

Northeast Metropolitan Regional Vocational High School

100 Hemlock Road, Wakefield, MA 01880
DRA PROJECT NO. 20202



- Geotechnical
- Plumbing
- Fire Protection
- Mechanical
- Fire Alarm
- Electrical
- Technology

VOLUME 4 of 4

BID SET

Issue Date: August 28th, 2023

**NORTHEAST METROPOLITAN REGIONAL
VOCATIONAL H.S. BUILDING COMMITTEE**

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MASSACHUSETTS SCHOOL BUILDING AUTHORITY

40 Broad Street, Suite 500
Boston, MA 02109

NORTHEAST METROPOLITAN REGIONAL VOCATIONAL SCHOOL DISTRICT

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DISTRICT COMMUNITIES

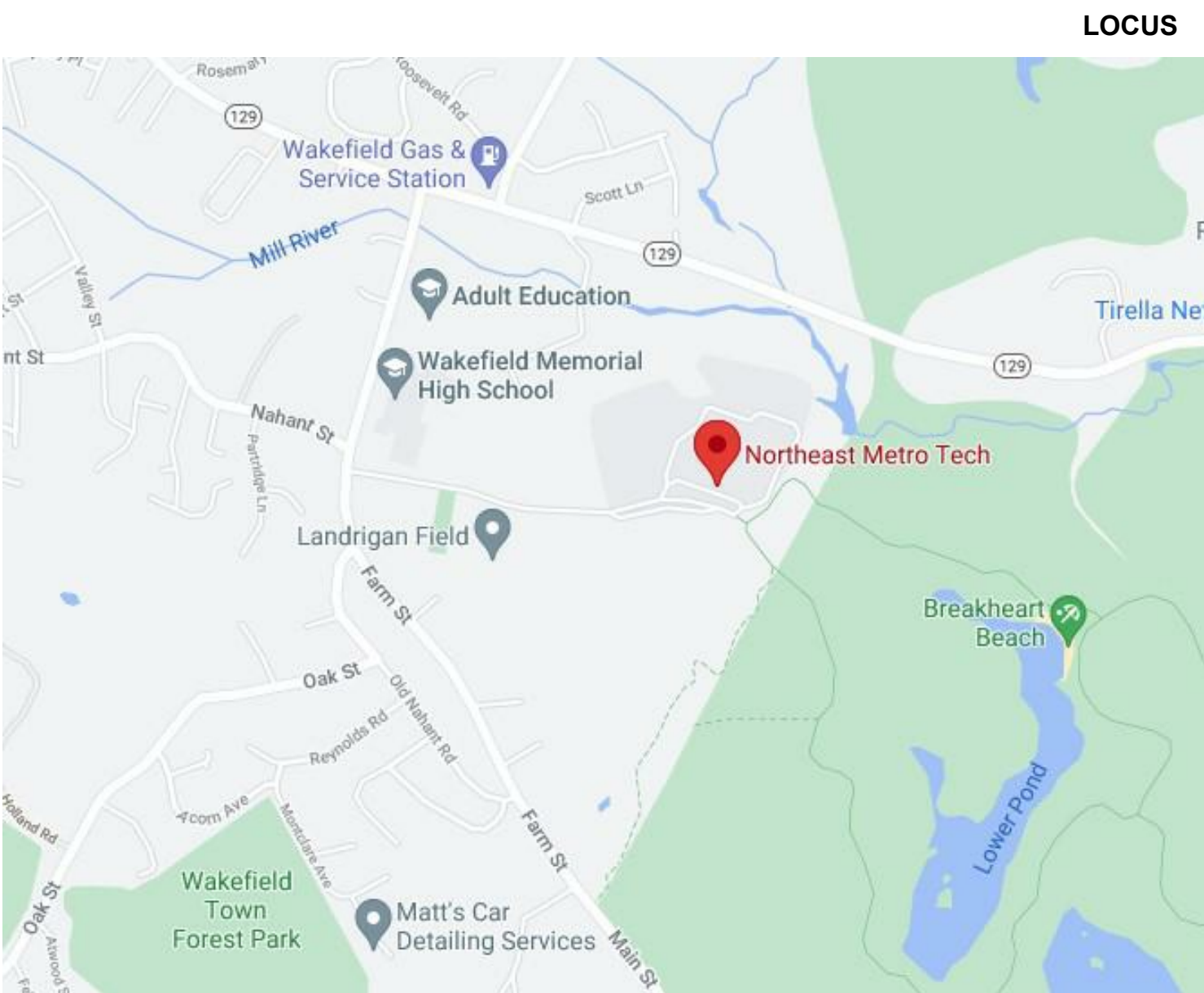
Chelsea, Malden, Melrose, North Reading, Reading, Revere, Saugus, Stoneham,
Wakefield, Winchester, Winthrop & Woburn

OWNERS PROJECT MANAGER

PMA Consultants
35 Braintree Hill Office Park, Suite 300
Braintree, MA 02184

CONSTRUCTION MANAGER AT RISK

Gilbane Building Company
10 Channel Center Street, Suite 100
Boston, MA 02210



ARCHITECT

Drummey Rosane Anderson
260 Charles Street, Studio 300
Waltham, MA 02453
t: 617.964.1700

LANDSCAPE ARCHITECT

Warner Larson
130 West Broadway
Boston, MA 02108
t: 617.464.1440

CIVIL ENGINEER

Nitsch Engineering
2 Center Plaza, Suite 430
Boston, MA 02108
t: 617.338.0063

STRUCTURAL ENGINEER

Engineers Design Group
350 Main Street, Floor 2
Malden, MA 02148
t: 781.396.9007

MEP-FP ENGINEER

Bala Consulting Engineers
52 Temple Place
Boston, MA 02111
t: 617.357.6060

EQUIPMENT CONSULTANT

Point Line
75 Lowell Street
Carlisle, MA 01741
t: 617.314.7501

TECHNOLOGY CONSULTANT

3Si, System Software Support, Inc.
168 Main Street
Northfield, MA 01360
t: 413.498.0069

FOOD SERVICE CONSULTANT

Crabtree McGrath Associates
161 West Main Street
Georgetown, MA 01833
t: 978.352.8500

VOLUME 1 OF 4

CIVIL	
NUMBER	DRAWING NAME
EX-1	TOPOGRAPHIC SURVEY
EX-2	TOPOGRAPHIC SURVEY
EX-3	TOPOGRAPHIC SURVEY
EX-4	TOPOGRAPHIC SURVEY
EX-5	TOPOGRAPHIC SURVEY
EX-6	TOPOGRAPHIC SURVEY
EX-7	TOPOGRAPHIC SURVEY
EX-8	TOPOGRAPHIC SURVEY
EX-9	TOPOGRAPHIC SURVEY
EX-10	TOPOGRAPHIC SURVEY
EX-11	TOPOGRAPHIC SURVEY
EX-12	TOPOGRAPHIC SURVEY
EX-13	TOPOGRAPHIC SURVEY
EX-14	TOPOGRAPHIC SURVEY
C-000	CIVIL NOTES, LEGENDS, AND ABBREVIATIONS
C-100	KEY PLAN
C-201	UTILITY DEMOLITION PLAN I
C-202	UTILITY DEMOLITION PLAN II
C-202	UTILITY DEMOLITION PLAN III
C-203	UTILITY DEMOLITION PLAN IV
C-204	UTILITY DEMOLITION PLAN V
C-205	UTILITY DEMOLITION PLAN VI
C-300	SEDIMENTATION AND EROSION CONTROL PLAN I
C-301	SEDIMENTATION AND EROSION CONTROL PLAN II
C-302	SEDIMENTATION AND EROSION CONTROL PLAN III
C-303	SEDIMENTATION AND EROSION CONTROL PLAN IV
C-304	SEDIMENTATION AND EROSION CONTROL PLAN V
C-305	SEDIMENTATION AND EROSION CONTROL PLAN VI
C-400	DRAINAGE PLAN I
C-401	DRAINAGE PLAN II
C-402	DRAINAGE PLAN III
C-403	DRAINAGE PLAN IV
C-404	DRAINAGE PLAN V
C-405	DRAINAGE PLAN VI
C-406	DRAINAGE TABLE
C-500	UTILITY SITE PLAN I
C-501	UTILITY SITE PLAN II
C-502	UTILITY SITE PLAN III
C-503	UTILITY SITE PLAN IV
C-504	UTILITY SITE PLAN V
C-505	UTILITY SITE PLAN VI
C-506	UTILITY X-SECTION
C-600	DRIVEWAY LAYOUT AND GRADING PLAN I
C-601	DRIVEWAY LAYOUT AND GRADING PLAN II
C-602	DRIVEWAY LAYOUT AND GRADING PLAN III
C-603	DRIVEWAY LAYOUT AND GRADING PLAN IV
C-604	DRIVEWAY PROFILE
C-605	DRIVEWAY CROSS-SECTIONS
C-700	CIVIL SITE DETAILS I
C-701	CIVIL SITE DETAILS II
C-702	CIVIL SITE DETAILS III
C-703	CIVIL SITE DETAILS IV
C-704	CIVIL SITE DETAILS V
C-705	CIVIL SITE DETAILS VI
ADD ALT-1	ALTERNATE NO.1 LOCKER BUILDING UTILITY PLAN
ADD ALT-3	ALTERNATE NO.3 MAINTENANCE BUILDING
C800	WALL PLAN, ELEVATION & SECTION

LANDSCAPE

NUMBER	DRAWING NAME
L000	OVERALL SITE PLAN
L101	DEMO AND SITE PREPARATION PLAN - 1
L102	DEMO AND SITE PREPARATION PLAN - 2
L103	DEMO AND SITE PREPARATION PLAN - 3
L104	DEMO AND SITE PREPARATION PLAN - 4
L105	DEMO AND SITE PREPARATION PLAN - 5
L201	LAYOUT PLAN - 1
L202	LAYOUT PLAN - 2
L203	LAYOUT PLAN - 3
L204	LAYOUT PLAN - 4
L205	LAYOUT PLAN - 5
L301	MATERIALS PLAN - 1
L302	MATERIALS PLAN - 2
L303	MATERIALS PLAN - 3
L304	MATERIALS PLAN - 4
L305	MATERIALS PLAN - 5
L401	GRADING PLAN - 1
L402	GRADING PLAN - 2
L403	GRADING PLAN - 3
L404	GRADING PLAN - 4
L405	GRADING PLAN - 5
L501	PLANTING PLAN - 1
L502	PLANTING PLAN - 2
L503	PLANTING PLAN - 3
L504	PLANTING PLAN - 4
L505	PLANTING PLAN - 5
L601	LANDSCAPE DETAILS - 1
L602	LANDSCAPE DETAILS - 2
L603	LANDSCAPE DETAILS - 3
L604	LANDSCAPE DETAILS - 4
L605	LANDSCAPE DETAILS - 5
L606	LANDSCAPE DETAILS - 6
L607	BOARDWALK HANDRAIL AND GUARDRAIL PLAN - 1
L701	BOARDWALK HANDRAIL AND GUARDRAIL PLAN - 2
L702	BOARDWALK HANDRAIL AND GUARDRAIL PLAN - 3
L703	1703 - PLAZA ENTRANCE JOINTS PLAN
L801	ALTERNATE NO.1 LOCKER BUILDING
L901	SIGNAGE & PAVEMENT MARKINGS PLAN

IRRIGATION

NUMBER	DRAWING NAME
I101	IRRIGATION PLAN
I102	IRRIGATION PLAN
I201	IRRIGATION DETAILS
L202	IRRIGATION DETAILS

VOLUME 2 OF 4

STRUCTURAL	
NUMBER	DRAWING NAME
S0-0.1	GENERAL NOTES
S0-0.2	TYPICAL DETAILS
S0-0.3	TYPICAL DETAILS
S0-0.4	TYPICAL DETAILS
S0-0.5	TYPICAL DETAILS
S0-0.6	TYPICAL DETAILS
S0-0.7	TYPICAL DETAILS
S0-0.8	TYPICAL DETAILS
S0-0.9	TYPICAL DETAILS
S1-1-00	LOWER LEVEL FOUNDATION PLAN - AREA C
S1-1-00MC	MEZZANINE FLOOR FRAMING PLAN - AREA C
S1-1-0MD	MEZZANINE FLOOR FRAMING PLAN - AREA D
S1-1-1A	FIRST FLOOR FOUNDATION PLAN - AREA A
S1-1-1B	FIRST FLOOR FOUNDATION PLAN - AREA B
S1-1-1C	FIRST FLOOR FOUNDATION PLAN - AREA C
S1-1-1D	FIRST FLOOR FOUNDATION PLAN - AREA D
S1-1-1MA	MEZZANINE FLOOR FRAMING - AREA A
S1-1-1MB	MEZZANINE FLOOR FRAMING - AREA B
S1-1-2A	SECOND FLOOR FRAMING PLAN - AREA A
S1-1-2B	SECOND FLOOR FRAMING PLAN - AREA B
S1-1-2C	SECOND FLOOR FRAMING PLAN - AREA C
S1-1-2D	SECOND FLOOR FRAMING PLAN - AREA D
S1-1-3A	THIRD FLOOR FRAMING PLAN - AREA A
S1-1-3B	THIRD FLOOR FRAMING PLAN - AREA B
S1-1-3C	THIRD FLOOR FRAMING PLAN - AREA C
S1-1-3D	THIRD FLOOR FRAMING PLAN - AREA D
S1-1-4A	FOURTH FLOOR FRAMING PLAN - AREA A
S1-1-4B	FOURTH FLOOR FRAMING PLAN - AREA B
S1-1-4C	FOURTH FLOOR FRAMING PLAN - AREA C
S1-1-4D	FOURTH FLOOR FRAMING PLAN - AREA D
S1-1-5A	ROOF FRAMING PLAN - AREA A
S1-1-5B	ROOF FRAMING PLAN - AREA B
S1-1-5C	ROOF FRAMING PLAN - AREA C
S1-1-5D	ROOF FRAMING PLAN - AREA D
S1-1-6	JOIST DRUNNAGE FRAMING PARTS
S2-0.1	SECTIONS
S2-0.2	SECTIONS
S2-0.3	SECTIONS
S2-0.4	SECTIONS
S2-0.5	SECTIONS
S3-0.1	SECTIONS
S3-0.2	SECTIONS
S3-0.3	SECTIONS
S3-0.4	SECTIONS
S3-0.5	SECTIONS
S3-0.6	SECTIONS
S3-0.7	SECTIONS
S3-0.8	SECTIONS
S3-0.9	SECTIONS
S4-0.1	BRACE FRAME ELEVATIONS - AREA A
S4-0.2	BRACE FRAME ELEVATION - AREAS A + B
S4-0.3	BRACE FRAME ELEVATION - AREA B
S4-0.4	BRACE FRAME ELEVATION C + D
S4-0.5	SHEAR WALLS
S4-0.6	SHEAR WALLS
S4-0.7	SHEAR WALLS
S4-0.8	BRACED FRAME DETAILS
S4-0.9	BRACED FRAME DETAILS
S5-0.1	JOIST LOADING DIAGRAMS
S5-0.2	JOIST LOADING DIAGRAMS
S5-0.3	JOIST LOADING DIAGRAMS
SC-1.1	CONCESSION BUILDING PLANS
SC-2.1	CONCESSION BUILDING SECTIONS
SL-1.1	LOCKER ROOM BUILDING SECTIONS
SL-2.1	LOCKER ROOM BUILDING SHEAR WALLS
SM-1.1	MAINTENANCE BUILDING FOUNDATION PLANS
SS-1.1	SITE BUILDING FOUNDATION PLANS

VOLUME 3 OF 4

CODE ANALYSIS

NUMBER	DRAWING NAME
CD-1.1	CODE ANALYSIS LOWER LEVEL
CD-1.2	CODE ANALYSIS FIRST FLOOR
CD-1.3	CODE ANALYSIS FIRST FLOOR MEZZ
CD-1.4	CODE ANALYSIS SECOND FLOOR
CD-1.5	CODE ANALYSIS THIRD FLOOR
CD-1.6	CODE ANALYSIS FOURTH FLOOR

ARCHITECTURAL

NUMBER	DRAWING NAME
A0-2.1	SYMBOLS & ABBREVIATIONS
A1-0.0	PARTITION TYPES
A1-0.1	OVERALL LOWER LEVEL & FIRST FLOOR PLANS
A1-0.2	OVERALL LOWER LEVEL AND FIRST FLOOR MEZZ. PLANS
A1-0.3	OVERALL SECOND FLOOR PLAN
A1-0.4	OVERALL THIRD FLOOR PLAN
A1-0.5	OVERALL FOURTH FLOOR PLAN
A1-0.6	OVERALL ROOF PLAN
A1-0.7	LOWER LEVEL BUILDING LAYOUT & EDGE OF SLAB PLAN
A1-0.8	FIRST FLOOR BUILDING LAYOUT & EDGE OF SLAB PLAN
A1-0.9	SECOND & THIRD FLOOR EDGE OF SLAB PLANS
A1-0.10	FOURTH FLOOR EDGE OF SLAB PLAN
A1-1-0C	LOWER LEVEL FLOOR PLAN - AREA C
A1-1-0D	LOWER LEVEL FLOOR PLAN - AREA D
A1-1-0MC	LOWER LEVEL MEZZANINE PLAN - AREA C
A1-1-0MD	LOWER LEVEL MEZZANINE PLAN - AREA D
A1-1-1A	FIRST FLOOR PLAN - AREA A
A1-1-1B	FIRST FLOOR PLAN - AREA B
A1-1-1C	FIRST FLOOR PLAN - AREA C
A1-1-1D	FIRST FLOOR PLAN - AREA D
A1-1-1MA	FIRST FLOOR MEZZANINE PLAN - AREA A
A1-1-1MB	FIRST FLOOR MEZZANINE PLAN - AREA B
A1-1-2A	SECOND FLOOR PLAN - AREA A
A1-1-2B	SECOND FLOOR PLAN - AREA B
A1-1-2C	SECOND FLOOR PLAN - AREA C
A1-1-2D	SECOND FLOOR PLAN - AREA D
A1-1-3A	THIRD FLOOR PLAN - AREA A
A1-1-3B	THIRD FLOOR PLAN - AREA B
A1-1-3C	THIRD FLOOR PLAN - AREA C
A1-1-3D	THIRD FLOOR PLAN - AREA D
A1-1-4A	FOURTH FLOOR PLAN - AREA A
A1-1-4B	FOURTH FLOOR PLAN - AREA B
A1-1-4C	FOURTH FLOOR PLAN - AREA C
A1-1-4D	FOURTH FLOOR PLAN - AREA D
A1-2-1A	ROOF PLAN - AREA A
A1-2-1B	ROOF PLAN - AREA B
A1-2-1C	ROOF PLAN - AREA C
A1-2-1D	ROOF PLAN - AREA D
A2-0.1	OVERALL BUILDING ELEVATIONS
A2-1.1	BUILDING ELEVATIONS
A2-1.2	BUILDING ELEVATIONS
A2-1.3	BUILDING ELEVATIONS
A2-1.4	BUILDING ELEVATIONS
A2-1.5	BUILDING ELEVATIONS
A2-1.6	BUILDING ELEVATIONS
A2-1.7	BUILDING ELEVATIONS
A2-1.8	BUILDING ELEVATIONS
A2-2.1	INTERIOR ELEVATIONS
A2-2.2	INTERIOR ELEVATIONS
A2-2.3	INTERIOR ELEVATIONS
A2-2.4	INTERIOR ELEVATIONS
A2-2.5	INTERIOR ELEVATIONS
A2-2.6	INTERIOR ELEVATIONS
A2-2.7	INTERIOR ELEVATIONS
A2-2.8	INTERIOR ELEVATIONS
A2-2.9	INTERIOR ELEVATIONS
A2-2.10	INTERIOR ELEVATIONS
A2-2.11	INTERIOR ELEVATIONS
A2-2.12	INTERIOR ELEVATIONS
A2-2.13	INTERIOR ELEVATIONS
A2-2.14	INTERIOR ELEVATIONS
A2-2.15	INTERIOR ELEVATIONS
A2-2.16	INTERIOR ELEVATIONS
A3-1.1	BUILDING SECTIONS
A3-1.2	BUILDING SECTIONS
A3-1.3	BUILDING SECTIONS
A3-1.4	BUILDING SECTIONS
A3-1.5	BUILDING SECTIONS
A3-1.6	BUILDING SECTIONS

VOLUME 3 OF 4 (CONT.)

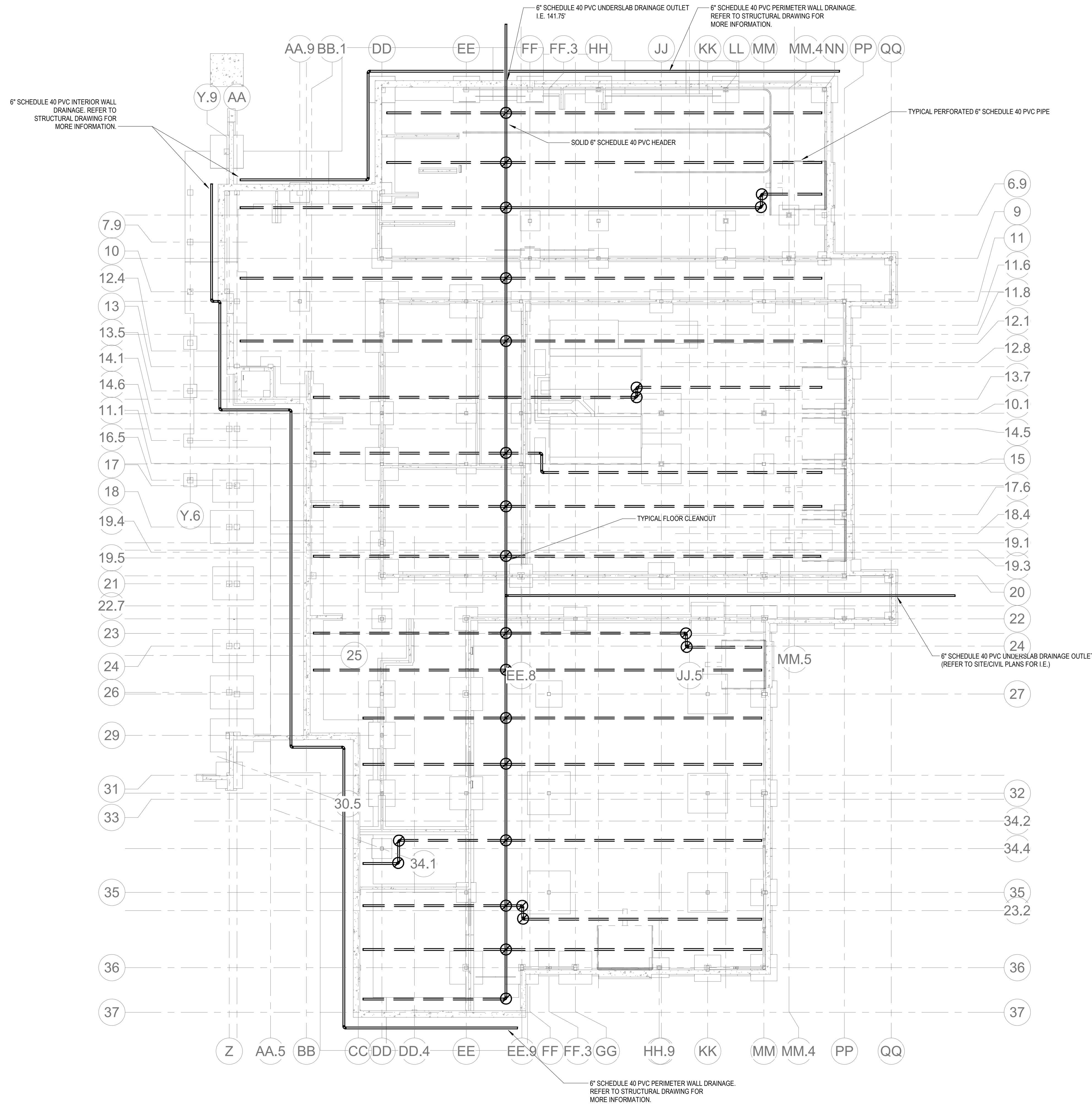
ARCHITECTURAL	
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A3-2.1	WALL SECTIONS
A3-2.2	WALL SECTIONS
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A3-2.5	WALL SECTIONS
A3-2.6	WALL SECTIONS
A3-2.7	WALL SECTIONS
A3-2.8	WALL SECTIONS
A3-2.9	WALL SECTIONS
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A3-2.11	WALL SECTIONS
A3-2.12	WALL SECTIONS
A3-2.13	WALL SECTIONS
A3-2.14	WALL SECTIONS
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A3-2.16	WALL SECTIONS
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A3-2.18	WALL SECTIONS
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A3-2.20	WALL SECTIONS
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A3-2.23	WALL SECTIONS
A3-2.24	WALL SECTIONS
A3-2.25	WALL SECTIONS
A3-2.26	WALL SECTIONS
A3-2.27	WALL SECTIONS
A3-2.28	WALL SECTIONS
A3-2.29	WALL SECTIONS
A3-2.30	WALL SECTIONS
A3-3.1	VERTICAL DETAILS
A3-3.2	VERTICAL DETAILS
A3-3.3	VERTICAL DETAILS
A3-3.4	VERTICAL DETAILS
A3-3.5	VERTICAL DETAILS
A4-1.1	TOILET AND LOCKER ROOM PLANS
A4-1.2	TOILET PLANS
A4-1.3	TOILET PLANS
A4-1.4	TOILET AND LOCKER ROOM ELEVATIONS
A4-1.5	TOILET AND LOCKER ROOM ELEVATIONS
A4-1.6	TOILET ELEVATIONS
A4-1.7	TOILET ELEVATIONS
A4-1.8	EXTERIOR PLAN DETAILS
A5-1.2	EXTERIOR PLAN DETAILS
A5-1.3	EXTERIOR PLAN DETAILS
A5-1.4	EXTERIOR PLAN DETAILS
A5-2.1	INTERIOR PLAN DETAILS
A5-2.2	INTERIOR PLAN DETAILS
A5-2.3	INTERIOR PLAN DETAILS
A5-3.1	ROOF DETAILS
A5-3.2	ROOF DETAILS
A5-3.3	ROOF DETAILS
A6-2.1	DOOR SCHEDULE
A6-2.2	DOOR SCHEDULE
A6-2.3	DOOR SCHEDULE, FRAME & BORROWED LIGHT TYPES
A6-2.4	DOOR AND BORROWED LITE DETAILS
A6-2.5	DOOR AND BORROWED LITE DETAILS
A6-3.1	WINDOW, TRANSLUCENT WALL PANEL AND LOUVER TYPES
A6-3.2	CURTAIN WALL TYPES
A6-3.3	CURTAIN WALL TYPES
A6-3.4	CURTAIN WALL TYPES
A6-3.5	INTERIOR CURTAIN WALL TYPES
A6-3.6	STOREFRONT AND INTERIOR STOREFRONT TYPES
A6-3.7	INTERIOR STOREFRONT TYPES
A6-3.8	WINDOW AND TRANSLUCENT WALL PANEL DETAILS
A6-3.9	LOUVER DETAILS
A6-3.10	CURTAIN WALL DETAILS
A6-3.11	CURTAIN WALL DETAILS
A6-3.12	CURTAIN WALL DETAILS
A6-3.13	CURTAIN WALL DETAILS
A6-3.14	INTERIOR CURTAIN WALL DETAILS
A6-3.15	INTERIOR CURTAIN WALL DETAILS
A6-3.16	STOREFRONT DETAILS
A6-3.17	STOREFRONT & INTERIOR STOREFRONT DETAILS
A6-3.18	INTERIOR STOREFRONT DETAILS
A6-3.19	INTERIOR STOREFRONT DETAILS
A7-1.1	STAIR PLANS
A7-1.2	STAIR SECTIONS
A7-1.3	STAIR PLANS & SECTIONS
A7-1.4	STAIR PLANS
A7-1.5	STAIR SECTIONS
A7-1.6	STAIR PLANS & SECTIONS
A7-1.7	STAIR PLANS & SECTIONS
A7-1.8	STAIR PLANS & SECTIONS
A7-1.9	ELEVATOR PLANS & SECTIONS
A7-1.10	STAIR DETAILS
A7-1.11	STAIR DETAILS - ELEVATOR DETAILS, SPECIALTY DETAILS
A7-1.12	LOADING RAMP PLAN, SECTION & DETAILS
A8-1-0C	LOWER LEVEL REFLECTED CEILING PLAN - AREA C
A8-1-0D	LOWER LEVEL REFLECTED CEILING PLAN - AREA D
A8-1-0MC	LOWER LEVEL MEZZANINE REFLECTED CEILING PLAN - AREA C
A8-1-0MD	LOWER LEVEL MEZZANINE REFLECTED CEILING PLAN - AREA D
A8-1-1A	FIRST FLOOR REFLECTED CEILING PLAN - AREA A
A8-1-1B	FIRST FLOOR REFLECTED CEILING PLAN - AREA B
A8-1-1C	FIRST FLOOR REFLECTED CEILING PLAN - AREA C
A8-1-1D	FIRST FLOOR REFLECTED CEILING PLAN - AREA D
A8-1-1MA	FIRST FLOOR MEZZANINE REFLECTED CEILING PLAN - AREA A
A8-1-1MB	FIRST FLOOR MEZZANINE REFLECTED CEILING PLAN - AREA B
A8-1-2A	SECOND FLOOR REFLECTED CEILING PLAN - AREA A
A8-1-2B	SECOND FLOOR REFLECTED CEILING PLAN - AREA B
A8-1-2C	SECOND FLOOR REFLECTED CEILING PLAN - AREA C
A8-1-2D	SECOND FLOOR REFLECTED CEILING PLAN - AREA D
A8-1-3A	THIRD FLOOR REFLECTED CEILING PLAN - AREA A
A8-1-3B	THIRD FLOOR REFLECTED CEILING PLAN - AREA B
A8-1-3C	THIRD FLOOR REFLECTED CEILING PLAN - AREA C
A8-1-3D	THIRD FLOOR REFLECTED CEILING PLAN - AREA D
A8-1-4A	FOURTH FLOOR REFLECTED CEILING PLAN - AREA A
A8-1-4B	FOURTH FLOOR REFLECTED CEILING PLAN - AREA B
A8-1-4C	FOURTH FLOOR REFLECTED CEILING PLAN - AREA C
A8-1-4D	FOURTH FLOOR REFLECTED CEILING PLAN - AREA D
A9-1.1	MISCELLANEOUS DETAILS
A9-1.2	MISCELLANEOUS DETAILS
A9-1.3	MISCELLANEOUS DETAILS
A9-1.4	MISCELLANEOUS DETAILS
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A9-1.57	MISCELLANEOUS DETAILS
A9-1.58	MISCELLANEOUS DETAILS
A9-1.59	MISCELLANEOUS DETAILS
A9-1.60	MISCELLANEOUS DETAILS
A9-1.61	MISCELLANEOUS DETAILS
A9-1.62	MISCELLANEOUS DETAILS
A9-1.63	MISCELLANEOUS DETAILS
A9-1.64	MISCELLANEOUS DETAILS
A9-1.65	MISCELLANEOUS DETAILS
A9-1.66	MISCELLANEOUS DETAILS
A9-1.67	MISCELLANEOUS DETAILS
A9-1.68	MISCELLANEOUS DETAILS
A9-1.69	MISCELLANEOUS DETAILS
A9-1.70	MISCELLANEOUS DETAILS
A9-1.71	MISCELLANEOUS DETAILS
A9-1.72	MISCELLANEOUS DETAILS
A9-1.73	MISCELLANEOUS DETAILS
A9-1.74	MISCELLANEOUS DETAILS
A9-1.75	MISCELLANEOUS DETAILS
A9-1.76	MISCELLANEOUS DETAILS
A9-1.77	MISCELLANEOUS DETAILS
A9-1.78	MISCELLANEOUS DETAILS
A9-1.79	MISCELLANEOUS DETAILS
A9-1.80	MISCELLANEOUS DETAILS
A9-1.81	MISCELLANEOUS DETAILS
A9-1.82	MISCELLANEOUS DETAILS
A9-1.83	MISCELLANEOUS DETAILS
A9-1.84	MISCELLANEOUS DETAILS
A9-1.85	MISCELLANEOUS DETAILS
A9-1.86	MISCELLANEOUS DETAILS
A9-1.87	MISCELLANEOUS DETAILS
A9-1.88	MISCELLANEOUS DETAILS
A9-1.89	MISCELLANEOUS DETAILS
A9-1.90	MISCELLANEOUS DETAILS
A9-1.91	MISCELLANEOUS DETAILS
A9-1.92	MISCELLANEOUS DETAILS
A9-1.93	MISCELLANEOUS DETAILS
A9-1.94	MISCELLANEOUS DETAILS
A9-1.95	MISCELLANEOUS DETAILS
A9-1.96	MISCELLANEOUS DETAILS
A9-1.97	MISCELLANEOUS DETAILS
A9-1.98	MISCELLANEOUS DETAILS
A9-1.99	MISCELLANEOUS DETAILS
A9-2.00	MISCELLANEOUS DETAILS
A9-2.01	MISCELLANEOUS DETAILS
A9-2.02	MISCELLANEOUS DETAILS
A9-2.03	MISCELLANEO

SCOPE NOTES:

UNDERSLAB DRAINAGE SHALL CONSIST OF:

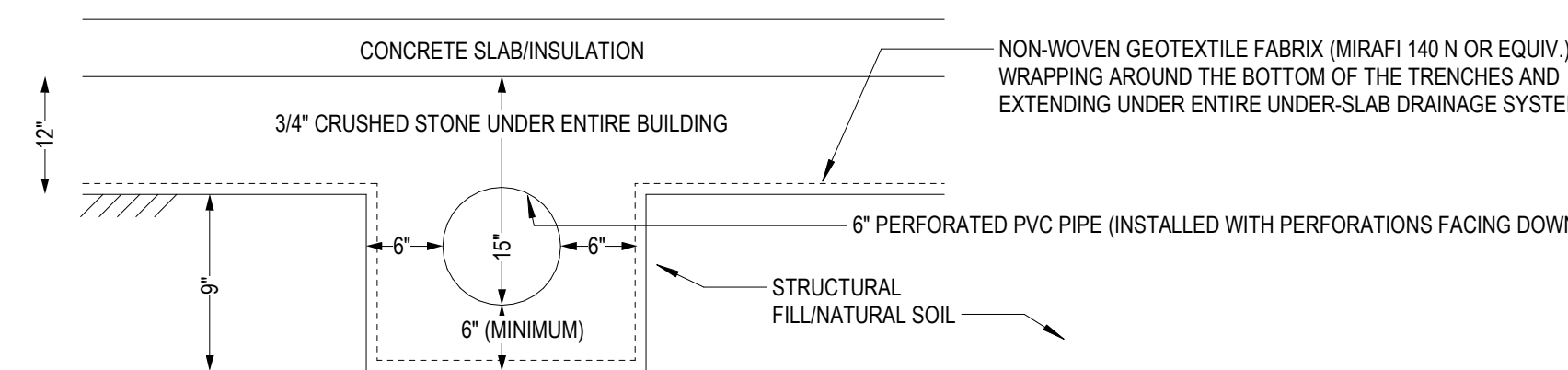
- A MINIMUM OF 12 INCHES OF 3/4 INCH CRUSHED STONE PLACED BELOW THE SLAB.
- 6" PERFORATED SCHEDULE 40 PVC PIPES INSTALLED WITH THEIR INVERTS AT LEAST 24 INCHES BELOW THE BOTTOM OF THE SLAB. THE PIPES SHALL BE INSTALLED IN TRENCHES PLACED AT 10-15 FEET APART. THE TRENCHES SHALL BE 18 INCHES WIDE AND 12 INCHES DEEP BELOW THE BOTTOM OF THE 12 INCHES OF CRUSHED STONE) TO ALLOW PLACING CRUSHED STONE AROUND THE PVC PIPE.
- THE PERFORATED PVC PIPES SHOULD CONNECT TO A 6 INCH SOLID PVC HEADER PIPE THAT COLLECTS AND CHANNELS THE COLLECTED WATER OUT OF THE BUILDING.
- CLEAN OUTS SHALL BE INCLUDED AT THE END OF THE PERFORATED PIPES.
- UNDERSLAB DRAINAGE PIPES SHALL CONSIST OF 6 INCH SCHEDULE 40 PVC.
- THE LAYOUT OF THE UNDER SLAB DRAINAGE SYSTEM SHOULD NOT BE CONNECTED TO OTHER DRAINAGE PIPES, PERIMETER DRAINS, OR ROOF LEADERS.
- OUTLET PIPES SHALL BE SLOPED AWAY FROM THE BUILDING AS TO PREVENT BACKFLOW INTO THE BUILDING.
- THE UNDERSLAB DRAINAGE SYSTEM SHOWN IN THESE DRAWINGS IS TO SHOW THE GENERAL LAYOUT OF THE SYSTEM. THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS SHOWING UNDERSLAB DRAINAGE SYSTEM AS RECONCILED WITH FOUNDATIONS AND OTHER UTILITIES. THE SYSTEM SHALL NOT BE INSTALLED UNTIL THE SHOP DRAWINGS ARE REVIEWED AND APPROVED.
- REFER TO STRUCTURAL DRAWINGS FOR DETAILS OF PERIMETER AND INTERIOR WALL DRAINS.
- LOCATION OF UNDER SLAB DRAINAGE PIPES MAY BE ADJUSTED IN THE FIELD AS NEEDED. IF ADJUSTMENT IS MORE THAN 1/4 FEET, THE GEOTECHNICAL ENGINEER MUST BE NOTIFIED TO REVIEW NEW LOCATION.

FINISHED FLOOR ELEVATION AT LOWER LEVEL IS 143.97'



1 GEOTECHNICAL PLAN - EAST

GT-0-1 1/16" = 1'-0"



2 UNDER-SLAB DRAINAGE DETAIL (TRENCHES AT 15 TO 20 FOOT SPACING TO CLEAR FOOTINGS)

GT-0-2 N.T.S.

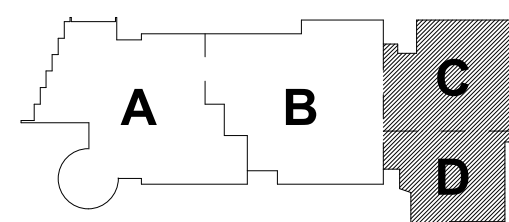
REVISION LEGEND: ☐ NEW ISSUE ☒ REVISED ISSUE ☒ REVISED, NOT ISSUED
☐ REMOVED FROM DRAWING SET ☐ ISSUED, NOT REVISED

DRAWING LIST - GEOTECHNICAL

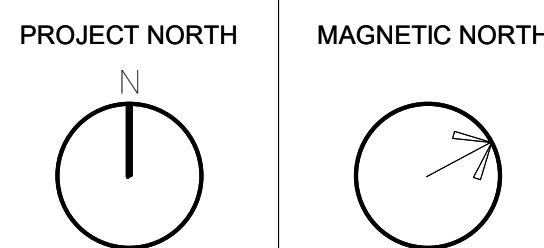
DRAWING NUMBER	DRAWING TITLE	06/23/2022 - DESIGN DEVELOPMENT - COST ESTIMATE SET	08/04/2022 - DESIGN DEVELOPMENT	11/12/2022 - 50% CONSTRUCTION DOCUMENTS COST ESTIMATING SET	12/06/2022 - EARLY SITE PREPARATION CONTRACT DOCUMENTS	01/13/2023 - DESIGN DEVELOPMENT - COST ESTIMATING SET	03/13/2023 - 80% CD COST ESTIMATE SET	06/16/2023 - PRELIMINARY SET	08/29/2023 - BID SET
GT-0-1	GEOTECHNICAL PLAN EAST	☐	☒	☒	☒	☒	☒	☒	☒
GT-0-2	GEOTECHNICAL PLAN WEST	☐	☒	☒	☒	☒	☒	☒	☒
GTI-0-1	ALTERNATE NO. 1 GEOTECHNICAL LOCKER BUILDING PLAN	☐	☒	☒	☒	☒	☒	☒	☒

BID SET

August 28th, 2023



KEY PLAN



GEOTECHNICAL PLAN EAST

Scale: As indicated
Job No.: 60-20-409
Drawn By: DRA
Date: August 28th, 2023

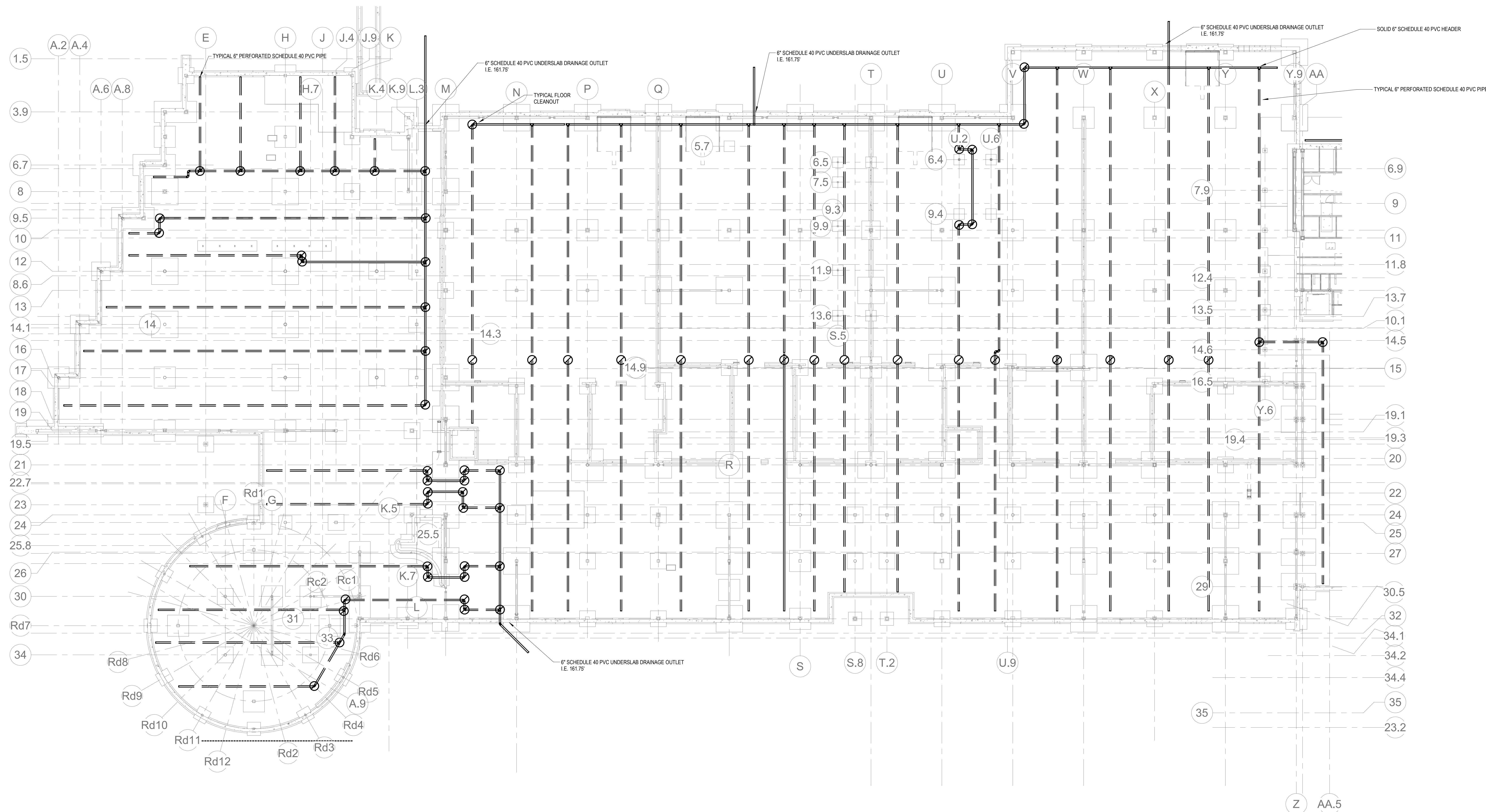
GT-0-1

SCOPE NOTES:

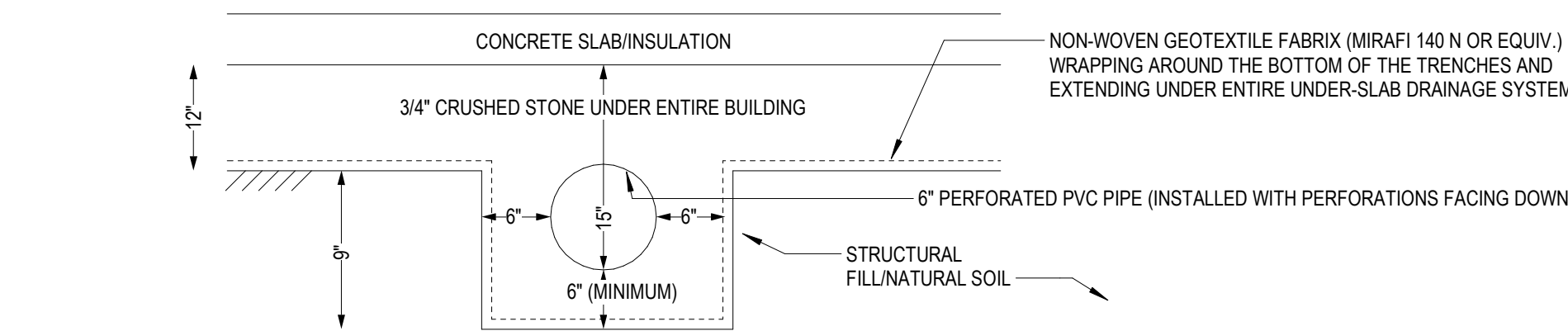
UNDERSLAB DRAINAGE SHALL CONSIST OF:

1. A MINIMUM OF 12 INCHES OF 3/4 INCH CRUSHED STONE PLACED BELOW THE SLAB
2. 6" PERFORATED SCHEDULE 40 PVC PIPES INSTALLED WITH THEIR INVERTS AT LEAST 24 INCHES BELOW THE BOTTOM OF THE SLAB. THE PIPES SHALL BE INSTALLED IN TRENCHES PLACED AT 10-15 FEET APART. THE TRENCHES SHALL BE 18 INCHES WIDE AND 12 INCHES DEEP BELOW THE BOTTOM OF THE 12 INCHES OF CRUSHED STONE) TO ALLOW PLACING CRUSHED STONE AROUND THE PVC PIPE.
3. THE PERFORATED PVC PIPES SHOULD CONNECT TO A 6 INCH SOLID PVC HEADER PIPE THAT COLLECTS AND CHANNELS THE COLLECTED WATER OUT OF THE BUILDING.
4. CLEAN OUTS SHALL BE INCLUDED AT THE END OF THE PERFORATED PIPES.
5. UNDER SLAB DRAINAGE PIPES SHALL CONSIST OF 6 INCH SCHEDULE 40 PVC.
6. THE LAYOUT OF THE UNDER SLAB DRAINAGE SYSTEM SHOULD NOT BE CONNECTED TO OTHER DRAINAGE PIPES, PERIMETER DRAINS, OR ROOF LEADERS.
7. OUTLET PIPES SHALL BE SLOPED AWAY FROM THE BUILDING AS TO PREVENT BACKFLOW INTO THE BUILDING.
8. THE UNDERSLAB DRAINAGE SYSTEM SHOWN IN THESE DRAWINGS IS TO SHOW THE GENERAL LAYOUT OF THE SYSTEM. THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS SHOWING UNDERSLAB DRAINAGE SYSTEM AS RECONCILED WITH FOUNDATIONS AND OTHER UTILITIES. THE SYSTEM SHALL NOT BE INSTALLED UNTIL THE SHOP DRAWINGS ARE REVIEWED AND APPROVED.

FINISHED FLOOR ELEVATION AT FIRST FLOOR IS 163.59'



1 GEOTECHNICAL PLAN - WEST
GT-0-2
1/8" = 1'-0"

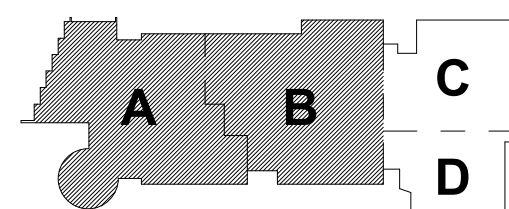


2 UNDER-SLAB DRAINAGE DETAIL (TRENCHES AT 15 TO 20 FOOT SPACING TO CLEAR FOOTINGS)
GT-0-3
N.T.S.

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BID SET

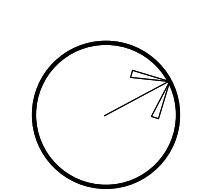
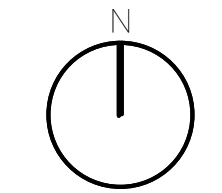
August 28th, 2023



KEY PLAN

PROJECT NORTH

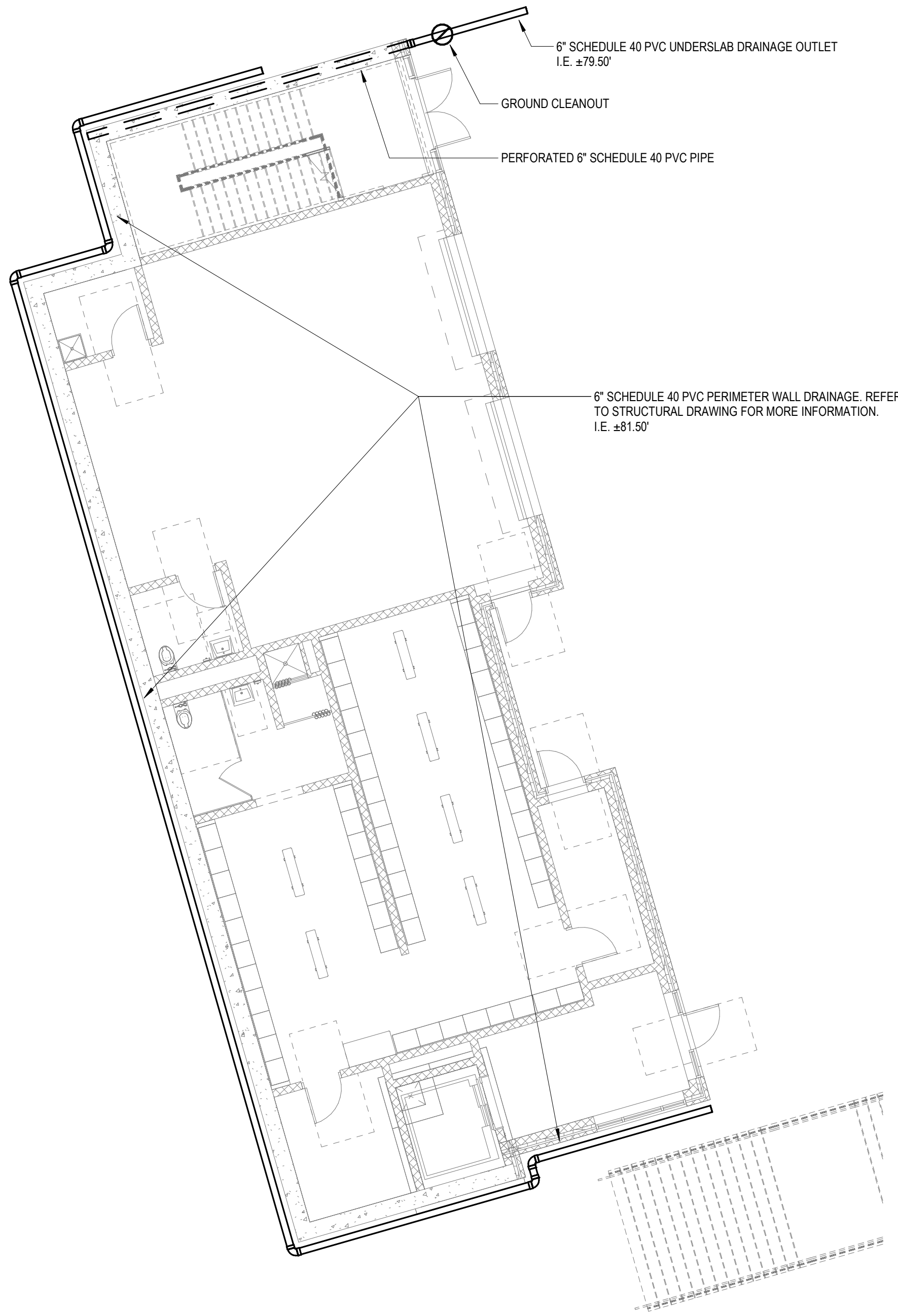
MAGNETIC NORTH



GEOTECHNICAL
PLAN WEST

Scale: As indicated
Job No.: 60-20-409
Drawn By: DRA
Date: August 28th, 2023

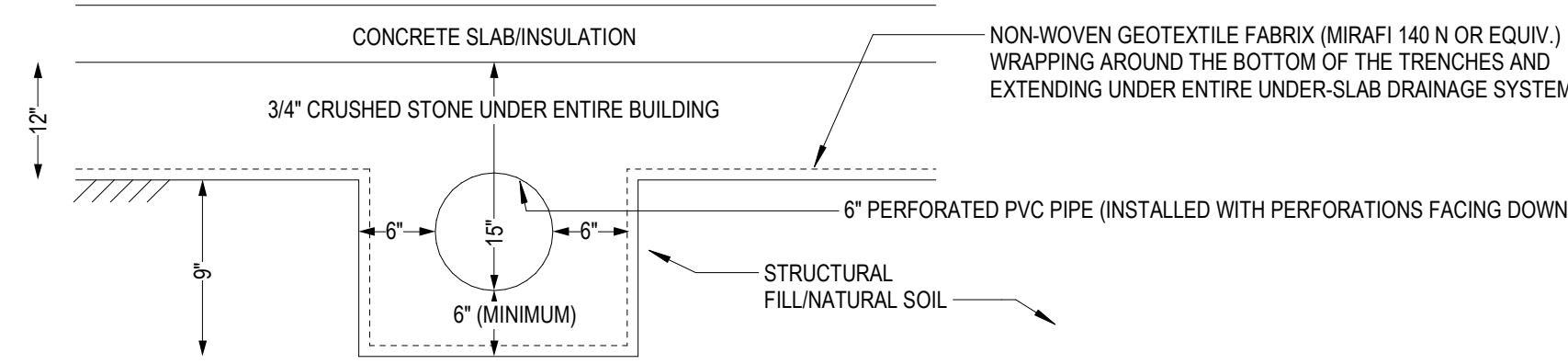
GT-0-2



- SCOPE NOTES:
- UNDERSLAB DRAINAGE SHALL CONSIST OF:
1. A MINIMUM OF 12 INCHES OF 3/4 INCH CRUSHED STONE PLACED BELOW THE SLAB.
 2. 6" PERFORATED SCHEDULE 40 PVC PIPE INSTALLED WITH ITS INVERT AT LEAST 18 INCHES BELOW THE BOTTOM OF THE SLAB. THE TRENCHES SHALL BE 18 INCHES WIDE AND 12 INCHES DEEP (BELOW THE BOTTOM OF THE 12 INCHES OF CRUSHED STONE) TO ALLOW 6 INCHES OF CRUSHED STONE AROUND THE SIDES OF AND BELOW THE PVC PIPE.
 3. THE PERFORATED PVC PIPE SHOULD CONNECT TO A 6 INCH SOLID PVC HEADER PIPE THAT COLLECTS AND CHANNELS THE COLLECTED WATER OUT OF THE BUILDING.
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 9. REFER TO STRUCTURAL DRAWINGS FOR DETAILS OF PERIMETER AND INTERIOR WALL DRAINS.
 10. LOCATION OF UNDER SLAB DRAINAGE PIPES MAY BE ADJUSTED IN THE FIELD AS NEEDED. IF ADJUSTMENT IS MORE THAN 1/2 FEET, THE GEOTECHNICAL ENGINEER MUST BE NOTIFIED TO REVIEW NEW LOCATION.

FINISHED FLOOR ELEVATION AT FIRST FLOOR IS 81.50'

1 GEOTECHNICAL PLAN - LOCKER BUILDING
GTL-01
1/8" = 1'-0"



2 UNDER-SLAB DRAINAGE DETAIL (TRENCHES AT 15 TO 20 FOOT SPACING TO CLEAR FOOTINGS)
GTL-02
N.T.S.

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225 Oakland Road
Studio 205
South Windsor, CT
06074
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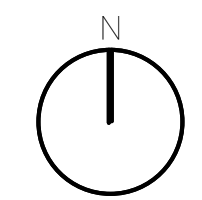
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Metropolitan
Regional
Vocational High
School

Wakefield, MA 01880

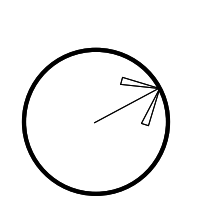
BID SET

August 28th, 2023

PROJECT NORTH



MAGNETIC NORTH



ALTERNATE NO. 1
GEOTECHNICAL
LOCKER
BUILDING PLAN

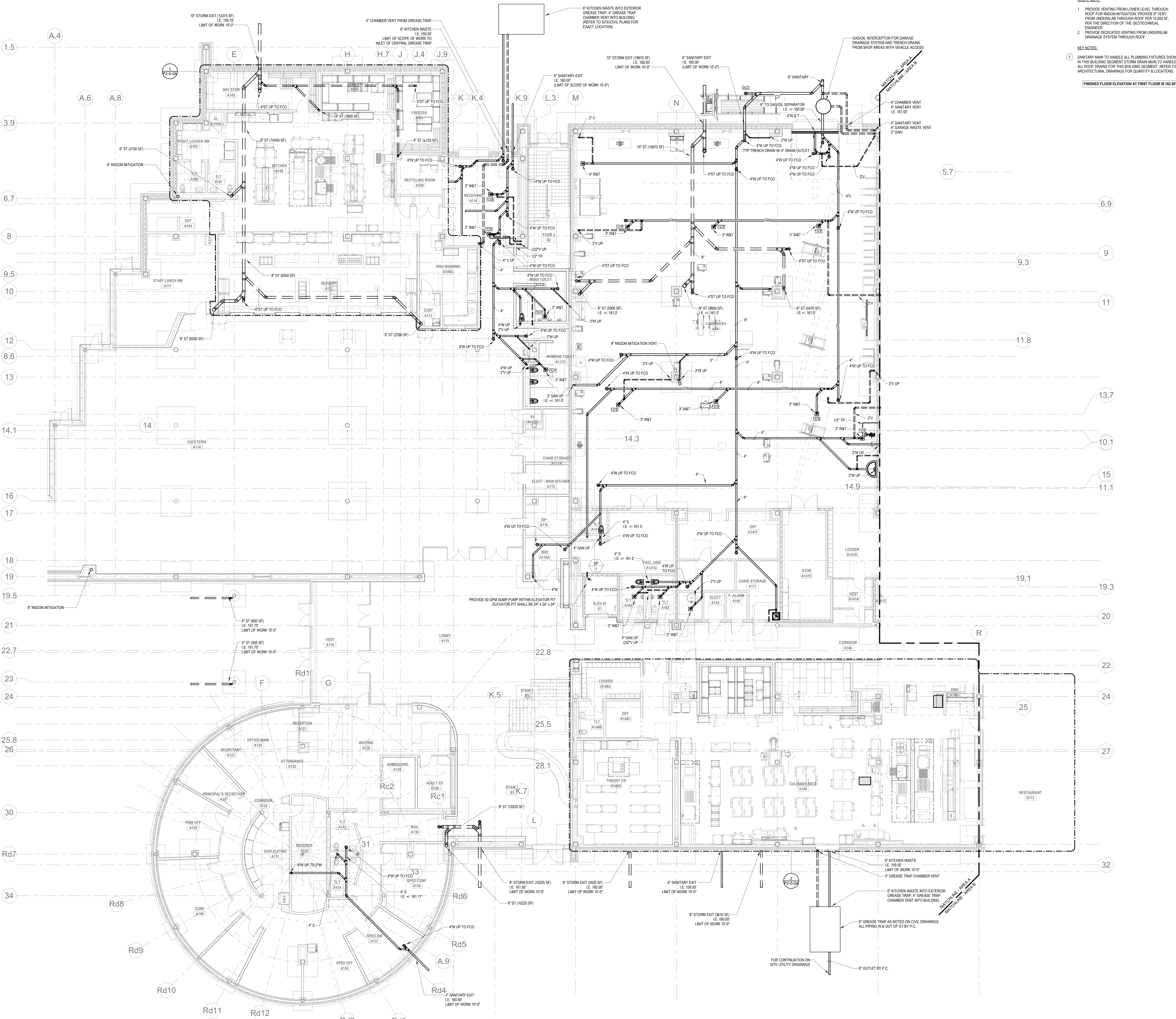
Scale: N.T.S.
Job No.: 60-20-409
Drawn By: DRA
Date: August 28th, 2023

GTL-0-1

[illegible]

Scale: 12" = 1'-0"
 Job No.: 60-20-409
 Drawn By: RDR
 Date: August 28th, 2003

P0-0-1



PLUMBING FIRST FLOOR PLAN - AREA A BELOW SLAB

SCOPE NOTE:

1. PROVIDE VENTING FROM LOWER LEVEL THROUGH ROOF FOR RADON MITIGATION. PROVIDE 8" VENT FROM UNDERSLAB THROUGH ROOF PER 10,000 SF. FOR THE DIRECTION OF THE GEOTECHNICAL ENGINEER.
2. PROVIDE DEDICATED VENTING FROM UNDERSLAB DRAINAGE SYSTEM THROUGH ROOF.

KEY NOTES:

1. SANITARY MAIN TO HANDLE ALL PLUMBING FIXTURES SHOWN IN THIS BUILDING SEGMENT. STORM DRAIN MAIN TO HANDLE ALL ROOF DRAINS FOR THIS BUILDING SEGMENT. REFER TO ARCHITECTURAL DRAWINGS FOR QUANTITY & LOCATIONS.

FINISHED FLOOR ELEVATION AT FIRST FLOOR IS 163.50'

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www.dra.com

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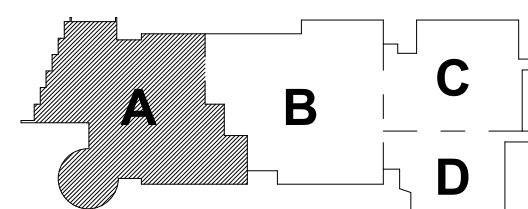
Wakefield, MA 01880

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BALA
ENGINEERS

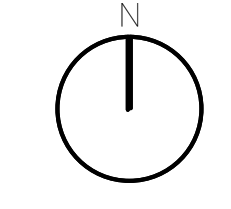
BID SET

August 28th, 2023

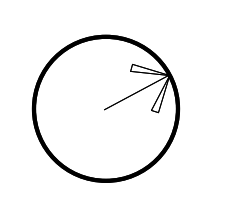


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



PLUMBING FIRST
FLOOR PLAN -
AREA A BELOW
SLAB

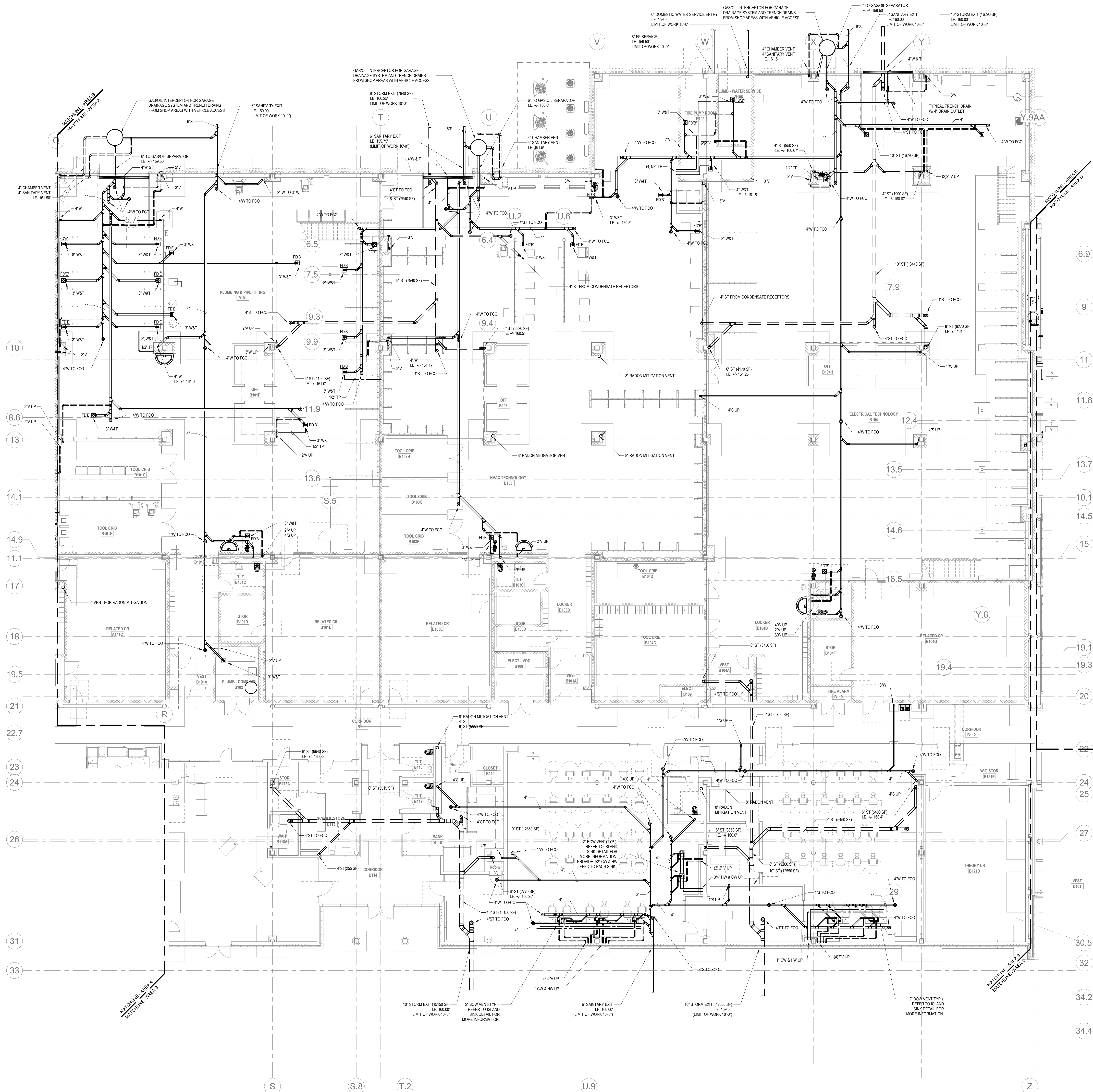
Scale: 1/8" = 1'-0"

Job No.: 60-20-409

Drawn By: RDR

Date: August 28th, 2023

P1-0-0A



SCOPE NOTE:

1. PROVIDE VENTING FROM LOWER LEVEL THROUGH ROOF FOR RADON MITIGATION. PROVIDE 8\"/>
2. PROVIDE DEDICATED VENTING FROM UNDERSLAB DRAINAGE SYSTEM THROUGH ROOF.

KEY NOTES:

1. SANITARY MAIN TO HANDLE ALL PLUMBING FIXTURES SHOWN IN THIS BUILDING SEGMENT. STORM DRAIN MAIN TO HANDLE ALL ROOF DRAINS FOR THIS BUILDING SEGMENT. REFER TO ARCHITECTURAL DRAWINGS FOR QUANTITY & LOCATIONS.

FINISHED FLOOR ELEVATION AT FIRST FLOOR IS 163.50'

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06074

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Studio 300
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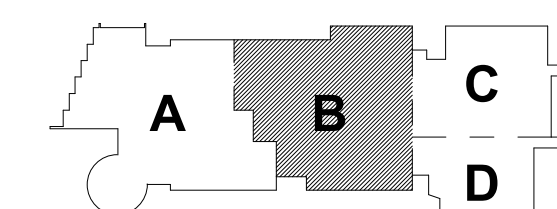
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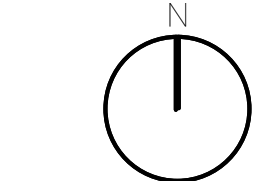
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August 28th, 2023

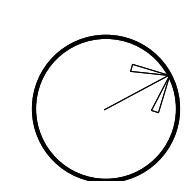


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



PLUMBING FIRST
FLOOR PLAN -
AREA B BELOW
SLAB

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

Job No.: 60-20-409

Drawn By: RDR

Date: August 28th, 2023

P1-0-0B

1 PLUMBING FIRST FLOOR PLAN - AREA B BELOW SLAB

P1-0-0B 1/8" = 1'-0"

1. PROVIDE VENTING FROM LOWER LEVEL THROUGH ROOF FOR RADON MITIGATION. PROVIDE 8" VENT FROM UNDERSLAB THROUGH ROOF PER 10,000 SF, PER THE DIRECTION OF THE GEOTECHNICAL ENGINEER.

① FINAL LOCATION OF 1/2" CA CONNECTION SHALL BE FIELD COORDINATED PER THE MANUFACTURER'S REQUIREMENT.

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06074	02453

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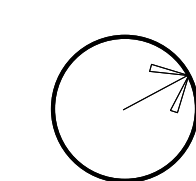
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MECHANICAL | ELECTRICAL | PLUMBING | FIRE PROTECTION
STRUCTURAL | TOWERWORK | CONSTRUCTION

August 28th, 2023



MAGNETIC NORTH



Scale: 10" = 1' 0"

... 66 66 10

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Drawn By: RDR

P1-0-0C

1. PROVIDE VENTING FROM LOWER LEVEL THROUGH ROOF FOR RADON MITIGATION. PROVIDE 8" VENT FROM UNDERSLAB THROUGH ROOF PER 10,000 SF. PER THE DIRECTION OF THE GEOTECHNICAL ENGINEER.
2. PROVIDE DEDICATED VENTING FROM UNDERSLAB DRAINAGE SYSTEM THROUGH ROOF.

① SANITARY MAIN TO HANDLE ALL PLUMBING FIXTURES SHOWN IN THIS BUILDING SEGMENT STORM DRAIN MAIN TO HANDLE ALL ROOF DRAINS FOR THIS BUILDING SEGMENT. REFER TO ARCHITECTURAL DRAWINGS FOR QUANTITY & LOCATIONS.

FINISHED FLOOR ELEVATION AT LOWER LEVEL IS 143.50'

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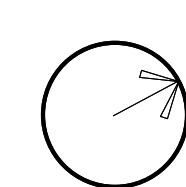
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BALA CORRELL ENGINEERS, INC.
10 TEMPLE PLACE
BOSTON, MA 02115-1008
TEL: 617 237 8880 FAX: 617 237 5888
WWW.BALA.COM

August 28th, 2023



MAGNETIC NORTH



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

Job No.: 60-20-409

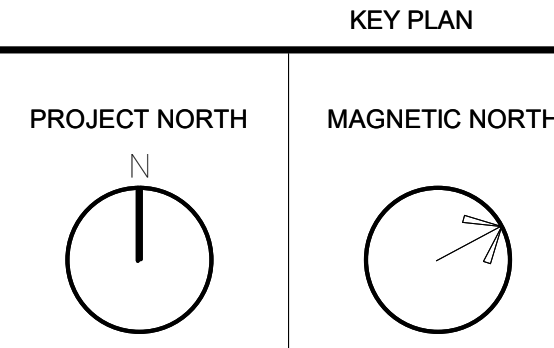
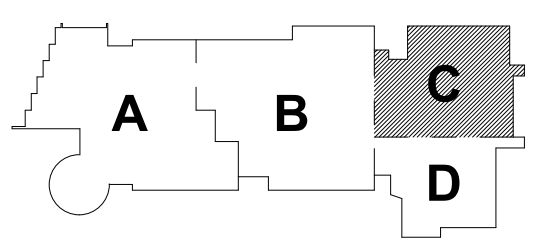
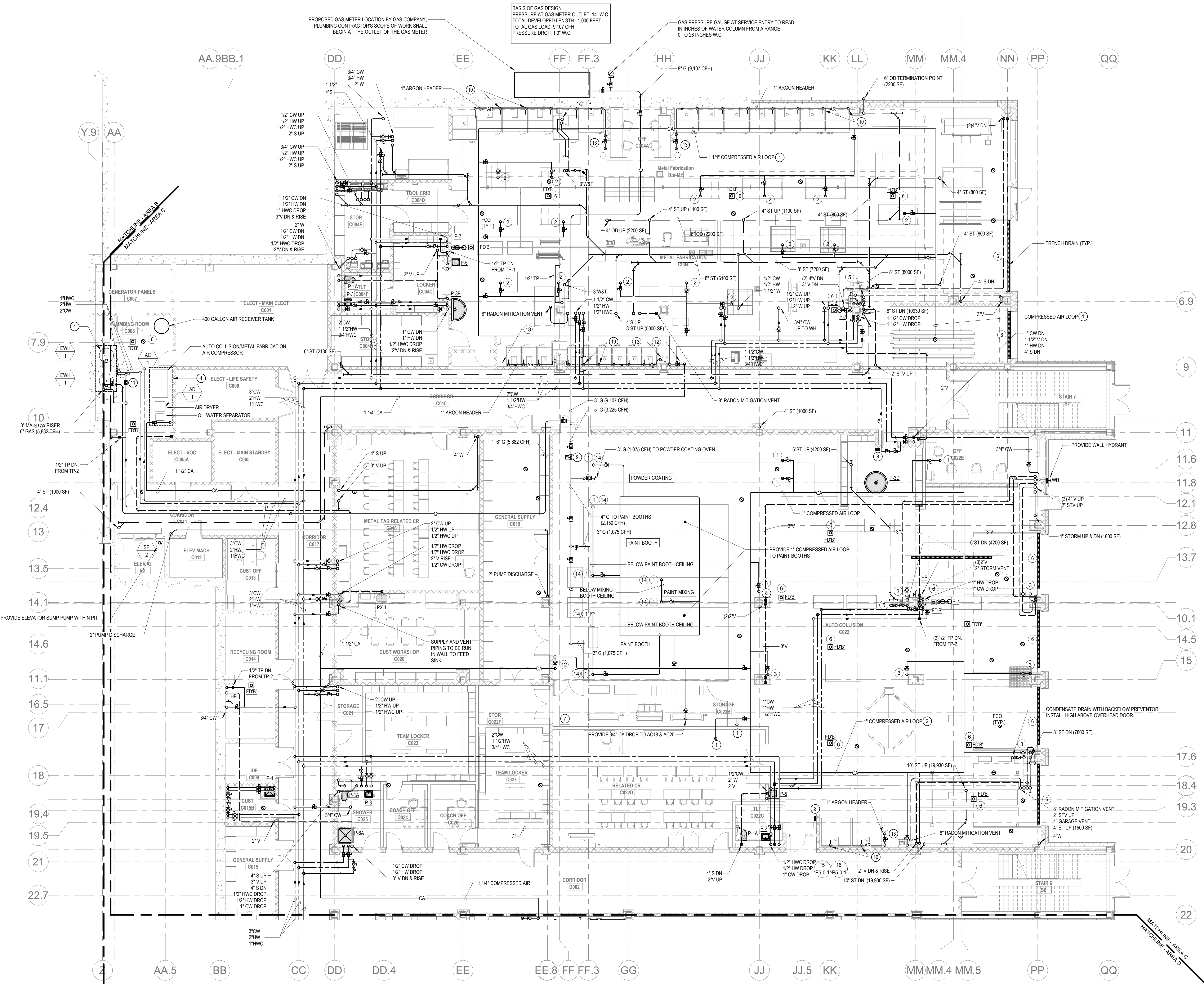
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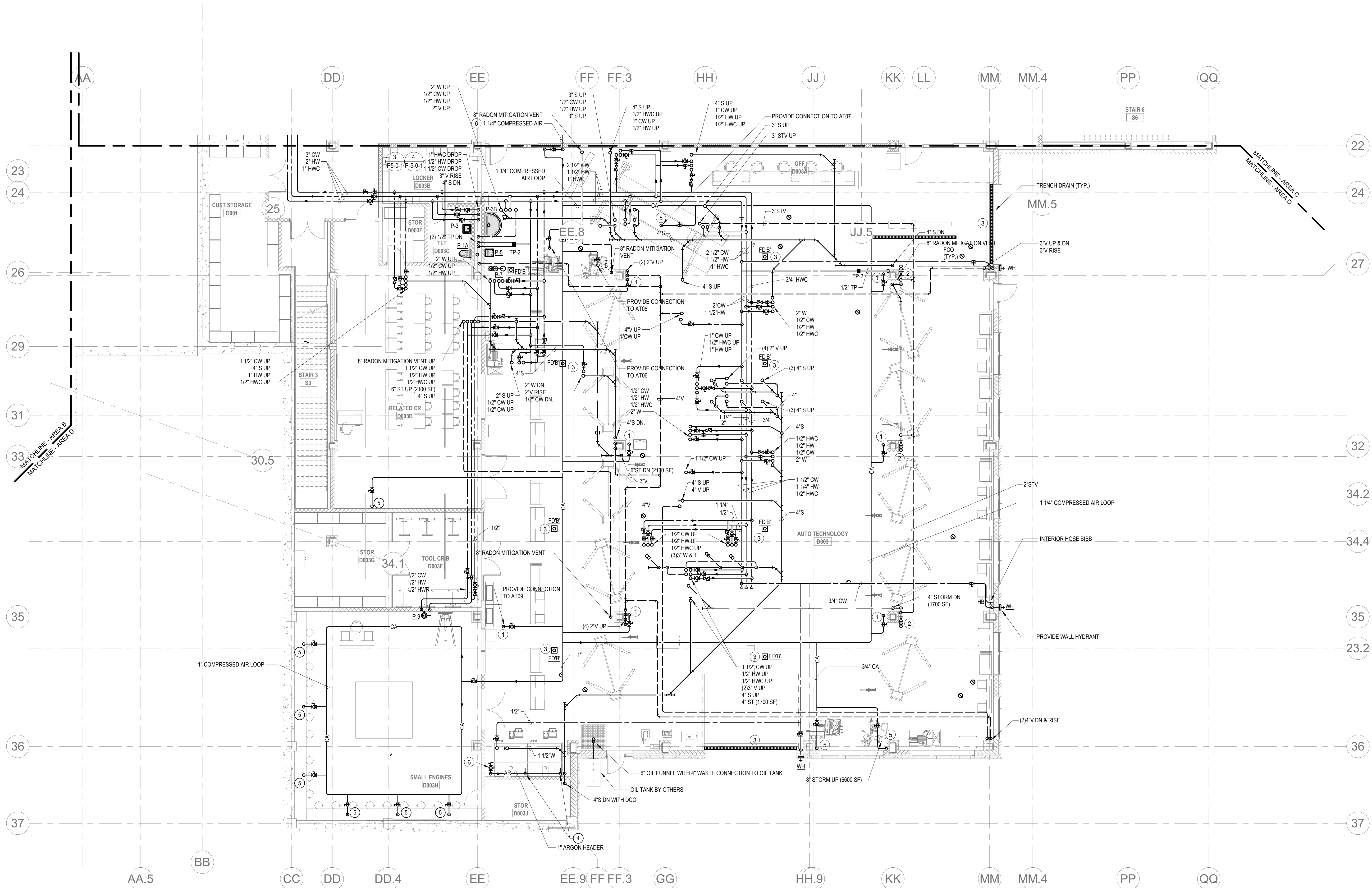
P1-0-0D

- KEY NOTES:
1. PROVIDE 1/2" COMPRESSED AIR DROP FROM CEILING. EACH DROP SHALL CONTAIN A PRESSURE GAUGE, AIR FILTER, CONDENSATE FILTER, AND PRESSURE REGULATOR.
 2. PROVIDE 1/2" COMPRESSED AIR CONNECTION TO SEE HOSE REEL FOR USE AT 1/2" WORKSHEET IN METAL FABRICATION SHOP. EACH CONNECTION SHALL CONTAIN A PRESSURE GAUGE, AIR FILTER, CONDENSATE FILTER, AND PRESSURE REGULATOR.
 3. PROVIDE 3/4" COMPRESSED AIR DROP TO FEED DOUBLE COMPRESSED AIR OUTLET. EACH DROP SHALL CONTAIN A SHUTOFF VALVE, PRESSURE GAUGE, AIR FILTER, CONDENSATE FILTER, AND PRESSURE REGULATOR.
 4. PROVIDE CONCRETE HOUSEKEEPING PAD.
 5. CONDENSATE DRAIN WITH BACKWATER VALVE. INSTALL TIGHT TO WALL. FIELD COORDINATE INSTALLATION.
 6. PROVIDE FLOOR/TRENCH DRAIN WITH TRAP GUARD.
 7. MASTER GAS VALVE CONTROL PANEL. EMERGENCY SHUTOFF PANEL. TO GAS SUPPLY TO PAINT BOOTHS AND POWDER COATING BOOTH.
 8. EMERGENCY SHUTOFF BUTTON FOR GAS SUPPLY.
 9. GAS SOLENOID VALVE SHALL BE WIRED TO EMERGENCY SHUTOFF PANEL AND EMERGENCY SHUTOFF BUTTONS WITHIN AUTO COLLISION SHOP.
 10. 1/2" ARGON DROP TO EACH WELDING BOOTH. PROVIDE SHUTOFF VALVE AND QUICK DISCONNECT. 48" AFF. (TYPICAL).
 11. PROVIDE 3/4" WATER METER FOR AREA C WATER HEATERS.
 12. PIPE DROPS TO MASTER SHUTOFF VALVE TO BE LOCATED IN LOCKED CABINET / VALVE BOX. SHUTOFF VALVE TO BE INSTALLED AT APPROX. 48" AFF.
 13. PROVIDE HOSE CONNECTION FOR PORTABLE ARGON CANISTER TO SUPPLY 1" ARGON PIPE HEADER FOR WELDING BOOTHS. CONNECTION SHALL BE INSTALLED 60" AFF.
 14. PROVIDE ONE PENETRATION FOR COMPRESSED AIR PIPING INTO PAINT BOOTH AND MIXING BOOTH AND DISTRIBUTE PIPING WITHIN TO DIFFERENT CONNECTION POINTS. FINAL LOCATION OF PENETRATION SHALL BE COORDINATED IN THE FIELD WITH THE PAINT BOOTH MANUFACTURER AND OTHER EQUIPMENT WITHIN THE PAINT BOOTH/MIXING BOOTH.

- PLUMBING GENERAL NOTES
1. GENERAL NOTE AT SOUND BARRIER CEILING:
A. IN THE VOCATIONAL SHOP ROOMS A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEPPFP SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNSTRUCTURED SUPPORTS ATTACHED TO BOTTOM CHORD OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEPPFP SYSTEMS COMPONENTS. SPECIALLY ACoustically RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEPPFP SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON A LIMITED BASIS AT LOCATIONS SPECIFICALLY INDICATED ON THE MEPPFP DRAWINGS.
 2. GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP MEZZANINES:
A. ALL COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEPPFP COORDINATION PROCESS.
B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.



PLUMBING
LOWER LEVEL
FLOOR PLAN -
AREA C



PLUMBING Level 0 Area D
P1-1-0D
1/8" = 1'-0"

- KEY NOTES:**
1. PROVIDE 3/4" COMPRESSED AIR DROP TO FEED DOUBLE COMPRESSED AIR OUTLET. EACH DROP SHALL CONTAIN A SHUTOFF VALVE, PRESSURE GAUGE, AIR FILTER, CONDENSATE FILTER, AND PRESSURE REGULATOR.
 2. CONDENSATE RECEPTOR WITH BACKWATER VALVE. INSTALL TIGHT TO WALL. FIELD COORDINATE INSTALLATION.
 3. PROVIDE FLOOR/TRENCH DRAIN WITH TRAP GUARD.
 4. 1/2" ARGON DROP TO EACH WELDING BOOTH. PROVIDE SHUTOFF VALVE AND QUICK DISCONNECT 48" AFF (TYPICAL).
 5. PROVIDE 1/2" COMPRESSED AIR DROP TO FEED COMPRESSED AIR OUTLET. EACH DROP SHALL CONTAIN A SHUTOFF VALVE, PRESSURE GAUGE, AIR FILTER, CONDENSATE FILTER, AND PRESSURE REGULATOR.
 6. PIPE DROPS TO MASTER SHUTOFF VALVE TO BE LOCATED IN LOCKED CABINET/VALVE BOX. SHUTOFF VALVE TO BE INSTALLED AT APPROX. 48" AFF.

- PLUMBING GENERAL NOTES**
1. GENERAL NOTE AT SOUND BARRIER CEILING:
A. IN THE VOCATIONAL SHOP ROOMS A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEPPFP SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE INSTANT SUPPORTS ATTACHED TO BOTTOM CHORD OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEPPFP SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEPPFP SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON A LIMITED BASIS AT LOCATIONS SPECIFICALLY INDICATED ON THE MEPPFP DRAWINGS.
 2. GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP MEZZANINES:
A. ALL COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEPPFP COORDINATION PROCESS.
B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.

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225 Oakland Road
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260 Charles Street
Studio 300
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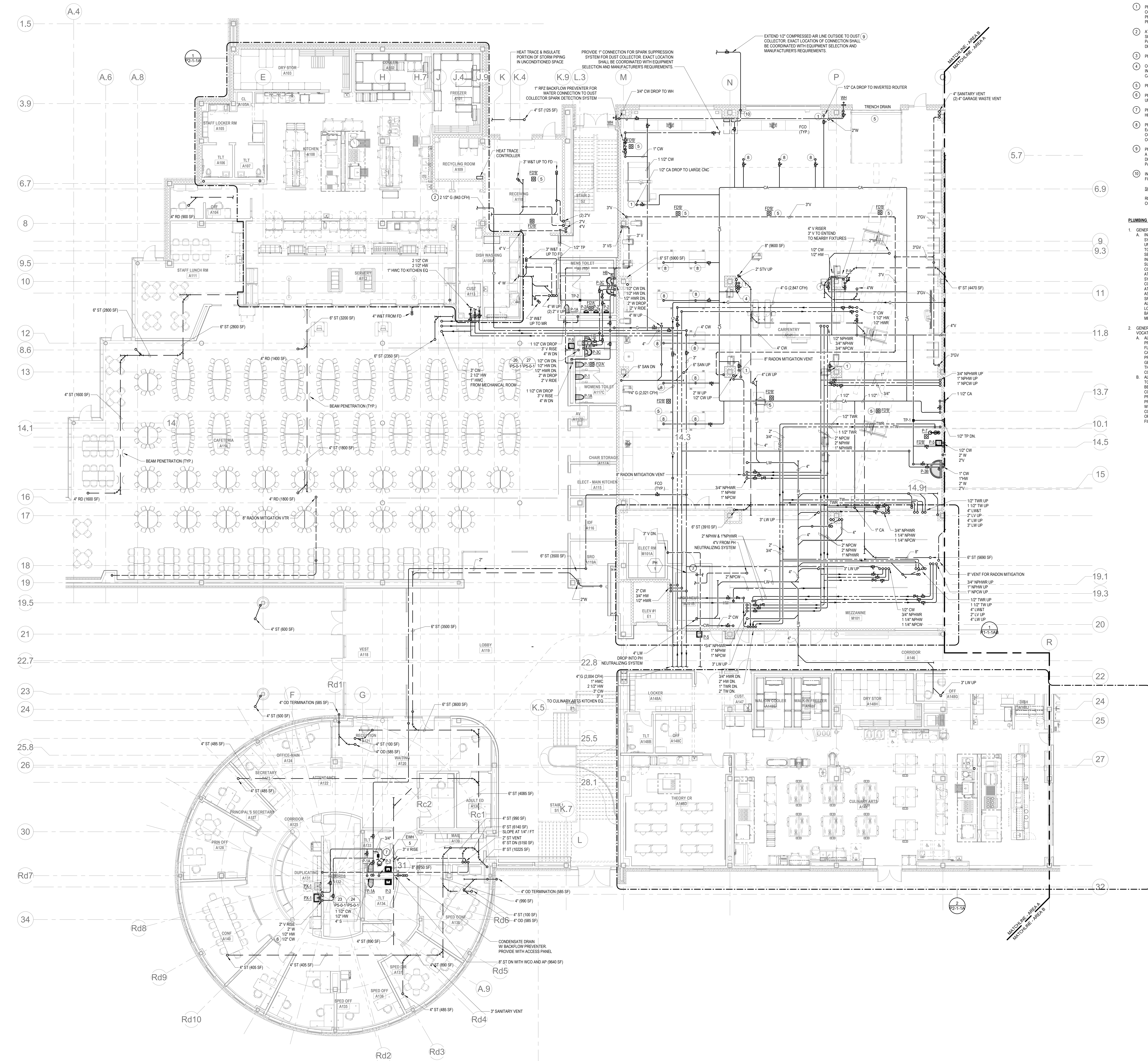
KEY PLAN

PROJECT NORTH
MAGNETIC NORTH

PLUMBING
LOWER LEVEL
FLOOR PLAN -
AREA D

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

P1-1-0D



1 PLUMBING Level 1 Area A
1/8" = 1'-0"

- KEY NOTES:**
1. PROVIDE COMPRESSED AIR DROP FROM CEILING AGAINST COLUMN WITH DUAL OUTLETS. EACH DROP SHALL CONTAIN A PRESSURE GAUGE, AIR FILTER, CONDENSATE FILTER, AND PRESSURE REGULATOR.
 2. AT EACH GAS HOOD, PROVIDE KITCHEN EMERGENCY GAS SHUTOFF SYSTEM. SYSTEM SHALL CONSIST OF MAIN CONTROL PANEL WITH SHUTOFF FOR GAS SOLENOID VALVE, AND CO DETECTORS. MINIMUM (2) CO DETECTORS PER HOOD.
 3. PROVIDE CONCRETE HOUSEKEEPING PAD.
 4. CONDENSATE RECEPTOR WITH BACKFLOW PREVENTOR. INSTALL TIGHT TO COLUMN AND ABOVE COLUMN ENCLOSURE CAP. FIELD COORDINATE INSTALLATION.
 5. PROVIDE FLOOR/TRENCH DRAIN WITH TRAP GUARD.
 6. PROVIDE (2) CAPPED AND VALVED CW CONNECTIONS UNDERCOUNTER FOR FUTURE USE BY OWNER.
 7. PROVIDE 1/2" WATER METER ON CW LINE TO ADMIN WATER HEATER.
 8. PROVIDE COMPRESSED AIR DROP WITH AIR HOSE REELS. EACH DROP SHALL CONTAIN A PRESSURE GAUGE, AIR FILTER, CONDENSATE FILTER, AND PRESSURE REGULATOR. FIELD COORDINATE DROP LOCATION.
 9. PRIOR TO FINAL CONNECTION TO DUST COLLECTOR, INSTALL A COMPRESSED AIR DUMP VALVE. DUMP VALVE FURNISHED BY DIVISION 23. CONTROL WIRING OF DUMP VALVE TO CONTROL PANEL BY DIVISION 23.
 10. INSTALL A HOSE FOR THE CO2 FIRE SUPPRESSION SYSTEM FOR THE DUST COLLECTOR, FURNISHED BY DIVISION 23.
- SCOPE NOTES:**
- REFER TO SHEET P2-2A FOR KITCHEN PLUMBING FIXTURE CONNECTION SCHEDULE.

- PLUMBING GENERAL NOTES:**
1. GENERAL NOTE AT SOUND BARRIER CEILING:
A. IN THE VOCATIONAL SHOP ROOMS A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEPP SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB CONTRACTOR SHALL PROVIDE UNSTRUT SUPPORTS ATTACHED TO BOTTOM CHORD OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEPP SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEPP SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON A LIMITED BASIS AT LOCATIONS SPECIFICALLY INDICATED ON THE MEPP DRAWINGS.
 2. GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP MEZZANINES:
A. ALL COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEPP COORDINATION PROCESS.
B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB CONTRACTOR. NO CUTTING ANCHOR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.

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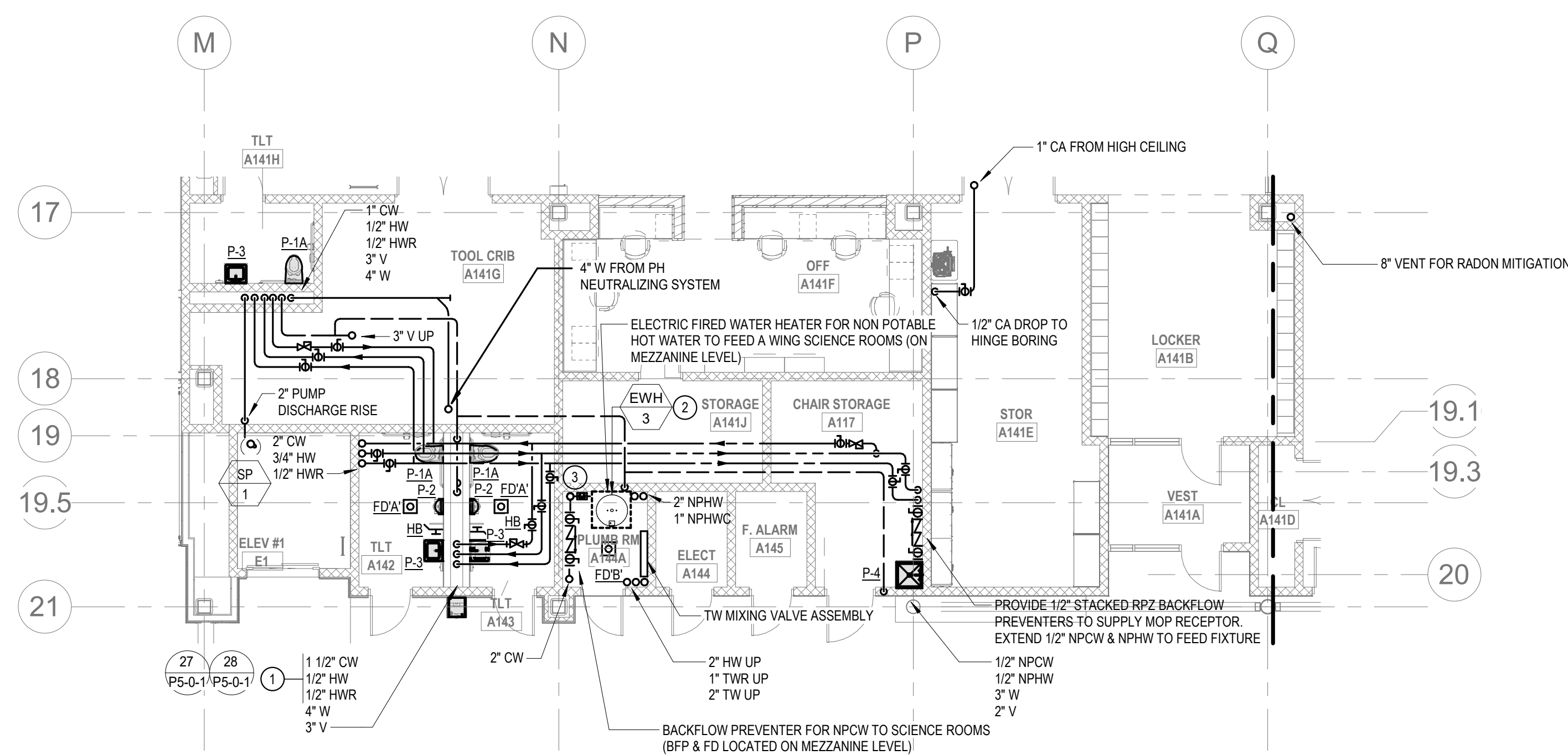
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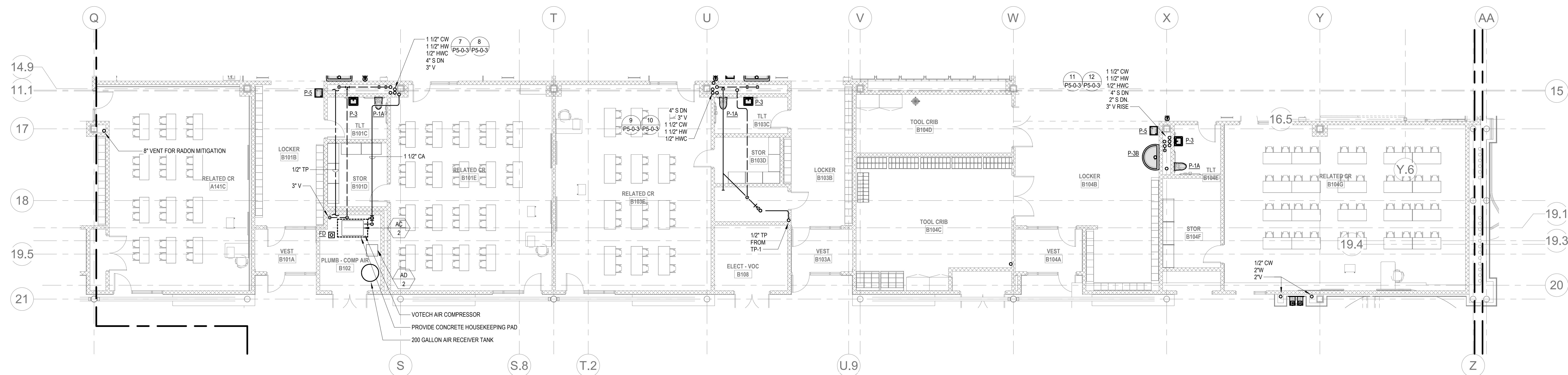
- KEY NOTES:**
- 1 PROVIDE REQUIRED VALVES ON EACH WATER PIPING DROP.
 - 2 PROVIDE CONCRETE HOUSING PAD
 - 3 PROVIDE WMS WATER METER ON CW LINE TO WATER HEATER SERVING NPHW TO SCIENCE CLASSROOMS.

PLUMBING GENERAL NOTES

- GENERAL NOTE: ATTACH TO SOUND BARRIER CEILING.
- A. IN THE VOCATIONAL SHOP ROOMS A SOUND BARRIER CEILING SHALL BE INSTALLED TO THE UNDERSIDE OF THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE GENERAL CONTRACTOR'S DRAWINGS FOR THE LOCATION OF THE SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A REPAIR TO THE EXISTING CEILING SUSPENDED CEILING SYSTEM. MEPPF MEMPHIS SHALL BE NOTIFIED AND ALLOWED TO ATTACHED/REMOVE, OR NOT ALLOWED TO ATTACH THIS CEILING SYSTEM TO THE SUPPORT. THE CONTRACTOR SHALL PROVIDE EACH SUB-CONTRACTOR'S SPECIAL NOTE TO THE GENERAL CONTRACTOR ATTACHED TO BOTTOM CHORD OF STRUCTURAL STEEL BEAMS TO BE USED FOR SUPPORT. THE CONTRACTOR SHALL PROVIDE SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE REQUIRED TO ACCESS MEPPF MEMPHIS EQUIPMENT. ACCESS PANELS LOCATED ABOVE THE SOUND BARRIER CEILING ON A LIMITED BASIS SHALL BE SPECIFICALLY INDICATED ON THE MEPPF DRAWINGS.
2. GENERAL NOTES: PRE-CAST CONCRETE PANELS LOCATED AT VOCATIONAL SHOP ROOMS SHALL BE ATTACHED TO THE FOLLOWING COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE LEVELS. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING PRE-CAST PLANK ROOF CLOSURES: PENETRATIONS THROUGH THE PRE-CAST CONCRETE PANELS ARE ON THE MECHANICAL MEZZANINE. THE GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PANELS WITH THE MEPPF MEMPHIS COORDINATION PROCESS.
- B. THE FOLLOWING COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE ATTACHED TO THE PRE-CAST CONCRETE PANELS BY THE CONTRACTOR (DURING CO-ORDINATION AND SHOP DRAWING PROCESS, IN ADDITION TO THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS): THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE



PLUMBING LEVEL 1 BELOW MEZZ. AREA A PART PLAN



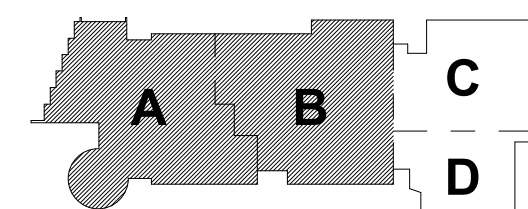
2 PLUMBING LEVEL 1 BELOW MEZZ. AREA B PART PLAN
P1-1-1AB 1/8" = 1'-0"

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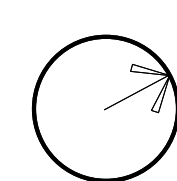
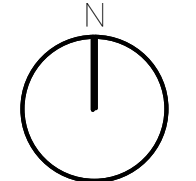
August 28th, 2023



KEY PLAN

PROJECT NORTH

MAGNETIC NORTH



**PLUMBING FIRST
FLOOR BELOW
MEZZANINE
PLAN - AREA A/B**

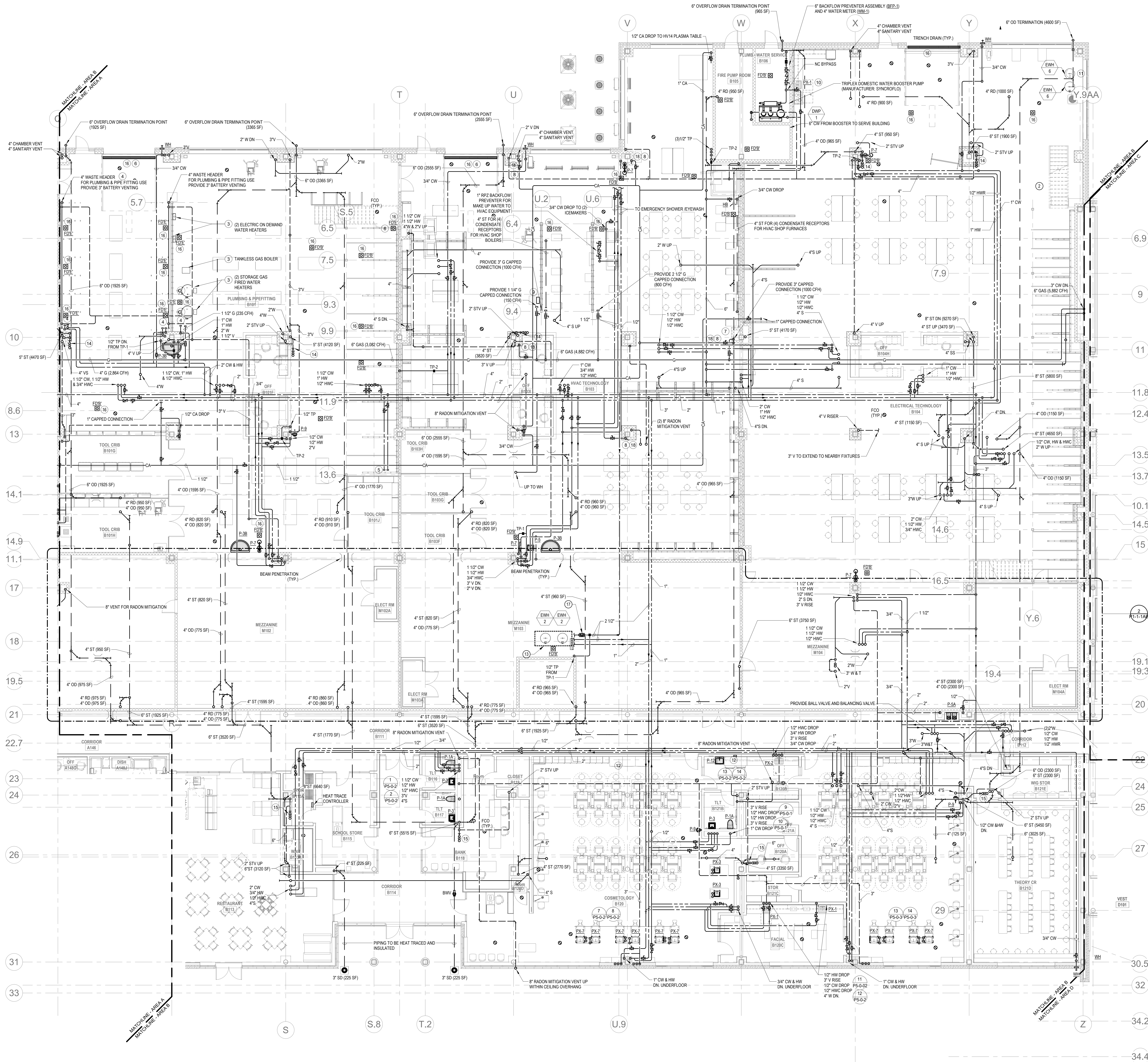
Scale: 10" = 1' 0"

Job No.: 60-20-409

Drawn By: RDR

Date: August 28th, 2023

P1-1-1AB



- KEY NOTES:**
1. PROVIDE AN ALLOWANCE FOR (10) COMPRESSED AIR DROPS WITHIN HVAC TECHNOLOGY SHOP. EACH COMPRESSED AIR DROP SHALL INCLUDE A SHUT-OFF VALVE, AIR FILTER, PRESSURE GAUGE, AND AIR PRESSURE REGULATOR. PROVIDE 50 FOOT HOSE REEL FOR EACH DROP.
 2. PROVIDE EXPANSION LOOP AND FLEXIBLE COUPLINGS ON DOMESTIC WATER PIPE WHICH CROSSES EXPANSION JOINT AT COLUMN LINE 15.28.
 3. GAS WATER HEATER: BRADFORD WHITE #BWG24058N GAS BOILER (TANKLESS). IDEAL #IDEAL155C. ELECTRIC ON DEMAND WATER HEATER: BRADFORD WHITE #BWRE3055-INOW.
 4. PROVIDE 1 1/2" CW AND 1 1/2" HW AT THIS APPROXIMATE LOCATION. DROP WATER PIPING AGAINST COLUMN AND CAP FOR FUTURE USE FOR STUDENT PLUMBING BOOTH.
 5. PROVIDE CAPPED 1 1/2" CW & HW CONNECTION FOR STUDENT USE AT PLUMBING BOOTH.
 6. PROVIDE OPEN 4" DRAIN LINE SLOPED TOWARDS FLOOR DRAIN.
 7. PROVIDE 4" CAPED GAS LINE WITH MASTER GAS SHUT-OFF FOR FUTURE USE BY SCHOOL (1,000 CFH).
 8. PROVIDE COMPRESSED AIR DROP FROM CEILING AGAINST COLUMN. EACH DROP SHALL CONTAIN A PRESSURE GAUGE, AIR FILTER, CONDENSATE FILTER, AND PRESSURE REGULATOR.
 9. PROVIDE INSTANTANEOUS GAS FIRED WATER HEATER, NAVEN #NPE-180A2 (150 CFH).
 10. PK-1 SINK IN ELECTRICAL SHOP IS A MOCK SINK. PROVIDE NO WATER OR WASTE TO SINK. PROVIDE CARRIAGE DISPOSAL (GR-1) TO PK-1 SINK IN ELECTRICAL SHOP.
 11. ELECTRIC WATER HEATER IS A MOCK WATER HEATER FOR USE BY STUDENTS OF ELECTRICAL SHOPS. PROVIDE NO WATER TO WATER HEATER.
 12. PROVIDE WASHING MACHINE BOX WITH 1/2" CW, 1/2" HW, 2" W, AND 2" V CONNECTIONS. WATER HAMMER ARRESTOR SHALL BE PROVIDED AT THE INLET SIDE OF COWHW CONNECTION.
 13. PROVIDE CONCRETE HOUSEKEEPING PAD.
 14. CONDENSATE RECEPTOR WITH BACKFLOW PREVENTOR. INSTALL TIGHT TO WALL. FIELD COORDINATE INSTALLATION.
 15. CONDENSATE RECEPTOR WITH BACKFLOW PREVENTOR. INSTALL ABOVE CEILING. FIELD COORDINATE INSTALLATION.
 16. PROVIDE FLOOR/TRENCH DRAIN WITH TRAP GUARD.
 17. PROVIDE MM&2 WATER METER FOR COSMETOLOGY WATER HEATERS.
 18. PROVIDE CONVENIENCE DUAL OUTLETS FOR COMPRESSED AIR.
- SCOPE NOTES:**
- PROVIDE ALLOWANCE FOR 6" SECONDARY ROOF DRAINAGE TERMINATION POINT ON NORTH SIDE OF BUILDING.

- PLUMBING GENERAL NOTES**
1. GENERAL NOTE AT SOUND BARRIER CEILING:
A. IN THE VOCATIONAL SHOP ROOMS A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALLY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEMFP SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED, SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNISTRUT SUPPORTS ATTACHED TO BOTTOM CHORD OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEMFP SYSTEMS COMPONENTS. SPECIALLY ACoustically RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEMFP SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON A LIMITED BASIS AT LOCATIONS SPECIFICALLY INDICATED ON THE MEMFP DRAWINGS.
 2. GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP MEZZANINES:
A. ALL COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEMFP COORDINATION PROCESS.
B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.

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Drummeys Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
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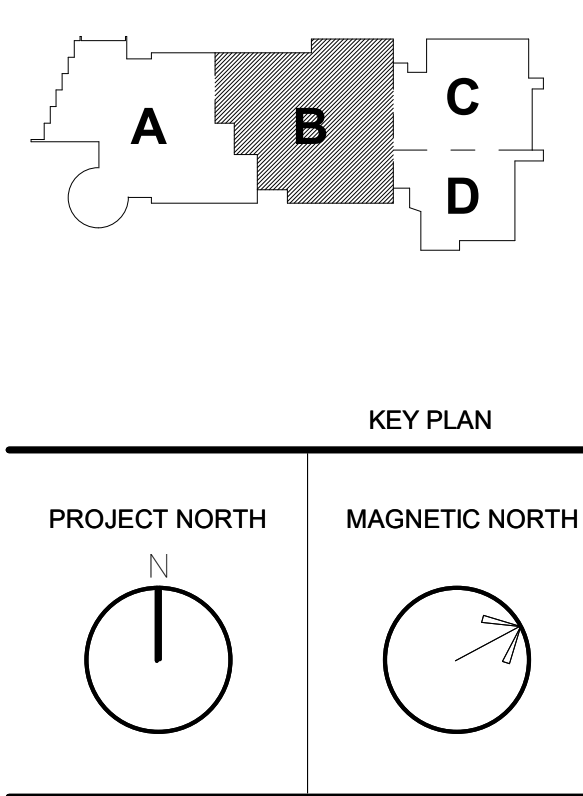
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August 28th, 2023



**PLUMBING FIRST
FLOOR PLAN -
AREA B**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

P1-1-1B

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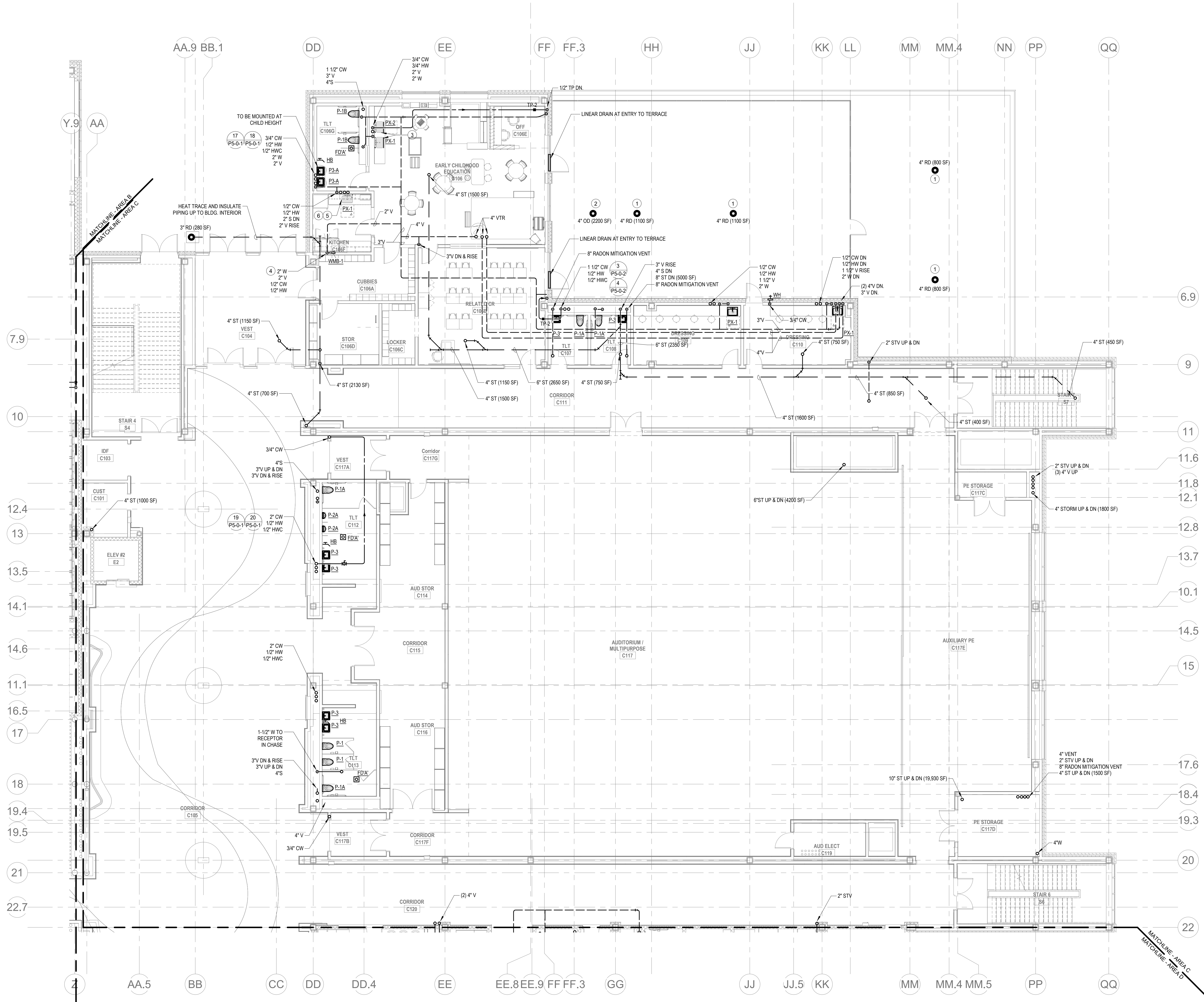
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KEY NOTES:

- 1 PROVIDE TERRACE STYLE ROOF DRAIN.
- 2 PROVIDE TERRACE STYLE OVERFLOW DRAIN.
- 3 PROVIDE PLASTER TRAPS FOR SINKS.
- 4 PROVIDE WASHING MACHINE BOX WITH 1/2" CW, 1/2" HW, 2" W, AND 2" V CONNECTIONS. WATER HAMMER ARRESTOR SHALL BE PROVIDED AT THE INLET SIDE OF COWHW CONNECTION.
- 5 OFF OF CW SUPPLY TO SINK, EXTEND SEPARATELY VALVED CW CONNECTION TO BE FED TO SUPPLY REFRIGERATOR.
- 6 OFF OF HW SUPPLY TO SINK, EXTEND SEPARATELY VALVED HW CONNECTION TO FEED DISHWASHER. DRAIN HOSE FROM DISHWASHER TO BE EXTENDED TO CONNECTION AT ADJACENT SINK TAIL PIECE.

PLUMBING GENERAL NOTES

1. GENERAL NOTE AT SOUND BARRIER CEILING:
A. IN THE VOCATIONAL SHOP ROOMS A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER-LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEPPFP SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED, SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNRESTRICTED SUPPORTS ATTACHED TO BOTTOM CHORD OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEPPFP SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEPPFP SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON A LIMITED BASIS AT LOCATIONS SPECIFICALLY INDICATED ON THE MEPPFP DRAWINGS.
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B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.



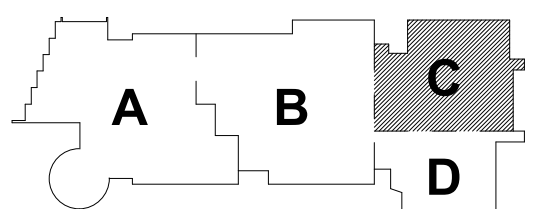
PLUMBING Level 1 Area C
1/8" = 1'-0"

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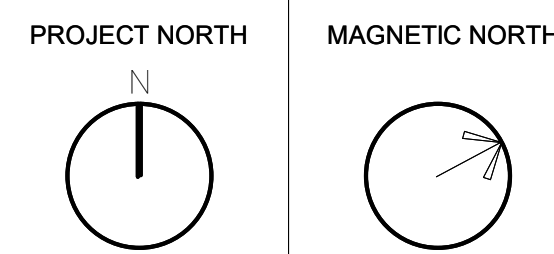
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August 28th, 2023



KEY PLAN



**PLUMBING FIRST
FLOOR PLAN -
AREA C**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

P1-1-1C

KEY NOTES:
1. PROVIDE VALVED 1/2" CW CONNECTION TO ICEMAKER.

PLUMBING GENERAL NOTES

- GENERAL NOTE AT SOUND BARRIER CEILING.
A. IN THE VOCATIONAL SHOP ROOMS A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEPPFP SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNSTRUT SUPPORTS ATTACHED TO BOTTOM CHORD OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEPPFP SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEPPFP SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON A LIMITED BASIS AT LOCATIONS SPECIFICALLY INDICATED ON THE MEPPFP DRAWINGS.
- GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP MEZZANINES.
A. ALL COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEPPFP COORDINATION PROCESS.
B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.



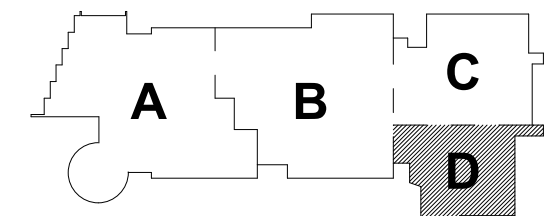
1 PLUMBING Level 1 Area D
1/8" = 1'-0"

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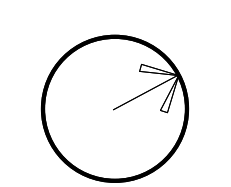
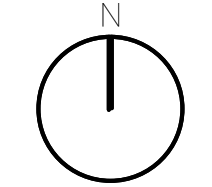
August 28th, 2023



KEY PLAN

PROJECT NORTH

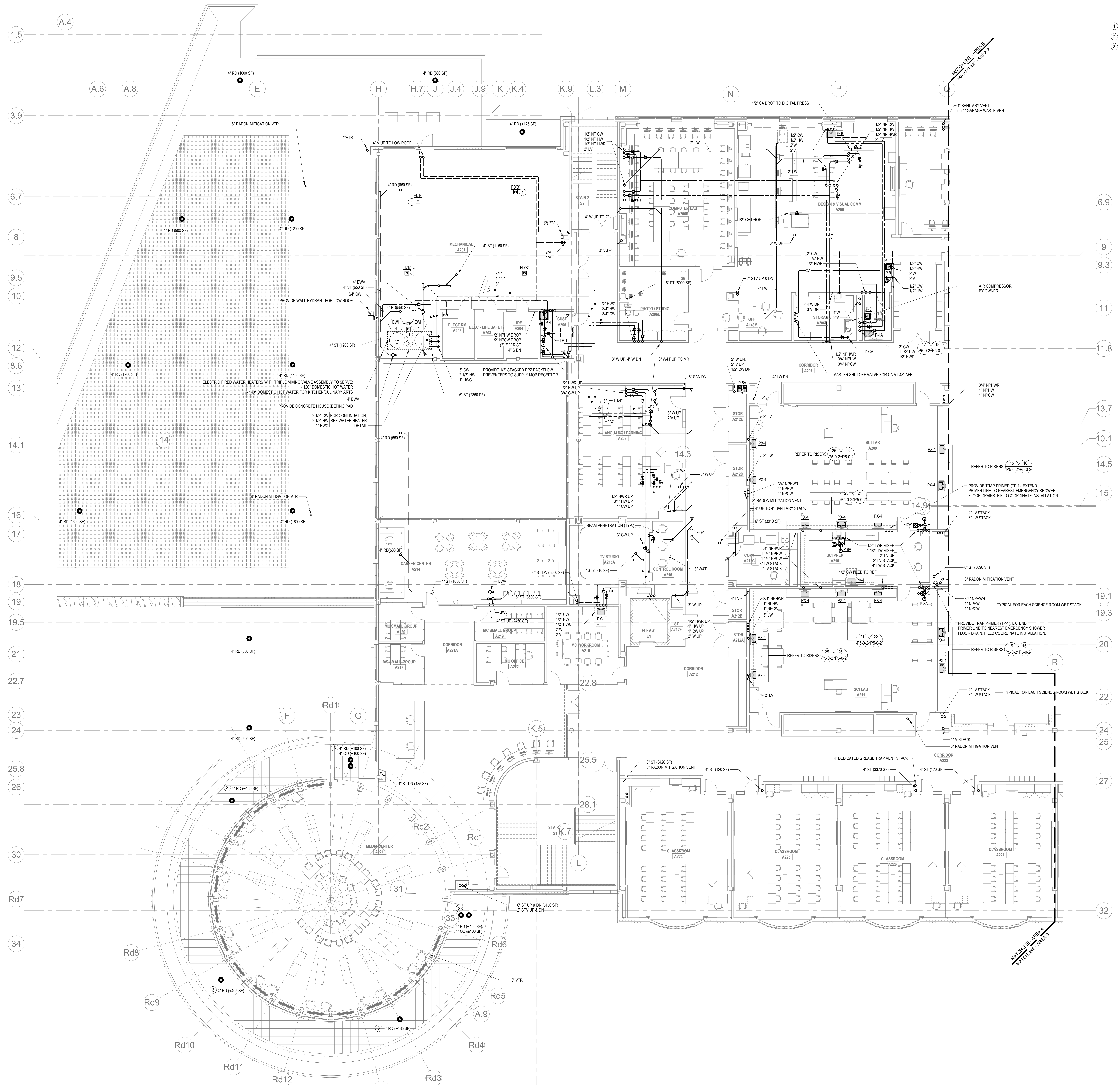
MAGNETIC NORTH



PLUMBING FIRST
FLOOR PLAN -
AREA D

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

P1-1-1D



- KEYNOTES:
- 1 PROVIDE FLOOR DRAINS WITH TRAP GUARD.
 - 2 PROVIDE 1/4" ON CW LINE SERVING AREA A WATER HEATERS.
 - 3 PROVIDE TERRACE STYLE DRAIN.

PLUMBING Level 2 Area A
1/8" = 1'-0"

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KEY PLAN

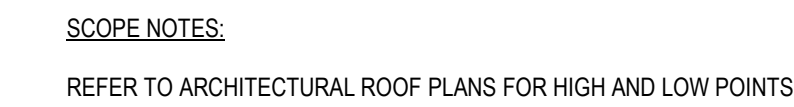
PROJECT NORTH

MAGNETIC NORTH

PLUMBING SECOND FLOOR PLAN - AREA A

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

P1-1-2A



KEY NOTES:

1. PROVIDE (2) CAPPED AND VALVED CW CONNECTIONS UNDERCOUNTER FOR FUTURE USE BY OWNER.
2. PROVIDE TERRACE STYLE DRAIN.
3. 4" OVERFLOW DRAIN TO OFFSET WITHIN PLUMBING CHASE
4. PROVIDE DRIP PAN FOR WASTE PIPING THROUGH MDF ROOM

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--	--

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PLUMBING Level 2 Area B

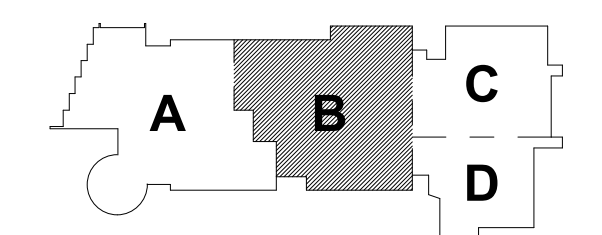
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KEY PLAN

PROJECT NO.

MAGNETIC NORTH

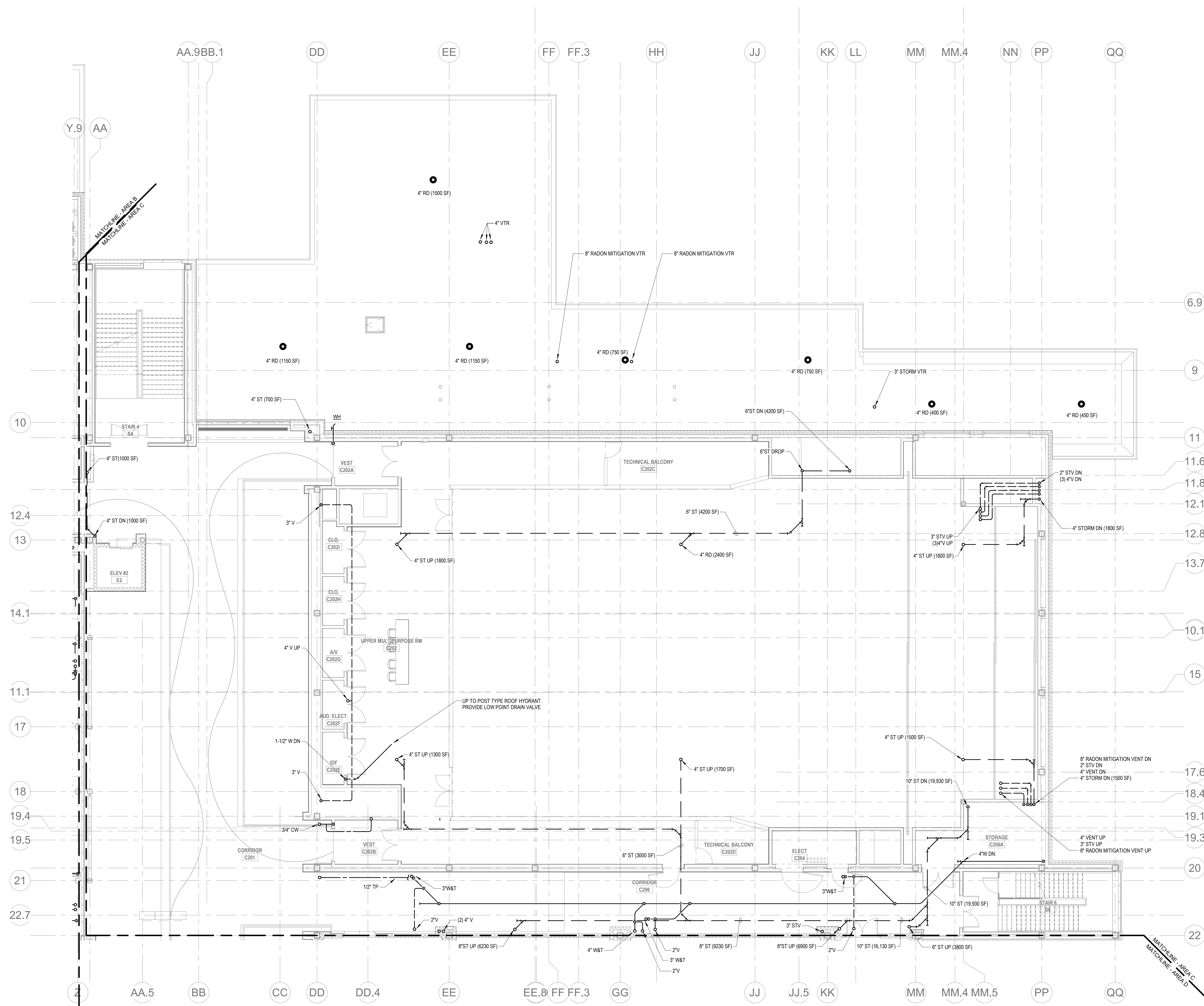
**PLUMBING
SECOND FLOOR
PLAN - AREA B**

Scale: $1/8" = 1'-0"$
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

P1-1-2B

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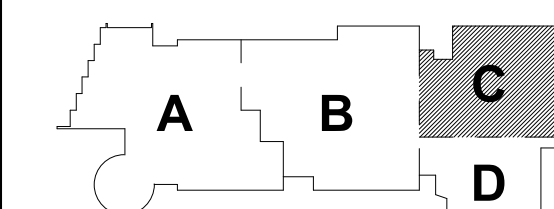
PLUMBING Level 2 Area C

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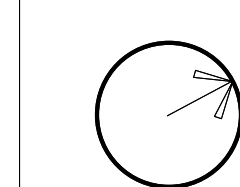
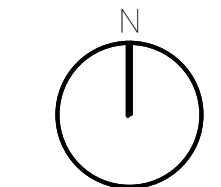
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KEY PLAN

PROJECT NORT

MAGNETIC NORTH



**PLUMBING
SECOND FLOOR
PLAN - AREA C**

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

Job No.: 60-20-40

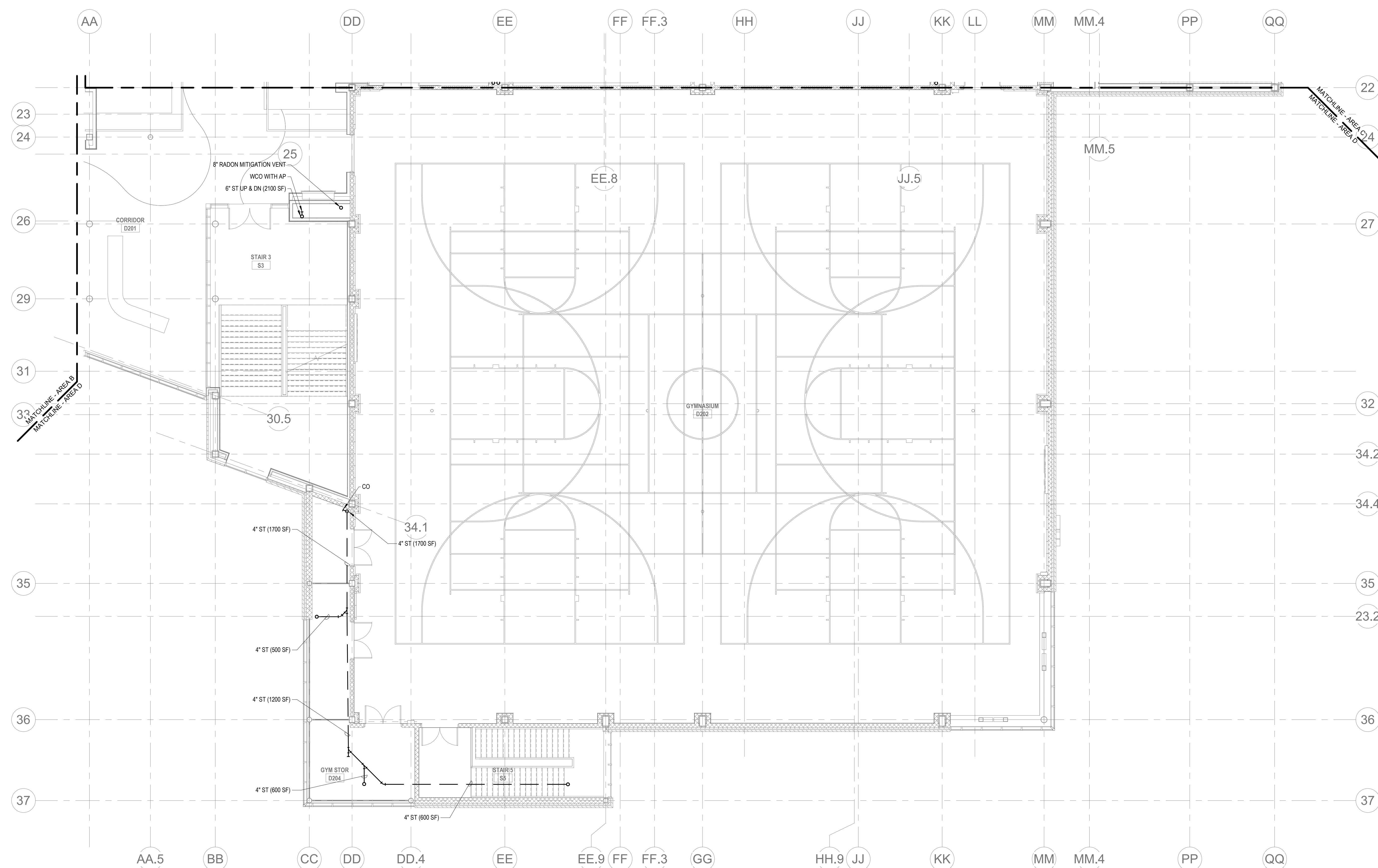
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Date: August 28th, 2023

P1-1-2C

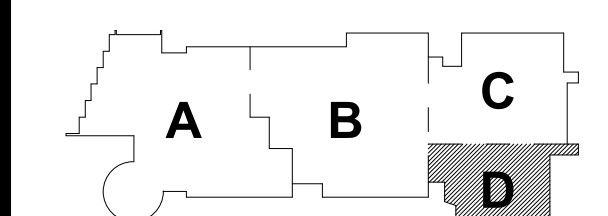
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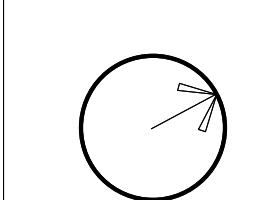
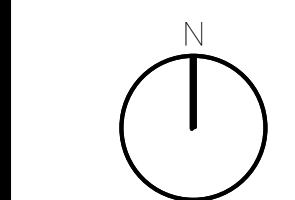
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KEY PLAN

PROJECT NORTH

MAGNETIC NORTH



**PLUMBING
SECOND FLOOR
PLAN - AREA D**

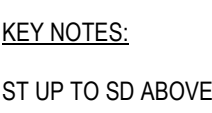
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Job No.: 60-20-409

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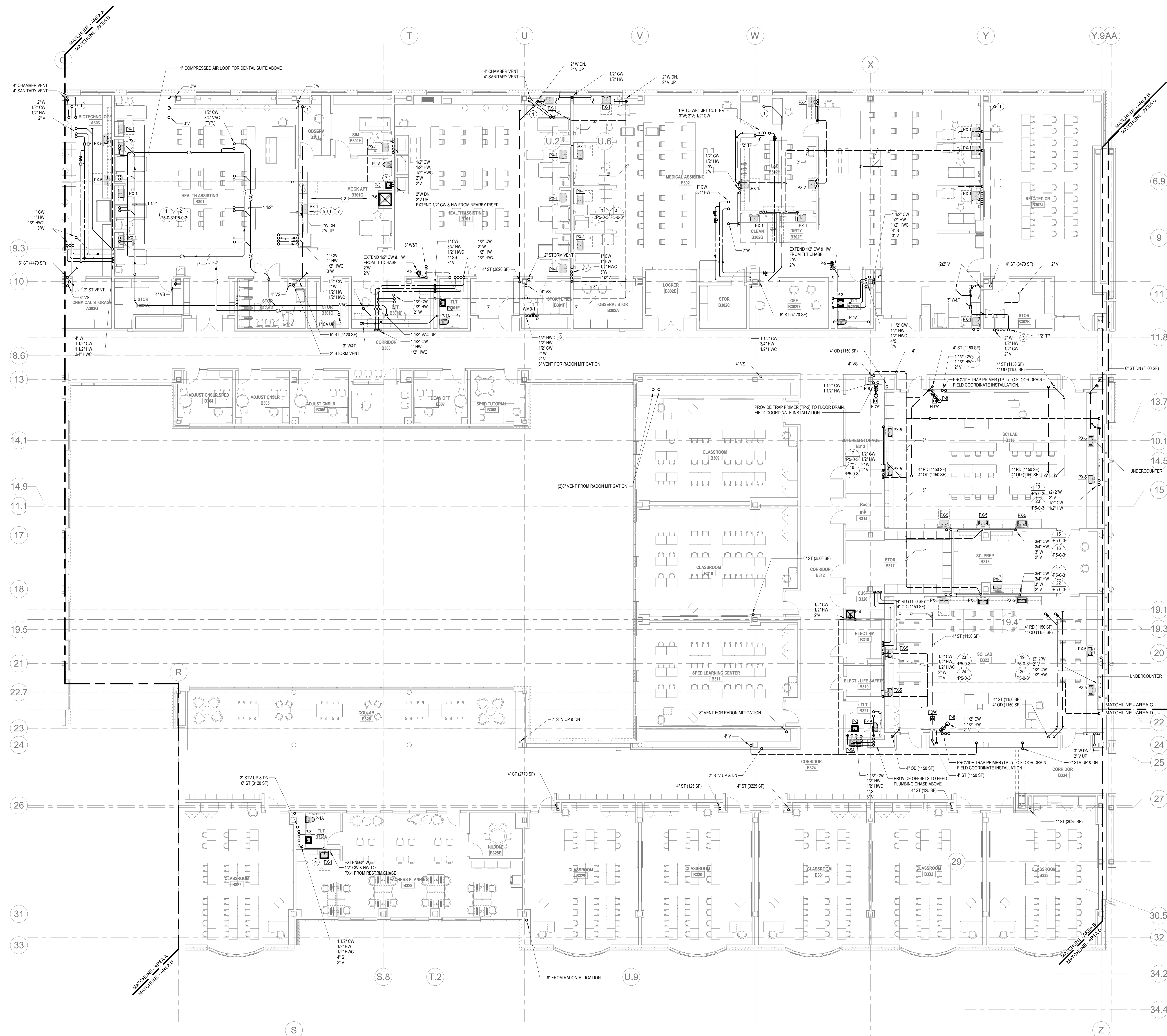
P1-1-2D



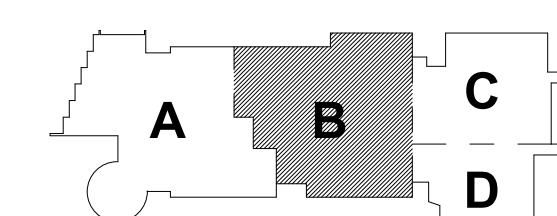
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P1-1-3A

1. KEY NOTES:
 - ① 4" R/L UP 4" TO RD ABOVE.
 - ② PLUMBING FIXTURES IN MOOK SHOWER: NOT EXISTE WATER OR WASTE PIPING UNLESS OTHERWISE NOTED
 - ③ PROVIDE WASHING MACHINE BOX WITH 1/2" CW. 1/2" HW. 2" W. AND 2" V CONNECTIONS. WATER MANIFOLD SHALL BE PROVIDED AT THE INLET SIDE OF CROWN CONNECTION
 - ④ PROVIDE 2" CAPED AND VALVED CW CONNECTIONS UNDER COUNTER FOR FUTURE USE BY OWNER.
 - ⑤ OFF OF CW SUPPLY TO SINK. EXTEND SEPARATELY VALVED CW CONNECTION TO BE FED TO SUPPLY REFRIGERATOR.
 - ⑥ OFF OF HW SUPPLY TO SINK, EXTEND SEPARATELY VALVED HW CONNECTION TO BE FED DISHWASHER. DRINK/HOT WATER FROM DISHWASHER TO BE EXTENDED TO CONNECTION AT ADJACENT COUNTER
 - ⑦ PLUMBING CONNECTION SHALL BE PROVIDED TO THIS SINK, RUN 1/2" CW, 1/2" HW SUPPLY TO SINK FROM NEARBY SLEIPY RISE PIPING NOT SHOWN FOR CLARITY. PIPING SHALL BE 1/2" CW AND 1/2" HW SIPS



PLUMBING Level 3 Area B



SCOPE NOTES:

SECONDARY ROOF DRAINAGE IS NOT REQUIRED ON THE BASIS THAT THE ROOF STRUCTURE IS TO BE CAPABLE OF HANDLING THE MAXIMUM PONDING. REFER TO ARCHITECTURAL ROOF PLANS FOR HIGH AND LOW POINTS.

