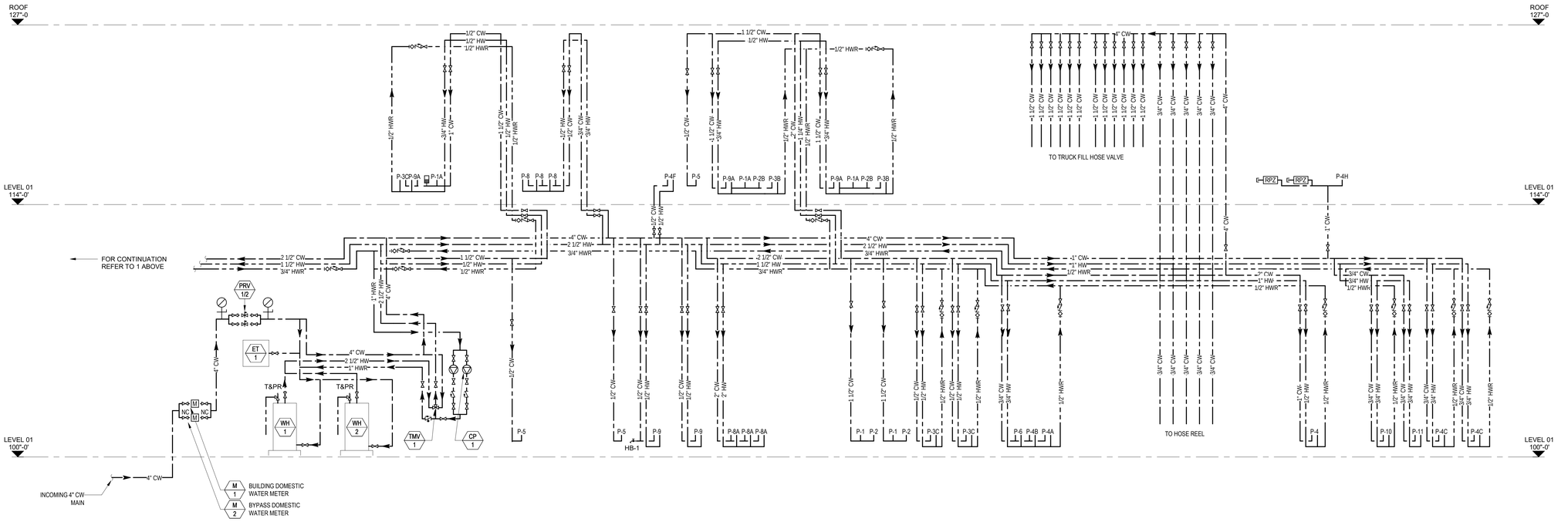


1 WATER RISER DIAGRAM
12" = 1'-0"



2 WATER RISER DIAGRAM
12" = 1'-0"

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PLUMBING WATER RISER DIAGRAM

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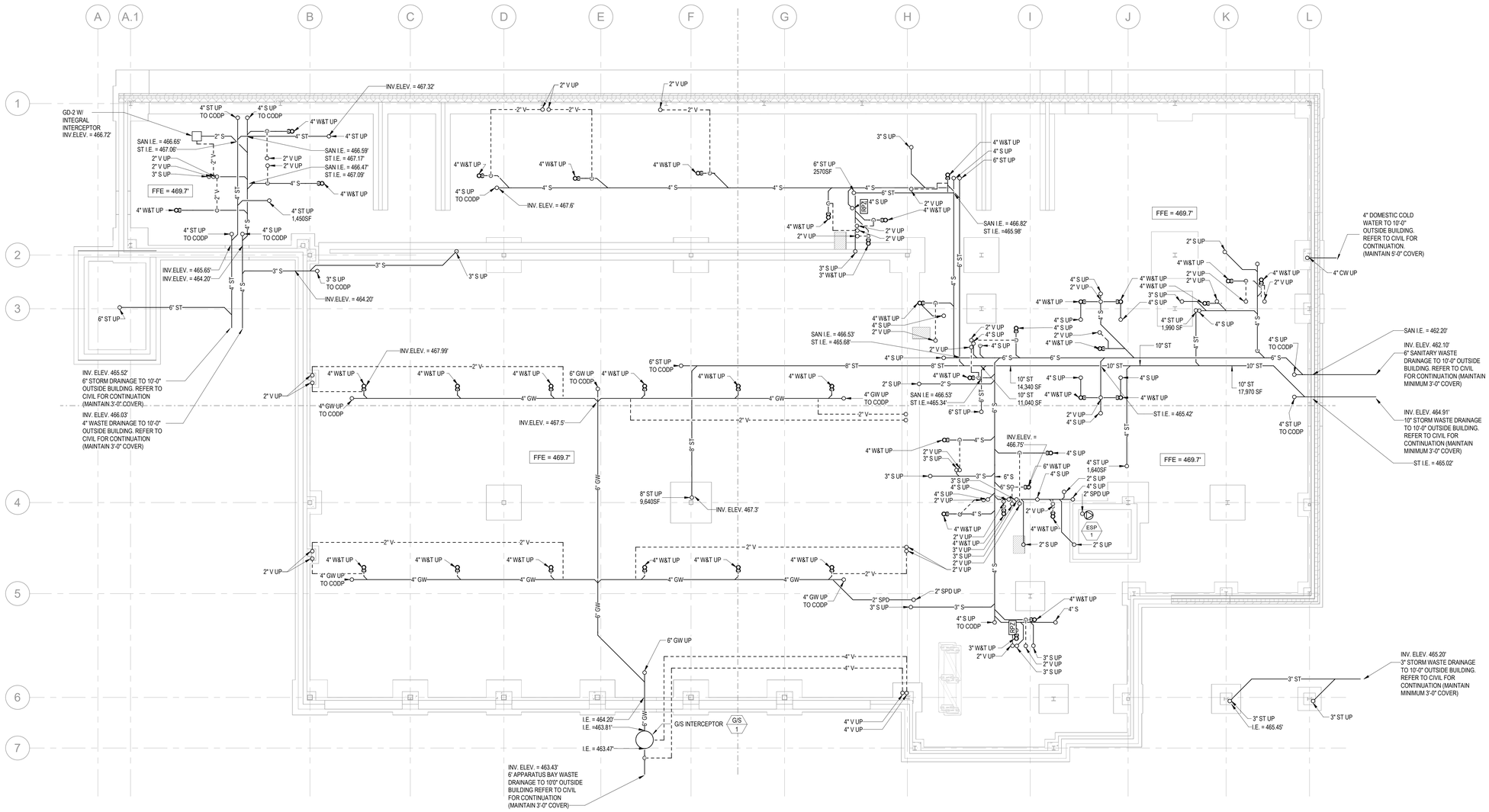

1 PLUMBING FIRST FLOOR UNDERSLAB PLAN
1/8" = 1'-0"

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PLUMBING UNDERGROUND PLAN

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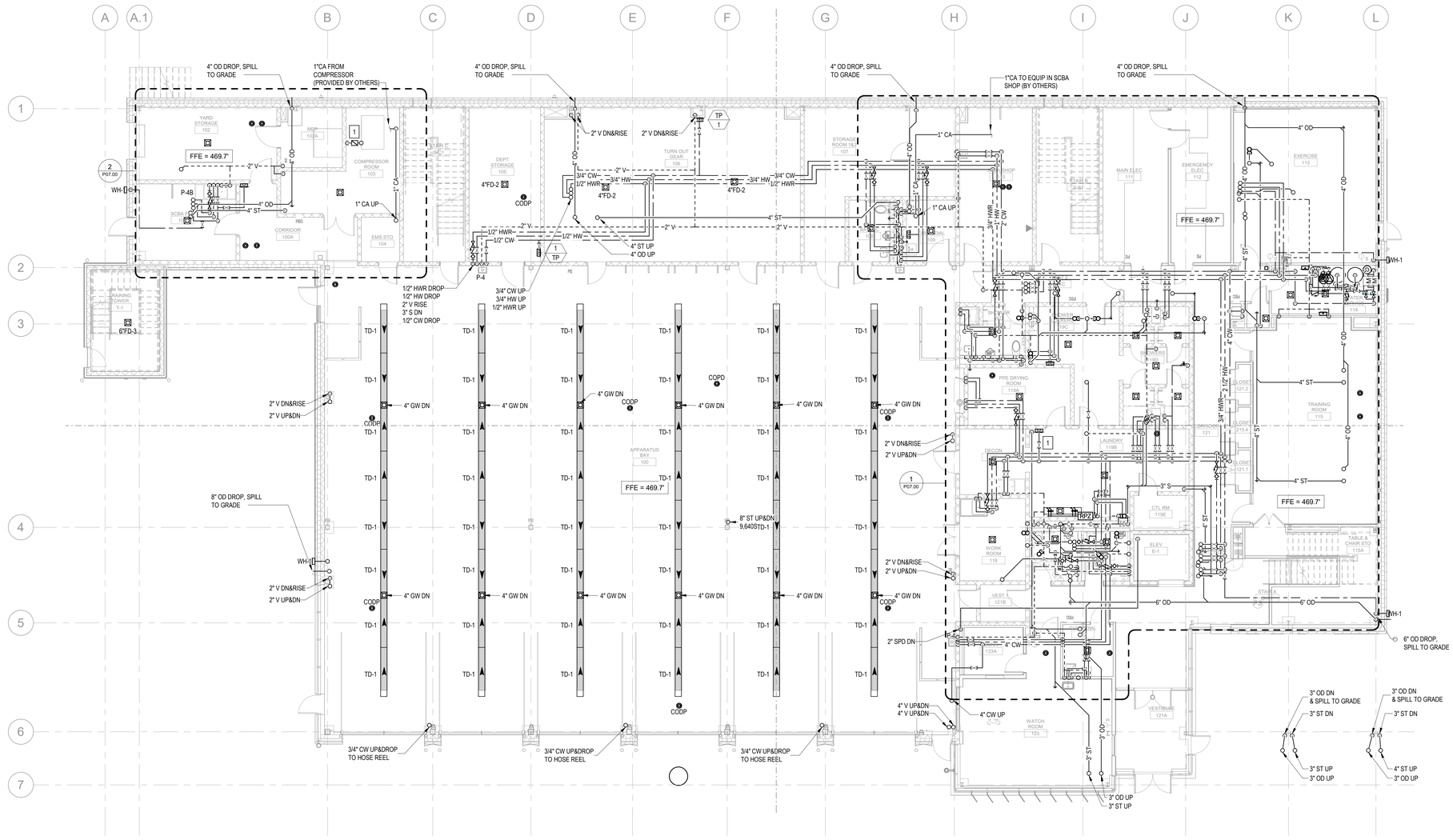
PLUMBING NOTES

1 INSTALL OPEN END DRAIN CONNECTED TO STORM TO COLLECT CONDENSATE. REFER TO DETAIL 9 ON P08.01.

2 APPARATUS BAY - TWO TRAPS SHALL BE PROVIDED WITH 1/2" TRAP PRIMER WATER SUPPLY AND THE REMAINING TEN TRAPS SHALL BE PROTECTED WITH BARRIER TYPE FLOOR DRAIN TRAP SEAL PROTECTION DEVICE SIMILAR TO ZSHIELD BARRIER TRAP SEAL DEVICE Z1072-4



1 PLUMBING FIRST FLOOR PLAN
1/8" = 1'-0"

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PLUMBING FIRST FLOOR PLAN

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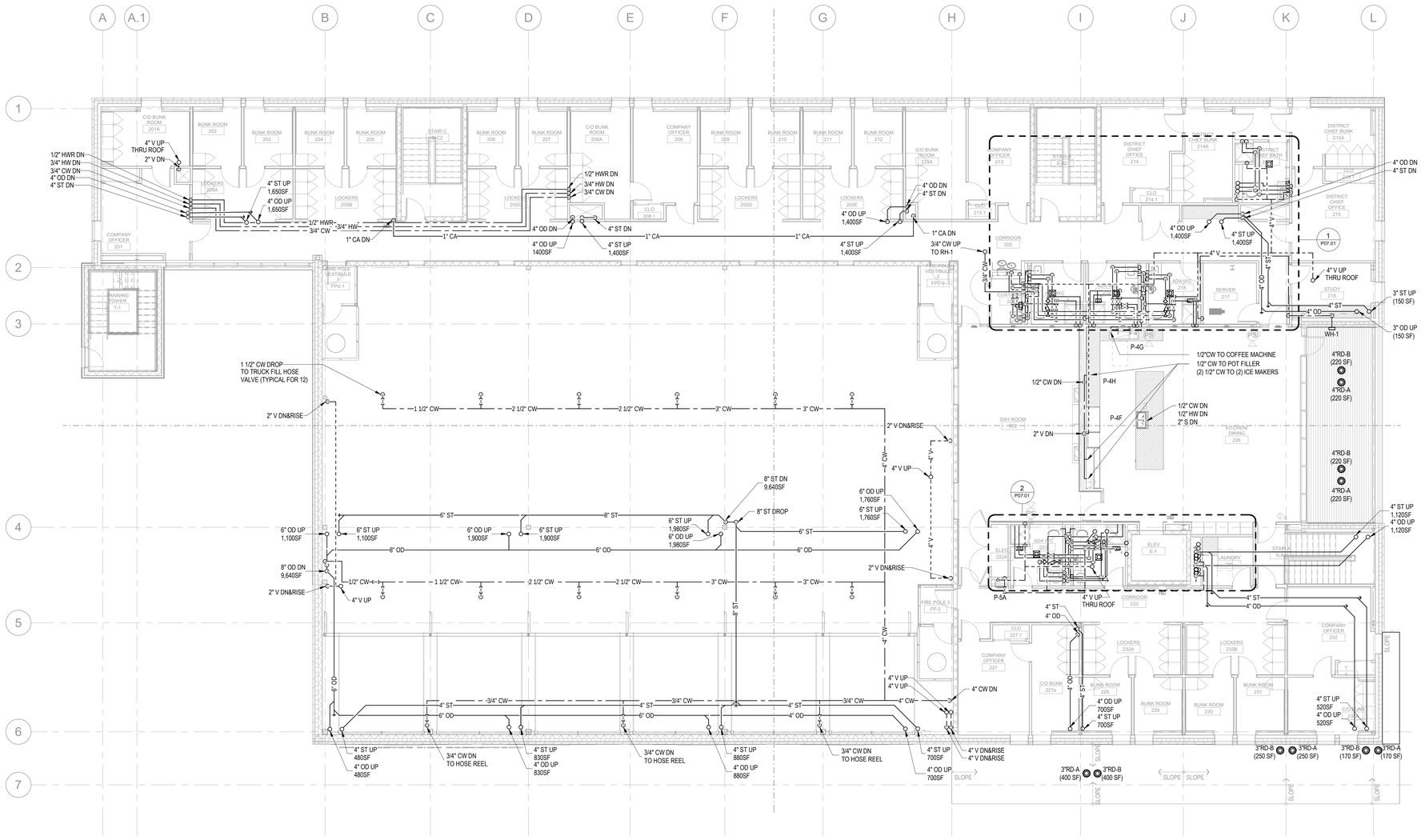

1 PLUMBING SECOND FLOOR PLAN

1/8" = 1'-0"

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PLUMBING SECOND FLOOR PLAN

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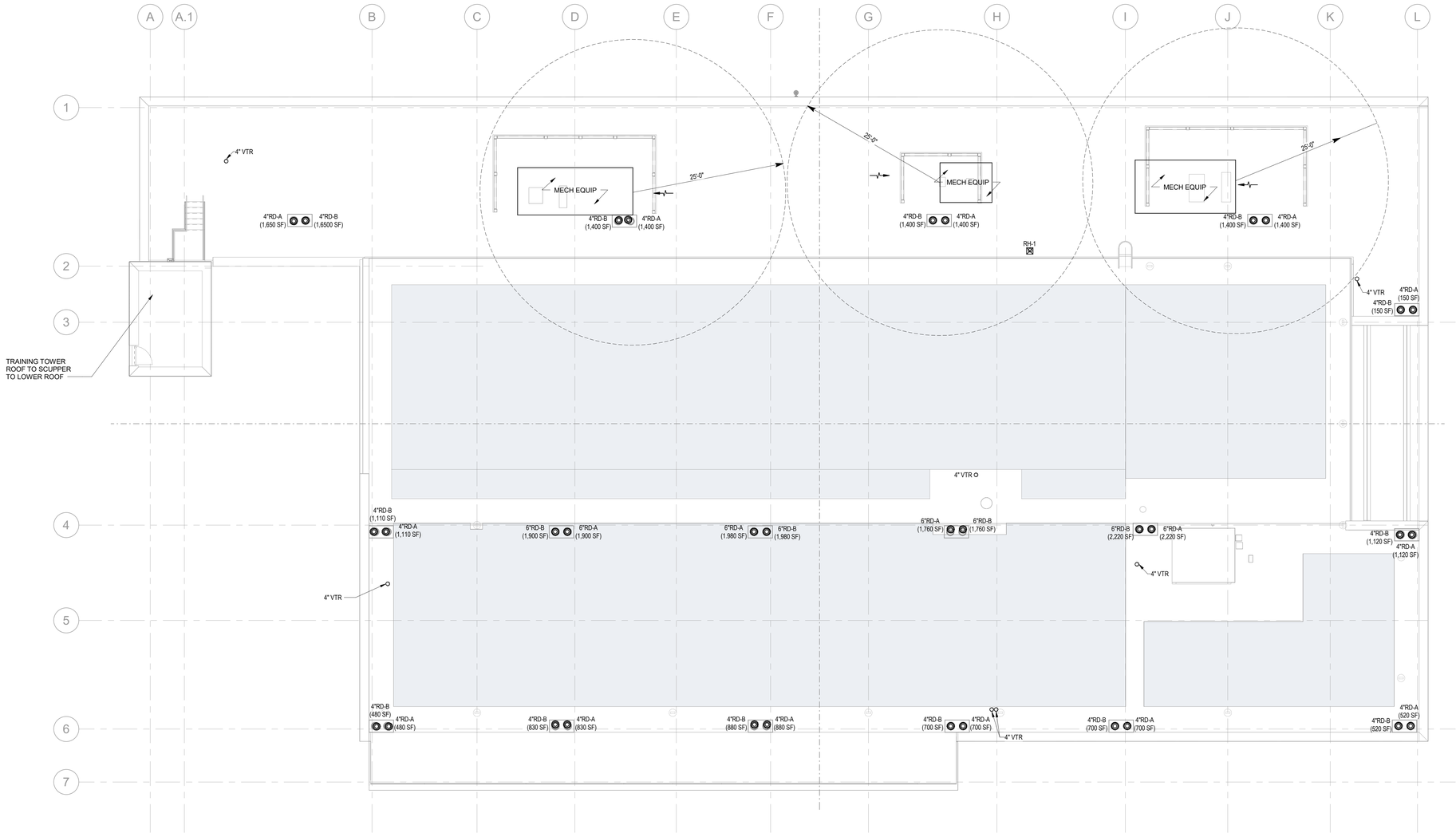

1 PLUMBING ROOF PLAN
1/8" = 1'-0"

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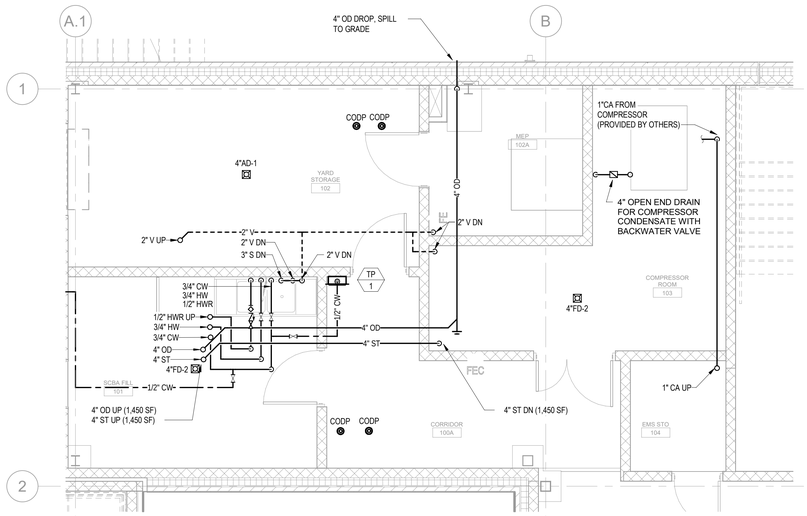
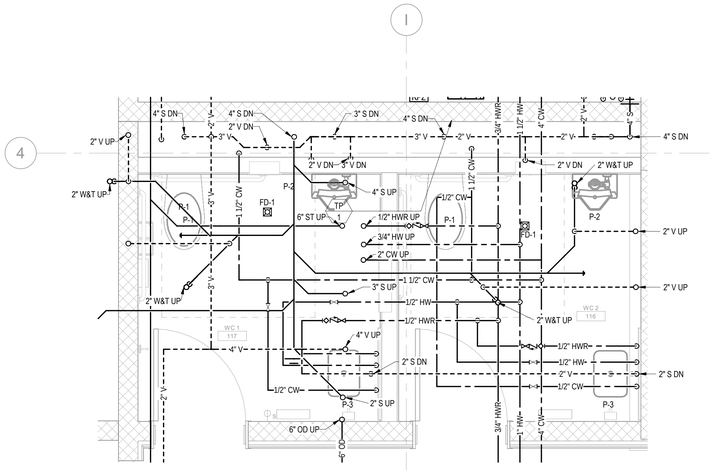
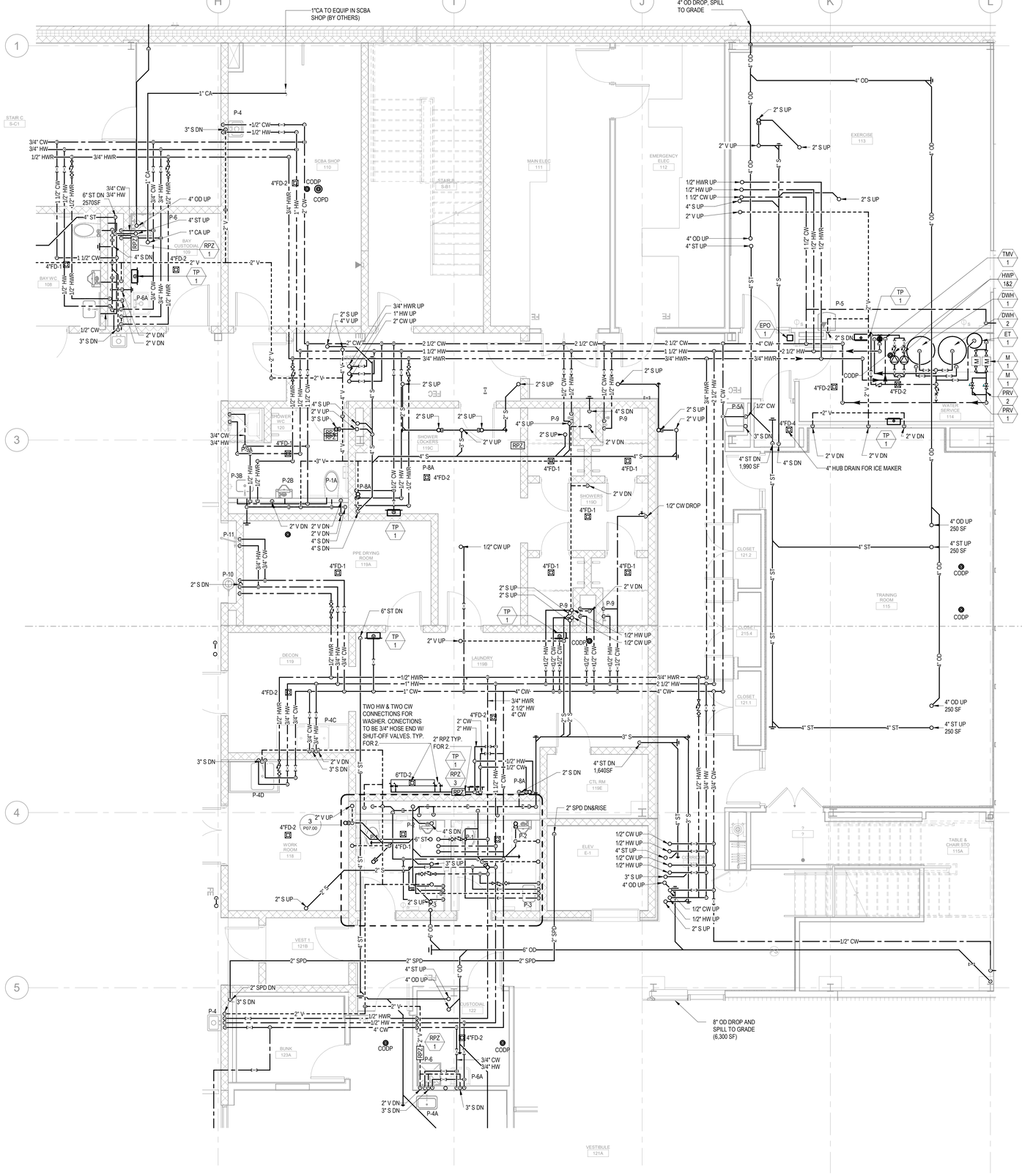


2 ENLARGED PLUMBING FIRST FLOOR PLAN
1/4" = 1'-0"



3 ENLARGED PLUMBING FIRST FLOOR PLAN
1/2" = 1'-0"



1 ENLARGED PLUMBING FIRST FLOOR PLAN
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KEY PLAN

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PLUMBING ENLARGED PLANS

SHEET NUMBER

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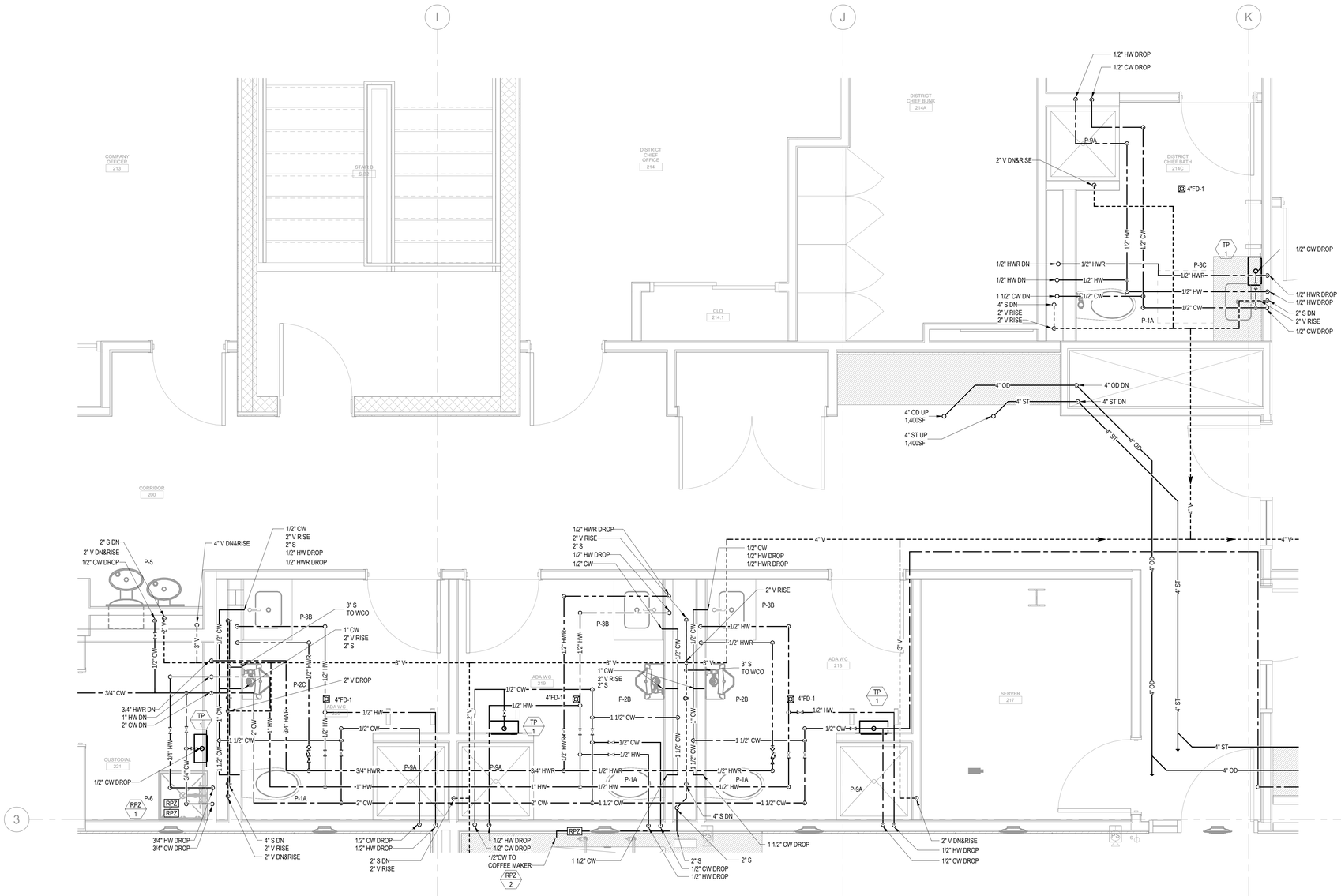
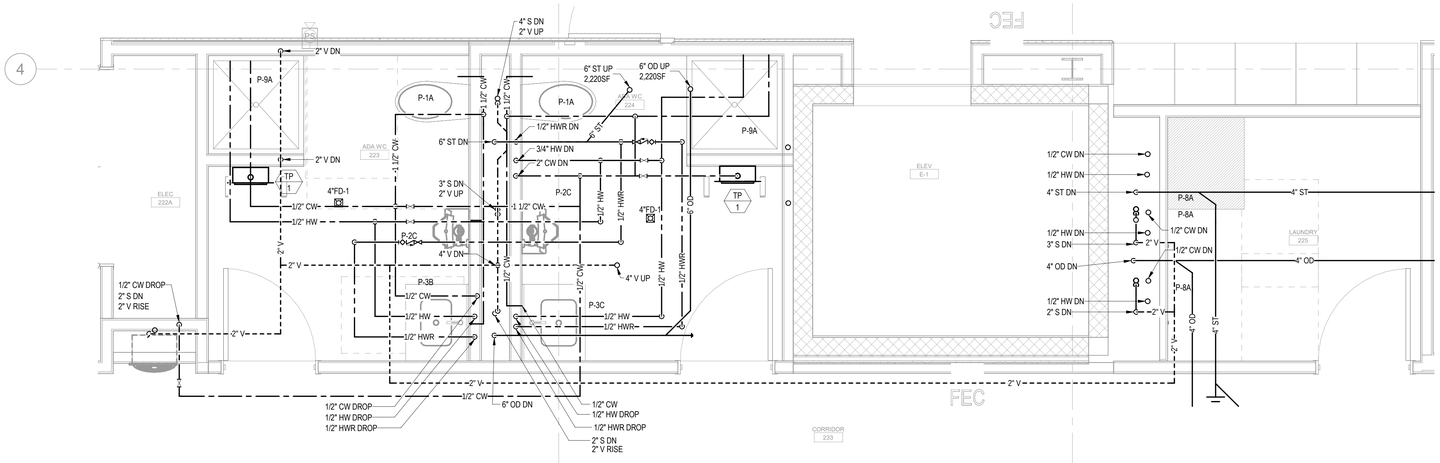


1 PLUMBING SECOND FLOOR PLAN - SHOWERS
1/2" = 1'-0"



2 PLUMBING SECOND FLOOR PLAN - BATHROOMS AND LANDRY
1/2" = 1'-0"

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COMMONWEALTH OF MASSACHUSETTS
HILARY G WILLIAMS
MECHANICAL NO. 55379
REGISTERED PROFESSIONAL ENGINEER
12/19/25

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
Job Number	15713Z.000	

TITLE

PLUMBING ENLARGED PLANS

SHEET NUMBER

P07.01

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CONSTRUCTION DOCUMENTS 12/19/25

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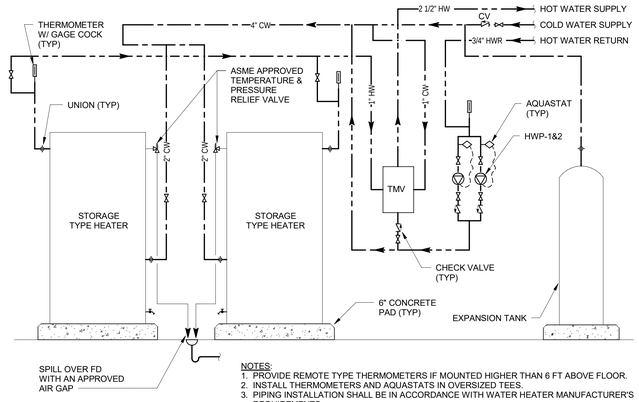
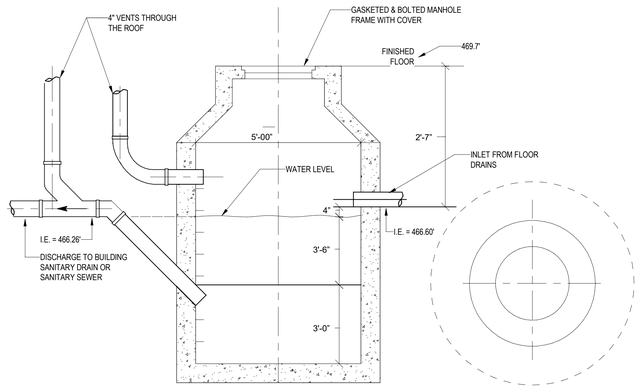


NOTES:
1. PROVIDE REMOTE TYPE THERMOMETERS IF MOUNTED HIGHER THAN 6 FT ABOVE FLOOR.
2. INSTALL THERMOMETERS AND AQUASTATS IN OVERSIZED TEES.
3. PIPING INSTALLATION SHALL BE IN ACCORDANCE WITH WATER HEATER MANUFACTURER'S REQUIREMENTS.
4. REFER TO PLANS AND SCHEDULES FOR MANUFACTURER INFORMATION OF EXPANSION TANK, WATER HEATERS, RECIRC PUMPS AND MIXING VALVE.

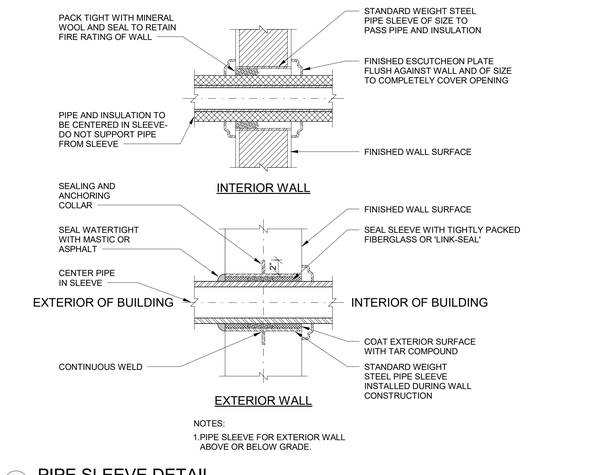
1 DUPLEX ELECTRIC WATER HEATER DETAIL
NTS



NOTE: PROVIDE WATERPROOFING INSIDE SEPARATOR

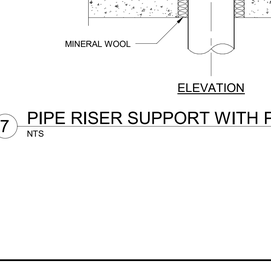
COVER DETAIL

2 GAS AND SAND INTERCEPTOR (G/S-1)
NTS



NOTES:
1.PIPE SLEEVE FOR EXTERIOR WALL ABOVE OR BELOW GRADE.

3 PIPE SLEEVE DETAIL
NTS



WITH IMCOMPRESSIBLE INSULATING BLOCK AT HANGER		
PIPE DIAMETER	SHIELD LENGTH	SHIELD THICKNESS
UP TO 3"	6"	18 USSG
4" TO 6"	8"	16 USSG
8" & LARGER	12"	16 USSG

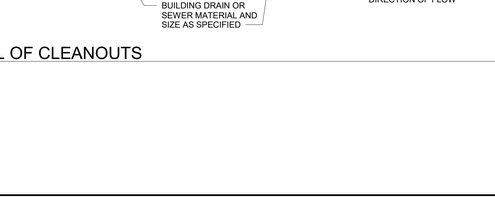
WITHOUT IMCOMPRESSIBLE INSULATING BLOCK AT HANGER		
PIPE DIAMETER	SHIELD LENGTH	SHIELD THICKNESS
UP TO 3"	12"	18 USSG
4"	15"	16 USSG
5"	18"	16 USSG
6"	21"	16 USSG
8" & LARGER	24"	14 USSG

NOTES:
1. HANGER, ROD & INBSERT SHALL BE DIPPED IN ZINC CHROMATE PRIMER PRIOR TO INSTALLATION.
2. FOR HEAT-TRACED PIPING USE THE FOLLOWING INSULATION THICKNESS.

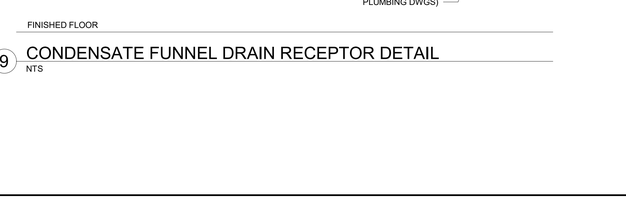
PIPE DIAMETER	FIBERGLASS INSULATION SHIELD LENGTH
1/2" TO 1"	1"
1-1/4" TO 2"	1-1/2"
2-1/2" TO 6"	2"

FOR NON HEAT-TRACED PIPING REFER TO SPECIFICATIONS

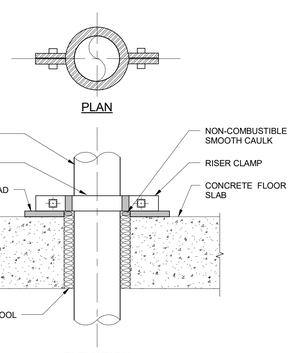
4 HANGER DETAIL
NTS



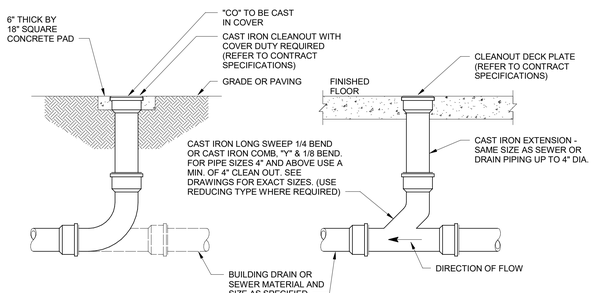
5 TRAP PRIMER DETAIL
NTS



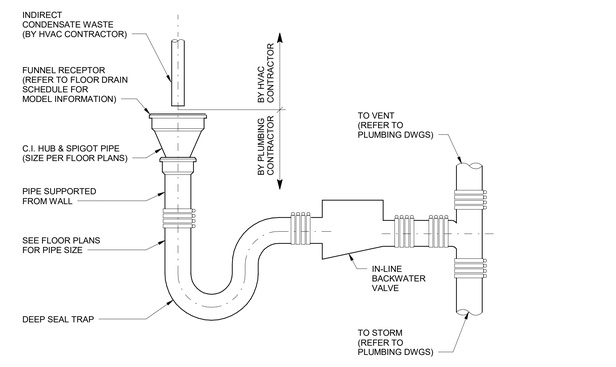
6 FLOOR DRAIN DETAIL
NTS



7 PIPE RISER SUPPORT WITH PAD
NTS



8 DETAIL OF CLEANOUTS
NTS



9 CONDENSATE FUNNEL DRAIN RECEPTOR DETAIL
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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

PLUMBING DETAILS SHEET 1

SHEET NUMBER

P08.01

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DUCTWORK SYMBOLS

SYMBOL	DESCRIPTION
32x20 / 12x6	DOUBLE-LINE AND SINGLE-LINE RECTANGULAR DUCT. FIRST NUMBER INDICATES SIDE IN VIEW IN INCHES, SECOND NUMBER INDICATES SIDE IN DEPTH IN INCHES.
24ø / 12ø	DOUBLE-LINE AND SINGLE-LINE ROUND DUCT, NUMBER INDICATES DIAMETER IN INCHES
32x20(L2') / 12x6(L2)	ACOUSTICAL LINED DUCTWORK, SIZES GIVEN ARE CLEAR INSIDE DIMENSIONS IN INCHES
	EXISTING DUCTWORK
	FLEXIBLE DUCT
	FLEXIBLE CONNECTION
	DIRECTION OF AIR FLOW
	TRANSITION / REDUCER
	RADIUS ELBOW WITH TURNING VANES & MITERED ELBOW WITH TURNING VANES
	DUCT - END CAP
	RECTANGULAR DUCT BRANCH
	CIRCULAR DUCT BRANCH
	RECTANGULAR SUPPLY AIR DUCT (UP AND DOWN)
	RECTANGULAR RETURN AIR DUCT (UP AND DOWN)
	RECTANGULAR EXHAUST AIR DUCT (UP AND DOWN)
	RECTANGULAR OUTSIDE AIR DUCT (UP AND DOWN)
	ROUND SUPPLY AIR DUCT (UP AND DOWN)
	ROUND RETURN AIR DUCT (UP AND DOWN)
	ROUND EXHAUST AIR DUCT (UP AND DOWN)
	ROUND OUTSIDE AIR DUCT (UP AND DOWN)
VD	VOLUME DAMPER
MD	MOTORIZED DAMPER
BDD	BACKDRAFT DAMPER
FD	FIRE DAMPER
SD	SMOKE DAMPER
FSD	COMBINATION FIRE/SMOKE DAMPER
SMD	DUCT SMOKE DETECTOR
TYPE (CFM)	AIR TERMINAL - SIDEWALL GRILLE/REGISTER (AIRFLOW DIRECTION AND TYPE SHOWN)
TYPE (CFM)	AIR TERMINAL - CEILING SUPPLY (AIRFLOW DIRECTION AND TYPE SHOWN)
TYPE (CFM)	AIR TERMINAL - CEILING RETURN (AIRFLOW DIRECTION AND TYPE SHOWN)
TYPE (CFM)	AIR TERMINAL - CEILING EXHAUST (AIRFLOW DIRECTION AND TYPE SHOWN)
TYPE (CFM)	AIR TERMINAL - CEILING SUPPLY - ROUND (AIRFLOW DIRECTION AND TYPE SHOWN)
TYPE (CFM)	AIR TERMINAL - CEILING RETURN - ROUND (AIRFLOW DIRECTION AND TYPE SHOWN)
TYPE (CFM)	AIR TERMINAL - CEILING EXHAUST - ROUND (AIRFLOW DIRECTION AND TYPE SHOWN)
	LINEAR DIFFUSER (AIR DIRECTION AND TYPE SHOWN)
AD	ACCESS DOOR
	TRANSFER DUCT WITH GRILLES
UC	UNDERCUT DOOR
	AIR FLOW ARROW (SUPPLY)
	AIR FLOW ARROW (RETURN/EXHAUST)

DUCTWORK SYMBOLS

SYMBOL	DESCRIPTION
	FAN - ROOF MOUNTED - MUSHROOM
	FAN - ROOF MOUNTED - UPBLAST
	FAN - CENTRIFUGAL
	FAN - CENTRIFUGAL PLUG/PLENUM
	FAN - AXIAL
	FILTER - BAG
	FILTER - PLEATED
	FILTER - CARBON
	HUMIDIFIER
	LOUVER
AC	AIR HANDLING UNIT ACCESS SECTION
AL	AIR HANDLING UNIT PLENUM SECTION
P C	COIL - PRE-HEAT
R C	COIL - RE-HEAT
C C	COIL - COOLING
H C	COIL - HEATING
DX C	COIL - DX
	FAN COIL UNIT
	UNIT HEATER
	UNIT HEATER - CEILING - PLAN
	VAV BOX - SINGLE DUCT
	VAV BOX - FAN ASSISTED - PARALLEL
	SOUND ATTENUATOR
TS	TEMPERATURE SENSOR
R	HUMIDITY SENSOR
DPS	DIFFERENTIAL PRESSURE
CO	CARBON MONOXIDE SENSOR
CO2	CARBON DIOXIDE SENSOR
O	OCCUPANCY SENSOR
T	THERMOSTAT
H	NITROGEN OXIDES SENSOR
SP	STATIC PRESSURE SENSOR
XX-YY	SENSOR - SEE ABBREVIATIONS FOR TYPE
XX-YY	SENSOR (DUCT MOUNTED) - SEE ABBREVIATIONS FOR TYPE
	ROOF EXHAUST FAN (PLAN)
L (SQ.FT.)	LOUVER (DOOR AND WALL) AND LOUVER FREE AREA

GENERAL DUTY MANUAL AND CONTROL VALVES

SYMBOL (WITH OPERATOR TYPE)					DESCRIPTION
MANUAL	CYLINDER	DIAPHRAGM	MOTORIZED	SOLENOID	
			M S	S	2-PORT SHUT-OFF VALVE (S)
			M T	S T	2-PORT THROTTLING VALVE (T)
			M S	S	3-WAY GATE VALVE
			M	S	ANGLE VALVE
			M	S	GLOBE VALVE
			M	S	3-WAY GLOBE VALVE
			M	S	BALL VALVE
			M	S	PLUG VALVE
			M	S	BUTTERFLY VALVE
			M	S	DIAPHRAGM VALVE

PIPING SYMBOLS

SYMBOL	DESCRIPTION
	EXISTING
	NEW (LINETYPE VARIES PER SYSTEM)
	ELBOW TURN DOWN
	TEE TURN DOWN
	PIPE TURN UP
	TEE TURN UP
	CAPPED PIPE
	INSULATED PIPE
XXX X	XXXX - SERVICE TYPE. SEE ABBREVIATIONS
R	PITCH OF PIPE (RISE)
D	PITCH OF PIPE (DROP)
	CONCENTRIC REDUCER/EXPANDER
FOB / FOT	ECCENTRIC REDUCER/EXPANDER
	PIPE ANCHOR
	UNION JOINT
	FLANGED JOINT
	EXPANSION LOOP
	EXPANSION JOINT
	PIPE ALIGNMENT GUIDE
	CHECK VALVE
	CHECK VALVE - SWING GATE
	CHECK VALVE - SPRING
	PRESSURE REDUCING VALVE
	QUICK DISCONNECT VALVE (OPENING)
	QUICK DISCONNECT VALVE (CLOSING)
	LOCK SHIELD VALVE
	NEEDLE VALVE
	CIRCUIT SETTER (BALANCING VALVE)
	AUTOMATIC FLOW LIMITING VALVE
	TAMPER VALVE
	FLOAT VALVE
	TRIPLE DUTY VALVE
	COCK, DRAIN
	COCK, SHUT-OFF
	CURB VALVE
	SAFETY RELIEF VALVE
	HOSE END DRAIN
	STRAINER Y-TYPE
	AIR VENT, AUTOMATIC
	AIR VENT, MANUAL
VB	VACUUM BREAKER
	FLEXIBLE CONNECTION (BRAIDED HOSE)
	FLEXIBLE CONNECTION (SPHERICAL RUBBER)
T	THERMOSTATIC RADIATOR
	THERMOWELL
M	FLOW METER
	TEST POINT
	PRESSURE GAUGE
	THERMOMETER
	STEAM TRAP
FS	FLOW OR PRESSURE SWITCH
	PUMP
	FLOW INDICATOR

GENERAL SYMBOLS AND TAGS

SYMBOL	DESCRIPTION
AHU 8	EQUIPMENT TYPE EQUIPMENT TAG NUMBER
	LINE BREAK
	ELECTRIC HEAT TRACING
	EXISTING TO BE REMOVED
	POINT OF NEW CONNECTION TO EXISTING WORK
XXX	POINT OF DISCONNECTION OF WORK TO BE REMOVED (XXX - SERVICE REFERENCE. SEE ABBREVIATIONS)

ABBREVIATIONS

SYMBOL	DESCRIPTION
°F	DEGREE FARENHEIT
Ø	DIAMETER OR PHASE
AC	AIR CONDITIONING UNIT
ACC	AIR COOLED CONDENSER
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AMB	AMBIENT
AP	ACCESS PANEL
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
AS	AIR SEPARATOR
AWT	AVERAGE WATER TEMPERATURE
BAS	BUILDING AUTOMATION SYSTEM
BDD	BACKDRAFT DAMPER
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BSMT	BASEMENT
BMS	BUILDING MANAGEMENT SYSTEM
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
C	CONVERTER
CAV	CONSTANT AIR VOLUME
CC	COOLING COIL
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CFP	CHEMICAL FEED PUMP
CG	CEILING GRILL
CJ	CONSTRUCTION JOINT
CLG	CEILING
CLR	CLEAR
CND	CONDENSER WATER
CNDR	CONDENSER WATER RETURN
CNDS	CONDENSER WATER SUPPLY
C.O.	CLOSE OFF
CO	CARBON MONOXIDE
CO2	CARBON DIOXIDE
COL	COLUMN
CONC	CONCRETE
COND	CONDENSATE
CONDR	CONDENSOR
CONN	CONNECTION
CONT	CONTINUATION / CONTINUOUS
CONV	CONVECTOR
COP	COEFFICIENT OF PERFORMANCE
CP	CONTROL PANEL
CU	CONDENSING UNIT
CU FT	CUBIC FEET
CU IN	CUBIC INCHES
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DEMO	DEMOLITION
DH	DOMESTIC WATER HEATER
DHW	DOMESTIC HOT WATER
DIA	DIAMETER
DIM	DIMENSION
DLV	DOOR LOUVER
DMPR	DAMPER
DP	DEWPOINT
DPS	DIFFERENTIAL PRESSURE SENSOR
DR	DRAIN
DS	DISCONNECT SWITCH
DW	DOMESTIC WATER
DWG	DRAWING
DXC	DX SPLIT SYSTEM (CONDENSING UNIT)
DXE	DX SPLIT SYSTEM (EVAPORATOR UNIT)
(E)	EXISTING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ED	EXHAUST DIFFUSER
EB	ELECTRIC BOILER
EDB	ENTERING DRY BULB TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EFV	EXHAUST FAN FOR VEHICLE
EFF	EFFICIENCY
EG	EXHAUST GRILLE
ELEC	ELECTRICAL
ENT	ENTERING
ER	EXHAUST REGISTER
ES	ELECTRIC SUPPLY
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EWT	ENTERING WATER TEMPERATURE
EXP	EXPANSION
EXT	EXTERIOR
F	FAN
FCV	FLOW CONTROL VALVE
FD	FIRE DAMPER
FDR	FLOOR DRAIN
FF	FINAL FILTER
FLA	FULL LOAD AMP
FMD	FLOW MEASURING DEVICE
FPB	FAN POWERED BOX
FPM	FEET PER MINUTE
FSD	COMBINATION FIRE/SMOKE DAMPER
FSS	FLOW SENSING SWITCH
FT	FEET
FTR	FINNED TUBE RADIATION
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GDS	GAS DETECTION SYSTEM
GPM	GALLON PER MINUTE
H	HUMIDITY
HC	HEATING COIL
HFD	HORIZONTAL FIRE DAMPER
HHW	HEATING HOT WATER
HHWR	HEATING HOT WATER RETURN
HHWS	HEATING HOT WATER SUPPLY
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPC	HIGH PRESSURE CONDENSATE

ABBREVIATIONS

SYMBOL	DESCRIPTION
HPS	HIGH PRESSURE STEAM
HTG	HEATING
HTP	HEAT TRANSFER PACKAGE
HZ	HERTZ
IN	INCHES
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LB	POUND
LD	LINEAR DIFFUSER
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTUH
MBTU	THOUSAND BTU
MCA	MINIMUM CIRCUIT AMPACITY
MCC	MOTORIZED CONTROL CENTER
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MEZZ	MEZZANINE
MFSD	MODULATING FIRE SMOKE DAMPER
MIN	MINIMUM
MISC	MISCELLANEOUS
NC	NORMALLY CLOSED
NFA	NET FREE AREA
NIC	NOT IN CONTRACT
NO	NUMBER
NOX	NITROGEN OXIDES
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAD	OUTSIDE AIR DAMPER
OBD	OPPOSED BLADE DAMPER
OCC	OCCUPANCY SENSOR
OD	OUTSIDE DIAMETER
OPNG	OPENING
OPWT	OPERATING WEIGHT
P	PUMP
PA	PIPE ANCHOR
PCF	POUNDS PER CUBIC FOOT
PD	PRESSURE DROP
PERF	PERFORATED
PF	PRE-FILTER
PG	PRESSURE GAUGE
PH	PHASE
PL	PLATE
POC	POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH (ABS)
PSIG	POUNDS PER SQUARE INCH (GAUGE)
RA	RETURN AIR
RAD	RETURN AIR DAMPER
RC	REHEAT COIL
RCHWR	RADIANT CHILLED WATER RETURN
RCHWS	RADIANT CHILLED WATER SUPPLY
RD	RETURN DIFFUSER
RDR	ROOF DRAIN
REFG	REFRIGERATION SYSTEM
REFGR	REFRIGERATION RETURN
REFGS	REFRIGERATION SUPPLY
RG	RETURN GRILL
RH	RELATIVE HUMIDITY
RHG	REFRIGERANT HOT GAS
RHHWR	RADIANT HEATING HOT WATER RETURN
RHHWS	RADIANT HEATING HOT WATER SUPPLY
RL	REFRIGERANT LIQUID LINE
RPM	REVOLUTIONS PER MINUTE
RR	RETURN REGISTER
RS	REFRIGERANT SUCTION LINE
S	SLAB
SA	SUPPLY AIR
SAD	SEE ARCHITECTURAL DRAWINGS
SD	SMOKE DAMPER
SD	SUPPLY DIFFUSER
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SF	SUPPLY FAN
SG	SUPPLY GRILLE
SP	STATIC PRESSURE
SPD	SEE PLUMBING DRAWINGS
SQ FT	SQUARE FEET
SR	SUPPLY REGISTER
SS	STAINLESS STEEL
SST	STAINLESS STEEL
ST	SOUND TRAP (ATTENUATOR)
ST	SURFACE TEMPERATURE
STL	STEEL
STM	STEAM
STRUCT	STRUCTURAL
T, TEMP	TEMPERATURE
TA	TRANSFER AIR
TA	TO LEVEL ABOVE
TB	TO LEVEL BELOW
TG	TRANSFER GRILLE
THK	THICK
TNL	TUNNEL
TYP	TYPICAL
UFD	UNDERFLOOR DUCT
UGND	UNDERGROUND
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VC	VENT COIL
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE/CONTROLLER
VIF	VERIFY IN FIELD
W/O	WITHOUT
WB	WET BULB
WC	WATER COLUMN
WF	WATER FILTER
WFR	WATER FILTER RETURN
WFS	WATER FILTER SUPPLY
WG	WATER GAUGE OR WALL GRILLE
WMS	WIRE MESH SCREEN
WS	WATER SOFTENER
WT	WEIGHT
WW	WELL WATER

GENERAL NOTES

1. EXACT LOCATIONS OF ALL CEILING DIFFUSERS, REGISTERS AND GRILLES DETAILED ON THE ARCHITECTURAL REFLECTIVE CEILING PLAN, AND ARCHITECTURAL ROOM ELEVATIONS.
2. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL FITTINGS, TRANSITIONS, DAMPERS, VALVES, AND OTHER DEVICES REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
3. ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED, AND TESTED IN ACCORDANCE WITH THE MOST RESTRICTIVE OF LOCAL REGULATIONS, PROCEDURES DETAILED IN THE ASHRAE HANDBOOK OF FUNDAMENTALS, OR THE APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION.
4. DUCTWORK SHALL BE INSULATED OR LINED PER SPECIFICATIONS OR AS NOTED ON DRAWINGS. ALL DUCT JOINTS AND SEAMS SHALL BE SEALED PER SPECIFICATIONS.
5. DUCT AND PLENUM SIZES INDICATED ON THE DRAWINGS ARE INSIDE CLEAR DIMENSIONS. WHERE DUCTWORK AND PLENUMS ARE INTERNALLY LINED, THEIR SIZES SHALL BE ADJUSTED TO PROVIDE THE INSIDE CLEAR DIMENSIONS INDICATED ON THE DRAWINGS.
6. MANUAL DAMPERS SHALL BE PROVIDED IN ALL DUCT BRANCHES AND IN ALL BRANCHES TO INDIVIDUAL DIFFUSERS, GRILLES AND REGISTERS.
7. ALL EQUIPMENT, DUCTS, PIPING, AND OTHER DEVICES AND MATERIALS INSTALLED OUTSIDE OF THE BUILDING OR OTHERWISE EXPOSED TO THE WEATHER SHALL BE COMPLETELY WEATHERPROOFED.
8. PROVIDE AN INSULATED SHEETMETAL DRAIN PAN BELOW ALL CEILING HUNG FAN COIL UNITS. DRAIN PAN SHALL BE 4" DEEP AND SHALL EXTEND 6" BEYOND THE EDGE OF THE FAN COIL. PROVIDE TRAP AND DRAIN PIPING.
9. THIS CONTRACTOR SHALL INSTALL DUCT MOUNTED SMOKE DETECTORS FURNISHED BY THE ELECTRICAL CONTRACTOR.
10. PROVIDE METAL COVER PLATES FOR ALL PIPES LOCATED AT FLOOR LEVEL TO PREVENT PIPE DAMAGE. PLATES SHALL NOT BE DAMAGED BY NORMAL MAINTENANCE TRAFFIC.
11. CONTRACTOR SHALL COORDINATE INSTALLATION OF EQUIPMENT WITH ALL SERVICES AND TRADES.
12. CONTRACTOR SHALL VERIFY CLEARANCE ABOVE THE CEILING AND NOTIFY THE ENGINEER AND ARCHITECT ABOUT POSSIBLE CONFLICTS.
13. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WORK WITH ALL TRADES. THE SHOP DRAWINGS PREPARED BY THE CONTRACTOR SHALL INDICATE SPACE ALLOWANCES FOR ALL WORK OF ALL OTHER TRADES AND SHALL BE SIGNED OFF BY OTHER CONTRACTORS.
14. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE BUILDING CODE REQUIREMENTS AND PROVIDE ALL REQUIRED CONTROLLED INSPECTIONS FOR HIS WORK.
15. PROVIDE ESCUTCHEONS AND SEALING OF ALL PENETRATIONS OF FIRE SEPARATIONS IN ACCORDANCE WITH DETAIL DRAWINGS.
16. FOR PIPING REQUIREMENTS NOT INDICATED ON PLANS, SEE RELATED CONNECTION DETAILS AND DIAGRAMS.
17. PROVIDE REDUCER FITTINGS FOR CHANGE IN PIPE SIZE AND FOR FINAL CONNECTION AT EQUIPMENT AND AS REQUIRED TO PERMIT DRAINAGE AND VENTING.
18. PROVIDE MANUAL AIR VENTS, DRAINS AND RELIEF VALVES. AS REQUIRED AT THE HIGH AND LOW POINTS IN THE SYSTEM.
19. PROVIDE VALVED AND CAPPED CONNECTIONS FOR DRAINAGE AT ALL LOW POINTS OF PIPING SYSTEM.
20. MINIMUM PITCH SHALL BE SUFFICIENT TO INSURE ADEQUATE VENTING OR DRAINAGE.
21. COORDINATE INSTALLATION OF NEW PIPES IN THE CEILING WITH NEW AND EXISTING SERVICES.
22. CONNECTION OF NEW WORK SHALL BE COORDINATED WITH THE BUILDING ENGINEER SO AS TO NOT DISRUPT BUILDING OPERATIONS AND SERVICES. IF TEMPORARY SHUTDOWNS ARE REQUIRED THEY SHALL BE COORDINATED WITH BUILDING ENGINEER AND SCHEDULED AS REQUIRED. ALL SHUTDOWNS MUST BE ACCOMPLISHED AFTER NORMAL WORKING HOURS. ALL REQUIRED OVERTIME LABOR SHALL BE INCLUDED IN THE BASE BID.
23. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE ALL WORK WITH ALL NEW AND EXISTING WORK OF ALL OTHER TRADES. THE SHOP DRAWINGS PREPARED BY THIS CONTRACTOR SHALL INDICATE SPACE ALLOWANCES FOR ALL WORK OF ALL OTHER TRADES AND SHALL BE SIGNED OFF BY ALL OTHER CONTRACTORS.
24. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE BUILDING CODE REQUIREMENTS AND PROVIDE ALL REQUIRED CONTROLLED INSPECTIONS FOR HIS WORK.
25. THESE NOTES APPLY TO ALL SYSTEMS.
26. CONTRACTOR SHALL VERIFY ON-SITE ALL CONDITIONS AND MEASUREMENTS SHOWN ON CONTRACT.
27. CONTRACTOR SHALL PROVIDE DETAILS AND LOCATIONS OF SUPPORTS FOR ALL PIPING, AND EQUIPMENT WITH LOAD CALCULATIONS FOR REVIEW BY THE STRUCTURAL ENGINEER.
28. ALL SUPPORTS FOR MECHANICAL EQUIPMENT ARE BASED ON PRELIMINARY INFORMATION FROM ONE MANUFACTURER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING SIZES FROM CERTIFIED DRAWINGS OF EQUIPMENT BEING SUBMITTED AND SHALL MAKE ANY STRUCTURAL MODIFICATIONS REQUIRED WITHOUT ANY ADDITIONAL COST TO THE OWNER.
29. ALL PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISERS OF RUNS.
30. PRIOR TO ISSUING BID PRICE COORDINATE WITH BUILDING ENGINEER TO DETERMINE EXTENT OF WORK WHICH IS REQUIRED TO BE PERFORMED AFTER NORMAL OPERATING HOURS OR DURING THE WEEKENDS AND INCLUDE FOR SUCH WORK IN BID PRICE.
31. CONTRACTOR SHALL IDENTIFY ANY WORK WHICH MAY BE REQUIRED TO BE PERFORMED ON OVERTIME IN ORDER NOT TO DISTURB OCCUPIED SPACES WHICH ARE NOT IN CONTRACT.
32. THE CONTRACTOR SHALL BEAR ALL COSTS FOR UTILITY SHUTDOWNS.

SUBMITTALS

1. CONTRACTOR SHALL REFER TO SECTION 013300 DIVISION 1 OF THE GENERAL REQUIREMENTS SPECIFICATION FOR THE PROCEDURES OF ALL SUBMITTALS IN ADDITION TO THE REQUIREMENTS LISTED BELOW.
2. THE CONTRACTOR SHALL PREPARE AND MAINTAIN A SUBMITTAL REVIEW SCHEDULE, CLEARLY INDICATING THE NUMBER AND TYPE OF SUBMITTALS ISSUED TO THE DESIGN TEAM EACH WEEK.
3. SUBMITTALS SHALL BE ISSUED TO THE DESIGN TEAM IN THE ORDER IN WHICH REVIEWS ARE REQUIRED BY THE CONTRACTOR. THE DESIGN TEAM WILL ONLY REVIEW SUBMITTALS IN THE ORDER IN WHICH THEY WERE RECEIVED.
4. SUBSTITUTION REQUESTS, REMEDIAL WORKS FOR FIELD CONDITIONS, REMEDIAL WORKS FOR CONTRACTOR ERRORS, AND SIMILAR CONDITIONS SHALL BE AGREED BY THE DESIGN TEAM IN WRITING PRIOR TO THEIR ISSUANCE BY THE CONTRACTOR AS A SUBMITTAL.
5. ONLY SUBMITTALS REQUIRED BY THESE SPECIFICATIONS, AS WELL AS ANY ADDITIONAL SUBMITTALS AGREED TO IN WRITING, SHALL BE REVIEWED BY THE DESIGN TEAM.
6. THE DESIGN TEAM RESERVES THE RIGHT TO REJECT SUBMITTALS IF ANY OF THE REQUIREMENTS STATED IN THIS SECTION ARE NOT MET.
7. THE CONTRACTOR UNDERSTANDS THAT AN ORDERLY SUBMITTAL PROCESS, MEETING THE CONDITIONS STATED IN THIS SECTION, IS A PRE-REQUISITE FOR THE DESIGN TEAM TO MEET THE AGREED SUBMITTAL REVIEW PERIODS.
8. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS SIGNED BY A DRO OR CSE INCLUDING REGISTRATION NUMBER AS REQUIRED BY THE SPECIFICATIONS, FOR ENGINEER'S APPROVAL.
9. ONLY SHOP DRAWINGS MARKED "NO EXCEPTIONS TAKEN", "REVISE AS NOTED" OR "SEE COMMENTS NOTED" MAY BE USED BY CONTRACTOR IN THE WORK. SHOP DRAWINGS MARKED "REJECTED" OR "RESUBMIT FOR REVIEW" SHALL BE CORRECTED AND COMPLETED AS REQUIRED AND RESUBMITTED TO THE ARCHITECT AND REVIEWED BY THE ARCHITECT BEFORE THEY ARE USED IN THE WORK.
10. THE REVIEW PERIOD FOR SUBMITTALS AND SHOP DRAWINGS SHALL BE 21 CALENDAR DAYS FROM RECEIPT OF SUBMITTAL OR SHOP DRAWING
11. THE REVIEW PERIOD FOR REQUESTS FOR INFORMATION SHALL BE 7 CALENDAR DAYS FROM RECEIPT OF REQUEST FOR INFORMATION.

2 MECHANICAL GENERAL NOTES
NTS

MECHANICAL DRAWING LIST

Sheet Number	Sheet Name
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M00.02	MECHANICAL SCHEDULES
M00.03	MECHANICAL SCHEDULES
M01.01	MECHANICAL SITE PLAN
M03.01	MECHANICAL SINGLE LINE DIAGRAMS
M03.02	MECHANICAL SINGLE LINE DIAGRAMS
M04.01A	MECHANICAL DUCTWORK PLAN FIRST FLOOR - PART A
M04.01B	MECHANICAL DUCTWORK PLAN FIRST FLOOR - PART B
M04.01D	MECHANICAL DUCTWORK PLAN FIRST FLOOR - PART D
M04.02A	MECHANICAL DUCTWORK PLAN SECOND FLOOR - PART A
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M04.02C	MECHANICAL DUCTWORK PLAN SECOND FLOOR - PART C
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M05.00	MECHANICAL PIPING PLAN UNDER SLAB
M05.01	MECHANICAL PIPING PLAN FIRST FLOOR
M05.02	MECHANICAL PIPING PLAN SECOND FLOOR
M06.01	MECHANICAL CONTROLS PLAN FIRST FLOOR
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M08.01	MECHANICAL DETAILS
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M09.00	MECHANICAL CONTROLS
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M09.03	MECHANICAL CONTROLS
M09.04	MECHANICAL CONTROLS
M09.05	MECHANICAL CONTROLS
M09.06	MECHANICAL CONTROLS

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COMMONWEALTH OF MASSACHUSETTS — HILARY G. WILLIAMS — MECHANICAL NO. 55370 — REGISTERED PROFESSIONAL ENGINEER — 12/19/25

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL GENERAL NOTES, SYMBOLS & ABBREVIATIONS

SHEET NUMBER

M00.00

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VRF OUTDOOR UNIT HEAT PUMP SCHEDULE

ITEM						COOLING DATA				HEATING DATA			ELECTRICAL DATA						VIBRATION ISOLATION			
TYPE	NO	MANUFACTURER	MODEL	LOCATION	REFRIGERANT TYPE	CAPACITY [BTU/H]	OUTDOOR TEMP DB [°F]	MIN. EER	MIN. IEER	CAPACITY [BTU/H]	OUTDOOR TEMP DB [°F]	MIN. COP	MCA [AMPS]	MOCP [AMPS]	V	PH	HZ	EMERGENCY/ STANDBY POWER	MOUNT TYPE	BASE TYPE	OPERATING WEIGHT [LBS]	NOTES
VRF	1	MITSUBISHI	TURYE0724AMM0AN	OUTSIDE	R32	72000	95	11	14.6	80000	-1	3.3	22	35	460	3	60 Hz	YES	NEOPRENE PAD	RAIL	633	1,2,3,4,5
VRF	2	MITSUBISHI	TURYE1924AMM0AN	OUTSIDE	R32	192000	95	11	14.4	192000	-1	3.3	31	50	460	3	60 Hz	YES	NEOPRENE PAD	RAIL	745	1,2,3,4,5
VRF	3	MITSUBISHI	TURYE0964AMM0AN	OUTSIDE	R32	96000	95	11	14.6	108000	-1	3.3	22	35	460	3	60 Hz	YES	NEOPRENE PAD	RAIL	663	1,2,3,4,5
VRF	4	MITSUBISHI	TURYE1204AMM0AN	OUTSIDE	R32	120000	95	11	14.6	135000	-1	3.3	27	45	460	3	60 Hz	YES	NEOPRENE PAD	RAIL	637	1,2,3,4,5

NOTES:
1. PROVIDE WITH MANUFACTURER CONTROLLER.
2. PROVIDE MOUNTING RAIL TO ELEVATE UNIT TO MINIMUM 18" ABOVE GRADE.
3. UNITS SHALL BE RATED FOR OPERATION IN HEATING DOWN TO -13 DEGREES F, AND IN COOLING UP TO 95F.
4. PROVIDE PERFORMANCE DATA AT DESIGN CONDITIONS AND MIN AND MAX OPERATING CONDITIONS IN THE SUBMITTAL.
5. MIN EFFICIENCY REQUIREMENT ARE RATED UNDER AHRI 1230 TEST PROCEDURE.

DX PACKAGED AIR HANDLING UNIT SCHEDULE (PART 1)

ITEM						SUPPLY FAN					MOTOR DATA						EXHAUST FAN				MOTOR DATA						DX COOLING			PERFORMANCE			DX COOLING EVAPORATOR COIL				
TYPE	NO.	MANUFACTURER	MODEL	LOCATION	AREA SERVED	SUPPLY AIRFLOW [CFM]	DESIGN OUTSIDE AIRFLOW [CFM]	TOTAL S.P. [IN W.C.]	EXT S.P. [IN W.C.]	FAN SPEED [RPM]	BHP	HP	V	PH	HZ	FAN CONFIG	FAN QTY.	VFD	EXHAUST AIRFLOW [CFM]	TOTAL S.P. [IN W.C.]	EXT S.P. [IN W.C.]	FAN SPEED [RPM]	BHP	HP	V	PH	HZ	FAN CONFIG	FAN QTY.	VFD	COOLING COIL AIRFLOW [CFM]	REFRIG TYP	REFRIG CHARGE [LBS]	TOTAL CAP [BTUH]	SENS CAP [BTUH]	ISMRE	ENT DB [°F]	ENT WB [°F]	LVG DB [°F]	LVG WB [°F]	CONDENSATE P-TRAP HEIGHT [IN]
DOAS	1	VALENT	VXC-112-PL-5A-1-A2	ROOF	RED ZONES	1630	1630	2.86	1.8	1627	1.27	2	480	3	60	PLENUM	1	YES	1170	1.56	1.00	1223	0.52	1.5	480	3	60	PLENUM	1	YES	1630	R454B	23.4	71300	46000	8.5	131	0.09	79.6	67.4	52.8	52.7	6"
DOAS	2	VALENT	VXE-212-58-15A-1-A2	ROOF	GREEN ZONES	2605	2605	2.51	1.8	1528	0.96	2	480	3	60	PLENUM	2	YES	2020	1.59	1.00	1026	1.07	2	480	3	60	PLENUM	1	YES	2605	R454B	40.6	156100	96700	7.9	115	0.07	76.8	64.4	41.6	41.4	6"

DX PACKAGED AIR HANDLING UNIT SCHEDULE (PART 2)

ITEM		DX HEATING						ELEC HEATING			COMBINED ELECTRICAL POC					PRE FILTER							
									AIR														
TYPE	NO.	HEATING COIL AIRFLOW [CFM]	MAX VEL [FPM]	MAX P.D. [IN W.C.]	ENT DB [°F]	LVG DB [°F]	TOTAL CAP [BTUH]	ISCOP	HEATING AIRFLOW [CFM]	ENT DB [°F]	LVG DB [°F]	V	PH	HZ	MCA [AMPS]	FLA [AMPS]	EMERGENCY/ STANDBY POWER	MAX. FACE VEL. [FPM]	HEIGHT [IN]	WIDTH [IN]	DEPTH [IN]	QUANTITY	MERV RATING	RATED "CLEAN" PRESSURE DROP [IN WG. @ FPM]	RATED "DIRTY" PRESSURE DROP [IN WG. @ FPM]
DOAS	1	1630	131	0.09	39	60	35700	3.9	1630	39.7	68.8	480	3	60	55.4	45.9	YES	400	20"	20"	2"	4	8	0.2	0.5
DOAS	2	2605	115	0.07	56	92	101200	3.8	2605	55.8	98.3	480	3	60	123.1	101.4	YES	400	16"	20"	2"	6	8	0.2	0.5

DX PACKAGED AIR HANDLING UNIT SCHEDULE (PART 3)

ITEM		FINAL FILTER							INTERNAL VIBRATION ISOLATION FOR ALL FANS			
TYPE	NO.	MAX. FACE VEL. [FPM]	HEIGHT [IN]	WIDTH [IN]	DEPTH [IN]	QUANTITY	MERV RATING	RATED "CLEAN" PRESSURE DROP [IN WG. @ FPM]	RATED "DIRTY" PRESSURE DROP [IN WG. @ FPM]	TYPE	MIN. STATIC DEFL. [IN]	OPERATING WEIGHT [LBS]	NOTES
DOAS	1	400	20"	24"	2"	4	13	0.3	0.8	SPRING CURB	2"	3701	1, 2, 4, 5, 6,7
DOAS	2	400	20"	20"	2"	12	13	0.3	0.8	SPRING CURB	2"	4824	1, 3, 4, 5,6

NOTES:
1. PROVIDE WITH MANUFACTURER CONTROLLER.
2. PROVIDE WITH ENTHALPY CORE FOR HEAT RECOVERY.
3. PROVIDE WITH ENTHALPY WHEEL FOR ENERGY RECOVERY.
4. DX TO PROVIDE HEATING AND COOLING, ELEC HEATING FOR BACKUP.
5. PROVIDE CURB TO ELEVATE UNIT TO MINIMUM 18" ABOVE GRADE.
6. PROVIDE WITH ELECTRIC PREHEATER FOR FROST CONTROL.
7. PROVIDE WITH ENERGY CORE BYPASS DAMPER.

DOAS ENERGY RECOVERY SCHEDULE

ITEM						SUMMER										WINTER									
						OUTSIDE AIR		SUPPLY AIR		RETURN AIR		EXHAUST AIR		EFFECTIVENESS		OUTSIDE AIR		SUPPLY AIR		RETURN AIR		EXHAUST AIR		EFFECTIVENESS	
TYPE	NO.	ENERGY RECOVERY TYPE	OA AIRFLOW [CFM]	EA AIRFLOW [CFM]	MAX AIR PD [IN WC]	DB [°F]	WB [°F]	DB [°F]	WB [°F]	DB [°F]	WB [°F]	DB [°F]	WB [°F]	SENS.	TOTAL	DB [°F]	WB [°F]	DB [°F]	WB [°F]	DB [°F]	WB [°F]	DB [°F]	WB [°F]	SENS. [%]	TOTAL [%]
DOAS	1	FIXED PLATE	1630	1630	0.77	86	71	78	66	75	63	83	68	77.1	64.9	2	0	52	42	67	52	24	23	77.1	74.1
DOAS	2	WHEEL	2605	2605	0.3	86	71	78	65	75	63	84	70	83.9	81.2	2	0	47	40	67	52	11	10	83.5	82.6

NOTES:
1. SEE DOAS INFORMATION IN DX PACKAGED AIR HANDLING UNIT SCHEDULE.

DX SPLIT SYSTEM (CONDENSING UNIT) SCHEDULE (COOLING ONLY)

ITEM					REFRIGERANT		COOLING DATA				ELECTRICAL								
TYPE	NO.	MANUFACTURER	MODEL NO.	LOCATION	TYPE	CHARGE [LBS]	HIGH AMBIENT OUTDOOR TEMP [°F]	CAP [BTUH]	EFFICIENCY [EER]	SEASONAL EFFICIENCY [SEER2]	V	PH	HZ	MCA [AMPS]	MOCP [AMPS]	EMERGENCY/ STANDBY POWER	OBERATING WEIGHT [LBS]	NOTES
ACCU	1	MITSUBISHI	TUHYE1203AN41AN	OUTSIDE	R-32	21	87	120000	10.7	NA	208	3	60	55	90	YES	633	1,2,3
ACCU	2	MITSUBISHI	PUZ-AK12NL	OUTSIDE	R-454B	4	115	12000	NA	21.1	208	3	60	14	20	YES	100	1,2
ACCU	3	MITSUBISHI	PUZ-AH24NL	OUTSIDE	R-454B	7	115	24000	NA	21.1	208	3	60	14	25	YES	155	1,2

NOTES:
1. SEE CONNECTED INDOOR UNIT IN INDOOR UNIT SCHEDULE.
2. PROVIDE MOUNTING RAIL TO ELEVATE UNIT TO MINIMUM 18" ABOVE GRADE.
3. UNIT IS VARIABLE-REFRIGERANT-FLOW AIR COOLING ONLY CONDITIONER.

INDOOR UNIT SCHEDULE

ITEM							FAN			COOLING DATA				HEATING DATA		ELECTRICAL DATA						PRE-FILTER				VIBRATION ISOLATION			
										CAPACITY		AIR-SIDE ENTERING																	
TYPE	NO.	OUTDOOR UNIT	MANUFACTURER	MODEL NO.	LOCATION	CABINET TYPE	MAX SUPPLY [CFM]	EXT. S.P. [IN WG]	DESIGN OA AIRFLOW [CFM]	REDUCED OA FLOW [CFM]	SENSIBLE [BTU/H]	NOM. TOTAL [BTU/H]	DB [°F]	WB [°F]	CONDENSATE PUMP [Y/N]	CAPACITY NOMINAL [BTU/H]	AIRSIDE ENT. DB [°F]	MCA [AMPS]	MOCP [AMPS]	V	PH	HZ	EMERGENCY/ STANDBY POWER	MAX. FACE VEL. [FPM]	DEPTH [IN]	MERV RATING	RATED "CLEAN" PRESSURE DROP [IN WG. @ FPM]	MOUNT TYPE	MIN STATIC DEFL. [IN]	OPERATING WEIGHT [LBS]	NOTES
FC	1-01	VRF-1	MITSUBISHI	TPLFYP005FM1M0A	101 SCBA FILL	CASSETTE	280	0.10	30	30	4248.0	5000.0	80	67	Yes	5600.0	70	0.2	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	29	1,2,3
FC	1-02	VRF-1	MITSUBISHI	TPLFYP005FM1M0A	102 YARD STORAGE	CASSETTE	280	0.10	0	0	4248.0	5000.0	80	67	Yes	5600.0	70	0.2	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	29	1,2,3,5
FC	1-03	VRF-1	MITSUBISHI	TPLFYP005FM1M0A	100A CORRIDOR	CASSETTE	280	0.10	50	50	4248.0	5000.0	80	67	Yes	5600.0	70	0.2	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	29	1,2,3
FC	1-05	VRF-1	MITSUBISHI	TPLFYP005FM1M0A	103 COMPRESSOR ROOM	CASSETTE	280	0.10	50	50	12000.0	12000.0	80	67	Yes	13500.0	70	0.2	15	208	1	60	YES	400	0' - 0"	8	0.33	SPRING HANGER	0' - 1"	29	1,2,3
FC	1-06	VRF-1	MITSUBISHI	TPEFYP006MA1M0A	105 DEPT STORAGE	DUCTED	300	0.40	25	25	5097.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	1-07	VRF-1	MITSUBISHI	TPEFYP012MA1M0A	106 TURNOUT GEAR	DUCTED	370	0.60	50	25	7627.0	12000.0	80	67	Yes	13500.0	70	2.1	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	1-08	VRF-1	MITSUBISHI	TPEFYP006MA1M0A	107 STORAGE ROOM 1&2	DUCTED	300	0.40	25	25	5097.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	1-10	VRF-1	MITSUBISHI	TPLFYP005FM1M0A	119A PPE DRYING ROOM	CASSETTE	280	0.10	0	0	4248.0	5000.0	80	67	Yes	5600.0	70	0.2	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	29	1,2,3,5
FC	1-11	VRF-1	MITSUBISHI	TPLFYP005FM1M0A	119 DECON	CASSETTE	280	0.10	70	70	4248.0	5000.0	80	67	Yes	5600.0	70	0.2	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	29	1,2,3
FC	1-12	VRF-1	MITSUBISHI	TPEFYP006MA1M0A	119C SHOWER AND LOCKERS	DUCTED	300	0.40	200	200	5097.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	1-13	VRF-1	MITSUBISHI	TPLFYP005FM1M0A	119B LAUNDRY	CASSETTE	280	0.10	0	0	4248.0	5000.0	80	67	Yes	5600.0	70	0.2	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	29	1,2,3,5
FC	1-14	VRF-1	MITSUBISHI	TPLFYP005FM1M0A	118 WORK ROOM	CASSETTE	280	0.10	60	60	4248.0	5000.0	80	67	Yes	5600.0	70	0.2	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	29	1,2,3
FC	1-15	VRF-1	MITSUBISHI	TPLFYP005FM1M0A	110 SCBA SHOP	CASSETTE	280	0.10	50	50	4248.0	5000.0	80	67	Yes	5600.0	70	0.2	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	29	1,2,3
FC	1-16	ACCU-1	MITSUBISHI	TPLFYP036EM142A	111 EMERGENCY ELEC	CASSETTE	880	0.10	0	0	36000.0	36000.0	80	67	Yes	40000.0	70	0.9	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	55	1,2,3,4
FC	1-17	ACCU-1	MITSUBISHI	TPLFYP036EM142A	112 MAIN ELEC	CASSETTE	880	0.10	0	0	36000.0	36000.0	80	67	Yes	40000.0	70	0.9	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	55	1,2,3,4
FC	1-18	ACCU-1	MITSUBISHI	TPLFYP036EM142A	112 MAIN ELEC	CASSETTE	880	0.10	0	0	36000.0	36000.0	80	67	Yes	40000.0	70	0.9	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	55	1,2,3,4
FC	1-19	VRF-2	MITSUBISHI	TPEFYP024MA1M0A	113 EXERCISE	DUCTED	880	0.60	200	40	18870.0	24000.0	80	67	Yes	27000.0	70	2.5	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	70	1,2,3
FC	1-20	VRF-2	MITSUBISHI	TPEFYP030MA1M0A	115 TRAINING ROOM	DUCTED	1270	0.60	260	40	25690.0	30000.0	80	67	Yes	34000.0	70	4.3	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	84	1,2,3
FC	1-21	VRF-2	MITSUBISHI	TPLFYW06FM1W0A	121 CORRIDOR	CASSETTE	280	0.10	50	50	5285.0	6000.0	80	67	Yes	9000.0	70	0.4	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	31	1,2,3
FC	1-22	VRF-2	MITSUBISHI	TPEFYP012MA1M0A	122 VESTIBULE	DUCTED	370	0.60	50	50	8175.0	12000.0	80	67	Yes	13500.0	70	2.1	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	1-23	VRF-2	MITSUBISHI	TPEFYP012MA1M0A	123A BUNK	DUCTED	370	0.60	20	20	8175.0	12000.0	80	67	Yes	13500.0	70	2.1	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	1-24	VRF-2	MITSUBISHI	TPEFYP024MA1M0A	123 WATCH ROOM	DUCTED	880	0.60	50	50	18870.0	24000.0	80	67	Yes	27000.0	70	2.5	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	70	1,2,3
FC	1-26	VRF-2	MITSUBISHI	TPEFYP012MA1M0A	121 CORRIDOR	DUCTED	370	0.60	200	200	8175.0	12000.0	80	67	Yes	13500.0	70	2.1	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	1-27	ACCU-2	MITSUBISHI	PKA-AL12NL	CTL ROOM	WALL	385	0.10	0	0	8095.0	12000.0	80	67	Yes	13500.0	70	14.0	20	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	28	1,3,4
FC	2-01	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	201 COMPANY OFFICER	DUCTED	300	0.40	30	30	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-02	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	201A C/O BUNK ROOM	DUCTED	300	0.40	30	30	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-03	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	202 BUNK ROOM	DUCTED	300	0.40	20	20	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-04	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	203 BUNK ROOM	DUCTED	300	0.40	20	20	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-05	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	204 BUNK ROOM	DUCTED	300	0.40	20	20	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-06	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	205 BUNK ROOM	DUCTED	300	0.40	20	20	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-07	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	206 BUNK ROOM	DUCTED	300	0.40	20	20	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-08	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	207 BUNK ROOM	DUCTED	300	0.40	20	20	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-09	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	208A C/O BUNK ROOM	DUCTED	300	0.40	30	30	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-10	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	208 COMPANY OFFICER	DUCTED	300	0.40	30	30	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-11	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	209 BUNK ROOM	DUCTED	300	0.40	20	20	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-12	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	210 BUNK ROOM	DUCTED	300	0.40	20	20	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-13	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	211 BUNK ROOM	DUCTED	300	0.40	20	20	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-14	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	212 BUNK ROOM	DUCTED	300	0.40	20	20	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-15	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	213A C/O BUNK ROOM	DUCTED	300	0.40	30	20	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-16	VRF-3	MITSUBISHI	TPEFYP006MA1M0A	213 COMPANY OFFICERBUNK ROOM	DUCTED	300	0.40	30	20	4912.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-17	VRF-4	MITSUBISHI	TPEFYP006MA1M0A	214 DISTRICT CHIEF OFFICE	DUCTED	300	0.40	20	20	5668.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-18	VRF-4	MITSUBISHI	TPEFYP006MA1M0A	214A DISTRICT CHIEF BUNK	DUCTED	300	0.40	25	20	5668.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-19	VRF-3	MITSUBISHI	TPEFYP012MA1M0A	200AB LOCKERS	DUCTED	370	0.60	50	50	7480.0	12000.0	80	67	Yes	13500.0	70	2.1	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-20	VRF-4	MITSUBISHI	TPEFYP006MA1M0A	215A DISTRICT CHIEF BUNK	DUCTED	300	0.40	20	20	5668.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-21	VRF-4	MITSUBISHI	TPEFYP006MA1M0A	215 DISTRICT CHIEF OFFIC	DUCTED	300	0.40	20	20	5668.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-22	VRF-4	MITSUBISHI	TPEFYP006MA1M0A	216 STUDY	DUCTED	300	0.40	15	15	5675.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-23	VRF-4	MITSUBISHI	TPLFYP005FM1M0A	225 LAUNDRY	CASSETTE	280	0.10	0	0	4248.0	5000.0	80	67	Yes	5600.0	70	0.2	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	29	1,2,3,5
FC	2-24	VRF-4	MITSUBISHI	TPEFYP006MA1M0A	232 COMPANY OFFICER	DUCTED	300	0.40	20	20	16678.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-25	VRF-4	MITSUBISHI	TPEFYP006MA1M0A	232A C/O BUNK ROOM	DUCTED	300	0.40	20	20	5668.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-26	VRF-4	MITSUBISHI	TPEFYP006MA1M0A	231 BUNK ROOM	DUCTED	300	0.40	20	20	5285.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-27	VRF-4	MITSUBISHI	TPEFYP006MA1M0A	230 BUNK ROOM	DUCTED	300	0.40	20	20	5668.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-28	VRF-4	MITSUBISHI	TPEFYP006MA1M0A	229 BUNK ROOM	DUCTED	300	0.40	20	20	5668.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2,3
FC	2-29	VRF-4	MITSUBISHI	TPEFYP006MA1M0A	228 BUNK ROOM	DUCTED	300	0.40	20	20	5668.0	6000.0	80	67	Yes	6700.0	70	1.8	15	208	1	60	YES	400	0' - 2"	8	0.33	SPRING HANGER	0' - 1"	47	1,2

AIR-WATER HEAT PUMP SCHEDULE

ITEM						HEATING MODE							EVAPORATOR						ELEC. DATA (PER MODULE)					VIBRATION ISOLATION					
TYPE	NO.	MANUFACTURER	MODEL NO.	REFRIG TYPE	REFRIG CHARGE [LBS]	MIN EFF AT -15°DB [COP]	MIN EFF AT 47F HTG CONDS [COP]	MIN EFF AT 17F HTG CONDS [COP]	DESIGN HEATING OA TEMP [°F]	LOW AMBIENT MIN. OPERATING OA TEMP. [°F]	HEATING CAPACITY [kBTU/H]	EWT [°F]	LVG [°F]	MAX FLOW [GPM]	DESIGN FLOW [GPM]	MIN FLOW [GPM]	FLUID SYSTEM	CONN [IN]	MAX. PRESS. DROP FULL FLOW [FT WC]	FLA [AMPS]	MCA [AMPS]	V	HZ	PH	EMERGENCY/ STANDBY POWER	MOUNT TYPE	MIN STATIC DEFL. [IN]	BASE TYPE	OPERATING WEIGHT [LBS]	NOTES
ASHP	1	WATER FURNACE	T9RS	R-454B	94.00	1.7	2.77	1.95	2	-15	400.0	110	120	73	50	36	30% PROP GLY	6"	5	72	80	460	60	3	YES	SPRING	0" - 2"	RAIL	2550	1

NOTES:
1. PROVIDE CURB TO ELEVATE UNIT TO MINIMUM 18" ABOVE GRADE. COORDINATE HEIGHT WITH SPRING ISOLATION.

Manifolds

Name	ManifoldType	# Circuits	Tubing Size	Supply Temp [°F]	TotalFlow [USGPM]	Head Loss [ft water]	Total Load [Btu/hr]	Fluid
Manifold 3	Stainless Steel - Shut Off/Balancing/Flow Meters, 1-1/4"	6	3/4"	100	8.21	15.2	61,488	30% Propylene Glycol
Manifold 4	Stainless Steel - Shut Off/Balancing/Flow Meters, 1-1/4"	12	3/4"	100	14.05	13.1	105,167	30% Propylene Glycol

NOTES:
1. THERE IS NO MANIFOLD 1 NOR MANIFOLD 2, NUMBERING STARTS AT MANIFOLD 3.

Rooms

Name	Heating Zone	Area [ft²]	Heating Room Temp [°F]	Panel Type	Floor Cover R [R]	Slab Thickness	Tube Depth(Center)[1] [in]	Surface Temp [°F]	Heat Loss [Btu/hr]	Panel Backloss	Supplemental	Total Load [Btu/hr]	Radiant Unit Load [Btu/(hr-ft²)]
Room A-05	201	8,121	68	Embedded Slab	0.0	8.0 in (Slab)	4.0 in	77	192,000	19,200	44,545	211,200	20.5

[1] Tube depth measured from the top of the slab to the center of the tubing.

Circuit Information

Number	Length [ft]	Tube Size	Spacing[1] [in]	Manifold	Flow [USGPM]	Head Loss [ft water]	Total Load [Btu/hr]	Actuator	Color
M3.1	627	3/4"	6	Manifold 3	1.37	11.0	10,251	No	
M3.2	627	3/4"	6	Manifold 3	1.37	11.1	10,254	No	
M3.3	626	3/4"	6	Manifold 3	1.37	11.0	10,235	No	
M3.4	627	3/4"	6	Manifold 3	1.37	11.1	10,256	No	
M3.5	628	3/4"	6	Manifold 3	1.37	11.1	10,258	No	
M3.6	626	3/4"	6	Manifold 3	1.37	11.0	10,233	No	
M4.1	589	3/4"	12	Manifold 4	1.29	9.4	9,648	No	
M4.2	568	3/4"	12	Manifold 4	1.24	8.5	9,303	No	
M4.3	588	3/4"	12	Manifold 4	1.29	9.3	9,638	No	
M4.4	578	3/4"	12	Manifold 4	1.25	8.7	9,384	No	
M4.5	577	3/4"	12	Manifold 4	1.25	8.7	9,378	No	
M4.6	490	3/4"	12	Manifold 4	1.05	5.5	7,880	No	
M4.7	499	3/4"	12	Manifold 4	1.08	5.8	8,061	No	
M4.8	494	3/4"	12	Manifold 4	1.07	5.6	7,995	No	
M4.9	502	3/4"	12	Manifold 4	1.09	5.9	8,149	No	
M4.10	495	3/4"	12	Manifold 4	1.07	5.7	8,029	No	
M4.11	498	3/4"	12	Manifold 4	1.08	5.8	8,080	No	
M4.12	591	3/4"	12	Manifold 4	1.29	9.3	9,622	No	

NOTES:
1. THERE IS NO MANIFOLD 1 NOR MANIFOLD 2, NUMBERING STARTS AT MANIFOLD 3.

PUMP SCHEDULE

ITEM								MOTOR DATA							
TYPE	NO.	MANUFACTURER	Model	LOCATION	SYSTEM SERVED	FLOW [GPM]	PUMP HEAD [FT WC]	POWER [HP]	V	PH	HZ	CONTROL	EMERGENCY/STANDBY POWER	WEIGHT	NOTES
HHWP	1	BELL & GOSSETT	ECOCIRC XL 20-140	MEP ROOM	ASHP LOOP	72	15	0.5	208	1	60	ECM	YES	40	1
HHWP	2	BELL & GOSSETT	ECOCIRC XL 36-45	MEP ROOM	RADIANT LOOP	25	20	0.2	120	1	60	ECM	YES	25	1

NOTES:
1. PUMPS SELECTION BASE UPON REQUIREMENTS OF RADIANT FLOOR MANUFACTURE. IF AN ALTERNATE RADIANT FLOOR PRODUCT IS SELECTED PUMP SELECTION MAY BE AFFECTED. ANY CHANGES TO PUMP OR ELECTRICAL REQUIREMENTS DUE TO ALTERNATE RADIANT FLOOR MANUFACTURE SHALL BE AT NO ADDITIONAL COST TO OWNER.

BUFFER TANK SCHEDULE

ITEM							DIMENSIONS						
TYPE	NO.	MANUFACTURER	MODEL NO.	LOCATION	SERVICE	VOLUME [GAL]	HEIGHT [IN]	DIA [IN]	CONN SIZE [IN]	FLUID SYSTEM	DESIGN PRESSURE [PSI]	OPERATING WEIGHT [LBS]	NOTES
BT	1	LOCHINVAR	CVU 400	MEP	RADIANT HEATING	400	80"	46"	3"	30% PROP GLY	125.00	5100	1,2

NOTES:
1. UNIT TO BE MOUNTED ON THE MIN 6" CONCRETE CURB.
2. WEIGHT LISTED IS 100% FULL.

EXPANSION TANK SCHEDULE

ITEM						SYSTEM VOLUME [GAL]	SYSTEM TEMP RANGE [°F]	ACCEPTANCE VOLUME [GAL]	TANK SIZE		FILL PRESSURE AT TANK [PSIG]	MAX WORKING PRESSURE [PSIG]	OPERATING WEIGHT [LBS]	NOTES
TYPE	NO.	MANUFACTURER	MODEL NO.	TYPE	FLUID SYSTEM				DIA [IN]	LENGTH [IN]				
ET	1	BELL & GOSSETT	B50	BLADDER	30% PROP GLY	13.0	40 - 120	13.0	14"	24"	60	125	160	1,2,3,4
ET	2	BELL & GOSSETT	B50	BLADDER	30% PROP GLY	13.0	40 - 120	13.0	14"	24"	60	125	160	1,2,3,4

NOTES:
1. PROVIDE FULL-ACCEPTANCE BLADDERS.
2. CONTRACTOR SHALL VERIFY ALL PRESSURE VALVES AND SYSTEM VOLUME FOR FINAL TANK SELECTION.
3. PROVIDE ASME RATED EXPANSION TANK.
4. WEIGHT LISTED IS 100% FULL.

GLYCOL FEED SYSTEM SCHEDULE

ITEM							TANK SIZE			ELECTRICAL DATA						
TYPE	NO.	MANUFACTURER	MODEL NO.	LOCATION	SERVICE	TANK VOLUME [GAL]	DIA [IN]	H [IN]	SYSTEM OUTLET DIA [IN]	MOTOR HP	V	PH	HZ	EMERGENCY/ STANDBY POWER	OPERATING WEIGHT [LBS]	NOTES
GF	1	NEPTUNE	G-50-1A	MEP	RADIANT HEATING	50	22"	55"	1/2"	0.33	120	1	60	YES	600	1

NOTES:
1. PROVIDE WITH LOW LEVEL ALARM OUTPUT.

CHEMICAL POT FEEDER SCHEDULE

ITEM									
TYPE	NO.	MANUFACTURER	MODEL NO.	LOCATION	SERVICE	CAPACITY [GAL]	FLUID SYSTEM	DESIGN PRESSURE [PSI]	OPERATING WEIGHT [LBS]	NOTES
CPF	1	NEPTUNE	FTF-5DB	MEP ROOM	RADIANT LOOP	5	30% PROP GLY	125.00	50	1

NOTES:
1. FLOOR MOUNTED.

HIGH-PLUME PACKAGED EXHAUST FAN SYSTEM SCHEDULE

ITEM							MIN STACK HEIGHT ABOVE ROOF [FT]	E.S.P. [IN W.C.]	FAN [RPM]	MOTOR DATA							VIBRATION ISOLATION					
TYPE	NO.	MANUFACTURER	MODEL NO.	LOCATION	AREA SERVED	AIR FLOW [CFM]				BHP	HP	V	PH	HZ	SPEED CONTROL	EMERGENCY/ STANDBY POWER	MOUNT TYPE	MIN. STATIC DEFL. [IN]	BASE TYPE	OPERATING WEIGHT [LBS]	NOTES
EF	3	GREENHECK	VK-H-24-18	ROOF	APPARATUS BAY	5600	10' - 0"	0.72	863	2.60	3.00	460	3	60	NA	YES	SPRING	2"	RAIL	1095	1,2

NOTES:
1. PROVIDE RAIL TO ELEVATE UNIT TO MINIMUM 18" ABOVE GRADE.
2. FAN TO BE RUN AS CONSTANT VOLUME.

FAN SCHEDULE

ITEM									MOTOR DATA							
TYPE	NO.	MANUFACTURER	MODEL NO.	LOCATION	AREA SERVED	AIR FLOW [CFM]	E.S.P. [IN W.C.]	FAN [RPM]	BHP	HP	V	PH	HZ	EMERGENCY/ STANDBY POWER	OPERATING WEIGHT [LBS]	NOTES
EF	1	GREENHECK	CUE-100HP-VG	ROOF	VEST AND FIRE POLES	300	1	1681	0.13	0.25	208	1	60	YES	54	
EF	2	PLYMOVENT	TEV-745-60	ROOF	APPARATUS BAY	3000	8	3500	9.50	10.00	460	3	60	YES	290	1, 2, 3
EF	D1	GREENHECK	USF-06-B7	ROOF	LAUNDRY AND LOCKER ROOM	400	0.5	1229	0.06	0.25	208	3	60	YES	148	
EF	D2	GREENHECK	USF-10-B6	ROOF	PPE DRYING ROOM	350	1	1509	0.12	0.25	208	3	60	YES	143	

NOTES:
1. PROVIDE WITH MANUFACTURER CONTROLLER.
2. PROVIDE WITH AIR FILTRATION SYSTEM DESIGNED TO REDUCE THE DIESEL EXHAUST PARTICULATE FROM THE EXHAUST BLOWER DISCHARGE.
3. FAN SHALL BE CLASS B SPARK RESISTANCE CONSTRUCTION OF POWDER COATED STEEL HOUSING AND ALUMINUM WHEEL WITH SHAFT SEALS.

ENERGY RECOVERY VENTILATOR SCHEDULE (PART 1)

ITEM						SUPPLY FAN					EXHAUST FAN					ENERGY RECOVERY								
								MOTOR DATA					MOTOR DATA				WINTER PERFORMANCE								
																	OUTSIDE AIR				EXHAUST AIR		EFFECTIVENESS	
TYPE	NO.	MANUFACTURER	MODEL NO.	LOCATION	AREA SERVED	DESIGN AIRFLOW [CFM]	EXT. S.P. [IN WG]	HP	BHP	FAN SPEED [RPM]	AIRFLOW [CFM]	EXT. S.P. [IN WC]	HP	BHP	FAN SPEED [RPM]	TYPE	ENT DB [°F]	ENT WB [°F]	LVG DB [°F]	LVG WB [°F]	ENT DB [°F]	ENT WB [°F]	SENSIBLE [%]	TOTAL [%]
HRV	1	VALENT	ERW-E1-20L	ROOF	APPARATUS BAY	400	0.50	0.50	0.12	996	400	0.50	0.50	0.15	1004	FORWARD CURVE	1.7	0.1	42.3	34.2	60	47	69.6	66.7

ENERGY RECOVERY VENTILATOR SCHEDULE (PART 2)

ITEM		ELECTRICAL DATA					FINAL FILTER			VIBRATION ISOLATION			
TYPE	NO.	V	PH	HZ	MCA [AMPS]	EMERGENCY/ STANDBY POWER	QUANTITY	DEPTH [IN]	MERV RATING	MOUNT TYPE	MIN.STATIC DEFL. [IN]	OPERATING WEIGHT [LBS]	NOTES
HRV	1	115	1	60	15	Yes	1	2	8	SPRING	2"	280	1

NOTES:
1. PROVIDE RAIL TO ELEVATE UNIT TO MINIMUM 18" ABOVE GRADE.