KEY NOTES:

- 1 PROVIDE TRAP GUARD FOR FLOOR DRAIN.
- 2 ALL PLUMBING VENTS SHALL TERMINATE OUTSIDE OF 25'-0" RADIUS OF ALL HVAC FRESH AIR INTAKES.

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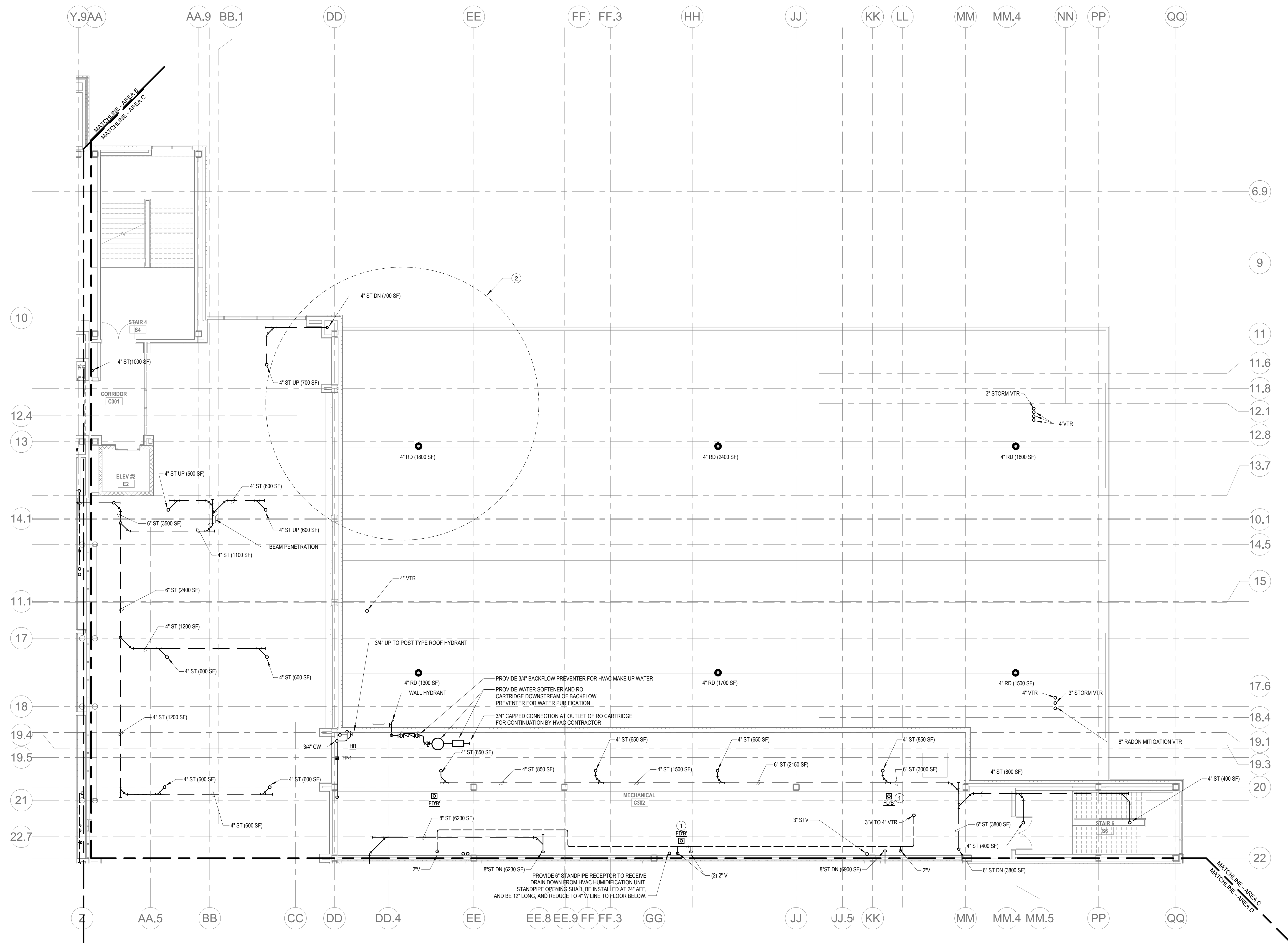
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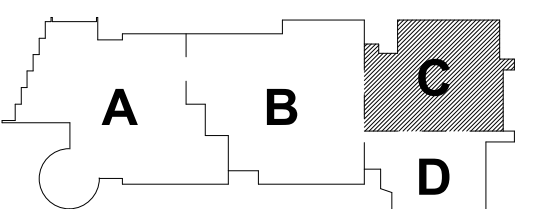
1 PLUMBING Level 3 Area C
P1-1-3C 1/8" = 1'-0"

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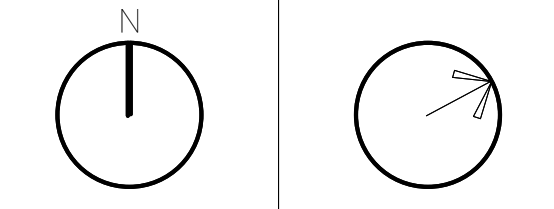
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KEY PLAN

PROJECT NORTH MAGNETIC NORTH

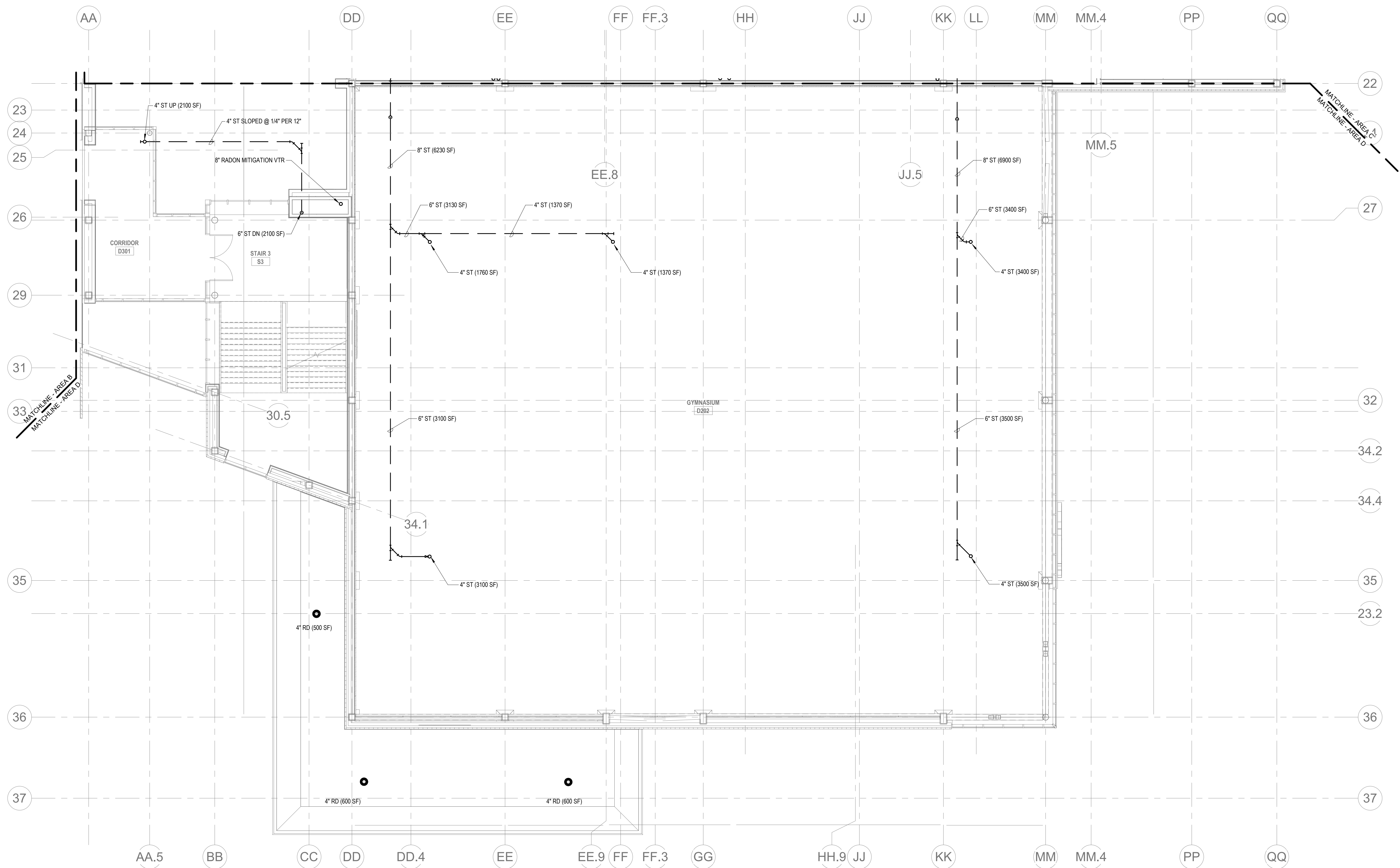


PLUMBING
THIRD FLOOR
PLAN - AREA C

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

P1-1-3C

SCOPE NOTES:
REFER TO ARCHITECTURAL ROOF PLANS FOR HIGH AND LOW POINTS



PLUMBING Level 3 Area D
P1-1-3D 1/8" = 1'-0"

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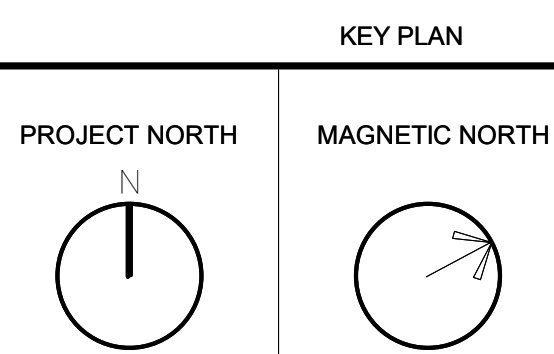
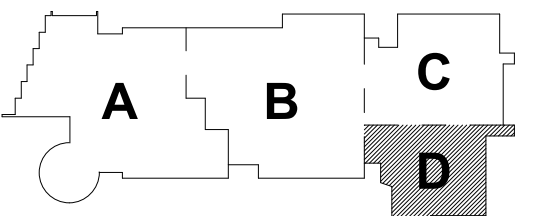
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**PLUMBING
THIRD FLOOR
PLAN - AREA D**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

P1-1-3D

SCOPE NOTES:
REFER TO ARCHITECTURAL ROOF PLANS FOR HIGH AND LOW POINTS

KEY NOTES:

- 1 PROVIDE EMERGENCY MIXING VALVE ABOVE CEILING TO PROVIDE TEMPERED WATER TO EMERGENCY FRESHWASH
- 2 3" TERRACE DRAIN SHALL GRATE SHALL BE FLUSH WITH PAVERS. 3" STORM FROM TERRACE DRAIN SHALL TIE INTO STORM SYSTEM
- 3 ST UP TO SD ABOVE
- 4 ST UP TO RD ABOVE
- 5 PROVIDE (2) CAPPED AND VALVED CW CONNECTIONS UNDERCOUNTER FOR FUTURE USE BY OWNER
- 6 REFER TO DENTAL PIPING DIAGRAM FOR INSTALLATION OF VALVES, ACCESSORIES AS SHOWN ON DENTAL DRAWINGS
- 7 PROVIDE PLASTER TRAP ON MODEL MAKING SINKS
- 8 FINAL LAYOUT OF DENTAL PUMPS ARE SUBJECT TO REVIEW APPROVAL COORDINATION WITH DENTAL VENDOR
- 9 EXTEND WATER CONNECTION TO FILTER

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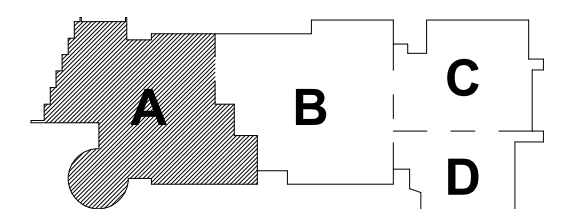
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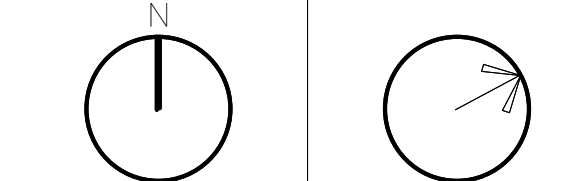
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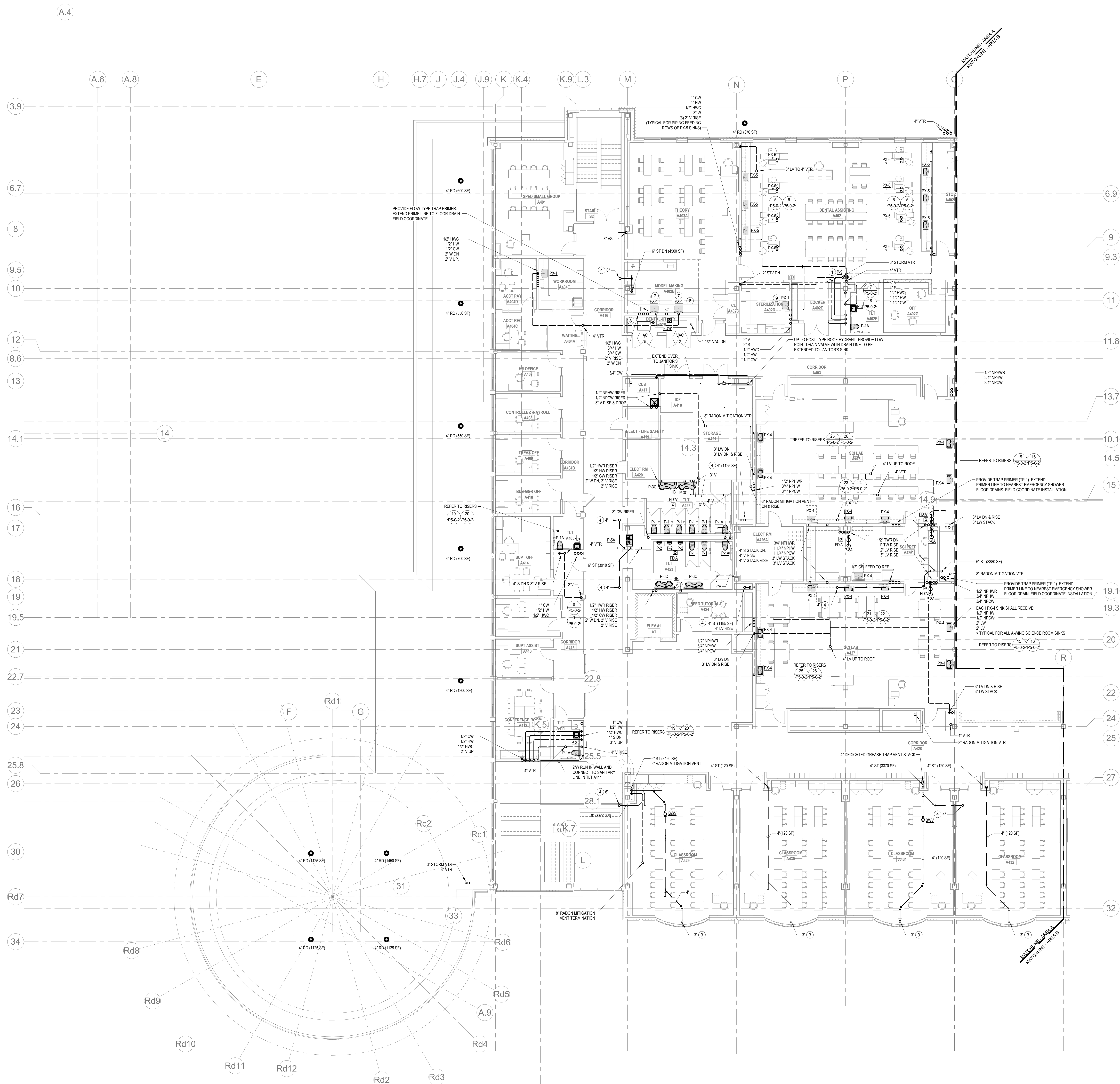
PROJECT NORTH MAGNETIC NORTH



PLUMBING
FOURTH FLOOR
PLAN - AREA A

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

P1-1-4A



1 PLUMBING Level 4 Area A
P1-1-4A 1/8" = 1'-0"

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SCOPE NOTES:
REFER TO ARCHITECTURAL ROOF PLANS FOR HIGH AND LOW POINTS

KEY NOTES:

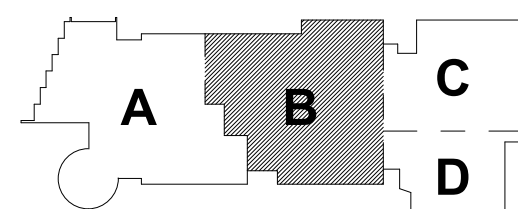
1. PROVIDE 1/2" COMPRESSED AIR DROP TO ROBOTICS EQUIPMENT. EACH COMPRESSED AIR DROP SHALL INCLUDE A SHUTOFF VALVE, AIR FILTER, PRESSURE GAUGE, CONDENSATE SEPARATOR AND AIR PRESSURE REGULATOR.
2. PROVIDE EMERGENCY MIXING VALVE ABOVE CEILING TO PROVIDE TEMPERED WATER TO EMERGENCY STEWAGE.
3. RL-UP TO RD ABOVE.
4. RL-UP TO SD ABOVE.
5. MINIMUM SLOPE 1/2" PER FOOT.
6. PROVIDE (2) CAPPED AND VALVED CW CONNECTIONS UNDERCOUNTER FOR FUTURE USE BY OWNER.
7. PROVIDE PLASTER TRAP UNDERCOUNTER UNDER MODEL MAKING SINKS IN DENTAL ASSISTING CLASSROOM.
8. PROVIDE 1/2" COMPRESSED AIR DROP TO QUICK DISCONNECT FITTING AT 8' AFF. TYPICAL AT ALL STUDENT WORKBENCHES.
9. PROVIDE WASHING MACHINE BOX WITH 1/2" CW, 1/2" HW, 2" W, AND 2" V CONNECTIONS. WATER HAMMER ARRESTOR SHALL BE PROVIDED AT THE INLET SIDE OF CWHW CONNECTION.
10. PROVIDE COMPRESSED AIR OUTLET AT 8' AFF. TYPICAL FOR ALL CEILING DROPS.
11. COORDINATE FINAL LOCATION OF RP2(h) IN THIS CLOSET AS TO FACILITATE DRAINING INTO NEARBY MOP RECEPTOR.

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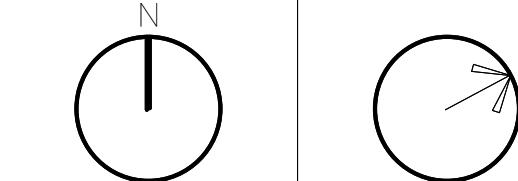
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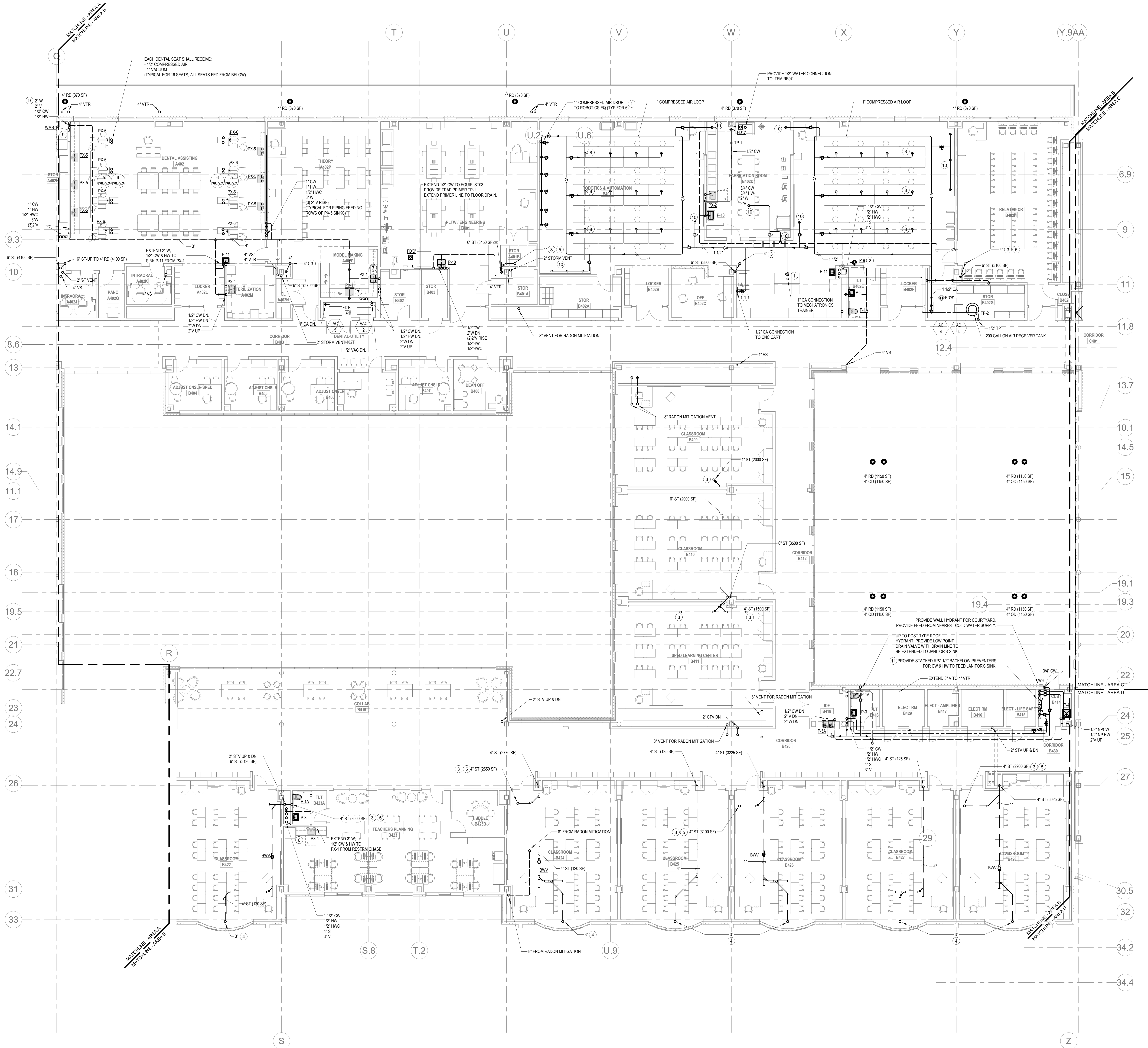
PROJECT NORTH MAGNETIC NORTH



**PLUMBING
FOURTH FLOOR
PLAN - AREA B**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

P1-1-4B



PLUMBING Level 4 Area B
P1-1-4B 1/8" = 1'-0"

SCOPE NOTES:

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KEY NOTES:

- 1 ALL PLUMBING VENTS SHALL TERMINATE OUTSIDE OF 25'-0" RADIUS OF ALL HVAC FRESH AIR INTAKES.

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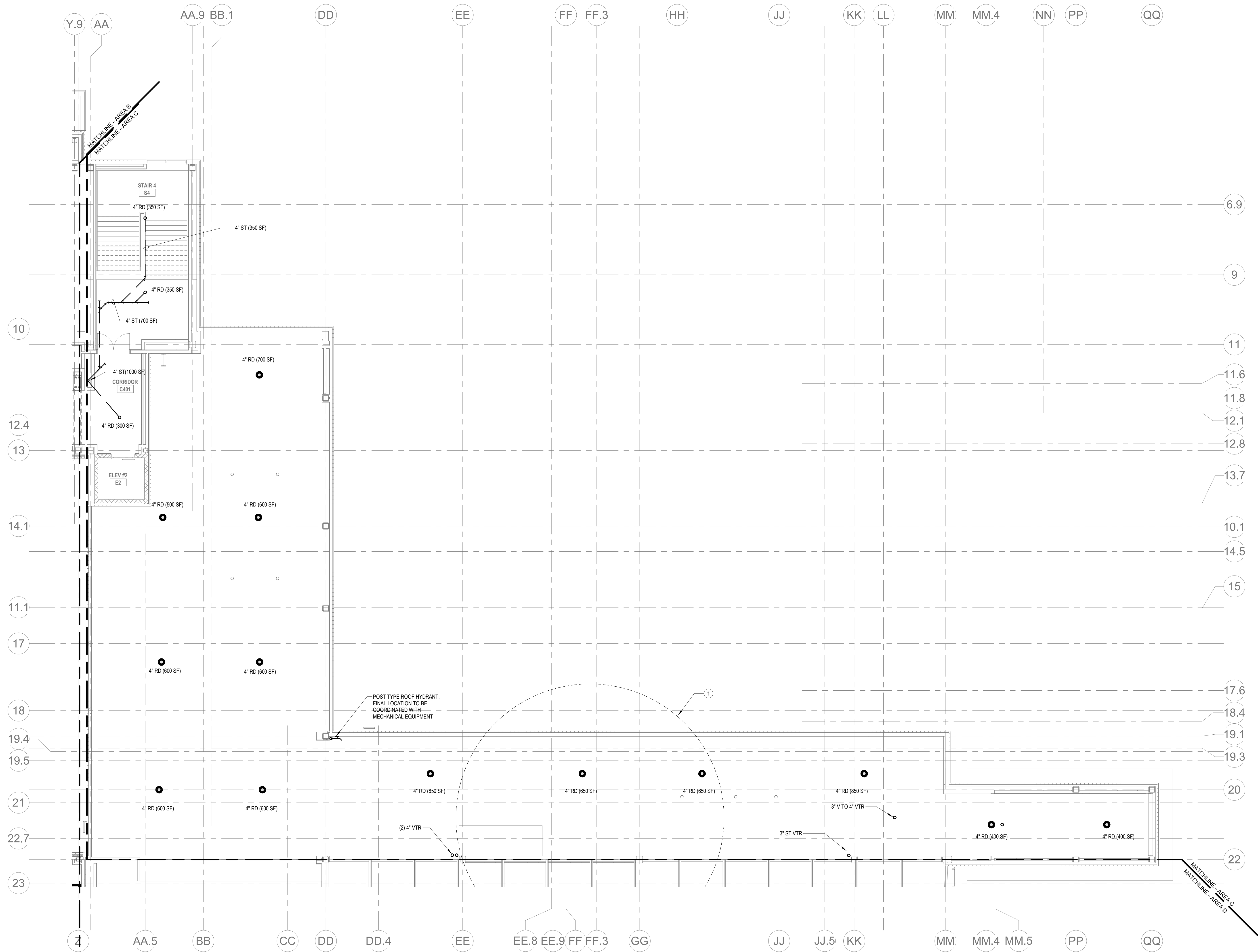
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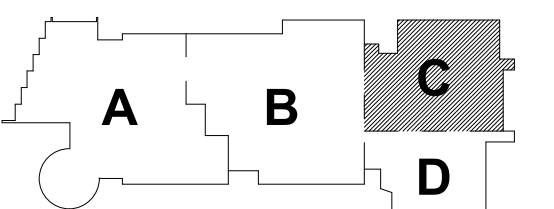
PLUMBING Level 4 Area C
1/16" = 1'-0"

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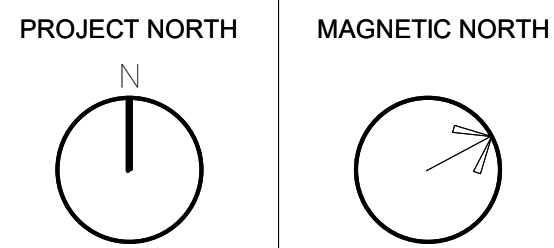
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KEY PLAN



PLUMBING
FOURTH FLOOR
PLAN - AREA C

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

Job No.: 60-20-409

Drawn By: RDR

Date: August 28th, 2023

P1-1-4C

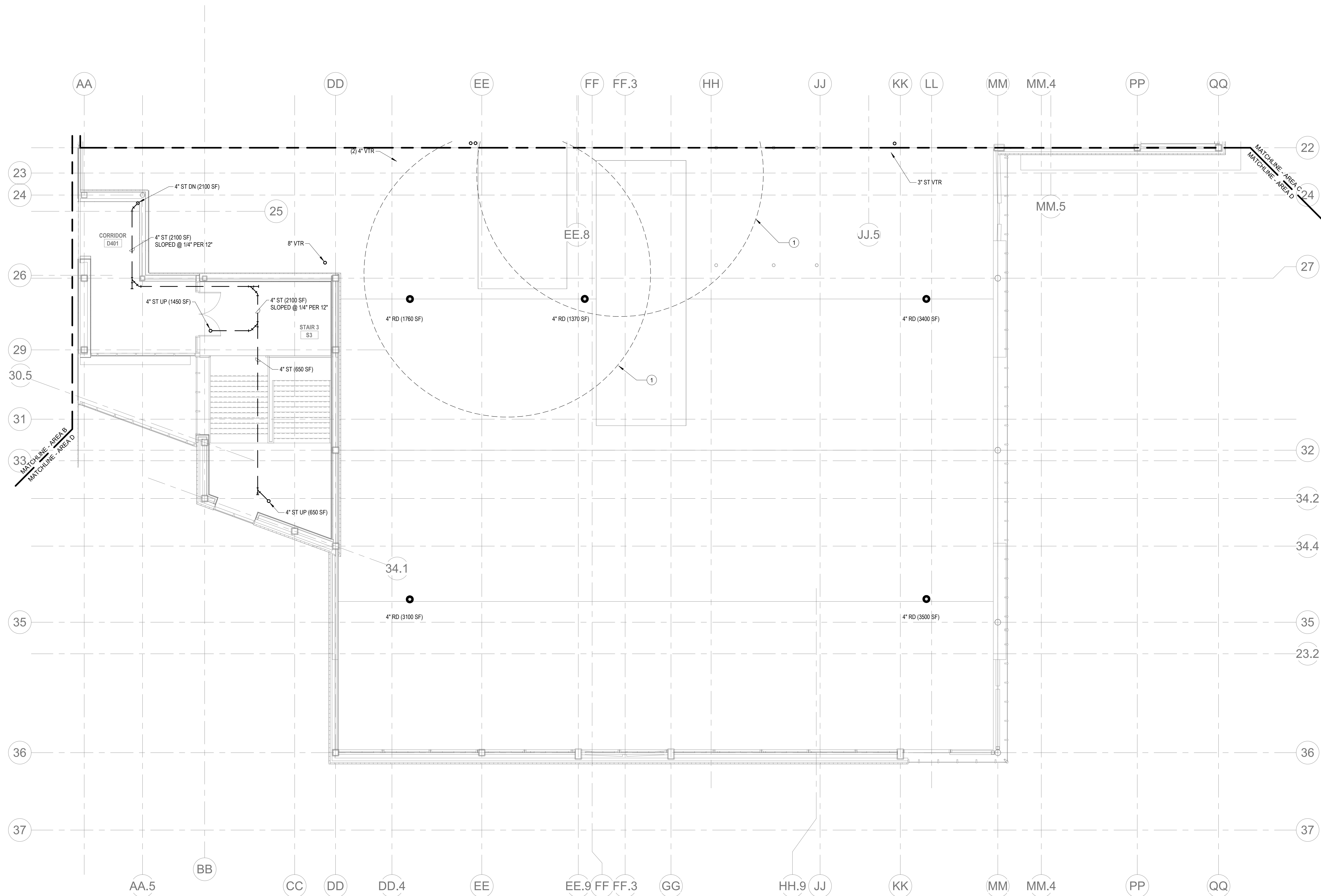
SCOPE NOTES:
SECONDARY ROOF DRAINAGE IS NOT REQUIRED ON THE BASIS THAT THE ROOF STRUCTURE IS CAPABLE OF HANDLING THE MAXIMUM PONDING. REFER TO ARCHITECTURAL ROOF PLANS FOR HIGH AND LOW POINTS.
KEY NOTES:
1 ALL PLUMBING VENTS SHALL TERMINATE OUTSIDE OF 25'-0" RADIUS OF ALL HVAC FRESH AIR INTAKES.



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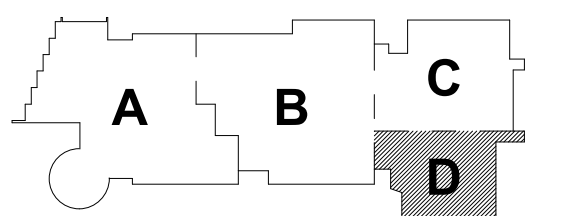
1 PLUMBING Level 4 Area D
Scale: 1/8" = 1'-0"

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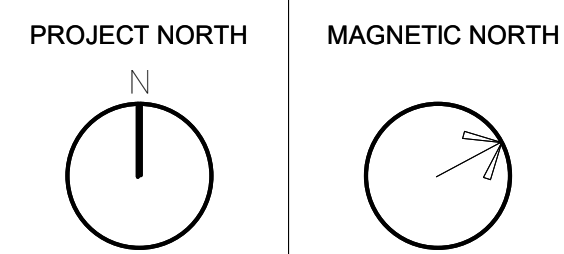


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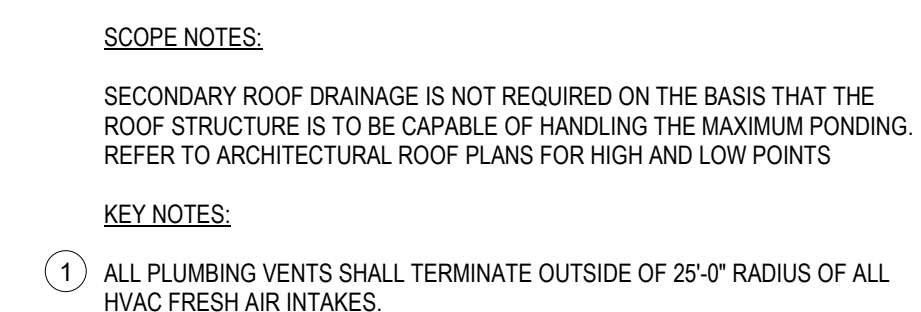
KEY PLAN



PLUMBING
FOURTH FLOOR
PLAN - AREA D

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

P1-1-4D



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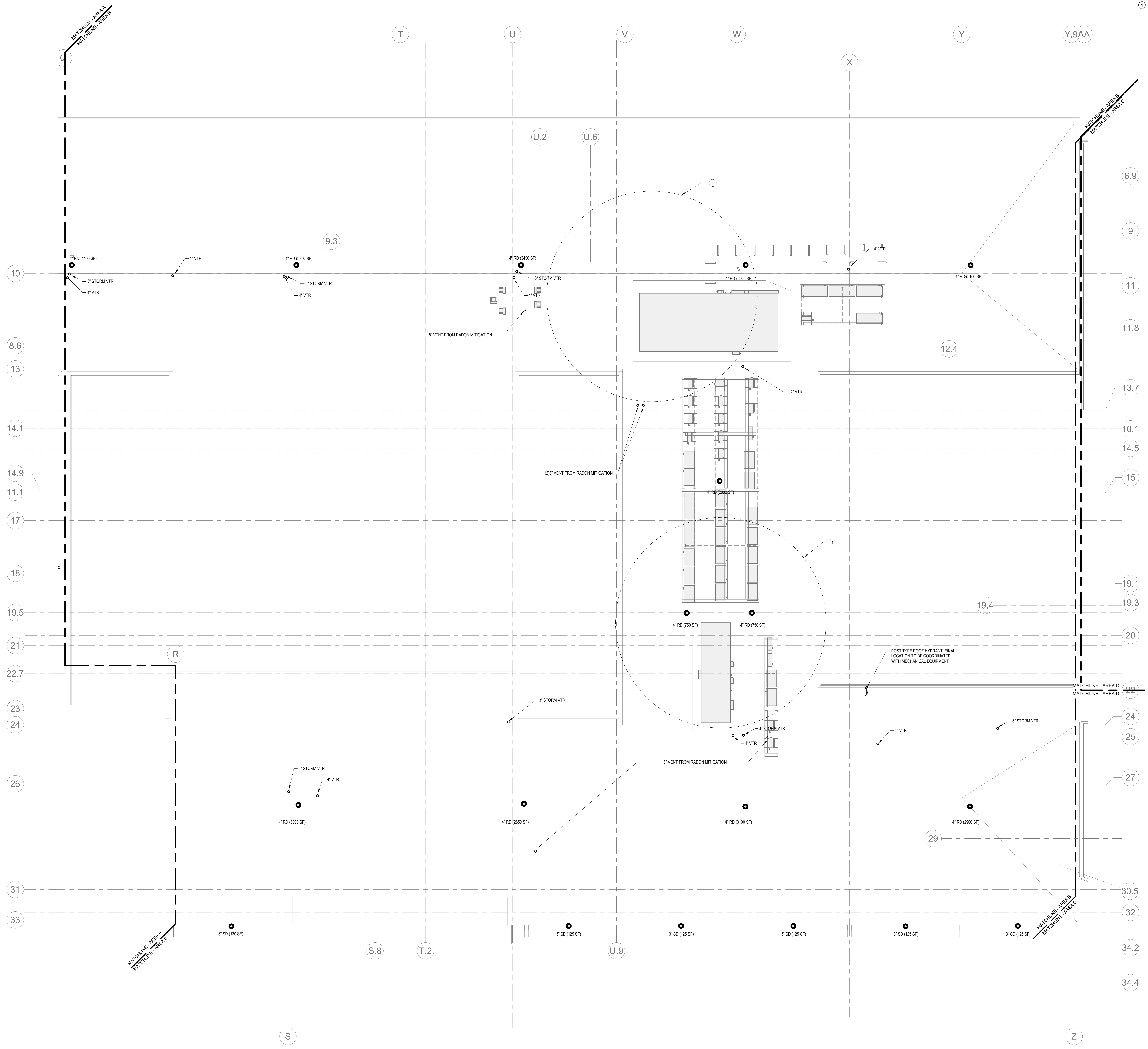
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August 28th, 2023

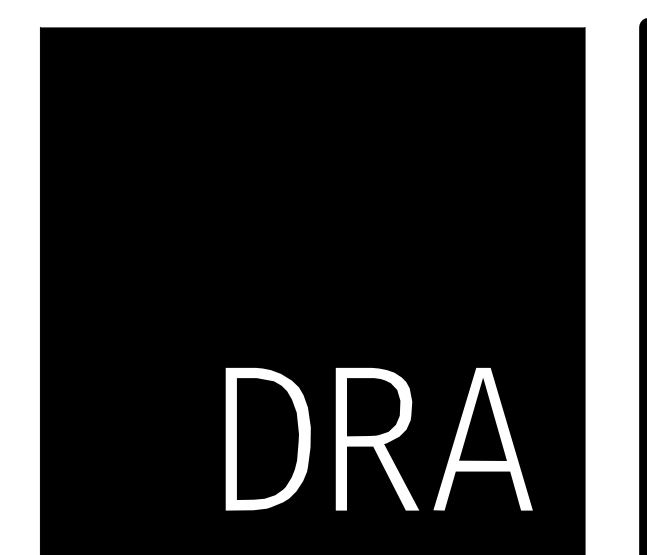


P1-2-1A



SCOPE NOTES:
SECONDARY ROOF DRAINAGE IS NOT REQUIRED ON THE BASIS THAT THE ROOF STRUCTURE IS CAPABLE OF HANDLING THE MAXIMUM PONDING. REFER TO ARCHITECTURAL ROOF PLANS FOR HIGH AND LOW POINTS.

KEY NOTES:
1 ALL PLUMBING VENTS SHALL TERMINATE OUTSIDE OF 25'-0" RADIUS OF ALL HVAC FRESH AIR INTAKES.



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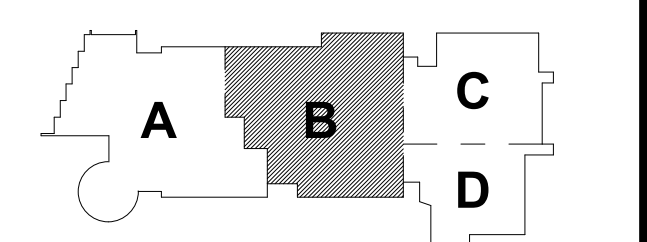
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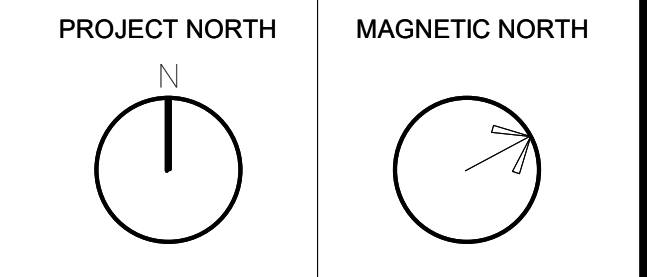
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KEY PLAN



**PLUMBING ROOF
PLAN - AREA B**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

P1-2-1B

SECONDARY ROOF DRAINAGE IS NOT REQUIRED ON THE BASIS THAT THE ROOF STRUCTURE IS CAPABLE OF HANDLING THE MAXIMUM PONDING. REFER TO ARCHITECTURAL ROOF PLANS FOR HIGH AND LOW POINTS.

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KEY PLAN

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

Job No.: 60-20-409

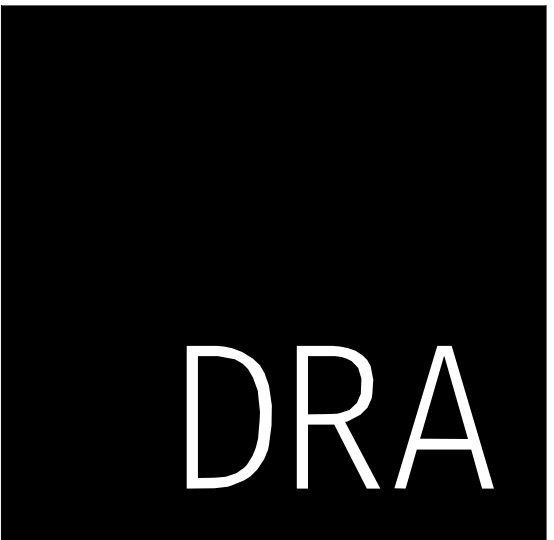
Drawn By: RDR

Date: August 28th, 2023

P1-2-1C

P1-2-1C

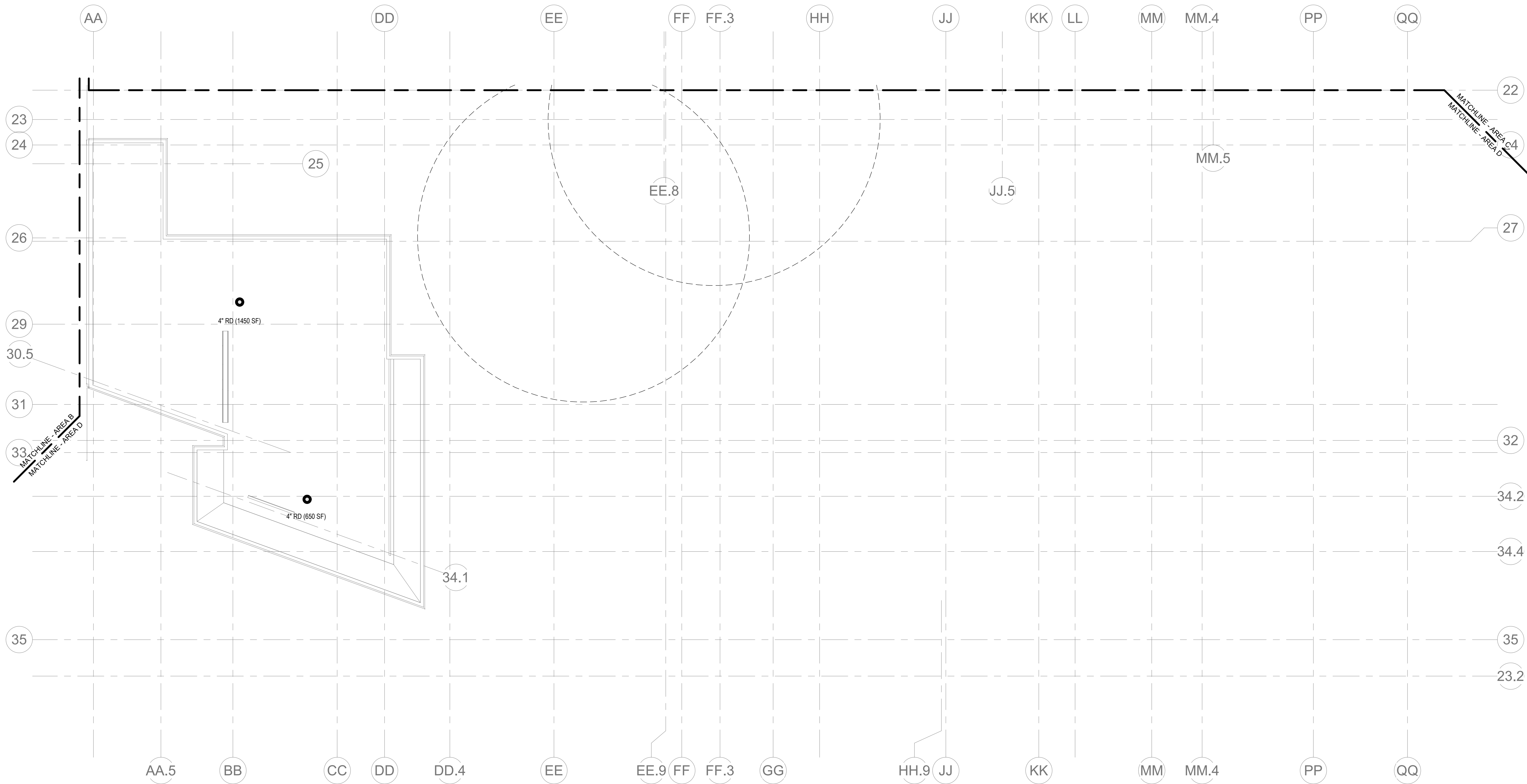
SCOPE NOTES:
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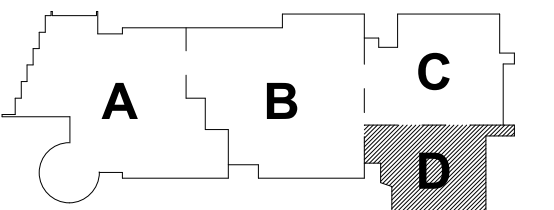
1 PLUMBING Main Roof Area D
1/8\"/>

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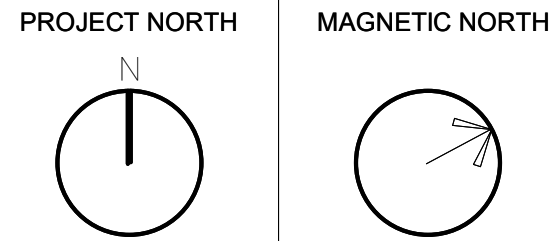


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August 28th, 2023



KEY PLAN



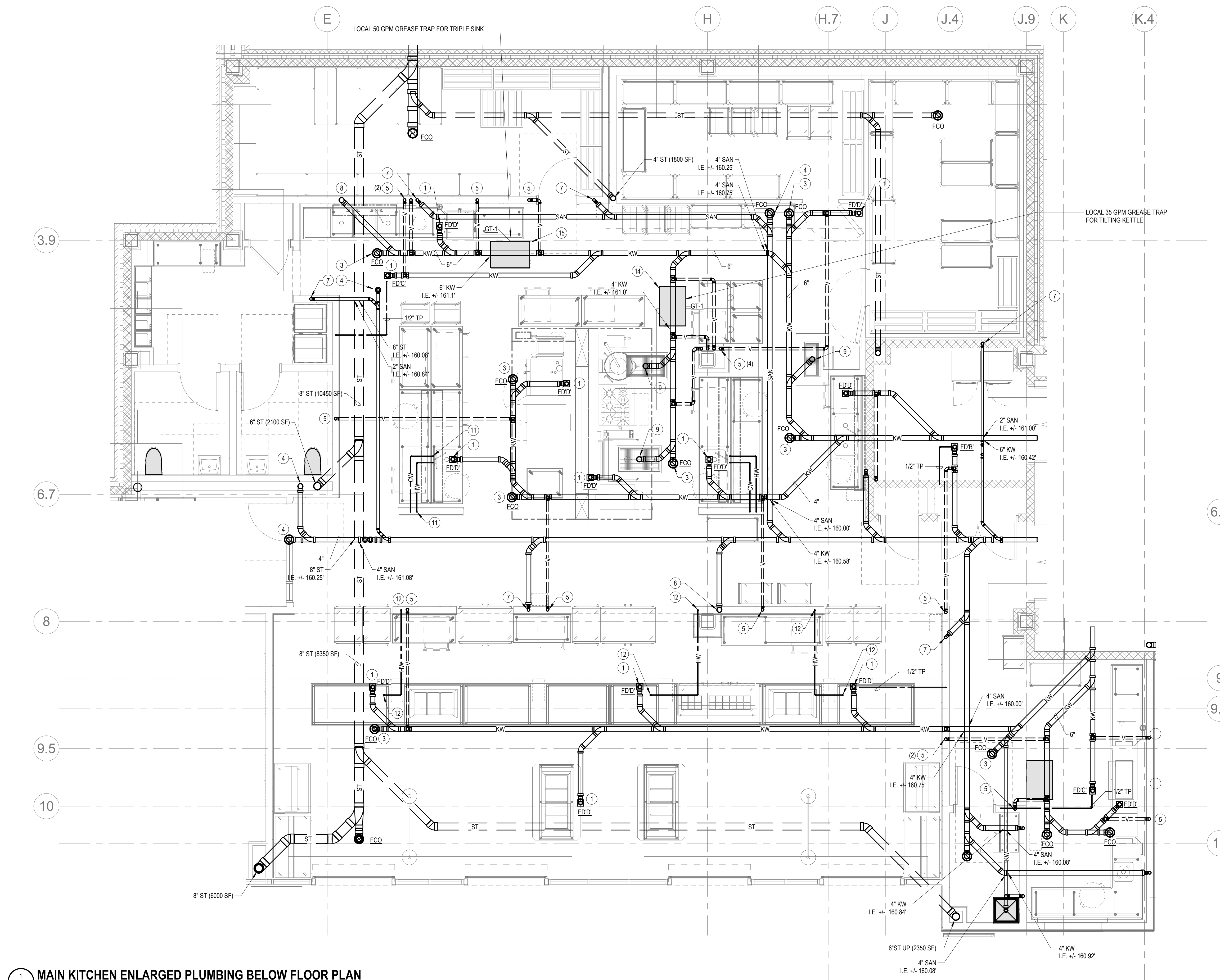
PLUMBING ROOF
PLAN - AREA D

Scale: 1/8\"/>

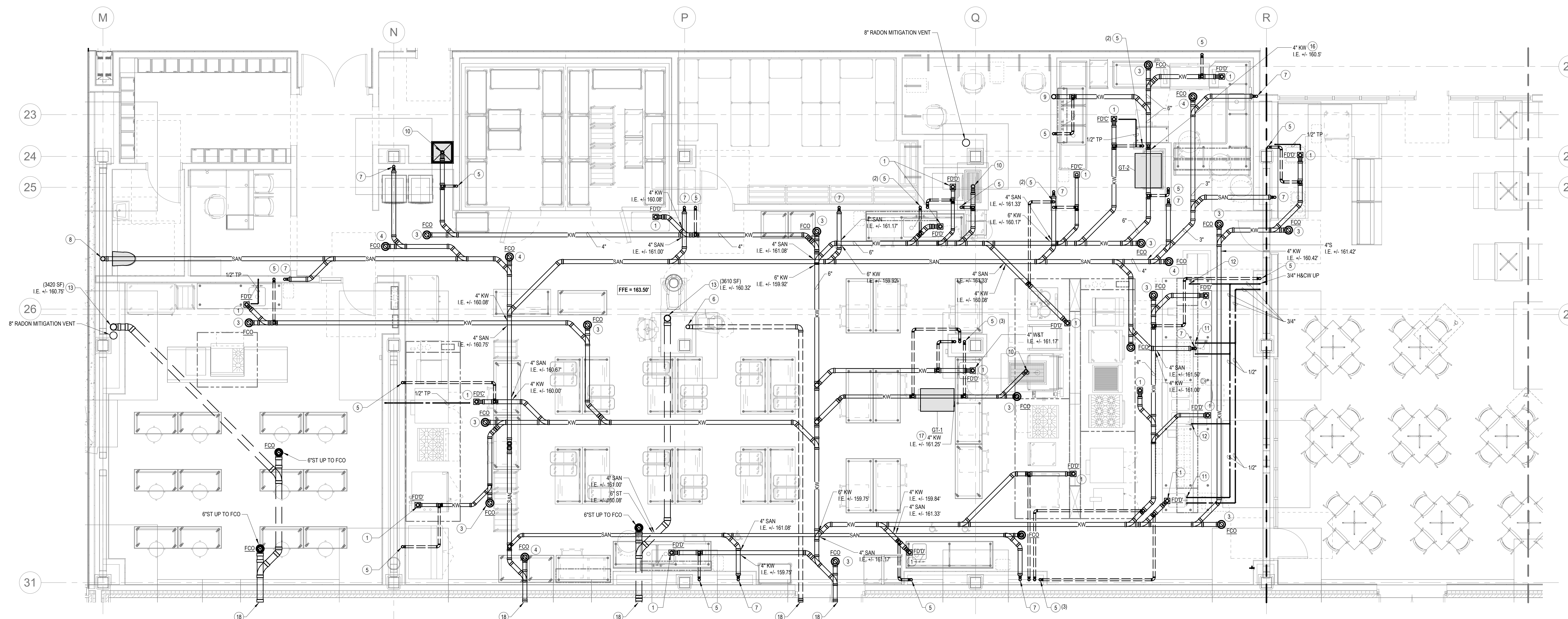
P1-2-1D

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1 MAIN KITCHEN ENLARGED PLUMBING BELOW FLOOR PLAN
P2-0-0A 1/4" = 1'-0"



CULINARY KITCHEN ENLARGED PLUMBING BELOW FLOOR PLAN

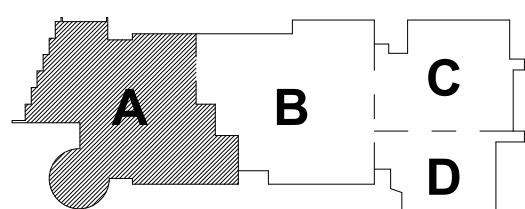
- 3) 3"X 6 T
- 4) 3"X 6BT
- 5) 4"XW UP TO FCO
- 6) 4"W UP TO FCO
- 7) 2"V UP
- 8) 4"V UP
- 9) 2"V UP
- 10) 4"V UP
- 11) 4"XW UP
- 12) 3"XW UP
- 13) 1/2"X6CU UP
- 14) 1/2"HW UP
- 15) 1"ST UP
- 16) GREASE TRAP IN PIT
DIMENSIONS 22" X 30" X 14"
I.E. BOTTOM OF GREASE TRAP: 160.33'
- 17) GREASE TRAP IN PIT
DIMENSIONS 22" X 30" X 14"
I.E. BOTTOM OF GREASE TRAP: 160.5'
- 18) GREASE TRAP IN PIT
DIMENSIONS 26" X 37" X 21"
I.E. BOTTOM OF GREASE TRAP: 159.33'
- 19) GREASE TRAP IN PIT
DIMENSIONS 27" X 35" X 14"
I.E. BOTTOM OF GREASE TRAP: 160.67'
- 20) REFER TO SHEET P-1.64 FOR PIPE SIZE, INVERT, AND CONTINUATION

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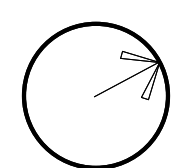
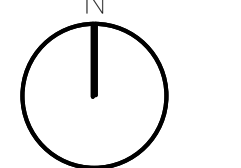
August 28th, 2023



KEY PLAN

PROJECT NORTH

MAGNETIC NORTH



**PLUMBING
BELOW FLOOR
ENLARGED
KITCHEN/CULINARY
ARTS PLANS**

Scale: 1/4" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

P2-0-0A

DRA

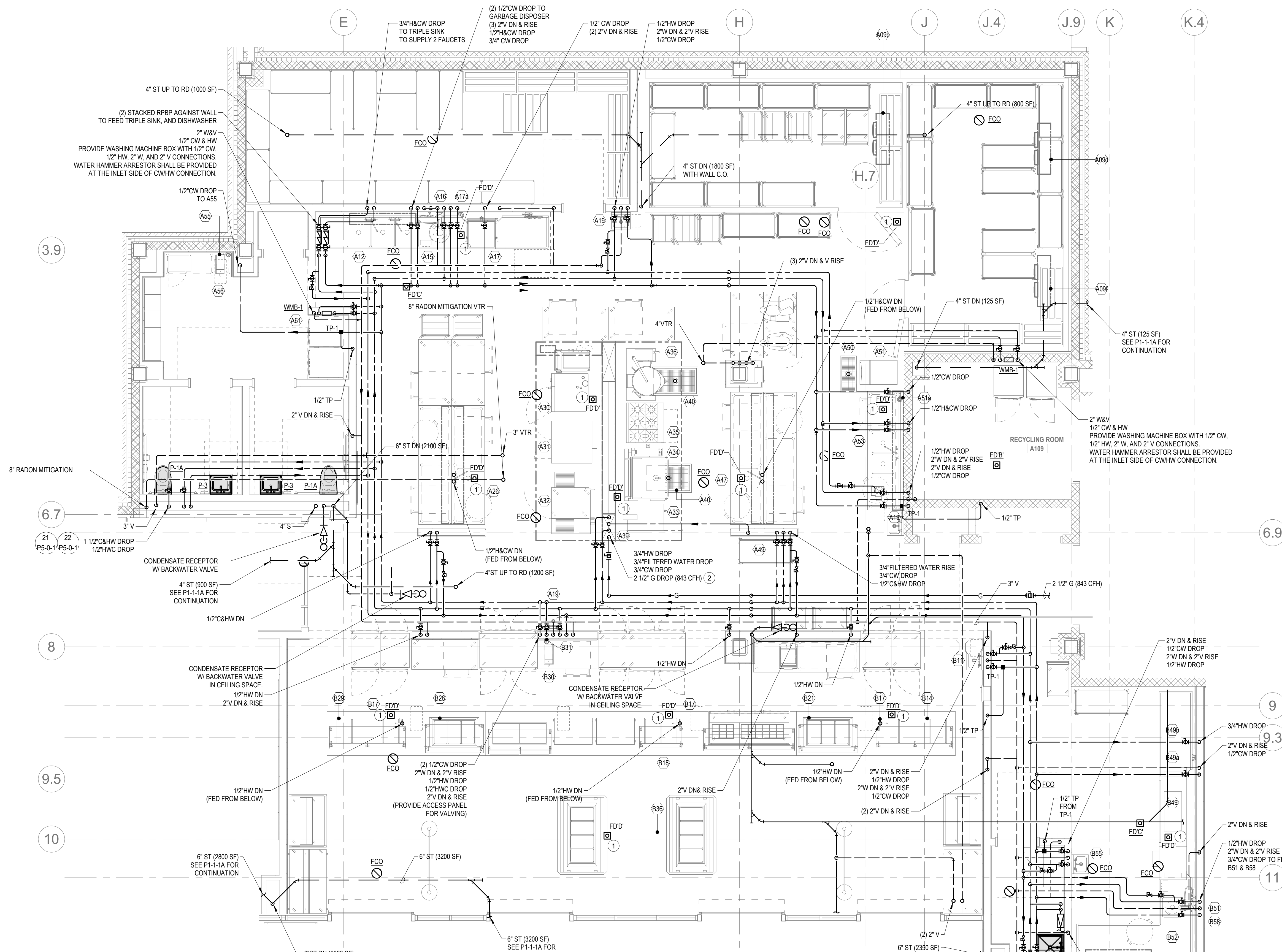
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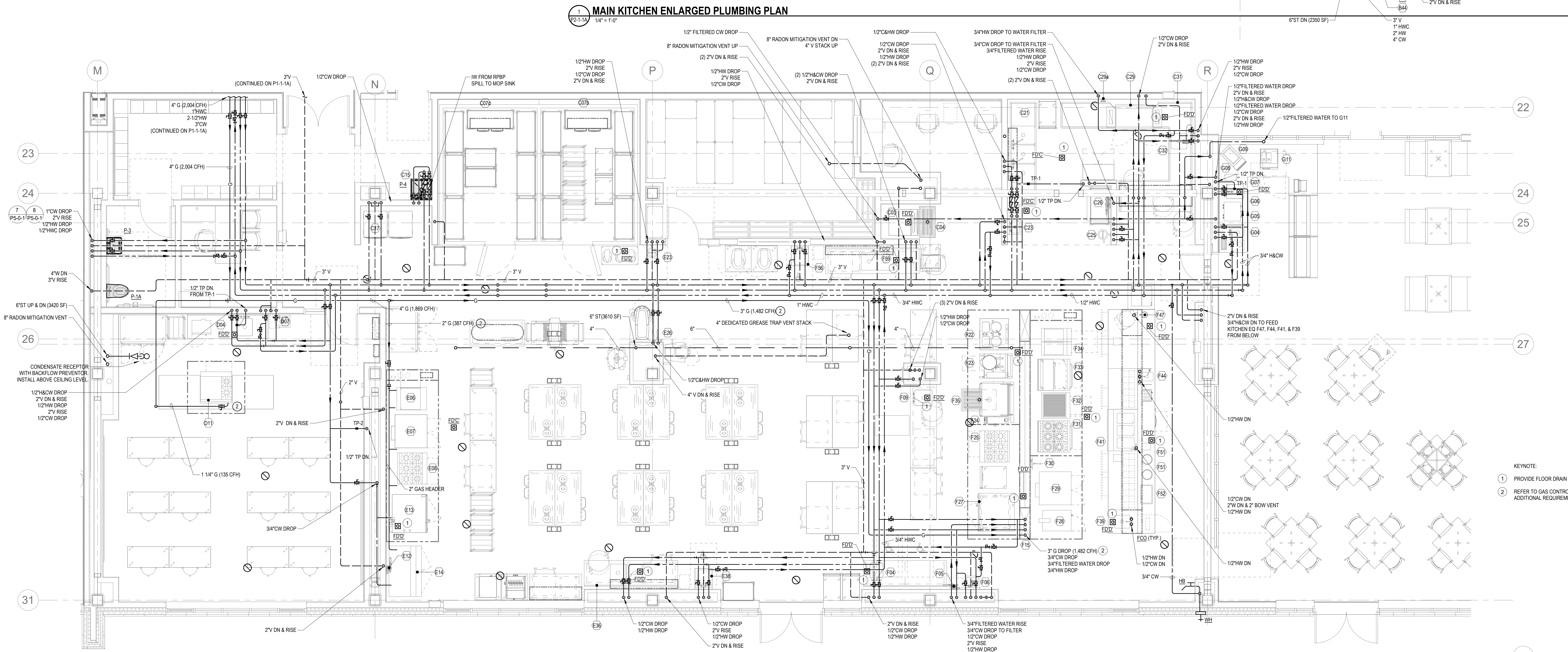
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1 MAIN KITCHEN ENLARGED PLUMBING PLAN

P2-1-1A 1/4" = 1'-0"



2 CULINARY KITCHEN ENLARGED PLUMBING PLAN

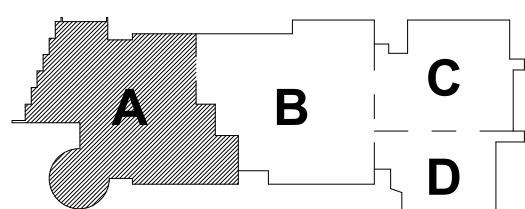
P2-1-1A 1/4" = 1'-0"

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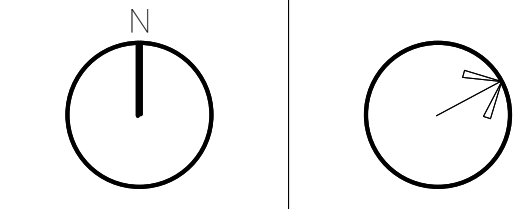
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KEY PLAN

PROJECT NORTH MAGNETIC NORTH



**PLUMBING FIRST
FLOOR
ENLARGED
KITCHEN/CULINARY
ARTS PLANS**

Scale: 1/4" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

P2-1-1A

KEY NOTES:

- ① KITCHEN EQUIPMENT SHALL BE PROVIDED WITH A CHECK VALVE OR OTHER CODE REQUIRED BACKFLOW PREVENTION DEVICES.

KITCHEN EQUIPMENT PLUMBING FIXTURE SCHEDULE

ITEM	QTY	DESCRIPTION	QW	HW	G	V	W	COMMENTS
A09b	1	COOLER EVAPORATOR COIL					1" (TO FD)	
A09a	1	FREEZER EVAPORATOR COIL					1" (TO FD)	
A09f	1	FREEZER EVAPORATOR COIL					1" (TO FS)	
A12	1	THREE-COMPARTMENT SINK	(2) 3/4"	(2) 3/4" 120°F		(3) 2"		120°F HW, WASTE MANFOLD THRU GI BY PC, PROVIDE RPZ'S FOR WATER LINES TO FIXTURE
A15	1	DISPOSER	(2) 1/2"					
A16	1	HOSE REEL ASSEMBLY	1/2"	1/2"		2"		
A17	1	WAREWASHER, DOOR-TYPE, VENTLESS	3/4" (55°F MIN FROM ITEM A17a) 1/2" (DRAIN TAMPERING)				3/4" (TO FS)	UNIT PROVIDED WITH DRAIN WATER TAMPERING SYSTEM
A17a	1	WATER FILTER ASSEMBLY	3/4" (55°F MIN)					
A19	3	HAND SINK	1/2"	1/2"		1-1/2"		PROVIDE THERMOSTATIC MIXING VALVE TO TEMPER WATER TO 110 DEG F
A26	1	COOKS WORK TABLE WITH SINK & OVERSHELF	1/2" (STUB-UP)	1/2" (STUB-UP)			2" (TO FS)	
A30	1	COMBINATION OVEN/STEAMER, ROLL-IN	3/4" (FILTERED FROM A 39)		3/4"		2" (TO FS)	G @ 160 MBTU (FROM ITEM A39)
A31	1	DOUBLE CONVECTION OVEN			3/4"			G @ 160 MBTU (FROM ITEM A39)
A32	1	COMBICON OVEN ON STAND			3/4"			G @ 40 MBTU (FROM ITEM A39)
A33	1	TEN-PAN STEAMER	1/2" (FILTERED FROM ITEM A39)		3/4"		1-1/2" (TO FS)	G @ 84 MBTU (FROM ITEM A39)
A34	1	FORTY-GALLON TILTING BRAISING PAN	1/2" (FROM ITEM A39)	1/2" (FROM ITEM A39)	1/2"			G @ 144 MBTU (FROM ITEM A39)
A35	1	SIX-BURNER RANGE WITH OVEN			3/4"			G & 215 MBTU (FROM ITEM A39)
A36	1	FORTY-GALLON TILTING KETTLE	1/2" (FROM ITEM A39)	1/2" (FROM ITEM A39)	1/2"			G @ 100 MBTU (FROM ITEM A39)
A39	1	UTILITY DISTRIBUTION SYSTEM	(1) 3/4", (1) 3/4" (FILTERED FROM A49)	3/4"	2"			G & 943 MBTU (1,700 MBTU SYSTEM CAPACITY)
A40	2	FLOOR PAN & GRATE						W CONNECTION 7" BFF
A47	1	COOKS WORK TABLE WITH SINK & OVERSHELF	1/2" (STUB-UP)	1/2" (STUB-UP)			2" (TO FS)	
A49	1	WATER FILTER ASSEMBLY	3/4"					
A50	1	FLOOR PAN & GRATE					3"	W CONNECTION 7" BFF
A51	1	ICE MAKER WITH BIN	1/2" (FILTERED FROM ITEM A51a)				1/2" & 3/4" TO FS	
A51a	1	WATER FILTER ASSEMBLY	1/2"					
A53	1	PREP TABLE WITH SINKS	1/2"	1/2"		(2) 2" (TO FS)		
A55	1	WATER FILTER ASSEMBLY	1/2"					
A56	1	COFFEE BREWER	1/2" (FILTERED FROM ITEM A55)					
A61	1	FRONT LOAD CLOTHES WASHER	1/2"	1/2"		2"		PROVIDE LAUNDRY STANDPIPE WASTE & TRAP
B11	1	HAND SINK	1/2"	1/2"		1-1/2"		PROVIDE THERMOSTATIC MIXING VALVE TO TEMPER WATER TO 110 DEG F
B14	1	HOT FOOD WELL ASSEMBLY, DROP-IN					1/2" (TO FS)	
B17	3	FILL FAUCET		1/2" (STUB-UP)				
B18	1	HOT FOOD WELL ASSEMBLY, DROP-IN					1/2" (MANIFOLD TO FS)	
B21	1	COLD PAN, DROP-IN					1" (TO FS)	
B28	1	COLD PAN, DROP-IN					1" (TO FS)	
B29	1	HOT FOOD WELL ASSEMBLY, DROP-IN					1/2" (TO FS)	
B30	1	EXISTING COFFEE BREWER	1/2" (FILTERED FROM ITEM B31)					
B31	1	WATER FILTER ASSEMBLY	1/2"					
B36	1	COLD PAN, DROP-IN					1" (TO FS)	
B44	1	MOP SINK & SERVICE FAUCET (BY PC)	1/2"	1/2"				DRAIN IN FLOOR, PROVIDE RPZ'S ON WATER LINES TO FIXTURE. SEE PLUMBING FIXTURE SCHEDULE
B49	1	EXISTING WAREWASHER, CONVEYER TYPE	1/2"	3/4" (180°F FROM ITEM B49b)			1-1/4" (TO FS)	UNIT PROVIDED WITH DRAIN WATER TAMPERING SYSTEM
B49a	1	WATER FILTER ASSEMBLY		3/4"				
B49b	1	BOOSTER HEATER, LARGE COMPACT		3/4" (FROM ITEM B49a)				
B51	1	HOSE REEL ASSEMBLY	1/2"					
B62	1	SOILED TRAY TABLE WITH SCRAP SINK & INTEGRAL PASS-THRU WINDOW FRAME				2"		
B65	1	HAND SINK	1/2"	1/2"		1-1/2"		PROVIDE THERMOSTATIC MIXING VALVE TO TEMPER WATER TO 110 DEG F
B68	1	DISPOSER	(2) 1/2"			2"		
C03	1	ICE MAKER WITH BIN	1/2" (FILTERED FROM ITEM C03)				1/2" & 3/4" (TO FS)	
C04	1	FLOOR PAN & GRATE					3"	W CONNECTION 7" BFF
C07b	1	COOLER EVAPORATOR COIL					1" (TO FD)	HW TO FD BY REC
C07c	1	FREEZER EVAPORATOR COIL		1/2"			1" (TO FD)	HW TO FD BY REC
C15	1	MOP SINK & SERVICE FAUCET (BY PC)	1/2"	1/2"				DRAIN IN FLOOR, PROVIDE RPZ'S ON WATER LINES TO FIXTURE. SEE PLUMBING FIXTURE SCHEDULE
C17	1	FRONT LOAD CLOTHES WASHER	1/2"	1/2"		2"		PROVIDE LAUNDRY STANDPIPE WASTE & TRAP
C21	1	THREE-COMPARTMENT SINK	(2) 3/4"	(2) 3/4" 120°F		(3) 2"		WASTE MANFOLD THRU GI BY PC, PROVIDE RPZ'S ON WATER LINES TO FIXTURE
C23	1	HAND SINK	1/2"			1-1/2"		PROVIDE THERMOSTATIC MIXING VALVE TO TEMPER WATER TO 110 DEG F
C25	1	EYEFACE WASH	1/2"	1/2"		1-1/2"		PROVIDE THERMOSTATIC MIXING VALVE TO TEMPER WATER TO 90 DEG F
C26	1	WATER FILTER ASSEMBLY	3/4"					
C29	1	WAREWASHER, RACK CONVEYER	1/2" (DRAIN TAMPERING)	1/2" (FROM ITEM C29a)			2" (TO FS)	UNIT PROVIDED WITH DRAIN WATER TAMPERING SYSTEM
C29a	1	WATER FILTER ASSEMBLY		3/4"				
C31	1	SOILED WARE TABLE WITH SCRAP SINK				2"		
C32	1	HOSE REEL ASSEMBLY	1/2"	1/2"				
D04	1	WORK COUNTER WITH SINK	1/2"	1/2"			2" (TO FS)	
D07	1	HAND SINK	1/2"	1/2"		1-1/2"		PROVIDE THERMOSTATIC MIXING VALVE TO TEMPER WATER TO 110 DEG F
D11	1	TWO-BURNER/GRIDDLE RANGE WITH OVEN			3/4" (STUB-UP)			G & 135 MBTU
D16	1	DONUT FRYER WITH FILTER DRAWER			1/2"			G @ 12 MBTU
E07	1	DOUBLE CONVECTION OVEN			3/4"			G & 160 MBTU
E08	1	SIX-BURNER RANGE WITH OVEN			3/4"			G & 215 MBTU, QD
E12	1	WATER FILTER ASSEMBLY	3/4"					REQUIRES WALL BLOCKING BY GC IN NON-MASONRY WALLS; PC TO BRANCH FILTERED WATER OUTPUT PIPING TO ITEMS E13 & E14
E13	1	DOUBLE COMBINATION OVEN	(2) 3/4" (FILTERED FROM ITEM E12)		(2) 3/4"		(2) 1-1/2" (TO FS)	G @ 98 MBTU
E14	1	EXISTING ROLL-IN PROOFER	1/2" (FILTERED FROM ITEM E12)				3/4" (TO FS)	
E23	1	EYEFACE WASH	1/2"	1/2"		1-1/2"		PROVIDE THERMOSTATIC MIXING VALVE TO TEMPER WATER TO 90 DEG F
E26	1	FILL FAUCET	1/2"	1/2"				
E36	1	PREP TABLE WITH SINKS	1/2"	1/2"			(2) 2" (TO FS)	
E38	1	ADA COMPLIANT HAND SINK	1/2"	1/2"		1-1/2"		
F04	1	ADA COMPLIANT PREP STATION TABLE WITH SINK	1/2"	1/2"			1-1/2" (TO FS)	
F05	1	WATER FILTER ASSEMBLY	3/4"					
F06	1	HAND SINK	1/2"	1/2"		1-1/2"		PROVIDE THERMOSTATIC MIXING VALVE TO TEMPER WATER TO 110 DEG F
F09	1	COOKS WORK TABLE WITH SINK & OVERSHELF	1/2"	1/2"			2" (TO FS)	
F15	1	UTILITY DISTRIBUTION SYSTEM	(1) 3/4", (1) 3/4" (FILTERED FROM ITEM F05)	3/4"	2"			G @ 1,499 MBTU (LOOPED SERVICE) (2,350 MBTU SYSTEM CAPACITY)
F22	1	DOUBLE TWENTY-QUART TILTING KETTLE	1/2" (FILTERED FROM ITEM F15)	1/2" (FROM ITEM F15)	1/2"		1-1/4" (TO FS)	G & 200 MBTU (FROM ITEM F15)
F23	1	FORTY-QUART KETTLE WITH DRAIN CART STAND	1/2" (FROM ITEM F15)	1/2" (FROM ITEM F15)	1/2"		1-1/2" (TO FS)	G & 55 MBTU (FROM ITEM F15)
F24	1	FORTY-GALLON TILTING BRAISING PAN	1/2" (FILTERED FROM ITEM F15)	1/2" (FROM ITEM F15)	1/2"			G & 144 MBTU (FROM ITEM F15)
F25	1	SIX-BURNER RANGE WITH OVEN			3/4"			G & 215 MBTU (FROM ITEM F15)
F27	1	COMBINATION OVEN ON MOBILE STAND	3/4" (FILTERED FROM ITEM F15), 3/4" (FROM ITEM F15)		3/4"		1-1/2" (TO FS)	G @ 98 MBTU (FROM ITEM F15)
F28	1	TEN-PAN STEAMER	1/2" (FILTERED FROM ITEM F15)		3/4"		1-1/2" (TO FS)	G & 84 MBTU (FROM ITEM F15)
F29	1	CONVECTION OVEN			3/4"			G & 55 MBTU (FROM ITEM F15)
F30	1	FILL FAUCET	1/2" (FROM ITEM F15)	1/2" (FROM ITEM F15)				
F31	1	SIX-BURNER RANGE WITH OVEN & BACKSHELF BROILER			1"			G @ 252 MBTU (FROM ITEM F15)
F32	1	HEAVY DUTY UNDERFIRE BROILER			3/4"			G & 95 MBTU (FROM ITEM F15)
F33	1	GRIDDLE RANGE WITH OVEN & BACKSHELF BROILER			1"			G & 132 MBTU (FROM ITEM F15)
F34	1	FRYER ASSEMBLY WITH FILTER DRAWER			3/4"			G & 160 MBTU (FROM ITEM F15)
F35	1	FLOOR PAN & GRATE					3"	W CONNECTION 7" BFF
F39	1	WORK SINK (PART OF ASSEMBLY)	1/2" (STUB-UP)	1/2" (STUB-UP)			2" (TO FS)	
F41	1	STEAM TABLE, THREE-WELL (PART OF ASSEMBLY)	1/2" (STUB-UP)	1/2" (STUB-UP)		1-1/2"		PROVIDE THERMOSTATIC MIXING VALVE TO TEMPER WATER TO 110 DEG F
F44	1	HAND SINK (PART OF ASSEMBLY)	1/2" (STUB-UP)	1/2" (STUB-UP)				
F47	1	DIPS/WELL & FAUCET		1/2"			1-1/4" (TO FS)	
F51	2	SOUP WELL, DROP-IN					1/2" (MANIFOLD TO FS)	
F52	1	HOT FOOD WELL, DROP-IN					1/2" (TO FS)	
F56	1	ADA COMPLIANT HAND SINK	1/2"	1/2"		1-1/2"		
F59	1	PREP TABLE WITH SINKS	1/2"	1/2"			(2) 2" (TO FS)	
G04	1	UNDERMOUNT HAND SINK WITH FAUCET & SOAP DISPENSER	1/2"	1/2"		1-1/2"		
G05	1	COFFEE BREWER (BY OWNER'S VENDOR)	1/2" (FILTERED FROM ITEM C26)					
G06	1	PRE-RINSE UNIT WITH ADD-ON FAUCET	1/2"	1/2"				
G07	1	UNDERMOUNT WORK SINK					1-1/2" (TO FS)	
G08	1	HOT WATER DISPENSER	1/2" (FILTERED FROM C26)					
G09	1	ICE DISPENSER, MANUAL FILL					3/4" (TO FS)	
G11	1	ESPRESSO MACHINE (BY OWNER'S VENDOR)	1/2" (FILTERED FROM ITEM C26)				3/4" (TO FS)	
J07	1	THREE-COMPARTMENT SINK W/ PRE-RINSE SPRAY	1/2"	1/2"		(3) 2"		W TO GREASE INTERCEPTOR, ADD ADDITIONAL 1/2" CW FOR PRE-RINSE SPRAY
J09	1	HAND SINK WITH FAUCET	1/2"	1/2"		1-1/2"		REQUIRES WALL BLOCKING BY GC IN NON-MASONRY WALLS
J11	1	CONCESSIONS TABLE WITH SINK	1/2"	1/2"			2"	HW TO FLOOR SINK

GENERAL NOTES:

- ALL KITCHEN EQUIPMENT CONNECTIONS SHALL INCLUDE SEPARATE SUPPLY STOPS.
- ALL ITEMS TO BE SUPPLIED WITH A SELF-DISPENSING SOAP DISPENSER SHALL BE INSTALLED WITH A REDUCED PRESSURE TYPE BACKFLOW PREVENTER.
- PLUMBING CONTRACTOR SHALL BE RESPONSIBLE TO INSTALL FOR EACH FOOD SERVICE EQUIPMENT ALL ACCESSORIES PROVIDED WITH EACH FOOD SERVICE EQUIPMENT AND SHALL INCLUDE AT A MINIMUM THE FOLLOWING: PRESSURE REDUCING VALVE, STOP HANDLE VALVES, WATER HAMMER ARRESTORS, REGULATORS AND OTHER SIMILAR DEVICES.
- HW CONNECTION SHALL BE EXTENDED TO NEARBY FLOOR DRAIN/FLOOR SINK.

DRA

DrummeY Rosane Anderson, Inc.

225 Oakland Road
Studio 205
South Windsor, CT
06074

260 Charles Street
Studio 300
Waltham, MA
02453

Planning | Architecture | Interior Design
Tel: 617.984.1700
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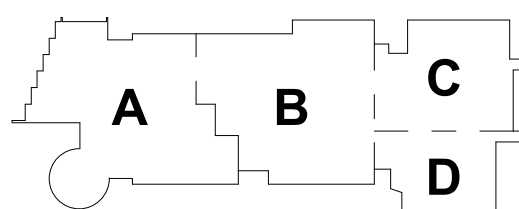
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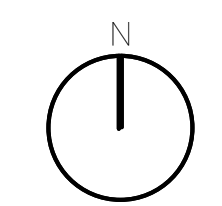
BID SET

August 28th, 2023

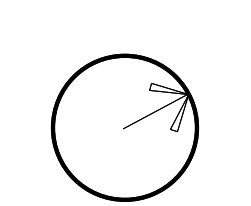


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



PLUMBING FOOD SERVICE SCHEDULE

Scale:

Job No.: 60-20-409

Drawn By: RDR

Date: August 28th, 2023

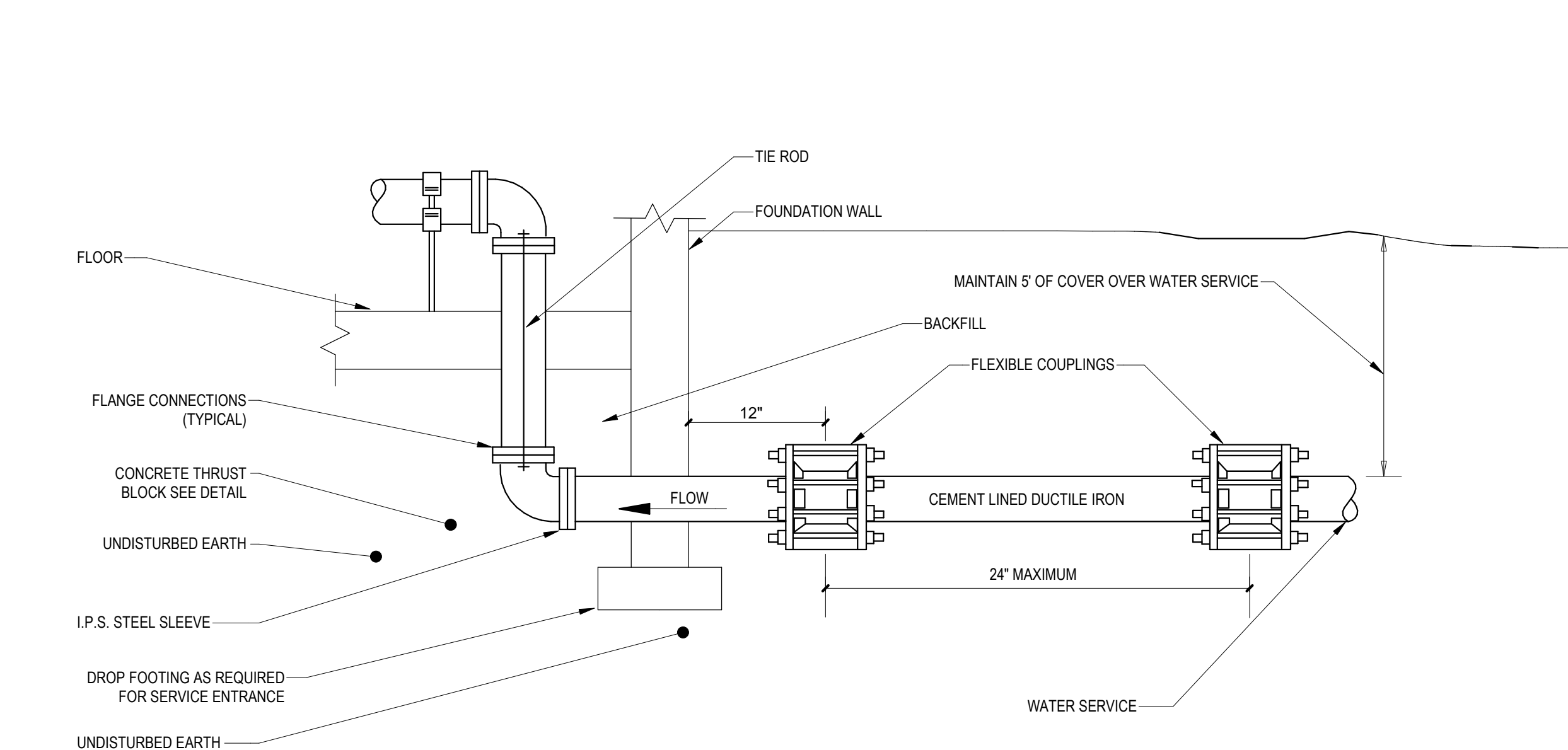
P2-2-2A

DRA

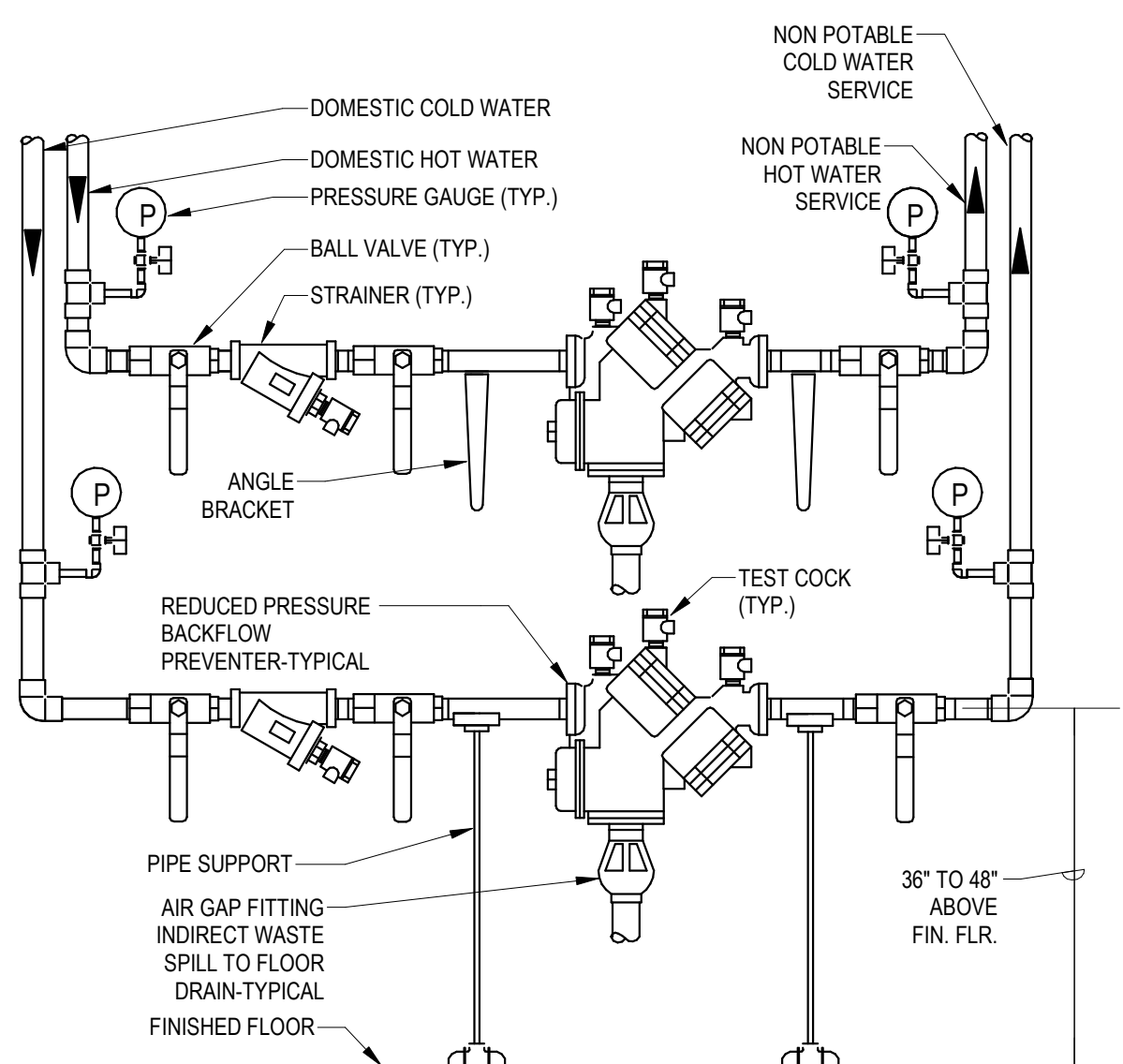
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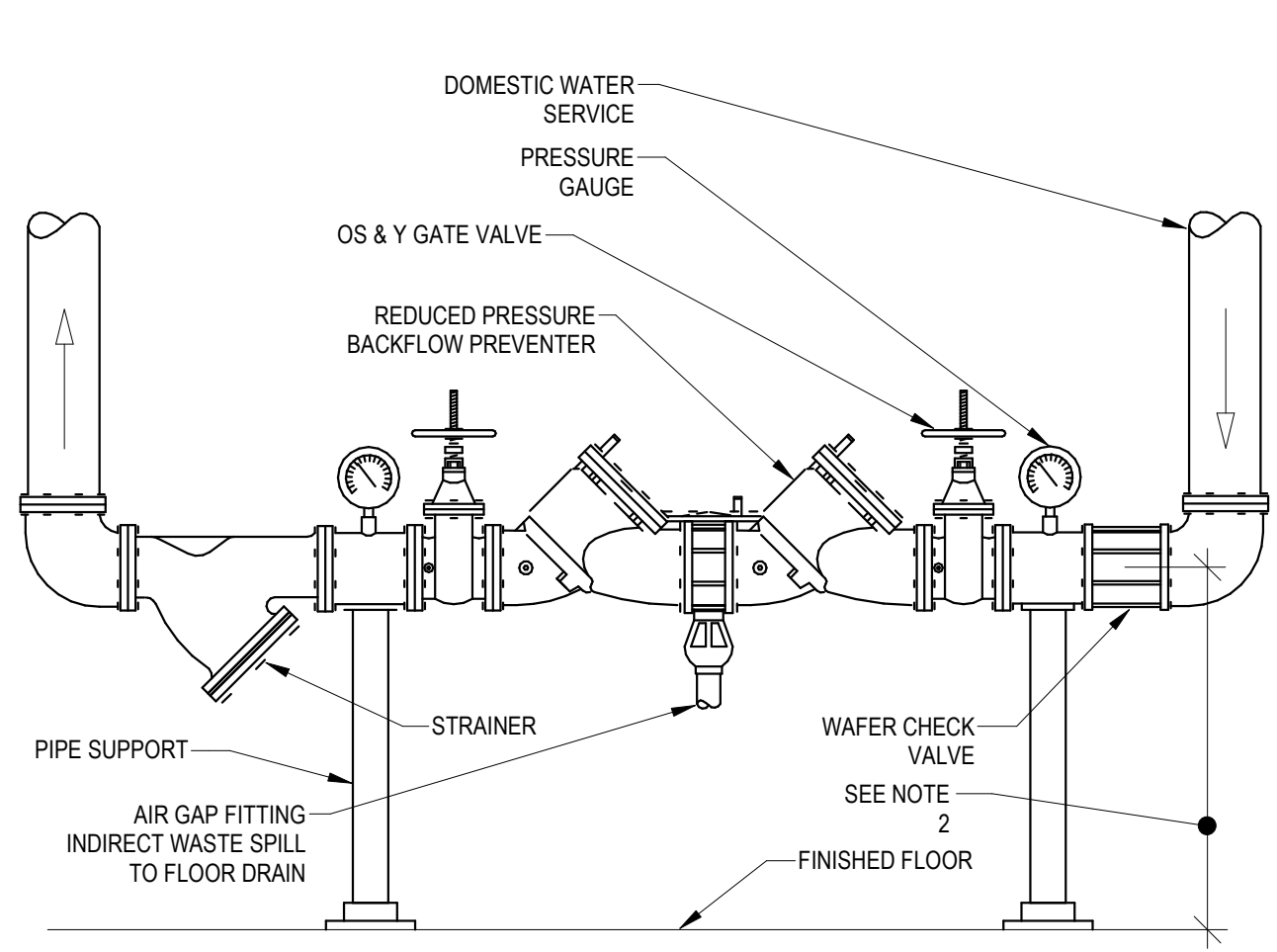
Wakefield, MA 01880



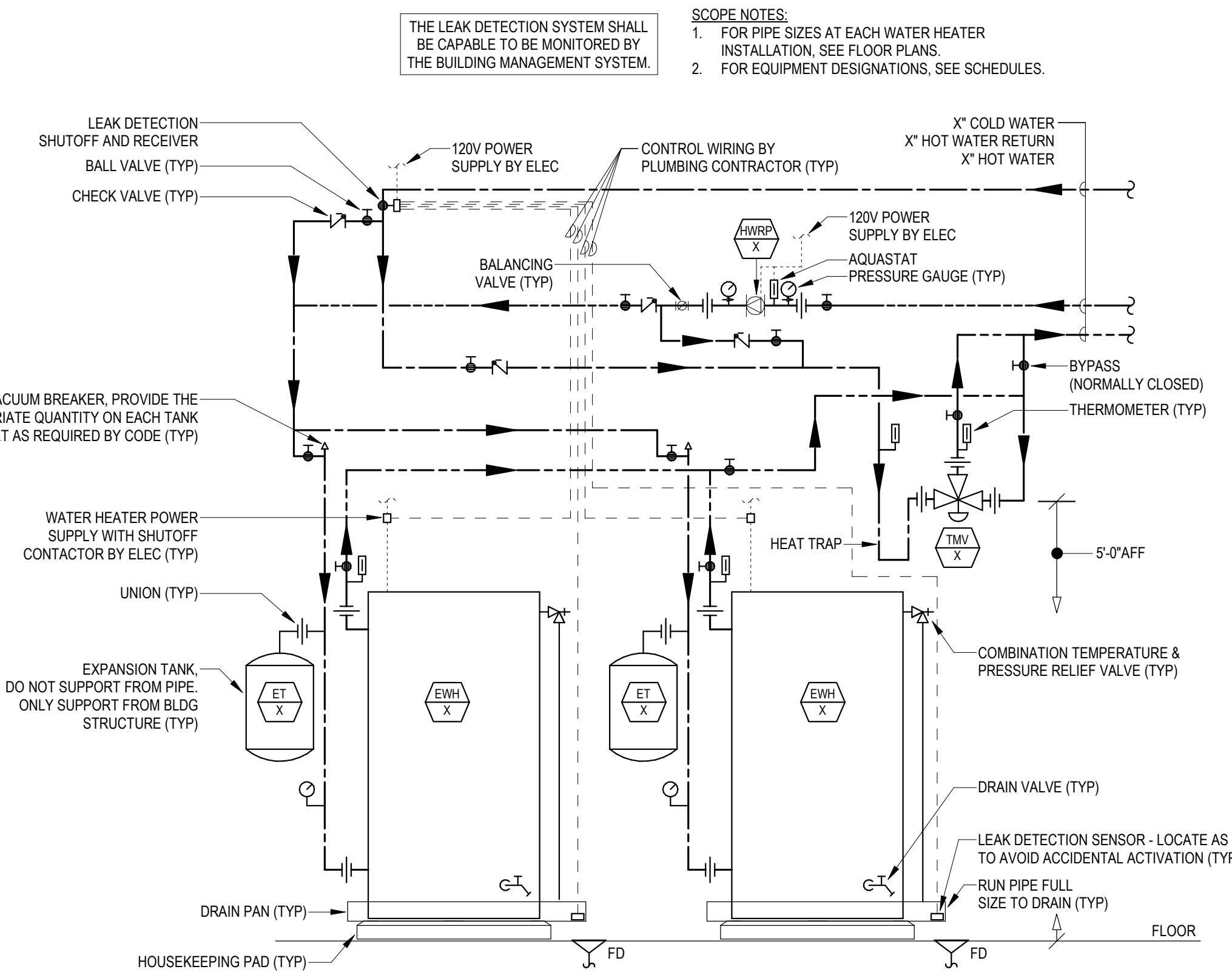
1 WATER SERVICE ENTRANCE (THRU FLOOR)



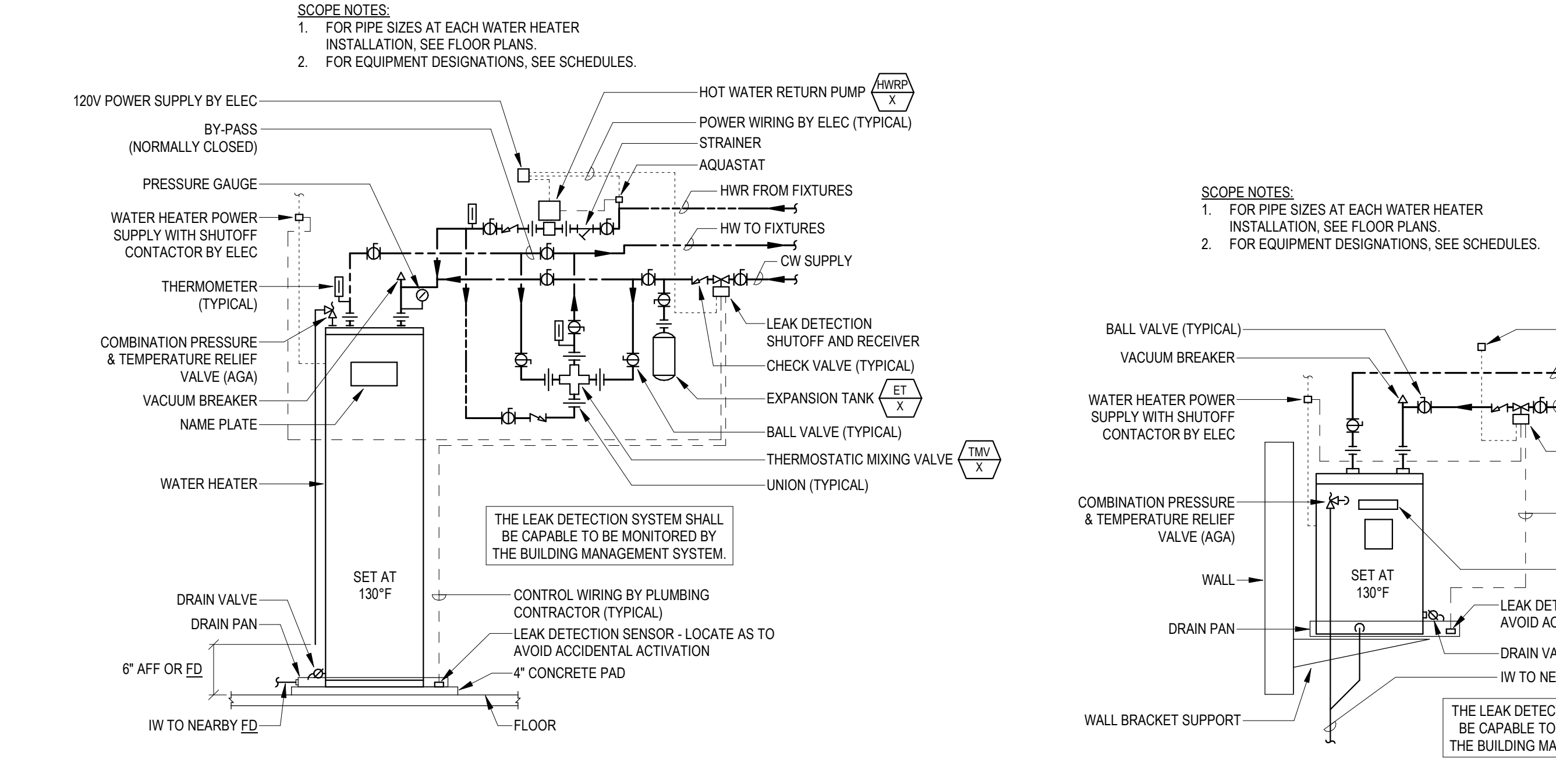
2 STACKED REDUCED PRESSURE BACKFLOW PREVENTERS



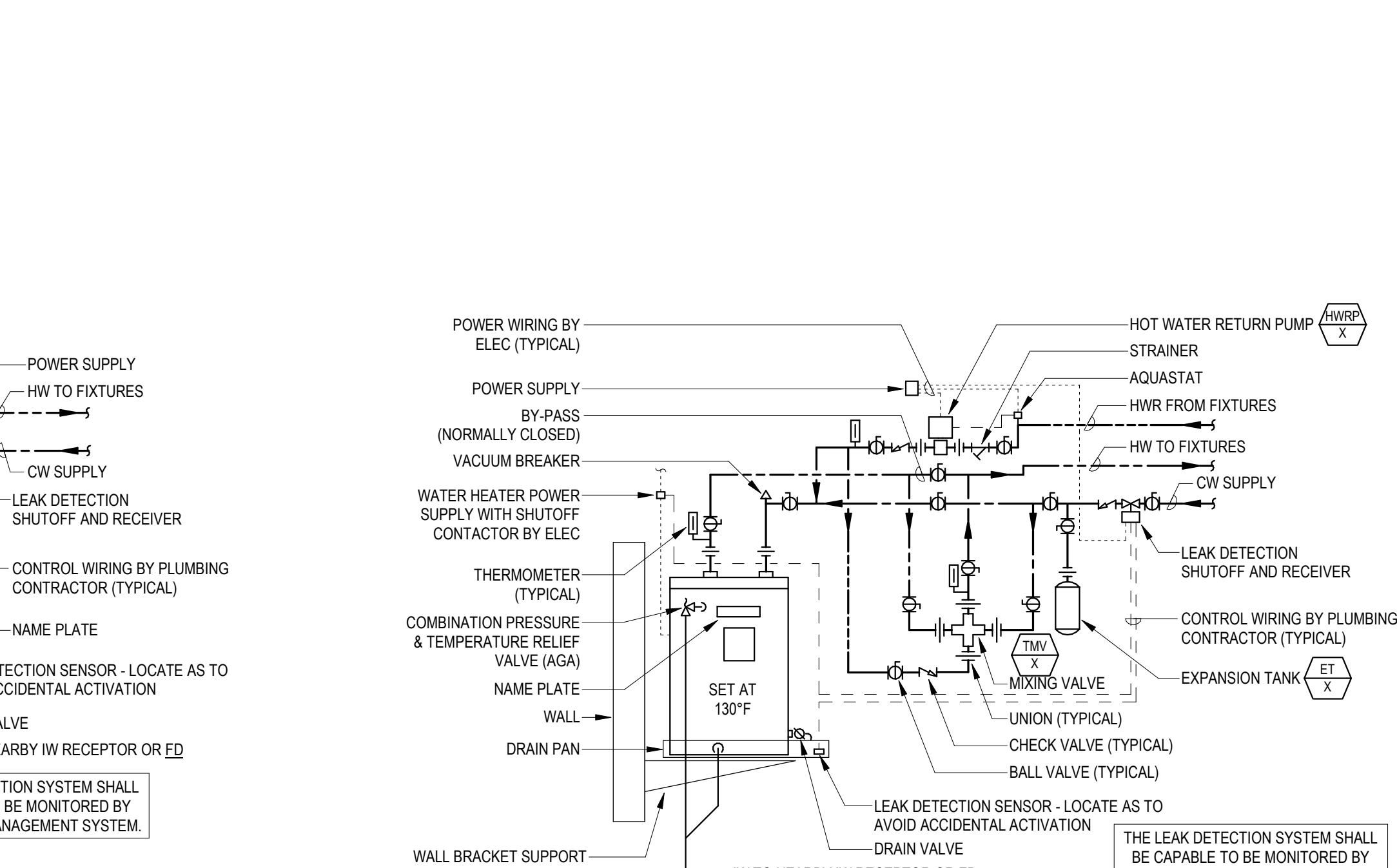
3 REDUCED PRESSURE BACKFLOW PREVENTER (LARGE BFP)



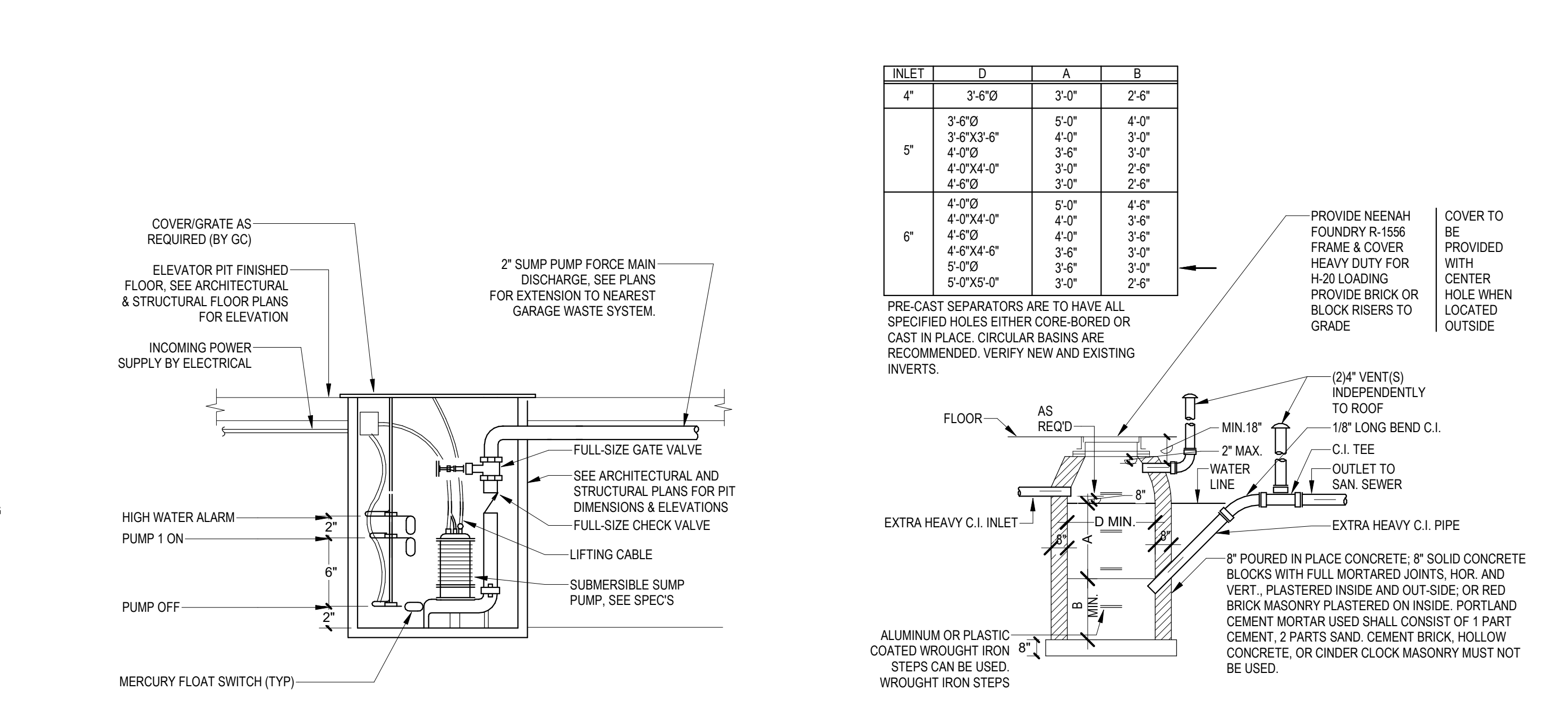
4 ELECTRIC WATER HEATER PIPING DETAIL (DUPLEX W/ MIXING VALVE)



5 ELECTRIC WATER HEATER - FLOOR MOUNTED (W/ CIRCULATION)

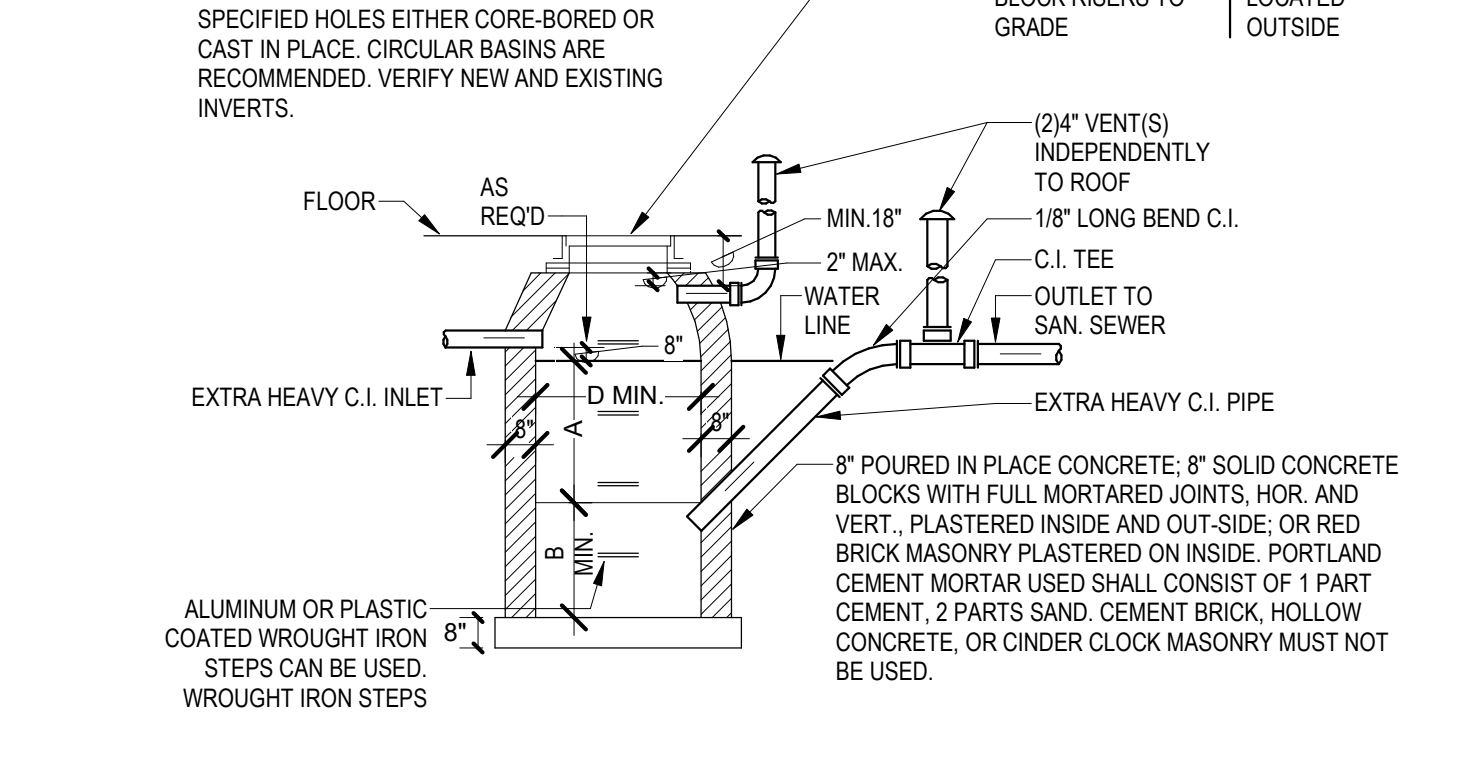


6 ELECTRIC WATER HEATER - SUSPENDED

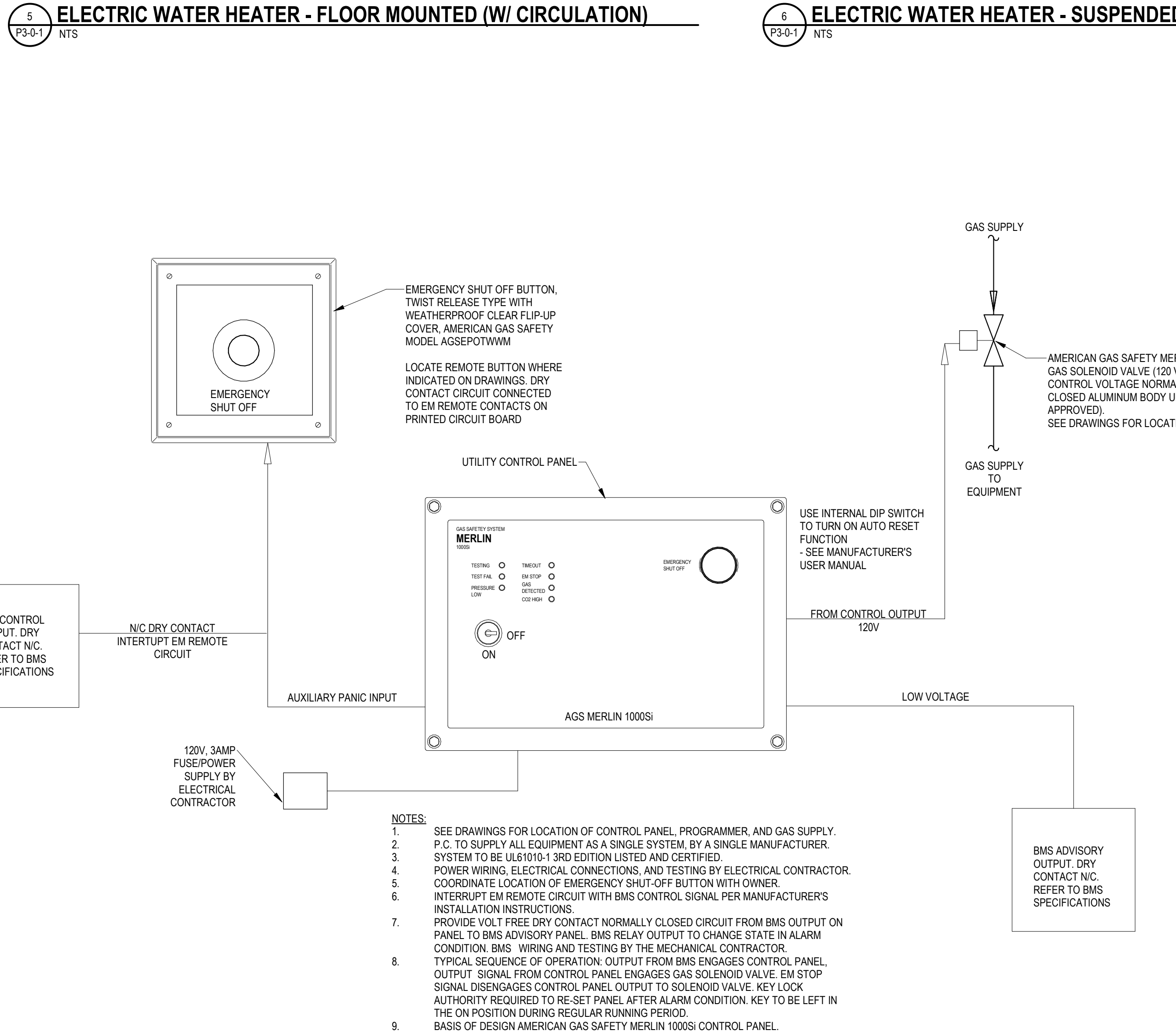


8 SIMPLEX ELEVATOR PIT SUMP PUMP

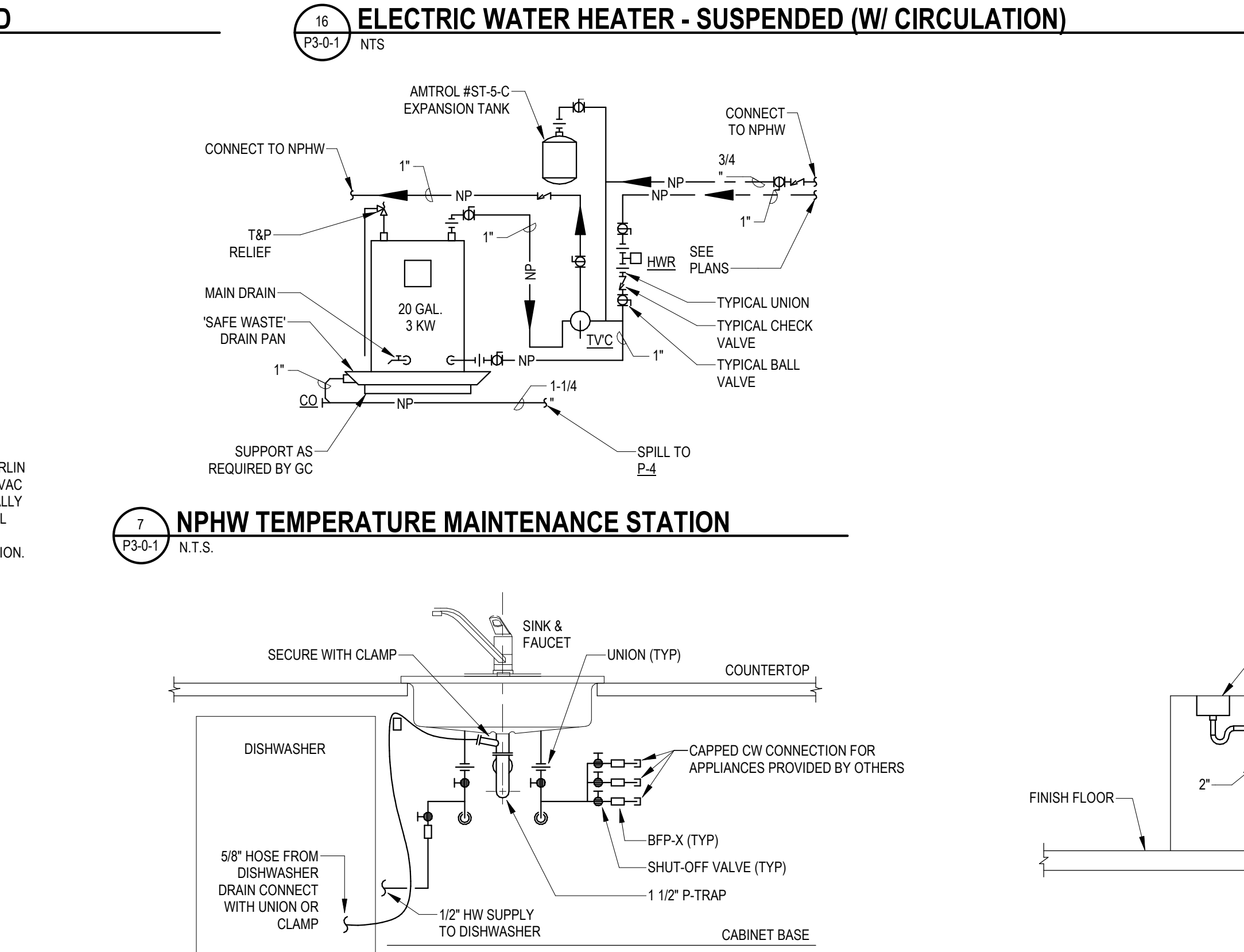
INLET	D	A	B
4"	3'-6"	3'-0"	2'-6"
5"	3'-6"	4'-0"	3'-0"
6"	4'-0"	4'-0"	3'-0"
8"	4'-0"	4'-0"	3'-0"
10"	4'-0"	4'-0"	3'-0"
12"	4'-0"	4'-0"	3'-0"