AIR CIRCULATOR SCHEDULE

ITEM					MOTOR DATA					
TYPE	NO.	MANUFACTURER	LOCATION	AIR FLOW [CFM]	HP	V	PH	HZ	EMERGENCY/ STANDBY POWER	NOTES
C	1	GREENHECK	PPE DRYING ROOM	2400	0.25	115	1	60	NO	1,2
C	2	GREENHECK	PPE DRYING ROOM	2400	0.25	115	1	60	NO	1,2

NOTES:
1. PROVIDE WITH MANUFACTURE MOUNT BRACKET WITH VIBRATION ISOLATOR.
2. SEE CONTROL DRAWINGS AND SPECS FOR CONTROL DETAILS.

DESTRATIFICATION FAN SCHEDULE

ITEM					MOTOR DATA					
TYPE	NO.	MANUFACTURER	LOCATION	AIR FLOW [CFM]	WATTS	V	PH	HZ	EMERGENCY/ STANDBY POWER	NOTES
DSF	1	ENVIROFAN	APPARATUS BAY	7212	82.55	120	1	60	YES	1,2,3
DSF	2	ENVIROFAN	APPARATUS BAY	7212	82.55	120	1	60	YES	1,2,3
DSF	3	ENVIROFAN	EXERCISE ROOM	7212	82.55	120	1	60	YES	1,2,4
DSF	4	ENVIROFAN	APPARATUS BAY	7212	82.55	120	1	60	YES	1,2,3
DSF	5	ENVIROFAN	APPARATUS BAY	7212	82.55	120	1	60	YES	1,2,3

NOTES:
1. CONTRACTOR TO PROVIDE AND INSTALL A LOCAL START/STOP PUSH-BUTTON STATION FOR THE FAN. MOUNT AT 36" A.F.F.
2. CONTRACTOR TO PROVIDE MOUNTING HARDWARE AND DOWNROD (EXTENSION TUBE) OF SUFFICIENT LENGTH TO INSTALL FAN AT THE MOUNTING HEIGHT (MH) SHOWN ON DRAWINGS.
3. FAN COLOR TO BE BLACK.
4. FAN COLOR TO BE WHITE.

DEHUMIDIFIER UNIT SCHEDULE

ITEM						REFRIGERANT						MOTOR DATA							FILTER				
TYPE	NO.	MANUFACTURER	MODEL NO.	LOCATION	AREA SERVED	TYPE	CHARGE [OZ]	AIR FLOW [CFM]	TEMP [F]	RH [%]	TOTAL COOLING [BTU/HR]	WATER REMOVAL [PINTS/DAY]	DRIVE	WATT	MCA	V	PH	HZ	EMERGENCY/STANDBY POWER	SIZE [LxWxD]	MERV	DRAIN CONN. [IN]	OPERATING WEIGHT [LBS]	NOTES
DHU	1	QUEST	100	PPE DRYING ROOM	PPE DRYING ROOM	R454B	18	280	80	60	6800.0	100	VARIABLE SPEED ECM	540.00	15	120	1	60	NO	12" x 14" x 1"	13	3/4"	60	1,2,3,4

NOTES:
1. SUPPORT THE UNIT WITH VIBRATION ISOLATORS INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
2. PROVIDE WITH DIGITAL CONTROL INTERFACE WITH EXTERNAL CONTROL OPTION FOR BMS INTERFACE.
3. PROVIDE WITH DRAIN PAN UNDERNEATH THE UNIT.
4. PROVIDE WITH THE CONDENSATE PUMP.

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COMMONWEALTH OF MASSACHUSETTS
HILARY G. WILLIAMS
MECHANICAL
NO. 55370
REGISTERED PROFESSIONAL ENGINEER
12/19/25

CONSTRUCTION DOCUMENTS 12/19/25

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL SCHEDULES

SHEET NUMBER

M00.02

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VRF ZONE CONTROLLER DEVICE SCHEDULE

ITEM				ELECTRICAL					OBERATING WEIGHT [LBS]	
TYPE	NO	MANUFACTURER	MODEL NO.	V	PH	HZ	MCA	FLA		NOTES
BS	1	TRANE	CMB-M106NU-MA-SV	208	1	60	0.55	1	126	1
BS	2	TRANE	CMB-M108NU-MB-SV	208	1	60	0.74	1	139	1
BS	3	TRANE	CMB-M104NU-MB-SV	208	1	60	0.38	1	95	1
BS	4	TRANE	CMB-M106NU-MA-SV	208	1	60	0.55	1	126	1
BS	5	TRANE	CMB-M108NU-MB-SV	208	1	60	0.74	1	139	1
BS	6	TRANE	CMB-M104NU-MB-SV	208	1	60	0.38	1	95	1
BS	7	TRANE	CMB-M108NU-MB-SV	208	1	60	0.74	1	139	1
BS	8	TRANE	CMB-M104NU-MB-SV	208	1	60	0.38	1	95	1
BS	9	TRANE	CMB-M104NU-MA-SV	208	1	60	0.38	1	117	1
BS	10	TRANE	CMB-M108NU-MB-SV	208	1	60	0.74	1	139	1
BS	11	TRANE	CMB-M104NU-MB-SV	208	1	60	0.38	1	95	1
BS	12	TRANE	CMB-M106NU-MA-SV	208	1	60	0.55	1	126	1

NOTES:
1. PROVIDE WITH CONDENSATE PUMP, POWERED FROM THE BS POWER LINE.

SHUT OFF VALVE SCHEDULE

ITEM				ELECTRICAL					OBERATING WEIGHT [LBS]	
TYPE	NO	MANUFACTURER	MODEL NO.	V	PH	HZ	MCA	FLA		NOTES
SV	1	TRANE	CMR-M100KT-NA	208	1	60	0.38	0.30	15	1
SV	2	TRANE	CMR-M100KT-NA	208	1	60	0.38	0.30	15	1

NOTES:
1. VALVES SHALL BE INTERLOCKED WITH THE ASSOCIATED REFRIGERANT LEAK DETECTOR (RLD). UPON DETECTION OF A REFRIGERANT LEAK, THE RLD SHALL SIGNAL THE VALVES TO CLOSE IMMEDIATELY TO ISOLATE THE REFRIGERANT SOURCE.

ELECTRIC BASEBOARD HEATING SCHEDULE

ITEM											
TYPE	NO.	MANUFACTURER	MODEL NO.	LOCATION	PANEL WIDTH [IN]	PANEL LENGTH [IN]	HEATING DESIGN ROOM AIR TEMP [°F]	HEATING CAPACITY [BTU/H]	VOLTAGE	WATT	WEIGHT [LB]	NOTES
R	1	RUNTAL	EB3-208D	KITCHEN	0' - 3"	10' - 0"	60	3000.0	208 V	1466	120	1
R	2	RUNTAL	EB3-208D	KITCHEN	0' - 3"	10' - 0"	60	6824.0	208 V	1466	120	1

NOTES:
1. MOUNTING AND WIRING PER MAMUFACTURER'S INSTALLATION INSTRUCTION.

HOT BOX SCHEDULE

ITEM		MANUFACTURER		ELECTRICAL				DIMENSIONS			
TYPE	NO.		LOCATION	VOLTAGE	PHASE	THERMOSTAT	FANS	HEIGHT	LENGTH	WIDTH	NOTES
HB	1	HUBBELL	SITE	120 V	1	1900 W	1500 W	8' - 0"	8' - 0"	10' - 0"	1,2

NOTES:
1. ALUMINUM ENCLOSURE IS CUSTOMIZED WITH HINGED DOOR.
2. MOUNT ON 9" MANUFACTURER'S RECOMMENDED SLAB.

DUCT RUNOUT SIZING

DUCT DIA [IN]	DUCT SIZE [IN]	FLOW RANGE [CFM]
4"	4 x 4	0 - 35
5"	5 x 5	35 - 60
6"	6 x 6	60 - 100
8"	8 x 8	100 - 200
10"	10 x 10	200 - 400
12"	12 x 12	400 - 600

VAV UNIT SCHEDULE

					INLET	AIRFLOW					
MARK	MANUFACTURER	MODEL NO.	SYSTEM SERVED	PRIMARY AREA SERVED	DIAMETER [IN]	MAX AIRFLOW [CFM]	MIN AIRFLOW [CFM]	DCV MIN AIRFLOW [CFM]	MAXIMUM PRESSURE DROP [IN WC]	OPERATING WEIGHT [LBS]	NOTES
VAV-101	TITUS	DESV	DOAS-1	102 YARD STORAGE	8"	270	40	0	0.2	20	1,2,3
VAV-102	TITUS	DESV	DOAS-1	103 COMPRESSOR ROOM	6"	130	0	0	0.2	20	1,2,3
VAV-103	TITUS	DESV	DOAS-1	106 TURNOUT GEAR	6"	150	0	0	0.2	20	1,2,3
VAV-104	TITUS	DESV	DOAS-1	119A PPE DRYING ROOM	8"	350	110	0	0.2	20	1,2,3,4
VAV-105	TITUS	DESV	DOAS-1	119B LAUNDRY	10"	400	100	0	0.2	20	1,2,3,5
VAV-106	TITUS	DESV	DOAS-1	119C SHOWER AND LOCKERS	8"	330	0	0	0.2	20	1,2,3
VAV-107	TITUS	DESV	DOAS-2	123 WATCH ROOM	8"	370	0	0	0.2	20	1,2,3
VAV-108	TITUS	DESV	DOAS-2	115 TRAINING ROOM	8"	260	40	40	0.2	20	1,2
VAV-109	TITUS	DESV	DOAS-2	113 EXERCISE	8"	200	40	40	0.2	20	1,2
VAV-201	TITUS	DESV	DOAS-2	222 DAY ROOM	6"	170	40	40	0.2	20	1,2
VAV-202	TITUS	DESV	DOAS-2	226 KITCHEN DINING	12"	600	210	210	0.2	20	1,2
VAV-203	TITUS	DESV	DOAS-2	214 DISTRICT CHIEF OFFICE	10"	580	0	0	0.2	20	1,2,3
VAV-204	TITUS	DESV	DOAS-2	232 COMPANY OFFICER	8"	225	0	0	0.2	20	1,2,3
VAV-205	TITUS	DESV	DOAS-2	225 LAUNDRY	8"	200	0	0	0.2	20	1,2,3,5

NOTES:
1. ALL POWER, CONTROL WIRING, RELAYS, MISCELLANEOUS CONTROLS DEVICES SHALL BE UNDER DIVISION 23.
2. VAV CONTROLLERS TO BE FURNISHED AND FIELD INSTALLED BY DIV 23 CONTROLS.
3. A MINIMUM AIRFLOW VALUE OF 0 INDICATES THAT THERE IS NO MINIMUM AIRFLOW REQUIREMENT AND NO DCV MINIMUM.
4. INTERLOCK WITH EF-02. SEE CONTROL DRAWINGS FOR DETAILS.
5. INTERLOCK WITH DYRERS. SEE CONTROL DRAWINGS FOR DETAILS.

EVAV UNIT SCHEDULE

					INLET		AIRFLOW					
MARK	MANUFACTURER	MODEL NO.	SYSTEM SERVED	PRIMARY AREA SERVED	HEIGHT [IN]	WIDTH [IN]	MAX AIRFLOW [CFM]	MIN AIRFLOW [CFM]	DCV MIN AIRFLOW [CFM]	MAXIMUM PRESSURE DROP [IN WC]	OPERATING WEIGHT [LBS]	NOTES
EVAV-101	TITUS	DESV	DOAS-1	102 YARD STORAGE	10"	12"	270	0	0	0.2	20	1,2,3,4
EVAV-102	TITUS	DESV	DOAS-1	103 COMPRESSOR ROOM	8"	12"	130	0	0	0.2	20	1,2,3,4
EVAV-103	TITUS	DESV	DOAS-1	106 TURNOUT GEAR	8"	12"	180	0	0	0.2	20	1,2,3,4
EVAV-104	TITUS	DESV	DOAS-1	119A PPE DRYING ROOM	10"	12"	160	0	0	0.2	20	1,2,3,4
EVAV-106	TITUS	DESV	DOAS-1	119C SHOWER AND LOCKERS	10"	12"	430	0	0	0.2	20	1,2,3,4
EVAV-107	TITUS	DESV	DOAS-2	123 WATCH ROOM	10"	12"	170	0	0	0.2	20	1,2,3,4
EVAV-108	TITUS	DESV	DOAS-2	115 TRAINING ROOM	10"	12"	260	40	40	0.2	20	1,2,3
EVAV-109	TITUS	DESV	DOAS-2	113 EXERCISE	10"	12"	200	40	40	0.2	20	1,2,3
EVAV-201	TITUS	DESV	DOAS-2	222 DAY ROOM	8"	12"	170	40	40	0.2	20	1,2,3
EVAV-202	TITUS	DESV	DOAS-2	226 KITCHEN DINING	13"	14"	500	260	260	0.2	20	1,2,3
EVAV-203	TITUS	DESV	DOAS-2	214 DISTRICT CHIEF OFFICE	10"	12"	440	0	0	0.2	20	1,2,3,4
EVAV-204	TITUS	DESV	DOAS-2	232 COMPANY OFFICER	8"	12"	280	0	0	0.2	20	1,2,3,4

NOTES:
1. ALL POWER, CONTROL WIRING, RELAYS, MISCELLANEOUS CONTROLS DEVICES SHALL BE UNDER DIVISION 23.
2. VAV CONTROLLERS TO BE FURNISHED AND FIELD INSTALLED BY DIV 23 CONTROLS.
3. EVAV SHALL BE INTERLOCK WITH VAV BOX. SEE CONTROL DRAWINGS AND SEQUENCE OF OPERATION FOR DETAILS
4. A MINIMUM AIRFLOW VALUE OF 0 INDICATES THAT THERE IS NO MINIMUM AIRFLOW REQUIREMENT AND NO DCV MINIMUM.

FUEL OIL PUMP SCHEDULE

ITEM		MANUFACTURER			SYSTEM SERVED	FLUID SYSTEM	FLOW [GPM]	PUMP HEAD [PSI]	PUMP [RPM]	MOTOR DATA						OPERATING WEIGHT (LBS)	
TYPE	NO.		MODEL NO.	LOCATION						HP	V	PH	HZ	SPEED CONTROL	EMERGENCY/STANDBY POWER		NOTES
FOP	1	HAYES	HPI-030-EE	SITE	FUEL OIL	DIESEL	3.1	25	1725	0.5	120	1	60	MOTOR STARTER	YES	510	1,2
FOP	2	HAYES	HPI-030-EE	SITE	FUEL OIL	DIESEL	3.1	25	1725	0.5	120	1	60	MOTOR STARTER	YES	510	1,2

NOTES:
1. PROVIDE PACKAGED FUEL OIL CONTROLLER WITH BACNET INTERFACE CARD FOR BAS CONNECTION.
2. PROVIDE PUMPS ON COMMON SKID.

FUEL OIL TANK SCHEDULE

ITEM		MANUFACTURER	MODEL NO.	LOCATION	VOLUME [GAL]	DIMENSIONS			NOTES
TYPE	NO.					HEIGHT [FT]	LENGTH [FT]	WIDTH [FT]	
FOT	1	CONTAINMENT SOLUTIONS	DWT-6 TYPE II	UNDERGROUND	6000	6' - 4 23/64"	30' - 3 23/64"	6' - 4 23/64"	1

NOTES:
1. UNDERGROUND DOUBLE WALL FUEL TANK, FIBERGLASS REINFORCED PLASTIC (FRP). PROVIDE INTERSTITIAL LEAK DETECTION, MANWAY ACCESS, OVERFILL PROTECTION, SPILL CONTAINMENT BOX, NORMAL VENT LINES, AND RISERS TO GRADE. INSTALL PER NFPA 30, 37, AND LOCAL JURISDICTION. TANK TO BE AIR TESTED PRIOR TO BACKFILL.

FUEL OIL MAINTENANCE SYSTEM SCHEDULE

ITEM							FILTRATION		MOTOR DATA						OPERATING WEIGHT (LBS)	
TYPE	NO.	MANUFACTURER	MODEL NO.	SYSTEM SERVED	FLUID SYSTEM	FLOW [GPM]	STAGE 1	STAGE 2	HP	V	PH	HZ	SPEED CONTROL	EMERGENCY/STANDBY POWER		NOTES
FPS	1	FTI	FTI-2.8	FUEL OIL	DIESEL	3	2 MICRONS	5 PPM	0.33	115	1	60	MOTOR STARTER	YES	95	1

NOTES:
1. FPS TO BE PLACED INSIDE HOT BOX.

ELECTRIC UNIT HEATER SCHEDULE

ITEM						FAN	ELECTRICAL DATA							
TYPE	NO.	MANUFACTURER	MODEL NO.	AREA SERVED	TYPE	AIRFLOW [CFM]	CAPACITY [KW]	MCA [AMPS]	V	PH	HZ	EMERGENCY/ STANDBY POWER	OBERATING WEIGHT [LBS]	NOTES
EUH	1	INDEECO	UHIR	WATER SERVICE	WALL	350	2.5	9	277	1	60	Y	40	1, 2
EUH	2	INDEECO	UHIR	STAIRS	WALL	350	2.5	9	277	1	60	Y	40	1,2
EUH	3	INDEECO	UHIR	STAIRS	WALL	350	2.5	9	277	1	60	Y	40	1,2
EUH	4	INDEECO	UHIR	APPARATUS BAY	WALL	650	10	12	480	3	60	Y	40	1,2
EUH	5	INDEECO	UHIR	APPARATUS BAY	WALL	650	10	12	480	3	60	Y	40	1,2
EUH	6	INDEECO	UHIR	APPARATUS BAY	WALL	650	10	12	480	3	60	Y	40	1,2
EUH	7	INDEECO	UHIR	APPARATUS BAY	WALL	650	10	12	480	3	60	Y	40	1,2
EUH	8	INDEECO	UHIR	STAIRS	WALL	350	2.5	9	277	1	60	Y	40	1,2
EUH	9	INDEECO	UHIR	MEP ROOM	WALL	350	2.5	9	277	1	60	Y	40	1,2

NOTES:
1. PROVIDE WITH SPRING HANGERS FOR VIBRATION ISOLATION, MINIMUM 1" STATIC DEFLECTION.
2. PROVIDE WITH FACTORY INSTALLED NON-FUSED DISCONNECT SWITCH.

DIFFUSER & GRILLE SCHEDULE (TYPE)

ITEM		MANUFACTURER			NECK SIZE				PERFORMANCE RANGE			PLENUM SIZE		
TYPE	NO.		MODEL NO.	TYPE	HEIGHT [IN]	WIDTH [IN]	DIA [IN]	# OF SLOTS	SLOT WIDTH [IN]	MAX AIRFLOW [CFM]	MAX S.P. [IN W.C.]	MAX N.C.	WIDTH [IN]	HEIGHT [IN]	NOTES
CD	1	PRICE	SCD	SQUARE CONICAL DIFFUSER			8"			310	0.03	20			
CD	2	PRICE	SCD	SQUARE CONICAL DIFFUSER			10"			475	0.03	20			1,2,3,4
CD	3	PRICE	SDG	SPIRAL DUCT GRILLES	6"	12"				230	0.10	20			1,2,3,4
CD	4	PRICE	AND	RING NOZZLE DIFFUSER			10"			380	0.10	30			1,2,3,4
EG	1	PRICE	530	SIDEWALL EXHAUST GRILLE	6"	8"				180	0.10	20			1,2,3,4
EG	2	PRICE	530	SIDEWALL EXHAUST GRILLE	8"	12"				360	0.10	20			1,2,3,4
EG	3	PRICE	PDR	SQUARE PERFORATED DIFFUSER			6"			125	0.10	20			1,2,3,4
EG	4	PRICE	PDR	SQUARE PERFORATED DIFFUSER			8"			180	0.10	20			1,2,3,4
EG	5	PRICE	PDR	SQUARE PERFORATED DIFFUSER			10"			280	0.10	20			1,2,3,4
EG	6	PRICE	SDG	SPIRAL DUCT GRILLES	6"	12"				230	0.10	20			1,2,3,4
EG	7	PRICE	SDG	SPIRAL DUCT GRILLES	10"	20"				820	0.10	20			1,2,3,4
EL	1	PRICE	SDS	LINEAR EXHAUST			10"	3	3/4"	300	0.05	20	5 1/4"	14 1/8"	1,2,3,4
EL	2	PRICE	SDS	LINEAR EXHAUST			6"	1	1"	90	0.09	20	2"	10 1/8"	1,2,3,4
EL	3	PRICE	SDS	LINEAR EXHAUST			10"	3	1"	210	0.05	25	6"	14 1/8"	1,2,3,4
RG	1	PRICE	PDR	SQUARE PERFORATED DIFFUSER			8"			310	0.05	20			1,2,3,4
RG	2	PRICE	PDR	SQUARE PERFORATED DIFFUSER			10"			475	0.05	20			1,2,3,4
RL	1	PRICE	SDS	LINEAR RETURN	264"	6"		3	1"	710	0.03	20			1,2,3,4
RL	2	PRICE	SDS	LINEAR RETURN			10"	3	1 1/2"	350	0.07	20	7 1/2"	14 1/8"	1,2,3,4
RL	3	PRICE	SDS	LINEAR RETURN			10"	3	1 1/2"	255	0.04	20	7 1/2"	14 1/8"	1,2,3,4
RL	4	PRICE	SDS	LINEAR RETURN			10"	3	1 1/2"	350	0.07	20	7 1/2"	14 1/8"	1,2,3,4
RL	5	PRICE	SDS	LINEAR RETURN			10"	3	1"	350	0.04	20	6"	14 1/8"	1,2,3,4
RL	6	PRICE	SDS	LINEAR RETURN	132"	6"		3	1"	710	0.08	23			1,2,3,4
SL	1	PRICE	SDS WITH SDB PLENUM	LINEAR SUPPLY			10"	3	1 1/2"	350	0.06	20	7 1/2"	14 1/8"	1,2,3,4
SL	2	PRICE	SDS WITH SDB PLENUM	LINEAR SUPPLY			7"	2	1"	160	0.06	20	4"	11 1/8"	1,2,3,4
SL	3	PRICE	SDS WITH SDB PLENUM	LINEAR SUPPLY			10"	3	1 1/2"	370	0.08	19	7 1/2"	14 1/8"	1,2,3,4
SL	4	PRICE	SDS WITH SDB PLENUM	LINEAR SUPPLY			10"	3	1 1/2"	300	0.06	15	7 1/2"	14 1/8"	1,2,3,4

NOTES:
1. COLOR, FINISH, AND BORDER TYPE TO BE SELECTED BY THE ARCHITECT DURING THE SUBMITTAL STAGE.
2. REFER TO ARCHITECTURAL RCP'S FOR MOUNTING REQUIREMENTS AND COORDINATION WITH CEILING TYPE/GRID.
3. RUNOUTS TO DIFFUSERS, REGISTERS AND GRILLES TO BE FULL SIZE OF DIFFUSER NECK UNLESS OTHERWISE NOTED.
4. PROVIDE VOLUME DAMPER AT EACH RUNOUT.

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HILARY G. WILLIAMS
COMMONWEALTH OF MASSACHUSETTS
MECHANICAL
NO. 55370
REGISTERED PROFESSIONAL ENGINEER
12/19/25

CONSTRUCTION DOCUMENTS 12/19/25

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL SCHEDULES

SHEET NUMBER

M00.03

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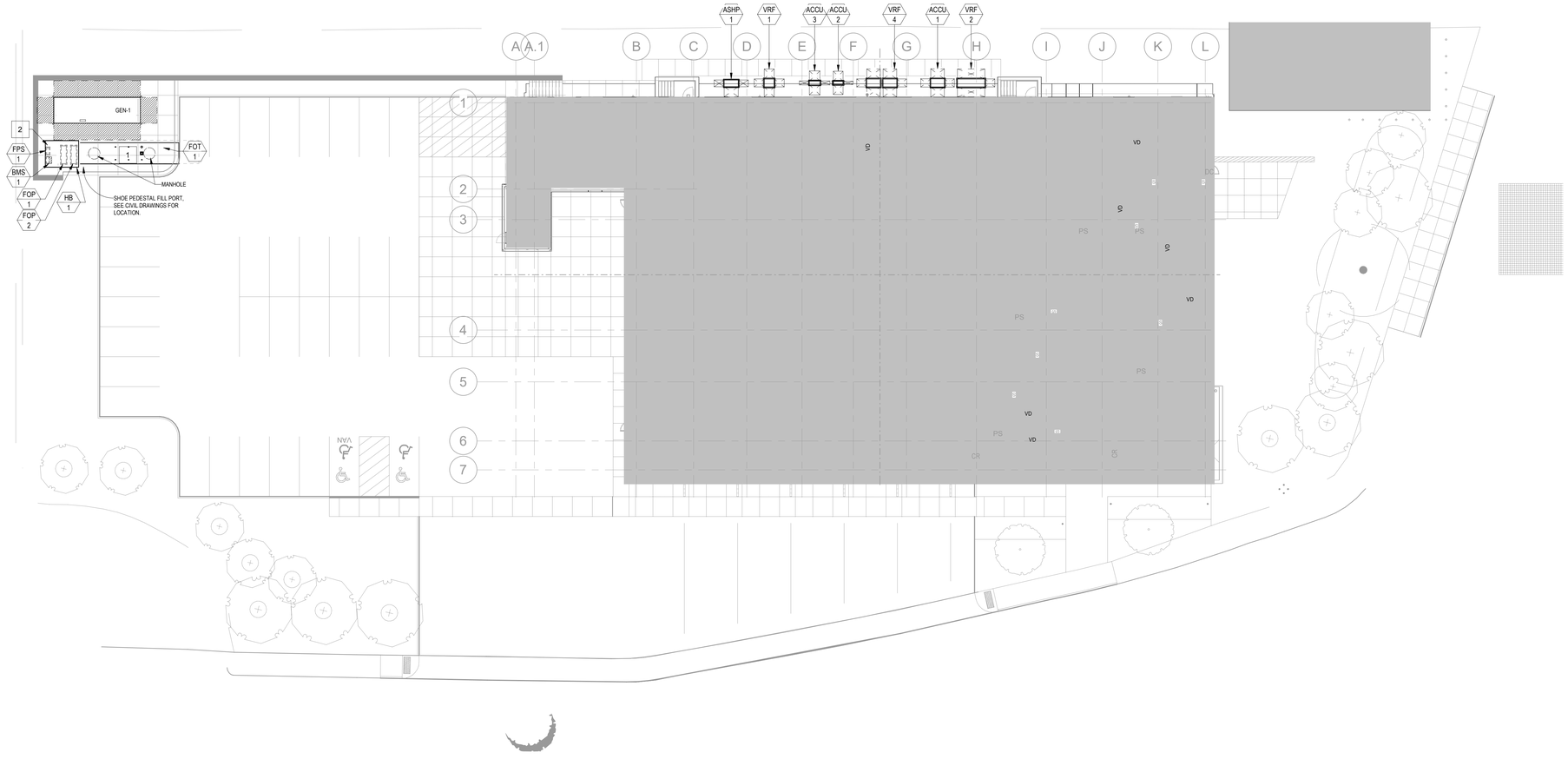
KEYNOTES:

1. FUEL OIL STORAGE TANK FOR THE EMERGENCY GENERATOR SHALL BE INSTALLED BELOW GRADE. EXACT LOCATION, TANK ACCESS, AND VENT ROUTING SHALL BE COORDINATED WITH CIVIL AND STRUCTURAL TRADES. ALL INSTALLATION SHALL COMPLY WITH APPLICABLE ENVIRONMENTAL, MECHANICAL, AND FIRE PROTECTION CODES. FUEL OIL SUPPLY AND RETURN PIPING SHALL BE PROVIDED PER M03.02; FINAL ROUTING TO BE COORDINATED WITH CIVIL AND STRUCTURAL TRADES.
2. FUEL OIL PUMP SET AND FUEL FILTRATION SYSTEM SHALL BE INSTALLED WITHIN A DEDICATED 8'-0" X 10'-0" WEATHERPROOF HOT BOX ENCLOSURE. MAINTAIN ALL REQUIRED CLEARANCES FOR ACCESS, SERVICE, AND VENTILATION. FUEL OIL PIPING SHALL BE PROVIDED PER M03.02.



1 MECHANICAL SITE PLAN
1/16" = 1'-0"

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MECHANICAL NO. 55379
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12/19/25

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CITY OF WORCESTER

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WORCESTER, MA 01605

CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL SITE PLAN

SHEET NUMBER

M01.01

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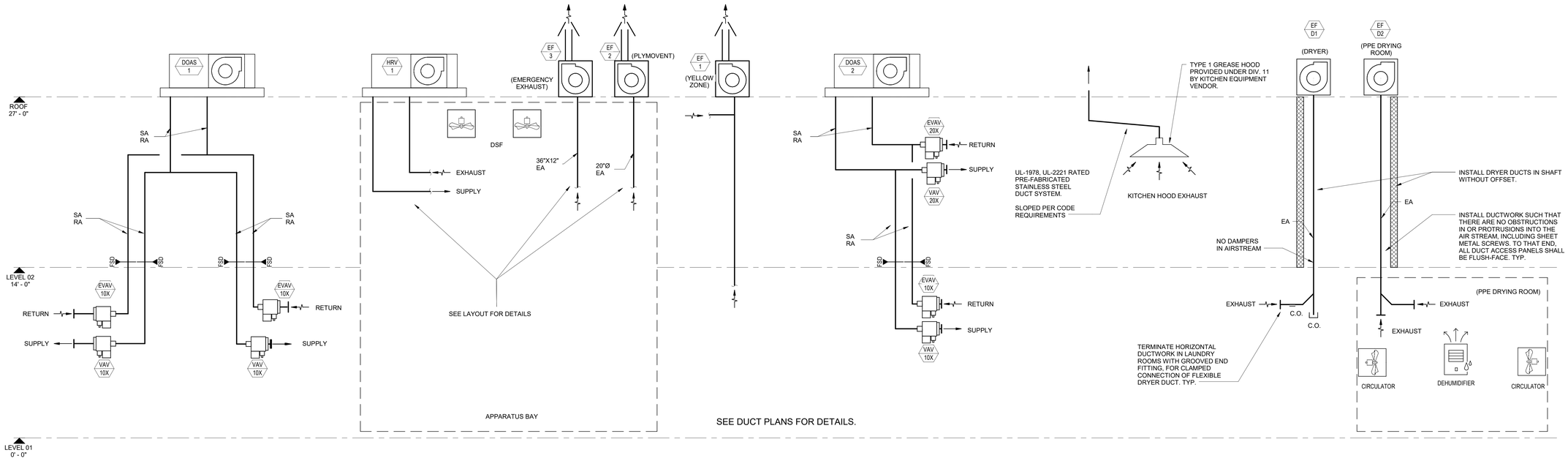
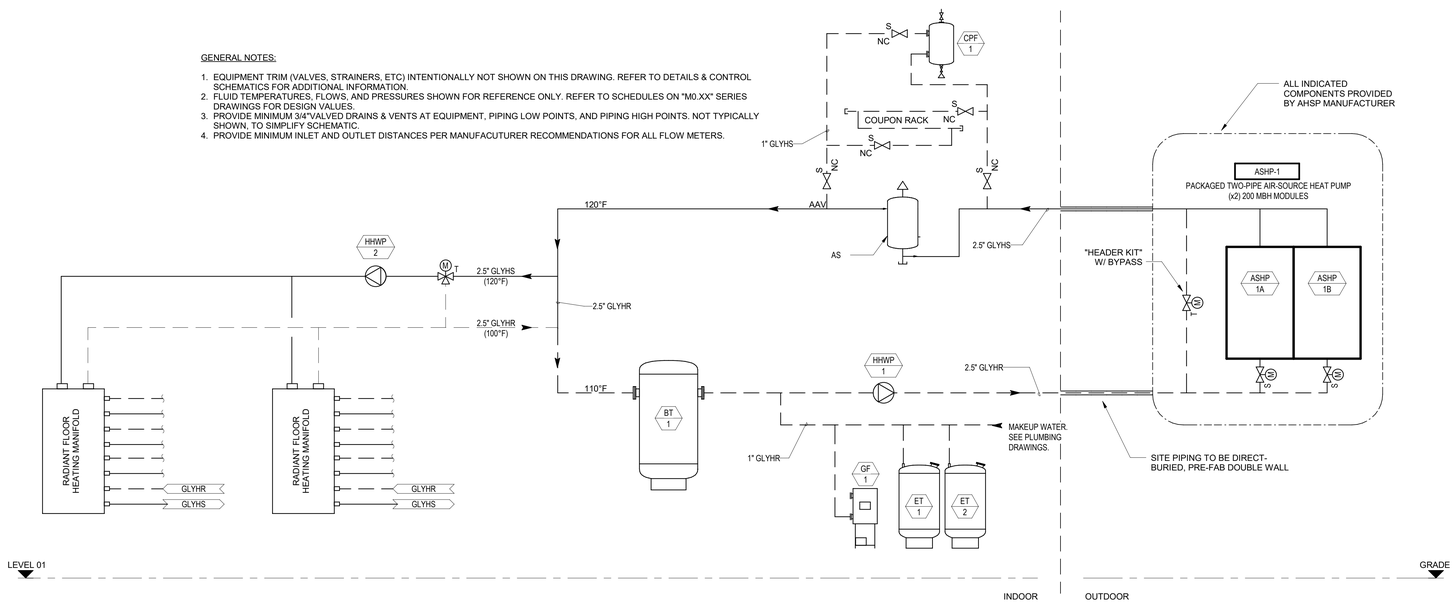


1 MECHANICAL AIR RISER DIAGRAM
NTS



2 HOT WATER FLOW DIAGRAM
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CONSTRUCTION DOCUMENTS 12/19/25

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WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL SINGLE LINE DIAGRAMS

SHEET NUMBER

M03.01

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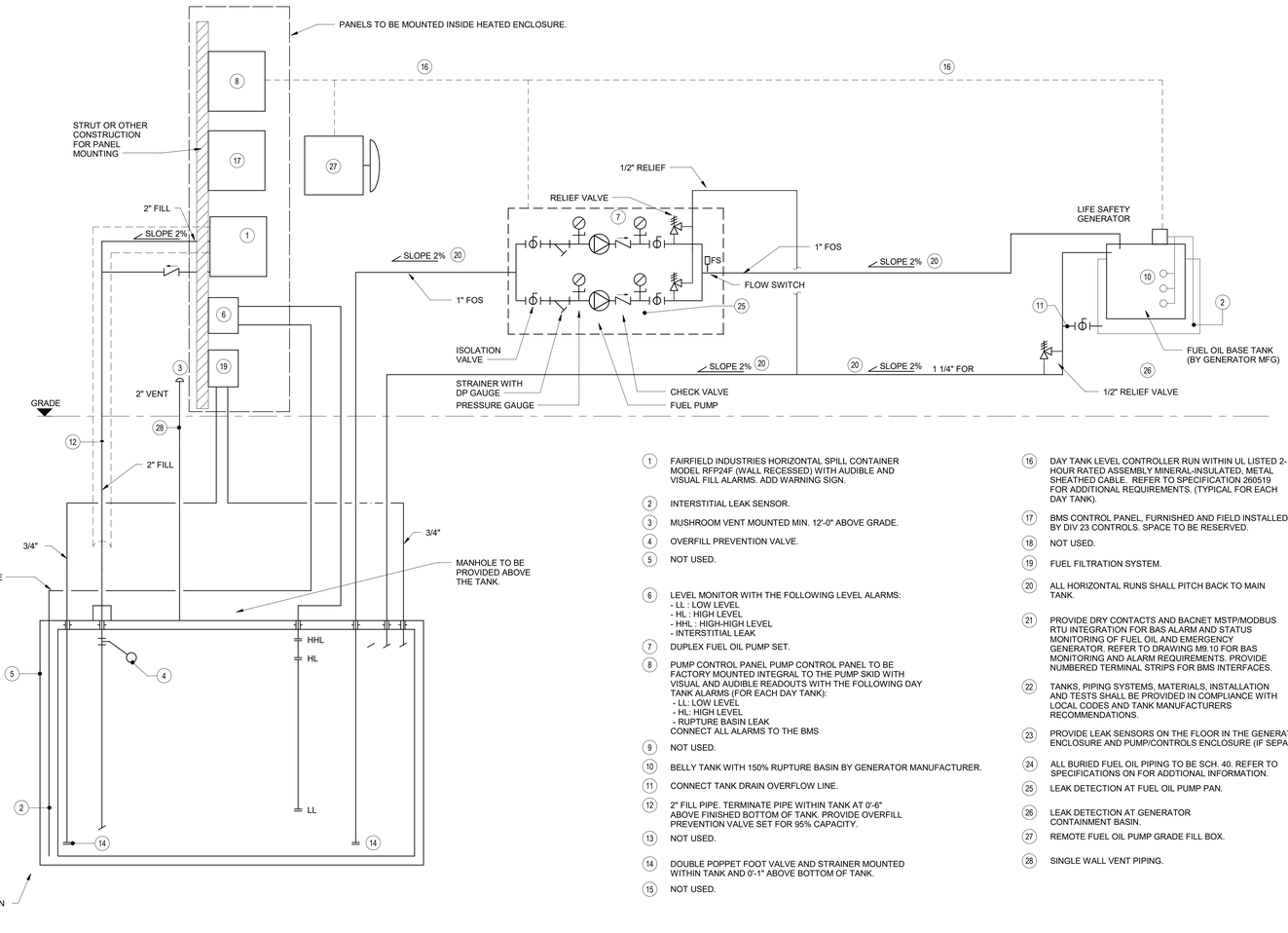

1. FAIRFIELD INDUSTRIES HORIZONTAL SPILL CONTAINER MODEL RFP24F (WALL RECESSED) WITH AUDIBLE AND VISUAL FILL ALARMS. ADD WARNING SIGN.
2. INTERSTITIAL LEAK SENSOR.
3. MUSHROOM VENT MOUNTED MIN. 12'-0" ABOVE GRADE.
4. OVERFILL PREVENTION VALVE.
5. NOT USED.
6. LEVEL MONITOR WITH THE FOLLOWING LEVEL ALARMS:
   - LL : LOW LEVEL
   - HL : HIGH LEVEL
   - HHL : HIGH-HIGH LEVEL
   - INTERSTITIAL LEAK
7. DUPLEX FUEL OIL PUMP SET.
8. PUMP CONTROL PANEL PUMP CONTROL PANEL TO BE FACTORY MOUNTED INTEGRAL TO THE PUMP SKID WITH VISUAL AND AUDIBLE READOUTS WITH THE FOLLOWING DAY TANK ALARMS (FOR EACH DAY TANK):
   - LL: LOW LEVEL
   - HL: HIGH LEVEL
   - RUPTURE BASIN LEAK
   CONNECT ALL ALARMS TO THE BMS
9. NOT USED.
10. BELLY TANK WITH 150% RUPTURE BASIN BY GENERATOR MANUFACTURER.
11. CONNECT TANK DRAIN OVERFLOW LINE.
12. 2" FILL PIPE. TERMINATE PIPE WITHIN TANK AT 0'-6" ABOVE FINISHED BOTTOM OF TANK. PROVIDE OVERFILL PREVENTION VALVE SET FOR 95% CAPACITY.
13. NOT USED.
14. DOUBLE POPPET FOOT VALVE AND STRAINER MOUNTED WITHIN TANK AND 0'-1" ABOVE BOTTOM OF TANK.
15. NOT USED.
16. DAY TANK LEVEL CONTROLLER RUN WITHIN UL LISTED 2-HOUR RATED ASSEMBLY MINERAL-INSULATED, METAL SHEATHED CABLE. REFER TO SPECIFICATION 260519 FOR ADDITIONAL REQUIREMENTS. (TYPICAL FOR EACH DAY TANK).
17. BMS CONTROL PANEL, FURNISHED AND FIELD INSTALLED BY DIV 23 CONTROLS. SPACE TO BE RESERVED.
18. NOT USED.
19. FUEL FILTRATION SYSTEM.
20. ALL HORIZONTAL RUNS SHALL PITCH BACK TO MAIN TANK.
21. PROVIDE DRY CONTACTS AND BACNET MSTP/MODBUS RTU INTEGRATION FOR BAS ALARM AND STATUS MONITORING OF FUEL OIL AND EMERGENCY GENERATOR. REFER TO DRAWING M9.10 FOR BAS MONITORING AND ALARM REQUIREMENTS. PROVIDE NUMBERED TERMINAL STRIPS FOR BMS INTERFACES.
22. TANKS, PIPING SYSTEMS, MATERIALS, INSTALLATION AND TESTS SHALL BE PROVIDED IN COMPLIANCE WITH LOCAL CODES AND TANK MANUFACTURERS RECOMMENDATIONS.
23. PROVIDE LEAK SENSORS ON THE FLOOR IN THE GENERATOR ROOM ENCLOSURE AND PUMP/CONTROLS ENCLOSURE (IF SEPARATE).
24. ALL BURIED FUEL OIL PIPING TO BE SCH. 40. REFER TO SPECIFICATIONS ON FOR ADDTIONAL INFORMATION.
25. LEAK DETECTION AT FUEL OIL PUMP PAN.
26. LEAK DETECTION AT GENERATOR CONTAINMENT BASIN.
27. REMOTE FUEL OIL PUMP GRADE FILL BOX.
28. SINGLE WALL VENT PIPING.

1 FUEL OIL LINE DIAGRAM
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12/19/25

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CITY OF WORCESTER

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CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL SINGLE LINE DIAGRAMS

SHEET NUMBER

M03.02

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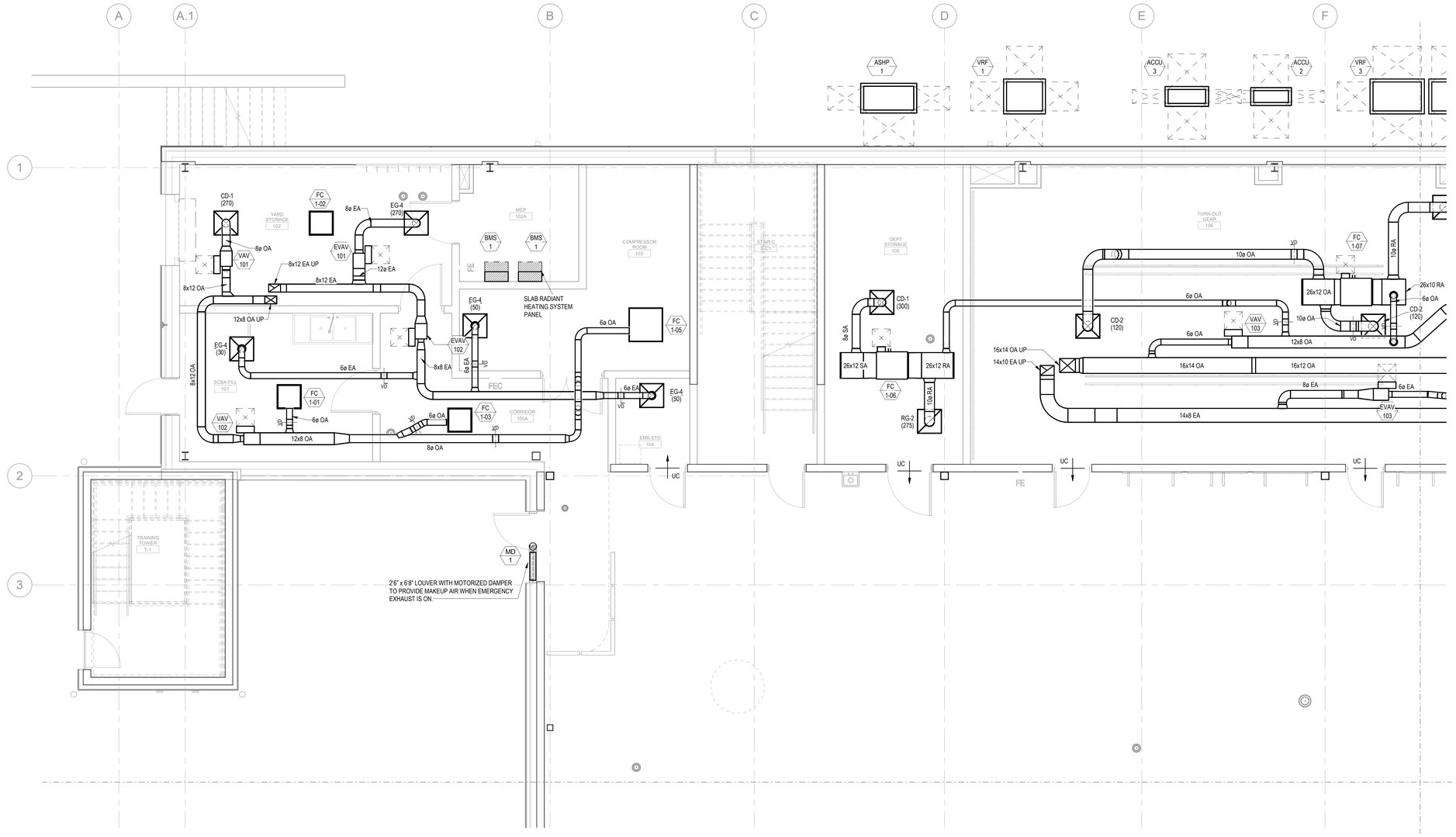
GENERAL:

1. ADD 1" LINER TO FCU SUPPLY AND RETURN PLENUM.



1 MECHANICAL DUCTWORK PLAN FIRST FLOOR - PART A
1/4" = 1'-0"

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE

MECHANICAL DUCTWORK PLAN FIRST FLOOR - PART A

SHEET NUMBER

M04.01A

CONSTRUCTION DOCUMENTS 12/19/25

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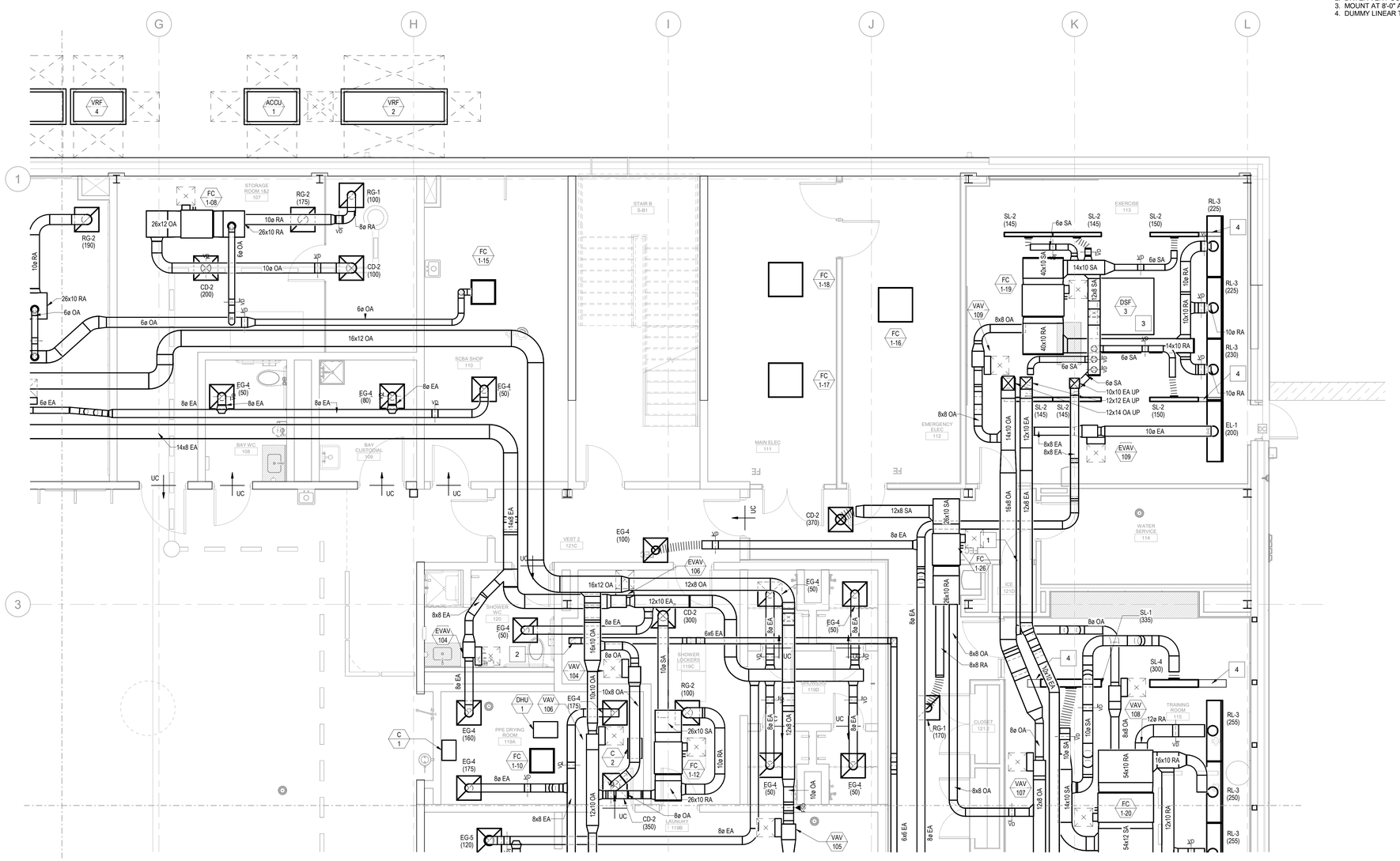
GENERAL:

1. ADD 1" LINER TO FCU SUPPLY AND RETURN PLENUM.

KEYNOTES:

1. PROVIDE WITH DOOR LOUVER WITH MIN FREE AREA OF 1SF.
2. DRYER VENT CONNECTION.
3. MOUNT AT 8'-0" AFF, TO COORDINATE THE HEIGHT AND LOCATION WITH LIGHTING.
4. DUMMY LINEAR TERMINAL TO ALIGN WITH LIGHTING.



1 MECHANICAL DUCTWORK PLAN FIRST FLOOR - PART B
1/4" = 1'-0"

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12/19/25

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CITY OF WORCESTER

455 MAIN STREET
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KEY PLAN

ISSUE CHART

MARK#	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL DUCTWORK PLAN FIRST FLOOR - PART B

SHEET NUMBER

M04.01B

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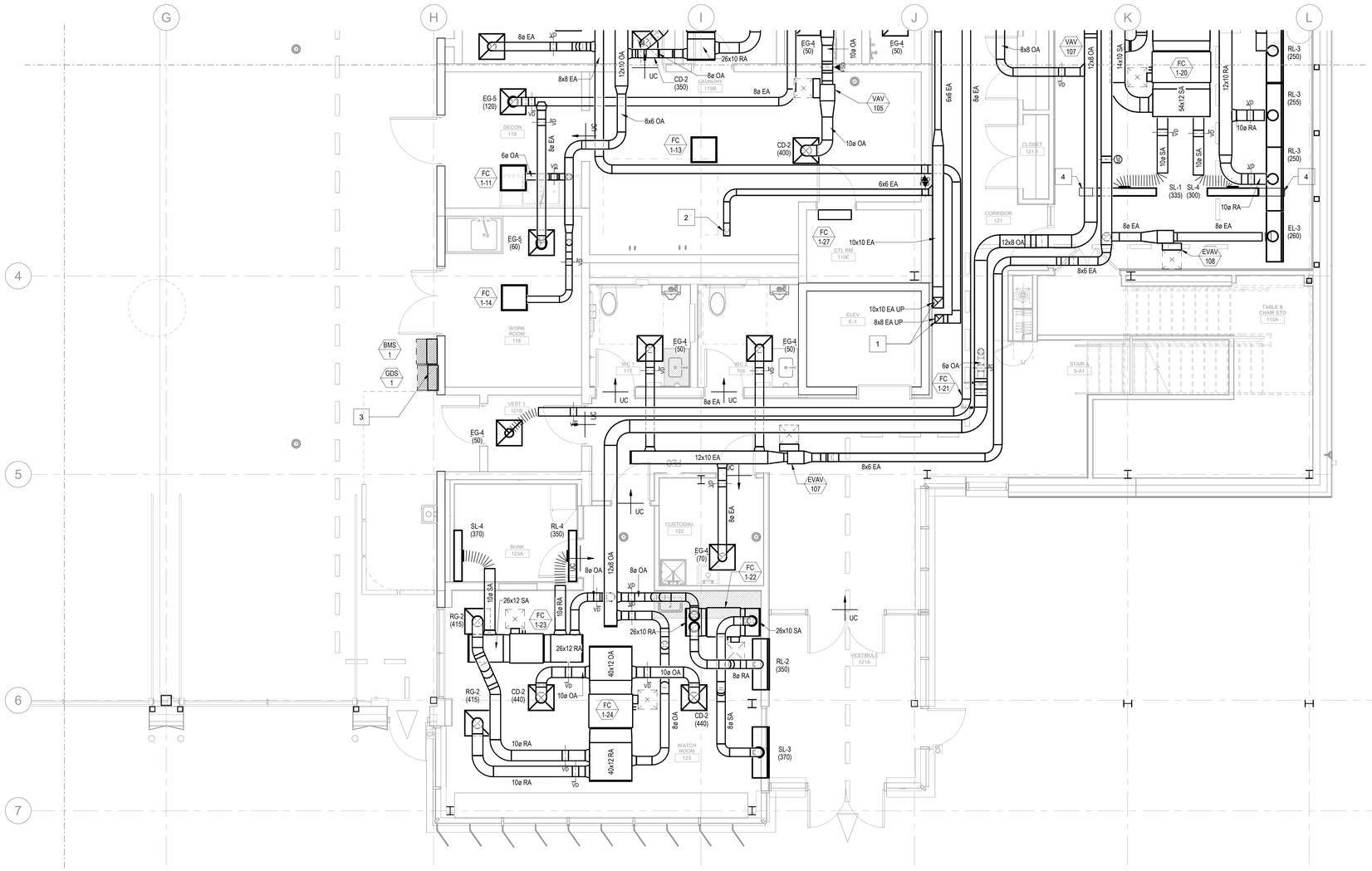
GENERAL:

1. ADD 1" LINER TO FCU SUPPLY AND RETURN PLENUM.

KEYNOTES:

1. EXHAUST VENT TO GO UP INSIDE THE SHAFT TO THE ROOF.
2. DRYER VENT CONNECTION.
3. GAS DETECTION SYSTEM PANEL.
4. DUMMY LINEAR TERMINAL TO ALIGN WITH LIGHTING.



1 MECHANICAL DUCTWORK PLAN FIRST FLOOR - PART D
1/4" = 1'-0"

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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE

MECHANICAL DUCTWORK PLAN FIRST FLOOR - PART D

SHEET NUMBER

M04.01D

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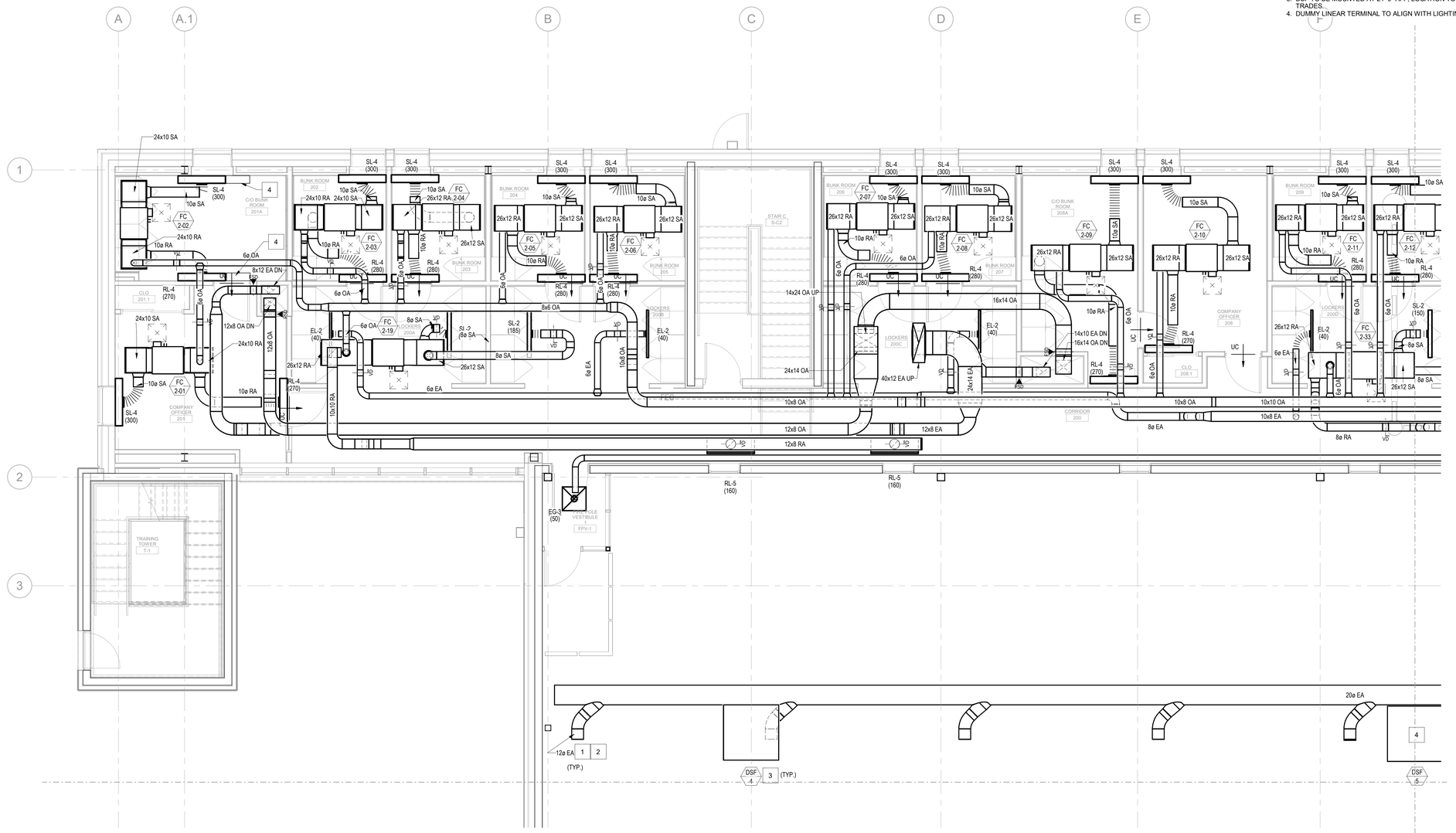
GENERAL:

1. ADD 1" LINER TO FCU SUPPLY AND RETURN PLENUM.

KEYNOTES:

1. DUCT CAPPED FOR PLYMOVENT CONNECTION. PLYMOVENT SYSTEM LOCATION TO BE COORDINATION WITH OTHER TRADES.
2. ALL PLYMOVENT DUCT TAP CONNECTIONS SIZED FOR 500 CFM.
3. DSF TO BE MOUNTED AT 21'-0" AFF, LOCATION TO BE COORDINATED WITH OTHER TRADES.
4. DUMMY LINEAR TERMINAL TO ALIGN WITH LIGHTING.



1 MECHANICAL DUCTWORK PLAN SECOND FLOOR - PART A
1/4" = 1'-0"

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE
MECHANICAL DUCTWORK PLAN SECOND FLOOR - PART A

SHEET NUMBER
M04.02A

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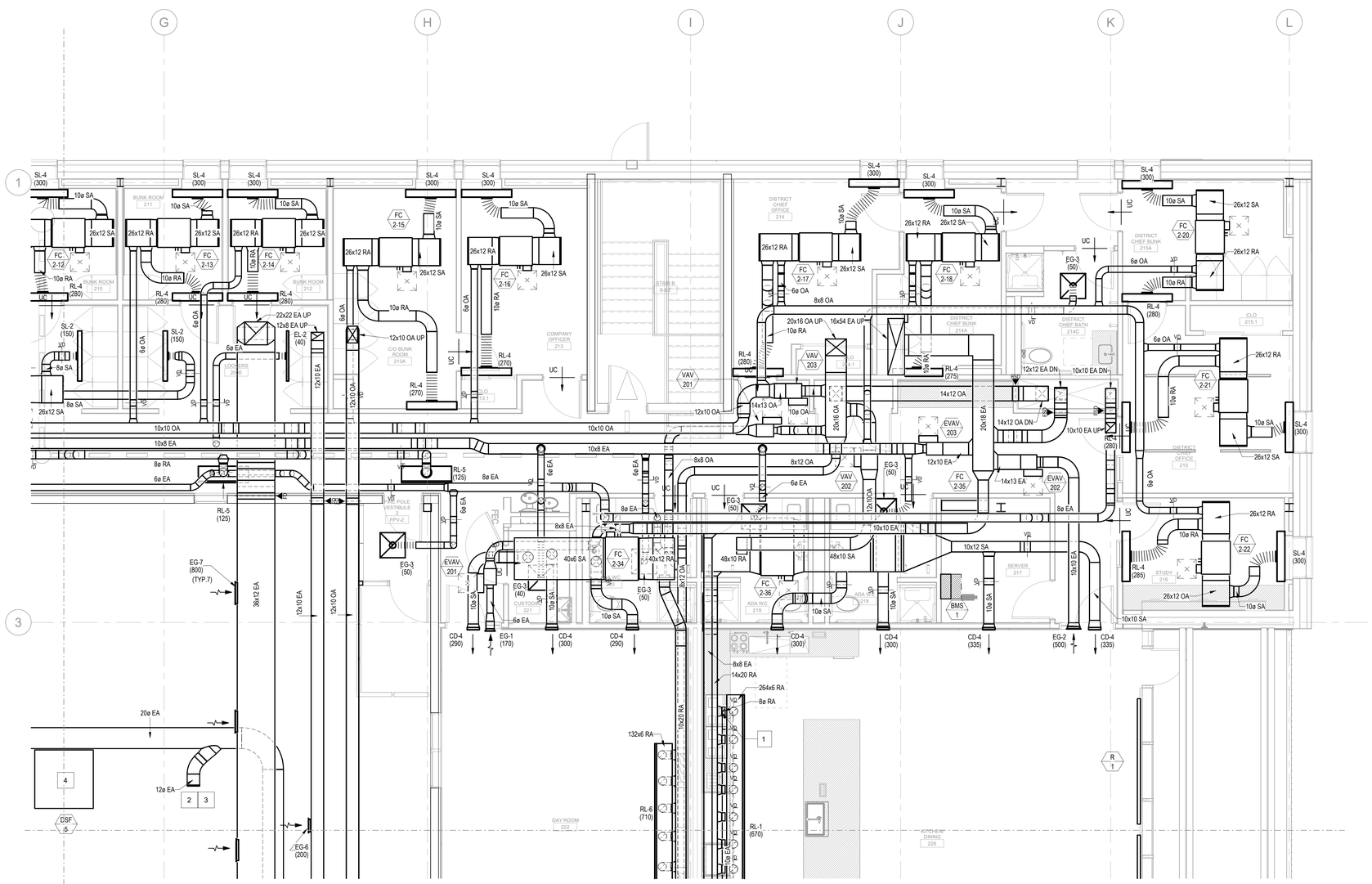
GENERAL:

1. ADD 1" LINER TO FCU SUPPLY AND RETURN PLENUM.

KEYNOTES:

1. DUCT TO CONNECT TO KITCHEN HOOD INTERNAL BLOWER. DUCT TRANSITION TO BE PROVIDED FOR KITCHEN HOOD CONNECTION.
2. DUCT CAPPED FOR PLYMOVENT CONNECTION. PLYMOVENT SYSTEM LOCATION TO BE COORDINATION WITH OTHER TRADES.
3. ALL PLYMOVENT DUCT TAP CONNECTIONS SIZED FOR 500 CFM.
4. DSF TO BE MOUNTED AT 21'-0" AFF, LOCATION TO BE COORDINATED WITH OTHER TRADES.



1 MECHANICAL DUCTWORK PLAN SECOND FLOOR - PART B
1/4" = 1'-0"

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KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE
MECHANICAL DUCTWORK PLAN SECOND FLOOR - PART B

SHEET NUMBER

M04.02B

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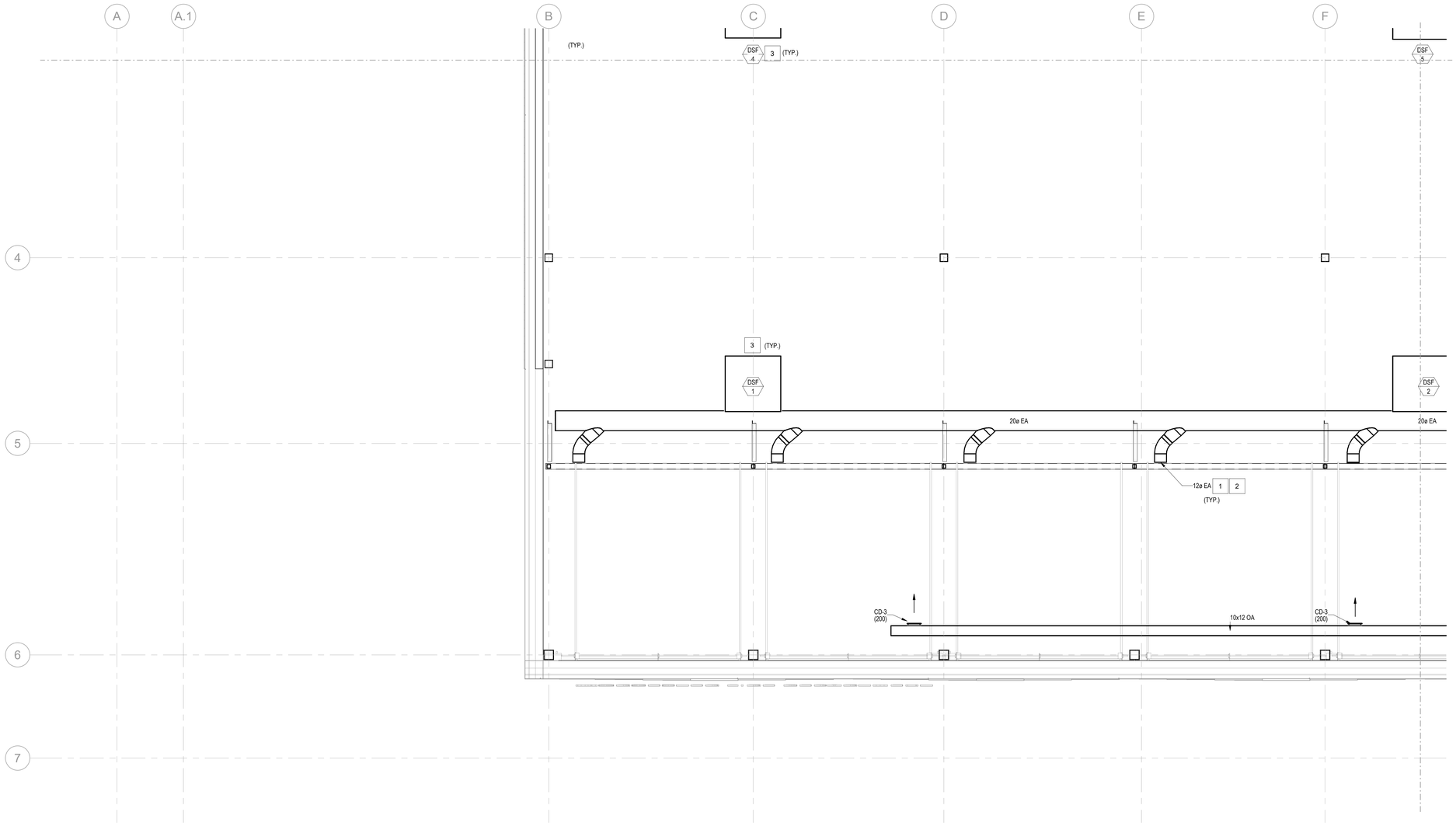
KEYNOTES:

1. DUCT CAPPED FOR PLYMOVENT CONNECTION. PLYMOVENT SYSTEM LOCATION TO BE COORDINATION WITH OTHER TRADES.
2. ALL PLYMOVENT DUCT TAP CONNECTIONS SIZED FOR 500 CFM.
3. DSF TO BE MOUNTED AT 21'-0" AFF, LOCATION TO BE COORDINATED WITH OTHER TRADES.



1 MECHANICAL DUCTWORK PLAN SECOND FLOOR - PART C
1/4" = 1'-0"

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COMMONWEALTH OF MASSACHUSETTS
HILARY G. WILLIAMS
MECHANICAL NO. 55370
REGISTERED PROFESSIONAL ENGINEER
12/19/25

PROJECT

CONSTRUCTION DOCUMENTS 12/19/25

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE
MECHANICAL DUCTWORK PLAN SECOND FLOOR - PART C

SHEET NUMBER
M04.02C

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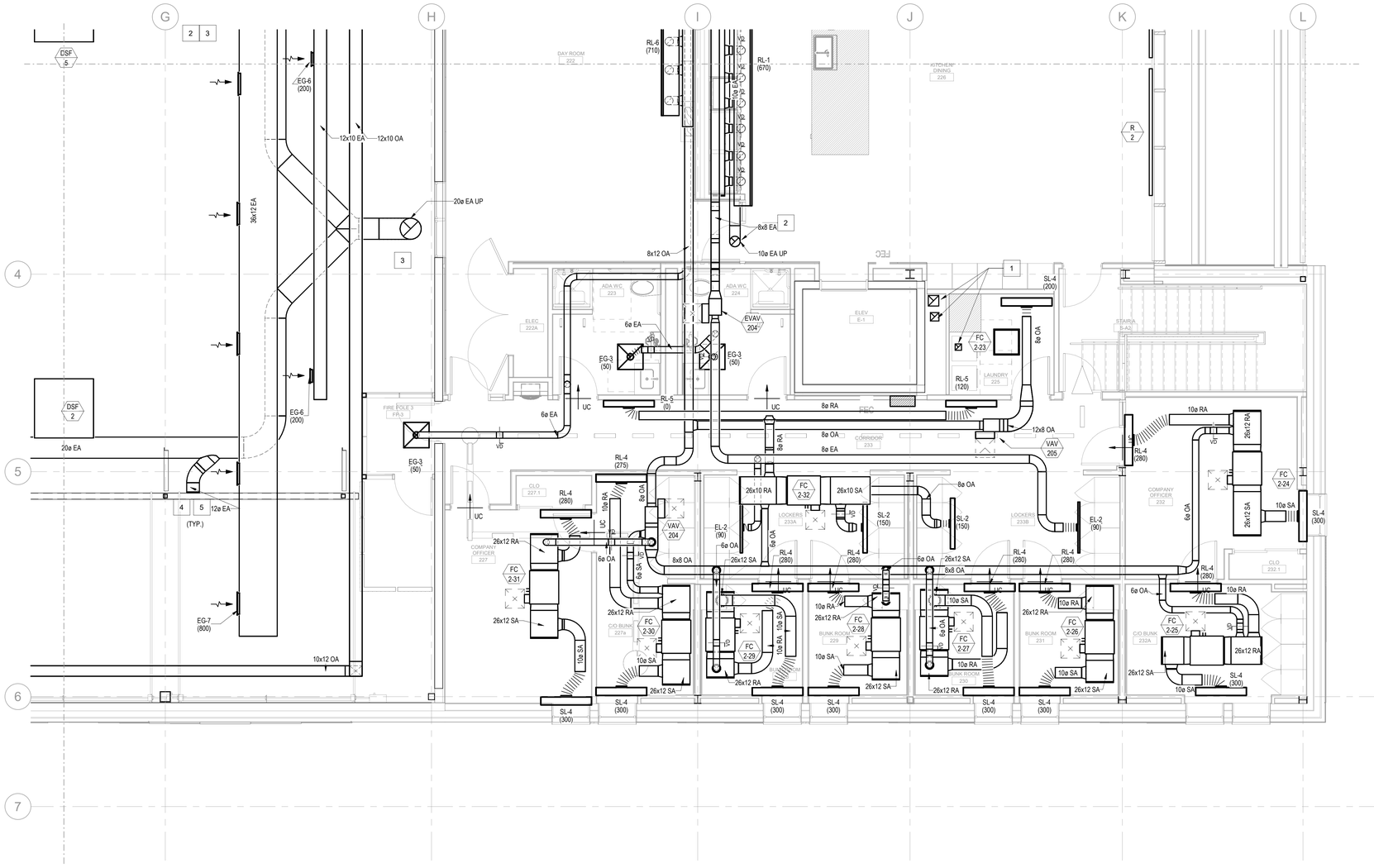
GENERAL:

1. ADD 1" LINER TO FCU SUPPLY AND RETURN PLENUM.

KEYNOTES:

1. EXHAUST VENT UP TO THE ROOF.
2. KITCHEN EXHAUST DUCT UP TO THE ROOF.
3. DUCT UP TO THE ROOF PLYMOVENT EXHAUST FAN.
4. ALL PLYMOVENT DUCT TAP CONNECTIONS SIZED FOR 500 CFM.
5. DUCT CAPPED FOR PLYMOVENT CONNECTION. PLYMOVENT SYSTEM LOCATION TO BE COORDINATION WITH OTHER TRADES.



1 MECHANICAL DUCTWORK PLAN SECOND FLOOR - PART D
1/4" = 1'-0"

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE
MECHANICAL DUCTWORK PLAN SECOND FLOOR - PART D

SHEET NUMBER
M04.02D

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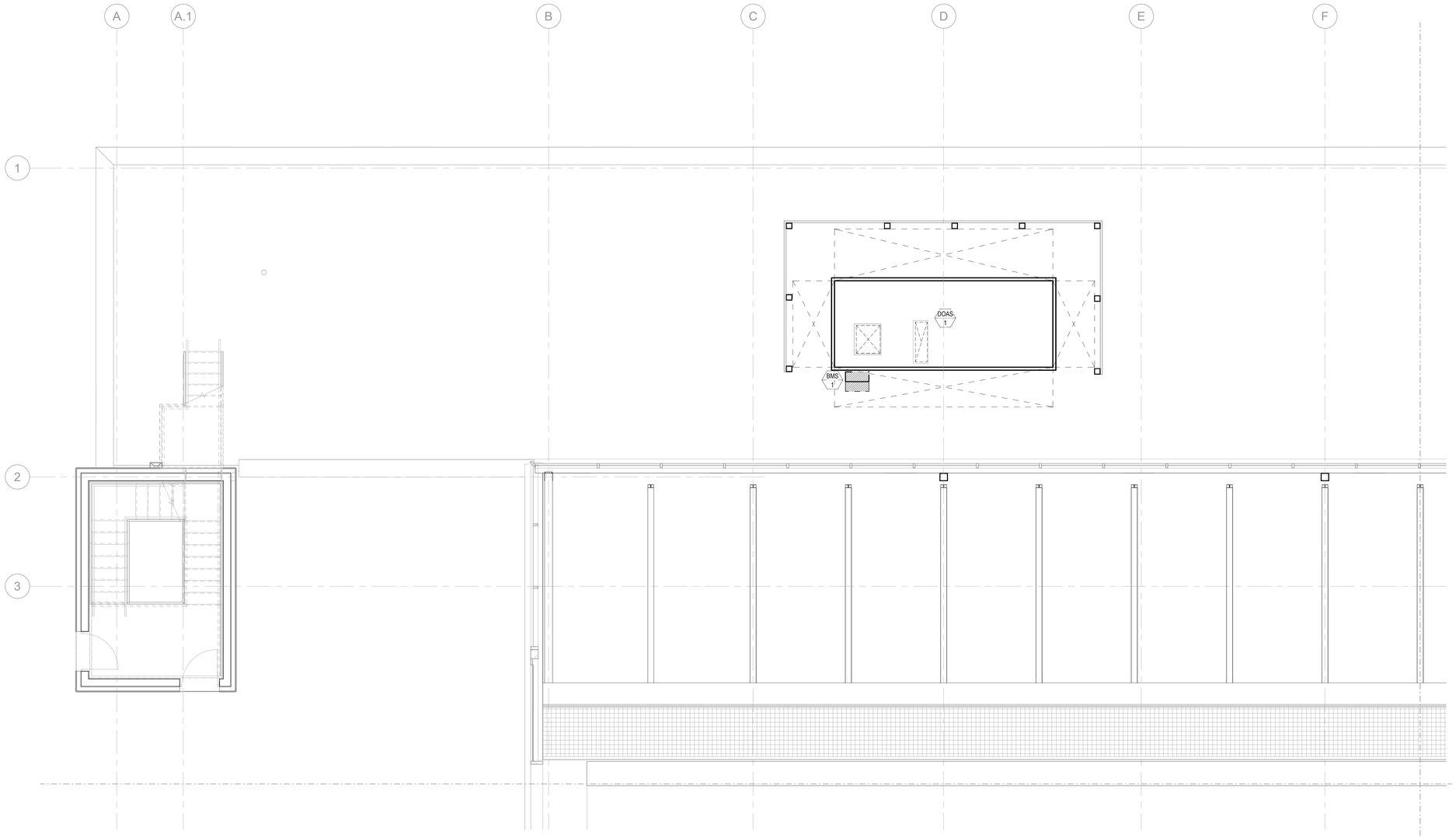

1 MECHANICAL DUCTWORK PLAN ROOF - PART A
1/4" = 1'-0"

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
Job Number		157132.000

TITLE

MECHANICAL DUCTWORK PLAN ROOF - PART A

SHEET NUMBER

M04.03A

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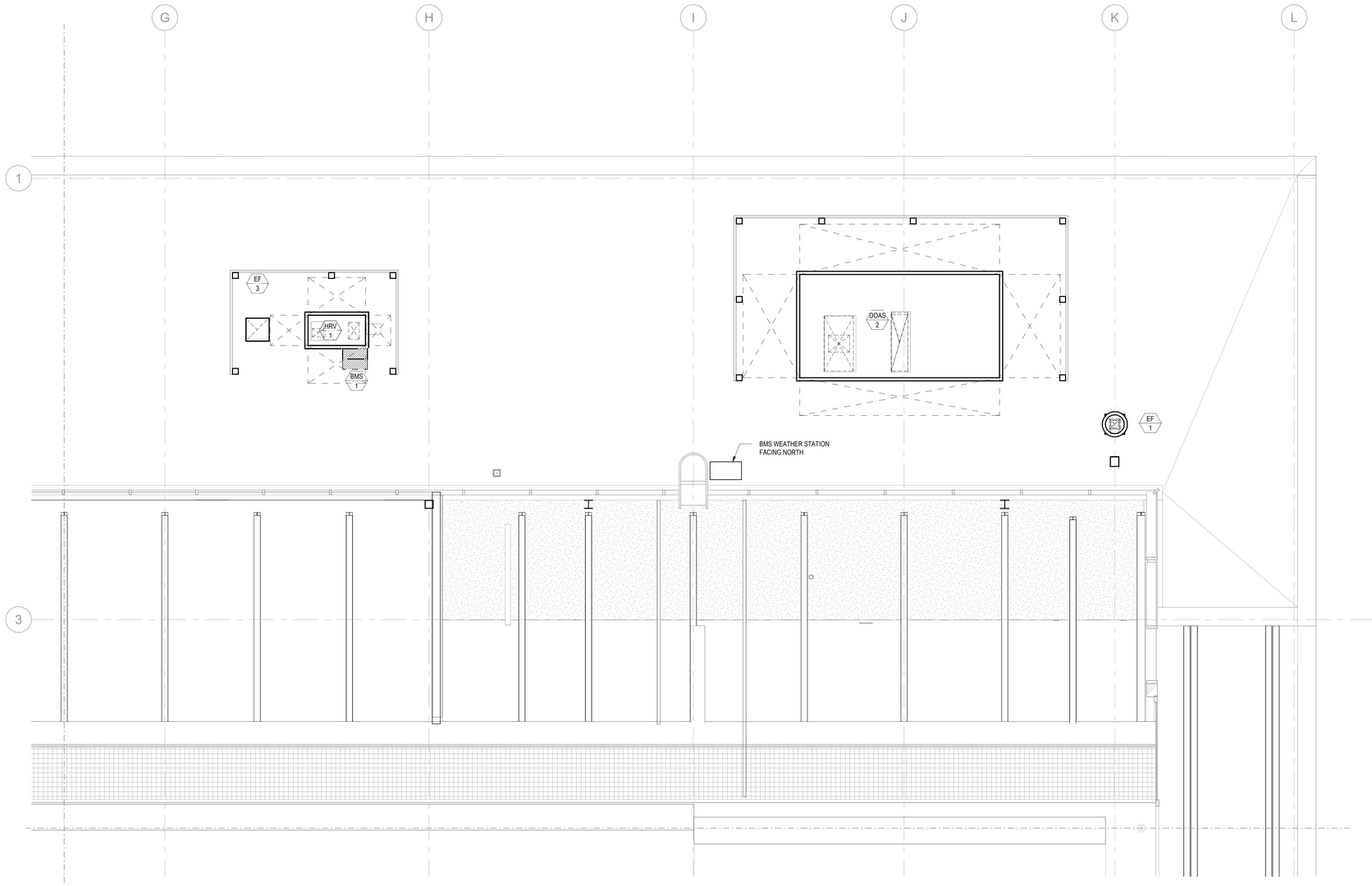

1 MECHANICAL DUCTWORK PLAN ROOF - PART B
1/4" = 1'-0"

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ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL DUCTWORK PLAN ROOF - PART B

SHEET NUMBER

M04.03B

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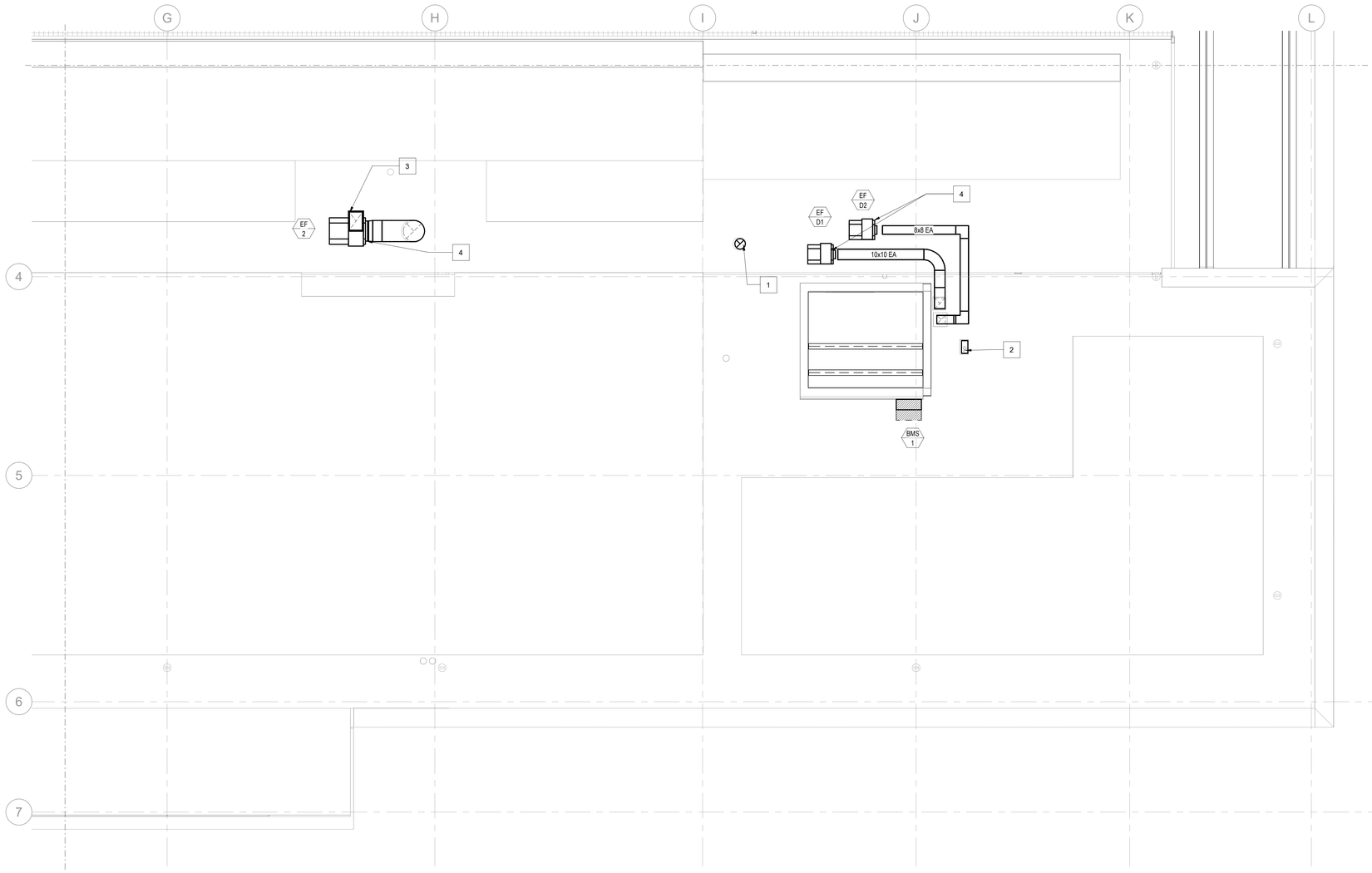

2 MECHANICAL DUCTWORK PLAN ROOF - PART D
1/4" = 1'-0"

KEYNOTES:

1. ROOF CAP FROM THE KITCHEN HOOD. DUCT SIZE AND LOCATION TO BE COORDINATED.
2. PROVIDE ROOF DRYER VENT WITH HOOD AND DAMPER.
3. EXHAUST SHALL BE DUCTED TO 10FT ABOVE OCCUPIED ROOF LEVEL.
4. FANS MUST BE ACCESSED BY WALKING AROUND THE PV.

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MARK	ISSUE	DATE

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MECHANICAL DUCTWORK PLAN ROOF - PART D

SHEET NUMBER

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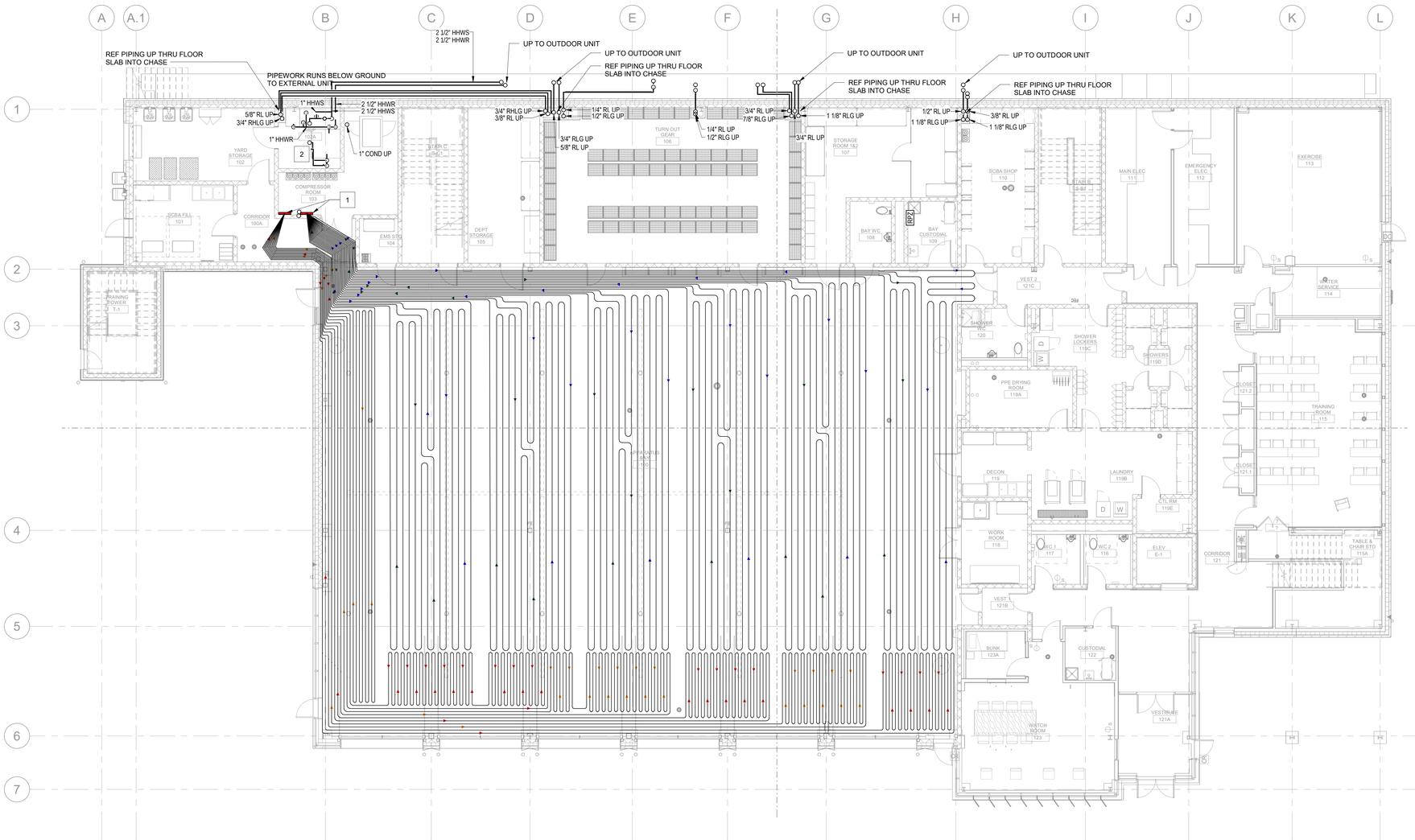
GENERAL NOTE
1. REFRIGERANT PIPE SIZE IS SUBJECT TO CHANGE BASED ON FINAL MANUFACTURERS SELECTION. CHANGES BASED ON MANUFACTURERS PREFERENCE SHALL BE AT NO COST TO OWNER.

KEYNOTES:

1. EXACT MANIFOLD LOCATION TO BE COORDINATED WITH MANUFACTURER. REFER TO LEVEL 01 DRAWINGS FOR LOCATIONS.
2. SEE M05.01 FOR PIPING DETAILS.



1 MECHANICAL PIPING PLAN UNDER SLAB
1/8" = 1'-0"

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL PIPING PLAN UNDER SLAB

SHEET NUMBER

M05.00

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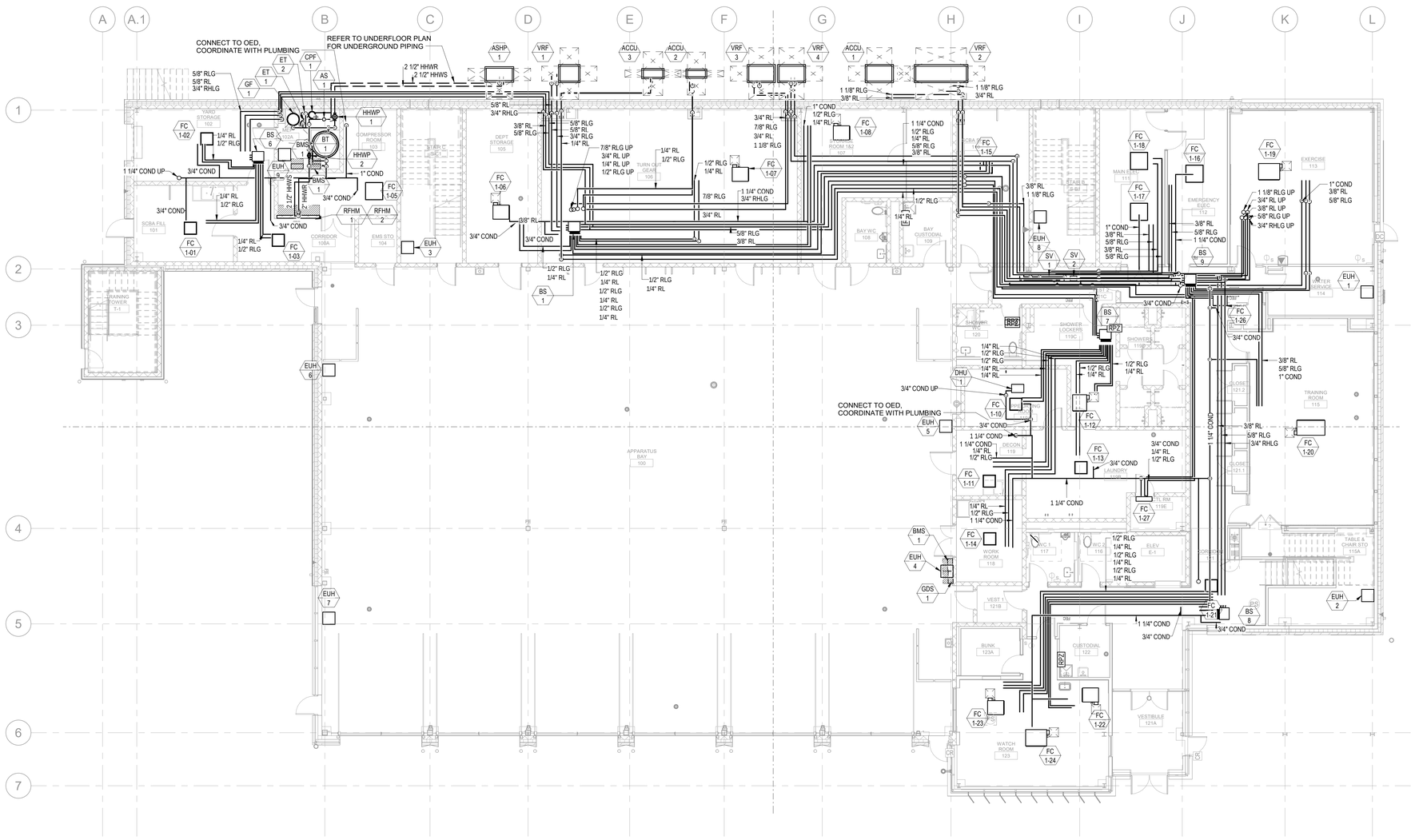
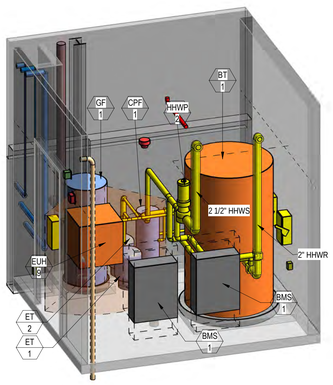
GENERAL NOTE:
1. REFRIGERANT PIPE SIZE IS SUBJECT TO CHANGE BASED ON FINAL MANUFACTURERS SELECTION. CHANGES BASED ON MANUFACTURERS PREFERENCE SHALL BE AT NO COST TO OWNER.
2. PIPE CONNECTION TO BS UNITS ARE SPACED FOR DRAWING CLARITY. CONTRACTOR TO COORDINATE SPACING AS REQUIRED.



1 MECHANICAL PIPING PLAN FIRST FLOOR
1/8" = 1'-0"



2 3D - MEP ROOM

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KEY PLAN

ISSUE CHART

MARK#	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL PIPING PLAN FIRST FLOOR

SHEET NUMBER

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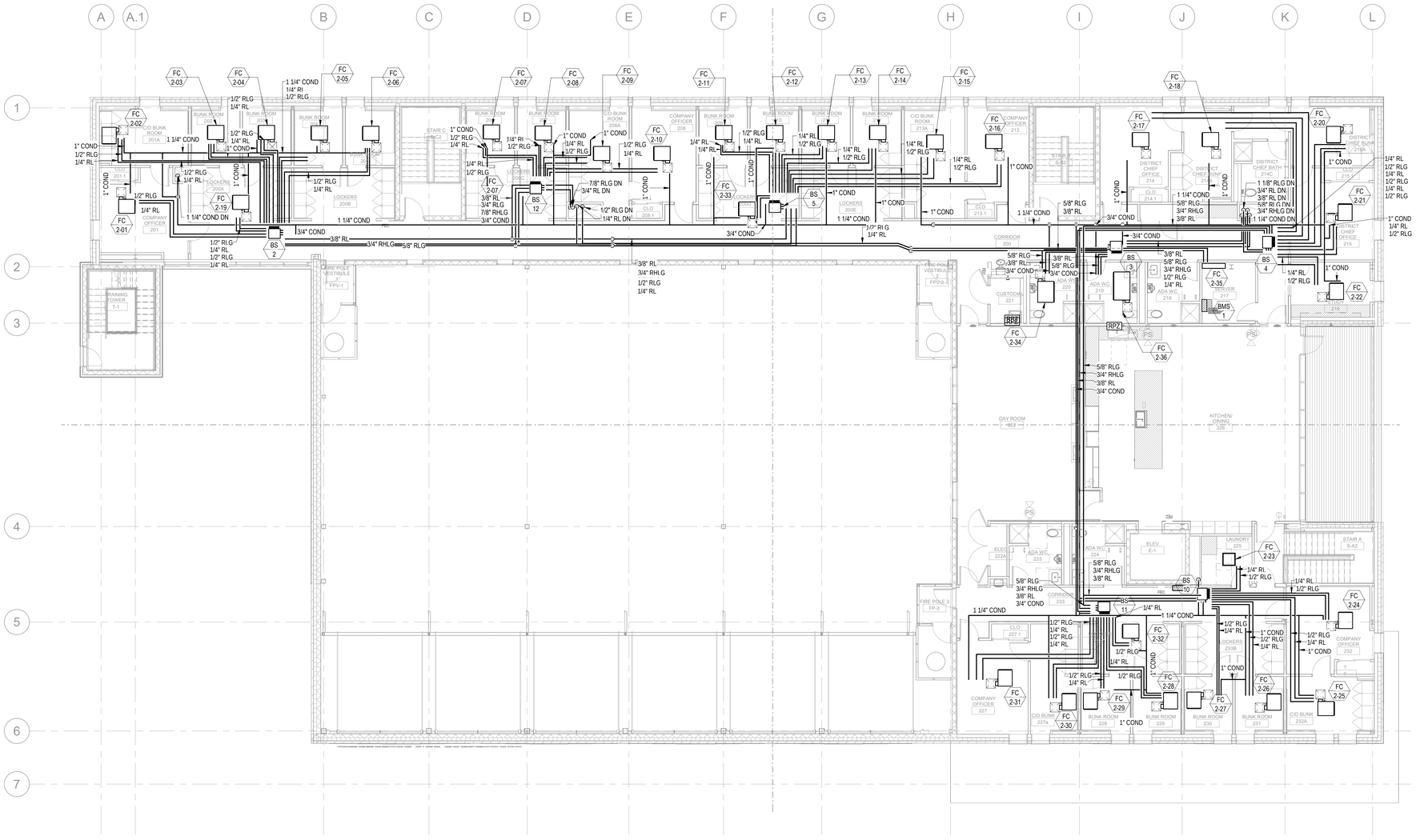
2. PIPE CONNECTION TO BS UNITS ARE SPACED FOR DRAWING CLARITY. CONTRACTOR TO COORDINATE SPACING AS REQUIRED.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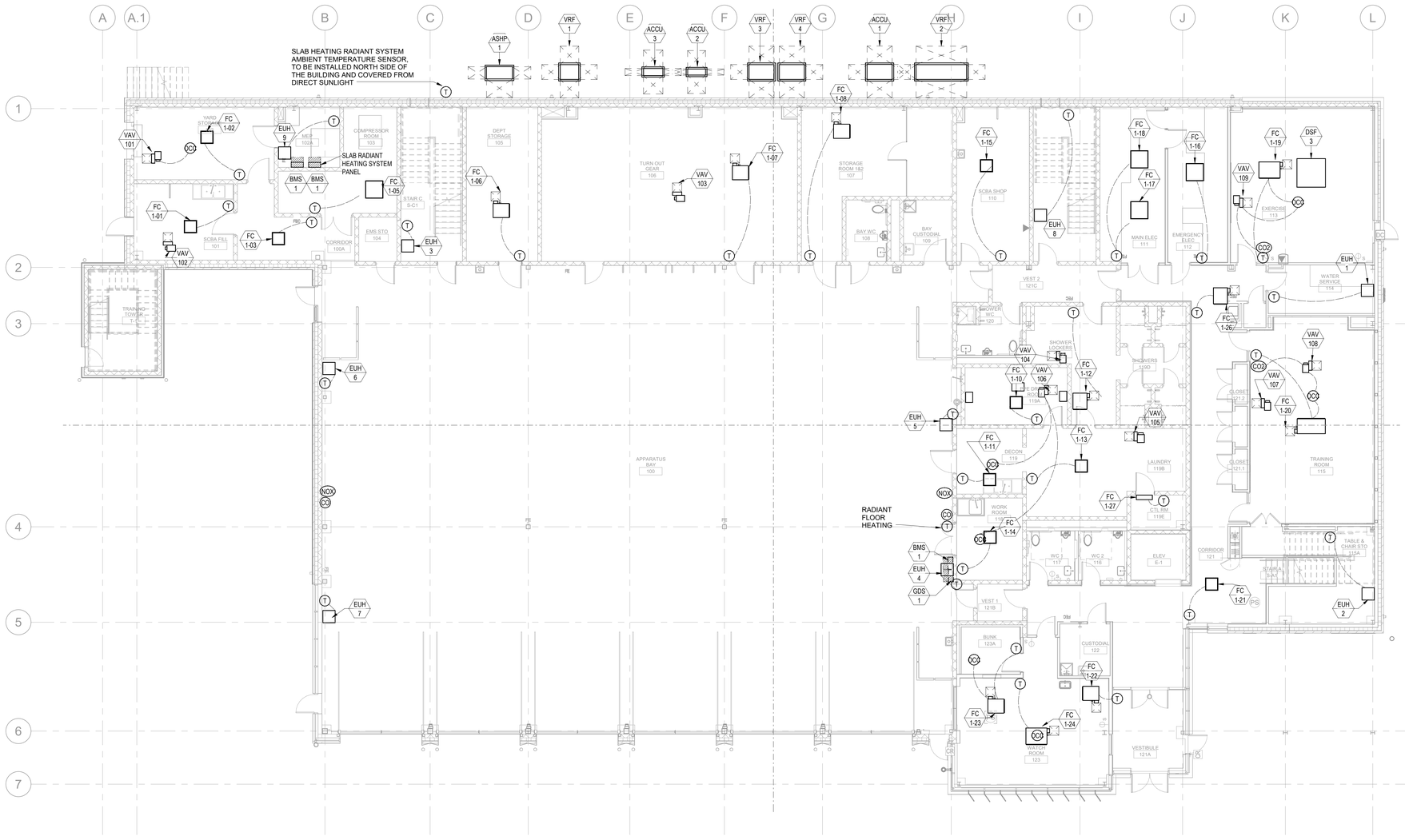
FC 2-36
BS 1
BS 2
BS 3
BS 4
BS 5
BS 10
BS 11
BS 12
BMS 1
RPZ
PS
1" COND
1 1/4" COND
1/2" RLG
1/4" RL
3/4" COND
3/8" RL
3/4" RHLG
5/8" RLG
7/8" RLG DN
3/4" RL DN
1/2" RLG DN
1/4" RL DN
1 1/8" RLG DN
1 1/4" COND DN
5/8" RLG
3/8" RL
3/4" RHLG
3/4" COND
1/2" RLG
1/4" RL
1" COND
1/2" RLG
1/4" RL
1/2" RLG
1/4" RL
1/2" RLG
1/4" RL

GENERAL NOTES:

1. OCCUPANCY SENSOR TO BE LOCATED ON THE CEILING OR ON THE WALL. SPECIFIC LOCATION TO BE COORDINATED WITH ARCHITECT.
2. EXACT HEIGHT AND LOCATION OF THERMOSTAT AND C02 SENSORS TO BE REFERENCED FROM ARCHITECT ELEVATIONS.
3. THERMOSTATS ARE NOT LOCATED ABOVE DIMMER SWITCHES.



1 MECHANICAL CONTROLS PLAN FIRST FLOOR
1/8" = 1'-0"

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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL CONTROLS PLAN FIRST FLOOR

SHEET NUMBER

M06.01

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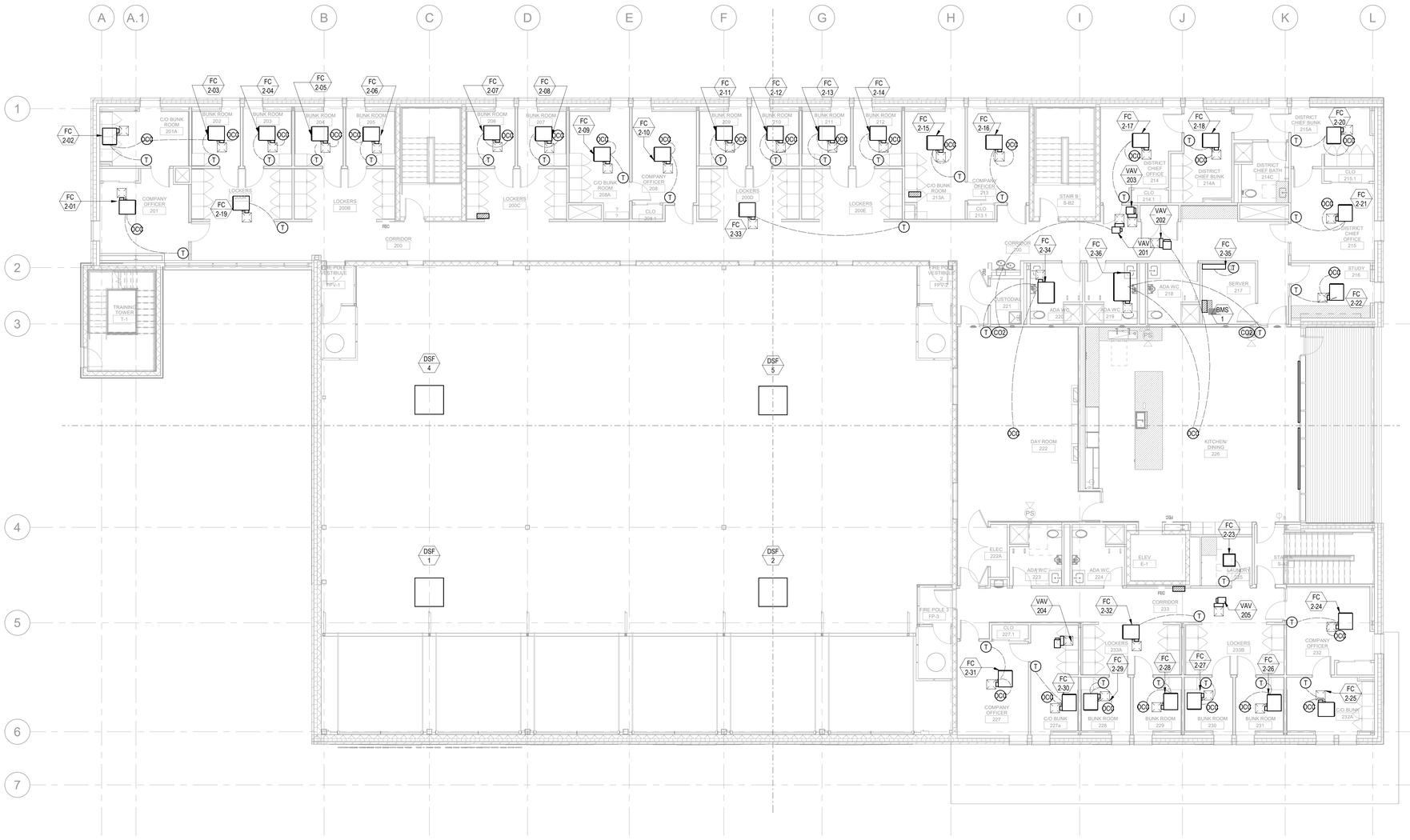

1 MECHANICAL CONTROLS PLAN SECOND FLOOR
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SHEET NUMBER

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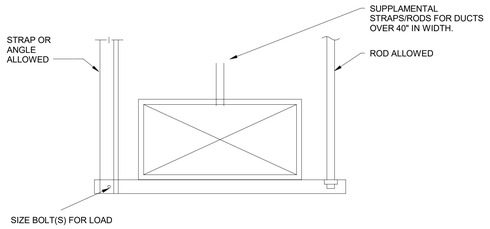
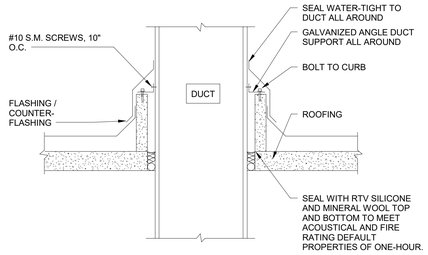


NOTES:

1. FOR HANGER SIZE AND SPACING, SEE SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
2. FOR UPPER ATTACHMENT TO BUILDING SEE SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
3. DUCT BRACING SHALL BE PROVIDED IN ACCORDANCE WITH SMACNA REQUIREMENTS.
4. MAINTAIN INSULATION AND VAPOR BARRIER INTEGRITY AT ALL SUPPORTS.

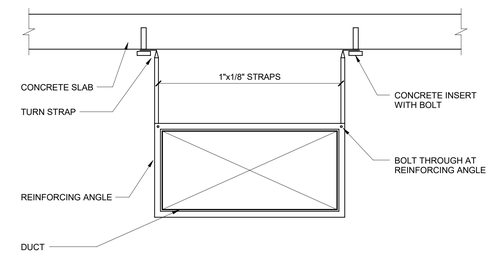
3 DUCT SUPPORT - TRAPEZE
NTS



NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR ROOFING, CURBAND FLASHING INSTALLATION.

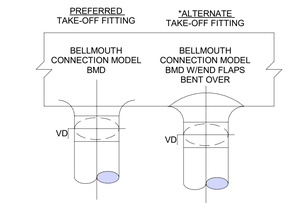
2 DUCT INSTALLATION - ROOF PENETRATION
NTS



NOTES:

1. DUCT BRACING SHALL BE PROVIDED IN ACCORDANCE WITH SMACNA REQUIREMENTS.
2. MAINTAIN VAPOR BARRIER AT ALL HANGERS AND SUPPORTS FOR INSULATED DUCTWORK.

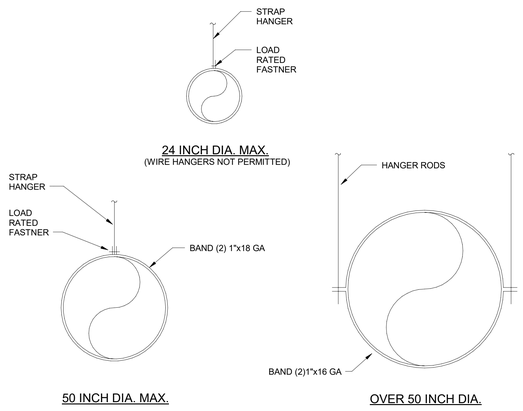
1 DUCT SUPPORT - RECTANGULAR DUCT STRAPS
NTS



NOTES:

1. ALL ROUND AND RECTANGULAR BELLMOUTH FITTINGS SHALL BE INCLUDED WITH THE FOLLOWING STANDARD FEATURES:
   A. NEOPRENE GASKET TO MINIMIZE AIR LEAKAGE.
   B. PRE-DRILLED HOLES FOR QUICK MOUNTING.
   C. LOCKING LEVER AND HAT-CHANNEL STAND-OFFS; DEPTH = INSULATION - THICKNESS + 1/2 INCH BUT NOT LESS THAN 2 INCHES DEEP. INSULATE CHANNEL VOIDS.
   D. QUADRANT VOLUME DAMPER W/ NEOPRENE GROMMET GASKET TO MINIMIZE AIR LEAKAGE AT DAMPER PIVOT POINTS, FOR TERMINAL CONNECTIONS TO DIFFUSERS. VD'S NOT REQUIRED UPSTREAM OF VAV'S.
2. ALTERNATE FITTING OPTION ONLY TO BE USED WHEN REQUIRED FOR COORDINATION.
3. REFER TO SPECIFICATIONS SECTION 233300 AIR DUCT ACCESSORIES FOR DAMPER REQUIREMENTS.

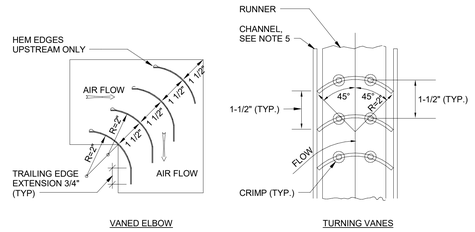
6 DUCT CONNECTION - ROUND TO ROUND
NTS



NOTES:

1. FOR HANGER SIZE AND SPACING, SEE SMACNA HVAC DUCT CONSTRUCTION STANDARDS TABLE.
2. FOR UPPER ATTACHMENT TO BUILDING SEE SMACNA HVAC DUCT CONSTRUCTION STANDARDS, WITH SPECIFIC STRUCTURAL ENGINEER APPROVAL.

5 DUCT SUPPORT - ROUND DUCT STRAPS
NTS



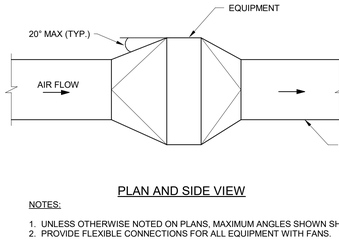
VANED ELBOW

TURNING VANES

NOTES:

1. MAXIMUM UNSUPPORTED VANE LENGTH 36"
2. VANES AND FRAMES MINIMUM 20 GUAGE
3. DUCT INLET AND OUTLET DIMENSIONS SHALL BE EQUAL
4. FRAMES AND CHANNELS - BOLTED OR TACK WELDED TO ELBOW
5. PROVIDE 16 GAUGE CHANNEL AND VANES FOR HIGH VELOCITY (>2000 FPM) APPLICATIONS.
6. VANE ARRANGEMENT "C" COEFFICIENT SHALL NOT EXCEED 0.12

4 DUCT INSTALLATION - TURNING VANES
NTS

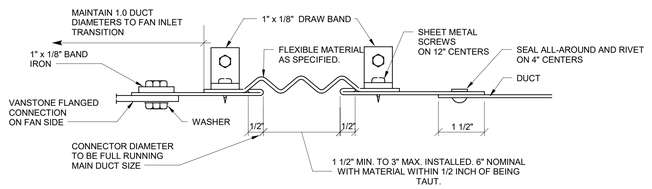


PLAN AND SIDE VIEW

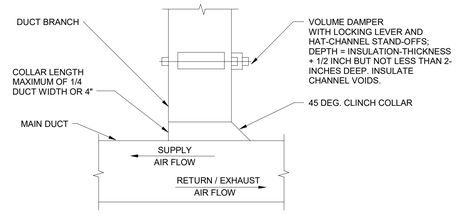
NOTES:

1. UNLESS OTHERWISE NOTED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.
2. PROVIDE FLEXIBLE CONNECTIONS FOR ALL EQUIPMENT WITH FANS.

9 DUCT CONNECTION - EQUIPMENT TRANSITION
NTS



8 DUCT CONNECTION EQUIPMENT ROUND
NTS



NOTES:

1. FURNISH THIS TYPE CONNECTION FOR BRANCHES WITH LESS THAN 25% OF THE MAIN DUCT MAXIMUM AIR FLOW.
2. QUADRANT VOLUME DAMPER W/ NEOPRENE GROMMET GASKET TO MINIMIZE AIR LEAKAGE AT DAMPER PIVOT POINTS, FOR TERMINAL CONNECTIONS TO DIFFUSERS. VD'S NOT REQUIRED UPSTREAM OF VAV'S.
3. REFER TO SPECIFICATIONS SECTION 233300 AIR DUCT ACCESSORIES FOR DAMPER REQUIREMENTS.

7 DUCT CONNECTION - RECTANGULAR TAP
NTS

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COMMONWEALTH OF MASSACHUSETTS
HILARY G. WILLIAMS
MECHANICAL NO. 55370
REGISTERED PROFESSIONAL ENGINEER
12/19/25

PROJECT

CONSTRUCTION DOCUMENTS 12/19/25

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL DETAILS

SHEET NUMBER

M08.01

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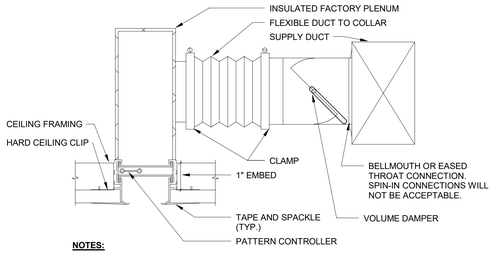
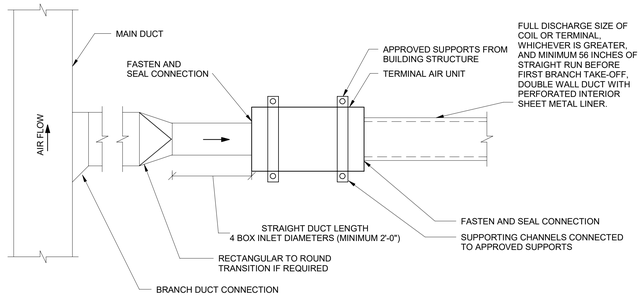


NOTES:

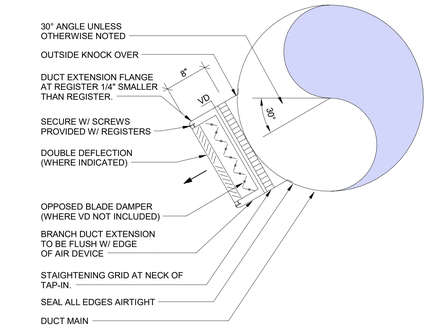
1. FLEXIBLE DUCT SAME DIAMETER AS DIFFUSER INLET, 5' MINIMUM & 6' MAXIMUM LENGTH. STRETCH FLEXIBLE DUCT TO AT LEAST 90% OF FULLY EXTENDED LENGTH.
2. SPIN-IN BRANCH TAP FITTING, STRAIGHT SIDE, WITH MANUAL DAMPER. DAMPER SHAFT IN HORIZONTAL. INTEGRAL INSULATION GUARD SLEEVE REQUIRED FOR TAP FITTING TO MAIN DUCT WITH INTERNAL INSULATION.

3 DUCT TERMINATION - LINEAR DIFFUSER
NTS

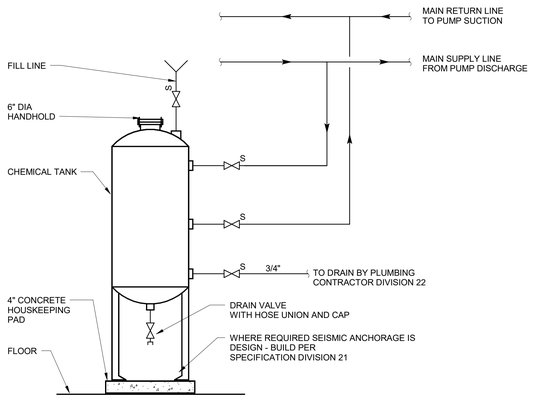


PLAN VIEW

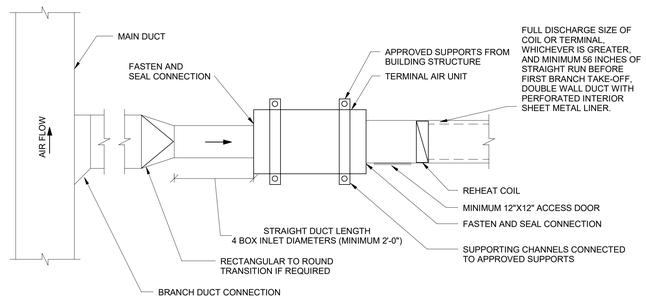
2 DUCT CONNECTION - TERMINAL AIR UNIT
NTS



1 DUCT TERMINATION - EXPOSED DIFFUSER
NTS

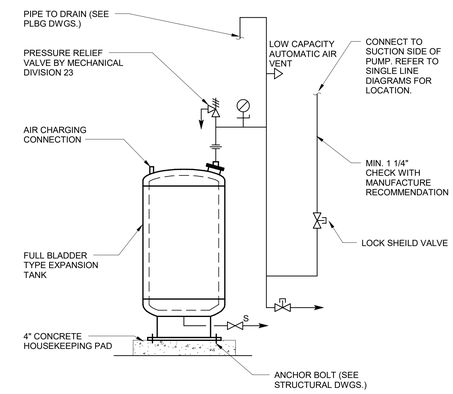


6 PIPE CONNECTION - CHEMICAL POT FEEDER
NTS

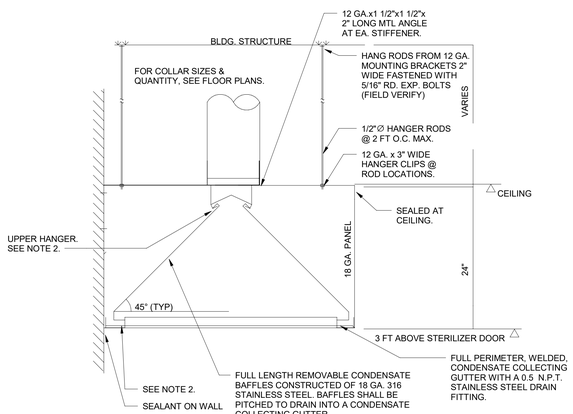


PLAN VIEW

5 DUCT CONNECTION - TERMINAL AIR UNIT WITH REHEAT COIL
NTS

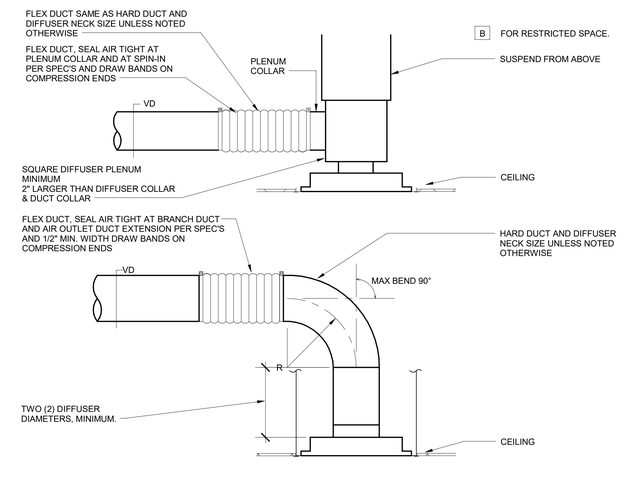


4 PIPE CONNECTION - EXPANSION TANK - VERTICAL
NTS



NOTES:
1. ALL COMPONENTS TO BE CONSTRUCTED OF WELDED 316L STAINLESS STEEL.
2. THE CONDENSATE BAFFLES MUST HOOK ONTO THE UPPER HANGER AND REST IN THE CONDENSATE GUTTER FOR PROPER OPERATION.

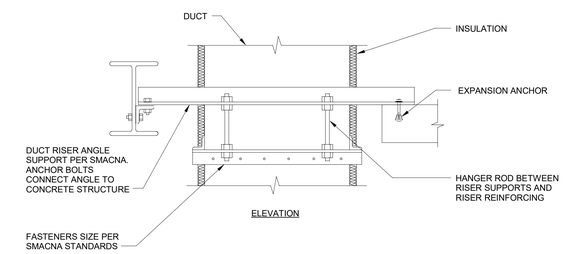
9 DUCT CONNECTION - TYPE II HOOD
NTS



NOTES:

1. FLEXIBLE DUCT SAME DIAMETER AS DIFFUSER INLET, 5' MINIMUM & 6' MAXIMUM LENGTH. STRETCH FLEXIBLE DUCT TO AT LEAST 90% OF FULLY EXTENDED LENGTH.
2. MINIMUM RADIUS OF FLEX DUCT TO BE R=D/2

8 DUCT TERMINATION - CEILING DIFFUSER
NTS



NOTES:

1. INTERMEDIATE SUPPORTS AS REQUIRED BY CODE AND AS RECOMMENDED BY SMACNA.
2. SIZE COMPONENTS TO CONFORM WITH REQUIREMENTS OF SPEC. AND SMACNA.
3. FOR ROUND RISERS, USE CLAMPS PER SMACNA.
4. DETAIL FOR REFERENCE ONLY. CONTRACTOR TO DESIGN AND SUPPLY SUPPORT SYSTEM.

7 DUCT INSTALLATION - RISER SUPPORT
NTS

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25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL DETAILS

SHEET NUMBER

M08.02

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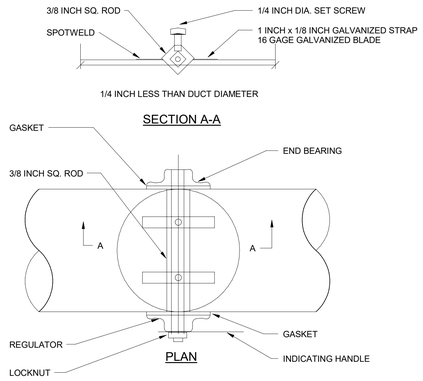
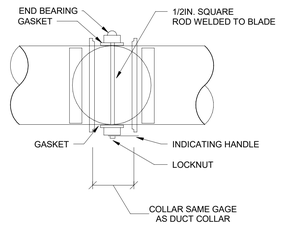
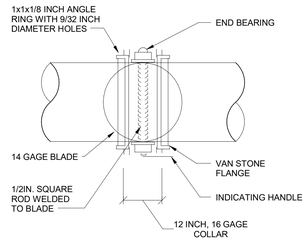


SIZE UP TO 14 INCH DIAMETER

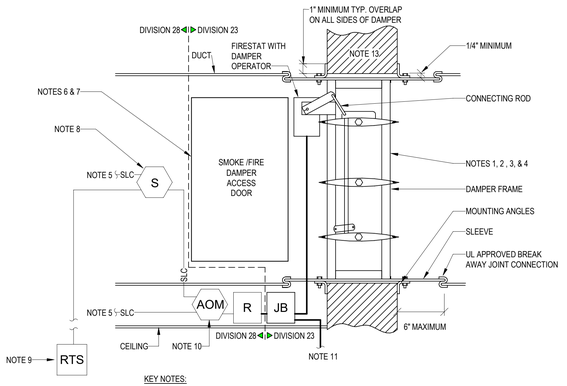


SIZE 15 INCH TO 20 INCH DIAMETER



SIZE 21 INCH TO 28 INCH DIAMETER

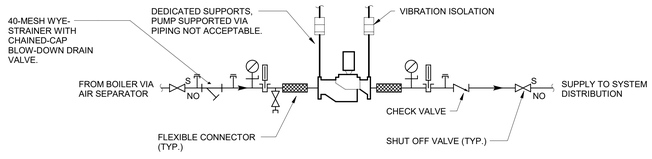
2 MANUAL VOLUME DAMPER
NTS



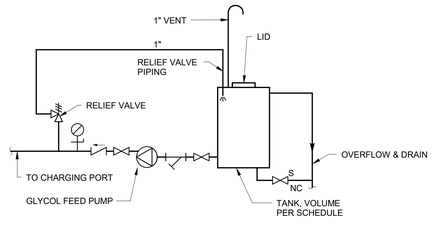
KEY NOTES:

1. COMBINATION FIRE/SMOKE DAMPER BY DIVISION 23. INSTALL THE DAMPER IN THE PLANE OF THE RATED PARTITION. FIRE/SMOKE DAMPER SHALL BE RATED TO MAINTAIN THE RATING OF THE FIRE SEPARATION. FUSIBLE LINK TO BE RATED FOR 50 PERCENT ABOVE MAXIMUM OPERATING TEMPERATURE OF AIRFLOW OF THE SYSTEM.
2. FIRE/SMOKE DAMPER TO BE UL LISTED, IBC, IMC, NFPA AND STATE FIRE MARSHAL APPROVED.
3. FIRE/SMOKE DAMPER INSTALLATION SHALL MEET ALL MANUFACTURER AND CODE REQUIREMENTS (IMC, NFPA, LOCAL AND STATE AMENDMENTS, ETC.). MANUFACTURERS INSTALLATION INSTRUCTIONS SHALL BE MADE AVAILABLE TO THE INSPECTING AUTHORITIES.
4. REFER TO SPECIFICATION SECTION 233300 AIR DUCT ACCESSORIES FOR ADDITIONAL REQUIREMENTS (END SWITCHES, POSITION SWITCH FOR REMOTE OPERATION, ETC.).
5. TO/FROM FIRE ALARM CLASS X, SLC CIRCUIT SERVING THIS AREA
6. LOCATE ACCESS DOOR FOR BEST ACCESS TO LINK AND DUCT SMOKE DETECTOR. PROVIDE MULTIPLE DOORS AS NECESSARY. PROVIDE FIRE RATED DOORS WHERE REQUIRED. COORDINATE FINAL SIZES AND LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
7. ACCESS DOOR MINIMUM SIZE SHALL BE 1" SMALLER THAN DUCT HEIGHT, 12" MIN. LENGTH W/ ACCESS DOOR LABEL. ACCESS PANELS SHALL BE PERMANENTLY IDENTIFIED ON THE EXTERIOR BY A LABEL WITH LETTERS NOT LESS THAN 1/2" IN HEIGHT "FIRE DAMPER" OR SMOKE/FIRE DAMPER" PER IMC.
8. DIVISION 28 TO PROVIDE DUCT SMOKE DETECTOR TO BE LOCATED AND INSTALLED BY DIVISION 23 WITHIN FIVE FEET OF FSD IN ACCORDANCE W/ CODE REQUIREMENTS AND MANUFACTURERS APPROVED LISTING. SAMPLING TUBES SHALL EXTEND THE FULL WIDTH OF THE DUCT REGARDLESS OF DUCT WIDTH. DIVISION 23 SHALL DOCUMENT PRESSURE DIFFERENTIAL MEASUREMENTS FOR ALL DUCT SMOKE DETECTORS.
9. DIVISION 28 TO PROVIDE, INSTALL, AND CONNECT REMOTE TEST SWITCH/INDICATOR LIGHT FOR DUCT SMOKE DETECTOR LOCATED ABOVE THE CEILING. COORDINATE FINAL HEIGHTS AND LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
10. DIVISION 28 TO PROVIDE AND INSTALL THE CONTROL MODULE IN ACCORDANCE WITH CODE REQUIREMENTS AND MANUFACTURERS APPROVED LISTING.
11. DIVISION 23 TO WIRE TO 120V JUNCTION BOX (BRANCH CIRCUIT PROVIDED BY DIVISION 26) FROM DAMPER VIA CONTACTS ON RIB RELAY. DIVISION 28 TO WIRE FROM RIB RELAY TO CONTROL MODULE TO ACTUATE DAMPER CLOSED.
12. DIVISION 28 TO PROVIDE INTERPOSING RELAY SIZED AS NECESSARY TO MEET THE POWER RATING REQUIREMENTS OF THE DAMPER. COORDINATE REQUIREMENTS WITH DIVISION 23. DIVISION 28 TO PROVIDE 24V POWER AS NECESSARY TO ACTUATE INTERPOSING RELAY.
13. RATED SHAFT ENCLOSURE OR FIRE SMOKE BARRIER.
14. REFER TO FIRE ALARM SEQUENCE OF OPERATIONS FOR PROGRAMMING REQUIREMENTS FOR THE FIRE ALARM SYSTEM AND FIRE SMOKE DAMPER OPERATIONS.
15. PROVIDE UL LISTED & FM APPROVED FIRESTOPPING FOR PENETRATIONS THROUGH RATED ASSEMBLIES IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND CODE REQUIREMENTS.

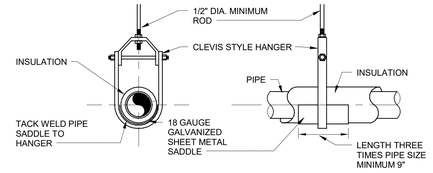
1 FIRE AND SMOKE DAMPER
NTS



4 PIPE CONNECTION - INLINE PUMP
NTS

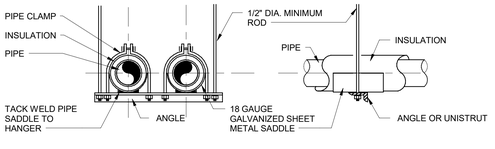


3 GLYCOL FEED SYSTEM
NTS



SINGLE PIPE

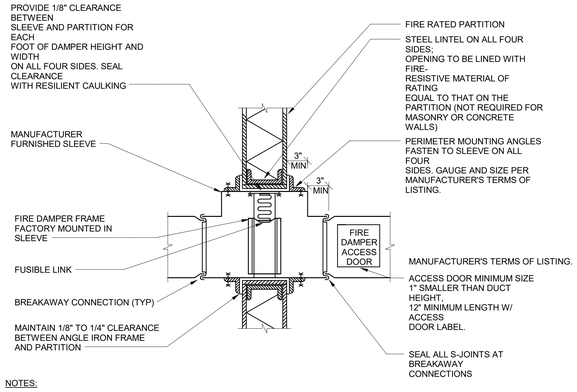
STEEL ROD SIZING SCHEDULE	
PIPE, IPS	ROD
TO 2 IN.	1/2 IN.
2-1/2 IN. & 3 IN.	1/2 IN.
4 IN.	5/8 IN.
6 IN.	3/4 IN.



TWO OR MORE PIPES

PIPE SUPPORT SPACING SCHEDULE		
TYPE OF PIPE	SIZE	MAX. SPACING
STEEL	1-1/2" AND SMALLER	7 FT.
	2" AND LARGER	10 FT.
BRASS OR COPPER	3/4" AND SMALLER	5 FT.
	1" TO 1-1/4"	6 FT.
	1-1/2" TO 3"	7 FT.
	4" AND LARGER	10 FT.

6 HANGER - PIPE
NTS



NOTES:

1. FIRE DAMPER TO BE UL LABELED, NFPA 90
2. INSTALLATION DETAILS SHALL MEET NFPA 90A
3. FIRE DAMPER DETAIL SHOWN IS FOR REFERENCE ONLY. FIRE DAMPER SHALL BE STATE FIRE MARSHAL APPROVED AND INSTALLED STRICTLY PER MANUFACTURERS PRINTED INSTRUCTIONS. MANUFACTURERS INSTALLATION INSTRUCTIONS SHALL BE MADE AVAILABLE TO THE INSPECTING AUTHORITIES.
3. LOCATE ACCESS DOOR FOR BEST ACCESS TO LINK.
4. FUSIBLE LINK TO BE RATED FOR 165°F. MINIMUM
5. FIRE DAMPER SHALL BE CALIFORNIA STATE FIRE MARSHAL LISTING.
7. ACCESS POINTS (PANELS) SHALL BE PERMANENTLY IDENTIFIED ON THE EXTERIOR BY A LABEL WITH LETTERS NOT LESS THAN 1/2 INCH IN HEIGHT "FIRE DAMPER" OR SMOKE/FIRE DAMPER" PER CMC.

5 DAMPER - FIRE
NTS

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25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL DETAILS

SHEET NUMBER

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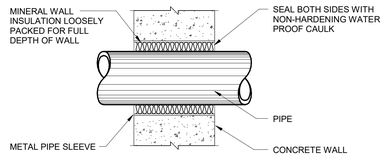
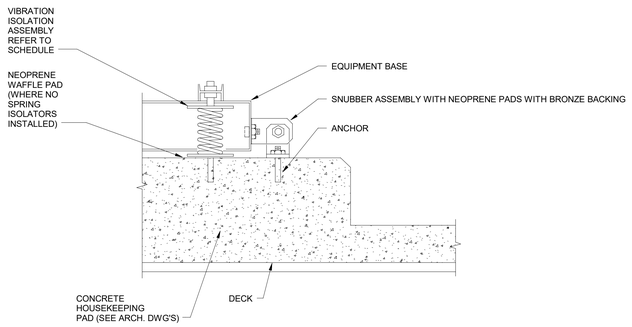
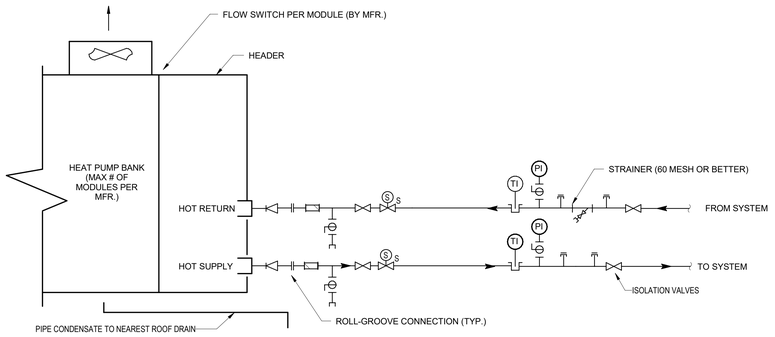


3 PIPE PENETRATION THROUGH CONCRETE WALL
NTS



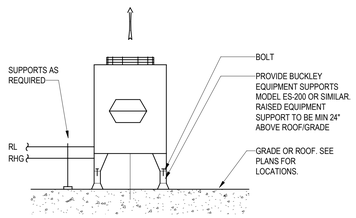
NOTES:
1. DETAIL FOR REFERENCE ONLY.
2. SEE EQUIPMENT ANCHORAGE DETAIL FOR MORE INFORMATION ON ANCHOR SIZES AND DIMENSIONS.

2 EQUIPMENT INSTALLATION - EQUIPMENT ON CURB
NTS



NOTES:
1. PIPE SIZES AS SHOWN ON PLANS, REDUCE ONLY FOR VALVE CONNECTIONS AND CONTROLS.
2. PROVIDE FLEXIBLE CONNECTIONS TO FACILITATE EQUIPMENT REMOVAL AND REPLACEMENT
3. FULLY INSULATE PIPE
4. SHOULD MANUFACTURER BE UNABLE TO PROVIDE INTERNAL HEAD PRESSURE CONTROL VALVES, PROVIDE EXTERNAL 3-WAY VALVE.

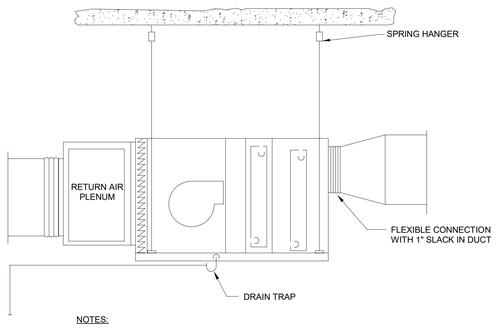
1 MODULAR AIR SOURCE HEAT PUMP 2-PIPE UNIT DETAIL
NTS



NOTES

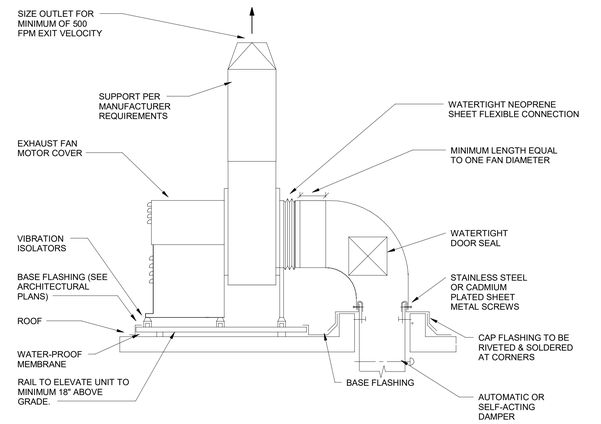
1. PROVIDE MINIMUM OF 6'-0" CLEARANCE AROUND CONDENSING UNIT.
2. USE 4" MIN. RADIUS AT ALL PIPE BENDS.
3. FOR PIPE PENETRATIONS SEE DETAILS SERIES DRAWINGS.
4. PROVIDE VIBRATION ISOLATION AS NOTED IN MECHANICAL SCHEDULE.

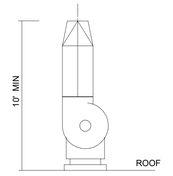
6 AIR-COOLED CONDENSING UNIT
NTS



NOTES:
1. OVERFLOW SENSOR TO BE LOCATED IN PRIMARY DRAIN. SENSOR SHALL DEACTIVATE FCU AND RAISE AN ALARM UPON DETECTION OF MOISTURE.
2. FANS SHALL NOT HAVE INTERNAL VIBRATION ISOLATION. INTERNAL VIBRATION ISOLATION SHALL BE FIXED RIGID.
3. COORDINATE FILTER ACCESS (SIDE/BOTTOM) WITH RCP TO ENSURE FILTER CAN BE REMOVED WITHOUT CUTTING.

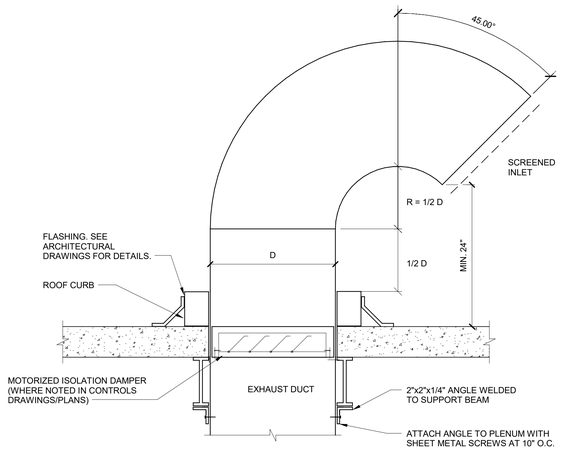
5 EQUIPMENT INSTALLATION - FCU
NTS





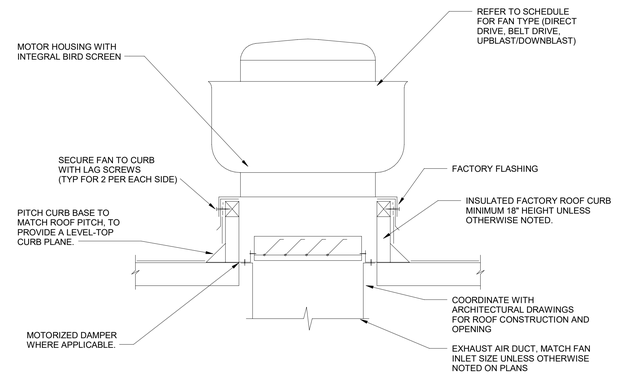
FAN DISCHARGE DETAIL

4 ROOF MOUNTED UTILITY FAN
NTS



NOTES:
1. FABRICATE IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT CONSTRUCTION STANDARDS OF MINIMUM 18 GAGE GALVANIZED STEEL.
2. MOUNT ON MINIMUM 12 INCH HIGH CURB BASE WHERE SIZE EXCEEDS 9" X 9".
3. ANGLE OF OPENING SHALL BE NO GREATER THAN 45° FROM THE HORIZONTAL.

8 DUCT TERMINATION - GOOSENECK
NTS



7 ROOFTOP EXHAUST FAN
NTS

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COMMONWEALTH OF MASSACHUSETTS
HILARY G. WILLIAMS
MECHANICAL NO. 55370
REGISTERED PROFESSIONAL ENGINEER
12/19/25

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL DETAILS

SHEET NUMBER

M08.04

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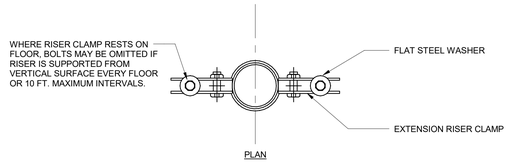
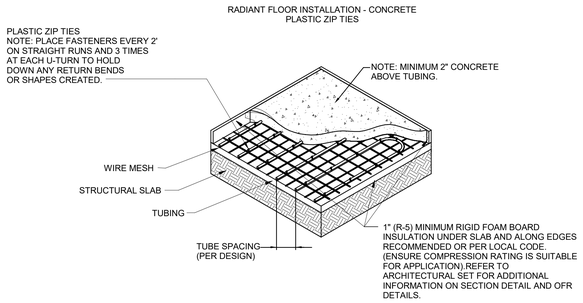


NOTES:

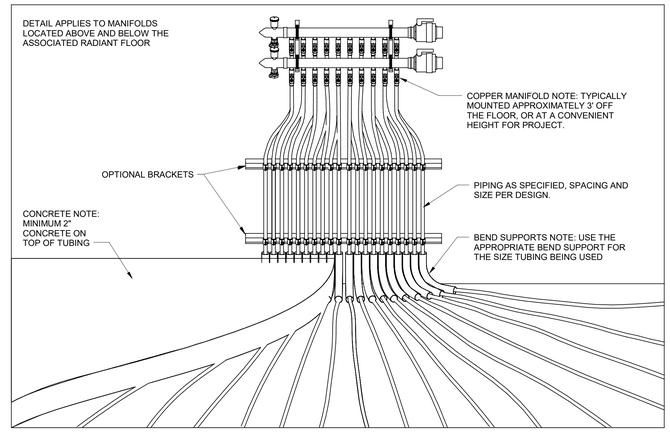
1. FOR HOLD DOWN DETAILS, REFER TO SPECIFICATION
2. SUBMIT STAMPED CALCULATIONS FOR SUPPORT SIZING
3. MAINTAIN VAPOR BARRIER AT ALL SUPPORTS WHERE REQUIRED BY SPECIFICATION.

BOLT SIZE	EMBEDMENT DEPTH	PIPE SIZE
1/4"	2"	UP TO 1-1/2"
3/8"	2-1/2"	2" TO 4"
1/2"	3-1/2"	5" AND LARGER

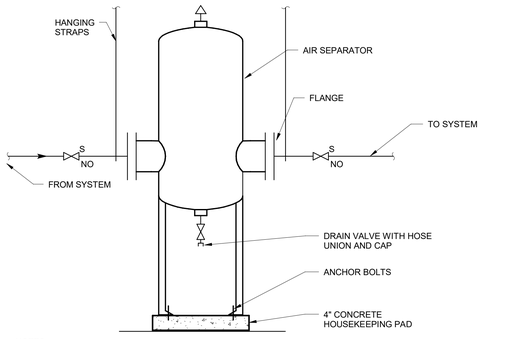
3 PIPE RISER SUPPORT
NTS



2 RADIANT FLOOR- CONCRETE ZIP TIES
NTS



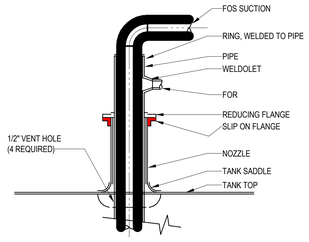
1 RADIANT FLOORING MANIFOLD DETAIL
NTS



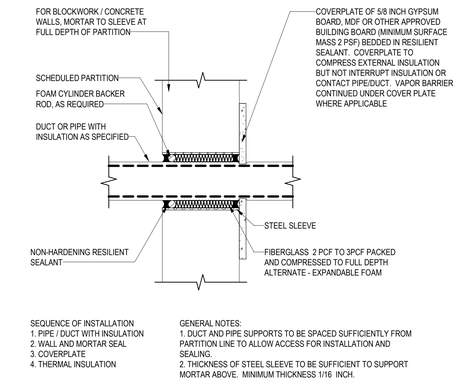
NOTES:

1. INSTALL AIR SEPARATOR AT POINT OF LOWEST SOLUBILITY (HIGHEST TEMPERATURE WATER, & LOWEST PRESSURE).
2. INSTALL PERFECTLY UPRIGHT, IN A STRAIGHT RUN OF HORIZONTAL PIPING.
3. INSTALL PIPE HANGERS AS CLOSE TO PIPE CONNECTIONS AS POSSIBLE.
4. STANDS REQUIRED FOR UNITS LARGER THAN 12", STRAPS APPLY TO ALL UNITS 10" AND LESS, REFER TO MANUFACTURER'S INSTRUCTION FOR PROPER SUPPORT OF SEPARATOR.

6 PIPE CONNECTION - AIR SEPARATOR
NTS



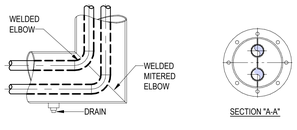
5 CONNECTION TO SUCTION AND RETURN BELL IN FUEL OIL TANK
NTS

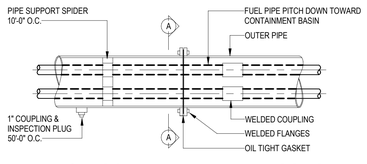


SEQUENCE OF INSTALLATION
1. PIPE / DUCT WITH INSULATION
2. WALL AND MORTAR SEAL
3. COVERPLATE
4. THERMAL INSULATION

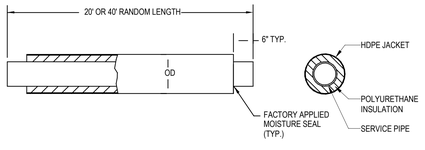
GENERAL NOTES:
1. DUCT AND PIPE SUPPORTS TO BE SPACED SUFFICIENTLY FROM PARTITION LINE TO ALLOW ACCESS FOR INSTALLATION AND SEALING.
2. THICKNESS OF STEEL SLEEVE TO BE SUFFICIENT TO SUPPORT MORTAR ABOVE. MINIMUM THICKNESS 1/16 INCH.

4 DUCT AND PIPE PENETRATION - MULTIPLE
NTS





8 FUEL OIL CONTAINMENT PIPE CONSTRUCTION
NTS



XTRU-THERM CROSS SECTION					
SECTION	MANUFACT. & MODEL #	INSULATION THICKNESS	HDPE JACKET		SERVICE
	PERMA - PIPE		NOMINAL OD	THICKNESS	
10"	STD.WT. A53B, ERW	1"	14"	0.150"	CHW S/R

KEY NOTES:

1. FOR 2" AND SMALLER PIPE: SQUARE ENDS
2. FOR 2 1/2" AND LARGER PIPE: BEVELED ENDS

7 TYPICAL UNDERGROUND CHW, HHW, PCR PIPES
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CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

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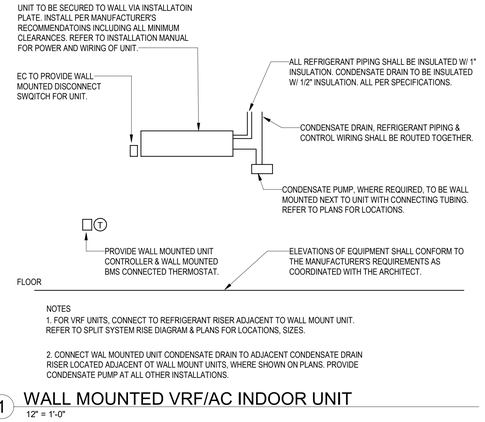


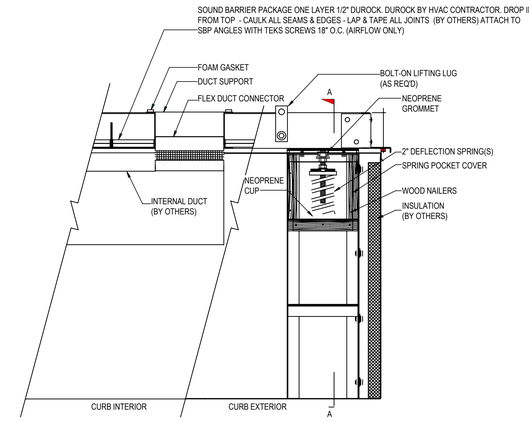
NOTES

1. FOR VRF UNITS, CONNECT TO REFRIGERANT RISER ADJACENT TO WALL MOUNT UNIT. REFER TO SPLIT SYSTEM RISE DIAGRAM & PLANS FOR LOCATIONS, SIZES.

2. CONNECT WAL MOUNTED UNIT CONDENSATE DRAIN TO ADJACENT CONDENSATE DRAIN RISER LOCATED ADJACENT OT WALL MOUNT UNITS, WHERE SHOWN ON PLANS. PROVIDE CONDENSATE PUMP AT ALL OTHER INSTALLATIONS.

1 WALL MOUNTED VRF/AC INDOOR UNIT

1/2" = 1'-0"



KEY NOTES:

1. PROVIDE INSULATED PLENUM CURBS FOR DOAS UNIT AND HRV.

2 AHU CURB DETAIL

1/2" = 1'-0"

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CITY OF WORCESTER

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SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FAN - CENTRIFUGAL		THERMOWELL
	FAN - AXIAL		AVERAGING ELEMENT
	FAN - PLENUM / PLUG		VALVE - 2 WAY
	PUMP		VALVE - 3 WAY
	FILTER - PLEATED	M	ACTUATOR - MOTOR
	FILTER - BAG		ACTUATOR - DIAPHRARM
	FILTER - CARBON		ACTUATOR - PISTON
H C	COIL - HEATING		DAMPER
C C	COIL - COOLING		DAMPER - FIRE/SMOKE
P C	COIL - PREHEATING		MANUAL SWITCH
R C	COIL - REHEATING		HORN / STROBE
	HUMIDIFIER		STROBE
VFD	VARIABLE FRQUENCY DRIVE		PANIC BUTTON
	MOTOR STARTER		UNDERFLOOR TEMPERATURE SENSOR
XXX	PANEL (SEE ABBREVIATIONS)	XX YY	EQUIPMENT TAG XX - DEVICE TYPE YY - DEVICE NUMBER
		TT 01	BMS DEVICE TT - DEVICE TYPE 01 - DEVICE NUMBER
		PT 02	NON-BMS DEVICE PT - DEVICE TYPE 02 - DEVICE NUMBER
			LOCAL HARD WIRED CONNECTION
			IP COMMUNICATIONS CAT-5E/6/6A IN SUPPORT OF BACNET / IP, BACNET SC, MODBUS / TCPIP
			SERIAL COMMUNICATIONS RS-485, RS-232 IN SUPPORT OF BACNET / MSTP, MODBUS / RTU
			IP COMMUNICATIONS FIBER IN SUPPORT OF BACNET / IP, BACNET SC, MODBUS / TCP

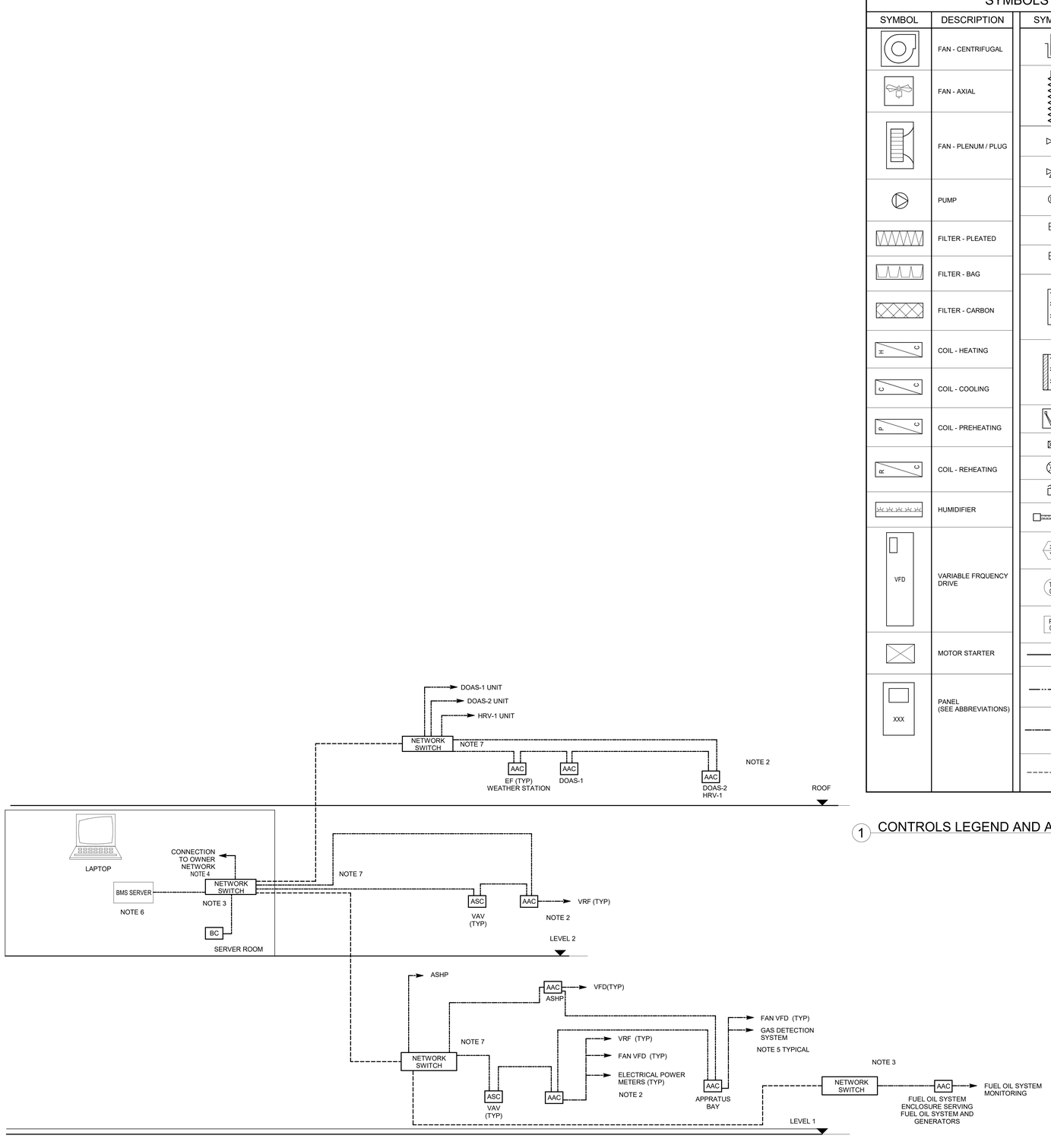
ABBREVIATIONS

SYMBOL	DESCRIPTION
A	AQUASTAT
AAC	ADVANCED APPLICATION CONTROLLER
AC	ALARM CONTACT
AFS	AIR FLOW SWITCH
AFT	AIR FLOW TRANSMITTER
AHU	AIR-HANDLING UNIT
AI	ANALOG INPUT
AO	ANALOG OUTPUT
AS	AIR SEPERATOR
ASC	APPLICATION SPECIFIC CONTROLLER
BC	BUILDING CONTROLLER
BCP	BOILER CONTROL PANEL
BMS	BUILDING MANAGEMENT SYSTEM
CA	COMMON ALARM
CCP	CHILLER CONTROL PANEL
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CO2	CARBON DIOXIDE
CP	CONTROL PANEL
CPF	CHEMICAL POT FEEDER
CRAC	COMPUTER ROOM A/C UNIT
CS	CURRENT SENSOR
DC	DRY COOLER
DDCP	DIRECT DIGITAL CONTROL PANEL
DES	DAMPER END SWITCH
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
DRS	DAMPER RESET SWITCH
EF	EXHAUST FAN
EFSO	EMERGENCY FUEL SHUT OFF SYSTEM
EGCP	EMERGENCY GENERATOR CONTROL PANEL
ET	EXPANSION TANK
FAS	FIRE ALARM SYSTEM
FBK	FEEDBACK
FCU	FAN COIL UNIT
FLP	FAIL LAST POSITION
FLSS	FIRE AND LIFE SAFETY STSTEM
FLT	FAULT
FMS	FACILITY MANAGEMENT SYSTEM
FMS	FLOW MEASURING STATION
FS	FLOW SWITCH
FSC	FAN START CIRCUIT
FSD	FIRE SMOKE DAMPER
FT	FLOW TRANSMITTER
FOCP	FUEL OIL CONTROL PANEL
FZ	FREEZE PROTECTION DEVICE (FREEZESTAT)
GCP	GENERATOR CONTROL PANEL
GWR	GLYCOL WATER RETURN
GWS	GLYCOL WATER SUPPLY
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HT	HUMIDITY TRANSMITTER
HX	HEAT EXCHANGER
IMH	IMMERSION HEATER
I/P	INTERNET PROTOCOL
LS	LEAK SENSOR
MIV	MOTORIZED ISOLATION VALVE
NIC	NETWORK INTERFACE CONTROLLER
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
P	PUMP
PCD	PRESSURE CONTROL DAMPER
PCV	PRESSURE CONTROL VALVE
PDS	PRESSURE DIFFERENTIAL SWITCH

ABBREVIATIONS

SYMBOL	DESCRIPTION
PI	PRESSURE INDICATOR
PSH	PRESSURE SWITCH HIGH
PSL	PRESSURE SWITCH LOW
PT	PRESSURE TRANSMITTER
RFL	RESETTABLE FUSIBLE LINK
SCD	SMOKE CONTROL DAMPER
SD	SMOKE DETECTOR
ST	STATUS
SW	SWITCH
TCD	TEMPERATURE CONTROL DAMPER
TCV	TEMPERATURE CONTROL VALVE
TF	TRANSFER FAN
THL	TEMPERATURE HIGH LIMIT
TSD	TOUCH SCREEN DISPLAY
TT	TEMPERATURE TRANSMITTER
UPS	UNINTERRUPTIBLE POWER SUPPLY
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME
VES	VALVE END SWITCH
VFD	VARIABLE FREQUENCY DRIVE

1 CONTROLS LEGEND AND ABBREVIATIONS



NOTES:
1. CONTRACTOR TO PROVIDE ALL WIRING INCLUSIVE OF NETWORK SWITCHES.
2. EQUIPMENT INTEGRATION TYPICAL- COORDINATE INTEGRATION PROTOCOLS WITH APPROVED EQUIPMENT SUBMITTALS.
3. LOCATE NETWORK SWITCH WITHIN NEAREST BMS PANEL.
4. COORDINATE WITH OWNER'S IT.
5. REFER TO MECHANICAL AND ELECTRICAL PLANS FOR PANEL LOCATIONS.
6. REFER TO SPECIFICATION FOR RACK INSTALLATION OF BMS SERVER.
7. CONTRACTOR TO IMPLEMENT LOOP NETWORK ARCHITECTURE WITH RAPID SPANNING TREE PROTOCOL (RSTP); CONTRACTOR TO PROVIDE ALL HARDWARE, SOFTWARE AND ASSOCIATED NETWORK SWITCH CAPABILITIES TO SUPPORT RSTP.

2 CONTROLS SYSTEM ARCHITECTURE

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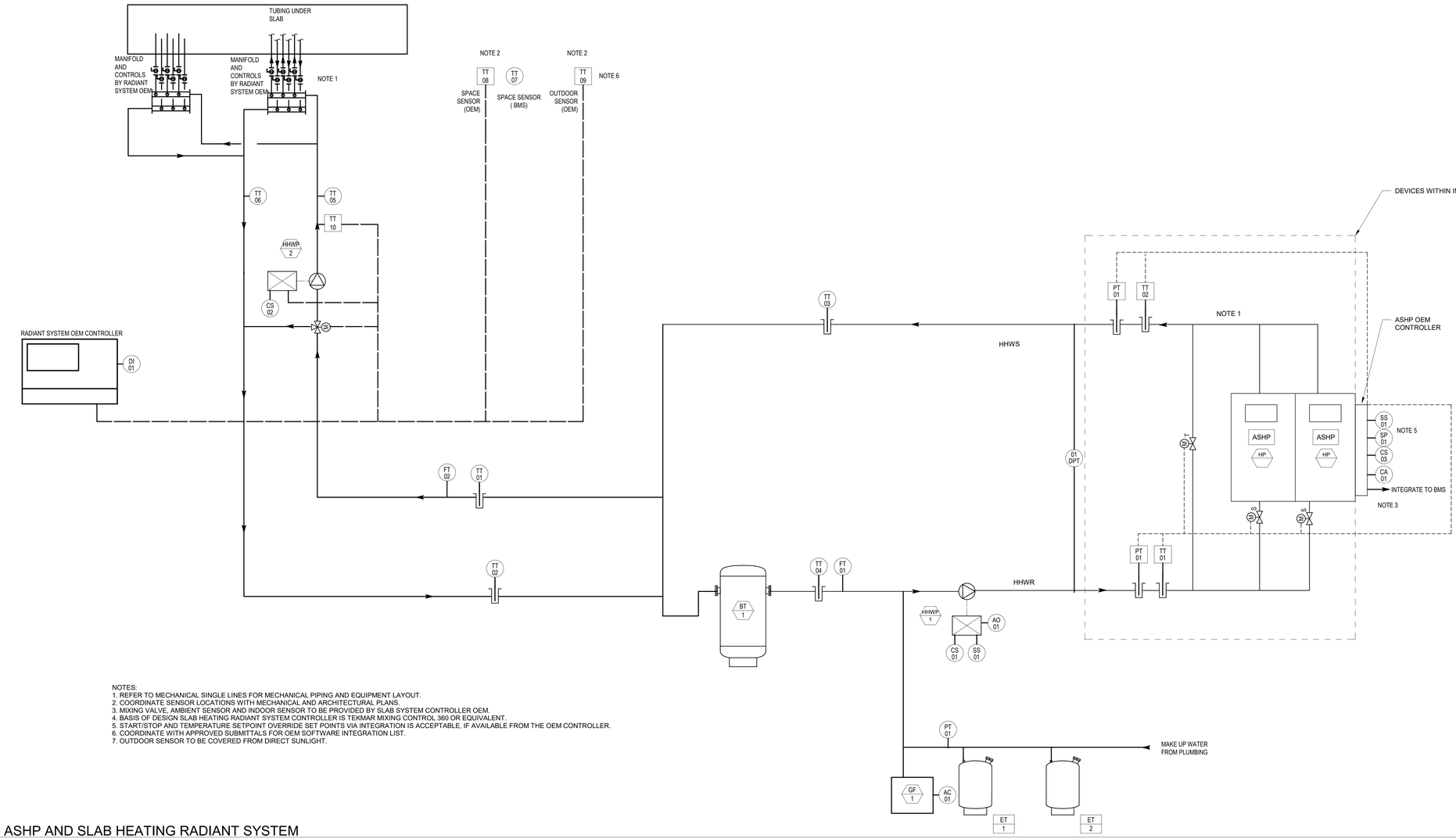
M09.01 INSTRUMENTATION AND INPUT-OUTPUT LIST

POINT TYPE	ITEM TYPE	ITEM NO.	DESCRIPTION	NOTES
ASHP AND SLAB HEATING RADIANT SYSTEM				
AI	DPT	01	DIFFERENTIAL PRESSURE TRANSMITTER	ASHP
AI	FT	01	FLOW TRANSMITTER	ASHP
AI	FT	02	FLOW TRANSMITTER	RADIANT SYSTEM
AI	PT	01	PRESSURE TRANSMITTER	EXPANSION TANK
AI	TT	01	TEMPERATURE TRANSMITTER	SUPPLY TO RADIANT SYSTEM
AI	TT	02	TEMPERATURE TRANSMITTER	RETURN FROM RADIANT SYSTEM
AI	TT	03	TEMPERATURE TRANSMITTER	SUPPLY FROM ASHP
AI	TT	04	TEMPERATURE TRANSMITTER	RETURN TO ASHP
AI	TT	05	TEMPERATURE TRANSMITTER	RADIANT SYSTEM (TO MANIFOLDS)
AI	TT	06	TEMPERATURE TRANSMITTER	RADIANT SYSTEM (FROM MANIFOLDS)
AI	TT	07	TEMPERATURE TRANSMITTER	BMS SPACE SENSOR
AO	AO	01	ANALOG OUTPUT	HHWP 1
AO	SP	01	SETPOINT	ASHP OEM CONTROLLER
DI	AC	01	ALARM CONTACT	GLYCOL FEEDER ALARM
DI	CA	01	COMMON ALARM	ASHP OEM CONTROLLER
DI	CS	01	CURRENT SENSOR	HHWP 1
DI	CS	02	CURRENT SENSOR	HHWP 2
DI	CS	03	CURRENT SENSOR	ASHP OEM CONTROLLER
DI	DI	01	DIGITAL INPUT	HEATING SYSTEM ENABLE REQUEST FROM RADIANT CONTROLLER
DO	SS	01	START/STOP	ASHP OEM CONTROLLER
DO	SS	01	START/STOP	HHWP 1
N/A	N/A	N/A	INTEGRATE TO BMS	ASHP OEM CONTROLLER



NOTES:
1. REFER TO MECHANICAL SINGLE LINES FOR MECHANICAL PIPING AND EQUIPMENT LAYOUT.
2. COORDINATE SENSOR LOCATIONS WITH MECHANICAL AND ARCHITECTURAL PLANS.
3. MIXING VALVE, AMBIENT SENSOR AND INDOOR SENSOR TO BE PROVIDED BY SLAB SYSTEM CONTROLLER OEM.
4. BASIS OF DESIGN SLAB HEATING RADIANT SYSTEM CONTROLLER IS TEKMAR MIXING CONTROL 360 OR EQUIVALENT.
5. START/STOP AND TEMPERATURE SETPOINT OVERRIDE SET POINTS VIA INTEGRATION IS ACCEPTABLE, IF AVAILABLE FROM THE OEM CONTROLLER.
6. COORDINATE WITH APPROVED SUBMITTALS FOR OEM SOFTWARE INTEGRATION LIST.
7. OUTDOOR SENSOR TO BE COVERED FROM DIRECT SUNLIGHT.

1 ASHP AND SLAB HEATING RADIANT SYSTEM

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HILARY G. WILLIAMS
MECHANICAL NO. 55370
REGISTERED PROFESSIONAL ENGINEER
12/19/25

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CONSTRUCTION DOCUMENTS 12/19/25

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
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CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

MECHANICAL CONTROLS

SHEET NUMBER

M09.01

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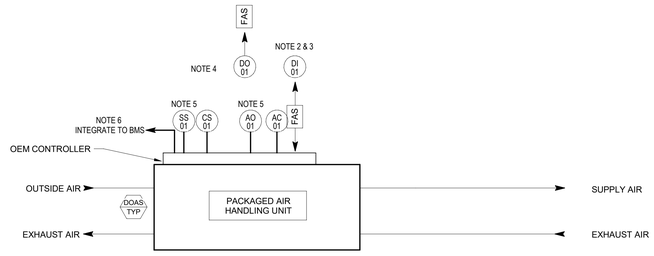
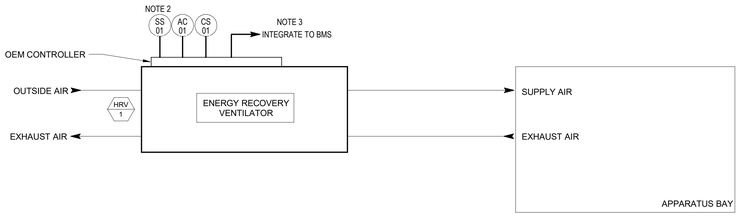


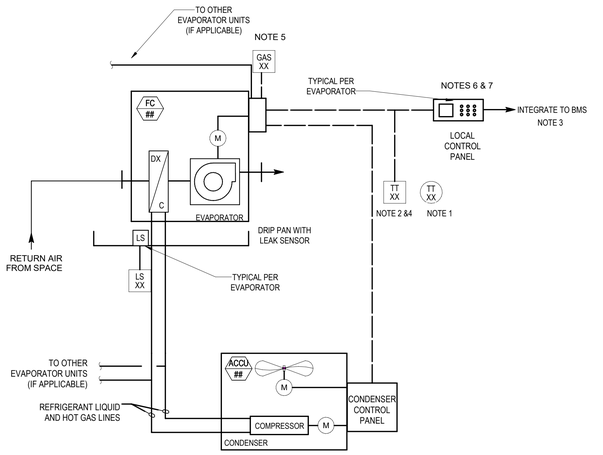
NOTES:
1. NOT USED.
2. COORDINATE WITH APPROVED FIRE ALARM SUBMITTALS.
3. FIRE ALARM SHUTDOWN MODULE: CONTRACTOR TO HARDWIRE FA OUTPUT MODULE INTO AHU SAFETY CIRCUIT. STATUS TO BE MONITORED AT BAS IN ADDITION TO CIRCUIT HARDWARE.
4. REQUEST TO RUN OUTPUT TO FAS FOR COMMAND OF FSDS. COORDINATE INTERFACE WITH FIRE ALARM CONTRACTOR.
5. START/STOP AND TEMPERATURE SETPOINT OVERRIDE POINTS BY INTEGRATION IS ACCEPTABLE INSTEAD IF AVAILABLE; COORDINATE WITH APPROVED SUBMITTALS FOR OEM SOFTWARE INTEGRATION LIST.
6. COORDINATE INTEGRATION PROTOCOLS WITH APPROVED DOAS SUBMITTALS.

1 DX PACKAGED AIR HANDLING UNIT - TYPICAL



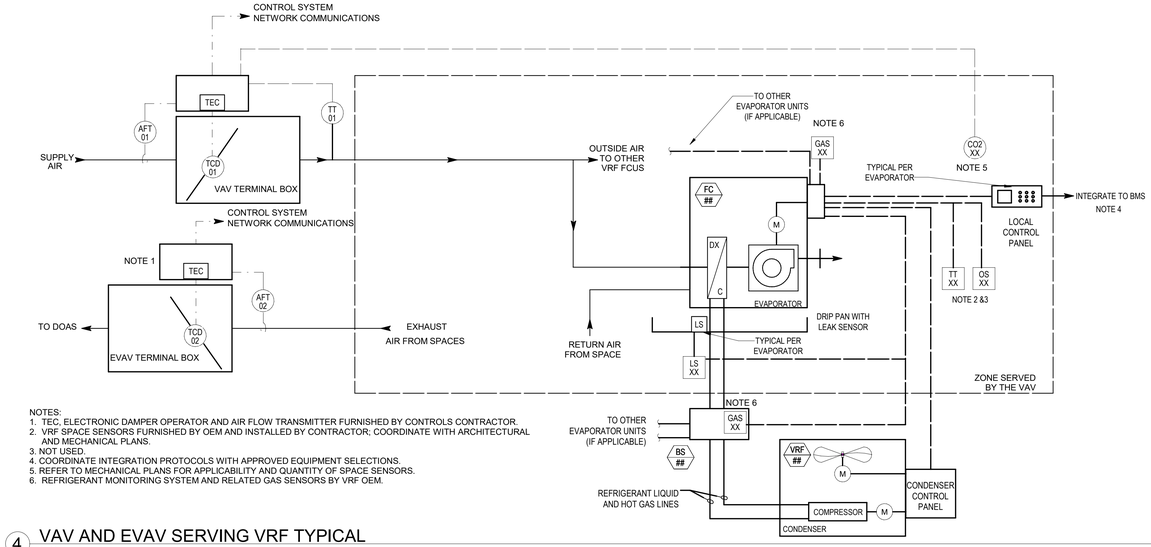
NOTES:
1. NOT USED.
2. START/STOP POINT BY INTEGRATION IS ACCEPTABLE INSTEAD IF AVAILABLE; COORDINATE WITH APPROVED SUBMITTALS FOR OEM SOFTWARE INTEGRATION LIST.
3. COORDINATE INTEGRATION PROTOCOLS WITH APPROVED ERV SUBMITTALS.

2 ENERGY RECOVERY VENTILATOR-TYPICAL



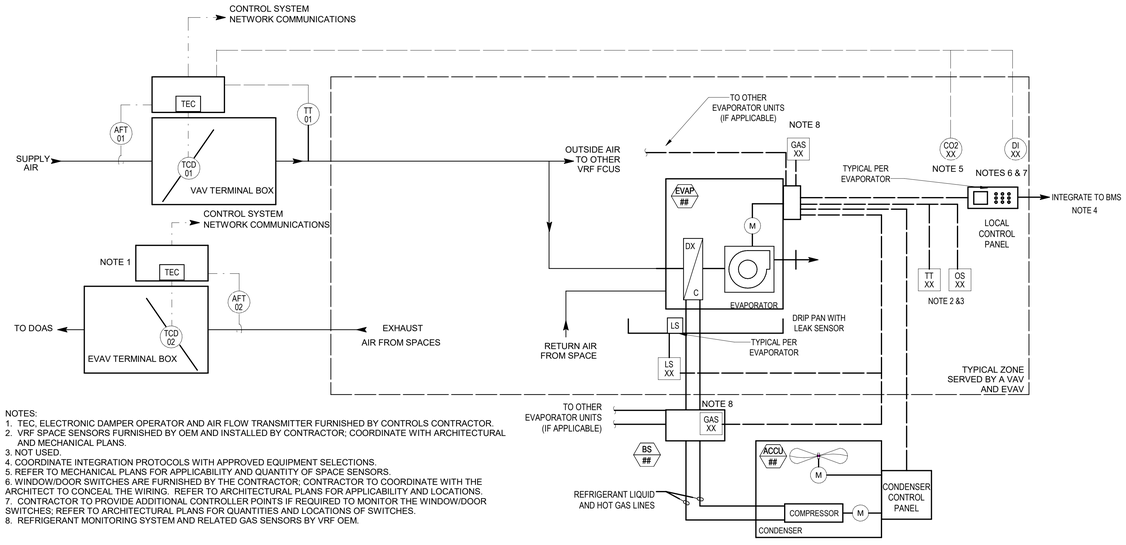
NOTES:
1. PROVIDE TEMPERATURE SENSOR CONNECTED TO BMS FOR MONITORING, UNLESS SPACE TEMPERATURE MONITORING IS AVAILABLE VIA BMS INTEGRATION. SPACE TEMPERATURE ALARMS (HIGH AND LOW) FOR ALL IT CLOSETS, ELECTRICAL ROOMS, BDF ROOMS AND ELEVATOR MACHINE / CONTROL ROOMS.
2. FOR QUANTITIES AND LOCATIONS REFER TO MECHANICAL PLANS & SCHEDULES.
3. COORDINATE INTEGRATION PROTOCOLS WITH APPROVED EQUIPMENT SELECTIONS.
4. REFER TO MECHANICAL PLANS FOR APPLICABILITY AND QUANTITY OF SPACE SENSORS.
5. REFRIGERANT MONITORING SYSTEM AND RELATED GAS SENSORS BY VRF OEM.

3 VRF FCU SERVING BOH SPACES TYPICAL
NTS



NOTES:
1. TEC, ELECTRONIC DAMPER OPERATOR AND AIR FLOW TRANSMITTER FURNISHED BY CONTROLS CONTRACTOR.
2. VRF SPACE SENSORS FURNISHED BY OEM AND INSTALLED BY CONTRACTOR; COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS.
3. NOT USED.
4. COORDINATE INTEGRATION PROTOCOLS WITH APPROVED EQUIPMENT SELECTIONS.
5. REFER TO MECHANICAL PLANS FOR APPLICABILITY AND QUANTITY OF SPACE SENSORS.
6. REFRIGERANT MONITORING SYSTEM AND RELATED GAS SENSORS BY VRF OEM.

4 VAV AND EVAV SERVING VRF TYPICAL
NTS



NOTES:
1. TEC, ELECTRONIC DAMPER OPERATOR AND AIR FLOW TRANSMITTER FURNISHED BY CONTROLS CONTRACTOR.
2. VRF SPACE SENSORS FURNISHED BY OEM AND INSTALLED BY CONTRACTOR; COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS.
3. NOT USED.
4. COORDINATE INTEGRATION PROTOCOLS WITH APPROVED EQUIPMENT SELECTIONS.
5. REFER TO MECHANICAL PLANS FOR APPLICABILITY AND QUANTITY OF SPACE SENSORS.
6. WINDOW/DOOR SWITCHES ARE FURNISHED BY THE CONTRACTOR; CONTRACTOR TO COORDINATE WITH THE ARCHITECT TO CONCEAL THE WIRING. REFER TO ARCHITECTURAL PLANS FOR APPLICABILITY AND LOCATIONS.
7. CONTRACTOR TO PROVIDE ADDITIONAL CONTROLLER POINTS IF REQUIRED TO MONITOR THE WINDOW/DOOR SWITCHES; REFER TO ARCHITECTURAL PLANS FOR QUANTITIES AND LOCATIONS OF SWITCHES.
8. REFRIGERANT MONITORING SYSTEM AND RELATED GAS SENSORS BY VRF OEM.

5 VAV AND EVAV SERVING VRF FCUS, AND WINDOW/DOOR SWITCHES TYPICAL
NTS

M09.02 INSTRUMENTATION AND INPUT-OUTPUT LIST

POINT TYPE	ITEM TYPE	NO.	DESCRIPTION	NOTES
DX PACKAGED AIR HANDLING UNIT				
AO	AO	01	ANALOG OUTPUT	DISCHARGE TEMPERATURE SETPOINT
DI	AC	01	ALARM CONTACT	COMMON ALARM
DI	CS	01	CURRENT SENSOR	AHU SUPPLY AIR FLOW SETPOINT
DI	DI	01	DIGITAL INPUT	AHU FAS SHUTDOWN
DO	DO	01	START/STOP	REQUEST TO RUN
DO	SS	01	START/STOP	AHU ENABLE/DISABLE
N/A	N/A	N/A	INTEGRATE TO BMS	AHU
ENERGY RECOVERY VENTILATOR				
DI	AC	01	ALARM CONTACT	
DI	CS	01	CURRENT SENSOR	STATUS
DO	SS	01	START/STOP	ERV ENABLE/DISABLE
N/A	N/A	N/A	INTEGRATE TO BMS	
VAV AND EVAV SERVING VRF FCUS TYPICAL				
AI	AFT	01	AIR FLOW TRANSMITTER	
AI	AFT	02	AIR FLOW TRANSMITTER	
AI	CO2	XX	CARBON DIOXIDE	SPACE SENSOR
AI	TT	01	TEMPERATURE TRANSMITTER	SUPPLY AIR
AO	TCD	01	TEMPERATURE CONTROL DAMPER	
AO	TCD	02	TEMPERATURE CONTROL DAMPER	
N/A		01	INTEGRATE TO BMS	
VAV AND EVAV SERVING VRF FCUS, AND WINDOW/DOOR SWITCHES TYPICAL				
AI	AFT	01	AIR FLOW TRANSMITTER	
AI	AFT	02	AIR FLOW TRANSMITTER	
AI	CO2	XX	CARBON DIOXIDE	SPACE SENSOR
AI	TT	01	TEMPERATURE TRANSMITTER	SUPPLY AIR
AO	TCD	01	TEMPERATURE CONTROL DAMPER	
AO	TCD	02	TEMPERATURE CONTROL DAMPER	
DI	DI	XX	DIGITAL INPUT	DOOR/WINDOW AUX CONTACT
N/A		01	INTEGRATE TO BMS	
VRF FCU SERVING BOH SPACES				
AI	TT	XX	TEMPERATURE TRANSMITTER	
N/A			INTEGRATE TO BMS	

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25 MADISON ST
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CITY OF WORCESTER

455 MAIN STREET
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KEY PLAN

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MARK	ISSUE	DATE

Job Number 157132.000

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MECHANICAL CONTROLS

SHEET NUMBER

M09.02

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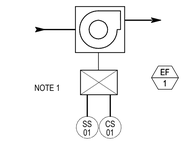
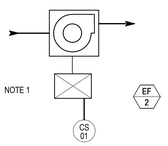


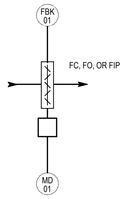
NOTES:
1. REFER TO MECHANICAL SCHEDULES AND PLANS FOR LOCATIONS.

1 FAN WITH STARTER (EF-1)



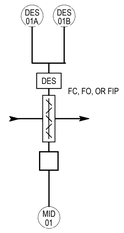
NOTES:
1. REFER TO MECHANICAL SCHEDULES AND PLANS FOR LOCATIONS.

2 DIESEL EXHAUST EXTRACTION SYSTEM (EF-2)



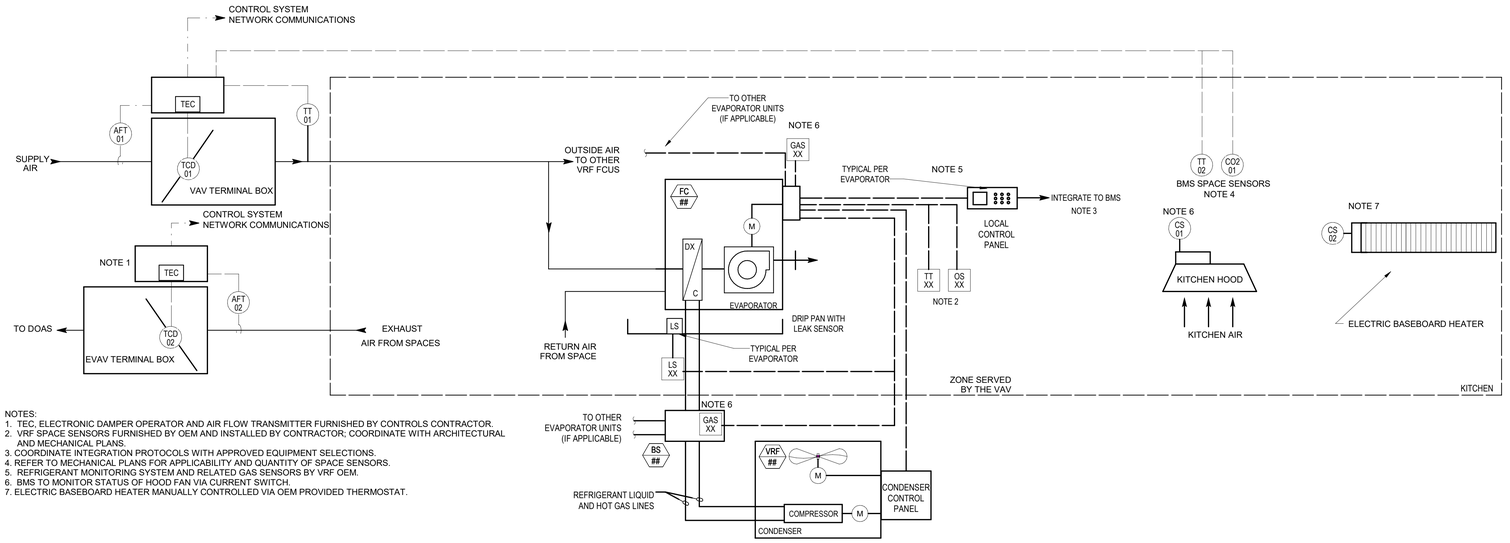
NOTES:
1. REFER TO MECHANICAL PLANS FOR QUANTITIES AND LOCATIONS

3 MODULATING DAMPER-TYPICAL
NTS



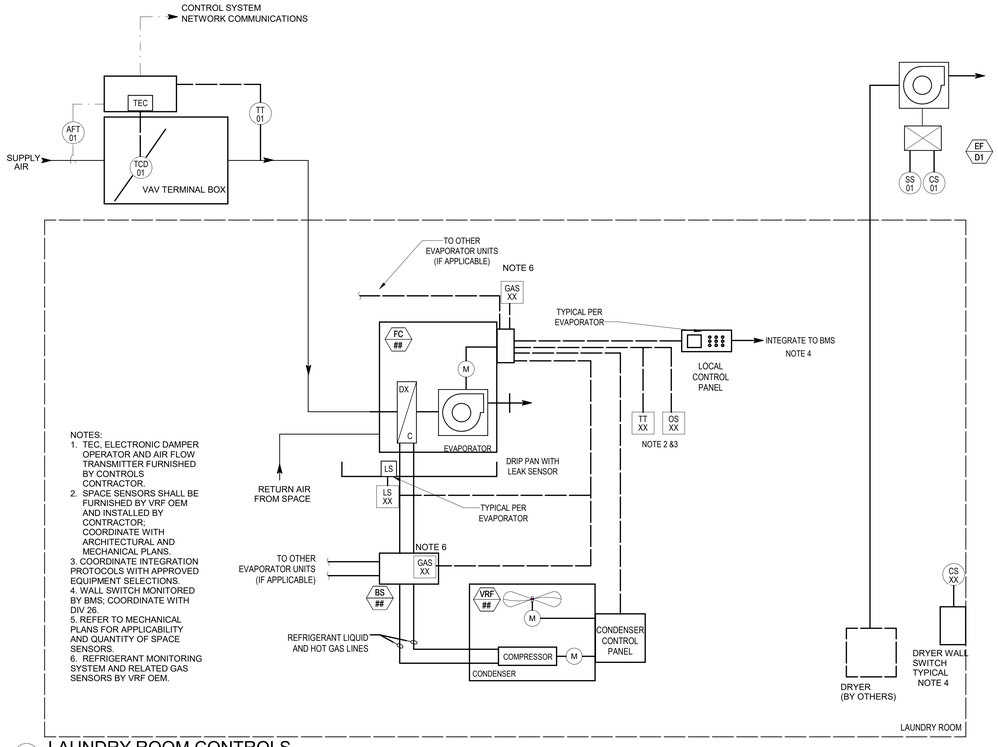
NOTES:
1. REFER TO MECHANICAL PLANS FOR QUANTITIES AND LOCATIONS.

4 MOTORIZED ISOLATION DAMPER-TYPICAL
NTS



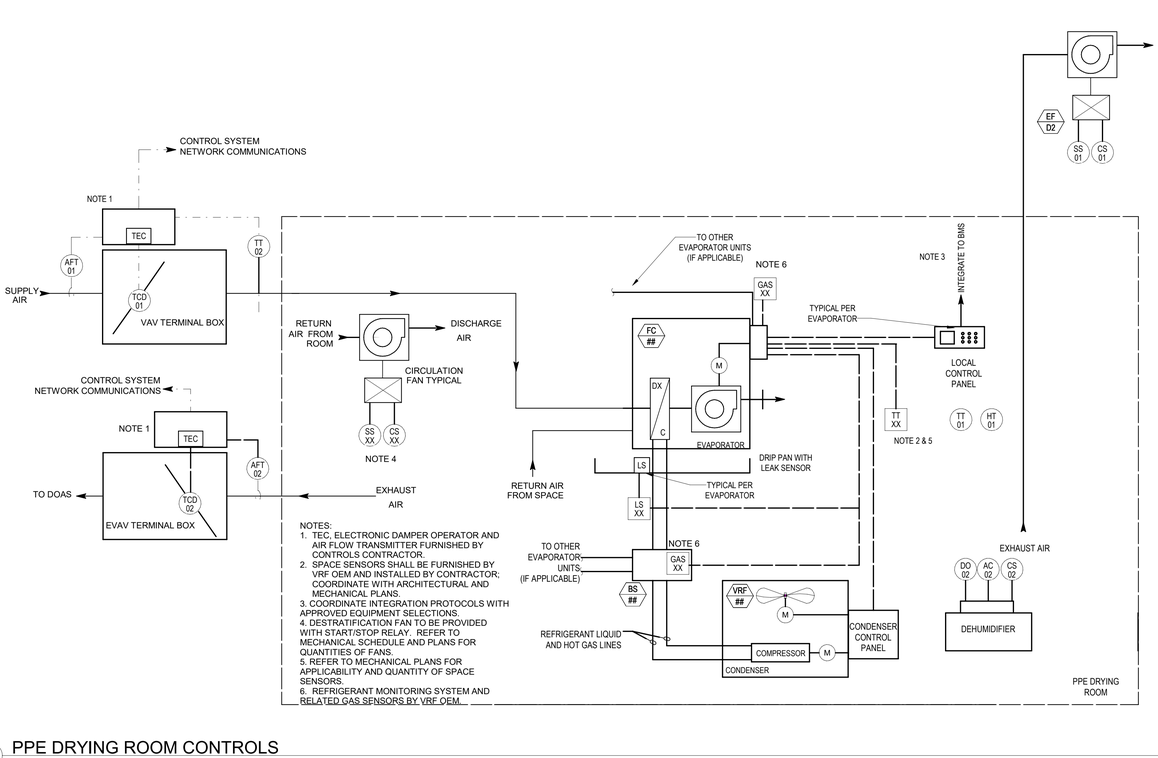
NOTES:
1. TEC, ELECTRONIC DAMPER OPERATOR AND AIR FLOW TRANSMITTER FURNISHED BY CONTROLS CONTRACTOR.
2. VRF SPACE SENSORS FURNISHED BY OEM AND INSTALLED BY CONTRACTOR; COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS.
3. COORDINATE INTEGRATION PROTOCOLS WITH APPROVED EQUIPMENT SELECTIONS.
4. REFER TO MECHANICAL PLANS FOR APPLICABILITY AND QUANTITY OF SPACE SENSORS.
5. REFRIGERANT MONITORING SYSTEM AND RELATED GAS SENSORS BY VRF OEM.
6. BMS TO MONITOR STATUS OF HOOD FAN VIA CURRENT SWITCH.
7. ELECTRIC BASEBOARD HEATER MANUALLY CONTROLLED VIA OEM PROVIDED THERMOSTAT.

5 KITCHEN SYSTEM-DETAIL
NTS



NOTES:
1. TEC, ELECTRONIC DAMPER OPERATOR AND AIR FLOW TRANSMITTER FURNISHED BY CONTROLS CONTRACTOR
2. SPACE SENSORS SHALL BE FURNISHED BY VRF OEM AND INSTALLED BY CONTRACTOR; COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS.
3. COORDINATE INTEGRATION PROTOCOLS WITH APPROVED EQUIPMENT SELECTIONS.
4. WALL SWITCH MONITORED BY BMS; COORDINATE WITH DIV 26.
5. REFER TO MECHANICAL PLANS FOR APPLICABILITY AND QUANTITY OF SPACE SENSORS.
6. REFRIGERANT MONITORING SYSTEM AND RELATED GAS SENSORS BY VRF OEM.

6 LAUNDRY ROOM CONTROLS
NTS



NOTES:
1. TEC, ELECTRONIC DAMPER OPERATOR AND AIR FLOW TRANSMITTER FURNISHED BY CONTROLS CONTRACTOR.
2. SPACE SENSORS SHALL BE FURNISHED BY VRF OEM AND INSTALLED BY CONTRACTOR; COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS.
3. COORDINATE INTEGRATION PROTOCOLS WITH APPROVED EQUIPMENT SELECTIONS.
4. DESTRATIFICATION FAN TO BE PROVIDED WITH START/STOP RELAY. REFER TO MECHANICAL SCHEDULE AND PLANS FOR QUANTITIES OF FANS.
5. REFER TO MECHANICAL PLANS FOR APPLICABILITY AND QUANTITY OF SPACE SENSORS.
6. REFRIGERANT MONITORING SYSTEM AND RELATED GAS SENSORS BY VRF OEM.

7 PPE DRYING ROOM CONTROLS
NTS

M-09.03 INSTRUMENTATION AND INPUT-OUTPUT LIST

POINT TYPE	ITEM TYPE	ITEM NO.	DESCRIPTION	NOTES
FAN WITH STARTER				
DI	CS	01	CURRENT SENSOR	
DI	CS	01	CURRENT SENSOR	
DI	CS	XX	CURRENT SENSOR	
DO	SS	01	START/STOP	
DO	SS	XX	START/STOP	
KITCHEN SYSTEM DETAIL				
AI	AFT	01	AIR FLOW TRANSMITTER	
AI	AFT	02	AIR FLOW TRANSMITTER	
AI	CO2	01	CARBON DIOXIDE	SPACE SENSOR
AI	TT	01	TEMPERATURE TRANSMITTER	SUPPLY AIR
AI	TT	02	TEMPERATURE TRANSMITTER	
AO	TCD	01	TEMPERATURE CONTROL DAMPER	
AO	TCD	02	TEMPERATURE CONTROL DAMPER	
DI	CS	01	CURRENT SENSOR	
DI	CS	02	CURRENT SENSOR	ELECTRIC BASEBOARD HEATER STATUS
N/A		01	INTEGRATE TO BMS	
LAUNDRY ROOM CONTROLS				
AI	AFT	01	AIR FLOW TRANSMITTER	
AI	TT	01	TEMPERATURE TRANSMITTER	SUPPLY AIR
AO	TCD	01	TEMPERATURE CONTROL DAMPER	
DI	CS	01	CURRENT SENSOR	
DI	CS	XX	CURRENT SENSOR	
DO	SS	01	START/STOP	
N/A		01	INTEGRATE TO BMS	
MODULATING DAMPER				
AI	FBK	01	FEEDBACK	
AO	MD	01	MODULATING DAMPER	
MOTORIZED ISOLATION DAMPER				
DI	DES	01A	DAMPER END SWITCH	
DI	DES	01B	DAMPER END SWITCH	
DO	MID	01	MOTORIZED ISOLATION DAMPER	
PPE DRYING ROOM CONTROLS				
AI	AFT	01	AIR FLOW TRANSMITTER	
AI	AFT	02	AIR FLOW TRANSMITTER	
AI	HT	01	HUMIDITY TRANSMITTER	SPACE SENSOR
AI	TT	01	TEMPERATURE TRANSMITTER	SPACE SENSOR
AI	TT	02	TEMPERATURE TRANSMITTER	SUPPLY AIR
AO	TCD	01	TEMPERATURE CONTROL DAMPER	
AO	TCD	02	TEMPERATURE CONTROL DAMPER	
DI	AC	02	ALARM CONTACT	DEHUMIDIFIER ALARM CONTACT
DI	CS	01	CURRENT SENSOR	
DI	CS	02	CURRENT SENSOR	DEHUMIDIFIER STATUS
DO	DO	02	START/STOP	DEHUMIDIFIER ENABLE
DO	SS	01	START/STOP	
N/A		01	INTEGRATE TO BMS	

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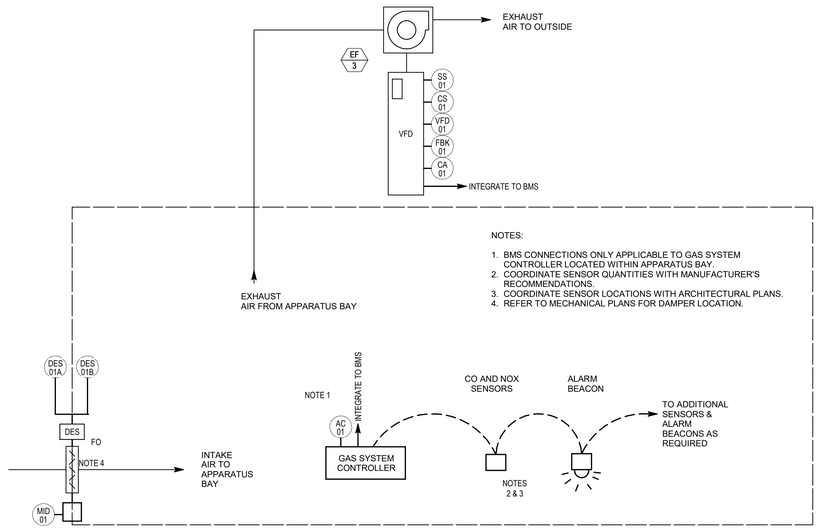
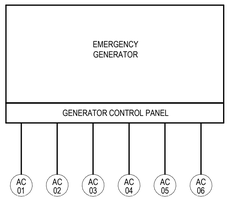


1 GAS DETECTION SYSTEM AND EXHAUST FAN

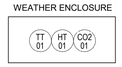


NOTES:
1. COORDINATE FINAL SELECTION OF ALARMS WITH DIV 26.

4 EMERGENCY GENERATOR-TYPICAL
NTS

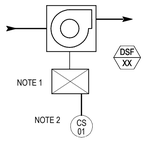
NOTES:
1. REFER TO ELECTRICAL DESIGN DRAWINGS FOR LOCATIONS AND QUANTITIES.

5 AUTOMATIC TRANSFER SWITCH MONITORING (ELECTRICAL) TYPICAL



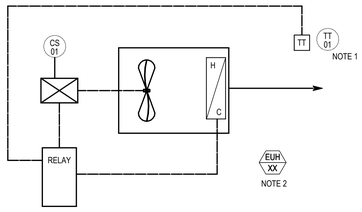
NOTES:
1. OUTDOOR WEATHER STATION SHALL BE LOCATED OUTDOORS. WEATHER STATION SHALL BE COVERED FROM DIRECT SUNLIGHT AND MONITORED BY BMS.
2. COORDINATE FINAL LOCATIONS WITH ARCHITECT AND OWNER.

6 WEATHER STATION



NOTES:
1. REFER TO MECHANICAL SCHEDULES AND PLANS FOR LOCATIONS AND QUANTITIES.
2. START/STOP SIGNAL NOT FROM BMS; COORDINATE WITH OEM'S APPROVED EQUIPMENT SUBMITTAL.

2 DESTRATIFICATION FANS-TYPICAL
NTS

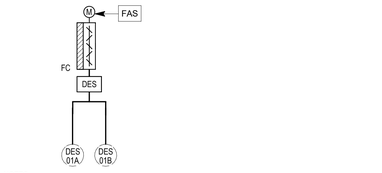


NOTES:
1. THERMOSTAT INTEGRAL TO ELECTRIC UNIT HEATER. PROVIDED BY MANUFACTURER.
2. APPARATUS BAY ELECTRIC UNIT HEATER (EUH): SETPOINT TO BE COORDINATED WITH APPARATUS BAY RADIANT SYSTEM SETPOINTS TO ENSURE THAT THE EUH ONLY PROVIDES BACK UP/SECONDARY HEATING.