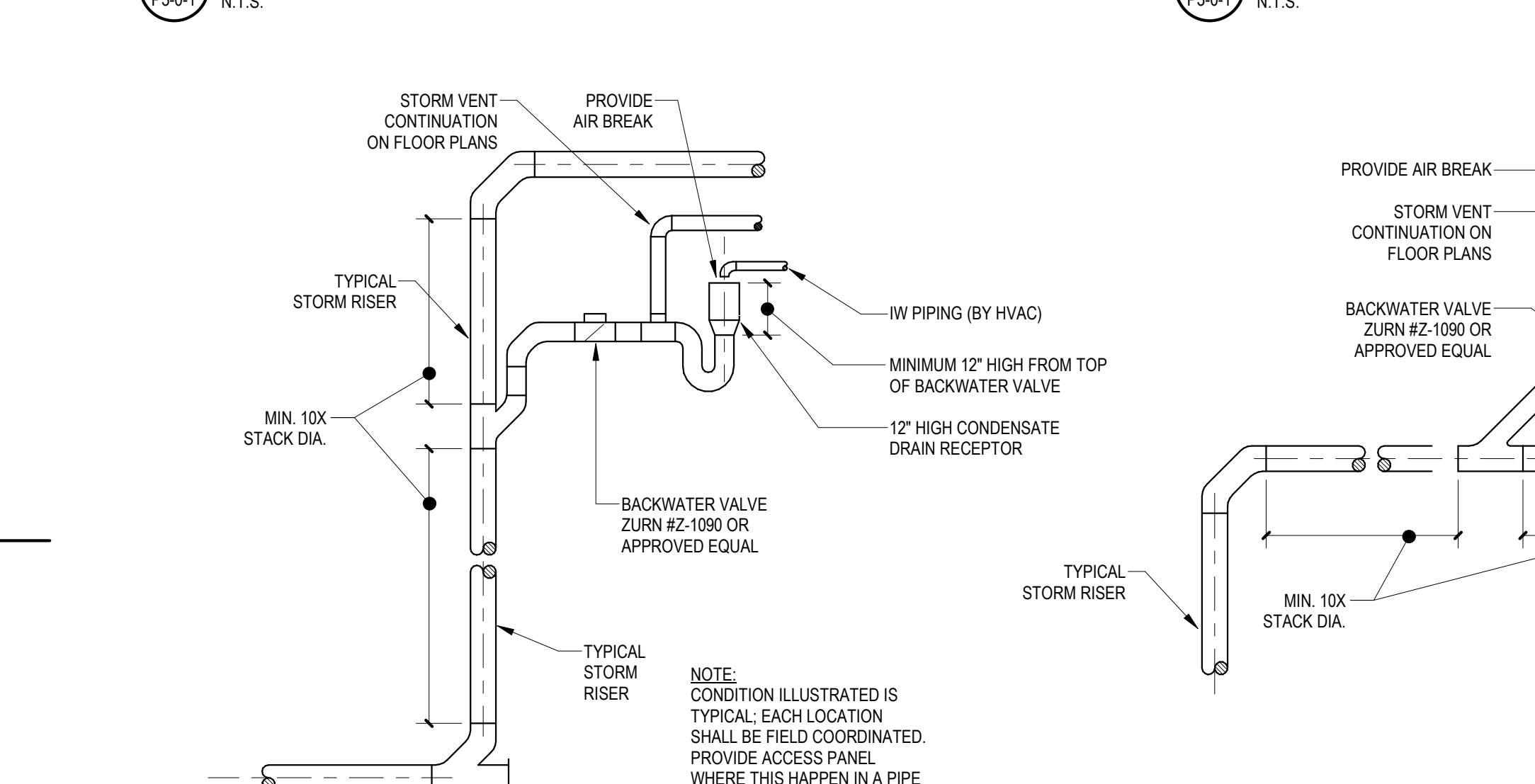
9 GASOLINE / SAND INTERCEPTOR



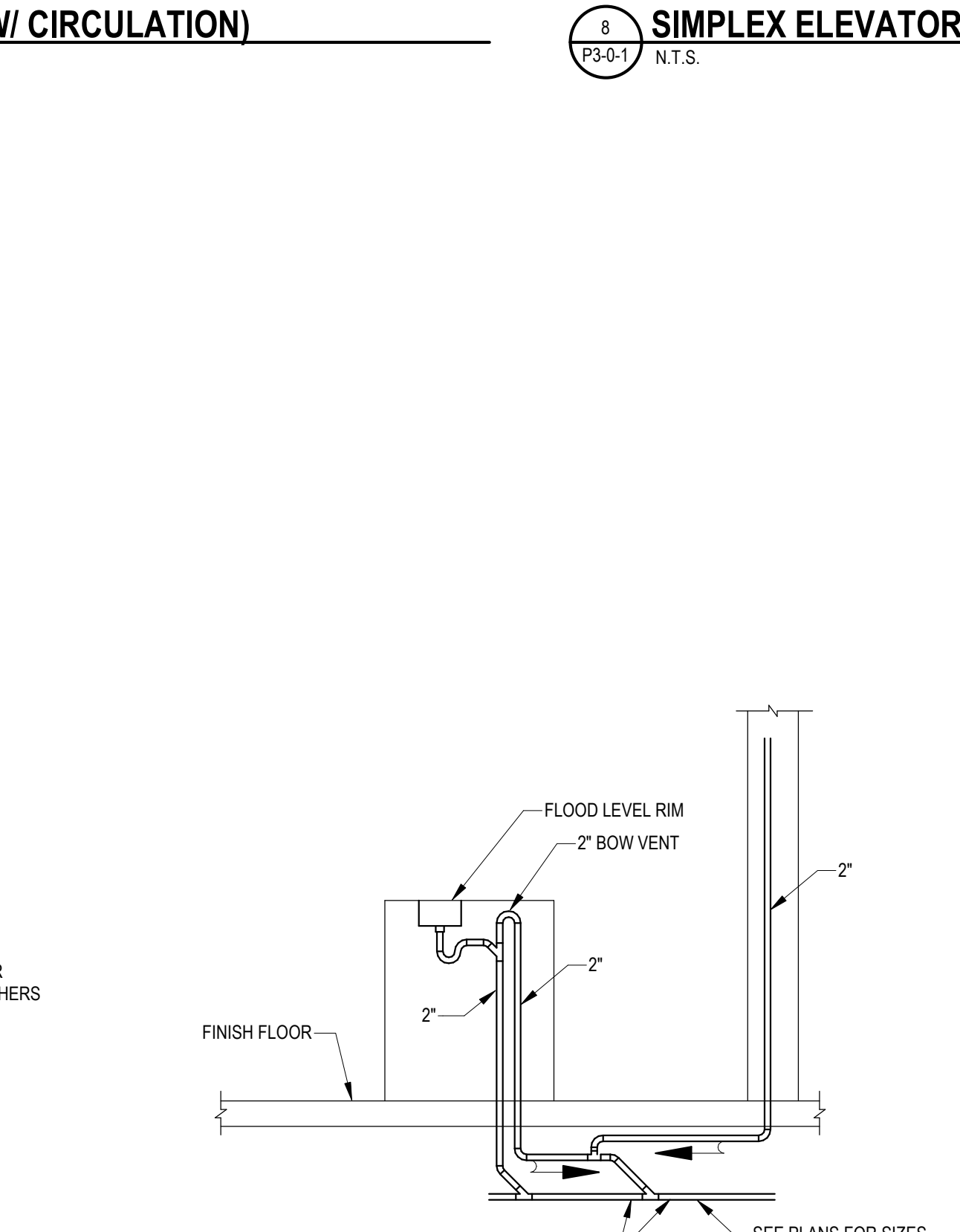
10 GAS SAFETY CONTROL DETAIL



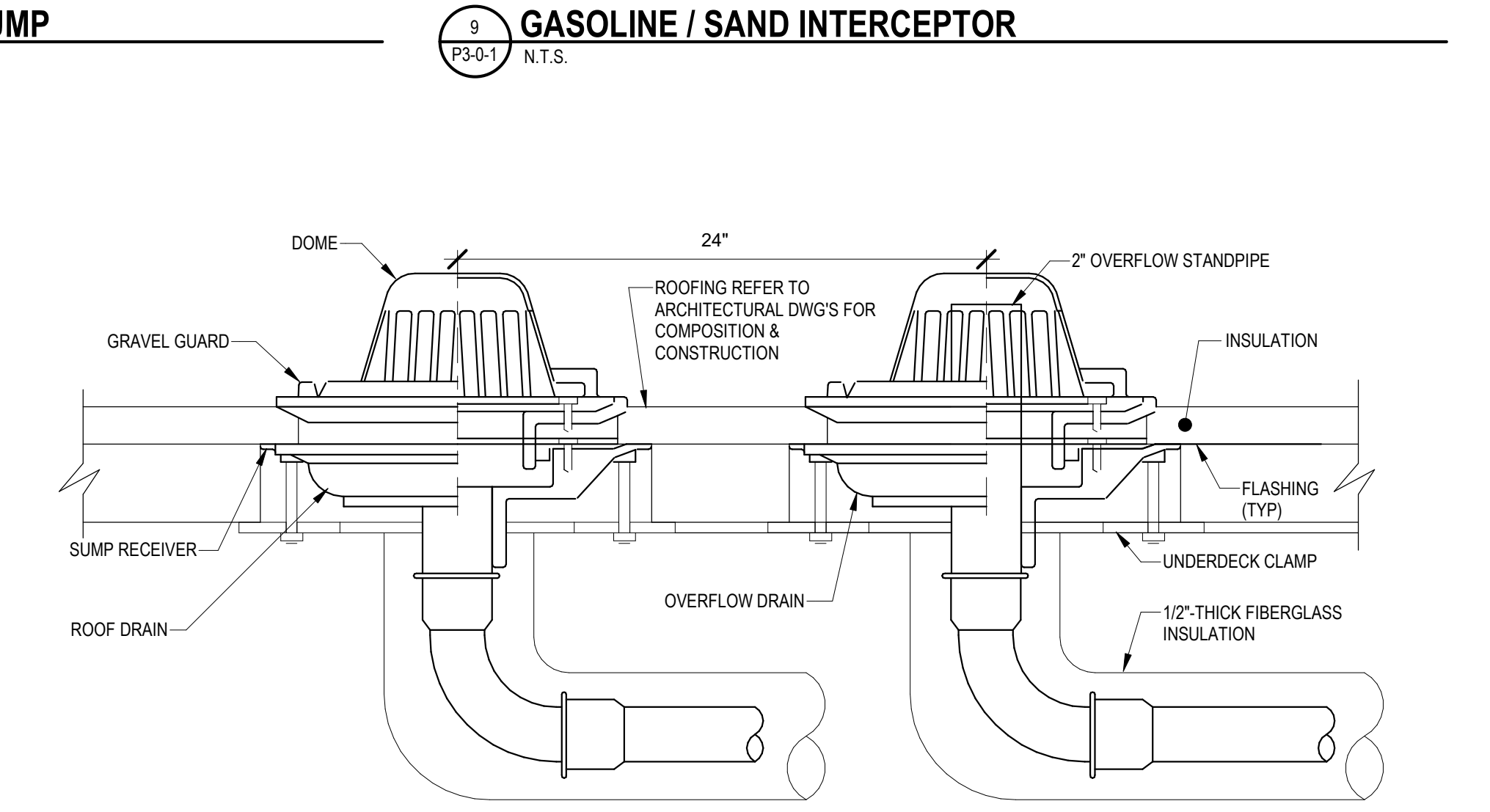
7 NPHW TEMPERATURE MAINTENANCE STATION



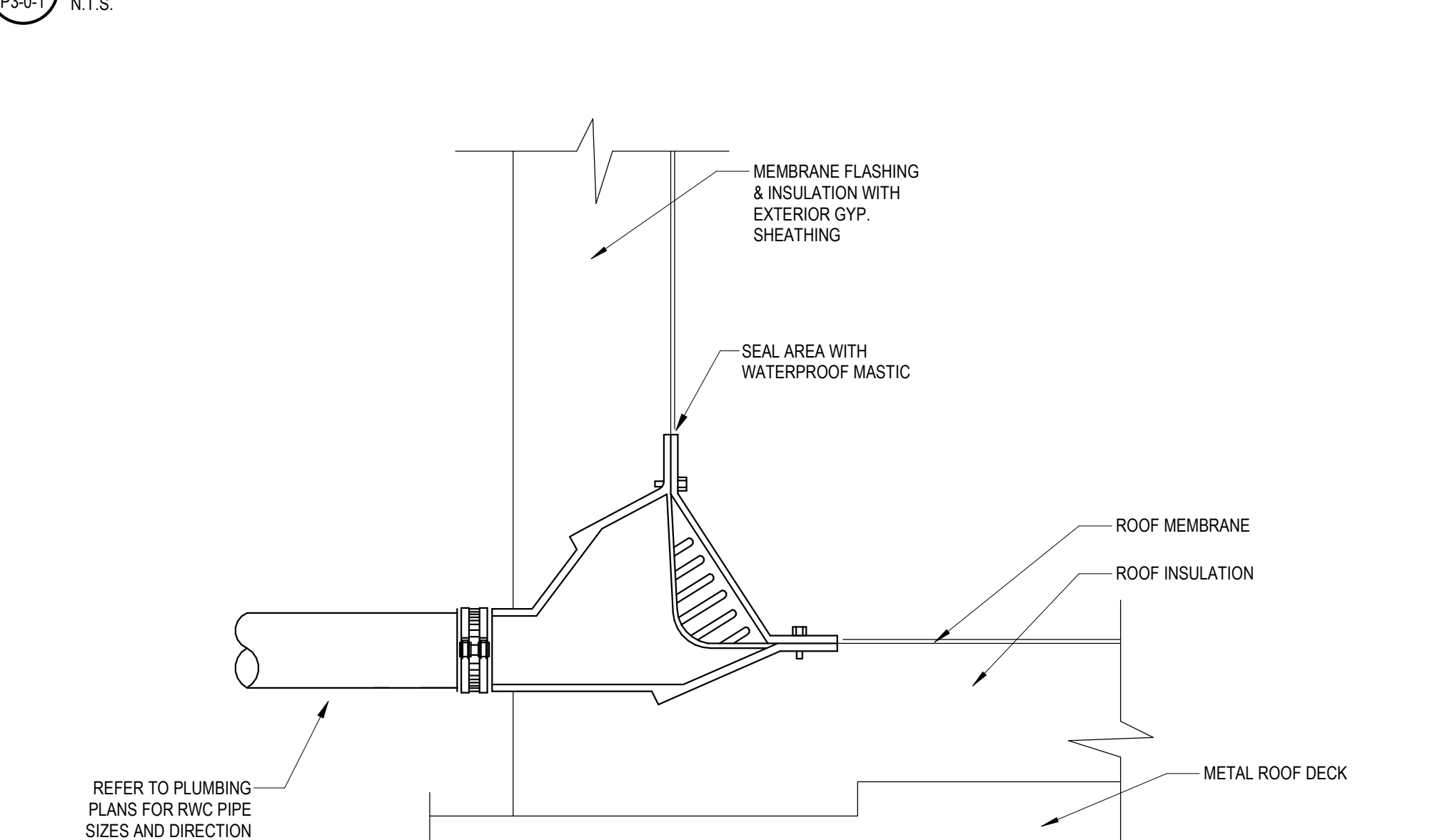
14 SINK AND APPLIANCE PIPING DETAIL



15 ISLAND SINK DETAIL



12 PRIMARY ROOF DRAIN AND INDEPENDENT OVERFLOW DRAIN DETAIL



13 SCUPPER DRAIN DETAIL

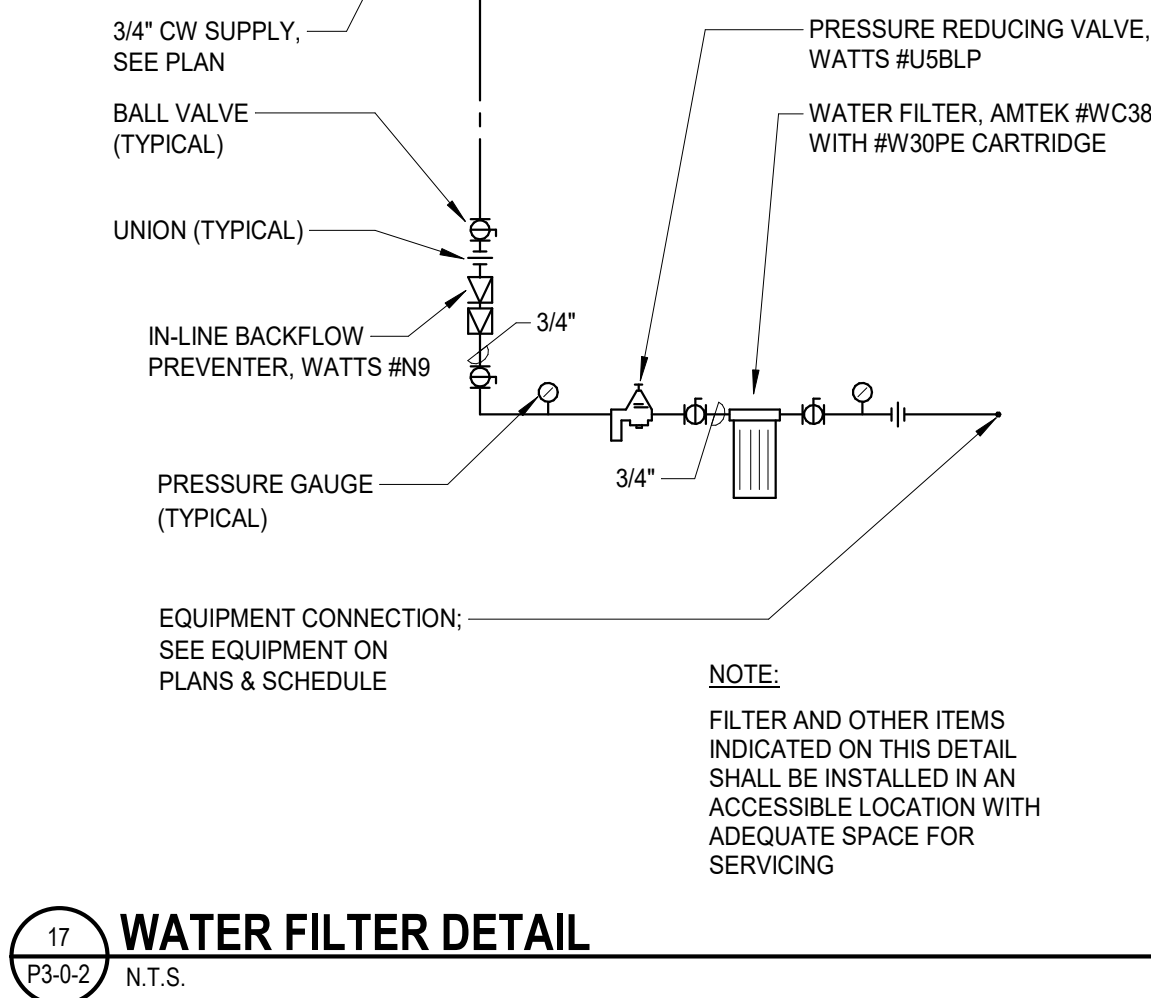
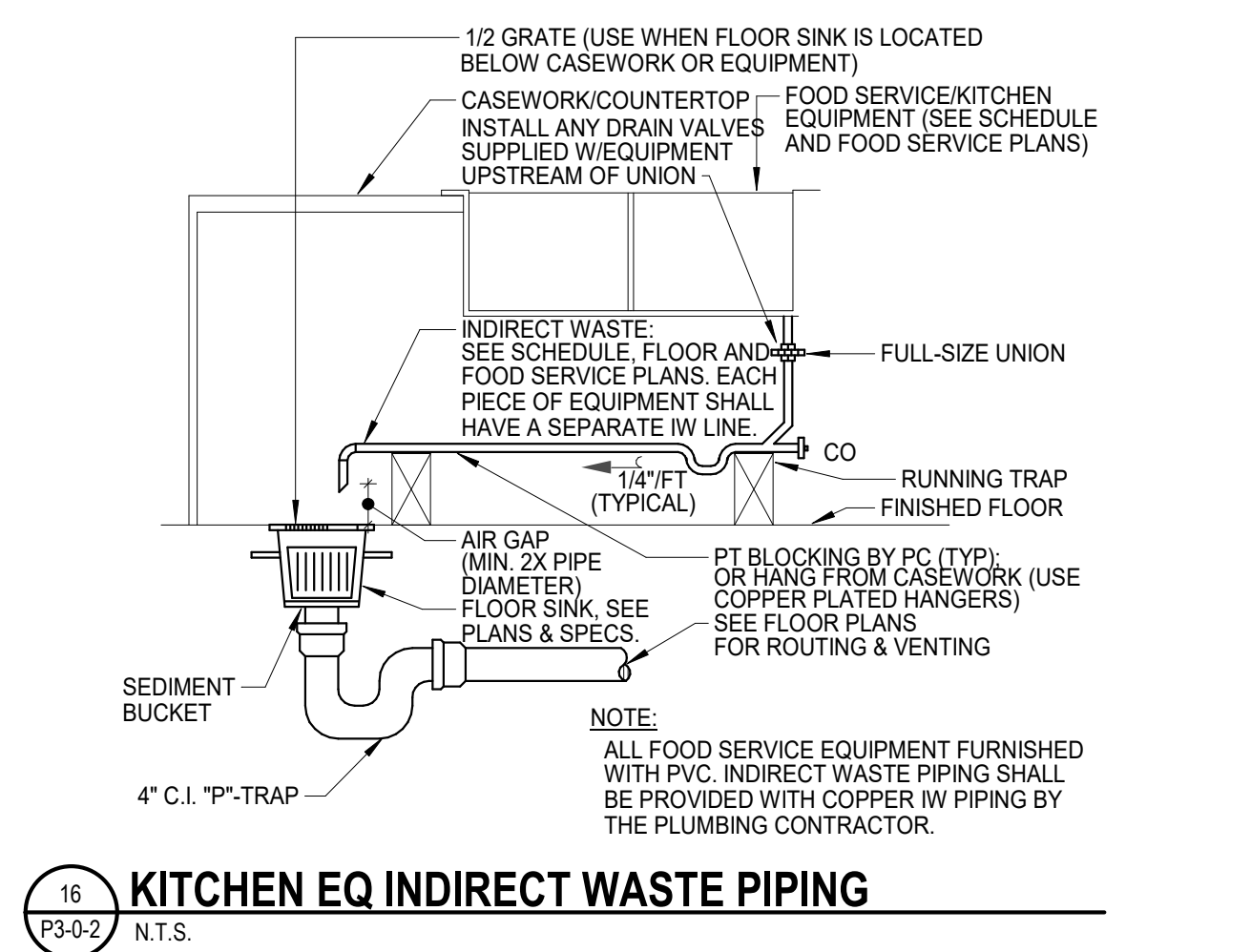
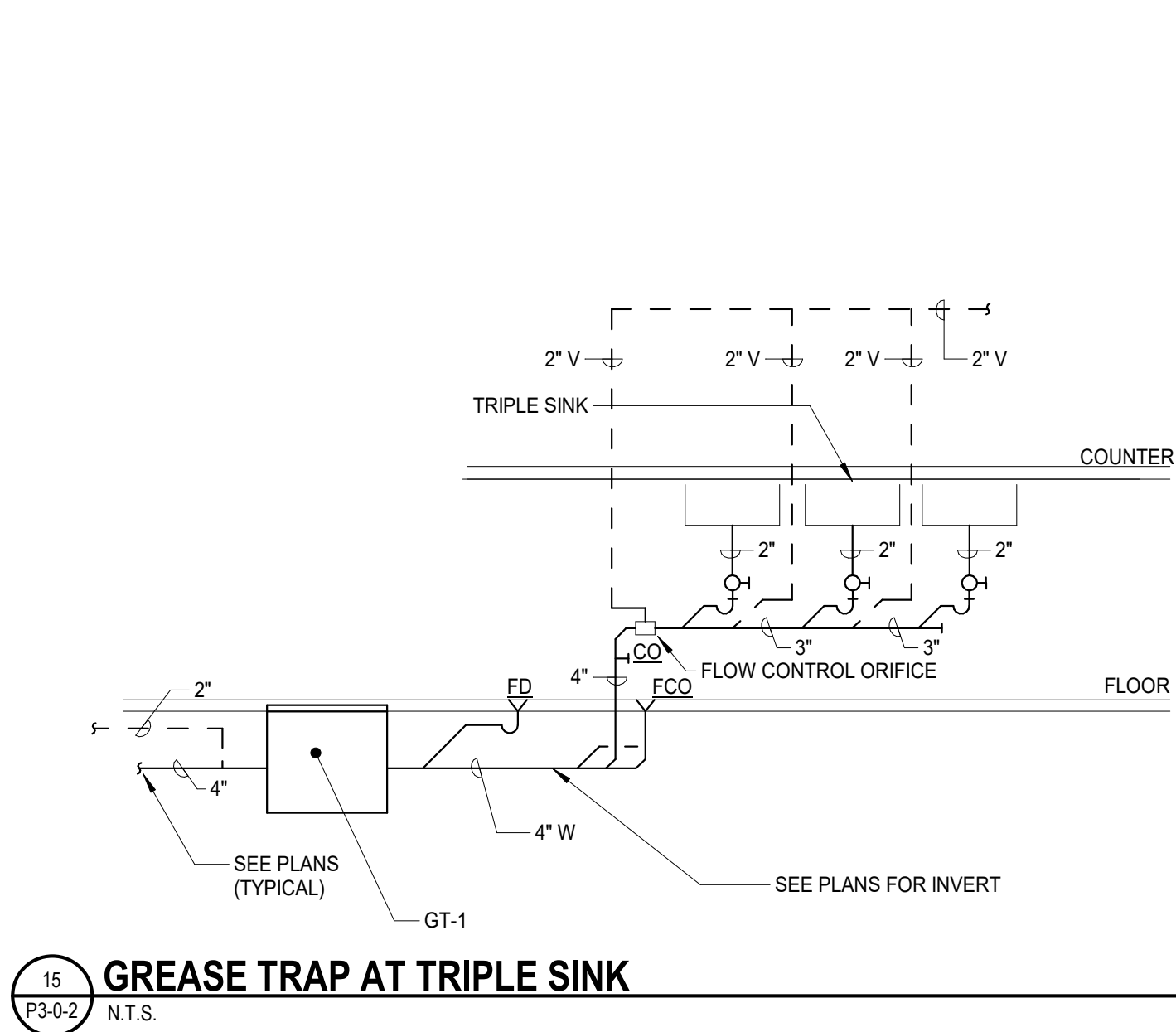
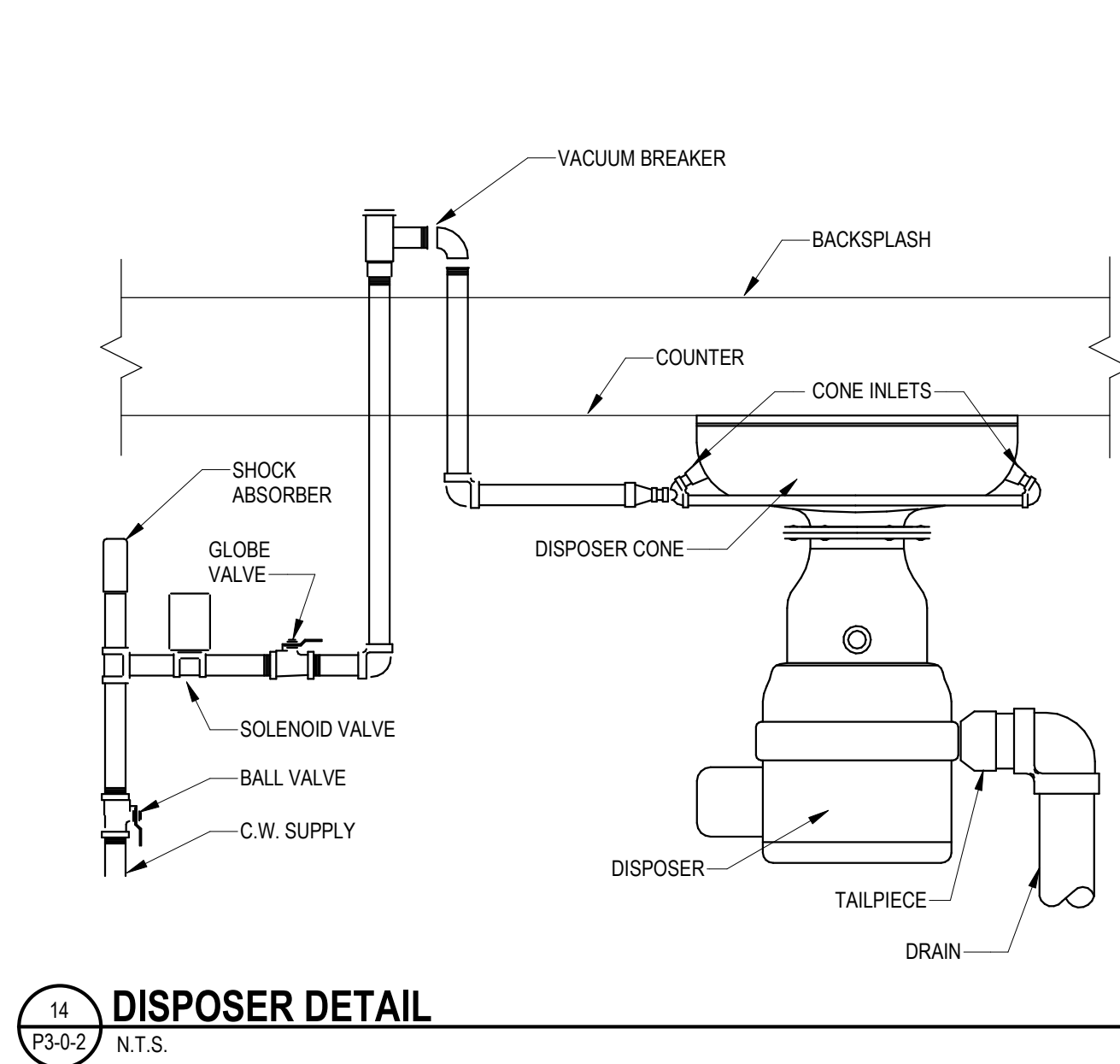
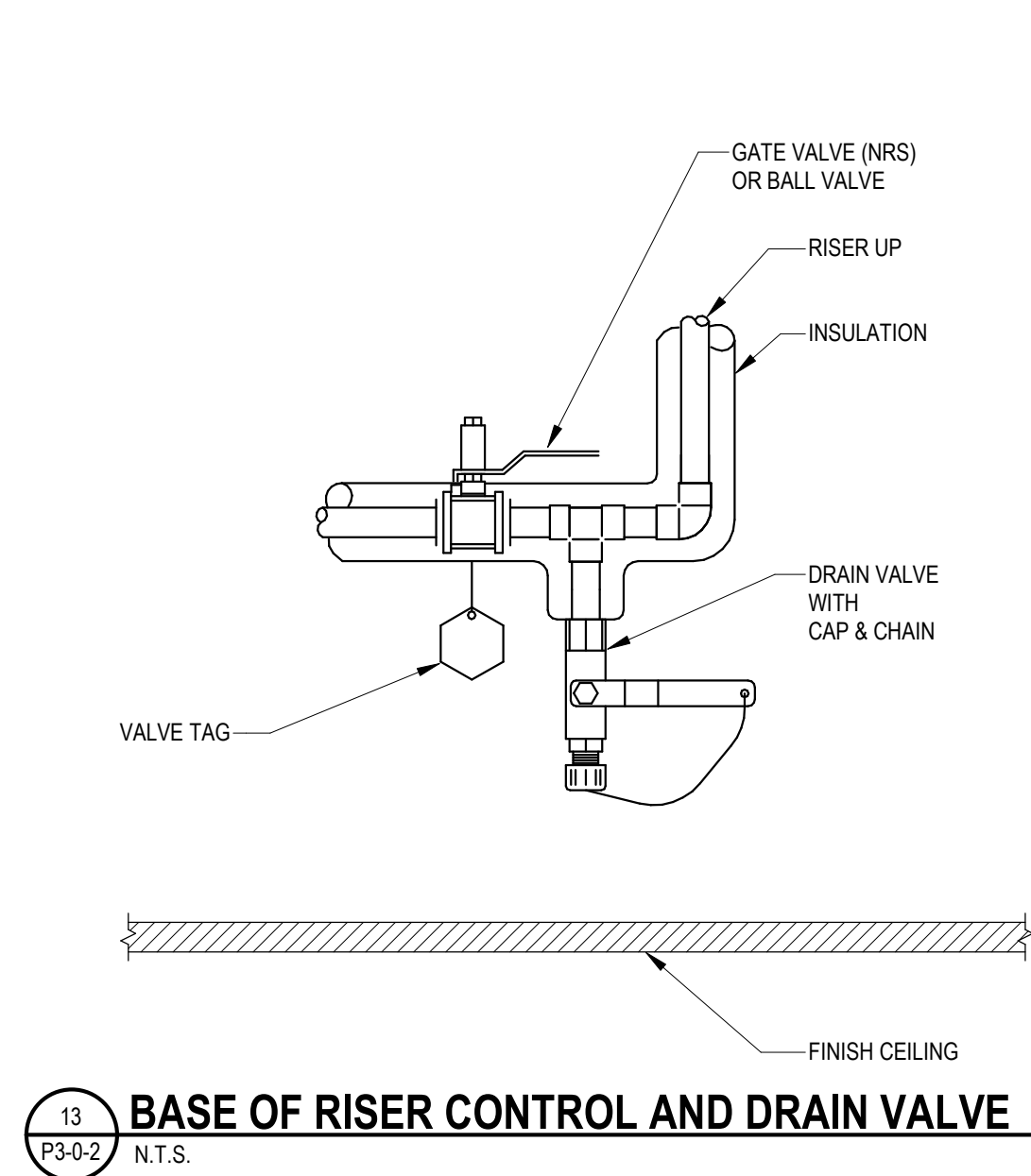
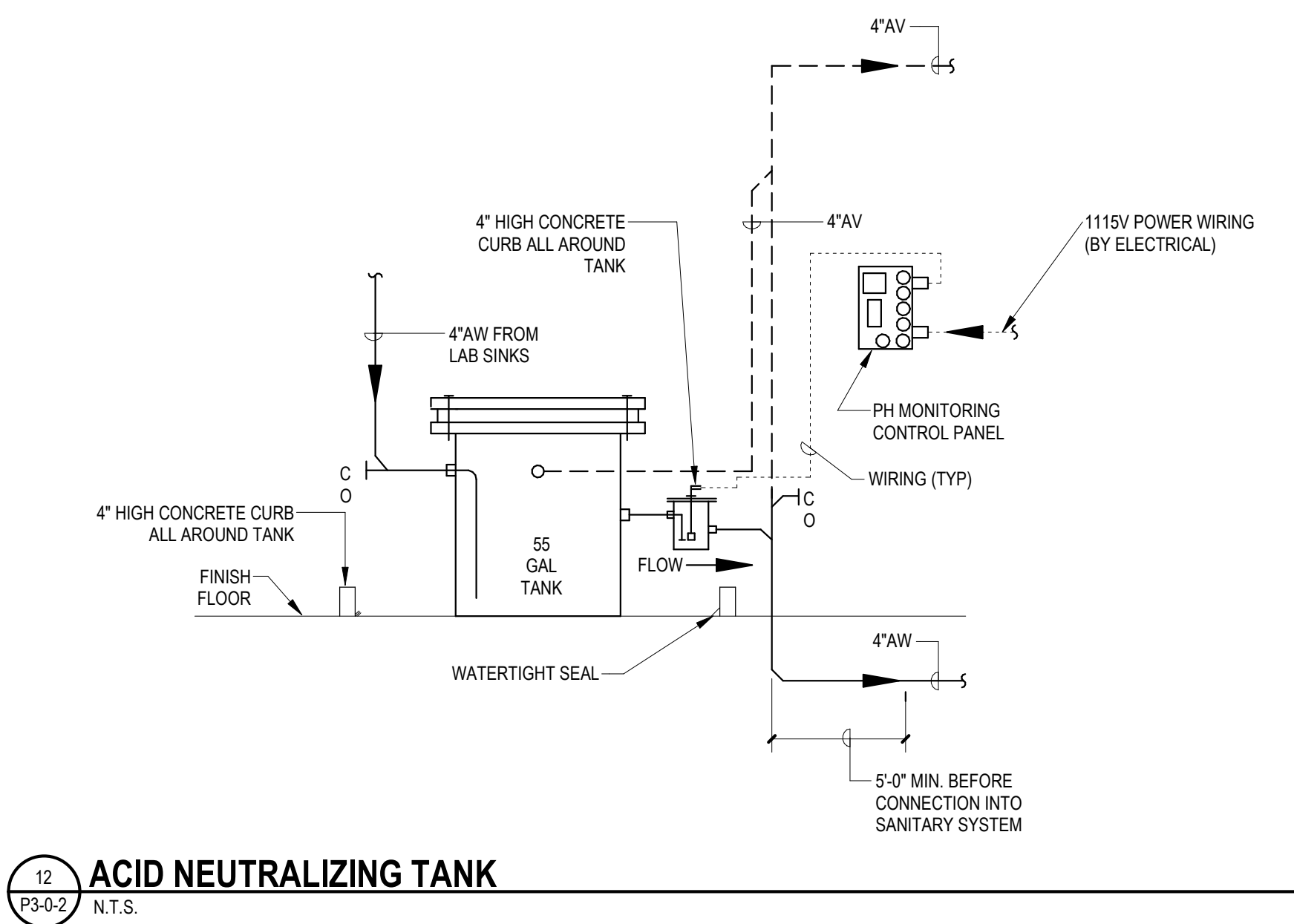
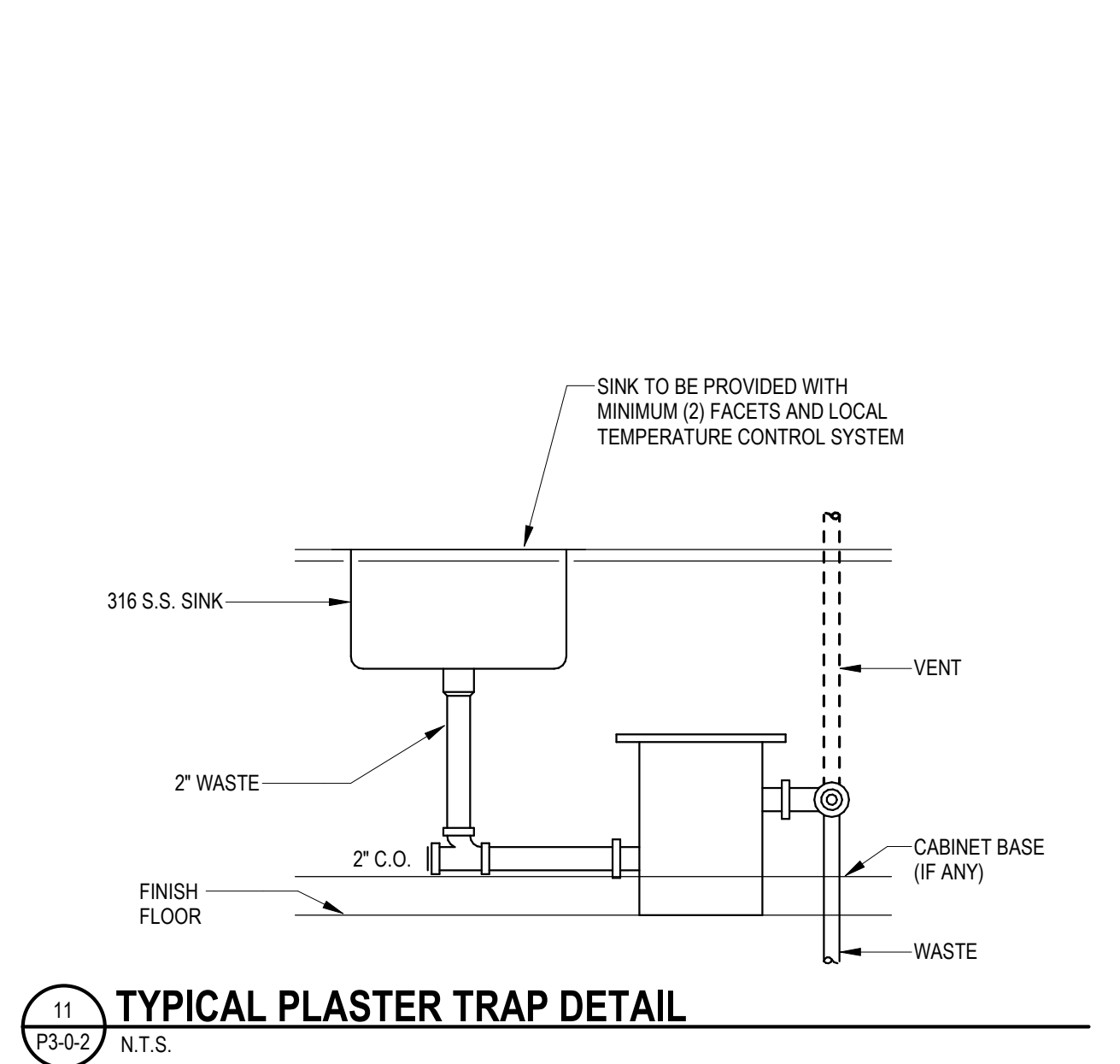
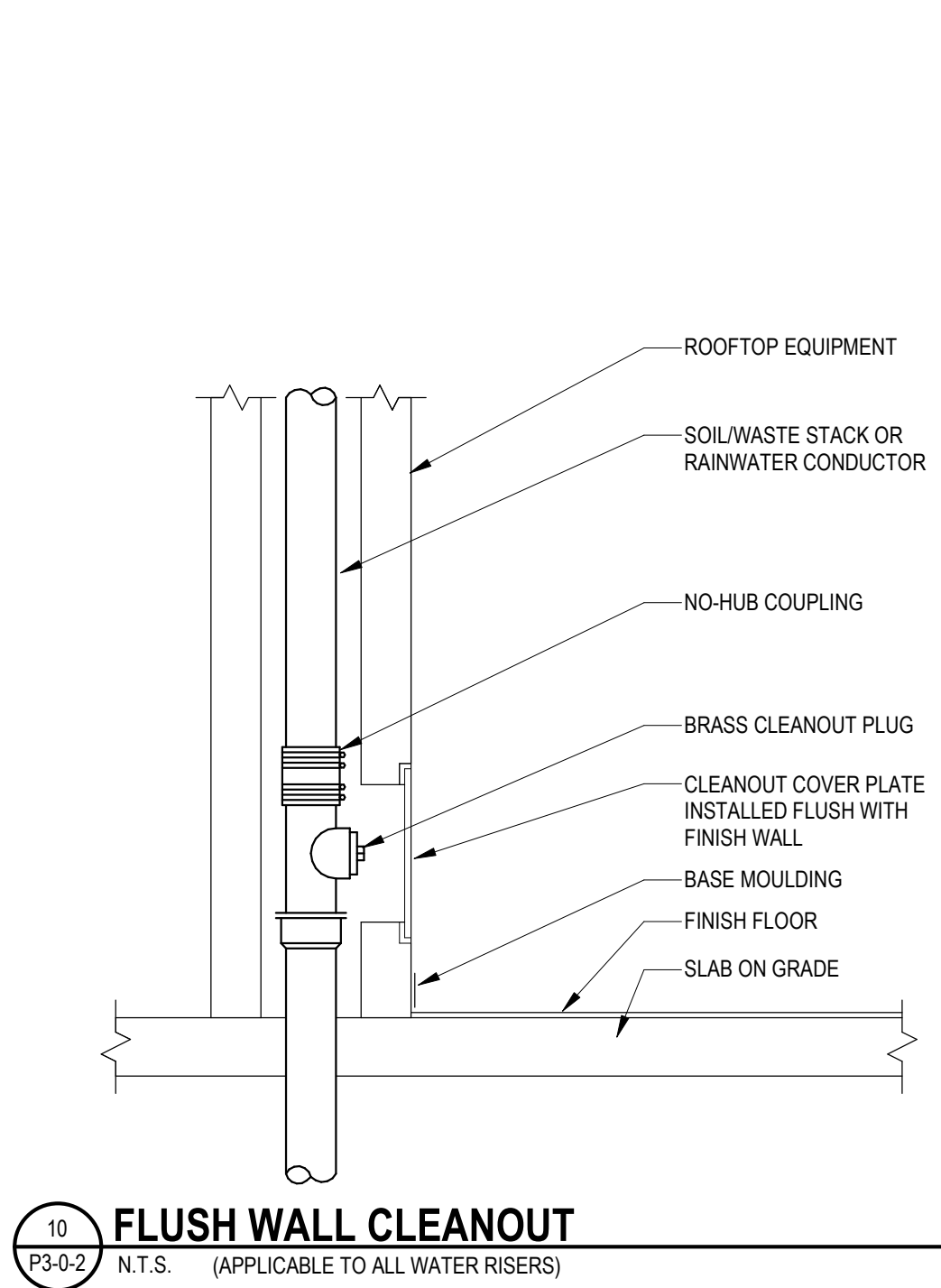
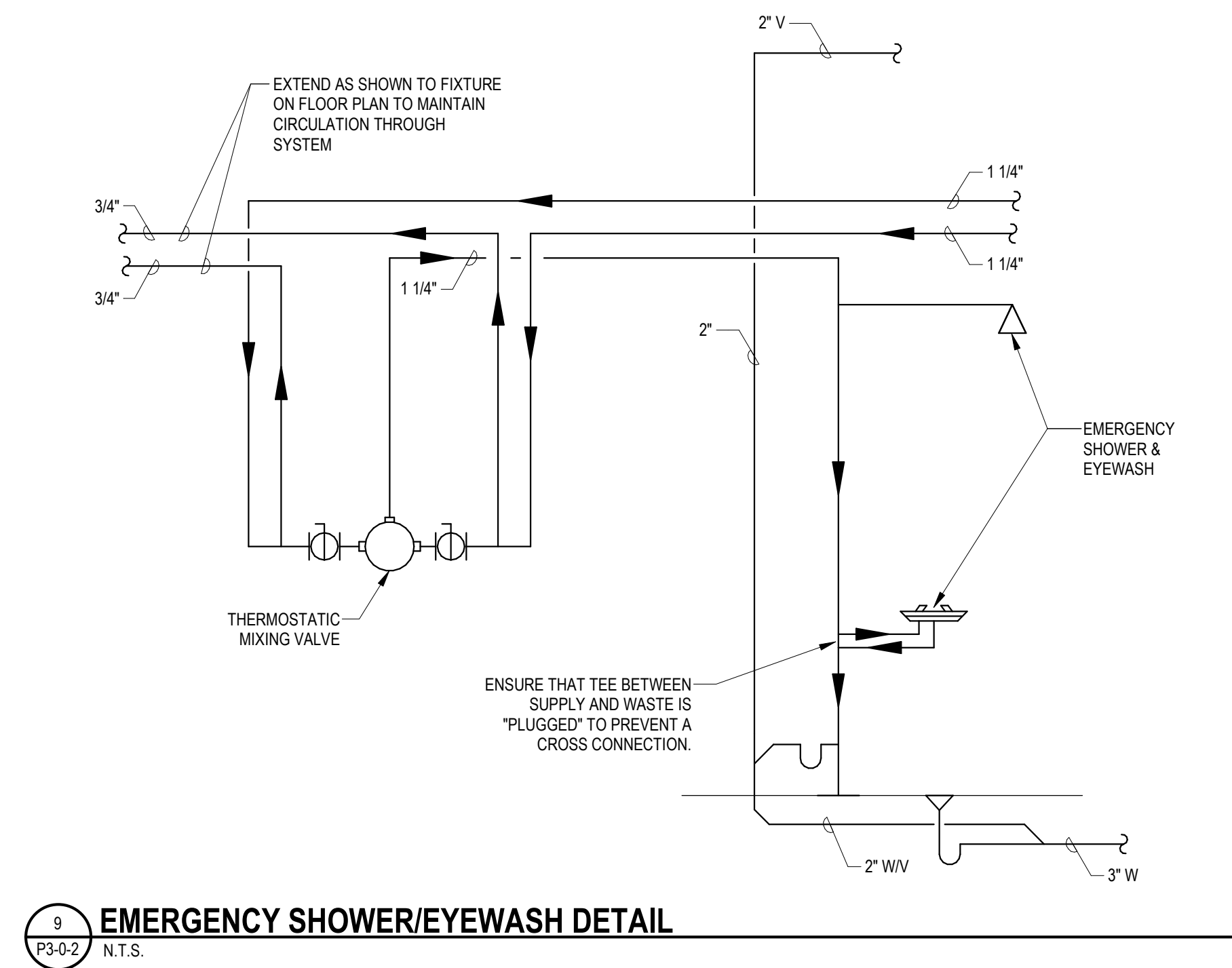
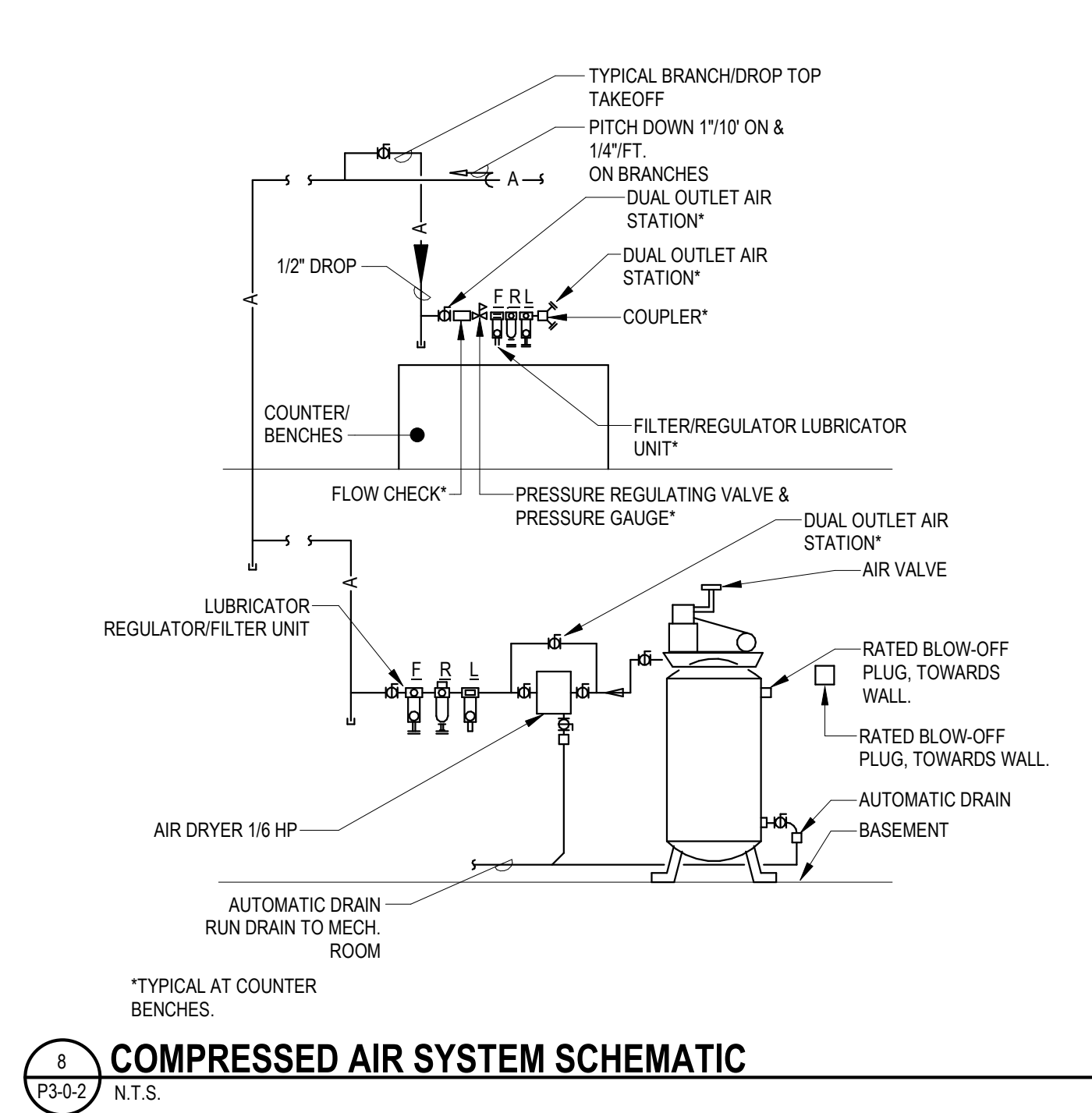
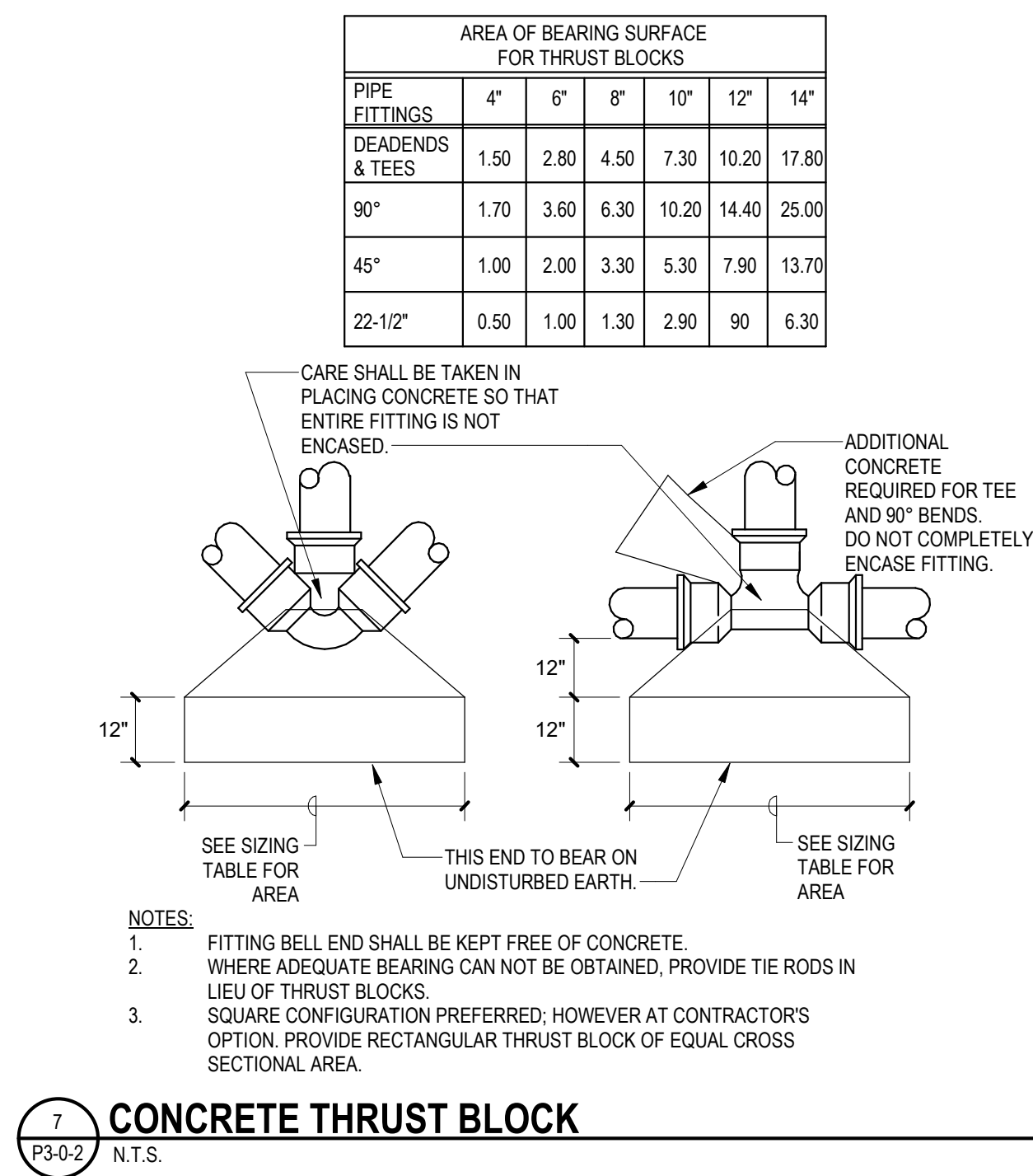
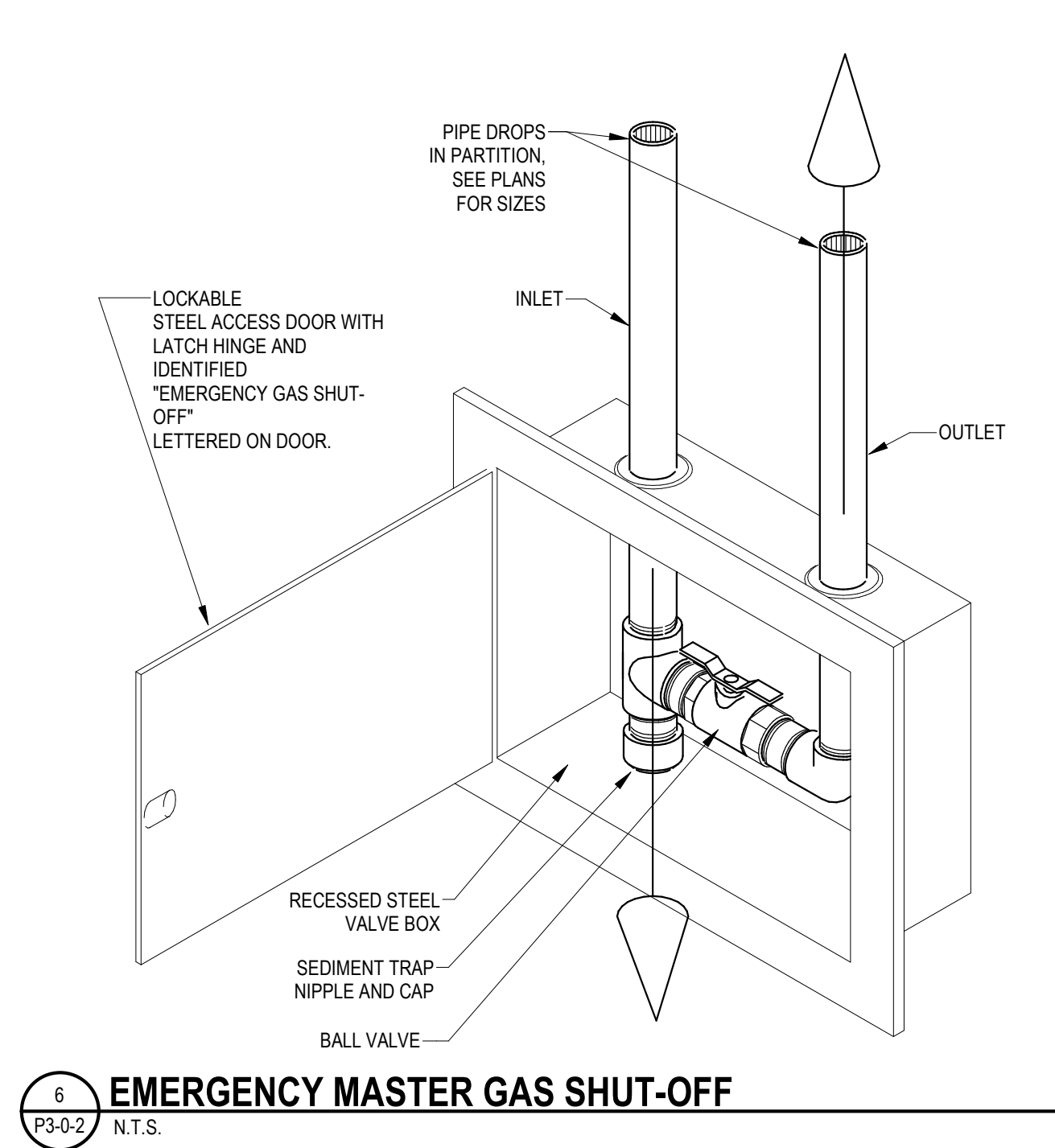
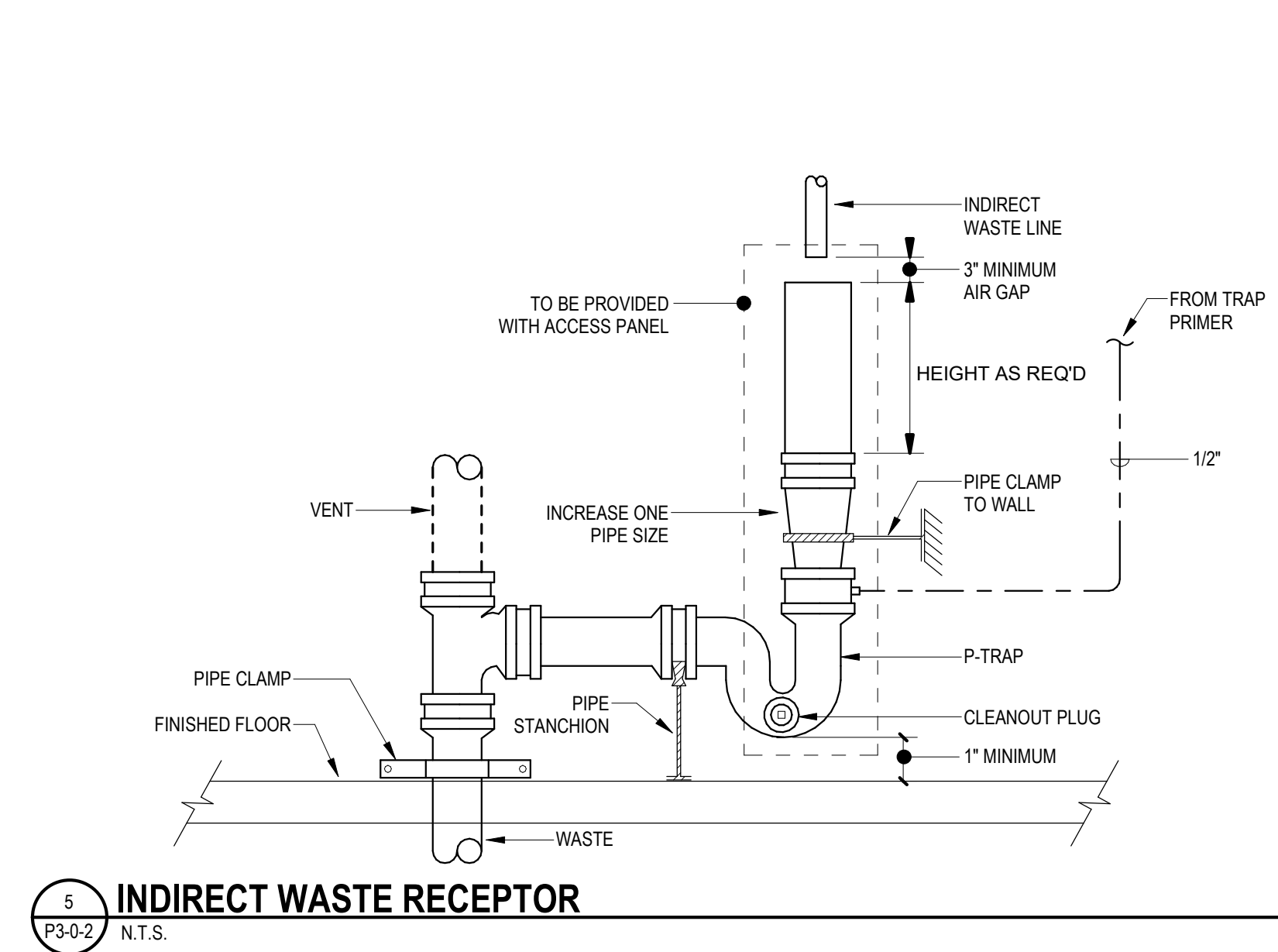
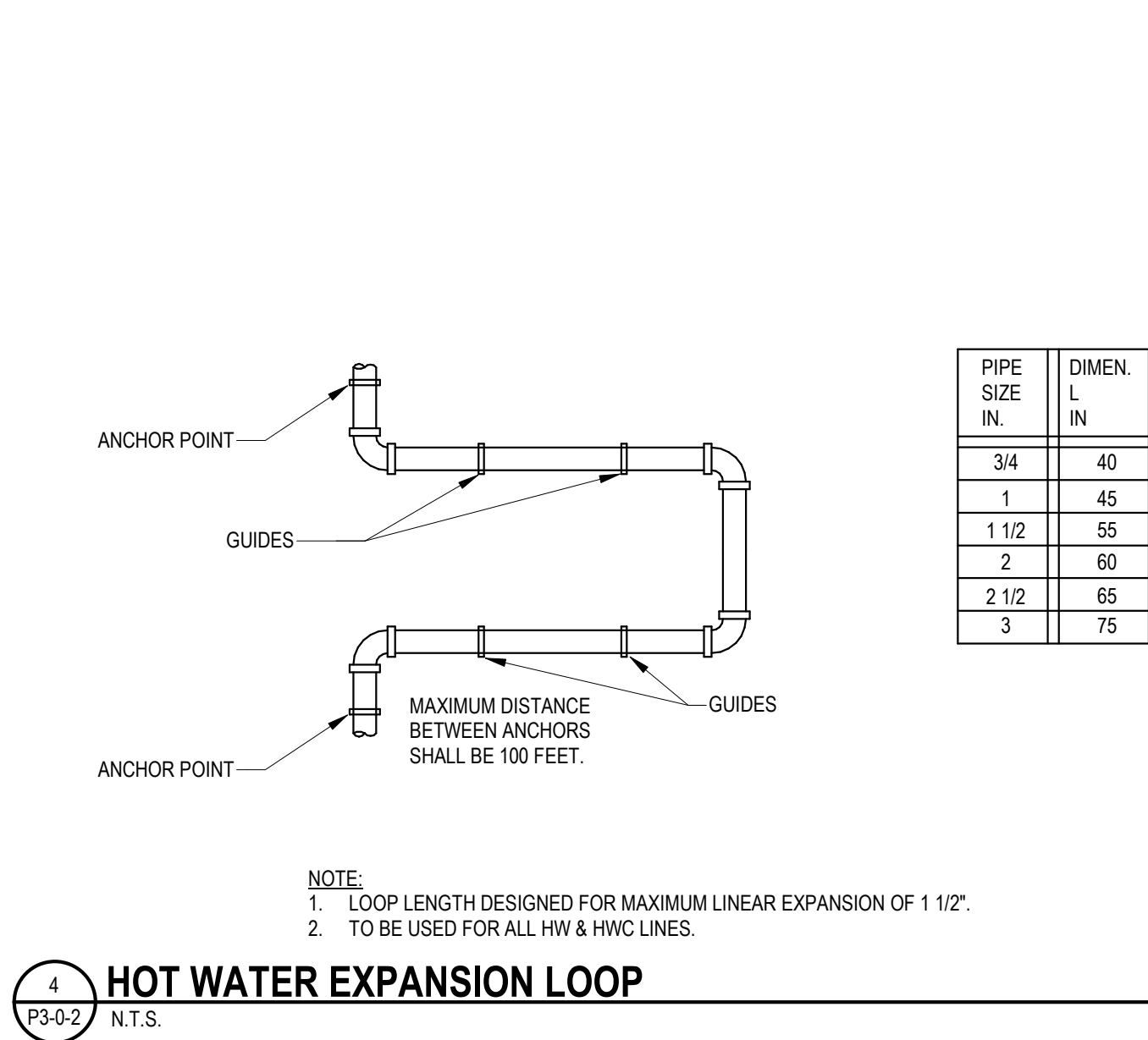
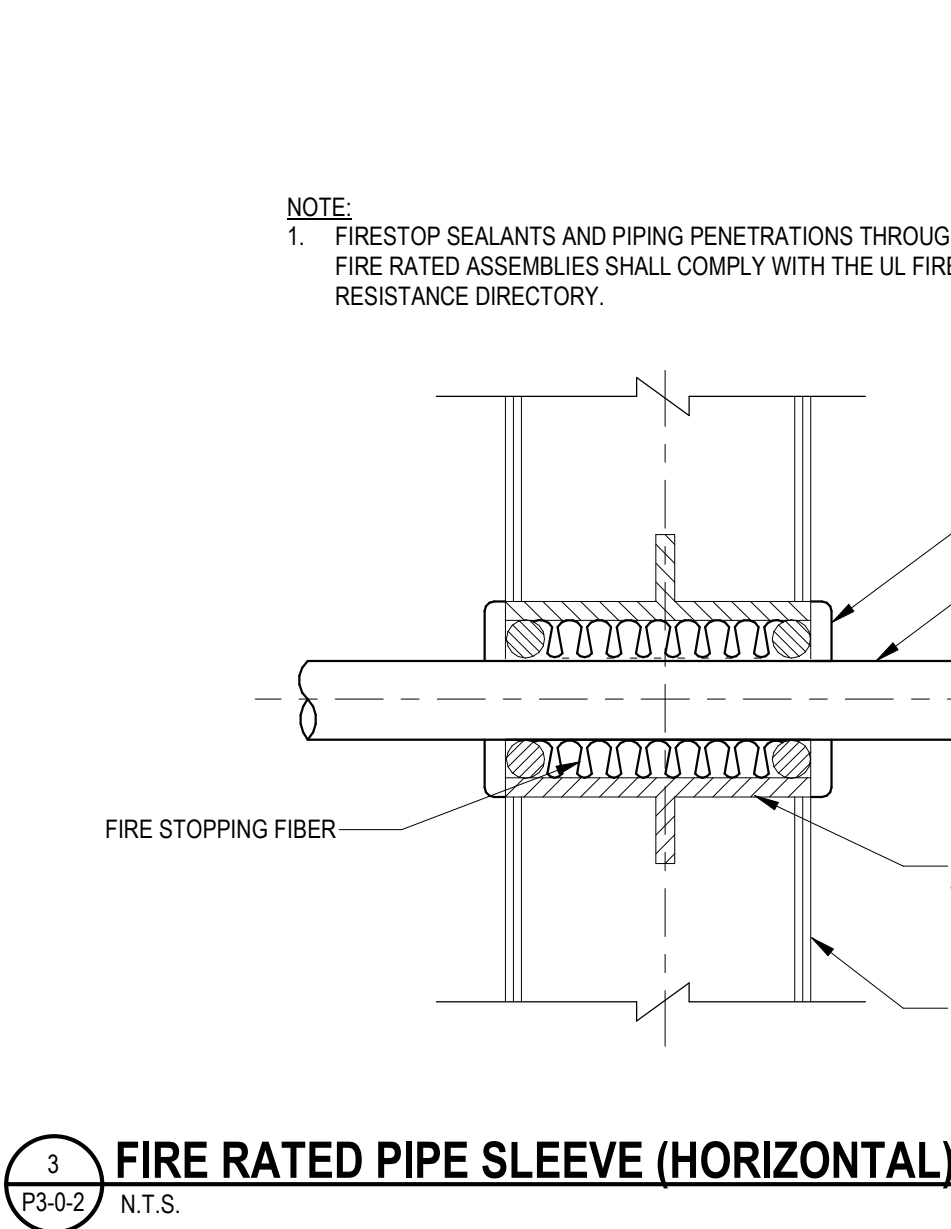
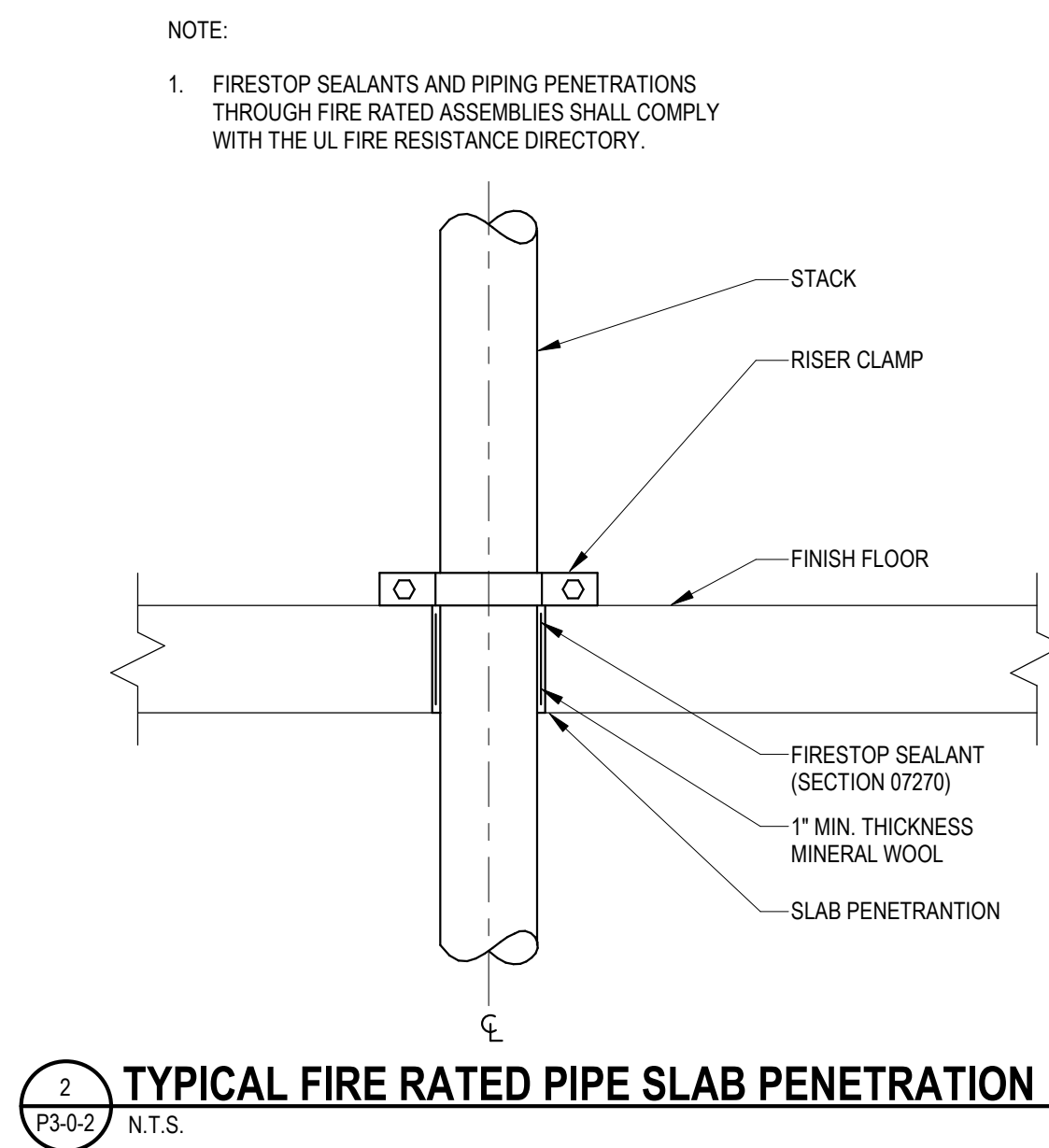
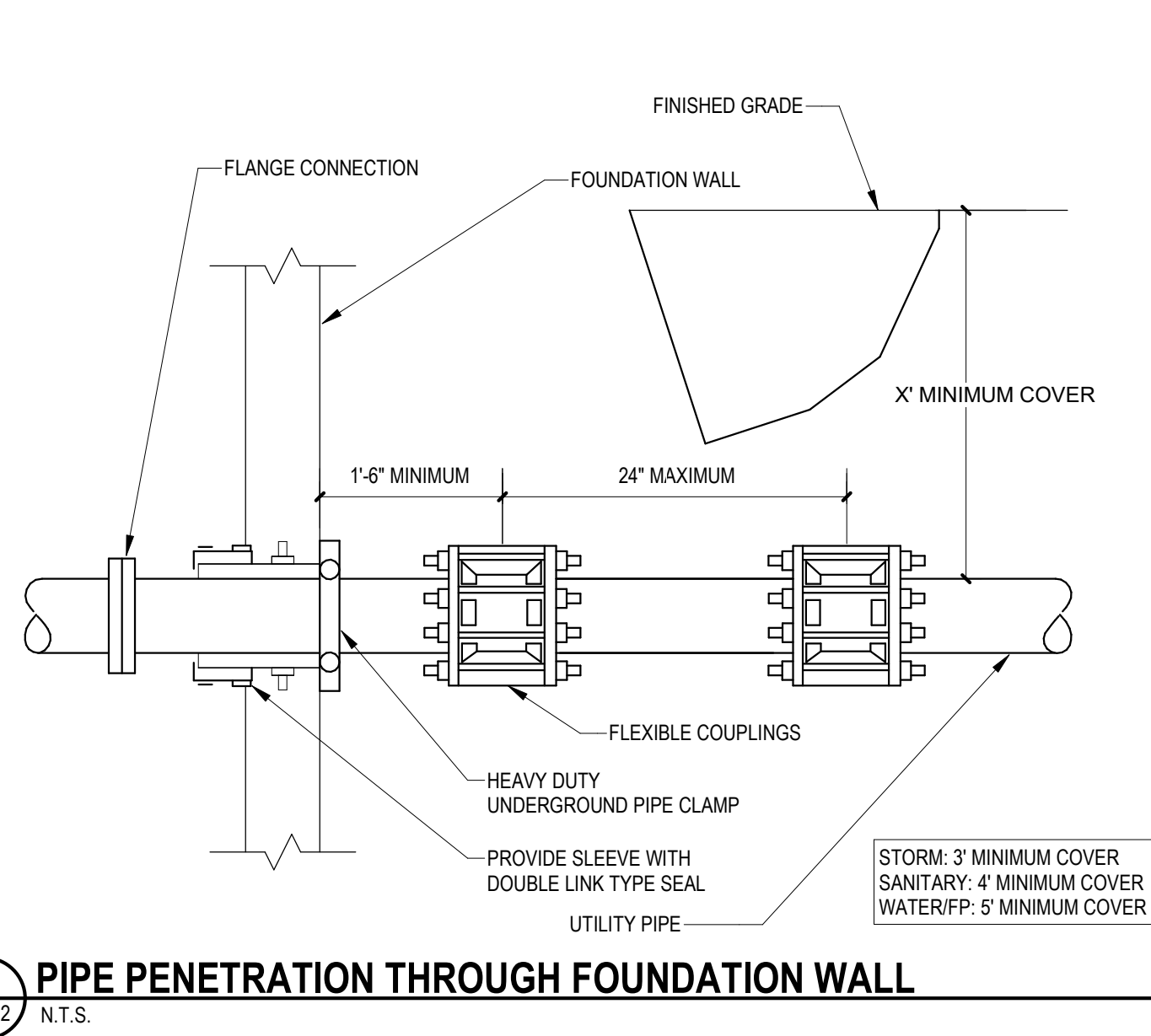
BID SET

August 28th, 2023

PROJECT NORTH
MAGNETIC NORTH

PLUMBING
DETAILS

Scale: As indicated
Job No.: 60-20-409
Drawn By: DRA
Date: August 28th, 2023
P3-0-1



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225 Oakland Road
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South Windsor, CT
06074

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PLUMBING FIXTURE SCHEDULE						
NO.	FIXTURE	MANUFACTURER	FAUCET/FLUSH VALVE	CARRIER / SUPPORT	MISC.	
P-1	WATER CLOSET	TOTO #CT708U	TOTO #FETL32CP	WALL MOUNTED	1/28 GPF	
P-1A	WATER CLOSET	TOTO #CT708U	TOTO #FETL32CP	WALL MOUNTED	1/28 GPF, ACCESSIBLE	
P-1B	WATER CLOSET	ZURN #Z2055-BWL	ZURN #Z2050AV-ONE	FLOOR MOUNTED	1.1 GPF, FOR USE AT EARLY EDUCATION	
P-2	URINAL	TOTO #UT105U	TOTO #FETLU42CP	WALL MOUNTED	0.125 GPF	
P-2A	URINAL	TOTO #UT105U	TOTO #FETLU42CP	WALL MOUNTED	0.125 GPF, ACCESSIBLE	
P-3	WALL MOUNTED LAVATORY	AMERICAN STANDARD DECORUM #A20401EC.20	SCUN HEAF-Z75502-LSM CP 0.35 GPM/MLM IR.IQ.FCT	WALL MOUNTED	0.35 GPM FAUCET, PROVIDE THERMOSTATIC MIXING VALVE	
P-3B	BASIN TYPE LAVATORY	BRADLEY #WF2704-TMA	INTEGRAL	FLOOR MOUNTED	54" SEM CIRCULAR, FOOT ACTIVATED FAUCET, INTEGRAL THERMOSTATIC MIXING VALVE	
P-3C	RESTROOM LAVATORY	BRADLEY #WG-3-TMA LAVATORY SYSTEM	INTEGRAL	WALL MOUNTED	0.35 GPM FAUCET, INTEGRAL THERMOSTATIC MIXING VALVE	
P-3D	CIRCULAR LAVATORY	BRADLEY #WF2708-TMA	INTEGRAL	FLOOR MOUNTED	54" CIRCULAR, FOOT ACTIVATED FAUCET, INTEGRAL THERMOSTATIC MIXING VALVE	
P-3E	RESTROOM LAVATORY	BRADLEY #WG-2-TMA LAVATORY SYSTEM	INTEGRAL	WALL MOUNTED	0.35 GPM FAUCET, INTEGRAL THERMOSTATIC MIXING VALVE	
P-4	MOP SINK	STERN WILLIAMS #W02-SB	CHICAGO #M45-8975RCVCP			
P-5	DRINKING FOUNTAIN	ELKAY LYRC2DW5K	N/A	WALL MOUNTED	120V POWER CONNECTION REQUIRED, W/ BOTTLE FILLER	
P-5A	DRINKING FOUNTAIN	ELKAY LYRC6RNTL8W5K	N/A	WALL MOUNTED	120V POWER CONNECTION REQUIRED, B LEVEL W/ ARCHITECT, DRAIN BY PC	
P-5B	OUTDOOR DRINKING FOUNTAIN	ELKAY LK44089F	N/A	WALL MOUNTED	EXTERIOR WALL MOUNTED FOUNTAIN, B LEVEL W/ BOTTLE FILLER	
P-6	SHOWER	SYMMONIS 9006-PLR-1.5-L5-L6-X	INTEGRAL SHOWER VALVE		1.5 GPM SHOWERHEAD, SHOWER BASE BY ARCHITECT, DRAIN BY PC	
P-6A	SHOWER ADA	SYMMONIS 9006-PLR-1.5-L5-L6-X	INTEGRAL SHOWER VALVE		PROVIDE ACCESSIBLE GRAB BAR AND HAND SHOWER, SHOWER BASE BY ARCHITECT, DRAIN BY PC	
P-7	EMERGENCY EYEWASH/SHOWER STATION	GUARDIAN #G19050		FREE STANDING	PROVIDE LOCAL MIXING VALVE TO TEMPER WATER	
P-8	EMERGENCY EYEWASH/SHOWER STATION	GUARDIAN #G8F2250		RECESSED IN WALL	INCLUDES LOCAL MIXING VALVE AND ACCESS PANEL	
P-8A	EMERGENCY EYEWASH/SHOWER STATION	GUARDIAN #G8F2250		RECESSED IN WALL	FED FROM TEMPERED WATER SYSTEM IN SCIENCE ROOMS	
P-9	EMERGENCY EYEWASH	GUARDIAN #G8F17500P-G8020		RECESSED IN WALL	INCLUDES LOCAL MIXING VALVE	
P-10	UTILITY SINK	ELKAY EWB1308T	ELKAY LWB721C-LK723	WALL HUNG	INCLUDES THERMOSTATIC MIXING VALVE	
P-11	HAND SINK	ELKAY CHST16LRSACC	INTEGRAL	WALL HUNG	INSTALL WITH LOCAL THERMOSTATIC MIXING VALVE	
P-12	LAUNDRY SINK	ELKAY #1C24X24	ELKAY LKBRAC		REFER TO NOTE #1.	
PX-1	CASEWORK SINK	FURNISHED BY OTHERS	FURNISHED BY OTHERS		REFER TO NOTE #1.	
PX-2	CASEWORK SINK W/ EYEWASH	FURNISHED BY OTHERS	FURNISHED BY OTHERS		REFER TO NOTE #1.	
PX-3	COSMETOLOGY SINK	FURNISHED BY OTHERS	FURNISHED BY OTHERS		PROVIDE LAB WASTE & VENT PIPING, NON POTABLE WATER/REFER TO NOTE #1.	
PX-4	SCIENCE ROOM SINK	FURNISHED BY OTHERS	FURNISHED BY OTHERS		PROVIDE LAB WASTE & VENT PIPING, NON POTABLE WATER/REFER TO NOTE #1.	
PX-4A	LAB SINK WITH EYEWASH	FURNISHED BY OTHERS	FURNISHED BY OTHERS		PROVIDE LAB WASTE & VENT PIPING, NON POTABLE WATER/REFER TO NOTE #1.	
PX-5	LAB SINK	FURNISHED BY OTHERS	FURNISHED BY OTHERS		REFER TO NOTE #1.	
PX-6	DENTAL STATION	FURNISHED BY OTHERS	FURNISHED BY OTHERS		PROVIDE COMPRESSED AIR, VACUUM, REFER TO NOTE #1.	
NOTE: INSTALLATION OF SINK, FAUCET, CONNECTION AND ACCESSORIES SHALL BE COMPLETED BY OTHER PLUMBING CONTRACTOR INCLUDING VACUUM AND NECESSARY ACCESSORIES TO ALLOW COMPLETE OPERATION OF FIXTURES.						

PLUMBING FIXTURE CONNECTION SCHEDULE						
FIXT. DESG	FIXTURE	SW	V	CW	HW	REMARKS
P-1	WATER CLOSET	4"	3"	1"	-	
P-1A	WATER CLOSET	4"	3"	1"	-	ACCESSIBLE
P-1B	WATER CLOSET	4"	3"	1"	-	PROVIDE AT CHLD HEIGHT
P-2	URINAL	3"	2"	3/4"	-	
P-2A	URINAL	3"	2"	3/4"	-	ACCESSIBLE
P-3	LAVATORY	1 1/2"	1 1/2"	1 1/2"	1 1/2"	
P-3B	WASH FOUNTAIN	2	1 1/2"	1"	1"	
P-3C	LAVATORY	1 1/2"	1 1/2"	1 1/2"	1 1/2"	
P-3D	WASH FOUNTAIN	2	1 1/2"	1"	1"	
P-4	MOP RECEPTOR	3"	2"	1 1/2"	1 1/2"	
P-4A	MOP RECEPTOR	3"	2"	1 1/2"	1 1/2"	
P-5	ELECTRIC WATER COOLER	1 1/2"	1 1/2"	1 1/2"	1 1/2"	
P-5B	OUTDOOR DRINKING FOUNTAIN	1 1/2"	1 1/2"	1 1/2"	1 1/2"	
P-6	SHOWER	3"	2"	1 1/2"	1 1/2"	
P-6A	(SHOWER ACCESSIBLE)	3"	2"	1 1/2"	1 1/2"	
P-7	EMERGENCY SHOWER/EYEWASH	1 1/2"	1 1/2"	1 1/2"	1 1/2"	PROVIDE LOCAL MIXING VALVE TO TEMPER WATER TO RP
P-8	EMERGENCY SHOWER/EYEWASH	1 1/2"	1 1/2"	1 1/2"	1 1/2"	PROVIDE LOCAL MIXING VALVE TO TEMPER WATER TO RP
P-8A	EMERGENCY SHOWER/EYEWASH	1 1/2"	1 1/2"	1 1/2"	-	PROVIDE TEMPERED WATER CONNECTION
P-9	EMERGENCY EYEWASH	1 1/2"	1 1/2"	1 1/2"	-	PROVIDE LOCAL MIXING VALVE TO TEMPER WATER TO RP
P-10	UTILITY SINK	1 1/2"	1 1/2"	1 1/2"	1 1/2"	
P-11	HAND SINK	1 1/2"	1 1/2"	1 1/2"	1 1/2"	
P-12	LAUNDRY SINK	1 1/2"	1 1/2"	1 1/2"	1 1/2"	
PX-1	CASEWORK SINK	1 1/2"	1 1/2"	1 1/2"	1 1/2"	
PX-2	CASEWORK SINK W/ EYEWASH	1 1/2"	1 1/2"	1 1/2"	1 1/2"	PROVIDE EYEWASH STATION WITH SINK
PX-3	COSMETOLOGY SINK	1 1/2"	1 1/2"	1 1/2"	1 1/2"	PROVIDE LAB TRAP - JR SMITH #750 - AT EACH SINK
PX-4	SCIENCE ROOM SINKS	1 1/2"	1 1/2"	1 1/2"	1 1/2"	PROVIDE ACID WASTE AND VENT, AND NON POTABLE CW & HW
PX-4A	LAB SINKS W/ EYEWASH	1 1/2"	1 1/2"	1 1/2"	1 1/2"	PROVIDE EYEWASH STATION WITH SINK, PROVIDE ACID WASTE AND VENT, AND NON POTABLE CW & HW
PX-5	LAB SINKS	1 1/2"	1 1/2"	1 1/2"	1 1/2"	
PX-6	DENTAL STATION	1 1/2"	1 1/2"	1 1/2"	-	PROVIDE COMPRESSED AIR AND VACUUM
PX-7	SHAMPOO STATION	1 1/2"	1 1/2"	1 1/2"	1 1/2"	PROVIDE LAB TRAP - JR SMITH #750 - AT EACH SINK

PLUMBING DOMESTIC WATER BOOSTER PUMP SCHEDULE						
NO.	MANUFACTURER	MODEL	LOCATION	ELECTRICAL		
				V	PH	HP
DWP-1	SYNCRIFLO	PR022TX100VFD	WATER SERVICE ENTRY 1ST FL - AREA B	480	3	10 @ 10
TRIPLEX DOMESTIC WATER BOOSTER SYSTEM						
NOTE: APPROPRIATE VIBRATION ISOLATION SHALL BE PROVIDED AS PART OF THIS EQUIPMENT INSTALLATION, APPLICABLE TO ALL EQUIPMENT.						

PLUMBING AIR COMPRESSOR SCHEDULE						
NO.	MANUFACTURER	MODEL	LOCATION	ELECTRICAL		
				V	PH	HP
AC-1	QUINCY	QSV-60	LOWER LEVEL PART C	480	3	60
AC-2	QUINCY	QCS-20	FIRST FLOOR PART A	480	3	20
AC-4	QUINCY	QCS-20	FOURTH FLOOR PART B	480	3	20
AC-5	MIDMARK	P72	FOURTH FLOOR PART A	208	3	5
AC-5	MIDMARK	P72	FOURTH FLOOR PART A	208	3	5
DENTAL						
NOTE: APPROPRIATE VIBRATION ISOLATION SHALL BE PROVIDED AS PART OF THIS EQUIPMENT INSTALLATION, APPLICABLE TO ALL EQUIPMENT.						

PLUMBING AIR DRYER SCHEDULE						
NO.	MANUFACTURER	MODEL	LOCATION	ELECTRICAL		
				V	PH	HP
AD-1	QUINCY	QPN-297	LOWER LEVEL PART C	480	3	
AD-2	QUINCY	QPN-63	FIRST FLOOR PART A	120	1	
AD-4	QUINCY	QPN-63	FOURTH FLOOR PART B	120	1	
AUTO COLLISION/METAL FABRICATION						
CARPENTRY SHOP						
ROBOTICS						
DENTAL						
NOTE: APPROPRIATE VIBRATION ISOLATION SHALL BE PROVIDED AS PART OF THIS EQUIPMENT INSTALLATION, APPLICABLE TO ALL EQUIPMENT.						

PLUMBING VACUUM PUMP SCHEDULE						
NO.	MANUFACTURER	MODEL	LOCATION	ELECTRICAL		
				V	PH	HP
VAC-2	MIDMARK	G4 (TWIN)	FOURTH FLOOR PART A	208	3	6
VAC-2	MIDMARK	G4 (TWIN)	FOURTH FLOOR PART A	208	3	6
DENTAL						
NOTE: APPROPRIATE VIBRATION ISOLATION SHALL BE PROVIDED AS PART OF THIS EQUIPMENT INSTALLATION, APPLICABLE TO ALL EQUIPMENT.						

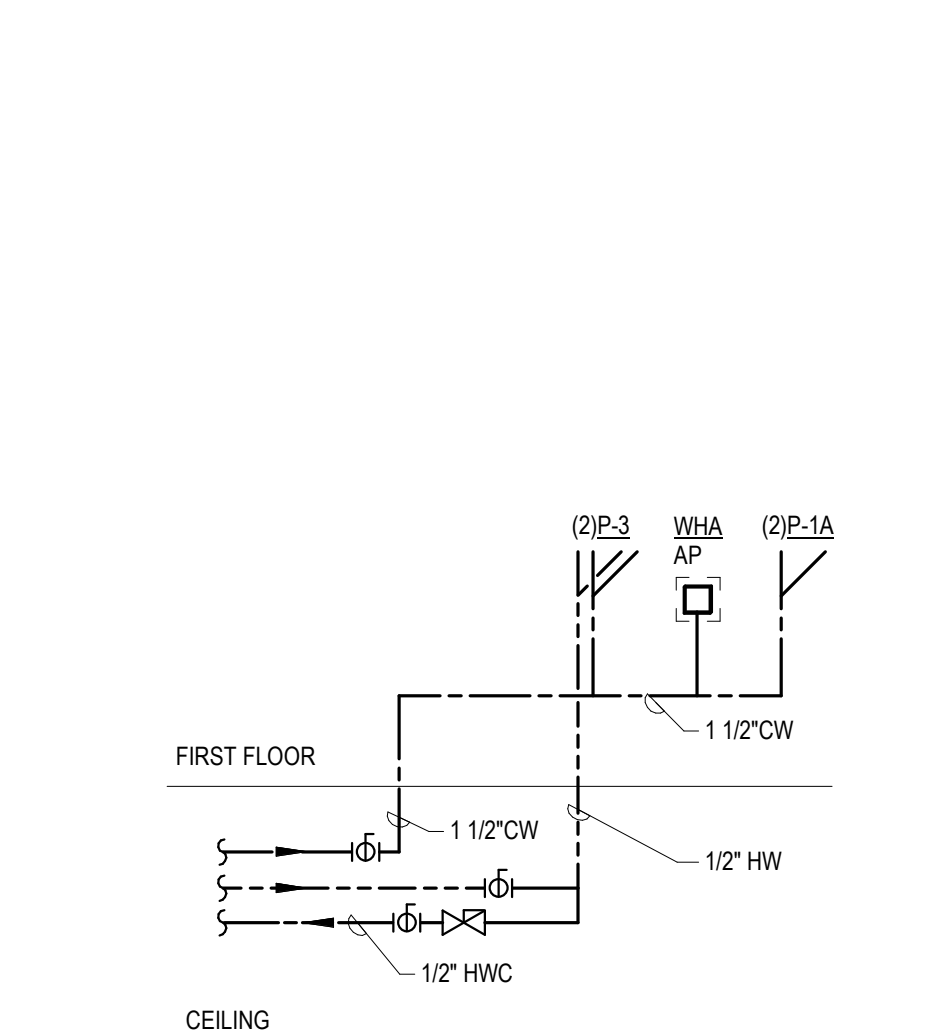
PLUMBING PH NEUTRALIZATION SCHEDULE						
NO.	MANUFACTURER	MODEL	LOCATION	ELECTRICAL		
				V	PH	HZ
PH-1	(PRACTICAL APPLICATIONS)	GDS-002-2	MEZZANINE PART A	480	3	
4" LAB WASTE INLET, 4" OUTLET, 4" LAB VENT						
NOTE: APPROPRIATE VIBRATION ISOLATION SHALL BE PROVIDED AS PART OF THIS EQUIPMENT INSTALLATION, APPLICABLE TO ALL EQUIPMENT.						

PLUMBING GREASE TRAP SCHEDULE						
NO.	MANUFACTURER	MODEL	GREASE CAPACITY (LBS)	FLOW RATE (GPM)	REMARKS	
GT-1	SCHER	GB2	130.5/127.6 LBS	3550 GPM	LOCAL GREASE TRAP FOR USE IN KITCHENS	
GT-2	SCHER	GB3	279/191 LBS	5075 GPM	LOCAL GREASE TRAP FOR USE IN KITCHENS	
GT-3	SCHER	GB1	2085 LBS	2025 GPM	GREASE TRAP FOR CONCESSIONS BUILDING	

PLUMBING SUMP PUMP SCHEDULE						
NO.	MANUFACTURER	MODEL	LOCATION	ELECTRICAL		
				V	PH	HP
SP-1	WEIL	1411	XX	208	3	1/2
SP-2	WEIL	1411	XX	208	3	1/2
SP-3	WEIL	1411	XX	208	3	1/2

PLUMBING ELECTRIC WATER HEATER SCHEDULE										
NO.	MANUFACTURER	MODEL	LOCATION	CAPACITY STORAGE	GPH @ 100°F RISE	V	PH	HZ	KW	SCCR (kAIC)
EW-1	PVI	DURAWATT-460 L 200A-VE	LOWER LEVEL PART C	200	370	480	3	60	90	XX
SERVES C & D WINGS, PROVIDE 120V, 1/3 HP, HOT WATER RETURN PUMP (HWRP-1) SEE DETAIL 4P3-0.1										
EW-1	PVI	DURAWATT-460 L 200A-VE	LOWER LEVEL PART C	200	370	480	3	60	90	XX
SERVES C & D WINGS, PROVIDE 120V, 1/3 HP, HOT WATER RETURN PUMP (HWRP-1) SEE DETAIL 4P3-0.1										
EW-2	PVI	DURAWATT-270 L 119A-VE	MEZZANINE PART B	119	220	480	3	60	54	XX
SERVES B WING, PROVIDE 120V, 1/2 HP, HOT WATER RETURN PUMP (HWRP-2) SEE DETAIL 4P3-0.1										
EW-2	PVI	DURAWATT-270 L 119A-VE	MEZZANINE PART B	119	220	480	3	60	54	XX
SERVES B WING, PROVIDE 120V, 1/2 HP, HOT WATER RETURN PUMP (HWRP-2) SEE DETAIL 4P3-0.1										
EW-3	AO SMITH	DSE-120	UNDER MEZZANINE PART A	119	XX	480	3	60	54	XX
SERVES NW/HW FOR SCIENCE ROOMS, PROVIDE 120V, 1/2 HP, HOT WATER RETURN PUMP (HWRP-3) SEE DETAIL 4P3-0.1										
EW-4	PVI	DURAWATT-560	SECOND FLOOR PART A	300	400	480	3	60	108	XX
SERVES KITCHEN/CULINARY ARTS AND A WING, PROVIDE 120V, 1/3 HP, HOT WATER RETURN PUMP (HWRP-4) SEE DETAIL 4P3-0.1										
EW-4	PVI	DURAWATT-560	SECOND FLOOR PART A	300	400	480	3	60	108	XX
SERVES KITCHEN/CULINARY ARTS AND A WING, PROVIDE 120V, 1/3 HP, HOT WATER RETURN PUMP (HWRP-4) SEE DETAIL 4P3-0.1										
EW-5	AO SMITH	DSE-30	1ST FLOOR ADMIN WING	30	25	208	1	60	6	XX
SERVES ADMIN WING TOILET ROOMS, PROVIDE 120V, 1/8 HP, HOT WATER RETURN PUMP (HWRP-5) SEE DETAIL 4P3-0.1										
EW-6	AO SMITH	DSE-40	ELECTRICAL SHOP	40	12	208	1	60	3	XX
EW-6	AO SMITH	DSE-40	ELECTRICAL SHOP	40	12	208	1	60	3	XX
MOCK WATER HEATER FOR STUDENT WIRING										
EW-7	AO SMITH	DSE-30	CONCESSIONS BUILDING	30	61	208	1	60	15	XX
SERVES CONCESSIONS BUILDING HW DEMAND, PROVIDE 120V, 1/8 HP, HOT WATER RETURN PUMP (HWRP-6) SEE DETAIL 4P3-0.1										
EW-8	AO SMITH	DSE-120	LOCKER ROOM BUILDING	119	246	480	3	60	60	XX
ALTERNATE NO. 1 SERVES LOCKER BUILDING, PROVIDE 120V, 1/8 HP, HOT WATER RETURN PUMP (HWRP-7) SEE DETAIL 4P3-0.1										
EW-9	AO SMITH	DEL-10	MAINTENANCE BLDG	10	12	208	1	60	3	XX
ALTERNATE NO. 3 SERVES MAINTENANCE BUILDING SEE DETAIL 4P3-0.1										

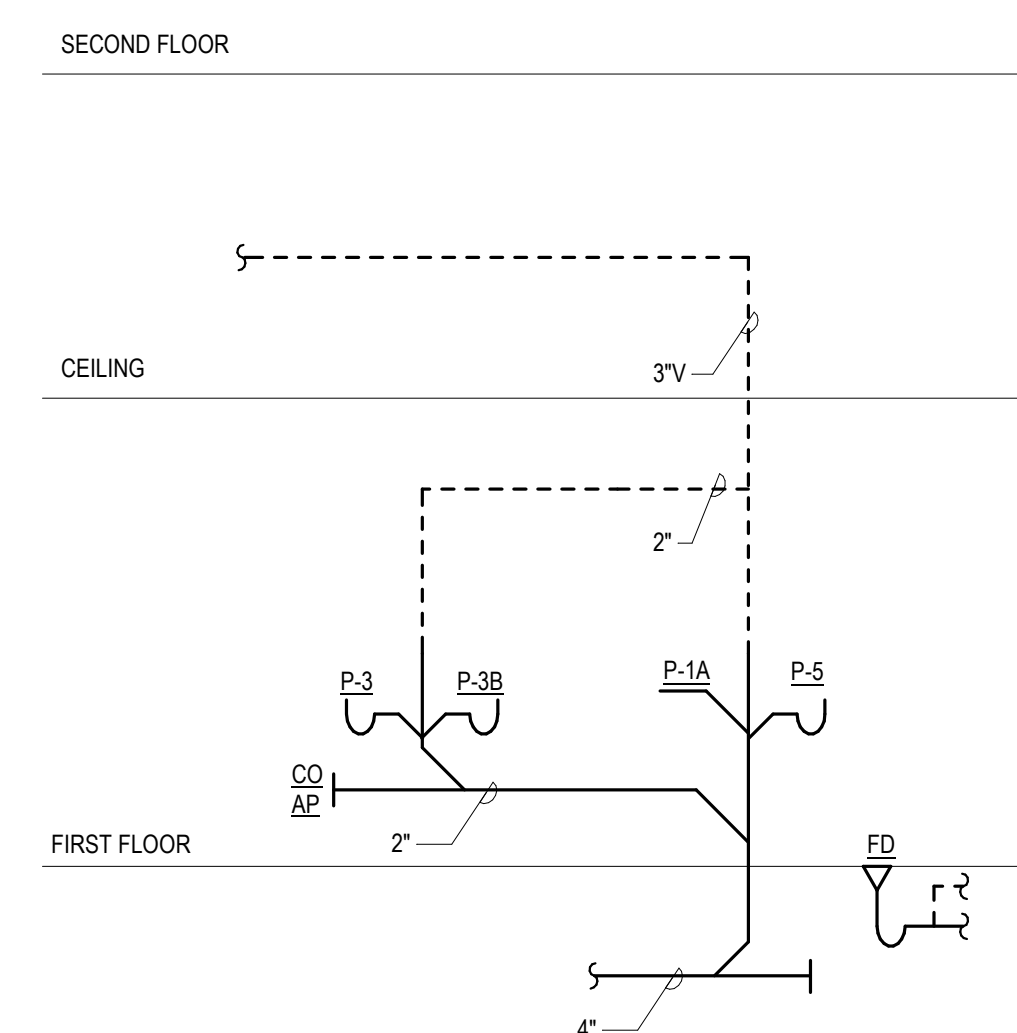
PLUMBING THERMOSTATIC MIXING VALVE SCHEDULE						
NO.	MANUFACTURER	MODEL	LOCATION	GPM	SYSTEM PRESSURE DROP (PSI)	REMARKS
TMX-1	LEONARD	TM-820B-LF-DT	LOWER LEVEL PART C	40	10	FOR USE WITH EWH-1
TMX-2	LEONARD	TM-820B-LF-DT	MEZZANINE PART B	40	10	FOR USE WITH EWH-2
TMX-3	LEONARD	TM-820B-LF-DT	MEZZANINE PART A	40	10	FOR USE WITH EWH-3
TMX-4	LEONARD	TM-820B-LF-DT	SECOND FLOOR PART A	63	20	FOR USE WITH EWH-4
TMX-5	LEONARD	AT-LF	1ST FLOOR ADMIN WING	10	10	FOR USE WITH EWH-5
TMX-6	LEONARD		ELECTRICAL SHOP	10	10	FOR USE WITH EWH-6
TMX-7	LEONARD	TM-26-LF	CONCRESSIONS BUILDING	10	10	FOR USE WITH EWH-7
TMX-8	LEONARD	TM-26-LF	LOCKER ROOM BUILDING	10	10	FOR USE WITH EWH-8



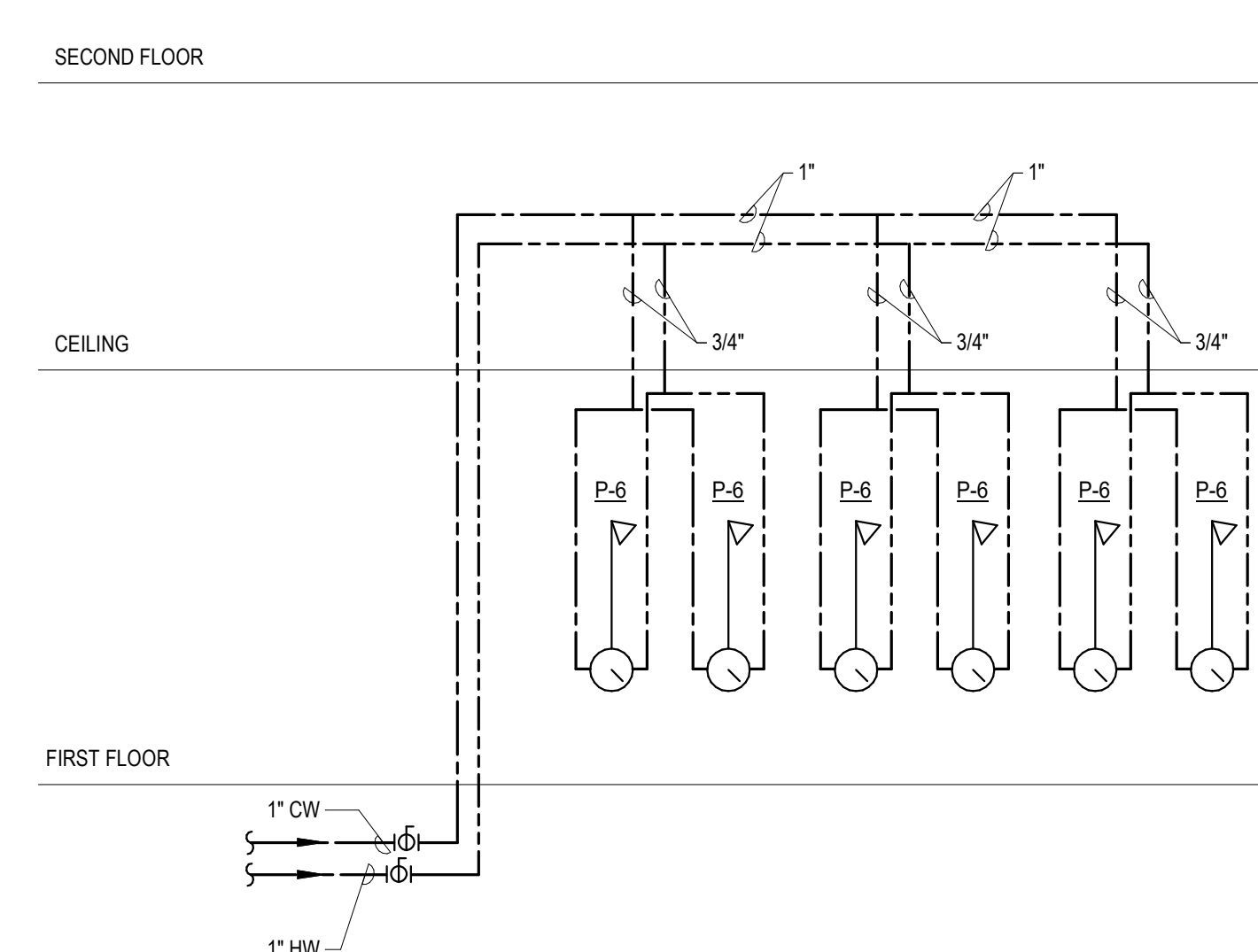
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2
P5-0-1

NURSE TOILETS D107-D108 WATER RISER
N.T.S.

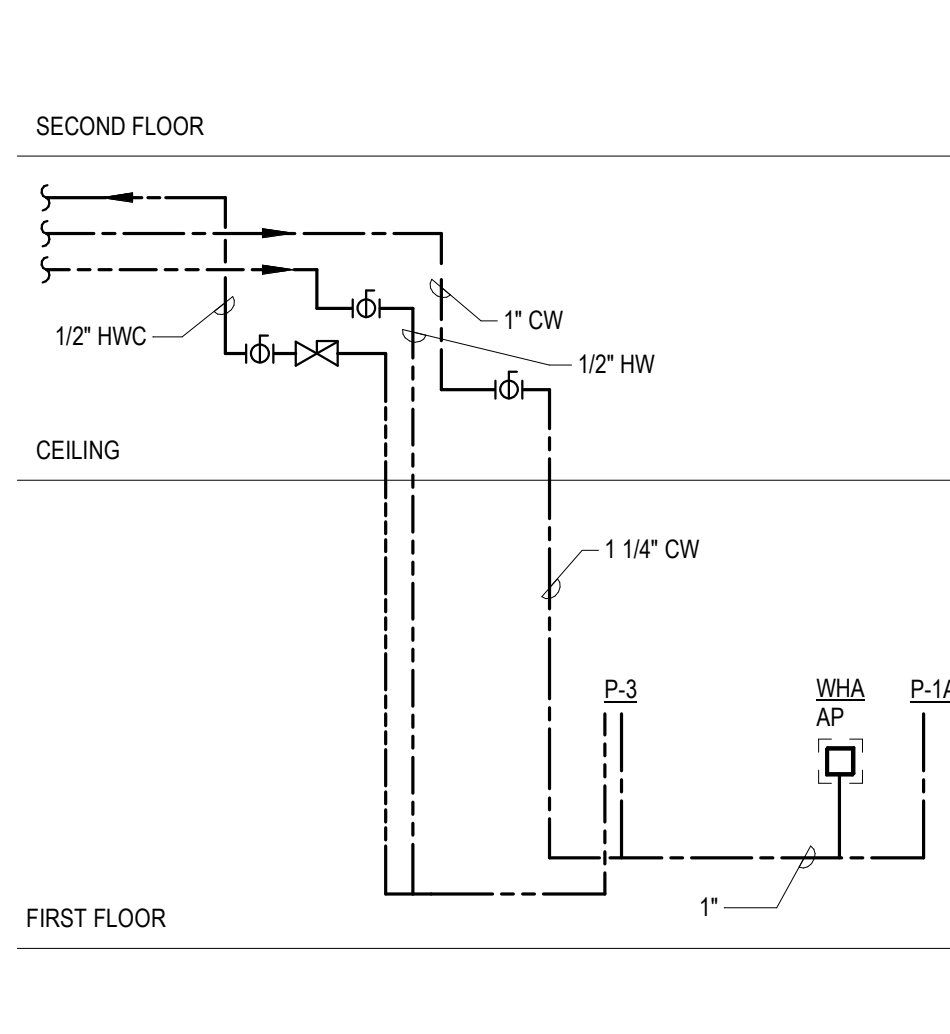


4 ROOMSD003C & D003 SANITARY RISER
P5-Q-1 N.T.S.

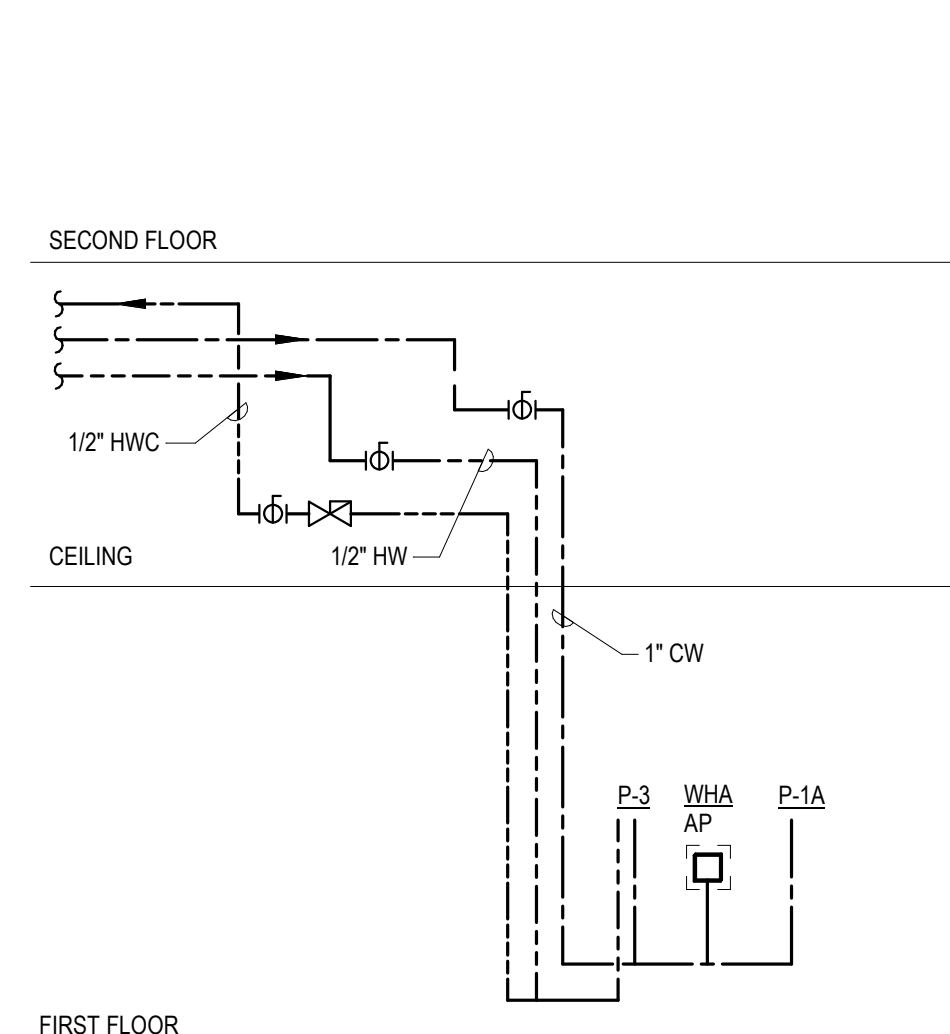


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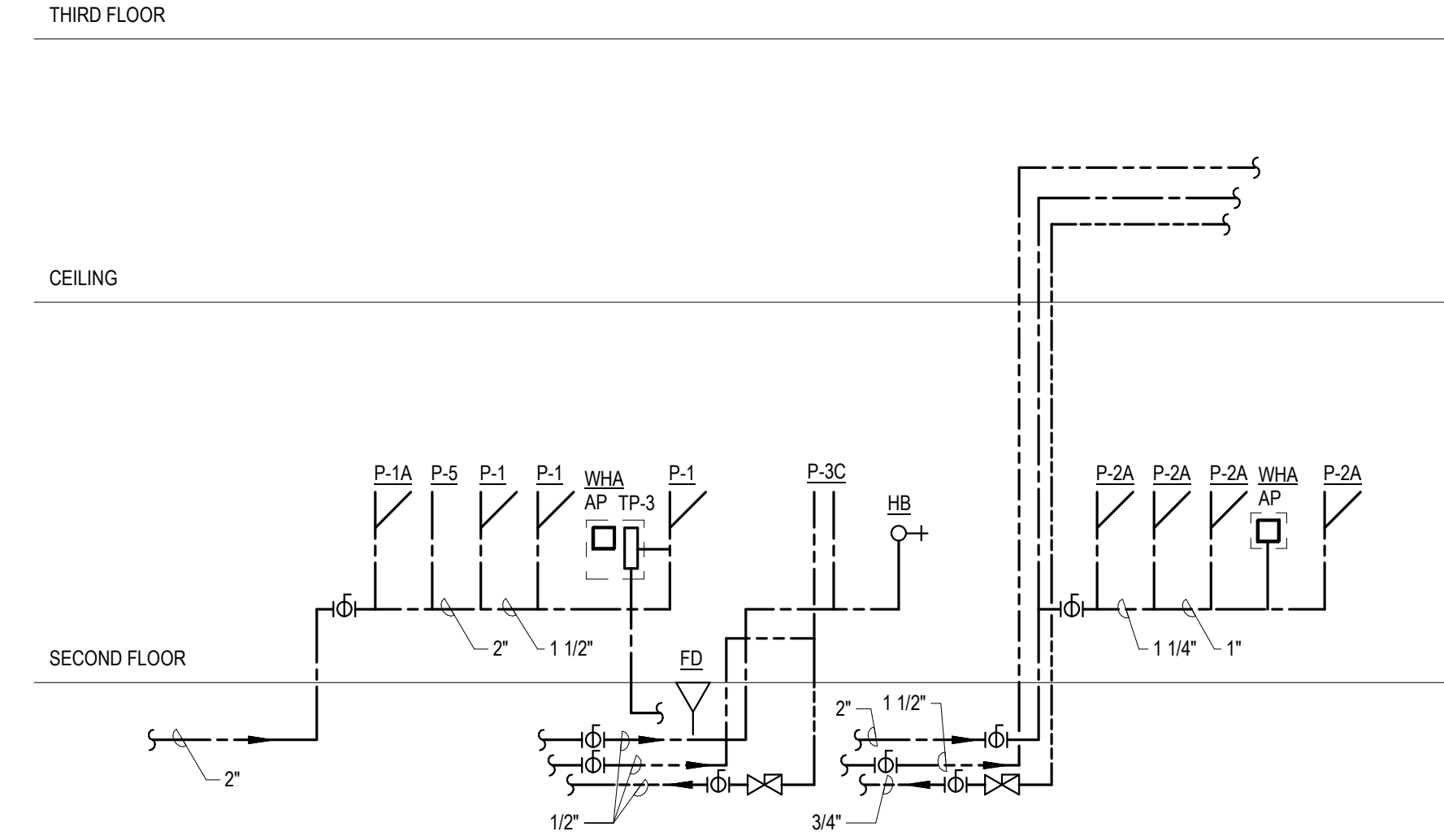
SHOWER ROOMS D122A/D117A WATER RISER
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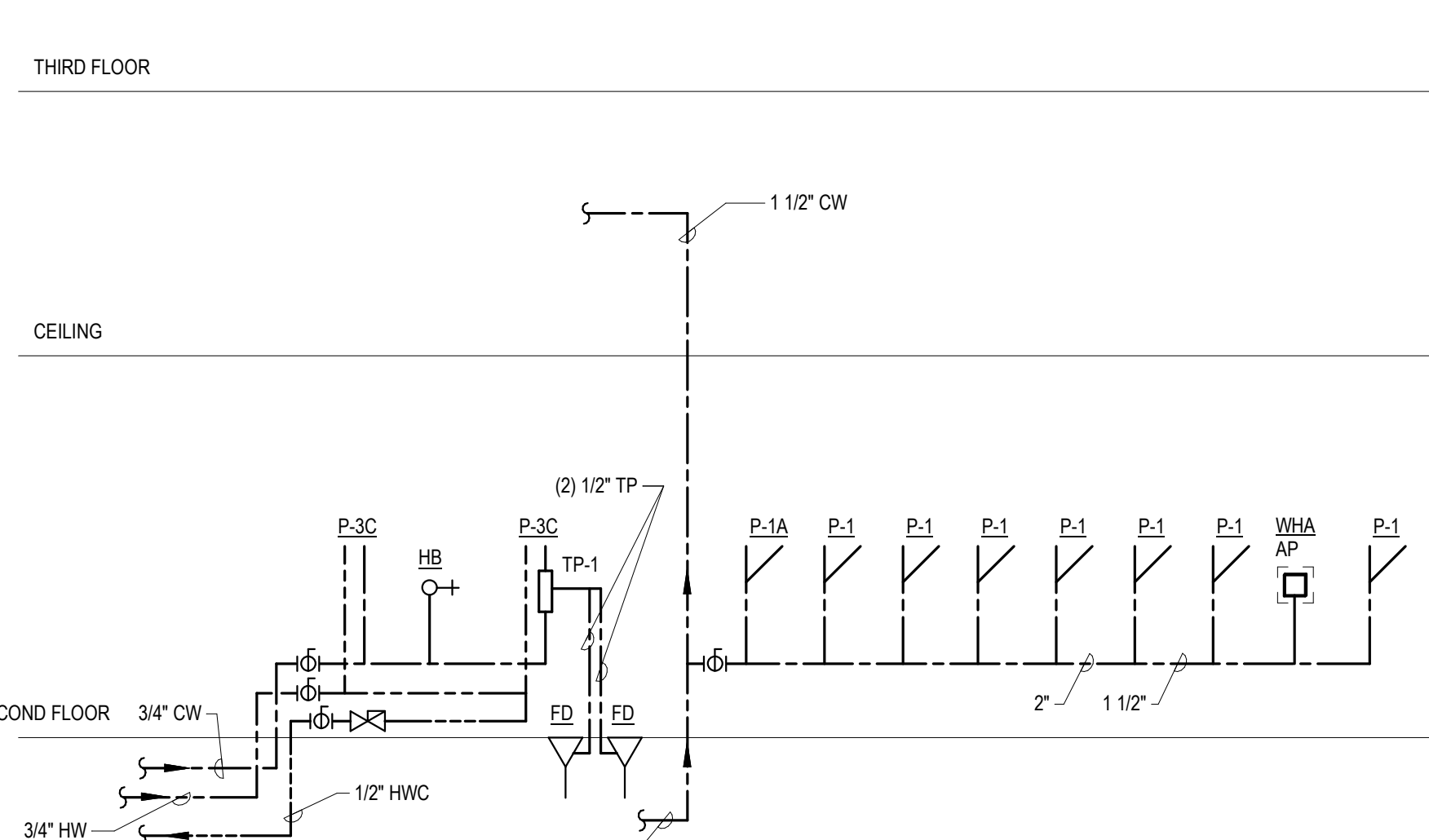
TOILET ROOM A148B WATER RISER
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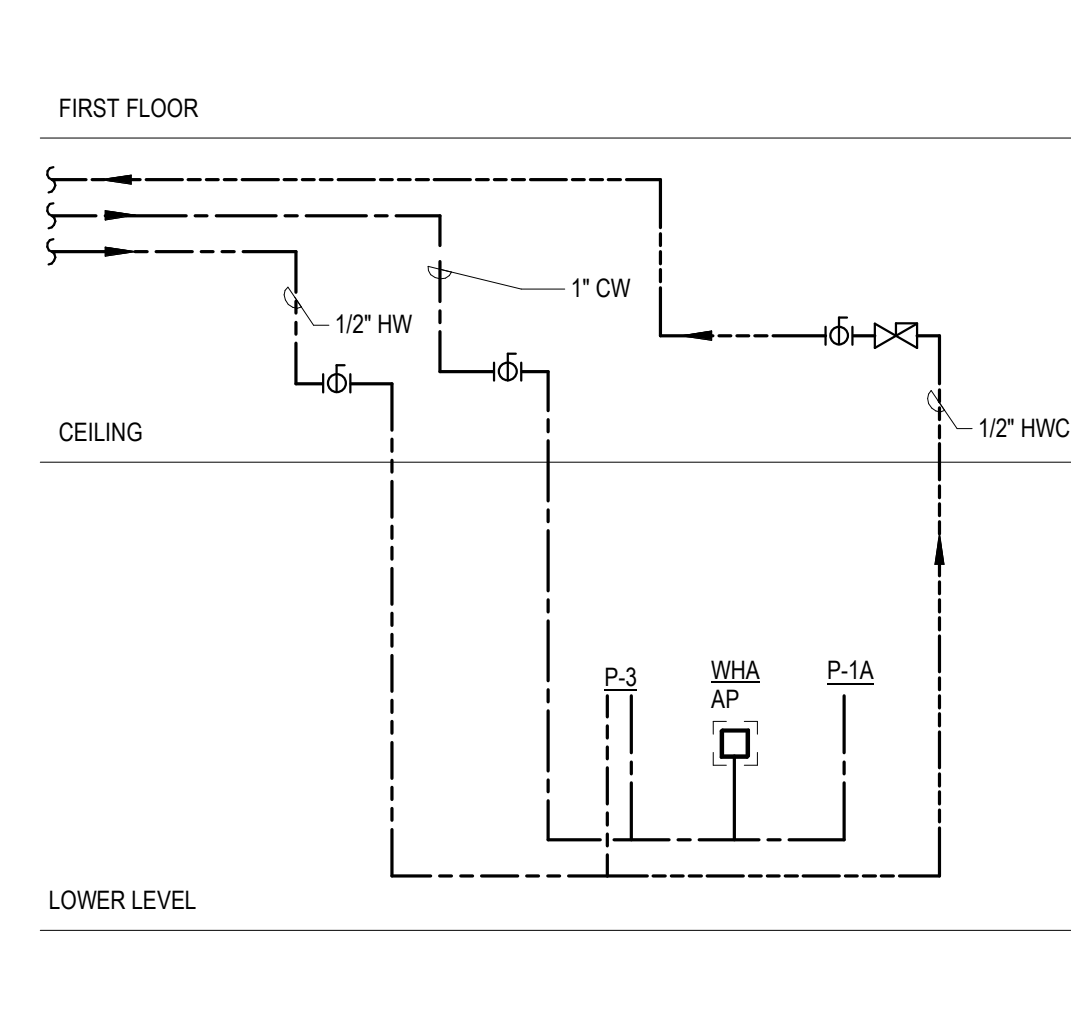
10 TOILET ROOM B121B WATER RISER
P5-0-1 N.T.S.



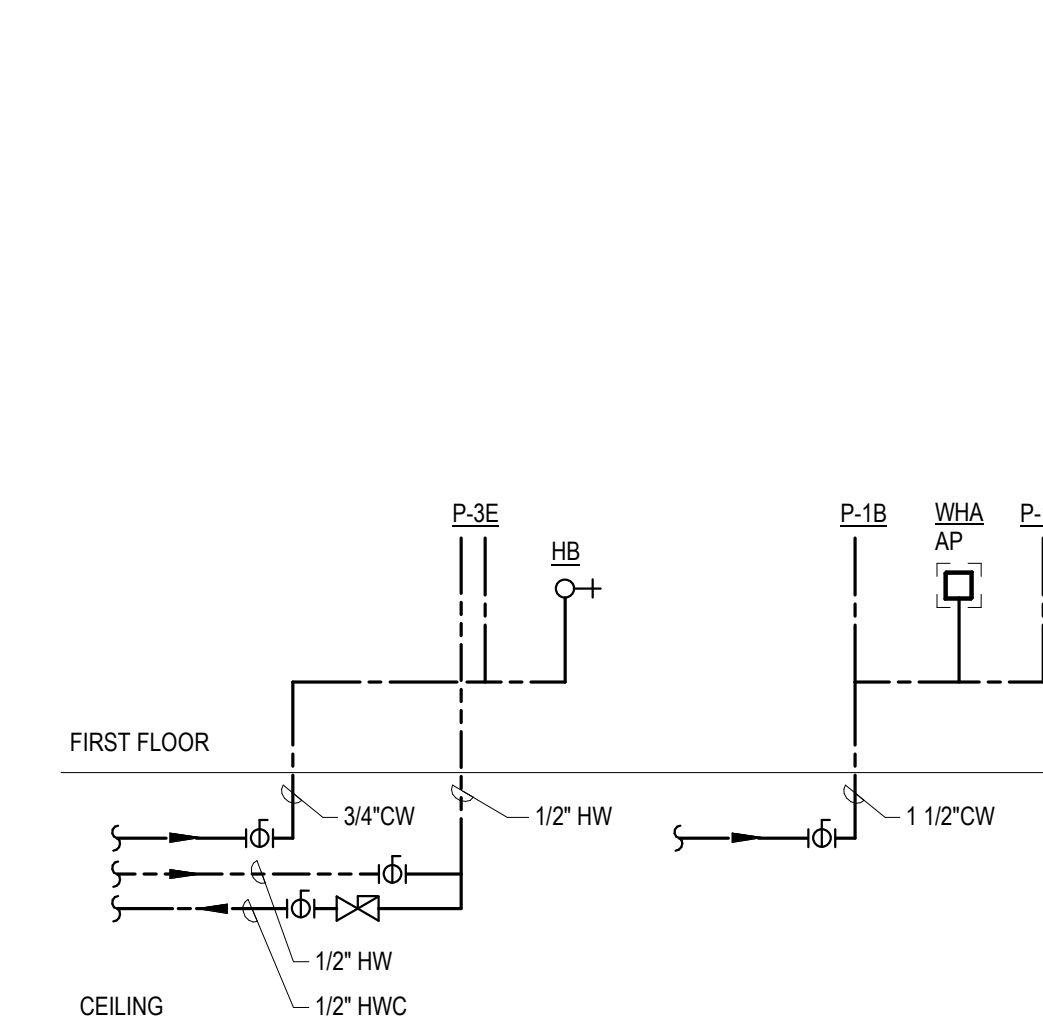
12 TOILET ROOM B217 WATER RISER
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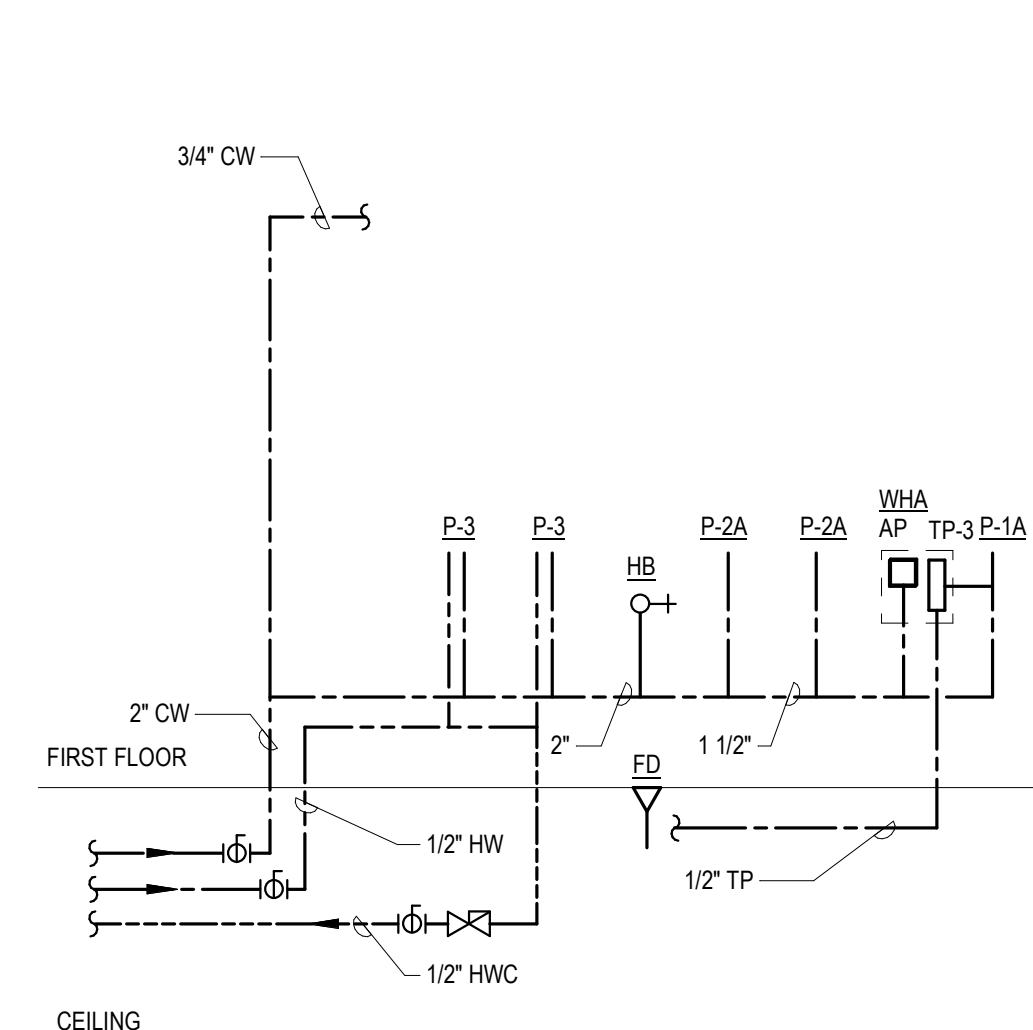
14 TOILET ROOM B228 WATER RISER
P50-1 N.T.S.



TOILET ROOM C022C WATER RISER

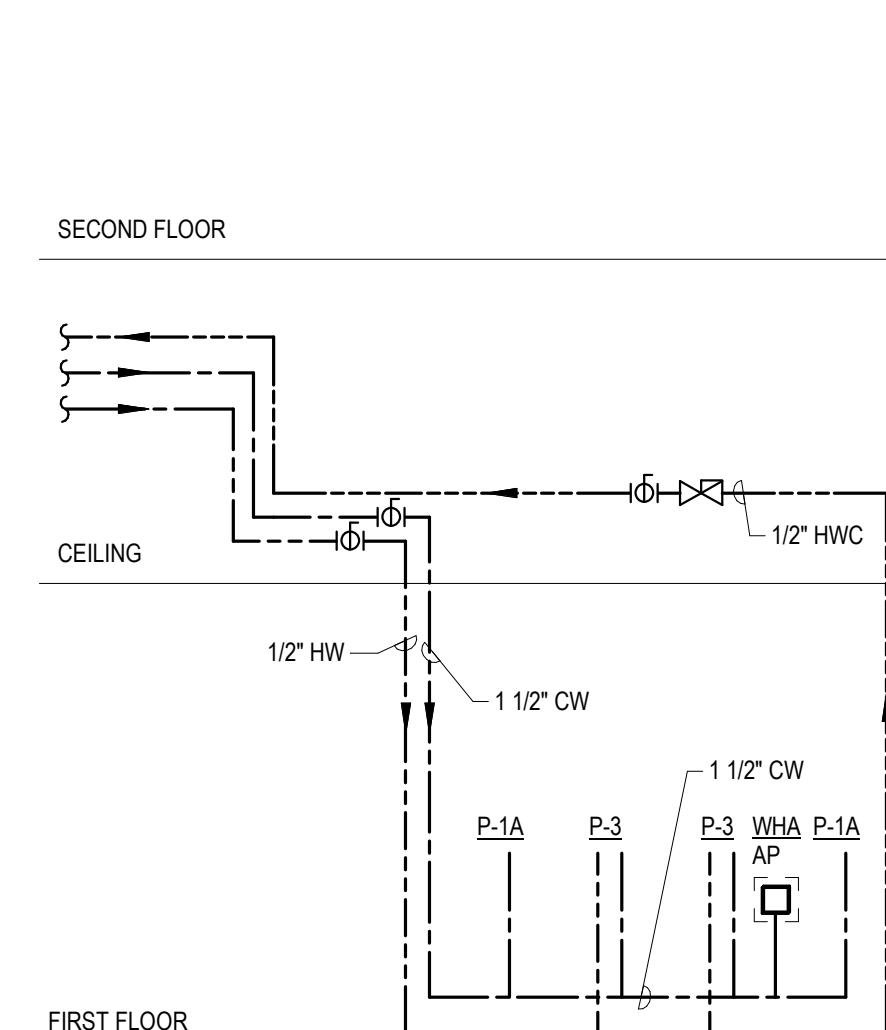


18 TOILET ROOM C106G WATER RISER
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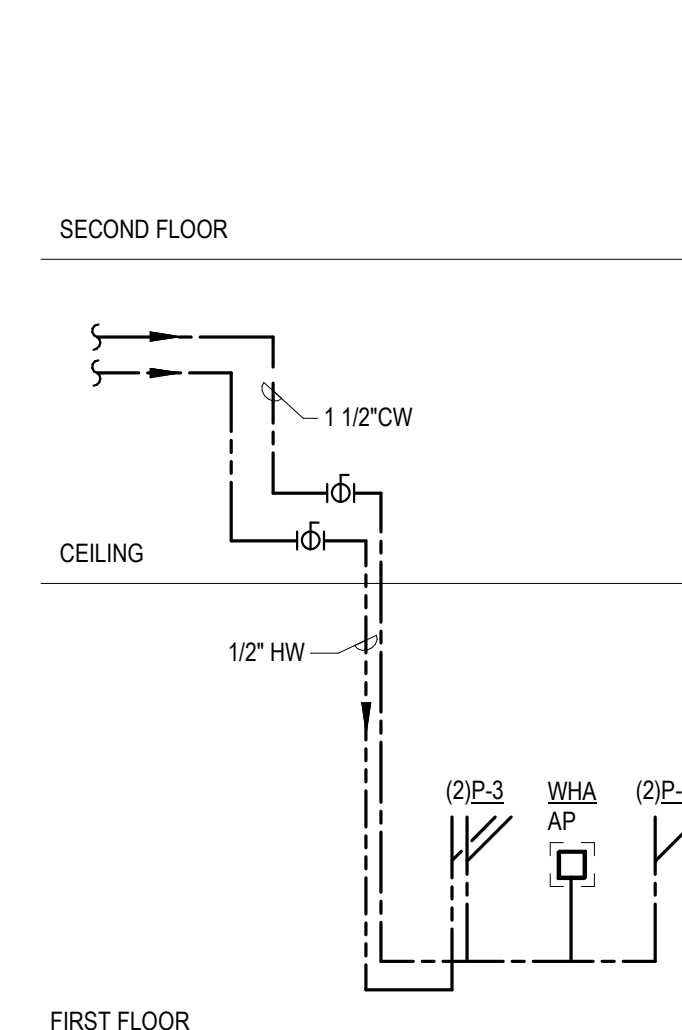


20
P5-0-1

TOILET ROOM C112 WATER RISER
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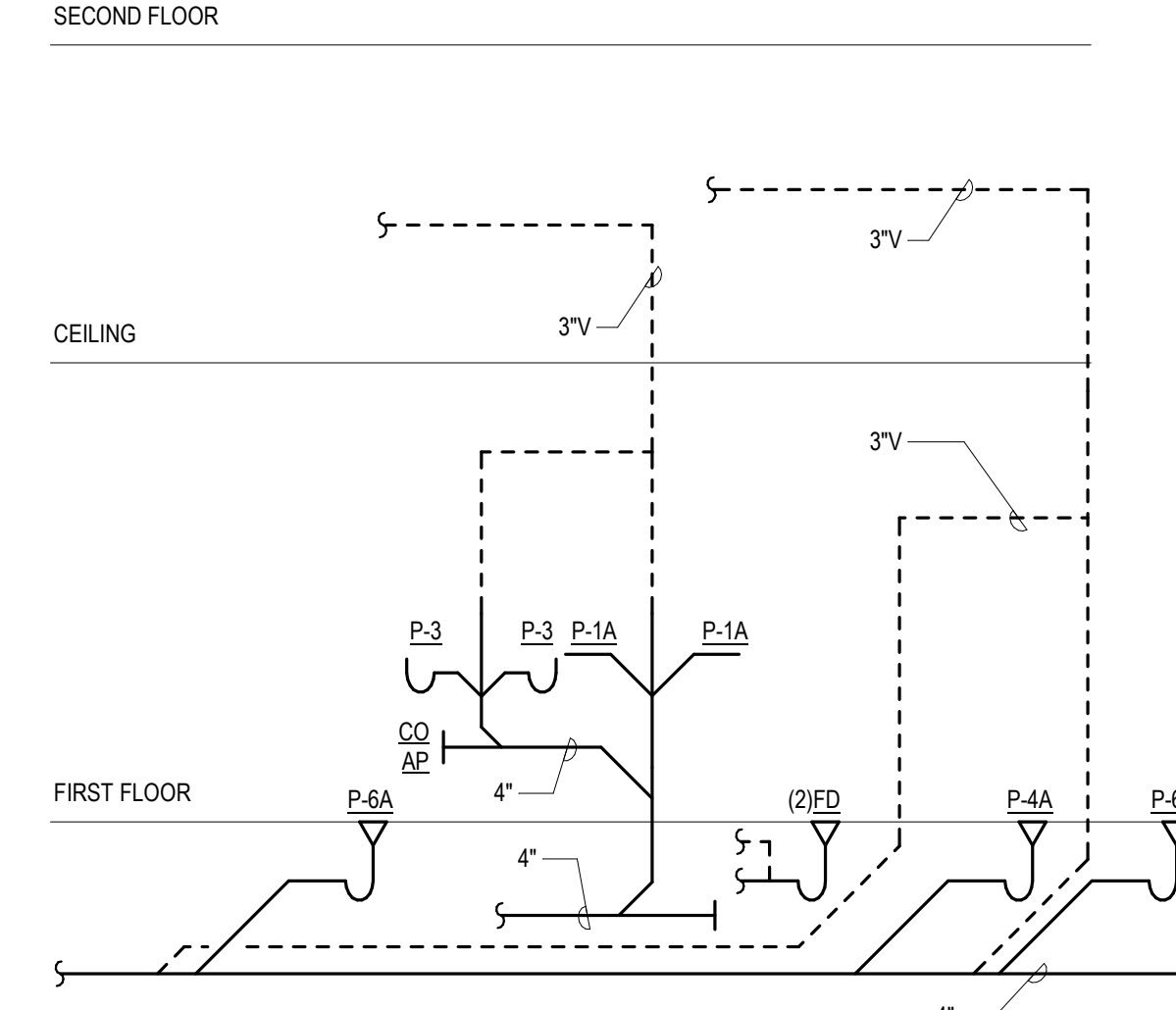


22 TOILET ROOMS A106-A107 WATER RISER
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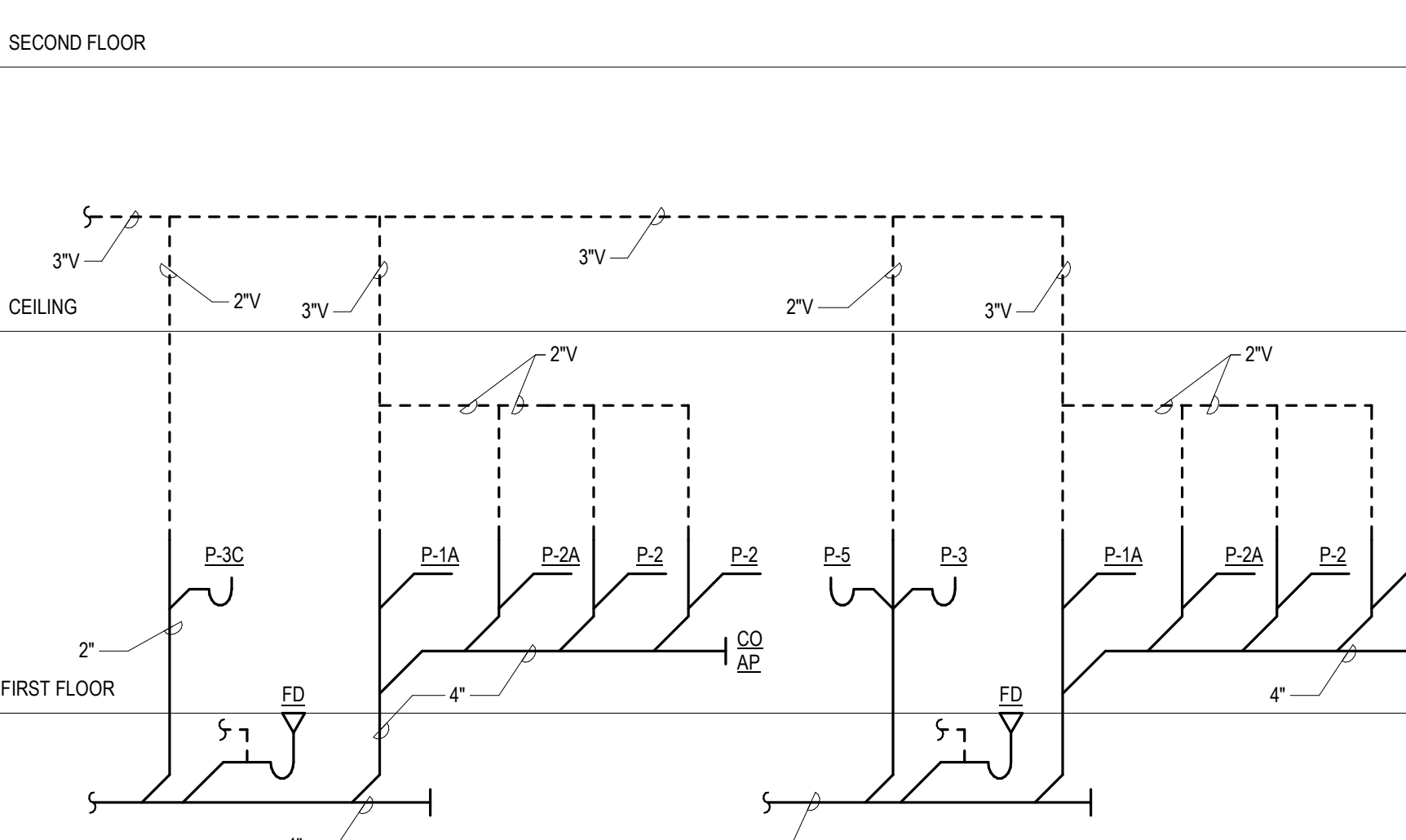
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P5-0-1

TOILET ROOMS A133-A134 WATER RISER
N.T.S.