3 ELECTRIC UNIT HEATER-TYPICAL
NTS

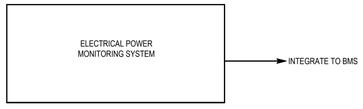
M-904 INSTRUMENTATION AND INPUT-OUTPUT LIST

POINT TYPE	ITEM TYPE	ITEM NO.	DESCRIPTION	NOTES
AUTOMATIC TRANSFER SWITCH				
DI	AC	01	ALARM CONTACT	
DI	ST	01	STATUS	ATS POSITION STATUS
DESTRATIFICATION FANS-TYPICAL				
DI	CS	01	CURRENT SENSOR	
EMERGENCY GENERATOR				
DI	AC	01	ALARM CONTACT	
DI	AC	02	ALARM CONTACT	
DI	AC	03	ALARM CONTACT	
DI	AC	04	ALARM CONTACT	
DI	AC	05	ALARM CONTACT	
DI	AC	06	ALARM CONTACT	
FSD MONITORING- TYPICAL				
DI	DES	01A	DAMPER END SWITCH	
DI	DES	01B	DAMPER END SWITCH	
FUEL OIL SYSTEM-MONITORING				
DI	AC	01	ALARM CONTACT	
DI	AC	02	ALARM CONTACT	
DI	AC	03	ALARM CONTACT	
DI	AC	04	ALARM CONTACT	
DI	AC	05	ALARM CONTACT	
N/A	N/A	N/A	INTEGRATE TO BMS	
GAS DETECTION SYSTEM AND EXHAUST FAN				
AI	FBK	01	FEEDBACK	
AO	VFD	01	VARIABLE FREQUENCY DRIVE	
DI	AC	01	ALARM CONTACT	
DI	CA	01	COMMON ALARM	
DI	CS	01	CURRENT SENSOR	
DI	DES	01A	DAMPER END SWITCH	
DI	DES	01B	DAMPER END SWITCH	
DO	MID	01	MOTORIZED ISOLATION DAMPER	
DO	SS	01	START/STOP	
N/A	N/A	N/A	INTEGRATE TO BMS	GAS DETECTION SYSTEM CONTROLLER
N/A	N/A	N/A	INTEGRATE TO BMS	EXHAUST FAN VFD
HOX BOX TEMPERATURE MONITORING				
AI	TT	01	TEMPERATURE TRANSMITTER	
PLUMBING WATER METER- TYPICAL				
AI	AI	01	ANALOG INPUT	
DI	DI	01	DIGITAL INPUT	
POWER METER MONITORING				
N/A	N/A	N/A	INTEGRATE TO BMS	
RECIRCULATION PUMPS (PLUMBING)				
DI	CS	01	CURRENT SENSOR	PUMP - STARTER
SUMP PUMP (PLUMBING)				
DI	AC	01	ALARM CONTACT	
DI	AC	02	ALARM CONTACT	
UNIT HEATER (ELEC)				
AI	TT	01	TEMPERATURE TRANSMITTER	SPACE SENSOR
DI	CS	01	CURRENT SENSOR	
WEATHER STATION				
AI	CO2	01	CARBON DIOXIDE	OUTDOOR CARBON DIOXIDE
AI	HT	01	HUMIDITY TRANSMITTER	OUTDOOR RELATIVE HUMIDITY
AI	TT	01	TEMPERATURE TRANSMITTER	OUTDOOR AIR TEMP



NOTES:
1. REFER TO MECHANICAL PLANS FOR QUANTITIES AND LOCATIONS.
2. FIRE SMOKE DAMPERS CONTROLLED AND POWERED BY OTHERS.
3. BMS TO MONITOR END SWITCHES; CONTRACTOR TO PROVIDE IF NOT PROVIDED BY THE FSD OEM.

7 FIRE SMOKE DAMPERS- TYPICAL
NTS

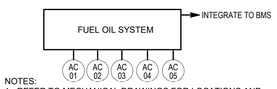


NOTES:
1. COORDINATE INTEGRATION PROTOCOLS WITH APPROVED SUBMITTALS.
2. COORDINATE LOCATIONS WITH DIV 26 PLANS.

8 ELECTRICAL POWER MONITORING SYSTEM
NTS

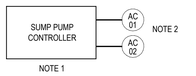
NOTES:
1. COORDINATE FINAL INTERFACE TYPE WITH APPROVED SUBMITTALS.
2. REFER TO PLUMBING SCHEDULES AND PLANS FOR QUANTITIES AND LOCATIONS.

9 PLUMBING WATER METER- TYPICAL
NTS



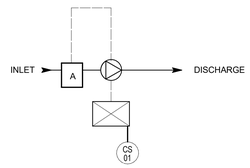
NOTES:
1. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS AND QUANTITIES.

10 FUEL OIL SYSTEM MONITORING
NTS



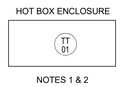
NOTES:
1. SUMP PUMP CONTROLS PROVIDED BY DIV. 22. REFER TO PLUMBING DRAWINGS FOR LOCATION AND QUANTITIES.
2. BMS CONTRACTOR SHALL MONITOR COMMON ALARMS FROM SUMP PUMP PACKAGED CONTROLLER.

11 SUMP PUMP (PLUMBING)
NTS



NOTES:
1. REFER TO PLUMBING SCHEDULE FOR LOCATION AND QUANTITIES OF RECIRCULATION PUMPS.

12 RECIRCULATION PUMPS (PLUMBING)
NTS



NOTES:
1. REFER TO MECHANICAL PLANS FOR MORE DETAILS.
2. COORDINATE FINAL LOCATIONS WITH ARCHITECT.

13 HOT BOX TEMPERATURE MONITORING
NTS

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PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE

MECHANICAL CONTROLS

SHEET NUMBER

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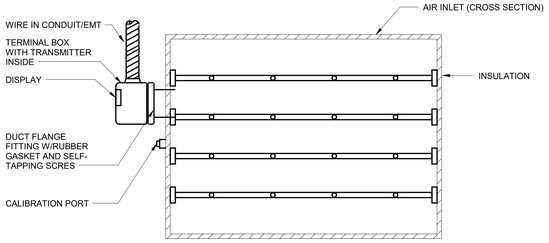
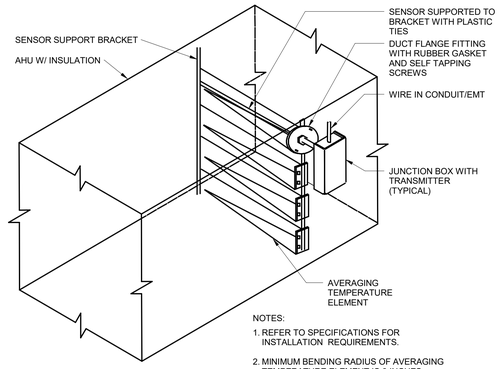


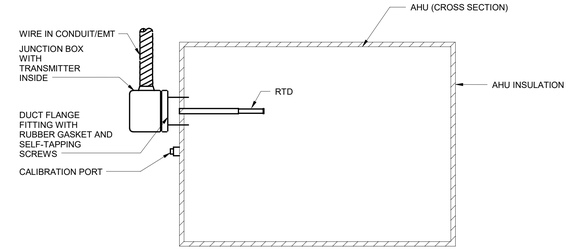
NOTES
:
1. PROVIDE QUANTITY OF PROBES PER MANUFACTURE'S RECOMMENDATIONS TO ACHIEVE 2% ACCURACY.
2. COORDINATE LOCATION AND STRAIGHT RUN REQUIREMENTS WITH AIR FLOW SENSOR MANUFACTURER.

1 AIR FLOW STATION INSTALLATION DETAIL - TYPICAL



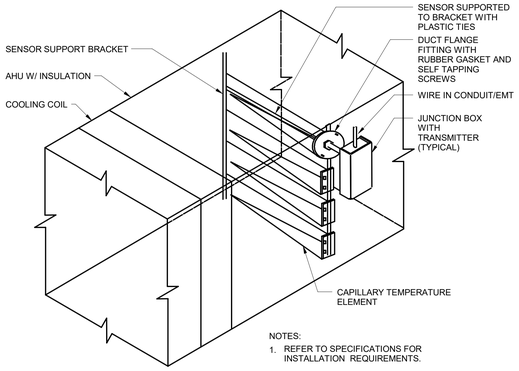
NOTES:
1. REFER TO SPECIFICATIONS FOR INSTALLATION REQUIREMENTS.
2. MINIMUM BENDING RADIUS OF AVERAGING TEMPERATURE ELEMENT IS 3 INCHES.
3. SENSOR SUPPORT BRACKET ATTACHED TO DUCT WITH BOLTS.

2 DUCT TEMPERATURE SENSOR MOUNTING DETAIL (AVERAGING) - TYPICAL



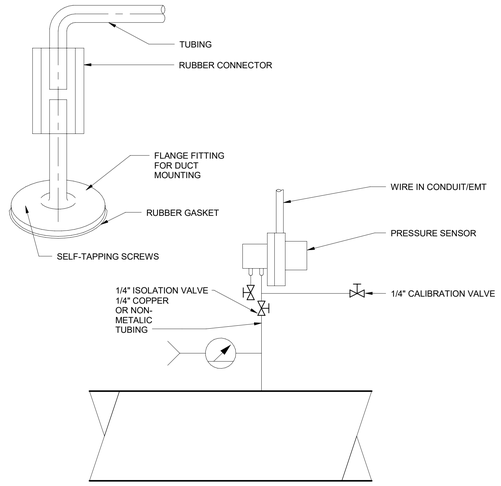
NOTES:
1. RTD LENGTH SHALL BE 1/3 OF DUCT WIDTH.
2. HUMIDITY AND CO SENSOR SHALL BE MOUNTED BASED ON THIS DETAIL.

3 DUCT TEMPERATURE SENSOR MOUNTING DETAIL (INSERTION) - TYPICAL

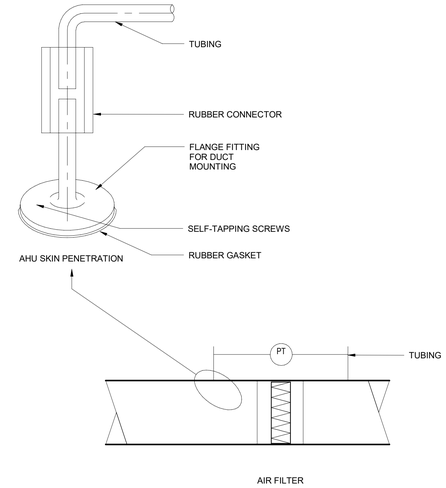


NOTES:
1. REFER TO SPECIFICATIONS FOR INSTALLATION REQUIREMENTS.
2. MINIMUM BENDING RADIUS OF CAPILLARY TYPE TEMPERATURE ELEMENTS IS 3 INCHES.
3. SENSOR SUPPORT BRACKET ATTACHED TO DUCT WITH BOLTS.

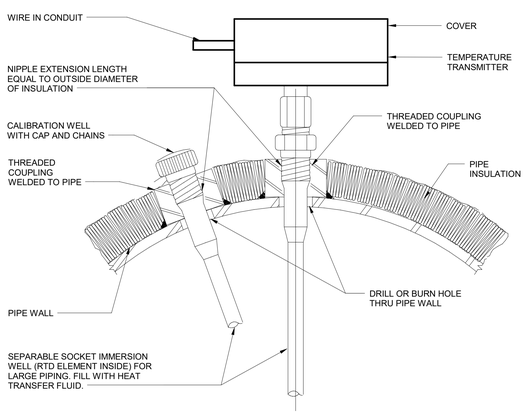
4 FREEZESTAT SENSOR MOUNTING DETAIL - TYPICAL



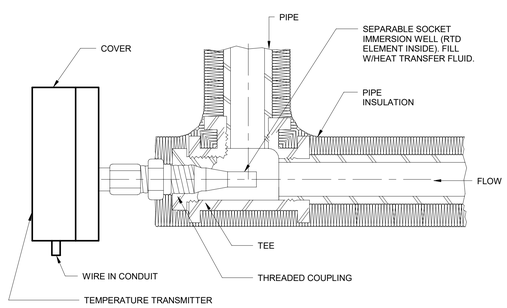
5 DUCT OR AHU STATIC PRESSURE SENSOR MOUNTING DETAIL - TYPICAL



6 AIR FILTER PRESSURE GAUGE MOUNTING DETAIL - TYPICAL



7 RTD TEMPERATURE SENSOR INSTALLATION (LARGE PIPE) - TYPICAL



8 RTD TEMPERATURE SENSOR INSTALLATION (SMALL PIPE) - TYPICAL

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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

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Job Number 157132.000

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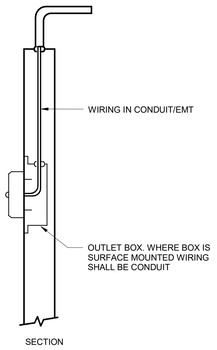
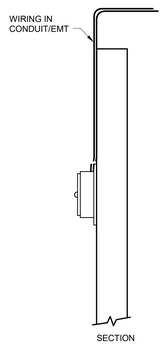
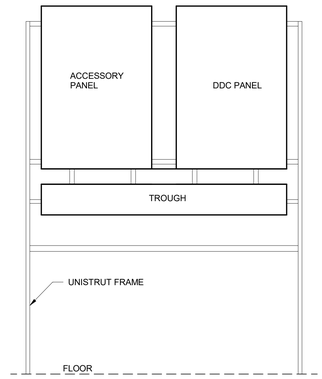


1 SPACE SENSOR INSTALLATION (FINISHED WALL) - TYPICAL



2 SPACE SENSOR INSTALLATION (UNFINISHED WALL) - TYPICAL



NOTES:
1. REFER TO 230900 SPECIFICATIONS FOR ALL BMS PANEL REQUIREMENTS.

3 BMS PANEL INSTALLATION DETAIL - TYPICAL

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LIGHTING

SYMBOL	DESCRIPTION
	CEILING AND RECESSED MOUNTED LIGHTING FIXTURE. - SHADED AREA FIXTURE ON EMERGENCY CIRCUIT
	PURVIS SYSTEM CEILING AND WALL MOUNTED LED. REFER TO PURVIS SPECS.
	CEILING/WALL EXIT LIGHT AND OUTLET BOX - SHADED AREA INDICATED ILLUMINATED FACE(S) - ARROW INDICATES DIRECTION

NOTE: SEE LIGHT FIXTURE SCHEDULE AND SPECIFICATIONS FOR COMPLETE FIXTURE DESCRIPTION.

WIRING DEVICES

SYMBOL	DESCRIPTION
T Sab	LINE VOLTAGE SWITCH - LOWER CASE LETTER DENOTES SWITCHING ZONES - "T" DENOTES SWITCH TYPE; MC - MOMENTARY CONTACT D - DIMMER WP - WEATHER PROOF PB - PUSHBUTTON
$ab	LOW VOLTAGE SWITCH
	OCCUPANCY SENSOR, CEILING MOUNTED LETTER DESIGNATION ON SENSORS: HB = HIGH BEAM BL= BLACK FINISH
	OCCUPANCY SENSOR, WALL MOUNTED
	PHOTOCELL CONTROLLER, CEILING MOUNTED BL=BLACK FINISH
	PHOTOCELL CONTROLLER, WALL MOUNTED
TC	TIME CLOCK
RC	REMOTE CONTROL SWITCH
	LETTER DESIGNATION ON RECEPTACLES: AF = ARC FAULT CIRCUIT INTERRUPTER G = GROUND FAULT CIRCUIT INTERRUPTER WP = WEATHER PROOF WITH 'GFCI' LS = LIFE SAFETY PL = CONTROLLED REF = REFRIGERATOR FR = FREEZER
	SIMPLEX RECEPTACLE WALL MOUNTED, +18" AFF, UON
	DUPLEX RECEPTACLE WALL MOUNTED, +18" AFF, UON
	QUAD RECEPTACLE WALL MOUNTED, +18" AFF, UON
	SPECIAL RECEPTACLE WALL MOUNTED, +18" AFF, UON
	SIMPLEX RECEPTACLE CEILING MOUNTED
	DUPLEX RECEPTACLE CEILING MOUNTED
	QUAD RECEPTACLE CEILING MOUNTED
	SPECIAL RECEPTACLE CEILING MOUNTED
	SIMPLEX RECEPTACLE FLUSH FLOOR MOUNTED
	DUPLEX RECEPTACLE FLUSH FLOOR MOUNTED
	QUAD RECEPTACLE FLUSH FLOOR MOUNTED
	SPECIAL RECEPTACLE FLUSH FLOOR MOUNTED
	POKE THROUGH FLOOR BOX WITH OUTLETS AS SPECIFIED
	ACCESS FLOOR BOX WITH OUTLETS AS SPECIFIED
	JUNCTION BOX RECESSED WALL MOUNTED
	JUNCTION BOX RECESSED CEILING MOUNTED
J	JUNCTION BOX RECESSED FLUSH FLOOR MOUNTED

RACEWAYS

SYMBOL	DESCRIPTION
	CONDUIT AND WIRE, HASH MARKS INDICATE NUMBER OF WIRES. # HASH MARKS INDICATES 3#12+1#10N+ 1#12G IN 3/4" CONDUIT UON.
	CONDUIT AND WIRE HOMERUN. CONTINUOUS RUN TO MCC, PANELBOARD, SWITCHBOARD OR EQUIPMENT CABINET.
	FLEXIBLE CONNECTION
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	CONDUIT CAPPED

MISCELLANEOUS

SYMBOL	DESCRIPTION
P3800	FEEDER SIZE, SEE FEEDER SCHEDULE
#	REFERENCE NOTE
E-3 A	DETAIL REFERENCE: - DETAIL DESIGNATION - SHEET NUMBER REFERENCE
EF 1	EQUIPMENT REFERENCE. COORDINATE EQUIPMENT WITH MECHANICAL/PLUMBING TRADES. SEE MECHANICAL/PLUMBING DRAWINGS FOR LOCATIONS.

LIGHTNING PROTECTION & GROUNDING

SYMBOL	DESCRIPTION
L	- 'L' DENOTES LIGHTNING PROTECTION MAIN CONDUCTOR
	LIGHTING PROTECTION AIR TERMINAL
	THRU ROOF PENETRATION CABLE IN CONDUIT
	THRU ROOF PENETRATION TO STEEL
	FULL DOWNLEAD TO GROUND
	STEEL COLUMN BOND TO GROUND
TW	GROUND ELECTRODE 3/4" COPPER ROD, 10'-0" DEEP - "TW" INDICATES TEST WELL
G	- 'G' DENOTES COUNTERPOISE/GROUND CABLE
	TRIANGULAR GROUND GRID - THREE 3/4" x 10'-0" RODS SPACED 30'-0" MINIMUM APART INTERCONNECTED WITH 4/0 COPPER CONDUCTOR.
	2"x1/4" COPPER GROUND BUS BAR, LENGTH AS INDICATED ON PLANS.

POWER

SYMBOL	DESCRIPTION
4x 3P 30A	SAFETY DISCONNECT SWITCH, 3 POLE UON - NUMERICAL DENOTES TRIP SIZE - '4X' DENOTES NEMA ENCLOSURE IF INDICATED
4x F 30A	FUSED DISCONNECT SWITCH - NUMERICAL DENOTES TRIP SIZE - '4X' DENOTES NEMA ENCLOSURE IF INDICATED
4x VFD 30A	VARIABLE FREQUENCY DRIVE - NUMERICAL DENOTES TRIP SIZE - '4X' DENOTES NEMA ENCLOSURE IF INDICATED
	MOTOR CONTROL EQUIPMENT AND CONNECTION TO CONTROLLED MOTOR(S). CONTROLLER IS MOUNTED AGAINST AN ADJACENT WALL OR OTHERWISE REMOTE FROM THE MOTOR. SEE MOTOR EQUIPMENT SCHEDULE(S) FOR CIRCUITING, TYPE OF CONTROL EQUIPMENT, QUANTITY OF MOTORS CONNECTED TO CONTROLLER, AND OTHER DETAILS. CONDUCTOR SIZE BETWEEN CONTROLLER AND MOTOR SHALL MATCH THE UPSTREAM OF THE CONTROLLER UNLESS NOTED OTHERWISE ON THE SCHEDULE.
	MOTOR CONTROL EQUIPMENT AND CONNECTION TO CONTROLLED MOTOR(S). CONTROLLER IS EITHER INTEGRAL TO THE EQUIPMENT OR MOUNTED DIRECTLY ONTO THE EQUIPMENT. SEE MOTOR EQUIPMENT SCHEDULE(S) FOR CIRCUITING, TYPE OF CONTROL EQUIPMENT, QUANTITY OF MOTORS CONNECTED TO CONTROLLER, AND OTHER DETAILS. CONDUCTOR SIZE BETWEEN CONTROLLER AND MOTOR SHALL MATCH THE UPSTREAM OF THE CONTROLLER UNLESS NOTED OTHERWISE ON THE SCHEDULE.
PB	PULLBOX
T4	TRANSFORMER, SEE SCHEDULE FOR RATING
ATS	AUTOMATIC TRANSFER SWITCH, SEE RISER DIAGRAM FOR RATING
	EMERGENCY POWER OFF
	SURFACE MOUNTED PANELBOARD
	FLUSH MOUNTED PANELBOARD
	FLOOR MOUNTED DISTRIBUTION/SWITCHBOARD
HH	HANDHOLE
MH	MANHOLE

SINGLE LINE DIAGRAM

SYMBOL	DESCRIPTION
PANEL	PANELBOARD, SEE PANEL SCHEDULE FOR RATING.
	FEEDER
BW	BUSWAY
LSI TRIP	MOLDED CASE CIRCUIT BREAKER: - "TEXT' DENOTES CB ACCESSORIES L= LONG TIME S = SHORT TIME I = INSTANTANEOUS G = GROUND FAULT A = GROUND FAULT ALARM AR = ARC ENERGY REDUCTION MAINTENANCE SWITCH - NUMERICAL DENOTES TRIP SIZE
GFP TRIP	LOW VOLTAGE DRAW OUT CIRCUIT BREAKER: - "TEXT' DENOTES CB ACCESSORIES - NUMERICAL DENOTES TRIP SIZE
GFP FUSE	FUSE/SWITCH UNIT - "TEXT' DENOTES FUSE ACCESSORIES ST, GFR, EO, LO, LOCK OUT PROVISIONS - NUMERICAL DENOTES FUSE SIZE
GFP FUSE	MEDIUM VOLTAGE DRAWOUT FUSE/SWITCH UNIT - "TEXT' DENOTES FUSE ACCESSORIES - NUMERICAL DENOTES FUSE SIZE
	MEDIUM VOLTAGE DRAW OUT CIRCUIT BREAKER WITH INTEGRAL TRIP UNIT
ST TRIP	ENCLOSED CIRCUIT BREAKER - "TEXT' DENOTES CB ACCESSORIES - NUMERICAL DENOTES TRIP SIZE
ST TRIP	ENCLOSED SAFETY DISCONNECT SWITCH - "TEXT' DENOTES FUSE ACCESSORIES - NUMERICAL DENOTES SWITCH SIZE
	ENCLOSED FUSED DISCONNECT SWITCH - "TEXT' DENOTES FUSE ACCESSORIES - NUMERICAL DENOTES SWITCH SIZE
ATS-# CONN AMPS	AUTOMATIC TRANSFER SWITCH W/BYPASS ISOLATION
G	GENERATOR
	MOTOR
KI	KEY INTERLOCK
M	UTILITY METER
M	DIGITAL ENERGY METER
M V A	DIGITAL MULTIFUNCTION METER WITH CURRENT/POTENTIAL TRANSFORMER AS REQUIRED
200/5	CURRENT TRANSFORMER: - '200/5' DENOTES CT RATIO IF INDICATED
1	POTENTIAL TRANSFORMER: - NUMERICAL DENOTES QUANTITY OF FUSES
	INVERTER
	RECTIFIER
	BATTERY
	SURGE ARRESTER
	GROUND CONNECTION
	TRANSFORMER WITH PRIMARY AND SECONDARY CONNECTIONS AS INDICATED ON RISER DIAGRAM.

ABBREVIATIONS

SYMBOL	DESCRIPTION
A, AMP	AMPERE
AIC	AMPS INTERRUPTING CAPACITY
AC	ALTERNATING CURRENT
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
APPL	APPLIANCE
ATS	AUTOMATIC TRANSFER SWITCH
BAS	BUILDING AUTOMATION SYSTEM
BMS	BUILDING MANAGEMENT SYSTEM
BFG	BELOW FINISHED GRADE
C, CDT	CONDUIT
CB	CIRCUIT BREAKER
CH	CABINET HEIGHT
CKT	CIRCUIT
C.O., CO	CONDUIT ONLY
CONFIG.	CONFIGURATION
℄	CENTERLINE
CONV	CONVENIENCE
CM	CONSTRUCTION MANAGER
DDC	DIGITAL DATA CONTROL
DWG	DRAWING
DZP	DAYLIGHT ZONE PRIMARY
DZS	DAYLIGHT ZONE SECONDARY
E.C.	ELECTRICAL CONTRACTOR
ELEC	ELECTRICAL
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
E.O.	ELECTRICALLY OPERATED 'ON-OFF'
EQ	EQUAL
EWC	ELECTRIC WATER COOLER
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FAI	FURNISH AND INSTALL
FBO	FURNISHED BY OTHERS
FS	FIRE SHUTTER/DOOR
FLA	FULL LOAD AMPS
FSD	FIRE SMOKE DAMPER
G, GND	GROUND
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HC	HUNG CEILING
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSE POWER
IBEC	INSTALLED BY ELECTRICAL CONTRACTOR
IG	ISOLATED GROUND
JB,J	JUNCTION BOX
KVA	KILO VOLT- AMPERE
KW	KILO WATT
KWH	KILO WATT HOUR
LC	LOCK & COVER
LCP	LIGHTING CONTROL PANEL
LTG	LIGHTING
LV	LOW VOLTAGE
LVR	LOW VOLTAGE RELAY
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CONTROL PANEL
MER	MECHANICAL EQUIPMENT ROOM
MFRR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MSB	MAIN SWITCHBOARD
MTD	MOUNTED
N	NEUTRAL
NA, N/A	NOT APPLICABLE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
#	NUMBER
N.O.	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
P	POLES
PB	PULL BOX
PFC	POWER FACTOR CORRECTION
PH, ø	PHASE
PNL	PANEL
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
PWR	POWER
RC	REHEAT COIL
RECPT, REC	RECEPTACLE
RM	ROOM
SG	SIGNAGE
SHT	SHEET
SPEC	SPECIFICATIONS
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
SS	SURGE SUPPRESSION
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TC	TIME CLOCK
TYP	TYPICAL
UG	UNDERGROUND
UON, U.O.N.	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UNF	UNFUSED
V	VOLT
VA	VOLT-AMPERES
VPI	VACUUM PRESSURE IMPREGNATION
VT	VAPOR TIGHT
W	WATT
WP	WEATHER PROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF

ELECTRICAL GENERAL NOTES:

1. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NFPA 70, 2023 EDITION), THE 9TH EDITION OF THE MASSACHUSETTS STATE BUILDING CODE (780 CMR), AND ALL APPLICABLE REFERENCED CODES AND STANDARDS.
2. ALL PANELS, SWITCHES, AND WIRING TROUGHS SHALL HAVE SUFFICIENT GUTTER SPACE AND LUGS TO ACCOMMODATE CONDUCTORS SHOWN.
3. WHERE WIRE SIZES ARE INDICATED ON PLANS, FOR INDIVIDUAL CIRCUITS, THE WIRE SIZE INDICATED SHALL APPLY TO THE COMPLETE CIRCUIT, UNLESS OTHERWISE NOTED.
4. ALL JUNCTION BOXES AND PULL BOXES SHALL BE CODE GAUGE AND SIZE TO ACCOMMODATE NUMBER OF CONDUITS/CONDUCTORS SHOWN.
5. ALL CONDUIT, PULL, AND JUNCTION BOXES IN FINISHED AREAS SHALL BE PAINTED TO MATCH THE SURROUNDING FINISH.
6. ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL MECHANICAL, PLUMBING AND OTHER EQUIPMENT REQUIRING ELECTRICAL POWER, PRIOR TO PERFORMANCE OF ANY WORK.
7. ALL PANELBOARDS SHALL HAVE LOCKING DOORS AND SHALL BE KEYED ALIKE, UNLESS OTHERWISE NOTED.
8. ALL MOUNTING HEIGHTS FOR DEVICES SHALL BE AS PER ARCHITECTURAL DOCUMENTS.
9. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE IN WHICH WORK WILL BE INSTALLED. MAINTAIN HEADROOM AND SPACE CONDITIONS AT ALL TIMES.
10. LOCATION OF LOCAL WALL SWITCHES ARE SUBJECT TO MODIFICATIONS. AT OR NEAR DOORS, INSTALL SWITCHES ON SIDE OPPOSITE TO DOOR HINGES. VERIFY FINAL HINGE LOCATION IN FIELD PRIOR TO ANY WORK.
11. ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL WALL OUTLET BOXES FOR CLOCKS, SWITCHES, FIRE ALARM DEVICES, RECEPTACLES, ETC. WITH MILLWORK AND FURNITURE.
12. WHERE ELECTRIC MOTORS OR HEATERS ARE INSTALLED IN HUNG CEILINGS, PROVIDE DISCONNECT SWITCH IN HUNG CEILING WITHIN REACH FROM ACCESS POINT.
13. FURNISH APPROVED EXPANSION FITTINGS WHERE RACEWAY CROSSES BUILDING EXPANSION JOINTS.
14. FURNISH FISH WIRE IN EACH RACEWAY, IN WHICH PERMANENT WIRING IS NOT INSTALLED.
15. NOT MORE THAN THREE LIGHTING OR CONVENIENCE OUTLET CIRCUITS ARE PERMITTED IN ONE CONDUIT, UNLESS OTHERWISE INDICATED. ALL CIRCUITS SHALL HAVE A DEDICATED NEUTRAL UON.
16. PROVIDE PULL BOXES WHEREVER NECESSARY TO FACILITATE PULLING OF CONDUCTORS. COORDINATE LOCATIONS OF BOXES WITH OTHER TRADES TO AVOID CONFLICT.
17. OUTLET BOXES FOR LIGHT FIXTURES RECESSED IN HUNG CEILING SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY REMOVAL OF SUCH FIXTURES.
18. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR ADDITIONAL POWER REQUIREMENTS TO CONTROL PANELS AND TRANSFORMERS. ELECTRICAL CONTRACTOR SHALL VERIFY POWER REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO PERFORMANCE OF ANY WORK.
19. ALL EXTERIOR ELECTRICAL DEVICES AND EQUIPMENT SHALL BE WEATHERPROOF TYPE. ALL RECEPTACLES SHALL BE PROVIDED WITH CAST METAL WHILE-IN-USE COVERS AND ALL EXTERIOR EQUIPMENT ENCLOSURES AND DISCONNECT SWITCHES SHALL BE NEMA 3R STAINLESS STEEL.
20. LIGHTING, POWER, VOICE/DATA OUTLETS SHALL NOT BE INSTALLED BACK TO BACK.
21. WHERE MORE THAN ONE LIGHT SWITCH OCCURS AT SAME LOCATION, SWITCHES SHALL BE MOUNTED IN A MULTIPLE GANG BOX WITH A SINGLE COVER PLATE. REFER TO BOTH POWER AND LIGHTING DRAWINGS FOR LOCATIONS OF SWITCHES.
22. WHERE MORE THAN ONE HOMERUN IS SHOWN FOR A CIRCUIT, WIRES MUST BE SPLICED TOGETHER IN A JUNCTION BOX PRIOR TO ENTERING THE PANELBOARD ENCLOSURE. NO BRANCH CIRCUIT BREAKER MAY HAVE MORE THAN ONE CABLE AT ANY TERMINATION.
23. ALL HOMERUNS SHALL BE (2)#12+#12G THHN/THWN COPPER, UON. ALL WIRING SHALL BE TYPE THHN/THWN COPPER, UON.
24. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL POWER, LIGHTING AND CONTROL DEVICES WITHIN FINISHED AREAS.
25. MC CABLES SHALL NOT BE TERMINATED IN A PANELBOARD OR SWITCHBOARD ENCLOSURE. CABLES SHALL BE TERMINATED IN A TAP BOX AND THE WIRES SHALL BE CONTINUED, UNSPLICED, FROM THE TAP BOX TO THE CIRCUIT BREAKER.
26. PROVIDE FIRE STOPPING OF ALL ELECTRICAL PENETRATIONS THROUGH RATED PARTITIONS. FIRE STOPPING SHALL BE BY UL APPROVED DETAILS FOR THE CONSTRUCTION TYPE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A UL COMPLIANT SOLUTION FOR ALL REQUIRED PENETRATIONS THROUGH ANY FIRE RATED ASSEMBLY. CONTRACTOR SHALL SUBMIT ANY ADDITIONAL DETAILS REQUIRED FOR REVIEW PRIOR TO STARTING INSTALLATION.
27. ELECTRICAL CONTRACTOR SHALL COORDINATE NEMA RATINGS OF ALL DEVICES PRIOR TO INSTALLATION.
28. REFER TO AUDIOVISUAL, TELECOM AND SECURITY DRAWINGS FOR ALL BACKBOX AND CONDUIT REQUIREMENTS FOR THESE SYSTEMS. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL RACEWAYS AND BACKBOXES AS REQUIRED BY THE AUDIOVISUAL, TELECOM AND SECURITY DRAWINGS.

ELECTRICAL EQUIPMENT NAMING LEGEND

EXAMPLES

RP-LS -1A

- (D) SEQUENCE NUMBER
- (C) FLOOR
- (B) DISTRIBUTION BRANCH
- (A) TYPE OF EQUIPMENT

(A) TYPE OF EQUIPMENT

SWGR : SWITCHGEAR
SWBD : SWITCHBOARD
DP : DISTRIBUTION PANEL
PP : POWER PANEL
LP : LTG PANELBOARD
RP : RECEPT PANELBOARD
KP : KITCHEN PANELBOARD
TF : TRANSFORMER
ATS : AUTOMATIC TRANSFER SWITCH

(B) DISTRIBUTION BRANCH

EM : EMERGENCY LIFE SAFETY
LR : EMERGENCY LEGALLY REQUIRED
OS : EMERGENCY OPTIONAL STANDBY

(C) FLOOR

1 : FIRST FLOOR
2 : SECOND FLOOR

(D) SEQUENCE NUMBER

'A' THROUGH LAST LETTER NEEDED FOR EACH TYPE OF EQUIPMENT ON EACH LEVEL.

ELECTRICAL SHEET LIST

SHEET NUMBER	SHEET NAME
E00.00	ELECTRICAL GENERAL NOTES & LEGEND
E00.01	ELECTRICAL POWER SCHEDULES
E00.02	ELECTRICAL LIGHTING SCHEDULE
E01.00	ELECTRICAL LIGHTING SITE PLAN
E01.01	ELECTRICAL SITE POWER PLAN
E03.00	ELECTRICAL SINGLE LINE DIAGRAM
E03.01	ELECTRICAL GROUNDING SINGLE LINE DIAGRAM
E03.10	ELECTRICAL LIGHTING CONTROL DIAGRAM
E03.20	ELECTRICAL METERING SCHEMATIC
E04.01	ELECTRICAL FIRST FLOOR LIGHTING RCP
E04.02	ELECTRICAL SECOND FLOOR LIGHTING RCP
E04.03	ELECTRICAL LIGHTING DETAILS SHEET 1
E04.04	ELECTRICAL LIGHTING CONTROLS STRATEGY
E04.05	ELECTRICAL LIGHTING CONTROLS STRATEGY
E05.01	ELECTRICAL FIRST FLOOR POWER PLAN
E05.02	ELECTRICAL SECOND FLOOR POWER PLAN
E05.03	ELECTRICAL ROOF POWER PLAN
E06.01	ELECTRICAL FIRST FLOOR GROUNDING & LIGHTNING PROTECTION PLAN
E06.03	ELECTRICAL ROOF GROUNDING & LIGHTNING PROTECTION PLAN
E07.00	ELECTRICAL PART PLANS
E08.01	ELECTRICAL DETAILS SHEET 1
E08.02	ELECTRICAL DETAILS SHEET 2
E08.03	ELECTRICAL DETAILS SHEET 3
E08.04	ELECTRICAL DETAILS SHEET 4
E08.05	ELECTRICAL DETAILS SHEET 5
E08.06	ELECTRICAL DETAILS SHEET 6
E09.01	ELECTRICAL PANEL SCHEDULES SHEET 1
E09.02	ELECTRICAL PANEL SCHEDULES SHEET 2
E09.03	ELECTRICAL PANEL SCHEDULES SHEET 3

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COMMONWEALTH OF MASSACHUSETTS
JULIAN ASTBURY
ELECTRICAL
No. 45456
REGISTERED PROFESSIONAL ENGINEER
12/16/2025

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
	CONSTRUCTION DOCUMENTS 12/19/25	

Job Number 157132.000

TITLE

ELECTRICAL GENERAL NOTES & LEGEND

SHEET NUMBER

E00.00

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TRANSFORMER CONDUCTOR SCHEDULE

480V, 3 PHASE DELTA PRIMARY - 208/120V, WYE 3 PHASE, 4W SECONDARY
*ASSUMES THHN/THWN COPPER CONDUCTORS IN EMT CONDUIT

kVA RATING	PRIMARY FEEDER (1)	SECONDARY FEEDER (1,2,3)	PRIMARY OCPD	SECONDARY OCPD
	*COPPER	*COPPER	*COPPER	*COPPER
15	P30B	P55D	30A	50A
30	P55B	P110D	50A	100A
45	P110B	P175D	90A	150A
75	P150B	P255D	150A	225A
112.5	P230B	(2) SETS (4)#3/0+#1/0G,2-1/2"C	225A	400A
150	P310B	(2) SETS (4)250MCM+#1/0G,3"C	300A	500A
225	P230B x2	(2) SETS (4)600MCM+#3/0G,4"C	450A	800A
300	P310B x2	(3) SETS (4)500MCM+#3/0G,4"C	600A	1000A
500	P380B x3	(4) SETS (4)600MCM+#3/0G,4"C	1000A	1600A

NOTES:
1. FEEDER SIZE SHALL BE AS LISTED UNLESS NOTED OTHERWISE ON THE SINGLE LINE DIAGRAM(S).
2. TRANSFORMER GROUNDING ELECTRODE CONDUCTOR SHALL BE PROVIDED. SIZE SHALL MATCH GROUND CONDUCTOR SIZE SHOWN ON THE SECONDARY FEEDER.
3. PROVIDE ADDITIONAL SAME SIZE GROUND CONDUCTOR(S) FOR ALL TRANSFORMERS INDICATED AS ISOLATED GROUND.
4. THE PRIMARY FEEDER MAY BE PRO-RATED LOWER ONLY IF ALL OF NEC 240-21(B)(3) CONDITIONS ARE MET.

1 TRANSFORMER SCHEDULE

COPPER FEEDER SCHEDULE

DESIGNATION	CONDUCTORS (QTY, SIZE)	GROUND (SIZE)	CONDUIT (SIZE)
LOW VOLTAGE (600V) - ASSUMES THHN/THWN IN EMT CONDUIT			
P20A	2#12	#12	3/4"
P20B	3#12	#12	3/4"
P20D	4#12	#12	3/4"
P30A	2#10	#10	3/4"
P30B	3#10	#10	3/4"
P30D	4#10	#10	3/4"
P40A	2#8	#10	1"
P40B	3#8	#10	1"
P40D	4#8	#10	1"
P55B	3#6	#8	1-1/4"
P55D	4#6	#8	1-1/4"
P70B	3#4	#6	1-1/4"
P70D	4#4	#6	1-1/2"
P95B	3#2	#6	1-1/2"
P95D	4#2	#6	1-1/2"
P110B	3#1	#6	1-1/2"
P110D	4#1	#6	2"
P150B	3#1/0	#6	2"
P150D	4#1/0	#6	2"
P175B	3#2/0	#4	2"
P175D	4#2/0	#4	2"
P200B	3#3/0	#2	2-1/2"
P200D	4#3/0	#2	2-1/2"
P230B	3#4/0	#2	2-1/2"
P230D	4#4/0	#2	3"
P255B	(3)250MCM	#2	3"
P255D	(4)250MCM	#2	3-1/2"
P310B	(3)350MCM	#2	3"
P310D	(4)350MCM	#2	3-1/2"
P380B	(3)600MCM	#1/0	3-1/2"
P380D	(4)600MCM	#1/0	4"
P420B	(3)600MCM	#1/0	4"
P420D	(4)600MCM	#1/0	4"
MEDIUM VOLTAGE (15KV) REFER TO SPEC. FOR CABLE AND CONDUIT REQS			
H1	(3) 500MCM		5"

NOTE #1: FOR MULTIPLE FEEDERS, SIZE OF EACH GROUND WIRE SHALL BE UPSIZED BASED ON FEEDER CIRCUIT BREAKER SIZE PER NEC SECTION 250-122:

C.B. SIZE	GROUND WIRE
600A	#1
800A	#1/0
1000A	#2/0
1200A	#3/0
1600A	#4/0
2000A	250MCM
2500A	350MCM
3000A	400MCM
4000A	500MCM

NOTE #2: REFER TO SPECIFICATIONS FOR WIRE AND CONDUIT TYPE REQUIREMENTS FOR EACH SPACE. PROVIDE CONDUIT SIZE AS REQUIRED BASED ON SPECIFIED CONDUIT TYPE AND MASSACHUSETTS ELECTRICAL CODE MAXIMUM FILL RATIO REQUIREMENTS. SIZES INDICATED.

2 FEEDER SCHEDULE

DEVICE TYPE SCHEDULE

DEVICE LABEL	DESCRIPTION
ADR	ACCORDIAN DOOR POWER
AF	ARC FAULT CIRCUIT INTERRUPTER
BMS	BMS POWER. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
CP	CONTROL PANEL.
CR	CORD REEL
DR	ACCESS CONTROLLED DOOR POWER
FRE	FREEZER WITH GROUND FAULT CIRCUIT INTERRUPTER
FSD	POWER FOR 120V/24V TRANSFORMER FOR 24V FSD POWER. TRANSFORMER TO BE PROVIDED BY DIVISION 23.
G	GROUND FAULT CIRCUIT INTERRUPTER
GD	POWER FOR FUTURE RAM AIR GEAR DRYER.
ICE	ICE MAKER WITH GROUND FAULT CIRCUIT INTERRUPTER
MON	MONITOR. ELECTRICAL CONTRACTOR TO COORDINATE HEIGHT WITH OWNER.
MW	MICROWAVE
P	POWER FOR PURVIS SYSTE. COORDINATE POWER REQUIREMENTS AND EXACT LOCATIONS WITH PURVIS DRAWINGS.
PL	CONTROLLED RECEPTACLE. REFER TO E08.03/1.
PROJ	CEILING MOUNTED RECEPTACLE FOR FUTURE PROJECTOR.
RD	ROLL UP DOOR. REFER TO TL NOTE.
REF	REFRIGERTOR WITH GROUND FAULT CIRCUIT INTERRUPTER
SEC	SECURITY PANEL POWER
SH	MOTORIZED SHADES
SV	POWER FOR 208V SHUT-OFF VALVE.
TL	TRAFFIC LIGHT (LIFTMASTER RGL24LY) AND ASSOCIATED LOGIC CARDS AND ACCESSORIES TO BE FURNISHED AND INSTALLED BY EC. COORDINATE WITH VENDOR FOR EXACT WIRING DETAILS.
TP	ELECTRONIC TRAP PRIMER.
TV	TELEVISION
USB	DUPLEX RECEPTACLE WITH (2) USB-C OUTLETS
VAV	POWER FOR 120V/24V TRANSFORMER FOR 24V VAV POWER. TRANSFORMER TO BE PROVIDED BY DIVISION 23.
WASH	WASHING MACHINE WITH GROUND FAULT CIRCUIT INTERRUPTER
WC	WATER COOLER. PROVIDE DEDICATED CIRCUIT WITH GFCI BREAKER.

BRANCH CIRCUIT SCHEDULE

CIRCUIT BREAKER	CONDUCTOR
120 OR 277 VOLT, 1Ø, 2W, CIRCUITS	
20A - 1P	2#12 & 1#12G - 3/4"C
30A - 1P	2#10 & 1#10G - 3/4"C
40A - 1P	2#8 & 1#10G - 3/4"C
50A - 1P	2#6 & 1#10G - 3/4"C
60A - 1P	2#6 & 1#10G - 3/4"C
208 VOLT, 1Ø, 2W, CIRCUITS	
20A - 2P	2#12 & 1#12G - 3/4"C
30A - 2P	2#10 & 1#10G - 3/4"C
40A - 2P	2#8 & 1#10G - 3/4"C
50A - 2P	2#6 & 1#10G - 3/4"C
60A - 2P	2#6 & 1#10G - 3/4"C
208 or 480 VOLT, 3Ø, 3W, CIRCUITS	
20A - 3P	3#12 & 1#12G - 3/4"C
30A - 3P	3#10 & 1#10G - 3/4"C
40A - 3P	3#8 & 1#10G - 3/4"C
50A - 3P	3#6 & 1#10G - 3/4"C
60A - 3P	3#6 & 1#10G - 3/4"C

NOTES:
1. ALL BRANCH CIRCUIT SIZES ARE BASED ON RACEWAY LENGTH OF 65 FEET FOR 120 VOLT BRANCH CIRCUITS AND 150 FEET FOR 277 VOLT BRANCH CIRCUITS. IF LENGTH EXCEEDS 65 FEET (120 VOLT CIRCUITS) OR 150 FEET (277 VOLT CIRCUITS) THEN USE WIRE SIZE DENOTED BELOW AND INCREASE RACEWAY ACCORDINGLY. REDUCE LARGER CABLE SIZES IN JUNCTION BOX PRIOR TO DEVICE TERMINATION. PROVIDE WIRE REDUCERS AT BREAKERS WHEN REQUIRED.
2. EACH BRANCH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR. SHARED NEUTRALS ARE NOT ACCEPTABLE.

CIRCUIT LENGTH		
WIRE SIZE	120V CIRCUIT	277V CIRCUIT
#10	65 TO 120 FEET	150 TO 240 FEET
#8	120 TO 180 FEET	240 TO 400 FEET
#6	180 TO 250 FEET	400 TO 640 FEET
#4	250 TO 375 FEET	-
#2	375 TO 560 FEET	-

3 BRANCH CIRCUIT SCHEDULE

Mechanical Equipment Schedule (208 , 277, 480V)

Equipment	Equipment Number	Voltage	Phase	FLA	Panel	Circuit Number	Conductor Sets	Conductor Size	Ground Size	Conduit Size	Controller Type	Division	NEMA Rating	Disconnect Rating
ACCU	1	208 V	3	44.00	PP-OS-1B-2	29,31,33	1	3 #4	6	1 1/4"	Disconnect	26	NEMA 3R	100A
ACCU	2	208 V	3	11.20	PP-OS-1B-2	34,36,38	1	3 #10	10	1 1/4"	Disconnect	26	NEMA 3R	30A
ACCU	3	208 V	3	11.20	PP-OS-1B-2	35,37,39	1	3 #10	10	1 1/4"	Disconnect	26	NEMA 3R	30A
ASHP	1A	480 V	3	72.40	PP-OS-1A	1,3,5	1	3 #1/0	6	1 1/4"	Disconnect	26	NEMA 3R	200A
ASHP	1B	480 V	3	72.40	PP-OS-1A	7,9,11	1	3 #1/0	6	1 1/4"	Disconnect	26	NEMA 3R	200A
BS	1	208 V	1	0.44	PP-OS-1B-2	8,10	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
BS	2	208 V	1	0.59	PP-OS-1D	12,14	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
BS	3	208 V	1	0.30	PP-OS-1B-2	18,20	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
BS	4	208 V	1	0.44	PP-OS-1B-2	18,20	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
BS	5	208 V	1	0.59	PP-OS-1B-2	11,13	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
BS	6	208 V	1	0.30	PP-OS-1D	19,21	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
BS	7	208 V	1	0.59	PP-OS-2A	13,15	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
BS	8	208 V	1	0.30	PP-OS-2A	8,10	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
BS	9	208 V	1	0.30	PP-OS-1B-2	15,17	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
BS	10	208 V	1	0.59	PP-OS-2A	17,19	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
BS	11	208 V	1	0.59	PP-OS-2A	17,19	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
BS	12	208 V	1	0.44	PP-OS-1D	8,10	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
DOAS	1	480 V	3	45.90	PP-OS-1A	2,4,6	1	3 #4	10	1 1/4"	VFD	23	BY DIV. 23	BY DIV. 23
DOAS	2	480 V	3	101.40	PP-OS-1B	33,35,37	1	3 #1/0	6	2"	VFD	23	BY DIV. 23	BY DIV. 23
EF	1	208 V	1	3.20	PP-OS-1B-2	4,6	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
EF	2	480 V	3	14.00	PP-OS-1B	21,23,25	1	3 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
EF	3	480 V	3	4.80	PP-OS-1B	15,17,19	1	3 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
EF	D1	208 V	3	1.20	PP-OS-2A	9,11	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
EF	D2	208 V	3	1.20	PP-OS-2A	12,14	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
ESP	1	480 V	3	1.10	PP-LR-1	2,4,6	1	3 #12	12	3/4"	Disconnect	26	NEMA 3R	30A
EUH	1	277 V	1	9.00	PP-OS-1B	1	1	2 #12	12	3/4"	Integral	23	BY DIV. 23	BY DIV. 23
EUH	2	277 V	1	9.00	PP-OS-1B	3	1	2 #12	12	3/4"	Integral	23	BY DIV. 23	BY DIV. 23
EUH	3	277 V	1	9.00	PP-OS-1B	5	1	2 #12	12	3/4"	Integral	23	BY DIV. 23	BY DIV. 23
EUH	4	480 V	3	12.00	PP-OS-1A	25,27,29	1	3 #10	10	3/4"	Integral	23	BY DIV. 23	BY DIV. 23
EUH	5	480 V	3	12.00	PP-OS-1A	31,33,35	1	3 #10	10	3/4"	Integral	23	BY DIV. 23	BY DIV. 23
EUH	6	480 V	3	12.00	PP-OS-1B	9,11,13	1	3 #10	10	3/4"	Integral	23	BY DIV. 23	BY DIV. 23
EUH	7	480 V	3	12.00	PP-OS-1B	26,28,30	1	3 #10	10	3/4"	Integral	23	BY DIV. 23	BY DIV. 23
EUH	8	277 V	1	9.00	PP-OS-1B	7	1	2 #12	12	3/4"	Integral	23	BY DIV. 23	BY DIV. 23
EUH	9	277 V	1	9.00	PP-OS-1B	39	1	2 #12	12	3/4"	Integral	23	BY DIV. 23	BY DIV. 23
HHWP	1	208 V	1	5.40	PP-OS-1D	7,9	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
R	1	208 V	1	7.20	PP-OS-2A	20,22	1	2 #12	10	1"	Disconnect	26	NEMA 3R	30A
R	2	208 V	1	7.20	PP-OS-2A	16,18	1	2 #12	10	1"	Disconnect	26	NEMA 3R	30A
VRF	1	480 V	3	17.60	PP-OS-1A	13,15,17	1	3 #10	10	1"	Disconnect	26	NEMA 3R	60A
VRF	2	480 V	3	24.80	PP-OS-1A	19,21,23	1	3 #6	8	1"	Disconnect	26	NEMA 3R	60A
VRF	3	480 V	3	17.60	PP-OS-1B	8,10,12	1	3 #10	10	1"	Disconnect	26	NEMA 3R	30A
VRF	4	480 V	3	21.60	PP-OS-1B	14,16,18	1	3 #8	10	1"	Disconnect	26	NEMA 3R	60A
WH	1	480 V	3	65.00	PP-OS-1B	27,29,31	1	3 #2	6	1 1/4"	Disconnect	26	NEMA 3R	100A
WH	2	480 V	3	65.00	PP-OS-1A	8,10,12	1	3 #2	6	1 1/4"	Disconnect	26	NEMA 3R	100A

VRF Indoor Unit Heat Pump Electrical Schedule

Equipment	Equipment Number	Voltage	Phase	FLA	Panel	Circuit Number	Conductor Sets	Conductor Size	Ground Size	Conduit Size	Controller Type	Division	NEMA Rating	Disconnect Rating
FC	1-01	208 V	1	0.16	PP-OS-1D	11,13	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
FC	1-02	208 V	1	0.16	PP-OS-1D	19,21	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
FC	1-03	208 V	1	0.16	PP-OS-1D	11,13	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	1-05	208 V	1	0.16	PP-OS-1D	19,21	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	1-06	208 V	1	1.44	PP-OS-1B-2	8,10	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	1-07	208 V	1	1.44	PP-OS-1B-2	8,10	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
FC	1-08	208 V	1	1.44	PP-OS-1B-2	8,10	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	1-09	208 V	1	1.44	PP-OS-2A	13,15	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
FC	1-10	208 V	1	0.16	PP-OS-2A	28,30	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
FC	1-11	208 V	1	0.16	PP-OS-2A	28,30	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
FC	1-12	208 V	1	1.44	PP-OS-2A	13,15	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
FC	1-13	208 V	1	0.16	PP-OS-2A	28,30	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
FC	1-14	208 V	1	0.16	PP-OS-2A	24,26	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	1-15	208 V	1	0.16	PP-OS-1B-2	14,16	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
FC	1-16	208 V	1	1.44	PP-OS-1B-2	14,16	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	1-17	208 V	1	1.44	PP-OS-1B-2	14,16	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	1-18	208 V	1	1.44	PP-OS-1B-2	14,16	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	1-19	208 V	1	1.44	PP-OS-1B-2	15,17	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
FC	1-20	208 V	1	1.44	PP-OS-1B-2	15,17	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	1-21	208 V	1	1.44	PP-OS-2A	8,10	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	1-22	208 V	1	1.44	PP-OS-2A	21,23	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	1-23	208 V	1	1.44	PP-OS-2A	24,26	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	1-24	208 V	1	1.44	PP-OS-2A	21,23	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	1-26	208 V	1	1.44	PP-OS-1B-2	15,17	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	1-27	208 V	1	14.00	RP-LR-1	2,4	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-01	208 V	1	1.44	PP-OS-1D	12,14	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-02	208 V	1	1.44	PP-OS-1D	12,14	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-03	208 V	1	1.44	PP-OS-1D	4,6	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-04	208 V	1	1.44	PP-OS-1D	4,6	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-05	208 V	1	1.44	PP-OS-1D	4,6	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-06	208 V	1	1.44	PP-OS-1D	15,17	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-07	208 V	1	1.44	PP-OS-1D	15,17	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-08	208 V	1	1.44	PP-OS-1D	15,17	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-09	208 V	1	1.44	PP-OS-1D	8,10	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-10	208 V	1	1.44	PP-OS-1B-2	11,13	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-11	208 V	1	1.44	PP-OS-1B-2	11,13	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-12	208 V	1	1.44	PP-OS-1B-2	11,13	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-13	208 V	1	1.44	PP-OS-1B-2	30,32	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-14	208 V	1	1.44	PP-OS-1B-2	30,32	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-15	208 V	1	1.44	PP-OS-1B-2	18,20	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-16	208 V	1	1.44	PP-OS-1B-2	18,20	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-17	208 V	1	1.44	PP-OS-1B-2	7,9	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-18	208 V	1	1.44	PP-OS-1B-2	7,9	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-19	208 V	1	1.44	PP-OS-1D	12,14	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-20	208 V	1	1.44	PP-OS-1B-2	25,27	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-21	208 V	1	1.44	PP-OS-1B-2	25,27	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-22	208 V	1	1.44	PP-OS-1B-2	21,23	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-23	208 V	1	0.16	PP-OS-2A	32,34	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
FC	2-24	208 V	1	1.44	PP-OS-2A	32,34	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-25	208 V	1	1.44	PP-OS-2A	32,34	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-26	208 V	1	1.44	PP-OS-2A	17,19	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-27	208 V	1	1.44	PP-OS-2A	17,19	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-28	208 V	1	1.44	PP-OS-2A	25,27	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-29	208 V	1	1.44	PP-OS-2A	29,31	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-30	208 V	1	1.44	PP-OS-2A	29,31	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-31	208 V	1	1.44	PP-OS-2A	29,31	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-32	208 V	1	1.44	PP-OS-2A	25,27	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-33	208 V	1	1.44	PP-OS-1B-2	11,13	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-34	208 V	1	1.44	PP-OS-1B-2	18,20	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
FC	2-35	208 V	1	14.00	PP-OS-1B-2	47,49	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A
FC	2-36	208 V	1	1.44	PP-OS-1B-2	21,23	1	2 #10	10	3/4"	Disconnect	26	NEMA 1	30A

Firematic Equipment Schedule (208, 277, 480V)

Space: Name	Space: Number	Equipment	Voltage	Phase	FLA	Panel	Circuit Number	Conductor Sets	Conductor Size	Ground Size	Conduit Size	Controller Type	Division	NEMA Rating	Disconnect Rating
COMPRESSOR ROOM	103	COMPRESSOR	480 V	3	18.00	PP-OS-1B	20,22,24	1	4 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
LAUNDRY	119B	WASHER	208 V	3	4.20	RP-OS-1A	49,51,53	1	4 #12	12	3/4"	Disconnect	26	NEMA 3R	30A
LAUNDRY	119B	WASHER	208 V	3	4.20	RP-OS-1A	46,48,50	1	4 #12	12	3/4"	Disconnect	26	NEMA 3R	30A

Exterior Mechanical Equipment Schedule

Equipment	Description	Equipment Number	Voltage	Phase	FLA	Conductor Sets	Conductor Size	Ground Size	Conduit Size	Controller Type	Division	NEMA Rating	Disconnect Rating
FOP	FUEL OIL PUMP	1	120 V	1	3.89	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
FOP	FUEL OIL PUMP	2	120 V	1	3.89	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
FPS	FUEL POLISHING SYSTEM	1	120 V	1	2.57	1	2 #10	10	3/4"	Disconnect	26	NEMA 3R	30A
HB	HOT BOX	1	120 V	1	28.33	1	2 #6	8	1-1/4"	Disconnect	26	NEMA 3R	60A

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COMMONWEALTH OF MASSACHUSETTS
JULIAN ASTBURY
ELECTRICAL
No. 45456
REGISTERED PROFESSIONAL ENGINEER
12/16/2025

CONSTRUCTION DOCUMENTS 12/19/25

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL POWER SCHEDULES

SHEET NUMBER

E00.01

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Lighting Fixture Schedule

Type Mark	Description	Model	Manufacturer	Lamp Wattage	Wattage Comments	Voltage
AD01A	3"DOWNLIGHT STATIC WHITE 3000K 60DEGREES	OPUS ECO	LIGHTHEADED	9.0	W	277 V
AD01B	3"DOWNLIGHT STATIC WHITE 3500K 80DEGREES	OPUS ECO	LIGHTHEADED	9.0	W	277 V
AD01C	3" ADJUSTABLE DOWNLIGHT STATIC WHITE 3500K 20DEGREES	OPUS ECO	LIGHTHEADED	9.0	W	277 V
AD02A	3"DOWNLIGHT TUNABLE WHITE 2700K-4000K 60DEGREES	OPUS ECO	LIGHTHEADED	9.0	W	277 V
AD02B	3"DOWNLIGHT TUNABLE WHITE 2700K-4000K 60DEGREES HIGHER OUTPUT	OPUS ECO	LIGHTHEADED	13.0	W	277 V
AD02C	3"DOWNLIGHT TUNABLE WHITE 2700K-4000K 20DEGREES	OPUS ECO	LIGHTHEADED	9.0	W	277 V
AD04A	3"DOWNLIGHT STATIC WHITE 3500K 80DEGREES WET LOCATIONS	OPUS ECO	LIGHTHEADED	9.0	W	277 V
AD04B	3"DOWNLIGHT STATIC WHITE 4000K 80DEGREES WET LOCATIONS	OPUS ECO	LIGHTHEADED	9.0	W	277 V
AL01	3" SURFACE MOUNTED LINEAR LIGHT 500LM-FT 3500K BATWING OPTICS	BEAM 3 SURFACE	AXIS LIGHTING	4.2	W/ft	277 V
AL02	2" REGRESSED PERIMETER LINEAR 300LM-FT 3500K	SCULPT PERIMETER	AXIS LIGHTING	3.5	W/ft	277 V
AL03	PERIMETER COVE LIGHTING TUNABLE WHITE 2700K-4000K	COVE PERFECKT	AXIS LIGHTING	3.5	W/ft	277 V
AL05	3" SURFACE MOUNTED LINEAR LIGHT 1000LM-FT TW2700K-4000K BATWING OPTICS	BEAM 3 SURFACE	AXIS LIGHTING	9.3	W/ft	277 V
AL06	TAPE LIGHT 3000K	AS3	ACOLYTE	6.0	W/ft	277 V
AL07	2" RECESSED LINEAR 3500K DIFFUSE OPTIC	BEAM 2 RECESSED	AXIS LIGHTING	4.0	W/ft	277 V
AP01	DECORATIVE PENDANT LIGHT 16INCHES DIAMETER DIRECT ONLY 2700K	STELLA	EUREKA LIGHTING	35.0	W	277 V
AP02	2.5 INCHES CYLINDER PENDANT MOUNTED 3000K	CD1X	LUCIFER LIGHTING	11.0	W	277 V
AT01	TRACK SURFACE MOUNTED RAIL WITH CURRENT LIMITER	TRACK SURFACE	LUCIFER LIGHTING	216.0	W/27ft	120 V
ATH01A	3" ROUND TRACK HEAD 40DEGREES	CTM2	LUCIFER LIGHTING	11.0	W	120 V
ATH01B	3" ROUND TRACK HEAD 40DEGREES	CTM2	LUCIFER LIGHTING	11.0	W	120 V
AW01	WALL MOUNTED INDIRECT LINEAR LIGHT DIM TO WARM 2900K-2000K	AS2	ACOLYTE	5.2	W/ft	277 V
AW02	WALL MOUNT TASK LIGHITNG	TIP	MUUTO	8.0	W	120 V
AW03	WALL MOUNTED DIRECT LINEAR LIGHT	BEAM 3 WALL MOUNT	AXIS LIGHTING	8.8	W/ft	277 V
E01	3" CYLINDER SURFACE MOUNTED WET LOCATION 40DEGREES	CY3X	LUCIFER LIGHTING	11.0	W	277 V
E02A	POLE TOP LUMINAIRE WITH ASYMMETRIC LIGHT DISTRIBUTION TYPE IV FORWARD	COLIBRI MIDI	VIZULO	70.0	W	277 V
E02B	POLE TOP LUMINAIRE WITH SYMMETRIC LIGHT DISTRIBUTION TYPE V	COLIBRI MIDI	VIZULO	70.0	W	277 V
E02C	POLE TOP LUMINAIRE WITH ASYMMETRIC LIGHT DISTRIBUTION TYPE II	COLIBRI MIDI	VIZULO	70.0	W	277 V
E03	PATH BOLLARD	HERON	VIZULO	26.0	W	277 V
E05	2.5" CYLINDER SURFACE MOUNTED FOR CANOPY WET RATED EXTERIOR	CY1	LUCIFER LIGHTING	17.0	W	277 V
E06	5.5" RECESSED DOWNLIGHT WET RATED EXTERIOR	FRAXION 4 SLIM	LUCIFER LIGHTING	11.0	W	277 V
E07	WALL MOUNTED WET RATED	ROBIN	VIZULO	26.0	W	277 V
E08	GROUND STAKE MOUNTED FLOOD LIGHT FOR FLAG	ROOK X ACCENT	AMERLUX	12.0	W	277 V
E09A	RECESSED LINEAR FOR OUTDOOR CANOPY AND VESTIBULE	EXTEND 2	AXIS LIGHTING	3.5	W/ft	277 V
E09B	RECESSED LINEAR FOR OUTDOOR CANOPY WALLWASH	EXTEND 2	AXIS LIGHTING	3.5	W/ft	277 V
E10	SURFACE MOUNTED LINEAR OPTIC GRAZING OUTDOOR RATED	ADONIS	LED LINEAR	3.1	W/ft	277 V
FP01	HIGH BAY PENDANT LIGHT INDIRECT-DIRECT	ECHELAN	COLUMBIA LIGHTING	138.0	W	277 V
FP02	LED STRIP ROUND LENS PENDANT MOUNTED	MPS	COLUMBIA LIGHTING	4.0	W/ft	277 V
FR01A	2X4 TROFFER	CBT LSCS 120-347V	COLUMBIA LIGHTING	25.0	W	277 V
FR01B	2X4 TROFFER WET LISTED	LJT24	COLUMBIA LIGHTING	27.0	W	277 V
FS01	LED STRIP ROUND LENS SURFACE MOUNTED	MPS	COLUMBIA LIGHTING	4.0	W/ft	277 V
FW01	LED STRIP FLAT LENS WALL MOUNTED	MPS	COLUMBIA LIGHTING	5.8	W/ft	277 V
FW02	LED STRIP ROUND LENS WALL MOUNTED ELEVATOR PIT	MPS	COLUMBIA LIGHTING	16.0	W	277 V
FW03	LED WALL MOUNTED FOR TRAINING TOWER	VRSE-5	LEVITON	26.0	W	277 V
PS01	PURVIS SYSTEM - LED LIGHT - RED	BY OTHERS	BY OTHERS	4.0	W	120 V
PS02	PURVIS SYSTEM - STROBE LIGHT - RED	BY OTHERS	BY OTHERS	10.0	W	120 V
S/G	STOP AND GO COMMUNICATION LIGHTS	SG10-RG-LED	TRI LITE	20.0	W	120 V
X1	EXIT SIGN	-	-	10.0	W	277 V

REFER TO 260650 FOR COMPLETE LIGHTING SPECIFICATIONS

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PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL LIGHTING SCHEDULE

SHEET NUMBER

E00.02

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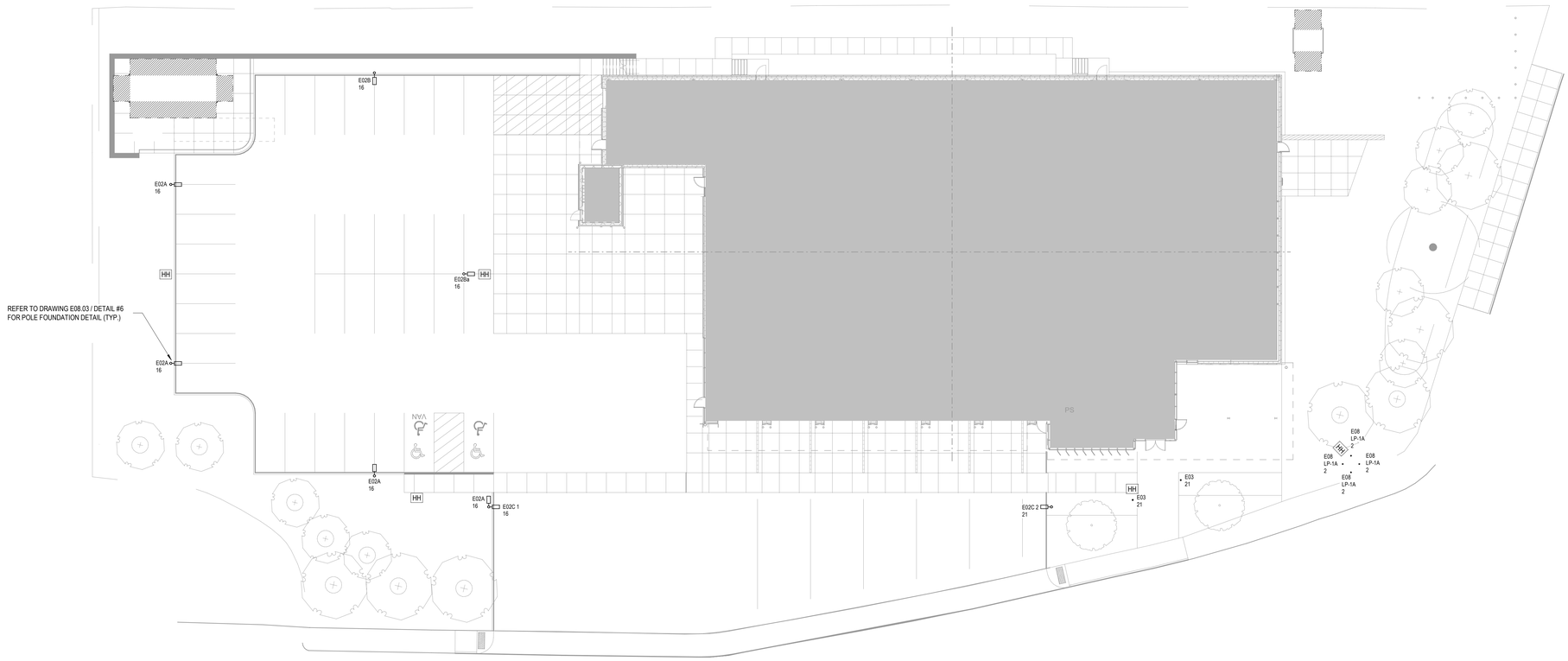
Exterior Lighting Control Strategy:

	Notes
Lights Included	All fixtures are dimmable.
Timeclock operation	All fixtures on preset timeclock control with manual scene selection override. Astronomical timeclock provide
Manual operation	Local dimming switch provided for Tower training outdoor zone. E02Ba Pole light, and E07a wall sconces zone switch shall be type ON/OFF (provide up to 1 location).
Setback	Lighting is automatically reduced by 50% from not later than midnight to not earlier than 6 a.m.
Building facade and landscape	Building facade and landscape lighting shall automatically shut off from not later than 1 hour after business closing to not earlier than 1 hour before business opening.
Emergency	Upon loss of power to any normal circuit within the exterior lighting, or by initiation from the fire alarm system all emergency lighting goes to 100%.

GENERAL NOTES

1. SEE DRAWING E00.00 FOR LEGENDS, NOTES, AND ABBREVIATIONS.
2. U.O.N, ALL LIGHT FIXTURES TO BE FED FROM PANEL PP-EM-1.



1 ELECTRICAL LIGHTING SITE PLAN
1/16" = 1'-0"

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COMMONWEALTH OF MASSACHUSETTS
JULIAN ASTBURY
ELECTRICAL
No. 45456
REGISTERED
PROFESSIONAL ENGINEER
12/16/2025

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL LIGHTING SITE PLAN

SHEET NUMBER

E01.00

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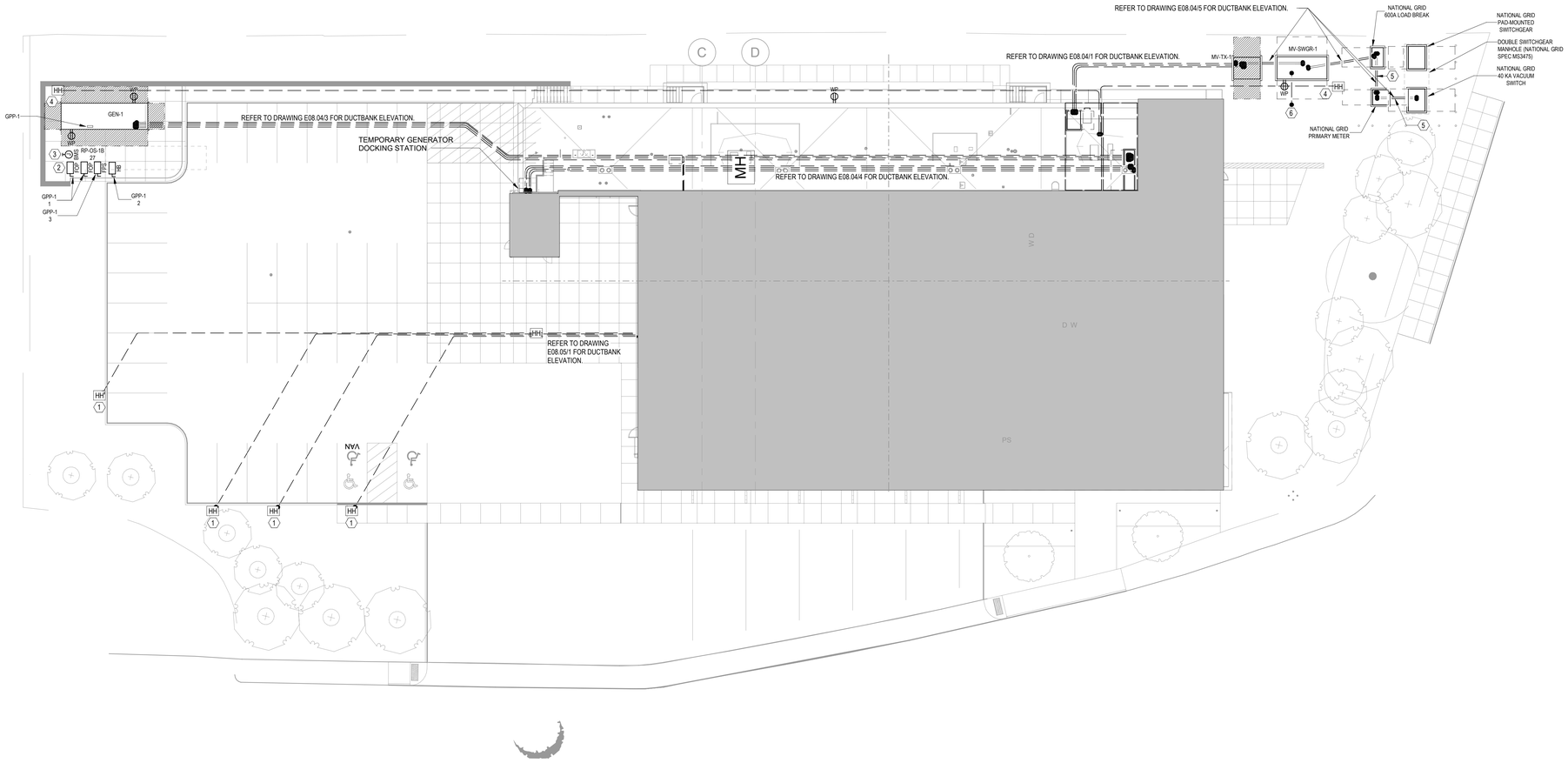
KEY NOTES

1. CONDUIT AND WIRE SHALL BE FURNISHED AND ROUTED FROM PANEL PP-EV TO FUTURE EV CHARGER HANDHOLES.
2. FUEL OIL PUMPS, FUEL POLISHING SYSTEM, BMS AND HOTBOX SYSTEM SHALL BE LOCATED WITHIN THE ENCLOSURE PROVIDED BY DIVSION 23.
3. POWER CONNECTION FOR BMS PANEL. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR. BMS POWER LOCATED INSIDE FUEL PUMP ENCLOSURE.
4. FURNISH AND INSTALL HANDHOLE FOR FUTURE EXTERIOR LIGHTING. PROVIDE 1" EMPTY CONDUIT WITH PULLSTRING FROM HANDHOLE TO PANEL LP-1A.
5. FURNISH AND INSTALL (2) 4" EMPTY CONDUIT WITH PULLSTRING BETWEEN NATIONAL GRID EQUIPMENT.
6. PROVIDE SPARE CONDUIT FROM SWITCHGEAR AND STUB OUT UNDERGROUND 5 FEET BEYOND CONCRETE PAD FOR FUTURE USE. CONDUIT SHALL BE CAPPED AND SEALED UNDERGROUND.

GENERAL NOTES

1. SEE DRAWING E00.00 FOR LEGENDS, NOTES, AND ABBREVIATIONS.
2. UNDERGROUND CONDUIT ROUTING IS DIAGRAMMATIC AND INTENDED TO CONVEY CONNECTIVITY RATHER THAN ACTUAL CONDUIT ROUTINGS. CONDUIT RUNS, WHERE SHOWN, ARE INTENDED TO REPRESENT THE GENERAL CONDUIT ROUTING ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT QUANTITY, CONFIGURATION AND ROUTING IN THE FIELD. NOT ALL CONDUIT RUNS ARE SHOWN.



1 ELECTRICAL SITE PLAN
1/16" = 1'-0"

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COMMONWEALTH OF MASSACHUSETTS
JULIAN ASTBURY ELECTRICAL No. 45456 REGISTERED PROFESSIONAL ENGINEER
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CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL SITE POWER PLAN

SHEET NUMBER

E01.01

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CONSTRUCTION DOCUMENTS 12/19/25

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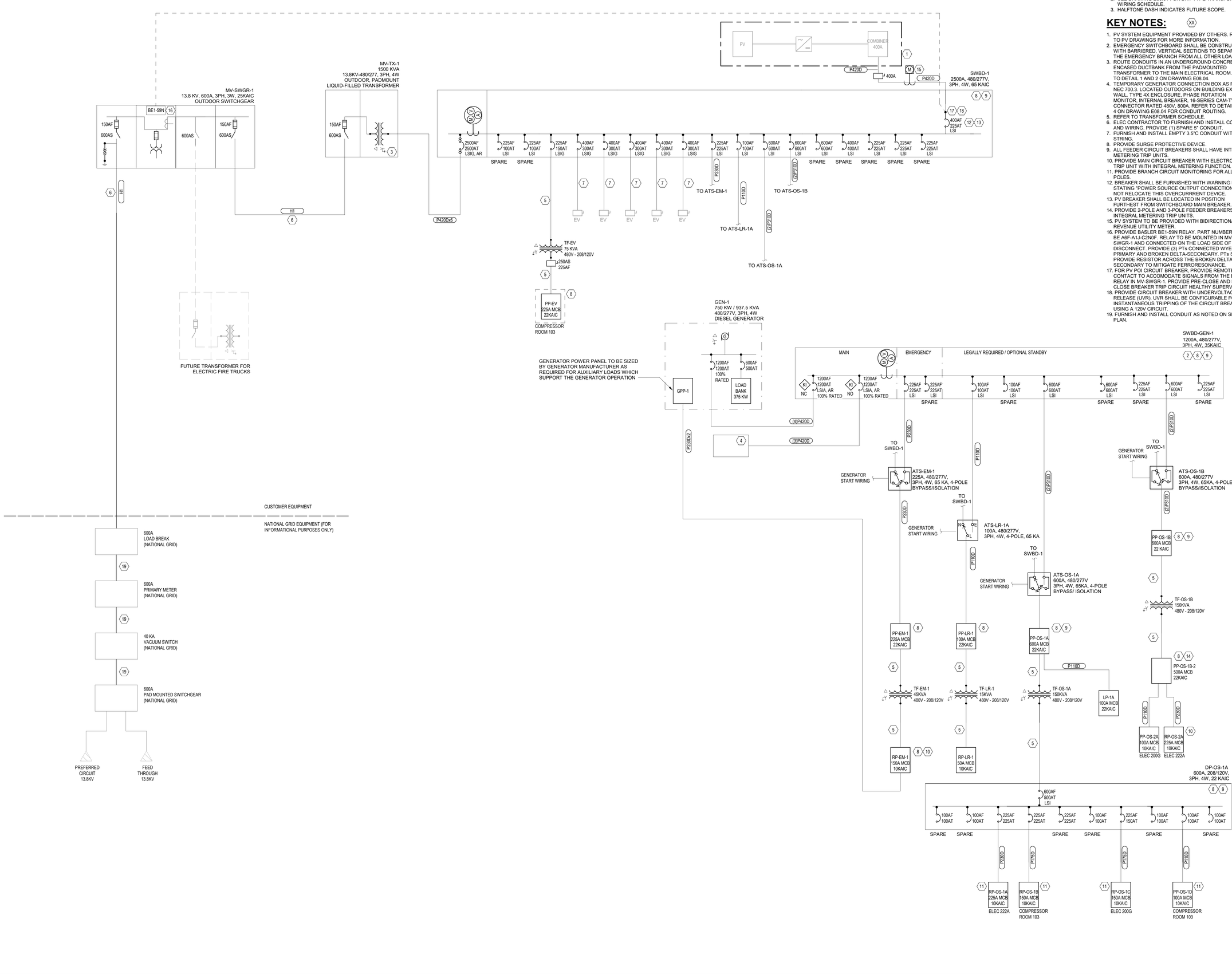
GENERAL NOTES:

1. SEE DRAWING E00.00 FOR LEGENDS, NOTES, AND ABBREVIATIONS.
2. SEE DRAWING E00.01 FOR DRY TYPE TRANSFORMER WIRING SCHEDULE.
3. HALFTONE DASH INDICATES FUTURE SCOPE.

KEY NOTES: (XX)

1. PV SYSTEM EQUIPMENT PROVIDED BY OTHERS. REFER TO PV DRAWINGS FOR MORE INFORMATION.
2. EMERGENCY SWITCHBOARD SHALL BE CONSTRUCTED WITH BARRIERED, VERTICAL SECTIONS TO SEPARATE THE EMERGENCY BRANCH FROM ALL OTHER LOADS.
3. ROUTE CONDUITS IN AN UNDERGROUND CONCRETE-ENCASED DUCTBANK FROM THE PADMOUNTED TRANSFORMER TO THE MAIN ELECTRICAL ROOM. REFER TO DETAIL 1 AND 2 ON DRAWING E08.04.
4. TEMPORARY GENERATOR CONNECTION BOX AS PER NEC 700.3. LOCATED OUTDOORS ON BUILDING EXTERIOR WALL. TYPE 4X ENCLOSURE, PHASE ROTATION MONITOR, INTERNAL BREAKER, 16-SERIES CAM-TYPE CONNECTOR RATED 480V, 800A. REFER TO DETAIL 1 AND 4 ON DRAWING E08.04 FOR CONDUIT ROUTING.
5. REFER TO TRANSFORMER SCHEDULE.
6. ELEC CONTRACTOR TO FURNISH AND INSTALL CONDUIT AND WIRING. PROVIDE (1) SPARE 5" CONDUIT.
7. FURNISH AND INSTALL EMPTY 3.5"C CONDUIT WITH PULL STRING.
8. PROVIDE SURGE PROTECTIVE DEVICE.
9. ALL FEEDER CIRCUIT BREAKERS SHALL HAVE INTEGRAL METERING TRIP UNITS.
10. PROVIDE MAIN CIRCUIT BREAKER WITH ELECTRONIC TRIP UNIT WITH INTEGRAL METERING FUNCTION.
11. PROVIDE BRANCH CIRCUIT MONITORING FOR ALL POLES.
12. BREAKER SHALL BE FURNISHED WITH WARNING LABEL STATING "POWER SOURCE OUTPUT CONNECTION - DO NOT RELOCATE THIS OVERCURRENT DEVICE.
13. PV BREAKER SHALL BE LOCATED IN POSITION FURTHEST FROM SWITCHBOARD MAIN BREAKER.
14. PROVIDE 2-POLE AND 3-POLE FEEDER BREAKERS WITH INTEGRAL METERING TRIP UNITS.
15. PV SYSTEM TO BE PROVIDED WITH BIDIRECTIONAL REVENUE UTILITY METER.
16. PROVIDE BASLER BE1-59N RELAY. PART NUMBER SHALL BE A6F-A1J-C2N0F. RELAY TO BE MOUNTED IN MV-SWGR-1 AND CONNECTED ON THE LOAD SIDE OF THE DISCONNECT. PROVIDE (3) PTs CONNECTED WYE-PRIMARY AND BROKEN DELTA-SECONDARY. PTs SHALL PROVIDE RESISTOR ACROSS THE BROKEN DELTA SECONDARY TO MITIGATE FERRORESONANCE.
17. FOR PV POI CIRCUIT BREAKER, PROVIDE REMOTE TRIP CONTACT TO ACCOMODATE SIGNALS FROM THE BE1-59N RELAY IN MV-SWGR-1. PROVIDE PRE-CLOSE AND POST-CLOSE BREAKER TRIP CIRCUIT HEALTHY SUPERVISION.
18. PROVIDE CIRCUIT BREAKER WITH UNDERVOLTAGE RELEASE (UVR). UVR SHALL BE CONFIGURABLE FOR INSTANTANEOUS TRIPPING OF THE CIRCUIT BREAKER USING A 120V CIRCUIT.
19. FURNISH AND INSTALL CONDUIT AS NOTED ON SITE PLAN.



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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE

ELECTRICAL SINGLE LINE DIAGRAM

SHEET NUMBER

E03.00

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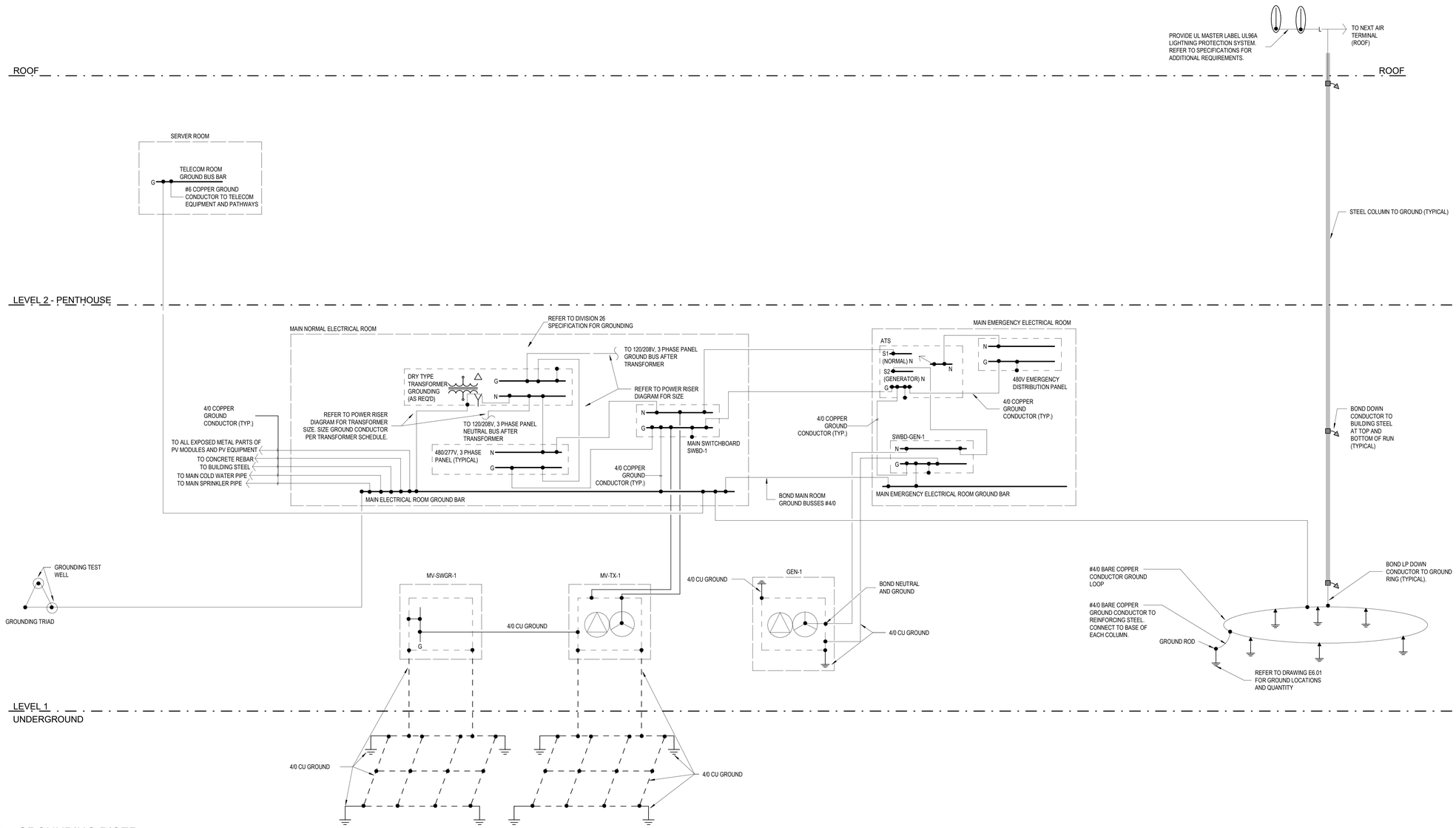
GENERAL NOTES:

1. DIAGRAM SHOWS GROUNDING DESIGN INTENT. ALL EQUIPMENT/PANELS TO BE GROUNDED
2. ALL EQUIPMENT TO BE GROUNDED PER MANUFACTURERS RECOMMENDATIONS.
3. ABOVE GRADE GROUND CABLING SHALL BE #4/0 INSULATED COPPER. U.O.N.
4. GROUND CABLE SHALL BE ROUTED IN 1" C. U.O.N.
5. REFER TO TRANSFORMER DETAIL 5 ON SHEET E08.02 FOR TRANSFORMER GROUNDING DETAIL.



1 GROUNDING RISER

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ELECTRICAL GROUNDING SINGLE LINE DIAGRAM

SHEET NUMBER

E03.01

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GENERAL NOTES:

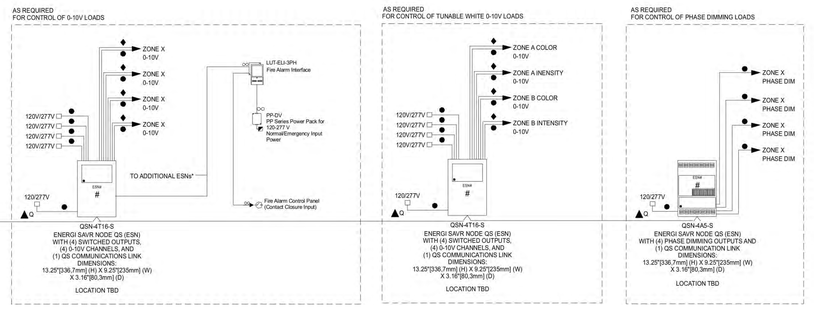
1. REFER TO 260943 - NETWORK LIGHTING CONTROL SPECIFICATION.
2. LIGHTING CONTROL SYSTEM DESIGN BASIS IS LUTRON ATHENA. DESIGN ALTERNATES INCLUDE NLIGHT AND WATTSTOPPER.
3. VENDOR SHALL ENSURE THAT ALL NECESSARY COMPONENTS ARE PROVIDED TO FORM A COMPLETE LIGHTING CONTROL SYSTEM, AND THAT ALL SPECIFIC EQUIPMENT LIMITATIONS AND REQUIREMENTS ARE ACCOUNTED FOR IN THE SUBMITTAL.

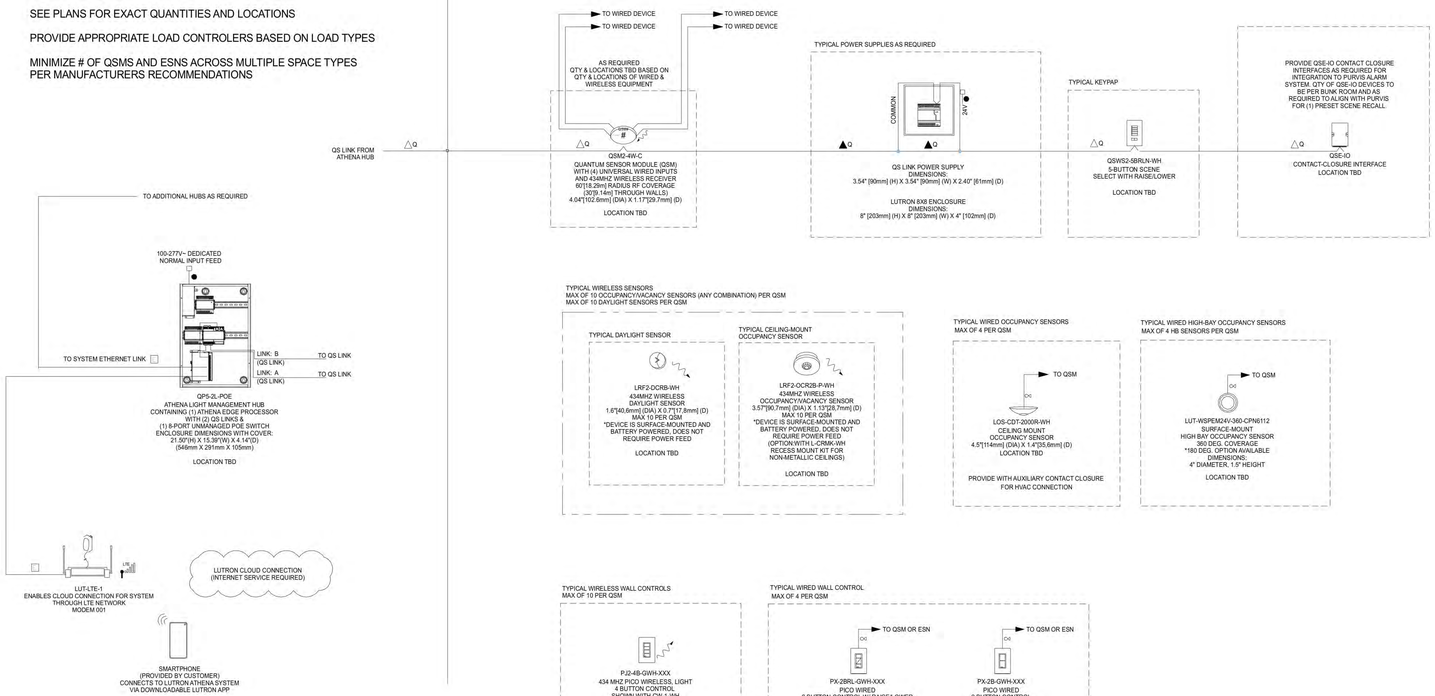
CONCEPT DRAWING NOTES:
CONTROL SYSTEM DRAWING IS PROVIDED FOR CONCEPTUAL PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION. EXACT EQUIPMENT REQUIREMENTS, INCLUDING LOCATIONS AND QUANTITIES, SHOULD BE VERIFIED IN ACCORDANCE WITH THE MOST UP-TO-DATE LIGHTINGELECTRICAL REFLECTED CEILING PLANS, LIGHTING FIXTURE SCHEDULES, PANEL SCHEDULES, CONTROL INTENT AND SPECIFICATIONS. SHADE EQUIPMENT SHOULD BE VERIFIED IN ACCORDANCE WITH ARCHITECTURAL PLANS, SPECIFICATIONS AND WINDOW SCHEDULES/DETAILS.

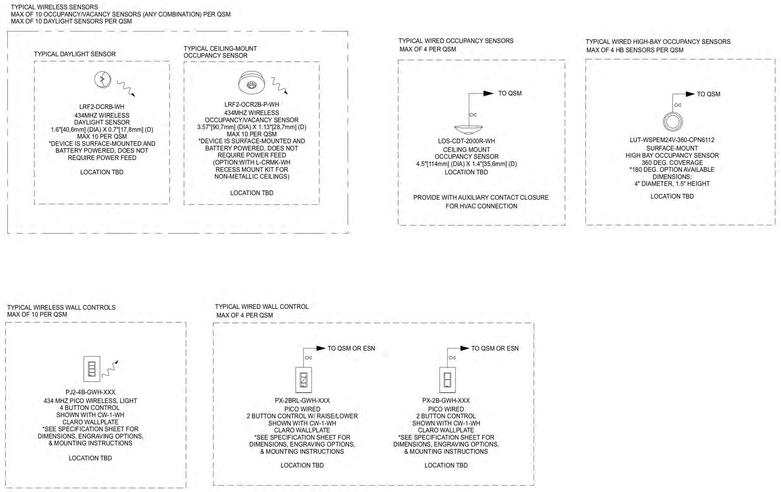
SEE PLANS FOR EXACT QUANTITIES AND LOCATIONS

PROVIDE APPROPRIATE LOAD CONTROLERS BASED ON LOAD TYPES

MINIMIZE # OF QSMS AND ESNS ACROSS MULTIPLE SPACE TYPES PER MANUFACTURERS RECOMMENDATIONS







TYPICAL LOAD SIDE TRANSFER RELAYS

PROVIDED BY LVS CONTROLS

WIRING LEGEND:

△Q QS CONTROL LINK (SEE WIRE DESCRIPTION BELOW)
▲Q QS CONTROL LINK (SEE WIRE DESCRIPTION BELOW) (CONNECT WIRES 1, 3 AND 4, DO NOT CONNECT WIRE # 2)

QS WIRING AS REQUIRED BY CONTROL LINK LENGTH
(REFER TO QS SMART PANEL POWER SUPPLY WIRING GUIDE FOR SHADE WIRING NOTES):

TOTAL CONTROL LINK LENGTH	WIRE GAUGE	AVAILABLE FROM LUTRON IN ONE CABLE:
LESS THAN 500ft (152.4 m)	POWER (TERMINALS 1&2): 1 PAIR 18 AWG (1.0 mm²)	GRX-CBL-346S (NON-PLENUM) OR GRX-PCBL-346S (PLENUM)
	DATA (TERMINALS 3&4): 1 PAIR 22 AWG (0.5 mm²), TWISTED AND SHIELDED*	
500ft (152.4 m) TO 2,000ft (610 m)**	POWER (TERMINALS 1&2): 1 PAIR 12 AWG (4.0 mm²)	GRX-CBL-46L (NON-PLENUM) OR GRX-PCBL-46L (PLENUM)
	DATA (TERMINALS 3&4): 1 PAIR 22 AWG (0.5 mm²), TWISTED AND SHIELDED*	

*ALTERNATE DATA-ONLY CABLE: USE APPROVED DATA LINK CABLE (22 AWG [0.5 mm²] TWISTED/SHIELDED) FROM BELDEN (MODEL # 9451).
**TOTAL LENGTH OF THE QS LINK MUST NOT EXCEED 2,000 ft (600 m).

- INPUT POWER (NORMAL-EMERGENCY)
- INPUT POWER (NORMAL)
- 2 #12AWG (4 mm2)
- 3 #12AWG (4 mm2)
- 0-10V SIGNAL: 2 #18AWG (1.0 mm2)
- CONTACT CLOSURE SIGNAL: 2 #18AWG (1.0 mm2)
- CONTACT CLOSURE SIGNAL: 3 #18AWG (1.0 mm2)
- CLEAR CONNECT - TYPE A WIRELESS SIGNAL
- CLEAR CONNECT - TYPE X WIRELESS SIGNAL
- LUTRON SENSOR CABLE C-CBL-522S OTHERWISE USE 3 #22 AWG (1.0 mm2)
- LUTRON SENSOR CABLE C-CBL-522S OTHERWISE USE 4 #22 AWG (1.0 mm2)
- D DMX CONTROL
- E CAT5E OR BETTER CABLE FOR LUTRON NETWORK TERMINATED WITH RJ45 CONNECTORS. 328 ft (100 m) MAXIMUM RUN.
- E POWER OVER ETHERNET (POE) ETHERNET LINK, CAT5E OR BETTER CABLE FOR LUTRON NETWORK TERMINATED WITH RJ45 CONNECTORS. 328 ft (100 m) MAXIMUM RUN

QS EQUIPMENT

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12/16/2025

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CONSTRUCTION DOCUMENTS 12/19/25

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CITY OF WORCESTER
455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL LIGHTING CONTROL DIAGRAM

SHEET NUMBER

E03.10

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SHEET NOTES:

1. PROVIDE ALL WIRING BETWEEN METERS, GATEWAYS, AND SWITCHES AS REQUIRED BY MANUFACTURER.
2. PROVIDE FACTORY INSTALLED RACEWAY WITHIN SWITCHBOARDS AS REQUIRED TO ALLOW FOR EXTERNAL WIRING FOR NETWORK CONNECTION. FACTORY INSTALLED RACEWAY SHALL SEPARATE THE LV WIRING FROM ALL LINE VOLTAGE WIRING. THE RACEWAY SHALL EXTEND A MINIUM OF 6" ABOVE THE SWITCHBOARD.

1 ELECTRICAL POWER METERING SYSTEM SCHEMATIC
NTS

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ISSUE CHART

MARK	ISSUE	DATE

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TITLE

ELECTRICAL METERING SCHEMATIC

SHEET NUMBER

E03.20

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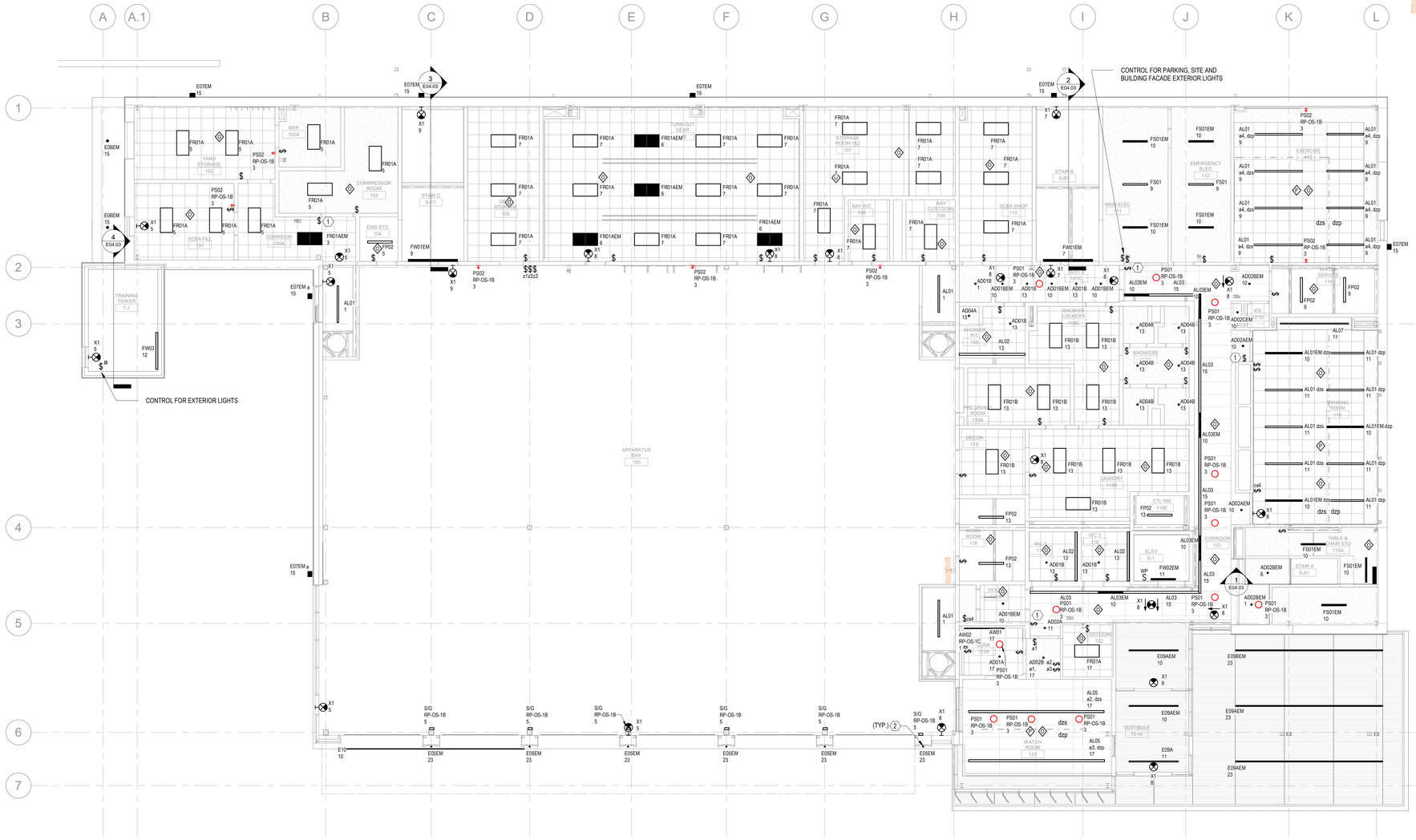
GENERAL NOTES

1. SEE DRAWING E00.00 FOR LEGENDS, NOTES, AND ABBREVIATIONS.
2. COORDINATE LOCATION OF ALL COMMON AREA LIGHTING CONTROL SWITCHES WITH ARCHITECT PRIOR TO INSTALLATION.
3. LIGHT FIXTURES DESIGNATED AS EMERGENCY SHALL BE PROVIDED WITH UL 924 BYPASS RELAY, AND FOLLOW SAME CONTROL SEQUENCE AS INDICATED IN CONTROL NARRATIVE. UPON LOSS OF NORMAL POWER, EMERGENCY FIXTURES SHALL TURN ON TO FULL BRIGHTNESS.
4. U.O.N. LIGHT FIXTURES TO BE FED FROM THE FOLLOWING PANELS.
   A. ALL NORMAL LIGHTING SHALL BE FED FROM LP-1A
   B. ALL EMERGENCY LIGHTING AND EXIT SIGNS SHALL BE FED FROM PP-EM-1.
5. TYPICAL CONTROL BY ROOM TYPE:
   A. OFFICES /STUDY: MANUAL ON/AUTOMATIC OFF
   B. CORRIDORS: FIXTURES DESIGNATED EMERGENCY SHALL REMAIN ON 24/7.
   C. STORAGE, IT, OTHER ROOMS: MANUAL ON/AUTOMATIC OFF
   D. BUNK ROOM: MANUAL ON/AUTOMATIC OFF
   E. RESTROOM: MANUAL ON/ AUTOMATIC OFF

KEY NOTES

1 MANUAL OVERRIDE SWITCH FOR CORRIDOR.

2 DRIVERS, BRANCH WIRING AND CONDUIT BETWEEN FIXTURES, AND REQUIRED JUNCTION BOXES FOR TYPE E05EM LUMINAIRES SHALL BE LOCATED INTERIOR TO THE APPARATUS BAY. CONTRACTOR TO LIMIT EXTERIOR EXPOSED BRANCH WIRING AND CONDUIT TO FIXTURE.



1 ELECTRICAL FIRST FLOOR LIGHTING RCP
1/8" = 1'-0"

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ELECTRICAL FIRST FLOOR LIGHTING RCP

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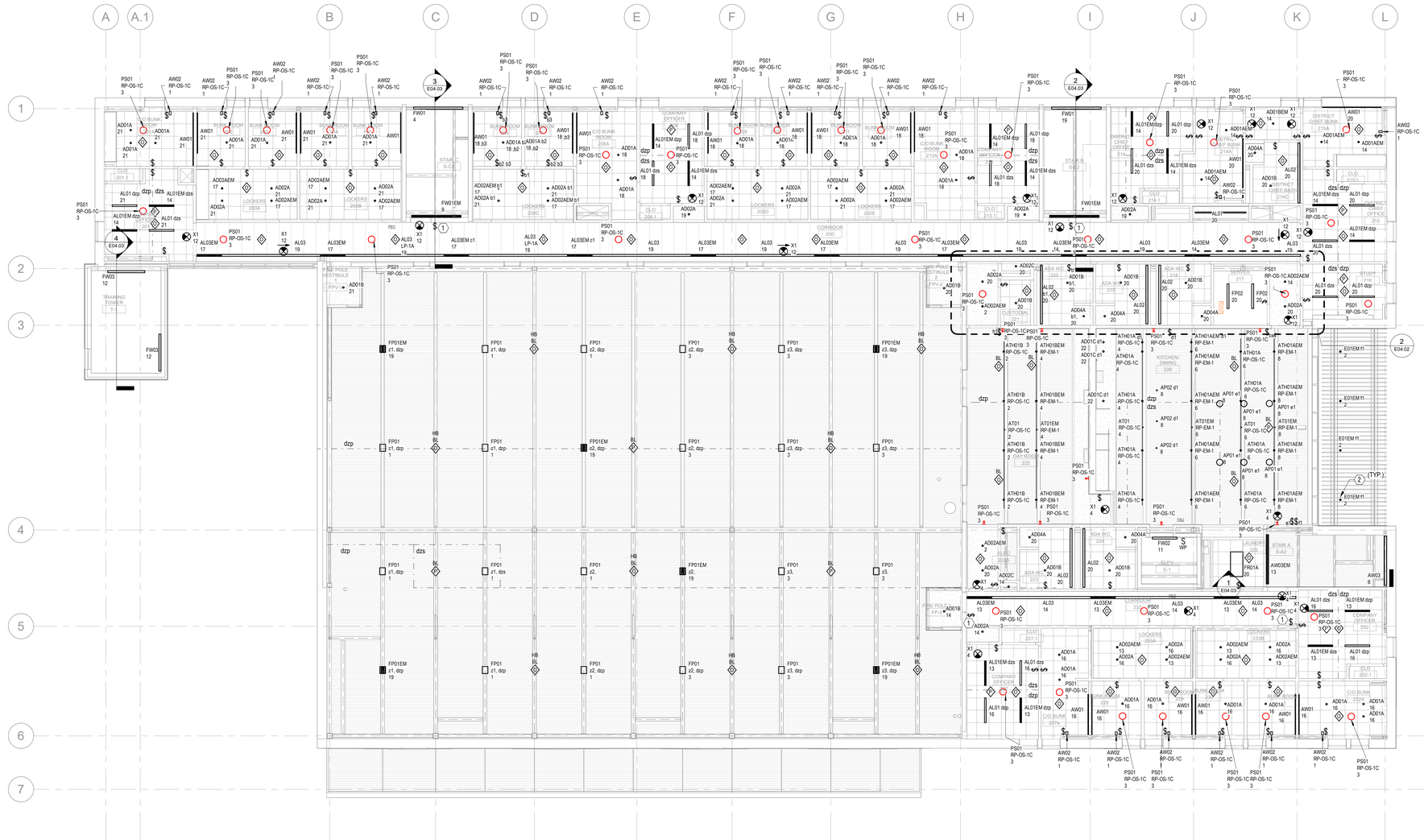
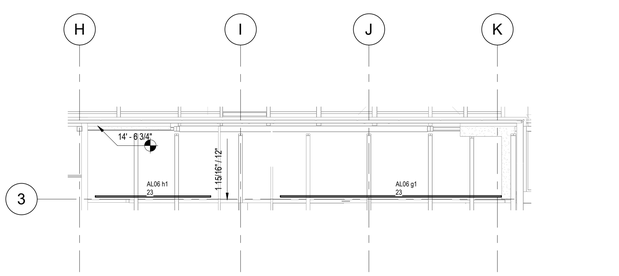


1 ELECTRICAL SECOND FLOOR LIGHTING RCP
1/8" = 1'-0"



2 ELECTRICAL SECOND FLOOR ENLARGED RCP
1/8" = 1'-0"

GENERAL NOTES

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2. COORDINATE LOCATION OF ALL COMMON AREA LIGHTING CONTROL SWITCHES WITH ARCHITECT PRIOR TO INSTALLATION.
3. LIGHT FIXTURES DESIGNATED AS EMERGENCY SHALL BE PROVIDED WITH UL 924 BYPASS RELAY, AND FOLLOW SAME CONTROL SEQUENCE AS INDICATED IN CONTROL NARRATIVE. UPON LOSS OF NORMAL POWER, EMERGENCY FIXTURES SHALL TURN ON TO FULL BRIGHTNESS.
4. U.O.N. LIGHT FIXTURES TO BE FED FROM THE FOLLOWING PANELS.
   A. ALL NORMAL LIGHTING SHALL BE FED FROM LP-1A
   B. ALL EMERGENCY LIGHTING AND EXIT SIGNS SHALL BE FED FROM PP-EM-1.
5. TYPICAL CONTROL BY ROOM TYPE:
   A. OFFICES /STUDY: MANUAL ON/AUTOMATIC OFF
   B. CORRIDORS: FIXTURES DESIGNATED EMERGENCY SHALL REMAIN ON 24/7.
   C. STORAGE, IT, OTHER ROOMS: MANUAL ON/AUTOMATIC OFF
   D. BUNK ROOM: MANUAL ON/AUTOMATIC OFF
   E. RESTROOM: MANUAL ON/ AUTOMATIC OFF

KEY NOTES

1 MANUAL OVERRIDE SWITCH FOR CORRIDOR.
2 BRANCH WIRING AND CONDUIT TO TERRACE LUMINAIRES SHALL BE ROUTED ALONG STRUCTURAL FRAME.

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JULIAN ASTBURY
ELECTRICAL
No. 45455
REGISTERED PROFESSIONAL ENGINEER
12/16/2025

CONSTRUCTION DOCUMENTS 12/19/25

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL SECOND FLOOR LIGHTING RCP

SHEET NUMBER

E04.02

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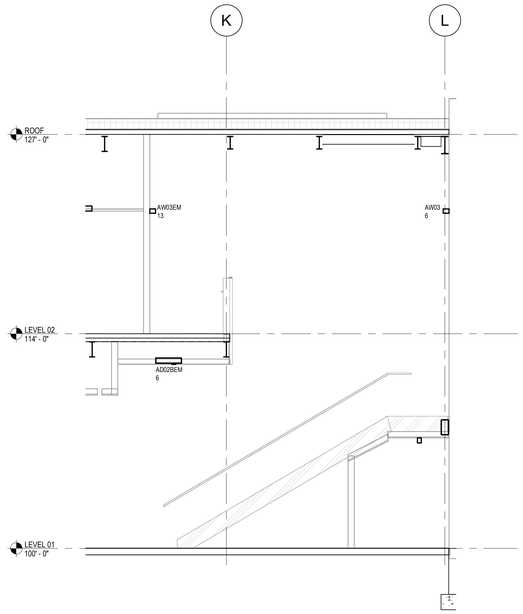
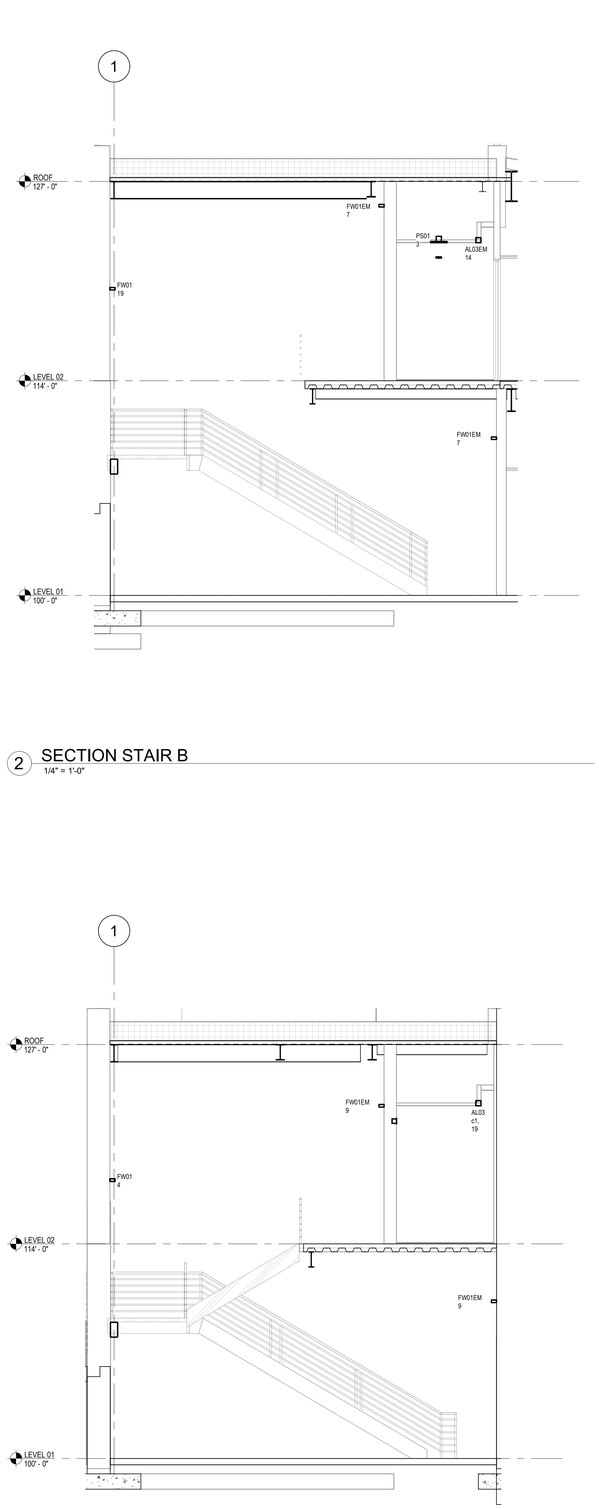
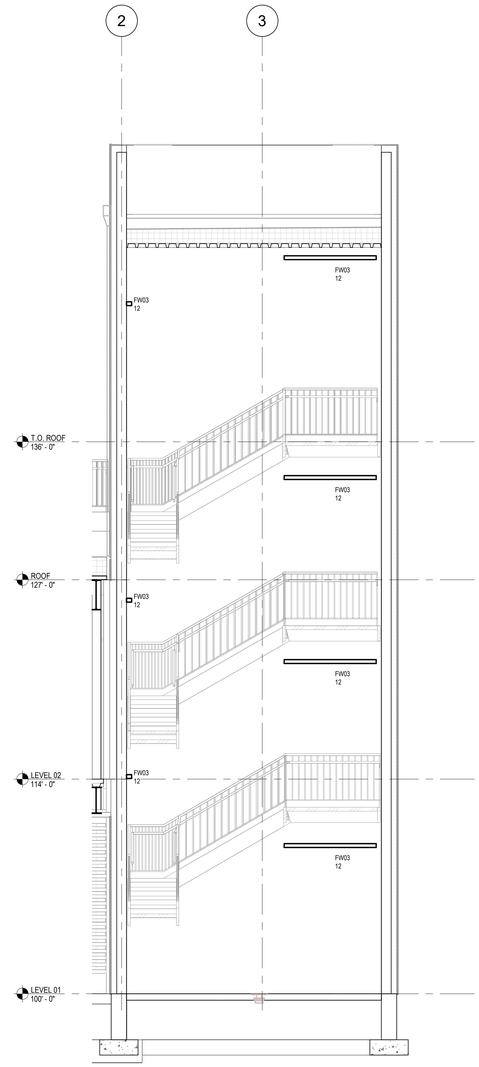


1 SECTION STAIR A
1/4" = 1'-0"

2 SECTION STAIR B
1/4" = 1'-0"



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



4 SECTION TRAINING TOWER T1
1/4" = 1'-0"

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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL LIGHTING DETAILS SHEET 1

SHEET NUMBER

E04.03

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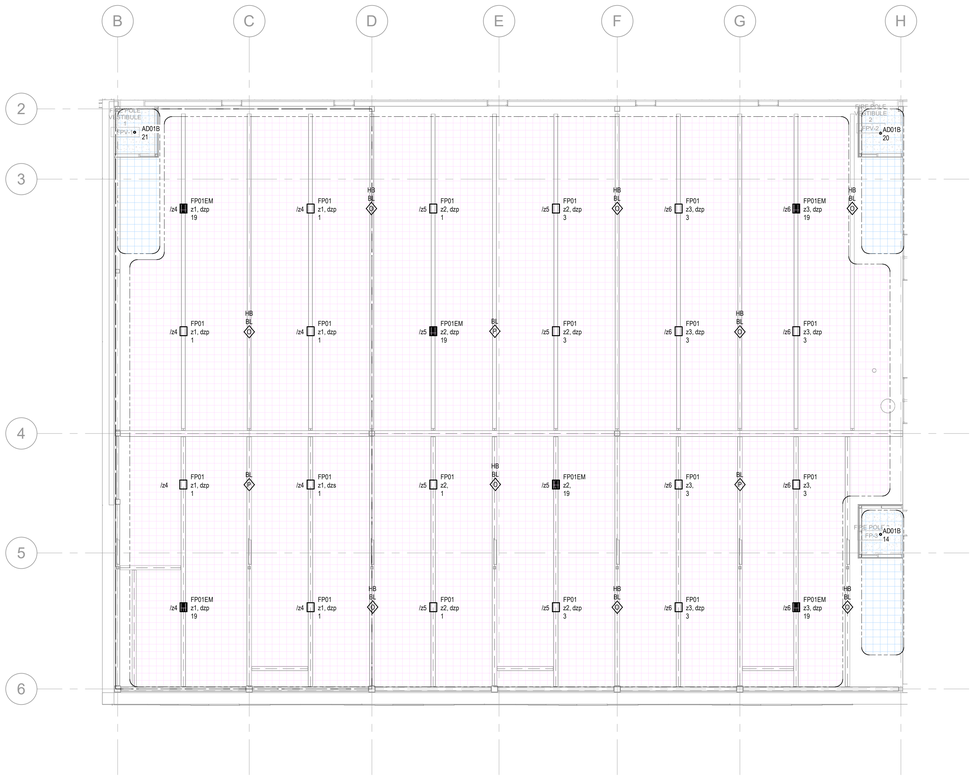

1 APPARATUS BAY CONTROL INTENT
1/8" = 1'-0"

DEVICE LEGEND

CS4 — 4 BUTTON SCENE CONTROL SWITCH
BATTERY POWERED WITH WIRELESS CONTROL
*TO INCLUDE WALL MOUNTING ACCESSORIES.
LUTRON: PJ2-4B-GWH-L31

Timeclock Schedule (typ): For time schedule events, use the following regularly scheduled times, programmable by Owner through the lighting control system:

MORNING: 5:30am - Sunrise
DAY: Sunrise - Sunset
EVENING: Sunset – 11:30pm
OVERNIGHT: 11:30pm – 5:30am
SUNSET and SUNRISE as calculated by astronomical time clock

Apparatus Bay Control Strategy:

	Notes
Lights Included	All fixtures are dimmable.
Timeclock operation	All fixtures on preset timeclock control with manual scene selection override.
Occupancy/vacancy operation	All fixtures operate with OCCUPANCY detection. Upon detection of Occupancy, all zones raise DIM level to preset timeclock scene. Upon Vacancy, lights DIM to unoccupied preset timeclock scene, after time delay of 20 min.
Manual operation	Local ON-OFF Switch control provided in up to (3) locations. Local scene control provided in up to (1) location. Scene control keypad shall be type cs4, and include: - Scenes 2/3/5/OFF
Daylight Dimming	Required for daylight zones.
Emergency	Upon loss of power to any normal circuit within the same room, or by initiation from the fire alarm system all emergency lighting goes to 100%.
Fire Alerting Call	Upon the event of the Fire Alerting Call, all AP01 Direct lighting goes to 100%. After time delay of 10 mins, when Unoccupied, Direct lighting DIM to 10%. When Occupied, all zones raise DIM level to preset timeclock scene.
Set points	See *Scene Setting Schedule.*

Lighting Control Scene Setting Schedule - Apparatus Bay

					SCHEDULED SCENES - **APPARATUS BAY**																				"OFF" *			
					Scene 1 - "Morning"				Scene 2 - "Day"				Scene 3 - "Evening"				Scene 4 - "Overnight"				Scene 5 - "Fire Alerting Call"							
Zone / Fixture Type & Function				Indirect Light AP01	Daylight	Dimming	Motion	Timeclock	Daylight	Dimming	Motion	Timeclock	Daylight	Dimming	Motion	Timeclock	Daylight	Dimming	Motion	Timeclock	Daylight	Dimming	Motion	Timeclock	Daylight	Dimming	Motion	Timeclock
APPARATUS BAY	General	AP01	gz1		✓	50%	O	✓	✓	100%	O	✓	✓	50%	O	✓	✓	10%	O	✓	-	100%	O	-	✓	10%	O	-
			gz2		✓	50%	O	✓	✓	100%	O	✓	✓	50%	O	✓	✓	10%	O	✓	-	100%	O	-	✓	10%	O	-
			gz3		✓	50%	O	✓	✓	100%	O	✓	✓	50%	O	✓	✓	10%	O	✓	-	100%	O	-	✓	10%	O	-
				gz4	✓	50%	O	✓	✓	50%	O	✓	✓	50%	O	✓	✓	80%	O	✓	-	100%	O	-	✓	10%	O	-
				gz5	✓	50%	O	✓	✓	50%	O	✓	✓	50%	O	✓	✓	80%	O	✓	-	100%	O	-	✓	10%	O	-
				gz6	✓	50%	O	✓	✓	50%	O	✓	✓	50%	O	✓	✓	80%	O	✓	-	100%	O	-	✓	10%	O	-
FIRE POLE	General	AD01B	gz1,2,3		-	50%	O	✓	-	100%	O	✓	-	50%	O	✓	-	20%	O	✓	-	80%	O	-	✓	10%	O	-
		AL01	gz1,3		-	50%	O	✓	-	100%	O	✓	-	50%	O	✓	-	50%	O	✓	-	100%	O	-	✓	10%	O	-

THE BUILDING OPERATES 24/7. REFER TO ELECTRICAL PLANS FOR FURTHER ZONING DIRECTION/GUIDANCE FOR LIGHTING CONTROLS.
* FOR SAFETY/SECURITY OF OCCUPANTS IN BUILDING, LIGHTS IN THIS SPACE SHALL MAINTAIN MINIMUM LIGHTING TO REMAIN ON WHEN SPACE IS UNOCCUPIED.

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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL LIGHTING CONTROLS STRATEGY

SHEET NUMBER

E04.04

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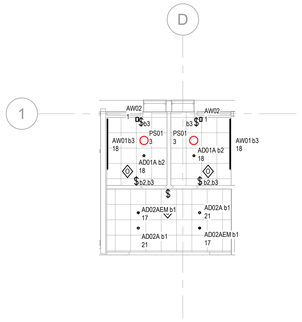
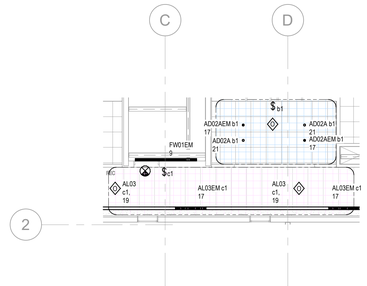


1 BUNK ROOM CONTROL INTENT
1/8" = 1'-0"



2 CORRIDOR AND LOCKER ROOM CONTROL INTENT
1/8" = 1'-0"

Corridor and Locker room - Timeclock Settings

			Scene 1 - "Morning"				Scene 2 - "Day"				Scene 3 - "Evening"				Scene 4 - "Overnight"				Scene 5 - "Fire Alerting Call"			
Zone / Fixture Type & Function			CCT	Dimming	Motion	Timeclock	CCT	Dimming	Motion	Timeclock	CCT	Dimming	Motion	Timeclock	CCT	Dimming	Motion	Timeclock	CCT	Dimming	Motion	Timeclock
CORRIDOR	AL03	c1	2700K-3000K	25%	O	✓	3000K-4000K-3500K-3000K	100%	O	✓	3000K-2700K	70%	O	✓	2700K	25%	O	✓	2700K	60%	O	✓
LOCKER ROOM	AD02A	b1	2700K-3000K	25%	O	✓	3000K-4000K-3500K-3000K	100%	O	✓	3000K-2700K	70%	O	✓	2700K	25%	O	✓	2700K	30%	O	✓

Typical Bunk Room Control Strategy:

	Notes
Lights Included	All fixtures are dimmable.
Timeclock operation	None.
Manual operation	Manual ON. Local dimming switch provided for zone b2,b3. AD01A downlight zone b2 and AW01 Indirect light zone b3 switch shall be type ON/OFF AW01 Indirect light (Warm to Dim) zone b3 switch shall be type ON/OFF/Dimmer (provide up to 1 locations close to bed). AW02 Task light zone has an integral switch and dimmer.
Occupancy/vacancy operation	All fixtures operate with VACANCY detection. When Unoccupied, all general and accent zones DIM to OFF with a time delay of 20 min.
Fire Alerting Call	Upon the event of the Fire Alerting Call, AD01A Downlight goes to 10%. After time delay of 10 mins, when Unoccupied, lighting DIM to OFF.
Emergency	Upon loss of power to any normal circuit within the same room, or by initiation from the fire alarm system all emergency lighting goes to 100%.

Typical Corridor and Locker Room Control Strategy:

	Notes
Lights Included	All fixtures are dimmable.
Timeclock operation	All fixtures on preset timeclock control. General zone fixtures (c1-b1) with manual override via located switches (ON/OFF/Dimmer).
Occupancy/vacancy operation	General zones (c1-b1) operate with OCCUPANCY detection. When Unoccupied, c1 and b1 DIM to 10%. When Occupied, c1-b1 raise DIM level to preset timeclock scene.
Manual operation	Local manual control provided in up to (2) locations for the corridor and up to (1) for locker room. Manual switch shall include: - ON/OFF/Dimmer
CCT	All fixtures are Tunable White with Correlated Color Temperature (CCT) variable from 2700K to 4000K. Refer to "Corridor Variable Color Temperature Settings" in Lighting Report for CCT values.
Emergency	Upon loss of power to any normal circuit in area, or by initiation from the fire alarm system all emergency lighting goes to 100%.
Fire Alerting Call	Upon the event of the Fire Alerting Call, c1 zone goes to 50% and b1 goes to 25%. After time delay of 10 mins, when Unoccupied, c1 and b1 DIM to 25%. When Occupied, all zones raise DIM level to preset timeclock scene.
Set points	See *Scene Setting Schedule*.

Exercise Room Control Strategy:

	Notes
Lights Included	All fixtures are dimmable.
Timeclock operation	None.
Occupancy/vacancy operation	All fixtures operate with OCCUPANCY detection. When Unoccupied, all zones DIM to OFF. When Occupied, all zones raise DIM level to Partial ON (typical). If space is Unoccupied for ≤20 min, upon detection of OCCUPANCY, raise DIM level to last used setpoints.
Manual operation	Local switch provided in up to (1) locations. Manual switch shall include: - ON/OFF/Dimmer
Daylighting	All fixtures within daylight zones operate with daylight dimming to OFF.
Emergency	Upon loss of power to any normal circuit within the same room, or by initiation from the fire alarm system all emergency lighting goes to 100%.

Training Room Control Strategy:

	Notes
Lights Included	All fixtures are dimmable.
Timeclock operation	None.
Occupancy/vacancy operation	All fixtures operate with OCCUPANCY detection. When Unoccupied, all zones DIM to OFF. When Occupied, all zones raise DIM level to Partial ON (typical). If space is Unoccupied for ≤20 min, upon detection of OCCUPANCY, raise DIM level to last used setpoints.
Manual operation	Local scene control provided in up to (1) location. Scene control keypad shall be type cs4, and include: - Function Scenes 2/3/4/OFF Manual control via switches provided up to (1) location, shall include: - ON/OFF
Daylighting	All fixtures within daylight zones operate with daylight dimming to OFF.
Emergency	Upon loss of power to any normal circuit within the same room, or by initiation from the fire alarm system all emergency lighting goes to 100%.

Kitchen Control Strategy:

	Notes
Lights Included	All fixtures are dimmable.
Timeclock operation	All fixtures on preset timeclock control with manual scene selection override.
Occupancy/vacancy operation	All fixtures operate with OCCUPANCY detection. When Unoccupied, all zones DIM to OFF with a time delay of 20 min. and task and accent zone d1/g1 DIM to 10%. Upon detection of Occupancy, all zones raise DIM level to preset timeclock scene.
Manual operation	Up to (1) local scene control keypad provided in secure location to control all zones. Scene control 4-button keypad shall include: - Scenes 2/3/5/OFF An additional switch shall be provided to control the d1 task zone, with: - ON/OFF/Dimmer An additional switch shall be provided to control the e1 dining area zone, with: - ON/OFF An additional switch shall be provided to control the f1 outdoor terrace area zone, with: - ON/OFF
Daylight Dimming	All fixtures within daylight zones operate with daylight dimming to OFF.
Emergency	Upon loss of power to any normal circuit within the same room, or by initiation from the fire alarm system all emergency lighting goes to 100%.
Fire Alerting Call	Upon the event of the Fire Alerting Call, all ATH01A lighting goes to 100%. After time delay of 10 mins, when Unoccupied, all ATH01A lighting DIM to OFF. When Occupied, all zones raise DIM level to preset timeclock scene.

Day Room Control Strategy:

	Notes
Lights Included	All fixtures are dimmable.
Timeclock operation	All fixtures on preset timeclock control with manual scene selection override.
Occupancy/vacancy operation	All fixtures operate with OCCUPANCY detection. When Unoccupied, all zones DIM to OFF with a time delay of 20 min. and accent zone h1 DIM to 10%. Upon detection of Occupancy, all zones raise DIM level to preset timeclock scene.
Manual operation	A switch shall be provided to control all the lighting ATH01B, with: - ON/OFF An additional switch shall be provided to control the h1 accent zone, with: - ON/OFF
Daylight Dimming	All fixtures within daylight zones operate with daylight dimming to OFF.
Emergency	Upon loss of power to any normal circuit within the same room, or by initiation from the fire alarm system all emergency lighting goes to 100%.
Fire Alerting Call	Upon the event of the Fire Alerting Call, all ATH01B lighting goes to 100%. After time delay of 10 mins, when Unoccupied, all ATH01B lighting DIM to OFF. When Occupied, all zones raise DIM level to preset timeclock scene.

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

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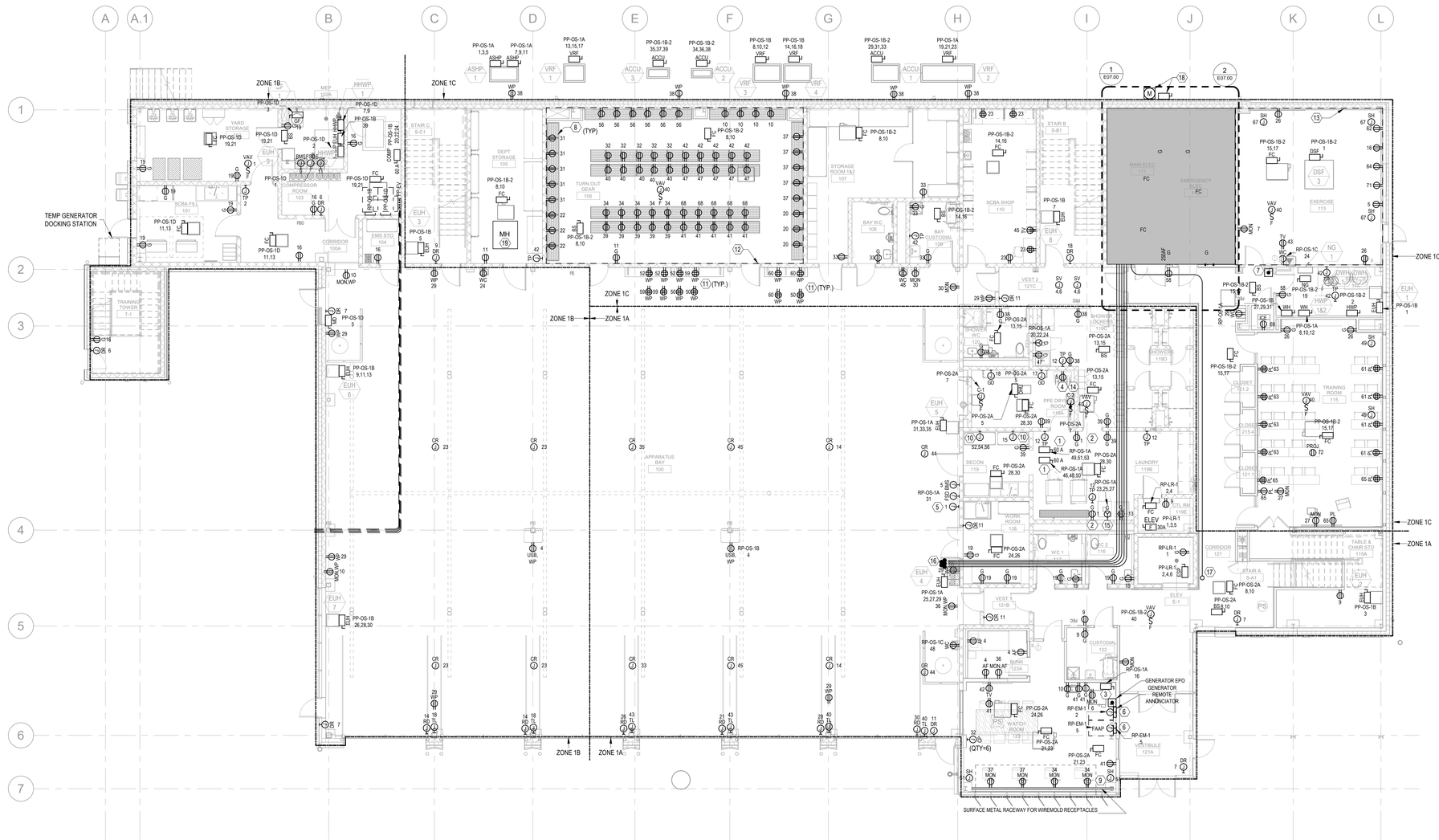

1 ELECTRICAL FIRST FLOOR POWER PLAN
1/8" = 1'-0"

GENERAL NOTES

1. SEE DRAWING E00.00 FOR LEGENDS, NOTES, AND ABBREVIATIONS.
2. SEE DRAWING E03.00 FOR SINGLE LINE DIAGRAM.
3. ALL CONDUIT SHALL BE CONCEALED UNLESS OTHERWISE NOTED.
4. CONDUIT RUNS, WHERE SHOWN, ARE INTENDED TO REPRESENT THE GENERAL CONDUIT ROUTING ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT QUANTITY, CONFIGURATION AND ROUTING IN THE FIELD. NOT ALL CONDUIT RUNS ARE SHOWN.
5. CONTRACTOR TO PROVIDE PULL BOXES SO THAT CONDUIT RUNS DO NOT EXCEED BENDS EXCEEDING 360 DEGREES AS PER NEC 314.28.
6. ALL EXPOSED CONDUIT SHALL BE PAINTED. PAINT COLOR TO BE COORDINATED WITH ARCHITECT.
7. U.O.N. DEVICES IN "ZONE 1A" TO BE FED FROM THE FOLLOWING PANELS.
   A. ALL RECEPTACLES AND SMALL POWER LOADS SHALL BE FED FROM RP-OS-1A.
   B. ALL 208/120V MECHANICAL LOADS SHALL BE FED FROM PP-OS-2A.
1. U.O.N. DEVICES IN "ZONE 1B TO BE FED FROM THE FOLLOWING PANELS.
   A. ALL RECEPTACLES AND SMALL POWER LOADS SHALL BE FED FROM RP-OS-1B.
   B. ALL 208/120V MECHANICAL LOADS SHALL BE FED FROM PP-OS-1D.
2. U.O.N. DEVICES IN "ZONE 1C" TO BE FED FROM THE FOLLOWING PANELS.
   A. ALL RECEPTACLES AND SMALL POWER LOADS SHALL BE FED FROM RP-OS-1C.
   B. ALL 208/120V MECHANICAL LOADS SHALL BE FED FROM PP-OS-1B-2.
3. ALL 15A AND 20A, 120V CIRCUITS IN BUNK ROOMS AND COMPANY OFFICE/DISTRICT CHIEF SUITES SHALL BE PROTECTED BY AFCI CIRCUIT BREAKERS.
4. REFER TO ARCHITECTURAL PACKAGE FOR EXACT LOCATIONS AND ELEVATIONS.

KEY NOTES

1 208-1P POWER CONNECTION TO 12KW GEAR WASHER. PROVIDE BREAKER WITH GFCI PROTECTION.
2 FOR WASHER / EXTRACTOR DETERGENT DELIVERY SYSTEM PUMP POWER SUPPLY.
3 POWER CONNECTION FOR HARDWIRED COFFEE BREWER. PROVIDE BREAKER WITH GFCI PROTECTION.
4 POWER FOR PPE DRYING RACK.
5 POWER CONNECTION FOR GAS DETECTION SYSTEM. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
6 POWER CONNECTION FOR FIRE ALARM PANEL.
7 FURNISH AND INSTALL (1) EPO FOR POWER SHUTDOWN OF WATER HEATER NEAR DOOR. WIRE THE EPO TO THE REMOTE SHUTDOWN CONTACT AT EACH WATER HEATER IN ROOM. ACTIVATING THE EPO SHALL SHUT DOWN BOTH WATER HEATERS. PROVIDE AND INSTALL CONDUIT WIRE, AS REQUIRED.
8 RECEPTACLES MOUNTED IN WIREMOLD AT TURNOUT GEAR LOCKER.
9 RECEPTACLES TO BE INSTALLED IN UNDERCOUNTER WIREMOLD. INSTALLATION TO BE COORDINATED WITH MILLWORK.
10 PROVIDE 1" CONDUIT WITH PULLSTRING FOR FUTURE SOLO RESCUE WASHER. PROVIDE BACKBOX IN ACCESSIBLE CEILING AND CAP OFF FOR FUTURE USE.
11 RECEPTACLES FOR CHARGING STATION TO BE RECESSED WITHIN CMU WALL. REFER TO ARCHITECTURAL DETAILS.
12 REFER TO DRAWING E08.05, DETAIL #1 FOR TURNOUT GEAR LOCKER ROOM POWER.
13 ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATIONS AND MOUNTING HEIGHTS OF ALL RECEPTACLES IN THE EXERCISE ROOM WITH THE EXERCISE EQUIPMENT CONSULTANT, ARCHITECT, AND ARCHITECTURAL DRAWINGS.
14 PROVIDE 1-POLE, 120V CONTACTOR SWITCH WITH 24V COIL FOR BMS MONITORING OF DRYER.
15 PROVIDE 3-POLE, 208V CONTACTOR SWITCH WITH 24V COIL FOR BMS MONITORING OF DRYER.
16 PROVIDE (5) 4" CONDUIT WITH PULLSTRING FOR FUTURE APPARATUS BAY EV CHARGERS. STUB UP AND CAP OFF FOR FUTURE USE. REFER TO SHEET E07.00 FOR CONTINUED CONDUIT ROUTING.
17 PROVIDE (1) 4" CONDUIT WITH PULLSTRING FOR FUTURE ROOFTOP PV SYSTEM. STUB UP AND CAP OFF FOR FUTURE USE. REFER TO DWGS E05.02, E05.03 AND E07.00 FOR CONTINUED CONDUIT ROUTING.
18 FURNISH AND INSTALL A 400A CT CABINET AND 400A, 480V DISCONNECT IN NEMA 3R ENCLOSURE FOR PV SYSTEM DISCONNECT, PER NATIONAL GRID REQUIREMENTS. BOTTOM OF CT CABINET AND DISCONNECT ENCLOSURES SHALL BE 4 FEET ABOVE GRADE.
19 REFER TO DRAWING E01.01 FOR MANHOLE LOCATION. MANHOLE SHALL BE FOR GENERATOR CONDUITS ROUTED UNDERNEATH SLAB. MANHOLE SHOWN ON THIS DRAWING IS FOR REFERENCE ONLY.

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ANDELMANLELEK
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COMMONWEALTH OF MASSACHUSETTS
JULIAN ASBURY
ELECTRICAL
No. 45455
REGISTERED PROFESSIONAL ENGINEER
12/16/2025

CONSTRUCTION DOCUMENTS 12/19/25

PROJECT
WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER
455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE
ELECTRICAL FIRST FLOOR POWER PLAN

SHEET NUMBER
E05.01

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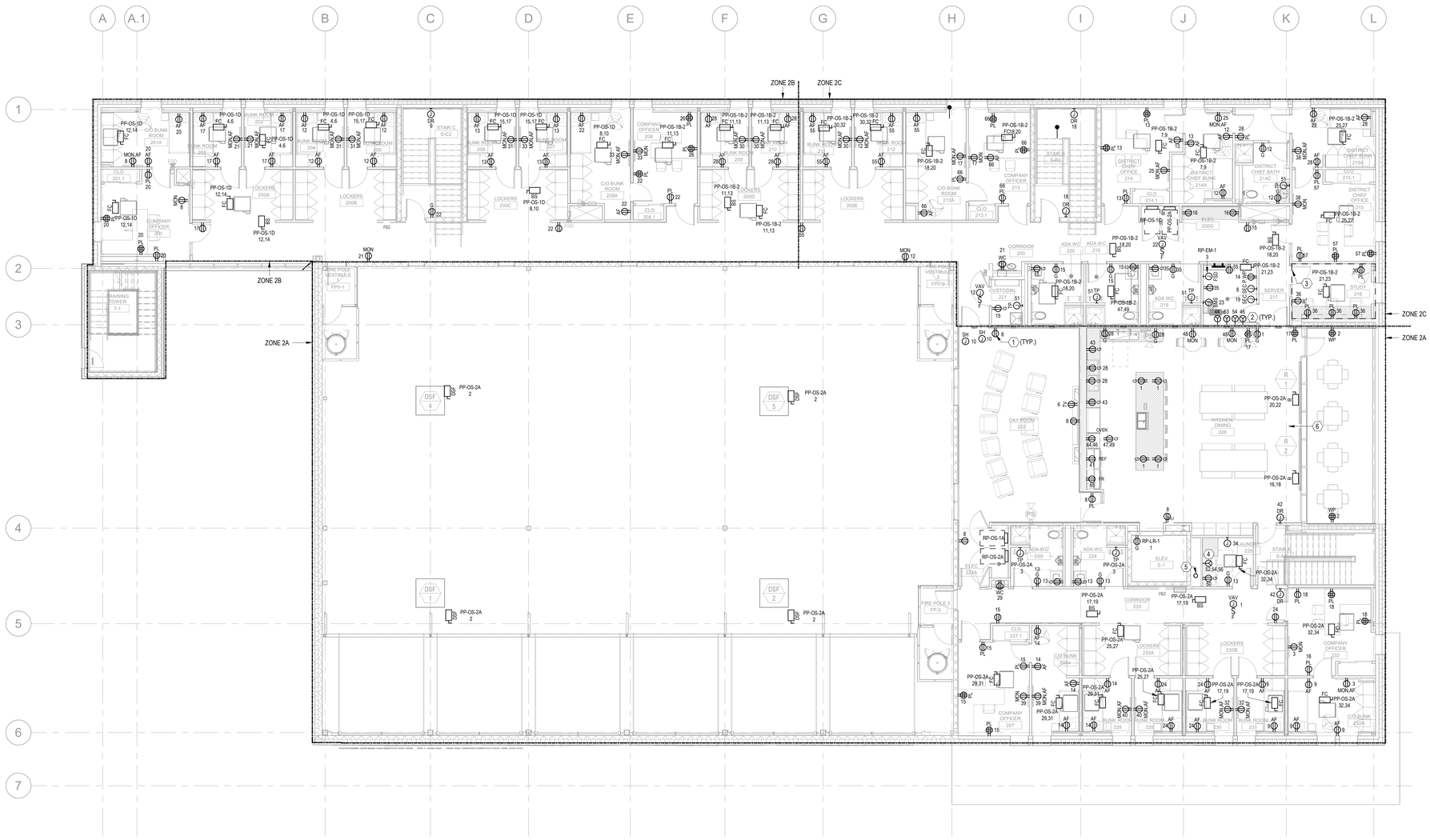

1 ELECTRICAL SECOND FLOOR POWER PLAN

1/8" = 1'-0"

GENERAL NOTES

1. SEE DRAWING E00.00 FOR LEGENDS, NOTES, AND ABBREVIATIONS.
2. SEE DRAWING E03.00 FOR SINGLE LINE DIAGRAM.
3. ALL CONDUIT SHALL BE CONCEALED UNLESS OTHERWISE NOTED.
4. CONDUIT RUNS, WHERE SHOWN, ARE INTENDED TO REPRESENT THE GENERAL CONDUIT ROUTING ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT QUANTITY, CONFIGURATION AND ROUTING IN THE FIELD. NOT ALL CONDUIT RUNS ARE SHOWN.
5. ALL EXPOSED CONDUIT SHALL BE PAINTED. PAINT COLOR TO BE COORDINATED WITH ARCHITECT.
6. REFER TO DETAIL 04/E9B.04 FOR KITCHEN AND DAYROOM CONDUIT ROUTING DETAILS.
7. U.O.N. DEVICES IN "ZONE 2A" TO BE FED FROM THE FOLLOWING PANELS.
   A. ALL RECEPTACLES AND SMALL POWER LOADS SHALL BE FED FROM RP-OS-1A.
   B. ALL 208/120V MECHANICAL LOADS SHALL BE FED FROM PP-OS-1B-2.
8. U.O.N. DEVICES IN "ZONE 2B TO BE FED FROM THE FOLLOWING PANELS.
   A. ALL RECEPTACLES AND SMALL POWER LOADS SHALL BE FED FROM RP-OS-1B.
   B. ALL 208/120V MECHANICAL LOADS SHALL BE FED FROM PP-OS-1D
9. U.O.N. DEVICES IN "ZONE 2C" TO BE FED FROM THE FOLLOWING PANELS.
   A. ALL RECEPTACLES AND SMALL POWER LOADS SHALL BE FED FROM RP-OS-2A.
   B. ALL 208/120V MECHANICAL LOADS SHALL BE FED FROM PP-OS-2A.
10. ALL 15A AND 20A, 120V CIRCUITS IN BUNK ROOMS AND COMPANY OFFICER/DISTRICT CHIEF SUITES SHALL BE PROTECTED BY AFCI CIRCUIT BREAKERS.
11. REFER TO ARCHITECTURAL PACKAGE FOR EXACT LOCATIONS AND ELEVATIONS.

KEY NOTES

1 EXACT RECEPTACLE LOCATIONS WITHIN THE DAY ROOM TO BE COORDINATED WITH ACOUSTICAL PANELS.

2 PROVIDE NEMA L6-30R FOR TELECOM RACK. COORDINATE EXACT LOCATIONS WITH TELECOM CONSULTANT, ARCHITECT, AND ARCHITECTURAL DRAWINGS.

3 ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATIONS AND MOUNTING HEIGHTS OF ALL RECEPTACLES IN THE STUDY ROOM WITH THE ARCHITECT AND ARCHITECTURAL DRAWINGS. RECEPTACLES SHALL BE INSTALLED UNDERCOUNTER AND INSTALLATION SHALL BE COORDINATED WITH MILLWORK AND WIRE MANAGEMENT ACCESSORY.

4 PROVIDE 3-POLE, 208V CONTACTOR SWITCH WITH 24V COIL FOR BMS MONITORING OF DRYER.

5 PROVIDE (1) 4" CONDUIT WITH PULLSTRING FOR FUTURE ROOFTOP PV SYSTEM. STUB UP AND CAP OFF FOR FUTURE USE. REFER TO DWGS E05.01, E05.03 AND E07.00 FOR CONTINUED CONDUIT ROUTING.

6 REFER TO DETAIL EE805/1 FOR CONDUIT ROUTING DETAILS WITHIN AND PLAN SOUTH OF THE DAYROOM AND KITCHEN.

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12/16/2025

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WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
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CITY OF WORCESTER

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CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL SECOND FLOOR POWER PLAN

SHEET NUMBER

E05.02

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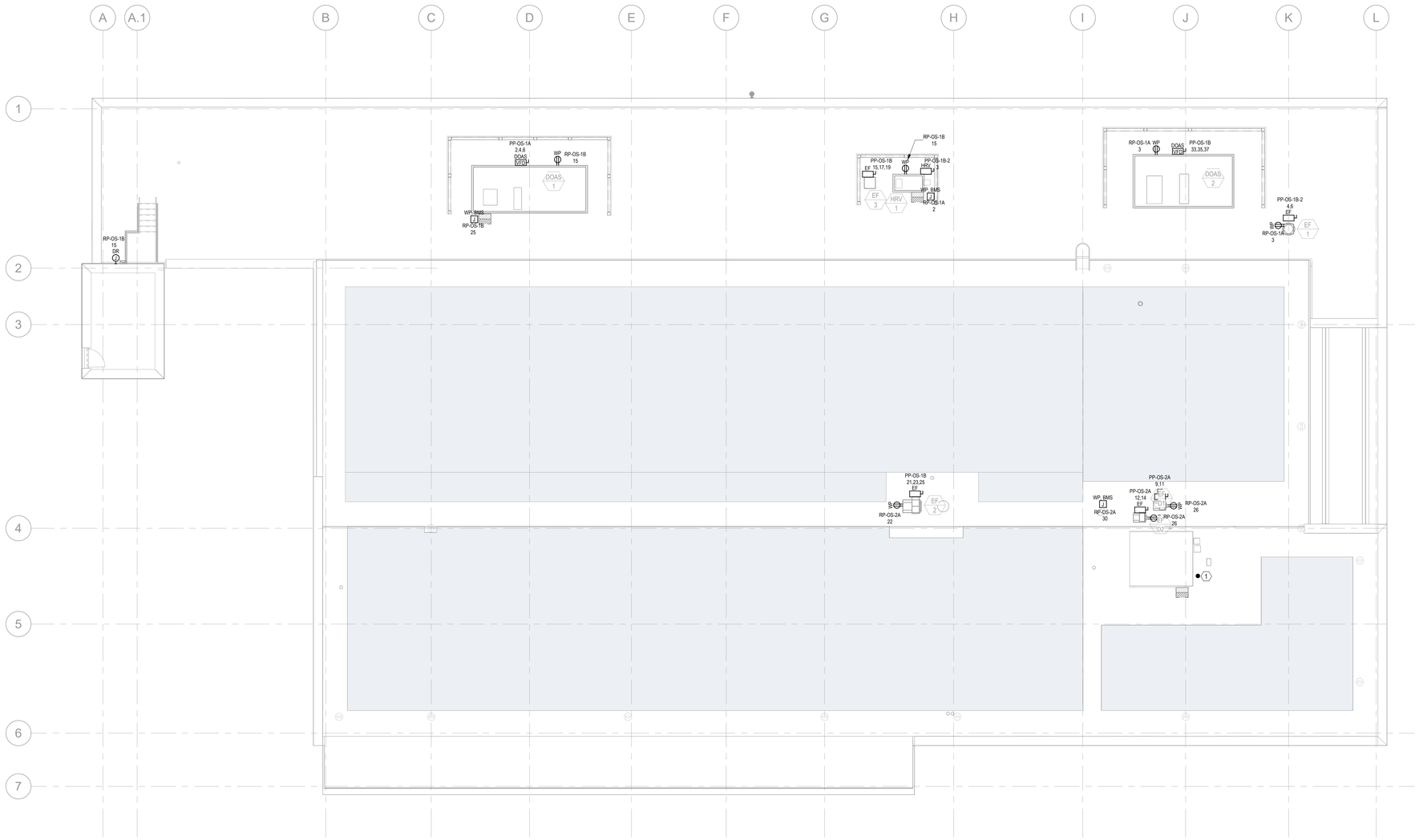
GENERAL NOTES

1. SEE DRAWING E00.00 FOR LEGENDS, NOTES, AND ABBREVIATIONS.
2. SEE DRAWING E03.00 FOR SINGLE LINE DIAGRAM.

KEY NOTES

1 PROVIDE (1) 4" CONDUIT WITH PULLSTRING FOR FUTURE ROOFTOP PV SYSTEM. STUB UP AND CAP OFF FOR FUTURE USE. REFER TO DWGS E05.01, E05.02 AND E07.00 FOR CONTINUED CONDUIT ROUTING.



1 ELECTRICAL ROOF POWER PLAN
1/8" = 1'-0"

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KEY PLAN

ISSUE CHART

MARK#	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL ROOF POWER PLAN

SHEET NUMBER

E05.03

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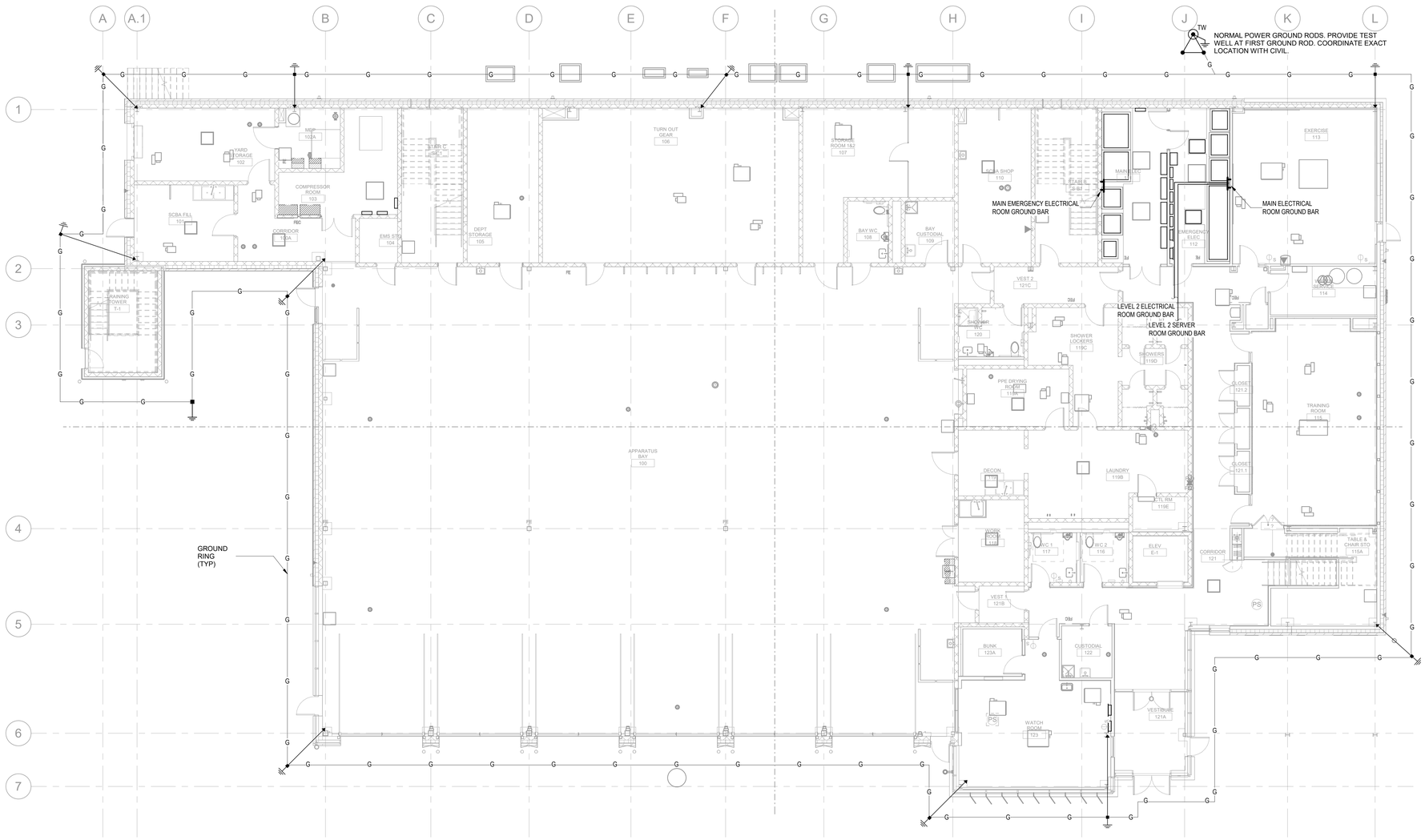
GENERAL NOTES

1. SEE DRAWING E00.00 FOR LEGENDS, NOTES, AND ABBREVIATIONS.
2. SEE DRAWING E03.01 FOR GROUNDING SINGLE LINE DIAGRAM.
3. DRAWING IS DIAGRAMMATIC. COORDINATE EXACT LOCATIONS OF ALL CONNECTIONS AND EQUIPMENT PRIOR TO INSTALLATION.
4. 4/0 BARE TINNED COPPER GROUND CONDUCTOR BURIED 3'-0" BELOW GRADE. INSTALL MINIMUM OF 2'-0" FROM FOUNDATION WALL. COORDINATE GROUND RING ELEVATION WITH DRIVEN GROUND RODS. TEST WELLS AND ALL SERVICES COMING TO THE BUILDING.
5. SEE DRAWINGS E08.01 AND E08.02 FOR GROUNDING DETAILS AS APPLICABLE.



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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE
ELECTRICAL FIRST FLOOR GROUNDING & LIGHTNING PROTECTION PLAN

SHEET NUMBER
E06.01

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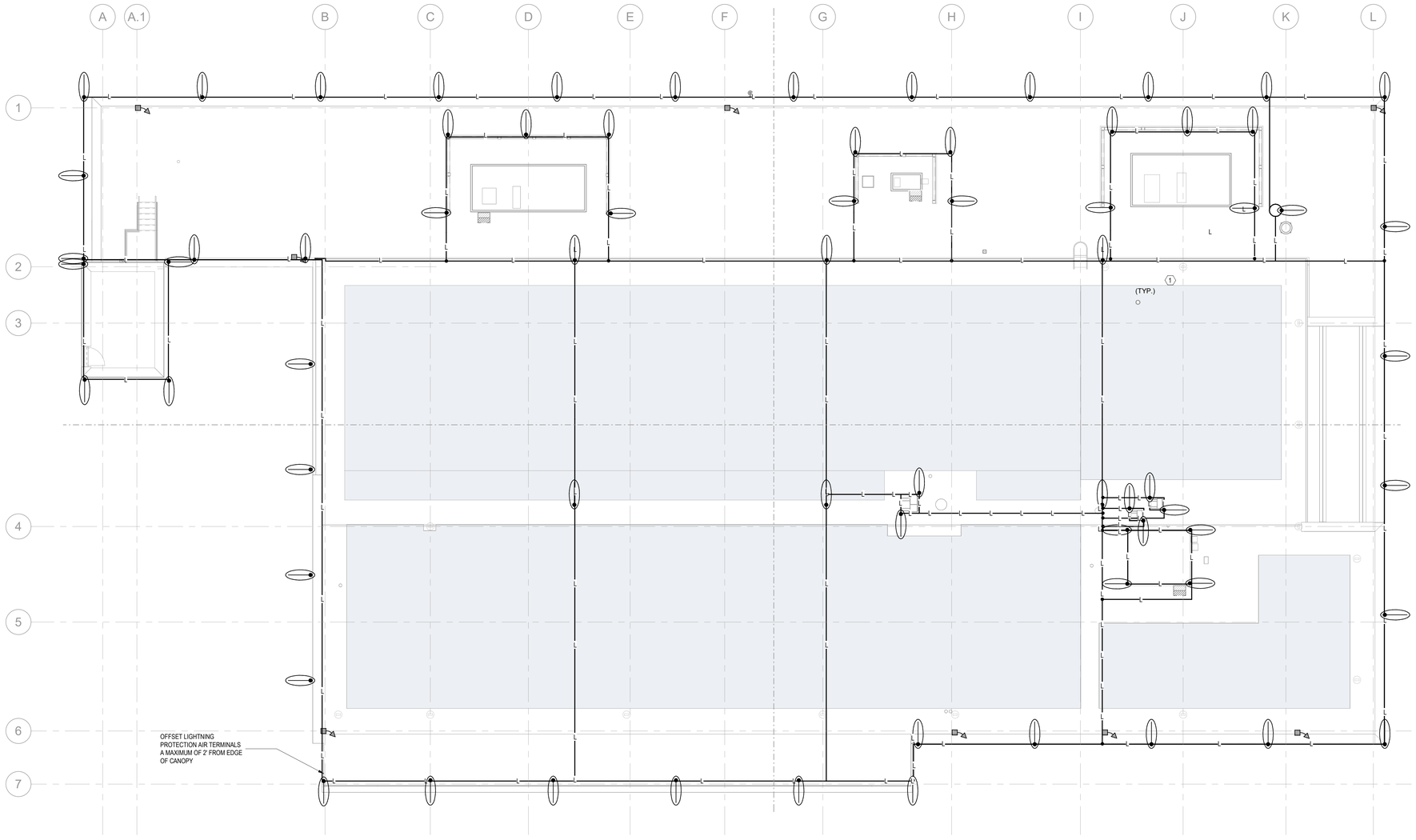

1 ELECTRICAL LIGHTNING PROTECTION PLAN
1/8" = 1'-0"

GENERAL NOTES

1. SEE DRAWING E00.00 FOR LEGENDS, NOTES, AND ABBREVIATIONS.
2. CONTRACTOR SHALL PROVIDE A COMPLETE UL MASTER LABEL LIGHTNING PROTECTION SYSTEM. PROVIDE ALL CONNECTIONS TO ROOFTOP EQUIPMENT AND OTHER METAL ACCESSORIES AS REQUIRED BY UL AND BY NFPA780. COORDINATE EXACT REQUIREMENTS, ROUTING, AND DETAILS WITH ARCHITECT PRIOR TO INSTALLATION. PROVIDE COMPLETE SHOP DRAWINGS SHOWING THE ENTIRE SYSTEM AND ALL PROPOSED DETAILS WITH ARCHITECT PRIOR TO INSTALLATION. CLEARLY INDICATE ALL CONCEALED AND EXPOSED RUNS.
3. PROVIDE AIR TERMINALS AND BONDING FOR MECHANICAL EQUIPMENT. BOND TO LIGHTNING PROTECTION MAIN CONDUCTOR AS REQUIRED PER UL AND NFPA 780. CORDINATE EXACT LOCATIONS AND REQUIRMENT WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
4. DRAWING IS DIAGRAMMATIC. COORDINATE EXACT LOCATIONS OF ALL CONNECTIONS AND EQUIPMENT PRIOR TO INSTALLATION.
5. SEE SPECIFICIATIONS FOR ADDITIONAL DETAILS AND SIZING REQUIREMENTS.
6. SEE DRAWINGS E08.01 AND E08.02 FOR GROUNDING DETAILS AS APPLICABLE.

KEY NOTES

1 COORDINATE LIGHTNING PROTECTION AND GROUNDING SYSTEM WITH PV SYSTEM. GROUND SYSTEM TIE-IN TO BE COORDINATED BETWEEN ELECTRICAL CONTRACTOR AND PV CONTRACTOR.

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PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
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CITY OF WORCESTER

455 MAIN STREET
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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE
ELECTRICAL ROOF GROUNDING & LIGHTNING PROTECTION PLAN

SHEET NUMBER
E06.03

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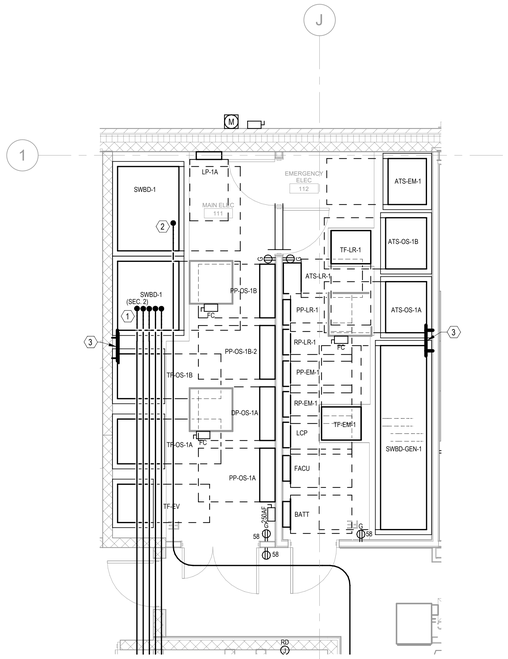
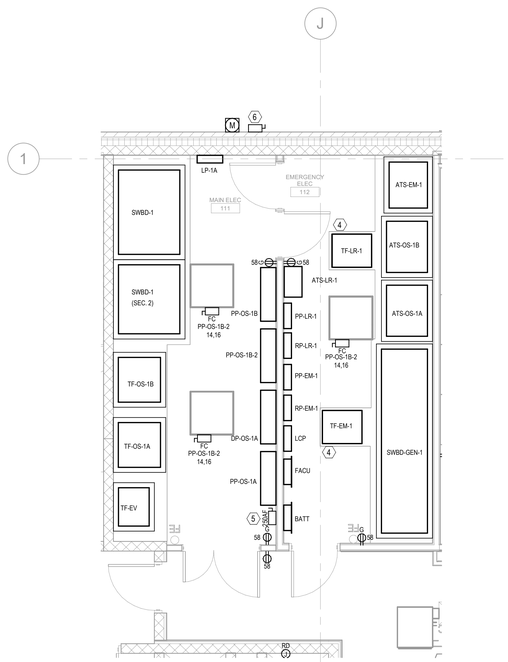


1 LEVEL 1 MAIN NORMAL AND EM ELECTRICAL ROOMS - COORDINATION PLAN
1/4" = 1'-0"



2 LEVEL 1 MAIN NORMAL AND EM ELECTRICAL ROOMS - POWER PLAN
1/4" = 1'-0"

KEY NOTES

1 PROVIDE (5) 4" CONDUIT WITH PULLSTRING FOR FUTURE APPARATUS BAY EV CHARGERS. STUB UP AND CAP OFF FOR FUTURE USE. REFER TO SHEET E05.01 FOR CONTINUED CONDUIT ROUTING.

2 PROVIDE (1) 4" CONDUIT WITH PULLSTRING FOR FUTURE ROOFTOP PV SYSTEM. STUB UP AND CAP OFF FOR FUTURE USE. REFER TO DWGS E05.01, E05.02 AND E05.03 FOR CONTINUED CONDUIT ROUTING.

3 GROUND BAR SHALL EXTEND ACROSS THE ENTIRE LENGTH OF THE WALL.

4 TRANSFORMER SHALL BE CEILING MOUNTED. REFER TO DETAILS 1 AND 3 ON DRAWING E08.01 FOR TRANSFORMER MOUNTING AND SUSPENSION.

5 TF-EV SECONDARY OCPD.

6 FURNISH AND INSTALL A 400A CT CABINET AND 400A, 480V DISCONNECT IN NEMA 3R ENCLOSURE FOR PV SYSTEM DISCONNECT, PER NATIONAL GRID REQUIREMENTS. BOTTOM OF CT CABINET AND DISCONNECT ENCLOSURES SHALL BE 4 FEET ABOVE GRADE.

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KEY PLAN

ISSUE CHART

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Job Number 157132.000

TITLE

ELECTRICAL PART PLANS

SHEET NUMBER

E07.00

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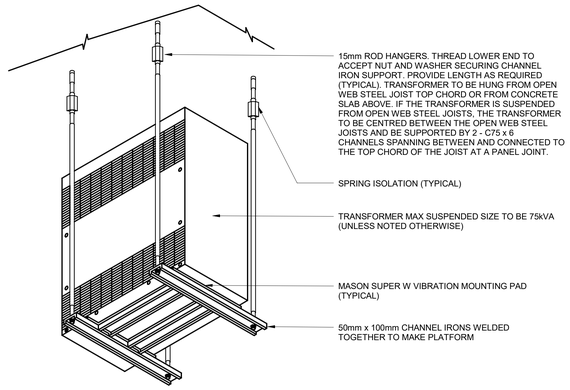
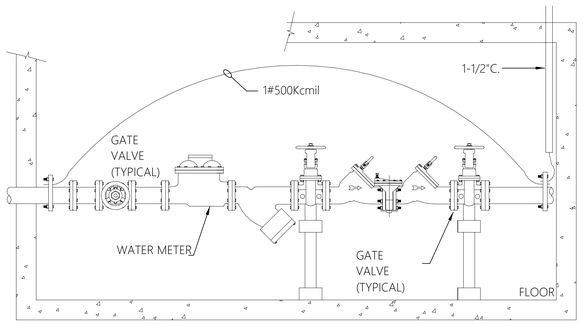


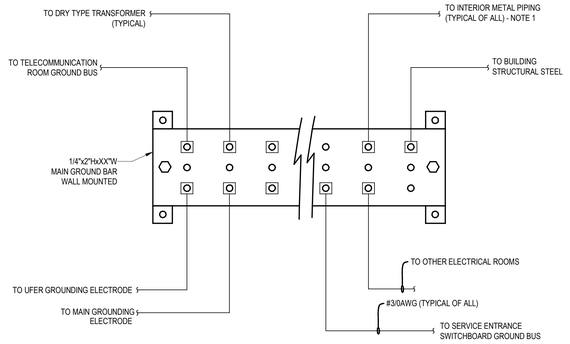
NOTES:

1. REFER TO ELECTRICAL SPECIFICATION AND ELECTRICAL POWER PLAN DRAWINGS FOR DETAILS.
2. REFER TO ELECTRICAL SINGLE LINE DIAGRAM FOR TRANSFORMER DETAILS.

1 TRANSFORMER SUSPENSION
NTS



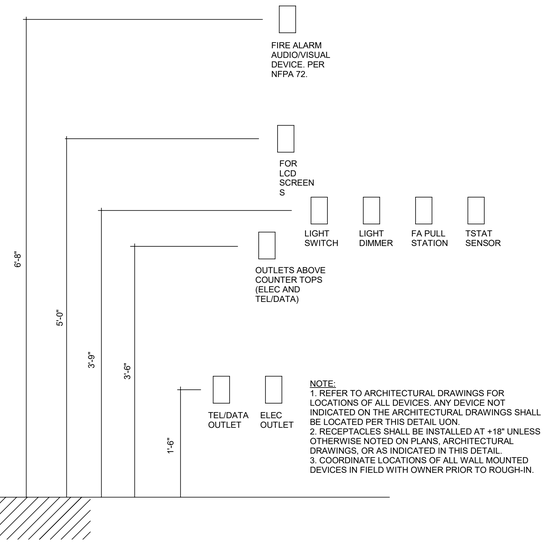
4 WATER METER GROUNDING JUMPER
NTS



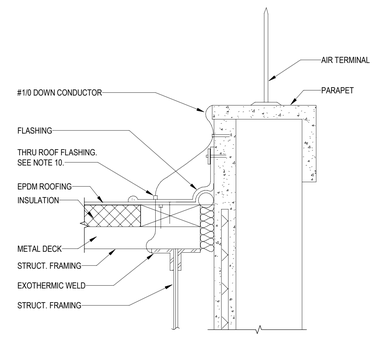
NOTES:

1. BOND ALL METAL PIPING DESCRIBED IN NEC 250.104. METAL PIPING SHALL INCLUDE WATER, GAS, VENT, WASTE, ETC. SIZE PER NEC.
2. ALL CONNECTIONS TO GROUND LOOPS & GROUNDING ELECTRODES SHALL UTILIZE EXOTHERMIC WELD.
3. ALL GROUNDING CONDUCTORS SHALL BE COPPER.
4. WIDTH SHALL BE SUITABLE TO ACCOMMODATE ALL CONNECTIONS INDICATED PLUS 100% SPARE AND SHALL BE A MINIMUM WIDTH OF 72".

2 MAIN ELECTRICAL ROOM GROUND BAR
NTS



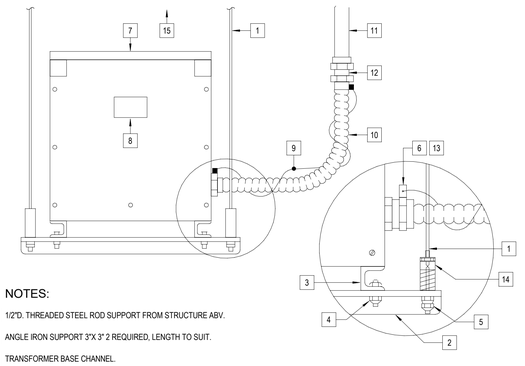
5 TYPICAL DEVICE MOUNTING HEIGHT
NTS



NOTES:

1. SEE PLATE FOR LEGEND.
2. SEE S-PLATES FOR EXACT SIZE AND LOCATION TO STRUCTURAL FOOTINGS.
3. STRUCTURAL FRAMEWORK SHALL BE MADE ELECTRICALLY CONTINUOUS BY WELDING.
4. ALL SPLICES BELOW GRADE SHALL BE THE EXOTHERMIC WELD TYPE.
5. AIR TERMINALS SHALL EXTEND NO LESS THAN 24 INCHES ABOVE THE ROOF PARAPET.
6. CONNECT AIR TERMINAL TO THE STRUCTURAL STEEL FRAMING WITH CONDUCTOR ROUTED THROUGH THE ROOF AS DETAILED EXCEPT WELD TO HORIZONTAL MEMBER.
7. CONNECT AIR TERMINAL TO THE TOP OF THE STRUCTURAL STEEL COLUMN WITH CONDUCTOR ROUTED THROUGH THE ROOF AS DETAILED.
8. GROUND RODS SHALL BE CONNECTED TO THE BOTTOM OF THE STRUCTURAL STEEL COLUMN WITH No. 1/0 AWG BARE COPPER CONDUCTOR AS DETAILED.
9. ALL METAL EQUIPMENT ON THE ROOF SHALL BE BONDED TO THE LIGHTNING PROTECTION SYSTEM.
10. THRU ROOF FLASHING SHALL BE COPPER WITH 8 INCH ROUND BASE AND VERTICAL TUBE WITH NEOPRENE SEAL. FLASHING SHALL BE THE PRODUCT OF THE MANUFACTURER OF THE LIGHTNING PROTECTION SYSTEM. A MEMBRANE FLASHING SHALL BE PROVIDED OVER THE THRU ROOF FLASHING.

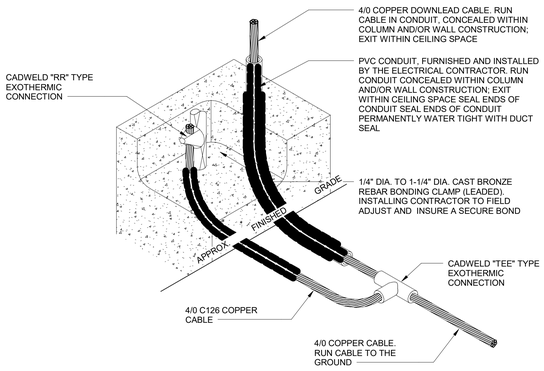
7 AIR TERMINAL
NTS



NOTES:

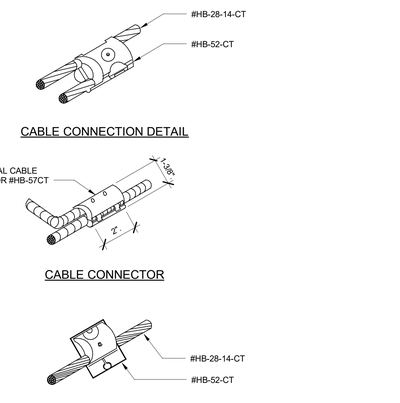
1	1/2"D. THREADED STEEL ROD SUPPORT FROM STRUCTURE ABV.	10	LIQUID TIGHT FLEXIBLE METAL CONDUIT 18"MIN.
2	ANGLE IRON SUPPORT 3"X 3" 2 REQUIRED, LENGTH TO SUIT.	11	RIGID CONDUIT.
3	TRANSFORMER BASE CHANNEL.	12	COMBINATION COUPLING.
4	1/2"D. NUT, BOLT & LOCKWASHER 4 REQUIRED.	13	GROUND CONNECTOR.
5	1/2"D. NUT, LOCKNUT & LOCKWASHER 4 REQUIRED.	14	VIBRATION ELIMINATOR 4 REQUIRED.
6	SECONDARY CONNECTION DETAIL, PRIMARY - SIMILAR.	15	PROVIDE MISCELLANEOUS STEEL AS REQUIRED TO CONNECT TO STRUCTURE.
7	TRANSFORMER - MOUNT BOTTOM SUPPORTS 6'-6"A.F.F.		
8	NAMEPLATE - CONNECTION DIAGRAM TO FACE CLOSET ENTRANCE.		
9	EXTERNAL COPPER BONDING WIRE.		

3 TRANSFORMER SUSPENSION DETAIL
NTS



NOTE: REBAR CONNECTION IS TYPICAL ON BOTH TOP AND BOTTOM OF CONCRETE ENCASED COLUMNS. ALL DOWN CONDUCTORS COURSED WITHIN CONCRETE COLUMNS SHALLBE BONDED TO THE REBAR AT BOTH THE TOP AND BOTTOM OF EACH VERTICAL RUN.

6 CONCEALED DOWNLEAD TO GROUNDING CONNECTION
NTS



NOTE:

EQUIPMENT AND CATALOG NUMBERS AS MANUFACTURED BY HEARY BROTHERS.

8 LIGHTING PROTECTION CABLE CONNECTION
NTS

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MEP/FP/LIGHTING
ARUP US, INC.
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ENERGY MODEL
ANDELMANLELEK
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COMMONWEALTH OF MASSACHUSETTS
JULIAN ASTBURY
ELECTRICAL
No. 45456
REGISTERED PROFESSIONAL ENGINEER
12/16/2025

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL DETAILS SHEET 1

SHEET NUMBER

E08.01

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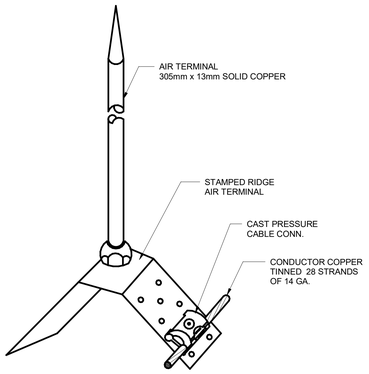
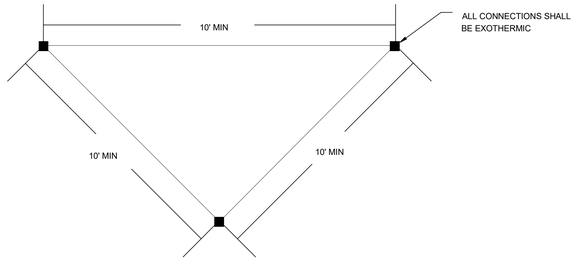


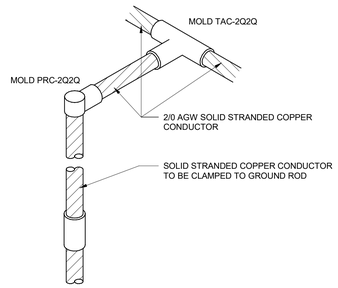
1 TYPICAL AIR TERMINAL BASE (RIDGE SADDLE)
NTS



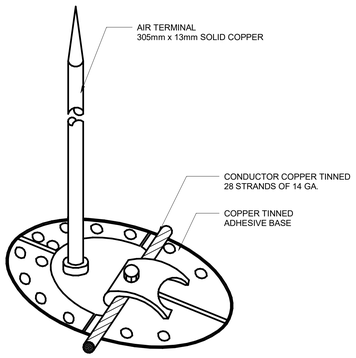
NOTES:

1. ALL CONNECTIONS SHALL BE EXOTHERMIC.
2. ALL GROUND WIRE SHALL BE COPPER CABLE.

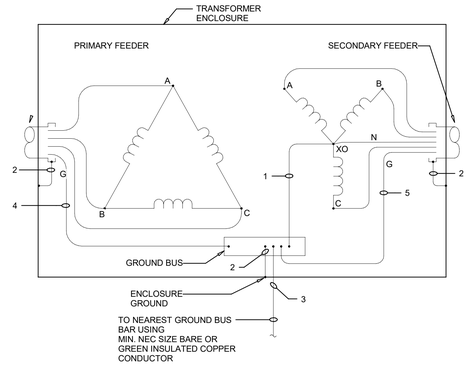
4 GROUNDING COUNTERPORPOISE
NTS



7 THROUGH CABLE TO GROUND ROD
NTS



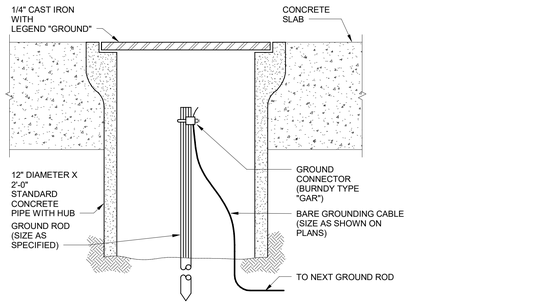
2 TYPICAL AIR TERMINAL BASE (ADHESIVE BASE)
NTS



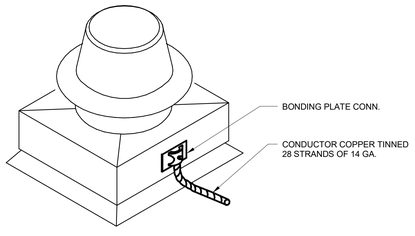
KEYED NOTES:

1. SYSTEM BONDING JUMPER
2. BONDING JUMPER (WHERE APPLICABLE FOR METALLIC CONDUIT)
3. GROUNDING ELECTRODE CONDUCTOR
4. EQUIPMENT GROUNDING CONDUCTOR
5. SUPPLY SIDE BONDING JUMPER/ EQUIPMENT GROUNDING CONDUCTOR

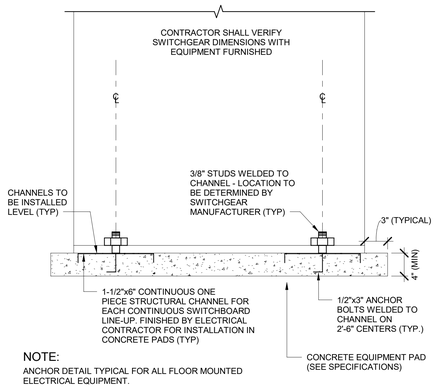
5 TRANSFORMER WIRING
NTS



8 GROUND ROD AND TEST WELL
NTS

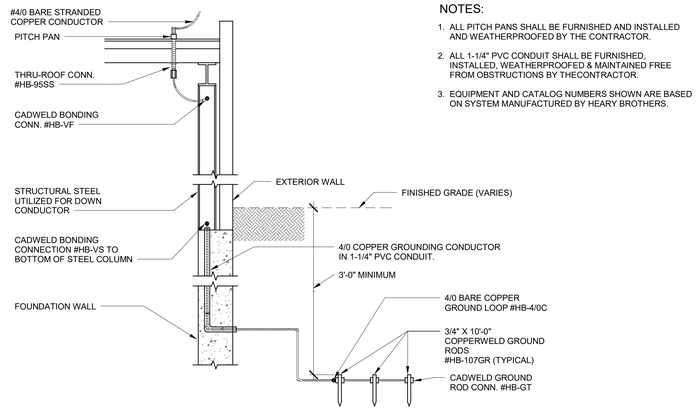


3 TYPICAL MECHANICAL EQUIPMENT BONDING
NTS



NOTE:
ANCHOR DETAIL TYPICAL FOR ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT.

6 TYPICAL EQUIPMENT MOUNTING TO CONCRETE PAD
NTS



NOTES:

1. ALL PITCH PANS SHALL BE FURNISHED AND INSTALLED AND WEATHERPROOFED BY THE CONTRACTOR.
2. ALL 1-1/4" PVC CONDUIT SHALL BE FURNISHED, INSTALLED, WEATHERPROOFED & MAINTAINED FREE FROM OBSTRUCTIONS BY THECONTRACTOR.
3. EQUIPMENT AND CATALOG NUMBERS SHOWN ARE BASED ON SYSTEM MANUFACTURED BY HEARY BROTHERS.

9 COLUMN GROUNDING DETAIL
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WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

CONSTRUCTION DOCUMENTS 12/19/25

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL DETAILS SHEET 2

SHEET NUMBER

E08.02

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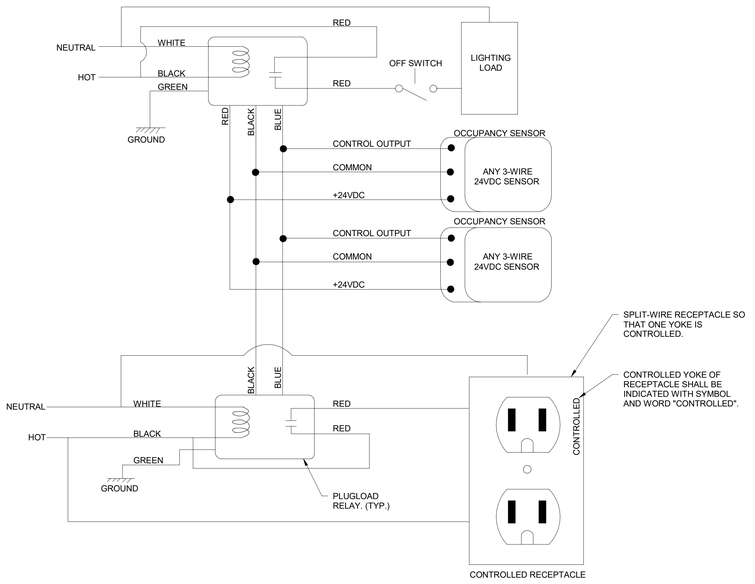
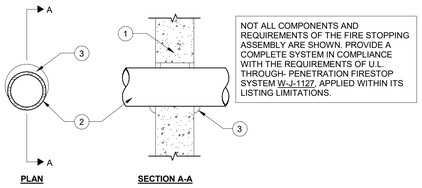


1 TYPICAL CONTROLLED RECEPTACLE
NTS



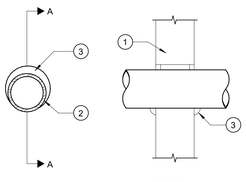
NOT ALL COMPONENTS AND REQUIREMENTS OF THE FIRE STOPPING ASSEMBLY ARE SHOWN. PROVIDE A COMPLETE SYSTEM IN COMPLIANCE WITH THE REQUIREMENTS OF U.L. THROUGH- PENETRATION FIRESTOP SYSTEM W-J-1127, APPLIED WITHIN ITS LISTING LIMITATIONS.

F RATING - 1 OR 2 HRS.
T RATING - 0 HRS.

NOTES:

1. WALL ASSEMBLY - MIN. 6 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL. WALL MAY ALSO BE CONSTRUCTED OF ANY CONCRETE BLOCKS. MAX. DIAM OF OPENING IS 10-1/2 INCH
2. THROUGH PENETRANT - ONE METALLIC CONDUIT, (MAX. 4" EMT OR RSC) INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN OPENING. THE ANNULAR SPACE BETWEEN PENETRANT AND PERIPHERY OF OPENING TO BE MIN. 0 IN. TO MAX. 1-7/8 IN.
3. FILL, VOID OR CAVITY MATERIAL - CAULK - MIN. 5/8 IN. THICKNESS OF CAULK APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. MIN. 1/4 IN. (6 MM) DIAM. BEAD OF CAULK APPLIED TO PENETRANT/WALL INTERFACE AT POINT CONTACT LOCATION ON BOTH SIDES OF WALL.
   3M COMPANY - IC 15WB OR CP 25WB+

2 CONDUIT FIREWALL PENETRATION
NTS

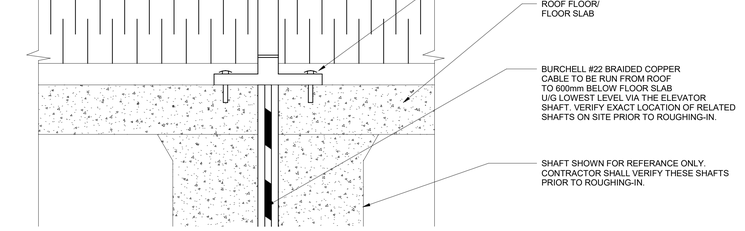


SYSTEM No. W-J-1127

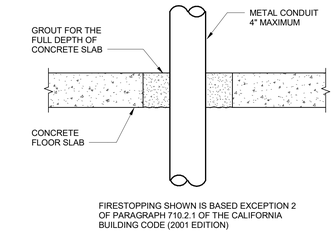
F RATING - 2 HR
T RATING - 1/4 HR

1. WALL ASSEMBLY - MIN. 6 IN. (152 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600 - 2400 KG/M3) CONCRETE WALL. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS. MAX DIAM OF OPENING IS 10-1/2 INCH (267MM) SEE CONCRETE BLOCK (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
2. THROUGH PENETRANT - ONE METALLIC PIPE, CONDUIT, TUBING OR OR FLEXIBLE METAL PIPE INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN OPENING. THE ANNULAR SPACE BETWEEN PENETRANT AND PERIPHERY OF OPENING TO BE MIN. 0 IN. (0 MM) (POINT CONTACT) TO MAX. 1-7/8 IN. (48 MM). PENETRANT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL. THE FOLLOWING TYPES AND SIZES OF PENETRANTS MAY BE USED:
   A. STEEL PIPE - NOM. 8 IN. (203 MM) DIAM (OR SMALLER) SCHEDULE 5 (OR HEAVIER).
   B. IRON PIPE - NOM. 8 IN. DIAM. (203 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   C. CONDUIT - NOM. 4 IN. (102 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING (EMT) OR NOM. 6 IN. (152 MM) RIGID STEEL CONDUIT.
3. FILL, VOID OR CAVITY MATERIAL - CAULK - MIN. 5/8 IN. (16MM) THICKNESS OF CAULK APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. MIN. 1/4 IN. (6 MM) DIAM BEAD OF CAULK APPLIED TO PENETRANT/WALL INTERFACE AT POINT CONTACT LOCATION ON BOTH SIDES OF WALL.
   3M COMPANY - IC 15WB OR CP 25WB+

3 MODULAR WIRING DETAIL
NTS

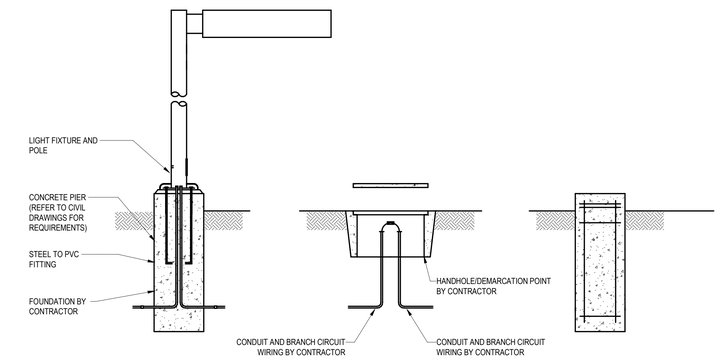


4 TYPICAL ROOF PENETRATION DETAIL
NTS



FIRESTOPPING SHOWN IS BASED EXCEPTION 2 OF PARAGRAPH 710.2.1 OF THE CALIFORNIA BUILDING CODE (2001 EDITION)

5 CONDUIT FLOOR PENETRATION
NTS



NOTES:

1. DETAIL IS DIAGRAMMATIC ONLY.
2. REFER TO CIVIL SITE DRAWINGS FOR ADDITIONAL INFORMATION.
3. CONTRACTOR SHALL COORDINATE ALL WORK PRIOR TO PULLING WIRING/CABLING AND ROUTING OF CONDUIT AND LOCATION OF FOUNDATIONS PRIOR TO ROUGH-IN.

6 LIGHT POLE MOUNTING DETAIL
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COMMONWEALTH OF MASSACHUSETTS
JULIAN ASTBURY
ELECTRICAL
No. 45456
REGISTERED PROFESSIONAL ENGINEER
12/16/2025

PROJECT

CONSTRUCTION DOCUMENTS 12/19/25

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER
455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL DETAILS SHEET 3

SHEET NUMBER

E08.03

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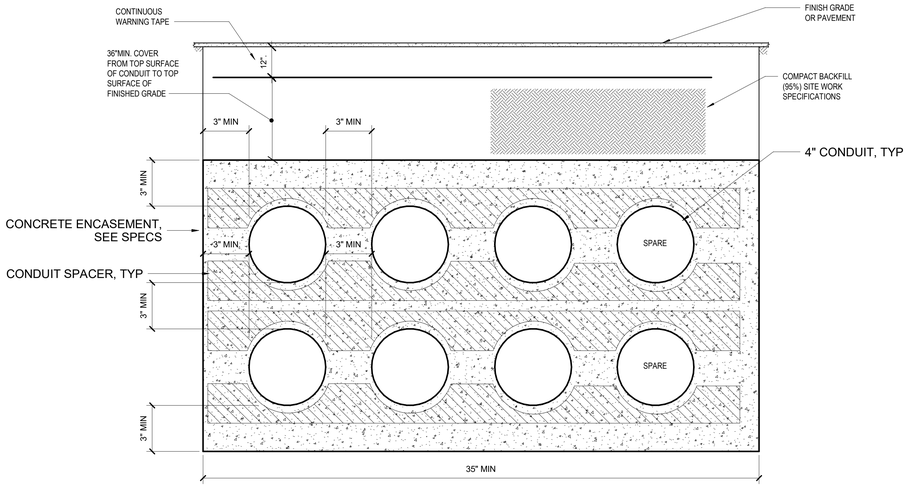
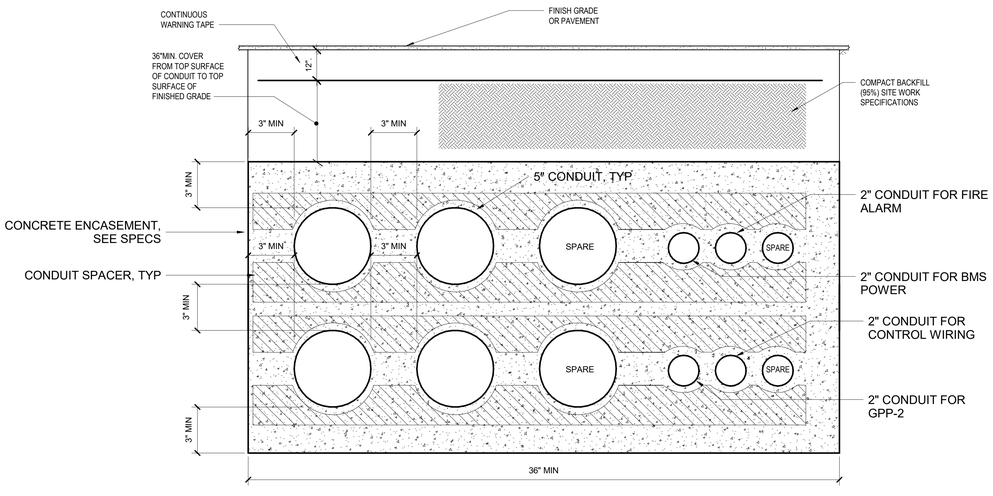


NOTE: DUCT BANK DETAIL FOR REFERENCE ONLY. COORDINATE DUCT BANK WITH CIVIL.

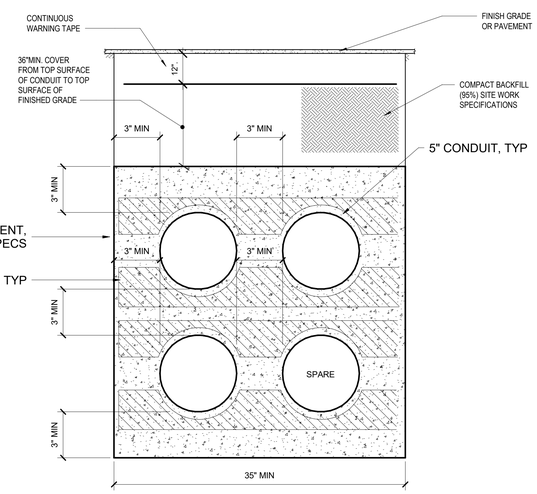
1 MAIN SWITCHBOARD DUCT BANK
NTS

2 DIRECT BURIAL CONDUIT
NTS



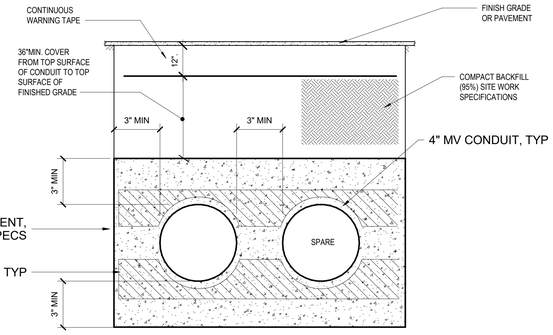
NOTE:
1. DUCT BANK DETAIL FOR REFERENCE ONLY. COORDINATE DUCT BANK WITH CIVIL.

3 GENERATOR DUCT BANK
NTS



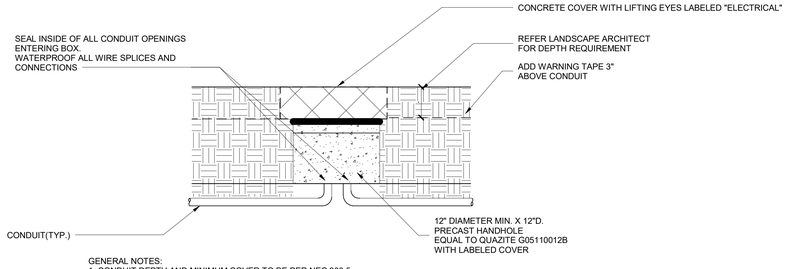
NOTE: DUCT BANK DETAIL FOR REFERENCE ONLY. COORDINATE DUCT BANK WITH CIVIL.

4 TEMP GENERATOR DOCKING STATION DUCT BANK
NTS



NOTE: DUCT BANK DETAIL FOR REFERENCE ONLY. COORDINATE DUCT BANK WITH CIVIL.

5 MV DUCT BANK
NTS



GENERAL NOTES:
1. CONDUIT DEPTH AND MINIMUM COVER TO BE PER NEC 300.5.
2. THIS DETAIL IS DIAGRAMMATIC. REFER TO LANDSCAPE ARCHITECT FOR MORE INFORMATION

6 TYPICAL CONDUIT ROUTING AND HANDHOLE
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COMMONWEALTH OF MASSACHUSETTS
JULIAN ASTBURY ELECTRICAL No. 45455 REGISTERED PROFESSIONAL ENGINEER
12/16/2025

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25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL DETAILS
SHEET 4

SHEET NUMBER

E08.04

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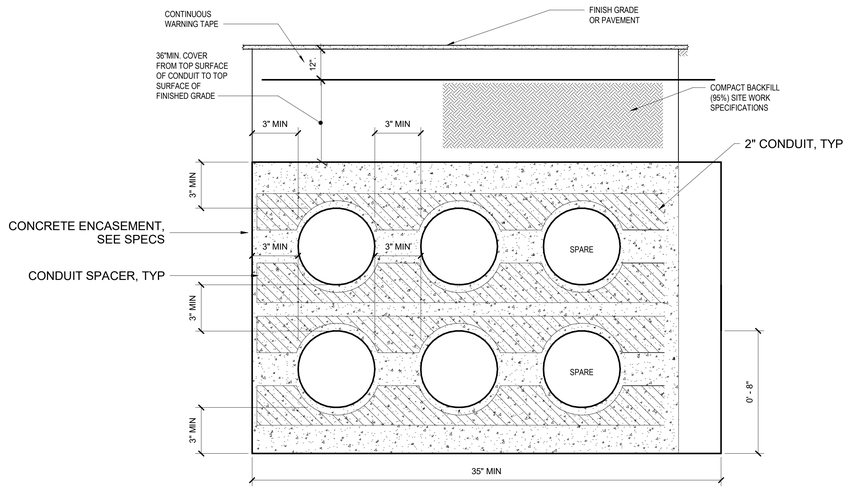
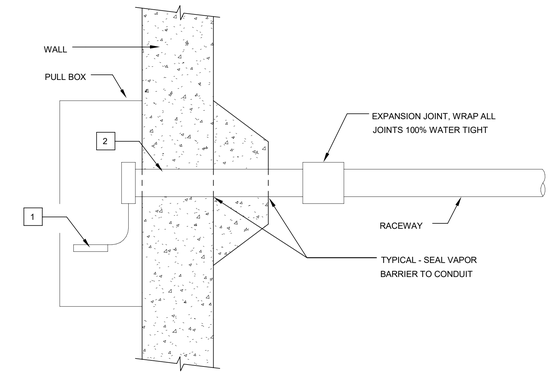


NOTE: DUCT BANK DETAIL FOR REFERENCE ONLY. COORDINATE DUCT BANK WITH CIVIL.