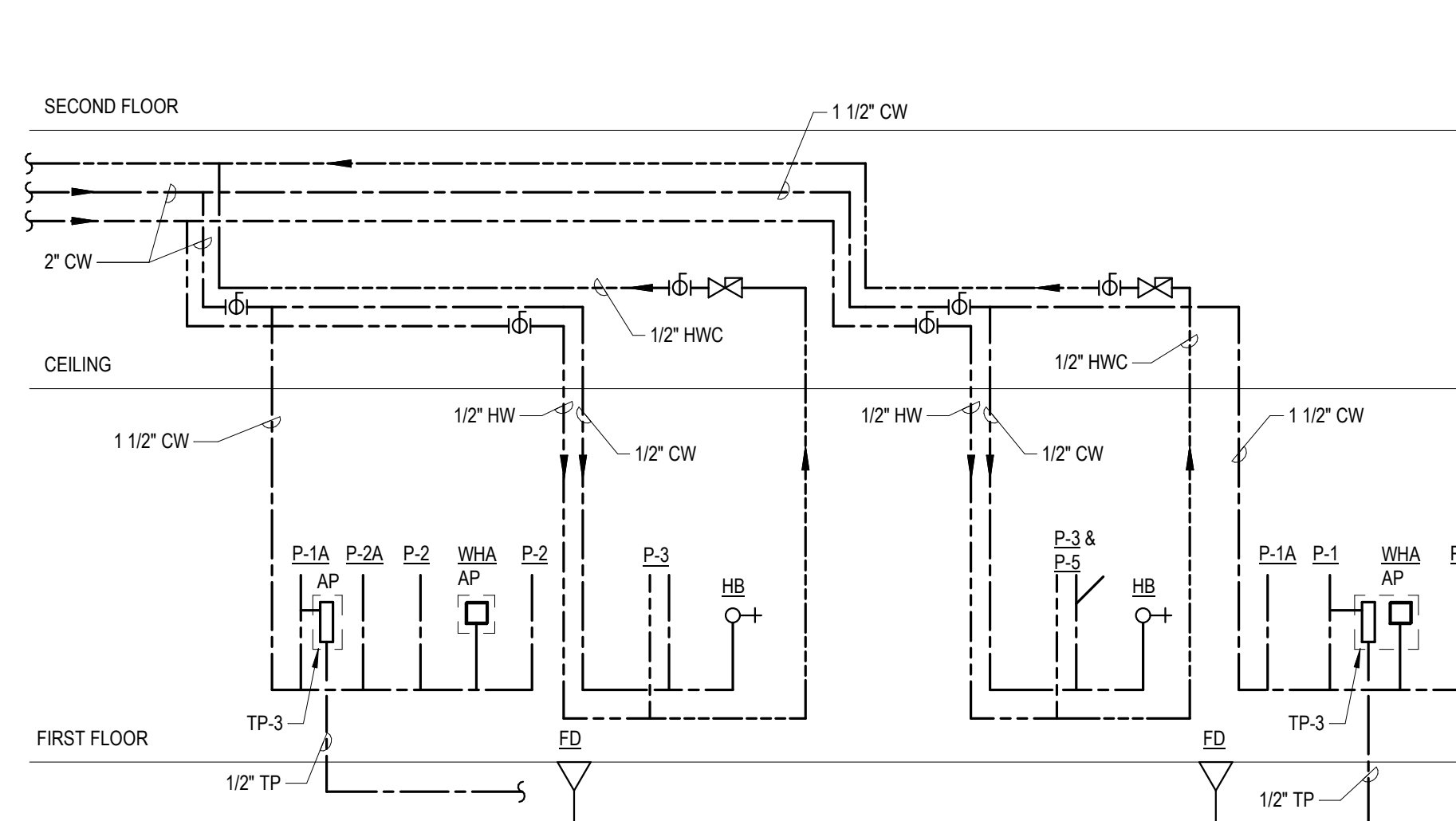


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P5-Q-1

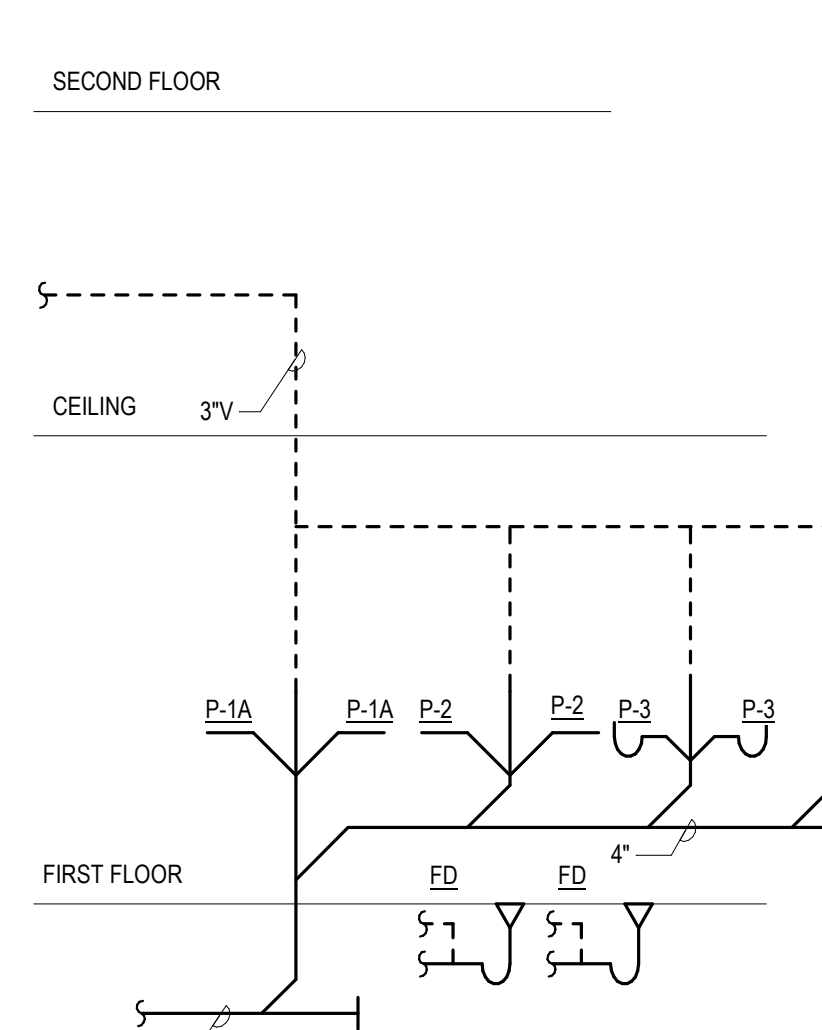
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N.T.S.



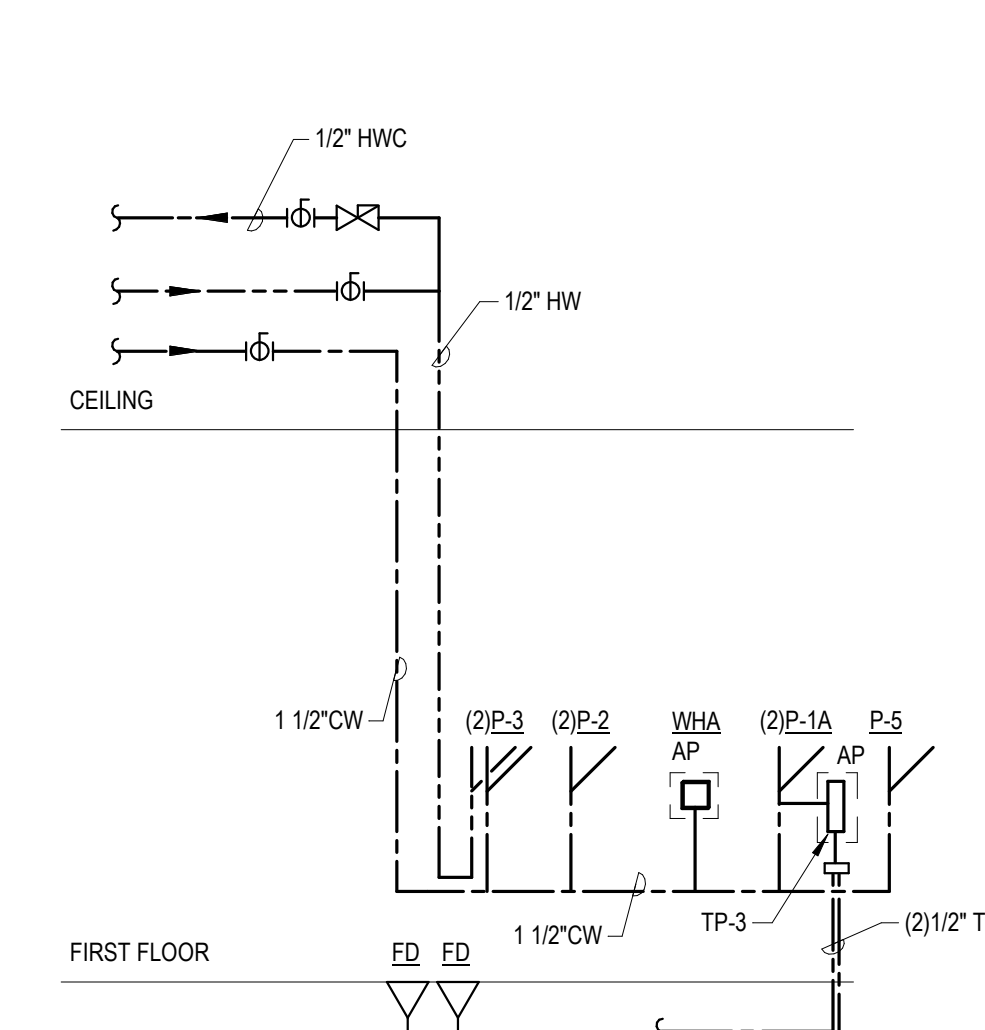
25 TOILET ROOMS A117C-A117D SANITARY RISER
P5-0-1 N.T.S.



26 TOILET ROOMS A117C-A117D WATER RISER
P5-0-1 N.T.S.



27 TOILET ROOM A142-A143 SANITARY RISER
P5-0-1 N.T.S.



28
P5-0-1

TOILET ROOM A142-A143 WATER RISER
N.T.S.

DRA

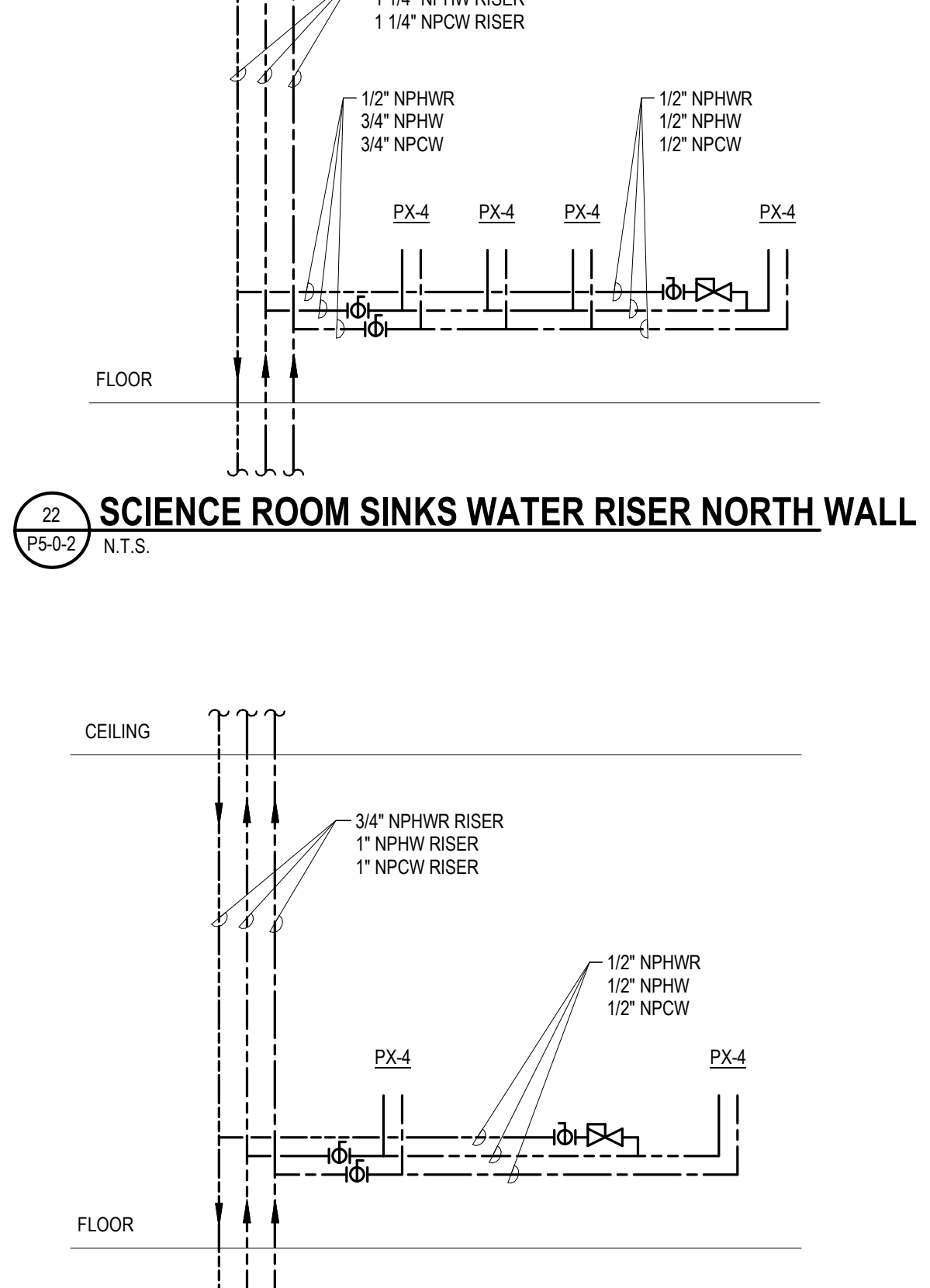
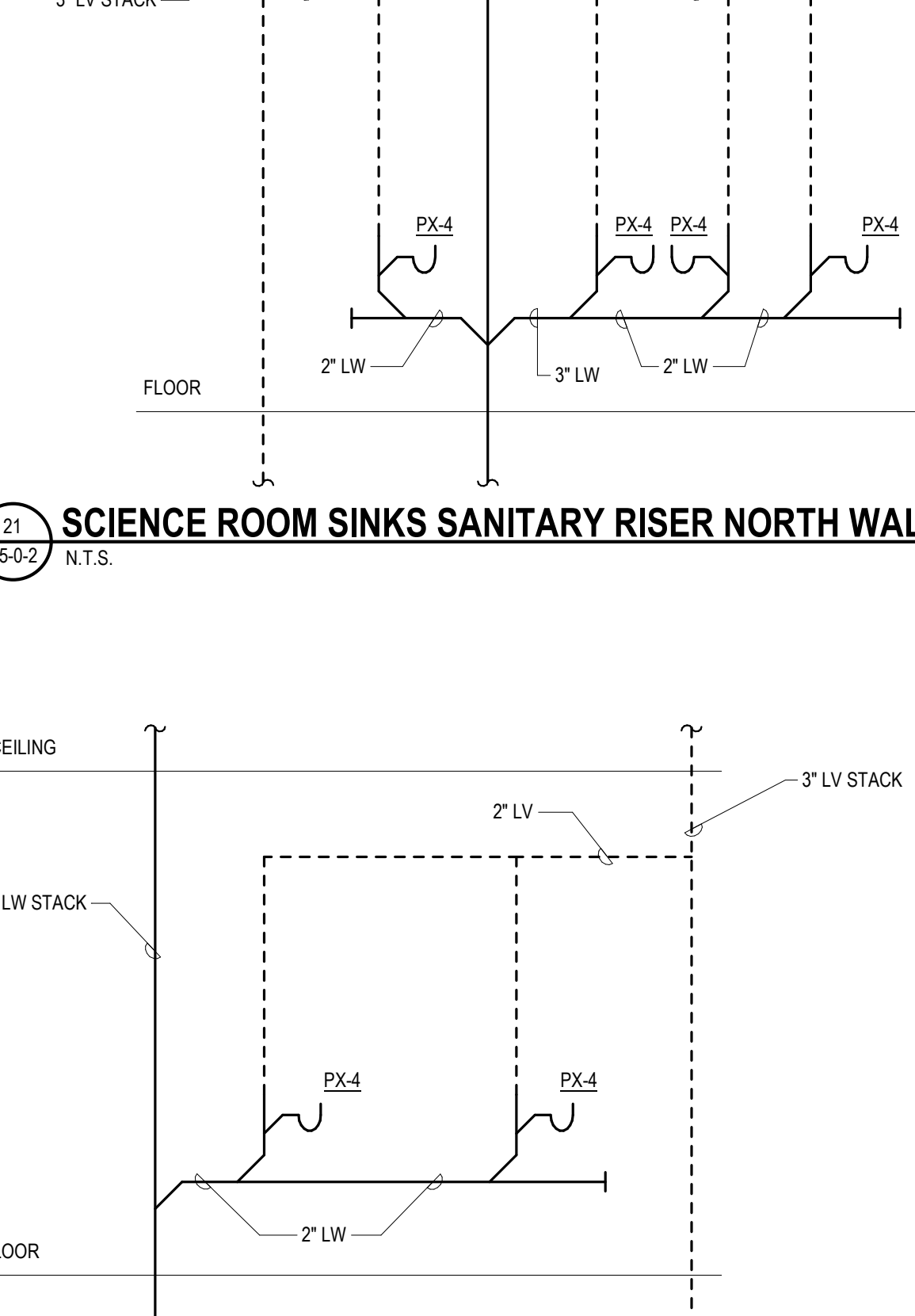
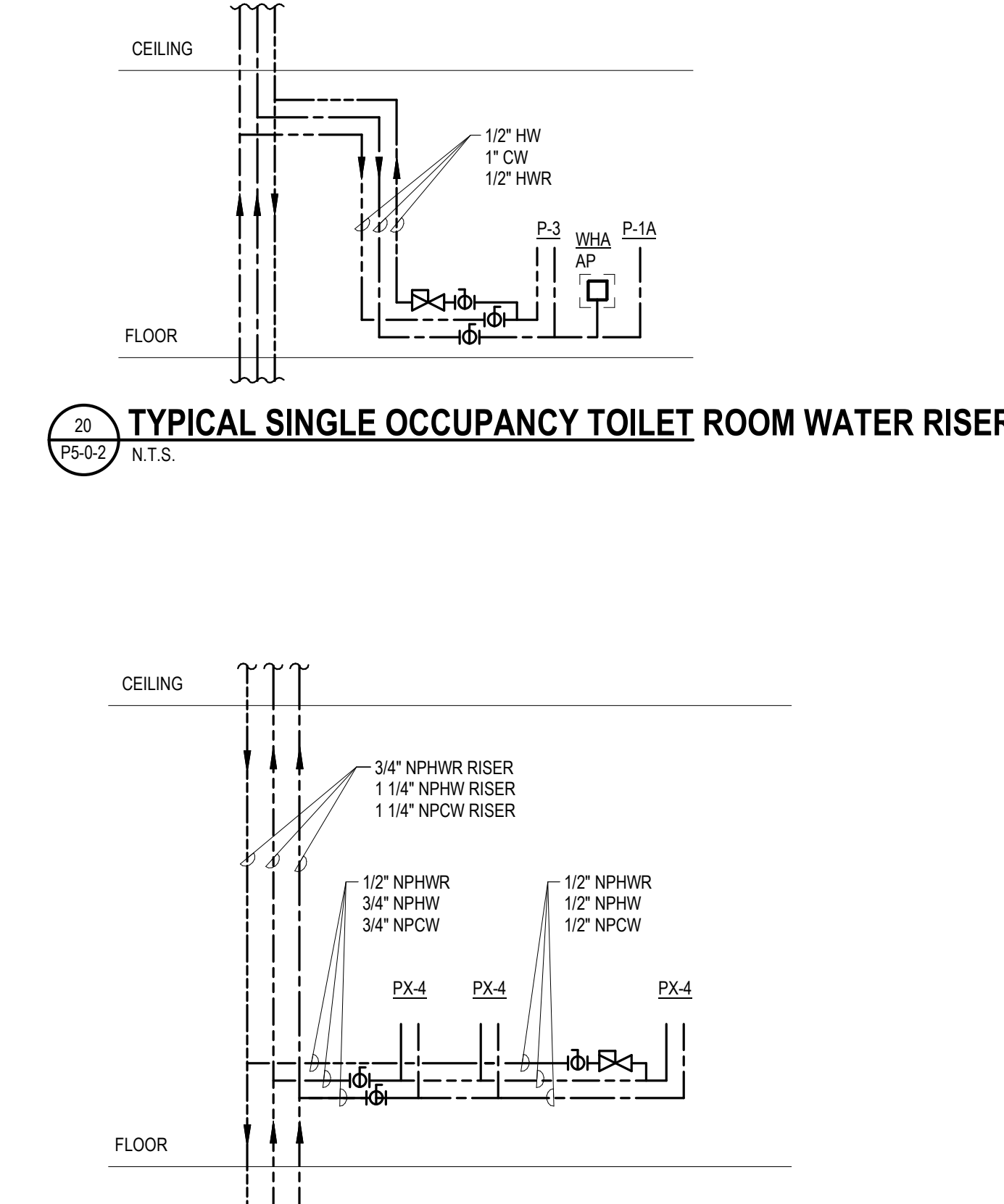
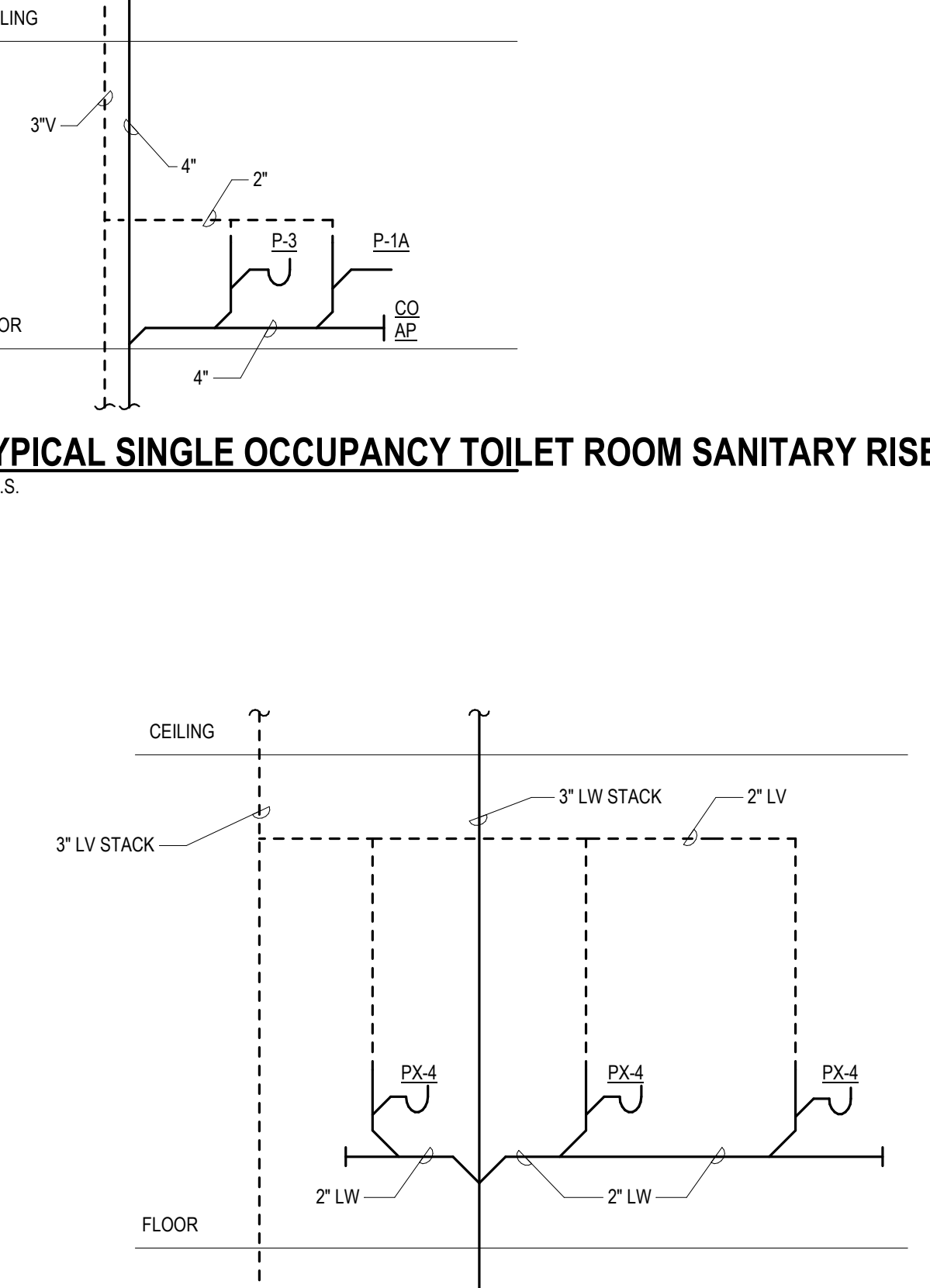
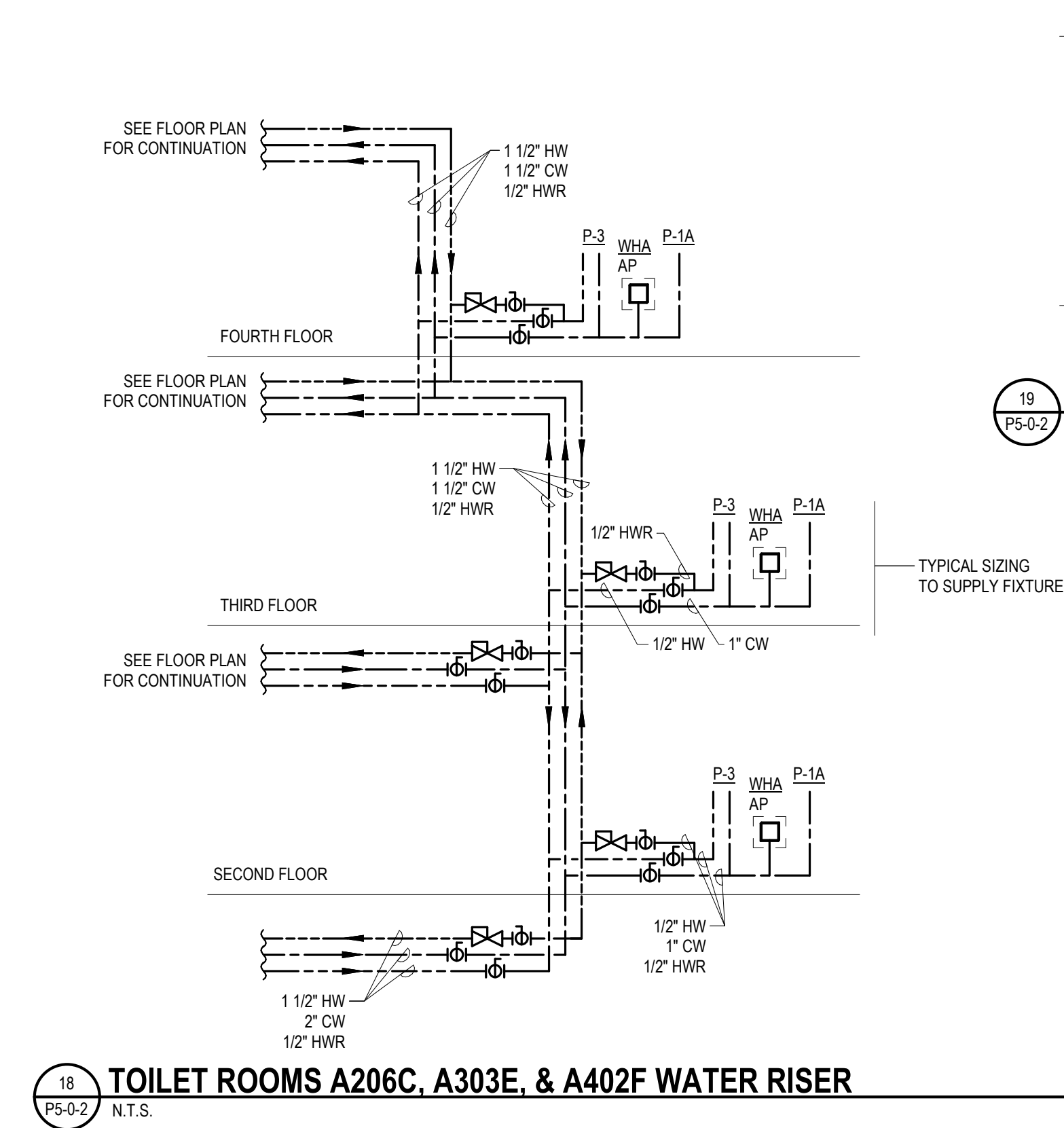
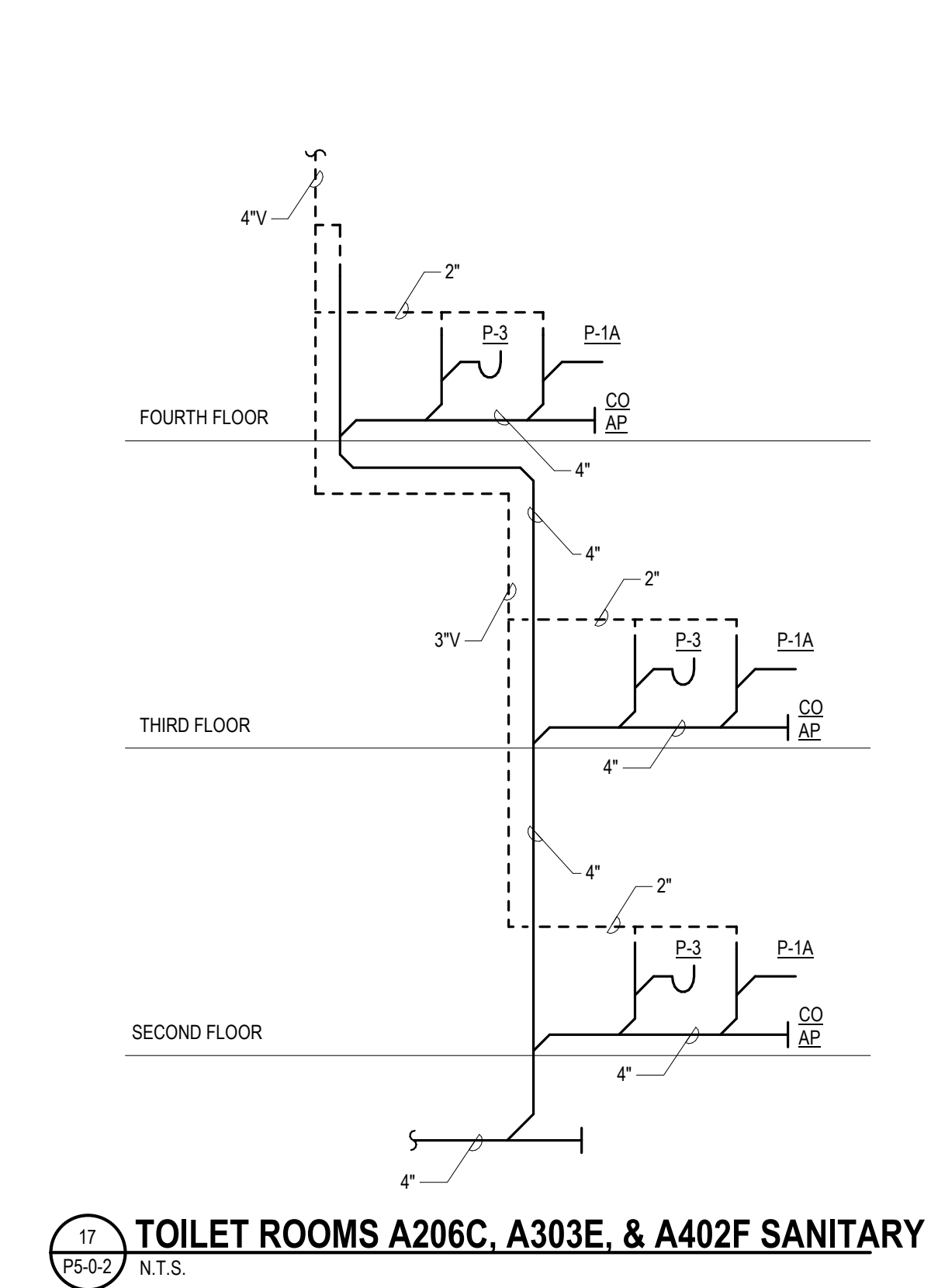
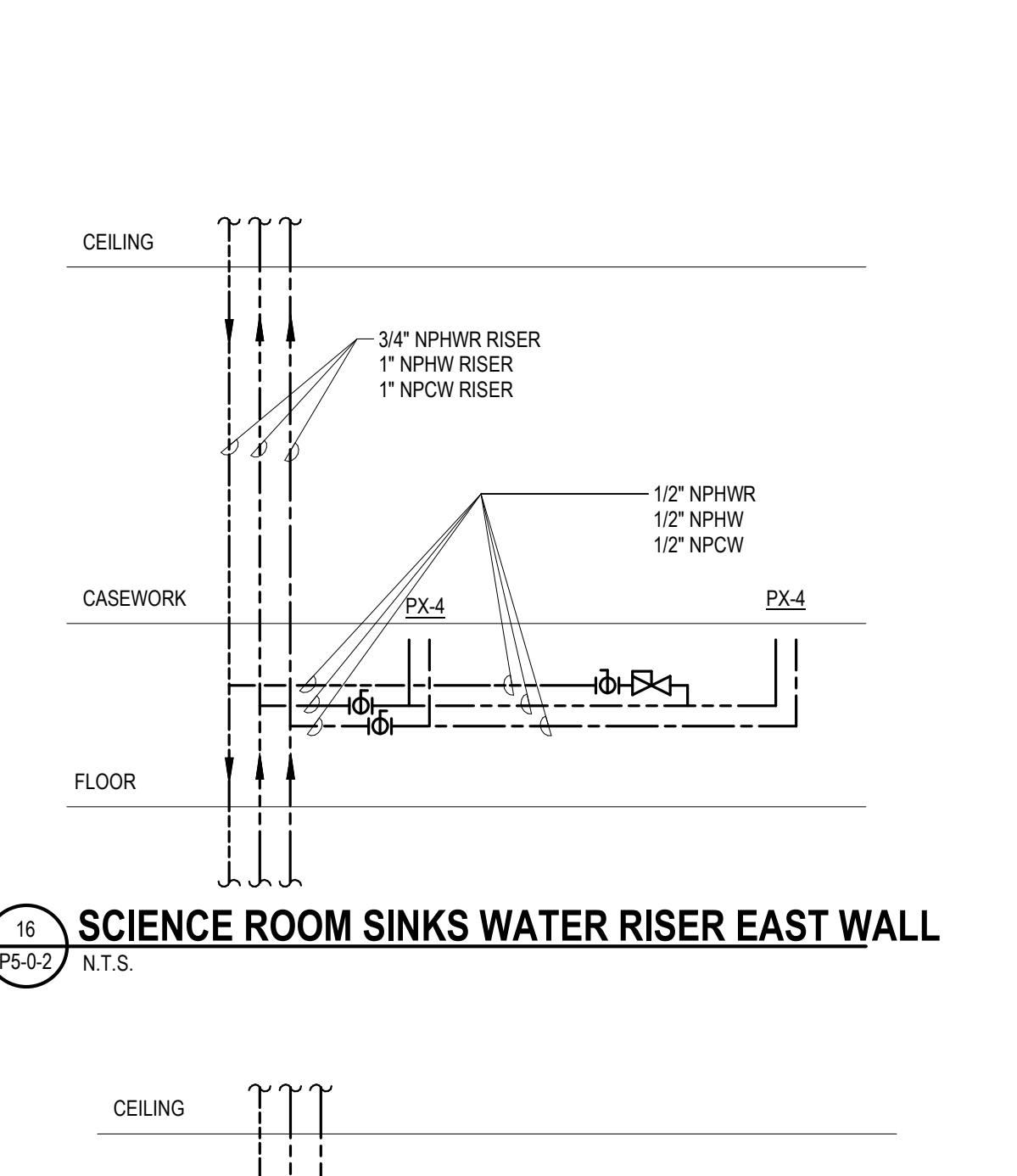
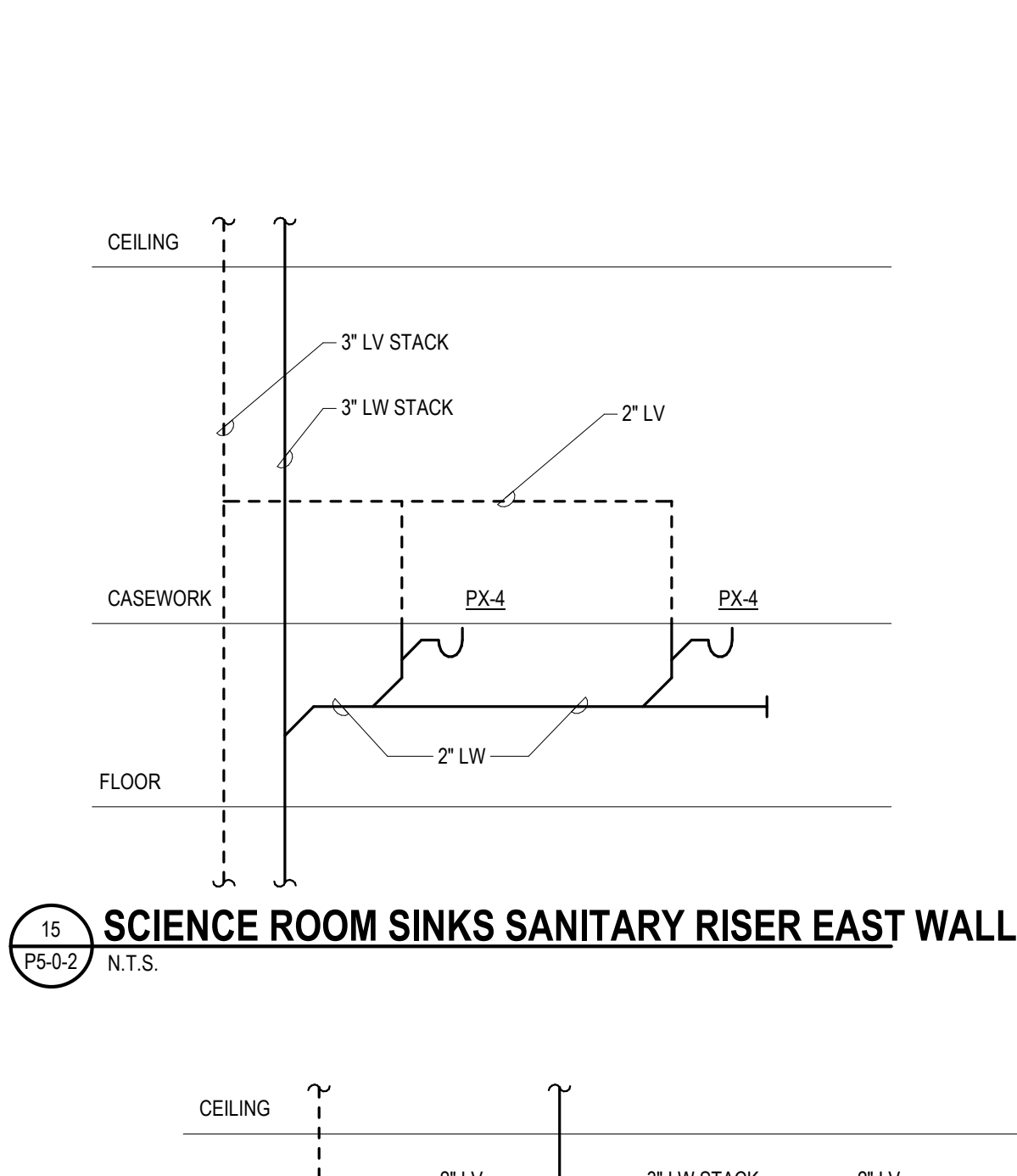
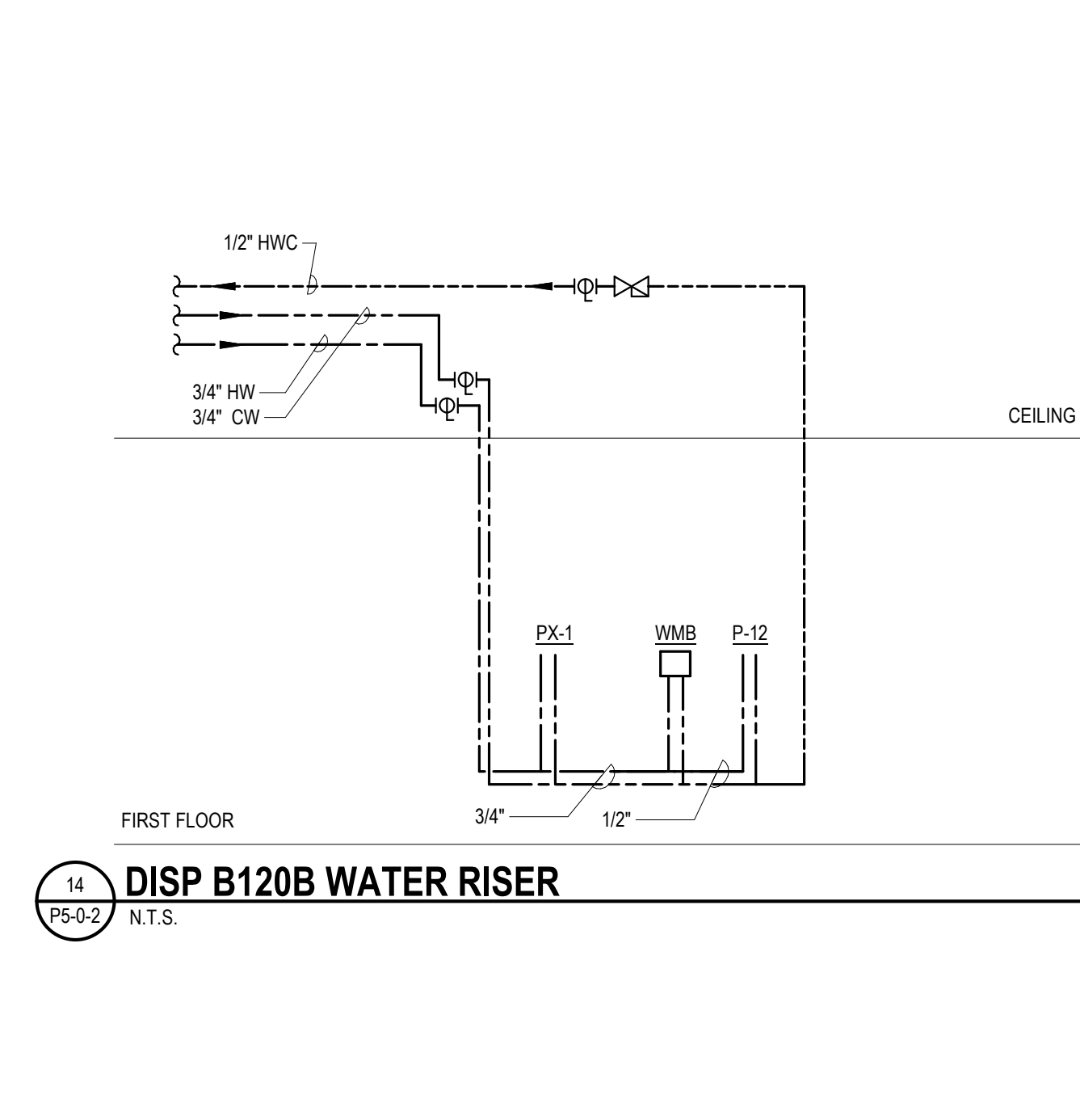
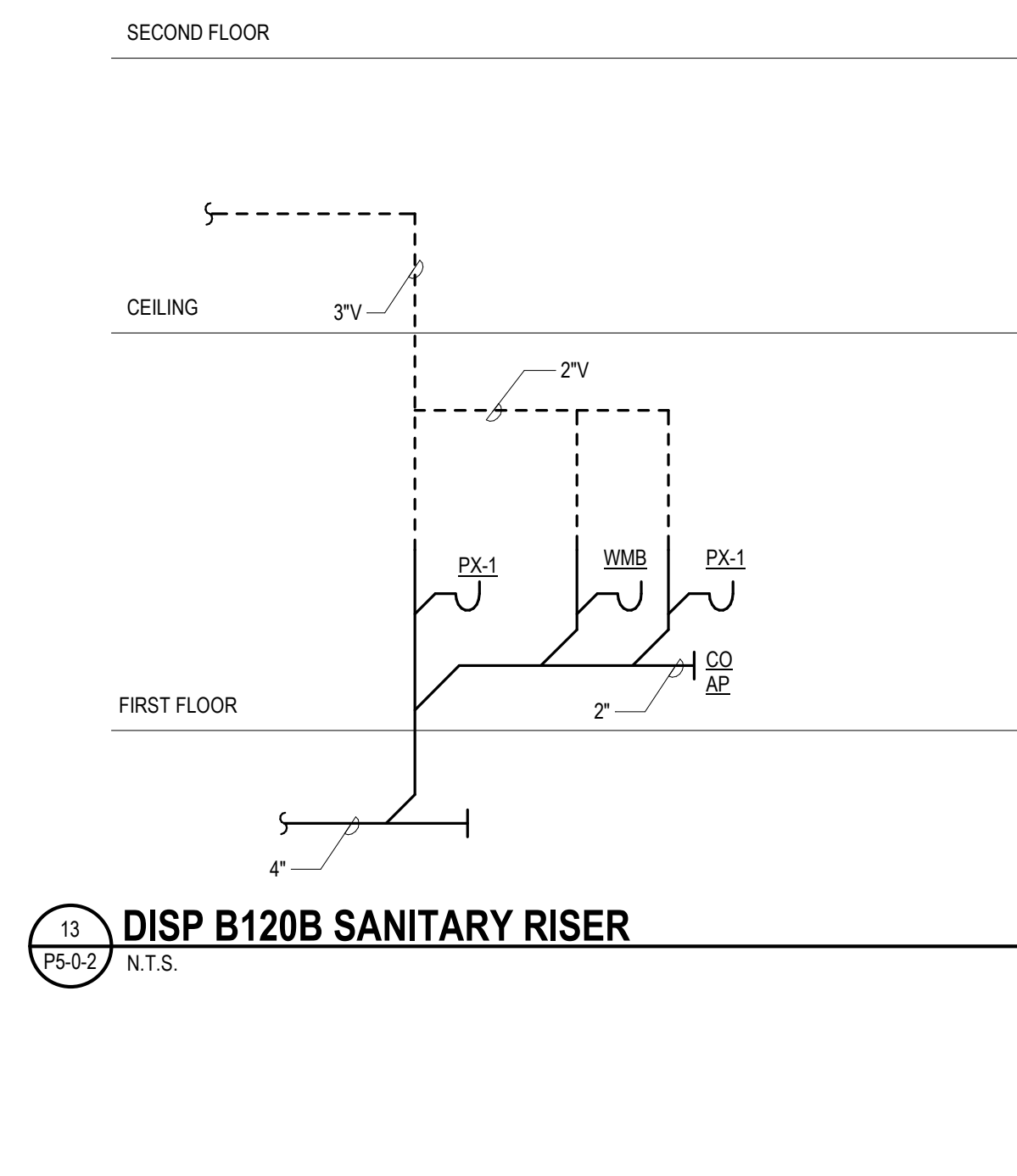
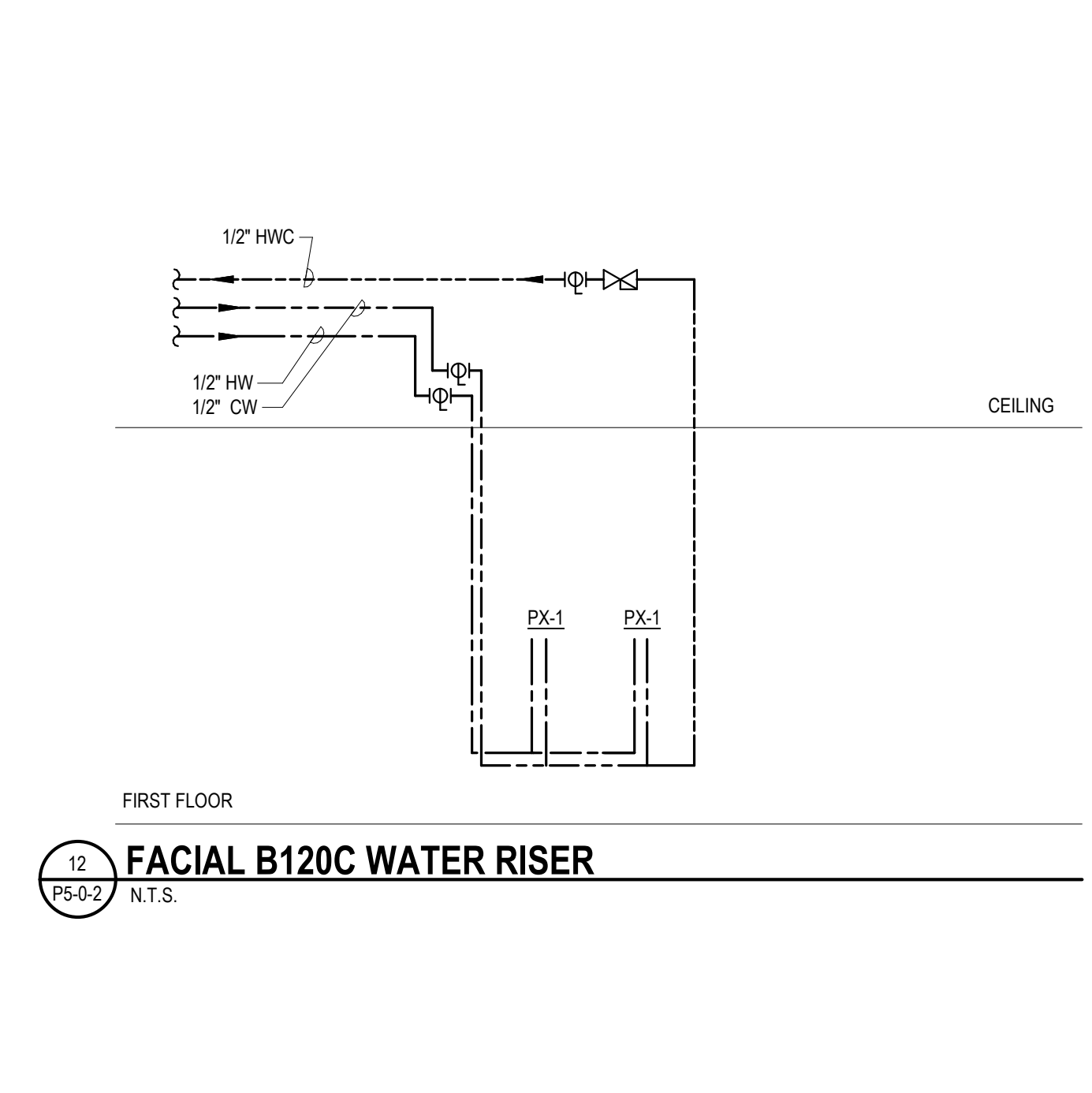
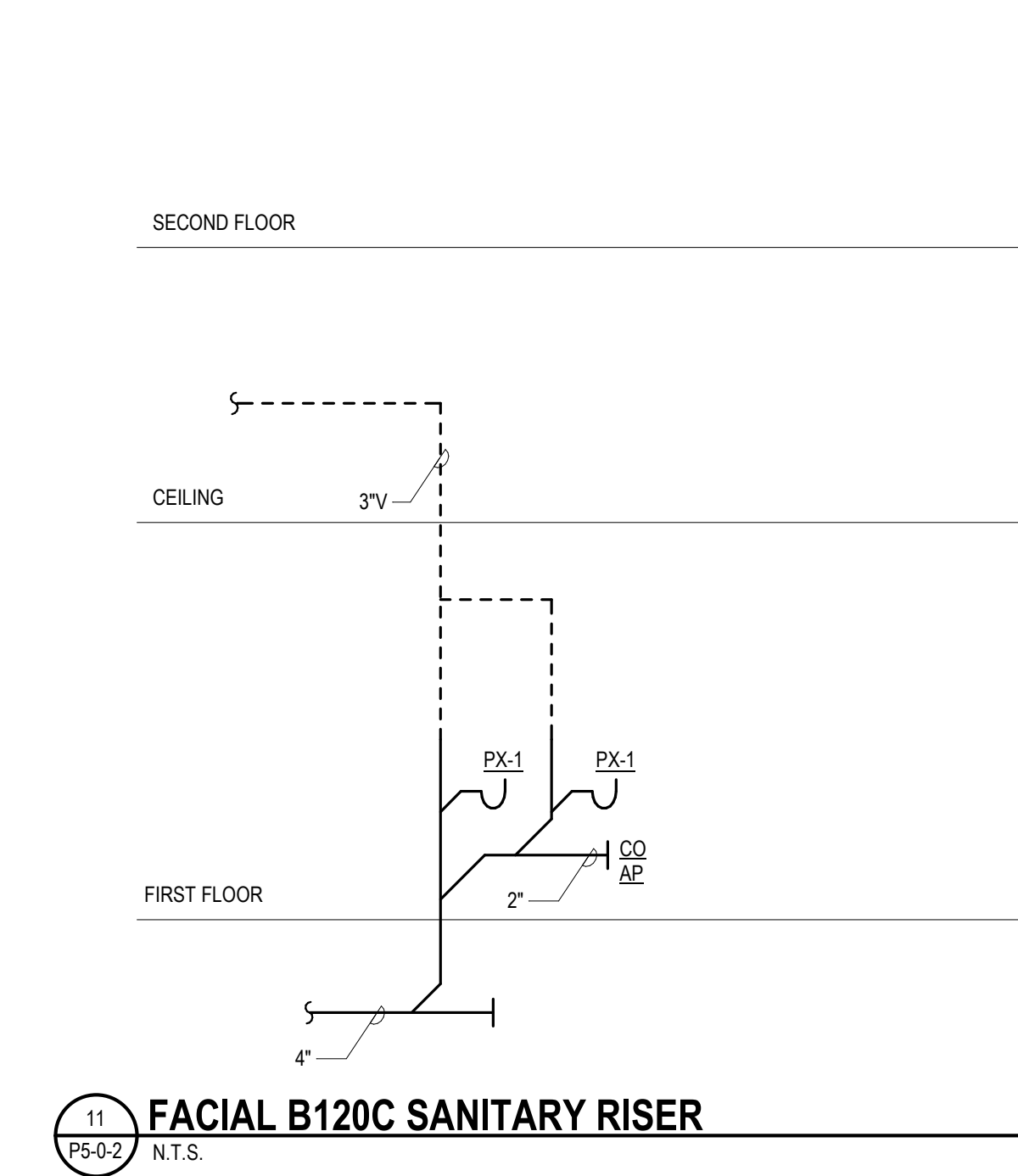
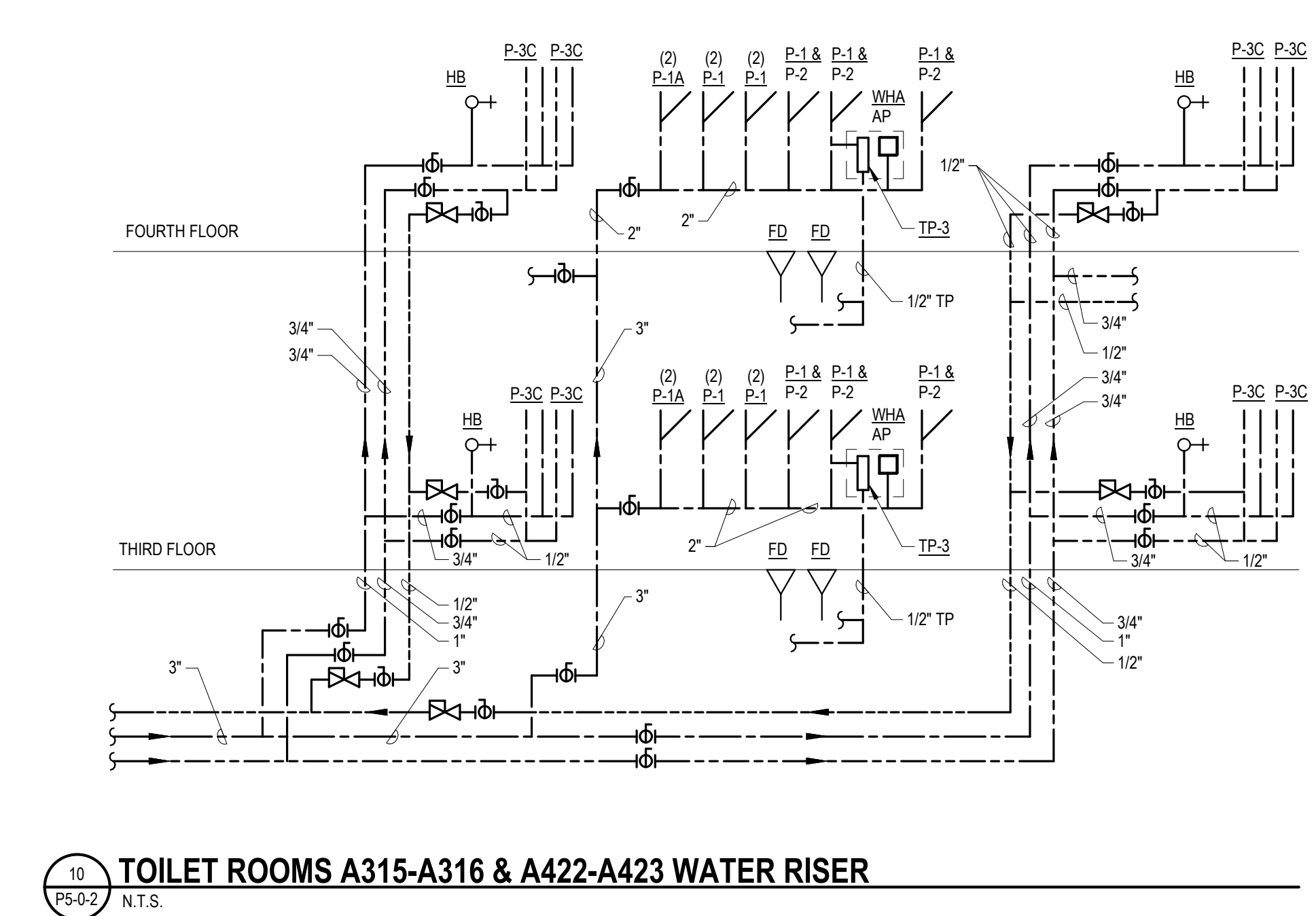
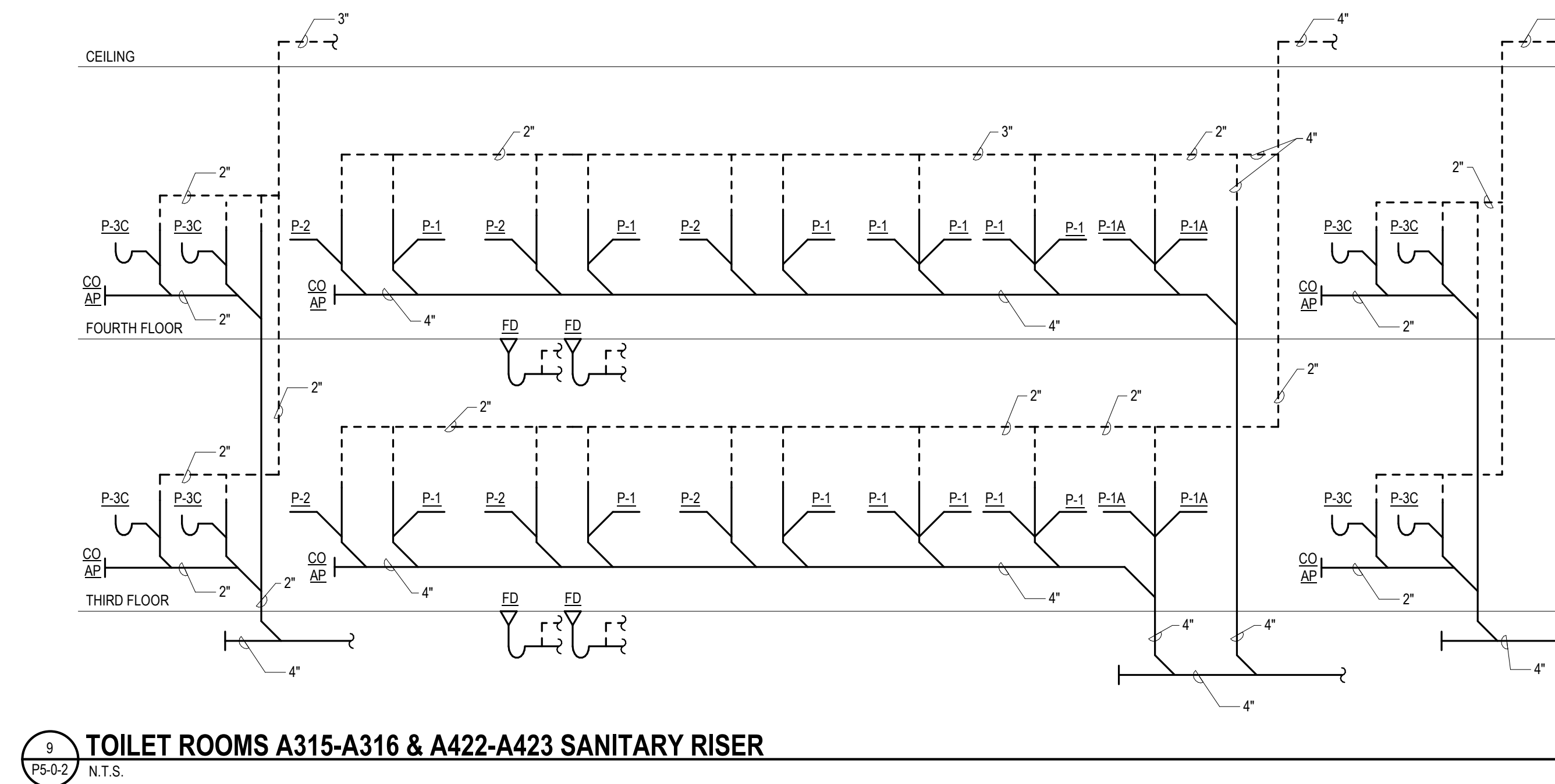
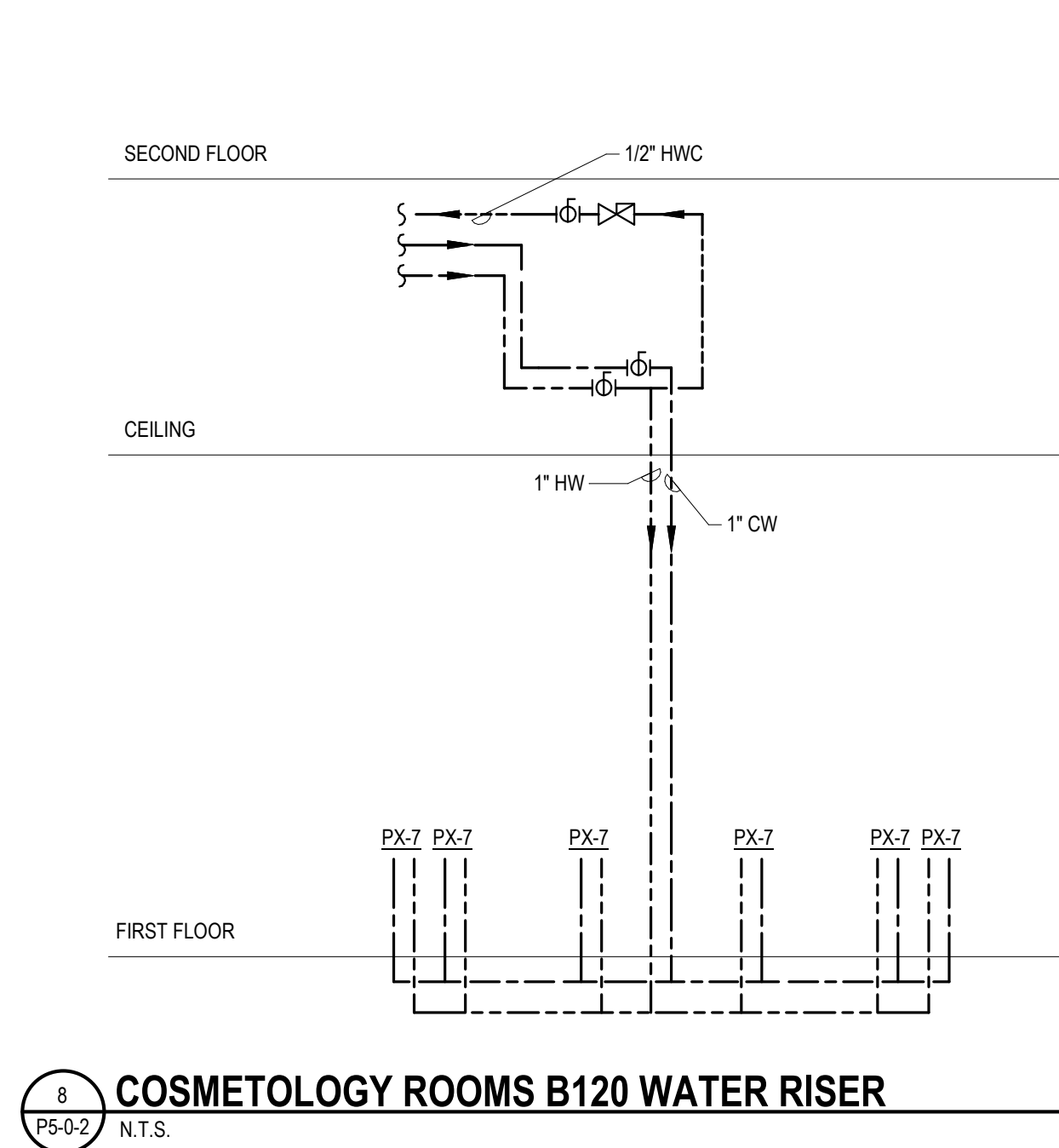
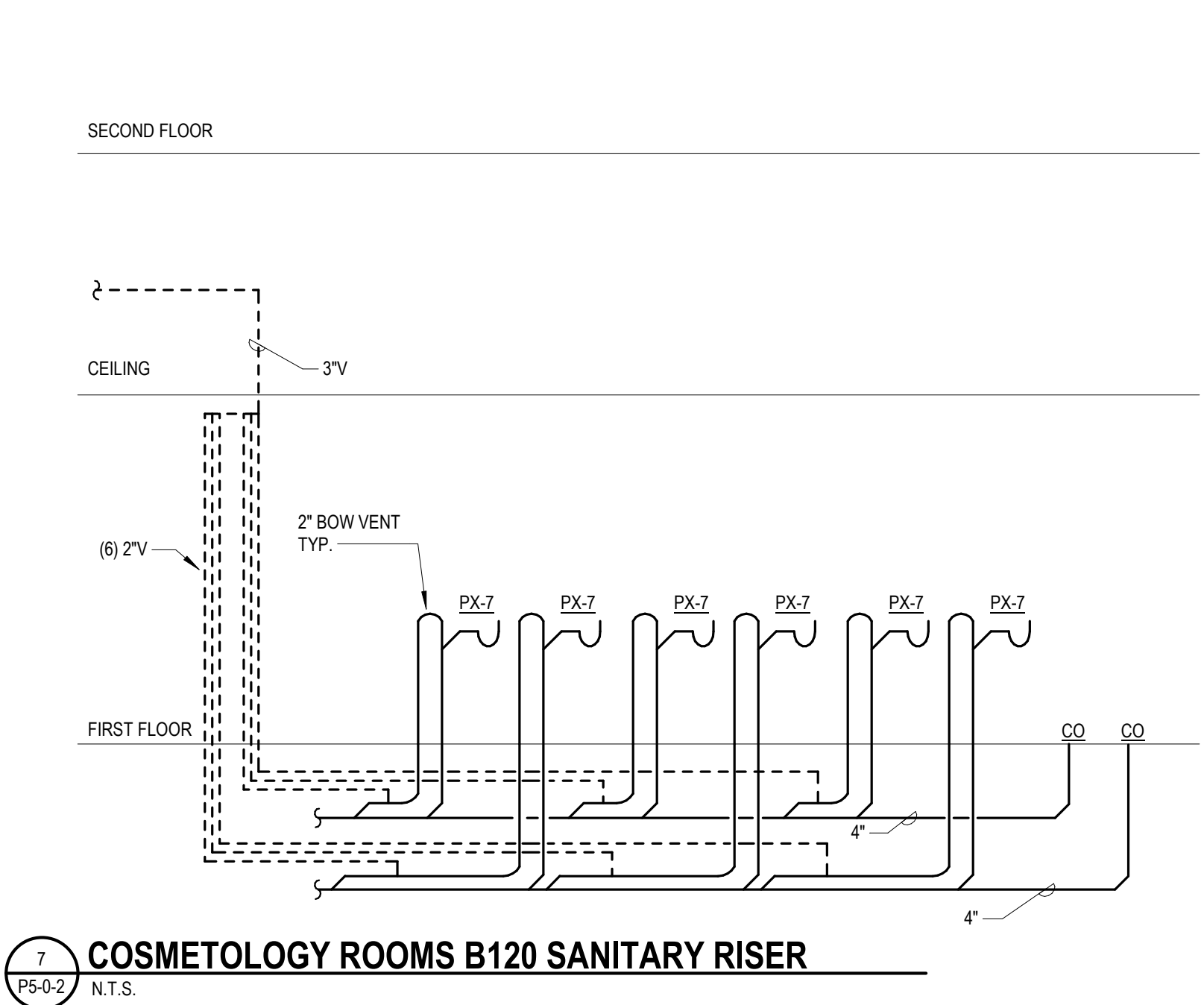
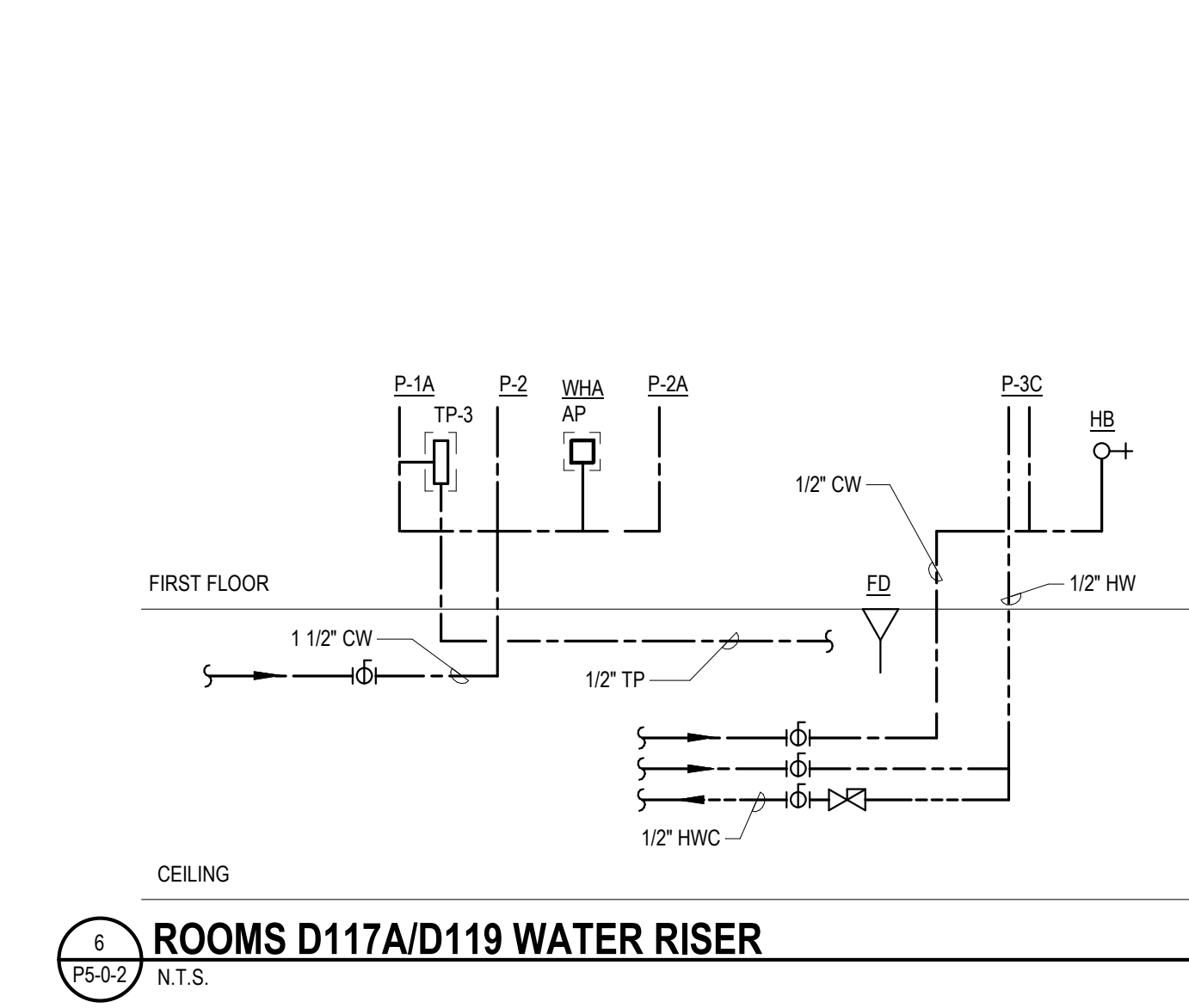
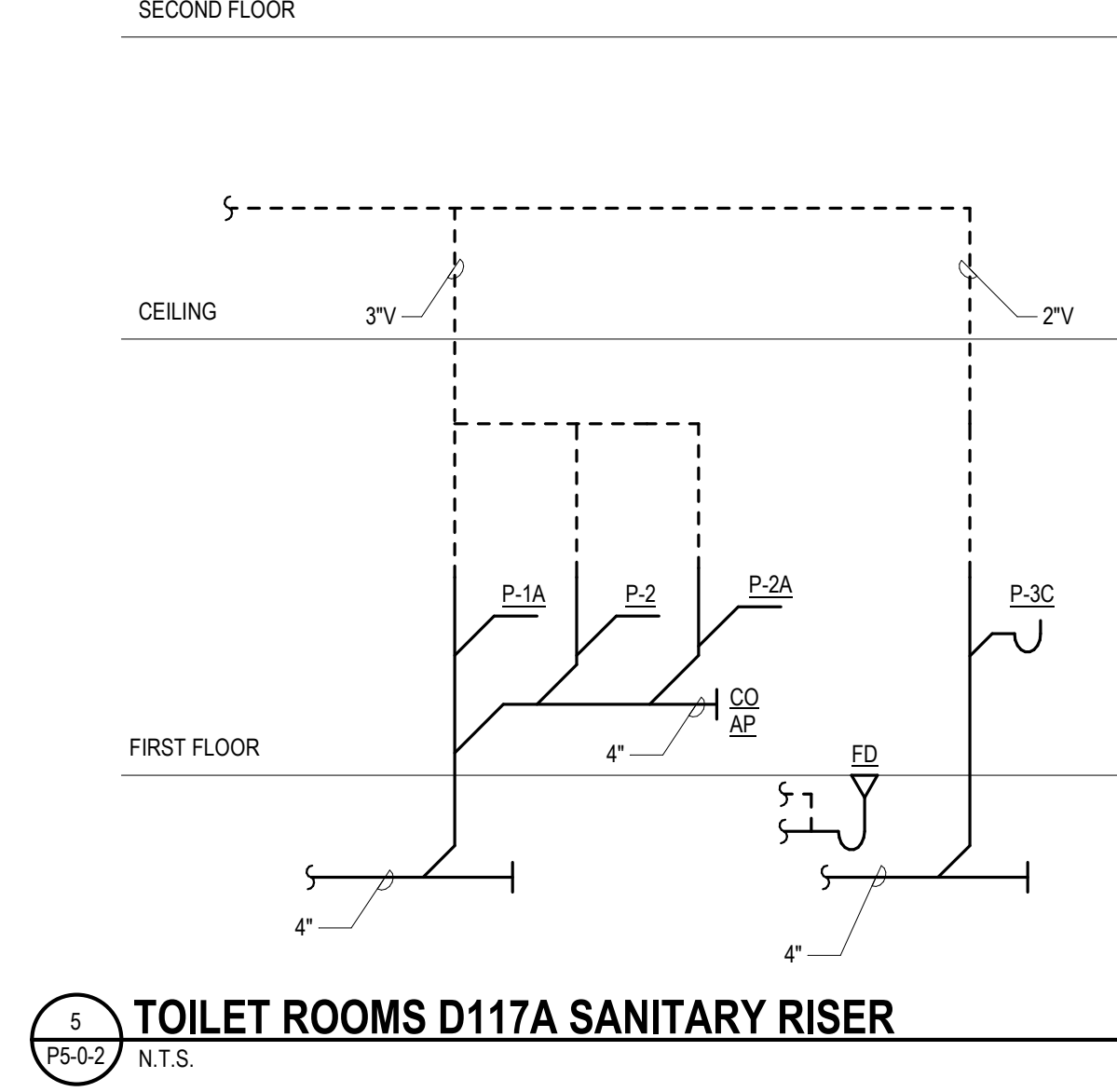
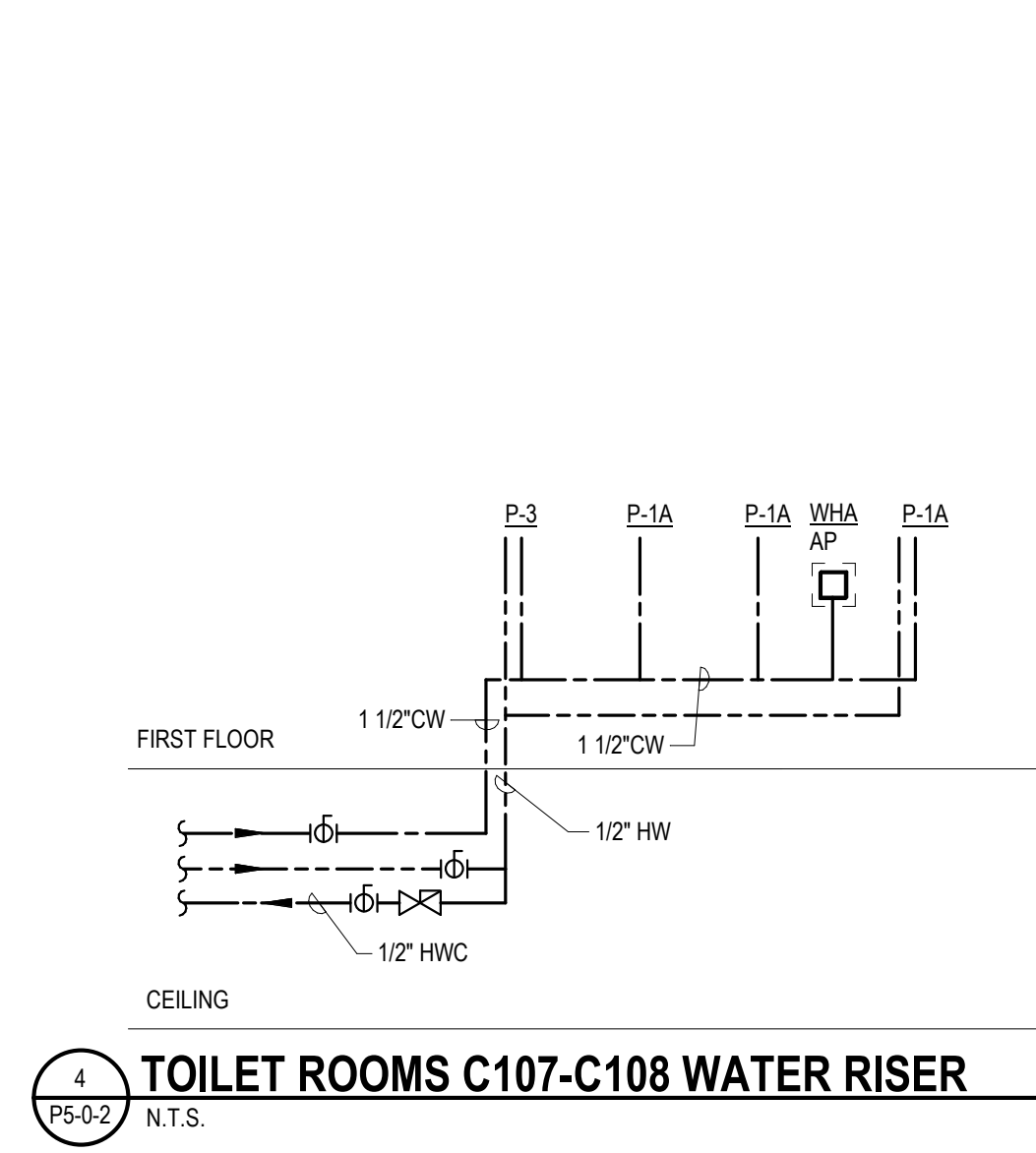
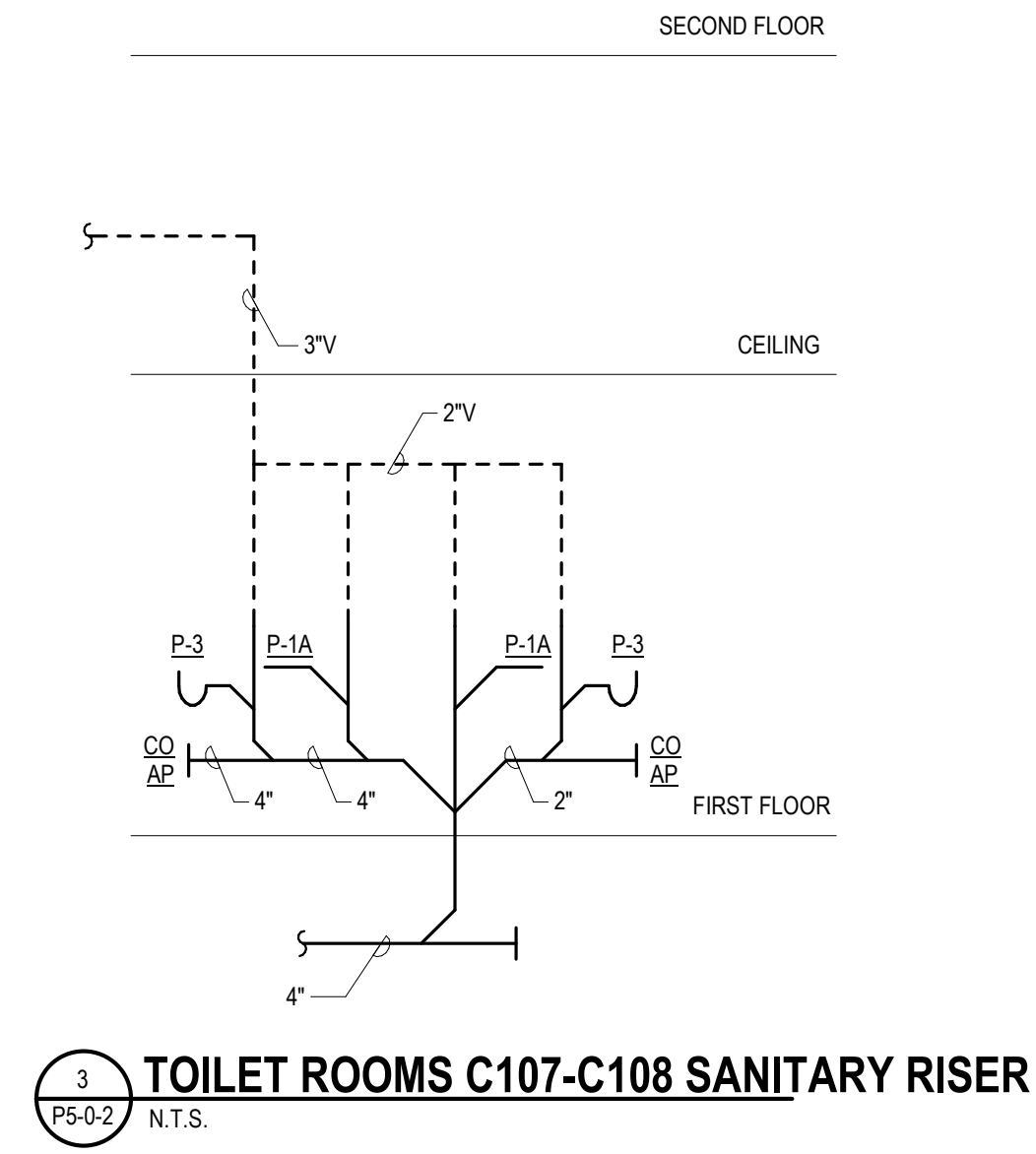
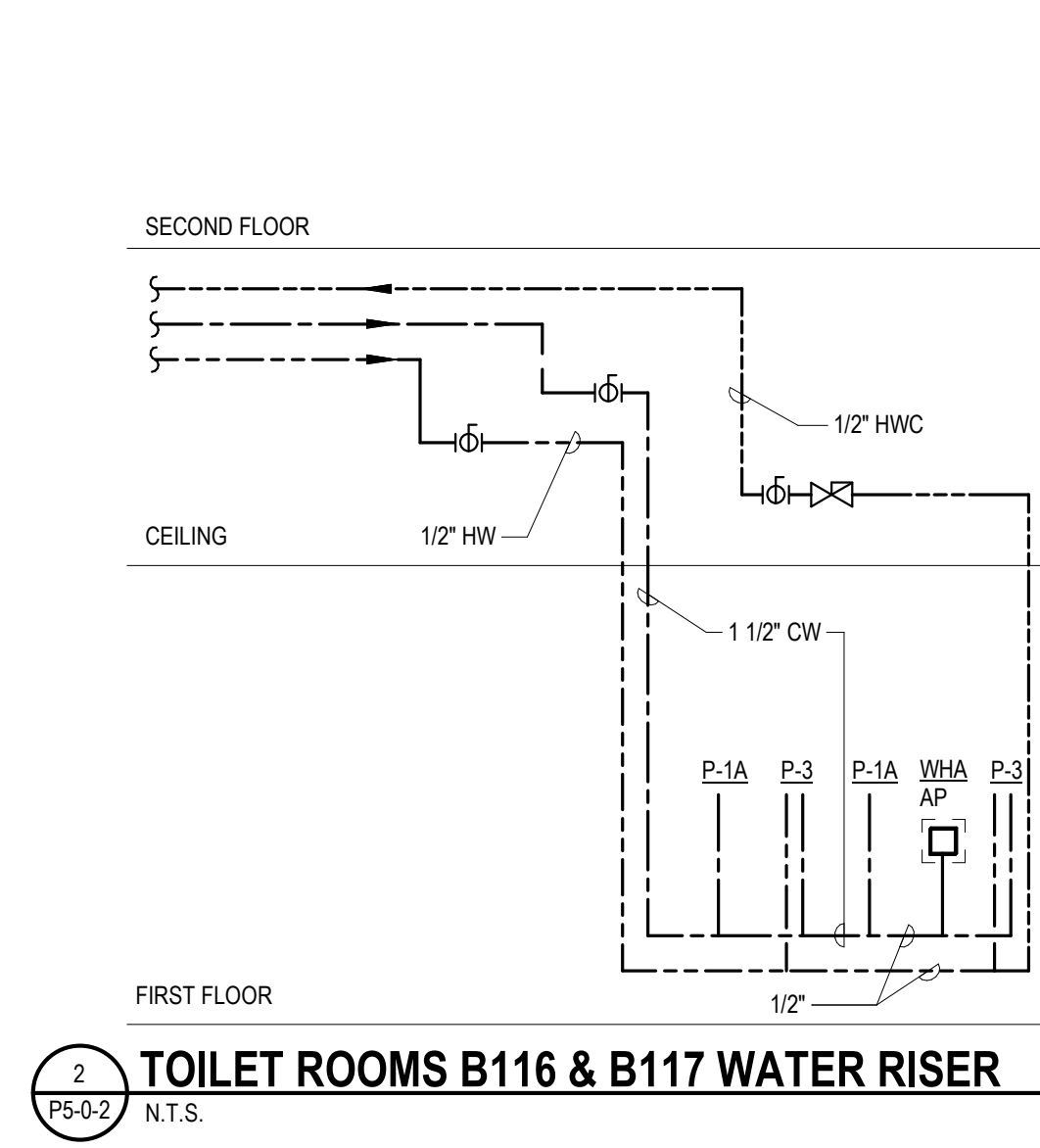
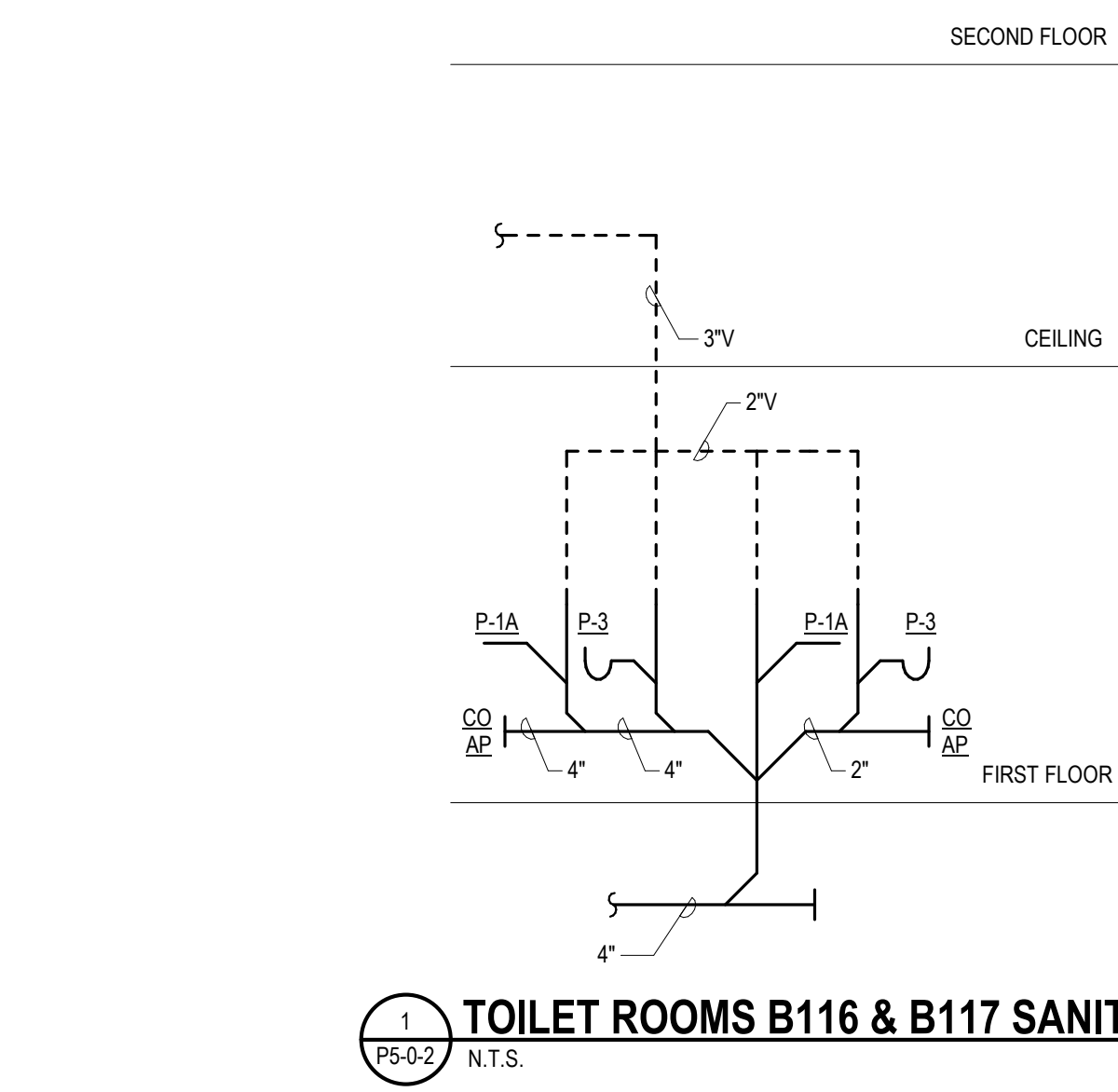
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06074
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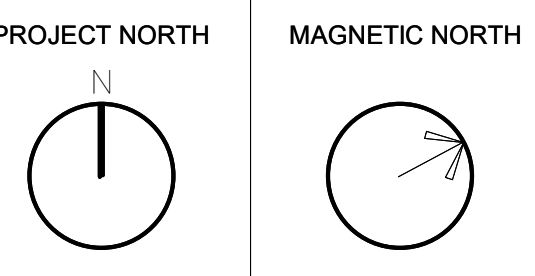
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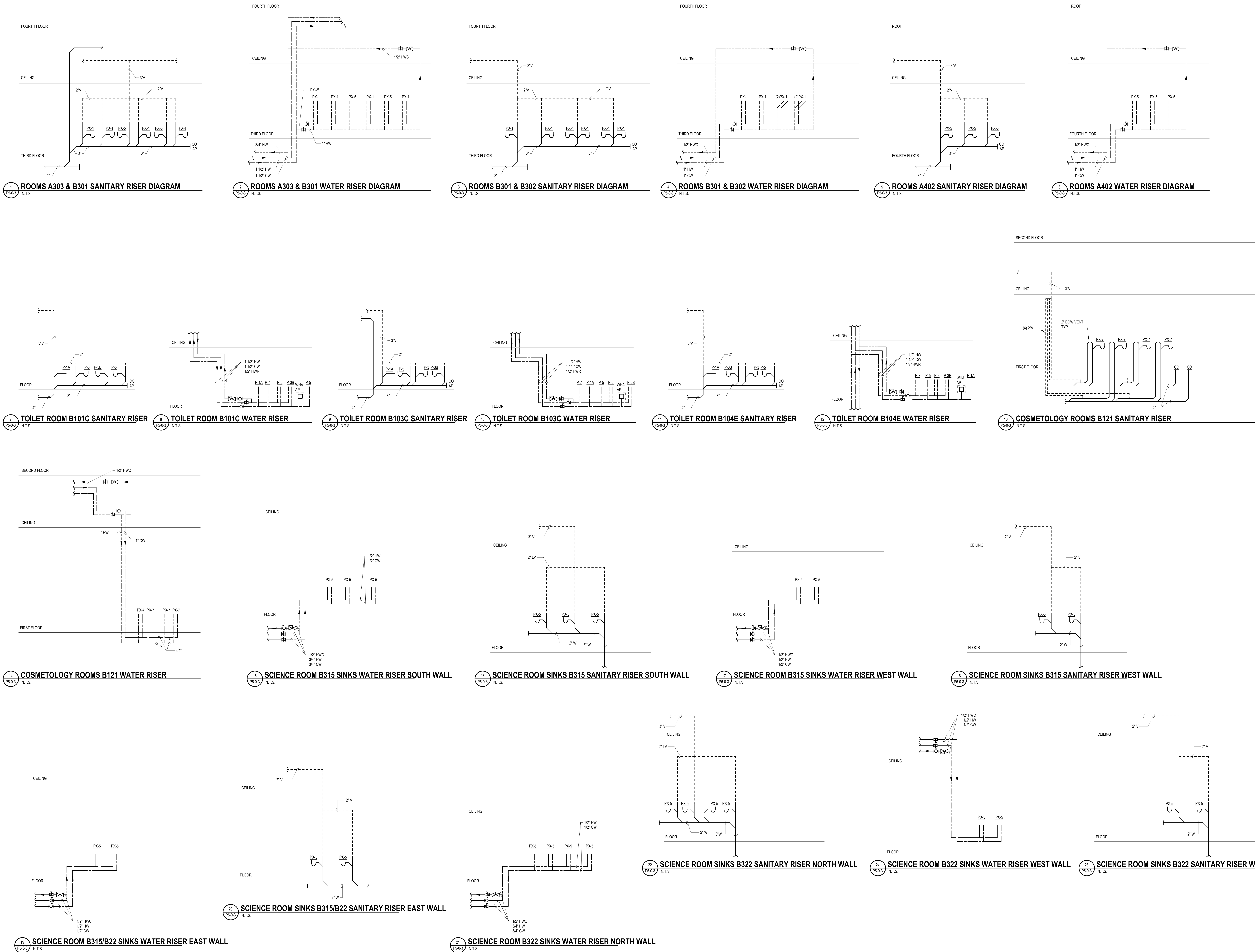
**PLUMBING
RISERS**

Scale: N.T.S.
Job No.: 60-20-409
Drawn By: DRA
Date: August 28th, 2023

P5-0-2

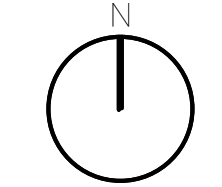
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Metropolitan
Regional
Vocational High School**

Wakefield, MA 01880

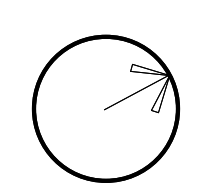
**BID SET**

August 28th, 2023

PROJECT NORTH



MAGNETIC NORTH

**PLUMBING
RISERS**

Scale: N.T.S.

Job No.: 60-20-409

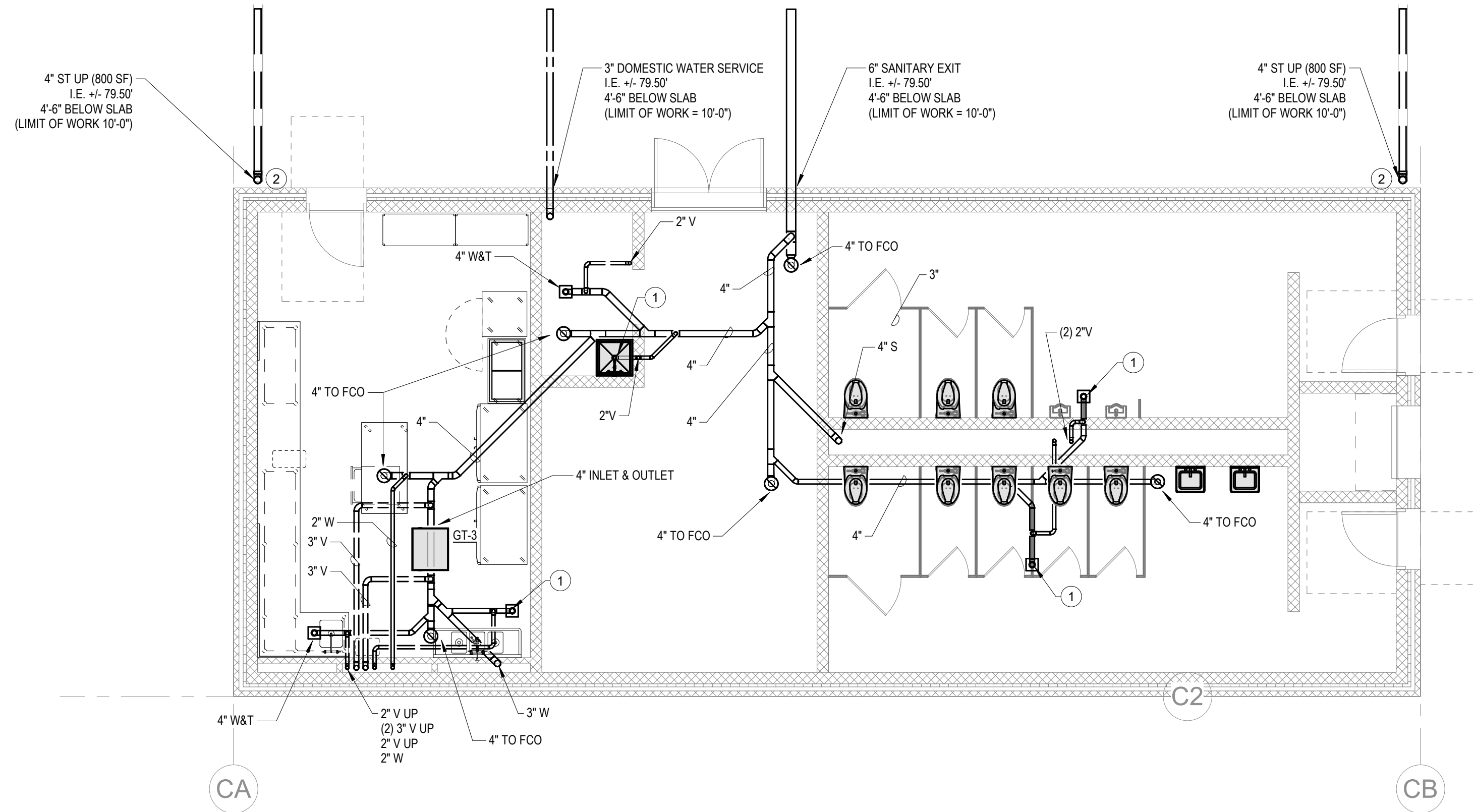
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Date: August 28th, 2023

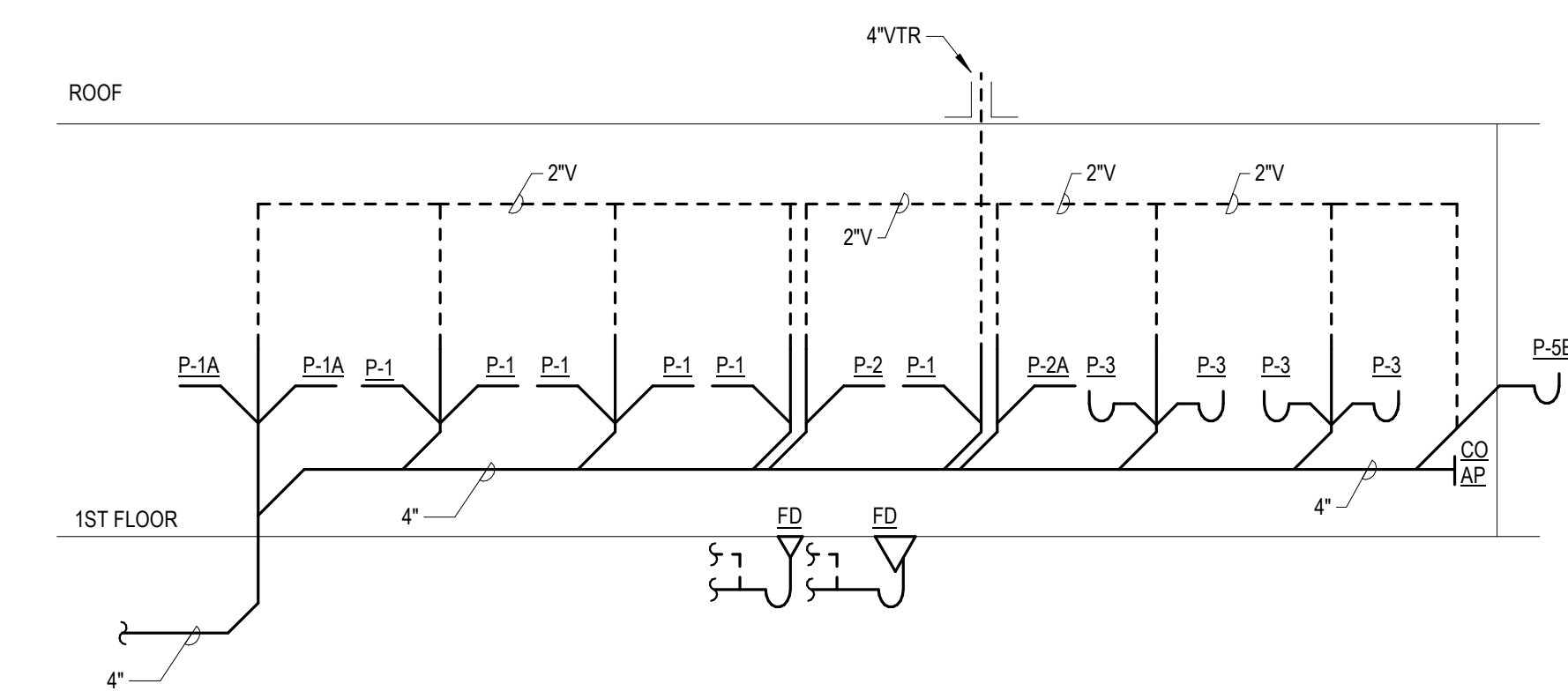
P5-0-3

CONCESSIONS EQUIPMENT PLUMBING FIXTURE SCHEDULE									
ITEM	QTY	DESCRIPTION	CW	HW	G	W	HW	COMMENTS	
J07	1	THREE-COMPARTMENT SINK W/ PRE-RINSE SPRAY	1/2"	1/2"		(3) 2"		W TO GREASE INTERCEPTOR. ADD ADDITIONAL 1/2" CW FOR PRE-RINSE SPRAY	
J08	1	HAND SINK WITH FAUCET	1/2"	1/2"		1-1/2"		REQUIRES WALL BLOCKING BY GC IN NON-MASONRY WALLS	
J11	1	CONCESSIONS TABLE WITH SINK	1/2"	1/2"			2"	W TO FLOOR SINK	

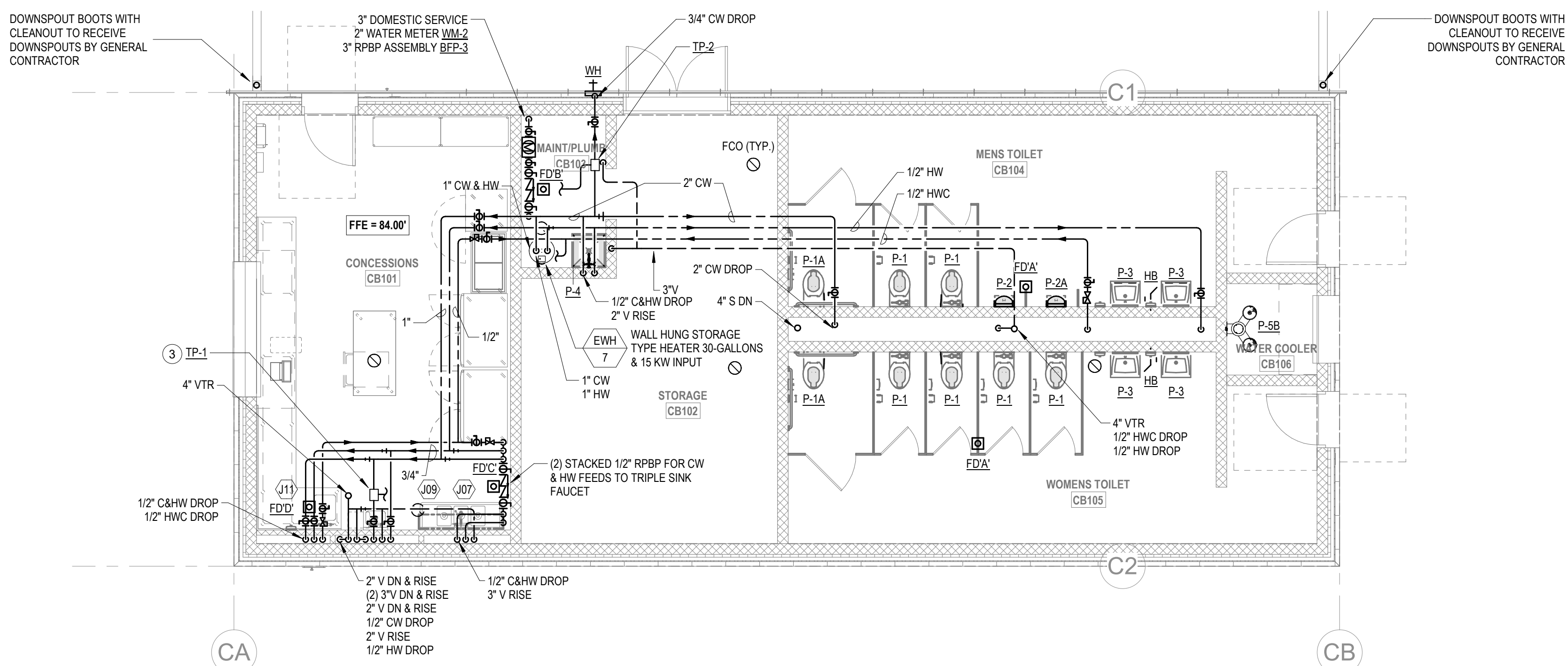
- KEY NOTES:
- 1" W&T
 - PROVIDE DOWNSPOUT BOOT DB-1 TO RECEIVE GUTTER. GUTTER SYSTEM BY GC.
 - EXTEND TRAP PRIMER LINE TO FDC.



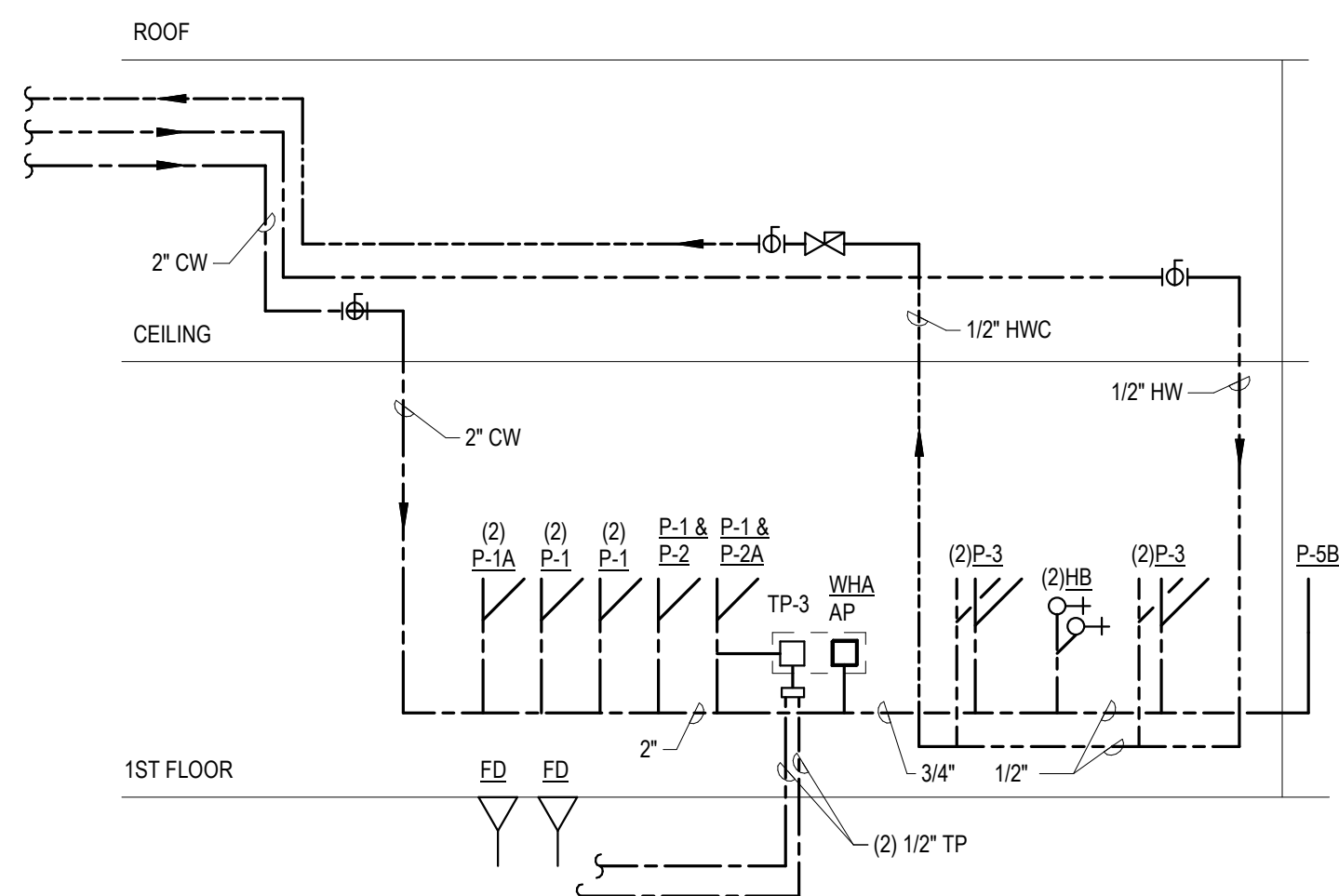
2 PLUMBING - CONCESSIONS BELOW SLAB
PC-1-1 3/16" = 1'-0"



3 TOILET ROOMS CB104-CB105 SANITARY RISER
N.T.S.



1 PLUMBING - CONCESSIONS FLOOR LEVEL PLAN
PC-1-1 3/16" = 1'-0"



4 TOILET ROOMS CB104-CB105 WATER RISER
N.T.S.

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Studio 205
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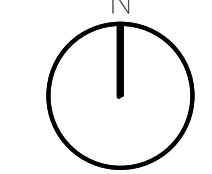
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BALA
ENGINEERS

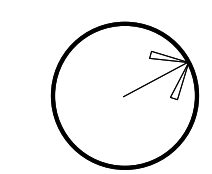
BID SET

August 28th, 2023

PROJECT NORTH



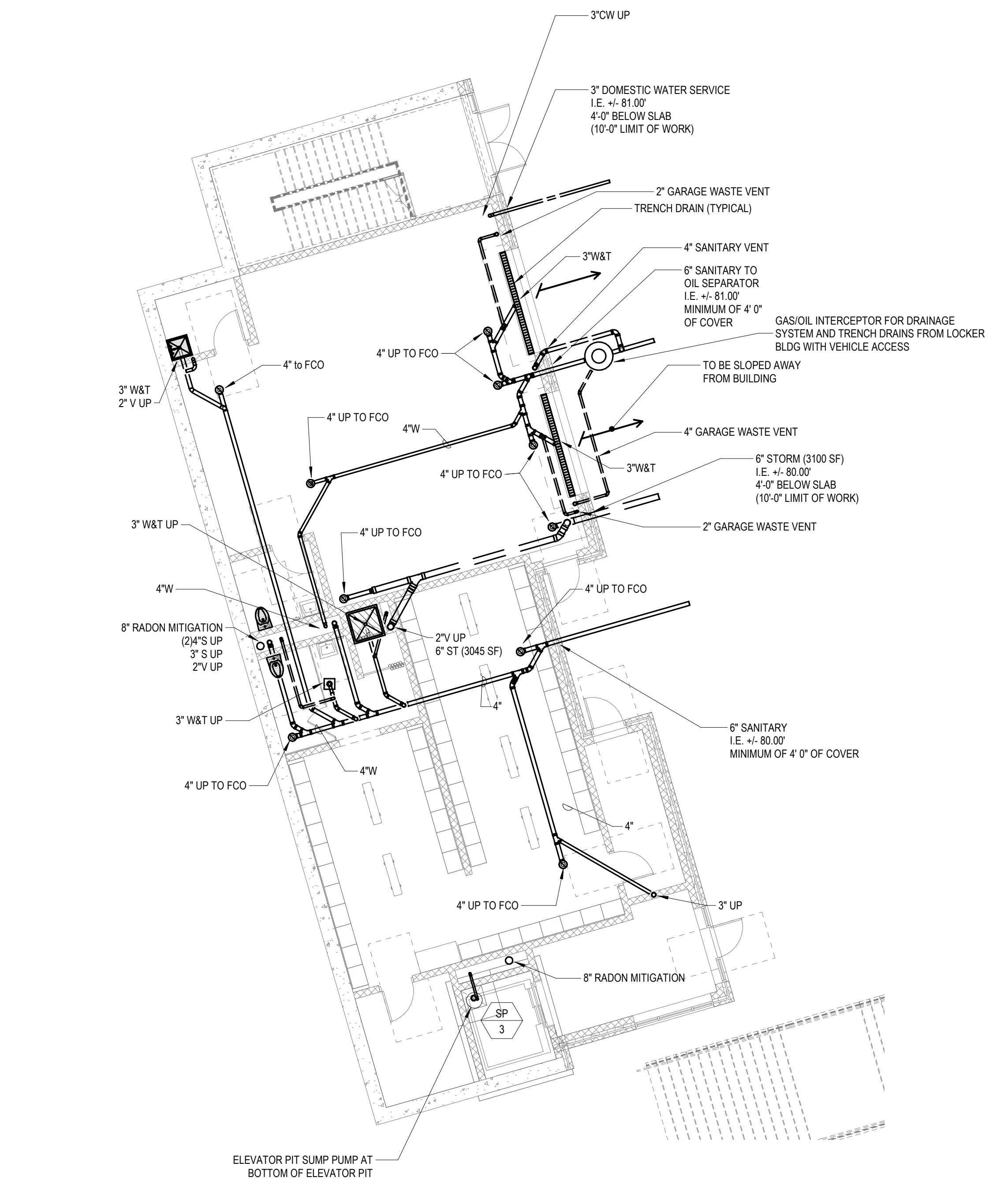
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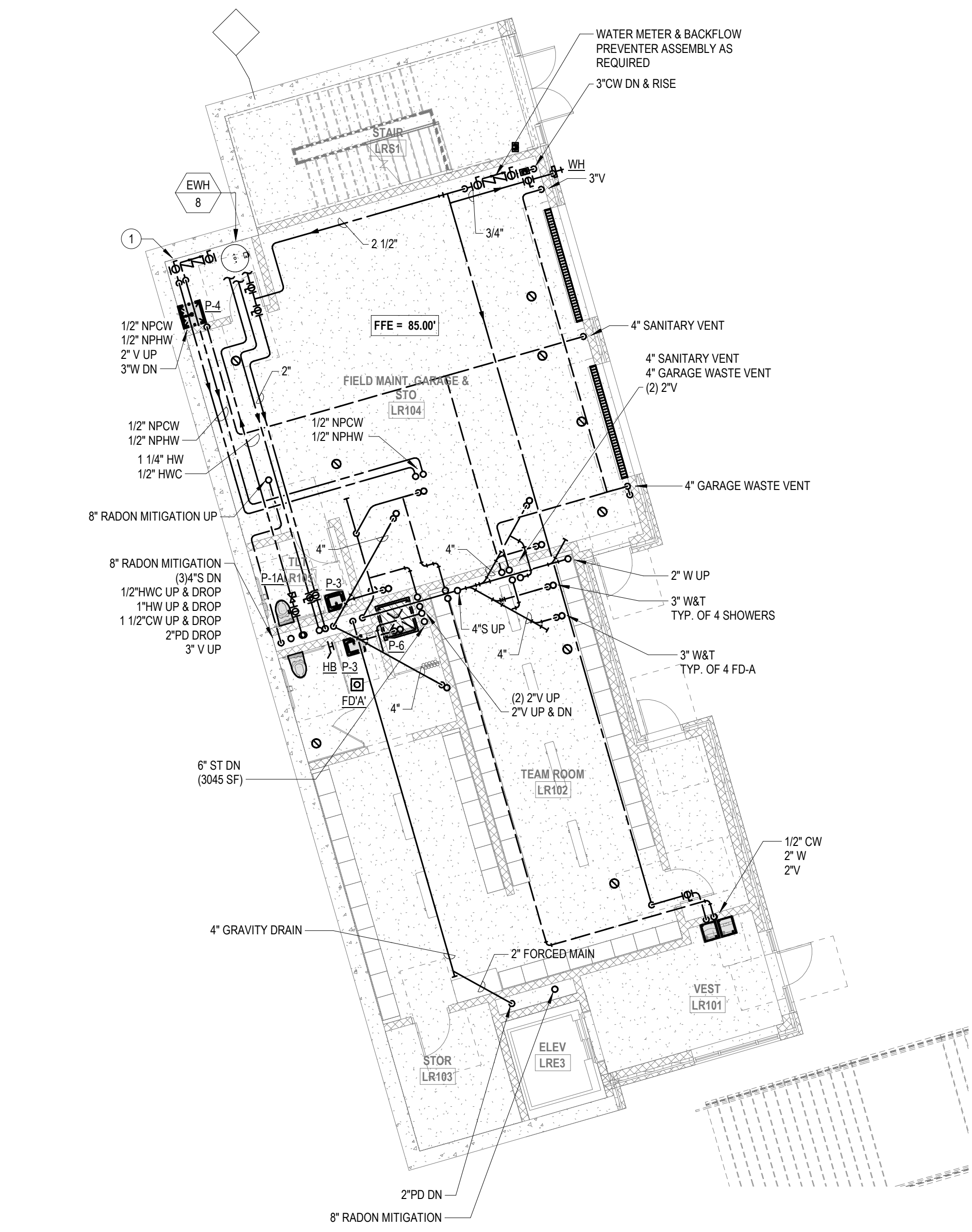
PLUMBING
CONCESSIONS
FLOOR LEVEL
PLAN

Scale: As Indicated
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

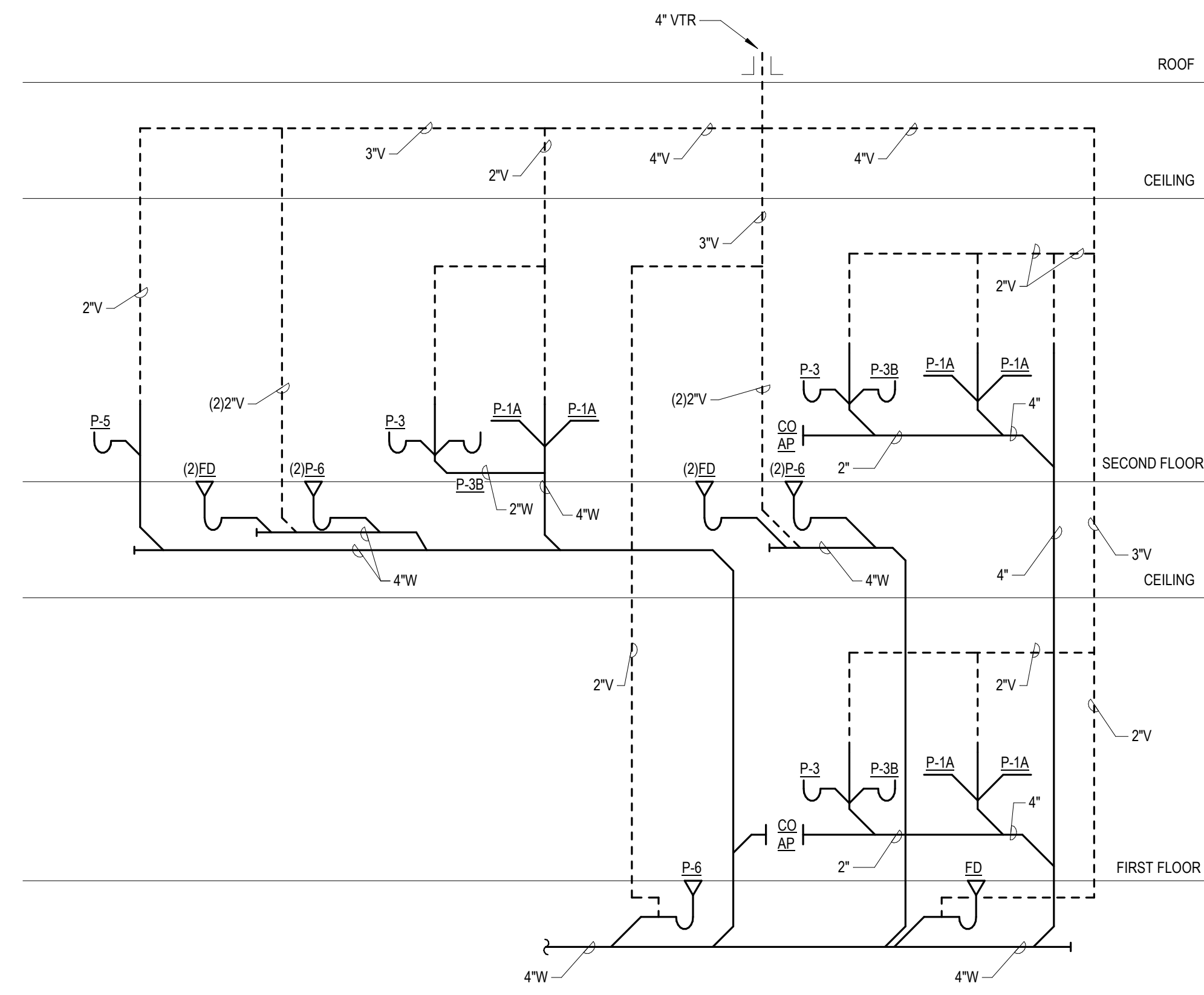
PC-1-1



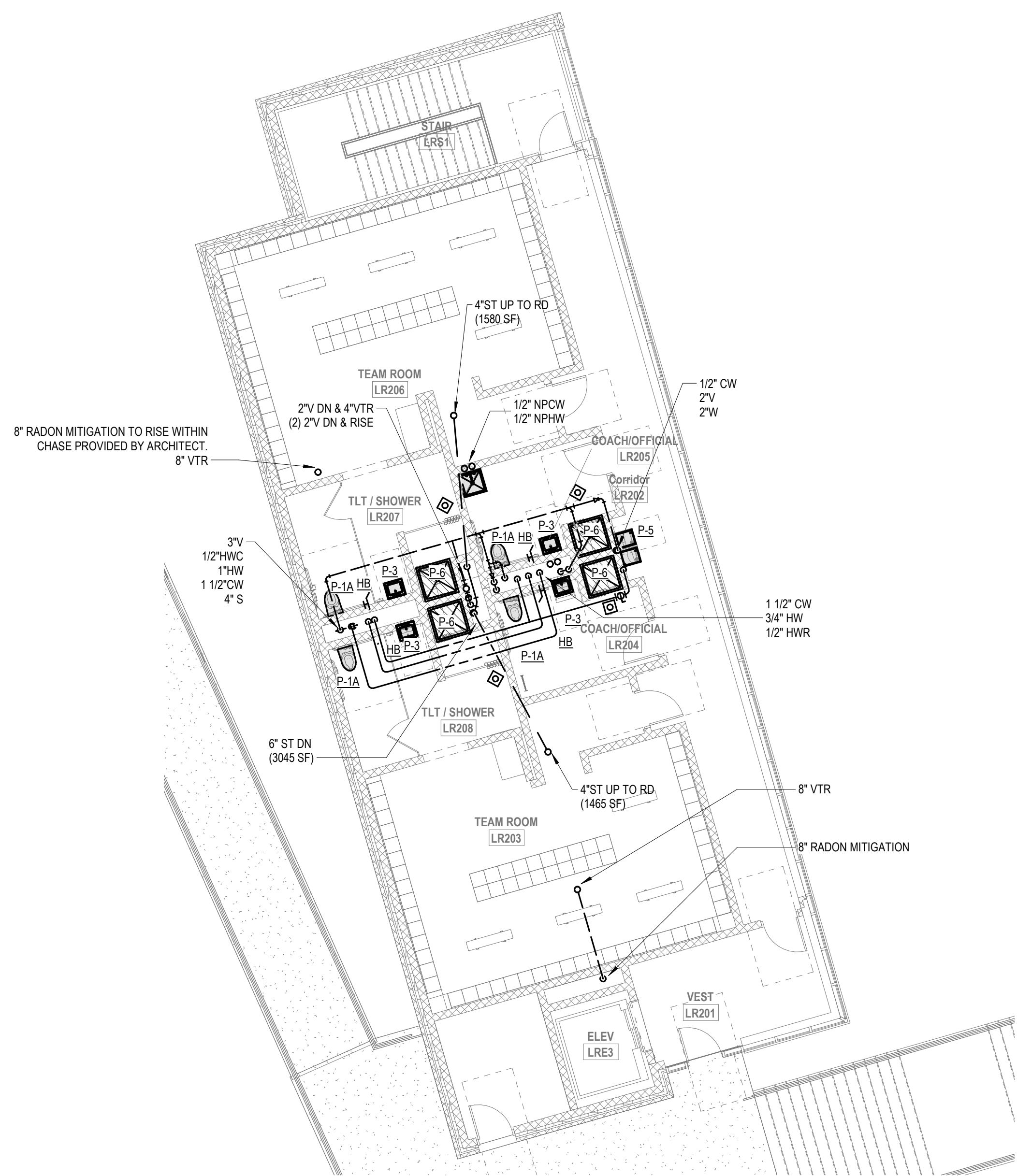
3 PLUMBING Locker Building Below Slab
1/8" = 1'-0"



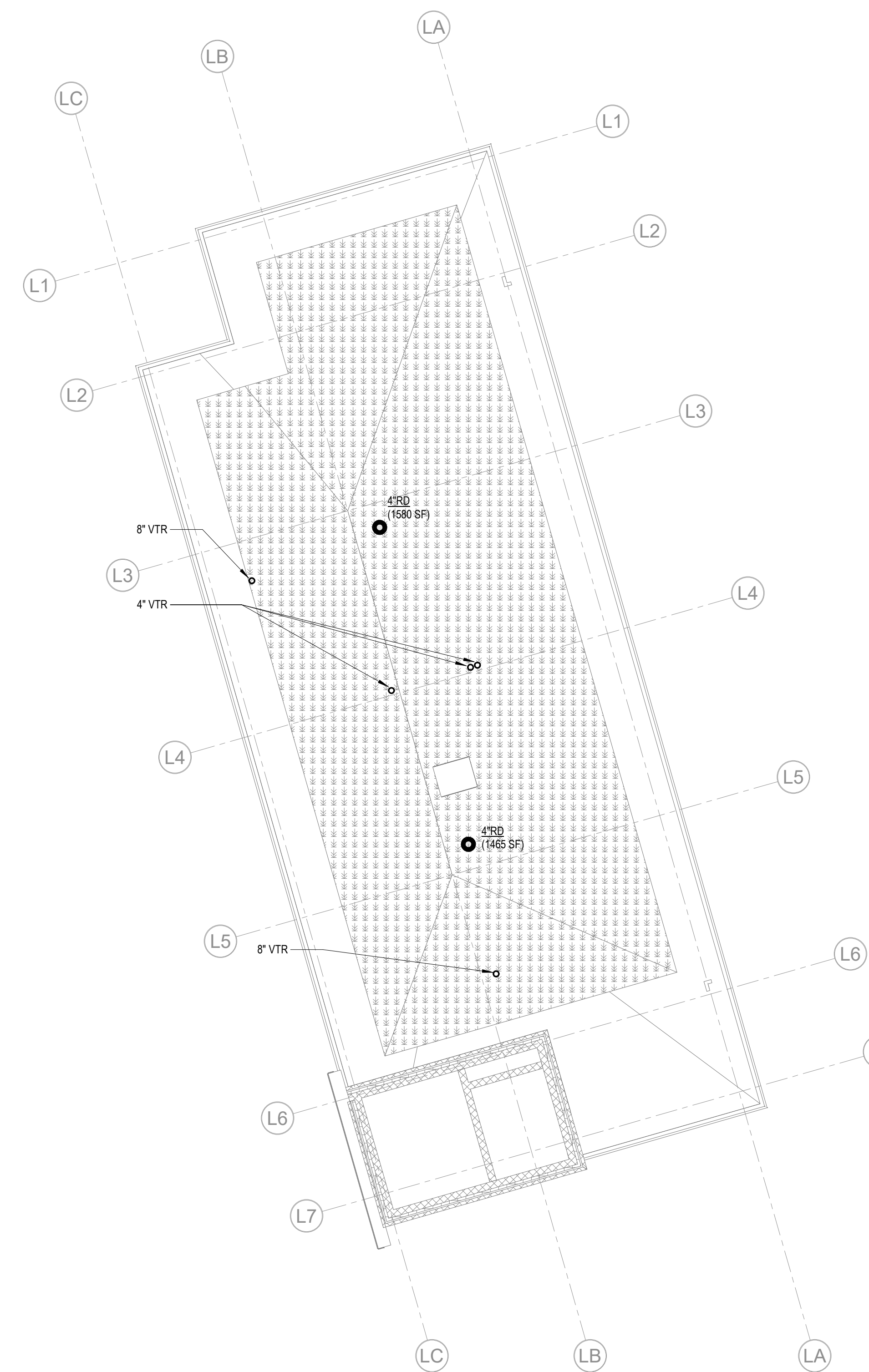
1 PLUMBING Locker Building First Floor
1/8" = 1'-0"



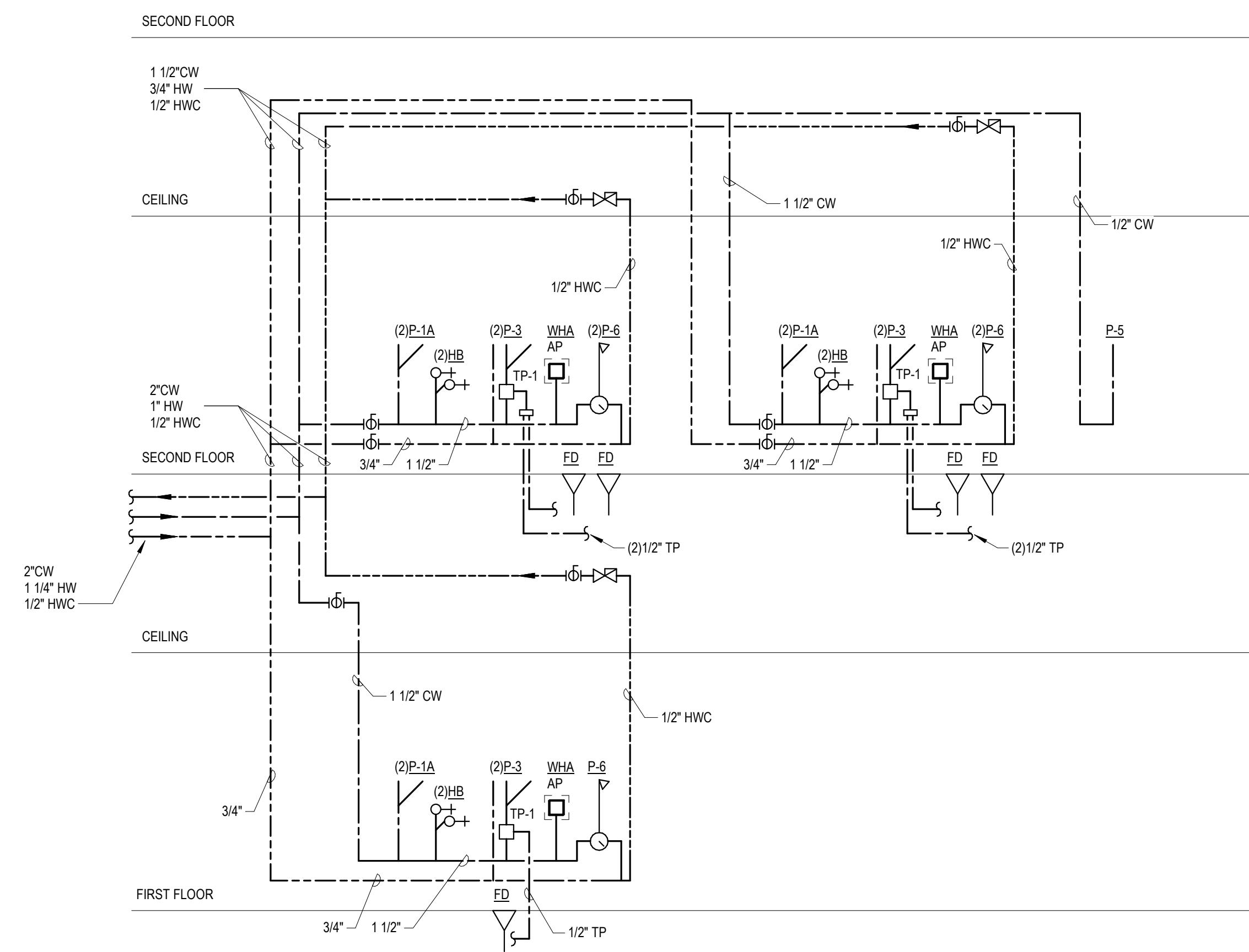
6 LOCKER BLDG RESTROOM SANITARY RISER
N.T.S.



2 PLUMBING Locker Building Second Level
1/8" = 1'-0"



4 PLUMBING Locker Building Roof
1/8" = 1'-0"



6 LOCKER BLDG RESTROOM WATER RISER
N.T.S.

GENERAL NOTE:
THE SCOPE OF WORK SHOWN ON THIS SHEET IS UNDER BID ALTERNATE NO. 1.

KEYNOTES:
1 PROVIDE STACKED RPZ 1/2" BACKFLOW PREVENTERS FOR CW & HW TO FEED JANITOR'S SINK. COORDINATE FINAL LOCATION OF RPZ(S) IN THIS CLOSET AS TO FACILITATE DRAINING INTO NEARBY MOP RECEPTOR.

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South Windsor, CT
06074
Tel: 617.984.1700
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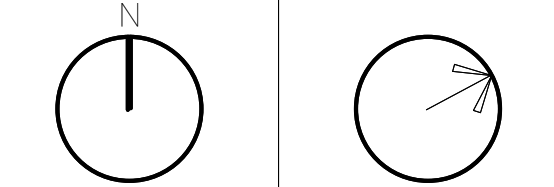
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BID SET

August 28th, 2023

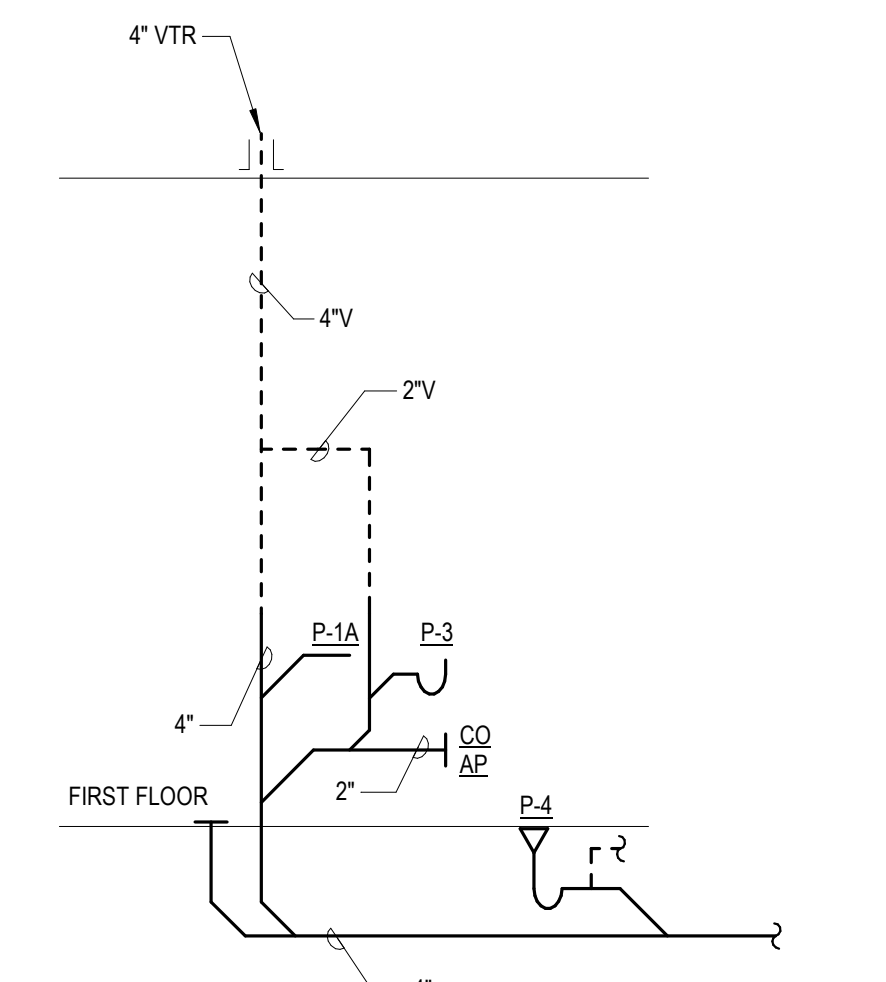
PROJECT NORTH MAGNETIC NORTH



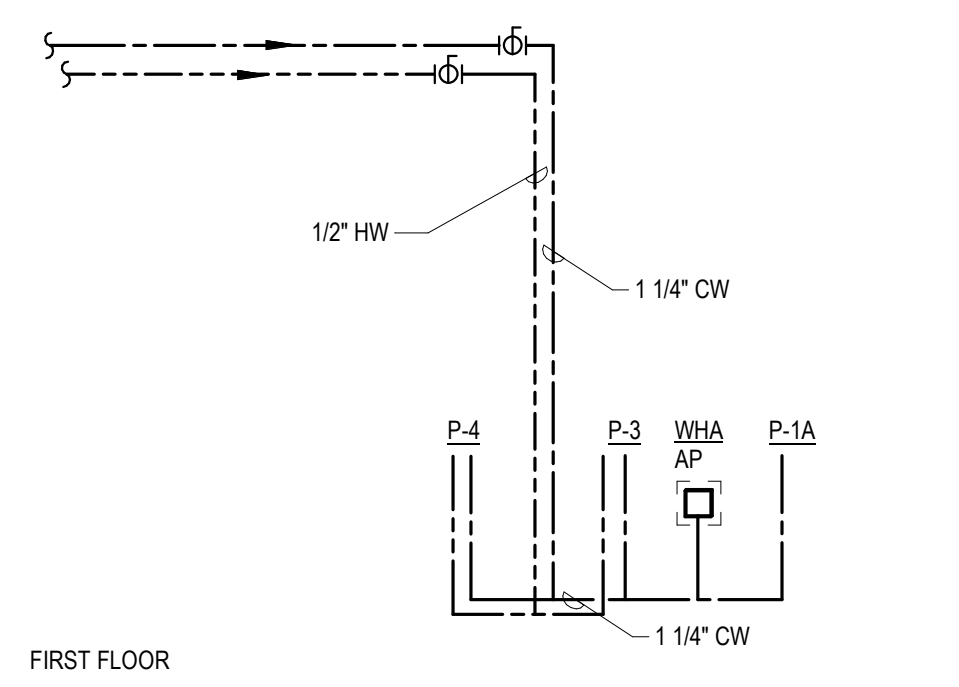
ALTERNATE NO.
1 PLUMBING
LOCKER
BUILDING PLAN

Scale: N.T.S.
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

PL-1-1



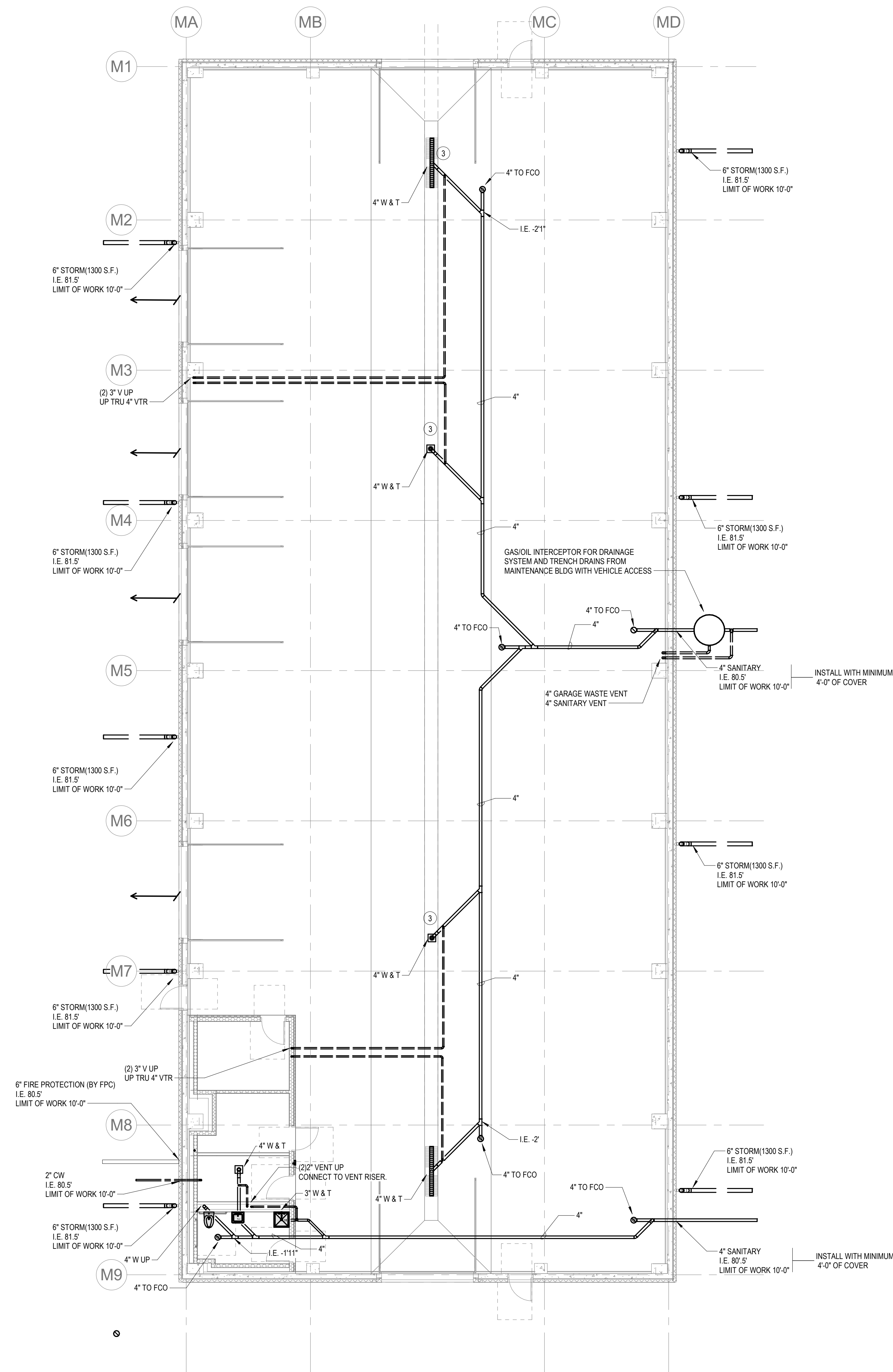
1 TOILET ROOM M003 SANITARY RISER
PM-1-1 N.T.S.



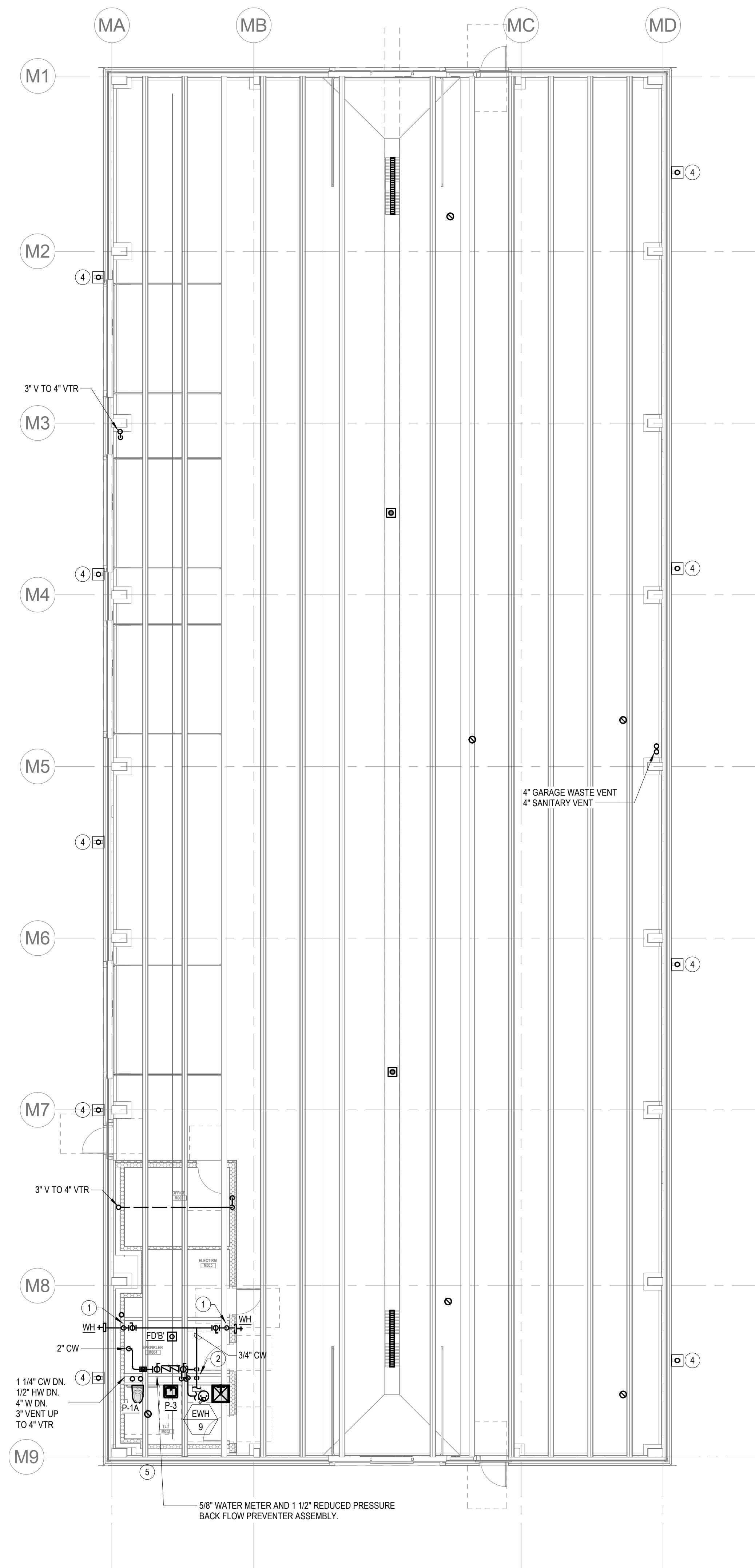
2 TOILET ROOM M003 WATER RISER
PM-1-1 N.T.S.

- KEYNOTES:
- 1 PROVIDE BALL VALVE AT VERTICAL PIPE DROP, SHOWN FOR CLARITY ONLY.
 - 2 PROVIDE FLOW TYPE TRAP PRIMER WITH ACCESS PANEL ON THE FEED TO LAVATORY SINKS. EXTEND PRIMER LINE TO NEAREST FLOOR AND TRENCH DRAIN.
 - 3 PROVIDE TRAP GUARD TO FLOOR/TRENCH DRAIN.
 - 4 PROVIDE DOWNSPOUT BOOTS TO RECEIVE DOWNSPOUT CONNECTIONS. FROM DOWNSPOUT BOOT PROVIDE 6\"/>

GENERAL NOTE:
THE SCOPE OF WORK SHOWN ON THIS SHEET IS UNDER BID ALTERNATE NO. 3.
FINISHED FLOOR ELEVATION AT LOWER LEVEL IS 88.00'



2 PLUMBING T.O. MAINTENANCE BUILDING BELOW SLAB
PM-1-1 1/8\"/>



1 PLUMBING T.O. MAINTENANCE BUILDING SLAB
PM-1-1 1/8\"/>

DRA

Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074
260 Charles Street
Studio 300
Waltham, MA
02453
Planning | Architecture | Interior Design
Tel: 817.984.1700
www.dra-inc.com

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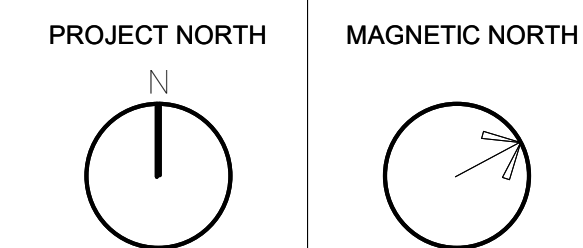
Wakefield, MA 01880

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BALA
ENGINEERS
Bala Consulting and Engineering, Inc.
3000 West 10th Avenue
Suite 100
Denver, CO 80202
Tel: 303.733.1111 Fax: 303.733.1112
www.bala-engineers.com

BID SET

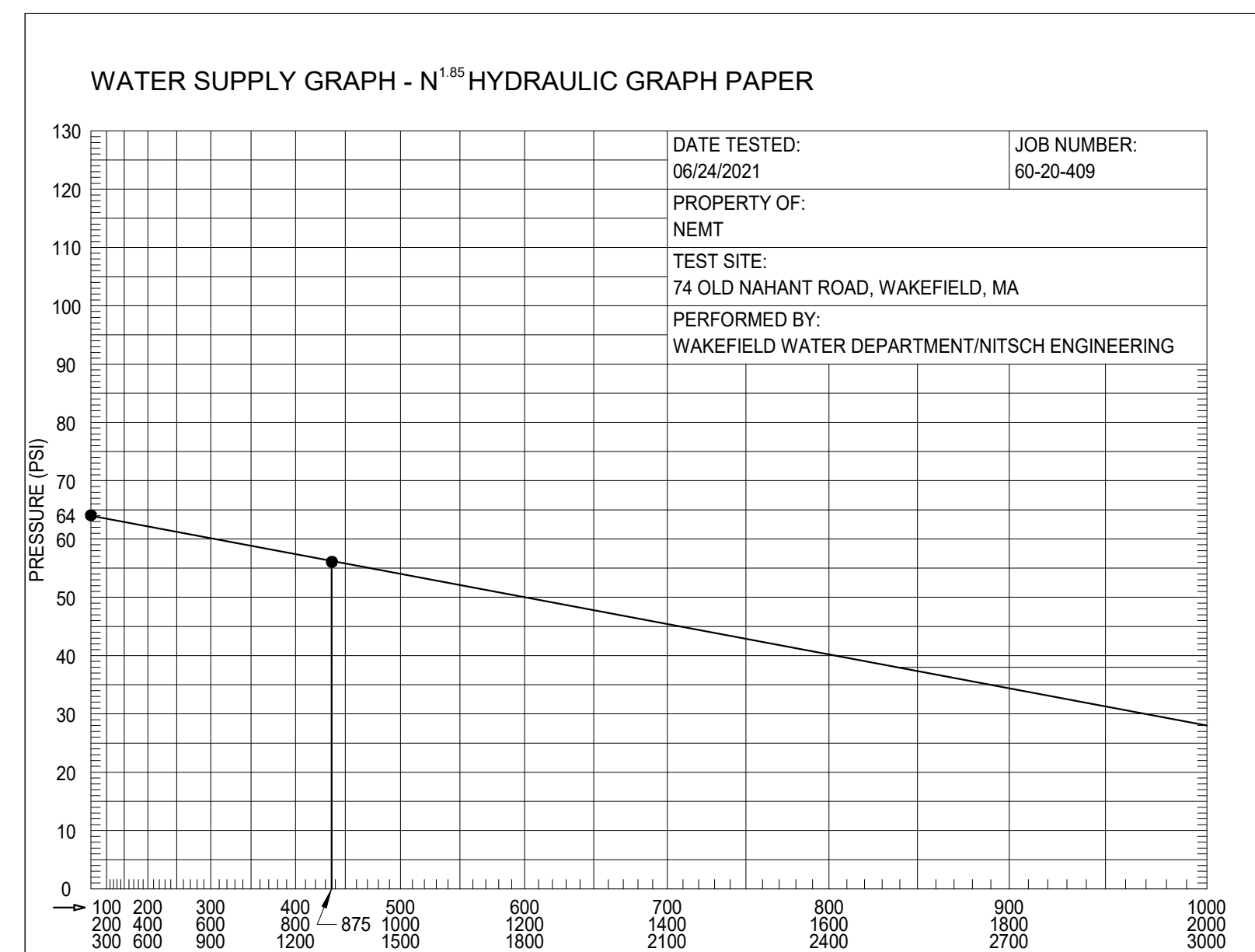
August 28th, 2023



**ALTERNATE NO.
3 PLUMBING
MAINTENANCE
BUILDING PLAN**

Scale: 1/8\"/>

PM-1-1



FIRE PROTECTION SYSTEM REQUIREMENTS AND LIMITATIONS

BASED ON A REVIEW OF THE WATER SUPPLY SYSTEM AND OF THE SYSTEM REQUIREMENTS, THE FOLLOWING IS INTENDED TO ADDRESS SOME OF THE FIRE PROTECTION SYSTEM CONCERNS THAT WERE UNCOVERED DURING THE DESIGN PROCESS.

THE BUILDING SYSTEM CONSISTS OF A COMBINATION OF AUTOMATIC STANDPIPE AND SPRINKLER SYSTEM. AS THE BUILDING HAS NOT BEEN CLASSIFIED AS A HIGH-RISE BUILDING, THE FIRE STANDPIPE SYSTEM HAS BEEN DESIGNED AS A MANUAL WET STANDPIPE SYSTEM, THEREFORE, THE 100-PSI PRESSURE REQUIREMENT TO SATISFY THE NFPA 14 REQUIREMENTS WILL BE SATISFIED UTILIZING A FIRE DEPARTMENT APPARATUS TAKING SUCTION FROM NEARBY FIRE HYDRANTS AND PUMPING INTO THE FIRE STANDPIPE SYSTEM VIA THE FIRE DEPARTMENT INLET CONNECTIONS.

THE BUILDING SYSTEM IS TO BE SUPPLIED WITH (4) MAIN SYSTEM RISERS/ZONES TO BE FED FROM A FIRE PUMP SYSTEM THAT IS REQUIRED TO SATISFY THE SPRINKLER SYSTEM FLOW AND PRESSURE REQUIREMENTS.

BASED ON THE SYSTEM DESIGN CRITERIA TO SATISFY NFPA 13 REQUIREMENTS, THE SPRINKLER SYSTEM DESIGN FOR THE HYDRAULICALLY MOST DEMANDING AREAS OF THE DESIGN IS TO BE BASED ON EXTRA HAZARD GROUP 1 FOR THE METAL FABRICATION AREA AND BASED ON EXTRA HAZARD GROUP 2 FOR THE SPRAY BOOTH AND ASSOCIATED EXHAUST DUCTWORK. FOR BOTH OF THESE AREAS, THE DESIGN AREA IS TO BE LIMITED TO 2,000 SQUARE FEET ON THE BASIS OF HIGH TEMPERATURE SPRINKLERS BEING UTILIZED IN THESE (2) AREAS. THIS IS AS ALLOWED PER 2013, NFPA 13, SECTION 11.2.3.2.6.

THE GREATER SYSTEM DEMANDS (+ 700 GPM +500 GPM OUTSIDE HOSE) FOR EACH OF THESE (2) AREAS TO BE DESIGNED IN ACCORDANCE WITH EXTRA HAZARD CLASSIFICATION HAVE SUCH A GREAT EFFECT ON THE AVAILABLE WATER SUPPLY THAT IS LIMITED, THAT THE FIRE PUMP SYSTEM WILL NEED TO BE PROVIDED WITH A SUCTION CONTROL VALVE AS ALLOWED BY 2013 NFPA 20, 4.15.9. IN ADDITION, THE BACKFLOW PREVENTION DEVICE NORMALLY PROVIDED AT THE MAIN WATER SERVICE ENTRY WILL NEED TO BE PROVIDED ON THE OUTLET SIDE OF THE FIRE PUMP AS ALLOWED BY 2013 NFPA 20, 4.15.6.

THE FIRE PUMP SYSTEM IS BEING DESIGNED IN ACCORDANCE WITH THE FOLLOWING, PER 2013, NFPA 20:

4.6.2.3.1 WHERE THE MAXIMUM FLOW AVAILABLE FROM THE WATER SUPPLY CANNOT PROVIDE A FLOW OF 150 PERCENT OF THE RATED FLOW OF THE PUMP, BUT THE WATER SUPPLY CAN PROVIDE THE GREATER OF 100 PERCENT OF RATED FLOW OR THE MAXIMUM FLOW DEMAND OF THE FIRE PROTECTION SYSTEM(S), THE WATER SUPPLY SHALL BE DEEMED TO BE ADEQUATE. IN THIS CASE, THE MAXIMUM FLOW SHALL BE CONSIDERED THE HIGHEST FLOW THAT THE WATER SUPPLY CAN ACHIEVE.

4.6.2.3.2 WHERE THE WATER SUPPLY CANNOT PROVIDE 150 PERCENT OF THE RATED FLOW OF THE PUMP, A PLACARD SHALL BE PLACED IN THE PUMP ROOM INDICATING THE MINIMUM SUCTION PRESSURE THAT THE FIRE PUMP IS ALLOWED TO BE TESTED AT AND ALSO INDICATING THE REQUIRED FLOW RATE. THE FIRE PROTECTION CONTACTOR SHALL BE RESPONSIBLE TO PROVIDE THE REQUIRED SIGNAGE AS NOTED IN THIS SECTION.

4.6.5.2 WHERE THE WATER SUPPLY CANNOT PROVIDE A FLOW OF 150 PERCENT OF THE RATED FLOW OR THE FLOW DEMAND OF THE FIRE PROTECTION SYSTEM(S), THE HEAD AVAILABLE FROM THE WATER SUPPLY SHALL BE PERMITTED TO BE CALCULATED ON THE BASIS OF THE MAXIMUM FLOW AVAILABLE AS ALLOWED BY 4.6.2.3.1.

THE Suction SIZE OF THE FIRE PUMP SYSTEM HAS BEEN DESIGNED TO COMPLY WITH THE REQUIREMENTS OF 2013 NFPA 20, PARAGRAPH 4.14.3.1. THE Suction SIZE FOR THE PUMP SHALL BE SUCH THAT THE MAXIMUM FLOW AVAILABLE FROM THE WATER SUPPLY AS DISCUSSED IN 4.6.2.3.1 (INCLUDED ABOVE), THE GAUGE PRESSURE AT THE PUMP SUCTION FLANGE SHALL BE 0 PSI OR HIGHER. IT IS TO BE NOTED THAT PER COMPLETED CALCULATIONS THE Suction PRESSURE FOR EACH OF THE (2) HYDRAULICALLY MOST DEMANDING CALCULATIONS HAS BEEN CALCULATED TO BE GREATER THAN 0 PSI AND TO BE APPROXIMATELY 7 PSI.

DUE TO THE SERIOUSNESS OF THE WATER SUPPLY ISSUE, IT IS REQUIRED THAT THE NEW WATER SUPPLY SYSTEM, INCLUDING THE ASSOCIATED FIRE HYDRANTS, BE INSTALLED AS EARLY AS PART OF THE PROJECT CONSTRUCTION PHASE. UPON COMPLETION OF THE SITE WATER SUPPLY SYSTEM INSTALLATION, THE FIRE PROTECTION CONTRACTOR SHALL OBTAIN/PERFORM NEW WATER FLOW TEST DATA FOR USE AS THE BASIS OF THE HYDRAULIC CALCULATIONS TO SIZE THE BUILDING FIRE PROTECTION SYSTEMS AND BE ABLE TO DEVELOP THE FIRE PROTECTION WORKING DRAWINGS.

HYDRANT FLOW TEST DATA #1			
STATIC PRESSURE	82	PSI	
RESIDUAL PRESSURE	87	PSI	
FLOW	676	GPM	
TESTED ON TEST PERFORMED @ 74 OLD NAHANT RD			06/24/2021
HYDRANT FLOW TEST DATA #2			
STATIC PRESSURE	64	PSI	
RESIDUAL PRESSURE	56	PSI	
FLOW	976	GPM	
TESTED ON TEST PERFORMED @ NEMT PARKING LOT			06/24/2021
WATER FLOW TEST REQUIREMENTS: UPON COMPLETION OF THE WATER SUPPLY DISTRIBUTION & INSTALLATION OF THE NEW SITE FIRE HYDRANTS, THE FIRE PROTECTION CONTRACTOR IN COORDINATION WITH THE CITY AND WATER DEPARTMENTS SHALL OBTAIN/PERFORM NEW WATER FLOW TESTS. THE RESULTS OF THESE TESTS SHALL BE USED AS THE BASIS TO SET THE FINAL HYDRAULIC CALCULATIONS. SYSTEM SIZING AND FIRE PUMP FLOW SELECTION AND CALCULATIONS COMPLETED BY S&A ARE PRELIMINARY ONLY AS THEY ARE BASED ON WATER FLOW TESTS CONDUCTED UTILIZING DATA FROM INCOMPLETE WATER SUPPLY SYSTEM.			
DESIGN CRITERIA			
LIGHT HAZARD OCCUPANCY FOR OFFICE TYPE SPACES & SIMILAR			
DENSITY 0.10 GPM/SQ.FT. / 1000 SQ.FT. SPRINKLER SPACING NOT TO EXCEED 225 SQ.FT			
MINIMUM 10 GPM OUTSIDE HOSE ALLOWANCE			
ORDINARY HAZARD GROUP I OCCUPANCY FOR STORAGE AREAS, RECEIVING AND SHIPPING STATIONS, STORAGE INCINERATORS WITH GAS FIRED EQUIPMENTS AND SIMILAR AREAS.			
DENSITY 0.20 GPM/SQ.FT. / 1500 SQ.FT. SPRINKLER SPACING NOT TO EXCEED 130 SQ.FT			
MINIMUM 25 GPM OUTSIDE HOSE ALLOWANCE			
ORDINARY HAZARD GROUP I OCCUPANCY FOR MECHANICAL SPACES, KITCHENS, DINING SPACES AND SIMILAR AREAS.			
DENSITY 0.15 GPM/SQ.FT. / 1500 SQ.FT. SPRINKLER SPACING NOT TO EXCEED 130 SQ.FT			
MINIMUM 25 GPM OUTSIDE HOSE ALLOWANCE			
EXTRA HAZARD GROUP I OCCUPANCY FOR PAINT BOOTHS			
DENSITY 0.40 GPM/SQ.FT. / 2000 SQ.FT. SPRINKLER SPACING NOT TO EXCEED 100 SQ.FT			
MINIMUM 50 GPM OUTSIDE HOSE ALLOWANCE			
EXTRA HAZARD GROUP I OCCUPANCY FOR METAL FABRICATION			
DENSITY 0.30 GPM/SQ.FT. / 2000 SQ.FT. SPRINKLER SPACING NOT TO EXCEED 100 SQ.FT			
MINIMUM 50 GPM OUTSIDE HOSE ALLOWANCE			

GENERAL NOTES

- [illegible]

FIRE PROTECTION GENERAL NOTES

1. THE WORK SHALL BE PERFORMED USING "THE METHOD B SHARED DESIGN" PROCESS. FROM A "FULLY ENGINEERED" DESIGN SET OF DOCUMENTS WHICH OUTLINES THE SYSTEM AND REQUIRES THE FIRE PROTECTION CONTRACTOR TO PROVIDE THE SPECIFIC DETAILS FOR THE PROJECT. THE DESIGN SHALL BE BASED ON THE FOLLOWING CRITERIA AS SET FORTH IN THE BID DOCUMENTS. WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE MASSACHUSETTS BUILDING CODE, NFPA, THE INSURERS INTERPRETATIONS OF NFPA AND THE LOCAL AUTHORITY FIRE PROTECTION WORKING DRAWINGS STAMPED BY A REGISTERED PROFESSIONAL FIRE PROTECTION ENGINEER. THE CONTRACTOR SHALL COORDINATE ALL SPRINKLER INSTALLATION WITH ALL OTHER TRADES. SHALL BE DEVELOPED BY THE FIRE PROTECTION CONTRACTOR UPON PROJECT COMPLETION, THESE DRAWINGS SHALL BECOME THE PROPERTY OF THE OWNER.
2. SEE ALL DRAWINGS AND SPECIFICATIONS FOR STANDPIPE AND SPRINKLER SYSTEM HYDRAULIC DESIGN INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING SPRINKLER LOCATION DATA AND THE LOCAL DEPARTMENT HOSE VALVE CONNECTIONS ARE INDICATED ON THE PLANS FOR SYSTEM DESIGN INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXISTING CONDITIONS OF EACH TYPE OF OCCUPANCY FOR EACH SPRINKLER ZONE AND SHALL PROVIDE HYDRAULIC CALCULATIONS FOR THE MOST ADVERSE CASE. THE CONTRACTOR SHALL SUBMIT THE HYDRAULIC CALCULATIONS TO THE LOCAL AUTHORITY FOR REVIEW AND APPROVAL. THE CONTRACTOR SHALL SUBMIT THE HYDRAULIC CALCULATIONS SHALL BE SUBMITTED AND APPROVED BY AN ILLIAPARTS OFFICE HEREIN REFER TO THE REQUIREMENT OF FIRE PROTECTION EQUIPMENT FABRICATION AND INSTALLATION OF ANY FIRE PROTECTION SYSTEM.
3. CONTRACTOR SHALL PROVIDE FIRE WATER SERVICE RESTRAINTS AND THRUST BLOCKS AS REQUIRED.
4. STANDPIPE SYSTEMS SHALL BE DESIGNED AND INSTALLED IN STRICT ACCORDANCE WITH NFPA-14, ALL APPLICABLE CODES AND THE AUTHORITY AWKING JURISDICTION. FIRE PROTECTION HOSE CONNECTIONS SHALL MEET THE REQUIREMENTS OF THE LOCAL FIRE MARSHAL AND THE AUTHORITY MAKING JURISDICTION.
5. ALL DEDICATED WATER SUPPLY WORK SITE, INSIDE OF THE PROPERTY LINE, INCLUDING CONNECTION TO THE MAIN WATER SUPPLY, SHALL BE PROVIDED BY THE FIRE PROTECTION SYSTEM PIPE, FITTINGS, HANGARS, ETC. SHALL BE INSTALLED UNDER THIS CONTRACT.
6. ALL EXPOSED PIPING AND PIPING ABOVE THE CEILING SHALL BE INSTALLED AS CLOSE AS PRACTICAL TO THE UNDERSIDE OF STRUCTURAL MEMBERS OR TO WITHIN ONE FOOT OF THE FLOOR / ROOF DECK ABOVE WHEREVER POSSIBLE.
7. PROVIDE 2" DRAIN FROM EACH SPRINKLER ZONE CONTROL VALVE ASSEMBLY AND EXTEND TO 20' X 20" DRAIN RISER, AS APPLICABLE. DISCHARGING TO EXTERIOR GRADE. AN APPROVED DRAINAGE SPECIALTY SIZE TO ACCOMMODATE THE ANTICIPATED DEMAND OR AS SHOWN ON THE DRAWINGS.
8. FINAL LOCATION OF EXTERIOR FIRE PROTECTION CONNECTIONS SHALL BE APPROVED BY THE LOCAL FIRE DEPARTMENT.
9. PROVIDE ALL NEW SPRINKLER SYSTEM COMPONENTS, REFURBISHING, TESTING, CERTIFICATION, AND ANY OTHER WORK REQUIRED TO ENSURE A COMPLETELY APPROVED AND OPERATIONAL SYSTEM. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SPACE FOR NEW PIPING CUT INS AS REQUIRED TO SUIT NEW SPRINKLER LOCATIONS.
10. FIELD COORDINATE ALL FIRE PROTECTION PIPING AND EQUIPMENT LOCATIONS AND/OR MODIFICATIONS WITH THE GENERAL, ELECTRICAL, AND MECHANICAL CONTRACTORS PRIOR TO COMMENCEMENT OF WORK TO ELIMINATE FIELD CONFLICTS. ALL SPECIAL REQUIREMENTS SHALL BE COORDINATED WITH LIGHTS, FIXTURES, DUCTWORK, DIFFUSERS, PIPING, EQUIPMENT, ETC.
11. THE FIRE PROTECTION CONTRACTOR SHALL CONFIRM LOGGING TO BE INSTALLED FOR COORDINATION OF LOCATIONS, SIZE, AND MOUNTING HEIGHTS. THE CONTRACTOR SHALL COORDINATE FINAL SPRINKLER HEAD LOCATION WITH THE GENERAL CONTRACTOR. THE CONTRACTOR SHALL COORDINATE THE ELECTRICAL CONTRACTOR TO ENSURE ALL AREAS ARE COVERED IN ACCORDANCE WITH NFPA STANDARDS.
12. COORDINATE ALL LOCATIONS AND MOUNTING HEIGHTS OF FIRE PROTECTION DEVICES AND APPURTENANCES WITH THE LOCAL AUTHORITY HAVING JURISDICTION, APPLICABLE ADA REQUIREMENTS AND ALL TRADE CONTRACTORS.
13. HYDRAULIC CALCULATIONS SHALL DICTATE THE ADEQUATE SIZES OF PIPING. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PIPING OF A LARGER DIAMETER, IF NECESSARY, TO BRING THE SYSTEM TO FULL COMPLIANCE WITH THE LOCAL AUTHORITY HAVING JURISDICTION.
14. AS APPLICABLE, THE FIRE PROTECTION SPRINKLER OR NON STANDPIPE SYSTEM HYDRAULIC CALCULATIONS SHALL BE SUBMITTED AND APPROVED BY THE OWNER'S UNDERWRITER, AUTHORITY HAVING JURISDICTION AND THE ENGINEER PRIOR TO REVIEW AND APPROVAL OF A FIRE PUMP SHOP DRAWING SUBMISSION.
15. CONTRACTOR SHALL VERIFY CONCEALED SPACES ARE PROTECTED IN ACCORDANCE WITH NFPA 1-3 AND ANY OTHER APPLICABLE CODES.
16. ADDITIONAL SPRINKLER HEADS SHALL BE PROVIDED UNDER ALL DUCTS AND / OR OTHER OBSTRUCTIONS THAT ARE 4'-0" AND GREATER IN WIDTH IN ACCORDANCE WITH NFPA 13. COORDINATE FINAL SPRINKLER HEAD LOCATIONS AND REQUIREMENTS WITH THE MECHANICAL AND ARCHITECTURAL DRAWINGS.
17. ADDITIONAL SPRINKLER HEADS SHALL BE PROVIDED AT THE LOWEST LEVELING AND TOP OF ALL STARTOVERS IN ACCORDANCE WITH NFPA 13.
18. SPRINKLER SHALL BE LOCATED IN THE CENTER OF CEILING TILES UNLESS SPECIFICALLY NOTED OTHERWISE.
19. ALL PIPING PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED WITH A LISTED FIREPROOFING PRODUCT WITH THE RATING OF THE WALL OR FLOOR.
20. PROVIDE NEC REQUIRED PIPE CLEARANCE ABOVE OR AROUND ANY ELECTRICAL, EQUIPMENT, PANELS, ETC.
21. PROVIDE PROTECTIVE SPRINKLER GUARDS ON SPRINKLER HEADS LOCATED BELOW 7'-0" AFF IN MECHANICAL ROOMS, STORAGE ROOMS, PARKS, SERVICE AREAS, GYMNASIUMS REGARDLESS OF SPRINKLER HEAD LOCATION AND WITH OVERHEAD DOORS.
22. SPRINKLER PIPING, IN-BAR, DUST COLLECTION, SHALL BE REPORTED FROM PANEL POINTS OF BAR JOINT THRUST SUPPORTS SHALL BE ATTACHED TO TOP CHORD ONLY, UNLESS SPECIFIC CROSS BRACING IS PROVIDED.
23. FOR ADDITION OR RELOCATION OF SPRINKLER HEADS IN NEW EXISTING CONSTRUCTION, THE SPRINKLER HEADS SHALL BE LOCATED IN ACCORDANCE WITH NFPA 13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INCLUDING SURROUNDING SPACES OUTSIDE OF THE SCOPE OF WORK AS REQUIRED PER NFPA STANDARDS.

ABBREVIATIONS

AC COMPRESSED AIR
 ABOVE CEILING
 AFF ABOVE FINISHED FLOOR
 AFS ABOVE FINISHED SURFACE
 ABV ABOVE PIPE
 BF BELOW BASED FLOOR
 BDF BACKLASH PREVENTER
 BLD BUILDING
 BOP BOTTOM OF PIPE
 C CLEAN
 CB&V CURB BOX & VALVE
 CP CAST IRON PIPE
 CLG CEILING
 CONN CONNECT
 CONT CONTAINER
 CP DETECTION DEVICE (SHOWN IN SYMBOL)
 D DUCTILE
 DN DRAIN RPIPE
 DN DOWN
 DP DRY PIPE
 DR DRAIN RISER
 DSP DRY STANDPIPE
 DWS DRAWING
 E EARTH
 EC ELECTRICAL CONTRACTOR
 ELEV ELEVATION
 EQUIP EQUIPMENT
 FDC FLOOR CONTROL VALVE
 FV FLOOR DRAIN
 FV FIRE DEPARTMENT CONNECTION
 FH FIRE HYDRANT
 FHC FIRE HOSE CABINET
 FHR FIRE HOSE RACK
 FHV FIRE HOSE VALVE
 FHCV FIRE HOSE VALVE CABINET
 FPR FIRE PROTECTION RISER
 FPTH FIRE PUMP TEST HEAD
 FT FEET
 GF GENERAL CONTRACTOR
 GP GALVANIZED
 GPD GALLONS PER DAY
 GPH GALLONS PER HOUR
 GPM GALLONS PER MINUTE
 H HALON
 I E L INVERT ELEVATION
 LZ LOW ZONE
 NC NORMALLY CLOSED
 NC NOT IN CONTACT
 NO NORMALLY OPEN
 NTS NOT TO SCALE
 PA PIPE ACTION
 PC PLUMBING CONTRACTOR
 PG PRESSURE GAUGE
 PVI POST INDICATOR VALVE
 PS PRESSURE
 PS PRESSURE SWITCH
 PSI POUNDS PER SQUARE INCH
 PSIG POUNDS PER SQUARE INCH GAUGE
 SF SQUARE FOOT
 SP SPRINKLER PIPING
 SPR SPRINKLER
 STD STANDARD PIPE
 TH THURST BLOCK
 TOP TOTAL DRAINAGE HEAD
 TOP TOP OF PIPE
 TS TAMPER SWITCH
 TYP TYPE
 VF VERIFY IN FIELD
 W WITH
 W/O WITHOUT
 WSP WET STAND PIPE

FIRE PROTECTION LEGEND

FP	FIRE MAN
DR	DRAIN PIPING
SP	SPRINKLER PIPING
PA	PREACTION SPRINKLER PIPING
D	DRY SPRINKLER PIPING
CA	CLEAN AGENT SYSTEM PIPING
DSP	DRY STAND PIPE
	CHECK VALVE
	BUTTERFLY VALVE
	BALL VALVE
	GATE VALVE - OUTSIDE SCREW & YOKE
	OS&Y VALVE WITH TAMPER SWITCH
	ANGLE VALVE
	PIPE CAP - FLANGED, SCREWED OR GROOVED TYPE
	FLANGED PIPE CONNECTION
	GROOVED PIPE MECHANICAL CONNECTION
	UNION
	FIRE DEPARTMENT VALVE
	FLOOR CONTROL VALVE ASSEMBLY
	UPRIGHT SPRINKLER HEAD
	CONCEALED PENDENT SPRINKLER HEAD
	EXPOSED PENDENT SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD
	FIRE DEPARTMENT CONNECTION (STORZ)
	FIRE DEPARTMENT CONNECTION (Y ^o PROJECTION)
	FIRE DEPARTMENT CONNECTION (JUSSH)
	FIRE DEPARTMENT CONNECTION (SIDEVAL)
	FIRE DEPARTMENT CONNECTION (SIDEVAL)
	FIRE HYDRANT
	WATER MOTOR GONG (OR ELECTRIC BELL)
	POST INDICATOR VALVE
	FLOW SWITCH
	PRESSURE SWITCH
	TAMPER SWITCH
	WALL INDICATOR VALVE
	WET PIPE SPRINKLER SYSTEM ALARM VALVE
	SMOKE DETECTOR
	HEAT OR THERMAL DETECTOR
EQUIPMENT TAG	
	DRY STAND PIPE RISER No.
	SPRINKLER RISER No.
	WET STAND PIPE RISER No.
	DRAIN RISER No.

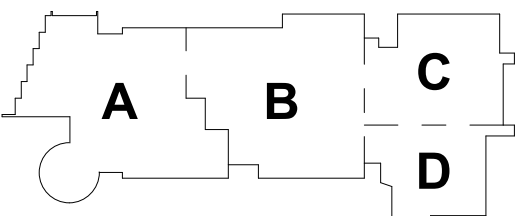
REVISION LEGEND		NEW ISSUE		REVISED ISSUE		REVISED, NOT ISSUED
		REMOVED FROM DRAWING SET				ISSUED, NOT REVISED

DRAWING LIST - FIRE PROTECTION

DRAWING NUMBER	DRAWING TITLE	06-03-2020 COST ESTIMATE SET	06-12-2020 RMC CD COST ESTIMATE SET	01-12-2020 ANSRA 6% CD SUBMISSION	03-12-2020 RMC CD SUBMISSION	04-12-2019 ANSRA SET	06-16-2019 PERMIT SET	06-24-2020 BID SET
FP0-1	FIRE PROTECTION COVER SHEET	○	●	●	●	●	●	●
FP0-2	FIRE PROTECTION SITE PLAN	○	●	●	●	●	●	●
FP1-1-3C/D	FIRE PROTECTION INTER MEZZANINE - AREAS C&D	○	○	○	○	○	○	○
FP1-1C	FIRE PROTECTION LOWER LEVEL FLOOR PLAN - AREA C	○	○	○	○	○	○	○
FP1-1D	FIRE PROTECTION SECOND FLOOR FLOOR PLAN - AREA D	○	○	○	○	○	○	○
FP1-1-1.5A/B	FIRE PROTECTION FIRST FLOOR MEZZANINE LVL. PLAN - AREA A	○	○	○	○	○	○	○
FP1-1-1A	FIRE PROTECTION FIRST FLOOR PLAN - AREA A	○	○	○	○	○	○	○
FP1-1-1B	FIRE PROTECTION SECOND FLOOR PLAN - AREA B	○	○	○	○	○	○	○
FP1-1-1C	FIRE PROTECTION FIRST FLOOR PLAN - AREA C	○	○	○	○	○	○	○
FP1-1-D	FIRE PROTECTION FIRST FLOOR PLAN - AREA D	○	○	○	○	○	○	○
FP1-1-2A	FIRE PROTECTION SECOND FLOOR PLAN - AREA A	○	○	○	○	○	○	○
FP1-1-2B	FIRE PROTECTION SECOND FLOOR PLAN - AREA B	○	○	○	○	○	○	○
FP1-1-2C	FIRE PROTECTION SECOND FLOOR PLAN - AREA C	○	○	○	○	○	○	○
FP1-1-2D	FIRE PROTECTION SECOND FLOOR PLAN - AREA D	○	○	○	○	○	○	○
FP1-1-3A	FIRE PROTECTION THIRD FLOOR PLAN - AREA A	○	○	○	○	○	○	○
FP1-1-3B	FIRE PROTECTION THIRD FLOOR PLAN - AREA B	○	○	○	○	○	○	○
FP1-1-3C	FIRE PROTECTION THIRD FLOOR PLAN - AREA C	○	○	○	○	○	○	○
FP1-1-3D	FIRE PROTECTION THIRD FLOOR PLAN - AREA D	○	○	○	○	○	○	○
FP1-1-4A	FIRE PROTECTION FOURTH FLOOR PLAN - AREA A	○	○	○	○	○	○	○
FP1-1-4B	FIRE PROTECTION FOURTH FLOOR PLAN - AREA B	○	○	○	○	○	○	○
FP1-1-4C	FIRE PROTECTION FOURTH FLOOR PLAN - AREA C	○	○	○	○	○	○	○
FP1-1-4D	FIRE PROTECTION FOURTH FLOOR PLAN - AREA D	○	○	○	○	○	○	○
FP1-1-5A	FIRE PROTECTION ROOF PLAN - AREA A	○	○	○	○	○	○	○
FP1-1-5B	FIRE PROTECTION ROOF PLAN - AREA B	○	○	○	○	○	○	○
FP5-1	FIRE PROTECTION RISER DIAGRAM	○	○	○	○	○	○	○
FPM-1.1	FIRE PROTECTION DETAILS	○	○	○	○	○	○	○
FPM-1.1	ALTERNATE NO. 3 FIRE PROTECTION MAINTENANCE BUILDING PLAN	○	○	○	○	○	○	○

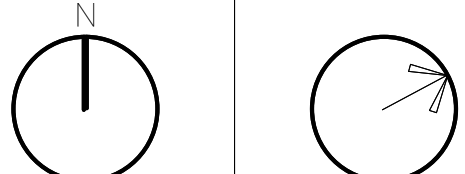
BID SET

August 28th, 2023



KEY PLAN

PROJECT NORTH	MAGNETIC NORTH
100°	100°
110°	110°
120°	120°
130°	130°
140°	140°
150°	150°
160°	160°
170°	170°
180°	180°
190°	190°
200°	200°
210°	210°
220°	220°
230°	230°
240°	240°
250°	250°
260°	260°
270°	270°
280°	280°
290°	290°
300°	300°
310°	310°
320°	320°
330°	330°
340°	340°
350°	350°
360°	360°



FIRE PROTECTION COVER SHEET

Scale: As indicated

Job No.: 60-20-409

Drawn By: RDR

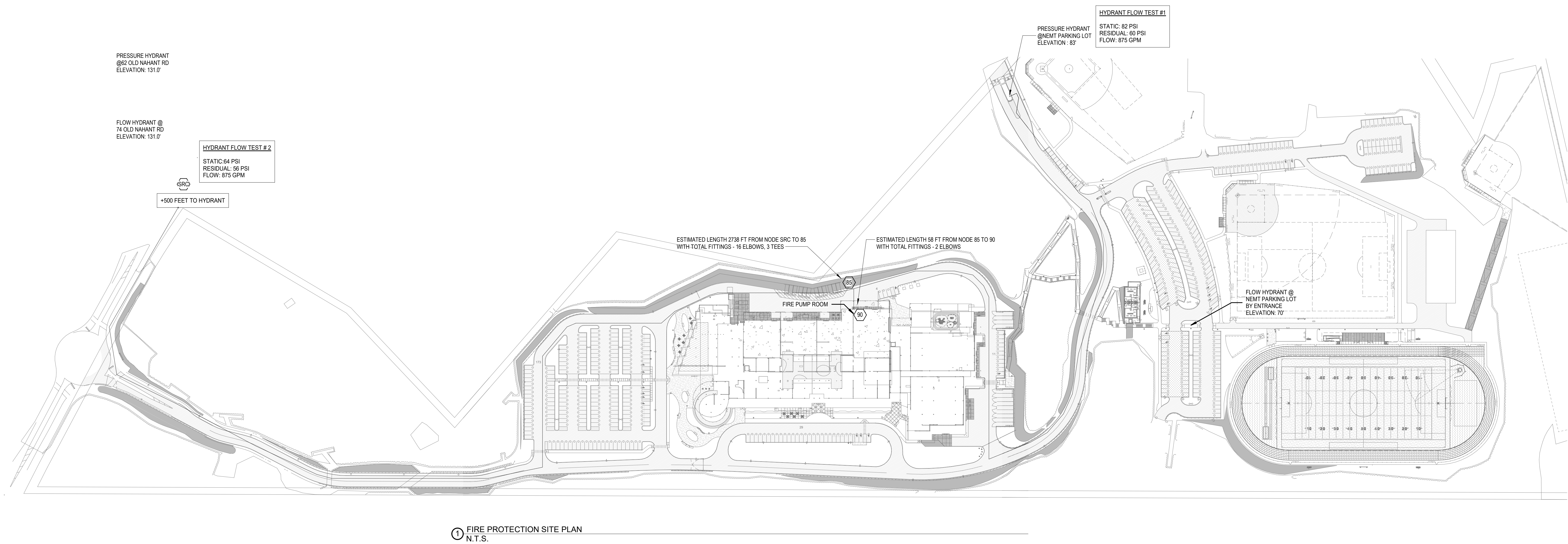
FP0-0-1

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225 Oakland Road
Studio 205
South Windsor, CT
06074
260 Charles Street
Studio 300
Waltham, MA
02453
Planning | Architecture | Interior Design
Tel: 617.984.1700
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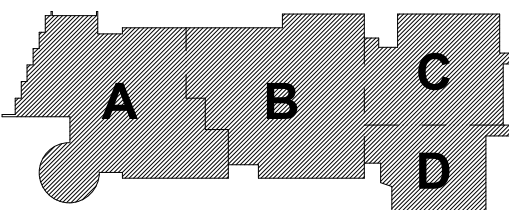


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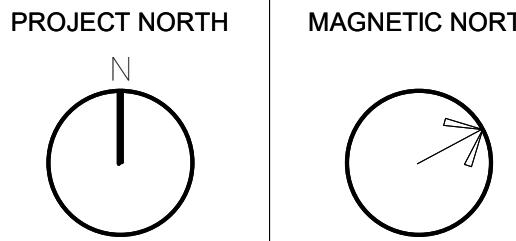
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BALA CONSULTING ENGINEERS, INC.
300 WEST 14TH STREET
NEW YORK, NY 10011-4209
TEL: 212.693.4000 FAX: 212.693.4001
WWW.BALA-ENGINEERS.COM
REGISTERED PROFESSIONAL ENGINEERS
STATE OF NEW YORK LICENSE NO. 00000000000000000000

BID SET

August 28th, 2023



KEY PLAN



FIRE
PROTECTION
SITE PLAN

Scale: NONE
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

FP0-0-2

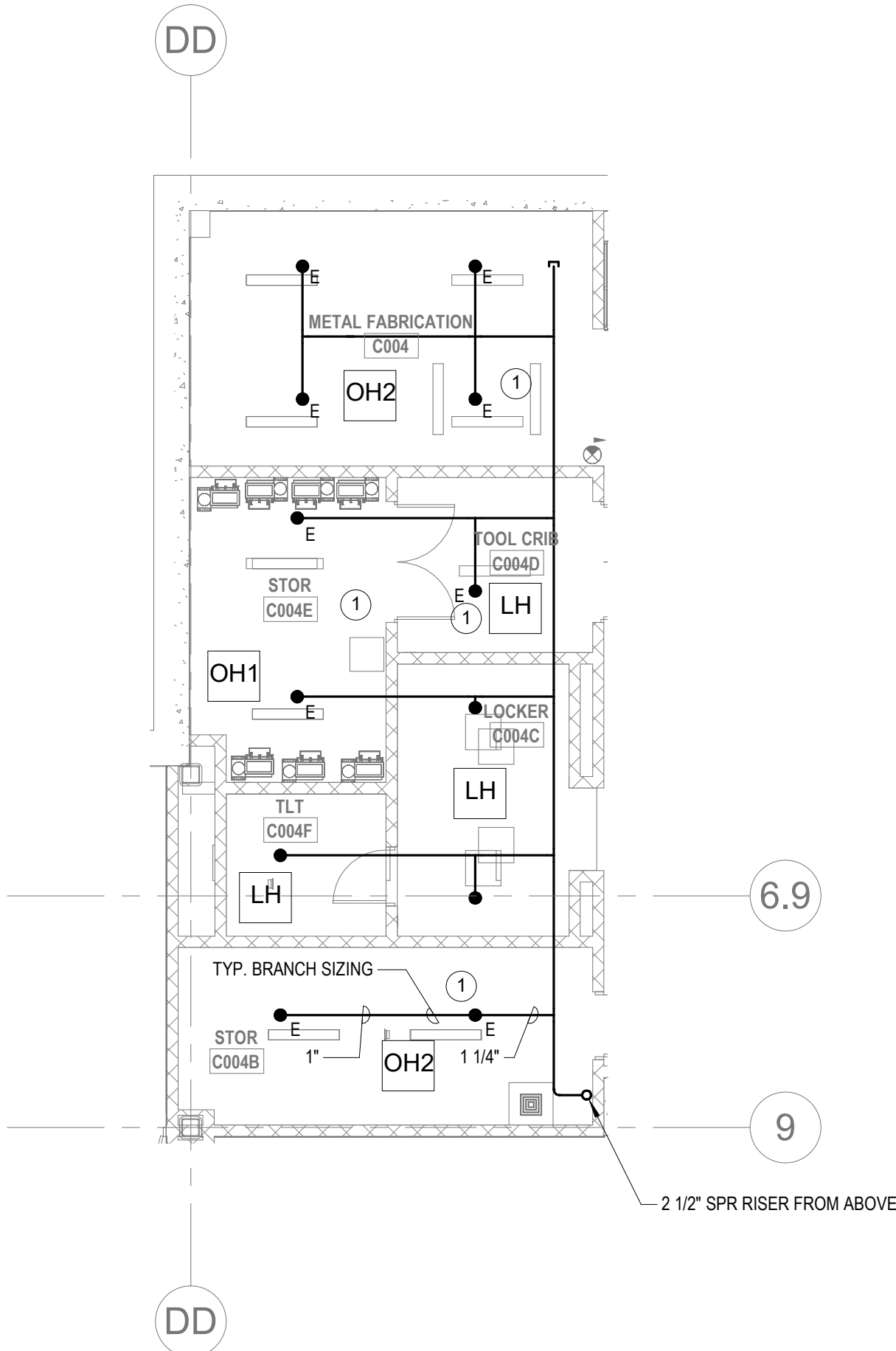
KEYNOTES

- LH LIGHT HAZARD OCCUPANCY
OH ORDINARY HAZARD OCCUPANCY
EH EXTRA HAZARD OCCUPANCY

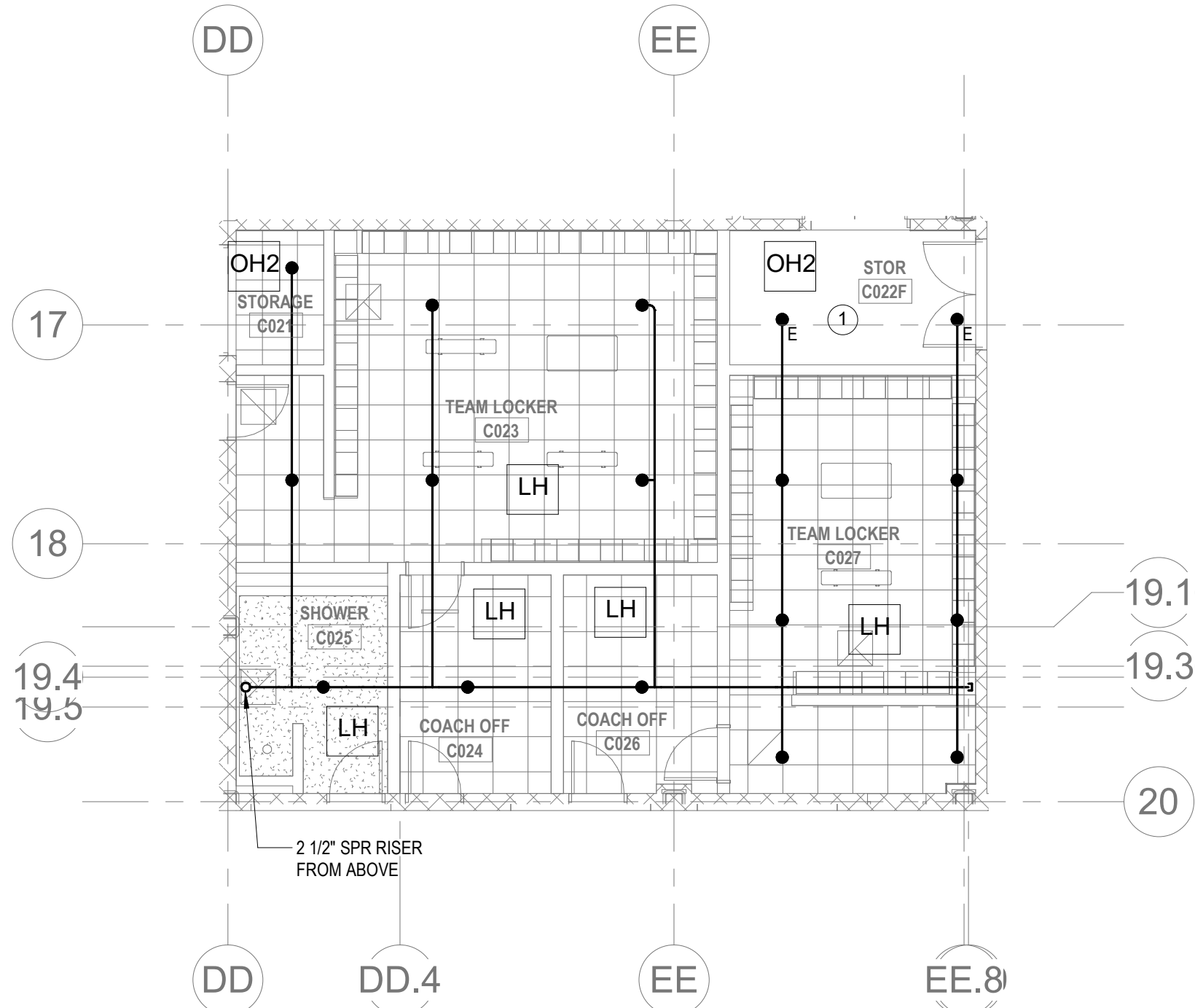
1 SPRINKLERS LOCATED IN THIS AREA SHALL BE EXPOSED PENDENT SPRINKLERS

FP GENERAL NOTES

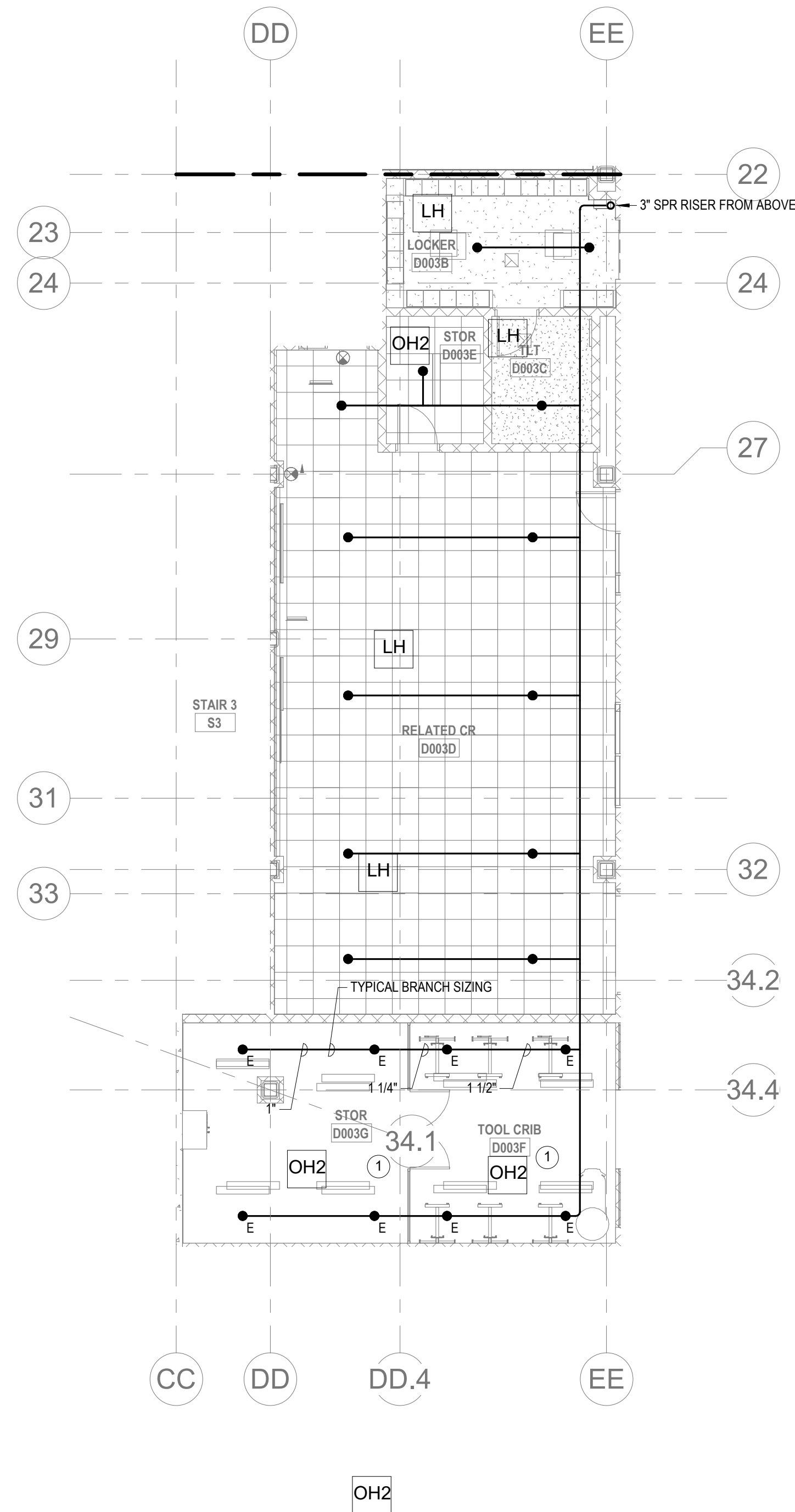
- WITHIN AREA OF SCOPE EXTEND NEW 2" SPRINKLER MAIN PIPING FROM A NEW ZONE CONTROL VALVE. CONTRACTOR SHALL SIZE BRANCH PIPING TO ALLOW FOR VELOCITY WILL REMAIN BELOW 20 FPS. PROVIDE QUICK RESPONSE UPRIGHTS IN OPEN CEILING AREAS AND CONCEALED PENDENTS IN AREAS WHERE DROP CEILINGS ARE INDICATED. EXTEND NEW 1" BRANCHES TO NEW CONCEALED PENDENTS. 1" SPRIGS SHALL BE ROUTED TO UPRIGHTS WITHIN 12" OF DECK. DESIGN INTENT IS TO PROVIDE A CODE COMPLIANT SPRINKLER LAYOUT FOR THE NEW PROGRAM LAYOUT. CONTRACTOR IS REQUIRE TO SUBMIT HYDRAULIC CALCULATIONS TERMINATED AT THE HYDRANT OUTLET.
- SPRINKLER COVERAGE IS NOT REQUIRED IN EXTERIOR OVERHANGS AS THEY ARE CONSTRUCTED OF NON COMBUSTIBLE MATERIALS.
- PROVIDE PROTECTIVE SPRINKLER GUARDS ON SPRINKLER HEADS LOCATED BELOW 7' 0" A.F.F. IN MECHANICAL ROOMS, STORAGE ROOMS, PUMP ROOMS, SERVICE AREAS, GYMNASIUMS REGARDLESS OF SPRINKLER HEAD ELEVATION AND WHERE OTHERWISE SUSCEPTIBLE TO DAMAGE.
- PROVIDE PROTECTIVE SPRINKLER GUARDS ON ALL EXPOSED PENDENT SPRINKLER HEADS AT THE UNDERSIDE OF THE MEZZANINE LEVEL.
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- DRY PENDENTS AND/OR DRY SIDEWALLS SHALL BE PROVIDED IN ROOMS/AREAS WHERE THE OPERATING TEMPERATURE IS LESS THAN 40F.
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- GENERAL NOTE AT SOUND BARRIER CEILING:
 - IN THE VOCATIONAL SHOP ROOMS A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEPPFP SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNSTRUCT SUPPORTS ATTACHED TO BOTTOM CHORD OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEPPFP SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEPPFP SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON A LIMITED BASIS AT LOCATIONS SPECIFICALLY INDICATED ON THE MEPPFP DRAWINGS.
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 - ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.



1 FIRE PROTECTION LOWER LEVEL FLOOR PLAN - AREA C - Callout 1
1/8" = 1'-0"



2 FIRE PROTECTION LOWER LEVEL FLOOR PLAN - AREA C - Callout 2
1/8" = 1'-0"



3 FIRE PROTECTION LOWER LEVEL FLOOR PLAN - AREA D - Callout 1
1/8" = 1'-0"



Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074
Tel: 817.984.1700
www.draam.com

260 Charles Street
Studio 300
Waltham, MA
02453

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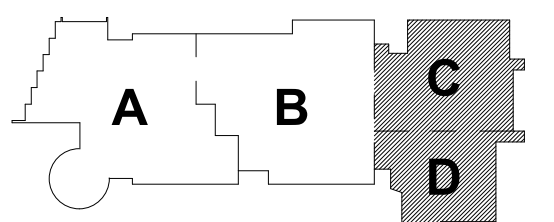
Northeast
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Vocational High
School

Wakefield, MA 01880

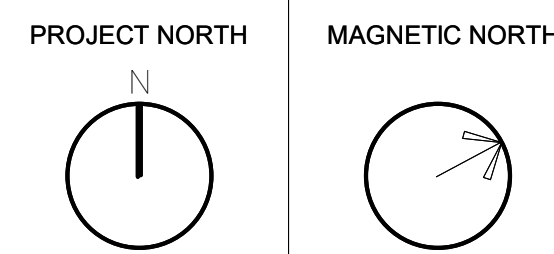


BID SET

August 28th, 2023



KEY PLAN



FIRE
PROTECTION
UNDER
MEZZANINE -
AREAS C&D

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

Job No.: 60-20-409

Drawn By: RDR

Date: August 28th, 2023

FP1-1-0.5CD

DRA

Drummeys Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074

260 Charles Street
Studio 300
Waltham, MA
02453

Planning | Architecture | Interior Design
Tel: 617.984.1700
www.dra-inc.com

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School

Wakefield, MA 01880

KEYNOTES

- LH LIGHT HAZARD OCCUPANCY
OH ORDINARY HAZARD OCCUPANCY
EH EXTRA HAZARD OCCUPANCY

- THE INDICATED AREA SHALL BE PROTECTED BY SPRINKLERS WITH A EXTRA HAZARD GROUP 2 SPRINKLER DESIGN CRITERIA PER NFPA 13.
- PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTOR'S TEST CONNECTION. (AS REQUIRED PER DETAIL).
- PROVIDE DRY PENDENTS WITH GUARDS BENEATH THE GARAGE DOOR TRACK.
- FOR ALL PIPING PASSING THROUGH COORDINATE Y9, PROVIDE AN EXPANSION LOOP AND ADD FLEXIBLE COUPLINGS ON EITHER SIDE.
- PROVIDE HIGH TEMPERATURE RATED SPRINKLERS THROUGHOUT THE INDICATED AREA.
- SPRINKLER COVERAGE REQUIRED BELOW ALL ACCESSIBLE AREAS.
- PROVIDE SPRINKLER UNDERSIDE OF DUCTWORK. FIELD COORDINATE.
- FINAL LOCATION OF ALL PIPING AND SPRINKLER HEADS IN ELECTRIC TYPE SPACES AND UTILITY ROOMS SHALL BE FIELD COORDINATED WITH ELECTRICAL CONTRACTOR AS TO VERIFY COMPLIANCE WITH ELECTRICAL CODES.
- PROVIDE SPRINKLER HEAD EVERY 12' WITHIN VERTICAL PORTION OF PAINT BOOTH EXHAUST DUCT.

GENERAL NOTES FOR PAINT SPRAY BOOTHS

- SPRINKLERS PROTECTING THE PAINT SPRAY BOOTHS SHALL BE DESIGNED FOR AN EXTRA HAZARD (GROUP 2) OCCUPANCY IN ACCORDANCE WITH NFPA 13.
- THE SPRINKLER SYSTEM PROTECTING DUCTS SHALL MEET ALL OF THE FOLLOWING REQUIREMENTS:
 - HORIZONTAL EXHAUST DUCTS SHALL HAVE SPRINKLERS LOCATED 12' FT CENTERS BEGINNING NO MORE THAN 6' FT FROM THE DUCT ENTRANCE.
 - WHERE EXHAUST DUCTS ARE MANIFOLDED, A SPRINKLER SHALL BE LOCATED IN THE MANIFOLD AT THE JUNCTION OF EACH EXHAUST DUCT WITH THE MANIFOLD.
 - SPRINKLERS SHALL PROVIDE A MINIMUM FLOW OF 30 GPM PER HEAD AT A MINIMUM OF 15 PSI PRESSURE.
 - SPRINKLERS SHALL BE ORDINARY TEMPERATURE RATED. UNLESS REQUIRED TO BE HIGHER DUE TO OPERATING TEMPERATURES MEASURED IN THE DUCTS, IN WHICH CASE THE OPERATING TEMPERATURE SHALL BE AT LEAST 50° F ABOVE THE INSIDE TEMPERATURE OF THE DUCT.
- EXHAUST DUCTS SHALL BE PROVIDED WITH ACCESS OPENING FOR INSPECTION AND MAINTENANCE OF SPRINKLERS.
- SPRINKLERS SHALL BE PERMITTED TO BE COVERED ONLY BY CELLOPHANE BAGS HAVING A THICKNESS OF 0.003 IN. OR LESS OR BY THIN PAPER BAGS. THESE COVERINGS SHALL BE REPLACED FREQUENTLY SO THAT HEAVY DEPOSITS DO NOT ACCUMULATE.
- SPRINKLERS THAT HAVE BEEN PAINTED OR COATED BY OVERSPRAY OR RESIDUES SHALL BE REPLACED WITH NEW SPRINKLERS.

FP GENERAL NOTES

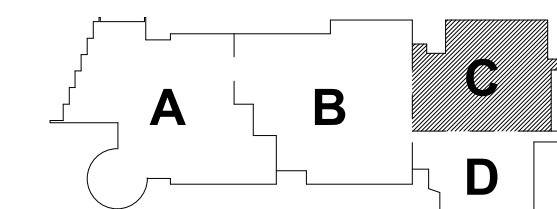
- WITHIN AREA OF SCOPE EXTEND NEW 4" SPRINKLER MAIN PIPING FROM A NEW ZONE CONTROL VALVE. CONTRACTOR SHALL SIZE BRANCH PIPING TO ALLOW FOR VELOCITY WILL REMAIN BELOW 20 FPS. PROVIDE QUICK RESPONSE UPRIGHTS IN OPEN CEILING AREAS AND CONCEALED PENDENTS IN AREAS WHERE DROP CEILING ARE INDICATED. EXTEND NEW 1" BRANCHES TO NEW CONCEALED PENDENTS. 1" SPRIGS SHALL BE ROUTED TO UPRIGHTS WITHIN 12' OF DECK. DESIGN INTENT IS TO PROVIDE A CODE COMPLIANT SPRINKLER LAYOUT FOR THE NEW PROGRAM LAYOUT. CONTRACTOR IS REQUIRE TO SUBMIT HYDRAULIC CALCULATIONS TERMINATED AT THE HYDRANT OUTLET.
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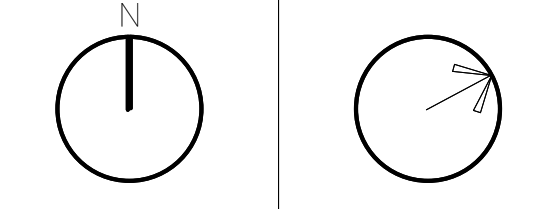
BID SET

August 28th, 2023



KEY PLAN

PROJECT NORTH
MAGNETIC NORTH

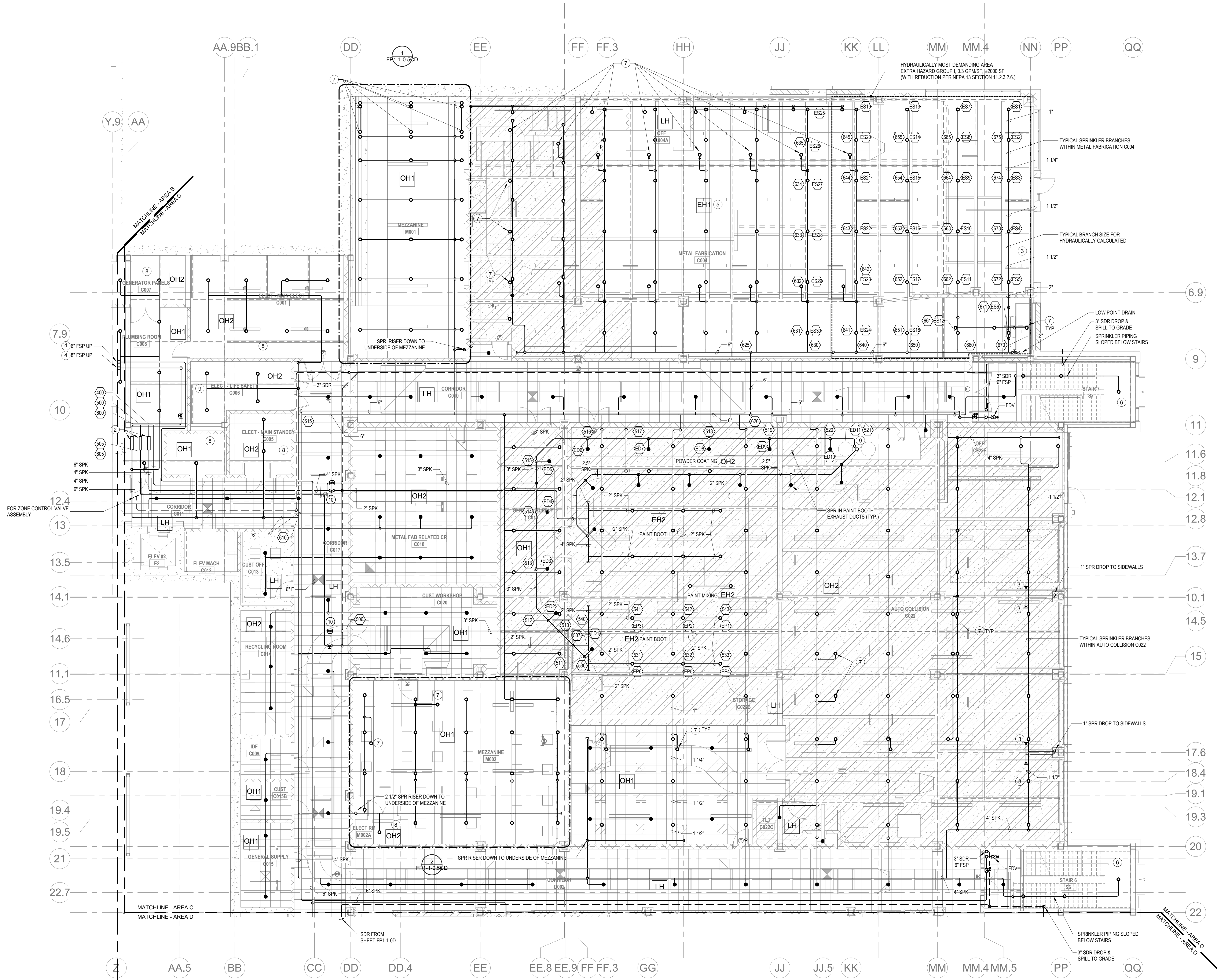


FIRE
PROTECTION
LOWER LEVEL
FLOOR PLAN -
AREA C

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

FP1-1-0C

FIRE PROTECTION LOWER LEVEL FLOOR PLAN - AREA C
1/8" = 1'-0"



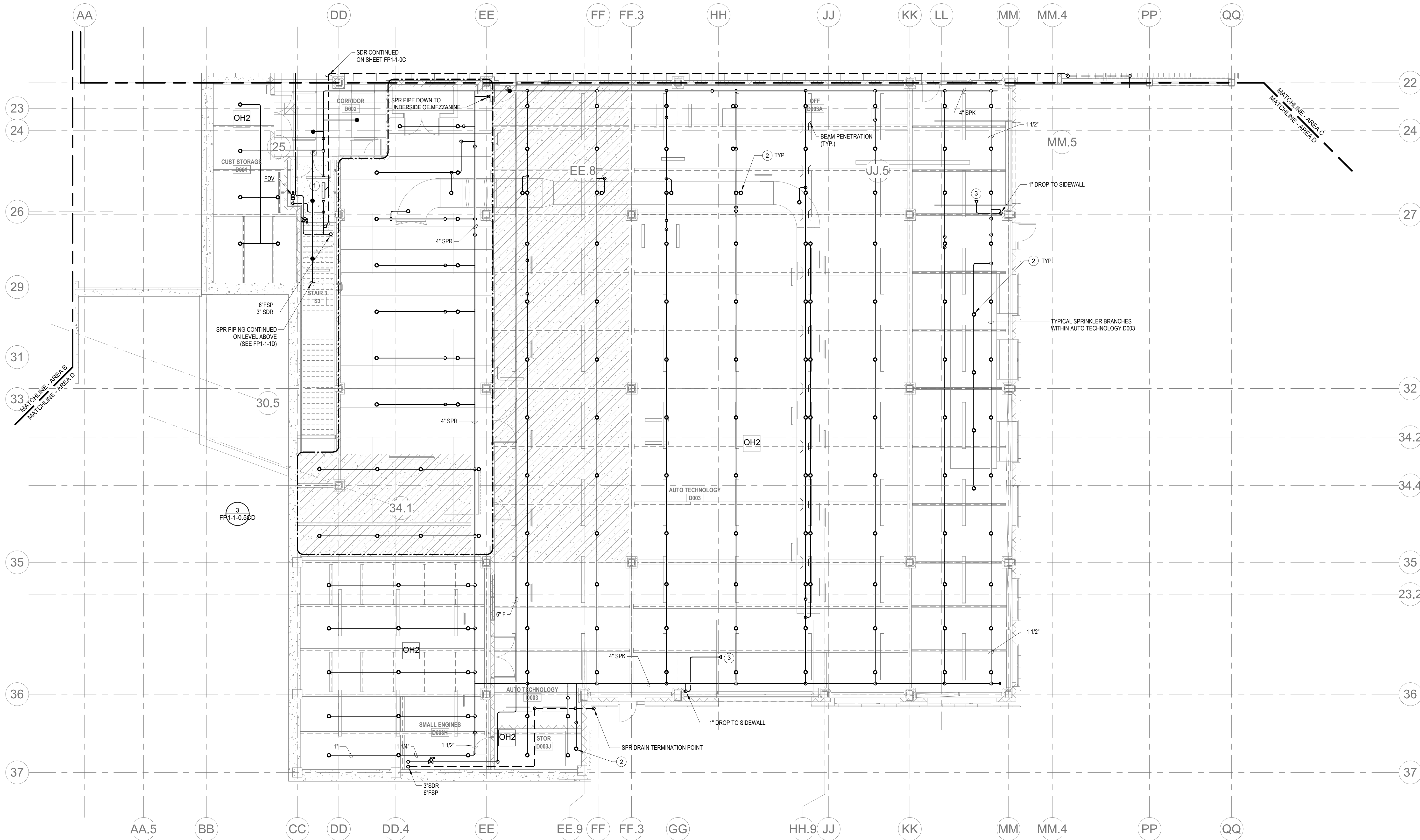
KEYNOTES

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FP GENERAL NOTES

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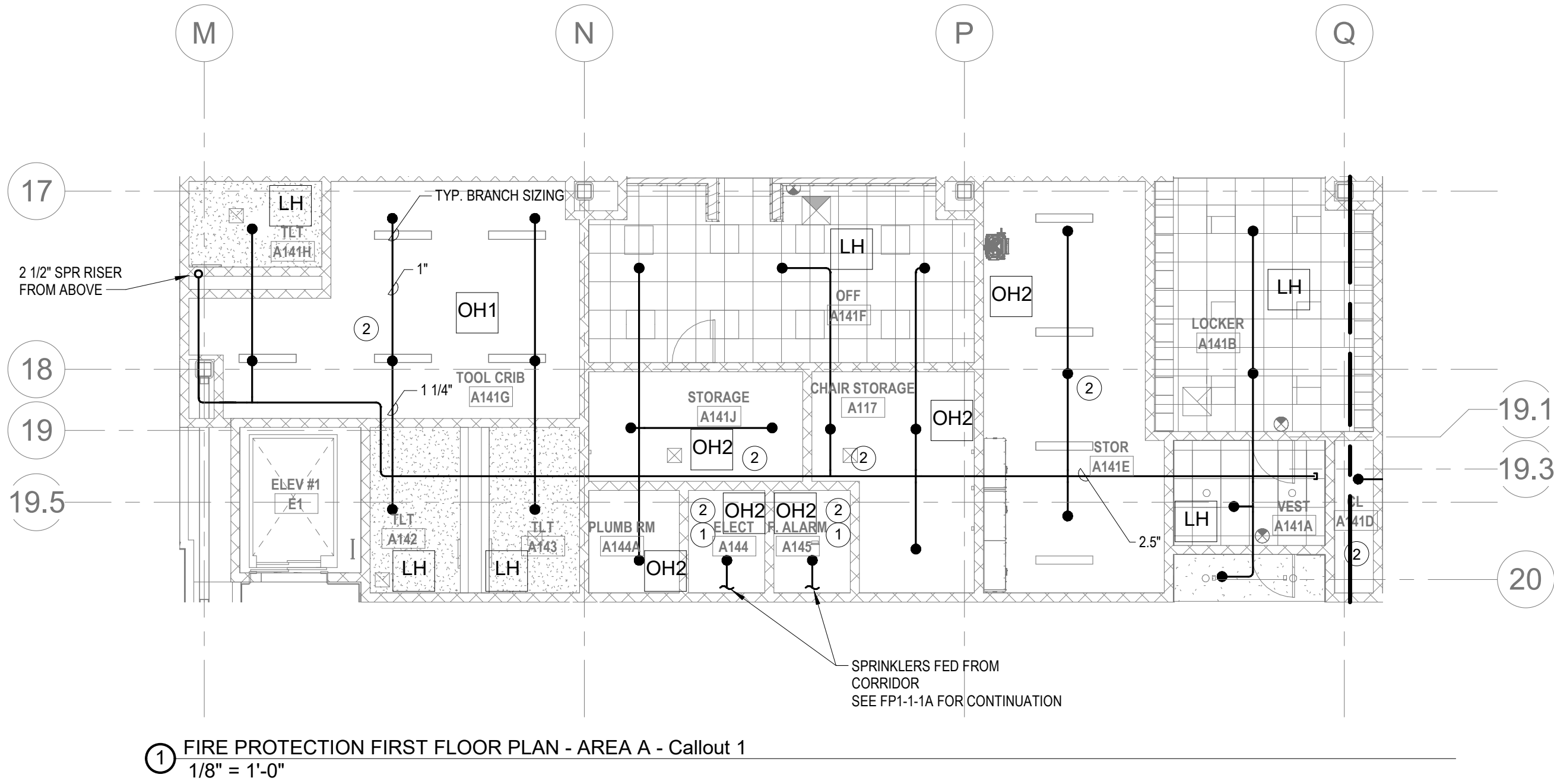
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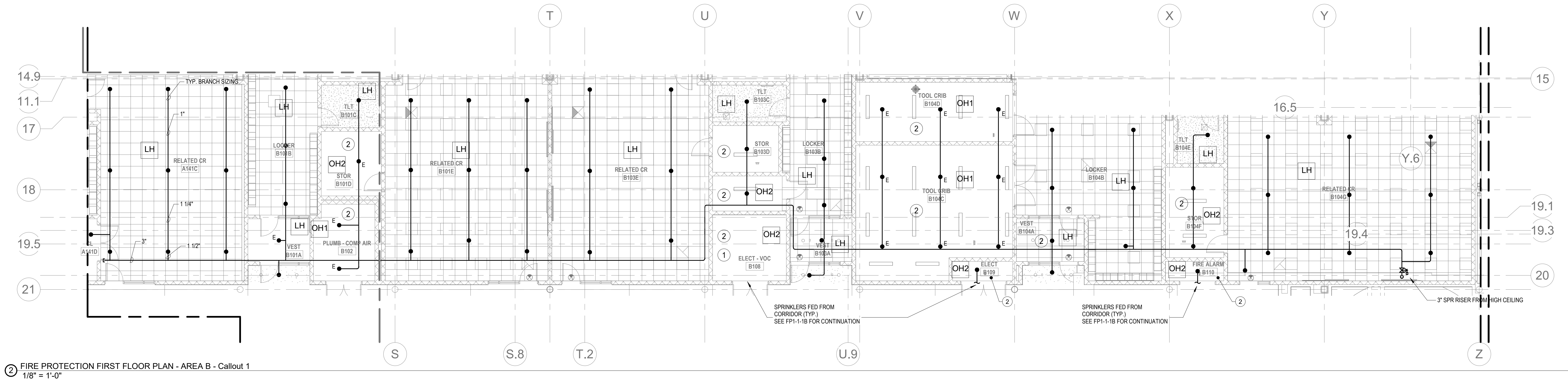
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A. ALL COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEPAFP COORDINATION PROCESS.
B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.



1 FIRE PROTECTION FIRST FLOOR PLAN - AREA A - Callout 1
1/8" = 1'-0"



2 FIRE PROTECTION FIRST FLOOR PLAN - AREA B - Callout 1
1/8" = 1'-0"

DRA

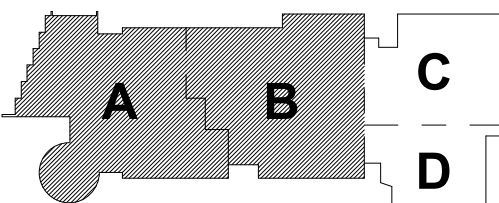
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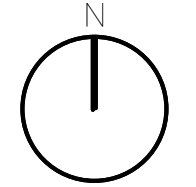
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August 28th, 2023

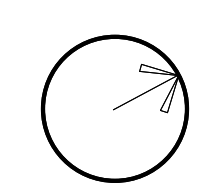


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



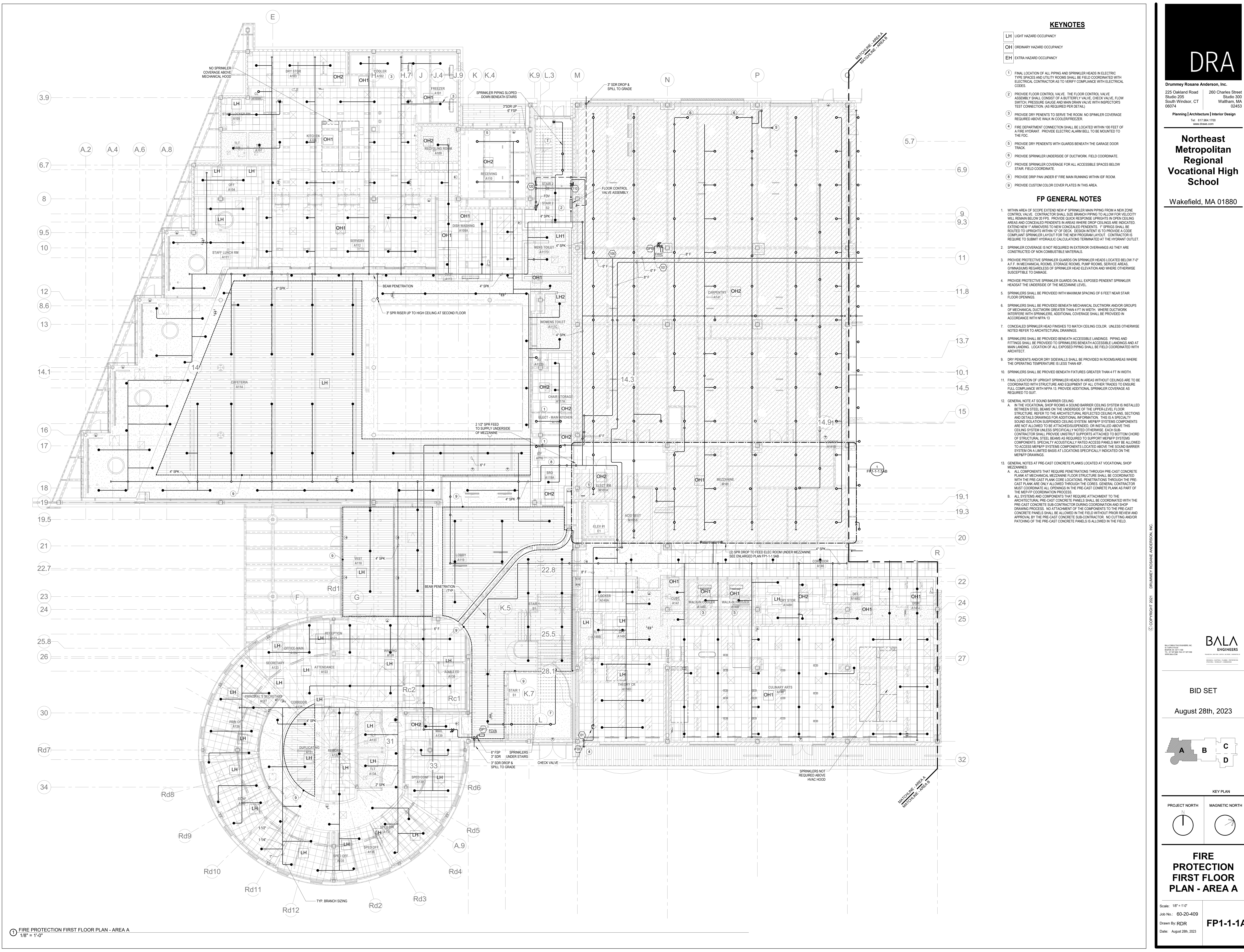
**FIRE
PROTECTION
FIRST FLOOR
MEZZANINE LVL
PLAN - AREA A**

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

Job No.: 60-20-409

Drawn By: DRA FP1-1-1.5AB

Date: August 28th, 2023



KEYNOTES

- LH LIGHT HAZARD OCCUPANCY
- OH ORDINARY HAZARD OCCUPANCY
- EH EXTRA HAZARD OCCUPANCY

- FINAL LOCATION OF ALL PIPING AND SPRINKLER HEADS IN ELECTRIC TYPE SPACES AND UTILITY ROOMS TO BE COORDINATED WITH ELECTRICAL CONTRACTOR AS TO VERIFY COMPLIANCE WITH ELECTRICAL CODES.
- PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTORS TEST CONNECTION (AS REQUIRED PER DETAIL).
- PROVIDE DRY PENDENTS TO SERVE THE ROOM. NO SPRINKLER COVERAGE REQUIRED ABOVE WALK IN COOLER/FREEZER.
- FIRE DEPARTMENT CONNECTION SHALL BE LOCATED WITHIN 100 FEET OF A FIRE HYDRANT. PROVIDE ELECTRIC ALARM BELL TO BE MOUNTED TO THE FDC.
- PROVIDE DRY PENDENTS WITH GUARDS BENEATH THE GARAGE DOOR TRACK.
- PROVIDE SPRINKLER UNDERSIDE OF DUCTWORK. FIELD COORDINATE.
- PROVIDE SPRINKLER COVERAGE FOR ALL ACCESSIBLE SPACES BELOW STAIR. FIELD COORDINATE.
- PROVIDE DRIP PAN UNDER 6" FIRE MAIN RUNNING WITHIN IDF ROOM.
- PROVIDE CUSTOM COLOR COVER PLATES IN THIS AREA.

FP GENERAL NOTES

- WITHIN AREA OF SCOPE EXTEND NEW 4" SPRINKLER MAIN PIPING FROM A NEW ZONE CONTROL VALVE. CONTRACTOR SHALL SIZE BRANCH PIPING TO ALLOW FOR VELOCITY WILL REMAIN BELOW 20 FPS. PROVIDE QUICK RESPONSE UPRIGHTS IN OPEN CEILING AREAS AND CONCEALED PENDENTS IN AREAS WHERE DROP CEILING ARE INDICATED. EXTEND NEW 1" ARMOVERS TO NEW CONCEALED PENDENTS. 1" SPRIGS SHALL BE ROUTED TO UPRIGHTS WITHIN 12" OF DECK. DESIGN INTENT IS TO PROVIDE A CODE COMPLIANT SPRINKLER LAYOUT FOR THE NEW PROGRAM LAYOUT. CONTRACTOR IS REQUIRED TO SUBMIT HYDRAULIC CALCULATIONS TERMINATED AT THE HYDRANT OUTLET.
- SPRINKLER COVERAGE IS NOT REQUIRED IN EXTERIOR OVERHANGS AS THEY ARE CONSTRUCTED OF NON COMBUSTIBLE MATERIALS.
- PROVIDE PROTECTIVE SPRINKLER GUARDS ON SPRINKLER HEADS LOCATED BELOW 7'-0" A.F.F. IN MECHANICAL ROOMS, STORAGE ROOMS, PUMP ROOMS, SERVICE AREAS, GYMNASIUMS REGARDLESS OF SPRINKLER HEAD ELEVATION AND WHERE OTHERWISE SUSCEPTIBLE TO DAMAGE.
- PROVIDE PROTECTIVE SPRINKLER GUARDS ON ALL EXPOSED PENDENT SPRINKLER HEADS AT THE UNDERSIDE OF THE MEZZANINE LEVEL.
- SPRINKLERS SHALL BE PROVIDED WITH MAXIMUM SPACING OF 6 FEET NEAR STAIR FLOOR OPENINGS.
- SPRINKLERS SHALL BE PROVIDED BENEATH MECHANICAL DUCTWORK AND/OR GROUPS OF MECHANICAL DUCTWORK GREATER THAN 4 FT IN WIDTH. WHERE DUCTWORK INTERFERE WITH SPRINKLERS, ADDITIONAL COVERAGE SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 13.
- CONCEALED SPRINKLER HEAD FINISHES TO MATCH CEILING COLOR. UNLESS OTHERWISE NOTED REFER TO ARCHITECTURAL DRAWINGS.
- SPRINKLERS SHALL BE PROVIDED BENEATH ACCESSIBLE LANDINGS. PIPING AND FITTINGS SHALL BE PROVIDED TO SPRINKLERS BENEATH ACCESSIBLE LANDINGS AND AT MAIN LANDING. LOCATION OF ALL EXPOSED PIPING SHALL BE FIELD COORDINATED WITH ARCHITECT.
- DRY PENDENTS AND/OR DRY SIDEWALLS SHALL BE PROVIDED IN ROOMS/AREAS WHERE THE OPERATING TEMPERATURE IS LESS THAN 40F.
- SPRINKLERS SHALL BE PROVIDED BENEATH FIXTURES GREATER THAN 4 FT IN WIDTH.
- FINAL LOCATION OF UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILING ARE TO BE COORDINATED WITH STRUCTURE AND EQUIPMENT OF ALL OTHER TRADES TO ENSURE FULL COMPLIANCE WITH NFPA 13. PROVIDE ADDITIONAL SPRINKLER COVERAGE AS REQUIRED TO SUIT.
- GENERAL NOTE AT SOUND BARRIER CEILING:
 - A. IN THE VOCATIONAL SHOP ROOMS A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR. STRUCTURE REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEPP SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNSTRUCT SUPPORTS ATTACHED TO BOTTOM CHORD OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEPP SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEPP SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON A LIMITED BASIS AT LOCATIONS SPECIFICALLY INDICATED ON THE MEPP DRAWINGS.
- GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP MEZZANES:
 - A. ALL COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEPP COORDINATION PROCESS.
 - B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.



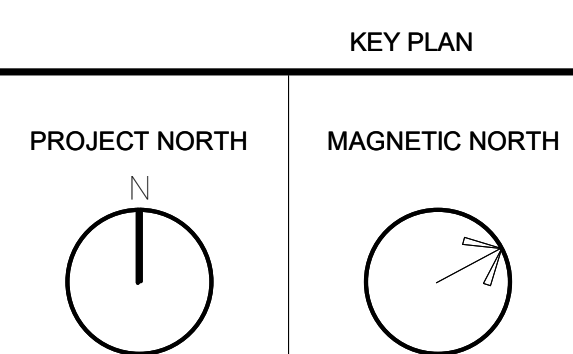
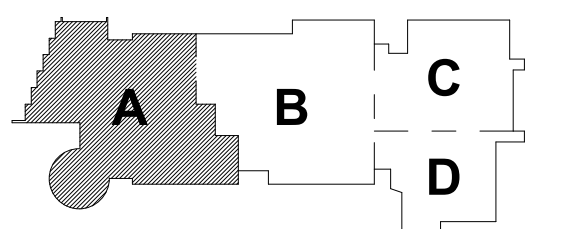
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BID SET
August 28th, 2023



**FIRE
PROTECTION
FIRST FLOOR
PLAN - AREA A**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023
FP1-1-1A

KEYNOTES

- LH LIGHT HAZARD OCCUPANCY
OH ORDINARY HAZARD OCCUPANCY
EH EXTRA HAZARD OCCUPANCY

- FINAL LOCATION OF ALL PIPING AND SPRINKLER HEADS IN ELECTRIC TYPE SPACES AND UTILITY ROOMS SHALL BE FIELD COORDINATED WITH ELECTRICAL CONTRACTOR AS TO VERIFY COMPLIANCE WITH ELECTRICAL CODES.
- FOR ALL PIPING PASSING THROUGH COORDINATE Y9, PROVIDE AN EXPANSION LOOP AND ADD FLEXIBLE COUPLINGS ON EITHER SIDE.
- PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTOR'S TEST CONNECTION. (AS REQUIRED PER DETAIL).
- PROVIDE DRY PENDENTS WITH GUARDS BENEATH THE GARAGE DOOR TRACK.
- PROVIDE SPRINKLER UNDERSIDE OF DUCTWORK. FIELD COORDINATE.
- FIRE PUMP FP-1 SHALL BE PRESSURE PUMP MODEL SAETRA, DOUBLE SUCTION, CENTRIFUGAL PUMP. PUMP SHALL DELIVER 1000 GPM WITH DIFFERENTIAL PRESSURE OF 90 PSI. 480V, 3 PHASE, 75 HP, 3600 RPM MOTOR.
- FIRE DEPARTMENT CONNECTION SHALL BE LOCATED WITHIN 100 FEET OF A FIRE HYDRANT. PROVIDE ELECTRIC ALARM BELL TO BE MOUNTED TO THE FDC.
- FIRE PUMP SUCTION CONTROL VALVE. FIELD COORDINATE INSTALLATION.

FP GENERAL NOTES

- WITHIN AREA OF SCOPE EXTEND NEW 4" SPRINKLER MAIN PIPING FROM A NEW ZONE CONTROL VALVE. CONTRACTOR SHALL SIZE BRANCH PIPING TO ALLOW FOR VELOCITY WILL REMAIN BELOW 20 FPS. PROVIDE QUICK RESPONSE SPRINKLES IN OPEN CEILING AREAS AND CONCEALED PENDENTS IN AREAS WHERE DROP CEILING ARE INDICATED. EXTEND NEW 1" ARMORERS TO NEW CONCEALED PENDENTS. 1" SPRINGS SHALL BE ROUTED TO UPRIGHTS WITHIN 12" OF DECK. DESIGN INTENT IS TO PROVIDE A CODE COMPLIANT SPRINKLER LAYOUT FOR THE NEW PROGRAM LAYOUT. CONTRACTOR IS REQUIRED TO SUBMIT HYDRAULIC CALCULATIONS TERMINATED AT THE HYDRANT OUTLET.
- SPRINKLER COVERAGE IS NOT REQUIRED IN EXTERIOR OVERHANGS AS THEY ARE CONSTRUCTED OF NON COMBUSTIBLE MATERIALS.
- PROVIDE PROTECTIVE SPRINKLER GUARDS ON SPRINKLER HEADS LOCATED BELOW 7'-0" A.F.F. IN MECHANICAL ROOMS, STORAGE ROOMS, PUMP ROOMS, SERVICE AREAS, CYNARHARS REGARDLESS OF SPRINKLER HEAD ELEVATION AND WHERE OTHERWISE SUSCEPTIBLE TO DAMAGE.
- PROVIDE PROTECTIVE SPRINKLER GUARDS ON ALL EXPOSED PENDENT SPRINKLER HEADS AT THE UNDERSIDE OF THE MEZZANINE LEVEL.
- SPRINKLERS SHALL BE PROVIDED WITH MAXIMUM SPACING OF 6 FEET NEAR STAIR FLOOR OPENINGS.
- SPRINKLERS SHALL BE PROVIDED BENEATH MECHANICAL DUCTWORK AND/OR GROUPS OF MECHANICAL DUCTWORK GREATER THAN 4 FT IN WIDTH. WHERE DUCTWORK INTERFERE WITH SPRINKLERS, ADDITIONAL COVERAGE SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 13.
- CONCEALED SPRINKLER HEAD FINISHES TO MATCH CEILING COLOR. UNLESS OTHERWISE NOTED REFER TO ARCHITECTURAL DRAWINGS.
- SPRINKLERS SHALL BE PROVIDED BENEATH ACCESSIBLE LANDINGS. PIPING AND FITTINGS SHALL BE PROVIDED TO SPRINKLERS BENEATH ACCESSIBLE LANDINGS AND AT MAIN LANDING. LOCATION OF ALL EXPOSED PIPING SHALL BE FIELD COORDINATED WITH ARCHITECT.
- DRY PENDENTS AND/OR DRY SIDEWALLS SHALL BE PROVIDED IN ROOMS AREAS WHERE THE OPERATING TEMPERATURE IS LESS THAN 40F.
- SPRINKLERS SHALL BE PROVIDED BENEATH FIXTURES GREATER THAN 4 FT IN WIDTH.
- FINAL LOCATION OF UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILINGS ARE TO BE COORDINATED WITH STRUCTURE AND EQUIPMENT OF ALL OTHER TRADES TO ENSURE FULL COMPLIANCE WITH NFPA 13. PROVIDE ADDITIONAL SPRINKLER COVERAGE AS REQUIRED TO SUIT.
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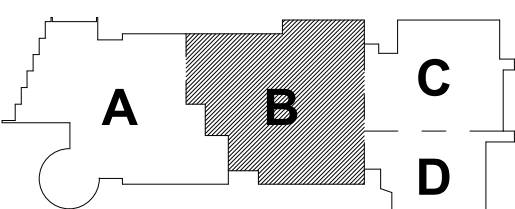
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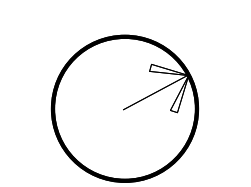
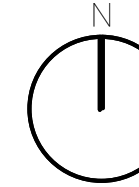
August 28th, 2023



KEY PLAN

PROJECT NORTH

MAGNETIC NORTH



FIRE
PROTECTION
FIRST FLOOR
PLAN - AREA B

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

Job No.: 60-20-409

Drawn By: RDR

Date: August 28th, 2023

FP1-1-B

FIRE PROTECTION FIRST FLOOR PLAN - AREA B
1/8" = 1'-0"

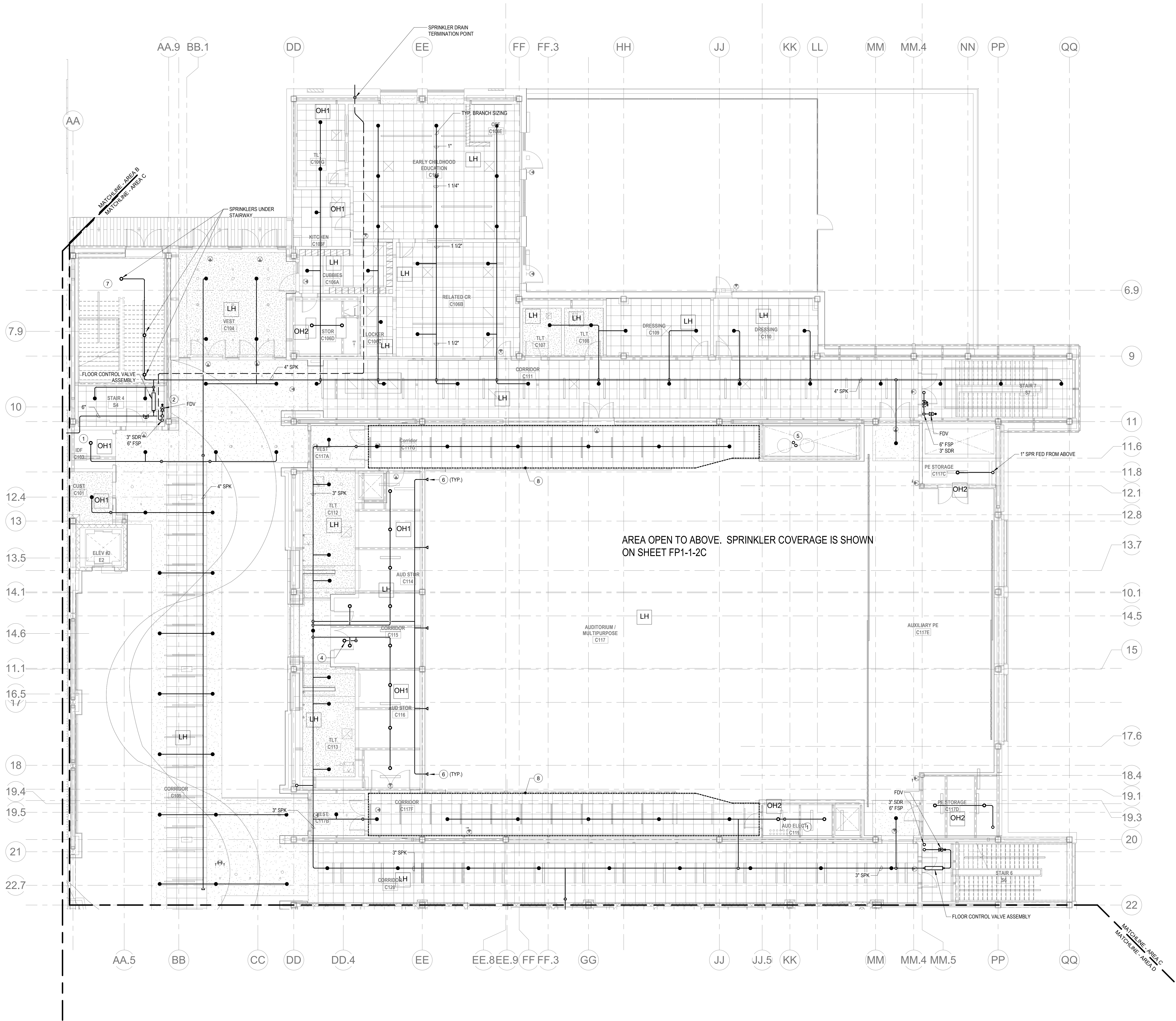
KEYNOTES

- LH LIGHT HAZARD OCCUPANCY
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- 1 FINAL LOCATION OF ALL PIPING AND SPRINKLER HEADS IN ELECTRIC TYPE SPACES AND UTILITY ROOMS SHALL BE FIELD COORDINATED WITH ELECTRICAL CONTRACTOR AS TO VERIFY COMPLIANCE WITH ELECTRICAL CODES.
- 2 PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTOR'S TEST CONNECTION. (AS REQUIRED PER DETAIL)
- 3 PROVIDE A FIRE HOSE VALVE CABINET ON EACH SIDE OF THE STAGE IN ACCORDANCE WITH 780 CMR 9.0.3.4.
- 4 PROVIDE SPRINKLER UNDERSIDE OF DUCTWORK. FIELD COORDINATE.
- 5 PROVIDE SPRINKLER HEAD EVERY 12' WITHIN VERTICAL PORTION OF SPRAY PAINT EXHAUST DUCT.
- 6 PROVIDE EXTENDED COVERAGE SIDEWALL SPRINKLER HEAD AT THE UNDERSIDE OF RETRACTABLE BLEACHERS.
- 7 SPRINKLER COVERAGE REQUIRED BELOW ALL ACCESSIBLE AREAS.
- 8 IN THIS AREA WITH EXTRUDED ALUMINUM CEILING, PROVIDE PENDENT SPRINKLER HEADS WITH DEFLECTOR 1" BELOW BOTTOM OF EXTRUDED ALUMINUM CEILING.

FP GENERAL NOTES

1. WITHIN AREA OF SCOPE EXTEND NEW 4" SPRINKLER MAIN PIPING FROM A NEW ZONE CONTROL VALVE. CONTRACTOR SHALL SIZE BRANCH PIPING TO ALLOW FOR VELOCITY WILL REMAIN BELOW 20 FPS. PROVIDE QUICK RESPONSE UPRIGHTS IN OPEN CEILING AREAS AND CONCEALED PENDENTS IN AREAS WHERE DROP CEILING ARE INDICATED. EXTEND NEW 1" BRANCHES TO NEW CONCEALED PENDENTS. 1" SPRIGS SHALL BE ROUTED TO UPRIGHTS WITHIN 12' OF DECK. DESIGN INTENT IS TO PROVIDE A CODE COMPLIANT SPRINKLER LAYOUT FOR THE NEW PROGRAM LAYOUT. CONTRACTOR IS REQUIRED TO SUBMIT HYDRAULIC CALCULATIONS TERMINATED AT THE HYDRANT OUTLET.
2. SPRINKLER COVERAGE IS NOT REQUIRED IN EXTERIOR OVERHANGS AS THEY ARE CONSTRUCTED OF NON COMBUSTIBLE MATERIALS.
3. PROVIDE PROTECTIVE SPRINKLER GUARDS ON SPRINKLER HEADS LOCATED BELOW 7'-0" A.F.F. IN MECHANICAL ROOMS, STORAGE ROOMS, PUMP ROOMS, SERVICE AREAS, GYMNASIUMS REGARDLESS OF SPRINKLER HEAD ELEVATION AND WHERE OTHERWISE SUSCEPTIBLE TO DAMAGE.
4. PROVIDE PROTECTIVE SPRINKLER GUARDS ON ALL EXPOSED PENDENT SPRINKLER HEADS AT THE UNDERSIDE OF THE MEZZANINE LEVEL.
5. SPRINKLERS SHALL BE PROVIDED WITH MAXIMUM SPACING OF 6 FEET NEAR STAIR FLOOR OPENINGS.
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9. DRY PENDENTS AND/OR DRY SIDEWALLS SHALL BE PROVIDED IN ROOMS/AREAS WHERE THE OPERATING TEMPERATURE IS LESS THAN 40F.
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11. FINAL LOCATION OF UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILING ARE TO BE COORDINATED WITH STRUCTURE AND EQUIPMENT OF ALL OTHER TRADES TO ENSURE FULL COMPLIANCE WITH NFPA 13. PROVIDE ADDITIONAL SPRINKLER COVERAGE AS REQUIRED TO SUIT.
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1 FIRE PROTECTION FIRST FLOOR PLAN - AREA C
1/8" = 1'-0"

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225 Oakland Road
Studio 205
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06074
Tel: 817.984.1700
www.dra.com

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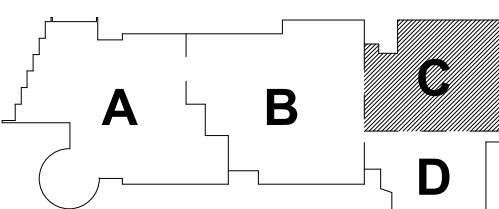
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BALA
ENGINEERS
INCORPORATED
1000 WASHINGTON STREET
SUITE 200
BOSTON, MA 02108
TEL: 617.552.1234
FAX: 617.552.1235
WWW.BALA-ENGINEERS.COM

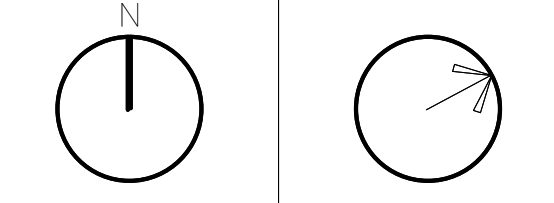
BID SET

August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



FIRE
PROTECTION
FIRST FLOOR
PLAN - AREA C

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

Job No.: 60-20-409

Drawn By: RDR

Date: August 28th, 2023

FP1-1-1C

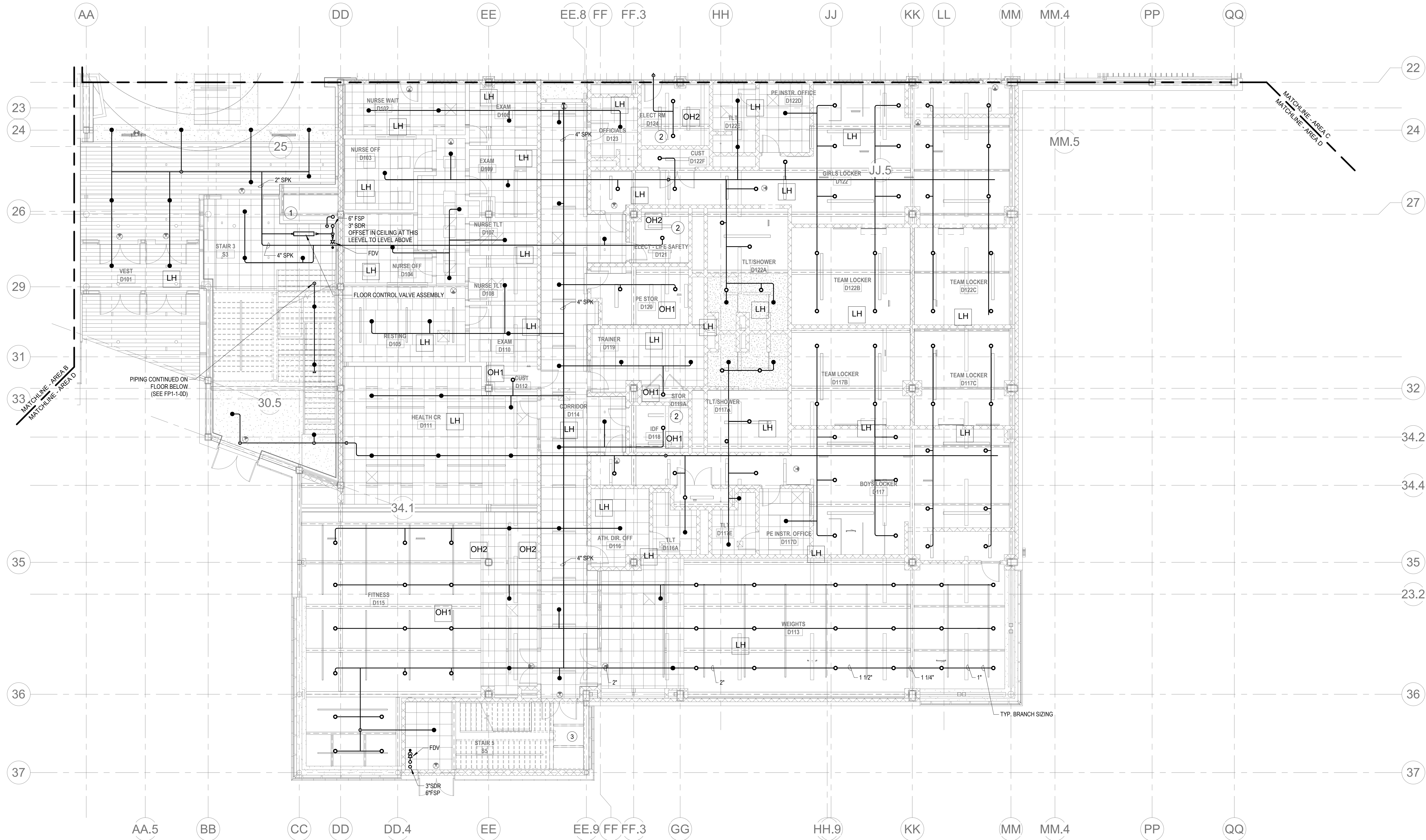
KEYNOTES

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- 1 PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTOR'S TEST CONNECTION. (AS REQUIRED PER DETAIL)
- 2 FINAL LOCATION OF ALL PIPING AND SPRINKLER HEADS IN ELECTRICAL TYPE SPACES AND UTILITY ROOMS SHALL BE FIELD COORDINATED WITH ELECTRICAL CONTRACTOR AS TO VERIFY COMPLIANCE WITH ELECTRICAL CODES.
- 3 SPRINKLER COVERAGE REQUIRED BELOW ALL ACCESSIBLE AREAS.

FP GENERAL NOTES

1. WITHIN AREA OF SCOPE EXTEND NEW 4" SPRINKLER MAIN PIPING FROM A NEW ZONE CONTROL VALVE. CONTRACTOR SHALL SIZE BRANCH PIPING TO ALLOW FOR VELOCITY WILL REMAIN BELOW 20 FPS. PROVIDE QUICK RESPONSE UPRIGHTS IN OPEN CEILING AREAS AND CONCEALED PENDENTS IN AREAS WHERE DROP CEILINGS ARE INDICATED. EXTEND NEW 1" ARMED OVERS TO NEW CONCEALED PENDENTS. 1" SPRINGS SHALL BE ROUTED TO UPRIGHTS WITHIN 12" OF DECK. DESIGN INTENT IS TO PROVIDE A CODE COMPLIANT SPRINKLER LAYOUT FOR THE NEW PROGRAM LAYOUT. CONTRACTOR IS REQUIRED TO SUBMIT HYDRAULIC CALCULATIONS TERMINATED AT THE INSTANT OUTLET.
2. SPRINKLER COVERAGE IS NOT REQUIRED IN EXTERIOR OVERHANGS AS THEY ARE CONSTRUCTED OF NON COMBUSTIBLE MATERIALS.
3. PROVIDE PROTECTIVE SPRINKLER GUARDS ON SPRINKLER HEADS LOCATED BELOW 7'-0" A.F.F. IN MECHANICAL ROOMS, STORAGE ROOMS, PUMP ROOMS, SERVICE AREAS, GYMNASIUMS REGARDLESS OF SPRINKLER HEAD ELEVATION AND WHERE OTHERWISE SUSCEPTIBLE TO DAMAGE.
4. PROVIDE PROTECTIVE SPRINKLER GUARDS ON ALL EXPOSED PENDENT SPRINKLER HEADS AT THE UNDERSIDE OF THE MEZZANINE LEVEL.
5. SPRINKLERS SHALL BE PROVIDED WITH MAXIMUM SPACING OF 6 FEET NEAR STAR FLOOR OPENINGS.
6. SPRINKLERS SHALL BE PROVIDED BENEATH MECHANICAL DUCTWORK AND/OR GROUPS OF MECHANICAL DUCTWORK GREATER THAN 4 FT IN WIDTH. WHERE DUCTWORK INTERFERES WITH SPRINKLERS, ADDITIONAL COVERAGE SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 13.
7. CONCEALED SPRINKLER HEAD FINISHES TO MATCH CEILING COLOR. UNLESS OTHERWISE NOTED REFER TO ARCHITECTURAL DRAWINGS.
8. SPRINKLERS SHALL BE PROVIDED BENEATH ACCESSIBLE LANDINGS. PIPING AND FITTINGS SHALL BE PROVIDED TO SPRINKLERS BENEATH ACCESSIBLE LANDINGS AND AT MAIN LANDING. LOCATION OF ALL EXPOSED PIPING SHALL BE FIELD COORDINATED WITH ARCHITECT.
9. DRY PENDENTS AND/OR DRY SIDEWALLS SHALL BE PROVIDED IN ROOMS AREAS WHERE THE OPERATING TEMPERATURE IS LESS THAN 40°F.
10. SPRINKLERS SHALL BE PROVIDED BENEATH FIXTURES GREATER THAN 4 FT IN WIDTH.
11. FINAL LOCATION OF UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILINGS ARE TO BE COORDINATED WITH STRUCTURE AND EQUIPMENT OR ALL OTHER TRADES TO ENSURE FULL COMPLIANCE WITH NFPA 13. PROVIDE ADDITIONAL SPRINKLER COVERAGE AS REQUIRED TO SUIT.
12. GENERAL NOTE AT SOUND BARRIER CEILING:
A. IN THE VOCATIONAL SHOP ROOMS A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEHPF SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNSTRUT SUPPORTS ATTACHED TO BOTTOM CHORD OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEHPF SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEHPF SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON A LIMITED BASIS AT LOCATIONS SPECIFICALLY INDICATED ON THE MEHPF DRAWINGS.
13. GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP MEZZANINES:
A. ALL COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEHPF COORDINATION PROCESS.
B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.



1 FIRE PROTECTION FIRST FLOOR PLAN - AREA D
1/8" = 1'-0"

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South Windsor, CT
06074
Tel: 817.984.1700
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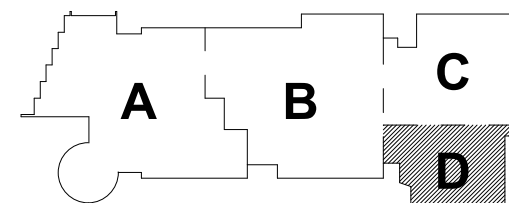
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DRAWN: LINDSEY L. BALA
CHECKED: LINDSEY L. BALA
APPROVED: LINDSEY L. BALA

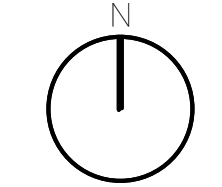
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August 28th, 2023

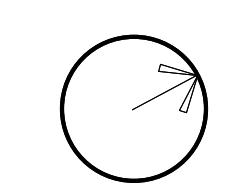


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



FIRE
PROTECTION
FIRST FLOOR
PLAN - AREA D

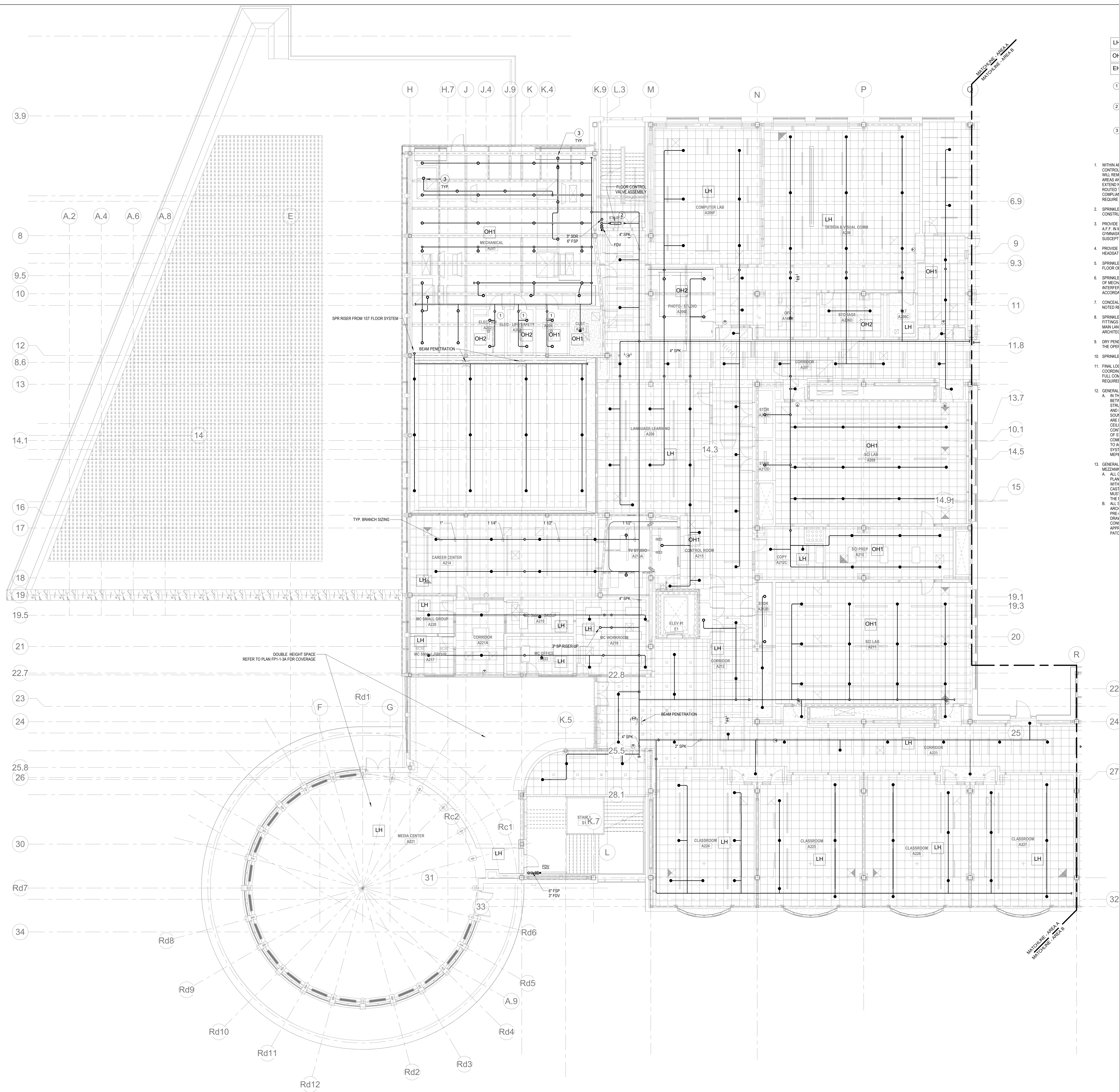
Scale: 1/8" = 1'-0"

Job No.: 60-20-409

Drawn By: RDR

Date: August 28th, 2023

FP1-1-1D



- KEYNOTES**
- LH LIGHT HAZARD OCCUPANCY
 - OH ORDINARY HAZARD OCCUPANCY
 - EH EXTRA HAZARD OCCUPANCY
- FINAL LOCATION OF ALL PIPING AND SPRINKLER HEADS IN ELECTRIC TYPE SPACES AND UTILITY ROOMS SHALL BE FIELD COORDINATED WITH ELECTRICAL CONTRACTOR AS TO VERIFY COMPLIANCE WITH ELECTRICAL CODES.
 - PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTOR'S TEST CONNECTION. (AS REQUIRED PER DETAIL).
 - PROVIDE SPRINKLER UNDERSIDE OF DUCTWORK. FIELD COORDINATE.