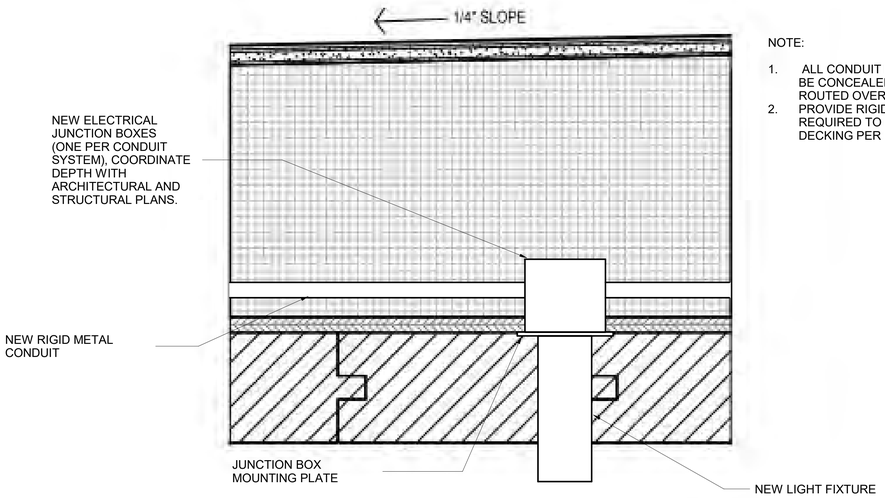
1 EV CHARGING DUCT BANK
NTS



KEYED NOTES:

1. AT EACH CONDUIT, PROVIDE AN ENGRAVED PLASTIC NAMEPLATE, INDICATING CONDUIT NO., AND ATTACH TO CONDUIT WITH NYLON CABLE TIE.
2. PROVIDE CONDUIT SLEEVE AND "LINK SEAL" FOR ALL PENETRATIONS BELOW GRADE.

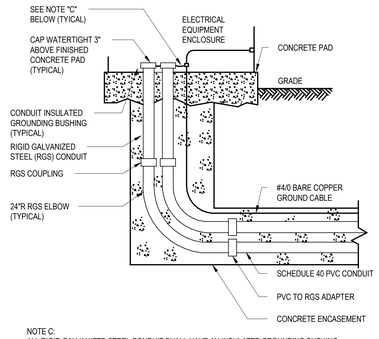
3 DIRECT BURIAL CONDUIT PENETRATION INTO BUILDING
NTS



NOTE:

1. ALL CONDUIT IN THE DAYROOM AND KITCHEN SHALL BE CONCEALED. OVERHEAD CONDUITS SHALL BE ROUTED OVERHEAD WITHIN THE CEILING.
2. PROVIDE RIGID METEAL CONDUIT FOR ALL WIRING REQUIRED TO BE ROUTED WITHIN 1-1/2" OF ROOF DECKING PER NEC 300.4(E).

2 KITCHEN / DAYROOM CONDUIT ROUTING
NTS



NOTE C:
ALL RIGID GALVANIZED STEEL CONDUIT SHALL HAVE AN INSULATED CROUNDING BUSHING INSTALLED. ALL INSULATED GROUNDING BUSHINGS SHALL BE CONNECTED WITH #4/0 BARE COPPER GROUND CABLE TO THE #4/0 BARE COPPER GROUND CABLE RUN WITH THE DUCTBANK.

4 TYPICAL CONDUIT STUB-UP DETAIL
NTS

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WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL DETAILS SHEET 5

SHEET NUMBER

E08.05

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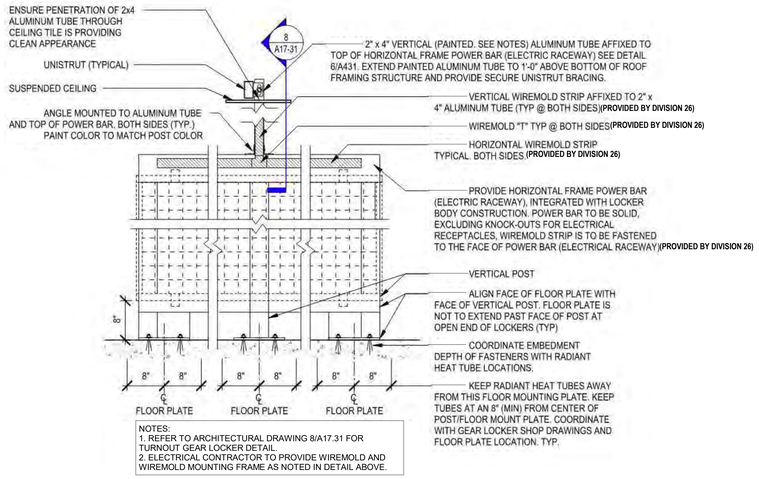
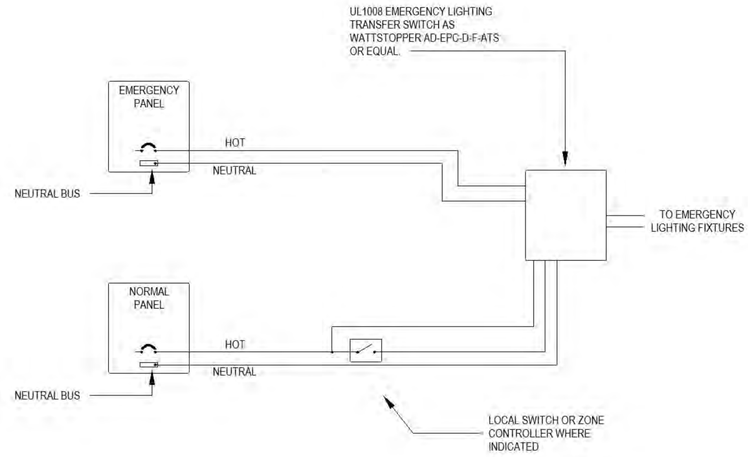
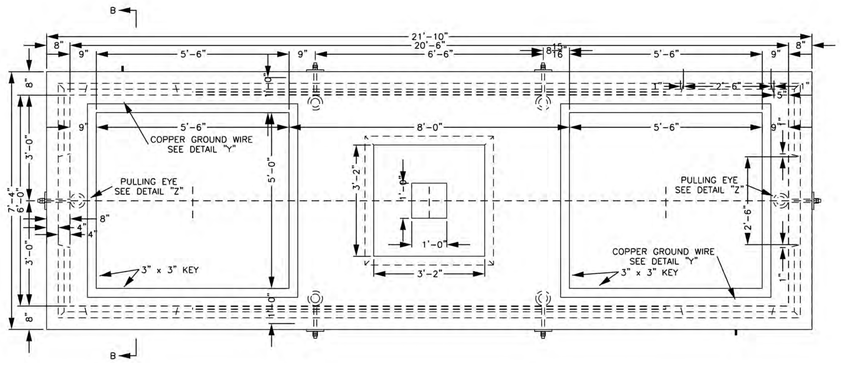


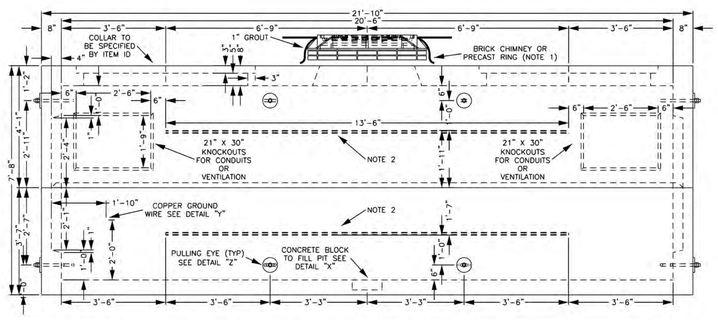
NOTES:
1. REFER TO ARCHITECTURAL DRAWING 8/A17.31 FOR TURNOUT GEAR LOCKER DETAIL.
2. ELECTRICAL CONTRACTOR TO PROVIDE WIREMOLD AND WIREMOLD MOUNTING FRAME AS NOTED IN DETAIL ABOVE.

1 TURNOUT GEAR LOCKER
NTS

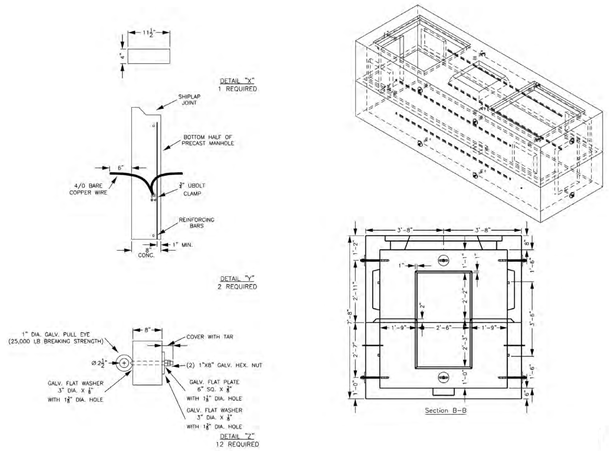


3 EMERGENCY LIGHTING BYPASS CONTROL DIAGRAM
NTS





NOTE
1. FOR MANHOLE CHIMNEY OR PRECAST RING SEE MS 3748, 3755 AND 3757. USE WITH UM14F(36" FRAME), UM14R(26"–36" RING) AND UM14C(26" COVER).
2. INSTALL 1–$\frac{3}{8}$"X1–$\frac{3}{8}$" HEAVY DUTY GALVANIZED UNISTRUT AND CABLE POSITIONING BRACKETS. UNISTRUT NEEDS TO BE PROPERLY BONDED TO THE GROUND GRID WITH A TINNED CONNECTOR AND 4/0 CABLE.



2 NATIONAL GRID DOUBLE SWITCHGEAR MANHOLE - SPEC. MS3475
NTS

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ENERGY MODEL
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COMMONWEALTH OF MASSACHUSETTS
JULIAN ASTBURY
ELECTRICAL
No. 45455
REGISTERED PROFESSIONAL ENGINEER
12/16/2025

CONSTRUCTION DOCUMENTS 12/19/25

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE

ELECTRICAL DETAILS SHEET 6

SHEET NUMBER

E08.06

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12/16/2025 6:42:12 PM Autodesk Docs://City of Worcester - South Division Firehouse/MEP_City of Worcester_South Division Firehouse.rvt

PANEL: PP-OS-1A

LOCATION: EMERGENCY ELEC 111 | **VOLTS:** 480/277 Wye | **A.I.C. RATING:** 22 KAIC
SUPPLY FROM: ATS-OS-1A | **PHASE:** 3 | **BUS RATING:** 600 A
MOUNTING: SURFACE | **WIRE:** 4 | **MAIN CB:** 600 A
ENCLOSURE: Type 1

CKT	CIRCUIT DESCRIPTION	LC	CT	TRIP	POLES	A	B	C	POLES	TRIP	CT	LC	CIRCUIT DESCRIPTION	CKT
1	ASHP-1 - EXTERIOR	HVAC	1	110 A	3	11584... 12714...			3	60 A	1	HVAC	DOAS-1 - ROOF	2
3	--	--	--	--	--		11584... 12714...		--	--	--	--	--	4
5	--	--	--	--	--			11584... 12714...	--	--	--	--	--	6
7	ASHP-1 - EXTERIOR	HVAC	1	110 A	3	11584... 18000...			3	100 A	1	HVAC	WH-2 - RM 114	8
9	--	--	--	--	--		11584... 18000...		--	--	--	--	--	10
11	--	--	--	--	--			11584... 18000...	--	--	--	--	--	12
13	VRF-1 - EXTERIOR	HVAC	1	30 A	3	3520... 53999...			3	300 A	1	HVAC...	TF-OS-1A	14
15	--	--	--	--	--		3520... 54318...		--	--	--	--	--	16
17	--	--	--	--	--			3520... 54392...	--	--	--	--	--	18
19	VRF-2 - EXTERIOR	HVAC	1	50 A	3	4960... 4062...			3	100 A	1	LIGH...	LP-1A	20
21	--	--	--	--	--		4960... 2679...		--	--	--	--	--	22
23	--	--	--	--	--			4960... 2917...	--	--	--	--	--	24
25	EUH-4 - APPARATUS BAY	HVAC	1	20 A	3	3324... 0 VA			3	110 A	--	--	SPARE	26
27	--	--	--	--	--		3324... 0 VA		--	--	--	--	--	28
29	--	--	--	--	--			3324... 0 VA	--	--	--	--	--	30
31	EUH-5 - APPARATUS BAY	HVAC	1	20 A	3	3324... 0 VA			3	20 A	--	--	SPARE	32
33	--	--	--	--	--		3324... 0 VA		--	--	--	--	--	34
35	--	--	--	--	--			3324... 0 VA	--	--	--	--	--	36
37	SPARE	--	--	20 A	3	0 VA 0 VA			3	20 A	--	--	SPARE	38
39	--	--	--	--	--		0 VA 0 VA		--	--	--	--	--	40
41	--	--	--	--	--			0 VA 0 VA	--	--	--	--	--	42
				TOTAL LOAD:		127050 VA	125982 VA	126283 VA						
				TOTAL AMPS:		459 A	455 A	456 A						

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
HVAC	218757 VA	100.00%	218757 VA	
LIGHTING (LTG)	10587 VA	125.00%	13233 VA	**TOTAL CONN. LOAD:** 379314 VA
Motor	3000 VA	100.00%	3000 VA	**TOTAL EST. DEMAND:** 349736 VA
POWER	72195 VA	100.00%	72195 VA	**TOTAL CONN..:** 456 A
RECEPTACLE (R)	74460 VA	56.72%	42230 VA	**TOTAL EST. DEMAND:** 421 A
Spare	360 VA	100.00%	360 VA	

NOTES:

PANEL: PP-OS-2A

LOCATION: | **VOLTS:** 120/208 Wye | **A.I.C. RATING:** 10 KAIC
SUPPLY FROM: PP-OS-1B-2 | **PHASE:** 3 | **BUS RATING:** 600 A
MOUNTING: SURFACE | **WIRE:** 4 | **MAIN CB:** 100 A
ENCLOSURE: Type 1

CKT	CIRCUIT DESCRIPTION	Load Classification	TRIP	POLES	A	B	C	POLES	TRIP	Load Classification	CIRCUIT DESCRIPTION	CKT
1	VAV - 232	HVAC	20 A	1	0 VA 420 VA			1	20 A	HVAC	DSF 1,2,4,5 - APPARATUS BAY	2
3	TRAP PRIMER - LEVEL 2	POW...	20 A	1		480 VA 62 VA		2	20 A	POW...	SHUT OFF VALVE - VEST 2	4
5	DHU - PPE DRYING ROOM 119A	HVAC	20 A	1			750 VA 62 VA	--	--	--	--	6
7	C-1, C-2 - PPE DRYING ROOM 119A	HVAC	20 A	1	1770 VA 456 VA			2	20 A	HVAC	FCU 1-21, BS-8	8
9	EF-D1 - ROOF	HVAC	20 A	2		117 VA 456 VA		--	--	--	--	10
11	--	--	--	--			117 VA 117 VA	2	20 A	HVAC	EF-D2 - ROOF	12
13	FCU - LAV 120	HVAC	20 A	2	850 VA 117 VA			--	--	--	--	14
15	--	--	--	--		850 VA 1247 VA		2	20 A	HVAC	R-2 - RM 226	16
17	FCU - 230, 231, 232	HVAC	20 A	2			912 VA 1247 VA	--	--	--	--	18
19	--	--	--	--	912 VA 1247 VA			2	20 A	HVAC	R-1 - RM 226	20
21	FCU - WATCH ROOM 123	HVAC	20 A	2		788 VA 1247 VA		--	--	--	--	22
23	--	--	--	--			788 VA 788 VA	2	20 A	HVAC	FCU 118, 123	24
25	FCU - 229, 232A	HVAC	20 A	2	788 VA 788 VA			--	--	--	--	26
27	--	--	--	--		788 VA 1181 VA		2	20 A	HVAC	FCU 119B, 119A, 119	28
29	FCU- 227, 227a, 228	HVAC	20 A	2			1181 VA 1181 VA	--	--	--	--	30
31	--	--	--	--	1181 VA 1181 VA			2	20 A	HVAC	FCU - 232A, 232	32
33	SPARE	--	20 A	2		0 VA 1181 VA		--	--	--	--	34
35	--	--	--	--			0 VA 0 VA	1	20 A	--	SPARE	36
37	SPARE	--	20 A	2	0 VA 0 VA			1	20 A	--	SPARE	38
39	--	--	--	--		0 VA 0 VA		1	20 A	--	SPARE	40
41	SPARE	--	20 A	1			0 VA 0 VA	1	20 A	--	SPARE	42
				TOTAL LOAD:	9709 VA	8293 VA	7129 VA					
				TOTAL AMPS:	82 A	71 A	59 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
HVAC	24641 VA	100.00%	24641 VA	
POWER	605 VA	100.00%	605 VA	**TOTAL CONN. LOAD:** 25128 VA
				TOTAL EST. DEMAND: 25128 VA
				TOTAL CONN..: 70 A
				TOTAL EST. DEMAND: 70 A

NOTES:

PANEL: PP-OS-1D

LOCATION: COMPRESSOR ROOM 103 | **VOLTS:** 120/208 Wye | **A.I.C. RATING:** 10 KAIC
SUPPLY FROM: DP-OS-1A | **PHASE:** 3 | **BUS RATING:** 100 A
MOUNTING: SURFACE | **WIRE:** 4 | **MAIN CB:** 100 A
ENCLOSURE: Type 1

CKT	CIRCUIT DESCRIPTION	LC	TRIP	POLES	A	B	C	POLES	TRIP	LC	CIRCUIT DESCRIPTION	CKT
1	FSD - RM 102A	POW...	20 A	1	500 VA 543 VA			1	20 A	HVAC	HHWP-2 - RM 102A	2
3	GF-1 - RM 102A	HVAC	20 A	1		864 VA 1181 VA		2	20 A	HVAC	FCU 202, 203, 204	4
5	MD-1 APPARATUS BAY 100	HVAC	20 A	1			500 VA 1181 VA	--	--	--	--	6
7	HHWP 1 - RM 102A	HVAC	20 A	2	272 VA 456 VA			2	20 A	HVAC	FCU 208A, 208, 200	8
9	--	--	--	--		272 VA 456 VA		--	--	--	--	10
11	FCU 101, 100A	HVAC	20 A	2			788 VA 1244 VA	2	20 A	HVAC	FCU 201A, 201, 200A, BS-2	12
13	--	--	--	--	788 VA 1244 VA			--	--	--	--	14
15	FCU 205, 207, 206	HVAC	20 A	2		1181 VA 0 VA		1	20 A	--	SPARE	16
17	--	--	--	--			1181 VA 0 VA	2	20 A	--	SPARE	18
19	FCU - RM 102, 103	HVAC	20 A	2	850 VA 0 VA			2	20 A	HVAC	FCU - KITCHEN	20
21	--	--	--	--		850 VA 0 VA		2	20 A	--	SPARE	22
23	SPARE	--	20 A	1			0 VA 0 VA	--	--	--	--	24
25	SPARE	--	20 A	2	0 VA 0 VA			2	20 A	--	SPARE	26
27	--	--	--	--		0 VA 0 VA		--	--	--	--	28
29	SPARE	--	20 A	2			0 VA 0 VA	2	20 A	--	SPARE	30
31	--	--	--	--	0 VA 0 VA			--	--	--	--	32
33	SPARE	--	20 A	2		0 VA 0 VA		2	20 A	--	SPARE	34
35	--	--	--	--			0 VA 0 VA	--	--	--	--	36
37	SPARE	--	20 A	1	0 VA 0 VA			1	20 A	--	SPARE	38
39	SPARE	--	20 A	1		0 VA 0 VA		1	20 A	--	SPARE	40
41	SPARE	--	20 A	1			0 VA 0 VA	1	20 A	--	SPARE	42
			TOTAL LOAD:		4459 VA	4627 VA	4803 VA					
			TOTAL AMPS:		37 A	39 A	40 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
HVAC	13440 VA	100.00%	13440 VA	
POWER	500 VA	100.00%	500 VA	**TOTAL CONN. LOAD:** 13873 VA
				TOTAL EST. DEMAND: 13873 VA
				TOTAL CONN..: 39 A
				TOTAL EST. DEMAND: 39 A

NOTES:

PANEL: PP-OS-1B

LOCATION: EMERGENCY ELEC 111 | **VOLTS:** 480/277 Wye | **A.I.C. RATING:** 22 KAIC
SUPPLY FROM: ATS-OS-1B | **PHASE:** 3 | **BUS RATING:** 600 A
MOUNTING: SURFACE | **WIRE:** 4 | **MAIN CB:** 600 A
ENCLOSURE: Type 1

CKT	CIRCUIT DESCRIPTION	LC	TRIP	POLES	A	B	C	POLES	TRIP	LC	CIRCUIT DESCRIPTION	CKT
1	EUH-1 - RM 114	HVAC	20 A	1	2493 VA 33156...			3	300 A	HVAC...	TF-OS-1B	2
3	EUH-2 - STAIR S-A1	HVAC	20 A	1		2493 VA 34308 VA		--	--	--	--	4
5	EUH-3 - STAIR S-C1	HVAC	20 A	1			2493 VA 35289 VA	--	--	--	--	6
7	EUH-8 - STAIR S-B1	HVAC	20 A	1	2493 VA 3520 VA			3	30 A	HVAC	VRF-3 - EXTERIOR	8
9	EUH-6 - APPARATUS BAY	HVAC	20 A	3		3324 VA 3520 VA		--	--	--	--	10
11	--	--	--	--			3324 VA 3520 VA	--	--	--	--	12
13	--	--	--	--	3324 VA 4320 VA			3	40 A	HVAC	VRF-4 - EXTERIOR	14
15	EF-3 - ROOF	HVAC	20 A	3		746 VA 4320 VA		--	--	--	--	16
17	--	--	--	--			746 VA 4320 VA	--	--	--	--	18
19	--	--	--	--	746 VA 6250 VA			3	40 A	POWER	COMPRESSOR - RM 103	20
21	EF-2 - ROOF	HVAC	30 A	3		3867 VA 6250 VA		--	--	--	--	22
23	--	--	--	--			3867 VA 6250 VA	--	--	--	--	24
25	--	--	--	--	3867 VA 3324 VA			3	20 A	HVAC	EUH-7 - APPARATUS BAY	26
27	WH-1 - RM 114	HVAC	100 A	3		18000 VA 3324 VA		--	--	--	--	28
29	--	--	--	--			18000... 3324 VA	--	--	--	--	30
31	--	--	--	--	18000 VA 0 VA			3	90 A	--	SPARE	32
33	DOAS-2 - ROOF	HVAC	125 A	3		27667 VA 0 VA		--	--	--	--	34
35	--	--	--	--			27667... 0 VA	--	--	--	--	36
37	--	--	--	--	27667 VA 0 VA			3	40 A	--	SPARE	38
39	HVAC MEP 102A	HVAC	20 A	1		2597 VA 0 VA		--	--	--	--	40
41	SPARE	--	125 A	3			0 VA 0 VA	--	--	--	--	42
43	--	--	--	--	0 VA 0 VA			3	30 A	--	SPARE	44
45	--	--	--	--		0 VA 0 VA		--	--	--	--	46
47	SPARE	--	20 A	3			0 VA 0 VA	--	--	--	--	48
49	--	--	--	--	0 VA 0 VA			3	20 A	--	SPARE	50
51	--	--	--	--		0 VA 0 VA		--	--	--	--	52
53	SPARE	--	20 A	1			0 VA 0 VA	--	--	--	--	54
55	SPARE	--	20 A	1	0 VA --			1	--	--	PREPARED SPACE	56
57	SPARE	--	20 A	1		0 VA --		1	--	--	PREPARED SPACE	58
59	SPARE	--	20 A	1			0 VA --	1	--	--	PREPARED SPACE	60
			TOTAL LOAD:		108109 VA	109152 VA	107897 VA					
			TOTAL AMPS:		390 A	394 A	390 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
HVAC	268918 VA	100.00%	268918 VA	
KITCHEN (K)	9200 VA	80.00%	7360 VA	**TOTAL CONN. LOAD:** 325155 VA
POWER	29215 VA	100.00%	29215 VA	**TOTAL EST. DEMAND:** 319759 VA
RECEPTACLE (R)	17160 VA	79.14%	13580 VA	**TOTAL CONN..:** 391 A
APPLIANCE (APPL)	960 VA	100.00%	960 VA	**TOTAL EST. DEMAND:** 385 A

NOTES:

PANEL: PP-OS-1B-2

LOCATION: EMERGENCY ELEC 111 | **VOLTS:** 120/208 Wye | **A.I.C. RATING:** 10 KAIC
SUPPLY FROM: TF-OS-1B | **PHASE:** 3 | **BUS RATING:** 600 A
MOUNTING: SURFACE | **WIRE:** 4 | **MAIN CB:** 500 A
ENCLOSURE: Type 1

CKT	CIRCUIT DESCRIPTION	LC	TRIP	POLES	A	B	C	POLES	TRIP	LC	CIRCUIT DESCRIPTION	CKT
1	DSF-3 - RM 113	HVAC	20 A	1	0 VA 373 VA			1	20 A	HVAC	HWP 1&2 - RM 114	2
3	HRV-1 - ROOF	HVAC	20 A	1		1812 VA 93 VA		2	20 A	HVAC	EF-1 - ROOF	4
5	DRYING RACK - 119A	POWER	20 A	1			1980 VA 93 VA	--	--	--	--	6
7	FCU - 214, 214A	HVAC	20 A	2	788 VA 1244 VA			2	20 A	HVAC	FCU 107, 106, 105, BS-1	8
9	--	--	--	--		788 VA 1244 VA		--	--	--	--	10
11	FCU 209, 210, 200D	HVAC	20 A	2			1637 VA 0 VA	1	20 A	HVAC	VAV - 200	12
13	--	--	--	--	1637 VA 1637 VA			2	20 A	HVAC	FCU 112, 111, 110	14
15	FCU 121.13, 113, 121	HVAC	20 A	2		1244 VA 1637 VA		--	--	--	--	16
17	--	--	--	--			1244 VA 1306 VA	2	20 A	HVAC	BS-3,4 - RM 200	18
19	NG-1 - RM 114	HVAC	20 A	1	1200 VA 1306 VA			--	--	--	--	20
21	FCU - 216, 217	HVAC	20 A	2		914 VA 0 VA		1	20 A	HVAC	VAV - 200	22
23	--	--	--	--			914 VA 11040 VA	3	100 A	POWE...	RP-OS-2A	24
25	FCU - 215A, 215	HVAC	20 A	2	788 VA 9560 VA			--	--	--	--	26
27	--	--	--	--		788 VA 13380 VA		--	--	--	--	28
29	ACCU-1 - EXTERIOR	HVAC	90 A	3			5280 VA 788 VA	2	20 A	HVAC	HVAC BUNK ROOM 211	30
31	--	--	--	--	5280 VA 788 VA			--	--	--	--	32
33	--	--	--	--		5280 VA 777 VA		3	20 A	HVAC	ACCU-2 - EXTERIOR	34
35	ACCU-3 - EXTERIOR	HVAC	20 A	3			777 VA 777 VA	--	--	--	--	36
37	--	--	--	--	777 VA 777 VA			--	--	--	--	38
39	--	--	--	--		777 VA 250 VA		1	20 A	HVAC	VAV TURN OUT GEAR - 106	40
41	RP-OS-2A	HVAC;...	100 A	3			9709 VA 1220 VA	1	20 A	POWER	TRAP PRIMER - ZONE 1A	42
43	--	--	--	--	8293 VA							44
45	--	--	--	--		7129 VA						46
47	HVAC SERVER 217	HVAC	20 A	2			394 VA 0 VA	2	20 A	--	SPARE	48
49	--	--	--	--	394 VA 0 VA			--	--	--	--	50
51	SPARE	--	20 A	2		0 VA 0 VA		2	20 A	--	SPARE	52
53	--	--	--	--			0 VA 0 VA	--	--	--	--	54
55	SPARE	--	20 A	1	0 VA 0 VA			2	20 A	--	SPARE	56
57	SPARE	--	20 A	1		0 VA 0 VA		--	--	--	--	58
59	SPARE	--	20 A	1			0 VA 0 VA	1	20 A	--	SPARE	60
			TOTAL LOAD:		33156 VA	34308 VA	35289 VA					
			TOTAL AMPS:		276 A	287 A	296 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
HVAC	67306 VA	100.00%	67306 VA	
KITCHEN (K)	9200 VA	80.00%	7360 VA	**TOTAL CONN. LOAD:** 102744 VA
POWER	10465 VA	100.00%	10465 VA	**TOTAL EST. DEMAND:** 97552 VA
RECEPTACLE (R)	17160 VA	79.14%	13580 VA	**TOTAL CONN..:** 285 A
APPLIANCE (APPL)	960 VA	100.00%	960 VA	**TOTAL EST. DEMAND:** 271 A

NOTES:

PANEL: LP-1A

LOCATION: EMERGENCY ELEC 111 | **VOLTS:** 480/277 Wye | **A.I.C. RATING:** 22 KAIC
SUPPLY FROM: PP-OS-1A | **PHASE:** 3 | **BUS RATING:** 100 A
MOUNTING: SURFACE | **WIRE:** 4 | **MAIN CB:** 100 A
ENCLOSURE: Type 1

CKT	CIRCUIT DESCRIPTION	LC	TRIP	POLES	A	B	C	POLES	TRIP	LC	CIRCUIT DESCRIPTION	CKT
1	LTG - APPARATUS BAY 100	LTG	20 A	1	1211 VA 48 VA			1	20 A	LTG	LTG - STAIR C	2
3	LTG - APPARATUS BAY 100	LTG	20 A	1		1126 VA 46 VA		1	20 A	LTG	LTG - STAIR C	4
5	LTG - 100A, 103, 101, 102, 102A, 104	LTG	20 A	1			216 VA 83 VA	1	20 A	LTG	LTG- STAIR A	6
7	LTG - 106, 107, 110, 108, 109	LTG	20 A	1	525 VA 243 VA			1	20 A	LTG	LTG- KITCHEN	8
9	LTG - 113, 114	LTG	20 A	1		299 VA 93 VA		1	20 A	LTG	LTG - SITE (NOTE 1)	10
11	LTG - 121.13, 121, 115A, 121A	LTG	20 A	1			258 VA 1092 VA	1	20 A	LTG	LTG - TRAINING TOWER T-1	12
13	LTG - 119, 20D, 118, 117, 116, 120, 121C	LTG	20 A	1	520 VA 171 VA			1	20 A	LTG	LTG - CORRIDOR 232	14
15	LTG - CORRIDOR 121	LTG	20 A	1		239 VA 387 VA		1	20 A	LTG	LTG - 232A, 232B	16
17	LTG - 123, 122	LTG	20 A	1			491 VA 394 VA	1	20 A	LTG	LTG - 206, 207, 209, 211, 210, 212, 208A,...	18
19	LTG - CORRIDOR 200, STAIR B	LTG	20 A	1	572 VA 652 VA			1	20 A	LTG	LTG - 223, 224, 225, 220, 219, 218, 222,...	20
21	LTG - 200C, 200B, 204, 200A, 202, 203,...	LTG	20 A	1		341 VA 27 VA		1	20 A	LTG	LTG - 226	22
23	LTG - SECOND FLOOR AL6	LTG	20 A	1			263 VA 0 VA	1	20 A	--	SPARE	24
25	SPARE	--	20 A	1	0 VA 0 VA			1	20 A	--	SPARE	26
27	SPARE	--	20 A	1		0 VA 0 VA		1	20 A	--	SPARE	28
29	SPARE	--	20 A	1			0 VA 0 VA	1	20 A	--	SPARE	30
31	SPARE	--	20 A	1	0 VA 0 VA			1	20 A	--	SPARE	32
33	SPARE	--	20 A	1		0 VA 0 VA		1	20 A	--	SPARE	34
35	SPARE	--	20 A	1			0 VA 0 VA	1	20 A	--	SPARE	36
37	SPARE	--	20 A	1	0 VA 120 VA			3	20 A	-	LUTRON LUT-ELI EMERGENCY...	38
39	SPARE	--	20 A	1		0 VA 120 VA		--	--	--	--	40
41	SPARE	--	20 A	1			0 VA 120 VA	--	--	--	--	42
			TOTAL LOAD:		4062 VA	2679 VA	2917 VA					
			TOTAL AMPS:		15 A	10 A	11 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
LIGHTING (LTG)	9298 VA	125.00%	11622 VA	
Spare	360 VA	100.00%	360 VA	**TOTAL CONN. LOAD:** 9658 VA
				TOTAL EST. DEMAND: 11982 VA
				TOTAL CONN..: 12 A
				TOTAL EST. DEMAND: 14 A

NOTES:
NOTE 1: PROVIDE METERING FOR SITE LIGHTING CIRCUIT AND CONNECT TO THE POWER MONITORING SYSTEM.

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CIVIL/LANDSCAPE
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63 PLEASANT ST, WATERTOWN, MA 02471

MEP/FP/LIGHTING
ARUP US, INC.
60 STATE ST, BOSTON, MA 02109

CODE
JENSEN HUGHES
33 ARCH ST, BOSTON, MA 02110

ENERGY MODEL
ANDELMANLELEK
1408 PROVIDENCE HWY, NORWOOD, MA 02062

COMMONWEALTH OF MASSACHUSETTS
JULIAN ASTBURY
ELECTRICAL
No. 45456
REGISTERED PROFESSIONAL ENGINEER
12/16/2025

CONSTRUCTION DOCUMENTS 12/19/25

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL PANEL SCHEDULES SHEET 1

SHEET NUMBER

E09.01

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PANEL: RP-OS-1A

LOCATION: ELEC 222A
SUPPLY FROM: DP-OS-1A
MOUNTING: SURFACE
ENCLOSURE: Type 1

VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4

A.I.C. RATING: 10 KAIC
BUS RATING: 225 A
MAIN CB: 225 A

CKT	CIRCUIT DESCRIPTION	LC	TRIP	POLES	A		B		C		POLES	TRIP	LC	CIRCUIT DESCRIPTION	CKT
1	FIRE SOAPS	R	20 A	1	360 VA	500 VA					1	20 A	POWER	BMS PANEL - ROOF	2
3	RECEPT - DOAS	R	20 A	1			360 VA	540 VA			1	20 A	R	RECEPT - 122, 123	4
5	BMS PANEL - APPARATUS BAY	POWER	20 A	1					500 VA	660 VA	1	20 A	R	MONITOR - WATCH ROOM	6
7	DOOR POWER - 121A, 121	POWER	20 A	1	700 VA	0 VA					1	20 A	--	SPARE	8
9	RECEPT - 119	R	20 A	1			720 VA	1250 VA			1	20 A	POWER	MICROWAVE - WATCHROOM	10
11	DOOR POWER - APPARATUS BAY	POWER	20 A	1					800 VA	960 VA	1	20 A	POWER	TRAP PRIMER - ZONE 1C	12
13	119B - WASHER	POWER	20 A	1	1000 VA	1000 VA					1	20 A	POWER	CR - APPARATUS BAY 100	14
15	(FUTURE) CRES-CORE	POWER	30 A	1			2000 VA	2055 VA			1	20 A	POWER	COFFEE BREWER (NOTE 2)	16
17	GEAR DRYER - PPE DRYING ROOM	POWER	20 A	1					1500 VA	1500 VA	1	20 A	POWER	GEAR DRYER - PPE DRYING ROOM	18
19	RECEPT - WORK ROOM	R	20 A	1	1260 VA	1000 VA					3	20 A	POWER	LAUNDRY - DRYER	20
21	ROLLUP DOOR - APPARATUS BAY 100	MOTOR	20 A	1			500 VA	0 VA			--	--	--	--	22
23	LAUNDRY - DRYER	POWER	20 A	3					1000 VA	0 VA	--	--	--	--	24
25	--	--	--	--	0 VA	500 VA					1	20 A	MOTOR	ROLLUP DOOR - APPARATUS BAY 100	26
27	--	--	--	--			0 VA	500 VA			1	20 A	MOTOR	ROLLUP DOOR - APPARATUS BAY 100	28
29	WC - 121 (NOTE 1)	R	20 A	1					500 VA	500 VA	1	20 A	MOTOR	ROLLUP DOOR - APPARATUS BAY 100	30
31	FSD - APPARATUS BAY	POWER	20 A	1	500 VA	500 VA					1	20 A	POWER	CONTROL PANEL - WATCHROOM	32
33	CR - APPARATUS BAY 100	POWER	20 A	1			500 VA	660 VA			1	20 A	R	MONITOR - WATCHROOM	34
35	CR - APPARATUS BAY 100	POWER	20 A	1					500 VA	660 VA	1	20 A	POWE...	MONITORS - APPARATUS BAY 100	36
37	MONITOR - WATCHROOM	R	20 A	1	660 VA	720 VA					1	20 A	R	RECEPT - 120	38
39	RECEPT - KITCHEN	R	20 A	1			720 VA	1000 VA			1	20 A	POWER	TL - APPARATUS BAY 100	40
41	RECEPT - WATCHROOM	R	20 A	1					720 VA	1000 VA	1	20 A	R	TV - WATCHROOM	42
43	TL - APPARATUS BAY 100	POWER	20 A	1	1000 VA	1000 VA					1	20 A	POWER	CR - APPARATUS BAY 100	44
45	CR - APPARATUS BAY 100	POWER	20 A	1			1000 VA	2917 VA			3	50 A	POWER	LAUNDRY - WASHER (NOTE 1)	46
47	LAUNDRY - WASHER	POWER	20 A	1					1000 VA	2917 VA	--	--	--	--	48
49	LAUNDRY - WASHER (NOTE 1)	POWER	50 A	3	2917 VA	2917 VA					--	--	--	--	50
51	--	--	--	--			2917 VA	3840 VA			3	40 A	POWER	(FUTURE) SOLO RESCUE	52
53	--	--	--	--					2917 VA	3840 VA	--	--	--	--	54
55	SPARE	--	20 A	2	0 VA	3840 VA					--	--	--	--	56
57	--	--	--	--			0 VA	0 VA			1	20 A	--	SPARE	58
59	SPARE	--	20 A	2					0 VA	0 VA	1	20 A	--	SPARE	60
61	--	--	--	--	0 VA	0 VA					3	20 A	--	SPARE	62
63	SPARE	--	20 A	1			0 VA	0 VA			--	--	--	--	64
65	SPARE	--	20 A	1					0 VA	0 VA	--	--	--	--	66
67	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	68
69	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	70
71	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	72
			TOTAL LOAD:		20373 VA		21478 VA		21473 VA						
			TOTAL AMPS:		170 A		180 A		180 A						

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
Motor	2000 VA	100.00%	2000 VA		
POWER	52115 VA	100.00%	52115 VA	TOTAL CONN. LOAD:	63325 VA
RECEPTACLE (R)	9210 VA	100.00%	9210 VA	TOTAL EST. DEMAND:	63325 VA
				TOTAL CONN..:	176 A
				TOTAL EST. DEMAND:	176 A

NOTES:
NOTE 1: PROVIDE GFCI BREAKER FOR WATER COOLER.
NOTE 2: PROVIDE GFCI BREAKER FOR KITCHEN APPLIANCE.

PANEL: RP-OS-1B

LOCATION: COMPRESSOR ROOM 103
SUPPLY FROM: DP-OS-1A
MOUNTING: SURFACE
ENCLOSURE: Type 1

VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4

A.I.C. RATING: 10 KAIC
BUS RATING: 225 A
MAIN CB: 150 A

CKT	CIRCUIT DESCRIPTION	LC	TRIP	POLES	A		B		C		POLES	TRIP	LC	CIRCUIT DESCRIPTION	CKT
1	HVAC YARD STORAGE 102	HVAC	20 A	1	50 VA	240 VA					1	20 A	POWER	TRAP PRIMER - ZONE 1B	2
3	LTG - PURVIS SYSTEM LVL 1	LTG	20 A	1			118 VA	360 VA			1	20 A	R	RECEPT - APPARATUS BAY 100	4
5	LTG - STOP GO	LTG	20 A	1					130 VA	400 VA	1	20 A	POWER	DOOR POWER	6
7	DOOR POWER - APPARATUS BAY	POWER	20 A	1	400 VA	660 VA					1	20 A	R	BUNK ROOM 201 DISPLAY	8
9	BMS PANEL - RM 102A	POWER	20 A	1			500 VA	660 VA			1	20 A	POWER	MONITORS - APPARATUS BAY 100	10
11	BMS PANEL - RM 102A	POWER	20 A	1					500 VA	720 VA	1	20 A	R	RECEPT - 204, 205	12
13	RECEPT - 206, 207	R	20 A	1	720 VA	1000 VA					1	20 A	MOTOR	ROLLUP DOOR - APPARATUS BAY 100	14
15	RECEPT - EF-1, HRV-1	POWE...	20 A	1			860 VA	900 VA			1	20 A	R	RECEPT - TRAINING TOWER, 100A, 103	16
17	RECEPT - 202, 203	R	20 A	1					900 VA	1000 VA	1	20 A	POWER	TL - APPARATUS BAY 100	18
19	RECEPT - 101, 102, 103	R	20 A	1	1080 VA	1440 VA					1	20 A	R	RECEPT - 201A	20
21	BUNK ROOM 202, 203, CORR DISPLAY	R	20 A	1			990 VA	1260 VA			1	20 A	R	RECEPT - 208A	22
23	CR - APPARATUS BAY 100	POWER	20 A	1					2000 VA	500 VA	1	20 A	R	WC - APPARATUS BAY (NOTE 1)	24
25	BMS PANEL - ROOF	POWER	20 A	1	500 VA	720 VA					1	20 A	R	RECEPT - 208	26
27	GENERATOR BMS PANEL	POWER	20 A	1			500 VA	720 VA			1	20 A	R	RECEPT - 209, 210	28
29	RECEPT - APPARATUS BAY	R	20 A	1					720 VA	990 VA	1	20 A	R	BUNK ROOM 209-211 DISPLAY	30
31	BUNK ROOM 204-206 DISPLAY	R	20 A	1	990 VA	0 VA					1	20 A	--	SPARE	32
33	BUNK ROOM 207, 208 DISPLAY	R	20 A	1			990 VA	0 VA			1	20 A	--	SPARE	34
35	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	36
37	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	38
39	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	40
41	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	42
43	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	44
45	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	46
47	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	48
49	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	50
51	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	52
53	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	54
55	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	56
57	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	58
59	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	60
61	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	62
63	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	64
65	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	66
67	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	68
69	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	70
71	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	72
			TOTAL LOAD:		7800 VA		7858 VA		7860 VA						
			TOTAL AMPS:		65 A		66 A		66 A						

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
HVAC	50 VA	100.00%	50 VA		
LIGHTING (LTG)	248 VA	125.00%	310 VA	TOTAL CONN. LOAD:	23518 VA
Motor	1000 VA	100.00%	1000 VA	TOTAL EST. DEMAND:	21070 VA
POWER	7200 VA	100.00%	7200 VA	TOTAL CONN..:	65 A
RECEPTACLE (R)	15020 VA	83.29%	12510 VA	TOTAL EST. DEMAND:	58 A

NOTES:
NOTE 1: PROVIDE GFCI BREAKER FOR WATER COOLER.

PANEL: RP-OS-1C

LOCATION:
SUPPLY FROM: DP-OS-1A
MOUNTING: SURFACE
ENCLOSURE: Type 1

VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4

A.I.C. RATING: 10 KAIC
BUS RATING: 225 A
MAIN CB: 150 A

CKT	CIRCUIT DESCRIPTION	LC	TRIP	POLES	A		B		C		POLES	TRIP	LC	CIRCUIT DESCRIPTION	CKT
1	LTG - BUNK ROOMS	LTG	20 A	1	54 VA	260 VA					1	20 A	LTG	LTG - 222	2
3	LTG - PURVIS SYSTEM LVL 2	LTG	20 A	1			196 VA	271 VA			1	20 A	LTG	LTG - 226	4
5	ROWING MACHINE	R	20 A	1					1500 VA	260 VA	1	20 A	LTG	LTG - 226	6
7	MONITOR - EXERCISE ROOM	R	20 A	1	330 VA	500 VA					1	20 A	POWER	SECURITY PANEL	8
9	DOOR POWER - STAIR C	POWER	20 A	1			400 VA	720 VA			1	20 A	R	RECEPT - 106 (NOTE 2)	10
11	RECEPT - 105, 106	R	20 A	1					360 VA	660 VA	1	20 A	R	BUNK ROOM 212, COR 200 DISPLAY	12
13	RECEPT - 214A	R	20 A	1	1260 VA	1800 VA					1	20 A	R	PURVIS SYSTEM UPS	14
15	RECEPT - 220	R	20 A	1			1080 VA	1500 VA			1	20 A	R	EXERCISE BIKE	16
17	BUNK ROOM 213 DISPLAY	R	20 A	1					660 VA	900 VA	1	20 A	POWER	DOOR POWER - STAIR B	18
19	SECURITY PANEL	POWER	20 A	1	500 VA	540 VA					1	20 A	R	RECEPT - 106 (NOTE 2)	20
21	WC - 200 (NOTE 1)	R	20 A	1			500 VA	540 VA			1	20 A	R	RECEPT - 106 (NOTE 2)	22
23	RECEPT - SCBA SHOP	POWE...	20 A	1					1260 VA	500 VA	1	20 A	R	WC - EXERCISE (NOTE 1)	24
25	BUNK ROOM 214 DISPLAY	R	20 A	1	660 VA	720 VA					1	20 A	R	RECEPT - 113	26
27	MONITOR - WATCHROOM	R	20 A	1			660 VA	720 VA			1	20 A	R	RECEPT - 215A	28
29	RECEPT - APPARATUS BAY 100	R	20 A	1					540 VA	660 VA	1	20 A	R	MONITORS - APPARATUS BAY 100	30
31	RECEPT - 106 (NOTE 2)	R	20 A	1	900 VA	900 VA					1	20 A	R	RECEPT - 106 (NOTE 2)	32
33	RECEPT - 107, 08, 109, 110	R	20 A	1			900 VA	900 VA			1	20 A	R	RECEPT - 106 (NOTE 2)	34
35	RECEPT - 217, 218	R	20 A	1					720 VA	900 VA	1	20 A	R	RECEPT - 216	36
37	RECEPT - 106 (NOTE 2)	R	20 A	1	900 VA	900 VA					1	20 A	R	EXTERIOR RECEPTACLES	38
39	RECEPT - 106 (NOTE 2)	R	20 A	1			900 VA	900 VA			1	20 A	R	RECEPT - 106 (NOTE 2)	40
41	RECEPT - 106 (NOTE 2)	R	20 A	1					900 VA	900 VA	1	20 A	R	RECEPT - 106 (NOTE 2)	42
43	TV - EXERCISE ROOM	R	20 A	1	1000 VA	1000 VA					1	20 A	POWER	TELECOM RACK	44
45	TV - SCBA	R	20 A	1			1000 VA	1000 VA			1	30 A	POWER	TELECOM RACK	46
47	RECEPT - 106 (NOTE 2)	R	20 A	1					900 VA	1000 VA	1	20 A	R	WC - 100 (NOTE 1)	48
49	MOTORIZED SHADES - TRAINING	POWER	20 A	1	1000 VA	1080 VA					1	20 A	R	RECEPT - APPARATUS BAY	50
51	MOTORIZED SHADES - WATCH ROOM	POWER	20 A	1			1000 VA	1080 VA			1	20 A	R	RECEPT - CHARGING STATION	52
53	TELECOM RACK	POWER	20 A	1					1000 VA	1000 VA	1	30 A	POWER	TELECOM RACK	54
55	RECEPT - 211, 212	R	20 A	1	1080 VA	1080 VA					1	20 A	R	RECEPT - 106 (NOTE 2)	56
57	RECEPT - 215	R	20 A	1			1080 VA	1080 VA			1	20 A	R	RECEPT - 111, 112, 114	58
59	RECEPT - CHARGING STATION	R	20 A	1					1080 VA	1080 VA	1	20 A	R	RECEPT - APPARATUS BAY	60
61	RECEPT - 115	R	20 A	1	1440 VA	1500 VA					1	20 A	R	STAIR MASTER	62
63	RECEPT - 115	R	20 A	1			1440 VA	1500 VA			1	20 A	R	TREADMILL	64
65	RECEPT - 115	R	20 A	1					1080 VA	1440 VA	1	20 A	R	RECEPT - 213	66
67	MOTORIZED SHADES - EXERCISE	POWER	20 A	1	1500 VA	900 VA					1	20 A	R	RECEPT - 106 (NOTE 2)	68
69	RECEPT - 201	POWER	20 A	1			1500 VA	0 VA			1	20 A	--	SPARE	70
71	TREADMILL	R	20 A	1					1500 VA	180 VA	1	20 A	R	(FUTURE) PROJECTOR	72
			TOTAL LOAD:		21804 VA		20867 VA		20980 VA						
			TOTAL AMPS:		182 A		174 A		175 A						

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
LIGHTING (LTG)	1041 VA	125.00%	1302 VA		
POWER	12380 VA	100.00%	12380 VA	TOTAL CONN. LOAD:	63651 VA
RECEPTACLE (R)	50230 VA	59.95%	30115 VA	TOTAL EST. DEMAND:	43797 VA
				TOTAL CONN..:	177 A
				TOTAL EST. DEMAND:	122 A

NOTES:
NOTE 1: PROVIDE GFCI BREAKER FOR WATER COOLER.
NOTE 2: PROVIDE GFCI BREAKER FOR TURN OUT GEAR LOCKERS.

PANEL: RP-OS-2A

LOCATION: ELEC 222A
SUPPLY FROM: RP-OS-1B-2
MOUNTING: SURFACE
ENCLOSURE: Type 1

VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4

A.I.C. RATING: 10 KAIC
BUS RATING: 225 A
MAIN CB: 225 A

CKT	CIRCUIT DESCRIPTION	LC	TRIP	POLES	A		B		C		POLES	TRIP	LC	CIRCUIT DESCRIPTION	CKT
1	RECEPT - KITCHEN	R	20 A	1	900 VA	720 VA					1	20 A	R	RECEPT - 226	2
3	BUNK ROOM 232 DISPLAY	R	20 A	1			660 VA	0 VA			1	20 A	--	SPARE	4
5	SPARE	--	20 A	1					0 VA	1000 VA	1	20 A	R	TV - DAY ROOM 222	6
7	SPARE	--	20 A	1	0 VA	900 VA					1	20 A	R	RECEPT - 222	8
9	RECEPT - 231, 232A	R	20 A	1			900 VA	1200 VA			1	20 A	POWER	MOTORIZED SHADES - DAYROOM	10
11	SPARE	--	20 A	1					0 VA	720 VA	1	20 A	R	RECEPT - 214B	12
13	RECEPT - 223, 224	R	20 A	1	900 VA	1080 VA					1	20 A	R	RECEPT - 228, 227a	14
15	RECEPT - 227	R	20 A	1			1260 VA	360 VA			1	20 A	R	RECEPT - 220 COUNTERTOP	16
17	RECEPT - 226	R	20 A	1					720 VA	1080 VA	1	20 A	R	RECEPT - 232	18
19	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	20
21	SPARE	--	20 A	1			0 VA	180 VA			1	20 A	R	RECEPT - EF-2	22
23	BMS PANEL	POWER	20 A	1					500 VA	900 VA	1	20 A	R	RECEPT - 229, 230	24
25	SPARE	--	20 A	1	0 VA	360 VA					1	20 A	R	RECEPT - EF-D1, EF-D2, EF-3	26
27	SPARE	--	20 A	1			0 VA	720 VA			1	20 A	R	RECEPT - COUNTER	28
29	WC - 233 (NOTE 1)	R	20 A	1					500 VA	500 VA	1	20 A	POWER	BMS PANEL - ROOF	30
31	SPARE	--	20 A	2	0 VA	660 VA					1	20 A	R	BUNK ROOM 230-231 DISPLAY	32
33	--	--	--	--			0 VA	500 VA			1	20 A	POWER	ASFP - LAUNDRY	34
35	SPARE	--	20 A	2					0 VA	0 VA	1	20 A	--	SPARE	36
37	--	--	--	--	0 VA	660 VA					1	20 A	R	BUNK ROOM 215 DISPLAY	38
39	BUNK ROOM 227 DISPLAY	R	20 A	1			660 VA	660 VA			1	20 A	R	BUNK ROOM 228, 229 DISPLAY	40
41	REFRIGERATOR (NOTE 2)	K	20 A	1					2900 VA	1000 VA	1	20 A	POWER	DOOR POWER - 232	42
43	TOASTER	APPL	20 A	1	960 VA	2900 VA					2	20 A	K	ELECTRIC OVEN (NOTE 2)	44
45	FREEZER (NOTE 2)	K	20 A	1			500 VA	0 VA			--	--	--	--	46
47	ELECTRIC OVEN (NOTE 2)	K	20 A	2					2900 VA	660 VA	1	20 A	R	KITCHEN DISPLAY	48
49	--	--	--	--	0 VA	1000 VA					1	20 A	POWER	LAUNDRY LVL 2 - WASHER	50
51	TRAP PRIMER - ZONE 2A	POWER	20 A	1			960 VA	1000 VA			3	20 A	POWER	LAUNDRY LVL 2 - DRYER	52
53	SPARE	--	20 A	1					0 VA	0 VA	--	--	--	--	54
55	SPARE	--	20 A	2	0 VA	0 VA					--	--	--	--	56
57	--	--	--	--			0 VA	0 VA			1	20 A	--	SPARE	58
59	SPARE	--	20 A	2					0 VA	0 VA	1	20 A	--	SPARE	60
61	--	--	--	--	0 VA	0 VA					1	20 A	--	SPARE	62
63	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	64
65	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	66
67	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	68
69	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	70
71	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	72
			TOTAL LOAD:		11040 VA		9560 VA		13380 VA						
			TOTAL AMPS:		94 A		80 A		113 A						

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
KITCHEN (K)	9200 VA	80.00%	7360 VA		
POWER	6660 VA	100.00%	6660 VA	TOTAL CONN. LOAD:	33980 VA
RECEPTACLE (R)	17160 VA	79.14%	13580 VA	TOTAL EST. DEMAND:	28560 VA
APPLIANCE (APPL)	960 VA	100.00%	960 VA	TOTAL CONN..:	94 A
				TOTAL EST. DEMAND:	79 A

NOTES:
NOTE 1: PROVIDE GFCI BREAKER FOR WATER COOLER.
NOTE 2: PROVIDE GFCI BREAKER FOR KITCHEN APPLIANCE.

PANEL: PP-EV

LOCATION: COMPRESSOR ROOM 103
SUPPLY FROM: TF-EV
MOUNTING: SURFACE
ENCLOSURE: Type 1

VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4

A.I.C. RATING: 22 KAIC
BUS RATING: 225 A
MAIN CB: 225 A

CKT	CIRCUIT DESCRIPTION	LC	TRIP	POLES	A		B		C		POLES	TRIP	LC	CIRCUIT DESCRIPTION	CKT
1	LEVEL 2 EV CHARGER	--	40 A	2	3328 VA	3328 VA					2	40 A	--	LEVEL 2 EV CHARGER	2
3	--	--	--	--			3328 VA	3328 VA			--	--	--	--	4
5	LEVEL 2 EV CHARGER	--	40 A	2					3328 VA	3328 VA	2	40 A	--	LEVEL 2 EV CHARGER	6
7	--	--	--	--	3328 VA	3328 VA					--	--	--	--	8
9	LEVEL 2 EV CHARGER	--	40 A	2			3328 VA	3328 VA			2	40 A	--	LEVEL 2 EV CHARGER	10
11	--	--	--	--					3328 VA	3328 VA	--	--	--	--	12
13	LEVEL 2 EV CHARGER	--	40 A	2	3328 VA	0 VA					2	40 A	--	SPARE	14
15	--	--	--	--			3328 VA	0 VA			--	--	--	--	16
17	SPARE	--	40 A	1					0 VA	0 VA	2	40 A	--	SPARE	18
19	SPARE	--	40 A	1	0 VA	0 VA					--	--	--	--	20
21	SPARE	--	40 A	1			0 VA	0 VA			1	40 A	--	SPARE	22
23	SPARE	--	40 A	1					0 VA	0 VA	1	40 A	--	SPARE	24
25	SPARE	--	40 A	1	0 VA	0 VA					1	40 A	--	SPARE	26
27	SPARE	--	40 A	1			0 VA	0 VA			1	40 A	--	SPARE	28
29	PREPARED SPACE	--	--	1					--	0 VA	1	40 A	--	SPARE	30
31	PREPARED SPACE	--	--	1	--	0 VA					1	40 A	--	SPARE	32
33	PREPARED SPACE	--	--	1			--	--			1	--	--	PREPARED SPACE	34
35	PREPARED SPACE	--	--	1					--	--	1	--	--	PREPARED SPACE	36
37	PREPARED SPACE	--	--	1	--	--					1	--	--	PREPARED SPACE	38
39	PREPARED SPACE	--	--	1			--	--			1	--	--	PREPARED SPACE	40
41	PREPARED SPACE	--	--	1					--	--	1	--	--	PREPARED SPACE	42
			TOTAL LOAD:		16640 VA		16640 VA		13312 VA						
			TOTAL AMPS:		143 A		143 A		111 A						

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
POWER	46592 VA	100.00%	46592 VA		
				TOTAL CONN. LOAD:	46592 VA
				TOTAL EST. DEMAND:	46592 VA
				TOTAL CONN..:	129 A
				TOTAL EST. DEMAND:	129 A

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12/16/2025

CONSTRUCTION DOCUMENTS 12/19/25

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL PANEL SCHEDULES SHEET 2

SHEET NUMBER

E09.02

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PANEL: PP-EM-1

LOCATION: MAIN ELEC 112 | **VOLTS:** 480/277 Wye | **A.I.C. RATING:** 22 KAIC
SUPPLY FROM: ATS-EM-1 | **PHASE:** 3 | **BUS RATING:** 225 A
MOUNTING: SURFACE | **WIRE:** 4 | **MAIN CB:** 225 A
ENCLOSURE: Type 1

CKT	CIRCUIT DESCRIPTION	LC	TRIP	POLES	A	B	C	POLES	TRIP	LC	CIRCUIT DESCRIPTION	CKT
1	LTG - STAIR A S-A1	LTG	20 A	1	13 VA	62 VA		1	20 A	LTG	LTG - 222, 226	2
3	LTG - CORRIDOR 100A	LTG	20 A	1		25 VA	70 VA	1	20 A	LTG	LEVEL 2 EXIT SIGNS	4
5	LEVEL 1 EXIT SIGNS	LTG	20 A	1			60 VA	100 VA	1	20 A	LTG	LTG - TURN OUT GEAR 106	6
7	LTG - STAIR B	LTG	20 A	1	111 VA	130 VA							
9	LTG - STAIR C	LTG	20 A	1		111 VA	390 VA						
11	LTG - ELEVATOR 1	LTG	20 A	1			128 VA	140 VA	1	20 A	LTG	LEVEL 2 EXIT SIGNS	12
13	LTG - 232, 232A, 232B, 232, 227	LTG	20 A	1	216 VA	250 VA							
15	LTG - SITE (NOTE 1)	LTG	20 A	1		174 VA	490 VA						
17	LTG - CORRIDOR 200	LTG	20 A	1			188 VA	6236 VA	3	90 A	HVAC...	TF-EM-1	18
19	LTG - APPARATUS BAY 100	LTG	20 A	1	751 VA	1023 VA			--	--	--	--	20
21	LTG - SITE (NOTE 1)	LTG	20 A	1		122 VA	771 VA		--	--	--	--	22
23	LTG - 100, CANOPY (NOTE 1)	LTG	20 A	1			353 VA	0 VA	1	20 A	--	SPARE	24
25	SPARE	--	90 A	3	0 VA	0 VA							
27	--	--	--	--		0 VA	0 VA						
29	--	--	--	--			0 VA	0 VA	1	20 A	--	SPARE	30
31	SPARE	--	20 A	1	0 VA	0 VA							
33	SPARE	--	20 A	1		0 VA	0 VA						
35	SPARE	--	20 A	1			0 VA	0 VA	1	20 A	--	SPARE	36
37	SPARE	--	20 A	1	0 VA	0 VA							
39	SPARE	--	20 A	1		0 VA	0 VA						
41	SPARE	--	20 A	1			0 VA	0 VA	1	20 A	--	SPARE	42
			TOTAL LOAD:		2542 VA	2149 VA	7112 VA						
			TOTAL AMPS:		9 A	8 A	26 A						

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
HVAC	5490 VA	100.00%	5490 VA		
LIGHTING (LTG)	4656 VA	125.00%	5820 VA	**TOTAL CONN. LOAD:**	11567 VA
POWER	2000 VA	100.00%	2000 VA	**TOTAL EST. DEMAND:**	12692 VA
				TOTAL CONN.:	14 A
				TOTAL EST. DEMAND:	15 A

NOTES:
NOTE 1: PROVIDE METERING FOR SITE LIGHTING CIRCUIT AND CONNECT TO THE POWER MONITORING SYSTEM.

PANEL: PP-LR-1

LOCATION: MAIN ELEC 112 | **VOLTS:** 480/277 Wye | **A.I.C. RATING:** 22 KAIC
SUPPLY FROM: ATS-LR-1 | **PHASE:** 3 | **BUS RATING:** 100 A
MOUNTING: SURFACE | **WIRE:** 4 | **MAIN CB:** 100 A
ENCLOSURE: Type 1

CKT	CIRCUIT DESCRIPTION	LC	TRIP	POLES	A	B	C	POLES	TRIP	LC	CIRCUIT DESCRIPTION	CKT
1	ELEV E-1	ELEV	30 A	3	2240 VA	1554 VA		3	20 A	HVAC	ESP-1 - ELEV E-1	2
3	--	--	--	--			2240 VA	1554 VA	--	--	--	--	4
5	--	--	--	--					2240 VA	1554 VA	--	--	--	--	6
7	TF-LR-1	HVAC...	30 A	3	2119 VA	0 VA					3	20 A	--	SPARE	8
9	--	--	--	--			1820 VA	0 VA			--	--	--	--	10
11	--	--	--	--					0 VA	0 VA	--	--	--	--	12
13	SPARE	--	30 A	3	0 VA	0 VA					3	20 A	--	SPARE	14
15	--	--	--	--			0 VA	0 VA			--	--	--	--	16
17	--	--	--	--					0 VA	0 VA	--	--	--	--	18
19	SPARE	--	30 A	3	0 VA	0 VA					3	20 A	--	SPARE	20
21	--	--	--	--			0 VA	0 VA			--	--	--	--	22
23	--	--	--	--					0 VA	0 VA	--	--	--	--	24
25	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	26
27	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	28
29	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	30
31	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	32
33	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	34
35	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	36
37	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	38
39	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	40
41	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	42
			TOTAL LOAD:		5673 VA	5338 VA	3606 VA								
			TOTAL AMPS:		21 A	20 A	13 A								

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
Elevator	6720 VA	100.00%	6720 VA		
HVAC	8303 VA	100.00%	8303 VA	**TOTAL CONN. LOAD:**	14598 VA
RECEPTACLE (R)	360 VA	100.00%	360 VA	**TOTAL EST. DEMAND:**	14598 VA
				TOTAL CONN.:	18 A
				TOTAL EST. DEMAND:	18 A

NOTES:

PANEL: GPP-1

LOCATION: | **VOLTS:** 120/208 Wye | **A.I.C. RATING:**
SUPPLY FROM: RP-EM-1 | **PHASE:** 3 | **BUS RATING:** 100 A
MOUNTING: SURFACE | **WIRE:** 4 | **MAIN CB:** 100 A
ENCLOSURE: Type 1

CKT	CIRCUIT DESCRIPTION	LC	TRIP	POLES	A	B	C	POLES	TRIP	LC	CIRCUIT DESCRIPTION	CKT
1	FOP-1 , FOP-2	HVAC	20 A	1	933 VA	4250 VA		1	50 A	HVAC	HB-1	2
3	FPS-1	HVAC	20 A	1		308 VA						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:		5183 VA	308 VA	0 VA					
			TOTAL AMPS:		44 A	3 A	0 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
HVAC	5490 VA	100.00%	5490 VA		
				TOTAL CONN. LOAD:	5490 VA
				TOTAL EST. DEMAND:	5490 VA
				TOTAL CONN.:	15 A
				TOTAL EST. DEMAND:	15 A

NOTES:
NOTE 1: GENERATOR POWER PANEL TO BE SIZED BY GENERATOR VENDOR. PANEL SCHEDULE SHOWN FOR REFERENCE ONLY.

PANEL: RP-EM-1

LOCATION: MAIN ELEC 112 | **VOLTS:** 120/208 Wye | **A.I.C. RATING:** 10 KAIC
SUPPLY FROM: TF-EM-1 | **PHASE:** 3 | **BUS RATING:** 225 A
MOUNTING: SURFACE | **WIRE:** 4 | **MAIN CB:** 150 A
ENCLOSURE: Type 1

CKT	CIRCUIT DESCRIPTION	LC	TRIP	POLES	A	B	C	POLES	TRIP	LC	CIRCUIT DESCRIPTION	CKT
1	GAS DETECTION SYSTEM - APPARATU...	POW...	20 A	1	500 VA	500 VA		1	20 A	POW...	GENERATOR REMOTE ANNUNCIATOR	2
3	FSD - RM 217	POW...	20 A	1		500 VA	260 VA	1	20 A	LTG	LTG (EM) - 222	4
5	FAAP - WATCH ROOM 123	POW...	20 A	1			500 VA	271 VA	1	20 A	LTG	LTG (EM) - 226	6
7	GENERATOR POWER PANEL	HVAC	90 A	3	5183 VA	260 VA					1	20 A	LTG	LTG (EM) - 226	8
9	--	--	--	--		308 VA	0 VA				1	20 A	--	SPARE	10
11	--	--	--	--			0 VA	0 VA	1	20 A	--	SPARE	12
13	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	14
15	SPARE	--	20 A	1		0 VA	0 VA				1	20 A	--	SPARE	16
17	SPARE	--	20 A	1			0 VA	0 VA	1	20 A	--	SPARE	18
19	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	20
21	SPARE	--	20 A	1		0 VA	0 VA				1	20 A	--	SPARE	22
23	SPARE	--	20 A	1			0 VA	0 VA	1	20 A	--	SPARE	24
25	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	26
27	SPARE	--	20 A	1		0 VA	0 VA				1	20 A	--	SPARE	28
29	SPARE	--	20 A	1			0 VA	0 VA	1	20 A	--	SPARE	30
31	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	32
33	SPARE	--	20 A	1		0 VA	0 VA				1	20 A	--	SPARE	34
35	SPARE	--	20 A	1			0 VA	0 VA	1	20 A	--	SPARE	36
37	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	38
39	SPARE	--	20 A	1		0 VA	0 VA				1	20 A	--	SPARE	40
41	SPARE	--	20 A	1			0 VA	0 VA	1	20 A	--	SPARE	42
			TOTAL LOAD:		6236 VA	1023 VA	771 VA								
			TOTAL AMPS:		52 A	9 A	6 A								

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
HVAC	5490 VA	100.00%	5490 VA		
LIGHTING (LTG)	791 VA	125.00%	989 VA	**TOTAL CONN. LOAD:**	7902 VA
POWER	2000 VA	100.00%	2000 VA	**TOTAL EST. DEMAND:**	8083 VA
				TOTAL CONN.:	22 A
				TOTAL EST. DEMAND:	22 A

NOTES:

PANEL: RP-LR-1

LOCATION: MAIN ELEC 112 | **VOLTS:** 120/208 Wye | **A.I.C. RATING:** 22 KAIC
SUPPLY FROM: TF-LR-1 | **PHASE:** 3 | **BUS RATING:** 100 A
MOUNTING: SURFACE | **WIRE:** 4 | **MAIN CB:** 50 A
ENCLOSURE: Type 1

CKT	CIRCUIT DESCRIPTION	LC	TRIP	POLES	A	B	C	POLES	TRIP	LC	CIRCUIT DESCRIPTION	CKT
1	RECEPT - ELEV E-1	R	20 A	1	360 VA	1820 VA		2	20 A	HVAC	HVAC CTL RM 119E	2
3	SPARE	--	20 A	2			0 VA	1820 VA	--	--	--	--	4
5	--	--	--	--					0 VA	0 VA	2	20 A	--	SPARE	6
7	SPARE	--	20 A	2	0 VA	0 VA					--	--	--	--	8
9	--	--	--	--			0 VA	0 VA			2	20 A	--	SPARE	10
11	SPARE	--	20 A	2					0 VA	0 VA	--	--	--	--	12
13	--	--	--	--	0 VA	0 VA					2	20 A	--	SPARE	14
15	SPARE	--	20 A	2			0 VA	0 VA			--	--	--	--	16
17	--	--	--	--					0 VA	0 VA	1	20 A	--	SPARE	18
19	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	20
21	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	22
23	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	24
25	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	26
27	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	28
29	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	30
31	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	32
33	PREPARED SPACE	--	--	1			--	--			1	--	--	PREPARED SPACE	34
35	PREPARED SPACE	--	--	1					--	--	1	--	--	PREPARED SPACE	36
37	PREPARED SPACE	--	--	1	--	--					1	--	--	PREPARED SPACE	38
39	PREPARED SPACE	--	--	1			--	--			1	--	--	PREPARED SPACE	40
41	PREPARED SPACE	--	--	1					--	--	1	--	--	PREPARED SPACE	42
			TOTAL LOAD:		2119 VA	1820 VA	0 VA								
			TOTAL AMPS:		20 A	18 A	0 A								

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
HVAC	3640 VA	100.00%	3640 VA		
RECEPTACLE (R)	360 VA	100.00%	360 VA	**TOTAL CONN. LOAD:**	3934 VA
				TOTAL EST. DEMAND:	3934 VA
				TOTAL CONN.:	11 A
				TOTAL EST. DEMAND:	11 A

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CITY OF WORCESTER

455 MAIN STREET
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KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

ELECTRICAL PANEL SCHEDULES SHEET 3

SHEET NUMBER

E09.03

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FIRE ALARM SYMBOLS

SYMBOL	DESCRIPTION
F	MANUAL PULL STATION
F H	HEAT DETECTOR R/F - RATE OF RISE AND FIXED TEMPERATURE R/C - RATE COMPENSATION F - FIXED TEMPERATURE R - RATE OF RISE ONLY
P S	SMOKE DETECTOR P - PHOTOELECTRIC I - IONIZATION BR - BEAM RECEIVER ASD - AIR SAMPLING BT - BEAM TRANSMITTER E - ELEVATOR RECALL SB - 520HZ SOUNDER BASE
P S	SMOKE DETECTOR (WALL MOUNTED)
S	SMOKE DETECTOR FOR DUCT WITH REMOTE TEST SWITCH
R S/H	SMOKE/HEAT DETECTOR
	HEAT LINE-TYPE DETECTOR (HEAT SENSITIVE CABLE)
CO	ADDRESSABLE CARBON MONOXIDE DETECTOR WITH TEMPORAL 4 PIEZO
AIM	ADDRESSABLE MODULE AIM - INPUT AOM - OUTPUT
WF	FLOW DETECTOR/SWITCH
PS	PRESSURE DETECTOR/SWITCH W - WATER LA - LOW AIR HA - HIGH AIR
TS	TAMPER DETECTOR/SWITCH
H	AUDIO DEVICE (WALL MOUNTED) H - HORN
H	AUDIO DEVICE (CEILING MOUNTED) H - HORN
	STROBE (WALL MOUNTED)
	STROBE (CEILING MOUNTED)
H	AUDIO/VISUAL COMBINATION (WALL MOUNTED) H - HORN
H	AUDIO/VISUAL COMBINATION (CEILING MOUNTED) H - HORN
	ROTATED BEACON
RTS	REMOTE TEST SWITCH
	ELECTRONIC BELL (WALL MOUNTED)
	DOOR HOLDER FLOOR/DOOR
FACP	FIRE ALARM CONTROL PANEL
FSA	FIRE SYSTEM ANNUNCIATOR ALARM
LVR	LOW VOLTAGE RELAY
ASPP	AIR SAMPLING CONTROL DETECTOR PANEL
FAC	FIRE ALARM COMMUNICATOR
FAA	FIRE ALARM ANNUNCIATOR
HVA	HVAC CONTROL PANEL
EVAC	VOICE EVACUATION PANEL
FATC	FIRE ALARM TERMINAL CABINET
FTR	FIRE ALARM TRANSPONDER
NAC	FIRE ALARM BOOSTER PANEL
RAI	REMOTE ALARM INDICATOR
PP	PURGE PANEL
FACU	FIRE ALARM CONTROL UNIT
BATT	BATTERY PACK AND CHARGER

ABBREVIATIONS

SYMBOL	DESCRIPTION
A, AMP	AMPERE
AIC	AMPS INTERRUPTING CAPACITY
ACV	ALARM CONTROL VALVE
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
ATC	AUTOMATIC TEMPERATURE CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
BAS	BUILDING AUTOMATION SYSTEM
BMS	BUILDING MANAGEMENT SYSTEM
BFG	BELOW FINISHED GRADE
C, CDT	CONDUIT
CB	CIRCUIT BREAKER
CH	CABINET HEIGHT
CKT	CIRCUIT
C.O., CO	CONDUIT ONLY
CONFIG.	CONFIGURATION
℄	CENTERLINE
CONV	CONVENIENCE
CM	CONSTRUCTION MANAGER
DCVA	DOUBLE BACKFLOW PREVENTER
DPV	DRY PIPE SYSTEM
DWG	DRAWING
E.C.	ELECTRICAL CONTRACTOR
ELEC	ELECTRICAL
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
E.O.	ELECTRICALLY OPERATED 'ON-OFF'
EQ	EQUAL
EWC	ELECTRIC WATER COOLER
FA	FIRE ALARM
FAI	FURNISH AND INSTALL
FBO	FURNISHED BY OTHERS
FCA	FLOOR CONTROL ASSEMBLY
FS	FIRE SHUTTER/DOOR
FLA	FULL LOAD AMPS
FSD	FIRE SMOKE DAMPER
G, GND	GROUND
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HC	HUNG CEILING
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSE POWER
IBEC	INSTALLED BY ELECTRICAL CONTRACTOR
IG	ISOLATED GROUND
JB,J	JUNCTION BOX
KVA	KILO VOLT- AMPERE
KW	KILO WATT
KWH	KILO WATT HOUR
LC	LOCK & COVER
LCP	LIGHTING CONTROL PANEL
LTG	LIGHTING
LV	LOW VOLTAGE
LVR	LOW VOLTAGE RELAY
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CONTROL PANEL
MER	MECHANICAL EQUIPMENT ROOM
MFRR	MANUFACTURER
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MSB	MAIN SWITCHBOARD
MTD	MOUNTED
N	NEUTRAL
NA, N/A	NOT APPLICABLE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
#	NUMBER
N.O.	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
P	POLES
PB	PULL BOX
PFC	POWER FACTOR CORRECTION
PH, ø	PHASE
PNL	PANEL
PVC	POLYVINYL CHLORIDE
PWR	POWER
RC	REHEAT COIL
RECPT	RECEPTACLE
RM	ROOM
SG	SIGNAGE
SHT	SHEET
SPEC	SPECIFICATIONS
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
SS	SURGE SUPPRESSION
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TC	TIME CLOCK
TYP	TYPICAL
UG	UNDERGROUND
UON, U.O.N.	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UNF	UNFUSED
V	VOLT
VA	VOLT-AMPERES
VPI	VACUUM PRESSURE IMPREGNATION
VT	VAPORIGHT
W	WATT
WP	WEATHER PROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF

GENERAL NOTES

A1. THE APPLICABLE GOVERNING LAWS, CODES AND STANDARDS INCLUDE THE FOLLOWING: MASSACHUSETTS STATE BUILDING CODE 10TH EDITION (2021 INTERNATIONAL BUILDING CODE AS MODIFIED BY 780 CMR), MASSACHUSETTS STATE FIRE CODE (527 CMR), MGL 148 MASSACHUSETTS FIRE LAWS (MFL), NFPA 70 2023 EDITION, NFPA 72 2019 EDITION AND LOCAL REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

A2. THE AUTHORITY HAVING JURISDICTION FOR THIS PROJECT IS THE WORCESTER FIRE DEPARTMENT.

A3. THE TERM "OWNER" SHALL REFER TO THE COMMONWEALTH OF MASSACHUSETTS.

A4. THE TERM "CONTRACTOR" SHALL REFER TO THE CONTRACTOR OR THEIR SUBCONTRACTORS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL OF THE WORK INDICATED IN THE CONTRACT DOCUMENTS.

A5. THE INSTALLATION SHALL BE IN ACCORDANCE WITH NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION, STANDARD PRACTICE OF GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION (NECA 1-2015).

A6. THE FIRE ALARM SYSTEM WILL COMPLY WITH REQUIREMENTS OF NFPA 72 FOR PROTECTED PREMISES SIGNALING SYSTEMS EXCEPT AS MODIFIED AND SUPPLEMENTED BY THE SPECIFICATION AND OTHER CONTRACT DOCUMENTS.

A7. THESE CONTRACT DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND ALL APPLICABLE GOVERNING LAWS, CODES AND STANDARDS, AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION AND THE OWNER.

A8. THE CONTRACT DOCUMENTS FORM COMPLIMENTARY REQUIREMENTS. PROVIDE WORK SPECIFIED AND NOT SHOWN, AND WORK SHOWN AND NOT SPECIFIED AS THOUGH BOTH EXPLICITLY REQUIRED BY BOTH. ALTHOUGH ALL OF THE WORK NECESSARY TO UNDERTAKE THIS PROJECT MAY/MAY NOT BE SPECIFICALLY SHOWN OR SPECIFIED, THE CONTRACTOR SHALL PROVIDE SUPPLEMENTARY OR MISCELLANEOUS ITEMS, APPURTENANCES, DEVICES AND MATERIALS NECESSARY FOR A SOUND, SECURE, RELIABLE, COMPLETE AND APPROVED INSTALLATION THAT MEETS ALL APPLICABLE REQUIREMENTS.

A9. THE CONTRACTOR IS DIRECTED TO BRING TO THE ATTENTION OF THE OWNER & ENGINEER, IN WRITING, ANY DISCREPANCIES, DEFICIENCIES AND/OR OTHER MATTERS AS THEY MAY RELATE TO CODES, STANDARDS, RECOMMENDATIONS AND/OR JOB CONDITIONS PRIOR TO BIDDING. FAILURE OF THE CONTRACTOR TO DO SO PRIOR TO BIDDING SHALL INDICATE ACCEPTANCE OF ALL DOCUMENTS HEREIN AND ALL JOB CONDITIONS.

A10. THE FIRE ALARM DRAWINGS ARE CONCEPTUAL IN NATURE AND INDICATE APPROXIMATE LOCATION OF DEVICES AND APPLIANCES. CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL PLACEMENT, CIRCUITRY, DESIGN, SPACING, AND TESTING OF FIRE ALARM SYSTEM IN ACCORDANCE WITH APPLICABLE GOVERNING LAWS, CODES AND STANDARDS.

A11. CIRCUITING OF FIRE ALARM DEVICES AND APPLIANCES AS SHOWN ON THE RISER DIAGRAM IS INDICATIVE ONLY.

A12. CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL DEVICE COUNTS AND LOCATIONS.

A13. ALL FIRE ALARM DEVICES AND EQUIPMENT, ETC., SHALL BE UL LISTED AND FM APPROVED.

A14. THE FIRE ALARM SYSTEM INCLUDING ALL MATERIALS, APPLIANCES, EQUIPMENT, WIRING, AND DEVICES WILL BE TESTED AND LISTED BY A NATIONALLY RECOGNIZED APPROVED TESTING LAB AS PART OF A PROTECTED PREMISES PROTECTIVE SIGNALING (FIRE ALARM) SYSTEM AND LISTED FOR COMPATIBILITY WITH INTERCONNECTED EQUIPMENT.

A15. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS FOR SEALING ALL PENETRATIONS IN FIRE AND SMOKE SEPARATIONS USING FIRE STOPPING AND METHODS AS PER SPECIFICATIONS.

A16. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES FOR FILING, APPROVALS, AND INSPECTIONS.

A17. THE CONTRACTOR SHALL COMPARE CONDITIONS THROUGHOUT THE BUILDING WITH DRAWINGS AND SPECIFICATIONS PRIOR TO A SUBMISSION OF A BID PROPOSAL. SUBMISSION OF A COST PROPOSAL (BID) WILL BE JUDGED AS EVIDENCE THAT SUCH EXAMINATION HAS BEEN MADE. CLAIMS FOR EXTRA COSTS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH EXAMINATION BEEN MADE WILL NOT BE RECOGNIZED.

A18. CONTRACTOR SHALL VERIFY IN THE FIELD ALL EXISTING CONDITIONS. NOTIFY THE OWNER AND ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO COMMENCING WORK. DO NOT PROCEED WITHOUT APPROVAL BY THE OWNER AND ENGINEER. FOR ANY RELOCATIONS, IF REQUIRED.

A19. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.

INSTALLATION NOTES

B1. THE FIRE ALARM SYSTEM SHALL BE LISTED AS A COMPATIBLE PRODUCT OF A SINGLE FIRE ALARM SYSTEM MANUFACTURER UNDER THE APPROPRIATE CATEGORY BY UL. THE CONTROL UNIT SHALL BE LISTED UNDER CATEGORY UOJZ.

B2. THE FIRE ALARM SYSTEM WILL BE CONNECTED VIA A NEW NETWORK.

B3. BACK BOXES FOR DEVICES AND APPLIANCES SHALL BE PERMITTED TO BE SURFACE MOUNTED IN ALL APPLICATIONS. BACK BOXES THAT ARE SURFACE MOUNTED SHALL BE APPROVED BY THE MANUFACTURER. SURFACE MOUNTED BACK BOXES WITH EXTENSION RINGS ARE NOT ACCEPTABLE.

B4. THE NUMBER OF CIRCUITS AND THE QUANTITY OF DEVICES PER CIRCUIT SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS. CONDUIT SIZING SHALL BE IN ACCORDANCE WITH CODE FOR THE NUMBER OF CIRCUITS REQUIRED.

B5. EQUIPMENT SHALL BE LOCATED TO FACILITATE INSPECTION, TESTING AND MAINTENANCE.
a. DEVICES AND APPLIANCES SHALL NOT BE INSTALLED ABOVE HIGH VOLTAGE ELECTRICAL EQUIPMENT (INCLUDING SWITCHGEAR, TRANSFORMERS, LAB BENCHES ETC.).

B6. PROVIDE REMOTE LED ALARM INDICATOR FOR ALL DEVICES ABOVE CEILINGS INCLUDING BAFFLE CEILINGS (SMOKE DETECTORS, DUCT SMOKE DETECTORS AND SPRINKLER FLOW AND TAMPER SWITCHES ETC.), AND FOR ALL DEVICES IN NORMALLY LOCKED ROOMS. ALL REMOTE ALARM INDICATORS SHALL BE WALL MOUNTED. COORDINATE WITH ROOM LABELS SUCH THAT REMOTE ALARM INDICATORS ARE ABOVE ROOM LABELS.

B7. ADDRESSABLE INPUT MODULES AND ADDRESSABLE OUTPUT MODULES SHALL BE PROVIDED AS REQUIRED TO SATISFY THE FIRE ALARM SEQUENCE OF OPERATIONS AND FOR MONITORING AND CONTROLLING FIRE ALARM SYSTEM INPUT AND OUTPUT FUNCTIONS AS NECESSARY FOR EQUIPMENT AND REMOTE POWER SUPPLIES. WHERE MORE THAN THREE (3) MONITOR MODULES ARE LOCATED IN A SINGLE LOCATION, THEY SHALL BE LOCATED IN A SPACEAGE CABINET. CONTRACTOR SHALL PROVIDE A TYPICAL DETAIL FOR ALL CABINET MOUNTING CONFIGURATIONS PRIOR TO FABRICATION AND INSTALLATION.

B8. AN AUXILIARY RELAY SHALL BE PROVIDED FOR ANY CIRCUIT CONTROLLED BY AN ADDRESSABLE OUTPUT MODULE WHEN THE MAXIMUM LOAD EXCEEDS 50% OF THE RATING FOR THE MODULE. AN AUXILIARY RELAY SHALL BE PROVIDED FOR EVERY CONTROL CIRCUIT THAT SHUTS DOWN OR INTERFACES WITH A FAN OR AIR HANDLING UNIT.

B9. TERMINAL CABINETS AND MODULE CABINETS ARE NOT PERMITTED TO BE LOCATED ABOVE CEILINGS UNLESS APPROVED BY ENGINEER AND ARCHITECT. TERMINAL CABINETS FOR THE FLOOR SHALL BE LOCATED ADJACENT TO THE FACP SERVING THAT FLOOR UNLESS OTHERWISE INDICATED.

B10. THE FIRE ALARM ANNUNCIATOR PANELS, FIRE ALARM TERMINAL CABINETS, AND FIRE ALARM CONTROL UNITS ARE TO BE SURFACE MOUNTED UNLESS OTHERWISE NOTED ON DRAWINGS.

CIRCUITING CRITERIA

C1. REFER TO THE RISER DIAGRAM FOR THE CLASSIFICATION OF EACH CIRCUIT. THE FEED AND RETURNS OF CLASS X & A CIRCUITS SHALL BE SEPARATED BY A MINIMUM OF 1 FT VERTICAL AND 4 FT HORIZONTAL SEPARATION.

C2. SIGNALING LINE CIRCUITS (SLC) SHALL BE DESIGNED WITH THE FOLLOWING:
C2.1 NO MORE THAN 75% OF THE AVAILABLE DEVICE ADDRESSES ARE PERMITTED TO BE UTILIZED.
C2.2 AT LEAST ONE ISOLATED CIRCUIT SHALL BE PROVIDED FOR EACH FLOOR UNLESS INDICATED ON THE DRAWINGS.
C2.3 A SHORT ON THE SLC SHALL NOT IMPAIR DEVICES ON OTHER FLOORS

C3. INITIATING DEVICE CIRCUITS (IDC) SHALL BE DESIGNED WITH NO MORE THAN ONE INPUT PER IDC UNLESS OTHERWISE INDICATED.

C4. NOTIFICATION APPLIANCE CIRCUITS (NAC) SHALL BE DESIGNED WITH THE FOLLOWING:
C4.1 A MINIMUM OF TWO NOTIFICATION CIRCUITS SHALL BE PROVIDED ON EACH FLOOR.
C4.2 EACH CIRCUIT SHALL HAVE A SPARE CAPACITY OF 25% IN LOAD AND WIRE LENGTH.
C4.3 ADJACENT NOTIFICATION APPLIANCES SHALL BE CONNECTED TO ALTERNATE CIRCUITS. WHERE TWO NOTIFICATION APPLIANCES ARE LOCATED IN THE SAME ROOM, THE APPLIANCES SHALL BE CONNECTED TO DIFFERENT CIRCUITS.

COORDINATION WITH OTHER TRADES AND SYSTEMS

D1. COORDINATE FIRE ALARM WORK WITH OTHER TRADES PRIOR TO INSTALLATION AND FABRICATION. READ THESE FIRE ALARM PLANS IN CONJUNCTION WITH ALL OTHER DISCIPLINES.

D2. CONTRACTOR SHALL COORDINATE FINAL PLACEMENT OF DEVICES AND APPLIANCES WITH OTHER TRADES,THE LOCATION OF NEW WORK AND ARCHITECTURAL REFLECTED CEILING PLANS.

D3. COORDINATE EXACT LOCATION AND QUANTITY OF NOTIFICATION DEVICES WITH MECHANICAL EQUIPMENT IN MECHANICAL ROOMS AND FIXED FURNITURE IN STORAGE ROOMS. DO NOT LOCATE NOTIFICATION APPLIANCES SO THAT THEY ARE OBSTRUCTED. ENSURE COMPLETE COVERAGE OF AUDIBLE AND VISUAL NOTIFICATION DEVICES. PROVIDE A MINIMUM SEPARATION OF AT LEAST 2-FEET FROM ADJACENT EQUIPMENT, COLUMNS, ETC., TO MAINTAIN STROBE COVERAGE.

D4. THE FIRE ALARM SYSTEM SHALL INTERFACE WITH THE ACCESS CONTROL AND SECURITY SYSTEMS AND PROVIDE INPUTS AND OUTPUTS AS NECESSARY TO COORDINATE WITH THESE SYSTEMS AS REQUIRED TO SATISFY THE FIRE ALARM SEQUENCE OF OPERATIONS.

D5. ADDRESSABLE I/O PUT MODULES SHALL BE PROVIDED AS NECESSARY TO INTERFACE WITH THE SECURITY STRATEGY (ACCESS CONTROL), DOORS ON HOLD OPEN DEVICES, PHASE 1 ELEVATOR RECALL, FIRE SMOKE DAMPER OPERATION, REMOTE INDICATORS, HVAC SHUTDOWN AND OTHER INTERFACED SYSTEMS AS NECESSARY IN ACCORDANCE WITH THE SEQUENCE OF OPERATIONS.

D6. ADDRESSABLE INPUT MODULES SHALL BE PROVIDED AS NECESSARY TO INTERFACE WITH THE HVAC/BMS MONITORING, DAMPER STATUS, FIRE PROTECTION MONITORING, AED CABINET LOCATIONS AND OTHER INTERFACED SYSTEMS AS NECESSARY IN ACCORDANCE WITH THE SEQUENCE OF OPERATIONS.

D7. ALL SMOKE AND COMBINATION FIRE/SMOKE DAMPERS SHALL CLOSE UPON SHUTDOWN OF THE ASSOCIATED AHU. PROVIDE NECESSARY ADDRESSABLE INPUT AND OUTPUT MODULES TO MAINTAIN FUNCTIONALITY COORDINATE FSD'S NAMES AND FUNCTIONS WITH ASSOCIATED UNITS AND MECHANICAL CONTRACTOR PRIOR TO PROGRAMMING.

D8. THE FIRE ALARM SYSTEM SHALL INTERFACE WITH THE SPRINKLER SYSTEM BY MONITORING EACH WATER FLOW INDICATING DEVICE AND EACH SUPERVISED CONTROL VALVE.

D9. DUCT DETECTORS SHALL BE SUPPLIED BY THE FIRE ALARM CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL CONDUCT AND DOCUMENT PRESSURE DIFFERENTIAL MEASUREMENTS FOR ALL DUCT SMOKE DETECTORS TO SUBMIT FOR RECORD. THE MECHANICAL CONTRACTOR SHALL INSTALL THE DETECTORS INTO THE DUCTS (SIDES OR TOP - NOT BOTTOM OF DUCTWORK) AND THE ELECTRICAL CONTRACTOR SHALL CONNECT THE DETECTORS TO THE FIRE ALARM SYSTEM. THE ELECTRICAL AND MECHANICAL CONTRACTOR SHALL JOINTLY SUPPORT THE TESTING OF THE DUCT SMOKE DETECTORS AND REQUIRED INTERFACES.

D10. COORDINATE FSD LABELS AND ASSOCIATED FANS. CONTRACTOR TO PROVIDE DUCT SMOKE DETECTOR, REMOTE TEST SWITCH, AND CONTROL MODULE PER FSD LOCATION. PROVIDE CONTROL MODULE AND MONITOR MODULE TO TURN OFF UNIT AND MONITOR UNIT OPERATION. CONFIRM ALL FSD LOCATIONS AND ASSOCIATED ACCESS PANELS PRIOR TO INSTALLATION.

D11. COORDINATE EXACT ROOM NAMES AND NUMBERS WITH CLIENT PRIOR TO NFPA 72 TESTING. CONTRACTOR SHALL EDIT THE PROGRAM AS NECESSARY PRIOR TO RECORDING NFPA 72 TEST RESULTS.

INITIATING DEVICES

E1. IN ACCORDANCE WITH APPLICABLE GOVERNING LAWS, CODES AND STANDARDS, FIELD LOCATE ALL SMOKE DETECTORS SO THAT ALL AREAS REQUIRING SMOKE DETECTION ARE WITHIN 21 FEET OF A SMOKE DETECTOR.

E2. PROVIDE SMOKE DETECTORS WITHIN 21 FT OF ALL LOCATIONS OF FIRE ALARM CONTROL EQUIPMENT.

E3. ELECTRICAL ROOMS, MECHANICAL, TELEPHONE (IDF OR IT) ROOMS, AND ELEVATOR MACHINE ROOMS SHALL HAVE SMOKE DETECTORS WITH REMOTE ALARM INDICATION IN AN AREA ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.

E4. DUCT SMOKE DETECTORS SHALL BE PROVIDED IN ACCORDANCE WITH THE APPLICABLE GOVERNING LAWS, CODES AND STANDARDS.

E5. DUCT SMOKE DETECTORS SHALL BE LOCATED IN AN ACCESSIBLE LOCATION. ALL DUCT SMOKE DETECTORS SHALL BE EQUIPPED WITH A REMOTE ALARM INDICATOR AND TEST SWITCH AT AN ACCESSIBLE LOCATION. SAMPLING TUBES SHALL EXTEND THE FULL WIDTH OF THE DUCT REGARDLESS OF DUCT WIDTH.

E6. MANUAL FIRE ALARM BOXES SHALL BE PROVIDED WITHIN 5 FT OF EVERY REQUIRED EXIT AND WITH A MAXIMUM TRAVEL DISTANCE OF 200 FT TO THE NEAREST PULL STATION.

NOTIFICATION APPLIANCES AND CIRCUITS

F1. WALL MOUNTED NOTIFICATION APPLIANCES (HORNS AND/OR STROBES) SHALL BE MOUNTED OR AS CONDITIONS ALLOW AT A UNIFORM HEIGHT THROUGHOUT THE BUILDING UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

F2. HORN SHALL BE LOCATED AND TAPPED APPROPRIATELY TO ACHIEVE AUDIBILITY & INTELLIGIBILITY IN ACCORDANCE WITH APPLICABLE GOVERNING LAWS, CODES AND STANDARDS. ALL HORNS SHALL BE TAPPED AS INDICATED ON THE DRAWINGS TO PROVIDE A MINIMUM dBA LEVEL MEASURED 10 FT FROM THE APPLIANCE IN ACCORDANCE WITH UL 1480 UNLESS OTHERWISE INDICATED. HORNS SHALL BE PERMITTED TO BE TAPPED AT LOWER SETTINGS WHERE IT CAN BE DEMONSTRATED THAT AUDIBILITY CAN STILL BE MET IN ACCORDANCE WITH APPLICABLE GOVERNING LAWS, CODES AND STANDARDS.

F3. AT NO COST TO THE OWNER, THE CONTRACTOR SHALL MAKE ALL CHANGES TO HORN TAP SETTINGS NECESSARY FOR COMPLIANCE WITH THE AUDIBLE REQUIREMENTS OF THE APPLICABLE GOVERNING LAWS, CODES AND STANDARDS AND TO MAINTAIN INTELLIGIBILITY WITHIN THE SPACES.

F4. VISIBLE NOTIFICATION APPLIANCES SHALL BE PROVIDED IN ALL PUBLIC AND COMMON AREAS, INCLUDING: CORRIDORS, PUBLIC LOBBIES, PUBLIC BATHROOMS, BUILDING CORE AREAS, OPEN WORK AREAS, ETC.

F5. ALL STROBES SHALL BE SYNCHRONIZED THROUGH OUT THE ENTIRE BUILDING. THEY SHALL BE SYNCHRONIZED ACCORDANCE WITH APPLICABLE GOVERNING LAWS, CODES AND STANDARDS.

F6. ALL NOTIFICATION APPLIANCES (HORN/STROBES, HORN, STROBES, ETC.) SHALL BE WHITE IN COLOR UNLESS OTHERWISE APPROVED BY THE ARCHITECT AND ENGINEER. VISUAL NOTIFICATION APPLIANCES SHALL BE LABELED AS "FIRE"

F7. THE LOCATIONS OF ALL APPLIANCES SHALL BE APPROVED BY THE OWNER AND ARCHITECT PRIOR TO INSTALLATION.

TWO WAY RADIO COMMUNICATION ENHANCEMENT SYSTEM (BI-DIRECTIONAL AMPLIFIER)

G1. A COMPLETE IN-BUILDING RADIO COMMUNICATIONS SYSTEM SHALL BE PROVIDED FOR WORCESTER FIRE DEPARTMENT. THIS SHALL BE PROVIDED IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION'S SPECIFICATION FIRE FIGHTER COMMUNICATION SYSTEMS. CONTRACTOR SHALL BE RESPONSIBLE FOR HIRING AN OWNER APPROVED BDA VENDOR AS PART OF THIS CONTRACT TO DESIGN AND PROVIDE A FULLY COMPLIANT SYSTEM.

G2. THE BUILDING SHALL BE PROVIDED WITH A TWO-WAY RADIO COMMUNICATION ENHANCEMENT SYSTEM THAT COMPLIES WITH THE REQUIREMENTS OF NFPA 72, 2019 EDITION, SECTION 24.9.2, NFPA 1221, 2019 EDITION, UL 2524, IN ADDITION TO ALL APPLICABLE GOVERNING LAWS, CODES AND STANDARDS.

G3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE DISTRIBUTED ANTENNA SYSTEM USING THE APPROPRIATE SOFTWARE PACKAGE (IBWAVE). THE FIRE ALARM DRAWINGS DO NOT INDICATE THE LOCATIONS OF THE ANTENNA OR ROUTING OF THE RACEWAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CORES, CONDUIT INSTALLATION AND CABLE PULLING AS REQUIRED.

G4. THE WORCESTER FD BDA SYSTEM SHALL CONSIST OF ANTENNAS AND CABLING SYSTEMS DEDICATED FOR THE RADIO SYSTEM.

G5. THE RADIO ENHANCEMENT SYSTEM SHALL SUPPORT ALL FREQUENCIES REQUIRED BY THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL COORDINATE THE REQUIRED FREQUENCIES WITH THE AGENCY. THIS RADIO ENHANCEMENT SYSTEM SHALL NOT IMPACT ANY OTHER SYSTEMS INSIDE THE BUILDING.

G6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND LICENSES.

G7. THE VERTICAL ANTENNA NETWORK SHALL ACHIEVE A PATHWAY SURVIVABILITY LEVEL 3. SEE SPECIFICATION FOR REQUIREMENTS.

G8. CONTRACTOR TO PROVIDE DEDICATED ANNUNCIATOR AT THE FIRE FIGHTER RESPONSE POINT.

RACEWAY AND CABLING

H1. THE TERMS RACEWAY AND CONDUIT SHALL REFER TO ELECTRICAL METALLIC TUBING (EMT) UNLESS OTHERWISE NOTED. ALL WIRING SHALL BE ROUTED WITHIN EMT UNLESS OTHERWISE INDICATED. FLEXIBLE METALLIC CONDUIT (FMC) AND/OR WORCESTER APPROVED METALLIC CLAD CABLE (MC) IS ALSO PERMITTED FOR CONCEALED APPLICATIONS. LIQUID TIGHT FLEXIBLE METALLIC CONDUIT NOT TO EXCEED 6-FT IN LENGTH SHALL BE PROVIDED FOR ALL INTERFACES WITH MONITOR MODULES SERVING FLOW, TAMPER OR PRESSURE SWITCHES. FMC OR MC NOT TO EXCEED 6-FT IN LENGTH SHALL ALSO BE USED FOR ALL INTERFACES WITH DUCT DETECTORS. IF MC CABLE IS REQUIRED TO BE PAINTED, THEN THE CABLE SHALL BE BANDED EVERY 2-FT WITH RED MARKINGS AND LABELED "WF FA".

H2. CLASSIFICATION AND PATHWAY SURVIVABILITY FOR ALL FIRE ALARM CIRCUITS SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE FOLLOWING SHALL BE CONSIDERED AS METHODS OF ACHIEVING THE REQUIRED PATHWAY SURVIVABILITY:

H2.1 PATHWAY SURVIVABILITY LEVEL 1: EMT UNLESS OTHERWISE INDICATED.

H2.2 PATHWAY SURVIVABILITY LEVEL 2-2-HOUR RATED FIRE RESISTIVE CABLING, OR ROUTING CABLE WITHIN 2-HOUR RATED CONSTRUCTION (REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF 2-HOUR RATED CONSTRUCTION). WHERE MI CABLE IS USED, SLEEVES SHALL BE PROVIDED FOR ANY PENETRATION THROUGH A CONCRETE OR BLOCK WALL OR FLOOR.

H3. ALL CIRCUITS, WIRING, EQUIPMENT, DEVICES, ETC. SHALL BE SUPERVISED.

H4. FIRE ALARM SYSTEM WIRING SHALL NOT BE INSTALLED IN THE SAME RACEWAY AS OTHER BUILDING SYSTEM WIRING.