- FP GENERAL NOTES**
- WITHIN AREA OF SCOPE EXTEND NEW 4" SPRINKLER MAIN PIPING FROM A NEW ZONE CONTROL VALVE. CONTRACTOR SHALL SIZE BRANCH PIPING TO ALLOW FOR VELOCITY WILL REMAIN BELOW 20 FPS. PROVIDE QUICK RESPONSE UPRIGHTS IN OPEN CEILING AREAS AND CONCEALED PENDENTS IN AREAS WHERE DROP CEILINGS ARE INDICATED. EXTEND NEW 1" BRANCHES TO NEW CONCEALED PENDENTS. 1" SPRIGS SHALL BE ROUTED TO UPRIGHTS WITHIN 12" OF DECK. DESIGN INTENT IS TO PROVIDE A CODE COMPLIANT SPRINKLER LAYOUT FOR THE NEW PROGRAM LAYOUT. CONTRACTOR IS REQUIRED TO SUBMIT HYDRAULIC CALCULATIONS TERMINATED AT THE HYDRANT OUTLET.
 - SPRINKLER COVERAGE IS NOT REQUIRED IN EXTERIOR OVERHANGS AS THEY ARE CONSTRUCTED OF NON COMBUSTIBLE MATERIALS.
 - PROVIDE PROTECTIVE SPRINKLER GUARDS ON SPRINKLER HEADS LOCATED BELOW 7'-0" A.F.F. IN MECHANICAL ROOMS, STORAGE ROOMS, PUMP ROOMS, SERVICE AREAS, GYMNASIUMS REGARDLESS OF SPRINKLER HEAD ELEVATION AND WHERE OTHERWISE SUSCEPTIBLE TO DAMAGE.
 - PROVIDE PROTECTIVE SPRINKLER GUARDS ON ALL EXPOSED PENDENT SPRINKLER HEADS AT THE UNDERSIDE OF THE MEZZANINE LEVEL.
 - SPRINKLERS SHALL BE PROVIDED WITH MAXIMUM SPACING OF 6 FEET NEAR STAIR FLOOR OPENINGS.
 - SPRINKLERS SHALL BE PROVIDED BENEATH MECHANICAL DUCTWORK AND/OR GROUPS OF MECHANICAL DUCTWORK GREATER THAN 4 FT IN WIDTH. WHERE DUCTWORK INTERFERS WITH SPRINKLERS, ADDITIONAL COVERAGE SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 13.
 - CONCEALED SPRINKLER HEAD FINISHES TO MATCH CEILING COLOR. UNLESS OTHERWISE NOTED REFER TO ARCHITECTURAL DRAWINGS.
 - SPRINKLERS SHALL BE PROVIDED BENEATH ACCESSIBLE LANDINGS. PIPING AND FITTINGS SHALL BE PROVIDED TO SPRINKLERS BENEATH ACCESSIBLE LANDINGS AND AT MAIN LANDING. LOCATION OF ALL EXPOSED PIPING SHALL BE FIELD COORDINATED WITH ARCHITECT.
 - DRY PENDENTS AND/OR DRY SIDEWALLS SHALL BE PROVIDED IN ROOMS/AREAS WHERE THE OPERATING TEMPERATURE IS LESS THAN 40F.
 - SPRINKLERS SHALL BE PROVIDED BENEATH FIXTURES GREATER THAN 4 FT IN WIDTH.
 - FINAL LOCATION OF UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILINGS ARE TO BE COORDINATED WITH STRUCTURE AND EQUIPMENT OF ALL OTHER TRADES TO ENSURE FULL COMPLIANCE WITH NFPA 13. PROVIDE ADDITIONAL SPRINKLER COVERAGE AS REQUIRED TO SUIT.
 - GENERAL NOTE AT SOUND BARRIER CEILING:
 - A. IN THE VOCATIONAL SHOP ROOMS A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEHPF SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNSTRUT SUPPORTS ATTACHED TO BOTTOM CHORD OR STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEHPF SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEHPF SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON A LIMITED BASIS AT LOCATIONS SPECIFICALLY INDICATED ON THE MEHPF DRAWINGS.
 - GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP MEZZANINES:
 - A. ALL COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEHPF COORDINATION PROCESS.
 - B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.

1 FIRE PROTECTION SECOND FLOOR PLAN - AREA A
1/8" = 1'-0"

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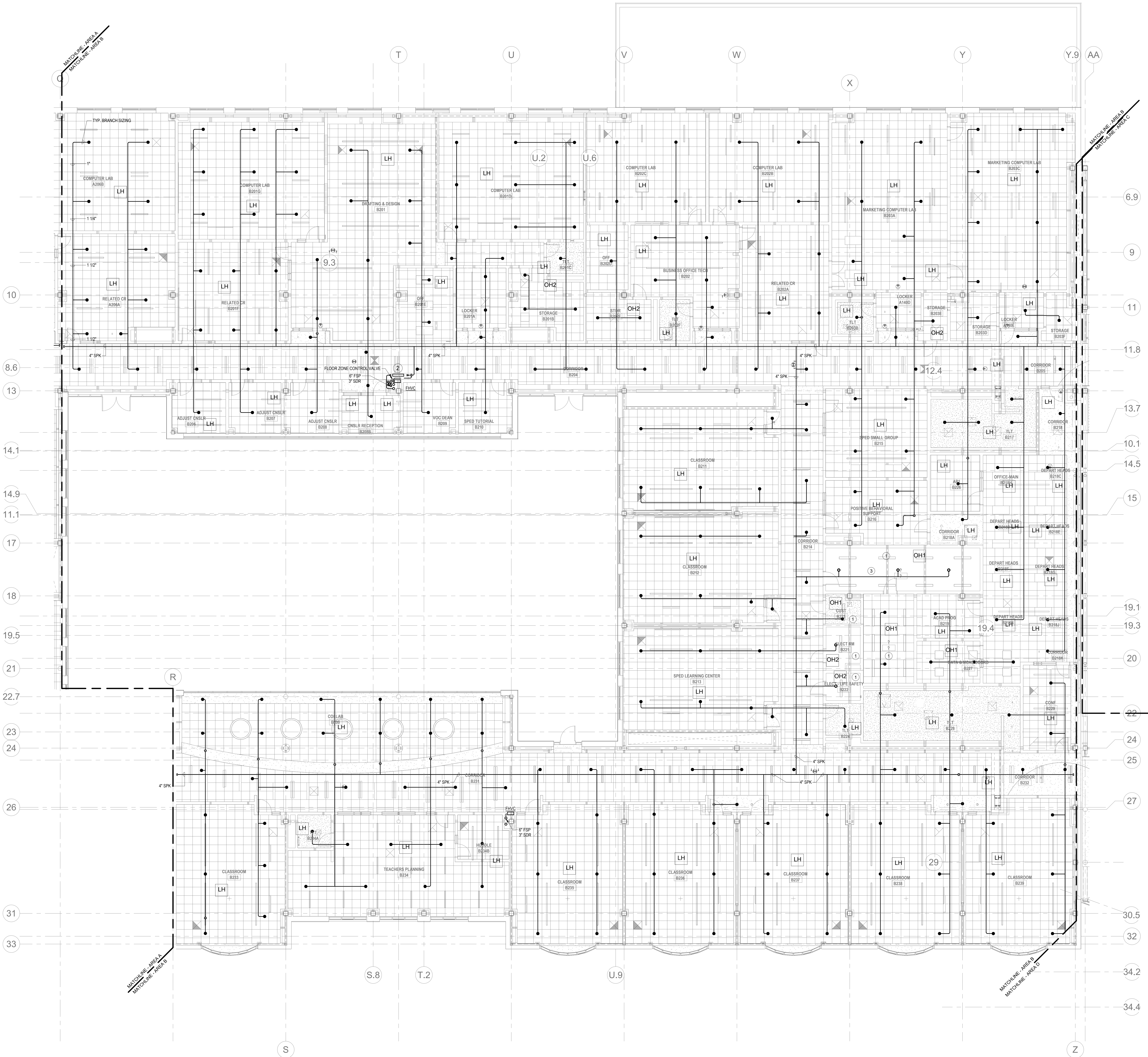
KEY PLAN

PROJECT NORTH
MAGNETIC NORTH

FIRE
PROTECTION
SECOND FLOOR
PLAN - AREA A

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

FP1-1-2A



KEYNOTES

- LH LIGHT HAZARD OCCUPANCY
OH ORDINARY HAZARD OCCUPANCY
EH EXTRA HAZARD OCCUPANCY

- FINAL LOCATION OF ALL PIPING AND SPRINKLER HEADS IN ELECTRIC TYPE SPACES AND UTILITY ROOMS SHALL BE FIELD COORDINATED WITH ELECTRICAL CONTRACTOR AS TO VERIFY COMPLIANCE WITH ELECTRICAL CODES.
- PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTOR'S TEST CONNECTION (AS REQUIRED PER DETAIL). CONTRACTOR IS REQUIRED TO SUBMIT HYDRAULIC CALCULATIONS TERMINATED AT THE HYDRANT OUTLET.
- PROVIDE DRIP PAN UNDER ALL SPRINKLER BRANCH PIPING WITHIN MDF ROOM.

FP GENERAL NOTES

- WITHIN AREA OF SCOPE EXTEND NEW 4" SPRINKLER MAIN PIPING FROM A NEW ZONE CONTROL VALVE. CONTRACTOR SHALL SIZE BRANCH PIPING TO ALLOW FOR VELOCITY WILL REMAIN BELOW 20 FPS. PROVIDE QUICK RESPONSE UPRIGHTS IN OPEN CEILING AREAS AND CONCEALED PENDENTS IN AREAS WHERE DROP CEILINGS ARE INDICATED. EXTEND NEW 1" ARMED/RESET TO NEW CONCEALED PENDENTS. 1" SPRINGS SHALL BE ROUTED TO UPRIGHTS WITHIN 12" OF DECK. DESIGN INTENT IS TO PROVIDE A CODE COMPLIANT SPRINKLER LAYOUT FOR THE NEW PROGRAM LAYOUT. CONTRACTOR IS REQUIRED TO SUBMIT HYDRAULIC CALCULATIONS TERMINATED AT THE HYDRANT OUTLET.
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- SPRINKLERS SHALL BE PROVIDED BENEATH FIXTURES GREATER THAN 4 FT IN WIDTH.
- FINAL LOCATION OF UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILINGS ARE TO BE COORDINATED WITH STRUCTURE AND EQUIPMENT OF ALL OTHER TRADES TO ENSURE FULL COMPLIANCE WITH NFPA 13. PROVIDE ADDITIONAL SPRINKLER COVERAGE AS REQUIRED TO SUIT.
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- GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP MEZZANINES:
A. ALL COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEPPF COORDINATION PROCESS.
B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.

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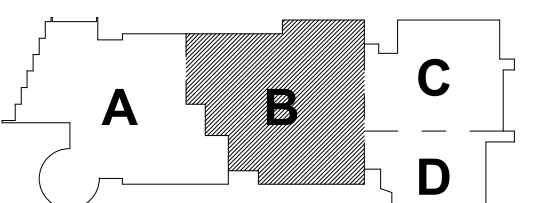
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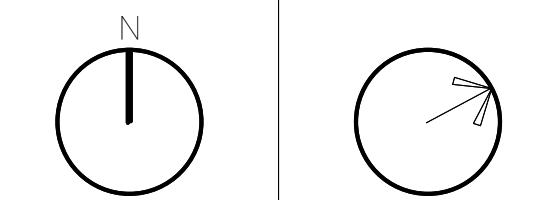
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August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



FIRE
PROTECTION
SECOND FLOOR
PLAN - AREA B

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

Job No.: 60-20-409

Drawn By: RDR

Date: August 28th, 2023

FP1-1-2B

LH	LIGHT HAZARD OCCUPANCY
OH	ORDINARY HAZARD OCCUPANCY
EH	EXTRA HAZARD OCCUPANCY

- 1 PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTOR'S TEST CONNECTION. (AS REQUIRED PER DETAIL)
- 2 PROVIDE SPRINKLER UNDERSIDE OF DUCTWORK. FIELD COORDINATE.
- 3 PROVIDE SPRINKLER PROTECTION ABOVE BALCONY CEILING. ARE ABOVE CEILING IS NOT ENCLOSED.
- 4 FINAL LOCATION OF ALL PIPING AND SPRINKLER HEADS IN ELECTRICITY TYPE SPACES AND UTILITY ROOMS SHALL BE FIELD COORDINATED WITH ELECTRICAL CONTRACTOR AS TO VERIFY COMPLIANCE WITH ELECTRICAL CODES.
- 5 IN THIS AREA WITH EXTRUDED ALUMINUM CEILING, PROVIDE PENCIL SPRINKLER HEADS WITH DEFLECTOR 1" BELOW BOTTOM OF EXTRUDED ALUMINUM CEILING.

WITHIN AREA OF SCORE EXPOSED NEW 4" SPRINKLER MAIN PIPING FROM A NEW ZONE CONTROL VALVE. CONTRACTOR SHALL PLACE BRANCH PIPING TO ALLOW FOR VELOCITY TESTING. CONTRACTOR SHALL PROVIDE QUICK RESPONSE SPRINKLERS IN OPEN CEILING AREAS AND CONCEALED PENDENTS IN AREAS WHERE DROP CEILING IS EXPOSED. EXPOSED SPRINKLER MAINS SHALL BE PROTECTED BY 1" THICK STEEL PLATE. SPRINKLERS SHALL BE ROUTED TO UNDEVELOPED PENETRATION IN "C" DECK. DESIGN INTENT IS TO PROVIDE A CODE COMPLIANT SPRINKLER SYSTEM FOR THE EXPOSED PENETRATION. CONTRACTOR SHALL BE REQUIRED TO SUBMIT HYDRAULIC CALCULATIONS TERMINATED AT THE HYDRANT OUTLET.

2. SPRINKLER COVERAGE IS NOT REQUIRED IN EXTERIOR OVERHANGS AS THEY ARE CONSTRUCTED OF NON COMBUSTIBLE MATERIALS.

3. PROVIDE PROTECTIVE SPRINKLER GUARDS ON EXPOSED SPRINKLER HEADS LOCATED BELOW 4" OF FINISH FLOORING. SPRINKLER GUARDS SHALL BE REMOVED AFTER CONSTRUCTION. GUARDS SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION OF ALL AREAS. GUARDS SHALL BE REMOVED IF SPRINKLER HEAD ELEVATION AND/OR OTHERS WOULD BE SUSCEPTIBLE TO DAMAGE.

4. PROVIDE PROTECTIVE SPRINKLER GUARDS ON ALL EXPOSED PENDENT SPRINKLER HEADS LOCATED BELOW 4" OF FINISH FLOORING. GUARDS SHALL BE REMOVED AFTER CONSTRUCTION. GUARDS SHALL BE REMOVED IF SPRINKLER HEAD ELEVATION AND/OR OTHERS WOULD BE SUSCEPTIBLE TO DAMAGE.

5. SPRINKLERS SHALL BE PROVIDED WITH MAXIMUM SPACING OF 6 FEET NEAR STAIR FLOOR OPENINGS.

6. SPRINKLERS SHALL BE PROVIDED BENEATH MECHANICAL, DUCTWORK AND GROUPS OF MECHANICAL DUCTWORK GREATER THAN 4 FT IN WIDTH. WHERE DUCTWORK EXCEEDS SPRINKLERS, ADDITIONAL COVERAGE SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 13.

7. CONCEALED SPRINKLER HEAD FINISHES TO MATCH CEILING COLOR. UNLESS OTHERWISE NOTED REFER TO ARCHITECTURAL DRAWINGS.

8. SPRINKLERS SHALL BE PROVIDED BENEATH ACCESSIBLE LADDERWAYS, PIPING AND MECHANICAL DUCTWORK. SPRINKLERS SHALL BE PROVIDED ACCESSIBLE LADDERWAYS AT MAIN LANDING. LOCATION OF ALL EXPOSED PIPING SHALL BE FIELD COORDINATED WITH ARCHITECT.

9. DRY PENDING AND/OR DRY SPIDERS SHALL BE PROVIDED IN ROOMS/AREAS WHERE SPRINKLER COVERAGE IS NOT REQUIRED.

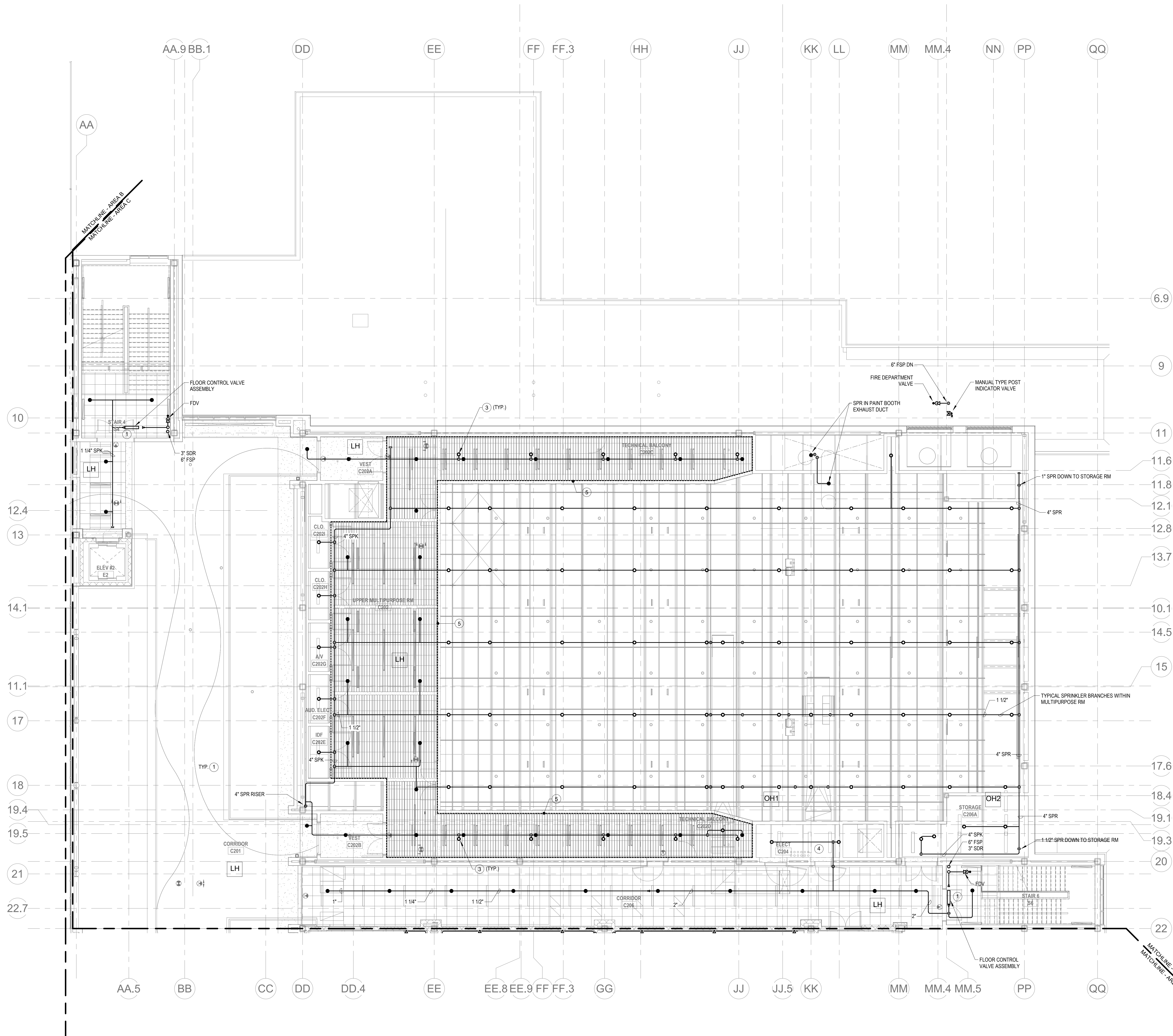
10. SPRINKLERS SHALL BE PROVIDED BENEATH FEATURES GREATER THAN 4 FT IN WIDTH.

11. FINAL LOCATION OF UPFIRE SPRINKLER HEADS IN AREAS WITH DROPPED CEILING SHALL BE COORDINATED WITH STRUCTURE AND EQUIPMENT OF ALL OTHER TRADES TO ENSURE FULL COMPLIANCE WITH NFPA 13. PROVIDE ADDITIONAL SPRINKLER COVERAGE AS REQUIRED.

GENERAL NOTE AT SOUND BARRIER CEILING

A. IN THE VOUCHER/ SHOP ROOMS A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR. CONTRACTOR SHALL PROVIDE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANT AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH MECHANICAL PLANT. PENETRATIONS THROUGH PRE-CAST CONCRETE PLANT ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR SHALL COORDINATE ALL OPENINGS IN THE CORES. GENERAL CONTRACTOR SHALL PROVIDE ALL COORDINATION FOR PENETRATIONS THROUGH PRE-CAST CONCRETE PANELS AS PART OF THE MECHANICAL COORDINATION.

B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE PRE-CAST CONCRETE SUB-CONTRACTOR SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND CONSTRUCTION. NO ADDITIONAL ATTACHMENT OR PENETRATIONS THROUGH PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR DRILLING OF PRE-CAST CONCRETE SHALL BE ALLOWED.



① FIRE PROTECTION SECOND FLOOR PLAN - AREA C
1/8" = 1'-0"

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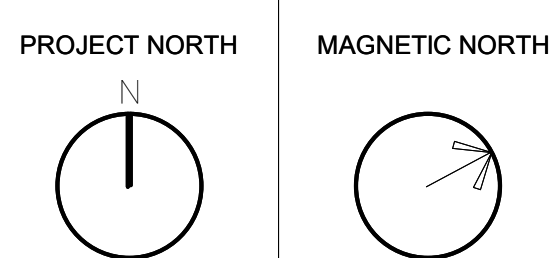
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August 28th, 2023



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FP1-1-2C

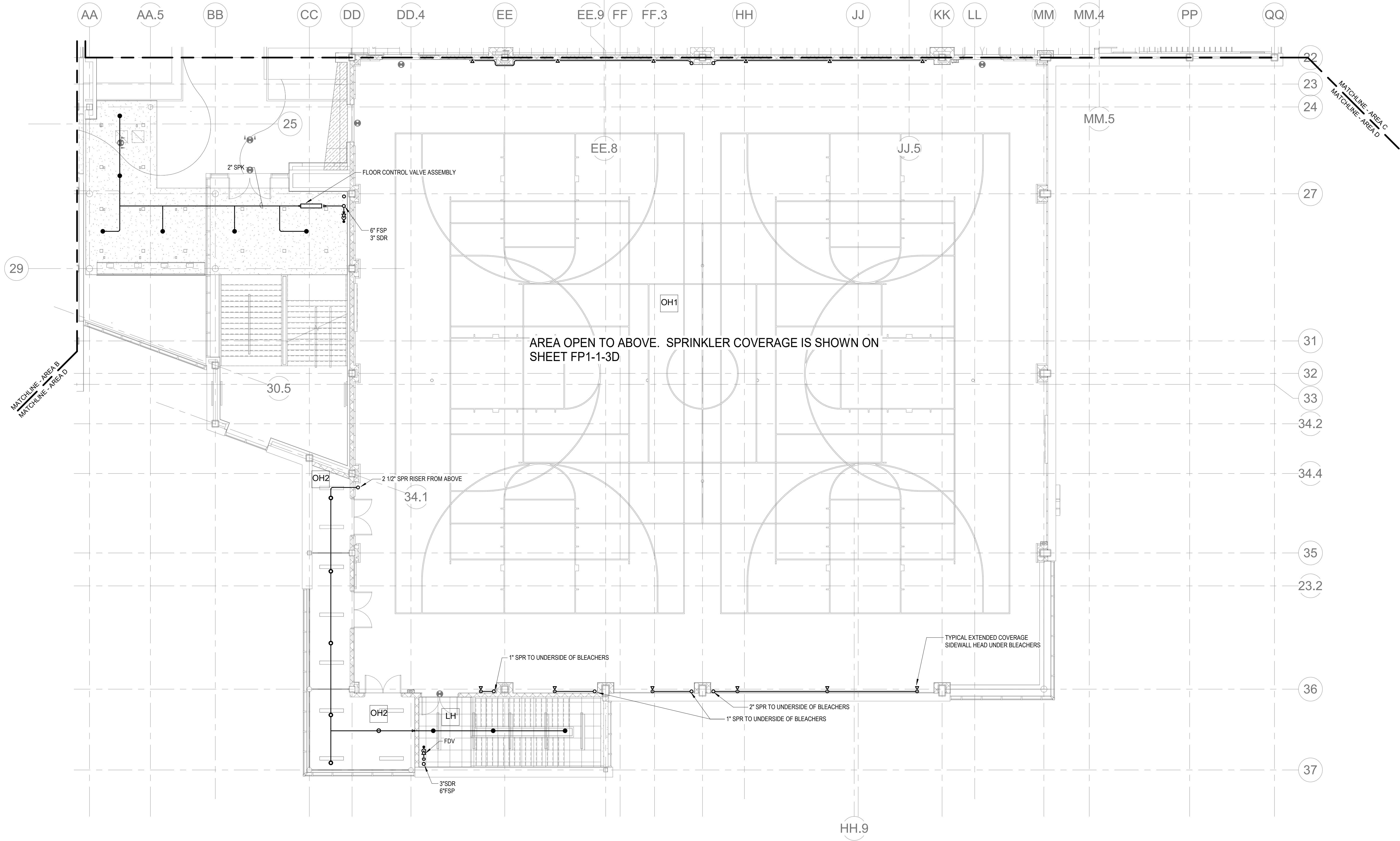
KEYNOTES

- LH LIGHT HAZARD OCCUPANCY
OH ORDINARY HAZARD OCCUPANCY
EH EXTRA HAZARD OCCUPANCY

1. PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTORS TEST CONNECTION. (AS REQUIRED PER DETAIL).

FP GENERAL NOTES

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2. SPRINKLER COVERAGE IS NOT REQUIRED IN EXTERIOR OVERHANGS AS THEY ARE CONSTRUCTED OF NON COMBUSTIBLE MATERIALS.
3. PROVIDE PROTECTIVE SPRINKLER GUARDS ON SPRINKLER HEADS LOCATED BELOW 7'-0" A.F.F. IN MECHANICAL ROOMS, STORAGE ROOMS, PUMP ROOMS, SERVICE AREAS, GYMNASIUMS REGARDLESS OF SPRINKLER HEAD ELEVATION AND WHERE OTHERWISE SUSCEPTIBLE TO DAMAGE.
4. PROVIDE PROTECTIVE SPRINKLER GUARDS ON ALL EXPOSED PENDENT SPRINKLER HEADS AT THE UNDERSIDE OF THE MEZZANINE LEVEL.
5. SPRINKLERS SHALL BE PROVIDED WITH MAXIMUM SPACING OF 8 FEET NEAR STAIR FLOOR OPENINGS.
6. SPRINKLERS SHALL BE PROVIDED BENEATH MECHANICAL DUCTWORK AND/OR GROUPS OF MECHANICAL DUCTWORK GREATER THAN 4 FT IN WIDTH. WHERE DUCTWORK INTERFERE WITH SPRINKLERS, ADDITIONAL COVERAGE SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 13.
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8. SPRINKLERS SHALL BE PROVIDED BENEATH ACCESSIBLE LANDINGS. PIPING AND FITTINGS SHALL BE PROVIDED TO SPRINKLERS BENEATH ACCESSIBLE LANDINGS AND AT MAIN LANKING. LOCATION OF ALL EXPOSED PIPING SHALL BE FIELD COORDINATED WITH ARCHITECT.
9. DRY PENDENTS AND/OR DRY SIDEWALLS SHALL BE PROVIDED IN ROOMS/AREAS WHERE THE OPERATING TEMPERATURE IS LESS THAN 40F.
10. SPRINKLERS SHALL BE PROVIDED BENEATH FIXTURES GREATER THAN 4 FT IN WIDTH.
11. FINAL LOCATION OF UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILINGS ARE TO BE COORDINATED WITH STRUCTURE AND EQUIPMENT OF ALL OTHER TRADES TO ENSURE FULL COMPLIANCE WITH NFPA 13. PROVIDE ADDITIONAL SPRINKLER COVERAGE AS REQUIRED TO SUIT.
12. GENERAL NOTE AT SOUND BARRIER CEILING:
A. IN THE VOCATIONAL SHOP ROOMS A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEPPFP SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNISTRU SUPPORTS ATTACHED TO BOTTOM CHORD OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEPPFP SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEPPFP SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON A LIMITED BASIS AT LOCATIONS SPECIFICALLY INDICATED ON THE MEPPFP DRAWINGS.
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A. ALL COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEPPFP COORDINATION PROCESS.
B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.



1. FIRE PROTECTION SECOND FLOOR PLAN - AREA D
1/8" = 1'-0"

DRA

Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
260 Charles Street
Studio 300
Waltham, MA 02453
Planning | Architecture | Interior Design
Tel: 617.984.1700
www.dra-inc.com

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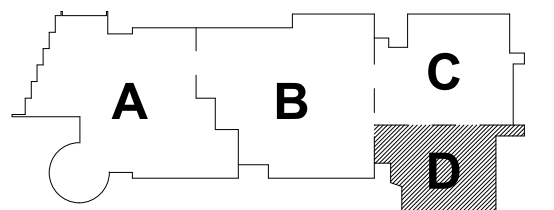
Wakefield, MA 01880

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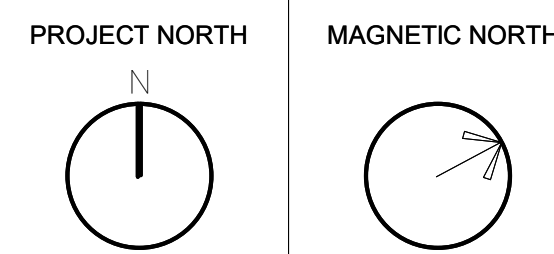
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ENGINEERS
BALA CONSULTING ENGINEERS, INC.
200 WEST 10TH STREET
SUITE 200
NEW YORK, NY 10011
TEL: 212.693.1234 FAX: 212.693.1235
WWW.BALA-ENGINEERS.COM
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NEW YORK LICENSE NO. 00000000000000000000

BID SET

August 28th, 2023



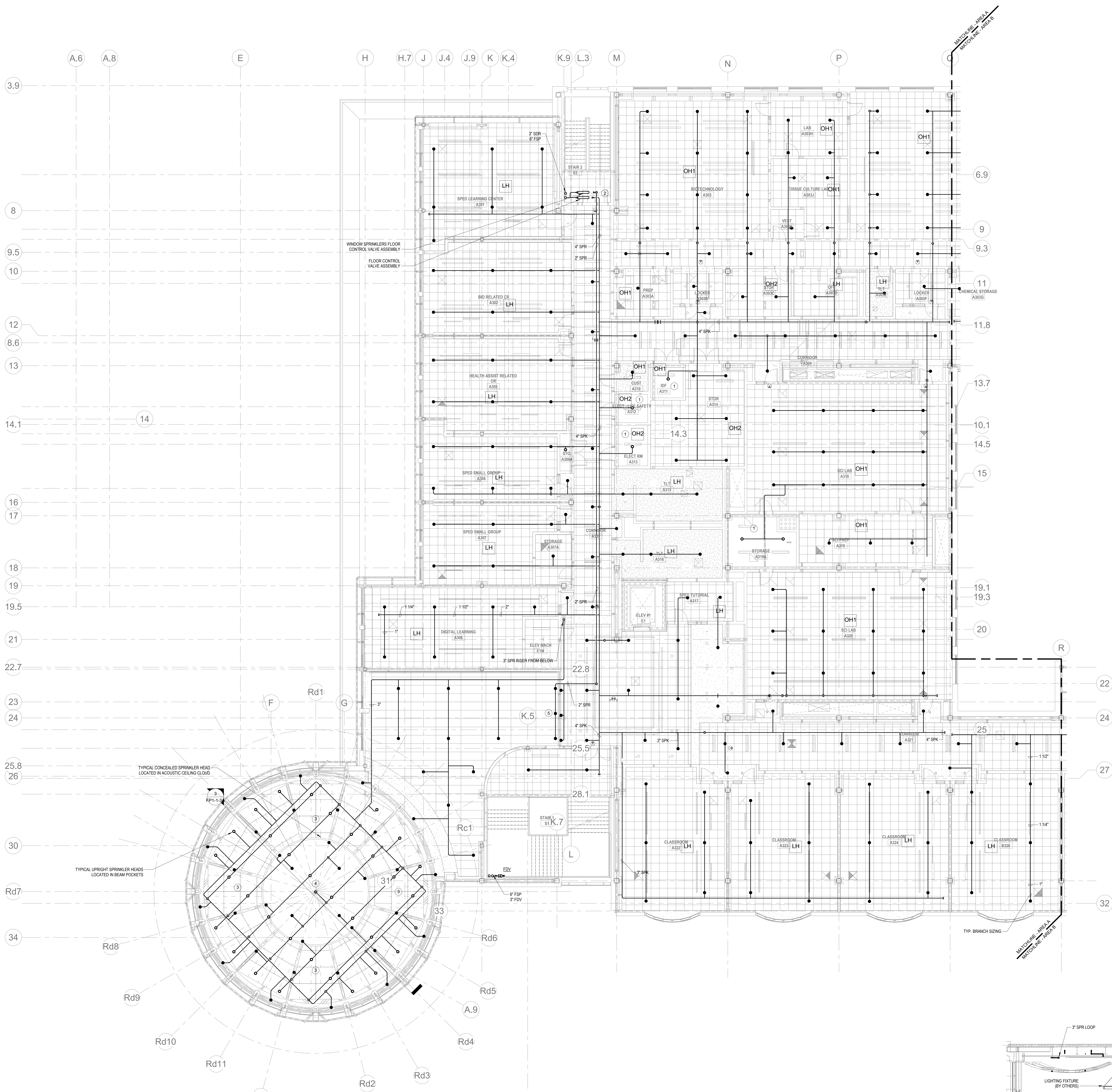
KEY PLAN



FIRE
PROTECTION
SECOND FLOOR
PLAN - AREA D

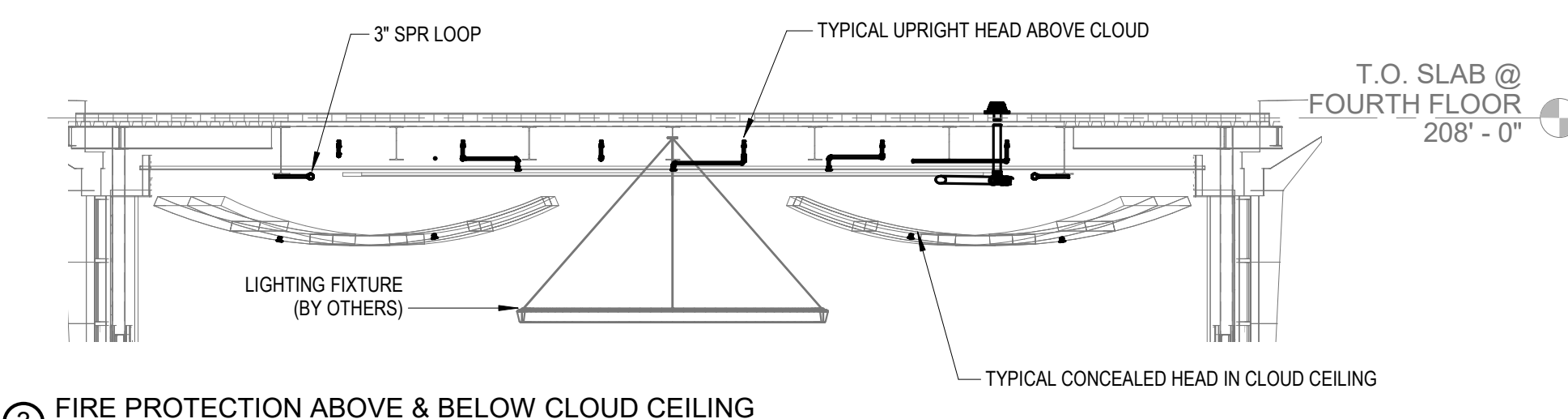
Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

FP1-1-2D



- ### KEYNOTES
- LH LIGHT HAZARD OCCUPANCY
 - OH ORDINARY HAZARD OCCUPANCY
 - EH EXTRA HAZARD OCCUPANCY
- FINAL LOCATION OF ALL PIPING AND SPRINKLER HEADS IN ELECTRIC TYPE SPACES AND UTILITY ROOMS SHALL BE FIELD COORDINATED WITH ELECTRICAL CONTRACTOR AS TO VERIFY COMPLIANCE WITH ELECTRICAL CODES.
 - PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTOR'S TEST CONNECTION. (AS REQUIRED PER DETAIL.)
 - PROVIDE SPRINKLER COVERAGE ABOVE AND BELOW MEDIA CENTER CEILING. SPRINKLER COVERAGE ABOVE CEILING SHALL BE COORDINATED WITH STRUCTURAL ELEMENTS.
 - PROVIDE CUSTOM COLOR SPRINKLER HEADS IN CIRCULAR PORTION OF MEDIA CENTER CEILING.
 - PROVIDE WINDOW SPRINKLERS WITHIN 2 IN. OF THE GLASS PARTITIONS IN ACCORDANCE WITH NFPA 13 TABLE 7.8.4. THESE SPRINKLERS SHALL BE SPACED NOT MORE THAN 6 FT FROM EACH OTHER.

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1 FIRE PROTECTION THIRD FLOOR PLAN - AREA A
1/8" = 1'-0"

2 FIRE PROTECTION ABOVE & BELOW CLOUD CEILING
1/8" = 1'-0"

DRA

Drummeys Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
www.dra.com

260 Charles Street
Studio 300
Waltham, MA 02453

Planning | Architecture | Interior Design

Northeast Metropolitan Regional Vocational High School

Wakefield, MA 01880

BALA ENGINEERS

BALA CONSULTING ENGINEERS, INC.
300 WILSON AVENUE, SUITE 200
WILSON, MA 01890
TEL: 978.262.1111 FAX: 978.262.1112
WWW.BALA-ENG.COM

REGISTERED PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE NO. 10456

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August 28th, 2023

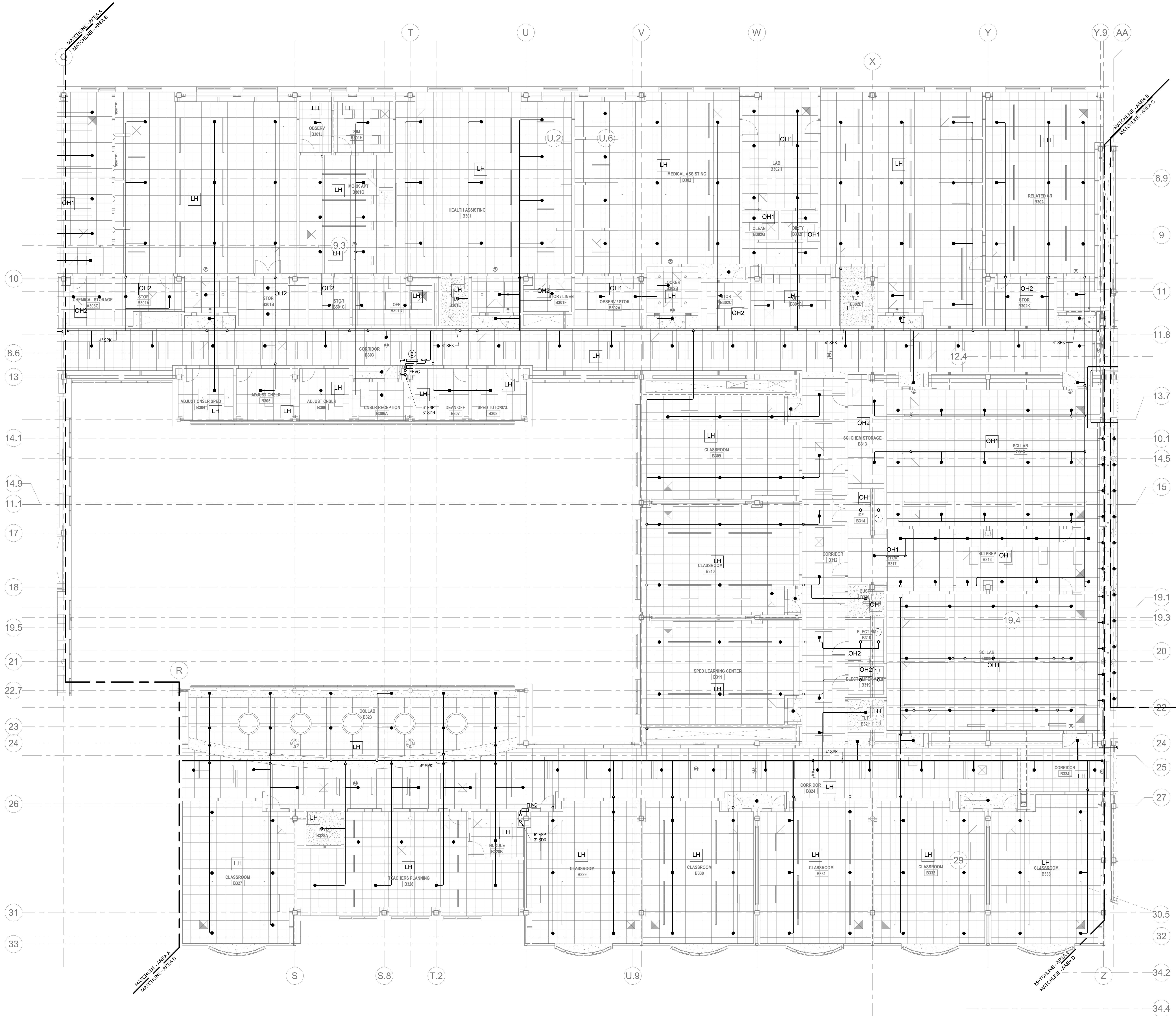
KEY PLAN

PROJECT NORTH
MAGNETIC NORTH

FIRE PROTECTION THIRD FLOOR PLAN - AREA A

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

FP1-1-3A



KEYNOTES

- LH LIGHT HAZARD OCCUPANCY
- OH ORDINARY HAZARD OCCUPANCY
- EH EXTRA HAZARD OCCUPANCY

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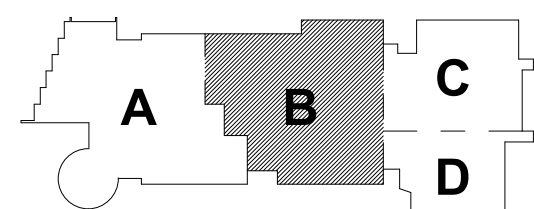
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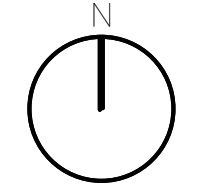
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August 28th, 2023

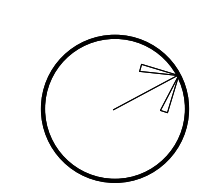


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



FIRE
PROTECTION
THIRD FLOOR
PLAN - AREA B

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

Job No.: 60-20-409

Drawn By: RDR

Date: August 28th, 2023

FP1-1-3B

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ENGINEERS

Drummeey Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074
Tel: 817.984.1700
www.dra.com

260 Charles Street
Studio 300
Waltham, MA
02453

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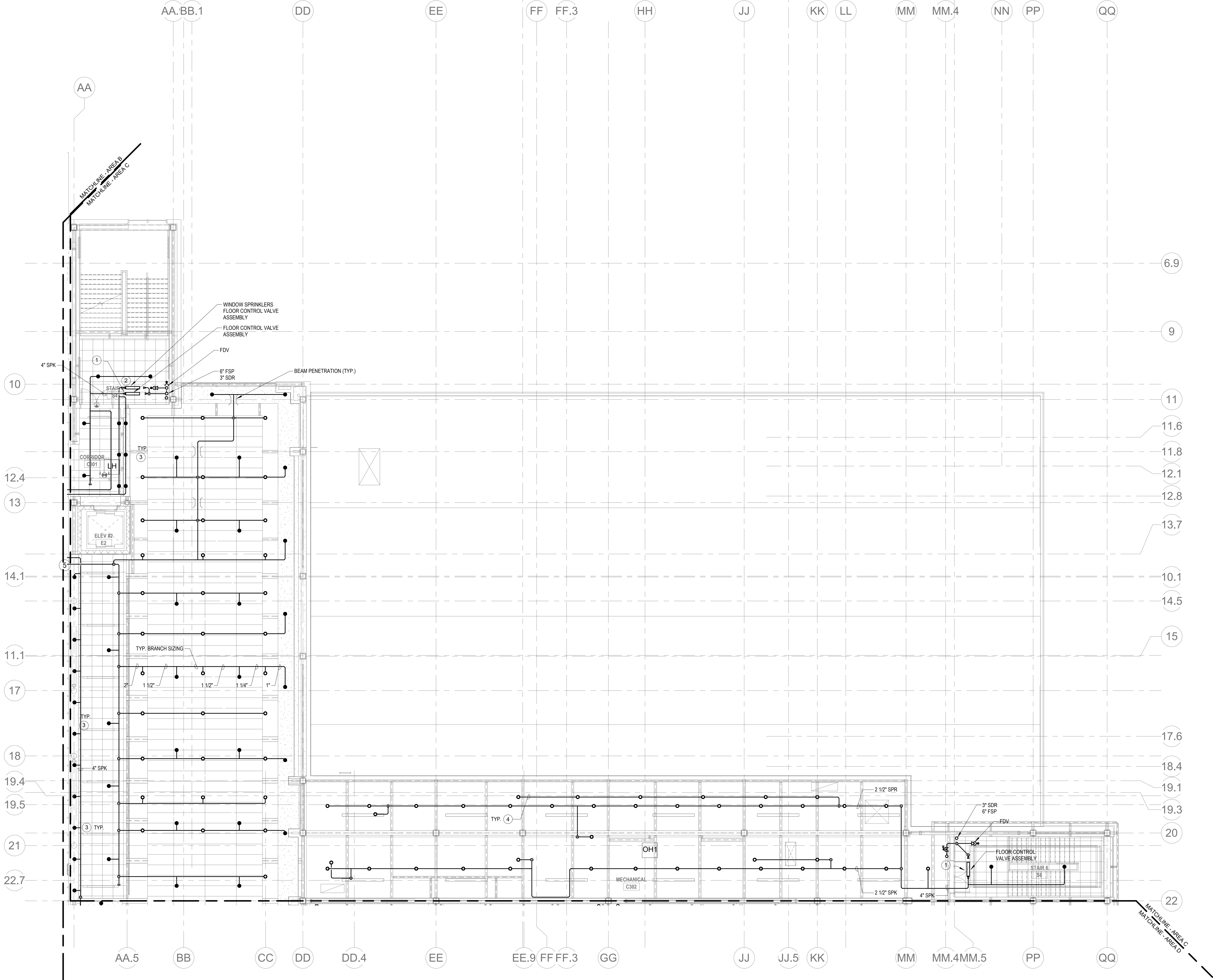
KEYNOTES

- LH LIGHT HAZARD OCCUPANCY
OH ORDINARY HAZARD OCCUPANCY
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- 4 PROVIDE SPRINKLER UNDERSIDE OF DUCTWORK. FIELD COORDINATE.
- 5 FOR ALL PIPING PASSING THROUGH COORDINATE Y9, PROVIDE AN EXPANSION LOOP AND KID FLEXIBLE COUPLINGS ON EITHER SIDE.
- 6 PROVIDE FLOOR DRAINS WITH TRAP GUARD.

FP GENERAL NOTES

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13. GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP MEZZANINES:
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B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.



1 FIRE PROTECTION THIRD FLOOR PLAN - AREA C
1/8" = 1'-0"

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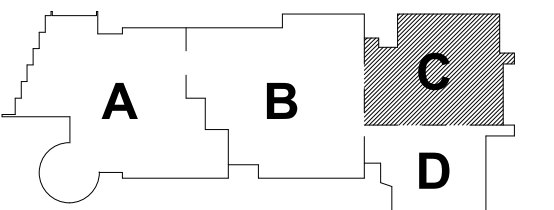
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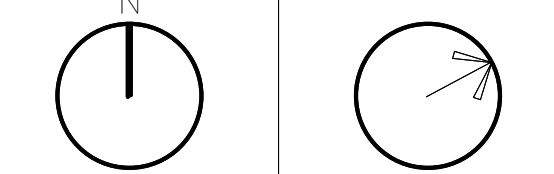
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August 28th, 2023



KEY PLAN

PROJECT NORTH
MAGNETIC NORTH



FIRE
PROTECTION
THIRD FLOOR
PLAN - AREA C

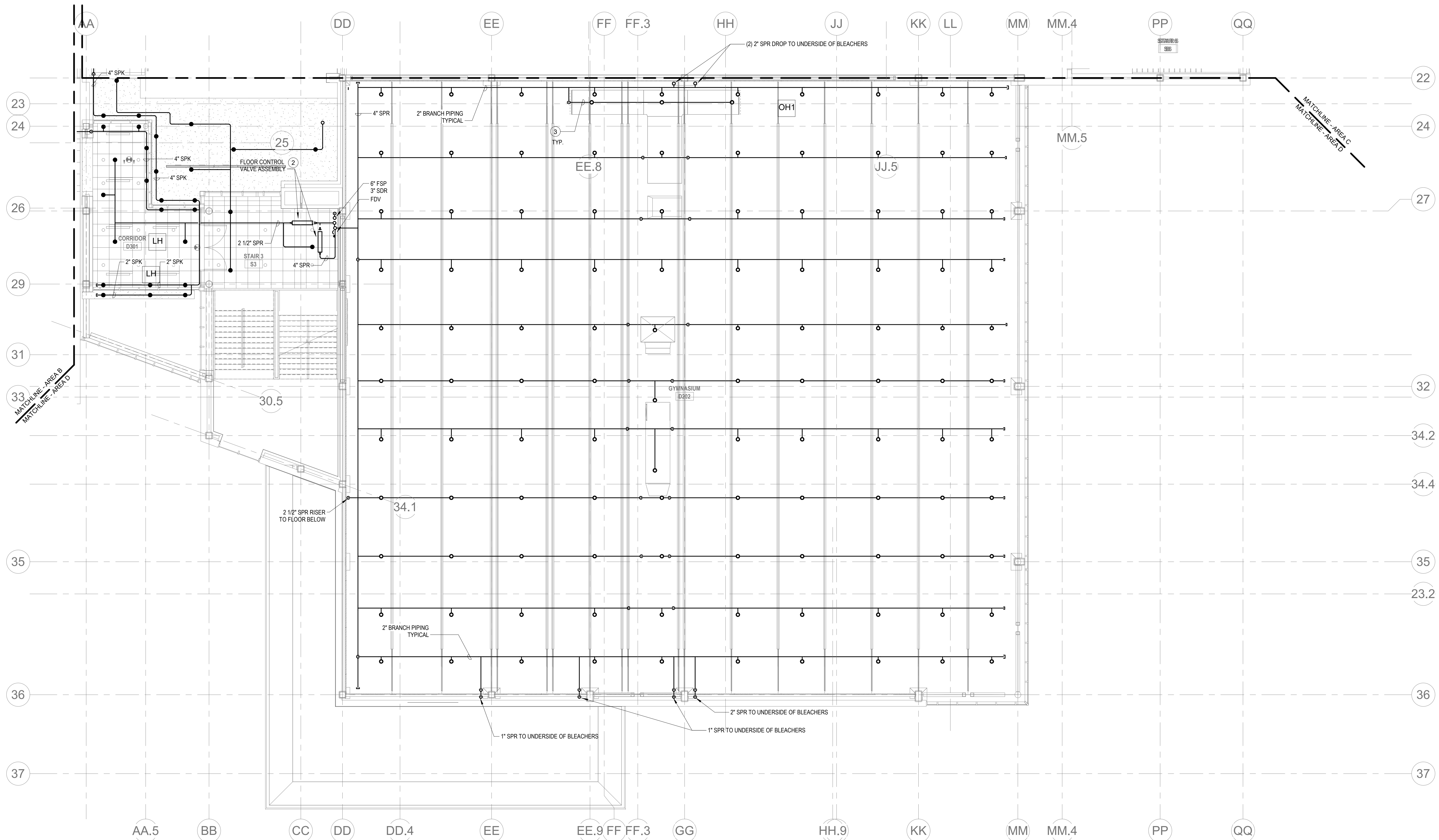
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Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

FP1-1-3C

LH	LIGHT HAZARD OCCUPANCY
OH	ORDINARY HAZARD OCCUPANCY
EH	EXTRA HAZARD OCCUPANCY

- ## FP GENERAL NOTES

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① FIRE PROTECTION THIRD FLOOR PLAN - AREA D
1/8" = 1'-0"

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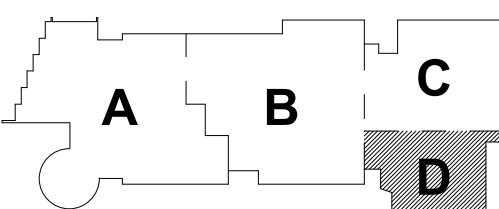
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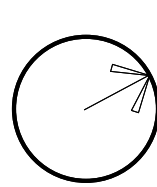
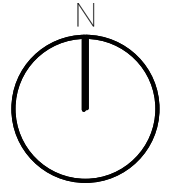
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KEY PLAN

PROJECT NORTH

MAGNETIC NORTH



**FIRE
PROTECTION
THIRD FLOOR
PLAN - AREA D**

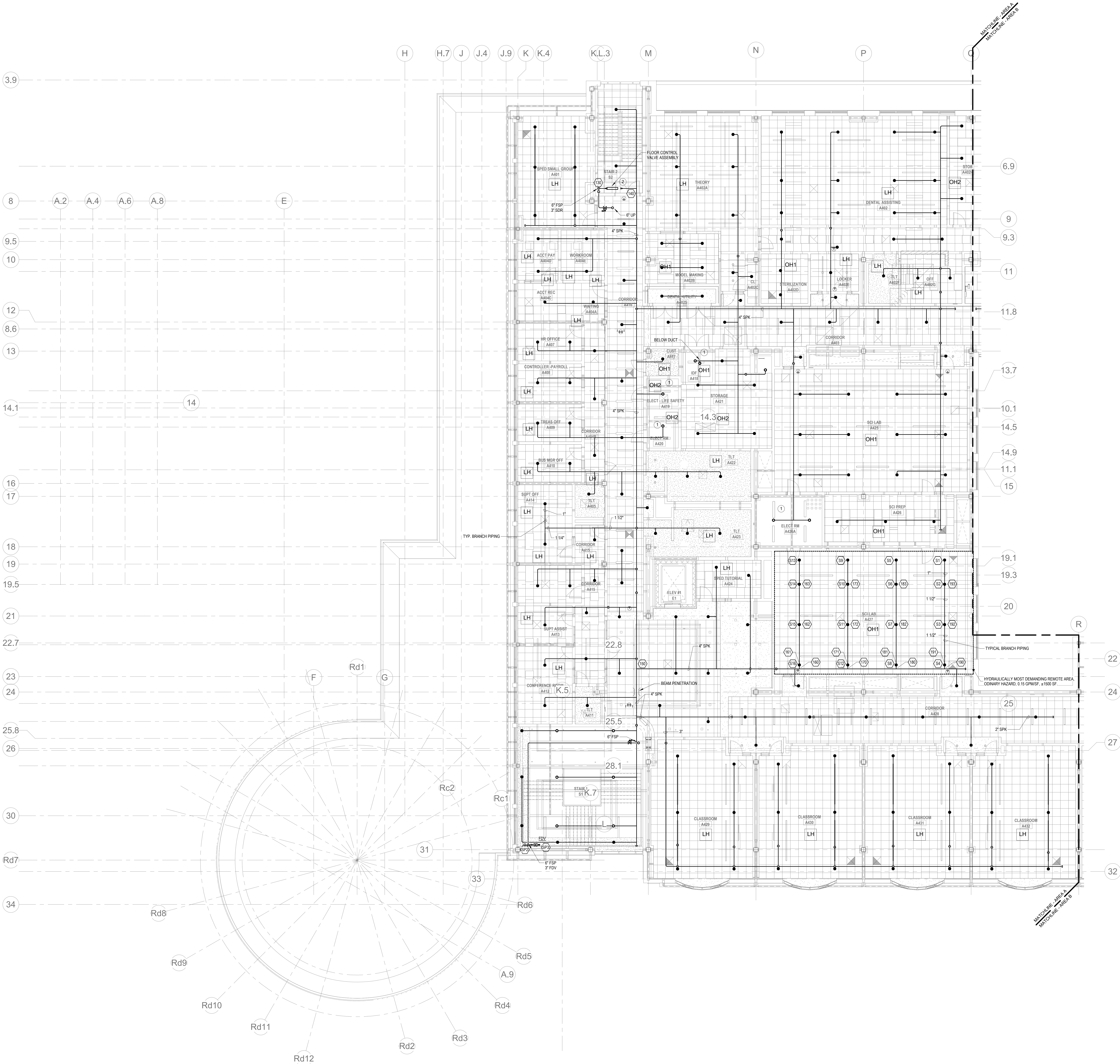
Scale: 1/8" = 1'-0"

Job No.: 60-20-409

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Date: August 28th, 2023

FP1-1-3D



KEYNOTES

- LH LIGHT HAZARD OCCUPANCY
OH ORDINARY HAZARD OCCUPANCY
EH EXTRA HAZARD OCCUPANCY

- 1 FINAL LOCATION OF ALL PIPING AND SPRINKLER HEADS IN ELECTRIC TYPE SPACES AND UTILITY ROOMS SHALL BE FIELD COORDINATED WITH ELECTRICAL CONTRACTOR AS TO VERIFY COMPLIANCE WITH ELECTRICAL CODES.
2 PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTOR'S TEST CONNECTION.

FP GENERAL NOTES

1. WITHIN AREA OF SCOPE EXTEND NEW 4" SPRINKLER MAIN PIPING FROM A NEW ZONE CONTROL VALVE. CONTRACTOR SHALL SIZE BRANCH PIPING TO ALLOW FOR VELOCITY WILL REMAIN BELOW 20 FPS. PROVIDE QUICK RESPONSE UPRIGHTS IN OPEN CEILING AREAS AND CONCEALED PENDENTS IN AREAS WHERE DROP CEILING ARE INDICATED. EXTEND NEW 1" ARMED OVERS TO NEW CONCEALED PENDENTS. 1" SPRIGS SHALL BE ROUTED TO SPRIGS WITHIN 12" OF DECK. DESIGN INTENT IS TO PROVIDE A CODE COMPLIANT SPRINKLER LAYOUT FOR THE NEW PROGRAM LAYOUT. CONTRACTOR IS REQUIRE TO SUBMIT HYDRAULIC CALCULATIONS TERMINATED AT THE HYDRANT OUTLET.
2. SPRINKLER COVERAGE IS NOT REQUIRED IN EXTERIOR OVERHANGS AS THEY ARE CONSTRUCTED OF NON COMBUSTIBLE MATERIALS.
3. PROVIDE PROTECTIVE SPRINKLER GUARDS ON SPRINKLER HEADS LOCATED BELOW 7'-0" A.F.F. IN MECHANICAL ROOMS, STORAGE ROOMS, PUMP ROOMS, SERVICE AREAS, DYNAMOMUS REGARDLESS OF SPRINKLER HEAD ELEVATION AND WHERE OTHERWISE SUSCEPTIBLE TO DAMAGE.
4. PROVIDE PROTECTIVE SPRINKLER GUARDS ON ALL EXPOSED PENDENT SPRINKLER HEADS AT THE UNDERSIDE OF THE MEZZANINE LEVEL.
5. SPRINKLERS SHALL BE PROVIDED WITH MAXIMUM SPACING OF 6 FEET NEAR STAIR FLOOR OPENINGS.
6. SPRINKLERS SHALL BE PROVIDED BENEATH MECHANICAL DUCTWORK AND/OR GROUPS OF MECHANICAL DUCTWORK GREATER THAN 4 FT IN WIDTH. WHERE DUCTWORK INTERFERE WITH SPRINKLERS, ADDITIONAL COVERAGE SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 13.
7. CONCEALED SPRINKLER HEAD FINISHES TO MATCH CEILING COLOR. UNLESS OTHERWISE NOTED REFER TO ARCHITECTURAL DRAWINGS.
8. SPRINKLERS SHALL BE PROVIDED BENEATH ACCESSIBLE LANDINGS. PIPING AND FITTINGS SHALL BE PROVIDED TO SPRINKLERS BENEATH ACCESSIBLE LANDINGS AND AT MAIN LANDING. LOCATION OF ALL EXPOSED PIPING SHALL BE FIELD COORDINATED WITH ARCHITECT.
9. DRY PENDENTS AND/OR DRY SIDEWALLS SHALL BE PROVIDED IN ROOMS/AREAS WHERE THE OPERATING TEMPERATURE IS LESS THAN 40F.
10. SPRINKLERS SHALL BE PROVIDED BENEATH FITURES GREATER THAN 4 FT IN WIDTH.
11. FINAL LOCATION OF UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILINGS ARE TO BE COORDINATED WITH STRUCTURE AND EQUIPMENT OF ALL OTHER TRADES TO ENSURE FULL COMPLIANCE WITH NFPA 13. PROVIDE ADDITIONAL SPRINKLER COVERAGE AS REQUIRED TO SUIT.
12. GENERAL NOTE AT SOUND BARRIER CEILING:
A. IN THE VOCATIONAL SHOP ROOMS A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEPPF SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNISTUT SUPPORTS ATTACHED TO BOTTOM CHORD OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEPPF SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEPPF SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON A LIMITED BASIS AT LOCATIONS SPECIFICALLY INDICATED ON THE MEPPF DRAWINGS.
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B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.

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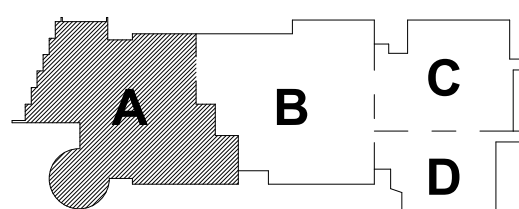
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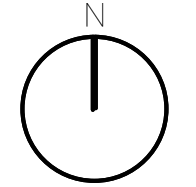
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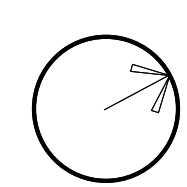


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



FIRE
PROTECTION
FOURTH FLOOR
PLAN - AREA A

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

Job No.: 60-20-409

Drawn By: RDR

Date: August 28th, 2023

FP1-1-4A

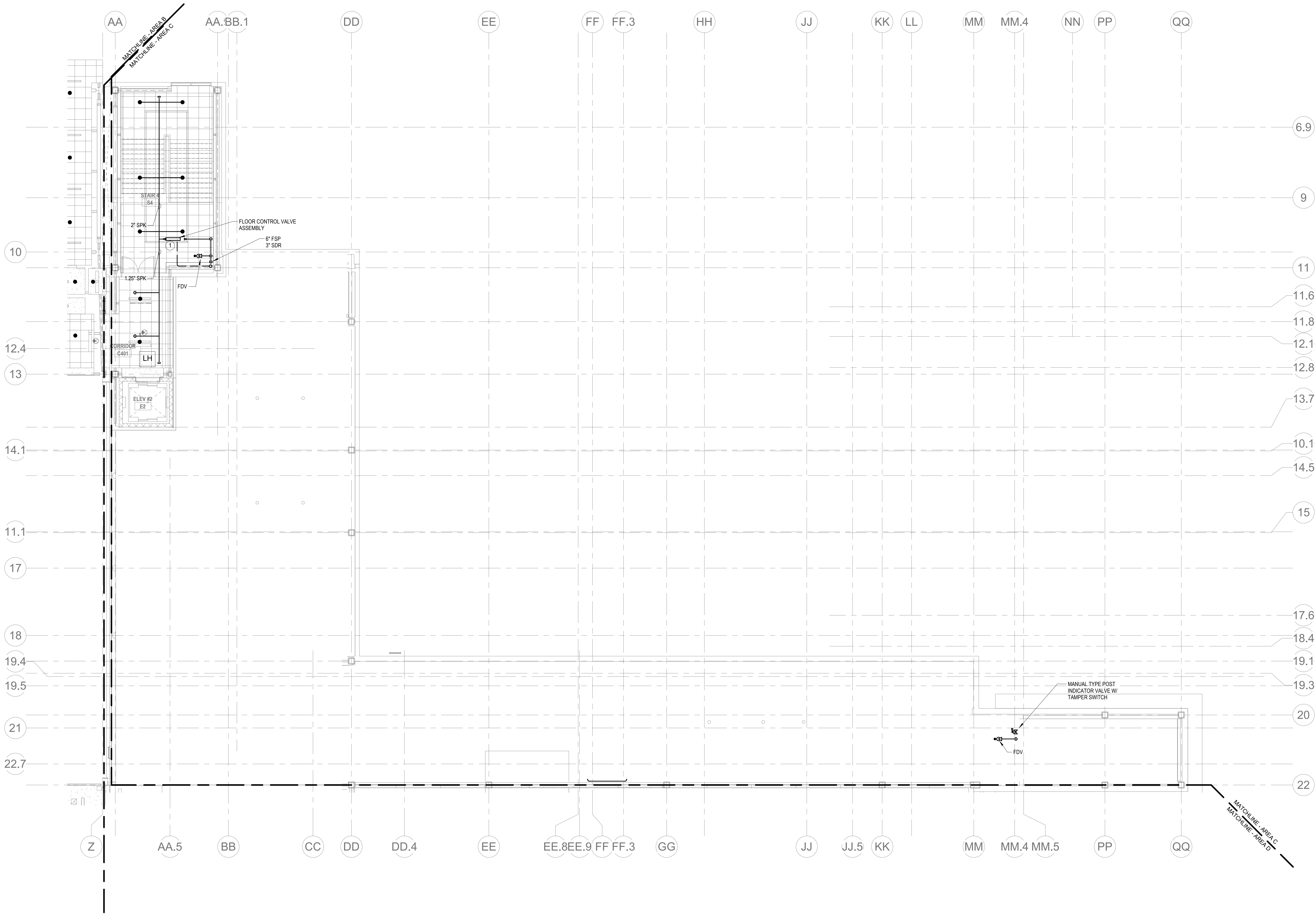
KEYNOTES

- LH LIGHT HAZARD OCCUPANCY
OH ORDINARY HAZARD OCCUPANCY
EH EXTRA HAZARD OCCUPANCY

1. PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTORS TEST CONNECTION. (AS REQUIRED PER DETAIL)

FP GENERAL NOTES

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2. SPRINKLER COVERAGE IS NOT REQUIRED IN EXTERIOR OVERHANGS AS THEY ARE CONSTRUCTED OF NON COMBUSTIBLE MATERIALS.
3. PROVIDE PROTECTIVE SPRINKLER GUARDS ON SPRINKLER HEADS LOCATED BELOW 7'-0" A.F.F. IN MECHANICAL ROOMS, STORAGE ROOMS, PUMP ROOMS, SERVICE AREAS, GYMNASIUMS REGARDLESS OF SPRINKLER HEAD ELEVATION AND WHERE OTHERWISE SUSCEPTIBLE TO DAMAGE.
4. PROVIDE PROTECTIVE SPRINKLER GUARDS ON ALL EXPOSED PENDENT SPRINKLER HEADS AT THE UNDERSIDE OF THE MEZZANINE LEVEL.
5. SPRINKLERS SHALL BE PROVIDED WITH MAXIMUM SPACING OF 6 FEET NEAR STAIR FLOOR OPENINGS.
6. SPRINKLERS SHALL BE PROVIDED BENEATH MECHANICAL DUCTWORK AND/OR GROUPS OF MECHANICAL DUCTWORK GREATER THAN 4 FT IN WIDTH. WHERE DUCTWORK INTERFERES WITH SPRINKLERS, ADDITIONAL COVERAGE SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 13.
7. CONCEALED SPRINKLER HEAD FINISHES TO MATCH CEILING COLOR. UNLESS OTHERWISE NOTED REFER TO ARCHITECTURAL DRAWINGS.
8. SPRINKLERS SHALL BE PROVIDED BENEATH ACCESSIBLE LANDINGS. PIPING AND FITTINGS SHALL BE PROVIDED TO SPRINKLERS BENEATH ACCESSIBLE LANDINGS AND AT MAIN LANDING. LOCATION OF ALL EXPOSED PIPING SHALL BE FIELD COORDINATED WITH ARCHITECT.
9. DRY PENDENTS AND/OR DRY SIDEWALLS SHALL BE PROVIDED IN ROOMS/AREAS WHERE THE OPERATING TEMPERATURE IS LESS THAN 40F.
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A. ALL COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEPPFP COORDINATION PROCESS.
B. ALL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.



1. FIRE PROTECTION FOURTH FLOOR PLAN - AREA C
1/8" = 1'-0"

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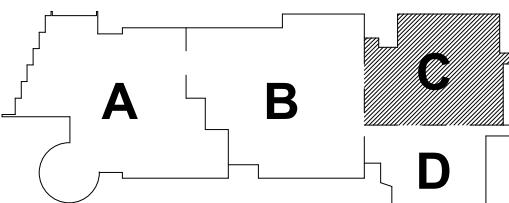
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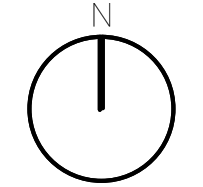
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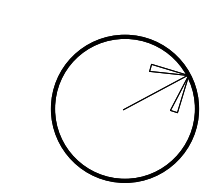


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



FIRE
PROTECTION
FOURTH FLOOR
PLAN - AREA C

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

Job No.: 60-20-409

Drawn By: RDR

Date: August 28th, 2023

FP1-1-4C

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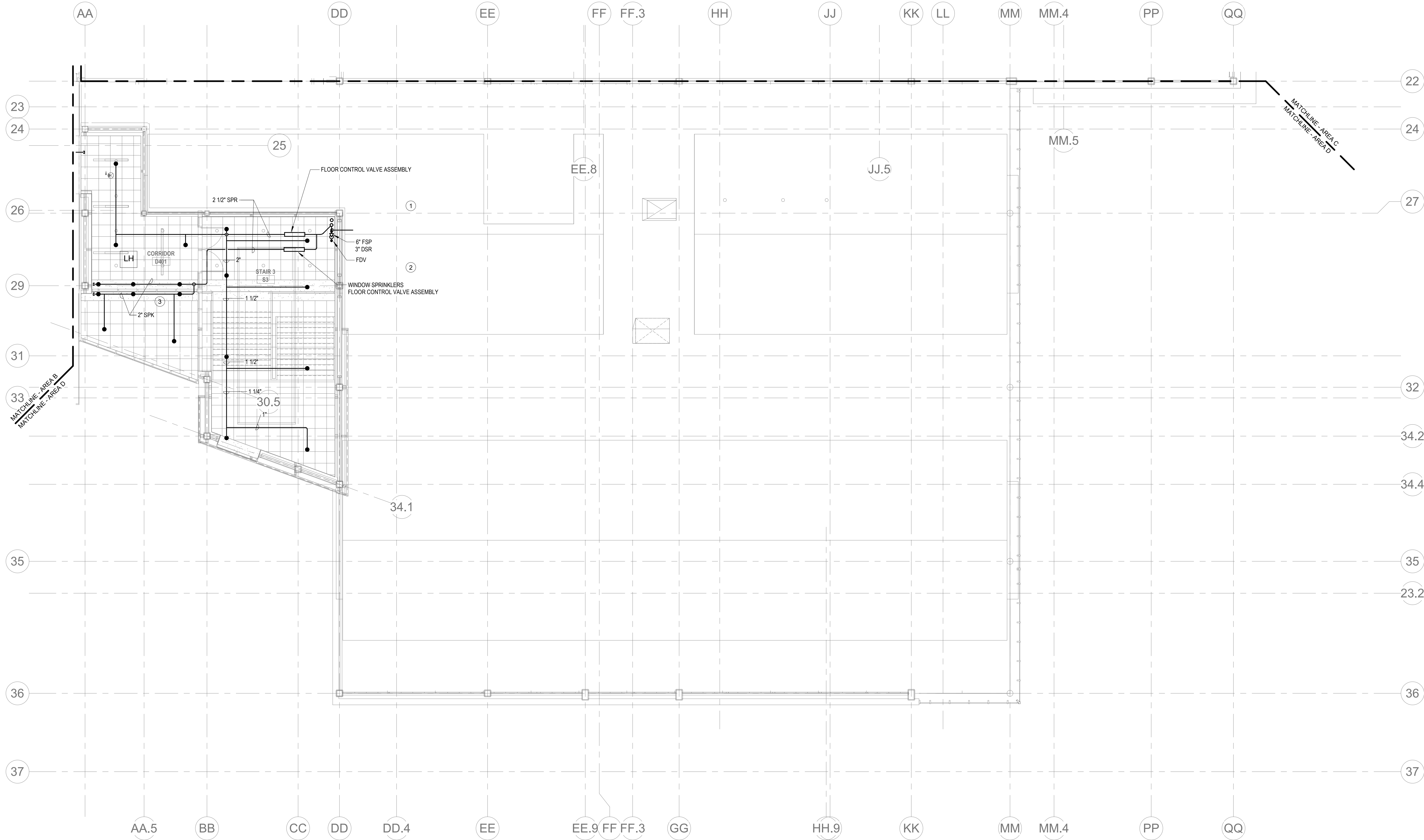
KEYNOTES

- LH LIGHT HAZARD OCCUPANCY
OH ORDINARY HAZARD OCCUPANCY
EH EXTRA HAZARD OCCUPANCY

1. PROVIDE 2 1/2" FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTOR'S TEST CONNECTION. (AS REQUIRED PER DETAIL).
2. PROVIDE 2 1/2" FLOOR CONTROL VALVE FOR THE WINDOW SPRINKLERS. THE FLOOR CONTROL VALVE SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTOR'S TEST CONNECTION.
3. PROVIDE WINDOW SPRINKLERS WITHIN 2 IN. OF THE GLASS PARTITIONS IN ACCORDANCE WITH NFPA 13 TABLE 7.8.3.1. THESE SPRINKLERS SHALL BE SPACED NOT MORE THAN 10 FT FROM EACH OTHER.

FP GENERAL NOTES

1. WITHIN AREA OF SCOPE EXTEND NEW 4" SPRINKLER MAIN PIPING FROM A NEW ZONE CONTROL VALVE. CONTRACTOR SHALL SIZE BRANCH PIPING TO ALLOW FOR VELOCITY WILL REMAIN BELOW 20 FPS. PROVIDE QUICK RESPONSE UPRIGHTS IN OPEN CEILING AREAS AND CONCEALED PENDENTS IN AREAS WHERE DROP CEILINGS ARE INDICATED. EXTEND NEW 1" BRIDGES TO NEW CONCEALED PENDENTS. 1" BRIGGS SHALL BE ROUTED TO UPRIGHTS WITHIN 12" OF CEILING. DESIGN INTENT IS TO PROVIDE A CODE COMPLIANT SPRINKLER LAYOUT FOR THE NEW PROGRAM LAYOUT. CONTRACTOR IS REQUIRED TO SUBMIT HYDRAULIC CALCULATIONS TERMINATED AT THE HYDRANT OUTLET.
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3. PROVIDE PROTECTIVE SPRINKLER GUARDS ON SPRINKLER HEADS LOCATED BELOW 7'-0" A.F.F. IN MECHANICAL ROOMS, STORAGE ROOMS, PUMP ROOMS, SERVICE AREAS, COMMON AREAS REGARDLESS OF SPRINKLER HEAD ELEVATION AND WHERE OTHERWISE SUSCEPTIBLE TO DAMAGE.
4. PROVIDE PROTECTIVE SPRINKLER GUARDS ON ALL EXPOSED PENDENT SPRINKLER HEADS AT THE UNDERSIDE OF THE MEZZANINE LEVEL.
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10. SPRINKLERS SHALL BE PROVIDED BENEATH FIXTURES GREATER THAN 4 FT IN WIDTH.
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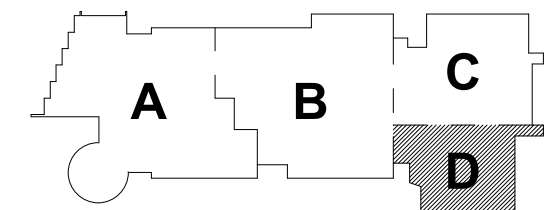
1. FIRE PROTECTION FOURTH FLOOR PLAN - AREA D
1/8" = 1'-0"

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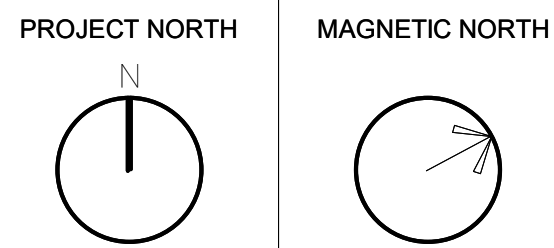
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WWW.BALA-ENGINEERS.COM

BID SET

August 28th, 2023



KEY PLAN



FIRE
PROTECTION
FOURTH FLOOR
PLAN - AREA D

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

Job No.: 60-20-409

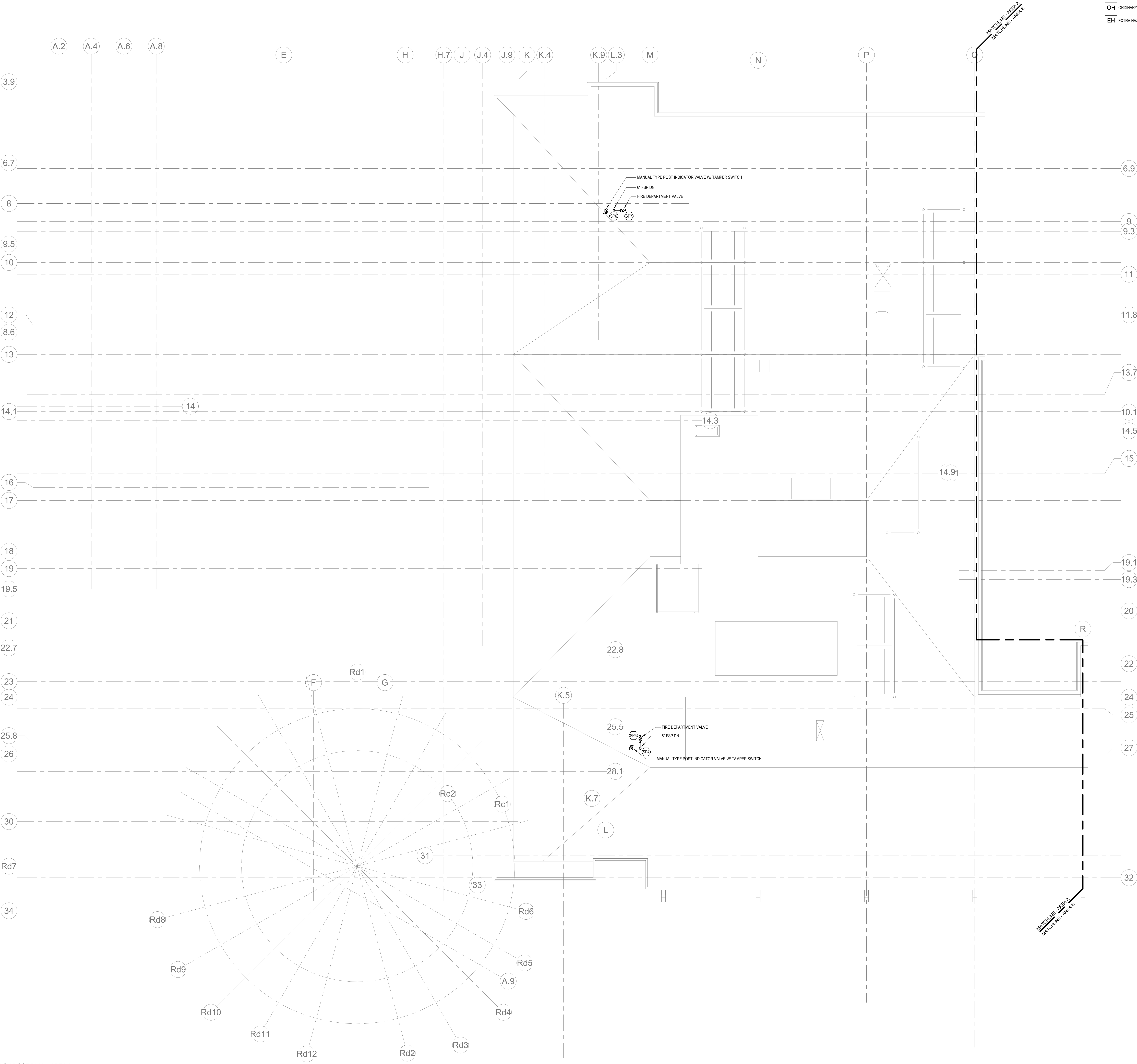
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Date: August 28th, 2023

FP1-1-4D

KEYNOTES

LH	LIGHT HAZARD OCCUPANCY
OH	ORDINARY HAZARD OCCUPANCY
EH	EXTRA HAZARD OCCUPANCY



FIRE PROTECTION ROOF PLAN - AREA A
1/8" = 1'-0"

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Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
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06074
Tel: 817.984.1700
www.dra-inc.com

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Studio 300
Waltham, MA
02453

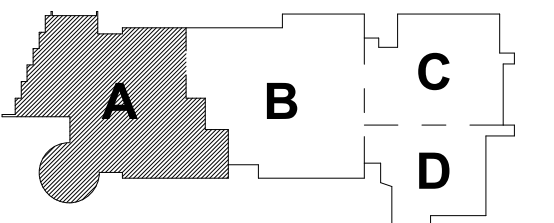
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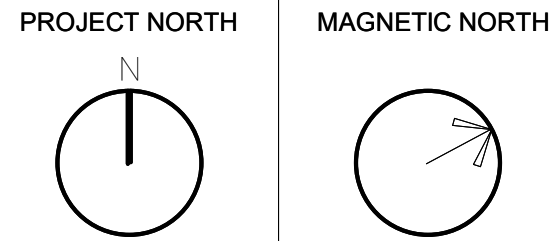
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August 28th, 2023



KEY PLAN



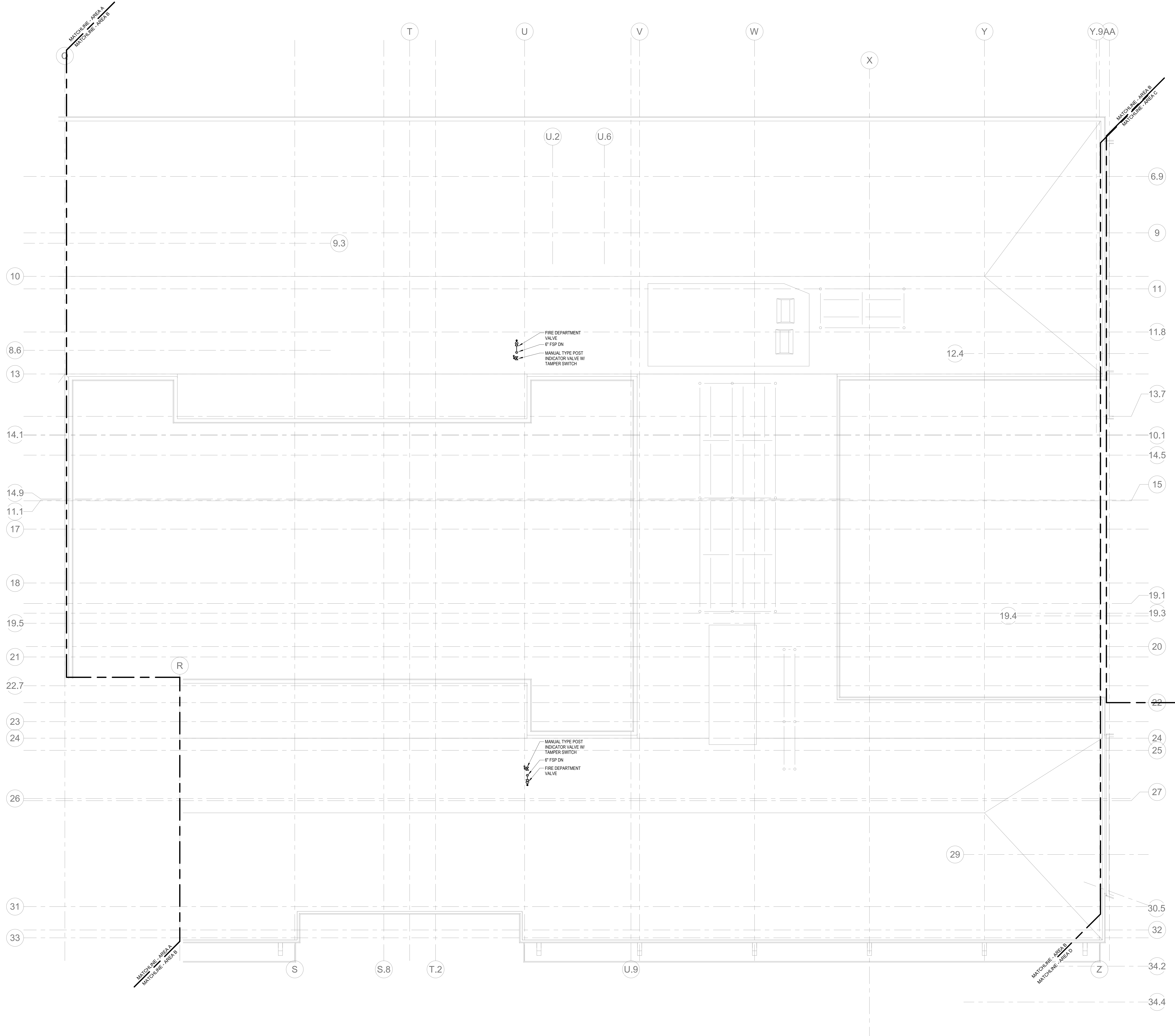
FIRE
PROTECTION
ROOF PLAN -
AREA A

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

FP1-2-1A

KEYNOTES

LH	LIGHT HAZARD OCCUPANCY
OH	ORDINARY HAZARD OCCUPANCY
EH	EXTRA HAZARD OCCUPANCY



1 FIRE PROTECTION ROOF PLAN - AREA B
1/8" = 1'-0"

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Studio 205
South Windsor, CT
06074
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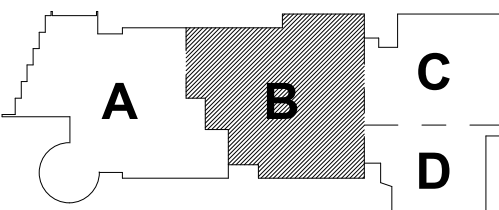
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SUITE 200
DALLAS, TEXAS 75201
TEL: 214.760.1000 FAX: 214.760.1001
WWW.BALA-ENGINEERS.COM

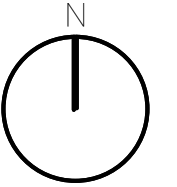
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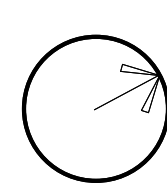


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



**FIRE
PROTECTION
ROOF PLAN -
AREA B**

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

Job No.: 60-20-409

Drawn By: RDR

Date: August 28th, 2023

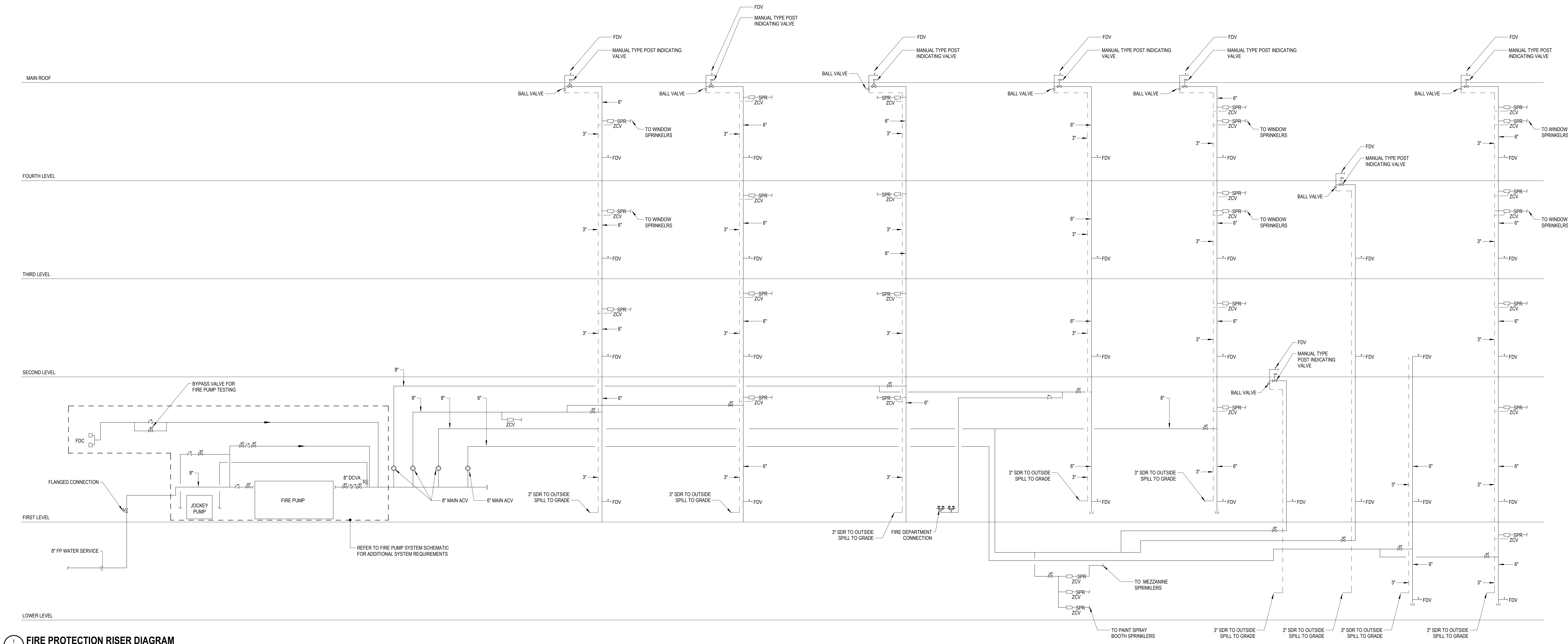
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Drumme Rosane Anderson, Inc.
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Studio 205
South Windsor, CT
06074
Planning | Architecture | Interior Design
Tel: 617.984.1700
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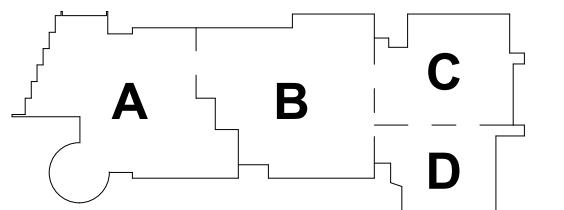
1 FIRE PROTECTION RISER DIAGRAM
FP5-0-1 NONE

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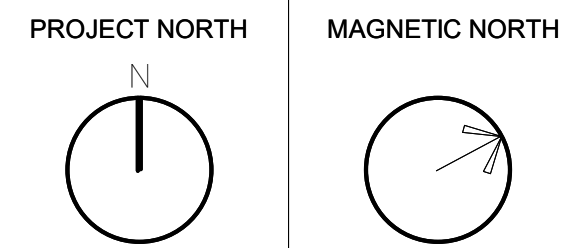
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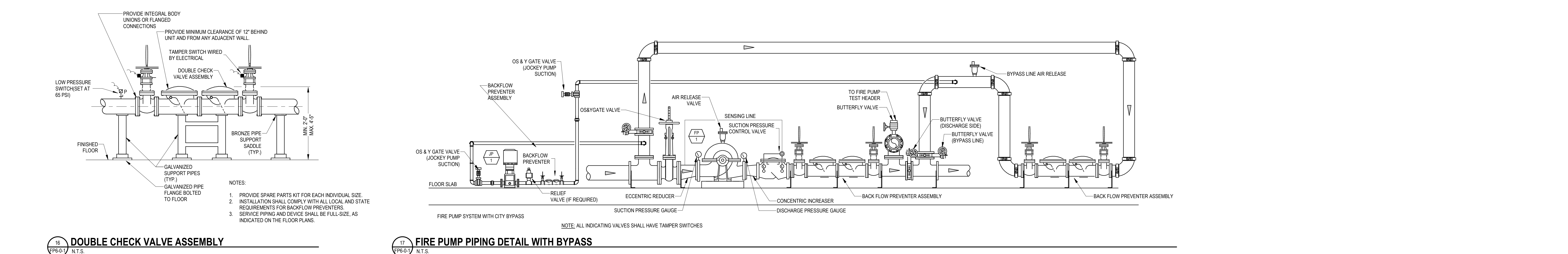
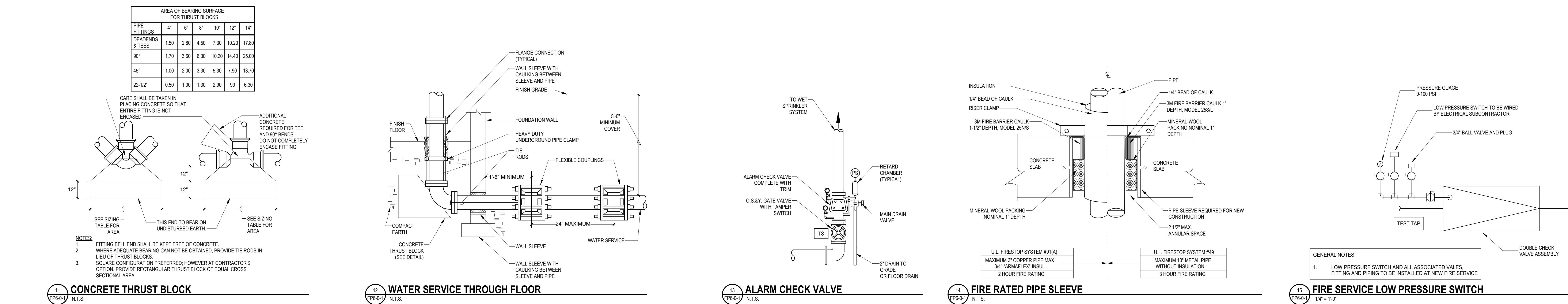
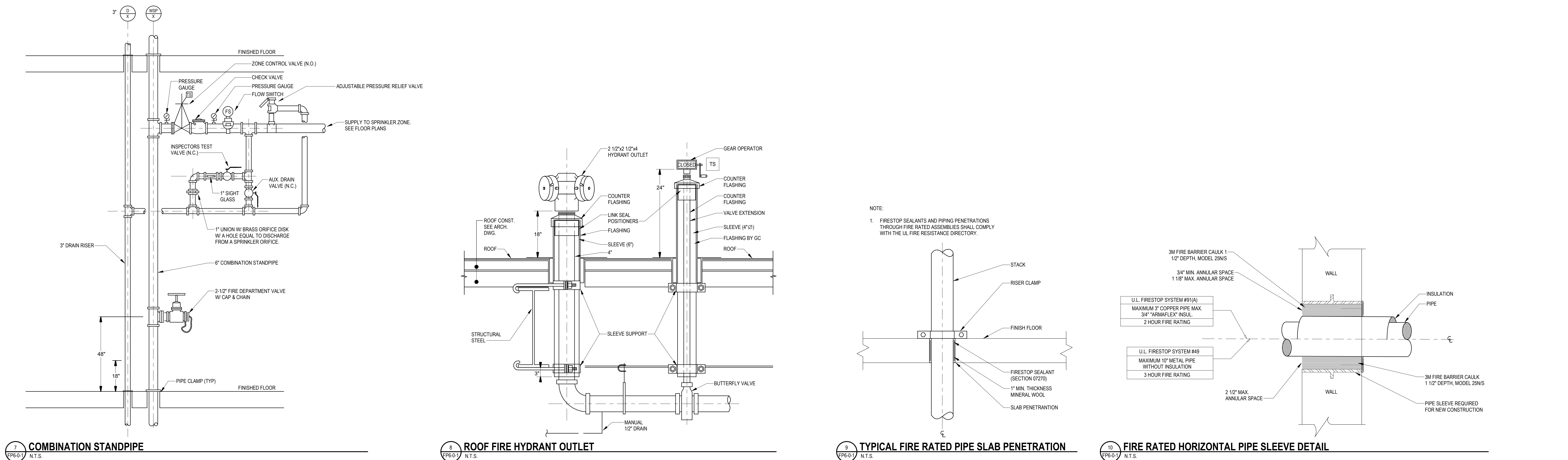
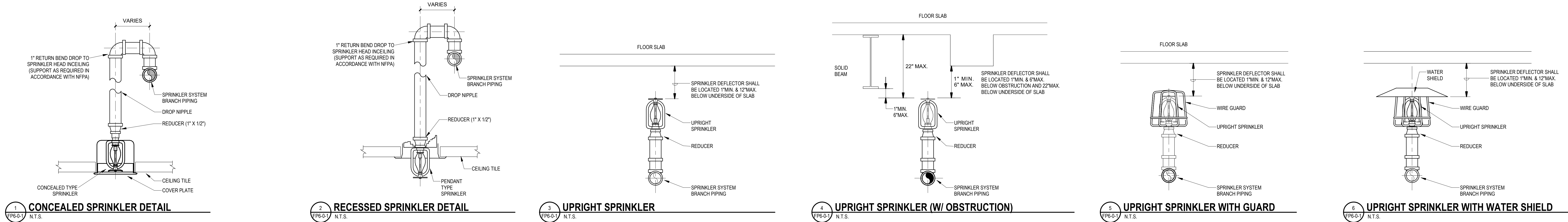
KEY PLAN



FIRE
PROTECTION
RISER DIAGRAM

Scale: NONE
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

FP5-0-1



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Drummay Rosane Anderson, Inc.

225 Oakland Road
Studio 205
South Windsor, CT
06074

260 Charles Street
Studio 300
Waltham, MA
02453

Planning | Architecture | Interior Design

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KEY PLAN

PROJECT NORTH

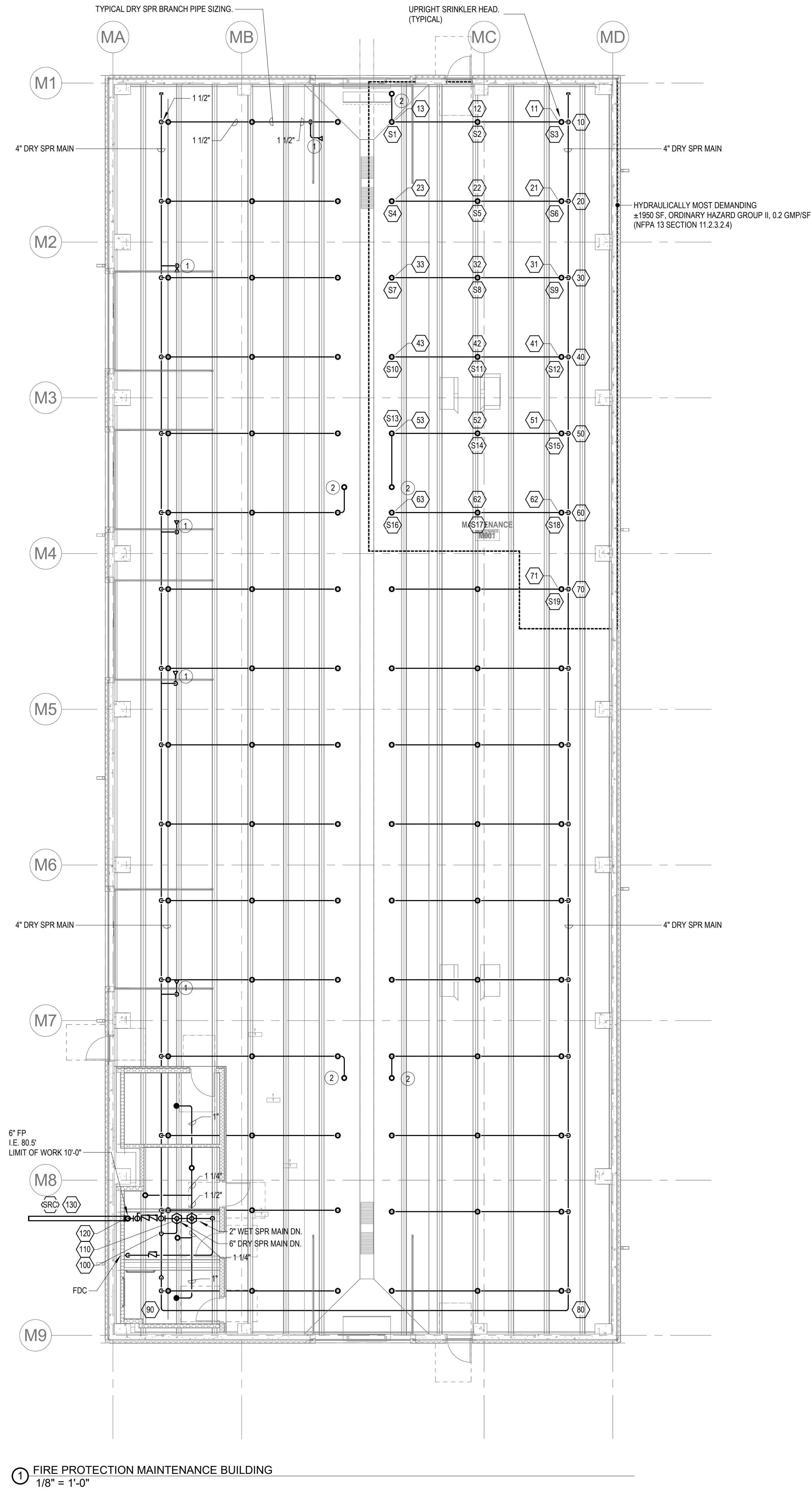
MAGNETIC NORTH

FIRE PROTECTION DETAILS

Scale: As indicated
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

FP6-0-1

KEYNOTES:
1 PROVIDE PENDANT WITH GUARDS BENEATH THE GARAGE DOOR TRACK. PROVIDE LOW POINT DRAIN.
2 PROVIDE PENDANT WITH GUARDS BENEATH DUCT GREATER THAN 48". PROVIDE LOW POINT DRAIN.
GENERAL NOTE:
THE SCOPE OF WORK SHOWN ON THIS SHEET IS UNDER BID ALTERNATE NO. 3.



DRA

Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817-984-1700
www.dra.com

280 Charles Street
Studio 300
Waltham, MA 02453

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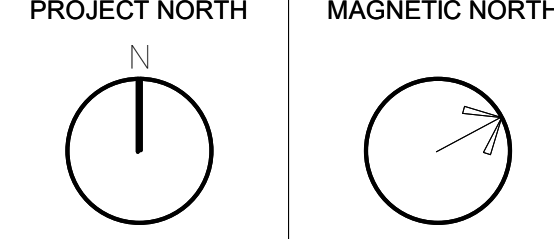
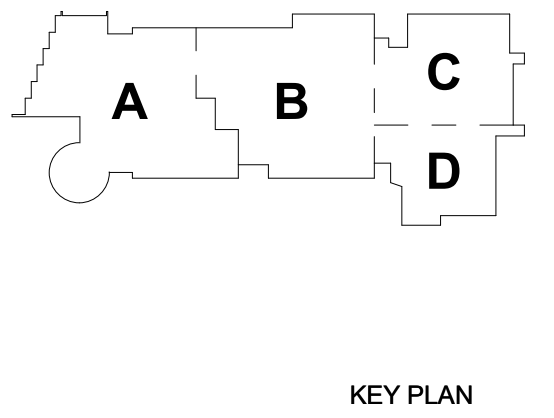
BALA
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BALA CONSULTING ENGINEERS, INC.
300 WEST 10TH STREET
SUITE 200
DENVER, CO 80202
TEL: 303.733.1111 FAX: 303.733.1112
WWW.BALA-ENGINEERS.COM

ARCHITECTS, ENGINEERS, PLANNERS
INTERIORS, LANDSCAPE ARCHITECTS
ENVIRONMENTAL SCIENTISTS

BID SET

August 28th, 2023



**ALTERNATE NO.
3 FIRE
PROTECTION
MAINTENANCE
BUILDING PLAN**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: RDR
Date: August 28th, 2023

FPM-1-1

ABBREVIATIONS	
(E)	EXISTING ITEM
(ED)	EXISTING ITEM TO BE DEMOLISHED
(F)	FUTURE
(N)	NEW
(RL)	RELOCATED ITEM
AV	AUTOMATIC AIR VENT
AC	AIR CONDITIONING UNIT
ACC	AIR COOLED CONDENSER
ACCU	AIR COOLED CONDENSING UNIT
ACD	AUTOMATIC CONTROL DAMPER
AGLC	AIR COOLED LIQUID CHILLER
AD	ACCESS DOOR
AF	AIR FILTER
AFB	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
ARCH	ARCHITECT
AS	AIR SEPARATOR
ASC	APPLICABLE SYSTEM CONTRACTOR
ATC	AUTOMATIC TEMPERATURE CONTROL
B	BOILER
BDD	BLOCK/DRIFT DAMPER
BE	BATHROOM EXHAUST
BMS	BUILDING MANAGEMENT SYSTEM
BS	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STEEL
BTU	BTU/HOUR THERMAL UNIT
BTUH	BTU PER HOUR
BVC	BOILER VENT AND COMBUSTION AIR
CA	COMBUSTION AIR
CAP	CAPACITY
CC	COOLING COIL
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CM	CONSTRUCTION MANAGER
CO	CLEAN OUT
CONN	CONNECT
CP	CONDENSATE PUMP
CT	COOLING TOWER
CUH	CONDENSING UNIT
CJH	CABINET UNIT HEATER
CV	CONNECTOR
CVB	CONSTANT VOLUME BOX
D	CONDENSATE DRAIN
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DE	DRYER EXHAUST
DF	DESTRATIFICATION FAN
DHW	DOMESTIC HOT WATER
Ø	DIAMETER
DN	DOWN
DP	DIFFERENTIAL PRESSURE
DWG	DRAWING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
ECU	EVAPORATIVE CONDENSING UNIT
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EMS	EMERGENCY MANAGEMENT SYSTEM
ER	EXHAUST REGISTER
ERV	EXHAUST ROOF VENT
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
ENT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
F	FAN
F&T	FLOAT & THERMOSTATIC TRAP
FA	FREE AREA
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FLR	FLOOR
FM	FLOW METER
FMS	FLOW MEASURING STATION
FO	FUEL OIL
FOB	FLAT ON BOTTOM
UH	UNIT HEATER
FF	FAN POWERED
FFB	FAN POWERED BOX
FNS	FNS PER INCH
FPM	FEET PER MINUTE
FSD	FIRE SMOKE DAMPER
FT	FEET
FTR	FIN-TUBE RADIATION
FTU	FAN TERMINAL UNIT

ABBREVIATIONS	
GAL	GALLONS
GC	GENERAL CONTRACTOR
GE	GENERAL EXHAUST
GPM	GALLONS PER MINUTE
H	HUMIDIFIER
HC	HEATING COIL
AV	AUTOMATIC AIR VENT
AC	AIR CONDITIONING UNIT
ACC	AIR COOLED CONDENSER
ACCU	AIR COOLED CONDENSING UNIT
ACD	AUTOMATIC CONTROL DAMPER
AGLC	AIR COOLED LIQUID CHILLER
AD	ACCESS DOOR
AF	AIR FILTER
AFB	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
ARCH	ARCHITECT
AS	AIR SEPARATOR
ASC	APPLICABLE SYSTEM CONTRACTOR
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BOS	BOTTOM OF STEEL
BTU	BTU/HOUR THERMAL UNIT
BTUH	BTU PER HOUR
BVC	BOILER VENT AND COMBUSTION AIR
CA	COMBUSTION AIR
CAP	CAPACITY
CC	COOLING COIL
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
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CM	CONSTRUCTION MANAGER
CO	CLEAN OUT
CONN	CONNECT
CP	CONDENSATE PUMP
CT	COOLING TOWER
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FA	FREE AREA
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FLA	FULL LOAD AMPS
FLR	FLOOR
FM	FLOW METER
FMS	FLOW MEASURING STATION
FO	FUEL OIL
FOB	FLAT ON BOTTOM
UH	UNIT HEATER
FF	FAN POWERED
FFB	FAN POWERED BOX
FNS	FNS PER INCH
FPM	FEET PER MINUTE
FSD	FIRE SMOKE DAMPER
FT	FEET
FTR	FIN-TUBE RADIATION
FTU	FAN TERMINAL UNIT

MECHANICAL VALVES AND ACCESSORIES	
	ISOLATION VALVE SEE SPECIFICATIONS FOR TYPE
	2-WAY CONTROL VALVE (DOC OR PNEUMATIC)
	3-WAY CONTROL VALVE (DOC OR PNEUMATIC)
	3-WAY CONTROL VALVE (MOTORIZED)
	THERMOSTATIC CONTROL VALVE
	SOLENOID VALVE
	DIFFERENTIAL PRESSURE VALVE
	GATE VALVE
	GLOBE VALVE
	OSY VALVE
	PRESSURE REDUCING VALVE
	SAFETY RELIEF VALVE
	ANGLE VALVE
	BALL VALVE
	BALL VALVE WITH MEMORY STOP
	BUTTERFLY VALVE
	BALANCING VALVE WITH TEST PORTS
	CHECK VALVE (Left & Right)
	PRESSURE GAUGE
	PRESSURE GAUGE WITH COOK
	PRESSURE GAUGE WITH SYPHON AND COOK
	PRESSURE GAUGE WITH SNUBBER & COOK AND WELL
	PRESSURE TEMPERATURE GAUGE PORT
	FLOAT & THERMOSTATIC TRAP
	THERMOSTATIC TRAP
	STEAM TRAP SEE SPECIFICATION FOR TYPE
	SITE GLASS
	THERMOMETER
	THERMOMETER WITH WELL
	CONCENTRIC PIPE REDUCER
	ECCENTRIC PIPE REDUCER
	AUTOMATIC AIR VENT
	MANUAL AIR VENT
	THERMOSTATIC AIR VENT
	VACUUM BREAKER
	CONCENTRIC PIPE REDUCER
	PIPE RISER / OR RISING AND DROPPING
	PIPE CONNECTION TOP OF MAIN
	PIPE TURNING DOWN
	TEE CONNECTION
	UNION
	PIPE CONNECTION BOTTOM OF MAIN
	FLANGED CONNECTION
	PIPE UP TO RADIATION
	STRAINER
	STRAINER AND DRAIN VALVE W/HOSE END CONN AND CAP
	FLEXIBLE CONNECTOR
	DIRECTION OF FLOW
	FLOW MEASURING DEVICE
	EXPANSION COMPENSATOR
	PIPE HEAT TRACE ELEMENT

MECHANICAL PIPING LEGEND	
	(B0) BLOW DOWN
	(BF) BOILER FEED
	(CA) COMPRESSED AIR
	(CD) CONDENSATE DRAIN
	(CF) CHEMICAL FEED
	(CHWR) CHILLED WATER RETURN
	(CHWS) CHILLED WATER SUPPLY
	(CLO) CONDUIT TANK LEAK
	(COND) CONDENSATE
	(CTR) COOLING TOWER RETURN
	(CTS) COOLING TOWER SUPPLY
	(CW) COLD WATER CITY WATER MAKE UP
	(CWR) CONDENSER WATER RETURN
	(CWS) CONDENSER WATER SUPPLY
	(D) DRAIN
	(DTR) DUAL TEMP RETURN
	(DTS) DUAL TEMP SUPPLY
	(ED) EXISTING DUCTWORK
	(E) EXISTING PIPING
	(FOG) FUEL OIL GAUGE
	(FOR) FUEL OIL RETURN
	(FOS) FUEL OIL SUPPLY
	(FOV) FUEL OIL VENT
	(GR) GLYCOL WATER RETURN
	(GS) GLYCOL WATER SUPPLY
	(HGR) HIGH PRESSURE STEAM COND RETURN
	(HPS) HIGH PRESSURE STEAM COND RETURN
	(HPWR) HEAT PUMP WATER RETURN
	(HPWS) HEAT PUMP WATER SUPPLY
	(HWR) HOT WATER RETURN
	(HWS) HOT WATER SUPPLY
	(LPR) LOW PRESS COND RETURN
	(LPS) LOW PRESS STEAM SUPPLY
	(MPR) MED PRESS COND RETURN
	(MPS) MED PRESS STEAM SUPPLY
	(NPW) NON POTABLE WATER
	(PC) PUMPED CONDENSATE
	(PSC) PUMPED STEAM CONDENSATE
	(PHWR) PRIMARY HOT WATER RETURN
	(PHWS) PRIMARY HOT WATER SUPPLY
	(RL) REFRIG LIQUID
	(RS) REFRIG SUCTION
	(SCHWR) SECONDARY CHILLED WATER RETURN
	(SCHWS) SECONDARY CHILLED WATER SUPPLY
	(SHWR) SECONDARY HOT WATER RETURN
	(SHWS) SECONDARY HOT WATER SUPPLY
	(TSTAT) THERMOSTAT
	(V) VENT

DUCTWORK SYMBOLS DOUBLE LINE	
	RECTANGULAR DUCTWORK - FIRST DIMENSION IS SIZE SHOWN (IN)
	ROUND DUCTWORK DIAMETER (IN)
	FLAT OVAL DUCT
	CAPPED DUCT
	EXISTING DUCTWORK
	EXISTING DUCTWORK TO BE REMOVED
	CAPPED ACOUSTICALLY LINED DUCTWORK
	DOUBLE-WALL DUCTWORK
	SUPPLY/OUTSIDE AIR DUCTWORK UP
	SUPPLY/OUTSIDE AIR DUCTWORK DOWN
	RETURN AIR DUCTWORK UP
	RETURN AIR DUCTWORK DOWN
	EXHAUST AIR DUCTWORK UP
	EXHAUST AIR DUCTWORK DOWN
	FLEXIBLE EQUIPMENT CONNECTION
	FLEXIBLE DUCT
	CHANGE OF ELEVATION IN DIRECTION OF AIR FLOW R-RISE & D-DROP
	RECTANGULAR TO RECTANGULAR TRANSITION
	RECTANGULAR TO ROUND TRANSITION
	MITERED ELBOW W/TURNING VANES
	MITERED ELBOW
	RADIUSED ELBOW
	SPIN COLLAR
	90° SPLIT TEE WITH TURNING VANES
	BELL MOUTH BRANCH DUCT TAKE OFF
	BELL MOUTH BRANCH DUCT TAKE OFF WITH DAMPER
	BRANCH DUCT TAKE OFF
	BACK DRAFT DAMPER
	COMBINATION FIRE SMOKE DAMPER WITH SMOKE DETECTOR
	FIRE DAMPER
	MOTORIZED DAMPER
	SMOKE DAMPER WITH SMOKE DETECTOR
	VOLUME DAMPER
	DUCT MOUNTED SMOKE DETECTOR
	SIDE WALL MOUNTED SUPPLY REGISTER
	SIDE WALL MOUNTED RETURN / EXHAUST REGISTER / GRILLE
	ELEVATION VIEW SIDE WALL MOUNTED EXHAUST REGISTER / GRILLE
	ELEVATION VIEW SIDE WALL MOUNTED SUPPLY REGISTER
	TRANSFER DUCT WITH ACOUSTICAL LINING
	SUPPLY / INTAKE OR DOOR UNDERCUT PRESSURIZATION
	LOUVERED DOOR PRESSURIZATION
	SUPPLY DIFFUSER - WAY THROW
	SUPPLY DIFFUSER 3 - WAY THROW
	SUPPLY DIFFUSER 2 - WAY THROW 90°
	SUPPLY DIFFUSER 1 - WAY THROW
	RETURN REGISTER / GRILLE
	EXHAUST REGISTER / GRILLE
	SUPPLY AIR DIFFUSER BELOW DUCT
	RETURN AIR DIFFUSER BELOW DUCT
	EXHAUST AIR DIFFUSER BELOW DUCT
	LINEAR DIFFUSER
	ACCESS DOOR IN CEILING
	DUCT MOUNTED ACCESS DOOR - ACCESS PANEL

INSTRUMENTATION SYMBOLS	
	CARBON DIOXIDE SENSOR
	CARBON DIOXIDE SENSOR DUCT MOUNTED
	CARBON MONOXIDE SENSOR
	CARBON MONOXIDE SENSOR DUCT MOUNTED
	COMBINATION TEMPERATURE AND CARBON DIOXIDE SENSOR
	VRF MANUFACTURER TEMPERATURE SENSOR/CONTROLLER
	CURRENT SENSOR
	FLOW SENSOR
	FREEZE STAT
	LEAK DETECTOR
	HUMIDITY SENSOR
	HUMIDITY SENSOR DUCT MOUNTED
	HYDROGEN SENSOR
	REFRIGERANT LEAK SENSOR
	REFRIGERANT LEAK SENSOR DUCT MOUNTED
	SMOKE DETECTOR
	SMOKE DETECTOR DUCT MOUNTED
	STATIC PRESSURE SENSOR
	TEMPERATURE SENSOR
	TEMPERATURE SENSOR DUCT MOUNTED
	COMBINATION TEMPERATURE RELATIVE HUMIDITY SENSOR
	COMBINATION TEMPERATURE RELATIVE HUMIDITY SENSOR DUCT MOUNTED
	EMERGENCY POWER REQUIRED SWITCH
	PACKAGED STARTER BY MECHANICAL LOOSE STARTER BY ELECTRICAL
	VARIABLE FREQUENCY DRIVE FLOW MEASURING STATION
MISC. LEGEND / TAGS	
	DIFFUSER, REGISTER, GRILLE DESIGNATION
	NEAR SIZE OR LENGTH IF LINEAR DIFFUSER AIR QUANTITY - CFM
	SCHEDULED EQUIPMENT TYPE (WITHOUT MOTOR) SCHEDULED REFERENCE NUMBER
	SCHEDULED EQUIPMENT TYPE (WITH MOTOR) SCHEDULED REFERENCE NUMBER
	EQUIPMENT TYPE EQUIPMENT LENGTH EQUIPMENT CAPACITY - MBWH
	SECTION SYMBOL SECTION DESCRIPTION DRAWING NUMBER LOCATION DETAIL SYMBOL DETAIL NUMBER DRAWING NUMBER LOCATION
	POWERED DAMPER DAMPER TYPE (FSD OR SD) ASSOCIATED FAN SYSTEM NORMAL, DAMPER (NON-ENERGIZED) POSITION
	CONNECT NEW TO EXISTING LIMIT OF REMOVAL
	DISTANCE TO FINISH FLOOR (FEET & INCHES) FROM BOTTOM OF DUCT OR PIPE
	RISER DESIGNATION TYPE NUMBER
	DEMOLITION SHEET NOTE NUMBER X
	NEW WORK SHEET NOTE NUMBER X
	REVISION NUMBER X

DESIGN CONDITIONS	
TEMPERATURES AND HUMIDITIES	TEMPERATURES AND HUMIDITIES
WINTER: OUTDOOR AIR TEMPERATURE: 9°F (96%) INDOOR AIR TEMPERATURES: 70°F GENERAL SPACES 65°F EXTERIOR STORAGE/MECHANICAL SPACES	CITY: STATE BOSTON, MA SUB-LOCATION _____ ELEVATION, AMSL _____
SUMMER: OUTDOOR AIR TEMPERATURE: 91°F-95°F (73°F-40°F) INDOOR AIR TEMPERATURES: 75°F-80°F** GENERAL SPACES 80°F-85°F** VOCATIONAL SHOP SPACES	
* MEAN COINCIDENT WET BULB ** INCIDENTAL RELATIVE HUMIDITY, UNLESS SPECIFIC HIGH/LIMIT HUMIDITY CONTROL IS REQUIRED	WEATHER DATA BASED ON 2017 ASHRAE FUNDAMENTALS HANDBOOK, CHAPTER 14, APPENDIX AND IECC 2015, CLIMATE ZONE 3A

Drummeys Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074

260 Charles Street
Studio 300
Waltham, MA 02453

Tel: 617.984.1700
www.dra.com

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REVISION LEGEND		NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
		ISSUED FROM DRAWING SET	ISSUED FROM DRAWING SET	ISSUED, NOT REVISED
DRAWING LIST - MECHANICAL				
DRAWING NUMBER	DRAWING TITLE	05-20-2021, SD	05-20-2022, CD COST EST	05-20-2022, CD COST EST
M0-0-1	MECHANICAL LEGENDS AND ABBREVIATIONS	○	●	●
M0-0-2	MECHANICAL GENERAL NOTES	○	●	●
M1-1-0C	MECHANICAL DUCTWORK LOWER LEVEL FLOOR PLAN - AREA C	○	●	●
M1-1-0D	MECHANICAL DUCTWORK LOWER LEVEL FLOOR PLAN - AREA D	○	●	●
M1-1-1A	MECHANICAL DUCTWORK FIRST FLOOR PLAN - AREA A	○	●	●
M1-1-1B	MECHANICAL DUCTWORK FIRST FLOOR PLAN - AREA B	○	●	●
M1-1-1C	MECHANICAL DUCTWORK FIRST FLOOR PLAN - AREA C	○	●	●
M1-1-1D	MECHANICAL DUCTWORK FIRST FLOOR PLAN - AREA D	○	●	●
M1-1-2A	MECHANICAL DUCTWORK SECOND FLOOR PLAN - AREA A	○	●	●
M1-1-2B	MECHANICAL DUCTWORK SECOND FLOOR PLAN - AREA B	○	●	●
M1-1-2C	MECHANICAL DUCTWORK SECOND FLOOR PLAN - AREA C	○	●	●
M1-1-2D	MECHANICAL DUCTWORK SECOND FLOOR PLAN - AREA D	○	●	●
M1-1-3A	MECHANICAL DUCTWORK THIRD FLOOR PLAN - AREA A	○	●	●
M1-1-3B	MECHANICAL DUCTWORK THIRD FLOOR PLAN - AREA B	○	●	●
M1-1-3C	MECHANICAL DUCTWORK THIRD FLOOR PLAN - AREA C	○	●	●
M1-1-3D	MECHANICAL DUCTWORK THIRD FLOOR PLAN - AREA D	○	●	●
M1-1-4A	MECHANICAL DUCTWORK FOURTH FLOOR PLAN - AREA A	○	●	●
M1-1-4B	MECHANICAL DUCTWORK FOURTH FLOOR PLAN - AREA B	○	●	●
M1-1-4C	MECHANICAL CONGRESSION BUILDING PLAN	○	●	●
M1-1-4D	ALTERNATE NO. 1 MECHANICAL LOCKER BUILDING PLAN	○	●	●
M1-1-4E	ALTERNATE NO. 3 MECHANICAL MAINTENANCE BUILDING PLAN	○	●	●
M1-2-1A	MECHANICAL ROOF PLAN - AREA A	○	●	●
M1-2-1B	MECHANICAL ROOF PLAN - AREA B	○	●	●
M1-2-1C	MECHANICAL ROOF PLAN - AREA C	○	●	●
M1-2-1D	MECHANICAL ROOF PLAN - AREA D	○	●	●
M1-3-0C	MECHANICAL PIPING LOWER LEVEL FLOOR PLAN - AREA C	○	●	●
M1-3-0D	MECHANICAL PIPING LOWER LEVEL FLOOR PLAN - AREA D	○	●	●
M1-3-1A	MECHANICAL PIPING FIRST FLOOR PLAN - AREA A	○	●	●
M1-3-1B	MECHANICAL PIPING FIRST FLOOR PLAN - AREA B	○	●	●
M1-3-1C	MECHANICAL PIPING FIRST FLOOR PLAN - AREA C	○	●	●
M1-3-1D	MECHANICAL PIPING FIRST FLOOR PLAN - AREA D	○	●	●
M1-3-2A	MECHANICAL PIPING SECOND FLOOR PLAN - AREA A	○	●	●
M1-3-2B	MECHANICAL PIPING SECOND FLOOR PLAN - AREA B	○	●	●
M1-3-2C	MECHANICAL PIPING SECOND FLOOR PLAN - AREA C	○	●	●
M1-3-2D	MECHANICAL PIPING SECOND FLOOR PLAN - AREA D	○	●	●
M1-3-3A	MECHANICAL PIPING THIRD FLOOR PLAN - AREA A	○	●	●
M1-3-3B	MECHANICAL PIPING THIRD FLOOR PLAN - AREA B	○	●	●
M1-3-3C	MECHANICAL PIPING THIRD FLOOR PLAN - AREA C	○	●	●
M1-3-3D	MECHANICAL PIPING THIRD FLOOR PLAN - AREA D	○	●	●
M1-3-4A	MECHANICAL PIPING FOURTH FLOOR PLAN - AREA A	○	●	●
M1-3-4B	MECHANICAL PIPING FOURTH FLOOR PLAN - AREA B	○	●	●
M2-0-1	MECHANICAL ENLARGED PLANS	○	●	●
M2-0-2	MECHANICAL ENLARGED PLANS	○	●	●
M2-0-3	MECHANICAL VRF SYSTEM DIAGRAMS SHEET #1	○	●	●
M2-0-4	MECHANICAL VRF SYSTEM DIAGRAMS SHEET #2	○	●	●
M2-0-5	MECHANICAL VRF SYSTEM DIAGRAMS SHEET #3	○	●	●
M2-0-6	MECHANICAL VRF SYSTEM DIAGRAMS SHEET #4	○	●	●
M2-0-7	MECHANICAL VRF SYSTEM DIAGRAMS SHEET #5	○	●	●
M2-0-8	MECHANICAL AIR RISER DIAGRAMS	○	●	●
M2-0-9	MECHANICAL DETAILS SHEET #1	○	●	●
M2-0-10	MECHANICAL DETAILS SHEET #2	○	●	●
M2-0-11	MECHANICAL DETAILS SHEET #3	○	●	●
M2-0-12	MECHANICAL DETAILS SHEET #4	○	●	●
M2-0-13	MECHANICAL DETAILS SHEET #5	○	●	●
M2-0-14	MECHANICAL DETAILS SHEET #6	○	●	●
M2-0-15	MECHANICAL DETAILS SHEET #7	○	●	●
M2-0-16	MECHANICAL SCHEDULES SHEET #1	○	●	●
M2-0-17	MECHANICAL SCHEDULES SHEET #2	○	●	●
M2-0-18	MECHANICAL SCHEDULES SHEET #3	○	●	●
M2-0-19	MECHANICAL SCHEDULES SHEET #4	○	●	●
M2-0-20	MECHANICAL SCHEDULES SHEET #5	○	●	●
M2-0-21	MECHANICAL SCHEDULES SHEET #6	○	●	●
M2-0-22	MECHANICAL SCHEDULES SHEET #7	○	●	●
M2-0-23	MECHANICAL SCHEDULES SHEET #8	○	●	●
M2-0-24	MECHANICAL SCHEDULES SHEET #9	○	●	●
M2-0-25	MECHANICAL SCHEDULES SHEET #10	○	●	●
M2-0-26	MECHANICAL SCHEDULES SHEET #11	○	●	●
M2-0-27	MECHANICAL SCHEDULES SHEET #12	○	●	●
M2-0-28	MECHANICAL SCHEDULES SHEET #13	○	●	●
M2-0-29	MECHANICAL SCHEDULES SHEET #14	○	●	●
M2-0-30	MECHANICAL SCHEDULES SHEET #15	○	●	●
M2-0-31	MECHANICAL SCHEDULES SHEET #16	○	●	●
M2-0-32	MECHANICAL SCHEDULES SHEET #17	○	●	●
M2-0-33	MECHANICAL SCHEDULES SHEET #18	○	●	●
M2-0-34	MECHANICAL SCHEDULES SHEET #19	○	●	●
M2-0-35	MECHANICAL SCHEDULES SHEET #20	○	●	●
M2-0-36	MECHANICAL SCHEDULES SHEET #21	○	●	●
M2-0-37	MECHANICAL SCHEDULES SHEET #22	○	●	●
M2-0-38	MECHANICAL SCHEDULES SHEET #23	○	●	●
M2-0-39	MECHANICAL SCHEDULES SHEET #24	○	●	●
M2-0-40	MECHANICAL SCHEDULES SHEET #25	○	●	●
M2-0-41	MECHANICAL SCHEDULES SHEET #26	○	●	●
M2-0-42	MECHANICAL SCHEDULES SHEET #27	○	●	●
M2-0-43	MECHANICAL SCHEDULES SHEET #28	○	●	●
M2-0-44	MECHANICAL SCHEDULES SHEET #29	○	●	●
M2-0-45	MECHANICAL SCHEDULES SHEET #30	○	●	●
M2-0-46	MECHANICAL SCHEDULES SHEET #31	○	●	●
M2-0-47	MECHANICAL SCHEDULES SHEET #32	○	●	●
M2-0-48	MECHANICAL SCHEDULES SHEET #33	○	●	●
M2-0-49	MECHANICAL SCHEDULES SHEET #34	○	●	●
M2-0-50	MECHANICAL SCHEDULES SHEET #35	○	●	●
M2-0-51	MECHANICAL SCHEDULES SHEET #36	○	●	●
M2-0-52	MECHANICAL SCHEDULES SHEET #37	○	●	●
M2-0-53	MECHANICAL SCHEDULES SHEET #38	○	●	●
M2-0-54	MECHANICAL SCHEDULES SHEET #39	○	●	●
M2-0-55	MECHANICAL SCHEDULES SHEET #40	○	●	●
M2-0-56	MECHANICAL SCHEDULES SHEET #41	○	●	●
M2-0-57	MECHANICAL SCHEDULES SHEET #42	○	●	●
M2-0-58	MECHANICAL SCHEDULES SHEET #43	○	●	●
M2-0-59	MECHANICAL SCHEDULES SHEET #44	○	●	●
M2-0-60	MECHANICAL SCHEDULES SHEET #45	○	●	●
M2-0-61	MECHANICAL SCHEDULES SHEET #46	○	●	●
M2-0-62	MECHANICAL SCHEDULES SHEET #47	○	●	●
M2-0-63	MECHANICAL SCHEDULES SHEET #48	○	●	●
M2-0-64	MECHANICAL SCHEDULES SHEET #49	○	●	●
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M2-0-66	MECHANICAL SCHEDULES SHEET #51	○	●	●
M2-0-67	MECHANICAL SCHEDULES SHEET #52	○	●	●
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M2-0-70	MECHANICAL SCHEDULES SHEET #55	○	●	●
M2-0-71	MECHANICAL SCHEDULES SHEET #56	○	●	●
M2-0-72	MECHANICAL SCHEDULES SHEET #57	○	●	●
M2-0-73	MECHANICAL SCHEDULES SHEET #58	○	●	●
M2-0-74	MECHANICAL SCHEDULES SHEET #59	○	●	●
M2-0-75	MECHANICAL SCHEDULES SHEET #60	○	●	●
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M2-0-81	MECHANICAL SCHEDULES SHEET #66	○	●	●
M2-0-82	MECHANICAL SCHEDULES SHEET #67	○	●	●
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M2-0-92	MECHANICAL SCHEDULES SHEET #77	○	●	●
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M2-0-204	MECHANICAL SCHEDULES SHE			