H5. ALL FIRE ALARM CABLING SHALL BE CONTINUOUS BETWEEN CONTROL UNITS, DEVICES AND APPLIANCES. INLINE SPLICING IS NOT PERMITTED. WHERE INLINE SPLICING IS REQUIRED, THE CONTRACTOR SHALL PROVIDE TERMINAL CABINETS.

H6. TWIST ON WIRE CONNECTORS (WIRE NUTS) AND CRIMP TYPE CONNECTORS ARE NOT PERMITTED. WHERE TERMINAL BLOCKS ARE PROVIDED, THE TERMINAL BLOCK SHALL BE SECURED TO THE BACK BOX.

H7. ALL RACEWAYS SHALL BE CONCEALED IN WALLS OR CEILINGS. EXPOSED CONDUIT SHALL ONLY BE PERMITTED WHERE MEANS OF CONCEALING DOES NOT EXIST (I.E. CMU BLOCK WALLS RO SIMILAR TYPE OF CONSTRUCTION), IN MECHANICAL/ELECTRICAL ROOMS, OR FOR CONNECTIONS TO SURFACE MOUNTED EQUIPMENT.

H8. ALL RACEWAYS ON EXPOSED WORK SHALL BE RUN AT RIGHT ANGLES TO AND PARALLEL WITH THE SURROUNDING WALL AND SHALL CONFORM TO THE FORM OF THE CEILING. DIAGONAL RUNS ARE NOT PERMITTED. BENDS IN PARALLEL CONDUIT RUNS SHALL BE CONCENTRIC. ALL RACEWAYS SHALL RUN PERFECTLY STRAIGHT AND TRUE.

H9. ALL JUNCTION BOXES AND PULL BOXES SHALL BE APPROPRIATELY SIZED TO ACCOMMODATE NUMBER OR CONDUIT/CONDUCTORS SHOWN PER CONTRACT DOCUMENTS AND OWNER REQUIREMENTS. JUNCTION BOXES WITH EXTENSION RINGS SHALL NOT BE PERMITTED, UTILIZE EXTRA DEEP BACKBOX WHERE REQUIRED.

H10. ALL JUNCTION BOX, PULL BOX COVERS AND CONDUIT FITTINGS SHALL BE RED.

H11. WHERE WEATHERPROOF DEVICES AND APPLIANCES ARE INDICATED, THE RACEWAY (CONDUIT, FITTINGS, JUNCTION BOXES, ETC.) SHALL BE LIQUID TIGHT IN THE ROOM WHERE THE WEATHERPROOF EQUIPMENT IS LOCATED.

H12. ONLY CABLING TERMINATING IN THE FIRE ALARM CONTROL UNITS AND TERMINAL CABINETS IS PERMITTED TO BE INSTALLED WITHIN THE ENCLOSURE. CABLES ARE NOT PERMITTED TO PASS THROUGH THE CABINETS TO CONNECT TO OTHER EQUIPMENT.

H13. CONDUIT FILL SHALL NOT EXCEED THE LESSER REQUIREMENTS OF THE NEC AND THE FOLLOWING:

H13.1 RISER AND DISTRIBUTION CONDUITS SHALL NOT EXCEED 28.6%. ALL CONDUITS INSTALLED IN A CORRIDOR OR SERVE MORE THAN 10 DEVICES AND APPLIANCES SHALL BE CONSIDERED A DISTRIBUTION CONDUIT.

H13.2 ALL OTHER CONDUITS SHALL NOT EXCEED 33.3%.

H14. ROUTING OF THE RACEWAY ON THE CONTRACT DOCUMENTS IS DIAGRAMMATIC AND INDICATIVE. CONTRACTOR IS RESPONSIBLE FOR ALL ROUTING. CONDUIT ROUTING WHERE INDICATED HAS BEEN SHOWN TO ILLUSTRATE THE DESIGN INTENT.

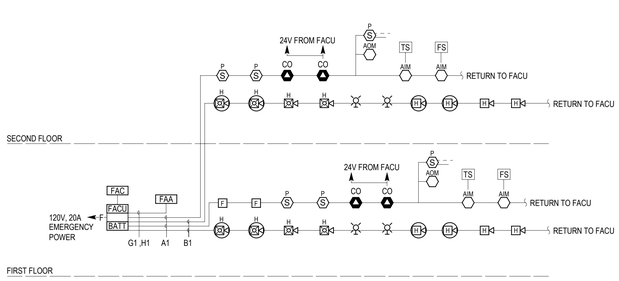
H15. CONDUIT REQUIRED TO RUN EXPOSED IN PUBLIC AREAS (CORRIDORS, OFFICES, ETC.) SHALL BE PAINT

GENERAL NOTES:

1. RISER DIAGRAM IS SCHEMATIC IN NATURE AND ONLY INTENDED TO COMMUNICATE CONCEPTUAL LAYOUT OF THE FIRE ALARM SYSTEM. RISER DIAGRAM DOES NOT INDICATE EXACT CIRCUITING OR NUMBER OF DEVICES REQUIRED FOR SYSTEM.
2. REFER TO SHEETS FA00.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
3. ALL FIRE ALARM SYSTEM WIRING SHALL BE AS FOLLOWS:
   A. INITIATING DEVICE CIRCUITS: CLASS A
   B. NOTIFICATION APPLIANCE CIRCUITS: CLASS A
   C. SIGNALING LINE CIRCUITS: CLASS A
4. PROVIDE ALL DUCT SMOKE DETECTORS, AND FIRE ALARM RELAYS AND ACCESSORIES AS REQUIRED FOR NEW MECHANICAL EQUIPMENT.

FIRE ALARM WIRE LEGEND			
LABEL	TYPE	CLASS	SURVIVABILITY
A1	SIGNALING LINE CIRCUIT	X	LEVEL 1
B1	STROBE CIRCUIT	A	LEVEL 1
D1	AUDIO RISER	A	LEVEL 1
E1	NETWORK RISER	A	LEVEL 1
F	120V AC	-	LEVEL 1
G1	RUI NETWORK	A	LEVEL 1
H1	24V DC	B	LEVEL 1
I3	BDA RISER CIRCUIT	A	LEVEL 3
J1	BDA FLOOR CIRCUIT - COAXIAL CABLE	-	LEVEL 1
X1	PUSH TO TALK AND MICROPHONE CIRCUITS	B	LEVEL 1

1 FIRE ALARM WIRE LEGEND
NTS



2 FIRE ALARM SINGLE LINE DIAGRAM
NTS

South Divison

Fire Station

	System Inputs	Signal Type (A=Alarm; P2=Priority 2; S=Supervisory; T=Trouble; U=Utility)	Signal Priority (1=Highest; 9=Lowest)	System Outputs: Control Unit Annunciation — Operator Interface: A Actuate common audible and LED indicator for alarm signal	B Actuate common audible and LED indicator for supervisory signal	C Actuate common audible and LED indicator for trouble signal	D Display (LCD) and status change	Control Unit Annunciation — Location LEDs (Note 2): E All flashing LEDs maintain status but are illuminated steady	F Illuminate the alarm silenced yellow LED	G Deactivate audible (alarm, supervisory & trouble) signals at all annunciators	H Restore the fire alarm system to normal if no alarms are present.	Notification — Interior: I Activate the distinctive general evacuation signal (temporal 3)	J Activate the visual notification appliances (strobes)	K Activate the local piezo at the detector in alarm	Notification — Exterior: L Activate exterior beacons at fire department response point	M Activate smoke detector audible alarm	Notification — Deactivation & Disables: N Deactivate all notification appliances (audible & visible)	O Prevent beacons, horns, and strobes from activating throughout building	Miscellaneous: P Signal is latching and fire alarm system must be reset to clear signal	Q Release of electrically held open smoke doors	R Release damper close relay unless associated detectors in alarm	S Activate smoke exhaust fans	T Shut down fans associated with detector	U Recall all elevators serving alarm floor to the designated level	V Shunt trip elevator power	W Close accordian door	X Transmit signal by device to the city fire alarm reporting system via the DACT, cell phone communication and RS-232 port (To be programmed at a later date)	Y Actuate Remote Indicator for inaccessible detector	
1	**DETECTION DEVICES**																												1
2	Manual Fire Alarm Box (Pull station)	A	3	■			■					■	■		■				■						■	■		2
3	Smoke Detector (In bunk room)	S	3		■		■									■									■	■	3
4	Smoke Detector (In elevator machine room)	A	3	■			■					■	■		■				■					■	■	■	4
5	Smoke Detector	A	3	■			■					■	■		■				■						■	■	5
6	Duct Smoke Detector	S	6		■		■																■				6
7	Heat Detector (In elevator shaft, elevator machine room)	A	3	■			■					■	■		■				■					■	■	■	7
8	Sprinkler Water Flow Switch	A	3	■			■																				8
9	Sprinkler Tamper Switch	S	6		■		■																				9
10	Carbon Monoxide	S	6		■		■							■											■	■	10
11	Air Handling Unit Request to Run	U	8																	■							11
12	Gas Detection System	A	3	■			■					■	■		■				■						■	■	12
13	VESDA Detector (FIRE 1) in Elevator Shaft	A	4	■			■					■	■		■				■	■			■		■	■	13
14	ATS Activation	S	6		■		■																				14
15	**SYSTEM FAULTS**																										15
16	Primary Power Failure (AC power loss - see note 2)	T	7			■	■																			■	16
17	Secondary Power Supply Fault (battery charger, low voltage, open circuit, etc.)	T	7			■	■																			■	17
18	Signaling Line Circuit (SLC) - Open, short or ground	T	7			■	■																			■	18
19	Initiating Device Circuit (IDC) - Open or ground	T	7			■	■																			■	19
20	Notification Appliance Circuit (NAC) - Open, short or ground	T	7			■	■																			■	20
21	Constant 24 VDC Power Circuit - Open or ground	T	7			■	■																			■	21
22	Fire Alarm System device communication failure	T	7			■	■																			■	22
23	Smoke Detector Self Test Failure	T	7			■	■																			■	23
24	Initiating Device Failure	T	7			■	■																			■	24
25	Generator Phase Reversal	T	7			■	■																			■	25
26	Generator Fault	T	7			■	■																			■	26
27	Generator Fuel Level	T	7			■	■																			■	27
28	Electronic Component/Card Failure	T	7			■	■																			■	28
29	BDA Failure of Critical System Components	S	6		■		■																			■	29
30	BDA Donor Antenna Failure	S	6		■		■																			■	30
31	BDA Battery Charger Failure	S	6		■		■																			■	31
32	BDA Low Battery (70% Capacity)	S	6		■		■																			■	32
33	BDA AC power loss	T	7			■	■																			■	33
34	BDA AC power loss	T	8			■	■																			■	34
35	VESDA Detector Fault / VESDA Battery Fault	T	7			■	■																			■	35
36	**OPERATOR BYPASS**																										36
37	Notification Bypass	T	7			■	■													■						■	37
38	**OPERATOR INTERFACE**																										38
39	Acknowledge	N/A	9					■		■																	39
40	Alarm Silence	N/A	9						■									■									40
41	System Reset	N/A	9								■																41
				A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	

Notes:

Note 1: Smoke detectors programmed with the alarm verification feature activated. When the alarm threshold has been exceeded the signals will be delayed for 15 seconds and then if the smoke detector is above the alarm threshold at any time in the proceeding 60 seconds the alarm activation sequence will begin.
Note 2: The location LED will remain illuminated until the fire alarm system has been reset.

3 FIRE ALARM SEQUENCE OF OPERATIONS
NTS

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JULIAN ASTBURY
ELECTRICAL
No. 45455
REGISTERED PROFESSIONAL ENGINEER
12/16/2025

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

CONSTRUCTION DOCUMENTS 12/19/25

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

FIRE ALARM SINGLE LINE DIAGRAM

SHEET NUMBER

FA03.00

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1 FIRE ALARM FIRST FLOOR PLAN
1/8" = 1'-0"

GENERAL NOTES:

1. SEE DRAWING FA00.01 FOR LEGENDS, NOTES, AND ABBREVIATIONS.
2. IN INSTANCES OF MULTIPLE FIRE SMOKE DAMPERS WITHIN THE SAME ROOM, LOCATE REMOTE TEST STATIONS ALIGNED ON SAME WALL.

KEY NOTES

1 FURNISH AND INSTALL CONTROL MODULE FOR BMS PANEL INTERFACE.
2 FURNISH AND INSTALL CONTROL MODULE FOR PRIMARY ELEVATOR RECALL.
3 FURNISH AND INSTALL CONTROL MODULE FOR FIREMAN'S HAT.
4 FURNISH AND INSTALL CONTROL MODULE FOR PRIMARY ELEVATOR RECALL.
5 FURNISH AND INSTALL CONTROL MODULE FOR ACCORDIAN DOOR.
6 FURNISH AND INSTALL MONITORING MODULE FOR ACCORDIAN DOOR.
7 FURNISH AND INSTALL MONITORING MODULE FOR GENERATOR PHASE REVERSAL.
8 FURNISH AND INSTALL MONITORING MODULE FOR GENERATOR FAULT.
9 FURNISH AND INSTALL MONITORING MODULE FOR GENERATOR FUEL LEVEL.
10 FURNISH AND INSTALL MONITORING MODULE FOR GAS DETECTION SYSTEM.
11 FURNISH AND INSTALL MONITORING MODULE FOR ATS MONITORING.
12 FURNISH AND INSTALL CONTROL MODULE FOR ELECTRONIC DOOR. COORDINATE EXACT LOCATION WITH SECURITY CONTRACTOR.
13 FURNISH AND INSTALL MONITORING MODULE FOR NITROGEN GENERATOR TROUBLE.
14 FURNISH AND INSTALL MONITORING MODULE FOR NITROGEN GENERATOR LOSS OF POWER.

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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

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FIRE ALARM FIRST FLOOR PLAN

SHEET NUMBER

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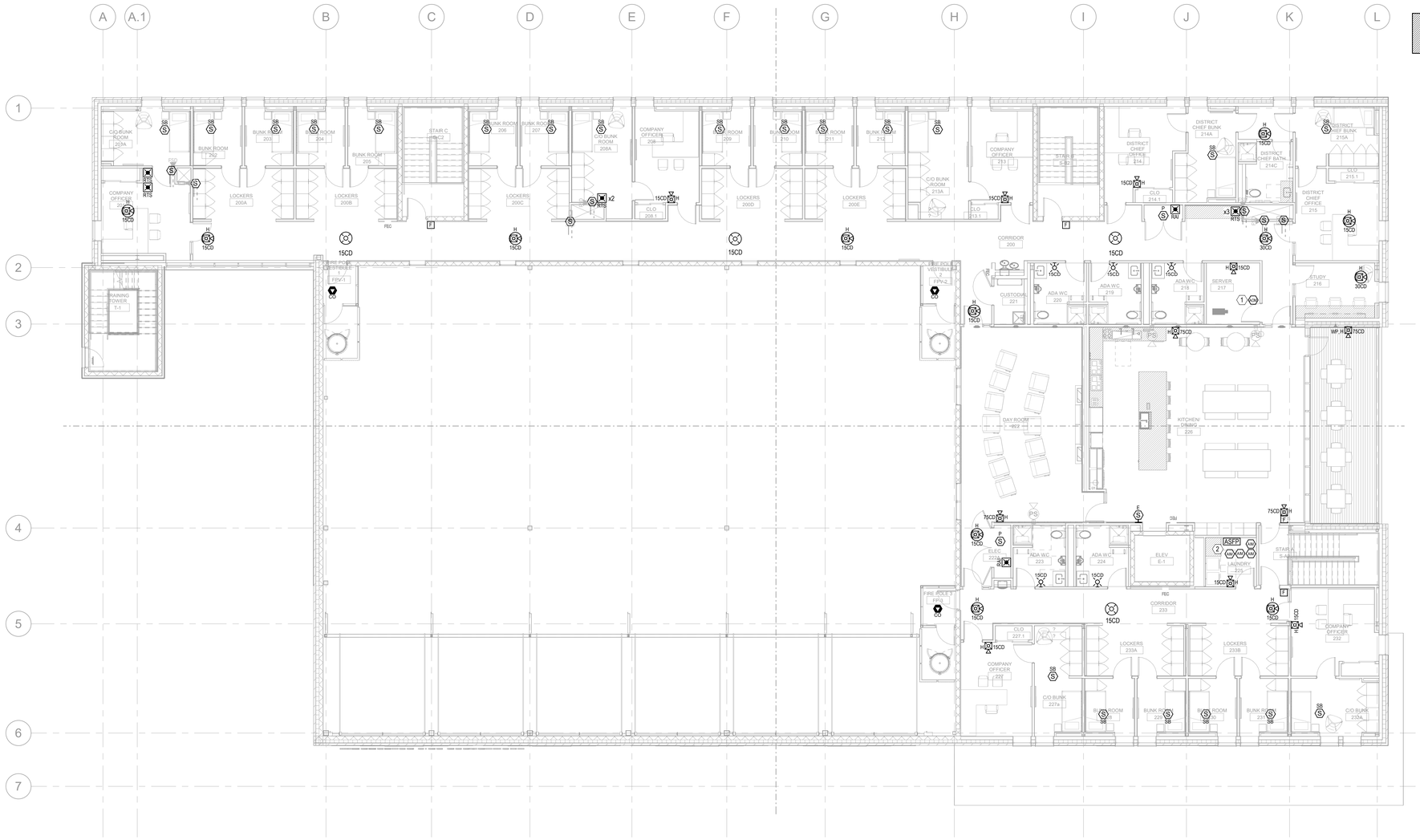
GENERAL NOTES:

1. SEE DRAWING FA00.01 FOR LEGENDS, NOTES, AND ABBREVIATIONS.
2. IN INSTANCES OF MULTIPLE FIRE SMOKE DAMPERS WITHIN THE SAME ROOM, LOCATE REMOTE TEST STATIONS ALIGNED ON SAME WALL.

KEY NOTES

1 FURNISH AND INSTALL CONTROL MODULE AT EACH SECURITY PANEL.

2 CONTRACTOR TO PROVIDE VESDA VLF-500 TO PROVIDE DETECTION INSIDE OF ELEVATOR SHAFTS. CONTRACTOR TO RUN TEST PORT BACK OUTSIDE ELEVATOR SHAFT FOR EASE OF TESTING. PROVIDE SINGLE VESDA PIPE WITH CLEAN OUT KIT BY XTRALIS. CONTRACTOR TO PROVIDE CLEAN OUT LOCATION WITHIN 12 INCHES OF THE VESDA DETECTOR PRIOR TO THE PVC PIPING ENTERING THE ELEVATOR SHAFT.



1 FIRE ALARM SECOND FLOOR PLAN
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FIRE ALARM SECOND FLOOR PLAN

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GENERAL NOTES:

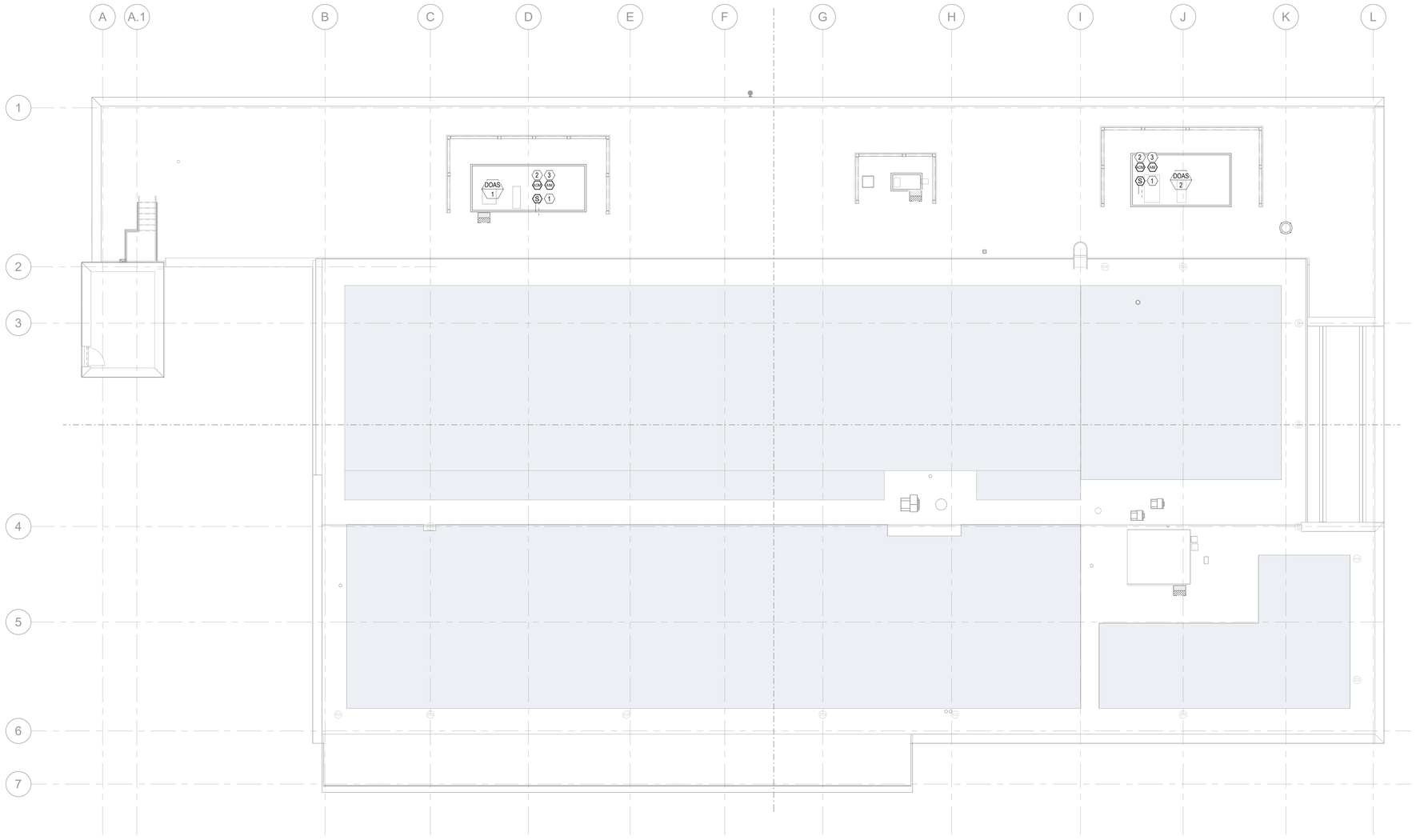
1. SEE DRAWING FA00.01 FOR LEGENDS, NOTES, AND ABBREVIATIONS.
2. PV DESIGN IS IN COMPLIANCE WITH 527 CMR 11.12. TOTAL PERCENTAGE OF ROOF AREA COVERED BY PV IS APPROXIMATELY 48%. REFER TO PV DRAWINGS FOR MORE INFORMATION.

KEY NOTES

1 CONTRACTOR TO MAINTAIN UL LISTING TEMPERATURE REQUIREMENTS FOR DUCT SMOKE DETECTOR. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.

2 FURNISH AND INSTALL CONTROL MODULE FOR AHU SHUTDOWN. CONTRACTOR TO MAINTAIN UL LISTING TEMPERATURE REQUIREMENTS FOR CONTROL MODULE. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.

3 FURNISH AND INSTALL MONITORING MODULE FOR AHU REQUEST TO RUN. CONTRACTOR TO MAINTAIN UL LISTINGTEMPERATURE REQUIREMENTS FOR CONTROL MODULE. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.



1 FIRE ALARM ROOF PLAN
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KEY PLAN

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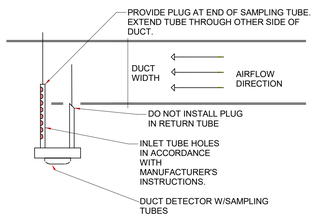
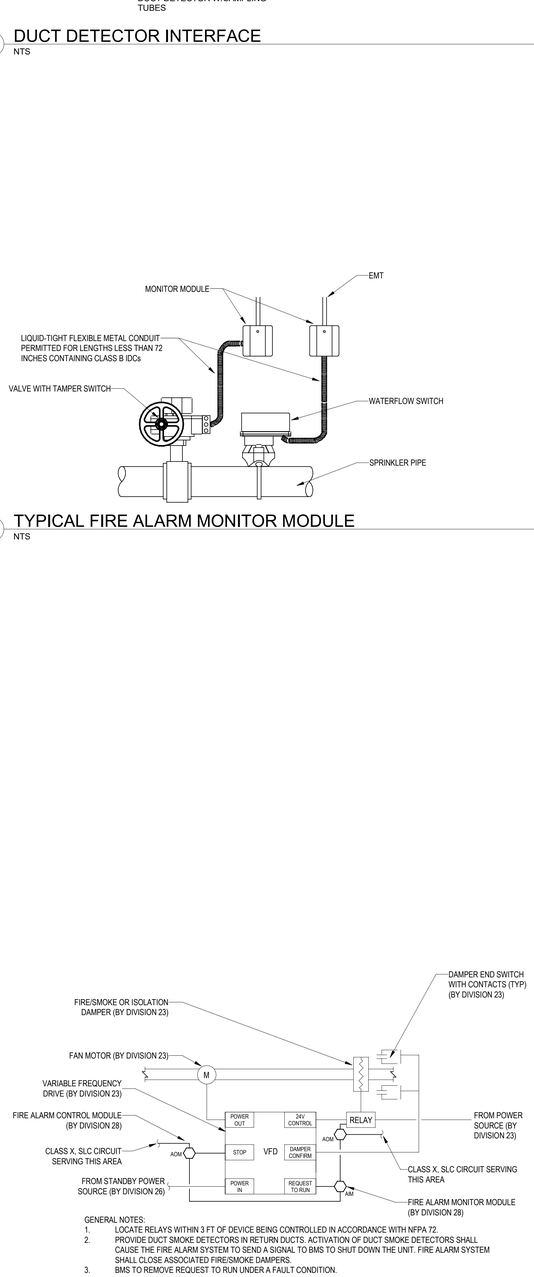
GENERAL NOTES
1. COMPLY WITH ALL MANUFACTURER'S INSTRUCTIONS. LOCATE DETECTORS IN COMPLIANCE WITH NFPA 90A.
2. LOCATE IN AN ACCESSIBLE LOCATION. SAMPLING TUBE SHALL EXTEND THE FULL WIDTH OF THE DUCT REGARDLESS OF DUCT WIDTH.



1 DUCT DETECTOR INTERFACE
NTS

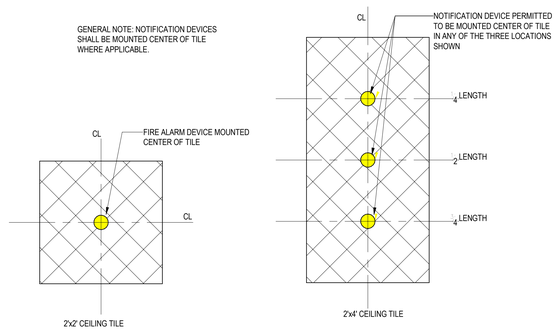
2 TYPICAL FIRE ALARM MONITOR MODULE
NTS



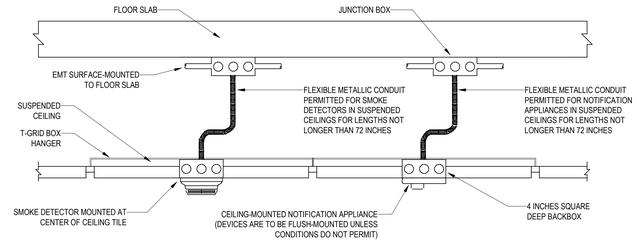
GENERAL NOTES:
1. LOCATE RELAYS WITHIN 3 FT OF DEVICE BEING CONTROLLED IN ACCORDANCE WITH NFPA 72.
2. PROVIDE DUCT SMOKE DETECTORS IN RETURN DUCTS. ACTIVATION OF DUCT SMOKE DETECTORS SHALL CAUSE THE FIRE ALARM SYSTEM TO SEND A SIGNAL TO BMS TO SHUT DOWN THE UNIT. FIRE ALARM SYSTEM SHALL CLOSE ASSOCIATED FIRE/SMOKE DAMPERS.
3. BMS TO REMOVE REQUEST TO RUN UNDER A FAULT CONDITION.

3 AHU INTERFACE W/O HOA SWITCH
NTS

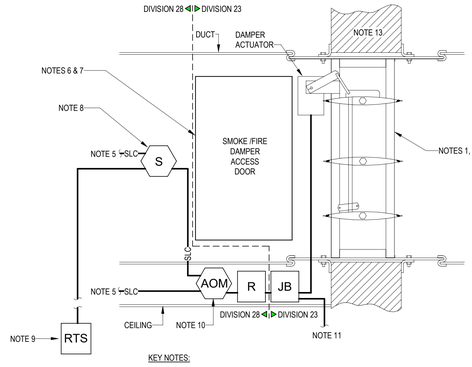
GENERAL NOTE: NOTIFICATION DEVICES SHALL BE MOUNTED CENTER OF TILE WHERE APPLICABLE.



4 CENTER OF TILE MOUNTING TYPICAL DETAIL
NTS

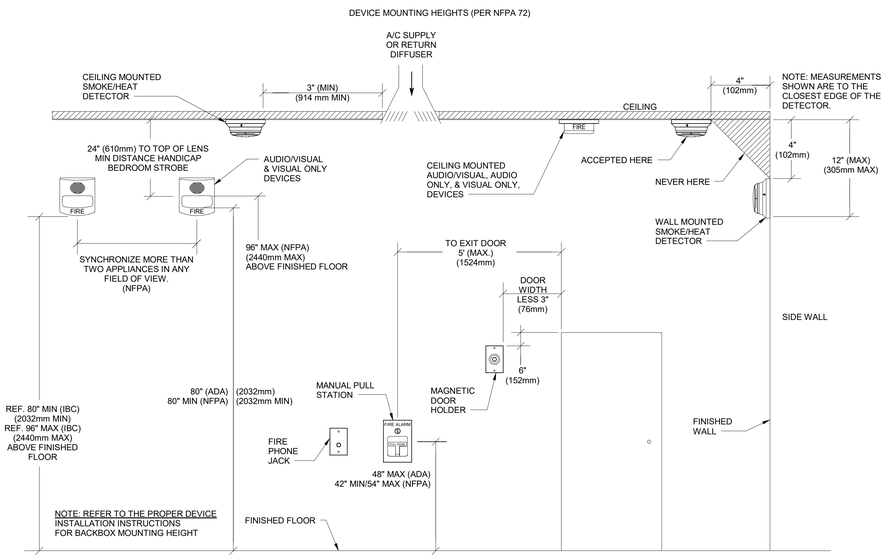


5 FIRE ALARM APPLIANCE IN SUSPENDED CEILING
NTS



KEY NOTES:
1. COMBINATION FIRE/SMOKE DAMPER BY DIVISION 23. INSTALL THE DAMPER IN THE PLANE OF THE RATED PARTITION. FIRE/SMOKE DAMPER SHALL BE RATED TO MAINTAIN THE RATING OF THE FIRE SEPARATION. FUSIBLE LINK TO BE RATED FOR 50 PERCENT ABOVE MAXIMUM OPERATING TEMPERATURE OF AIRFLOW OF THE SYSTEM.
2. FIRE/SMOKE DAMPER TO BE UL LISTED, IBC, IMC, NFPA AND STATE FIRE MARSHAL APPROVED.
3. FIRE/SMOKE DAMPER INSTALLATION SHALL MEET ALL MANUFACTURER AND CODE REQUIREMENTS (IMC, NFPA, LOCAL AND STATE AMENDMENTS, ETC.). MANUFACTURERS INSTALLATION INSTRUCTIONS SHALL BE MADE AVAILABLE TO THE INSPECTING AUTHORITIES.
4. REFER TO SPECIFICATION SECTION 233300 AIR DUCT ACCESSORIES FOR ADDITIONAL REQUIREMENTS (END SWITCHES, POSITION SWITCH FOR REMOTE OPERATION, ETC.).
5. TO/FROM FIRE ALARM CLASS X, SLC CIRCUIT SERVING THIS AREA
6. LOCATE ACCESS DOOR FOR BEST ACCESS TO LINK AND DUCT SMOKE DETECTOR. PROVIDE MULTIPLE DOORS AS NECESSARY. PROVIDE FIRE RATED DOORS WHERE REQUIRED. COORDINATE FINAL SIZES AND LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
7. ACCESS DOOR MINIMUM SIZE SHALL BE 1" SMALLER THAN DUCT HEIGHT, 12" MIN. LENGTH W/ ACCESS DOOR LABEL. ACCESS PANELS SHALL BE PERMANENTLY IDENTIFIED ON THE EXTERIOR BY A LABEL WITH LETTERS NOT LESS THAN 1/2" IN HEIGHT "FIRE DAMPER" OR SMOKE/FIRE FIRE DAMPER" PER IMC.
8. DIVISION 28 TO PROVIDE DUCT SMOKE DETECTOR TO BE LOCATED AND INSTALLED BY DIVISION 23 WITHIN FIVE FEET OF FSD IN ACCORDANCE W/ CODE REQUIREMENTS AND MANUFACTURERS APPROVED LISTING. SAMPLING TUBES SHALL EXTEND THE FULL WIDTH OF THE DUCT REGARDLESS OF DUCT WIDTH. DIVISION 23 SHALL DOCUMENT PRESSURE DIFFERENTIAL MEASUREMENTS FOR ALL DUCT SMOKE DETECTORS.
9. DIVISION 28 TO PROVIDE, INSTALL, AND CONNECT REMOTE TEST SWITCH/INDICATOR LIGHT FOR DUCT SMOKE DETECTOR LOCATED ABOVE THE CEILING. COORDINATE FINAL HEIGHTS AND LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
10. DIVISION 28 TO PROVIDE AND INSTALL THE CONTROL MODULE IN ACCORDANCE WITH CODE REQUIREMENTS AND MANUFACTURERS APPROVED LISTING.
11. DIVISION 23 TO WIRE 24V BRANCH CIRCUIT (SERVING SMOKE DAMPER BY DIVISION 23) TO DAMPER VIA CONTACTS ON CONTROL MODULE TO ACTUATE DAMPER CLOSED.
12. DIVISION 28 TO PROVIDE INTERPOSING RELAY AS NECESSARY TO MEET THE RATING REQUIREMENTS OF THE CONTROL MODULE. COORDINATE REQUIREMENTS WITH DIVISION 23.
13. RATED SHAFT ENCLOSURE OR FIRE SMOKE BARRIER.
14. REFER TO FIRE ALARM SEQUENCE OF OPERATIONS FOR PROGRAMMING REQUIREMENTS FOR THE FIRE ALARM SYSTEM AND FIRE SMOKE DAMPER OPERATIONS.
15. PROVIDE UL LISTED & FM APPROVED FIRESTOPPING FOR PENETRATIONS THROUGH RATED ASSEMBLIES IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND CODE REQUIREMENTS.

6 FIRE SMOKE DAMPER CONTROL INSTALLATION DETAIL-24V
NTS



7 FIRE ALARM DEVICE MOUNTING
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CONSTRUCTION DOCUMENTS 12/19/25

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
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FIRE ALARM DETAILS SHEET 1

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Introba

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TECHNOLOGY SYSTEMS DESIGN DRAWINGS

GENERAL NOTES

1. THE INFORMATION ON THIS SHEET APPLIES TO ALL OF THE TECHNOLOGY AND LOW VOLTAGE SYSTEMS REPRESENTED IN THIS SET OF DRAWINGS.
2. THESE DRAWINGS ARE COMPLEMENTARY TO THE SPECIFICATIONS. ITEMS REQUIRED BY EITHER THESE DRAWINGS OR SPECIFICATIONS ARE BINDING AS THOUGH THEY ARE REQUIRED BY BOTH. REVIEW THE SPECIFICATIONS IN DETAIL AND USE IN CONJUNCTION WITH THESE DRAWINGS.
3. CABLE TRAY, CONDUIT, AND J-HOOKS ARE SHOWN IN THEIR APPROXIMATE REQUIRED LOCATION. CONTRACTORS SHALL COORDINATE WITH OTHER TRADES PRIOR TO INSTALLATION.
4. CABLING SHALL NOT BE INSTALLED FREE ABOVE INACCESSIBLE CEILINGS. IT SHALL BE INSTALLED IN CONDUIT EVEN IF NOT SPECIFICALLY SHOWN ON THE DRAWINGS.
5. ANY CABLES INSTALLED IN CABLE TRAY SYSTEMS NOT SPECIFICALLY SHOWN ON THESE DRAWINGS OR INCLUDED IN THE DIVISION 27 AND 28 SPECIFICATIONS SHALL BE APPROVED BY THE CONSULTANT PRIOR TO INSTALLATION.
6. COMPONENTS AND INSTALLATION SHALL COMPLY WITH NFPA 70 "NATIONAL ELECTRICAL CODE". CROSS REFERENCE AND COORDINATE WITH ELECTRICAL DRAWINGS.
7. COORDINATE ALL SERVICE REQUIREMENTS WITHIN ITEMS OF MILLWORK, CASEWORK AND CEILINGS.
8. ANY QUESTIONS AND/OR CONCERNS ABOUT THE WORK TO BE PERFORMED SHALL BE ADDRESSED PRIOR TO THE START OF THAT WORK. OTHERWISE THE CONTRACTOR SHALL BE THE RESPONSIBLE PARTY ONCE THAT WORK HAS STARTED.

ROUGH-IN AND SUPPORT NOTES

1. PROVIDE ALL BACKBOX AND CONDUIT ROUGH-IN AS INDICATED ON THE LEGENDS, FLOOR PLANS, RISER DIAGRAMS AND OTHER DRAWINGS. PROVIDE PULL STRINGS IN ALL CONDUITS. PROVIDE SMOOTH INSULATED BUSHINGS ON ALL CONDUITS.
2. PROVIDE ALL FLOOR AND WALL PENETRATIONS INCLUDING CONDUIT SLEEVES, FLOOR CORES, FLOOR BOXES, POKE-THRUS, CONDUITS, FIRE-RATED AND SMOKE-RATED SLEEVES. PROVIDE SPECIFIED FIRE RATED DEVICES PER THE NOTES ON THIS SHEET AND SPECIFICATION SECTIONS.
3. REFER TO THE ARCHITECTURAL ELEVATIONS AND DETAILS FOR THE EXACT HEIGHT AND PLACEMENT OF OUTLETS AND OTHER LOW VOLTAGE SYSTEM DEVICES PRIOR TO ROUGH-IN. ELECTRICAL CONTRACTOR TO LOCATE DATA OUTLET BACKBOX AT SAME HEIGHT AS CORRESPONDING ELECTRICAL OUTLET, EITHER BELOW OR ABOVE COUNTER, AT COUNTERTOP LOCATIONS. LOCATE ALL BACKBOXES AT FURNITURE LOCATIONS TO BE ACCESSIBLE AND TO MISS FURNITURE SUPPORT CHANNELS.
4. CONDUIT INSTALLED SHALL COMPLY WITH NEC REQUIREMENTS FOR CONDUIT INSTALLATION. PROVIDE PULLBOX ON CONDUIT RUNS EVERY 150', AFTER (2) 90 DEGREE BENDS AND AS OTHERWISE REQUIRED BY NEC.
5. ALL INTERIOR JUNCTION BOXES SHALL BE NEMA 1 RATED UNLESS OTHERWISE SPECIFIED. ALL EXTERIOR JUNCTION BOXES SHALL BE NEMA 4 RATED WITH HINGED COVERS UNLESS OTHERWISE SPECIFIED. USE MYERS HUB CONNECTORS AT EXTERIOR OR JUNCTION BOX LOCATIONS.
6. ELECTRICAL CONTRACTOR SHALL MOUNT THE DATA OUTLET AND ELECTRICAL OUTLET IN A RIGID BOX MOUNTING BRACKET TO ENSURE CONSISTENT SPACING THROUGHOUT.
7. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND VERIFYING PLACEMENT OF ALL OUTLETS, CONDUIT, FLOOR BOXES, POKE-THRUS, ETC. WITH THE FURNITURE OR EQUIPMENT SUPPLIER TO ENSURE PROPER PLACEMENT WITH INSTALLED DEVICES. ADDITIONAL CHARGES FOR RELOCATING OUTLETS, CONDUIT, FLOOR BOXES, ETC. NOT PROPERLY COORDINATED OR INSTALLED WILL NOT BE ACCEPTED.
8. PROVIDE GROUNDING PER THE GROUNDING DETAILS IN THE DRAWINGS AND SPECIFICATIONS.
9. PRIOR TO INSTALLING ANY ELECTRICAL CONNECTIONS IN THE TDRs, COORDINATE THE EXACT POWER RECEPTACLE TYPES, LOCATIONS, PANEL LOCATIONS AND CONDUIT ROUTING WITH THE CONSULTANT.
10. SUPPORT ALL CABLE TRAY FROM STRUCTURE AT A MINIMUM OF 8'-0" ON CENTER AND WITHIN 1'-0" OF EACH END WITH TWO 1/2" DIAMETER ALL THREAD RODS AND HANGER KITS. USE TRAPEZE HANGER FOR CABLE TRAY; DO NOT CENTER MOUNT OR WALL MOUNT TRAY. HANGER SHALL SUPPORT FULL WIDTH OF CABLE TRAY AND BE HUNG FROM CEILING WITH ALL THREAD RODS. FOR HORIZONTAL TEE'S AND 90 DEGREE TURNS, FIELD CUT AND FABRICATE. PROVIDE RADIAL SWEEPING TURNS.
11. COORDINATE CABLE TRAY INSTALLATION WITH MECHANICAL EQUIPMENT, ELECTRICAL EQUIPMENT, DUCTWORK, CONDUITS, PIPING AND ALL OTHER TRADES PRIOR TO ORDERING AND INSTALLING.

PENETRATION REQUIREMENTS

1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE FIRE-RATED SLEEVES PER THESE INSTRUCTIONS AND AS SHOWN ON THE PLANS.
2. AT EACH ROOM WHERE LOW VOLTAGE CABLING IS BEING ROUTED INTO OR THROUGH, PROVIDE A MINIMUM OF:
   2.1 (1) HILTI CFS-MSL MODULAR SLEEVE (OR APPROVED EQUIVALENT) FOR FIRE RATED WALLS.
   2.2 (1) HILTI CS-SL-SA SMOKE AND ACOUSTIC SLEEVE (OR APPROVED EQUIVALENT) FOR NON-RATED OR SMOKE RATES WALLS.
   2.3 IF SLEEVES ARE ALREADY SHOWN FOR THAT ROOM, PROVIDE AS INDICATED.
3. FOR EACH SET OF SLEEVES, INSTALL THEM WITH THE APPROPRIATE GANGABLE BRACKETS FOR A TIGHT AND CLEAN INSTALLATION.
4. PROVIDE A STICKER ON THE WALL BY THE SLEEVES DETAILING THE UL RATING AND DATE INSTALLED.
5. WHERE CABLE TRAY PASSES THROUGH NON-RATED WALLS, PROVIDE FRAMING IN THE STUDS AND DRYWALL TO ALLOW THE CABLE TRAY TO PASS THROUGH. PROVIDE SLEEVES FOR CABLE TRAY IF IT PASSES THROUGH SMOKE OR FIRE RATED WALLS.

TECHNOLOGY LEGEND

SYMBOL	DESCRIPTION	DETAIL #	PROVIDE CONDUIT	NOTES
SYMBOLS				
T1	END USER DEVICE SYMBOL EXAMPLE	--	--	THIS SYMBOL AND SIMILARLY NAMED DEVICE SYMBOLS ARE FOR I.T. COORDINATION AND PLANNING ONLY.
##	TYPICAL ROOM DESIGNATION	--	--	TYPICAL ROOMS ARE SHOWN ON PLANS USING THIS SYMBOL WITH A LETTER DESIGNATION. THE LETTER MATCHES A TYPICAL ROOM LAYOUT ON THE ENLARGED ROOM PLANS. PROVIDE ALL DEVICES IN THE TYPICAL LAYOUT TO THE ROOMS IN WHICH THIS SYMBOL IS SHOWN.
PATHWAYS & PENETRATIONS				
	J-HOOK PATHWAY	--	--	PROVIDE J-HOOKS AS REQUIRED TO ROUTE CABLING.
	CABLE TRAY	--	--	PROVIDE CABLE TRAY PER SPECIFICATIONS. REFER TO TAG ON DRAWINGS FOR SIZE.
	LADDER RACK CABLE TRACK	--	--	PROVIDE RACK TRAY PER SPECIFICATIONS. REFER TO TAG ON DRAWINGS FOR SIZE.
(X) XX	FIRE RATED SLEEVE ASSEMBLY. QUANTITY AND TYPE INDICATED ON THE DRAWINGS.	--	--	ROUTE CABLING THROUGH SLEEVES. INSTALL IT NETWORK CABLING IN SEPARATE SLEEVE FROM OTHER LOW VOLTAGE CABLING.
(X) ZXX	SMOKE RATED SLEEVE ASSEMBLY. QUANTITY AND TYPE INDICATED ON THE DRAWINGS.	--	--	ROUTE CABLING THROUGH SLEEVES. INSTALL IT NETWORK CABLING IN SEPARATE SLEEVE FROM OTHER LOW VOLTAGE CABLING.
	CONDUIT SLEEVES	--	✓	--
	4" CONDUIT FLOOR CORE	--	✓	--
	CONDUIT UNDER FLOOR OR IN SLAB TO FREE STANDING MILLWORK	--	(2) 2"	ROUTE CABLING THROUGH CONTINUOUS CONDUIT FROM MILLWORK OVER TO THE WALL AND UP INTO ACCESSIBLE CEILING. CAP WITH NYLON BUSHINGS AND PROVIDE PULL STRINGS.
	CONDUIT PATHWAY BETWEEN TWO BOXES	--	✓	ROUTE TO LOCATION NOTED ON DRAWINGS. PROVIDE PULL STRING.
	CONDUIT PATHWAY FROM BOX, ROUTED UP WALL. CAP INDICATED STUB OUT ABOVE ACCESSIBLE CEILING.	--	✓	ROUTE CONDUIT UP WALL. CAP INDICATES STUB OUT ABOVE ACCESSIBLE CEILING. PROVIDE PULL STRING.
LINETYPES				
	FIBER OPTIC PRIMARY ROUTING	--	--	REFER TO THE FLOOR PLANS AND RISER DIAGRAMS FOR BACKBONE ROUTING THROUGH BUILDING.
	FIBER OPTIC SECONDARY ROUTING	--	--	REFER TO THE FLOOR PLANS AND RISER DIAGRAMS FOR BACKBONE ROUTING THROUGH BUILDING.
	COPPER BACKBONE CABLE ROUTING	--	--	REFER TO THE FLOOR PLANS AND RISER DIAGRAMS FOR BACKBONE ROUTING THROUGH BUILDING.
	TELECOM ROOM BOUNDARY LINE	--	--	DELINEATION LINE BETWEEN TELECOM ROOMS. ROUTE THE CABLING FOR ALL SYSTEMS TO THE TELECOM ROOMS SHOWN ON THE DRAWINGS BASED ON THIS SEPARATION LINE.

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	MTD	MOUNTED
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MTR	MAIN TELECOMMUNICATION ROOM
AWG	AMERICAN WIRE GAUGE	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
ARCH	ARCHITECTURAL	NEXT	NEAR-END CROSSTALK
A/C	AIR CONDITIONING	NIC	NOT IN CONTRACT
C	CONDUIT	NTS	NOT TO SCALE
CAB	CABINET	N.C.	NORMALLY CLOSED
CAT	CATEGORY	N.O.	NORMALLY OPEN
CLG	CEILING	NPT	NATIONAL PIPE THREAD
DAS	DISTRIBUTED ANTENNA SYSTEM	O.F.O.I.	OWNER FURNISHED OWNER INSTALLED
DWG	DRAWING	O.R.	OPERATING ROOM
EC	EMPTY CONDUIT	PB	PULL BOX
EF	ENTRANCE FACILITY	PBX	PRIVATE BRANCH EXCHANGE
EMI	ELECTROMAGNETIC INTERFERENCE	PIR	PASSSIVE INFRA RED
EMT	ELECTRICAL METALLIC TUBING	PNL	PANEL
ER	EQUIPMENT ROOM	PR	PAIR
ELEC	ELECTRIC	SM	SINGLE MODE FIBER OPTIC CABLE
EMR	ELEVATOR MECHANICAL ROOM	SS	STAINLESS STEEL
EXIST	EXISTING	STP	SHIELDED TWISTED-PAIR
F/UTP	FOILED UNSHIELDED TWISTED PAIR	TBB	TELECOMMUNICATION BONDING BACKBONE
FL	FLOOR	TBD	TO BE DETERMINED
FO	FIBER OPTIC	TC	TELECOMMUNICATION CLOSET
FOPP	FIBER OPTIC PATCH PANEL	TDR	TELECOMMUNICATION DISTRIBUTION ROOM
GND	GROUND	TEL	TELEPHONE
GRC	GALVANIZED RIGID CONDUIT	TGB	TELECOMMUNICATION GROUNDING BUS BAR
HC	HORIZONTAL CROSS-CONNECT	TMGB	TELECOMMUNICATION MAIN GROUNDING BUS BAR
IC	INTERMEDIATE CROSS-CONNECT	TIA	TELECOMMUNICATION INDUSTRY ASSOCIATION
IDC	INSULATION DISPLACEMENT CONNECTOR	TR	TELECOMMUNICATION ROOM
IDF	INTERMEDIATE DISTRIBUTION FRAME	TV	TELEVISION
JB	JUNCTION BOX	TYP	TYPICAL
LAN	LOCAL AREA NETWORK	U.O.N.	UNLESS OTHERWISE NOTED
LS	LOUDSPEAKER	UTP	UNSHIELDED TWISTED-PAIR
LV	LOW VOLTAGE	V	VOLT
MC	MAIN CROSS-CONNECT	VSS	VIDEO SURVEILLANCE SYSTEM
MDF	MAIN DISTRIBUTION FRAME	W	WATT
MER	MECHANICAL EQUIPMENT ROOM	WAP	WIRELESS ACCESS POINT
MIC	MICROPHONE	WP	WEATHERPROOF
MM	MULTI-MODE FIBER OPTIC CABLE		

TECHNOLOGY DRAWING LIST

Sheet Number	Sheet Name
T-000	TECHNOLOGY COVER PAGE
T-010	STRUCTURED CABLING LEGEND
T-020	SYNCHRONIZED CLOCK AND OVERHEAD PAGING SYSTEM LEGENDS
T-030	TECHNOLOGY SYSTEMS RESPONSIBILITY MATRIX
T-100	TELECOM FLOOR PLAN - LEVEL 01 - DISTRIBUTION
T-101	TELECOM FLOOR PLAN - LEVEL 02 - DISTRIBUTION
T-200	TELECOM FLOOR PLAN - LEVEL 01 - DEVICES
T-201	TELECOM FLOOR PLAN - LEVEL 02 - DEVICES
T-210	TELECOM CEILING PLAN - LEVEL 01
T-211	TELECOM CEILING PLAN - LEVEL 02
T-400	SERVER ROOM ENLARGED PLANS AND ELEVATIONS
T-500	TECHNOLOGY TYPICAL DETAILS
T-501	TECHNOLOGY TYPICAL DETAILS
T-502	TECHNOLOGY TYPICAL DETAILS
T-503	TECHNOLOGY TYPICAL DETAILS
T-504	STATION ALERTING / PAGING SYSTEM DETAILS

SECURITY DRAWING LIST

Sheet Number	Sheet Name
TY-010	SECURITY SYSTEMS LEGEND
TY-200	SECURITY FLOOR PLAN - LEVEL 01
TY-201	SECURITY FLOOR PLAN - LEVEL 02
TY-202	SECURITY FLOOR PLAN - ROOF
TY-500	SECURITY ACCESS CONTROL DETAILS
TY-501	SECURITY VSS CAMERA DETAILS
TY-600	SECURITY SYSTEM SCHEDULES

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CITY OF WORCESTER

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WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

TECHNOLOGY COVER PAGE

SHEET NUMBER

T-000

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STRUCTURED CABLING SYSTEM LEGEND

			BY CABLING CONTRACTOR			ROUGH-IN AND SUPPORT BY ELECTRICAL CONTRACTOR				
SYMBOL	DESCRIPTION	MOUNTING HEIGHT ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE	NUMBER OF UTP CABLES	FACEPLATE TYPE DETAIL MATRIX REFERENCE	NOTES	PROVIDE BACKBOX	PROVIDE PLASTER RING	PROVIDE CONDUIT	PROVIDE BACKING PER ARCH. DETAILS	NOTES
WALL OR FURNITURE MOUNTED DEVICES										
#	COMMUNICATION OUTLET	+18"	(2)	COMM	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	2-GANG	1-GANG	(1) 1"	--	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
AC #	ABOVE COUNTER COMMUNICATION OUTLET	+6" ABOVE BACKSPLASH	(2)	COMM	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	2-GANG	1-GANG	(1) 1"	--	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
F #	SYSTEM FURNITURE COMMUNICATION OUTLET	IN SYSTEM FURNITURE	(2)	FURN	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	--	--	YES	--	PROVIDE ROUGH-IN FOR FURNITURE FEED.
W	WALL PHONE COMMUNICATION OUTLET	+54"	(1)	WPH	--	2-GANG	1-GANG	(1) 1"	--	LEAVE 6" CLEARANCE ON WALL FROM CENTER OF FINISHED BACKBOX IN ALL DIRECTIONS. PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
RW	HORIZONTAL SURFACE MOUNTED RACEWAY DATA OUTLET	COORDINATE MOUNTING HEIGHT WITH ELECTRICAL DRAWINGS	(2)	SEE SPEC.	TERMINATE DATA CABLING WITHIN PROVIDED WALL MOUNTED RACEWAY. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATION FOR ADDITIONAL INFORMATION.	--	--	(1) 1" (SEE NOTE)	--	COORDINATE ROUGH-IN WITH ELECTRICAL DRAWINGS AND SPECIFICATIONS. PROVIDE BACKBOX AND CONDUIT AS REQUIRED. STUB CONDUIT UP TO ACCESSIBLE CEILING SPACE. PROVIDE PULL STRING. FOR RACEWAY OUTLET LOCATIONS, PROVIDE ADDITIONAL 1" CONDUIT(S) FOR EVERY (6) CABLES IN RACEWAY.
STATUS	STATUS BOARD DATA OUTLET	+60" (U.O.N.)	(1)	COMM	-	2-GANG	1-GANG	(1) 1"	--	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
BMS	BUILDING MANAGEMENT SYSTEM (BMS) DATA OUTLET	COORDINATE LOCATION(S) WITH BMS CONTRACTOR	(1)	SURF-1	COORDINATE EACH EXACT LOCATION WITH BMS CONTRACTOR. PROVIDE EITHER SURFACE MOUNT BOX OR OUTLET WITH FACEPLATE DEPENDING ON INSTALLATION.	2-GANG	1-GANG	(1) 1"	--	COORDINATE ROUGH-IN WITH BMS CONTRACTOR. PROVIDE BACKBOX AND CONDUIT WHERE REQUIRED. STUB CONDUIT UP TO ACCESSIBLE CEILING SPACE. PROVIDE PULL STRING.
TC	ATTEND TIME CLOCK DATA OUTLET	+44	(1)	TC	PROVIDE BISCUIT DATA JACK IN BACKBOX FOR TIME CLOCK.	2-GANG	1-GANG	(1) 1"	--	LEAVE 6" CLEARANCE ON WALL FROM CENTER OF FINISHED BACKBOX IN ALL DIRECTIONS. PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
DIS-B #	IN-WALL BOX DISPLAY COMMUNICATIONS OUTLET WITH AV INFRATRUCTURE	+60"	(2) UTP	DIS-B	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	2-GANG	1-GANG	(1) 1"	YES	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
TV-B #	IN-WALL BOX TELEVISION COMMUNICATIONS OUTLET WITH AV INFRATRUCTURE	+80"	(2) UTP, (1) COAX	TV-B	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	2-GANG	1-GANG	(1) 1"	YES	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
FF	FURNITURE FEED	+18"	(--)	FURN	ROUTE CABLING IN CONDUIT TO SYSTEM FURNITURE OUTLET.	2-GANG	2-GANG	(2) 1-1/4"	--	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
CC2	DATA OOTLET FOR SYNCRONIZED CLOCK - DIGITAL	+84"	(1)	SURF-1	PROVIDE SURFACE MOUNT BOX IN BACKBOX. DEVICE PROVIDED BY OTHERS.	--	--	(1) 1"	--	INSTALL CUSTOM BACKBOX FURNISHED WITH CLOCK. PROVIDE CONDUIT FROM BOX UP INTO CLOSEST ACCESSIBLE CEILING SPACE OF THE SAME ROOM AS THE STATION AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING. PROVIDE POWER.
VIM	VIDEO INTERCOM SYSTEM MASTER STATION COMMUNICATIONS OUTLET	REFER TO SECURITY LEGEND	(2)	SURF-1	PROVIDE SURFACE MOUNT BOX IN BACKBOX. DEVICE PROVIDED BY OTHERS.	REFER TO SECURITY LEGEND			--	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
VI	VIDEO INTERCOM SYSTEM SUBSTATION COMMUNICATIONS OUTLET	REFER TO SECURITY LEGEND	(--)	SURF-1	PROVIDE SURFACE MOUNT BOX IN BACKBOX. DEVICE PROVIDED BY OTHERS.	REFER TO SECURITY LEGEND			--	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
	WIRELESS ACCESS POINT WALL MOUNTED OUTLET	AS NOTED ON PLANS	(2)	WAP-2	PROVIDE TYPICAL FACEPLATE FOR ACCESS POINT.	2-GANG	1-GANG	(1) 1"	--	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
CEILING MOUNTED / ABOVE CEILING DEVICES										
OBS	SECURITY CAMERA DATA CEILING OUTLET	ABOVE ACCESSIBLE CEILING	(1)	SURF-1	PROVIDE SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING. # INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	--	--	--	--	--
#	DATA CEILING OUTLET NO TAG = ACCESSIBLE CEILING HL = HARD LID CEILING TYPE	ABOVE ACCESSIBLE CEILING	(1)	SURF-1	PROVIDE SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING. # INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	--	--	--	--	--
	WIRELESS ACCESS POINT OUTLET	ABOVE ACCESSIBLE CEILING	(2)	WAP-1	PROVIDE SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING.	NO TAG = -- HL = -	NO TAG = -- HL = -	NO TAG = -- HL = (1) 1"	--	IN HARDLID LOCATIONS, PROVIDE CONDUIT TO ACCESSIBLE CEILING OR AS SHOWN ON THE DRAWINGS. PROVIDE PULL STRING.
UNDER OR IN FLOOR DEVICES										
FB-T1 #	COMMUNICATIONS / POWER FLOOR BOX	IN FLOOR	(2)	FB	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	--	--	YES	--	PROVIDE CONTINUOUS CONDUITS FROM FLOOR BOX OVER TO WALL AND UP INTO ACCESSIBLE CEILING SPACE OF THE LEVEL IT SERVES. CAP WITH NYLON BUSHINGS AND PROVIDE PULL STRINGS. REFER TO DETAIL FOR CONDUIT SIZE REQUIREMENTS.
FB-TX AV #	COMMUNICATIONS / POWER / AUDIO VISUAL FLOOR BOX	IN FLOOR	(2)	FB-AV	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	--	--	YES	--	PROVIDE CONTINUOUS CONDUITS FROM FLOOR BOX OVER TO WALL AND UP INTO ACCESSIBLE CEILING SPACE OF THE LEVEL IT SERVES. CAP WITH NYLON BUSHINGS AND PROVIDE PULL STRINGS. REFER TO DETAIL FOR CONDUIT SIZE REQUIREMENTS.
PT-T1 #	COMMUNICATIONS / POWER POKE-THRU	IN FLOOR	(2)	PT	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	--	--	YES	--	PROVIDE CONTINUOUS CONDUITS FROM POKE-THRU OVER TO WALL AND UP INTO ACCESSIBLE CEILING SPACE OF THE LEVEL IT SERVES. CAP WITH NYLON BUSHINGS AND PROVIDE PULL STRINGS. REFER TO DETAIL FOR CONDUIT SIZE REQUIREMENTS.
PT-TX AV #	COMMUNICATIONS / POWER / AUDIO VISUAL POKE-THRU	IN FLOOR	(2)	PT-AV	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	--	--	YES	--	PROVIDE CONTINUOUS CONDUITS FROM POKE-THRU OVER TO WALL AND UP INTO ACCESSIBLE CEILING SPACE OF THE LEVEL IT SERVES. CAP WITH NYLON BUSHINGS AND PROVIDE PULL STRINGS. REFER TO DETAIL FOR CONDUIT SIZE REQUIREMENTS.
	FURNITURE FEED POKE THRU	IN FLOOR	--	--	ROUTE CABLING THROUGH POKE-THRU TO FURNITURE.	--	--	YES	--	PROVIDE CONDUIT FROM POKE-THRU TO CABLE TRAY ON FLOOR BELOW OR OVER TO WALL AND UP INTO ACCESSIBLE CEILING SPACE AS SHOWN ON DRAWINGS. CAP WITH NYLON BUSHINGS AND PROVIDE PULL STRINGS.

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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
Job Number	157132.000	

TITLE

STRUCTURED CABLING LEGEND

SHEET NUMBER

T-010

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SYNCHRONIZED CLOCK SYSTEM LEGEND

				BY SYNCHRONIZED CLOCK SYSTEM CONTRACTOR	ROUGH-IN AND SUPPORT BY ELECTRICAL CONTRACTOR			
SYMBOL	DESCRIPTION	DETAIL	MOUNTING HEIGHT ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE	NOTES	PROVIDE BACKBOX	PROVIDE PLASTER RING	PROVIDE CONDUIT	NOTES
C1	xx" - SYNCHRONIZED CLOCK - BATTERY	--	+84"	PROVIDE AND INSTALL CLOCK. COORDINATE EXACT LOCATION AND HEIGHT WITH ARCHITECT AND INTERIOR DESIGNER PRIOR TO INSTALLATION.	--	--	--	--
C2	SYNCHRONIZED CLOCK - DIGITAL	--	+84"	PROVIDE AND INSTALL CLOCK. COORDINATE EXACT LOCATION AND HEIGHT WITH ARCHITECT AND INTERIOR DESIGNER PRIOR TO INSTALLATION.	SEE NOTE		(1) 1"	INSTALL CUSTOM BACKBOX FURNISHED WITH CLOCK. PROVIDE CONDUIT FROM BOX UP INTO CLOSEST ACCESSIBLE CEILING SPACE OF THE SAME ROOM AS THE STATION AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING. PROVIDE POWER, CONNECT TO PIGTAIL CORD.
ET	SYNCHRONIZED CLOCK - DIGITAL ELAPSED TIMER	--	+84"	PROVIDE AND INSTALL CLOCK. FURNISH BACKBOX TO ELECTRICAL CONTRACTOR.	2-GANG	1-GANG	(1) 1"	INSTALL CUSTOM BACKBOX FURNISHED WITH CLOCK. PROVIDE CONDUIT FROM BOX UP INTO CLOSEST ACCESSIBLE CEILING SPACE OF THE SAME ROOM AS THE STATION AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING. PROVIDE POWER, CONNECT TO PIGTAIL CORD.
ET S/S	ELAPSED TIMER START / STOP / RESET CONTROLLER	--	+48"	PROVIDE AND INSTALL CONTROLLER.	2-GANG	1-GANG	(1) 1"	PROVIDE CONDUIT FROM BOX TO THE BACKBOX OF THE CONTROLLED CLOCK. PROVIDE PULL STRING.

STATION ALERTING / PAGING COMBINED-USE PURVIS SYMBOL LIST

				BY OVERHEAD PAGING SYSTEM CONTRACTOR	ROUGH-IN AND SUPPORT BY ELECTRICAL CONTRACTOR			
SYMBOL	DESCRIPTION	DETAIL	MOUNTING HEIGHT ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE	NOTES	PROVIDE BACKBOX	PROVIDE PLASTER RING	PROVIDE CONDUIT	NOTES
OVERHEAD PAGING								
FS	OVERHEAD PAGING SYSTEM ANALOG LOUDSPEAKER - 2'X2' DROP-TILE MOUNTED LOUDSPEAKER	--	IN FINISHED CEILING	PROVIDE LOUDSPEAKER. ROUTE CABLE AS REQUIRED BY SYSTEM IN DESIGNATED ZONES. PROVIDE ZONING AS SHOWN ON PLANS, ZONE CHART AND SPECIFICATIONS	--	--	--	--
FS L	OVERHEAD PAGING SYSTEM ANALOG LOUDSPEAKER - 2'X2' DROP-TILE MOUNTED LOUDSPEAKER WITH BEACON LIGHT	--	IN FINISHED CEILING	PROVIDE LOUDSPEAKER BEACON ASEMBLY. ROUTE CABLE AS REQUIRED BY SYSTEM IN DESIGNATED ZONES. PROVIDE ZONING AS SHOWN ON PLANS, ZONE CHART AND SPECIFICATIONS	--	--	--	--
FS	OVERHEAD PAGING SYSTEM ANALOG LOUDSPEAKER - GYPSUM CEILING MOUNTED LOUDSPEAKER	--	IN FINISHED CEILING	PROVIDE LOUDSPEAKER. ROUTE CABLE AS REQUIRED BY SYSTEM IN DESIGNATED ZONES. PROVIDE ZONING AS SHOWN ON PLANS, ZONE CHART AND SPECIFICATIONS	1-GANG	--	(1) 3/4"	PROVIDE CONDUIT FROM BOX TO NEXT LOUDSPEAKER BOX OR TO ACCESSIBLE CEILING AS SHOWN ON DRAWINGS. CAP WITH NYLON BUSHINGS AND PROVIDE PULL STRINGS.
FSX	OVERHEAD PAGING SYSTEM ANALOG LOUDSPEAKER - WALL MOUNTED LOUDSPEAKER	--	+84"	PROVIDE LOUDSPEAKER. ROUTE CABLE AS REQUIRED BY SYSTEM IN DESIGNATED ZONES. PROVIDE ZONING AS SHOWN ON PLANS, ZONE CHART AND SPECIFICATIONS	1-GANG	--	(1) 3/4"	PROVIDE CONDUIT FROM BOX TO ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
FSX	OVERHEAD PAGING SYSTEM ANALOG DIRECTIONAL/HORN LOUDSPEAKER - CEILING MOUNTED LOUDSPEAKER	--	IN FINISHED CEILING	PROVIDE LOUDSPEAKER. ROUTE CABLE AS REQUIRED BY SYSTEM IN DESIGNATED ZONES. PROVIDE ZONING AS SHOWN ON PLANS, ZONE CHART AND SPECIFICATIONS	1-GANG	--	(1) 3/4"	PROVIDE CONDUIT FROM BOX TO ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
FS PEND	OVERHEAD PAGING SYSTEM ANALOG LOUDSPEAKER - PENDANT MOUNTED LOUDSPEAKER	--	FROM STRUCTURE THROUGH CEILING	PROVIDE LOUDSPEAKER. ROUTE CABLE AS REQUIRED BY SYSTEM IN DESIGNATED ZONES. PROVIDE ZONING AS SHOWN ON PLANS, ZONE CHART AND SPECIFICATIONS	1-GANG	--	(1) 3/4"	
M	OVERHEAD PAGING SYSTEM MICROPHONE	--	BOX AT +18", DEVICE ON WORK SURFACE	ROUTE CABLE AS REQUIRED BY SYSTEM.	2-GANG	1-GANG	(1) 3/4"	PROVIDE CONDUIT FROM BOX TO ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
VC	OVERHEAD PAGING SYSTEM VOLUME CONTROL	--	+48"	ROUTE CABLE SO VOLUME CONTROL CONTROLS THE ASSOCIATED LOUDSPEAKER'S VOLUME.	2-GANG	1-GANG	(1) 3/4"	PROVIDE CONDUIT FROM BOX TO ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
DR	DORM REMOTE DEVICE	--	+48"	ROUTE CABLE SO DORM REMOTE DEVICE CONTROLS THE ASSOCIATED LIGHTING LEVEL.	2-GANG	1-GANG	(1) 3/4"	PROVIDE CONDUIT FROM BOX TO ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
NS	AMBIENT NOISE SENSOR	--	+12'-0"		--	--	--	

PAGING ZONE NOTES

1. REFER TO OVERHEAD PAGING ZONE CHART FOR DEPARTMENT LEVEL ZONING.
2. IN ADDITION TO THE OVERHEAD PAGING ZONING CHART, CONFIGURE ALL CALL TO ADDRESS EVERY ZONE/LOUDSPEAKER PER LEVEL AND THROUGHOUT THE BUILDING.
3. ANY OVERHEAD PAGING LOUDSPEAKERS IN ELEVATOR CABS WILL BE ON THE ALL CALL ZONE.
4. COORDINATE FINAL ZONING WITH OWNER PRIOR TO SUBMITTALS.

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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
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Job Number 157132.000

TITLE
SYNCHRONIZED CLOCK AND OVERHEAD PAGING SYSTEM LEGENDS

SHEET NUMBER
T-020

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TECHNOLOGY SYSTEMS RESPONSIBILITY

	SYSTEMS BREAKOUT	PROVIDED BY: OWNER	GENERAL CONTRACTOR	ELECTRICAL CONTRACTOR	CABLING CONTRACTOR	SECURITY CONTRACTOR	OVERHEAD PAGING CONTRACTOR	AUDIO / VISUAL SYSTEM VENDOR	NETWORK/ TELEPHONE VENDOR
ROUGH-IN AND SUPPORT									
1	BACKBOXES, CONDUITS, SLEEVES, FLOOR PENETRATIONS, ETC. FOR ALL SYSTEMS LISTED IN THIS MATRIX.	---	---	✓	---	---	---	---	---
2	BLOCKING IN WALL FOR WALL-MOUNTED TELEVISIONS, TRACKING BOARDS, AUDIO VISUAL DISPLAYS, COMPUTERS, ETC.	---	✓	---	---	---	---	---	---
3	FIRE RATED SLEEVE ASSEMBLIES, CONDUIT SLEEVES AND FIRESTOPPING	---	---	✓	---	---	---	---	---
4	POWER OUTLETS FOR ALL SYSTEMS	---	---	✓	---	---	---	---	---
5	ALL BACKBOXES, JUNCTION BOXES, PULLBOXES, AND CONDUIT FOR ALL SYSTEMS	---	---	✓	---	---	---	---	---
6	WIRE BASKET TRAY THROUGH CORRIDORS	---	---	✓	---	---	---	---	---
7	MAIN GROUNDING WITH BUSBARS	---	---	✓	---	---	---	---	---
8	TELECOM ROOM PLYWOOD BACKBOARD	---	✓	---	---	---	---	---	---
STRUCTURED CABLING AND IT INFRASTRUCTURE									
1	FACE PLATES, INSERTS, JACKS FOR DATA/VOICE/WIRELESS OUTLETS	---	---	✓	---	---	---	---	---
2	FIBER BACKBONE, COPPER RISER, UTP CABLING SUPPORTED ON J-HOOKS	---	---	✓	---	---	---	---	---
3	CABLE TRAY INSIDE TELECOM ROOMS, EQUIPMENT RACKS AND CABINETS, CABLE MANAGEMENT UNITS, PATCH PANELS	---	---	✓	---	---	---	---	---
4	GROUNDING OF RACKS, CABLE TRAY AND OTHER EQUIPMENT INSIDE TELECOM ROOMS	---	---	✓	---	---	---	---	---
CATV SYSTEM									
1	FACE PLATES, INSERTS, JACKS FOR CATV OUTLETS	---	---	✓	---	---	---	---	---
2	COAX AND/OR UTP CABLING INFRASTRUCTURE, BACKBONE WITH J-HOOKS	---	---	✓	---	---	---	---	---
3	TELEVISIONS AND WALL MOUNTS	✓	---	---	---	---	---	---	---
4	INSTALLATION OF WALL MOUNTS	✓	---	---	---	---	---	---	---
5	CATV UTP HUBS, AMPLIFIERS, SWITCHES, BALUNS, SPLITTERS, COUPLERS, ETC.	---	---	✓	---	---	---	---	---
6	BED CONTROL/NURSE CALL PILLOW SPEAKER INTERFACE CABLE AND CONNECTION	---	---	✓	---	---	---	---	---
SECURITY SYSTEM									
1	VSS CAMERAS & MOUNTING HARDWARE	---	---	---	---	✓	---	---	---
2	SECURITY INTERCOMS, EMERGENCY CALL STATIONS	---	---	---	---	✓	---	---	---
3	UTP CABLING FOR IP CAMERAS AND EMERGENCY CALL STATIONS	---	---	✓	---	---	---	---	---
4	CARD READERS, DOOR POSITION SWITCHES, PANIC AND REMOTE RELEASE BUTTONS	---	---	✓	---	---	---	---	---
5	ACCESS CONTROL SYSTEM CABLING WITH SUPPORT VIA J-HOOKS	---	---	✓	---	---	---	---	---
6	INTELLIGENT FIELD PANELS	---	---	✓	---	---	---	---	---
7	VIDEO SYSTEM HARDWARE, SERVERS, SOFTWARE, STORAGE SYSTEM, & PRINTERS	---	---	✓	---	---	---	---	---
8	ELECTRIFIED DOOR HARDWARE AND PERIPHERALS	---	✓	---	---	---	---	---	---
9	ACCESS CARDS	---	---	✓	---	---	---	---	---
10	ACCESS CONTROL AND VIDEO SERVERS AND RECORDERS	---	---	✓	---	---	---	---	---
11	ACCESS CARD CREATION STATION (WORKSTATION SOFTWARE, CAMERA, PRINTERS)	---	---	✓	---	---	---	---	---
12	SECURITY COMMAND CENTER BUILD-OUT (MOUNTS, MONITORS, WORKSTATION SOFTWARE)	---	---	✓	---	---	---	---	---
13	FIRE ALARM INTERFACE TO ACCESS CONTROL SYSTEM AND LOCKS	---	---	✓	---	---	---	---	---
CLOCK SYSTEMS									
1	SYNCHRONIZED CLOCKS, ELAPSED TIME CLOCKS, CODE BLUE CLOCKS, ACCESSORIES, HARDWARE, HEAD-END EQUIPMENT	✓	---	---	---	---	---	---	---

TECHNOLOGY SYSTEMS RESPONSIBILITY

	SYSTEMS BREAKOUT	PROVIDED BY: OWNER	GENERAL CONTRACTOR	ELECTRICAL CONTRACTOR	CABLING CONTRACTOR	SECURITY CONTRACTOR	OVERHEAD PAGING CONTRACTOR	AUDIO / VISUAL SYSTEM VENDOR	NETWORK/ TELEPHONE VENDOR
NETWORK AND TELEPHONE SYSTEMS									
1	NETWORK HARDWARE - SWITCHES, ROUTERS, FIREWALLS, VPN APPLIANCES, WIRELESS HARDWARE, ETC.	---	---	---	---	---	---	---	✓
2	TELEPHONE SERVERS, VOIP HARDWARE AND SOFTWARE, ROUTERS, CIRCUIT INTERFACES	---	---	---	---	---	---	---	✓
4	TELEPHONES, PERSONAL COMMUNICATION DEVICES, WIRELESS PHONES, BATTERIES AND CHARGERS	---	---	---	---	---	---	---	✓
5	WIRELESS ACCESS POINTS	---	---	---	---	---	---	---	✓
6	INTEGRATION / COORDINATION	---	---	✓	---	---	---	---	✓
7	ORDER TELCO CIRCUITS FOR FACILITY	✓	---	---	---	---	---	---	---
8	ORDER TELEPHONE LINES FOR FIRE ALARM AND ELEVATORS	---	✓	✓	---	---	---	---	---
MISC. PERIPHERAL EQUIPMENT									
1	ON-DEMAND VIDEO SERVERS AND SOFTWARE	✓	---	---	---	---	---	---	---
2	CONTROL DISPLAYS WITH MOUNT	✓	---	---	---	---	---	---	---
3	INSTALLATION AND CONFIGURATION	✓	---	---	---	---	---	---	---
MISC. PERIPHERAL EQUIPMENT									
1	END USER PC'S	✓	---	---	---	---	---	---	---
2	END USER PRINTERS	✓	---	---	---	---	---	---	---
3	SCANNERS	✓	---	---	---	---	---	---	---
4	COPIERS AND FAX MACHINES	✓	---	---	---	---	---	---	---
5	WALL MOUNTS FOR COMPUTERS AND/OR MONITORS	✓	---	---	---	---	---	---	---
AUDIO VISUAL SYSTEMS									
1	SPECIALTY FACEPLATES WITH AUDIO VISUAL CONNECTIONS	✓	---	---	---	---	---	---	---
2	AUDIO VISUAL CABLING, CONTROL CABLING, SPECIALTY CABLING SUPPORTED ON J-HOOKS	✓	---	---	---	---	---	---	---
3	ACTIVE AUDIO VISUAL EQUIPMENT - AMPLIFIERS, MICROPHONES, SPEAKERS, PROJECTORS, CONTROLS SYSTEMS, DSP'S, ETC.	✓	---	---	---	---	---	---	---
4	PROJECTION SCREENS	✓	✓	---	---	---	---	---	---
5	ABOVE CEILING COORDINATION AND CEILING PREPARATION/ROUGH-IN FOR PROJECTION SCREENS	✓	✓	---	---	---	---	---	---
6	CONFERENCE, TRAINING, TEAM, BOARDROOM AND MOUNTING BRACKETS	---	✓	---	---	---	---	---	---
7	AUDIO VISUAL RACKS, CABINETS, & CABLE MANAGEMENT UNITS	---	---	---	---	---	---	✓	---
8	COMPUTER FOR CONTROLLING AUDIO VISUAL SYSTEM IN ROOM	✓	---	---	---	---	---	---	---

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CITY OF WORCESTER

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
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Job Number 157132.000

TITLE

TECHNOLOGY SYSTEMS RESPONSIBILITY MATRIX

SHEET NUMBER

T-030

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CABLING NOTES:

1. ALL LOW VOLTAGE CABLING FROM OUTLETS AND DEVICES ON THIS PLAN SHALL BE HOMERUN TO THE SERVER ROOM ON SECOND FLOOR U.O.N.
2. CONTRACTOR TO ROUTE LOW VOLTAGE CABLING FROM EACH ROOM TO CORRIDOR VIA SMOKE AND ACOUSTICAL PATHWAYS (THROUGH NON-FIRE RATED WALLS) OR VIA FIRE-RATED PATHWAYS (THROUGH FIRE RATED WALLS). REFER TO ARCHITECTURAL DRAWINGS FOR WALL TYPES. INSTALL PATHWAYS ABOVE ACCESSIBLE CEILING. PROVIDE ADDITIONAL PATHWAYS AS REQUIRED.
3. PROVIDE J-HOOKS MOUNTED EVERY 5'-0" (MAX.) TO SUPPORT CABLING NOT IN CONDUIT OR CABLE TRAY.
4. THIS FLOOR PLAN REPRESENTS CABLING DISTRIBUTION INTENT FOR THE FLOOR. ACTUAL DISTRIBUTION PATHWAY ROUTING TO BE COORDINATED WITH OTHER WORK, INCLUDING ARCHITECTURAL, SPRINKLER AND HVAC.

DRAWING KEY NOTES:

1. J-HOOK PATHWAYS IN ACCESSIBLE CEILING.
2. (4) CONDUIT SLEEVES AT FIRE RATED WALL PENETRATIONS. PROVIDE PROPER FIRESTOPPING AT THE CONDUIT TO WALL PENETRATIONS.

1 **LEVEL 01 - TELECOM FLOOR PLAN - DISTRIBUTION**
1/8" = 1'-0"

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KEY PLAN

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Job Number 15713.2.000

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TELECOM FLOOR PLAN - LEVEL 01 - DISTRIBUTION

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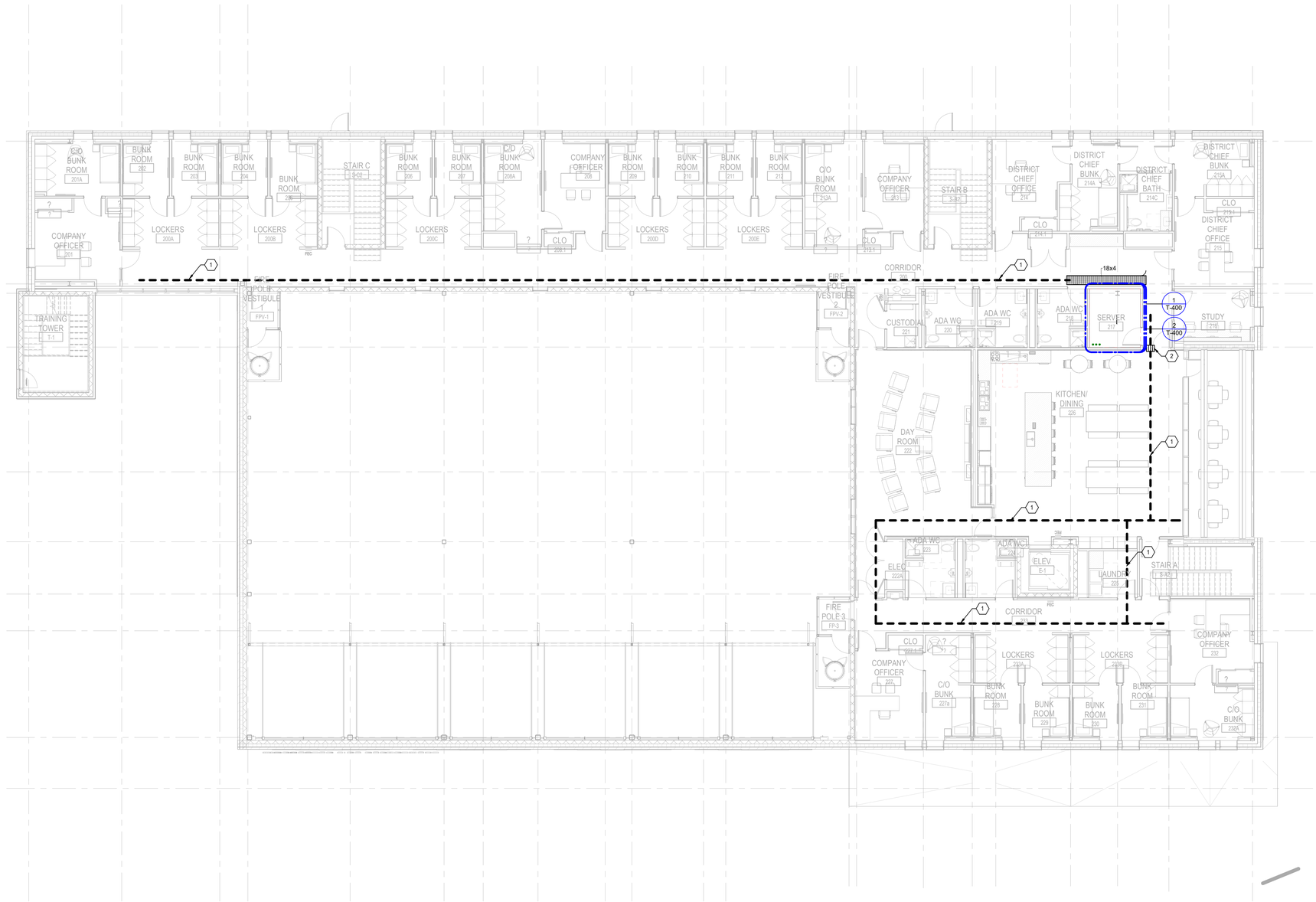

CABLING NOTES:

1. ALL LOW VOLTAGE CABLING FROM OUTLETS AND DEVICES ON THIS PLAN SHALL BE HOMERUN TO THE SERVER ROOM ON SECOND FLOOR U.O.N.
2. CONTRACTOR TO ROUTE LOW VOLTAGE CABLING FROM EACH ROOM TO CORRIDOR VIA SMOKE AND ACOUSTICAL PATHWAYS (THROUGH NON-FIRE RATED WALLS) OR VIA FIRE-RATED PATHWAYS (THROUGH FIRE RATED WALLS). REFER TO ARCHITECTURAL DRAWINGS FOR WALL TYPES. INSTALL PATHWAYS ABOVE ACCESSIBLE CEILING. PROVIDE ADDITIONAL PATHWAYS AS REQUIRED.
3. PROVIDE J-HOOKS MOUNTED EVERY 5'-0" (MAX.) TO SUPPORT CABLING NOT IN CONDUIT OR CABLE TRAY.
4. THIS FLOOR PLAN REPRESENTS CABLING DISTRIBUTION INTENT FOR THE FLOOR. ACTUAL DISTRIBUTION PATHWAY ROUTING TO BE COORDINATED WITH OTHER WORK, INCLUDING ARCHITECTURAL, SPRINKLER AND HVAC.

DRAWING KEY NOTES:

1. J-HOOK PATHWAYS IN ACCESSIBLE CEILING.
2. (4) CONDUIT SLEEVES AT FIRE RATED WALL PENETRATIONS. PROVIDE PROPER FIRESTOPPING AT THE CONDUIT TO WALL PENETRATIONS.

1 LEVEL 02 - TELECOM FLOOR PLAN - DISTRIBUTION

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PROJECT

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CITY OF WORCESTER

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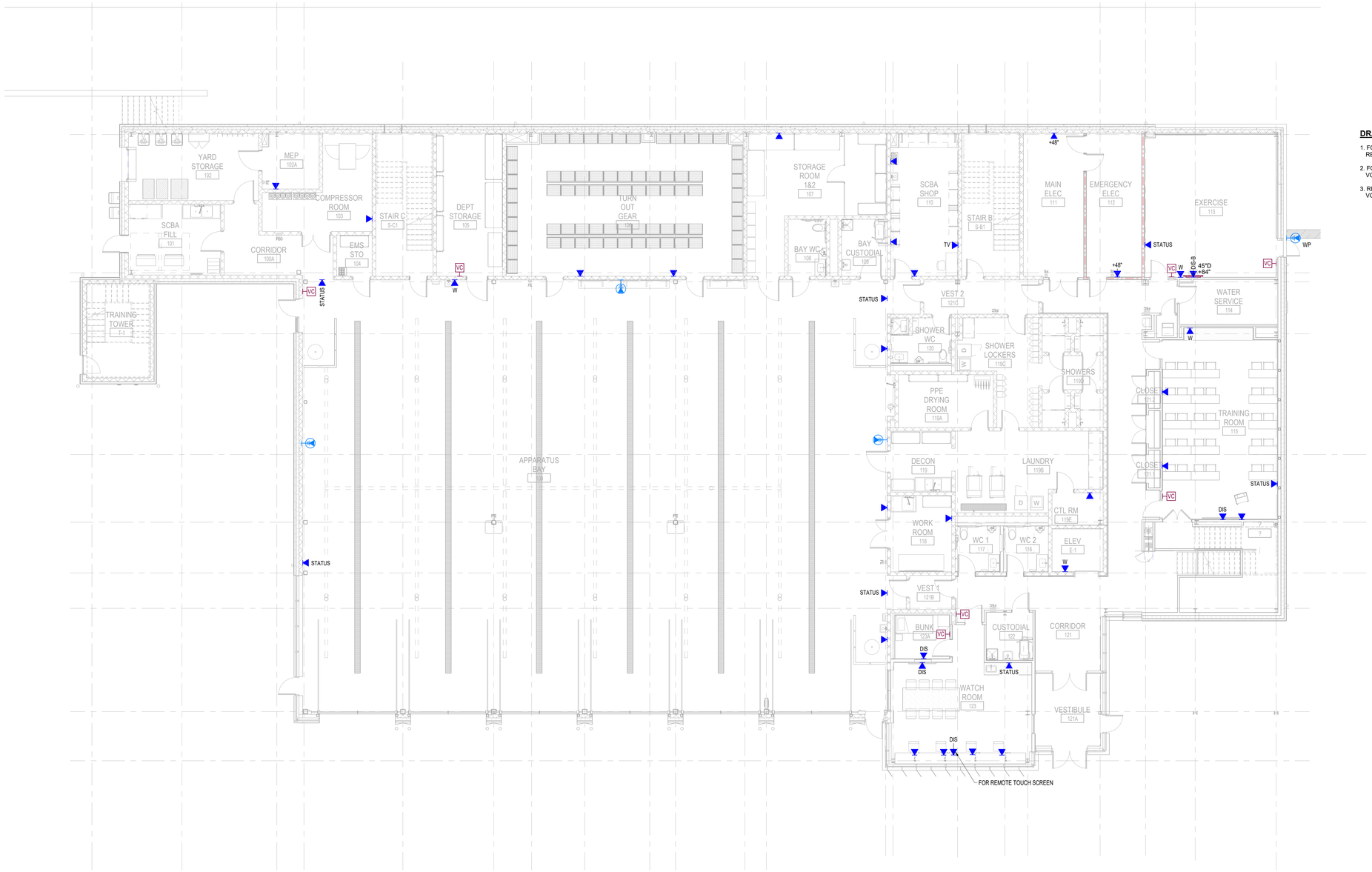

DRAWING NOTES:

1. FOR DEVICE SYMBOL LEGEND, NOTES AND ABBREVIATIONS, REFER TO SHEETS T-000, T-010, AND T-020.
2. FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF LOW VOLTAGE DEVICES, REFER TO THE ARCHITECTURAL DRAWINGS.
3. REFER TO T-21X SERIES DRAWINGS FOR CEILING MOUNTED LOW VOLTAGE DEVICE LOCATIONS.

1 **LEVEL 01 - TELECOM FLOOR PLAN**

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TELECOM FLOOR PLAN - LEVEL 01 - DEVICES

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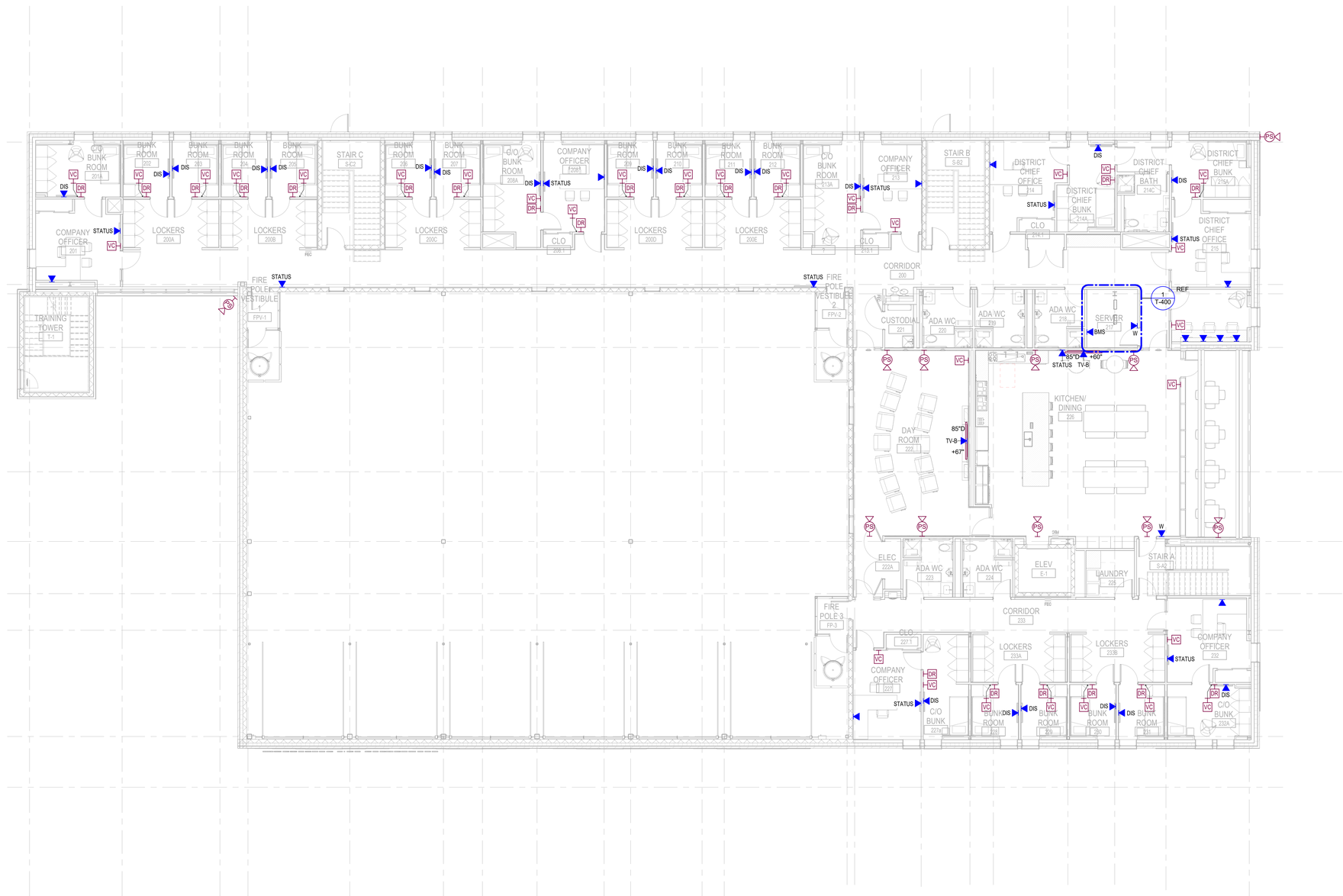

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1/8" = 1'-0"

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1. FOR DEVICE SYMBOL LEGEND, NOTES AND ABBREVIATIONS, REFER TO SHEETS T-000, T-010, AND T-020.
2. FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF LOW VOLTAGE DEVICES, REFER TO THE ARCHITECTURAL DRAWINGS.
3. REFER TO T-21X SERIES DRAWINGS FOR CEILING MOUNTED LOW VOLTAGE DEVICE LOCATIONS.