DRA

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225 Oakland Road
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GENERAL NOTES	MECHANICAL GENERAL NOTES	MECHANICAL GENERAL NOTES
1. THE WORK TO BE DONE UNDER THESE SPECIFICATIONS AND THE DRAWINGS CONSISTS OF PROVIDING ALL EQUIPMENT, MATERIALS, LABOR AND SERVICES AND PERFORMING ALL OPERATIONS TO COMPLETE THE CONSTRUCTION WORK FOR THIS PROJECT. ANY WORK NOT SPECIFICALLY COVERED BY THESE SPECIFICATIONS OR INDICATED ON THE CONTRACT DRAWINGS, BUT NECESSARY TO COMPLETE OR PERFECT ANY PART OF THIS INSTALLATION IN A SUBSTANTIAL MANNER, SHALL BE PROVIDED WITHOUT EXTRA COST TO THE OWNER. 2. THE WORK SHALL CONFORM TO THE MORE STRINGENT OF ALL APPLICABLE CODES & REGULATIONS, UL (AND FMJ) GUIDELINES, (LEED REQUIREMENTS), MANUFACTURER'S LITERATURE AND RECOMMENDATIONS, (BUILDING OPERATOR'S REQUIREMENTS), AND TO THE REQUIREMENTS OF FEDERAL, STATE AND LOCAL REGULATORY AGENCIES AND AUTHORITIES HAVING JURISDICTION. 3. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE EXTENT, GENERAL CHARACTER, LOCATION AND ARRANGEMENT OF THE WORK UNDER THIS CONTRACT. EXACT LOCATIONS OF ALL COMPONENTS ARE TO BE DETERMINED IN THE FIELD AND BY THE ACTUAL BUILDING CONDITIONS, WHERE JOB CONDITIONS REQUIRE MINOR CHANGES OR ADJUSTMENTS IN THE INDICATED LOCATIONS OR ARRANGEMENT OF THE WORK. SUCH CHANGES SHALL BE PROVIDED WITHOUT EXTRA COST. THE CONTRACTOR SHALL RE-INSTALL EQUIPMENT THAT HAS INADEQUATE OR UNSAFE ACCESSIBILITY. 4. INSTALLATION OF WORK SHALL PROVIDE REASONABLE ACCESSIBILITY FOR OPERATION, INSPECTION AND MAINTENANCE OF EQUIPMENT AND ACCESSORIES. PROVIDE CLEARANCES REQUIRED BY MANUFACTURERS AND APPLICABLE CODES. ALL CEILING MOUNTED EQUIPMENT SHALL BE INSTALLED IN SUCH A MANNER THAT LIGHTS, PIPING, AND DUCTWORK DO NOT BLOCK ACCESS TO EQUIPMENT AND RELATED ACCESSORIES. 5. THE TERM "TURNISH" SHALL MEAN TO OBTAIN AND SUPPLY TO THE JOB SITE. THE TERM "INSTALL" SHALL MEAN TO FIX IN POSITION AND CONNECT FOR USE. THE TERM "PROVIDE" SHALL MEAN TO FURNISH AND INSTALL. THE TERM "MECHANICAL WORK," "ELECTRICAL WORK," "PLUMBING WORK," ETC. SHALL MEAN ALL LABOR, MATERIAL, EQUIPMENT, SCAFFOLDING, RIGGING, TOOLS, SUPERVISION, SERVICES AND OTHER INCIDENTALS NECESSARY FOR COMPLETE AND OPERABLE INSTALLATION. 6. THE CM/SG SHALL MAKE SETS OF THE BID DOCUMENTS CONSISTING OF COMPLETE SETS OF DRAWINGS AND SPECIFICATIONS, AND ISSUE THEM TO EACH OF THE PRIME AND SUB-CONTRACTORS. EVERY PRIME AND SUB-CONTRACTOR ON EACH BIDDING TEAM SHALL RECEIVE COMPLETE SETS OF DRAWINGS AND SPECIFICATIONS. THERE ARE NOTES AND CROSS REFERENCES FOR VARIOUS TRADE CONTRACTORS IN MULTIPLE TRADE OR DISCIPLINE DRAWINGS AND SPECIFICATIONS. THIS EACH CONTRACTOR IS TO RECEIVE COMPLETE SETS OF THE BID DOCUMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THESE DRAWINGS FROM CM/SG. EACH CONTRACTOR IS RESPONSIBLE FOR THEIR WORK AS NOTED ON THE OTHER DISCIPLINE DOCUMENTS. BIDDERS ARE RESPONSIBLE FOR ALL COSTS FOR EACH SET OF BID DOCUMENTS REQUESTED. 7. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A FULL COORDINATION EFFORT IN ORDER TO CREATE A FINALIZED COORDINATED LAYOUT OF ALL EQUIPMENT, SYSTEMS, DUCTWORK, PIPING AND ALL OTHER ITEMS WITHIN THEIR RESPECTIVE SCOPE. THE CONTRACTOR'S COORDINATION EFFORT SHALL INCLUDE COORDINATED INFORMATION FROM ALL OTHER TRADE CONTRACTORS INVOLVED IN THE PROJECT SCOPE IN ORDER TO PROVIDE COORDINATION BETWEEN TRADES AND ALL EXISTING CONDITIONS. ALL ERRORS MADE AS A RESULT OF A LACK OF COORDINATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND CORRECTED AT NO ADDITIONAL COST TO THE PROJECT. MINOR RELOCATIONS AND SHIFTS OF EQUIPMENT, DUCTWORK, AND PIPING WHICH DO NOT CHANGE THE DESIGN INTENT INDICATED ON THE CONTRACT DOCUMENTS, REQUIRED TO ACCOMMODATE FIELD CONDITIONS ARE AT THE CONTRACTORS DISCRETION AND DO NOT REQUIRE ENGINEER APPROVAL. 8. CONTRACTOR SHALL ARRANGE AND OBTAIN ALL PERMITS, INSPECTIONS AND APPROVALS, AND PAY ALL RELATED FEES. 9. THE DRAWINGS INDICATE APPROXIMATE LOCATIONS BASED UPON INFORMATION OBTAINED WITHOUT REMOVING CEILING, TILES OR WALLS. THEREFORE, THE CONTRACTOR SHALL INCLUDE IN THEIR BID CONINGENCY COSTS TO ADDRESS CONFLICTS BETWEEN DESIGN AND EXISTING CONDITIONS. ANY CHANGES AND/OR MODIFICATIONS MUST BE REVIEWED AND APPROVED BY THE ENGINEER AND/OR OWNERS REPRESENTATIVE PRIOR TO CONSTRUCTION. 10. FOR ANY DISCREPANCY BETWEEN DRAWINGS AND/OR SPECIFICATIONS, THE CONTRACTOR SHALL BASE THEIR BID UPON THE MOST STRINGENT REQUIREMENT (QUALITY, QUANTITY, SIZE, ETC.). THE CONTRACTOR SHALL IDENTIFY DISCREPANCIES AS PART OF THEIR BID. 11. PRIOR TO DEMOLITION, THE CONTRACTOR SHALL LOG ALL EXISTING EQUIPMENT AND TRACE ELECTRICAL, FIRE ALARM, AND CONTROL CIRCUITS THAT SERVE SUCH EQUIPMENT. 12. ALL SERVICES TO EXISTING BUILDINGS SHALL BE MAINTAINED DURING CONSTRUCTION UNLESS OTHERWISE INDICATED. CONTRACTOR SHALL COORDINATE ALL SYSTEM SHUT DOWNS AND TIMING WITH OWNER. 13. THE CONTRACTOR SHALL EFFECTIVELY PROTECT ALL MATERIALS AND EQUIPMENT FROM ENVIRONMENTAL AND PHYSICAL DAMAGE UNTIL FINAL ACCEPTANCE. CLOSE AND PROTECT ALL OPENINGS DURING CONSTRUCTION. PROVIDE NEW MATERIALS AND EQUIPMENT TO REPLACE ITEMS DAMAGED. 14. EXISTING EQUIPMENT THAT INTERFERES WITH NEW ARRANGEMENT SHALL BE REMOVED, REINSTALLED, RELOCATED, REROUTED, EXTENDED OR ABANDONED AS REQUIRED, TO SUIT THE NEW ARRANGEMENT. 15. WHERE BEAMS ARE INDICATED TO BE PENETRATED WITH DUCTWORK AND/OR PIPING, CAREFULLY COORDINATE SIZES AND LOCATIONS OF THE ELEMENTS BEFORE FABRICATION. COORDINATE WITH FINAL LOCATION OF BEAM PENETRATIONS AND SHEAR WALL PENETRATIONS. 16. CONTRACTOR SHALL COORDINATE LOCATION OF ALL WALL, FLOOR AND ROOF OPENINGS WITH STRUCTURAL AND OTHER TRADES. 17. PROVIDE CUTTING AND PATCHING AS REQUIRED AND WHERE NECESSARY TO ACCOMMODATE NEW WORK AND THE REPAIR OF EXISTING WORK. 18. WHEN WORK INVOLVES CONTACT WITH MATERIALS CONTAINING ASBESTOS, PCB, OR OTHER TOXIC MATERIALS, NOTIFY OWNER, WHO WILL ESTABLISH PROCEDURES FOR REMEDIATION AND REMOVAL. 19. CONTRACTOR SHALL SCHEDULE THE WORK UNDER THIS CONTRACT WITH WORK OF OTHER TRADES AS NOT TO DELAY THE OVERALL PROGRESS OF THE PROJECT. 20. CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER OF ANY CONFLICTS PRIOR TO PURCHASING EQUIPMENT AND PRIOR TO CUTTING OPENINGS. 21. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS PER SPECIFICATIONS PRIOR TO PURCHASING OR INSTALLING EQUIPMENT AND SYSTEMS INDICATED ON CONTRACT DOCUMENTS. PRIOR TO SUBMITTAL, CONTRACTOR SHALL VERIFY THAT ADEQUATE SPACE EXISTS FOR THE SUBMITTED EQUIPMENT. SHOP DRAWINGS MUST BE REVIEWED BY ARCHITECT/ENGINEER. 22. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED BY OTHER TRADES DUE TO SUBSTITUTION OF OTHER THAN SCHEDULED EQUIPMENT. WHEN EQUIPMENT FURNISHED IS DIFFERENT THAN INDICATED, THE COST OF ADDITIONAL ELECTRICAL SERVICE, STRUCTURAL, AND RELATED WORK SHALL BE PAID BY THIS CONTRACTOR. 23. ALL WORK SHALL BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER AND SHALL BE DONE IN ACCORDANCE WITH GOOD TRADE PRACTICE AND IN CONFORMANCE WITH APPLICABLE MANUFACTURER'S RECOMMENDATIONS. 24. CONTRACTOR SHALL REMOVE ALL TRASH, DEBRIS AND DEMOLITION MATERIAL FROM PREMISES AT THE END OF EACH DAY. 25. RESTORE ALL SURFACES (WALLS, CEILINGS, FLOORS AND ROOFS) THAT ARE DAMAGED BY THE WORK OF THIS CONTRACT TO THEIR ORIGINAL CONDITION AT NO EXTRA COST TO THE OWNER. 26. PRIOR TO EQUIPMENT STARTUP, CONTRACTOR SHALL PERFORM THE SPECIFIED STARTUP AND COMMISSIONING PROCEDURES. 27. IN THE ABSENCE OF OTHER SPECIFIC INSTRUCTIONS, ALL WORK AND MATERIALS SUPPLIED SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF THEIR ACCEPTANCE BY THE OWNER. 28. BALA CONSULTING ENGINEERS, INC. (BALA) WILL PROVIDE CONTRACTOR WITH ELECTRONIC CADD FILES OF THE ENGINEERING DESIGNS FOR THE SOLE USE IN EXPEDITING SHOP DRAWINGS. BALA'S FILES SHALL NOT BE DIRECTLY COPIED AND ISSUED AS SHOP DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD COORDINATION, DIMENSIONING AND ADHERENCE TO THE SHOP DRAWING REQUIREMENTS AS NOTED IN THE SPECIFICATIONS. SHOULD THE SHOP DRAWINGS SUBMITTED PROVE TO BE A DIRECT COPY OF OUR FILES WITHOUT THE NECESSARY FIELD COORDINATION, DIMENSIONING AND ADHERENCE TO THE SHOP DRAWING REQUIREMENTS AS NOTED IN THE SPECIFICATIONS, THESE SHOP DRAWINGS WILL BE RETURNED AS REJECTED. BALA'S ELECTRONIC FILES ARE SAVED IN VERSION (REVIT, AUTOCAD) (2016, 2017, 2018) AND ARE COMPATIBLE WITH ALL VERSIONS AFTER THAT. BALA MAKES NO REPRESENTATION AS TO THE COMPATIBILITY OF THESE FILES WITH THE CONTRACTOR'S HARDWARE OR THEIR SOFTWARE. DATA CONTAINED ON THESE ELECTRONIC FILES ARE PART OF BALA'S "INSTRUMENTS OF SERVICE" AND ARE COPYRIGHTED. CONTRACTORS USE OF FILES IS FOR THE SOLE PURPOSE AS A CONVENIENCE IN THE PREPARATION OF DRAWINGS FOR THE REFERENCED PROJECT. ANY OTHER USE OR REUSE BY CONTRACTOR IS UNLAWFUL.	1. MECHANICAL CONTRACTOR SHALL EXAMINE THE DRAWINGS OF ALL TRADES AND COORDINATE THEIR WORK PRIOR TO ANY INSTALLATIONS TO AVOID INTERFERENCE WITH STRUCTURE, AND ALL EQUIPMENT ABOVE AND BELOW THE CEILING. THE MECHANICAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND FIELD CONDITIONS AT THE SITE PRIOR TO BID AND PURCHASE OF EQUIPMENT/MATERIALS. THE CONTRACTOR SHALL PROVIDE VALUE FOR SAME IN THEIR BID. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY FIELD CONDITIONS AT THE SITE AND NOTIFY THE OWNER, ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING WITH THE WORK. 2. FOR ANY DISCREPANCY BETWEEN DRAWINGS AND/OR SPECIFICATIONS, THE MECHANICAL CONTRACTOR SHALL BASE THEIR BID UPON THE MOST STRINGENT REQUIREMENT (QUALITY, QUANTITY, SIZE, ETC.). THE CONTRACTOR SHALL IDENTIFY DISCREPANCIES AS PART OF THEIR BID. 3. THE MECHANICAL CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING OF EXISTING CONSTRUCTION REQUIRED BY THEIR WORK. ALL FINISHES SHALL MATCH EXISTING. STRUCTURAL MEMBERS SHALL NOT BE CUT UNLESS APPROVED BY OWNERS REPRESENTATIVE. PAINTING SHALL BE BY GENERAL CONTRACTOR. WHERE EQUIPMENT IS REMOVED, CONTRACTOR TO REFRESH AREA TO MATCH EXISTING. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING INTEGRITY OF ALL STRUCTURAL ELEMENTS. 4. THE MECHANICAL CONTRACTOR SHALL EFFECTIVELY PROTECT ALL MATERIALS AND EQUIPMENT FROM ENVIRONMENTAL AND PHYSICAL DAMAGE UNTIL FINAL ACCEPTANCE. CLOSE AND PROTECT ALL OPENINGS DURING CONSTRUCTION. PROVIDE NEW MATERIALS AND EQUIPMENT TO REPLACE ITEMS DAMAGED. 5. EXISTING MECHANICAL EQUIPMENT THAT INTERFERES WITH NEW ARRANGEMENT SHALL BE REMOVED, REINSTALLED, RELOCATED, REROUTED, EXTENDED OR ABANDONED AS REQUIRED, TO SUIT THE NEW ARRANGEMENT. 6. ALL MATERIALS, EQUIPMENT AND INSTALLATIONS SHALL BE IN STRICT ACCORDANCE WITH SMACNA AND ASHARE GUIDELINES, UNLESS OTHERWISE NOTED. 7. EQUIPMENT INDICATED ON THE DRAWINGS, TOGETHER WITH ITS BASE AND/OR SUPPORT, DUCTWORK CONNECTIONS, SERVICE CLEARANCES, WALL, FLOOR AND ROOF PENETRATIONS, AND ELECTRICAL REQUIREMENTS IS BASED ON THE MODEL INDICATED IN THE SCHEDULES. IF CONTRACTOR FURNISHES AN EQUIVALENT SUBSTITUTION, THE CONTRACTOR SHALL MAKE THE REQUIRED MODIFICATIONS IN THE WORK WITHOUT CHANGE IN CONTRACT AMOUNT. 8. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL COSTS RELATED TO REMOVING AND REPLACING ALL CEILINGS AS REQUIRED FOR THE MECHANICAL WORK ON THIS PROJECT. PROVIDE SELECTIVE CEILING DEMOLITION TO PLACE NEW DUCTWORK AND DIFFUSERS. REPLACE DAMAGED CEILING TILES AND GRIDS RESULTING FROM DEMOLITION. NEW CEILING TILES SHALL MATCH WITH EXISTING. 9. COORDINATE MECHANICAL SYSTEM INSTALLATION WITH EXISTING CONDITIONS. VISIT SITE PRIOR TO BID AND INVESTIGATE REQUIREMENTS FOR MECHANICAL SYSTEM INSTALLATION. SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. 10. COORDINATE LOCATION OF ALL WALL, FLOOR AND ROOF OPENINGS WITH STRUCTURAL AND OTHER TRADES. 11. COORDINATE LOCATION OF NEW DUCTWORK, AIR DEVICES AND EQUIPMENT WITH LIGHT FIXTURES, SPRINKLER PIPING AND HYDRONIC PIPING. 12. COORDINATE THE LOCATIONS OF ALL EQUIPMENT AND REGISTERS WITH THE LATEST ARCHITECTURAL DRAWINGS PRIOR TO PERFORMING AND ROUGH-IN WORK FOR THE UTILITIES. 13. COORDINATE THERMOSTATS WITH FINAL DIFFUSER LOCATIONS. THERMOSTATS SHALL NOT BE MOUNTED IN THE THROWN PATTERN OF DIFFUSERS. 14. FIELD VERIFY THE ACTUAL LOCATIONS AND EXACT DIMENSIONS OF ALL EQUIPMENT, CASEWORK, DEVICES, FIXTURES, SWITCHES, SENSORS, STRUCTURAL ELEMENTS, ETC. DURING FIELD VISITS AND PRIOR TO PERFORMING ANY ROUGH-IN WORK FOR DUCTWORK, PIPING AND OTHER AND UTILITIES/SCOPE. MINOR CHANGES TO EQUIPMENT LOCATIONS OR DUCTWORK OR PIPING ROUTING AND DUCTWORK ASPECT RATIO, BASED ON THE FINAL COORDINATION EFFORT, ARE TO BE COMPLETED BY THE CONTRACTOR. REPORT DISCREPANCIES IMMEDIATELY TO ARCHITECT AND/OR ENGINEER. 15. PROVIDE TEMPORARY CONSTRUCTION FILTERS ON ALL RECIRCULATING HVAC EQUIPMENT USED FOR HEATING, COOLING, EXHAUST OR VENTILATION DURING CONSTRUCTION. PROVIDE REGULARLY SCHEDULED FILTER CHANGES DURING CONSTRUCTION. PROVIDE FRESH FILTERS PRIOR TO BALANCING. PRIOR TO TURN OVER TO OWNER, PROVIDE FRESH FILTERS IN ALL EQUIPMENT. 16. EFFECTIVELY PROTECT ALL MATERIALS AND EQUIPMENT FROM DUST, DIRT AND DAMAGE UNTIL FINAL ACCEPTANCE. CLOSE ALL DUCT AND EQUIPMENT OPENINGS DURING CONSTRUCTION WITH SUITABLE PROTECTIVE COVERING BEFORE, DURING AND FOLLOWING INSTALLATION. 17. UNLESS OTHERWISE NOTED, INSTALL DUCTWORK AND PIPING OVERHEAD, TIGHT TO UNDERSIDE OF STRUCTURE OR SLAB, WITH ADEQUATE SPACE FOR INSULATION AND GAP TO PREVENT TRANSMISSION OF VIBRATION TO STRUCTURE. 18. WHERE CONNECTING TO EXISTING DUCTWORK AND PIPING SYSTEMS, INSPECT FOR DEFECTS. NOTIFY OWNER IF EXISTING DUCTWORK, PIPING AND INSULATION IS FOUND TO HAVE DAMAGE/DEFECTS AND TO DETERMINE IF REPLACEMENT IS REQUIRED. 19. MECHANICAL WORK THAT IS TO REMAIN WHEN STRUCTURE ON WHICH IT IS INSTALLED IS TO BE MODIFIED OR REMOVED SHALL BE PROPERLY SUPPORTED IN PLACE UNTIL WORK OF ALL TRADES IS COMPLETED. REINSTALL MECHANICAL WORK ON NEW STRUCTURE. 20. ALL MATERIALS AND EQUIPMENT INSTALLED IN RETURN AIR PLENUMS SHALL BE NON-COMBUSTIBLE AND UL APPROVED FOR USE IN A RETURN AIR PLENUM SPACE. ALL WIRING SHALL BE NON-COMBUSTIBLE OR SHALL BE ENCLOSED IN METAL CONDUIT OR PROTECTED BY A SHEET METAL COVER SECURED WITH METAL FASTENERS. 21. PROVIDE ALL OFFSETS, FITTINGS, DOUBLE ELBOWS, RISES, DROPS, DUCTWORK, PIPING, INSULATION AND ALL DUCTWORK OR PIPING AROUND EXISTING CONDITIONS. DUCTWORK, PIPING, EXISTING STEEL, NEW CONSTRUCTION AND ALL OTHER TRADE WORK, COORDINATE WORK WITH ALL OTHER WORK AND ALL OTHER TRADE CONTRACTORS TO VERIFY LOCATIONS REQUIRING CHANGES IN ELEVATION. 22. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT AND PIPE TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION. 23. INSTALL PIPING SUCH THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, AND OTHER ACCESSORIES ARE ACCESSIBLE. 24. PROVIDE ACCESS PANELS AS REQUIRED FOR ALL VALVES, DAMPERS, CONTROLS, OR OTHER EQUIPMENT. PROVIDE ACCESS PANELS IN NON-LAY-IN-CEILINGS FOR SERVICE AND MAINTENANCE OF ALL CONCEALED EQUIPMENT AND DEVICES, SUCH AS HEAT PUMPS, ELECTRIC DUCT HEATERS, COILS, SMOKE DETECTORS, BALANCING DAMPERS AND FIRE DAMPERS. 25. [CLEAN EXISTING AND RELOCATED AIR DEVICES THOROUGHLY WITH WARM SOAPY WATER. REPAIR AND RE-PAINT ALL DAMAGED AIR DEVICES TO BE REUSED. CLEAN ALL AIR DEVICES AFTER CONSTRUCTION IS COMPLETED.] 26. CONTRACTOR SHALL NOT CONCEAL ANY WORK UNTIL INSPECTED BY MECHANICAL INSPECTOR AND/OR ARCHITECT/ENGINEER. CONTRACTOR SHALL NOTIFY A/E OF A SCHEDULED INSPECTION TIME WITHIN 72 HOURS. GENERAL CONTRACTOR SHALL NOT CONCEAL WORK UNTIL APPROVED, REGARDLESS OF SCHEDULE. 27. REMOVE ALL TRASH, DEBRIS AND DEMOLITION MATERIAL FROM PREMISES AT THE END OF EACH DAY. 28. PROVIDE ALL ROOFING OPENINGS, FLASHING, CURBS, COUNTER FLASHING, ETC. REQUIRED FOR THE INSTALLATION OF ROOF MOUNTED EQUIPMENT OR CURBS. COORDINATE OPENING WITH ROOFING CONTRACTOR AND CM/SG. ALL ROOFING WORK SHALL BE PERFORMED BY AUTHORIZED ROOFING CONTRACTOR TO MAINTAIN ROOF WARRANTY. 29. ALL DUCT DIMENSIONS ARE INSIDE CLEAR DIMENSIONS. 30. SHEETMETAL FITTINGS SHOWN SHALL BE PROVIDED. NO SUBSTITUTES WILL BE ALLOWED WITHOUT PRIOR CONSENT FROM ENGINEER. 31. PROVIDE BALANCING DAMPERS IN ALL DUCT BRANCHES AND TO AIR DEVICES. 32. PROVIDE COMBINATION PRESMOKE DAMPERS AND SMOKE DAMPERS IN DUCTS PASSING THROUGH FIRE OR SMOKE RATED ASSEMBLIES AS INDICATED ON THE ARCHITECTURAL DRAWINGS. 33. DUCTWORK SHALL NOT BE ROUTED ABOVE ELECTRICAL PANELS. COORDINATE WITH ELECTRICAL CONTRACTOR. DUCTWORK SHALL NOT COVER OR LIMIT ACCESS TO EXISTING CABINETS. 34. PROVIDE HEAVY DUTY FLEXIBLE CONNECTIONS AT ALL FANS INLET AND OUTLET CONNECTIONS.	36. PROVIDE ACOUSTICALLY LINED DUCTWORK 20 FEET DOWNSTREAM OF ALL FANS, FAN COIL UNITS, FAN POWERED BOXES AND VAV BOXES. 37. MECHANICAL CONTRACTOR SHALL BLANK OFF ALL UNUSED SECTIONS OF LOUVER AREA WITH #1 GAUGE GALVANIZED STEEL PANELS AND INSULATE WITH 1" THICK FIBERGLASS BOARD INSULATION.] 38. ALL OPEN-ENDED DUCTS IN CEILING PLENUMS OR EXPOSED SHALL BE UNSTRUCTURED FOR A MINIMUM DISTANCE OF 6 INCHES FROM THE OPENING TO ALLOW FREE FLOW OF AIR. UNLESS OTHERWISE NOTED, EACH OPENING SHALL TERMINATE WITH ¾" WIRE MESH SCREEN. 39. LOCATE CEILING DIFFUSERS, GRILLES AND REGISTERS AS SHOWN ON THE ARCHITECTURAL, REFLECTED CEILING PLANS. 40. CONTRACTOR SHALL PROVIDE FIRE STOPPING WHERE EQUIPMENT, DUCTWORK AND PIPING PENETRATE FIRE AND SMOKE RATED BARRIERS/PARTITIONS. INSTALL FIRE STOPPING IN ACCORDANCE WITH UL RATED ASSEMBLY REQUIREMENTS AFTER EQUIPMENT, DUCTWORK AND PIPING HAVE BEEN INSTALLED. 41. PROVIDE ALL MISCELLANEOUS STEEL, THREADED RODS, REINFORCEMENT, VIBRATION ISOLATORS, TURNBUCKLES, ETC. TO SUPPORT MECHANICAL EQUIPMENT ON OR FROM BUILDING STRUCTURE. ALL SUPPORTS AND ASSOCIATED ANCHORS SHALL BE SIZED BASED ON THE WEIGHT OF THE RESPECTIVE EQUIPMENT BEING SUPPORTED. 42. SUPPORT ALL EQUIPMENT, PIPING AND DUCTWORK FROM BUILDING STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION. OTHERWISE, ADHERE TO THE DETAILS IN THE CONTRACT DOCUMENTS. NOTIFY ARCHITECT AND/OR STRUCTURAL ENGINEER OF ALL WEIGHTS AND METHODS OF SUPPORT. PROVIDE DETAILS TO COORDINATE CONCRETE PADS AND STEEL PLATFORMS REQUIRED FOR MECHANICAL WORK. 43. PROVIDE VIBRATION ISOLATION FOR ROTATING, REVOLVING OR RECIPROCATING EQUIPMENT, INCLUDING DUCTWORK CONNECTIONS TO THE EQUIPMENT TO PREVENT TRANSMISSION OF NOISE AND VIBRATION TO BUILDING STRUCTURE AND OCCUPIED SPACES. VIBRATION ISOLATION DEVICES SHALL INCLUDE SPRING VIBRATE ISOLATORS, NEOPRENE PADS/ING AND DUCT PIPE FLEXIBLE CONNECTIONS. 44. CONTROL WIRE AND CONDUIT SHALL COMPLY WITH NEC, INTERNATIONAL BUILDING CODES AND ELECTRICAL SPECIFICATIONS. FLENUM RATED CABLE SHALL BE PROVIDED IN ALL PLENUM CEILINGS. CONTRACTOR TO COORDINATE LOCATION OF ALL PLENUM CEILINGS. 45. ALL WALL MOUNTED CONTROL DEVICES SHOWN ON DRAWINGS ARE DIAGRAMMATIC IN LOCATION AND SHOWN FOR GENERAL WIRING PURPOSES ONLY. ALL DEVICES SHALL BE MOUNTED 48" ABOVE FINISHED FLOOR. DEVICES INDICATED TO BE INSTALLED IN THE SAME LOCATIONS WITH DIFFERENT ELEVATIONS SHALL BE ADJOINED VERTICALLY AND HORIZONTALLY REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING DETAILS OF SWITCHES, OUTLETS, FIRE ALARM STROBES, AUDIBLE AND VISUAL DEVICES, FIRE ALARM PULL STATION, CLOCKS, SECURITY DEVICES, CARD READERS, THERMOSTATS, SENSORS, ETC. COORDINATE FINAL LOCATIONS WITH EQUIPMENT, FURNITURE, TENANT, AND ARCHITECT PRIOR TO INSTALLATION. 46. REMOVE TEMPORARY AIR FILTERS AND PROVIDE NEW FILTERS IN ALL AIR CONDITIONING EQUIPMENT WITHIN THE SCOPE OF WORK UPON COMPLETION OF CONSTRUCTION AND BEFORE BALANCING. 47. ALL LOUVERS SHALL BE FURNISHED BY DIV. 23 AND INSTALLED BY THE C. M. DIV. 23 SHALL FULLY REVIEW BOTH MECHANICAL DRAWINGS AND ARCHITECTURAL DRAWINGS FOR LOUVER SIZES. 48. T.O. SLAB AT FIRST FLOOR DATUM ELEVATION OF 100'-0" CORRESPONDS TO 163.9' MEAN SEA LEVEL, AS SHOWN ON SITE AND CIVIL DRAWINGS.

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BALA
ENGINEERS
BALA CONSULTING ENGINEERS, INC.
200 WILSON ST., SUITE 200
SOUTH WINDSOR, CT 06074
(860) 241-1700
FAX: (860) 241-1701
WWW.BALA-ENG.COM

BID SET

August 28th, 2023

MECHANICAL
GENERAL
NOTES

Scale: NTS
Job No.: 60-20-409
Drawn By: K/JL
Date: August 28th, 2023

M0-0-2

DRA

Drummeys Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074

260 Charles Street
Studio 300
Waltham, MA
02453

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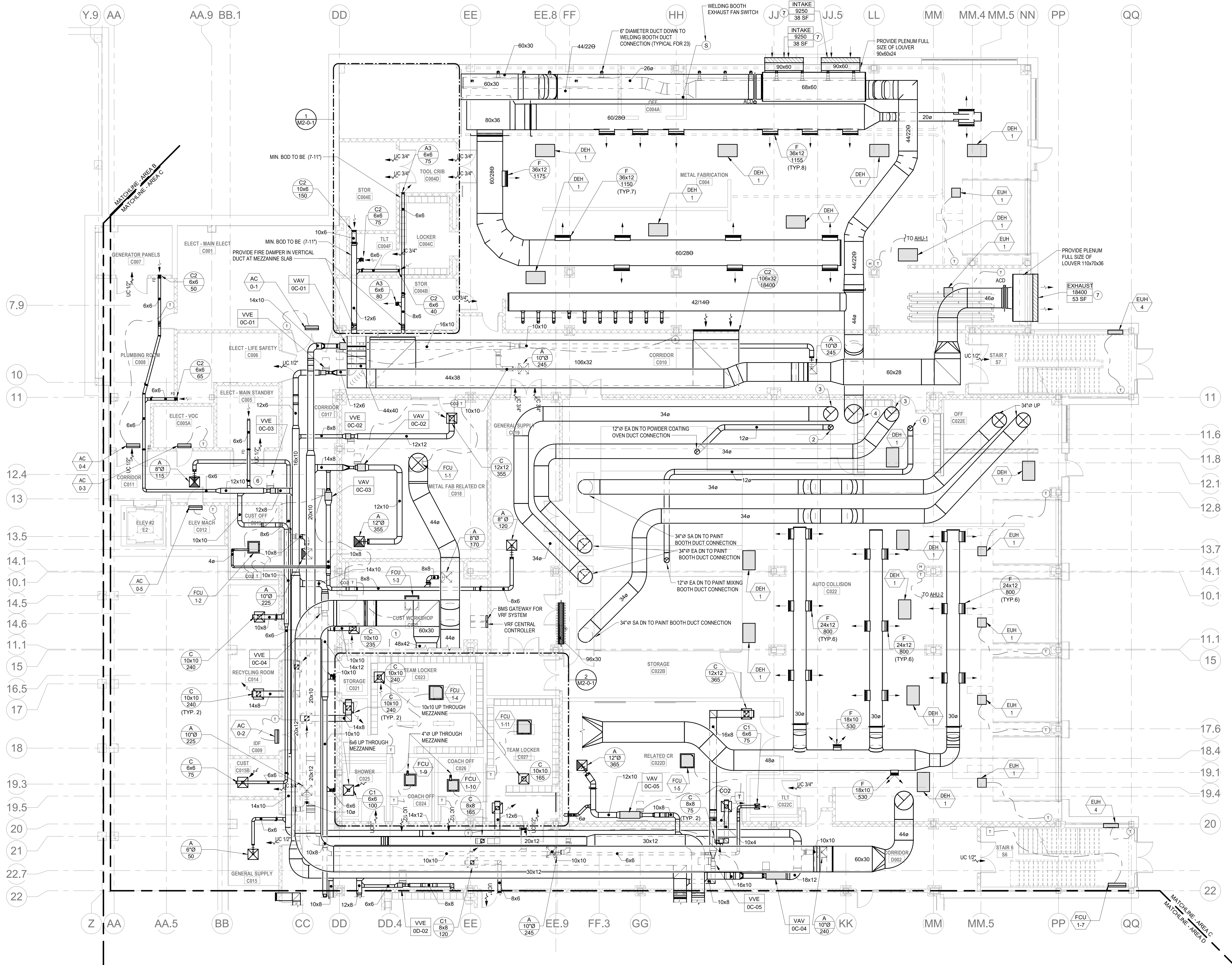
Wakefield, MA 01880

HVAC DRAWING NOTES

1. PROVIDE BMS HEAD END COMPUTER IN THIS ROOM.
2. 12" POWDER COATING OVEN EXHAUST DUCT UP TO FAN E3 ON ROOF.
3. 34" SPRAY BOOTH EXHAUST DUCT UP TO FAN E3 AND E3.1 ON ROOF.
4. 44" WELDING EXHAUST DUCT UP TO E3.3 ON ROOF.
5. PROVIDE MANUAL BALANCING DAMPER, BALANCE THE BALANCING DAMPER TO AN AIRFLOW OF 68 CFM.
6. 12" PAINT MIXING BOOTH EXHAUST DUCT UP TO FAN E1.1 ON ROOF.
7. LOUVERS PROVIDED BY DN. 23.

HVAC GENERAL NOTES

1. REFER TO PIPING SERIES PLANS (M) FOR PIPING LAYOUT AND CONNECTIONS.
2. GENERAL NOTE AT SOUND BARRIER CEILING:
IN THE METAL FABRICATION AND AUTO COLLISION SHOP A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEHPF SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNISTRUT SUPPORTS ATTACHED TO BOTTOM CORN OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEHPF SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEHPF SYSTEM COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON THE LIMITED BASES AT LOCATIONS SPECIFICALLY INDICATED ON THE MEHPF DRAWINGS.
3. GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP MEZZANES:
ALL HVAC COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEHPF COORDINATION PROCESS. ALL MECHANICAL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE MECHANICAL COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.



M1-1-0C VARIABLE AIR VOLUME EXHAUST AIR TERMINAL SCHEDULE (VVE)

UNIT NO.	TYPE	INLET DIAMETER (IN)	DISCHARGE SIZE (IN)	MAX. AIRFLOW (CFM)	MIN. TURNDOWN (CFM)	MAX. PD (IN WG)	MAX. NC RATING	DISCH. RAD.	MANUFACTURER	MODEL	REMARKS
VVE-0C-01	SINGLE DUCT EXHAUST	6	12x8	265	265	0.50	1.50	29	28	TITUS	DESV
VVE-0C-02	SINGLE DUCT EXHAUST	8	12x10	355	355	0.50	1.50	39	33	TITUS	DESV
VVE-0C-03	SINGLE DUCT EXHAUST	8	12x10	480	480	0.50	1.50	39	33	TITUS	DESV
VVE-0C-04	SINGLE DUCT EXHAUST	10	14x12.5	815	815	0.50	1.50	45	35	TITUS	DESV
VVE-0C-05	SINGLE DUCT EXHAUST	6	12x8	365	40	0.50	1.50	29	28	TITUS	DESV

- NOTES:
1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
 2. PROVIDE 1" DOUBBLEWALL PERFORATED LINER FOR ALL VAV TERMINALS.
 3. CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD.
 4. PROVIDE INLET VELOCITY SENSOR.
 5. SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.
 6. CONTROLS AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR.
 7. PROVIDE 1" LINER FOR 20' OF DOWNSTREAM OF ALL VAV BOXES.
 8. PROVIDE SOUND ATTENUATOR.

M1-1-0C VARIABLE AIR VOLUME TERMINAL (VAV)

UNIT NO.	SYSTEM	ROOM SERVED	PRIMARY INLET DIA. (IN)	MAX FLOW SETPOINT (CFM)	MIN FLOW OCCUPIED (CFM)	MINIMUM FLOW UNOCCUPIED (CFM)	INLET AIR PRESSURE (IN WG)	DISCHARGE SIZE (IN)	MAX PD (IN WG)	DISCH. RAD.	MANUFACTURER	MODEL	NOTES
VAV-0C-01	HRU4	C010 CORRIDOR	10	675	675	675	1.50	14x12.5	0.50	45	35	TITUS	DESV
VAV-0C-02	HRU4	C018 METAL FAB CR	8	355	110	35	1.50	12x10	0.50	39	33	TITUS	DESV
VAV-0C-03	HRU4	C018 METAL FAB CR	8	305	305	30	1.50	12x10	0.50	39	33	TITUS	DESV
VAV-0C-04	HRU4	C011 CORRIDOR	12	1100	1100	1100	1.50	18x15	0.50	43	36	TITUS	DESV
VAV-0C-05	HRU4	C0220 RELATED CR	8	395	120	40	1.50	12x10	0.50	39	33	TITUS	DESV

- NOTES:
1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
 2. PROVIDE 1" DOUBLEWALL PERFORATED LINER FOR ALL VAV TERMINALS.
 3. REFER TO FLOOR PLANS - VAV TERMINALS ARE PROVIDED WITH AND WITHOUT ELECTRIC RE-HEAT COILS.
 4. CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD.
 5. PROVIDE INLET VELOCITY SENSOR.
 6. CONTROLS AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR.
 7. SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.
 8. PROVIDE 1" LINER FOR 20' OF DOWNSTREAM OF ALL VAV BOXES.
 9. PROVIDE SOUND ATTENUATOR.

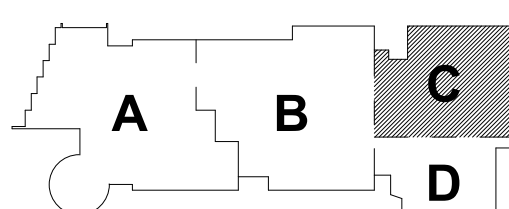
M1-1-0C DIRECT DUCTED OUTSIDE AIR FLOW (CFM)

UNIT NO.	LOCATION	VRF CONDENSING UNIT	OUTSIDE AIR FLOW (CFM)	NOTES
FCU-1-1	C018 METAL FAB CR	CU-1	15	SEE NOTES
FCU-1-2	C013 CUST OFF	CU-1	15	SEE NOTES
FCU-1-3	C020 CUST WORKSHOP	CU-1	45	SEE NOTES
FCU-1-4	C024 COACH OFF	CU-1	15	SEE NOTES
FCU-1-5	C026 COACH OFF	CU-1	15	SEE NOTES

- NOTES:
1. ALL DIRECT DUCTED VRF FAN COIL UNITS SHALL HAVE A MANUAL BALANCING DAMPER LOCATED AT THE BRANCH DUCT CONNECTION TO THE MAIN OUTSIDE AIR SUPPLY DUCT. MANUAL BALANCING DAMPER SHALL BE BALANCED TO THE OUTSIDE AIR FLOW (CFM) NOTED IN THIS SCHEDULE.

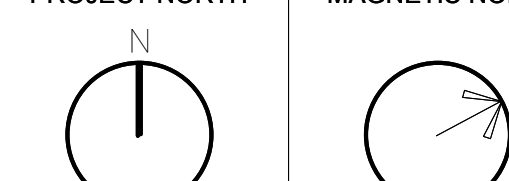
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August 28th, 2023



PROJECT NORTH

MAGNETIC NORTH



MECHANICAL
DUCTWORK
LOWER LEVEL
FLOOR PLAN -
AREA C

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

Job No.: 60-20-409

Drawn By: K.J.L.

Date: August 28th, 2023

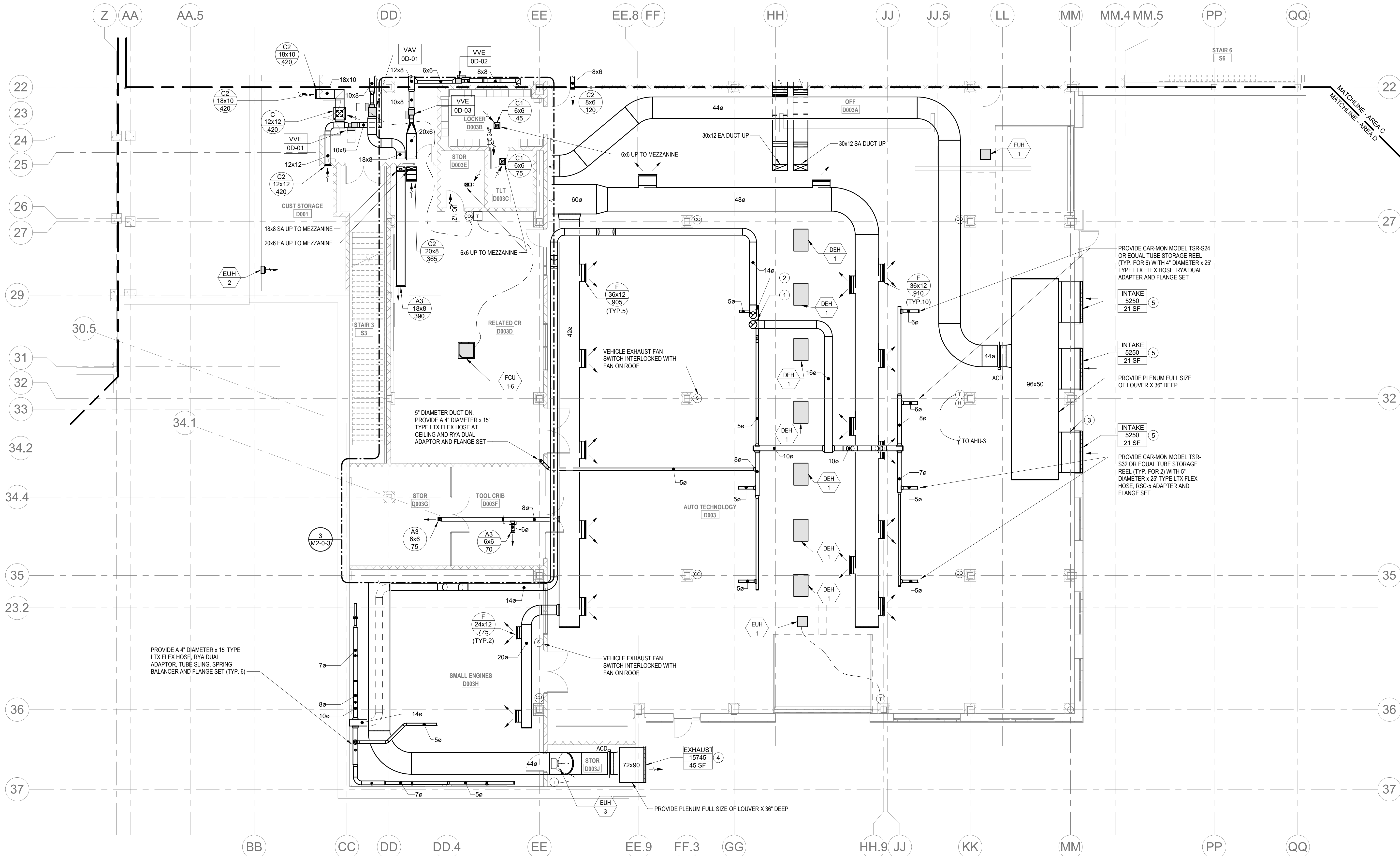
M1-1-0C

HVAC DRAWING NOTES

- 16"Ø VEHICLE EXHAUST DUCT UP (2,600 CFM).
- 14"Ø VEHICLE EXHAUST DUCT UP (2,100 CFM).
- SEAL SUPPLY AIR PLenum TIGHT AROUND BRACE FRAMING WITH IN WALL.
- LOUVERS PROVIDED BY DIV. 23.
- LOUVERS PROVIDED BY DIV. 08.

HVAC GENERAL NOTES

- REFER TO PIPING SERIES PLANS (M3) FOR PIPING LAYOUT AND CONNECTIONS.
- GENERAL NOTE AT SOUND BARRIER CEILING:
 - IN THE AUTO TECH SHOP A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEHPF SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNISTRUT SUPPORTS ATTACHED TO BOTTOM CORB OR STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEHPF SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEHPF SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON THE LIMITED BASES AT LOCATIONS SPECIFICALLY INDICATED ON THE MEHPF DRAWINGS.
- GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP MEZZANINES:
 - ALL HVAC COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEHPF COORDINATION PROCESS.
 - ALL MECHANICAL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE MECHANICAL COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.



M1-1-0D VARIABLE AIR VOLUME TERMINAL (VAV)

UNIT NO	SYSTEM	ROOM SERVED	PRIMARY AIR VALVE				SOUND DATA - MAX PWL IN PRO-DUCTIVE @ 1 FT INLET PRESSURE				MANUFACTURER	MODEL	NOTES
			PRIMARY INLET DIA (IN)	MAX FLOW SETPOINT (CFM)	MIN FLOW UNOCCUPIED (CFM)	MINIMUM FLOW (CFM)	INLET AIR PRESSURE (IN WG)	DISCHARGE SIZE WHH (IN)	MAX PD (IN WG)	DISCH RAD			
VAV-00-01	HRIU-1	D003 RELATED CR	8	390	120	40	1.50	12x10	0.50	39	TITUS	DESV	SEE NOTES 1-7

NOTES:
1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
2. PROVIDE 1\"/>

M1-1-0D VARIABLE AIR VOLUME EXHAUST AIR TERMINAL SCHEDULE (VVE)

UNIT NO	TYPE	INLET DIAMETER (IN)	DISCHARGE SIZE WHH (IN)	MAX AIRFLOW (CFM)	MIN TURNDOWN (CFM)	MAX PD (IN WG)	INLET AIR PRESSURE (IN WG)		DISCH	RAD	MANUFACTURER	MODEL	REMARKS
							INLET	MAX NC RATING					
VVE-00-01	SINGLE DUCT EXHAUST	8	12x10	420	420	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-7	
VVE-00-02	SINGLE DUCT EXHAUST	6	12x8	145	145	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-7	
VVE-00-03	SINGLE DUCT EXHAUST	8	12x10	365	40	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-7	

NOTES:
1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
2. PROVIDE 1\"/>

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Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
www.draan.com

280 Charles Street
Studio 300
Waltham, MA 02453
Tel: 817.984.1700
www.draan.com

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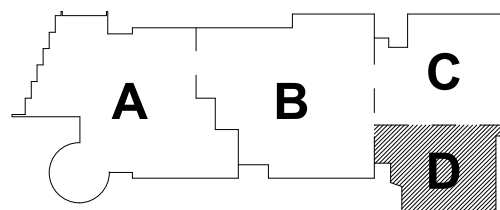
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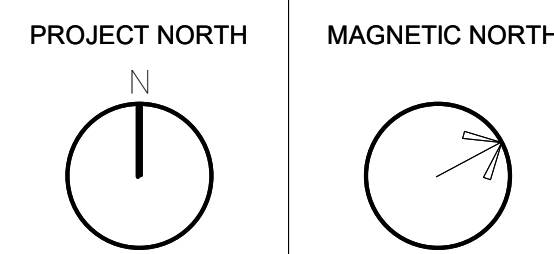
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August 28th, 2023



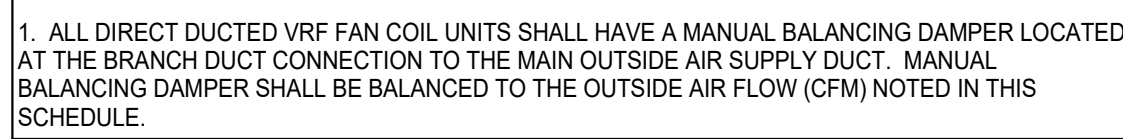
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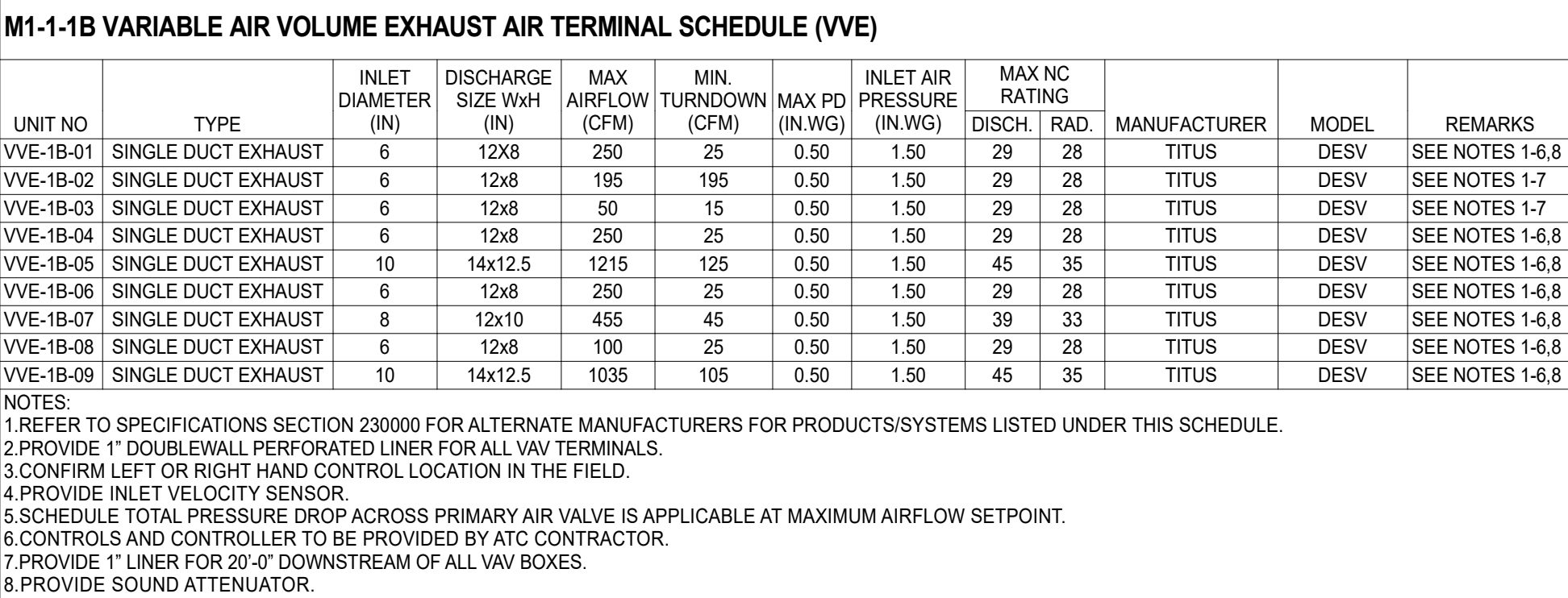


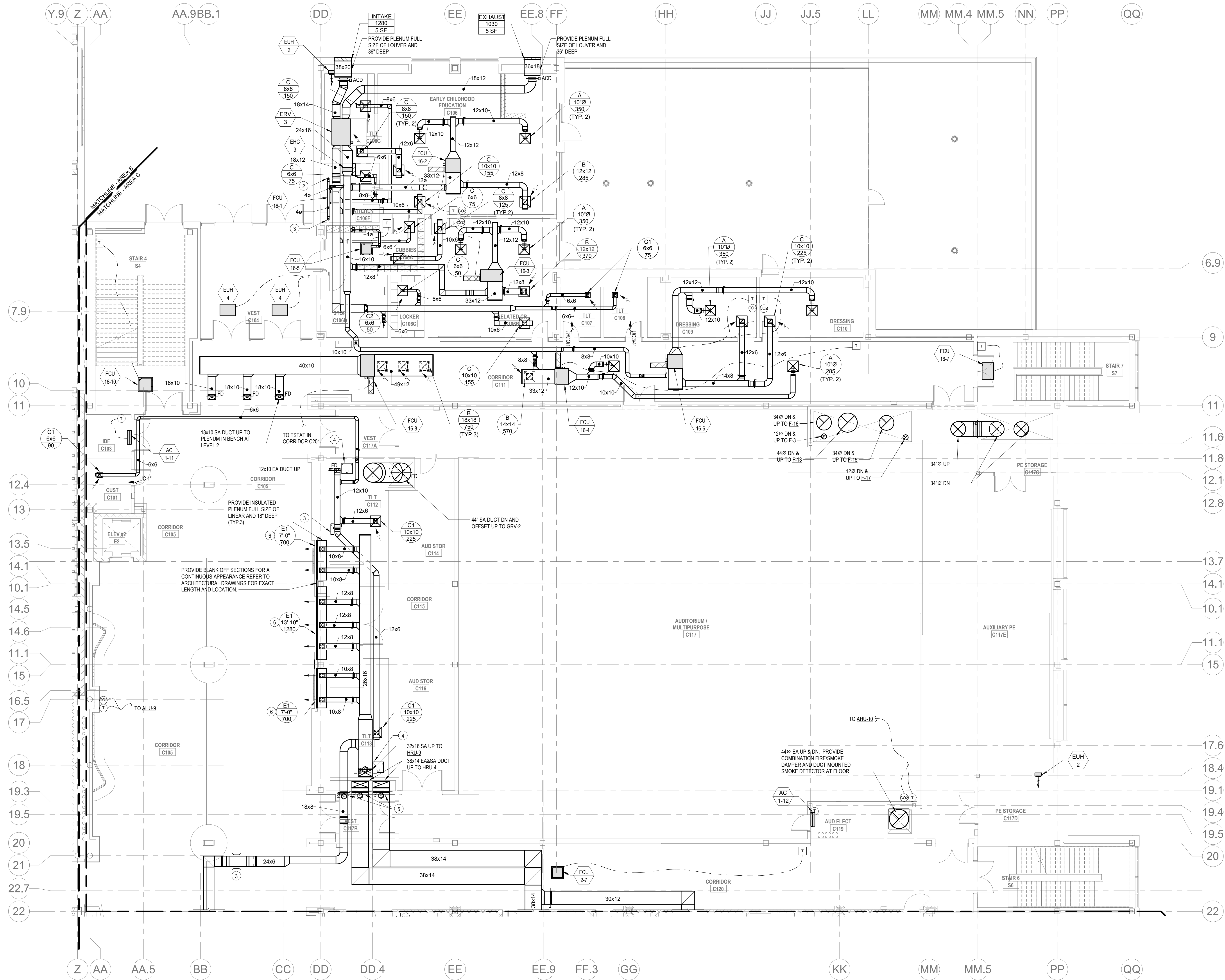
MECHANICAL
DUCTWORK
LOWER LEVEL
FLOOR PLAN -
AREA D

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023

M1-1-0D







HVAC DRAWING NOTES

- 4" Ø DRYER EA DUCT DN TO DRYER CONNECTION.
- 4" Ø DRYER EA DUCT UP TO GOOSENECK AT ROOF ABOVE.
- PROVIDE BEAM PENETRATION. COORDINATE WITH STRUCTURAL EXACT LOCATION AND SIZE.
- PROVIDE 24x24 ACCESS PANEL FOR ACCESS TO MECHANICAL EQUIPMENT ABOVE INACCESSIBLE CEILING.
- PROVIDE ACCESS PANEL FOR ACCESS TO DAMPERS ABOVE THE CEILING.
- PROVIDE REMOTE OPERATED BALANCING DAMPER. REFER TO DETAIL #14 ON DRAWING MA-2-2.

HVAC GENERAL NOTES

- REFER TO PIPING SERIES PLANS (M3) FOR PIPING LAYOUT AND CONNECTIONS.

M1-1-C DIRECT DUCTED OUTSIDE AIR FLOW (CFM)				
UNIT NO	LOCATION	VRF CONDENSING UNIT	OUTSIDE AIR FLOW (CFM)	NOTES
FCU-16-1	C106F KITCHEN	CU-16	15	SEE NOTES
FCU-16-2	C108F EARLY CHILDHOOD EDU	CU-16	415	SEE NOTES
FCU-16-3	C108B RELATED CR	CU-16	330	SEE NOTES
FCU-16-4	C111 CORRIDOR	CU-16	185	SEE NOTES
FCU-16-5	C109A CUBBIES	CU-16	25	SEE NOTES
FCU-16-6	C109C110 DRESSING	CU-16	180	SEE NOTES

Drummett Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
www.dra-inc.com

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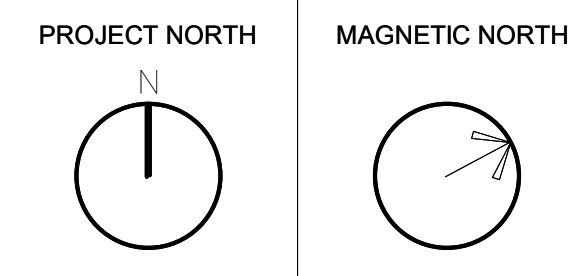
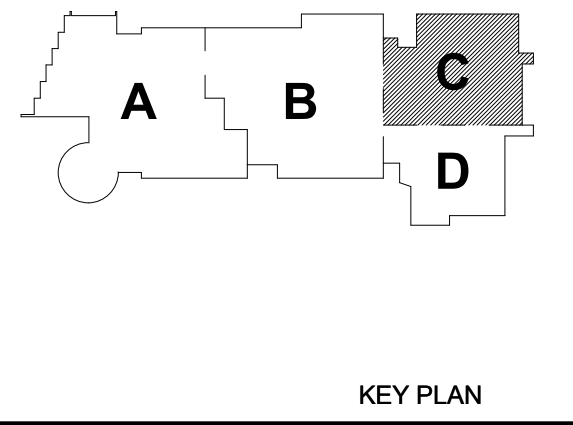
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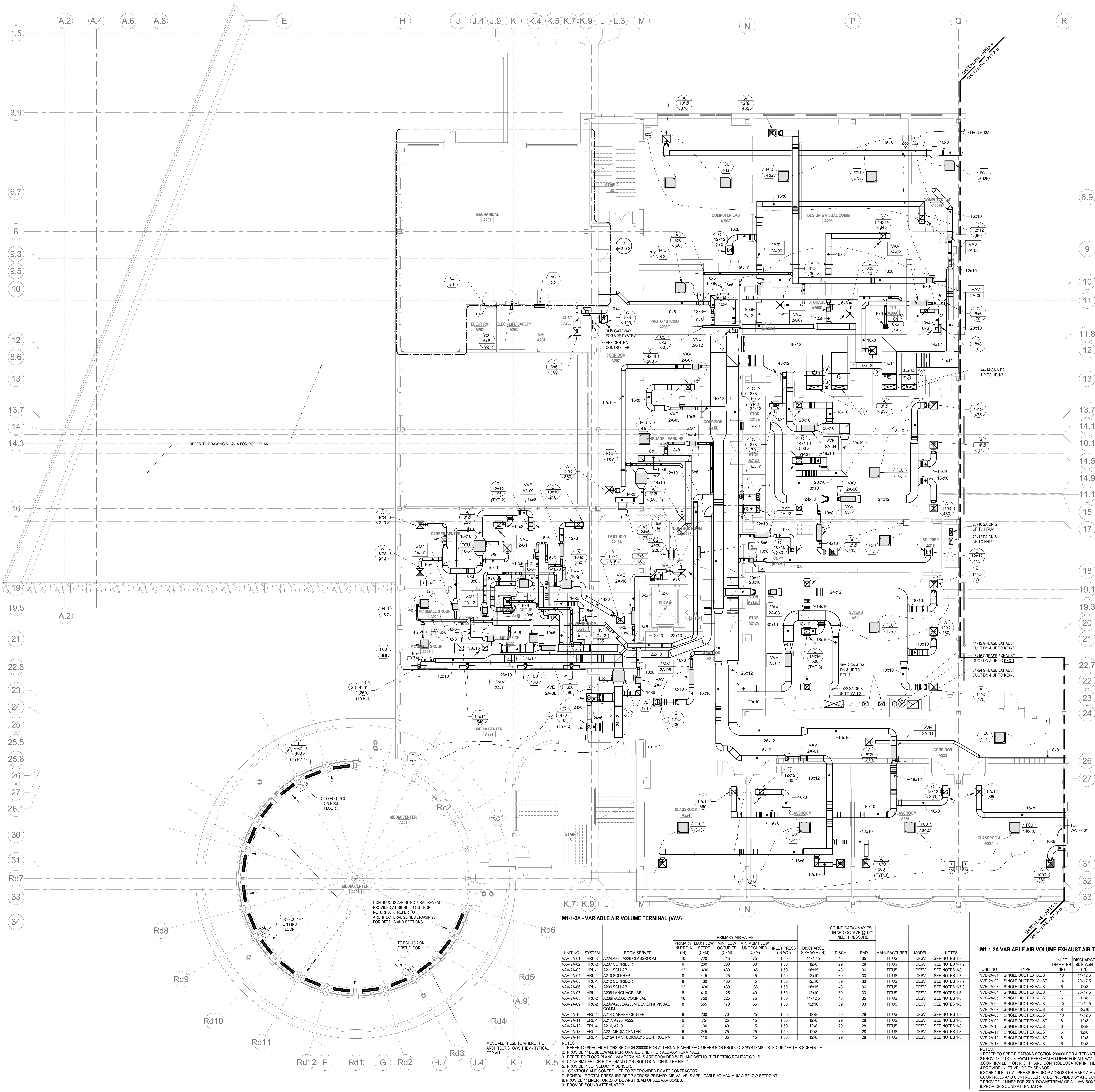
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August 28th, 2023



MECHANICAL
DUCTWORK
FIRST FLOOR
PLAN - AREA C

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023

M1-1-1C



HVAC DRAWING NOTES

- 40x12 SA & EA UP TO HRL1
- 22x12 EA UP TO HRL1
- 20x12 SA UP TO EBLE and 18x10 DN
- PROVIDE BEAM FLEXITATION. COORDINATE EXACT SIZE AND LOCATION WITH STRUCTURAL ENGINEER
- PROVIDE BEAM OFF SECTIONS BETWEEN ACTIVE PLENUM SECTIONS TO PROVIDE A CONTINUOUS APPEARANCE
- PROVIDE REMOTE OPERATED BALANCING DAMPER. REFER TO DETAIL #14 ON DRAWING 14-2-2
- ALL EXPOSED FCU'S SHALL BE PAINTED BLACK (TYP)
- 8x6 EA DN AND UP TO GBL4
- PROVIDE ACCESS PANEL ON WALL FOR ACCESS TO DAMPER

HVAC GENERAL NOTES

- REFER TO PIPING PLANS FOR PIPING LAYOUT AND CONNECTIONS

HVAC EQUIPMENT NOTES

- 10x10 200
- FCU 18-4
- 6x6 50
- AC 24
- VVE 2A-03

M1-1-2A DIRECT DUCTED OUTSIDE AIR FLOW (CFM)

UNIT NO	LOCATION	VRF CONDENSING UNIT	OUTSIDE AIR FLOW (CFM)	NOTES
FCU-18-1	A212 CORRIDOR	CU-18	245	SEE NOTES
FCU-18-2	A214 CAREER CENTER	CU-18	50	SEE NOTES
FCU-18-3	A222 MC OFFICE	CU-18	15	SEE NOTES
FCU-18-4	A214 CAREER CENTER	CU-18	80	SEE NOTES
FCU-18-5	A208 LANGUAGE LEARNING	CU-18	110	SEE NOTES
FCU-18-6	A214 CAREER CENTER	CU-18	230	SEE NOTES
FCU-18-7	A202 MC SMALL GROUP	CU-18	30	SEE NOTES
FCU-18-8	A217 MC SMALL GROUP	CU-18	30	SEE NOTES

- ALL DIRECT DUCTED VRF FAN COIL UNITS SHALL HAVE A MANUAL BALANCING DAMPER LOCATED AT THE BRANCH DUCT CONNECTION TO THE MAIN OUTSIDE AIR SUPPLY DUCT. MANUAL BALANCING DAMPER SHALL BE BALANCED TO THE OUTSIDE AIR FLOW (CFM) NOTED IN THIS SCHEDULE

M1-1-2A - VARIABLE AIR VOLUME TERMINAL (VAV)

PRIMARY AIR VALVE												ROUND DATA - MAX PWL IN 3RD OCTAVE @ 1" INLET PRESSURE	
UNIT NO	SYSTEM	ROOM SERVED	PRIMARY INLET DIA (IN)	MAX FLOW (CFM)	MIN FLOW OCCUPIED (CFM)	MINIMUM FLOW UNOCCUPIED (CFM)	INLET PRESS (IN.WG)	DISCHARGE SIZE W/OUT (IN)	DISCHG	RAD	MANUFACTURER	MODEL	NOTES
VAV-2A-01	HRU3	A224 A225 A226 CLASSROOM	10	720	215	75	1.50	14x12.5	45	35	TITUS	DESV	SEE NOTES 1-4
VAV-2A-02	HRU2	A207 CORRIDOR	6	260	280	30	1.50	12x8	29	28	TITUS	DESV	SEE NOTES 1-7,9
VAV-2A-03	HRU1	A211 SCI LAB	12	1430	430	145	1.50	18x15	43	38	TITUS	DESV	SEE NOTES 1-4
VAV-2A-04	HRU1	A210 SCI PREP	8	415	125	45	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-7,9
VAV-2A-05	HRU1	A212 CORRIDOR	8	430	130	45	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-7,9
VAV-2A-06	HRU1	A209 SCI LAB	12	1430	430	135	1.50	18x15	43	38	TITUS	DESV	SEE NOTES 1-7,9
VAV-2A-07	HRU1	A208 LANGUAGE LAB	8	410	125	40	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-4
VAV-2A-08	HRU2	A208F A208S COMP LAB	10	750	225	75	1.50	14x12.5	45	35	TITUS	DESV	SEE NOTES 1-4
VAV-2A-09	HRU2	A208F A208S DESIGN & VISUAL COMM	8	550	170	55	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-4
VAV-2A-10	ERU4	A214 CAREER CENTER	6	230	70	25	1.50	12x8	29	28	TITUS	DESV	SEE NOTES 1-4
VAV-2A-11	ERU4	A217, A220, A222	6	75	25	15	1.50	12x8	29	28	TITUS	DESV	SEE NOTES 1-4
VAV-2A-12	ERU4	A216, A219	6	130	40	15	1.50	12x8	29	28	TITUS	DESV	SEE NOTES 1-4
VAV-2A-13	ERU4	A221 MEDIA CENTER	6	245	75	25	1.50	12x8	29	28	TITUS	DESV	SEE NOTES 1-4
VAV-2A-14	ERU4	A215A TV STUDIO/A215 CONTROL RM	6	110	35	15	1.50	12x8	29	28	TITUS	DESV	SEE NOTES 1-4

- REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE
- PROVIDE 1" DOUBLEWALL PERFORATED LINER FOR ALL VAV TERMINALS
- REFER TO FLOOR PLANS. VAV TERMINALS ARE PROVIDED WITH AND WITHOUT ELECTRIC RE-HEAT COILS
- CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD
- PROVIDE INLET VELOCITY SENSOR
- CONTROLS AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR
- SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT
- PROVIDE 1" LINER FOR 20' DOWNSTREAM OF ALL VAV BOXES
- PROVIDE SOUND ATTENUATOR

M1-1-2A VARIABLE AIR VOLUME EXHAUST AIR TERMINAL SCHEDULE (VVE)

UNIT NO	TYPE	INLET DIAMETER (IN)	DISCHARGE SIZE W/OUT (IN)	MAX AIRFLOW (CFM)	MIN. TURNDOWN (IN WG)	MAX PD (IN WG)	INLET AIR PRESSURE (IN WG)	MAX NC DISCH. (IN WG)	RATING RAD	MANUFACTURER	MODEL	REMARKS
VVE-2A-01	SINGLE DUCT EXHAUST	10	14x12.5	1080	125	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-4,8
VVE-2A-02	SINGLE DUCT EXHAUST	14	20x17.5	1500	150	0.50	1.50	47	38	TITUS	DESV	SEE NOTES 1-4,8
VVE-2A-03	SINGLE DUCT EXHAUST	6	12x8	415	45	0.50	1.50	29	33	TITUS	DESV	SEE NOTES 1-7
VVE-2A-04	SINGLE DUCT EXHAUST	14	20x17.5	1500	450	0.50	1.50	47	38	TITUS	DESV	SEE NOTES 1-4,8
VVE-2A-05	SINGLE DUCT EXHAUST	6	12x8	360	35	0.50	1.50	29	33	TITUS	DESV	SEE NOTES 1-4,8
VVE-2A-06	SINGLE DUCT EXHAUST	10	14x12.5	750	75	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-4,8
VVE-2A-07	SINGLE DUCT EXHAUST	8	12x10	405	40	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-7
VVE-2A-08	SINGLE DUCT EXHAUST	10	14x12.5	1080	110	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-4,8
VVE-2A-09	SINGLE DUCT EXHAUST	6	12x8	210	25	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-4,8
VVE-2A-10	SINGLE DUCT EXHAUST	6	12x8	110	15	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-4,8
VVE-2A-11	SINGLE DUCT EXHAUST	6	12x8	110	15	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-7
VVE-2A-12	SINGLE DUCT EXHAUST	6	12x8	360	360	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-7
VVE-2A-13	SINGLE DUCT EXHAUST	6	12x8	230	230	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-4,8

- REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE
- PROVIDE 1" DOUBLEWALL PERFORATED LINER FOR ALL VAV TERMINALS
- CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD
- PROVIDE INLET VELOCITY SENSOR
- SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT
- CONTROLS AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR
- PROVIDE 1" LINER FOR 20' DOWNSTREAM OF ALL VAV BOXES
- PROVIDE SOUND ATTENUATOR

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Drummeys Rosane Anderson, Inc.

225 Oakland Road
Studio 205
South Windsor, CT 06074

260 Charles Street
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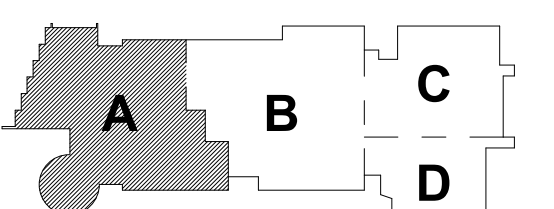
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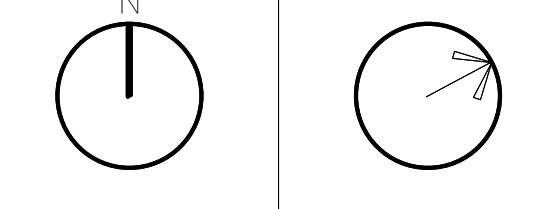
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August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



MECHANICAL DUCTWORK SECOND FLOOR PLAN - AREA A

Scale: As indicated

Job No.: 60-20-409

Drawn By: K.J.L.

Date: August 28th, 2023

M1-1-2A

M1-1-2B - VARIABLE AIR VOLUME TERMINAL (VAV)

UNIT NO	SYSTEM	ROOM SERVED	PRIMARY AIR VALVE				MAX INLET PRESS DROP (IN WG)	DISCHARGE SIZE WxH (IN)	DISCH	RAD	MANUFACTURER	MODEL	NOTES
			INLET DIA (IN)	AIR TERMINAL AIR FLOW (CFM)	MIN FLOW OCCUPIED (CFM)	MINIMUM FLOW UNOCCUPIED (CFM)							
VAV-2B-01	HRU-3	A227/B233 CLASSROOM	10	720	215	75	1.50	14x12.5	45	35	TITUS	DEV5	SEE NOTES 1-8
VAV-2B-02	HRU-3	B234 TEACHERS PLAN	6	175	55	25	1.50	12x8	29	28	TITUS	DEV5	SEE NOTES 1-7,9
VAV-2B-03	HRU-3	B230 COLLAB	8	650	195	85	1.50	12x10	39	33	TITUS	DEV5	SEE NOTES 1-7,9
VAV-2B-04	HRU-3	B231 CORRIDOR	8	670	670	70	1.50	12x10	39	33	TITUS	DEV5	SEE NOTES 1-7,9
VAV-2B-05	HRU-3	B236/B235 CLASSROOMS	10	720	220	75	1.50	14x12.5	45	35	TITUS	DEV5	SEE NOTES 1-8
VAV-2B-06	HRU-3	B237/B238/B239 CLASSROOMS	10	1080	325	110	1.50	14x12.5	45	35	TITUS	DEV5	SEE NOTES 1-8
VAV-2B-07	HRU-3	B215/B216/B220	6	185	55	25	1.50	12x8	29	28	TITUS	DEV5	SEE NOTES 1-8
VAV-2B-08	HRU-3	B211/B212/B213 CLASSROOMS	10	1080	325	110	1.50	14x12.5	45	35	TITUS	DEV5	SEE NOTES 1-8
VAV-2B-09	HRU-2	B204 CORRIDOR	10	805	805	80	1.50	14x12.5	45	35	TITUS	DEV5	SEE NOTES 1-8
VAV-2B-10	HRU-2	B202/B203 COMPUTER LAB	8	440	135	45	1.50	12x10	39	33	TITUS	DEV5	SEE NOTES 1-8
VAV-2B-11	HRU-2	B203A/B203C MARKETING COMPUTER LAB	10	780	235	80	1.50	14x12.5	45	35	TITUS	DEV5	SEE NOTES 1-8
VAV-2B-12	HRU-2	B202A/B202/B202D BUSINESS TECH	8	510	155	55	1.50	12x10	39	33	TITUS	DEV5	SEE NOTES 1-7,9
VAV-2B-13	HRU-2	B201 DRAFTING DESIGN	10	875	265	90	1.50	14x12.5	45	35	TITUS	DEV5	SEE NOTES 1-8
VAV-2B-14	HRU-2	A206A/B201F RELATED CR	8	660	200	70	1.50	12x10	39	33	TITUS	DEV5	SEE NOTES 1-7,9
VAV-2B-15	HRU-2	B201G/B201D COMPUTER LAB	10	750	225	75	1.50	14x12.5	45	35	TITUS	DEV5	SEE NOTES 1-8
VAV-2B-16	HRU-2	B206/B207/B208/B209/B210 OFFICES	6	150	35	25	1.50	12x8	29	28	TITUS	DEV5	SEE NOTES 1-7,9

- NOTES:
1. REFER TO SPECIFICATIONS SECTION 23000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
2. PROVIDE 1" DOUBLEWALL PERFORATED LINER FOR ALL VAV TERMINALS.
3. REFER TO FLOOR PLANS. VAV TERMINALS ARE PROVIDED WITH AND WITHOUT ELECTRIC RE-HEAT COLS.
4. CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD.
5. PROVIDE INLET VELOCITY SENSOR.
6. CONTROLS AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR.
7. SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.
8. PROVIDE 1" LINER FOR 20' OF DOWNSTREAM OF ALL VAV BOXES.
9. PROVIDE SOUND ATTENUATOR.

M1-1-2B DIRECT DUCTED OUTSIDE AIR FLOW (CFM)

UNIT NO	LOCATION	VRF CONDENSING UNIT	OUTSIDE AIR FLOW (CFM)	NOTES
FCU-5-12	B218G DEPT HEAD OFFICES	CU-5	90	SEE NOTES
FCU-5-13	B218G DEPT HEAD OFFICES	CU-5	105	SEE NOTES
FCU-5-14	B205 AP	CU-5	15	SEE NOTES
FCU-5-16	B218 ACAD PROG	CU-5	30	SEE NOTES
FCU-5-21	B220 MDF	CU-5	25	SEE NOTES
FCU-5-22	B227 DATA/CLASSROOM	CU-5	15	SEE NOTES
FCU-6-7	B202D OFF	CU-6	25	SEE NOTES
FCU-6-10	B201E OFF	CU-6	30	SEE NOTES
FCU-7-1	B210 SPED TUTORIAL	CU-7	30	SEE NOTES
FCU-7-2	B206 DEAN	CU-7	15	SEE NOTES
FCU-7-3	B208B CNLSR RECEPTION	CU-7	15	SEE NOTES
FCU-7-4	B208 ADJUST CNLSR	CU-7	15	SEE NOTES
FCU-7-5	B207 ADJUST CNLSR	CU-7	15	SEE NOTES
FCU-7-6	B206 ADJUST CNLSR	CU-7	15	SEE NOTES

- NOTES:
1. ALL DIRECT DUCTED VRF FAN COIL UNITS SHALL HAVE A MANUAL BALANCING DAMPER LOCATED AT THE BRANCH DUCT CONNECTION TO THE MAIN OUTSIDE AIR SUPPLY DUCT.
MANUAL BALANCING DAMPER SHALL BE BALANCED TO THE OUTSIDE AIR FLOW (CFM) NOTED IN THIS SCHEDULE.

M1-1-2B VARIABLE AIR VOLUME EXHAUST AIR TERMINAL SCHEDULE (VVE)

UNIT NO	TYPE	INLET DIAMETER (IN)	DISCHARGE SIZE WxH (IN)	MAX AIRFLOW (CFM)	MIN AIRFLOW (CFM)	MAX INLET PRESS (IN WG)	MAX NC RATING	DISCH	RAD	MANUFACTURER	MODEL	REMARKS
VVE-2B-01	SINGLE DUCT EXHAUST	10	14x12.5	720	75	0.50	1.50	45	35	TITUS	DEV5	SEE NOTES 1-7
VVE-2B-02	SINGLE DUCT EXHAUST	6	12x8	175	75	0.50	1.50	29	28	TITUS	DEV5	SEE NOTES 1-8
VVE-2B-03	SINGLE DUCT EXHAUST	10	14x12.5	720	75	0.50	1.50	45	35	TITUS	DEV5	SEE NOTES 1-8
VVE-2B-04	SINGLE DUCT EXHAUST	10	14x12.5	1080	325	0.50	1.50	45	35	TITUS	DEV5	SEE NOTES 1-7
VVE-2B-05	SINGLE DUCT EXHAUST	10	14x12.5	995	995	0.50	1.50	45	35	TITUS	DEV5	SEE NOTES 1-7
VVE-2B-06	SINGLE DUCT EXHAUST	10	14x12.5	1080	325	0.50	1.50	45	35	TITUS	DEV5	SEE NOTES 1-8
VVE-2B-07	SINGLE DUCT EXHAUST	8	12x8	165	25	0.50	1.50	29	28	TITUS	DEV5	SEE NOTES 1-8
VVE-2B-08	SINGLE DUCT EXHAUST	10	14x12.5	1945	1045	0.50	1.50	45	35	TITUS	DEV5	SEE NOTES 1-7
VVE-2B-09	SINGLE DUCT EXHAUST	6	12x8	630	190	0.50	1.50	29	28	TITUS	DEV5	SEE NOTES 1-8
VVE-2B-10	SINGLE DUCT EXHAUST	8	12x10	410	45	0.50	1.50	39	33	TITUS	DEV5	SEE NOTES 1-8
VVE-2B-11	SINGLE DUCT EXHAUST	8	12x10	440	45	0.50	1.50	39	33	TITUS	DEV5	SEE NOTES 1-7
VVE-2B-12	SINGLE DUCT EXHAUST	10	14x12.5	720	75	0.50	1.50	45	35	TITUS	DEV5	SEE NOTES 1-8
VVE-2B-13	SINGLE DUCT EXHAUST	10	14x12.5	750	75	0.50	1.50	45	35	TITUS	DEV5	SEE NOTES 1-8
VVE-2B-14	SINGLE DUCT EXHAUST	8	12x10	660	70	0.50	1.50	39	33	TITUS	DEV5	SEE NOTES 1-8

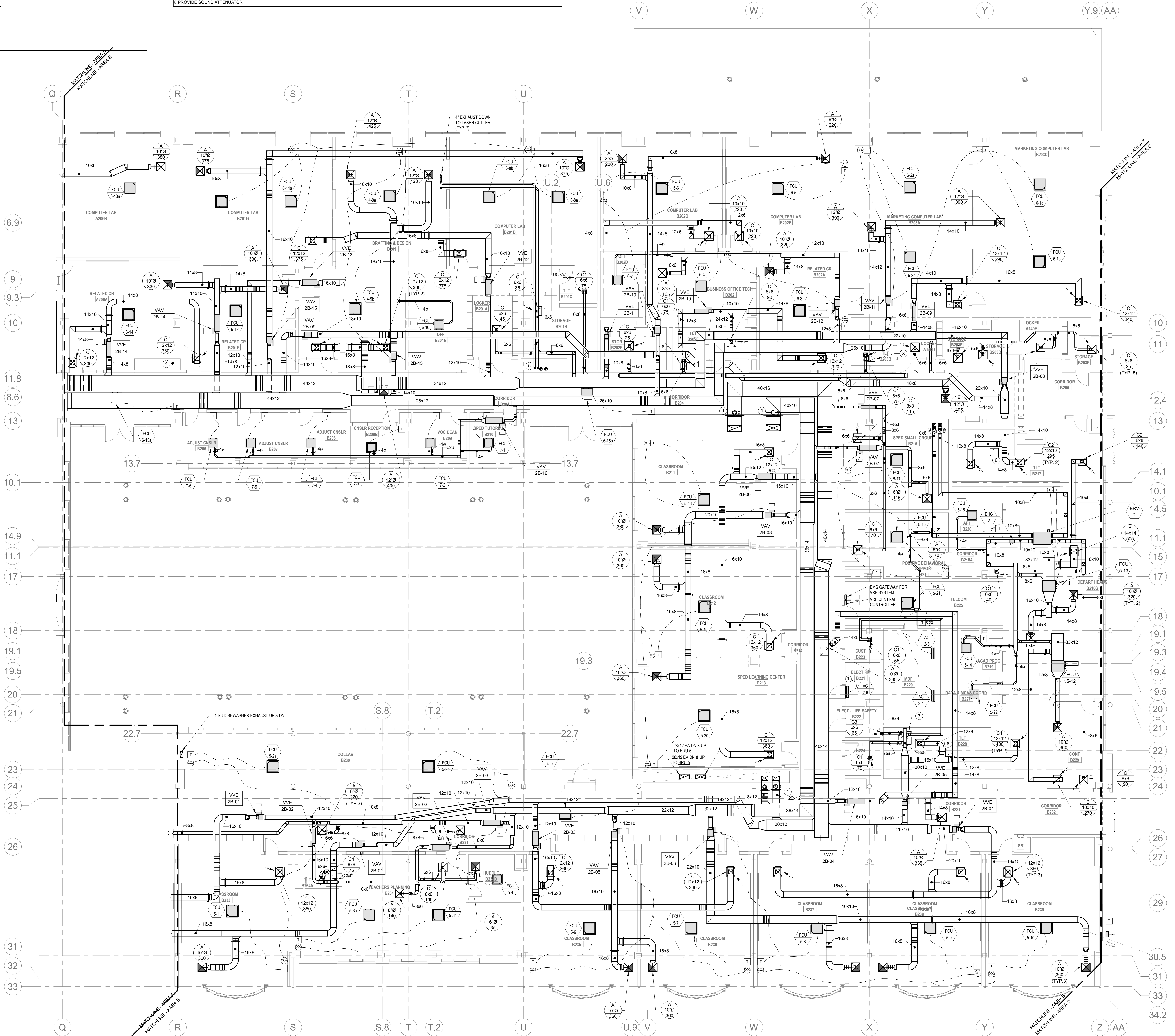
- NOTES:
1. REFER TO SPECIFICATIONS SECTION 23000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
2. PROVIDE 1" DOUBLEWALL PERFORATED LINER FOR ALL VAV TERMINALS.
3. CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD.
4. PROVIDE INLET VELOCITY SENSOR.
5. SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.
6. CONTROLS AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR.
7. PROVIDE 1" LINER FOR 20' OF DOWNSTREAM OF ALL VAV BOXES.
8. PROVIDE SOUND ATTENUATOR.

HVAC GENERAL NOTES

- REFER TO PIPING PLANS FOR PIPING LAYOUT AND CONNECTIONS

HVAC DRAWING NOTES

- PROVIDE ACCESS PANEL ON WALL FOR ACCESS TO DAMPER.
- 40x14 SA ON AND 8x60 EA UP TO HRU3.
- 30x14 EA ON AND 8x60 EA UP TO HRU3.
- 6" 10'10" O.D. TYPE B VENT FOR WATER HEATER UP TO ROOF & DOWN TO PLUMBING SHOP.
- (4) 4" Ø EXHAUST UP AND DN AND (1) 3" Ø EXHAUST UP & DN.
- PROVIDE 20x6 ACCESS PANEL FOR ACCESS TO MECHANICAL EQUIPMENT ABOVE INACCESSIBLE CEILING.
- PROVIDE 30x6 ACCESS PANEL FOR ACCESS TO MECHANICAL EQUIPMENT ABOVE INACCESSIBLE CEILING.
- PROVIDE 18x6 ACCESS PANEL FOR ACCESS TO MECHANICAL EQUIPMENT ABOVE INACCESSIBLE CEILING.



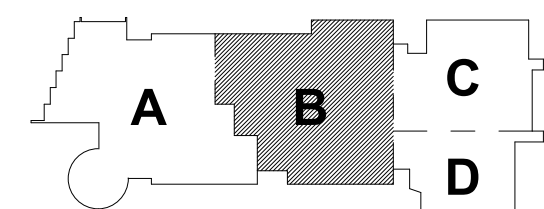
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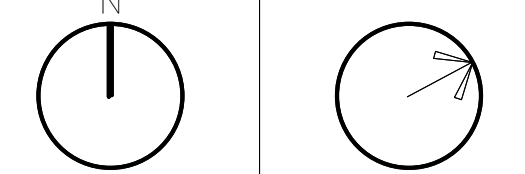
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August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



MECHANICAL DUCTWORK SECOND FLOOR PLAN - AREA B

Scale: As indicated

Job No.: 60-20-409

Drawn By: KJJL

Date: August 28th, 2023

M1-1-2B

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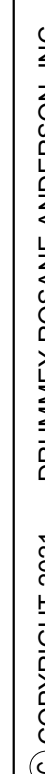
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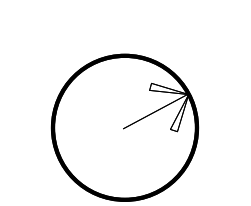


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MAGNETIC NORTH



Lab No. 60-20-409

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1. REFER TO PIPING PLANS FOR PIPING LAYOUT AND EQUIPMENT CONNECTION

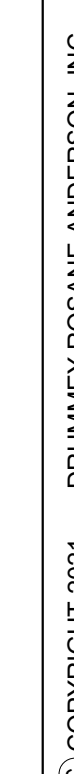
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BOSTON, MA 02111-1000
TEL: 617 237 6880 FAX: 617 237 5111
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August 28th, 2023



Scale: 10" = 1'.0"

Job No. 60-20-40

Dennis B. K. H.

Date: August 28th, 2023

M1-1-2D

M1-1-3A - VARIABLE AIR VOLUME TERMINAL (VAV)

PRIMARY AIR VALVE										SOUND DATA - MAX PWL IN 3RD OCTAVE @ 1.0' INLET PRESSURE			
UNIT NO	SYSTEM	ROOM SERVED	PRIMARY INLET DA (IN)	MAX FLOW OCCUPIED (CFM)	MIN FLOW UNOCCUPIED (CFM)	MINIMUM FLOW UNOCCUPIED (CFM)	MAX INLET PRESS. DROP (IN WG)	DISCHARGE SIZE WHH (IN)	DISCH	RAD	MANUFACTURER	MODEL	NOTES
VAV-3A-01	HRU-2	A304 CORRIDOR	6	225	225	25	1.50	12x8	29	28	TITUS	DESV	SEE NOTES 1-8
VAV-3A-02	HRU-2	A303H/A303I LAB	8	570	175	60	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-7,9
VAV-3A-03	HRU-1	A318 SCI LAB	12	1310	395	135	1.50	16x15	43	36	TITUS	DESV	SEE NOTES 1-7,9
VAV-3A-04	HRU-1	A319 SCI PREP	8	660	125	65	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-7,9
VAV-3A-05	HRU-1	A309 CORRIDOR	12	1270	1270	1270	1.50	16x15	43	36	TITUS	DESV	SEE NOTES 1-8
VAV-3A-06	HRU-2	A303 BIOTECHNOLOGY	14	1735	520	175	1.50	20x17.5	47	38	TITUS	DESV	SEE NOTES 1-7,9
VAV-3A-07	HRU-1	A301, A302 AND A305	10	1045	315	105	1.50	14x12.5	45	35	TITUS	DESV	SEE NOTES 1-8
VAV-3A-08	HRU-1	A306, A307, A306, A307A	8	585	175	60	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-8
VAV-3A-09	HRU-1	A320 SCI LAB	12	1305	395	130	1.50	16x15	43	36	TITUS	DESV	SEE NOTES 1-7,9
VAV-3A-10	HRU-1	A320/A320A CLASSROOMS	10	1080	325	110	1.50	14x12.5	43	36	TITUS	DESV	SEE NOTES 1-7,9

- NOTES:
1. REFER TO SPECIFICATIONS SECTION 23000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
 2. PROVIDE 1" DOUBLEWALL PERFORATED LINER FOR ALL VAV TERMINALS.
 3. REFER TO FLOOR PLANS. VAV TERMINALS ARE PROVIDED WITH AND WITHOUT ELECTRIC RE-HEAT COILS.
 4. CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD.
 5. PROVIDE INLET VELOCITY SENSOR.
 6. CONTROLS AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR.
 7. SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.
 8. PROVIDE 1" LINER FOR 20" C DOWNSTREAM OF ALL VAV BOXES.
 9. PROVIDE SOUND ATTENUATOR.

M1-1-3A VARIABLE AIR VOLUME EXHAUST AIR TERMINAL SCHEDULE (VVE)

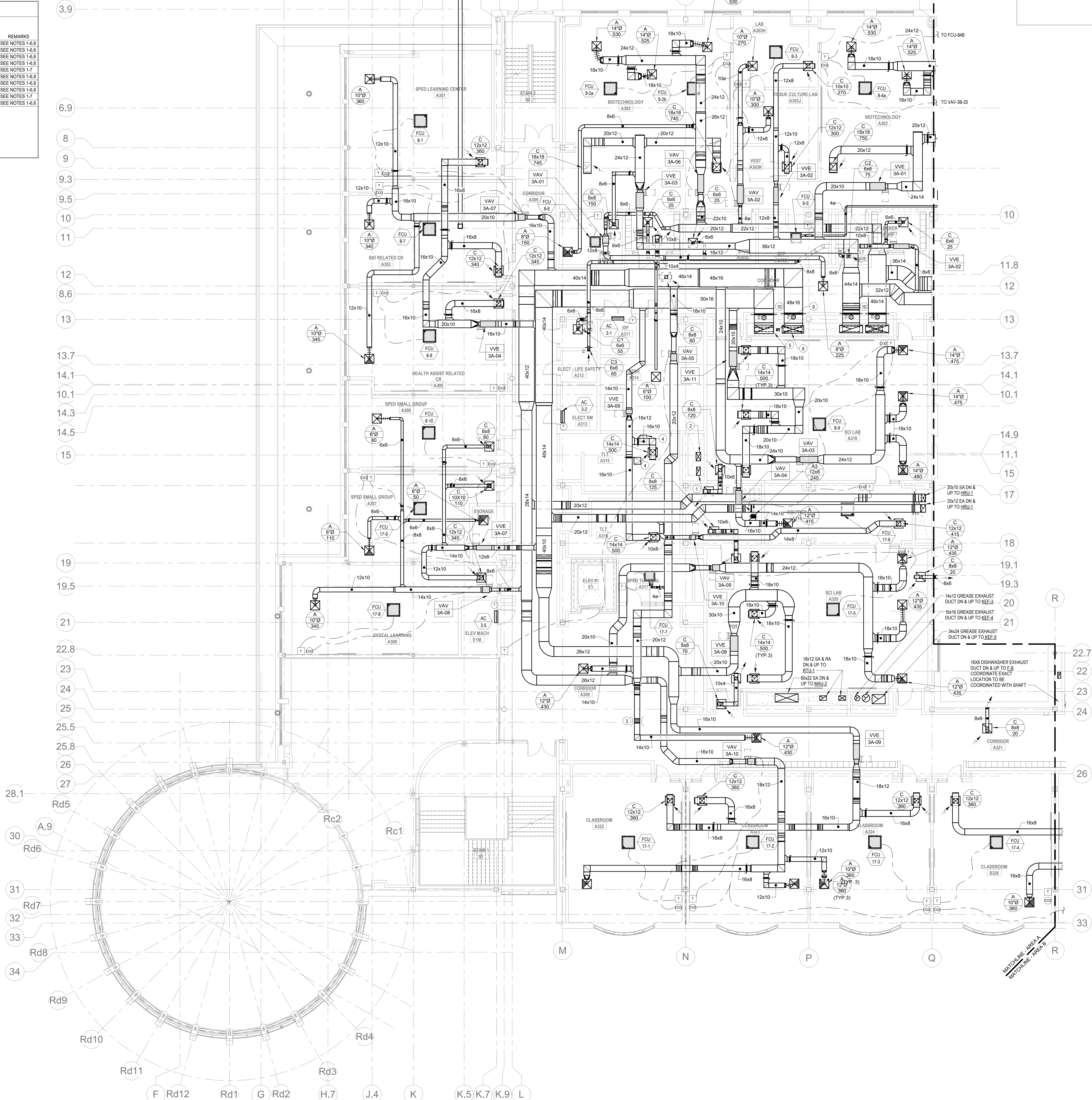
UNIT NO	TYPE	INLET DIAMETER (IN)	DISCHARGE SIZE WHH (IN)	MAX AIRFLOW (CFM)	MIN TURNDOWN (CFM)	MAX PG (IN WG)	INLET AIR PRESSURE (IN WG)	DISCH RAD	MANUFACTURER	MODEL	REMARKS	
VVE-3A-01	SINGLE DUCT EXHAUST	14	20x17.5	1485	150	0.50	1.50	47	38	TITUS	DESV	SEE NOTES 1-6,8
VVE-3A-02	SINGLE DUCT EXHAUST	6	12x8	270	270	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-6,8
VVE-3A-03	SINGLE DUCT EXHAUST	14	20x17.5	1635	165	0.50	1.50	47	38	TITUS	DESV	SEE NOTES 1-6,8
VVE-3A-04	SINGLE DUCT EXHAUST	10	14x12.5	1045	105	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-6,8
VVE-3A-05	SINGLE DUCT EXHAUST	10	14x12.5	1000	1000	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-7
VVE-3A-07	SINGLE DUCT EXHAUST	8	12x10	535	55	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-6,8
VVE-3A-08	SINGLE DUCT EXHAUST	14	20x17.5	1500	150	0.50	1.50	47	38	TITUS	DESV	SEE NOTES 1-6,8
VVE-3A-09	SINGLE DUCT EXHAUST	12	16x15	1080	110	0.50	1.50	43	36	TITUS	DESV	SEE NOTES 1-6,8
VVE-3A-10	SINGLE DUCT EXHAUST	8	12x10	415	45	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-7
VVE-3A-11	SINGLE DUCT EXHAUST	14	20x17.5	1500	150	0.50	1.50	47	38	TITUS	DESV	SEE NOTES 1-6,8

- NOTES:
1. REFER TO SPECIFICATIONS SECTION 23000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
 2. PROVIDE 1" DOUBLEWALL PERFORATED LINER FOR ALL VAV TERMINALS.
 3. CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD.
 4. PROVIDE INLET VELOCITY SENSOR.
 5. SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.
 6. CONTROLS AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR.
 7. PROVIDE 1" LINER FOR 20" C DOWNSTREAM OF ALL VAV BOXES.
 8. PROVIDE SOUND ATTENUATOR.

M1-1-3A DIRECT DUCTED OUTSIDE AIR FLOW (CFM)

UNIT NO	LOCATION	VRF CONDENSING UNIT	OUTSIDE AIR FLOW (CFM)	NOTES
FCU-6-5	A303 OFF	CU-6	30	SEE NOTES 1-8
FCU-17-7	A317 SPED TUTORIAL	CU-17	30	SEE NOTES 1-8

- NOTES:
1. ALL DIRECT DUCTED VRF FAN COIL UNITS SHALL HAVE A MANUAL BALANCING DAMPER LOCATED AT THE BRANCH DUCT CONNECTION TO THE MAIN OUTSIDE AIR SUPPLY DUCT. MANUAL BALANCING DAMPER SHALL BE BALANCED TO THE OUTSIDE AIR FLOW (CFM) NOTED IN THIS SCHEDULE.



HVAC DRAWING NOTES

1. 20x10 EA UP TO ERL4 & DN.
2. 20x12 SA UP TO ERL4 & DN.
3. PROVIDE BEAM PENETRATION. COORDINATE EXACT SIZE AND LOCATION WITH STRUCTURAL ENGINEER.
4. PROVIDE 16x16 ACCESS PANEL IN INACCESSIBLE CEILING FOR MECHANICAL EQUIPMENT SERVICE.
5. 48x12 EA DN AND 50x20 UP TO HRL1.
6. 48x12 SA DN AND 50x20 UP TO HRL1.
7. 44x14 SA DN AND 50x20 SA UP TO HRL2.
8. 44x14 EA DN AND 50x20 EA UP TO HRL2.
9. 56x EA DN AND UP TO ERL4.
10. PROVIDE ACCESS PANEL ON WALL FOR ACCESS TO DAMPER.

HVAC DRAWING NOTES

1. REFER TO PIPING PLANS FOR PIPING LAYOUT AND CONNECTIONS.

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South Windsor, CT
06074

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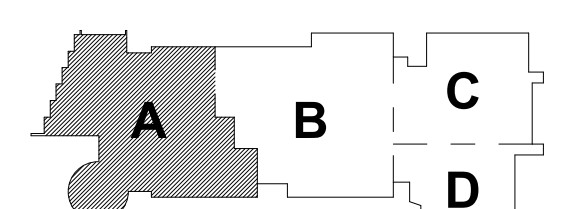
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300 WASHINGTON STREET, SUITE 200
WALTHAM, MA 02453
TEL: 617.984.1700 FAX: 617.984.1701
WWW.BALA-ENGINEERS.COM

DESIGNED BY: ROSANE ANDERSON, INC.
CHECKED BY: ROSANE ANDERSON, INC.
APPROVED BY: ROSANE ANDERSON, INC.

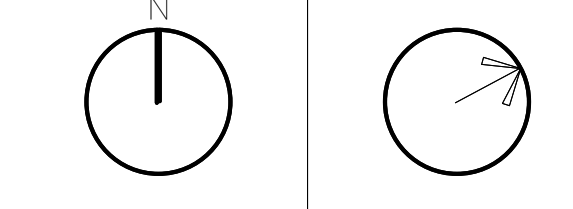
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August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



**MECHANICAL
DUCTWORK
THIRD FLOOR
PLAN - AREA A**

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

Job No.: 60-20-409

Drawn By: K.J.L.

Date: August 28th, 2023

M1-1-3A

DRA

Drummett Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074

260 Charles Street
Studio 300
Waltham, MA
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HVAC DRAWING NOTES

1. PROVIDE DRYER VENT CAP 36"Ø SIBU OR EQUAL.
2. 4"Ø DRYER EXHAUST FROM DRYER CONNECTION TO EXTERIOR WALL. PROVIDE VENT CAP AT WALL. TYPICAL FOR ALL DRYERS.
3. 4"Ø DRYER EXHAUST DUCT ON TO DRYER CONNECTION.
4. 10"Ø EXHAUST AIR DUCT UP TO F-10 ON ROOF ABOVE.
5. PROVIDE ACCESS PANEL ON WALL FOR ACCESS TO DAMPER.
6. 40x14 EA ON AND 52x20 SA UP TO BELL.
7. 36x14 EA ON AND 52x20 EA UP TO BELL.
8. F-10 10"Ø DUCT TYPE B VENT FOR WATER HEATER UP TO ROOF DOWN TO PLUMBING SHOP.
9. 18"Ø EXHAUST AIR DUCT UP TO F-22 ON ROOF ABOVE.
10. (4) 4" EXHAUST UP & DN AND (1) 3" EXHAUST UP/DN.

HVAC GENERAL NOTES

1. REFER TO PIPING PLANS FOR PIPING LAYOUT AND EQUIPMENT CONNECTIONS.

M1-1-3B DIRECT DUCTED OUTSIDE AIR FLOW (CFM)

UNIT NO.	LOCATION	VRF CONDENSING UNIT	OUTSIDE AIR FLOW (CFM)	NOTES
FCU-10-10	B301A OBSERVATION	CU-10	25	SEE NOTES
FCU-21-1	B308 SPED TUTORIAL	CU-21	25	SEE NOTES
FCU-21-2	B307 DRAW OFF	CU-21	15	SEE NOTES
FCU-21-3	B306A CNLSR RECEPTION	CU-21	20	SEE NOTES
FCU-21-4	B305 ADJUST CNLSR	CU-21	15	SEE NOTES
FCU-21-5	B304 ADJUST CNLSR	CU-21	15	SEE NOTES
FCU-21-6	B306 ADJUST CNLSR	CU-21	15	SEE NOTES

NOTES:
1. ALL DIRECT DUCTED VRF FAN COIL UNITS SHALL HAVE A MANUAL BALANCING DAMPER LOCATED AT THE BRANCH DUCT CONNECTION TO THE MAIN OUTSIDE AIR SUPPLY DUCT. MANUAL BALANCING DAMPER SHALL BE BALANCED TO THE OUTSIDE AIR FLOW (CFM) NOTED IN THIS SCHEDULE.

M1-1-3B - VARIABLE AIR VOLUME TERMINAL (VAV)

PRIMARY AIR VALVE													SOUND DATA - MAX PWL IN 3RD OCTAVE @ 1.0" INLET PRESSURE			
UNIT NO	SYSTEM	ROOM SERVED	INLET DIA. (IN)	AIR FLOW (CFM)	MIN FLOW (CFM)	MINIMUM FLOW UNOCCUPIED (CFM)	MAX INLET PRESS. (IN W.G.)	DISCHARGE SIZE (IN)	DISCH. RAD	MANUFACTURER	MODEL	NOTES				
VAV-3B-01	HRU-3	B327/B328 CLASSROOM	10	720	220	75	1.50	14x12.5	45	35	TITUS	DESV SEE NOTES 1-8				
VAV-3B-02	HRU-3	B328 TEACHERS PLAN	6	175	55	25	1.50	12x10	29	28	TITUS	DESV SEE NOTES 1-7,9				
VAV-3B-03	HRU-3	B323 COLLAB	10	425	140	40	1.50	12x10	39	33	TITUS	DESV SEE NOTES 1-7,9				
VAV-3B-04	HRU-3	B308/B309 CLASSROOM	10	720	220	75	1.50	14x12.5	45	35	TITUS	DESV SEE NOTES 1-8				
VAV-3B-05	HRU-3	B313/B323/B333 CLASSROOM	10	1080	325	25	1.50	14x12.5	45	35	TITUS	DESV SEE NOTES 1-8				
VAV-3B-06	HRU-3	B312 CORRIDOR	8	380	140	40	1.50	12x10	39	33	TITUS	DESV SEE NOTES 1-7,9				
VAV-3B-07	HRU-3	B322 SCI LAB	14	1430	430	145	1.50	20x17.5	45	35	TITUS	DESV SEE NOTES 1-8				
VAV-3B-08	HRU-3	B316 SCI PREP	8	470	145	40	1.50	12x10	39	33	TITUS	DESV SEE NOTES 1-8				
VAV-3B-09	HRU-3	B315 SCI LAB	14	1430	430	145	1.50	20x17.5	47	38	TITUS	DESV SEE NOTES 1-7,9				
VAV-3B-10	HRU-3	B308/B310/B311 CLASSROOM	10	1080	325	25	1.50	14x12.5	45	35	TITUS	DESV SEE NOTES 1-8				
VAV-3B-11	HRU-2	B304/B305/B306/B307/B308	6	105	35	25	1.50	12x10	29	28	TITUS	DESV SEE NOTES 1-8				
VAV-3B-12	HRU-2	A301 HEALTH ASSIST	8	440	135	45	1.50	12x10	39	33	TITUS	DESV SEE NOTES 1-8				
VAV-3B-13	HRU-2	B301C MOCK APT	6	180	55	25	1.50	12x10	29	28	TITUS	DESV SEE NOTES 1-7,9				
VAV-3B-14	HRU-2	B301 HEALTH ASSIST	8	440	135	45	1.50	12x10	39	33	TITUS	DESV SEE NOTES 1-8				
VAV-3B-15	HRU-2	B302 MEDICAL ASSIST	8	450	150	45	1.50	12x10	39	33	TITUS	DESV SEE NOTES 1-7,9				
VAV-3B-16	HRU-2	B302N LAB	8	540	165	55	1.50	12x10	39	33	TITUS	DESV SEE NOTES 1-8				
VAV-3B-17	HRU-2	B302 MEDICAL ASSIST	8	485	145	50	1.50	12x10	39	33	TITUS	DESV SEE NOTES 1-8				
VAV-3B-18	HRU-2	B302J RELAX CR	8	390	120	40	1.50	12x10	39	33	TITUS	DESV SEE NOTES 1-8				
VAV-3B-19	HRU-2	B303 CORRIDOR	6	285	95	25	1.50	12x10	29	28	TITUS	DESV SEE NOTES 1-8				
VAV-3B-20	HRU-2	A303 BIOTECHNOLOGY	14	1555	470	160	1.50	20x17.5	45	35	TITUS	DESV SEE NOTES 1-8				
NOTES																
1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.																
2. PROVIDE 1" DOUBLESIDED PERFORATED LINER FOR ALL VAV TERMINALS.																
3. REFER TO FLOOR PLANS, VAV TERMINALS ARE PROVIDED WITH AND WITHOUT ELECTRICAL HEAT COILS.																
4. COINTEGRATE LEFT OR RIGHT AND CONTROL LOCATION IN THE FIELD.																
5. PROVIDE INLET VELOCITY SENSOR.																
6. CONTROLS AND CONTROLLER TO BE PROVIDED BY ACTR CONTROLLER.																
7. SCHEDULE TABLE PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.																
8. PROVIDE 1" LINER FOR 20" DOWNSTREAM OF ALL VAV BOXES.																
9. PROVIDE SOUND ATTENUATOR.																

- NOTES:
1. REFER TO SPECIFICATIONS SECTION 23000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
2. PROVIDE 1" DOUBLEWALL PERFORATED LINER FOR ALL VAV TERMINALS.
3. REFER TO FLOOR PLANS. VAV TERMINALS ARE PROVIDED WITH AND WITHOUT ELECTRIC RE-HEAT COILS.
4. CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD.
5. PROVIDE INLET VELOCITY SENSOR.
6. CONTROLS AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR.
7. SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.
8. PROVIDE 1" LINER FOR 20'-0" DOWNSTREAM OF ALL VAV BOXES.
9. PROVIDE SOUND ATTENUATOR.

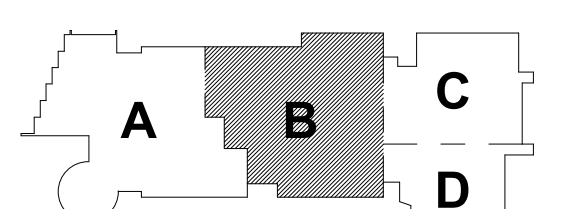
M1-1-3B VARIABLE AIR VOLUME EXHAUST AIR TERMINAL SCHEDULE (VVE)

UNIT NO.	TYPE	INLET DIAMETER (IN)	DISCHARGE SIZE (IN)	MAX AIRFLOW (CFM)	MIN. TURNDOWN (CFM)	MAX PD (IN W.G.)	INLET AIR PRESSURE (IN W.G.)	MAX NC RATING (IN W.G.)	DISCH. RAD	MANUFACTURER	MODEL	REMARKS
VVE-3B-01	SINGLE DUCT EXHAUST	10	14x12.5	720	75	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-7
VVE-3B-02	SINGLE DUCT EXHAUST	6	12x8	175	55	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-8
VVE-3B-03	SINGLE DUCT EXHAUST	8	12x10	410	40	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-8
VVE-3B-04	SINGLE DUCT EXHAUST	10	14x12.5	720	75	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-8
VVE-3B-05	SINGLE DUCT EXHAUST	10	14x12.5	1080	110	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-7
VVE-3B-06	SINGLE DUCT EXHAUST	6	12x8	195	195	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-7
VVE-3B-07	SINGLE DUCT EXHAUST	14	20x17.5	1500	150	0.50	1.50	47	38	TITUS	DESV	SEE NOTES 1-8
VVE-3B-08	SINGLE DUCT EXHAUST	8	12x10	405	40	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-7
VVE-3B-09	SINGLE DUCT EXHAUST	14	20x17.5	1500	150	0.50	1.50	47	38	TITUS	DESV	SEE NOTES 1-7
VVE-3B-10	SINGLE DUCT EXHAUST	10	14x12.5	1080	110	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-8
VVE-3B-11	SINGLE DUCT EXHAUST	8	12x10	365	40	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-8
VVE-3B-12	SINGLE DUCT EXHAUST	6	12x8	155	25	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-8
VVE-3B-13	SINGLE DUCT EXHAUST	6	12x8	155	35	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-8
VVE-3B-14	SINGLE DUCT EXHAUST	8	12x10	540	55	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-8
VVE-3B-15	SINGLE DUCT EXHAUST	8	12x10	515	55	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-8
VVE-3B-16	SINGLE DUCT EXHAUST	8	12x10	460	50	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-8
VVE-3B-17	SINGLE DUCT EXHAUST	8	12x10	390	40	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-8

- NOTES:
1. REFER TO SPECIFICATIONS SECTION 23000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
2. PROVIDE 1" DOUBLEWALL PERFORATED LINER FOR ALL VAV TERMINALS.
3. CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD.
4. PROVIDE INLET VELOCITY SENSOR.
5. SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.
6. CONTROLS AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR.
7. PROVIDE 1" LINER FOR 20'-0" DOWNSTREAM OF ALL VAV BOXES.
8. PROVIDE SOUND ATTENUATOR.

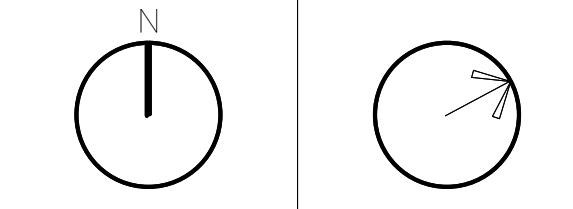
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August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



MECHANICAL DUCTWORK THIRD FLOOR PLAN - AREA B

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

Job No.: 60-20-409

Drawn By: K.J.L.

Date: August 28th, 2023

M1-1-3B

HVAC DRAWING NOTES

1. PROVIDE REMOTE OPERATED BALANCING DAMPER. REFER TO DETAIL #14 ON DWG M1-0-2.

HVAC GENERAL NOTES

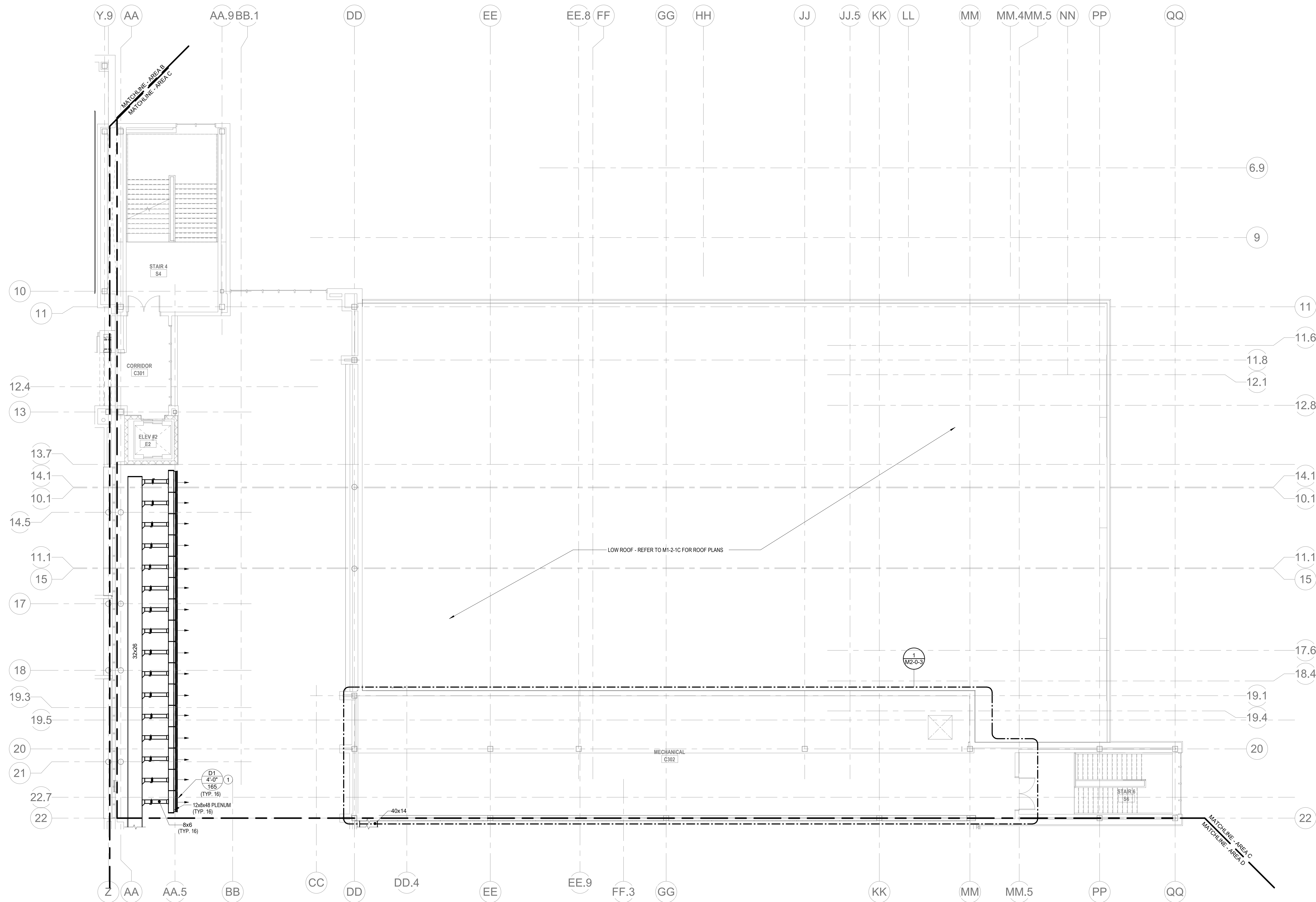
1. REFER TO PIPING SERIES PLANS (M3) FOR PIPING LAYOUT AND CONNECTIONS.

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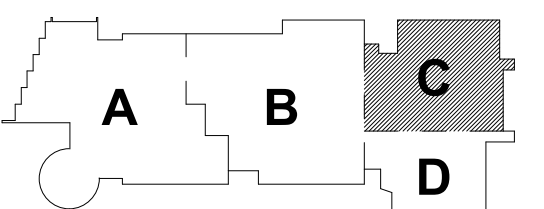


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SUITE 200
DENVER, CO 80202
TEL: 303.733.1111 FAX: 303.733.1112
WWW.BALA-ENGINEERS.COM

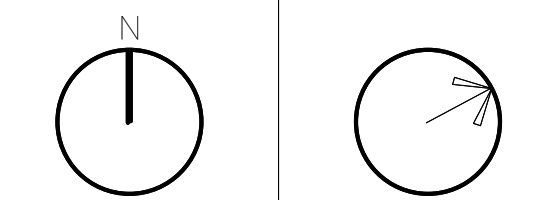
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KEY PLAN

PROJECT NORTH MAGNETIC NORTH



MECHANICAL
DUCTWORK
THIRD FLOOR
PLAN - AREA C

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

Job No.: 60-20-409

Drawn By: KJL

Date: August 28th, 2023

M1-1-3C

HVAC DRAWING NOTES

1. PROVIDE REMOTE OPERATED BALANCING DAMPER. REFER TO DETAIL #14 ON DWG M4-D-2.

HVAC GENERAL NOTES

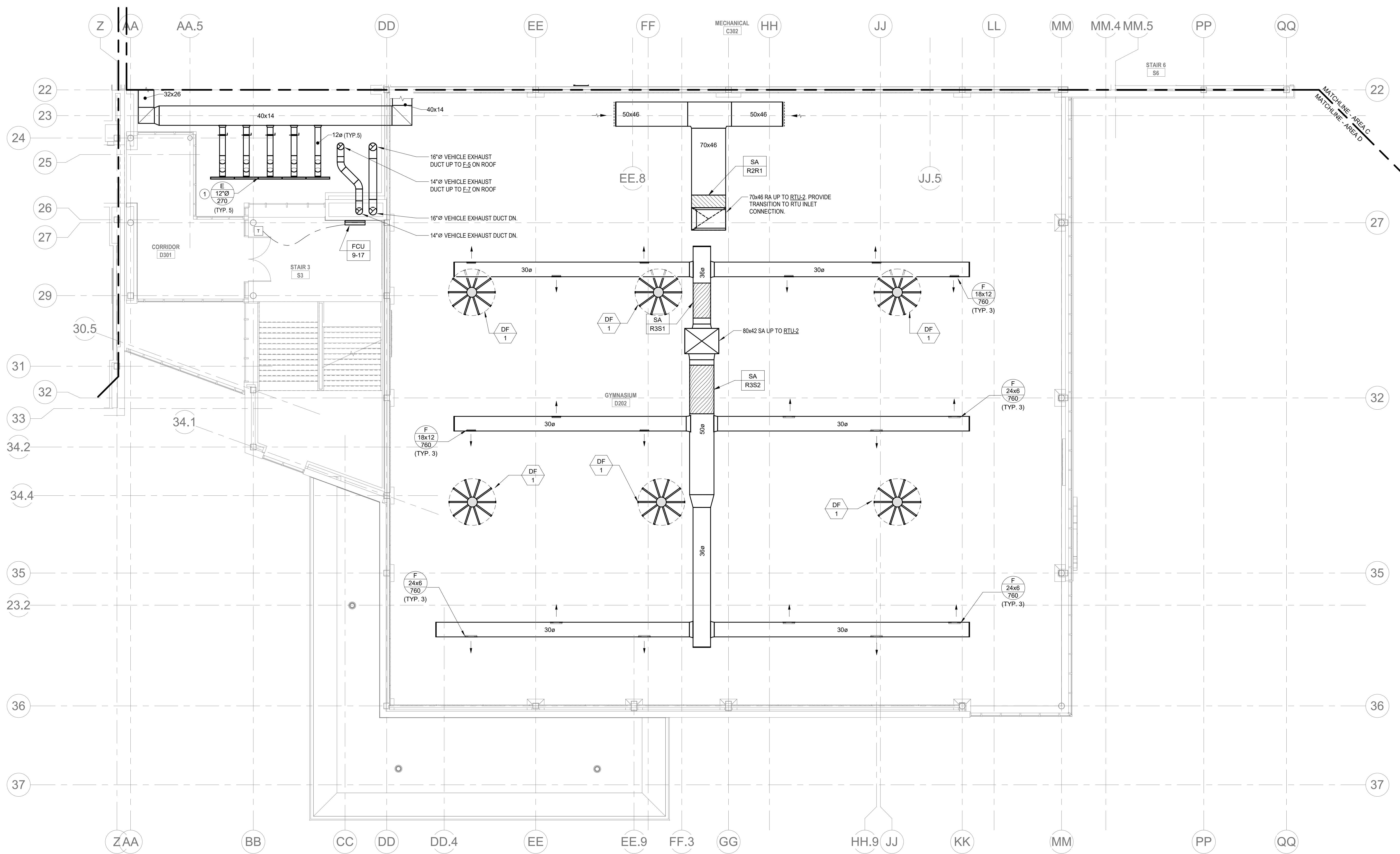
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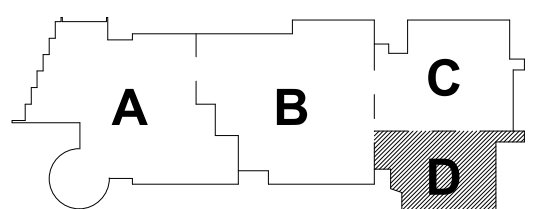


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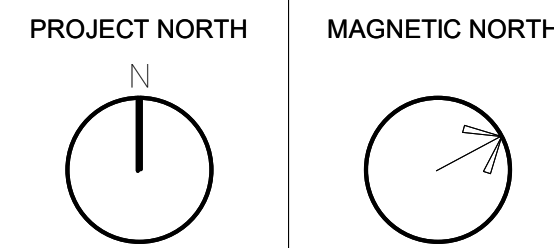
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KEY PLAN



MECHANICAL
DUCTWORK
THIRD FLOOR
PLAN - AREA D

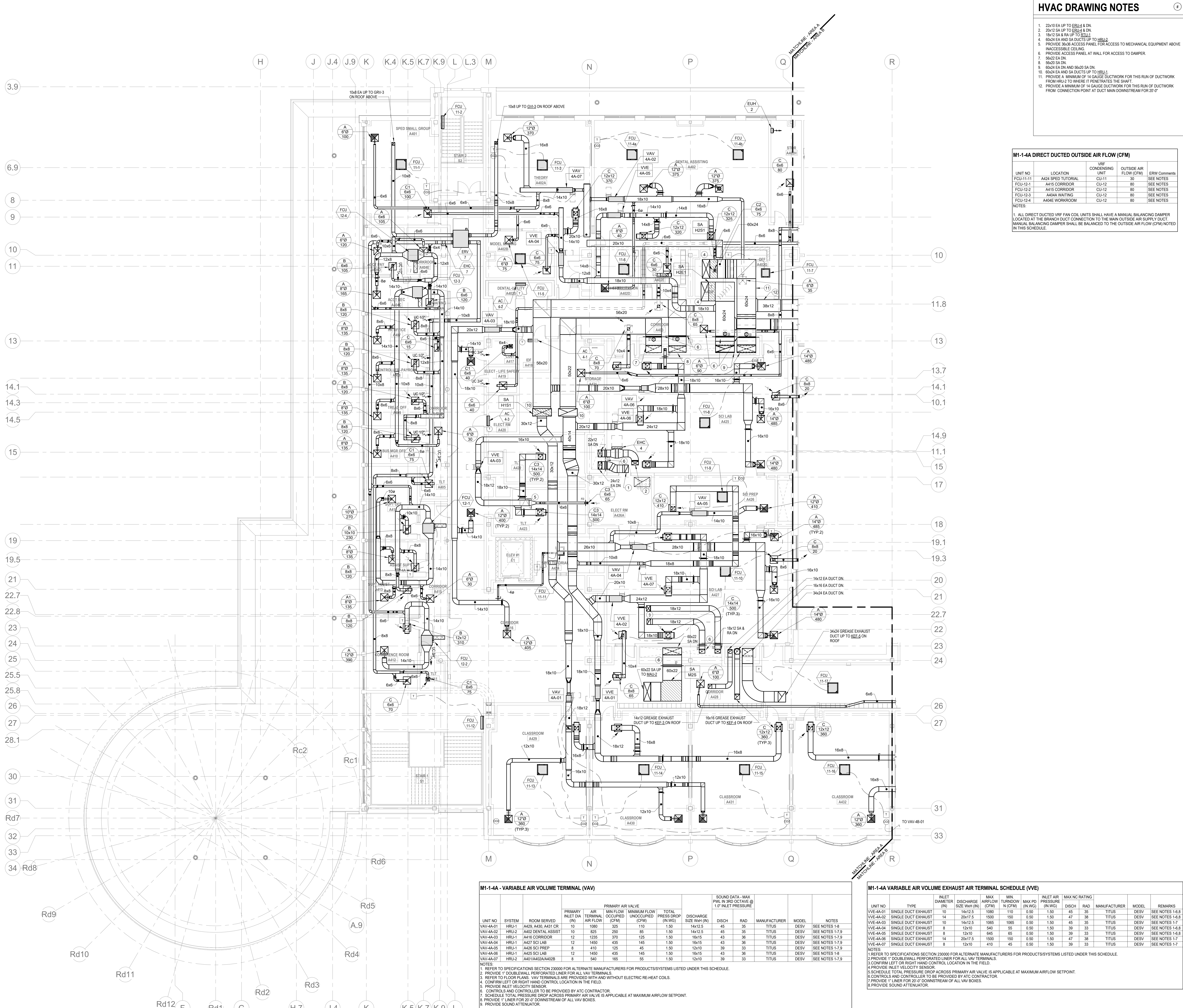
Scale: 1/8" = 1'-0"

Job No.: 60-20-409

Drawn By: KJL

Date: August 28th, 2023

M1-1-3D



HVAC DRAWING NOTES

- 20x10 EA UP TO ERL4 & DN
- 20x12 SA UP TO ERL4 & DN
- 18x12 SA & RA UP TO ERL1
- 80x24 EA AND SA DUCTS UP TO ERL2
- PROVIDE 36x36 ACCESS PANEL FOR ACCESS TO MECHANICAL EQUIPMENT ABOVE INACCESSIBLE CEILING
- PROVIDE ACCESS PANEL AT WALL FOR ACCESS TO DAMPER
- 56x20 SA DN
- 80x24 EA DN AND 56x20 SA DN
- 80x24 EA AND SA DUCTS UP TO ERL1
- PROVIDE A MINIMUM OF 14 GAUGE DUCTWORK FOR THIS RUN OF DUCTWORK FROM ERL2 TO WHERE IT PENETRATES THE SHED
- PROVIDE A MINIMUM OF 14 GAUGE DUCTWORK FOR THIS RUN OF DUCTWORK FROM CONNECTION POINT AT DUCT MAN DOWNSTREAM FOR 20'-0"

M1-1-4A DIRECT DUCTED OUTSIDE AIR FLOW (CFM)

UNIT NO	LOCATION	R/F	CONDENSING UNIT	OUTSIDE AIR FLOW (CFM)	ERVW Comments
FCU-11-11	A424 SPEED TUTORIAL	CU-11	30	80	SEE NOTES
FCU-12-1	A415 CORRIDOR	CU-12	80	80	SEE NOTES
FCU-12-2	A415 CORRIDOR	CU-12	80	80	SEE NOTES
FCU-12-3	A404 WAITING	CU-12	80	80	SEE NOTES
FCU-12-4	A404E WORKROOM	CU-12	80	80	SEE NOTES

NOTES:
1. ALL DIRECT DUCTED VRF FAN COIL UNITS SHALL HAVE A MANUAL BALANCING DAMPER LOCATED AT THE BRANCH DUCT CONNECTION TO THE MAIN OUTSIDE AIR SUPPLY DUCT. MANUAL BALANCING DAMPER SHALL BE BALANCED TO THE OUTSIDE AIR FLOW (CFM) NOTED IN THIS SCHEDULE.

M1-1-4A - VARIABLE AIR VOLUME TERMINAL (VAV)

UNIT NO	SYSTEM	ROOM SERVED	PRIMARY INLET DIA (IN)	DAIR AIR FLOW (CFM)	MIN FLOW (CFM)	MAX FLOW (CFM)	TOTAL PRESS DROP (IN WG)	DISCHARGE SIZE VAV (IN)	DISCH (IN WG)	RAD (IN WG)	MANUFACTURER	MODEL	NOTES
VAV-4A-01	HRU-1	A429, A430, A431 CR	10	1080	325	110	1.50	14x12.5	45	35	TITUS	DESV	SEE NOTES 1-8
VAV-4A-02	HRU-2	A402 DENTAL ASSIST	10	825	250	85	1.50	14x12.5	45	35	TITUS	DESV	SEE NOTES 1-7,9
VAV-4A-03	HRU-1	A416 CORRIDOR	12	1235	370	125	1.50	16x15	43	36	TITUS	DESV	SEE NOTES 1-7,9
VAV-4A-04	HRU-1	A427 SCI LAB	12	1450	435	145	1.50	16x15	43	36	TITUS	DESV	SEE NOTES 1-7,9
VAV-4A-05	HRU-1	A426 SCI LAB	8	410	125	45	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-7,9
VAV-4A-06	HRU-1	A425 SCI LAB	12	1450	435	145	1.50	16x15	43	36	TITUS	DESV	SEE NOTES 1-8
VAV-4A-07	HRU-2	A401/A402/A403	8	540	165	55	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-7,9

NOTES:
1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
2. PROVIDE 1" DOUBLEWALL PERFORATED LINER FOR ALL VAV TERMINALS.
3. REFER TO FLOOR PLANS. VAV TERMINALS ARE PROVIDED WITH AND WITHOUT ELECTRIC RE-HEAT COILS.
4. CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD.
5. PROVIDE INLET VELOCITY SENSOR.
6. CONTROL S AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR.
7. SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.
8. PROVIDE 1" LINER FOR 20'-0" DOWNSTREAM OF ALL VAV BOXES.
9. PROVIDE SOUND ATTENUATOR.

M1-1-4A VARIABLE AIR VOLUME EXHAUST AIR TERMINAL SCHEDULE (VVE)

UNIT NO	TYPE	INLET DIAMETER (IN)	DISCHARGE SIZE VAV (IN)	MAX AIRFLOW (CFM)	MIN TURNDOWN (IN WG)	MAX PD (IN WG)	INLET AIR PRESSURE (IN WG)	MAX NC RATING DISCH (IN WG)	RAD (IN WG)	MANUFACTURER	MODEL	REMARKS
VVE-4A-01	SINGLE DUCT EXHAUST	10	14x12.5	1080	110	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-8,9
VVE-4A-02	SINGLE DUCT EXHAUST	14	20x17.5	1500	150	0.50	1.50	47	38	TITUS	DESV	SEE NOTES 1-8,9
VVE-4A-03	SINGLE DUCT EXHAUST	10	14x12.5	1085	1085	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-7
VVE-4A-04	SINGLE DUCT EXHAUST	8	12x10	840	55	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-8,9
VVE-4A-05	SINGLE DUCT EXHAUST	8	12x10	845	65	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-8,9
VVE-4A-06	SINGLE DUCT EXHAUST	14	20x17.5	1500	150	0.50	1.50	47	38	TITUS	DESV	SEE NOTES 1-7
VVE-4A-07	SINGLE DUCT EXHAUST	8	12x10	410	45	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-7

NOTES:
1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
2. PROVIDE 1" DOUBLEWALL PERFORATED LINER FOR ALL VAV TERMINALS.
3. CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD.
4. PROVIDE INLET VELOCITY SENSOR.
5. SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.
6. CONTROL S AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR.
7. PROVIDE 1" LINER FOR 20'-0" DOWNSTREAM OF ALL VAV BOXES.
8. PROVIDE SOUND ATTENUATOR.