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TELECOM FLOOR PLAN - LEVEL 02 - DEVICES

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T-210

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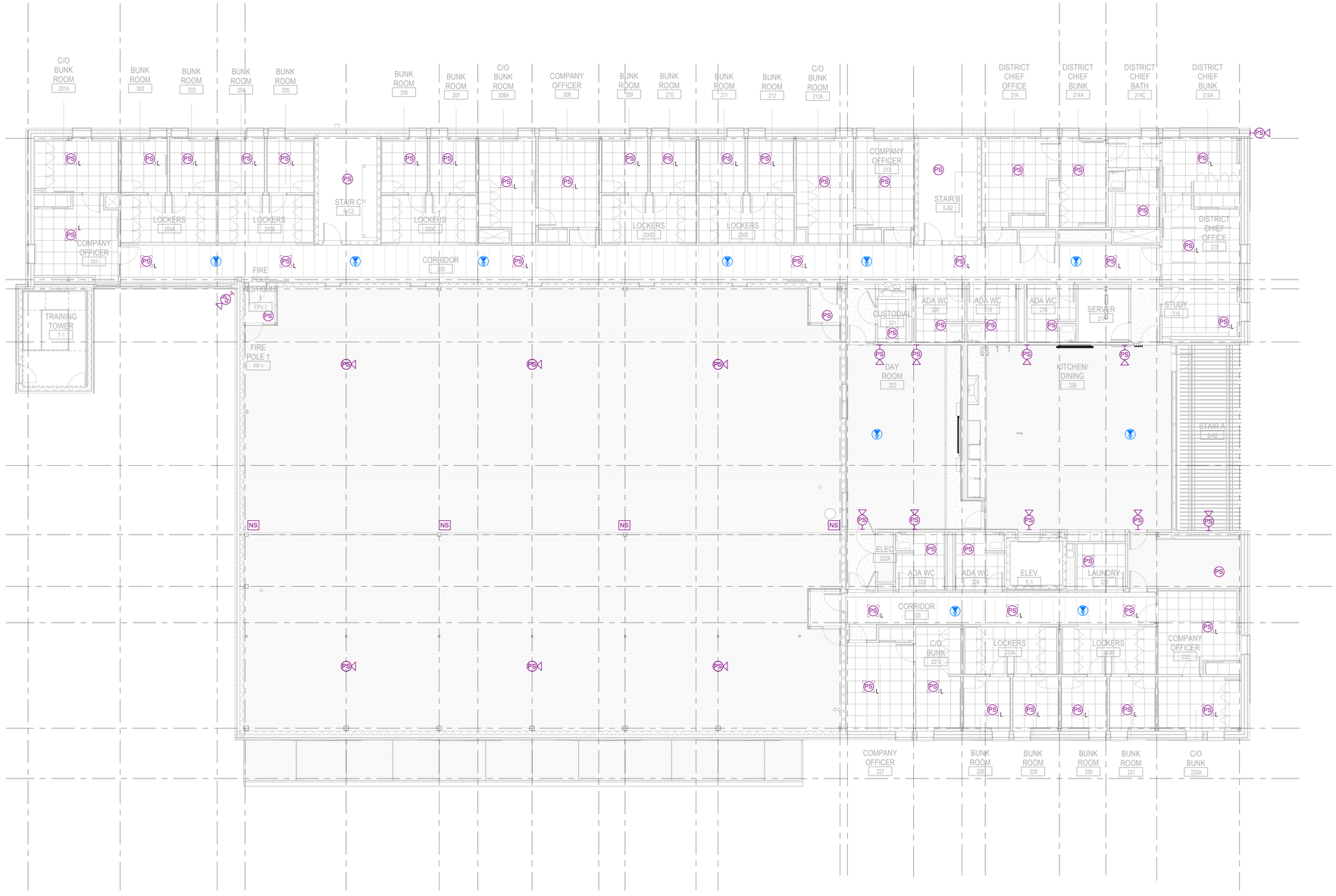

1 **LEVEL 02 - TELECOM CEILING PLAN**

1/8" = 1'-0"

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ENERGY MODEL
ANDELMANLELEK
1408 PROVIDENCE HWY, NORWOOD, MA 02062

NOT FOR CONSTRUCTION

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

TELECOM CEILING PLAN - LEVEL 02

SHEET NUMBER

T-211

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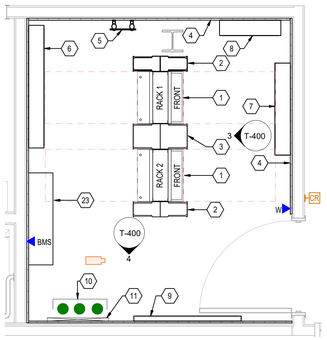
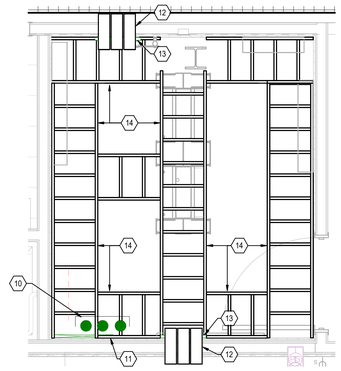


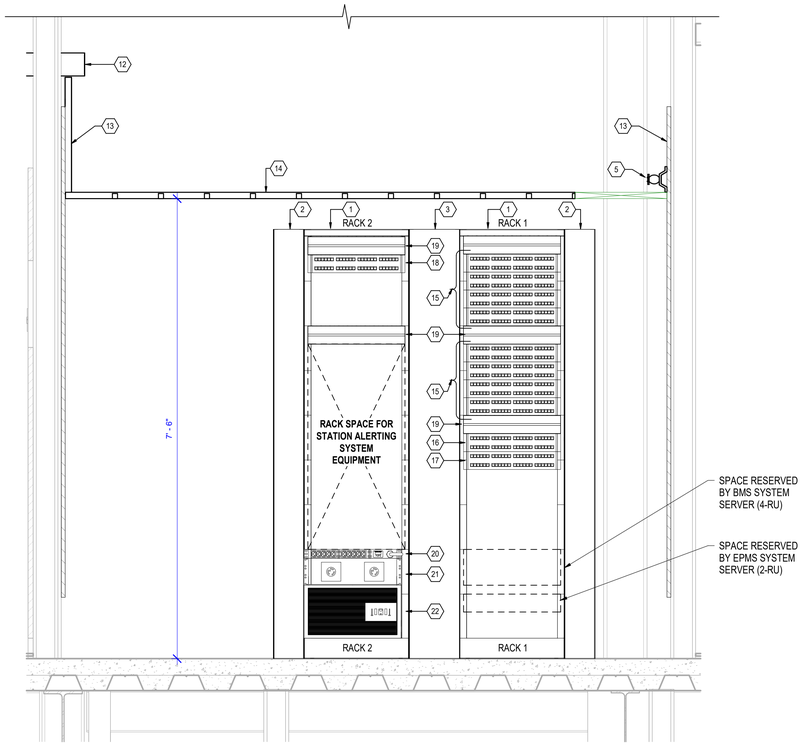
1 ENLARGED PLAN - LEVEL 2 - SERVER ROOM - LAYOUT

1/2" = 1'-0"



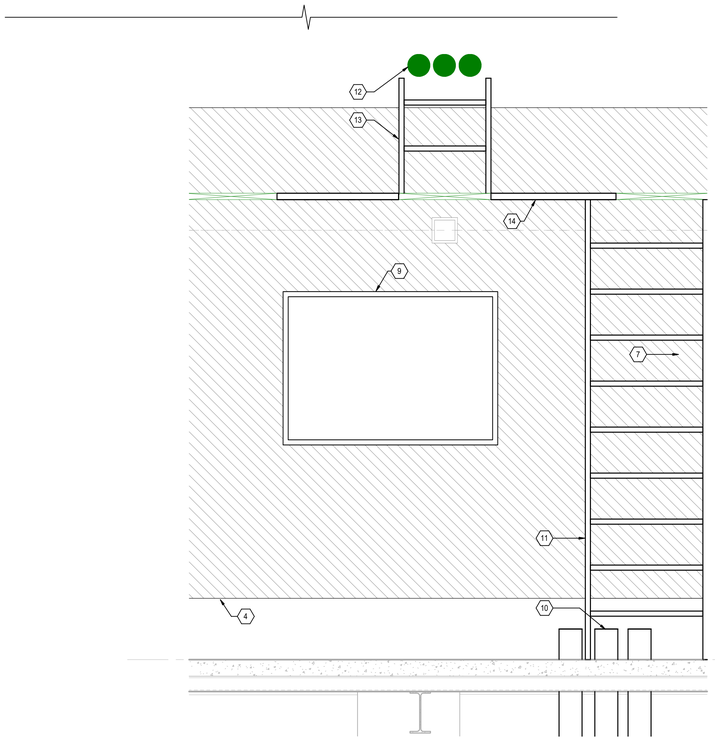
2 ENLARGED PLAN - LEVEL 2 - SERVER ROOM - PATHWAYS

1/2" = 1'-0"



3 SERVER ROOM RACK ELEVATION

1" = 1'-0"



4 SERVER ROOM WALL ELEVATION - SOUTH

1" = 1'-0"

KEYED NOTES

1. 7'-0" HIGH x 19" WIDE EQUIPMENT RACK WITH UNIVERSAL 5/8", 5/8", 1/2" ALTERNATING HOLE PATTERN FRONT AND BACK, AND BLACK BAKED ENAMEL FINISH. PROVIDE GROUND TERMINAL BLOCK, RACK BASE DUST COVER, AND RACK ISOLATION KIT. SECURE RACK TO FLOOR WITH CONCRETE FLOOR RACK MOUNTING KIT.
2. 6" WIDE VERTICAL CABLE MANAGER WITH HINGED DOOR.
3. 12" WIDE VERTICAL CABLE MANAGER WITH HINGED DOOR.
4. PLYWOOD BACKBOARD, 8'-0" HIGH X FULL LENGTH OF WALL. MOUNT WITH BOTTOM AT 12" ABOVE FINISH FLOOR. ROUGH ALL ELECTRICAL OUTLETS IN BACKBOARD FOR FLUSH MOUNT INSTALLATION OF FACEPLATES. BACKBOARDS SHALL BE 3/4" THICK AC EXTERIOR GRADE PLYWOOD. COUNTERSINK ALL SCREWS. PRIME WITH TWO COATS PRIMER, SANDING SMOOTH AFTER EACH COAT. FINISH WITH TWO COATS SEMI-GLOSS FIRE-RETARDANT PAINT, COLOR GREY. FINAL SURFACE SHALL BE UNIFORMLY SMOOTH AND EVEN. TOUCH UP AT END OF PROJECT. COORDINATE WORK WITH ELECTRICAL CONTRACTOR TO ENSURE THAT POWER RECEPTACLES ARE PROPERLY LOCATED AND WITH FACEPLATES FLUSH ON FACE OF BACKBOARD.
5. GROUNDING BUSBAR MOUNTED AT 84" ABOVE FINISH FLOOR, WITH TWO ROWS OF 7/16" HOLES AT 1" SPACING EACH WAY. MAKE ALL CONNECTS WITH TWO HOLE LONG BARREL COMPRESSION LUGS AND BOND TO BUSBAR WITH TWO 3/8" SS HEX HEAD CAP SCREWS WITH SS LOCKING NUTS. SEE GROUNDING SPECIFICATIONS AND GROUND BUSBAR DETAILS FOR NOTES.
6. SPACE FOR SECURITY SYSTEM CONTROL PANELS AND POWER SUPPLIES. REFER TO SECURITY DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATIO.
7. SPACE FOR WALL-MOUNTED SERVICE PROVIDER EQUIPMENT.
8. SPACE FOR WALL-MOUNTED OVERHEAD CATV SYSTEM EQUIPMENT.
9. CABLING SYSTEM AS-BUILT FLOOR PLAN, WALL MOUNTED IN FRAME.
10. THREE (3) 4" CONDUIT SLEEVES IN FLOOR SLAB. PROVIDE PROPER FIRESTOPPING AT THE CONDUIT TO SLAB PENETRATIONS.
11. 24" LADDER RACK MOUNTED VERTICALLY TO SUPPORT VERTICALLY ROUTED CABLES .
12. HORIZONTAL CABLING ENTERING ROOM OVERHEAD. PROVIDE QUANTITY OF FIRE RATED SLEEVES (OR APPROVED EQUIVALENT) AS REQUIRED PLUS (1) SPARE. EXTEND CABLES FROM WALL PENETRATION DOWN TO LADDER TRAY AT 7'-6" WITH VERTICALLY MOUNTED LADDER TRAY SECTIONS. REFER TO OVERALL PLANS FOR EXACT QUANTITIES.
13. 18" LADDER RACK MOUNTED VERTICALLY ON WALL FOR VERTICAL SUPPORT OF CABLING ENTERING THRU HORIZONTAL PATHWAYS.
14. 18" LADDER RACK, COLOR BLACK, MOUNTED AT 7'-6" ABOVE RACKS UNLESS NOTED OTHERWISE. PROVIDE BUTT-SPLICE KIT TO BUTT-SPLICE SECTIONS OF CABLE RUNWAY (PAINT BEFORE INSTALLING AND TOUCH UP AFTER INSTALLATION). PROVIDE ALL CABLE RUNWAY, FITTINGS, AND ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS. PROVIDE ALL ANGLE SUPPORT KITS, WALL SUPPORT KITS, AND SPLICE KITS AS REQUIRED.
15. 48-PORT CATEGORY 6 UTP PATCH PANEL FOR STATION CABLING TERMINATION.
16. 48-PORT CATEGORY 6A UTP PATCH PANEL FOR WAP CABLING TERMINATION.
17. 48-PORT CATEGORY 6 UTP PATCH PANEL FOR SECURITY CAMERA CABLING TERMINATION.
18. 48-PORT CATEGORY 6 UTP PATCH PANEL FOR COPPER RISER CABLING TERMINATION.
19. 2-RU HORIZONTAL CABLE MANAGER.
20. POWER STRIP
21. POWER PANEL
22. RACK MOUNTED UPS
23. SPACE RESERVED FOR BMS PANEL

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KEY PLAN

ISSUE CHART

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MARK	ISSUE	DATE

Job Number 157132.000

TITLE

SERVER ROOM ENLARGED PLANS AND ELEVATIONS

SHEET NUMBER

T-400

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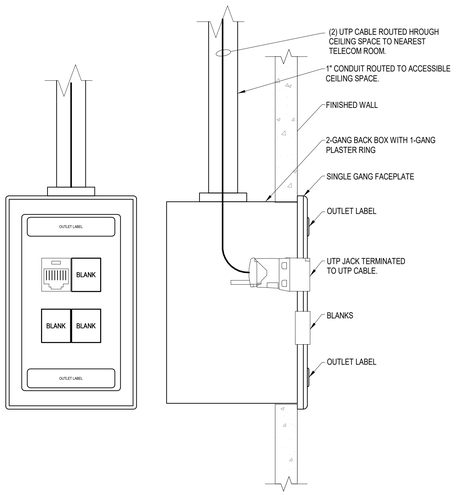
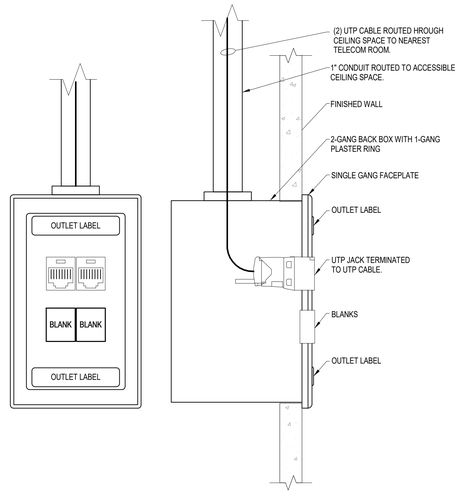


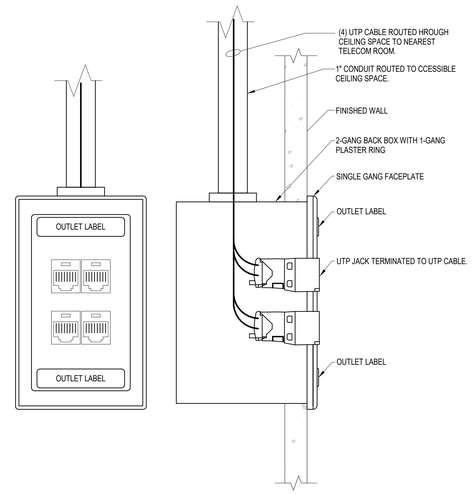
1 TYPICAL DATA OUTLET - 1-PORT

NTS SYMBOL: ◀1



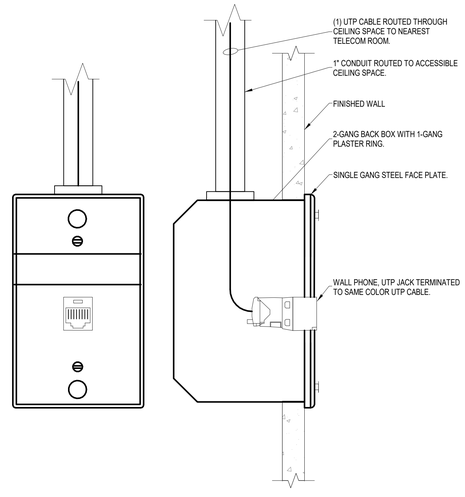
2 TYPICAL DATA OUTLET - 2-PORT

NTS SYMBOL: ◀



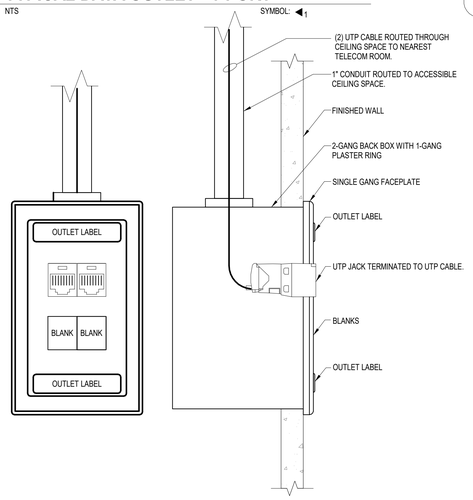
3 TYPICAL DATA OUTLET W/ (4) JACKS

NTS SYMBOL: ◀4



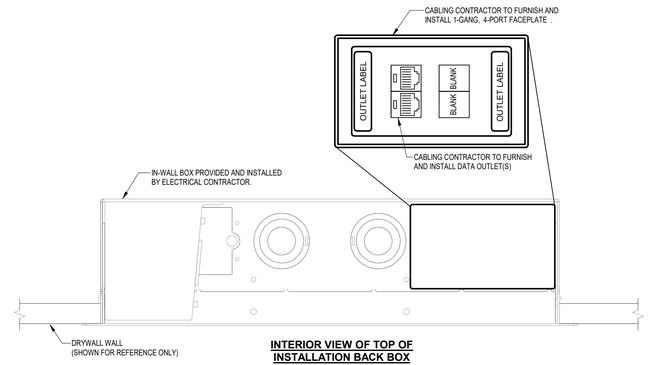
4 WALL PHONE OUTLET

NTS SYMBOL: ◀



5 TYPICAL TV OUTLET WITH (2) JACKS

NTS SYMBOL: ◀D ◀TD

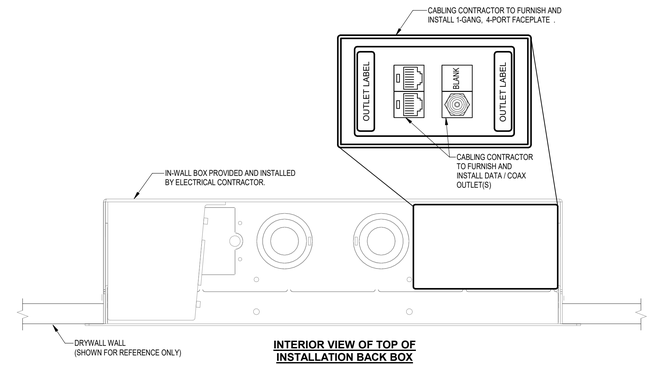


INTERIOR VIEW OF TOP OF INSTALLATION BACK BOX

NOTE:
IN-WALL BOX PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
ACTUAL IN-WALL BOX MODEL MAY VARY. THIS DETAIL IS SHOWN FOR INFORMATION ONLY.

6 IN-WALL BOX MOUNTED AV DISPLAY OUTLET WITH (2) DATA JACKS

NTS SYMBOL: ◀DIS-B



INTERIOR VIEW OF TOP OF INSTALLATION BACK BOX

NOTE:
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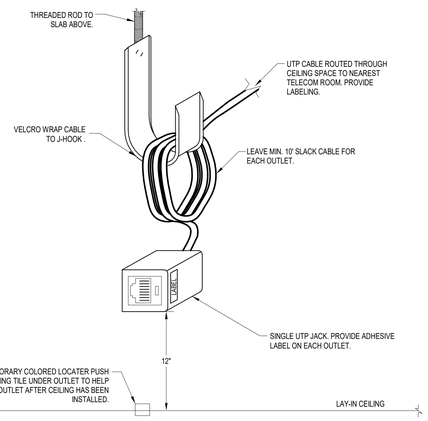
ACTUAL IN-WALL BOX MODEL MAY VARY. THIS DETAIL IS SHOWN FOR INFORMATION ONLY.

7 IN-WALL BOX MOUNTED TV DISPLAY OUTLET WITH (2) DATA+(1) COAX JACKS

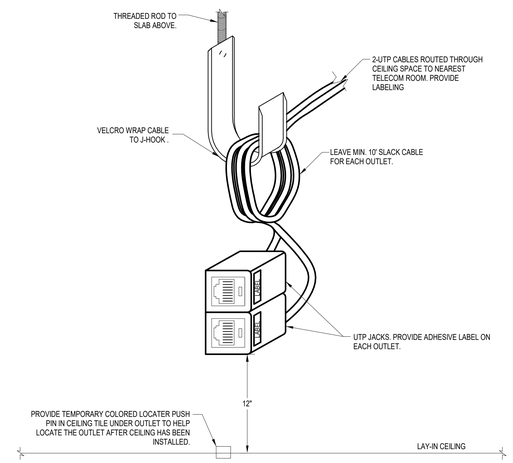
NTS SYMBOL: ◀TV-B



* = (1) DROP PER CAMERA

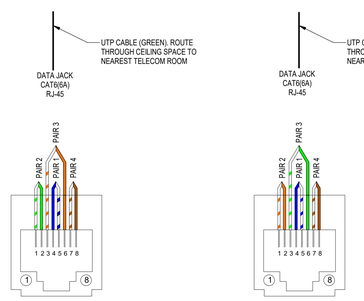
8 ABOVE CEILING DATA OUTLET - (1) JACK

NTS SYMBOL: ◀P-TUBE



9 ABOVE CEILING OUTLET - (2) JACKS

NTS SYMBOL: ◀ Y



T568A WIRING

PIN#	CABLE COLOR
1	WHITE/GREEN
2	GREEN
3	WHITE/ORANGE
4	BLUE
5	WHITE/BLUE
6	ORANGE
7	WHITE/BROWN
8	BROWN

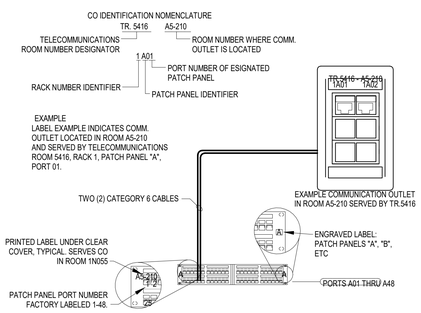
T568B WIRING *

PIN#	CABLE COLOR
1	WHITE/ORANGE
2	ORANGE
3	WHITE/GREEN
4	BLUE
5	WHITE/BLUE
6	GREEN
7	WHITE/BROWN
8	BROWN

* DEFAULT WIRING SCHEME

10 T568 WIRING SCHEMES

NTS



1 1 ANSI/TIA 606A OUTLET LABELING

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TECHNOLOGY TYPICAL DETAILS

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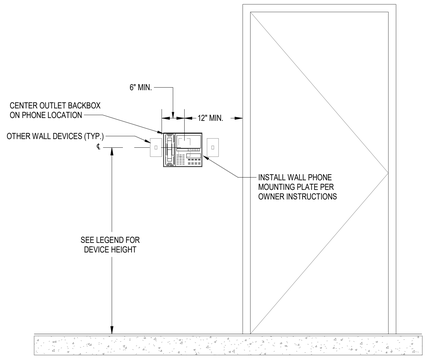
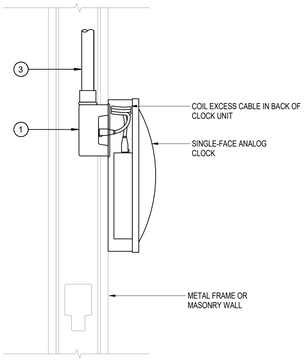


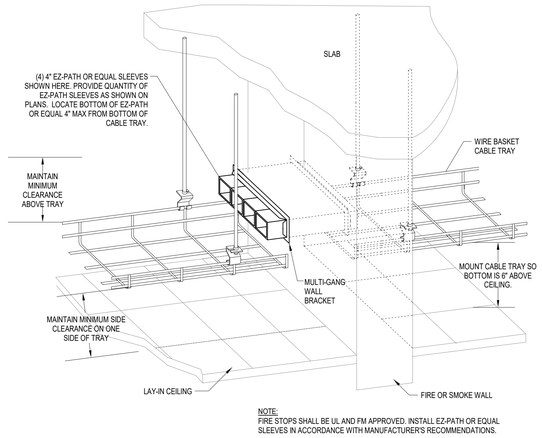
1 TYPICAL WALL PHONE DISTANCE FROM CORNER AND DOOR

12" = 1'-0"



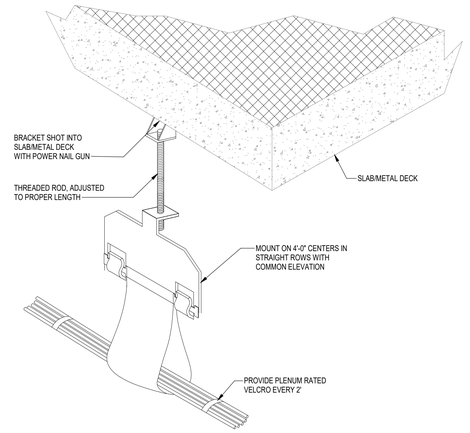
2 SINGLE-FACE ANALOG CLOCK

N.T.S.



3 EZ-PATH OVER CABLE TRAY

1" = 1'-0"



4 CABLE SLING ASSEMBLY

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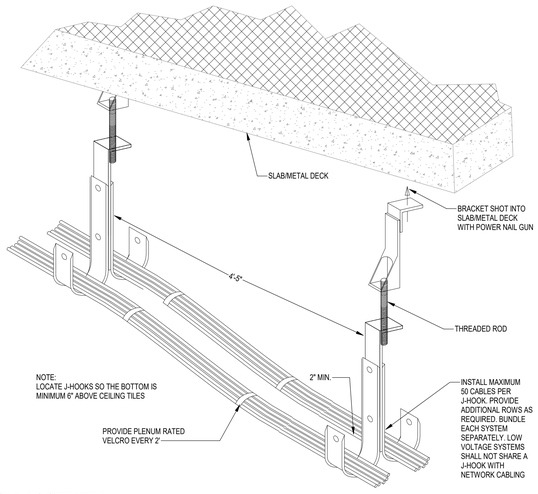
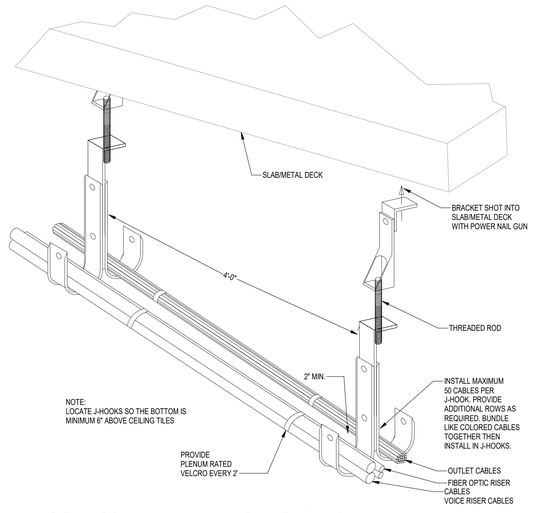


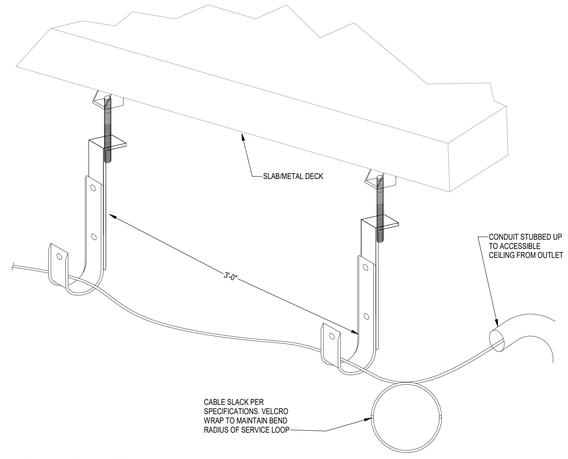
5 J-HOOK ASSEMBLY

NTS



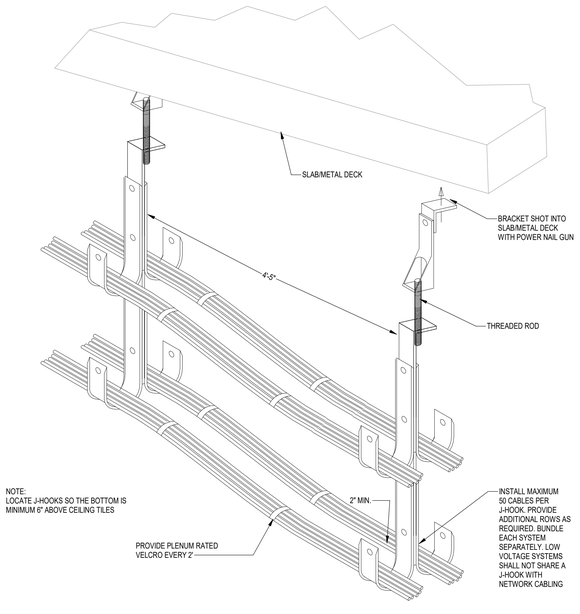
6 J-HOOK ASSEMBLY WITH RISER CABLES

NTS



7 SERVICE LOOP

NTS

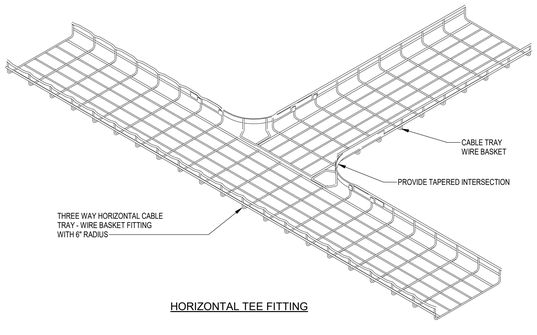


8 J-HOOK ASSEMBLY - TWO ROWS

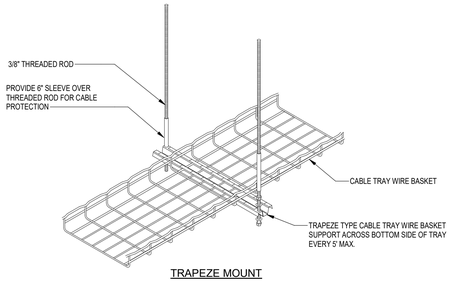
NTS

NOTES:

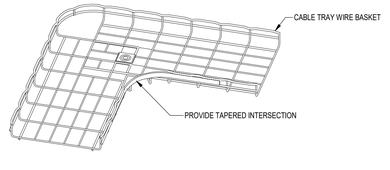
1. TRAPAZE MOUNT TRAY.
2. PROVIDE CORNER JUNCTIONS TO WRAP TRAY AROUND CORRIDORS CORNERS.
3. PROVIDE TEE FITTING WHERE TRAYS JOIN TOGETHER.
4. PROVIDE GROUND CONNECTION AND BONDING PER SPECIFICATIONS AND MANUFACTURER REQUIREMENTS.
5. ALIGN CABLE TRAY - WIRE BASKET WITH CONDUITS AND FIRE/SMOKE SLEEVES THAT PASS THROUGH FIRE OR SMOKE RATED WALLS.
6. MAINTAIN PROPER CLEARANCES AROUND TRAY AS NOTED IN THE SPECIFICATIONS.



HORIZONTAL TEE FITTING



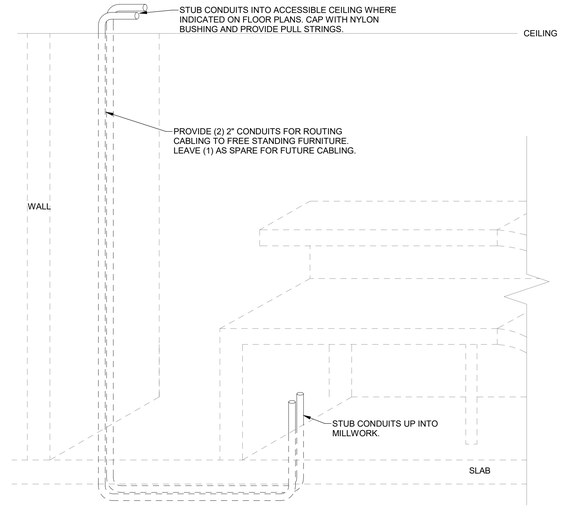
TRAPEZE MOUNT



CORNER JUNCTION

9 CABLE TRAY - WIRE BASKET

12" = 1'-0"



10 CONDUITS TO FREE STANDING MILLWORK

12" = 1'-0"

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MARK	ISSUE	DATE

Job Number 157132.000

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SHEET NUMBER

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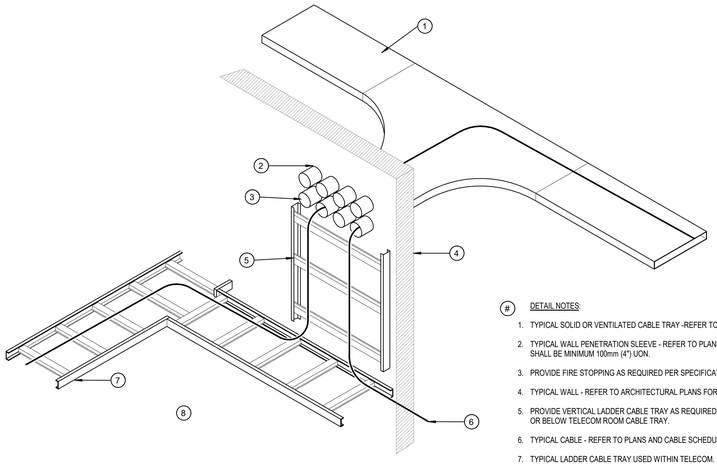
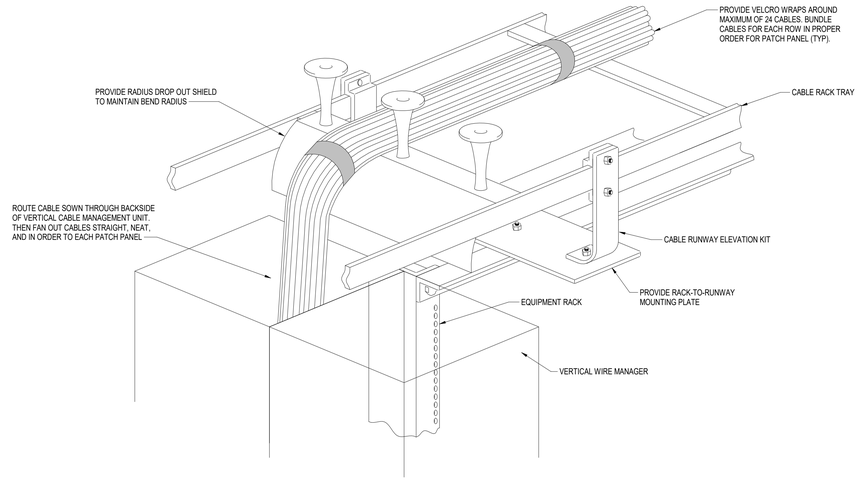


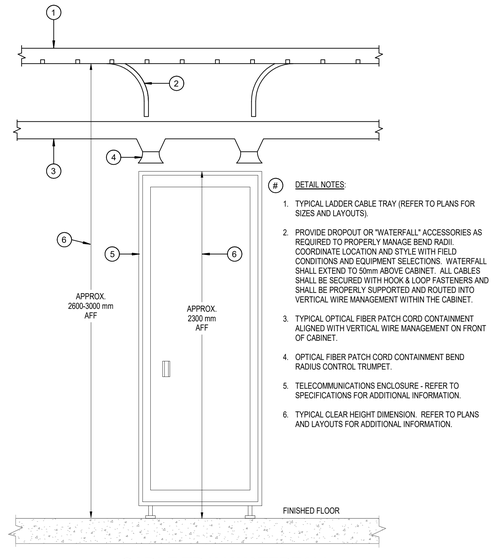
(#) DETAIL NOTES:

1. TYPICAL SOLID OR VENTILATED CABLE TRAY -REFER TO PLANS FOR TYPES, SIZES, MOUNTING HEIGHT AND LAYOUTS.
2. TYPICAL WALL PENETRATION SLEEVE - REFER TO PLANS FOR EXACT QUANTITY, SIZE, AND LOCATION. ALL SLEEVES SHALL BE MINIMUM 100mm (4") UON.
3. PROVIDE FIRE STOPPING AS REQUIRED PER SPECIFICATIONS.
4. TYPICAL WALL - REFER TO ARCHITECTURAL PLANS FOR DETAILS.
5. PROVIDE VERTICAL LADDER CABLE TRAY AS REQUIRED WHEN ENTRY CABLE TRAY IS GREATER THAN 500mm ABOVE OR BELOW TELECOM ROOM CABLE TRAY.
6. TYPICAL CABLE - REFER TO PLANS AND CABLE SCHEDULES FOR ADDITIONAL INFORMATION.
7. TYPICAL LADDER CABLE TRAY USED WITHIN TELECOM.
8. ROOMS - REFER TO PLANS FOR SIZES AND LAYOUTS.

6 CABLE TRAY ROOM ENTRANCE
N.T.S.



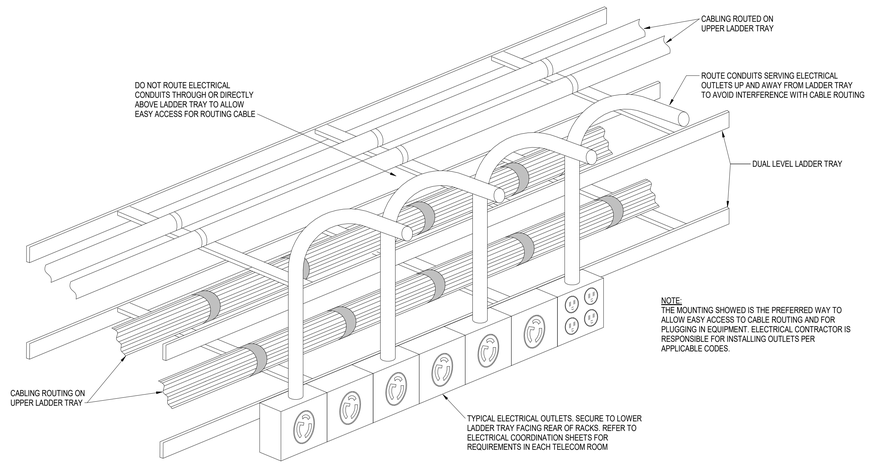
3 CABLE TRAY OVER RACK ELEVATION
N.T.S.



(#) DETAIL NOTES:

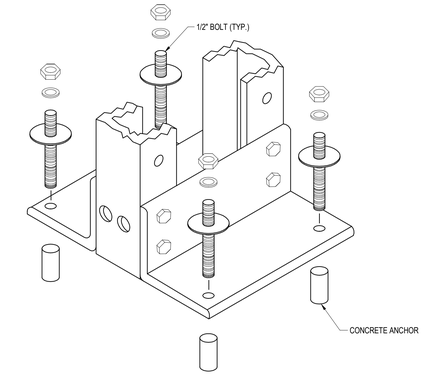
1. TYPICAL LADDER CABLE TRAY (REFER TO PLANS FOR SIZES AND LAYOUTS).
2. PROVIDE DROPOUT OR "WATERFALL" ACCESSORIES AS REQUIRED TO PROPERLY MANAGE BEND RADII. COORDINATE LOCATION AND STYLE WITH FIELD CONDITIONS AND EQUIPMENT SELECTIONS. WATERFALL SHALL EXTEND TO 50mm ABOVE CABINET. ALL CABLES SHALL BE SECURED WITH HOOK & LOOP FASTENERS AND SHALL BE PROPERLY SUPPORTED AND ROUTED INTO VERTICAL WIRE MANAGEMENT WITHIN THE CABINET.
3. TYPICAL OPTICAL FIBER PATCH CORD CONTAINMENT ALIGNED WITH VERTICAL WIRE MANAGEMENT ON FRONT OF CABINET.
4. OPTICAL FIBER PATCH CORD CONTAINMENT BEND RADIUS CONTROL TRUMPET.
5. TELECOMMUNICATIONS ENCLOSURE - REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. TYPICAL CLEAR HEIGHT DIMENSION. REFER TO PLANS AND LAYOUTS FOR ADDITIONAL INFORMATION.

5 CABLE TRAY WATERFALL
N.T.S.

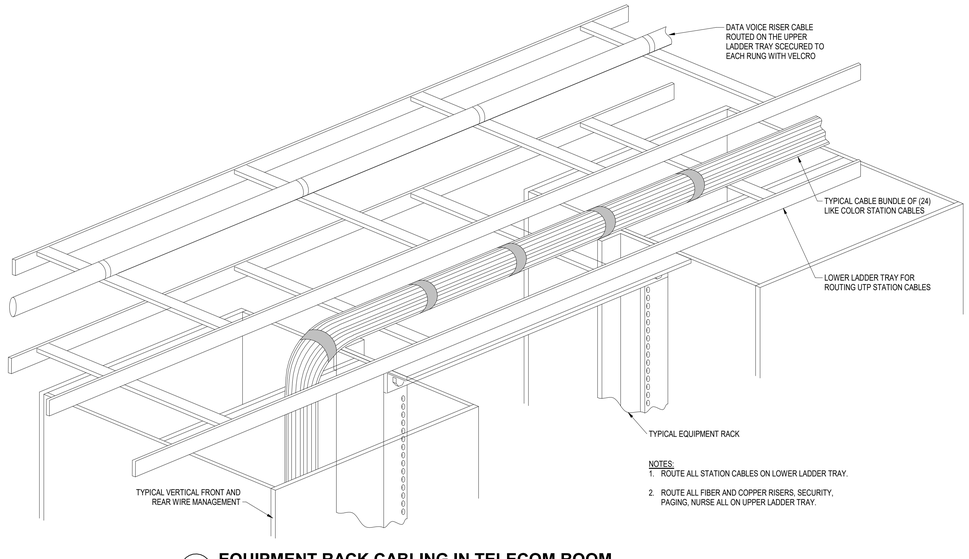


NOTE:
THE MOUNTING SHOWED IS THE PREFERRED WAY TO ALLOW EASY ACCESS TO CABLE ROUTING AND FOR PLUGGING IN EQUIPMENT. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING OUTLETS PER APPLICABLE CODES.

2 ELECTRICAL OUTLET MOUNTING
N.T.S.



4 EQUIPMENT RACK - TYP. FLOOR ATTACHMENT
N.T.S.



NOTES:
1. ROUTE ALL STATION CABLES ON LOWER LADDER TRAY.
2. ROUTE ALL FIBER AND COPPER RISERS, SECURITY, PAGING, NURSE ALL ON UPPER LADDER TRAY.

1 EQUIPMENT RACK CABLING IN TELECOM ROOM
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PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

TECHNOLOGY TYPICAL DETAILS

SHEET NUMBER

T-502

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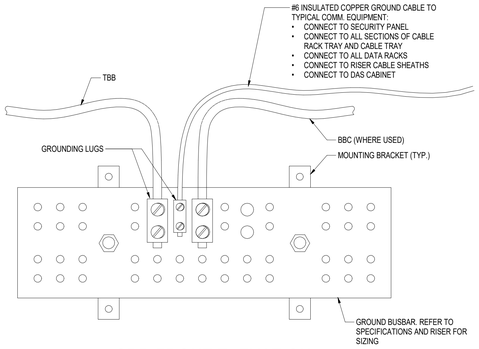
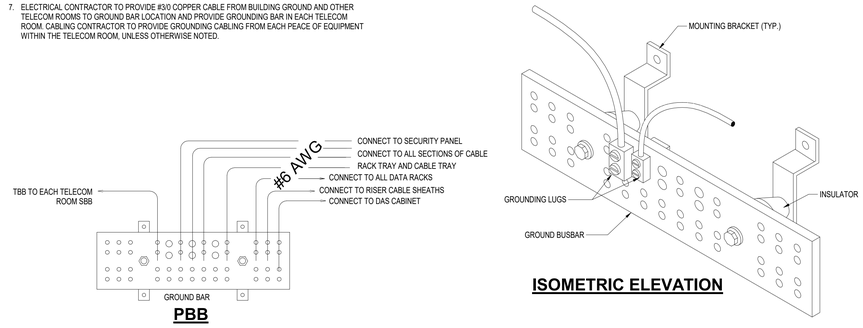
GROUNDING NOTES:

1. ALL GROUND CONNECTIONS SHALL BE MADE WITH HEAVY DUTY 2 HOLES COMPRESSION LUGS WITH STAINLESS STEEL HEX HEAD CAP SCREWS WITH SS LOCKING NUTS (TWO SCREWS AND NUTS PER 2 HOLES LUG).
2. WHERE GROUND CABLE IS RUN IN METAL CONDUIT, PROVIDE INSULATED GROUNDING BUSHING - MALLEABLE IRON, STEEL CITY #BG-807 AT CONDUIT ENDS AND GROUND PER NEC. GROUNDING TO BUILDING STRUCTURE, CONDUITS, UTILITY PIPING, OR ELECTRICAL SUBPANELS IN LIEU OF BONDING TO BUILDING MAIN ELECTRICAL SERVICE GROUND IS NOT ACCEPTABLE.
3. GROUND ALL COMMUNICATIONS RACKS WITH #6 AWG INSULATED STRANDED COPPER GROUNDING CONDUCTOR TO MAIN GROUNDING BUSBAR. GROUND RACKS INDIVIDUALLY TO BUSBAR (DO NOT LOOP GROUNDS). ROUTE CONDUCTOR ALONG RACK REAR AND CABLE RUNWAY TO GROUNDING BUSBAR.
4. GROUND EACH CONDUIT AND CONDUIT SUPPORTS STRUTS IN ALL COMMUNICATION ROOMS WITH #6 AWG INSULATED STRANDED COPPER GROUNDING CONDUCTOR TO GROUNDING BUSBAR. ROUTE CONDUCTOR IN CABLE RUNWAY TO GROUNDING BUSBAR.
5. GROUND CABLE RUNWAY WITH #6 AWG SOLID BARE COPPER GROUNDING CONDUCTOR TO GROUNDING BUSBAR. ROUTE CONDUCTOR IN CABLE RUNWAY TO GROUNDING BUSBAR.
6. MARK CONDUCTOR 6" FROM TERMINATION WITH GREEN TAPE.
7. ELECTRICAL CONTRACTOR TO PROVIDE #3/0 COPPER CABLE FROM BUILDING GROUND AND OTHER TELECOM ROOMS TO GROUND BAR LOCATION AND PROVIDE GROUNDING BAR IN EACH TELECOM ROOM. CABLING CONTRACTOR TO PROVIDE GROUNDING CABLING FROM EACH PEACE OF EQUIPMENT WITHIN THE TELECOM ROOM, UNLESS OTHERWISE NOTED.

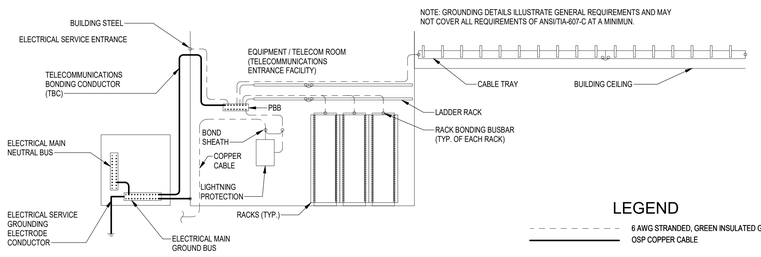


SBB FRONT ELEVATION

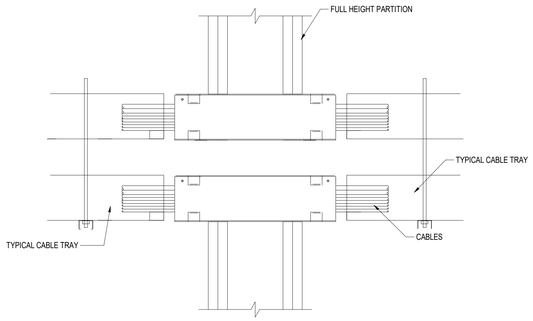


PBB | **ISOMETRIC ELEVATION**

5 GROUND BAR DETAIL
NTS



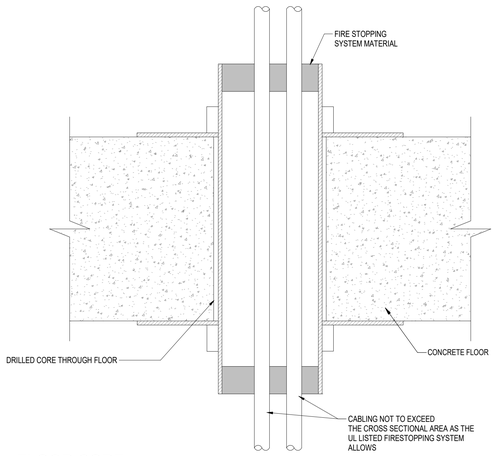
4 GROUNDING SYSTEM DETAIL
NTS



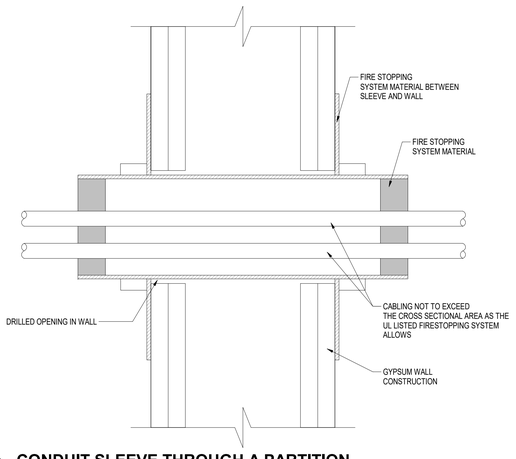
SIDEVIEW

NOTE:
INSTALL WHENEVER MORE THAN 16 CABLES MUST PASS THROUGH FULL HEIGHT PARTITION.

3 WALL PENETRATION - DOUBLE
NTS



2 FLOOR CORE
NTS



1 CONDUIT SLEEVE THROUGH A PARTITION
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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

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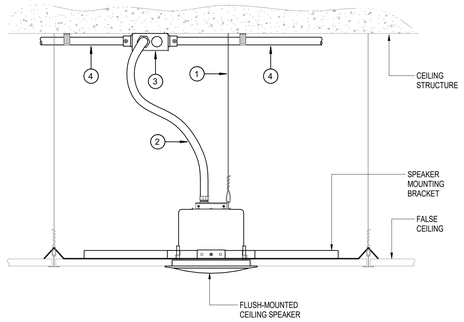
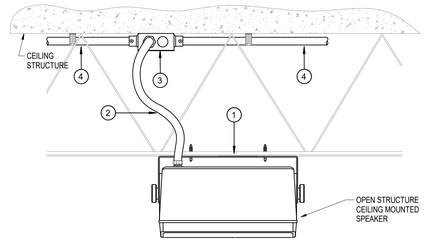


1 INTERIOR FLUSH-MOUNTED CEILING SPEAKER

N.T.S.

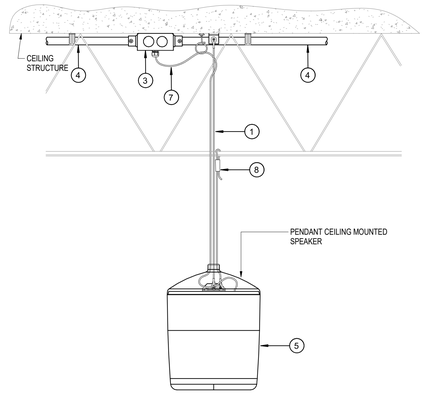
SYMBOL: (PS)



2 INTERIOR SURFACE-MOUNTED CEILING SPEAKER

N.T.S.

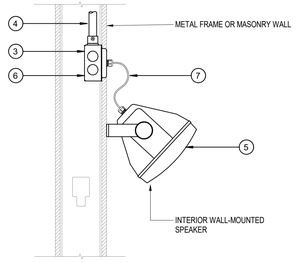
SYMBOL: (PS)



3 INTERIOR PENDANT-MOUNTED CEILING SPEAKER

N.T.S.

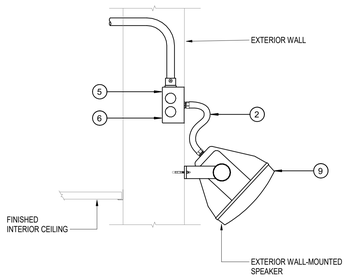
SYMBOL: (PS)PEND



4 INTERIOR SURFACE-MOUNTED WALL SPEAKER

N.T.S.

SYMBOL: ⊢(PS)



6 EXTERIOR FLUSH-MOUNTED WALL SPEAKER

N.T.S.

SYMBOL: ⊢(PS)

GENERAL NOTES:

1. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS RELATED TO PUBLIC ADDRESS SYSTEM (PA) REQUIREMENTS AND SCOPE.
2. THE PA SPEAKER AND DEVICE DETAILS ARE DIAGRAMMATIC IN NATURE AND SHOW GENERAL INSTALLATION REQUIREMENTS PER DEVICE. VERIFY FIELD CONDITIONS PER LOCATION PRIOR TO CONSTRUCTION.
3. ALL CONDUIT TO BE RUN CONCEALED UNLESS NOTED OTHERWISE. LOCATE JUNCTION BOXES ABOVE CEILING IN ACCESSIBLE LOCATION. SUPPORT ALL CONDUIT AND SPEAKERS FROM BUILDING STRUCTURE. SPEAKER SHALL NOT BE SUPPORTED SOLELY BY THE FALSE CEILING.
4. PROVIDE SPEAKER, SPEAKER COMPONENTS, AND MOUNTING HARDWARE, AND MOUNT AS INDICATED ON PLANS AND IN SPECIFICATIONS. PROVIDE ALL MOUNTING AND SUPPORT HARDWARE AS REQUIRED BY THE MANUFACTURER. PROVIDE ALL CONNECTIONS OF FLEXIBLE CONDUIT AND/OR CABLING TO JUNCTION BOX.
5. EXPOSED CONDUIT AND HARDWARE MAY BE REQUIRED TO LOCATE SPEAKER CORRECTLY AND PROVIDE ACCESS TO ACCESSIBLE CEILING FOR CONDUIT RUN TO THE JUNCTION BOX. PROVIDE JUNCTION BOXES AS NEEDED. REFER TO PROJECT SPECIFICATIONS REGARDING PAINTING REQUIREMENTS FOR EXPOSED CONDUIT AND MOUNTING HARDWARE.
6. FINISHED CEILING, WALL, AND STRUCTURAL DECK CONSTRUCTION SHOWN FOR REFERENCE ONLY. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR DETAILED INFORMATION.

(#) PAS DETAIL KEYED NOTES:

1. SUPPORT SPEAKER FROM RIGID STRUCTURE.
2. MINIMUM 20mm (3/4-IN) FLEXIBLE METAL CONDUIT. SUPPORT ANY FLEXIBLE CONDUIT LENGTH IN EXCESS OF 914mm (36-IN) TO THE DECK.
3. PROVIDE JUNCTION BOX. FOR CEILING-MOUNTED SPEAKERS, LOCATE JUNCTION BOX ABOVE ACCESSIBLE CEILING.
4. PROVIDE MINIMUM 25mm (1-IN) RIGID CONDUIT AND PA CABLING TO NEXT SPEAKER, TELECOMMUNICATION ROOM, OR PA ENCLOSURE.
5. MOUNT SPEAKER MINIMUM 3.5 METERS (12FT) AFF UNLESS OTHERWISE NOTED ON PLAN.
6. JUNCTION BOX AND ASSOCIATED CONDUIT MAY BE SURFACE MOUNTED TO THE FINISHED WALL IF FLUSH MOUNTING IS NOT FEASIBLE (MASONRY WALL, SECURE WALL, ETC.). IN SUCH INSTANCES, OBTAIN ENGINEER AND ARCHITECT APPROVAL PRIOR TO ROUGH-IN ON A CASE-BY-CASE BASIS.
7. PROVIDE FLEXIBLE STRANDED SPEAKER CABLE FROM JUNCTION BOX TO SPEAKER WITH WEATHER TIGHT CABLE GLANDS. SUPPORT CABLE TO CEILING STRUCTURE IN CEILING-MOUNTED APPLICATIONS.
8. PROVIDE SECONDARY SAFETY SUPPORT CONNECTION TO CEILING STRUCTURE.
9. PROVIDE JUNCTION BOX. FOR CEILING-MOUNTED AMBIENT NOISE SENSOR (ANS), LOCATE JUNCTION BOX ABOVE ACCESSIBLE CEILING.
10. PROVIDE MINIMUM 25MM (1-IN) RIGID CONDUIT AND PA CABLING TO NEXT ANS, TELECOMMUNICATION ROOM, OR PA ENCLOSURE.

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KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

STATION ALERTING / PAGING SYSTEM DETAILS

SHEET NUMBER

T-504

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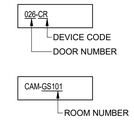
SECURITY SYSTEM LEGEND

				BY SECURITY SYSTEM CONTRACTOR		ROUGH-IN AND SUPPORT BY ELECTRICAL CONTRACTOR			
SYMBOL	DESCRIPTION	DETAIL	MOUNTING HEIGHT ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE ON PLANS	SECURITY CABLING	NOTES	PROVIDE BACKBOX	PROVIDE PLASTER RING	PROVIDE CONDUIT	NOTES
VIDEO SURVEILLANCE									
XX/#-## +##	FIXED IP SECURITY CAMERA XX=CAMERA ROUGH-IN TYPE (REFER TO CAMERA SCHEDULE) #-## =CAMERA NUMBER +## = HEIGHT IF WALL MOUNTED ONLY (REFER TO CAMERA SCHEDULE)	REFER TO CAMERA SCHEDULE AND DETAILS		LOW VOLTAGE POWER IF REQUIRED FOR EXTERIOR HEATER / BLOWER	PROVIDE CAMERA AND ENCLOSURE. REFER TO CAMERA SCHEDULE.	SEE NOTE			REFER TO CAMERA SCHEDULE AND DETAILS FOR ROUGH-IN REQUIREMENTS.
XX/#-## +##	PTZ IP SECURITY CAMERA XX=CAMERA ROUGH-IN TYPE (REFER TO CAMERA SCHEDULE) #-## =CAMERA NUMBER +## = HEIGHT IF WALL MOUNTED ONLY (REFER TO CAMERA SCHEDULE)	REFER TO CAMERA SCHEDULE AND DETAILS		LOW VOLTAGE POWER IF REQUIRED FOR EXTERIOR HEATER / BLOWER	PROVIDE CAMERA AND ENCLOSURE. REFER TO CAMERA SCHEDULE.	SEE NOTE			REFER TO CAMERA SCHEDULE AND DETAILS FOR ROUGH-IN REQUIREMENTS.
XX/#-## +##	180 DEGREE IP SECURITY CAMERA XX=CAMERA ROUGH-IN TYPE (REFER TO CAMERA SCHEDULE) #-## =CAMERA NUMBER +## = HEIGHT IF WALL MOUNTED ONLY (REFER TO CAMERA SCHEDULE)	REFER TO CAMERA SCHEDULE AND DETAILS		LOW VOLTAGE POWER IF REQUIRED FOR EXTERIOR HEATER / BLOWER	PROVIDE CAMERA AND ENCLOSURE. REFER TO CAMERA SCHEDULE.	SEE NOTE			REFER TO CAMERA SCHEDULE AND DETAILS FOR ROUGH-IN REQUIREMENTS.
XX/#-## +##	270 DEGREE IP SECURITY CAMERA XX=CAMERA ROUGH-IN TYPE (REFER TO CAMERA SCHEDULE) #-## =CAMERA NUMBER +## = HEIGHT IF WALL MOUNTED ONLY (REFER TO CAMERA SCHEDULE)	REFER TO CAMERA SCHEDULE AND DETAILS		LOW VOLTAGE POWER IF REQUIRED FOR EXTERIOR HEATER / BLOWER	PROVIDE CAMERA AND ENCLOSURE. REFER TO CAMERA SCHEDULE.	SEE NOTE			REFER TO CAMERA SCHEDULE AND DETAILS FOR ROUGH-IN REQUIREMENTS.
XX/#-## +##	360 DEGREE IP SECURITY CAMERA XX=CAMERA ROUGH-IN TYPE (REFER TO CAMERA SCHEDULE) #-## =CAMERA NUMBER +## = HEIGHT IF WALL MOUNTED ONLY (REFER TO CAMERA SCHEDULE)	REFER TO CAMERA SCHEDULE AND DETAILS		LOW VOLTAGE POWER IF REQUIRED FOR EXTERIOR HEATER / BLOWER	PROVIDE CAMERA AND ENCLOSURE. REFER TO CAMERA SCHEDULE.	SEE NOTE			REFER TO CAMERA SCHEDULE AND DETAILS FOR ROUGH-IN REQUIREMENTS.
ACCESS CONTROL AND ALARMS									
◇◆ XX-TYPE##	◆ HIGHER SECURITY LEVEL ◇ LOWER SECURITY LEVEL XX-TYPE## = ACCESS CONTROL DOOR TYPE IDENTIFIER	REFER TO ACS SCHEDULE AND DOOR DETAILS	--	--	REFER TO ACESS CONTROL SCHEDULE (ACS) AND DOOR DETAILS.	--	--	--	--
CR X	ACCESS CONTROL CARD READER "X = TYPE. NO TAG = STANDARD CARD READER DEVICE PER SPECIFICATIONS "KP" = CARD READER WITH KEYPAD "AL" = ANTI-LIGATURE CARD READER "M" = MULLION MOUNTED CARD READER	REFER TO ACS SCHEDULE AND DOOR DETAILS	+44"	(1) COMM/POWER CABLE FOR CARD READER, (1) COMM CABLE FOR DPS, (1) COMM/POWER CABLE FOR REX, (1) POWER CABLE FOR LOCK	PROVIDE CARD READER, DOOR POSITION SWITCH, REQUEST-TO-EXIT DEVICE (IF NOT INTEGRATED INTO DOOR HARDWARE) AND CABLE. DOOR HARDWARE, LOCAL POWER SUPPLIES AND AUTOMATIC OPERATORS BY HARDWARE SUPPLIER.	SEE NOTE			REFER TO DOOR DETAILS FOR ROUGH-IN REQUIREMENTS.
PB	PANIC BUTTON - MOUNTED UNDER DESK	--	BOX AT 18", BUTTON MOUNTED TO WORKSURFACE 2" FROM FRONT EDGE	(1) COMM / POWER CABLE	PROVIDE BUTTON AND CABLE. ROUTE CABLE THROUGH FRONT OF FACEPLATE (USE GROMMET) AND SECURE TO UNDERSIDE OF COUNTER.	2-GANG	1-GANG	(1) 3/4"	MOUNT BOX AT 18" A.F.F. PROVIDE CONDUIT FROM BOX UP INTO NEAREST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
PB WM	PANIC BUTTON - WALL MOUNTED	--	+44"	(1) COMM / POWER CABLE	PROVIDE BUTTON, COVER AND CABLE.	2-GANG	1-GANG	(1) 3/4"	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
DC	DOOR CONTACT / POSITION SWITCH	--	AT DOOR	(1) COMM CABLE FOR DPS, (1) COMM/POWER CABLE FOR REX AS REQUIRED	PROVIDE DPS AND CABLE. PROVIDE ASSOCIATED REX AS REQUIRED. REFER TO THE DOOR DETAILS AND ACCESS CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.	SEE NOTE			REFER TO DOOR DETAILS FOR ROUGH-IN REQUIREMENTS.
EL	ELECTRIC LOCK LOCATION	--	AT DOOR	(1) COMM CABLE TO TRIGGER LOCK FROM ACCESS CONTROL SYSTEM. ADDITIONAL CABLING PER SCHEDULE.	PROVIDE CABLE AND CONNECTIONS BETWEEN ACCESS CONTROL SYSTEM AND LOCK. DOOR HARDWARE PROVIDED BY OTHERS.	SEE NOTE			REFER TO DOOR DETAILS FOR ROUGH-IN REQUIREMENTS.
DE	DELAYED EGRESS LOCK LOCATION	--	AT DOOR	(1) COMM CABLE TO TRIGGER LOCK FROM ACCESS CONTROL SYSTEM. ADDITIONAL CABLING PER SCHEDULE.	PROVIDE CABLE AND CONNECTIONS BETWEEN ACCESS CONTROL SYSTEM AND LOCK. DOOR HARDWARE PROVIDED BY OTHERS.	SEE NOTE			REFER TO DOOR DETAILS FOR ROUGH-IN REQUIREMENTS.
IFP	INTELLIGENT FIELD PANEL	--	--	--	PROVIDE PANELS AND POWER SUPPLIES IN TELECOM ROOMS. PROVIDE SHOP DRAWING OF WALL ELEVATION FOR APPROVAL PRIOR TO INSTALLATION.	SEE NOTE			REFER TO DETAILS FOR ROUGH-IN REQUIREMENTS.
JB	JUNCTION BOX	--	ABOVE ACCESSIBLE CEILING	--	--	SEE NOTE			REFER TO DOOR DETAILS FOR ROUGH-IN REQUIREMENTS.
SECURITY COMMUNICATION									
IC M	AUDIO INTERCOM SUBSTATION "M" = MULLION MOUNTED AUDIO INTERCOM STATION	--	+44"	CABLES AS REQUIRED TO REMOTE RELEASE DOOR	PROVIDE STATION. INTEGRATE STATION WITH ASSOCIATED ACCESS CONTROL DOOR TO ALLOW MASTER STATION TO REMOTE RELEASE DOOR AS NOTED ON DRAWINGS.	2-GANG	1-GANG	(1) 1"	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
IM	AUDIO INTERCOM MASTER STATION	--	BOX AT 18", DEVICE ON DESK	CABLES AS REQUIRED TO REMOTE RELEASE DOOR	PROVIDE STATION. INTEGRATE STATION TO AUDIO INTERCOM SUBSTATION AS NOTED ON DRAWINGS. CONFIGURE TO UNLOCK DOOR WHERE SUBSTATION IS LOCATED.	2-GANG	1-GANG	(1) 1"	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
VI M	VIDEO INTERCOM SUBSTATION "M" = MULLION MOUNTED VIDEO INTERCOM STATION	--	+44"	CABLES AS REQUIRED TO REMOTE RELEASE DOOR	PROVIDE STATION. INTEGRATE STATION WITH ASSOCIATED ACCESS CONTROL DOOR TO ALLOW MASTER STATION TO REMOTE RELEASE DOOR AS NOTED ON DRAWINGS.	2-GANG	1-GANG	(1) 1"	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
VM	VIDEO INTERCOM MASTER STATION	--	BOX AT 18", DEVICE ON DESK	CABLES AS REQUIRED TO REMOTE RELEASE DOOR	PROVIDE STATION. INTEGRATE STATION TO VIDEO INTERCOM SUBSTATION AS NOTED ON DRAWINGS. CONFIGURE TO UNLOCK DOOR WHERE SUBSTATION IS LOCATED.	SEE NOTE			REFER TO STRUCTURED CABLING LEGEND FOR DEVICE ROUGH-IN REQUIREMENTS.
INTRUSION DETECTION									
KP IDS	INTRUSION SYSTEM ARMING KEYPAD	--	+44"	(1) COMM/POWER CABLE	PROVIDE KEYPAD AND CONFIGURE KEYPAD TO OVERRIDE THE INTRUSION DETECTION SYSTEM ALARM.	2-GANG	1-GANG	(1) 3/4"	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
MD	INTRUSION SYSTEM MOTION DETECTOR - WALL MOUNTED	--	+44"	CABLES AS REQUIRED BY SYSTEM	CONFIGURE MOTION DETECTOR TO ALARM WHEN ARMED BY THE INTRUSION DETECTION SYSTEM.	2-GANG	1-GANG	(1) 3/4"	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
SS	INTRUSION SYSTEM SECURITY SIREN - WALL MOUNTED	--	+120" OR AS NOTED ON DRAWINGS	CABLES AS REQUIRED BY SYSTEM	CONFIGURE SECURITY SIREN TO ALARM WHEN ARMED BY THE INTRUSION DETECTION SYSTEM.	2-GANG	1-GANG	(1) 3/4"	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
MD	INTRUSION SYSTEM MOTION DETECTOR	--	FLUSH IN CEILING	CABLES AS REQUIRED BY SYSTEM	CONFIGURE MOTION DETECTOR TO ALARM WHEN ARMED BY THE INTRUSION DETECTION SYSTEM.	--	--	--	--
GB	INTRUSION SYSTEM GLASS BREAK SENSOR	--	FLUSH IN CEILING	CABLES AS REQUIRED BY SYSTEM	CONFIGURE GLASS BREAK SENSOR TO ALARM WHEN ARMED BY THE INTRUSION DETECTION SYSTEM.	--	--	--	--
AL	INTRUSION SYSTEM SECURITY ALARM	--	FLUSH IN CEILING	CABLES AS REQUIRED BY SYSTEM	CONFIGURE SIREN TO ALARM UPON DOOR FORCED ALARM OR MOTION DETECTION ALARM.	--	--	--	--

SECURITY EQUIPMENT LABELING NOTES

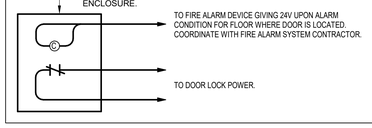
1. FURNISH AND INSTALL LABELS FOR ALL CAMERAS, CARD READERS, PIRS, CONTACTS, ANNUNCIATORS, INTERCOMS, AND OTHER SECURITY EQUIPMENT.
2. FURNISH AND INSTALL LABELS FOR ALL CABLES. ALL SECURITY EQUIPMENT CABLE SHALL HAVE A LABEL ATTACHED AT EACH CABLE END.
3. LABELS ARE TO BE GENERATED USING COMPUTER GENERATED SOFTWARE PACKAGE. ALL LABELS ARE TO BE PRINTED.
4. ALL LABELS ARE TO BE PRINTED ON POLYESTER FILM OR AS APPROVED.
5. BEFORE ANY LABELS ARE PRINTED THE CONTRACTOR MUST SUBMIT TO OWNER FOR APPROVAL OF THE FOLLOWING.
   A. PRINT OUT EXAMPLES OF LABELS AND LABELING SCHEME
   B. PHYSICAL EXAMPLE OF LABELS
6. ACCESS CONTROL SUBSYSTEM
   A. DOOR - AAA: DOOR NUMBER CORRESPONDS WITH ARCHITECT PLANS
   B. DOOR RELATED DEVICES - AAA-BB: USE DOOR NUMBER PLUS DEVICE TYPE SUFFIX:
      - LOCK: AAA-L
      - CARD READER IN: AAA-CR
        (IF 2 CR: AAA-CR1 = NON-SECURE SIDE, AAA-CR2 = SECURE SIDE)
      - CONTACT: AAA-DPS
      - REQUEST-TO-EXIT: AAA-REX
      - DOOR ACTUATOR: AAA-PP1, AAA-PP2
      - EMERGENCY RELEASE BUTTON: AAA-ERB
      - REMOTE RELEASE BUTTON: AAA-RR
7. IP CAMERA (VSS) SUBSYSTEM
   A. VSS DEVICES: CAM-#-## USE UNIQUE DEVICE NUMBER FROM SCHEDULE/FLOOR PLANS.
      - CAMERA: UTP CABLE LABELING BY CABLING CONTRACTOR
      - LABEL AT PATCH PANEL SHALL REFERENCE CAMERA NUMBER (DDD)AS SHOWN ON SCHEDULE/FLOOR PLANS.
      - POWER (IF REQUIRED): PS-DDD

CABLE LABEL EXAMPLE:



FIRE ALARM INTERFACE NOTES

1. ALL DOORS THAT LOCK IN A REQUIRED PATH OF EGRESS SHALL BE PROVIDED WITH FAIL-SAFE SECURITY HARDWARE.
2. ALL MAG-LOCKS SHALL BE FAIL-SAFE AND:
   A. CONFIGURED TO RELEASE ON LOSS OF POWER TO ANY DEVICE CONTROLLING MAG-LOCK.
   B. CONFIGURED TO RELEASE ON ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM.
   C. IF REQUIRED BY DOOR HARDWARE. PROVIDE WITH A SEPARATE MANUAL RELEASE PULL STATION CONFIGURED TO BREAK POWER TO THE MAG-LOCK UNTIL RESET.
3. THE SECURITY SYSTEM SHALL BE INTERFACED TO THE FIRE ALARM SYSTEM FOR EMERGENCY OVERRIDE. THE FIRE ALARM SYSTEM PROVIDER SHALL PROVIDE ALL FIRE ALARM INTERFACES. SECURITY CONTRACTOR SHALL CONNECT TO THE FIRE ALARM INTERFACE AND RUN CABLE TO THE SECURITY SYSTEM BACKBOARD(S) LOCATED IN THE TDR ROOMS AND ELEVATOR MACHINE ROOMS.
4. SECURITY CONTRACTOR SHALL PROVIDE RELAY INTERFACE IN SECURITY PANELS AND COORDINATE FIRE ALARM CONNECTION WITH FIRE ALARM SYSTEM PROVIDER.



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PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
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CITY OF WORCESTER
455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE
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Job Number 157132.000

TITLE

SECURITY SYSTEMS LEGEND

SHEET NUMBER

TY-010

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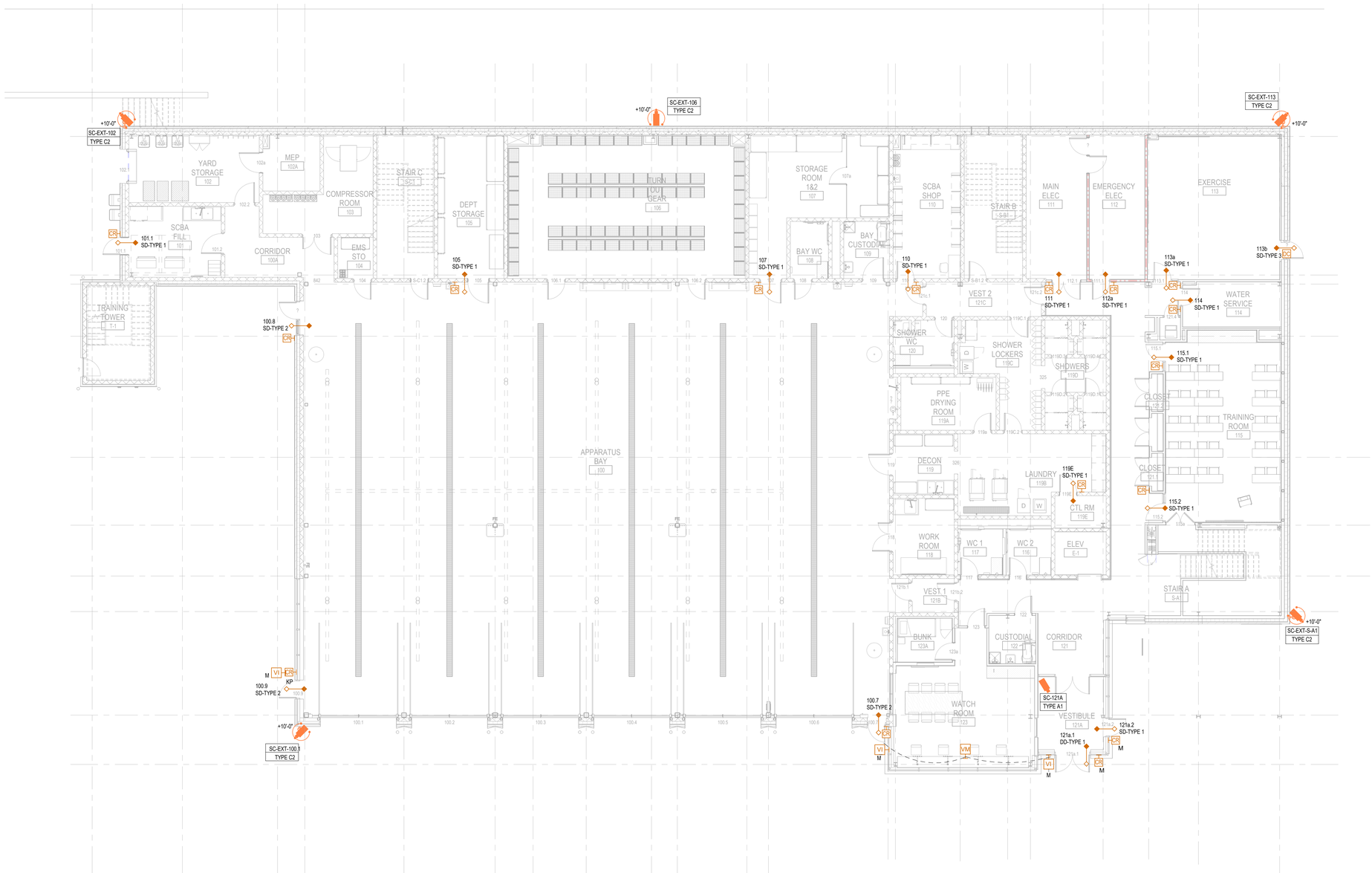

1 LEVEL 01 - SECURITY FLOOR PLAN

1/8" = 1'-0"

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SECURITY FLOOR PLAN - LEVEL 01

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1 LEVEL 02 - SECURITY FLOOR PLAN
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TITLE

SECURITY FLOOR PLAN - LEVEL 02

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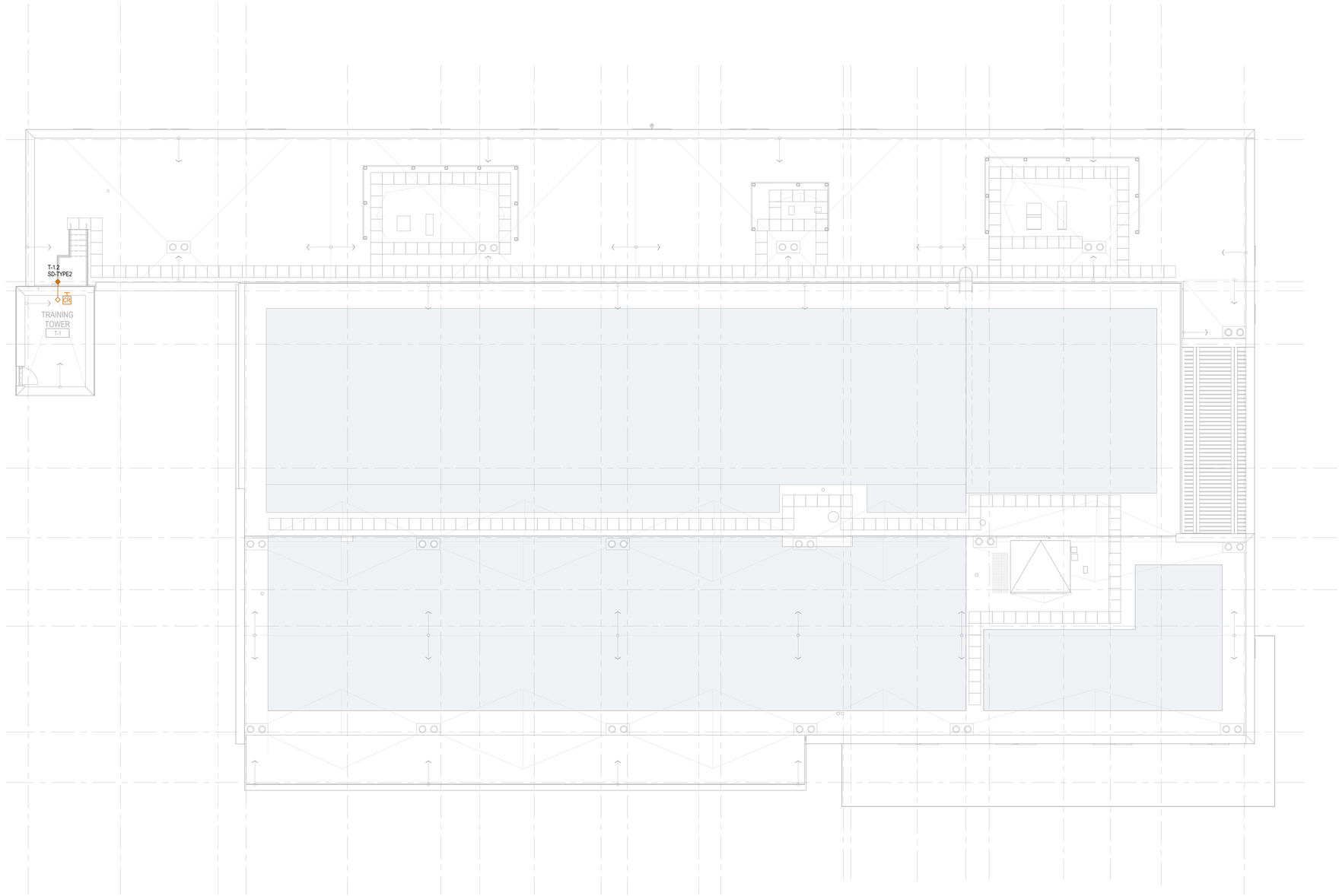

1 ROOF - SECURITY FLOOR PLAN
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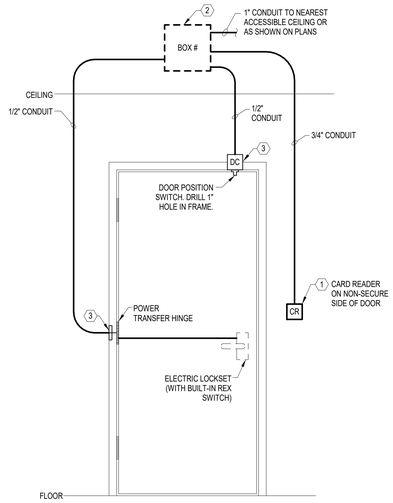
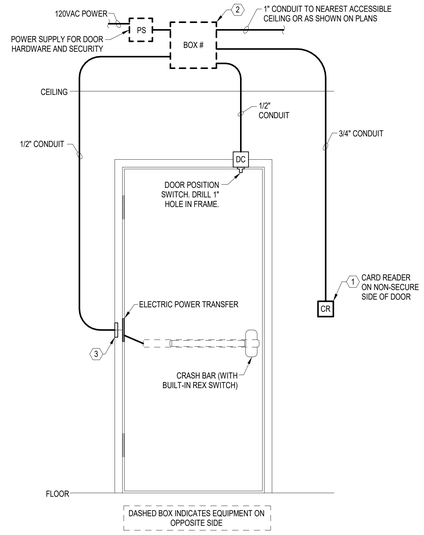


1 SGL DOOR WITH CR, EL/ELR, DPS, PT

NTS

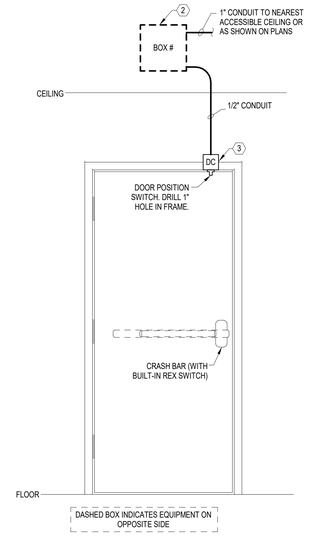
SD-TYPE 1



2 SGL DOOR WITH DPS, CR, PT, EL/ELR

N.T.S.

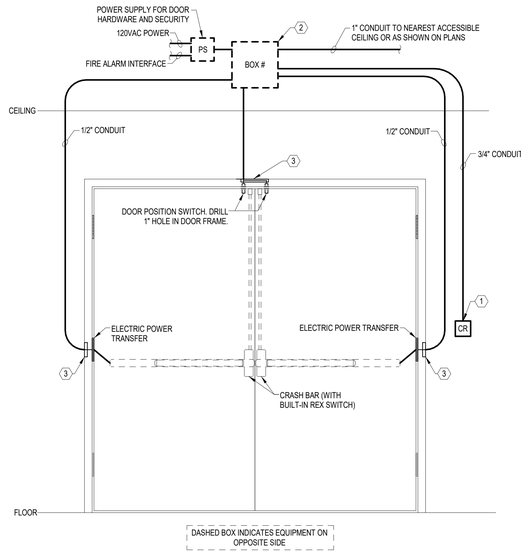
SD-TYPE 2



3 SGL DOOR WITH DPS, EL/ELR

NTS

SD-TYPE 3



4 DUAL WITH (2) DPS, CR, (2) PT, (2) EL/ELR

N.T.S.

DD-TYPE 1

5 ROLLOVER DOOR WITH DPS

NTS

OH-TYPE 1

6 ROLLOVER DOOR WITH CR, DPS

NTS

OH-TYPE 2

7 TYPICAL SECURITY EQUIPMENT WALL ELEVATION

NTS

NOTE

THIS IS AN EXAMPLE WALL ELEVATION FOR PLANNING PURPOSES. SUBMIT A LAYOUT FOR APPROVAL PRIOR TO INSTALLATION.

ACCESS CONTROL LEGEND:

CR CARD READER
DPS DOOR POSITION SWITCH
IML - INTEGRATED INTO MAGLOCK
IDH - INTEGRATED INTO DOOR HARDWARE
FLUSH - MOUNTED FLUSH IN DOOR FRAME
SURFACE - MOUNTED ON THE EXTERIOR OF THE DOOR
RTE REQUEST-TO-EXIT (SHUNTS DOOR ALARMS)
IDH - INTEGRATED INTO DOOR HARDWARE
MS - MOTION SENSOR
AO - DOOR ACTUATOR BUTTON FOR OPERATOR
DOOR TYPE
SGL - SINGLE DOOR
PR - PAIR OF DOORS, SAME SWING DIRECTION
DUAL - DUAL EGRESS PAIR OF DOORS
SLDG - AUTOMATIC SLIDING DOOR
RVLR - AUTOMATIC REVOLVING DOOR
OHD - OVERHEAD COILING DOOR
LOCK ELECTRIC LOCKING DOOR HARDWARE
EL - ELECTRIC LOCKSET WITH RTE BUILT IN
WEL - WIRELESS LOCKSET WITH RTE BUILT IN
IEL - INTERGRATED ELECTRIC LOCKSET (CR BUILT IN)
ES - ELECTRIC STRIKE
ELT - PANIC HARDWARE WITH ELECTRIC TRIM WITH RTE BUILT IN
ELR - PANIC HARDWARE WITH ELECTRIC LATCH RETRACTION WITH RTE BUILT IN
ML - MAGLOCK WITH DPS FEATURE
DEML - DELAYED EGRESS MAGLOCK WITH DPS
DECB - DELAYED EGRESS CRASH BAR WITH RTE BUILT IN (CHEXIT)
LM - LOCKING MECHANISM INSIDE AUTOMATIC SLIDING DOOR
MPD - MECHANICAL PANIC DEVICE
FS FAIL-SAFE (LOSS OF POWER = UNLOCKED)
FSE FAIL-SECURE (LOSS OF POWER = LOCKED)
120 VAC - 'YES' INDICATES 120VAC REQUIRED AT DOOR FOR HARDWARE

GENERAL NOTES:

1. REFER TO ACCESS CONTROL SCHEDULE FOR QUANTITY AND TYPES OF DEVICES FOR EACH CONTROLLED DOOR.
2. LOCATE JUNCTION BOXES ON THE SECURED SIDE OF THE DOOR (OPPOSITE SIDE OF THE CARD READER LOCATION.)
3. LOCATE CARD READERS AS SHOWN ON PLANS.
4. LOCATE DOOR ACTUATOR BUTTONS AS SHOWN ON PLANS. IF BUTTON IS FURTHER THAN 24" FROM DOOR OPENING, SIGNAGE MAY BE REQUIRED TO NOTIFY PERSONNEL AS TO WHICH BUTTON OPENS WHICH DOOR.
5. COORDINATE AUTO OPERATOR PUSH PAD QUANTITY AND LOCATION WITH ARCHITECTURAL PLANS. INTERFACE DOOR LOCKING DEVICES WITH AUTO OPERATORS, HOLD OPENS, AND HANDICAP ASSIST DOOR OPENERS ON SECURITY DOORS.
6. CONFIGURE AUTO OPERATORS AS A REX INPUT TO THE SECURITY SYSTEM.
7. ALL CONDUIT AND CABLING SHALL BE CONCEALED.
8. PROVIDE ADDITIONAL CONDUIT WHERE INDICATED ON PLAN DRAWINGS.
9. ALL CONDUIT 1/2" UNLESS OTHERWISE NOTED.

KEYED NOTES:

1. PROVIDE 2-GANG BACKBOX WITH 1-GANG PLASTER RING.
2. PROVIDE 12" X 12" X 6" NEMA 1 JUNCTION BOX WITH HINGED COVER. MOUNT ABOVE ACCESSIBLE CEILING ON SECURE SIDE OF DOOR. COORDINATE LOCATION WITH SLEEVES AND OTHER EQUIPMENT PRIOR TO INSTALLATION.
3. PROVIDE MORTAR GUARD AT CORE AND SHELL DOORS WHERE FRAMES ARE FILLED WITH MORTAR.

THESE DOOR DETAIL ROUGH-IN DIAGRAMS SHALL BE USED AS A BASIS OF DESIGN FOR PRICING ONLY. THE INSTALLING CONTRACTOR SHALL PROVIDE COORDINATED DRAWINGS DETAILING REQUIREMENTS FOR EACH DOOR AS REQUIRED FOR THE DOOR OPERATORS, LOCKING MECHANISM, AND ACCESS CONTROL SYSTEM TO OPERATE AND FUNCTION. THESE SHALL BE COORDINATED WITH THE DOOR HARDWARE SPECIFICATIONS, ACCESS CONTROL SYSTEM REQUIREMENTS, AND FIRE ALARM SYSTEM REQUIREMENTS FOR EACH DOOR.

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CITY OF WORCESTER

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WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

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Job Number 157132.000

TITLE

SECURITY ACCESS CONTROL DETAILS

SHEET NUMBER

TY-500

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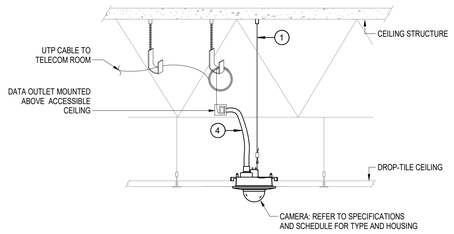
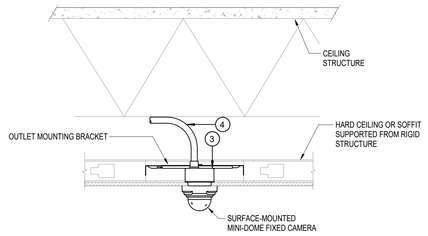


1 INTERIOR FIXED FLUSH CEILING MOUNT

N.T.S.

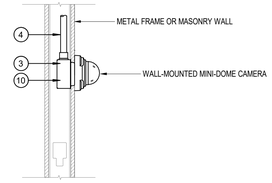
TYPE A1



2 INTERIOR FIXED SURFACE CEILING CAMERA

N.T.S.

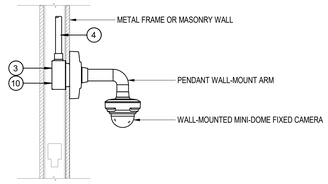
TYPE A2



3 INTERIOR FIXED SURFACE WALL MOUNTED DOME

N.T.S.

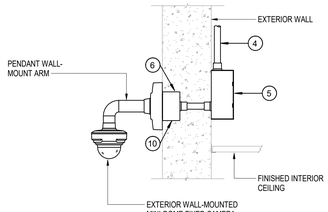
TYPE B1



4 INTERIOR FIXED WALL MOUNTED DOME WITH EXT. ARM

N.T.S.

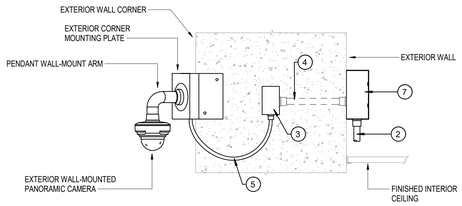
TYPE B2



5 EXTERIOR FIXED WALL MOUNTED DOME WITH EXT. ARM

N.T.S.

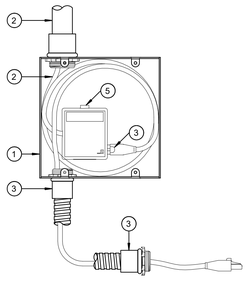
TYPE C1



6 EXTERIOR CORNER CAMERA ARM MOUNT

N.T.S.

TYPE C2



(#) DETAIL NOTES:

1. VSS JUNCTION BOX. MINIMUM 150mm (6-IN) SQUARE X 75mm (3-IN) DEEP. PROVIDE COVER AND SECURE TO ENCLOSURE WITH TAMPER RESISTANT SCREWS.
2. PROVIDE (1) CAT6A UTP DATA CABLE IN 25mm (1-IN) RIGID CONDUIT TO ASSOCIATE TR OR SECURITY CABINET. COIL MINIMUM 150mm (6-IN) OF SLACK FOR INSTALLED HORIZONTAL CABLE IN JUNCTION BOX.
3. PROVIDE CAT6A PATCH CORD TO CAMERA IN 20mm (3/4-IN) FLEXIBLE CONDUIT TO SURVEILLANCE CAMERA. TERMINATE CONDUIT VIA LISTED FITTING AT CAMERA OR JUNCTION BOX. CAMERA OMITTED FROM DETAIL FOR CLARITY. SIZE PATCH CORD AS NEEDED TO REACH CAMERA, COIL EXCESS IN JUNCTION BOX.
4. TERMINATE HORIZONTAL CABLING TO DIRECT-ATTACH FIELD MOUNT PLUG.
5. 1-PORT SURFACE OUTLET. FIX IN PLACE INSIDE JUNCTION BOX. LOCATE AS NECESSARY TO MAINTAIN MAXIMUM CABLE BEND RADIUS.

7 INTERIOR TERMINATED 1-DATA IN 6x6

N.T.S.

SHEET NOTES

1. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS RELATED TO CAMERA REQUIREMENTS AND SCOPE.
2. THE CAMERA AND DEVICE DETAILS ARE DIAGRAMMATIC IN NATURE AND SHOW GENERAL INSTALLATION REQUIREMENTS PER DEVICE. VERIFY FIELD CONDITIONS PER LOCATION PRIOR TO CONSTRUCTION.
3. ALL CONDUIT TO BE RUN CONCEALED UNO. LOCATE JUNCTION BOX ABOVE CEILING IN ACCESSIBLE LOCATION. SUPPORT ALL CONDUIT AND CAMERA FROM STRUCTURE.
4. PROVIDE VSS CAMERA, LENS, DOME ENCLOSURE AND MOUNT AS INDICATED ON PLANS AND SPECIFICATIONS. PROVIDE ALL MOUNTING AND SUPPORT HARDWARE AS REQUIRED BY THE MANUFACTURER. PROVIDE ALL CONNECTIONS OF FLEXIBLE CONDUIT AND CABLING TO VSS JUNCTION BOX.
5. EXPOSED CONDUIT AND HARDWARE MAY BE REQUIRED TO LOCATE CAMERA CORRECTLY AND PROVIDE ACCESS TO ACCESSIBLE CEILING FOR CONDUIT RUN TO THE JUNCTION BOX. PROVIDE JUNCTION BOXES AS NEEDED. REFER TO PROJECT SPECIFICATIONS REGARDING PAINTING REQUIREMENTS FOR EXPOSED CONDUIT AND MOUNTING HARDWARE
6. FINISHED CEILING, WALL, AND STRUCTURAL DECK CONSTRUCTION SHOWN FOR REFERENCE ONLY. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS DETAILED INFORMATION.

SHEET KEYED NOTES (#)

1. SUPPORT CAMERA FROM RIGID STRUCTURE PER MANUFACTURER RECOMMENDATIONS.
2. PROVIDE (1) 1" CONDUIT TO ACCESSIBLE CEILING. REFER TO FLOOR PLANS FOR ADDITIONAL INFORMATION.
3. CAMERA JUNCTION BOX: PROVIDE 4"x4"x2-1/8" FLUSH MOUNTED BOX WITH SINGLE GANG MUD RING OR MASONRY EQUIVALENT.
4. PATCH CABLE: PROVIDE DATA PATCH CORD TO CONNECT CAMERA.
5. (1) 3/4" FLEXIBLE OR EMT CONDUIT. FOR EXTERIOR CAMERAS, PROVIDE LIQUID TIGHT CONDUIT.
6. PENDANT CEILING MOUNT. LENGTH OF PIPE SHALL BE SO THAT THE DOME PORTION OF THE CAMERA IS SET BELOW ANY ADJACENT ELECTRICAL FIXTURES OR MECHANICAL SYSTEMS. THE BASE OF THE CAMERA SHALL MAINTAIN A MINIMUM OF 8'-6" A.F.F. TO MEET THE MINIMUM ADA MOUNTING REQUIREMENTS. CONTRACTOR TO FIELD COORDINATE WITH OTHER TRADES TO ENSURE THE CAMERA'S FIELD OF VIEW IS NOT OBSTRUCTED.
7. CAMERA JUNCTION BOX FOR EXTERIOR MOUNTED CAMERA: LOCATE JUNCTION BOX ABOVE ACCESSIBLE INTERIOR CEILING. PROVIDE SURGE PROTECTION WITHIN THE JUNCTION BOX FOR ALL COPPER CONDUCTORS.

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PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT
25 MADISON ST
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

MARK	ISSUE	DATE

Job Number 157132.000

TITLE

SECURITY VSS CAMERA DETAILS

SHEET NUMBER

TY-501

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SECURITY ACCESS CONTROL SCHEDULE

LEVEL	SHEET#	DOOR #	ROOM #	ROOM NAME	CARD READER	DPS	DOOR TYPE	DRAWING/ DETAIL#	COMMENTS
LEVEL 01	TY-200	100.7	100	APPARATUS BAY	1	1	SD-TYPE2	2/TY-500	
LEVEL 01	TY-200	100.8	100	APPARATUS BAY	1	1	SD-TYPE2	2/TY-500	
LEVEL 01	TY-200	100.9	100	APPARATUS BAY	1	1	SD-TYPE1	2/TY-500	CARD READER WITH KEYPIN CODE ACCESS
LEVEL 01	TY-200	101.1	100	SCBA FILL	1	1	SD-TYPE1	2/TY-500	
LEVEL 01	TY-200	105	105	DEPT STORAGE	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	107	107	STORAGE ROOM 1&2	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	110	110	SCBA SHOP	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	111	111	EMERGENCY ELEC	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	112a	112	MAIN ELEC	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	113a	113	EXERCISE	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	113b	113	EXERCISE	0	1	SD-TYPE3	3/TY-500	
LEVEL 01	TY-200	113c	119E	CTL ROOM	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	113m	115	TRAINING ROOM	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	114	114	WATER SERVICE	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	115.2	115	TRAINING ROOM	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	121a.1	121A	VESTIBULE	1	2	DD-TYPE1	1/TY-500	
LEVEL 01	TY-200	121a.2	121A	VESTIBULE	1	1	SD-TYPE1	2/TY-500	
LEVEL 01: 17									
LEVEL 02	TY-201	217	217	SERVER	1	1	SD-TYPE1	1/TY-500	
LEVEL 02: 1									
ROOF		T-1.2	ROOF		1	1	SD-TYPE2	2/TY-500	
ROOF: 1									
Grand total: 19									

VIDEO SURVEILLANCE SYSTEM IP CAMERA SCHEDULE

LEVEL	SHEET #	CAMERA #	ROOM #	ROOM NAME	CAMERA TYPE	CAMERA MOUNT	MOUNTING DRAWING/DETAIL #	COMMENTS
LEVEL 01	TY-200	SC-121A	121A	SERVER	TYPE A1	FLUSH CEILING MOUNT	1/TY-501	
LEVEL 01	TY-200	SC-EXT-100.1	100	APPARATUS BAY	TYPE C2	EXTERIOR WALL CORNER MOUNT	6/TY-501	
LEVEL 01	TY-200	SC-EXT-102	102	YARD STORAGE	TYPE C2	EXTERIOR WALL CORNER MOUNT	6/TY-501	
LEVEL 01	TY-200	SC-EXT-106	106	TURN OUT GEAR	TYPE C2	EXTERIOR WALL CORNER MOUNT	6/TY-501	
LEVEL 01	TY-200	SC-EXT-113	113	EXERCISE	TYPE C2	EXTERIOR WALL CORNER MOUNT	6/TY-501	
LEVEL 01	TY-200	SC-EXT-S-A1	S-A1	STAIR A	TYPE C2	EXTERIOR WALL CORNER MOUNT	6/TY-501	
LEVEL 01: 6								
LEVEL 02	TY-201	SC-217	217	SERVER	TYPE A1	FLUSH CEILING MOUNT	1/TY-501	
LEVEL 02: 1								

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MARK	ISSUE	DATE

Job Number 157132.000

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SECURITY SYSTEM SCHEDULES

SHEET NUMBER

TY-600

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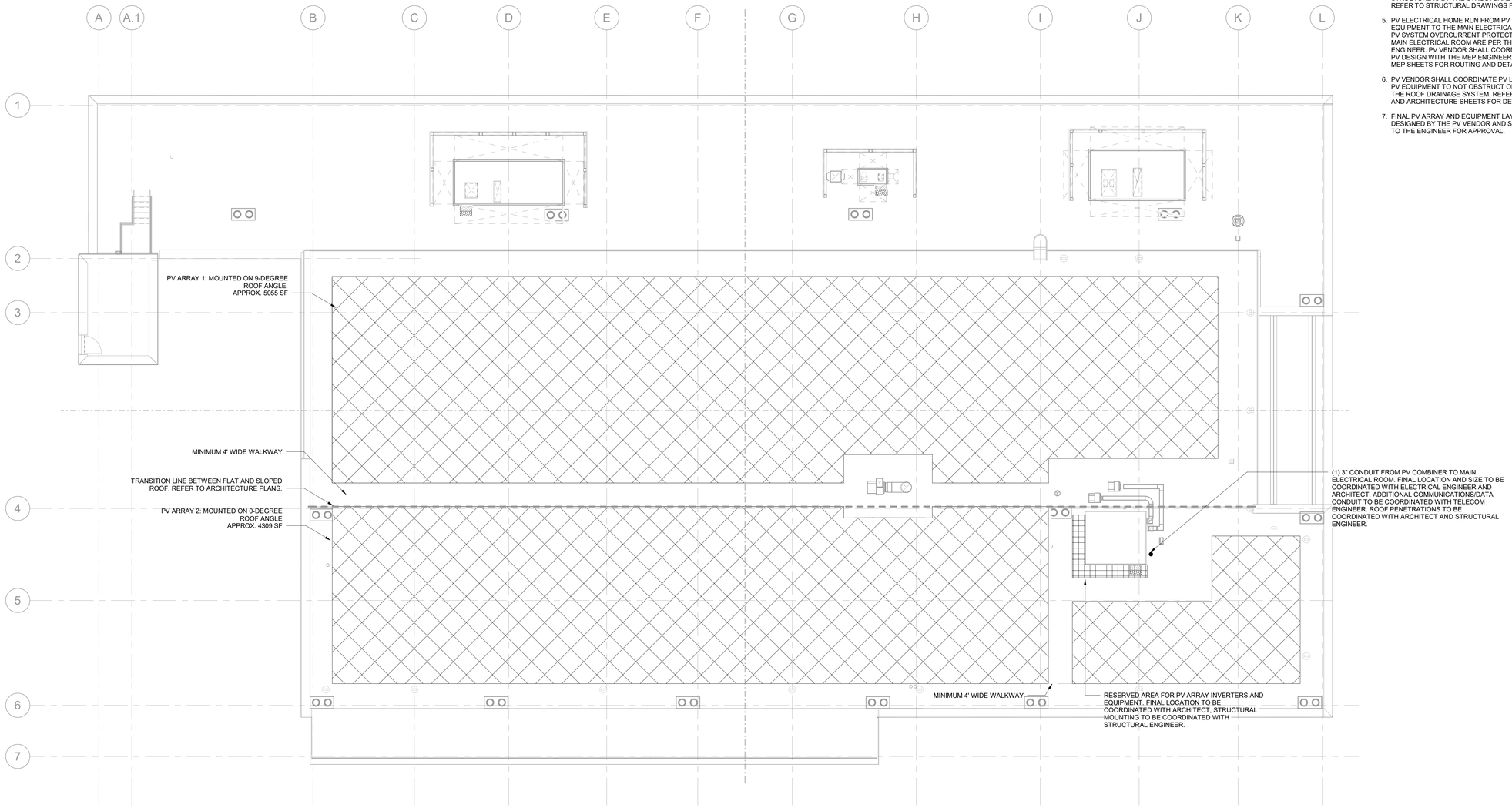

1 PV ROOF PLAN
1/8" = 1'-0"

SOLAR PV GENERAL NOTES:

1. PV ARRAY LAYOUT TO ADHERE TO NFPA 1 AND NFPA 70, INCLUDING:
   A. 4' MINIMUM CLEAR PATHWAY FROM ROOF PERIMETER.
   B. 4' MINIMUM PATHWAYS TO SKYLIGHT AND/OR VENTILATION HATCHES.
   C. PV ARRAYS NO GREATER THAN 150'x150' IN EITHER AXIS.
2. 4' MINIMUM CLEARANCE FROM PV ARRAY TO BE PROVIDED AROUND ROOFTOP EQUIPMENT (TYP.).
3. SHEET PV04.03 ORIENTATION IS NORMAL (PERPENDICULAR) TO ROOF SURACE BASED ON 9-DEGREE AND 0-DEGREE ROOF ANGLE TO ALLOW FOR PANEL LAYOUT. REFER TO ACHITECTURE DRAWINGS FOR ROOF DETAILS.
4. STRUCTURAL CONNECTION FROM PV RACKING, PV EQUIPMENT, AND CONDUIT TO BUILDING STRUCTURE IS BY THE STRUCTURAL ENGINEER. REFER TO STRUCTURAL DRAWINGS FOR DETAILS.
5. PV ELECTRICAL HOME RUN FROM PV ROOF EQUIPMENT TO THE MAIN ELECTRICAL ROOM AND PV SYSTEM OVERCURRENT PROTECTION AT THE MAIN ELECTRICAL ROOM ARE PER THE MEP ENGINEER. PV VENDOR SHALL COORDINATE THE PV DESIGN WITH THE MEP ENGINEER. REFER TO MEP SHEETS FOR ROUTING AND DETAILS.
6. PV VENDOR SHALL COORDINATE PV LAYOUT AND PV EQUIPMENT TO NOT OBSTRUCT OR IMPEDE THE ROOF DRAINAGE SYSTEM. REFER TO MEP AND ARCHITECTURE SHEETS FOR DETAILS.
7. FINAL PV ARRAY AND EQUIPMENT LAYOUT TO BE DESIGNED BY THE PV VENDOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL.

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