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Drummett Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074

260 Charles Street
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02453

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August 28th, 2023

KEY PLAN

PROJECT NORTH

MAGNETIC NORTH

MECHANICAL
DUCTWORK
FOURTH FLOOR
PLAN - AREA A

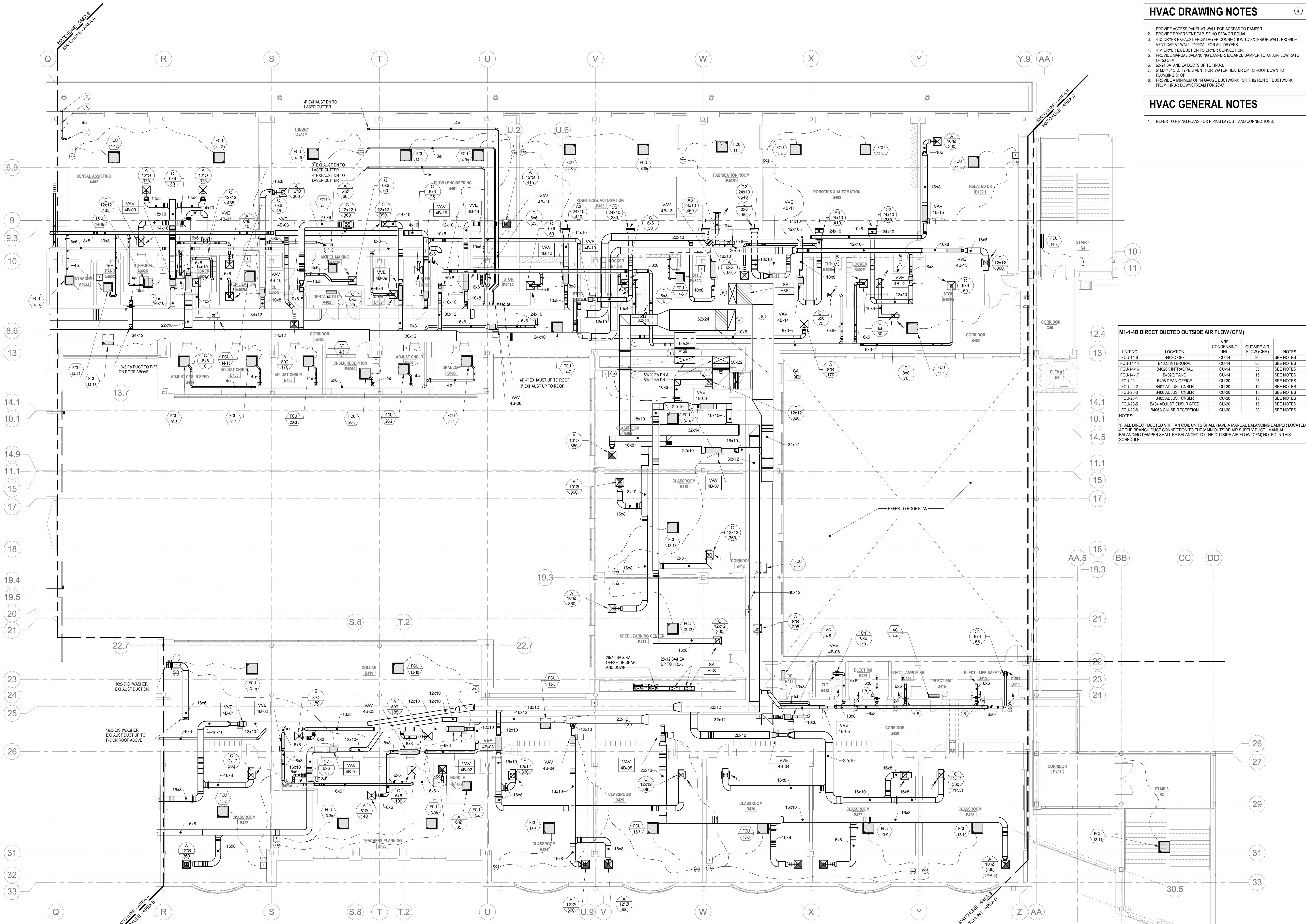
Scale: 1/8" = 1'-0"

Job No.: 60-20-409

Drawn By: K.J.L.

Date: August 28th, 2023

M1-1-4A



HVAC DRAWING NOTES

1. PROVIDE ACCESS PANEL AT WALL FOR ACCESS TO DAMPER.
2. PROVIDE DRYER VENT CAP, SEHO SP84 OR EQUAL.
3. 4" Ø DRYER EXHAUST FROM DRYER CONNECTION TO EXTERIOR WALL. PROVIDE VENT CAP AT WALL. TYPICAL FOR ALL DRYERS.
4. 4" Ø DRYER EXHAUST DUCT DN TO DRYER CONNECTION.
5. PROVIDE MANUAL BALANCING DAMPERS, BALANCE DAMPER TO AN AIRFLOW RATE OF 50 CFM.
6. Ø 3/4" SA AND EA DUCTS UP TO HELL3.
7. 8" ID, 10" O.D. TYPE B VENT FOR WATER HEATER UP TO ROOF DOWN TO PLUMBING SHOP.
8. PROVIDE A MINIMUM OF 14 GAUGE DUCTWORK FOR THIS RUN OF DUCTWORK FROM HRU-3 DOWNSTREAM FOR 20'-0".

HVAC GENERAL NOTES

1. REFER TO PIPING PLANS FOR PIPING LAYOUT AND CONNECTIONS.

M1-1-4B DIRECT DUCTED OUTSIDE AIR FLOW (CFM)

UNIT NO.	LOCATION	VRF CONDENSING UNIT	OUTSIDE AIR FLOW (CFM)	NOTES
FCU-14-4	B402C OFF	CU-14	20	SEE NOTES
FCU-14-14	B402J INTERNAL	CU-14	35	SEE NOTES
FCU-14-16	B402K INTERNAL	CU-14	35	SEE NOTES
FCU-14-17	B402O PANO	CU-14	15	SEE NOTES
FCU-20-1	B405 DEAN OFFICE	CU-20	25	SEE NOTES
FCU-20-2	B407 ADJUST CNLSR	CU-20	15	SEE NOTES
FCU-20-3	B408 ADJUST CNLSR	CU-20	15	SEE NOTES
FCU-20-4	B405 ADJUST CNLSR	CU-20	15	SEE NOTES
FCU-20-5	B409 ADJUST CNLSR SPEED	CU-20	15	SEE NOTES
FCU-20-6	B406A CNLSR RECEPTION	CU-20	20	SEE NOTES

NOTES:
1. ALL DIRECT DUCTED VRF FAN COIL UNITS SHALL HAVE A MANUAL BALANCING DAMPER LOCATED AT THE BRANCH DUCT CONNECTION TO THE MAIN OUTSIDE AIR SUPPLY DUCT. MANUAL BALANCING DAMPER SHALL BE BALANCED TO THE OUTSIDE AIR FLOW (CFM) NOTED IN THIS SCHEDULE.

M1-1-4B VARIABLE AIR VOLUME EXHAUST AIR TERMINAL SCHEDULE (VVE)

UNIT NO.	TYPE	INLET DIAMETER (IN.)	DISCHARGE SIZE (IN.)	MAX. AIRFLOW (CFM)	MIN. TURNDOWN (CFM)	MAX. PDP (IN. WG)	INLET AIR PRESSURE (IN. WG)	MAX. NC RATING (INCH. RAD.)	MANUFACTURER	MODEL	REMARKS	
VVE-4B-01	SINGLE DUCT EXHAUST	10	14x12.5	720	75	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-7
VVE-4B-02	SINGLE DUCT EXHAUST	6	12x8	175	175	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-6,8
VVE-4B-03	SINGLE DUCT EXHAUST	10	14x12.5	720	75	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-6,8
VVE-4B-04	SINGLE DUCT EXHAUST	10	14x12.5	1080	110	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-7
VVE-4B-05	SINGLE DUCT EXHAUST	6	12x8	300	300	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-7
VVE-4B-06	SINGLE DUCT EXHAUST	10	14x12.5	1080	110	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-6,8
VVE-4B-07	SINGLE DUCT EXHAUST	12	16x15	1165	240	0.50	1.50	43	36	TITUS	DESV	SEE NOTES 1-7
VVE-4B-08	SINGLE DUCT EXHAUST	8	12x10	420	45	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-7
VVE-4B-09	SINGLE DUCT EXHAUST	8	12x10	360	40	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-6,8
VVE-4B-10	SINGLE DUCT EXHAUST	8	12x10	330	35	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-7
VVE-4B-11	SINGLE DUCT EXHAUST	8	12x10	540	55	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-7
VVE-4B-12	SINGLE DUCT EXHAUST	6	12x8	330	35	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-7
VVE-4B-13	SINGLE DUCT EXHAUST	6	12x8	360	35	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-6,8
VVE-4B-14	SINGLE DUCT EXHAUST	8	12x10	495	495	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-7

- NOTES:
1. REFER TO SPECIFICATIONS SECTION 28000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
2. PROVIDE 1" DOUBLEDWALL PERFORATED LINER FOR ALL VAV TERMINALS.
3. CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD.
4. PROVIDE INLET VELOCITY SENSOR.
5. SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.
6. CONTROLS AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR.
7. PROVIDE 1" LINER FOR 20'-0" DOWNSTREAM OF ALL VAV BOXES.
8. PROVIDE SOUND ATTENUATOR.

M1-1-4B - VARIABLE AIR VOLUME TERMINAL (VAV)

PRIMARY AIR VALVE							SOUND DATA - MAX PM, IN 3RD OCTAVE @ 1/2" INLET PRESSURE						
UNIT NO	SYSTEM	ROOM SERVED	INLET DIA AIR TERMINAL (IN.)	AIR FLOW (CFM)	MIN FLOW OCCUPIED (CFM)	MINIMUM FLOW UNOCCUPIED (CFM)	INLET PRESS. DROP (IN WG)	DISCHARGE SIZE WH (IN)	DISCH RAD	MANUFACTURER	MODEL	NOTES	
VAV-4B-01	HRU-3	B422A432 CLASSROOM	8	115	110	25	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-6,8
VAV-4B-02	HRU-3	B415 COLLAB	8	470	140	50	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-7,9
VAV-4B-03	HRU-3	B423 TEACHER PLANNING	6	175	55	25	1.50	12x8	29	28	TITUS	DESV	SEE NOTES 1-7,9
VAV-4B-04	HRU-3	B425B424 CLASSROOM	10	720	215	75	1.50	14x12.5	45	35	TITUS	DESV	SEE NOTES 1-6,8
VAV-4B-05	HRU-3	B405B427B428 CLASSROOM	10	1080	325	110	1.50	14x12.5	45	35	TITUS	DESV	SEE NOTES 1-6,8
VAV-4B-06	HRU-3	B405B412 CORRIDOR	6	205	205	25	1.50	12x8	29	28	TITUS	DESV	SEE NOTES 1-6,8
VAV-4B-07	HRU-3	B405B410B411 CLASSROOM	10	1080	325	110	1.50	14x12.5	45	35	TITUS	DESV	SEE NOTES 1-7,9
VAV-4B-08	HRU-2	B404B405B406B407B408	6	105	25	25	1.50	12x8	29	28	TITUS	DESV	SEE NOTES 1-6,8
VAV-4B-09	HRU-2	A402, A402J	10	780	240	80	1.50	14x12.5	45	35	TITUS	DESV	SEE NOTES 1-6,8
VAV-4B-10	HRU-2	A403P THEORY	8	420	125	45	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-6,8
VAV-4B-11	HRU-2	B401 PLTW ENG	8	415	125	45	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-6,8
VAV-4B-12	HRU-2	B402 ROBOTICS	8	410	125	45	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-6,8
VAV-4B-13	HRU-2	B402 FAB LAB	8	480	145	50	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-7,9
VAV-4B-14	HRU-2	B402 ROBOTICS	8	470	140	50	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-6,8
VAV-4B-15	HRU-2	B402H RELATED CR	8	360	110	40	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-6,8
VAV-4B-16	HRU-2	B403 CORRIDOR	8	610	610	65	1.50	12x10	39	33	TITUS	DESV	SEE NOTES 1-6,8

- NOTES:
1. REFER TO SPECIFICATIONS SECTION 28000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
2. PROVIDE 1" DOUBLEDWALL PERFORATED LINER FOR ALL VAV TERMINALS.
3. REFER TO FLOOR PLANS. VAV TERMINALS ARE PROVIDED WITH AND WITHOUT ELECTRIC RE-HEAT COILS.
4. CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD.
5. PROVIDE INLET VELOCITY SENSOR.
6. CONTROLS AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR.
7. SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.
8. PROVIDE 1" LINER FOR 20'-0" DOWNSTREAM OF ALL VAV BOXES.
9. PROVIDE SOUND ATTENUATOR.

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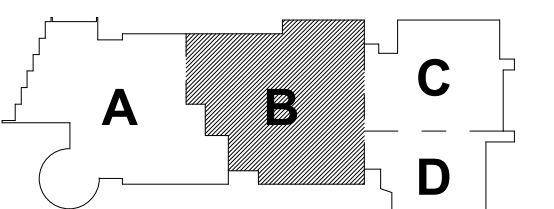
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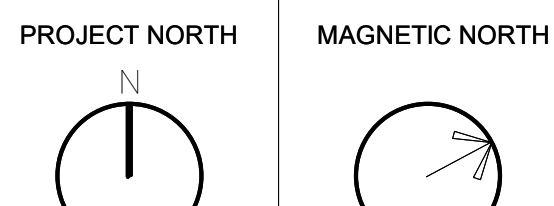
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BID SET

August 28th, 2023



KEY PLAN



**MECHANICAL
DUCTWORK
FOURTH FLOOR
PLAN - AREA B**

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

Job No.: 60-20-409

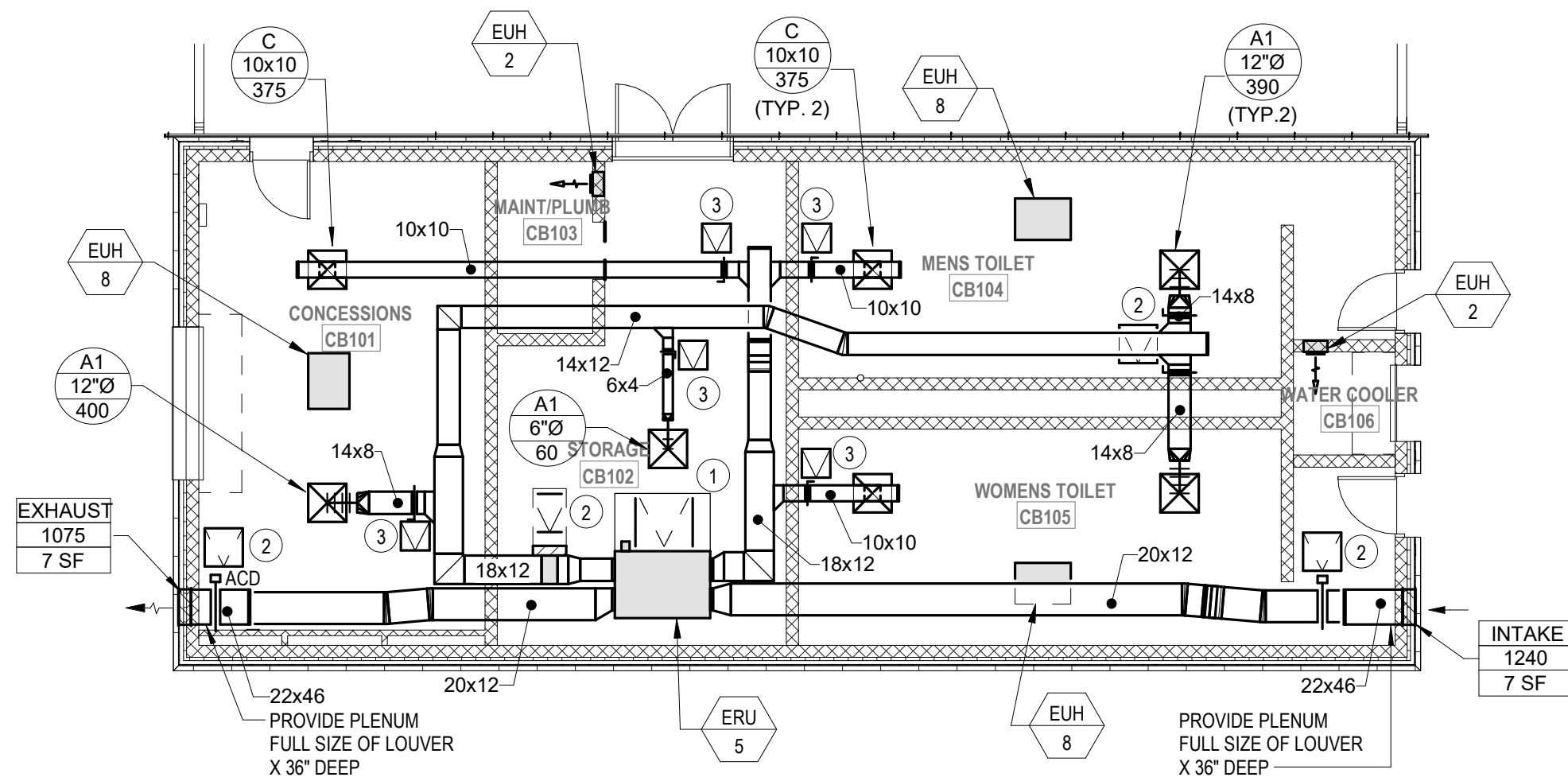
Drawn By: K.J.L.

Date: August 28th, 2023

M1-1-4B

HVAC DRAWING NOTES

1. PROVIDE 36X36 ACCESS PANEL FOR MECHANICAL EQUIPMENT ABOVE INACCESSABLE CEILING.
2. PROVIDE 30X30 ACCESS PANEL FOR MECHANICAL EQUIPMENT ABOVE INACCESSABLE CEILING.
3. PROVIDE 18X18 ACCESS PANEL FOR MECHANICAL EQUIPMENT ABOVE INACCESSABLE CEILING.



MECHANICAL Concessions Building
1/8" = 1'-0"

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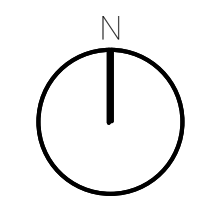
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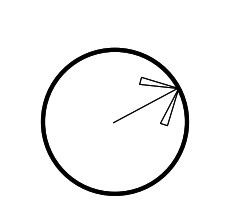
BID SET

August 28th, 2023

PROJECT NORTH



MAGNETIC NORTH



MECHANICAL
CONCESSION
BUILDING PLAN

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

Job No.: 60-20-409

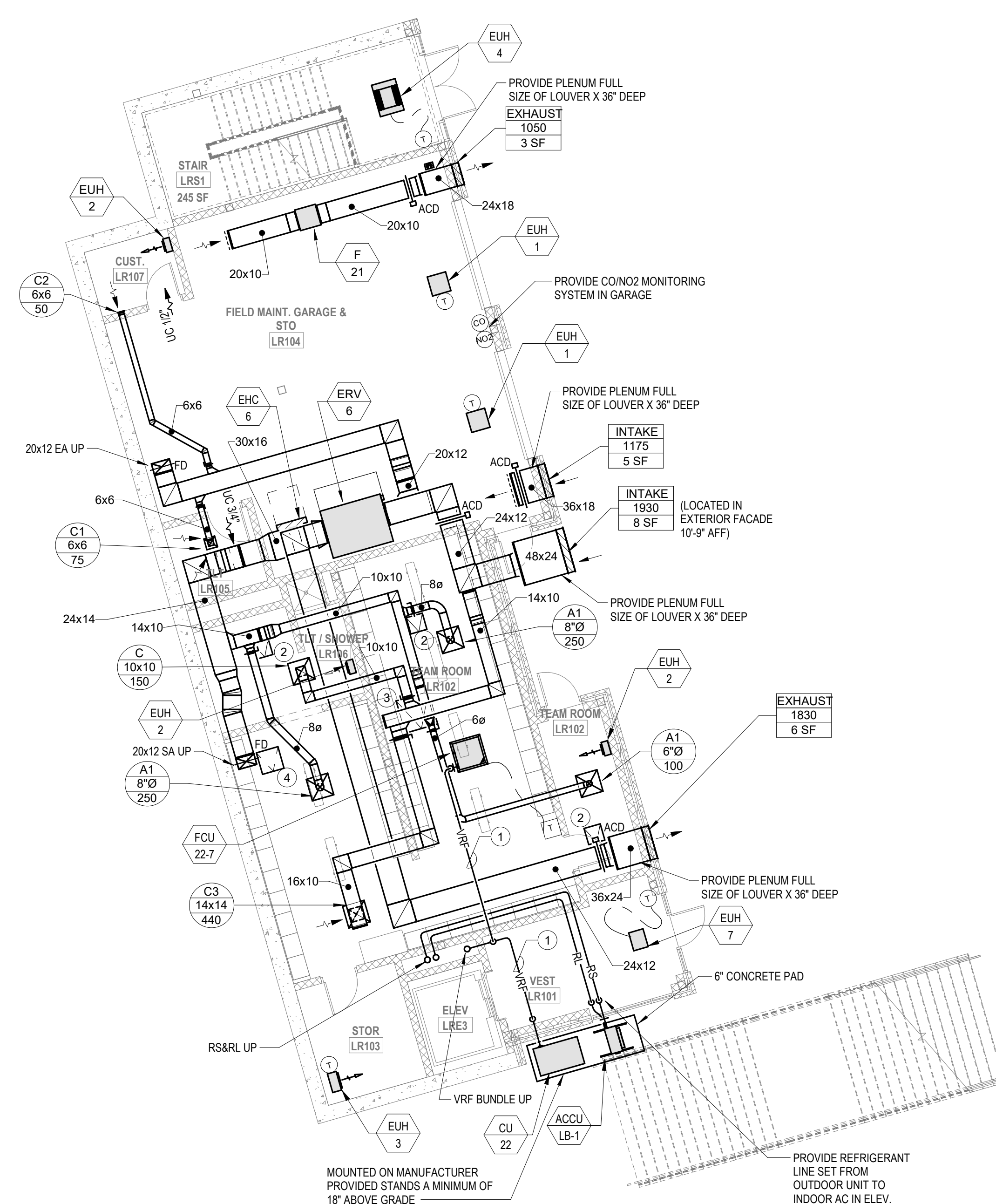
Drawn By: KJL

Date: August 28th, 2023

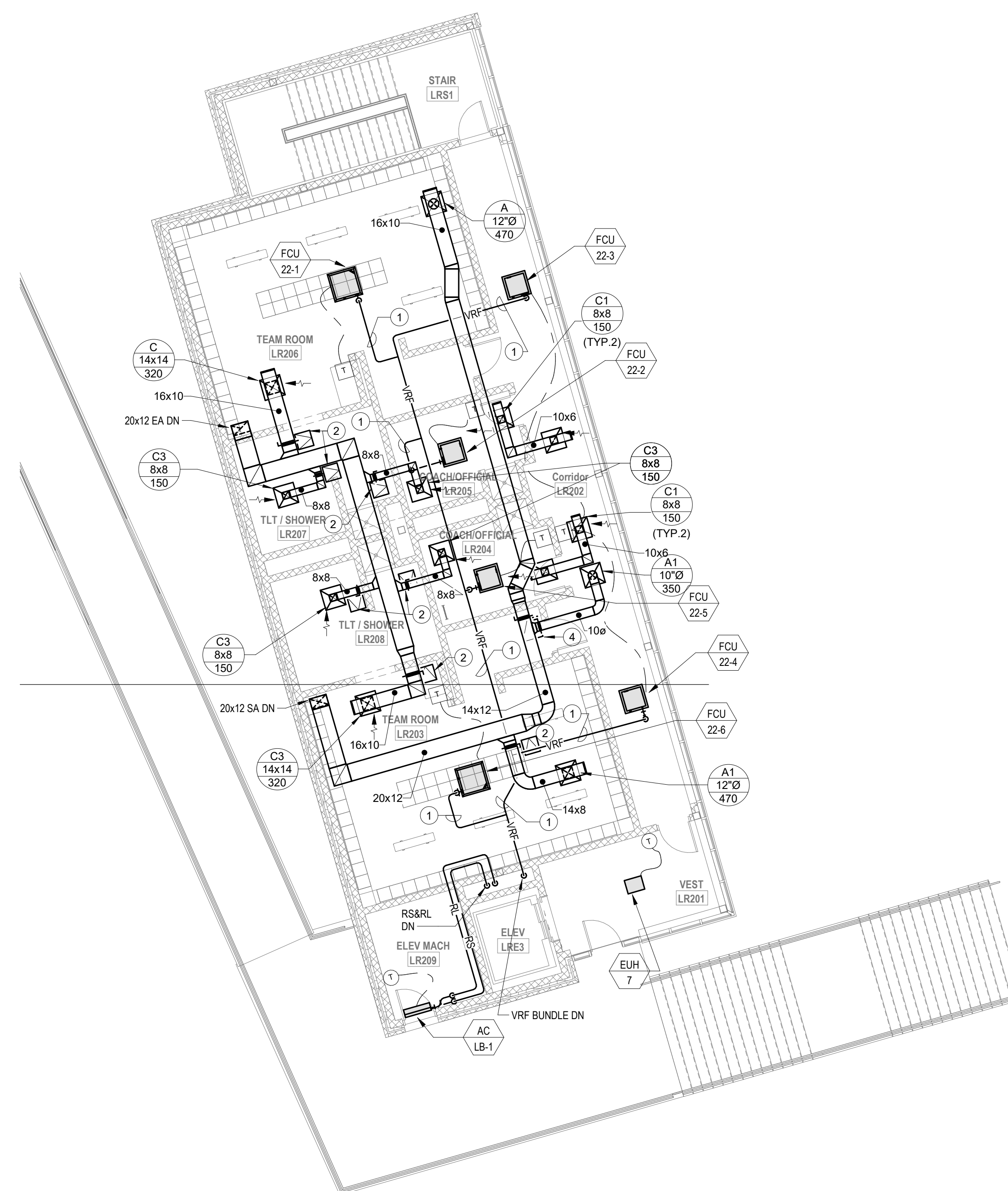
M1-1-CB

1. VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE H2 SYSTEM DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED BY THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.
2. PROVIDE 18x18 ACCESS PANEL IN INACCESSIBLE CEILING FOR ACCESS TO MECHANICAL EQUIPMENT/DAMPERS.
3. PROVIDE 36x36 ACCESS PANEL IN INACCESSIBLE CEILING FOR ACCESS TO MECHANICAL EQUIPMENT/DAMPERS.
4. PROVIDE 24x24 ACCESS PANEL IN INACCESSIBLE CEILING FOR ACCESS TO MECHANICAL EQUIPMENT/DAMPERS.

1. THE SCOPE OF WORK SHOWN ON THIS SHEET IS UNDER BID ALTERNATE NO. 1.



MECHANICAL Locker Building First Floor



MECHANICAL Locker Building Second Level

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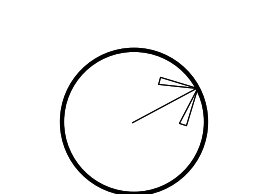
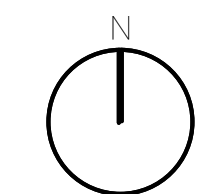
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August 28th, 2023

PROJECT NORTH

MAGNETIC NORTH



**ALTERNATE
NO.1
MECHANICAL
LOCKER
BUILDING PLAN**

Scale: 10" = 1'.0"

Job No.: 60-20

Drawn By: K.II

M1-1-LB

1. THE SCOPE OF WORK SHOWN ON THIS SHEET IS UNDER BID ALTERNATE NO. 3

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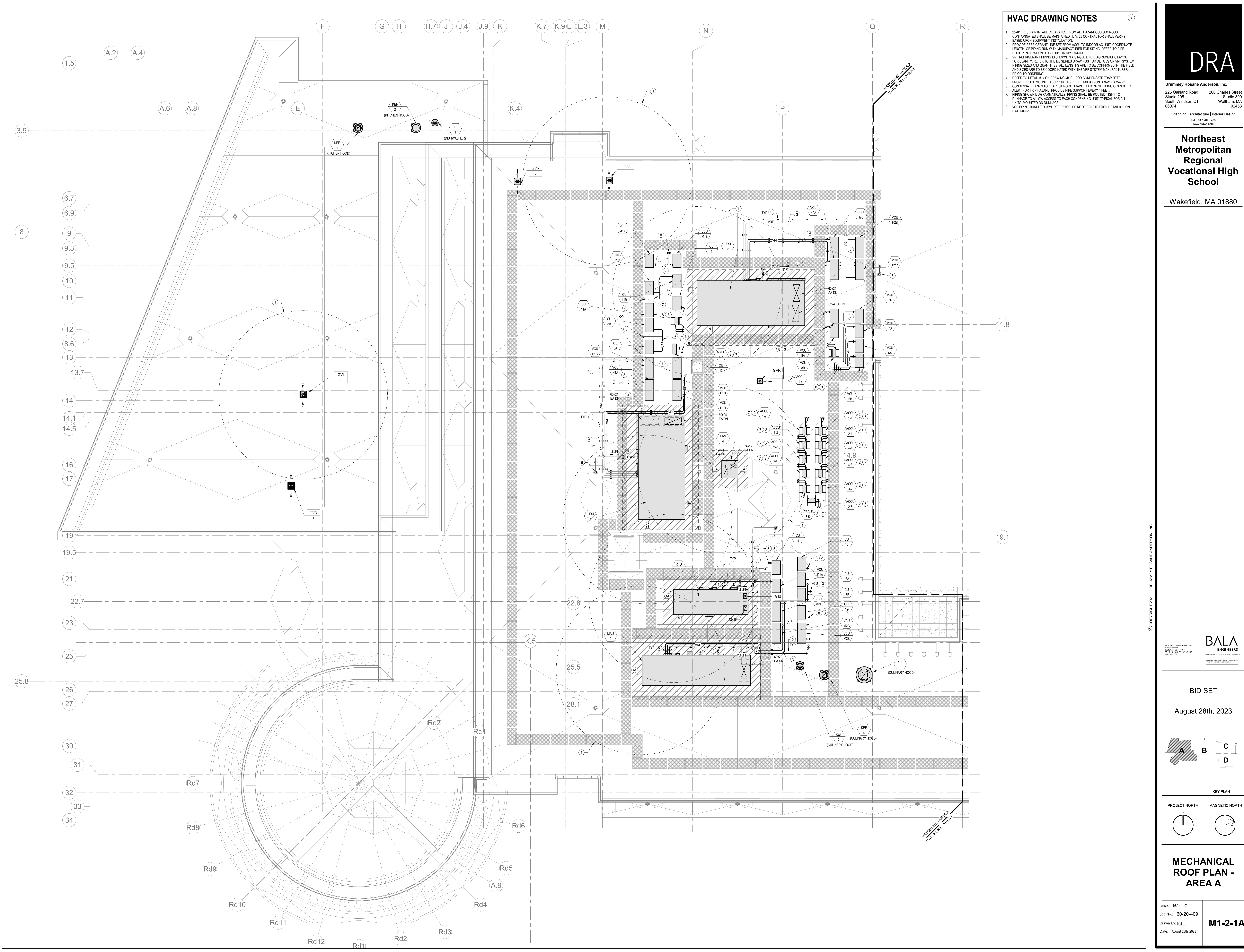
M1-1-MB

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

Job No.: 60 30 405

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M1-1-MB



- HVAC DRAWING NOTES**
- 25'-0" FRESH AIR INTAKE CLEARANCE FROM ALL HAZARDOUS/ODOROUS CONTAMINANTS SHALL BE MAINTAINED. DIV. 23 CONTRACTOR SHALL VERIFY BASED UPON EQUIPMENT INSTALLATION.
 - PROVIDE REFRIGERANT LINE SET FROM ACCU TO INDOOR AC UNIT. COORDINATE LENGTH OF PIPING RUN WITH MANUFACTURER FOR SIZING. REFER TO PIPE ROOF PENETRATION DETAIL #11 ON DWG M4-0-1.
 - VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE M4-0 SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.
 - REFER TO DETAIL #14 ON DRAWING M4-0-1 FOR CONDENSATE TRAP DETAIL.
 - PROVIDE ROOF MOUNTED SUPPORT AS PER DETAIL #13 ON DRAWING M4-0-2.
 - CONDENSATE DRAIN TO NEAREST ROOF DRAIN. FIELD PAINT PIPING ORANGE TO ALERT FOR TRIP HAZARD. PROVIDE PIPE SUPPORT EVERY 4 FEET.
 - PIPING SHOWN DIAGRAMMATICALLY. PIPING SHALL BE ROUTED TIGHT TO DRAINAGE TO ALLOW ACCESS TO EACH CONDENSING UNIT. TYPICAL FOR ALL UNITS MOUNTED ON DRAINAGE.
 - VRF PIPING BUNDLE DOWN. REFER TO PIPE ROOF PENETRATION DETAIL #11 ON DWG M4-0-1.

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South Windsor, CT 06074
Tel: 817.984.1700
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BID SET

August 28th, 2023

A

B

C

D

KEY PLAN

PROJECT NORTH

MAGNETIC NORTH

MECHANICAL ROOF PLAN - AREA A

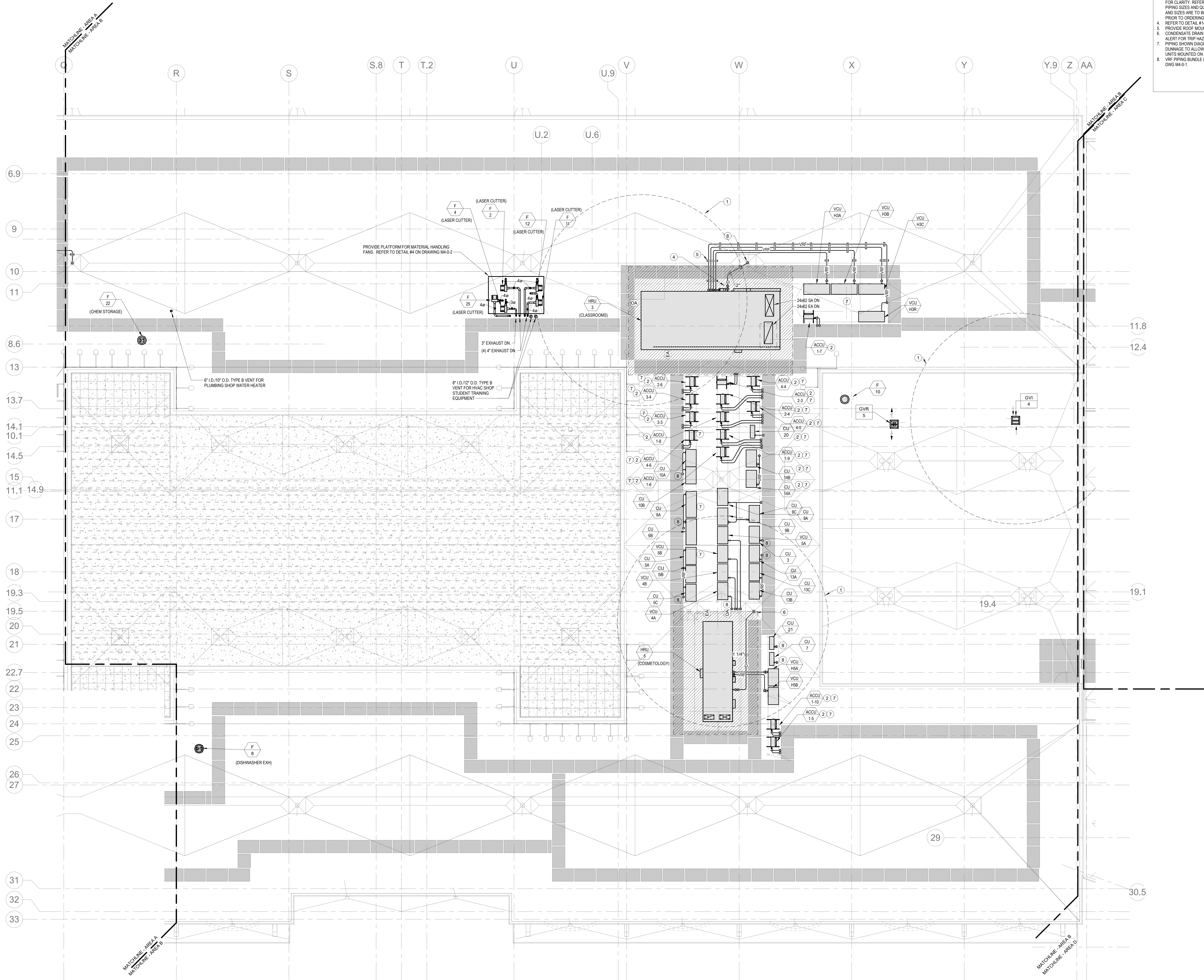
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Job No.: 60-20-409

Drawn By: KJL

Date: August 28th, 2023

M1-2-1A



HVAC DRAWING NOTES

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- REFER TO DETAIL #14 ON DRAWING M4-0.1 FOR CONDENSATE TRAP DETAIL.
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- CONDENSATE DRAIN TO NEAREST ROOF DRAIN. FIELD PAINT PIPING ORANGE TO ALERT FOR TRIP HAZARD. PROVIDE PIPE SUPPORT EVERY 4 FEET.
- PIPING SHOWN DIAGRAMMATICALLY. PIPING SHALL BE ROUTED TIGHT TO DUNNAGE TO ALLOW ACCESS TO EACH CONDENSING UNIT. TYPICAL FOR ALL UNITS MOUNTED ON DUNNAGE.
- VRF PIPING BUNDLE DOWN. REFER TO PIPE ROOF PENETRATION DETAIL #11 ON DWG M4-0.1.

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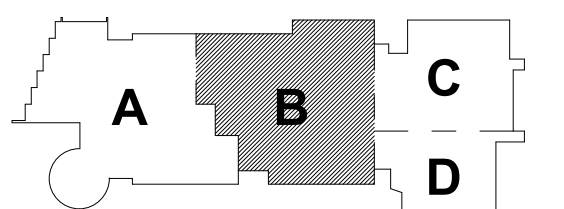
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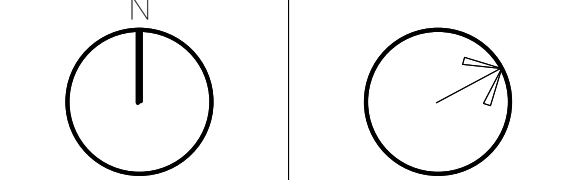
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KEY PLAN

PROJECT NORTH MAGNETIC NORTH



MECHANICAL
ROOF PLAN -
AREA B

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023

M1-2-1B

HVAC DRAWING NOTES

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- PIPING SHOW DIAGRAMMATICALLY. PIPING SHALL BE ROUTED TIGHT TO DUNNAGE TO ALLOW ACCESS TO EACH CONDENSING UNIT. TYPICAL FOR ALL UNITS MOUNTED ON DUNNAGE.
- VRF PIPING BUNDLE DOWN. REFER TO PIPE ROOF PENETRATION DETAIL #11 ON DWG M4-0-1.

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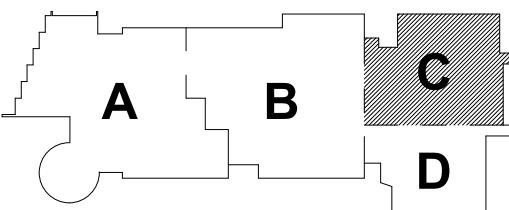
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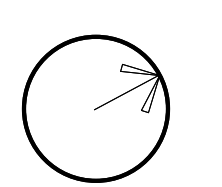
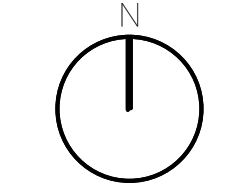
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KEY PLAN

PROJECT NORTH

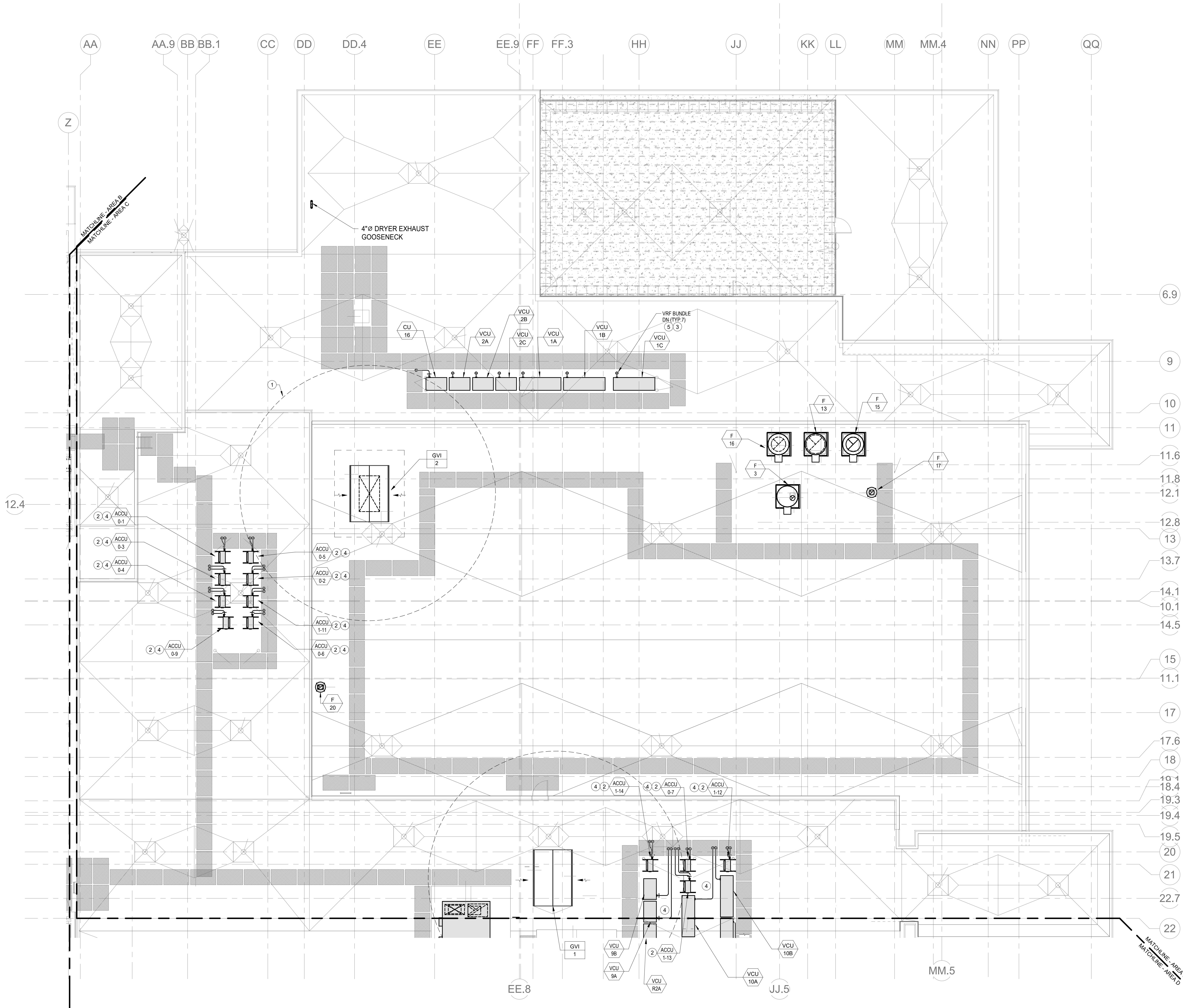
MAGNETIC NORTH



MECHANICAL
ROOF PLAN -
AREA C

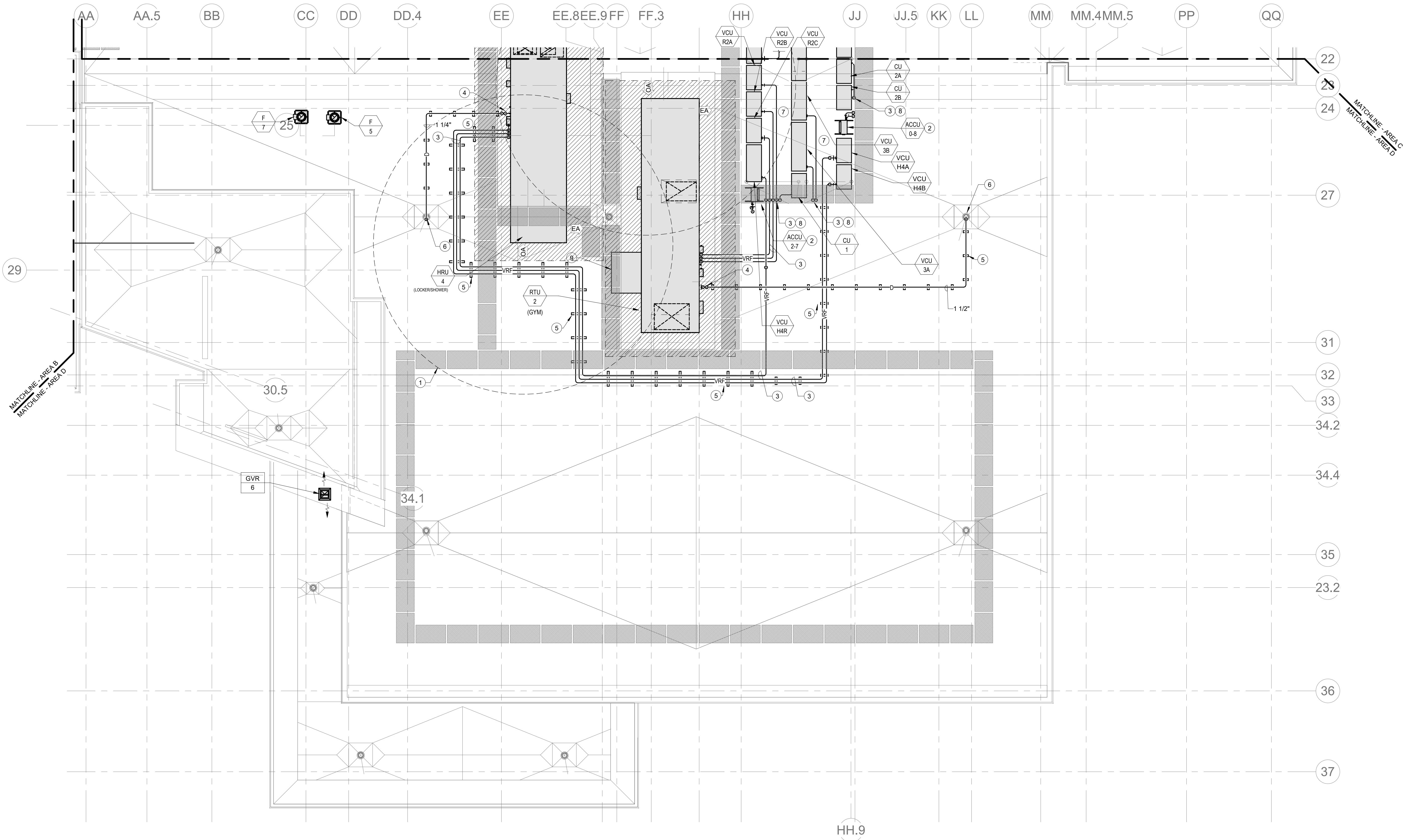
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Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023

M1-2-1C



HVAC DRAWING NOTES

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- PROVIDE REFRIGERANT LINE SET FROM ACCU TO INDOOR AC UNIT. COORDINATE LENGTH OF PIPING RUN WITH MANUFACTURER FOR SIZING. REFER TO PIPE ROOF PENETRATION DETAIL #11 ON DWG M4-1.
- VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE M4 SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.
- REFER TO DETAIL #14 ON DRAWING M4-1 FOR CONDENSATE TRAP DETAIL.
- PROVIDE ROOF MOUNTED SUPPORT AS PER DETAIL #13 ON DRAWING M4-2.
- CONDENSATE DRAIN TO NEAREST ROOF DRAIN. FIELD PAINT PIPING ORANGE TO ALERT FOR TRIP HAZARD. PROVIDE PIPE SUPPORT EVERY 4 FEET.
- PIPING SHOWN DIAGRAMMATICALLY. PIPING SHALL BE ROUTED TIGHT TO DRAINAGE TO ALLOW ACCESS TO EACH CONDENSING UNIT.
- VRF PIPING BUNDLE DOWN. REFER TO PIPE ROOF PENETRATION DETAIL #11 ON DWG M4-1.
- HUMIDIFIER NON POTABLE WATER AND DRAIN PIPING SHALL BE WITHIN ROOF CURB. INSTALL PIPING CONNECTIONS PER HUMIDIFIER MANUFACTURERS INSTALLATION INSTRUCTIONS. PROVIDE AN AIR GAP ON DRAIN PIPING AND ISOLATION VALVES ON NPW PIPING AT THE HUMIDIFIER MAKE-UP WATER AND CONDENSATE COOLER PIPING CONNECTIONS.



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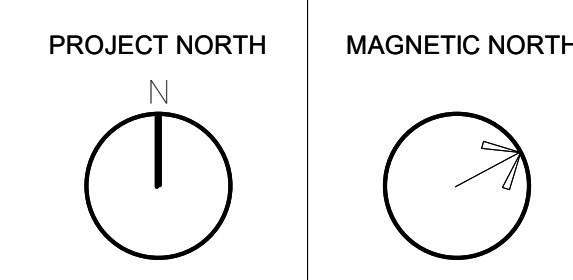
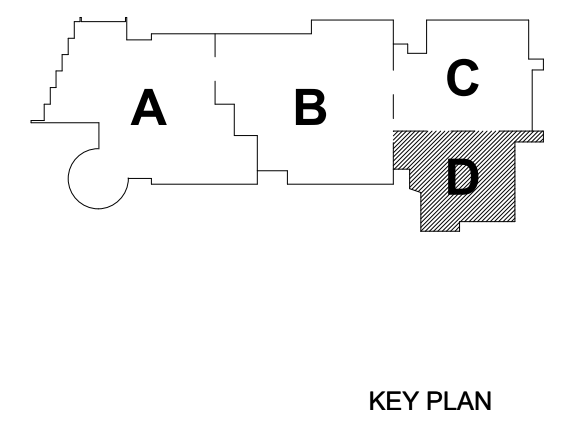
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BID SET
August 28th, 2023



MECHANICAL
ROOF PLAN -
AREA D

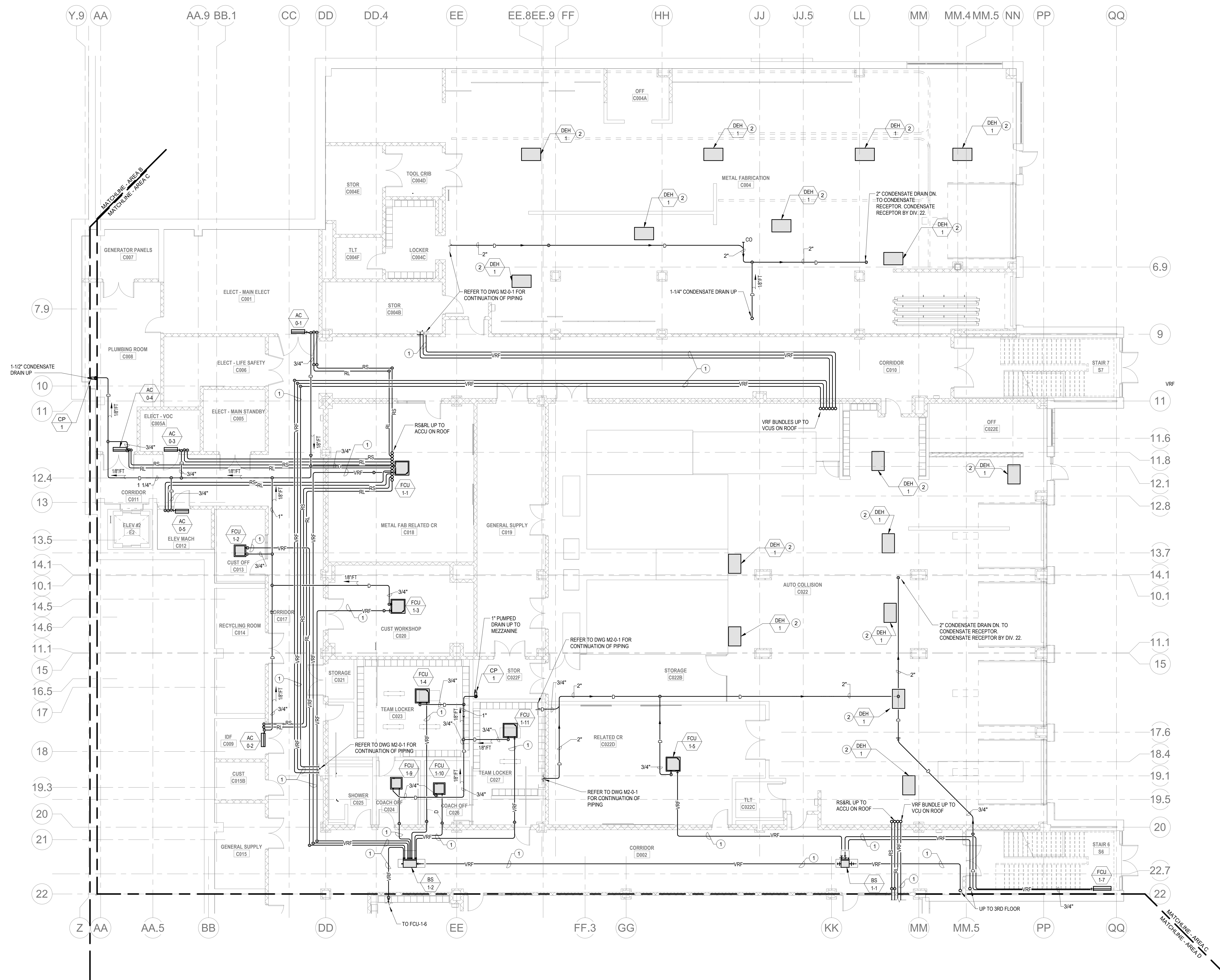
Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023

M1-2-1D

[illegible]

-ALL MECHANICAL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE MECHANICAL COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.

1. VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE M3 SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.
2. PROVIDE 1" CONDENSATE DRAIN FROM DEHUMIDIFIER TO NEAREST CONDENSATE RECEPTOR



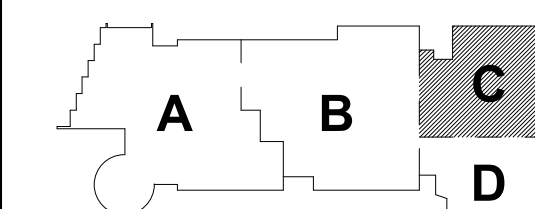
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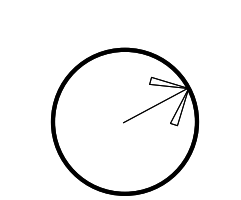
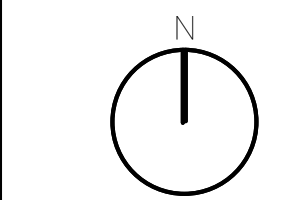
August 28th, 2023



KEY PLAN

PROJECT NORTH

MAGNETIC NORTH



**MECHANICAL
PIPING LOWER
LEVEL FLOOR
PLAN - AREA C**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023

M1-3-0C

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South Windsor, CT
06074

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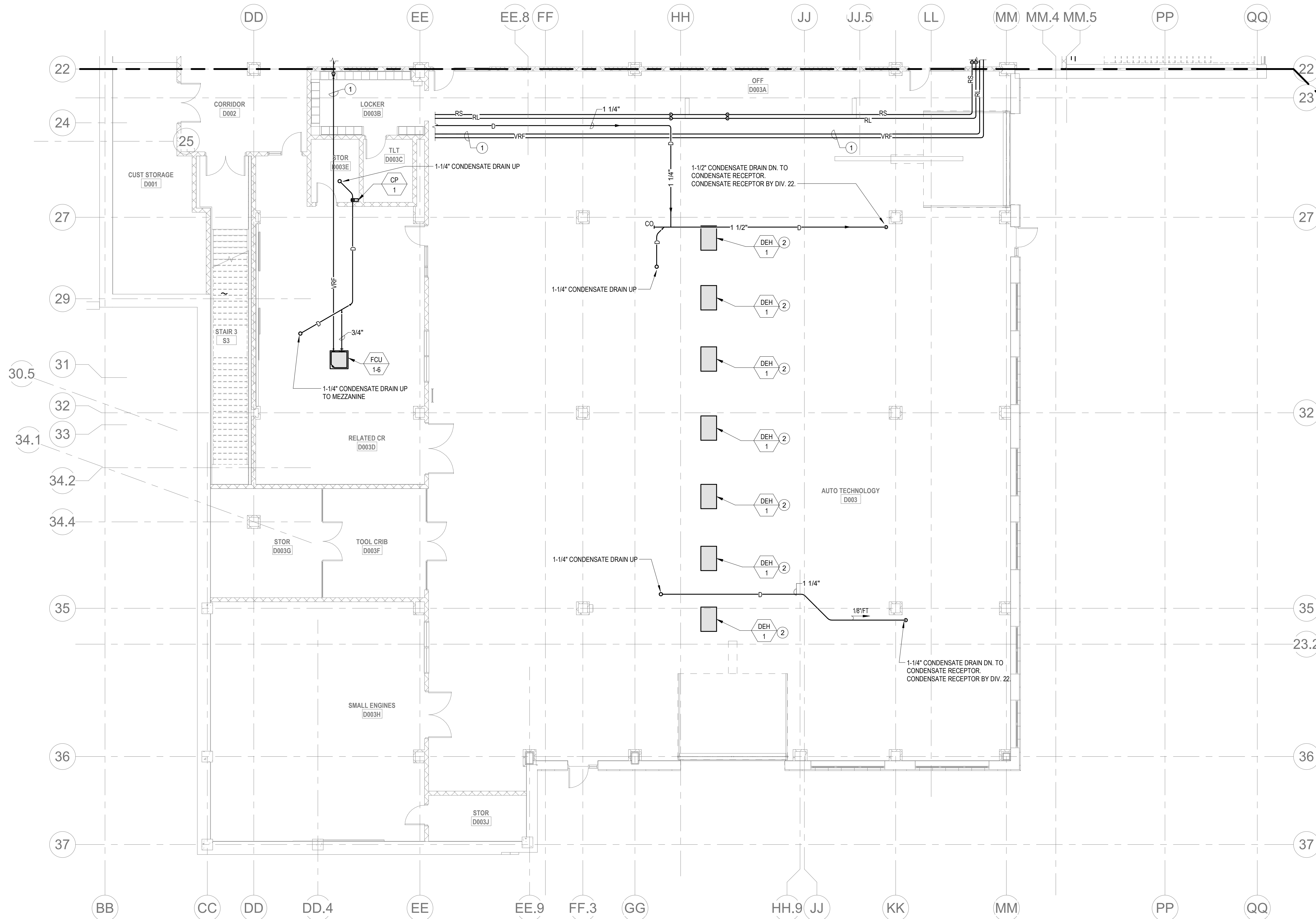
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HVAC GENERAL NOTES

1. REFER TO DUCTWORK PLANS FOR DUCTWORK LAYOUT, CONNECTIONS, AND CONTROLS.
2. GENERAL NOTE AT SOUND BARRIER CEILING:
 - IN THE METAL FABRICATION AND AUTO COLLISION SHOP A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEPPFP SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNISTRUT SUPPORTS ATTACHED TO BOTTOM CORO OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEPPFP SYSTEMS COMPONENTS. SPECIALTY ACoustically RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEPPFP SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON THE LIMITED BASES AT LOCATIONS SPECIFICALLY INDICATED ON THE MEPPFP DRAWINGS.
3. GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP MEZZANINES:
 - ALL HVAC COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE MECHANICAL COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.

HVAC DRAWING NOTES

1. VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE ME SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.
2. PROVIDE 1" CONDENSATE DRAIN FROM DEHUMIDIFIER TO NEAREST CONDENSATE RECEPTOR.

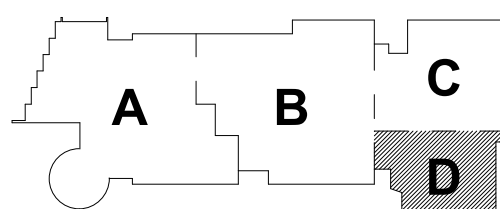


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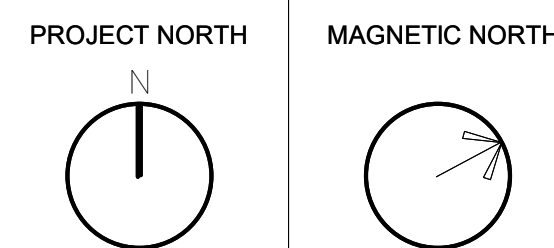
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BID SET

August 28th, 2023



KEY PLAN



**MECHANICAL
PIPING LOWER
LEVEL FLOOR
PLAN - AREA D**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: K,J,L
Date: August 28th, 2023

M1-3-0D

HVAC GENERAL NOTES

1. REFER TO DUCTWORK PLANS FOR DUCTWORK LAYOUT, CONNECTIONS, AND CONTROLS.

HVAC DRAWING NOTES

1. VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE M2 SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.
2. VRF PIPING BUNDLES UP.
3. RS&RL UP TO ACU ON ROOF.
4. PROVIDE 1" CONDENSATE DRAIN FROM DEHUMIDIFIER TO NEAREST CONDENSATE RECEPTOR.

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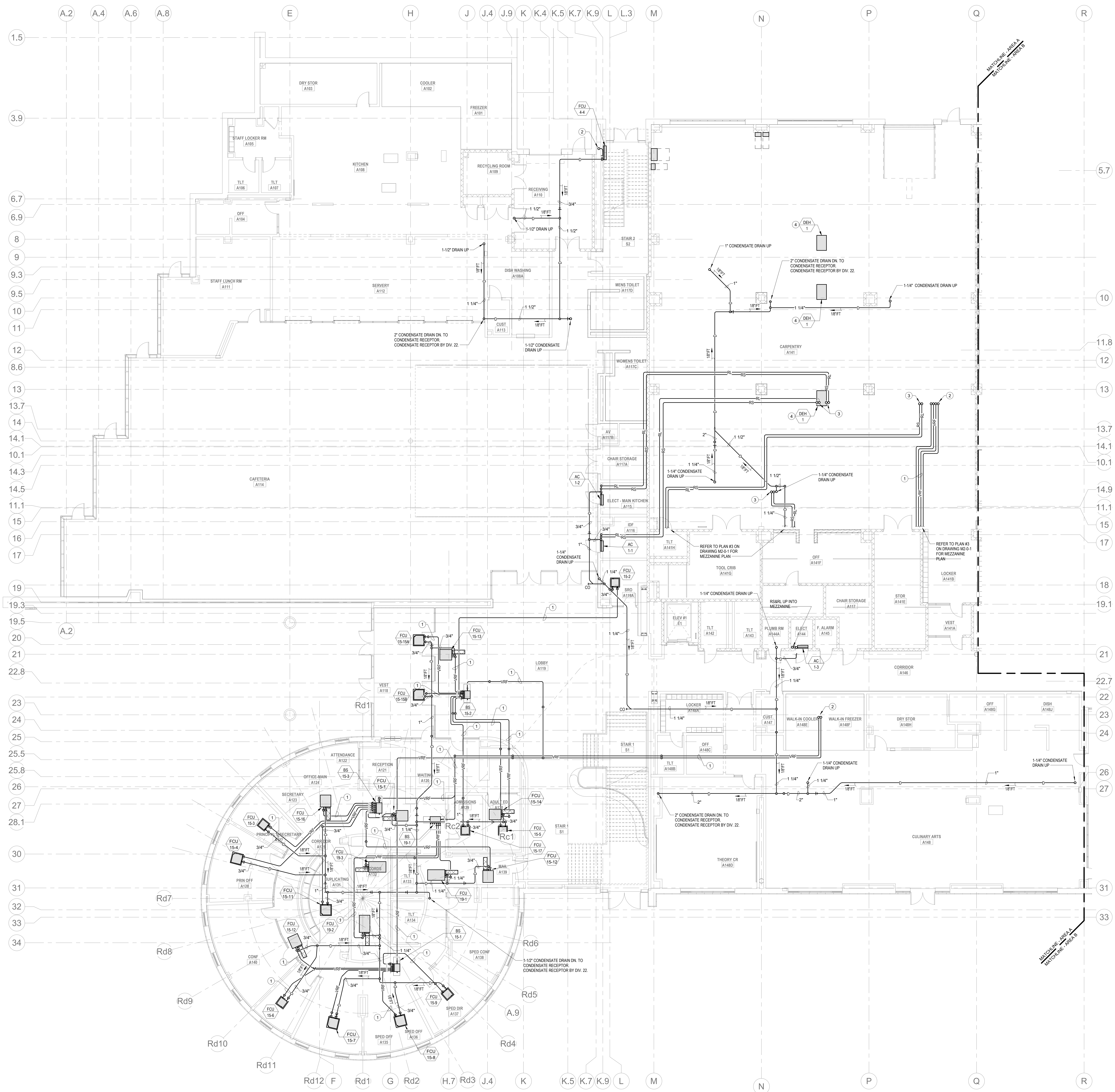
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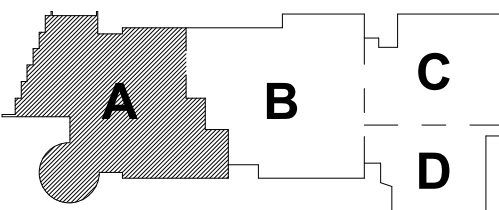
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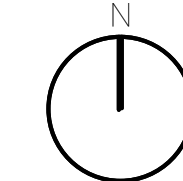
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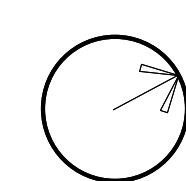


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



MECHANICAL PIPING FIRST FLOOR PLAN - AREA A

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

Job No.: 60-20-409

Drawn By: K.J.L.

Date: August 28th, 2023

M1-3-1A

HVAC GENERAL NOTES

1. REFER TO DUCTWORK PLANS FOR DUCTWORK LAYOUT, CONNECTIONS, AND CONTROLS.

HVAC DRAWING NOTES

1. REFER TO DRAWING #2 ON SHEET M1-3-1B FOR CONTINUATION OF PIPING
2. VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE M2 SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.
3. VRF PIPING BUNDLES UP.
4. RS&R UP TO ACQU ON ROOF.
5. PROVIDE 1" CONDENSATE DRAIN FROM DEHUMIDIFIER TO NEAREST CONDENSATE RECEPTOR.

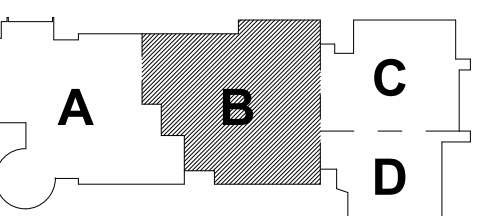
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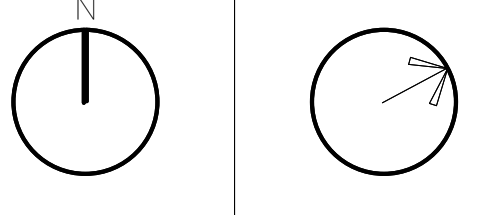
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KEY PLAN

PROJECT NORTH
MAGNETIC NORTH



MECHANICAL
PIPING FIRST
FLOOR PLAN -
AREA B

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: K.J.L.
Date: August 28th, 2023
M1-3-1B

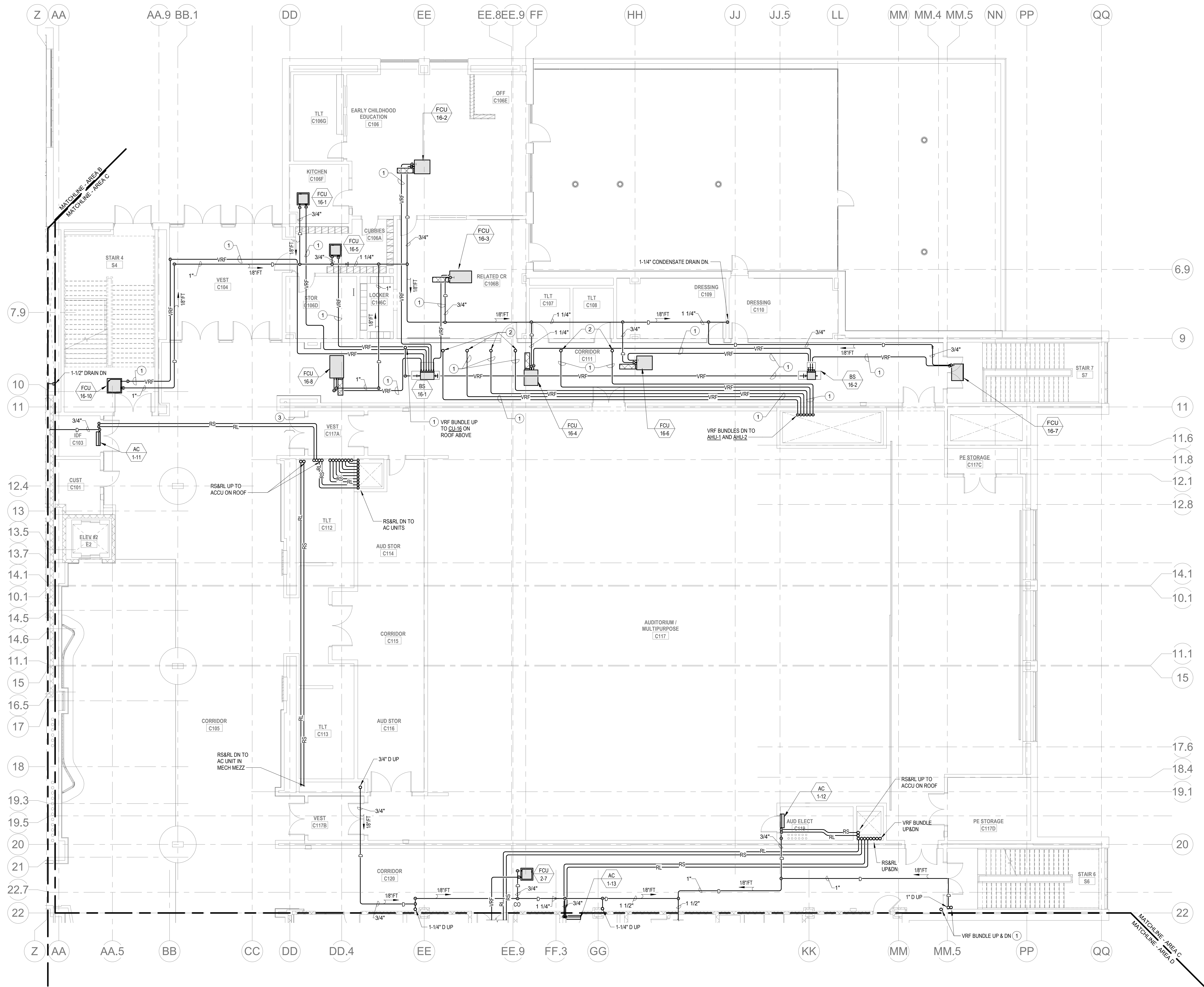
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HVAC GENERAL NOTES

1. REFER TO DUCTWORK PLANS FOR DUCTWORK LAYOUT, CONNECTIONS, AND CONTROLS.

HVAC DRAWING NOTES

1. VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE M2 SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.
2. VRF BUNDLE UP TO CUR ON ROOF.
3. PROVIDE BEAM PENETRATION, COORDINATE EXACT LOCATION AND SIZE WITH STRUCTURAL ENGINEER.



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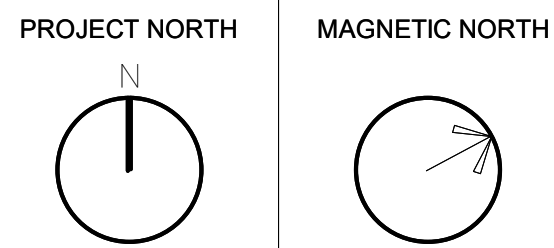
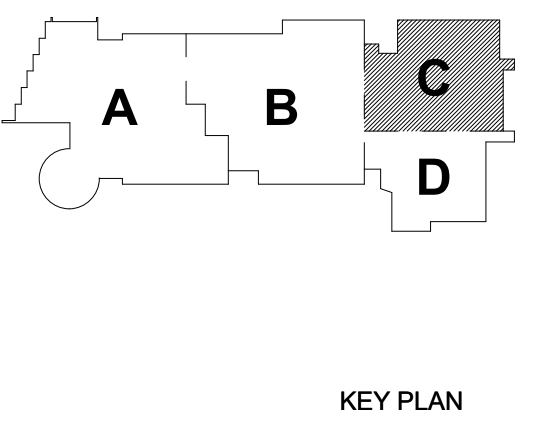
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MECHANICAL
PIPING FIRST
FLOOR PLAN -
AREA C

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023

M1-3-1C

①

1. REFER TO DUCTWORK PLANS FOR DUCTWORK LAYOUT, CONNECTIONS, AND CONTROLS.

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M1-3-1D

HVAC GENERAL NOTES

1. REFER TO DUCTWORK PLANS FOR DUCTWORK LAYOUT, CONNECTIONS, AND CONTROLS.

HVAC DRAWING NOTES

1. VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE M2 SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.
2. VRF PIPING BUNDLES UP.
3. RSRL UP TO ACU ON ROOF.
4. VRF BUNDLE DOWN TO AC UNIT BELOW.

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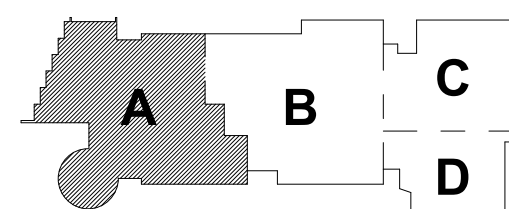
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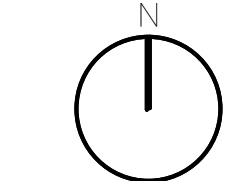
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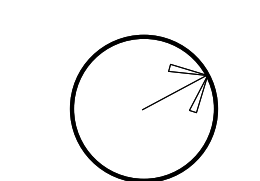


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



MECHANICAL PIPING SECOND FLOOR PLAN - AREA A

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

Job No.: 60-20-409

Drawn By: K.J.L.

Date: August 28th, 2023

M1-3-2A

HVAC GENERAL NOTES

1. PROVIDE REFRIGERANT LINE SET FROM EACH AC UNIT TO ASSOCIATED CONDENSING UNIT ON ROOF. INTEGRAL CONDENSATE PUMP AND CONDENSATE DRAIN PIPING TO NEAREST CONDENSATE RECEPTOR. CONDENSATE RECEPTOR BY DIV. 22
2. REFER TO DUCTWORK PLANS FOR DUCTWORK LAYOUT, CONNECTIONS, AND CONTROLS.

HVAC DRAWING NOTES

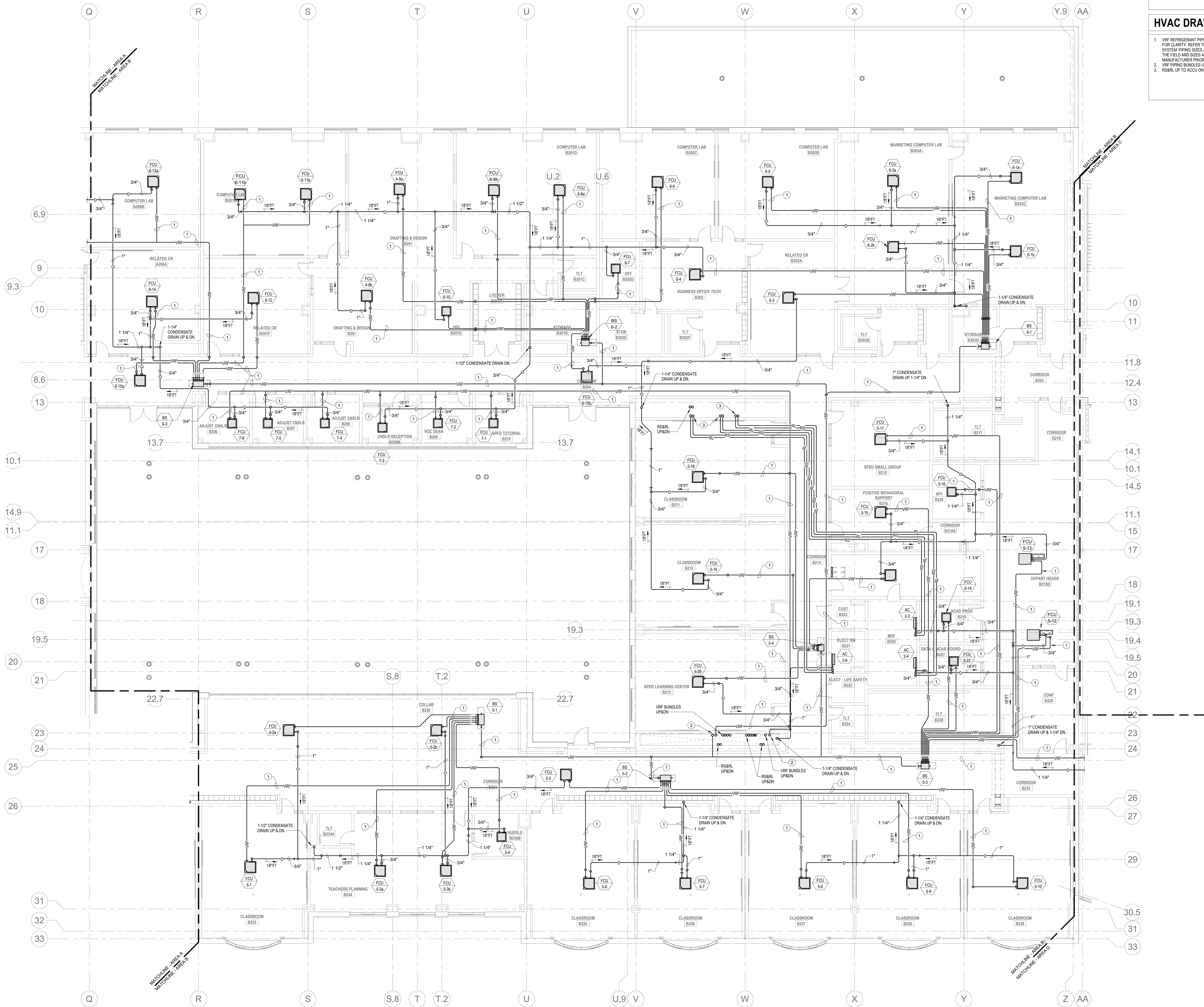
1. VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE M2 SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.
2. VRF PIPING BUNDLES UP.
3. RSRL UP TO ACU ON ROOF.

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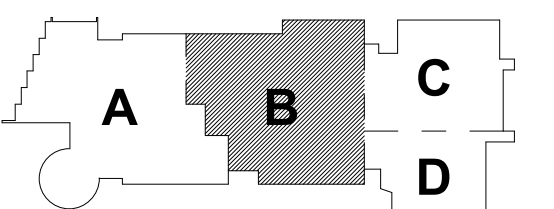


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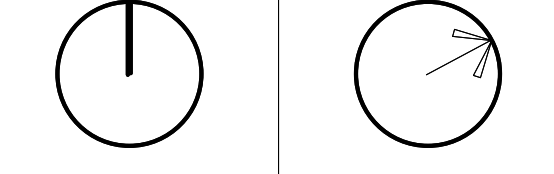
BID SET

August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



MECHANICAL
PIPING SECOND
FLOOR PLAN -
AREA B

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: K.J.L.
Date: August 28th, 2023

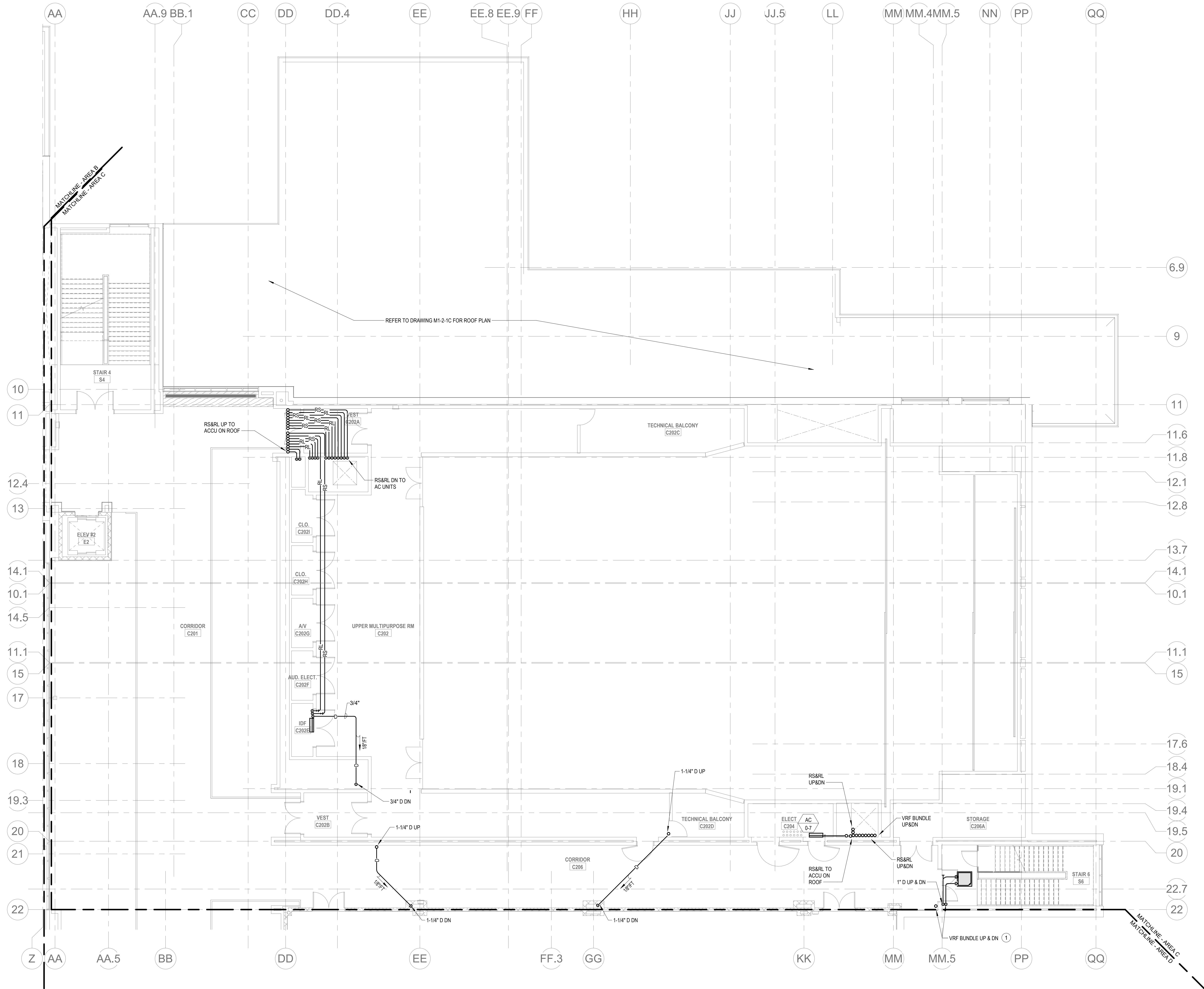
M1-3-2B

HVAC GENERAL NOTES

1. REFER TO DUCTWORK PLANS FOR DUCTWORK LAYOUT, CONNECTIONS, AND CONTROLS.

HVAC DRAWING NOTES

1. VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE M2 SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.
2. PROVIDE REFRIGERANT LINE SET FROM AC UNIT TO ASSOCIATED CONDENSING UNIT ON ROOF. INTEGRAL CONDENSATE PUMP AND CONDENSATE DRAIN PIPING TO NEAREST CONDENSATE RECEPTOR. CONDENSATE RECEPTOR BY DW. 22.



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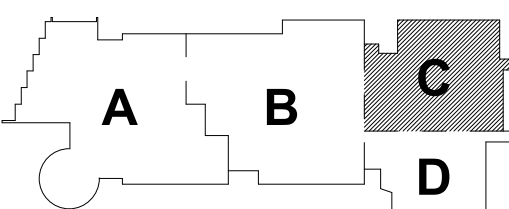
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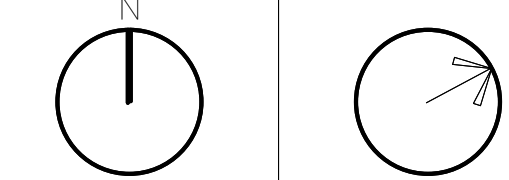
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KEY PLAN

PROJECT NORTH MAGNETIC NORTH



MECHANICAL
PIPING SECOND
FLOOR PLAN -
AREA C

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

Job No.: 60-20-409

Drawn By: KJL

Date: August 28th, 2023

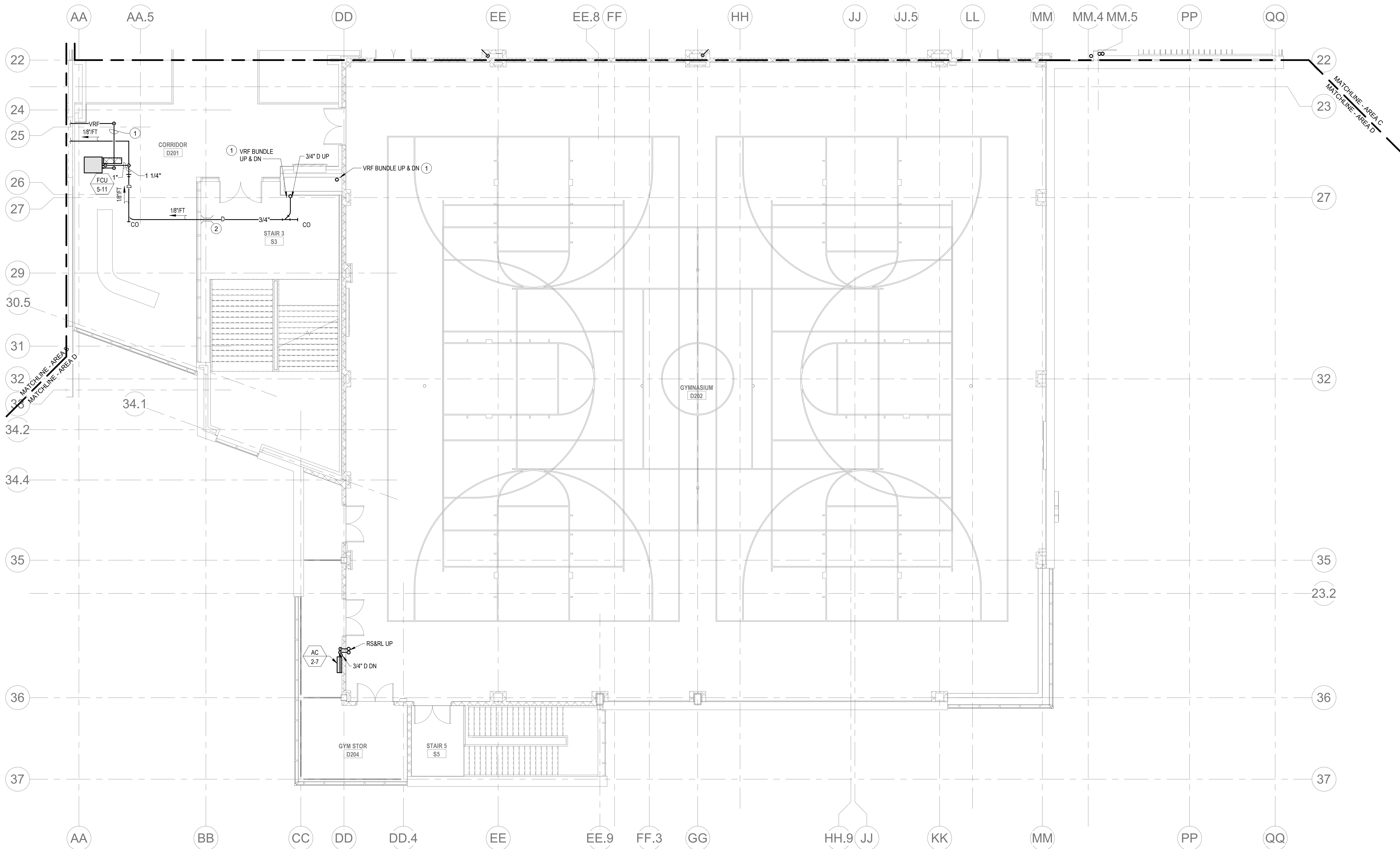
M1-3-2C

HVAC GENERAL NOTES

1. REFER TO DUCTWORK PLANS FOR DUCTWORK LAYOUT, CONNECTIONS, AND CONTROLS.

HVAC DRAWING NOTES

1. VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE M2 SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.
2. PROVIDE BEAM PENETRATION. COORDINATE EXACT LOCATION AND SIZE WITH STRUCTURAL ENGINEERS.



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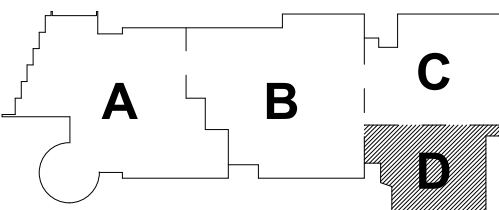
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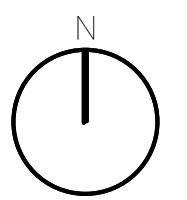
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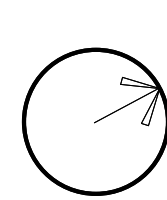


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



**MECHANICAL
PIPING SECOND
FLOOR PLAN -
AREA D**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023

M1-3-2D

1. REFER TO DUCTWORK PLANS FOR DUCTWORK LAYOUT, CONNECTIONS, AND CONTROLS.

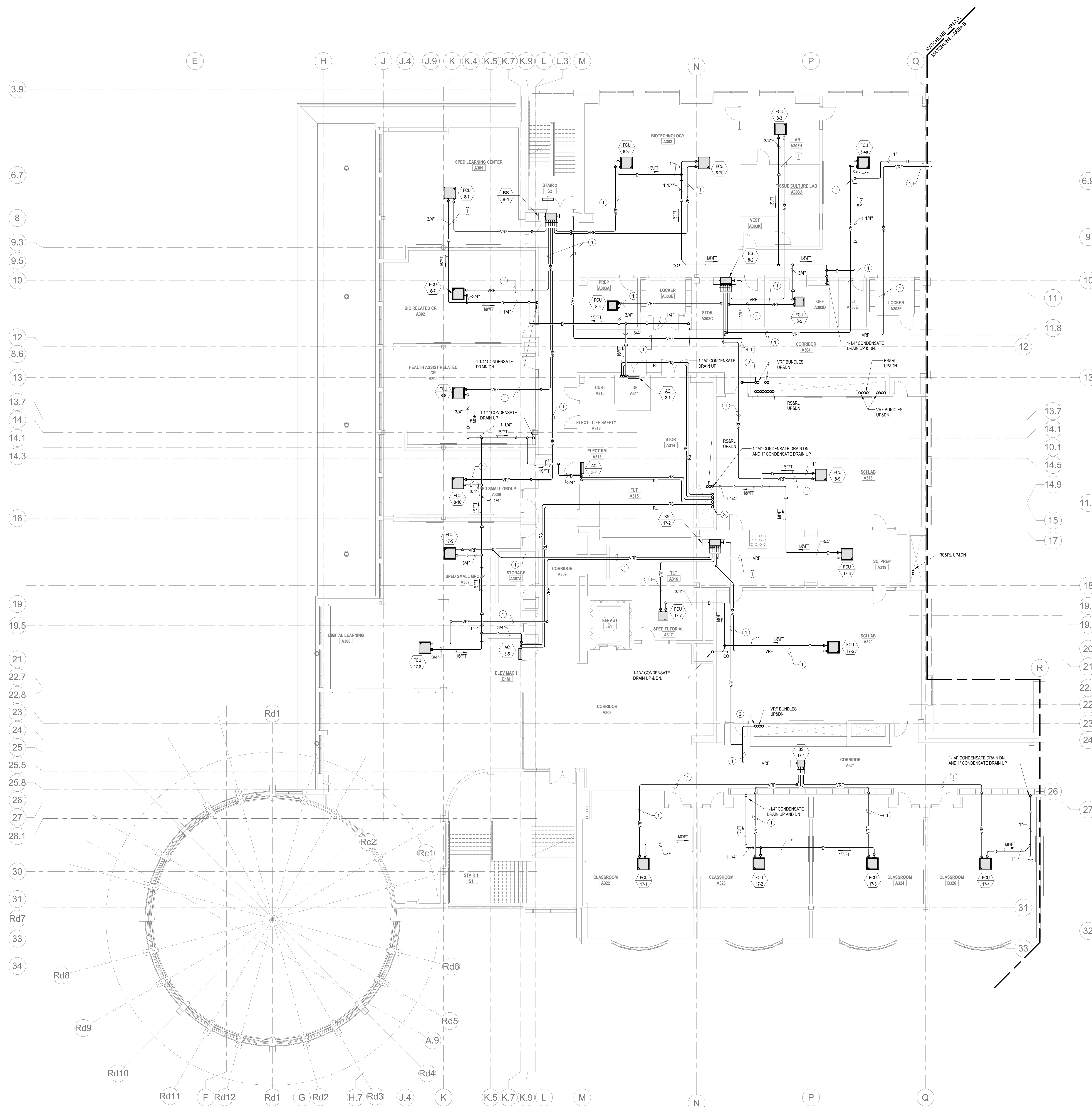
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2. VRF PIPING BUNDLES UP.
3. RS&L UP TO ACCU ON ROOF.

○

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August 28th, 2023



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Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023

HVAC GENERAL NOTES

1. REFER TO DUCTWORK PLANS FOR DUCTWORK LAYOUT, CONNECTIONS, AND CONTROLS.

HVAC DRAWING NOTES

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2. VRF PIPING BUNDLES UP.
3. RSRL UP TO ACU ON ROOF.

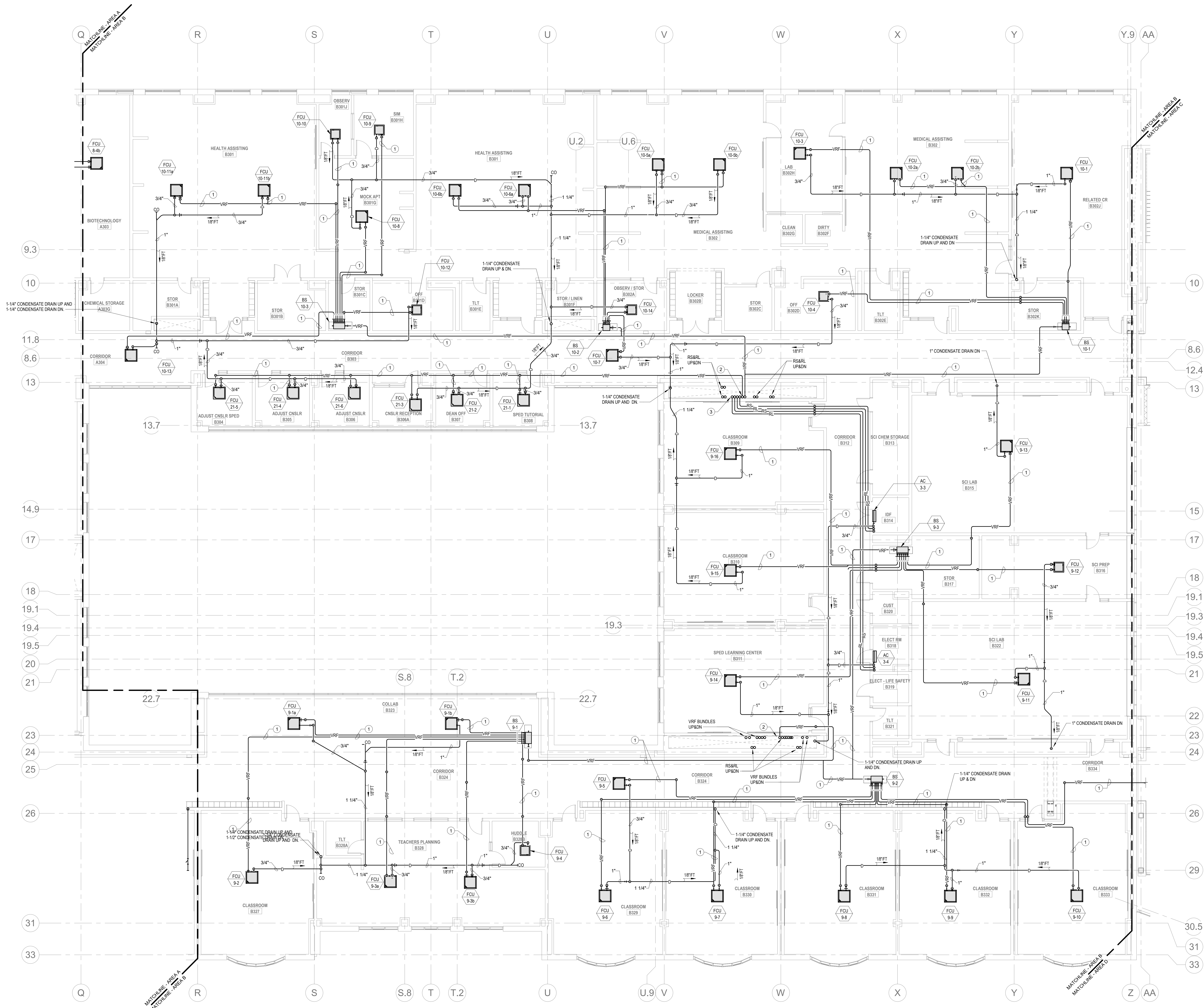
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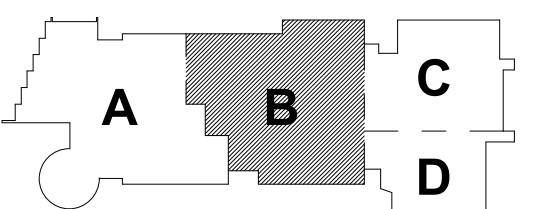


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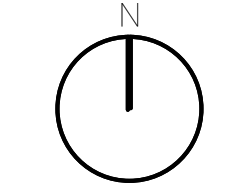
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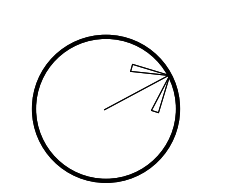


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



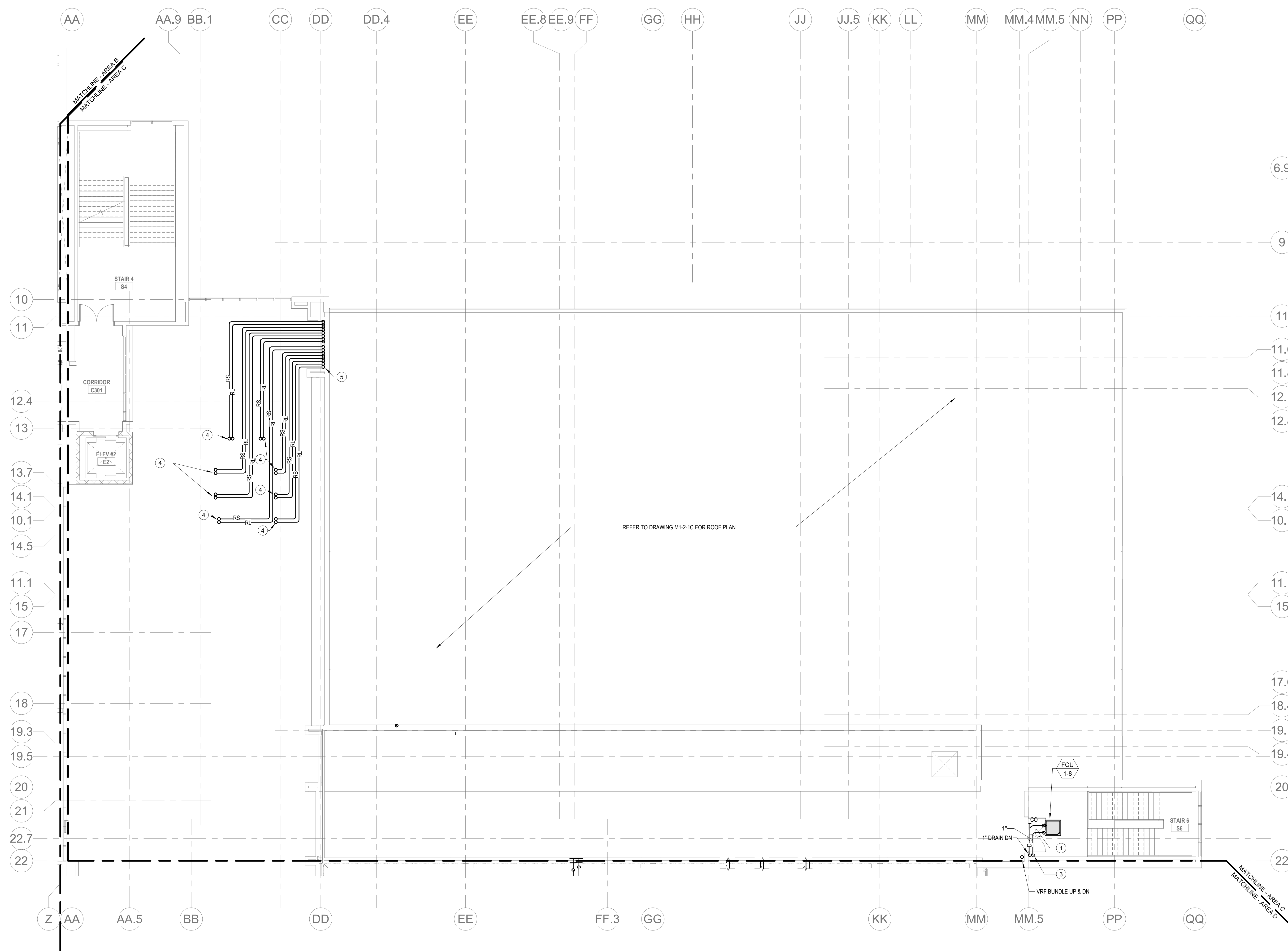
MECHANICAL
PIPING THIRD
FLOOR PLAN -
AREA B

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023

M1-3-3B

1. REFER TO DUCTWORK PLANS FOR DUCTWORK LAYOUT, CONNECTIONS, AND CONTROLS.

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2. PROVIDE REFRIGERANT LINE SET FROM AC UNIT TO ASSOCIATED CONDENSING COIL VRF R/P, INTEGRAL CONDENSATE PUMP, AND CONDENSATE DRAIN PIPING TO NEAREST CONDENSATE RECEPTOR. CONDENSATE RECEPTOR BY DIV. 22.
3. VRF PIPING BUNDLES DN.
4. RS4RL UP TO ACU/ ON ROOF.
5. RS4RL DN TO AC UNITS.

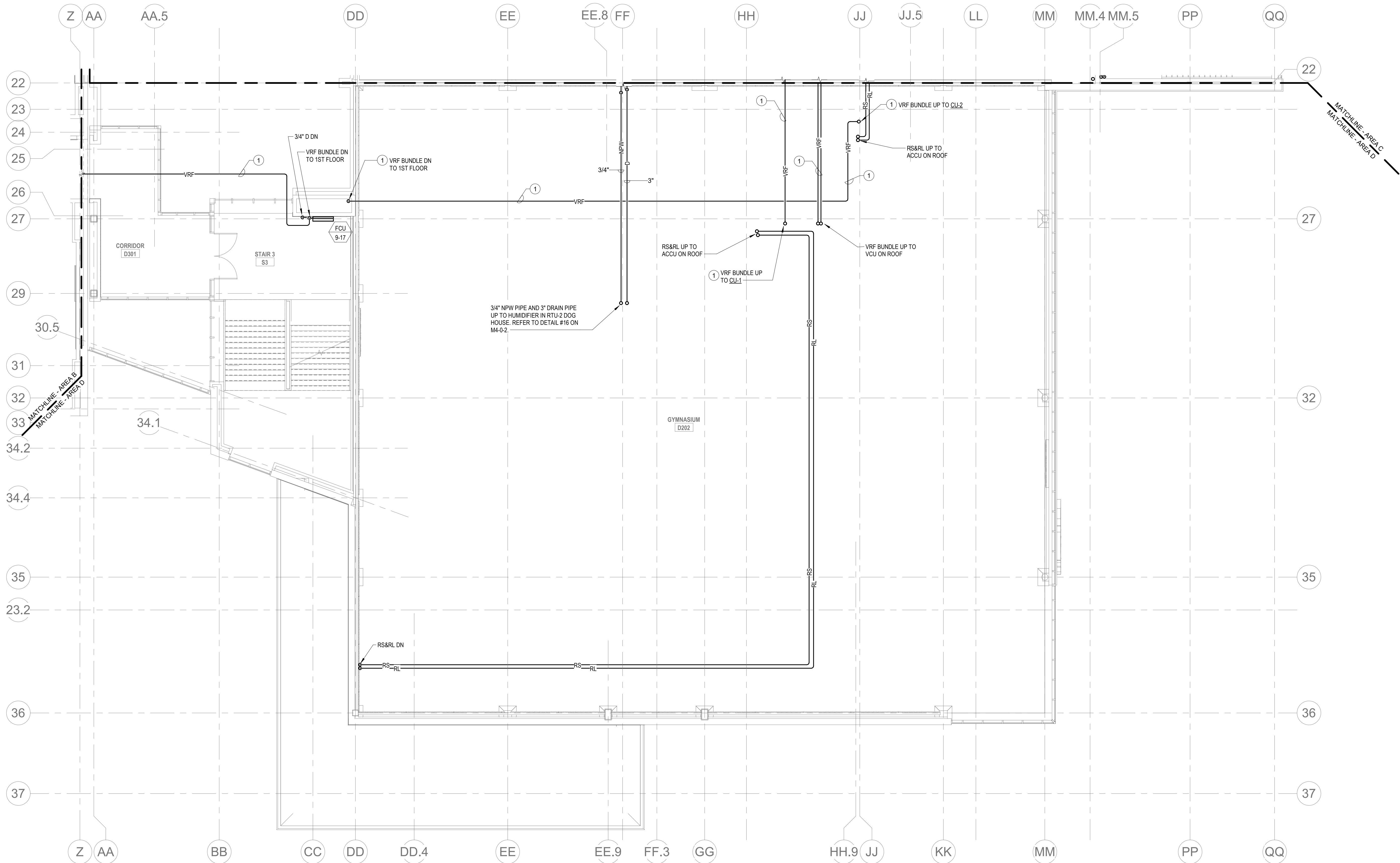


HVAC GENERAL NOTES

1. REFER TO DUCTWORK PLANS FOR DUCTWORK LAYOUT, CONNECTIONS, AND CONTROLS.

HVAC DRAWING NOTES

1. VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE M2 SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.



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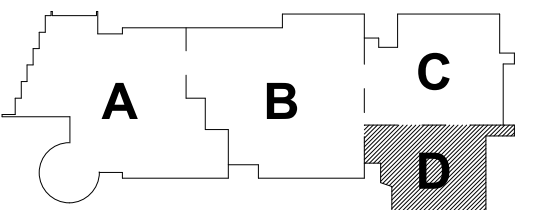
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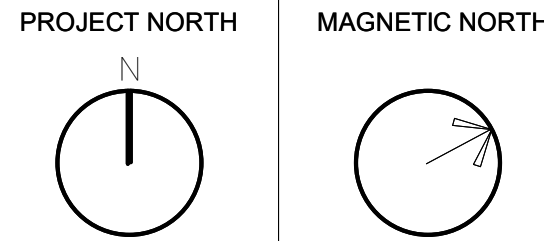
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BID SET
August 28th, 2023



KEY PLAN



MECHANICAL
PIPING THIRD
FLOOR PLAN -
AREA D

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023

M1-3-3D

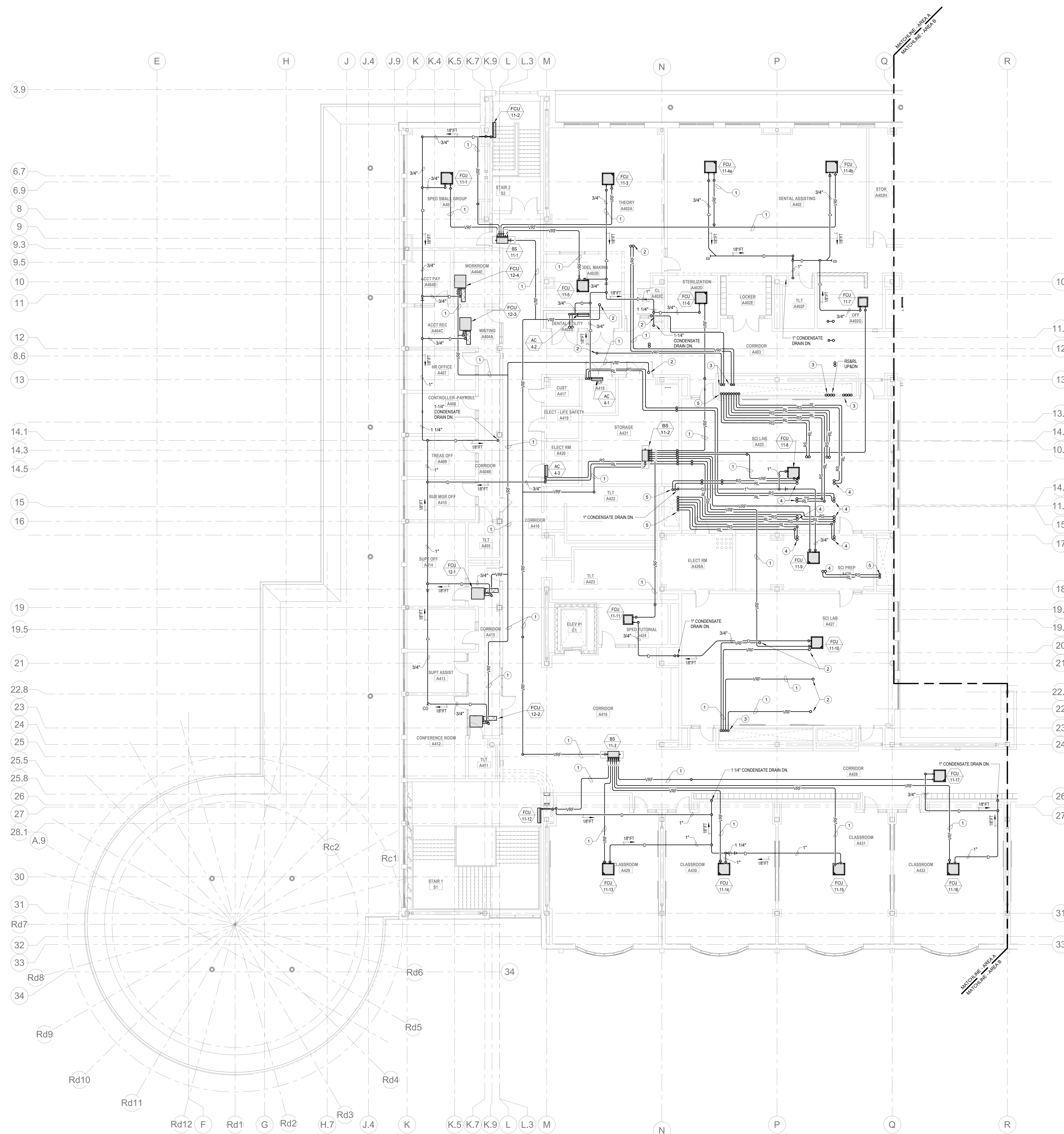
1. REFER TO DUCTWORK PLANS FOR DUCTWORK LAYOUT, CONNECTIONS, AND CONTROLS.

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2. VRF PIPING BUNDLES UP.
3. VRF PIPING BUNDLES DN.
4. RS&RL UP TO ACCU ON ROOF.
5. RS&RL DN TO AC UNITS.

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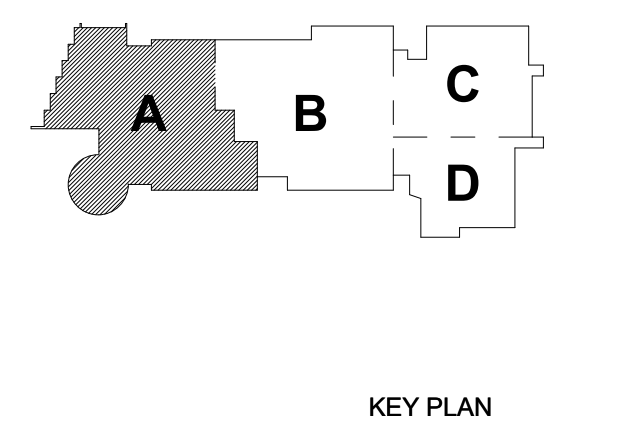
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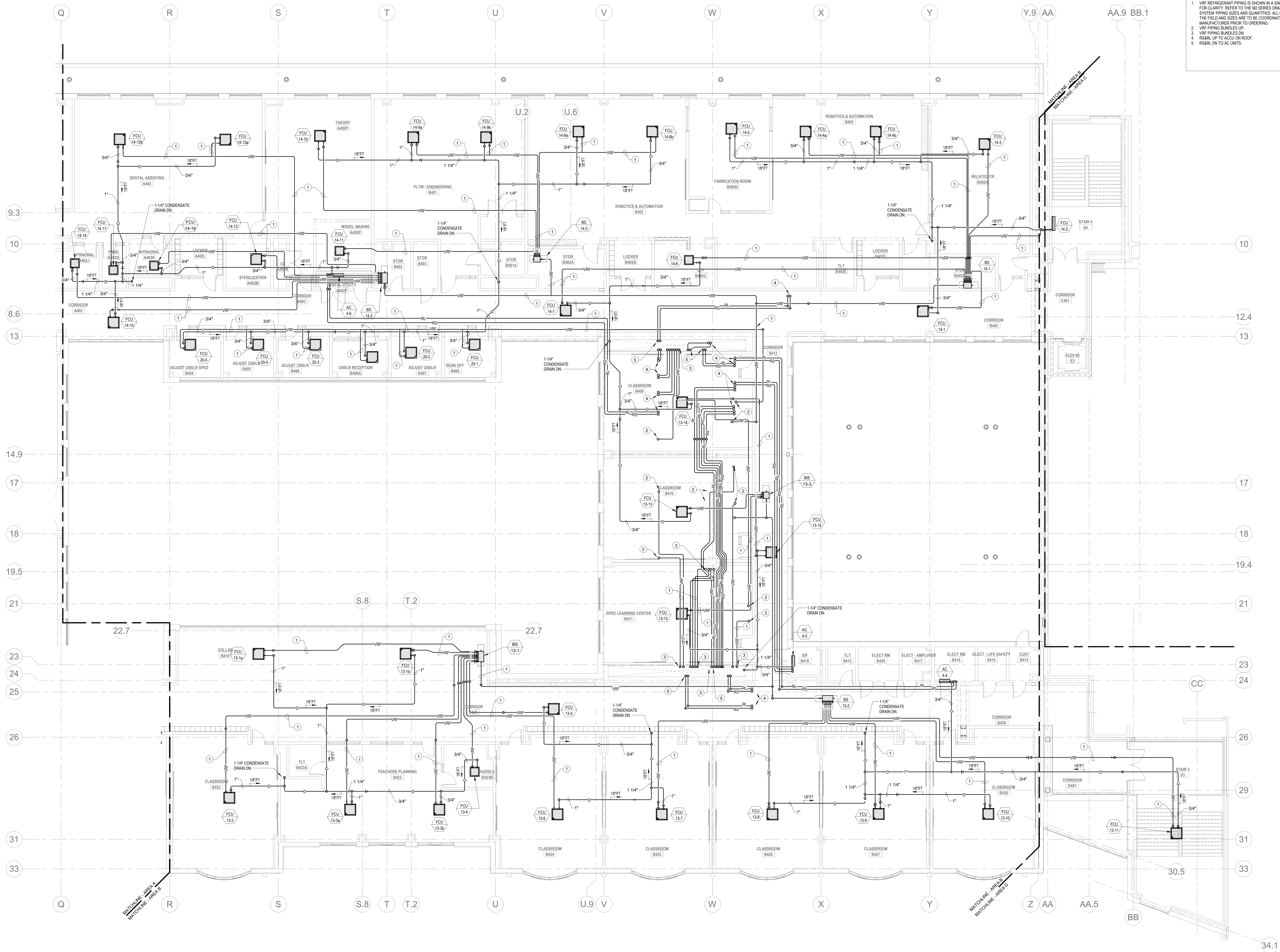
August 28th, 2023



**MECHANICAL
PIPING FOURTH
FLOOR PLAN -
AREA A**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023

M1-3-4A



HVAC GENERAL NOTES

1. REFER TO DUCTWORK PLANS FOR DUCTWORK LAYOUT, CONNECTIONS, AND CONTROLS.

HVAC DRAWING NOTES

1. VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE M2 SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.
2. VRF PIPING BUNDLES UP.
3. VRF PIPING BUNDLES DN.
4. RS&L UP TO ACU ON ROOF.
5. RS&L DN TO AC UNITS.

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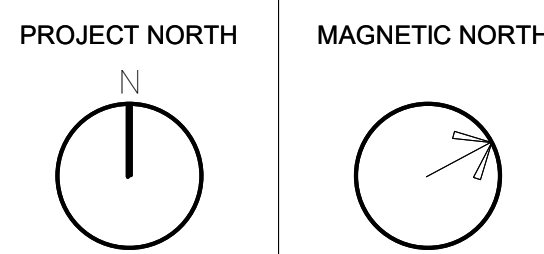
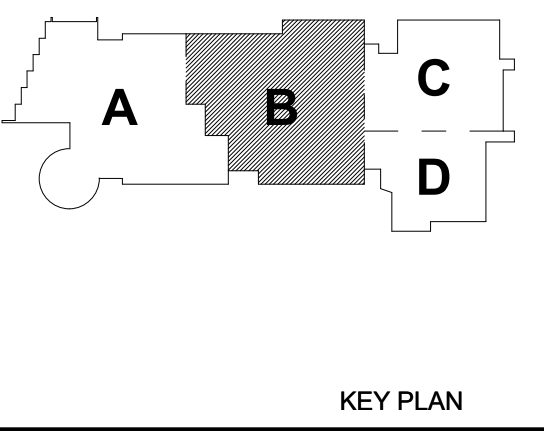
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BID SET
August 28th, 2023



MECHANICAL
PIPING FOURTH
FLOOR PLAN -
AREA B

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: K.J.L.
Date: August 28th, 2023
M1-3-4B

HVAC DRAWING NOTES

1. VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE M3 SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.

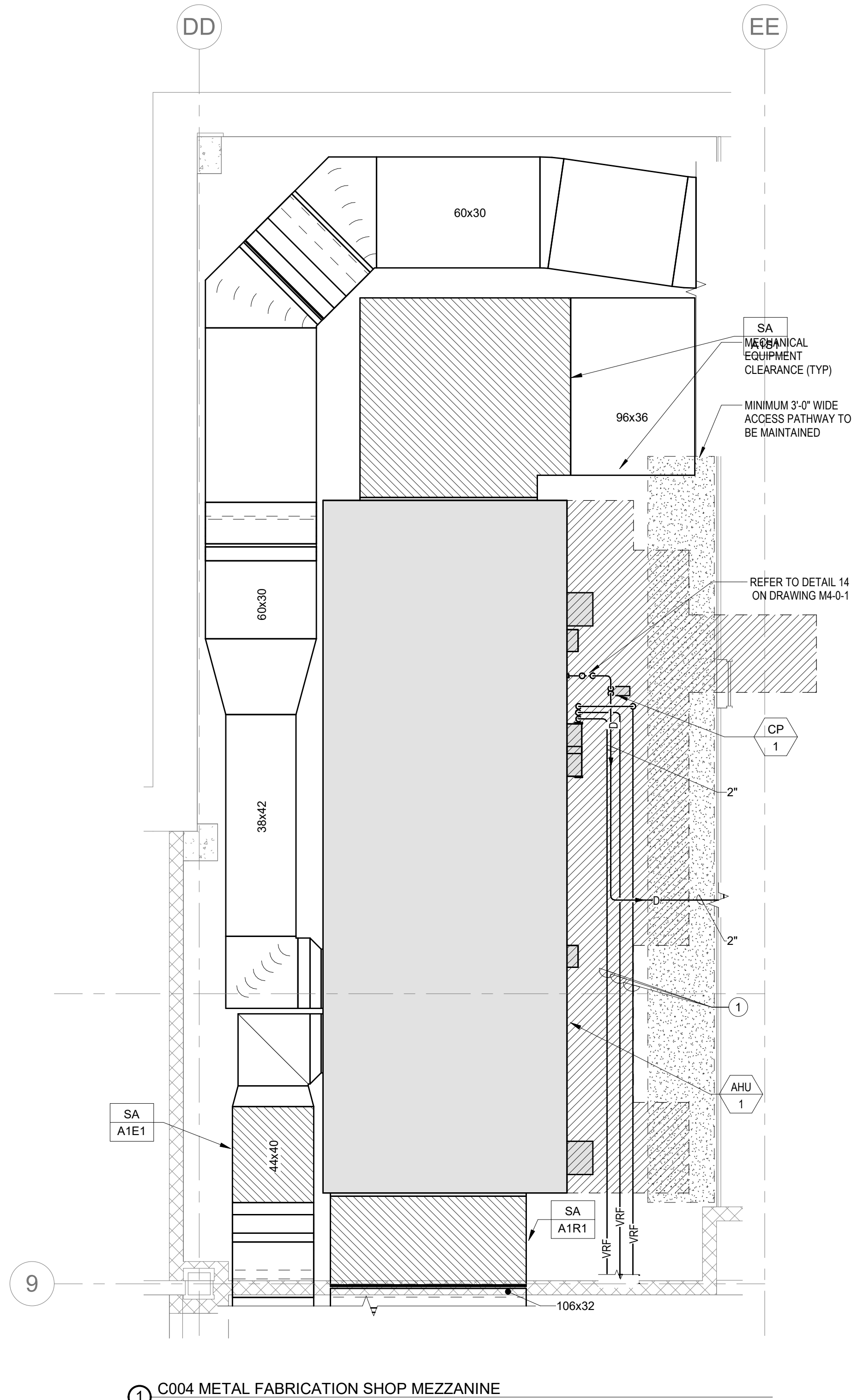
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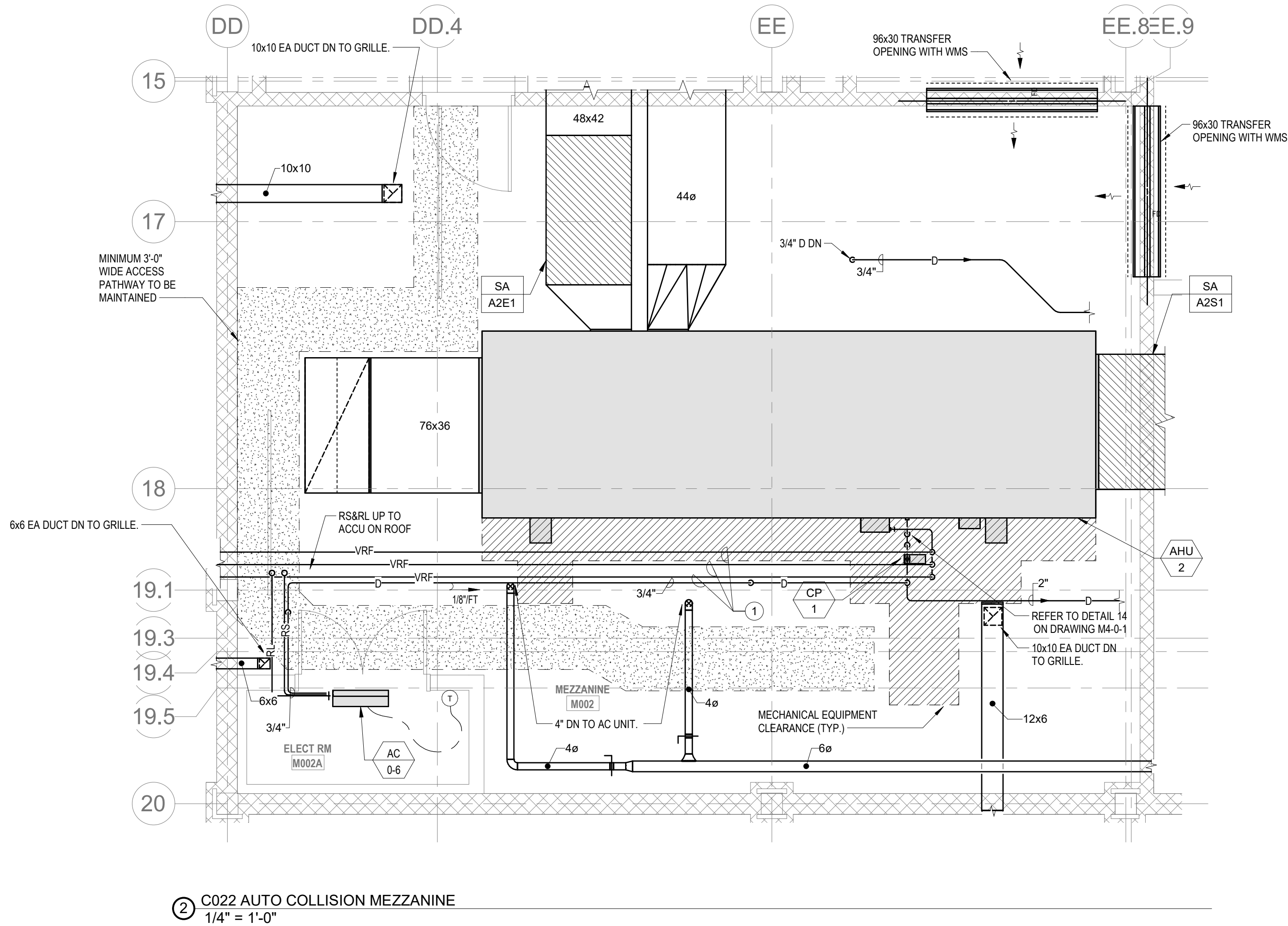
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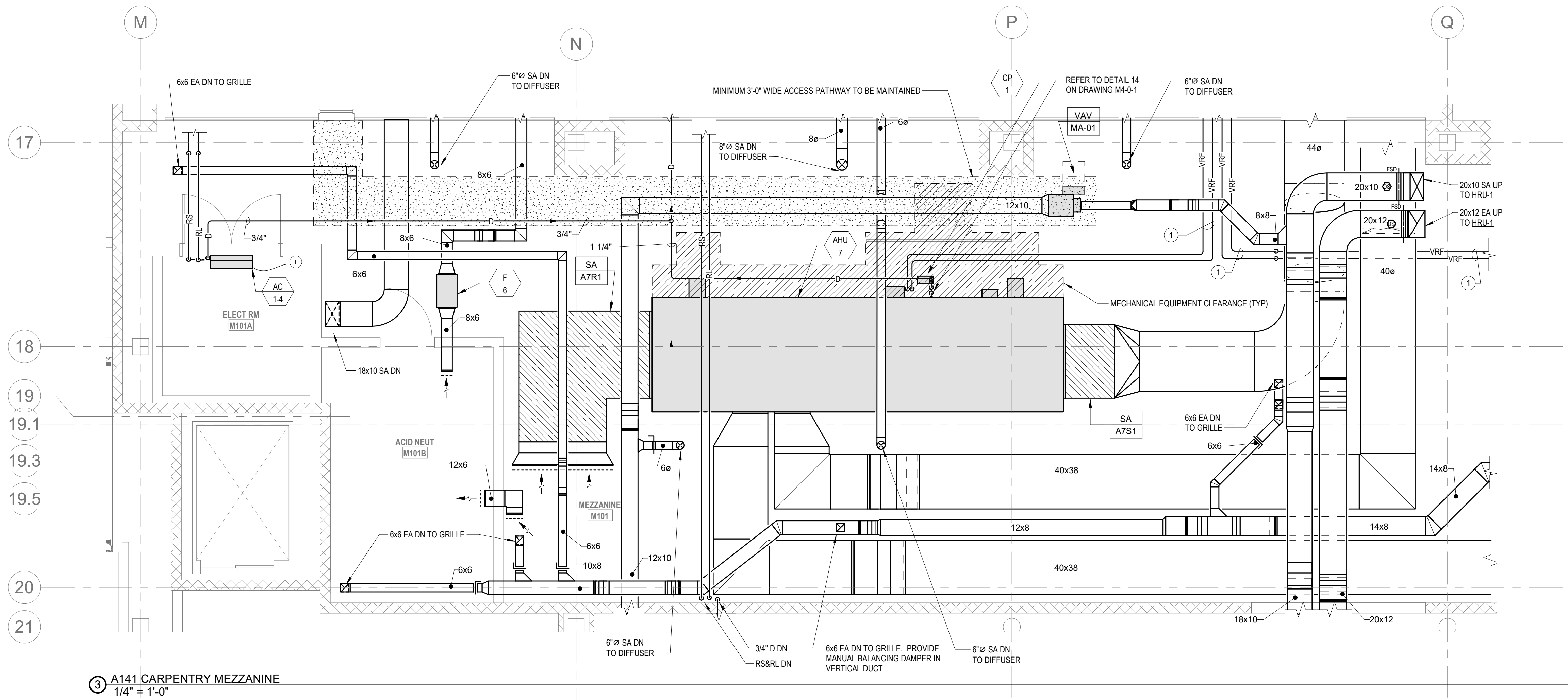
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① C004 METAL FABRICATION SHOP MEZZANINE
1/4" = 1'-0"



② C022 AUTO COLLISION MEZZANINE
1/4" = 1'-0"



③ A141 CARPENTRY MEZZANINE
1/4" = 1'-0"

M2-0-1 - VARIABLE AIR VOLUME TERMINAL (VAV)											
UNIT NO.	SYSTEM	ROOM SERVED	PRIMARY AIR VALVE				SOUND DATA - MAX PWL IN 3RD OCTAVE @ 1.0' INLET PRESSURE				
			PRIMARY INLET DIA (IN)	MAX FLOW SETPOINT (CFM)	MIN FLOW OCCUPIED (CFM)	MINIMUM FLOW UNOCCUPIED (CFM)	INLET AIR PRESSURE (IN.WG)	DISCHARGE SIZE VAV (IN)	DISCH	RAD	MANUFACTURER
VAV-MA-01	HRLU-2	A146 CORRIDOR	6	285	285	25	1.50	12x8	29	28	TITUS
NOTES:											
1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.											
2. PROVIDE 1" DOUBLEDWALL PERFORATED LINER FOR ALL VAV TERMINALS.											
3. REFER TO FLOOR PLANS. VAV TERMINALS ARE PROVIDED WITH AND WITHOUT ELECTRIC RE-HEAT COILS.											
4. CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD.											
5. PROVIDE INLET VELOCITY SENSOR.											
6. CONTROLS AND CONTROLLER TO BE PROVIDED BY A/C CONTRACTOR.											
7. SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.											
8. PROVIDE 1" LINER FOR 20'-0" DOWNSTREAM OF ALL VAV BOXES.											
9. PROVIDE SOUND ATTENUATOR.											

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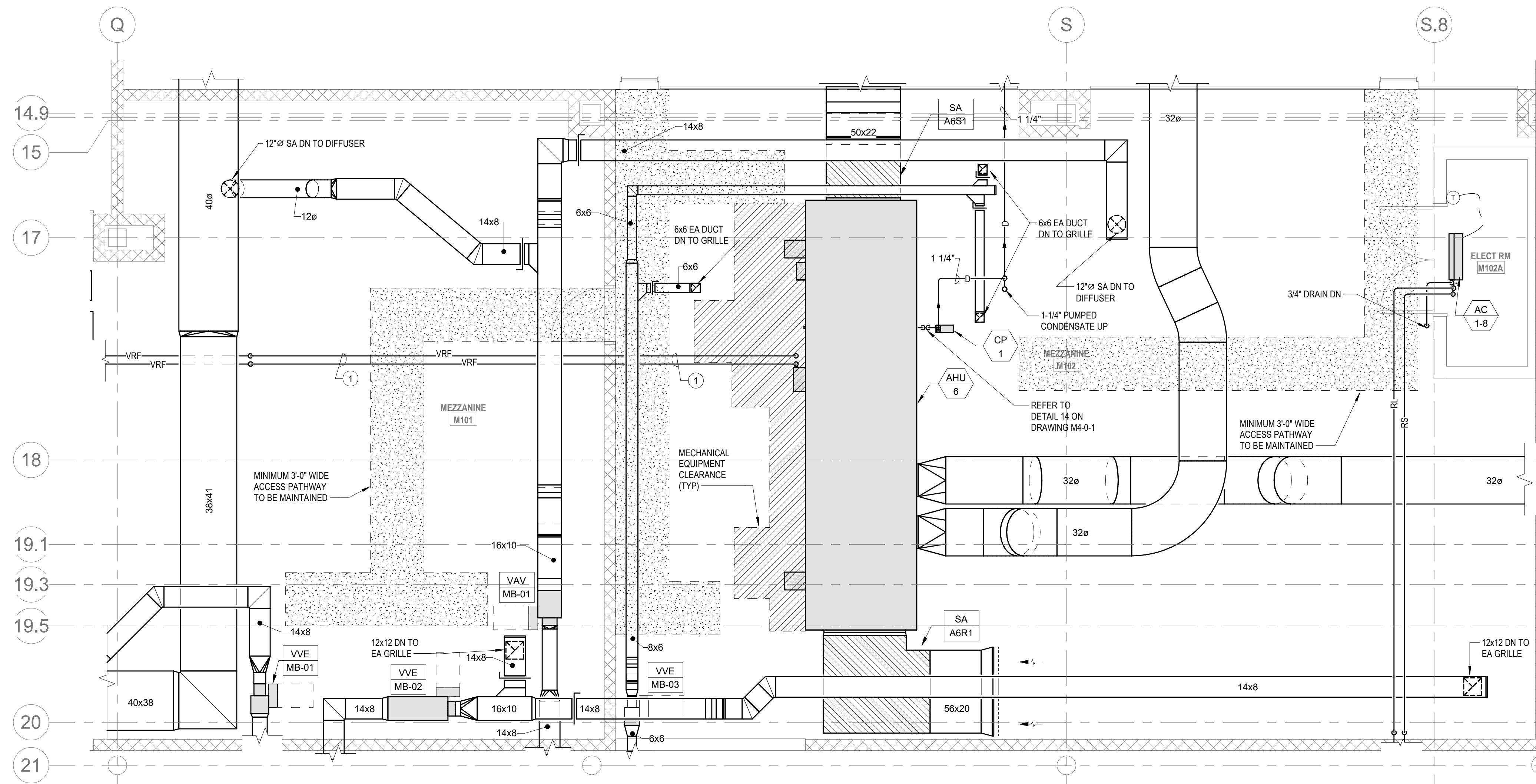
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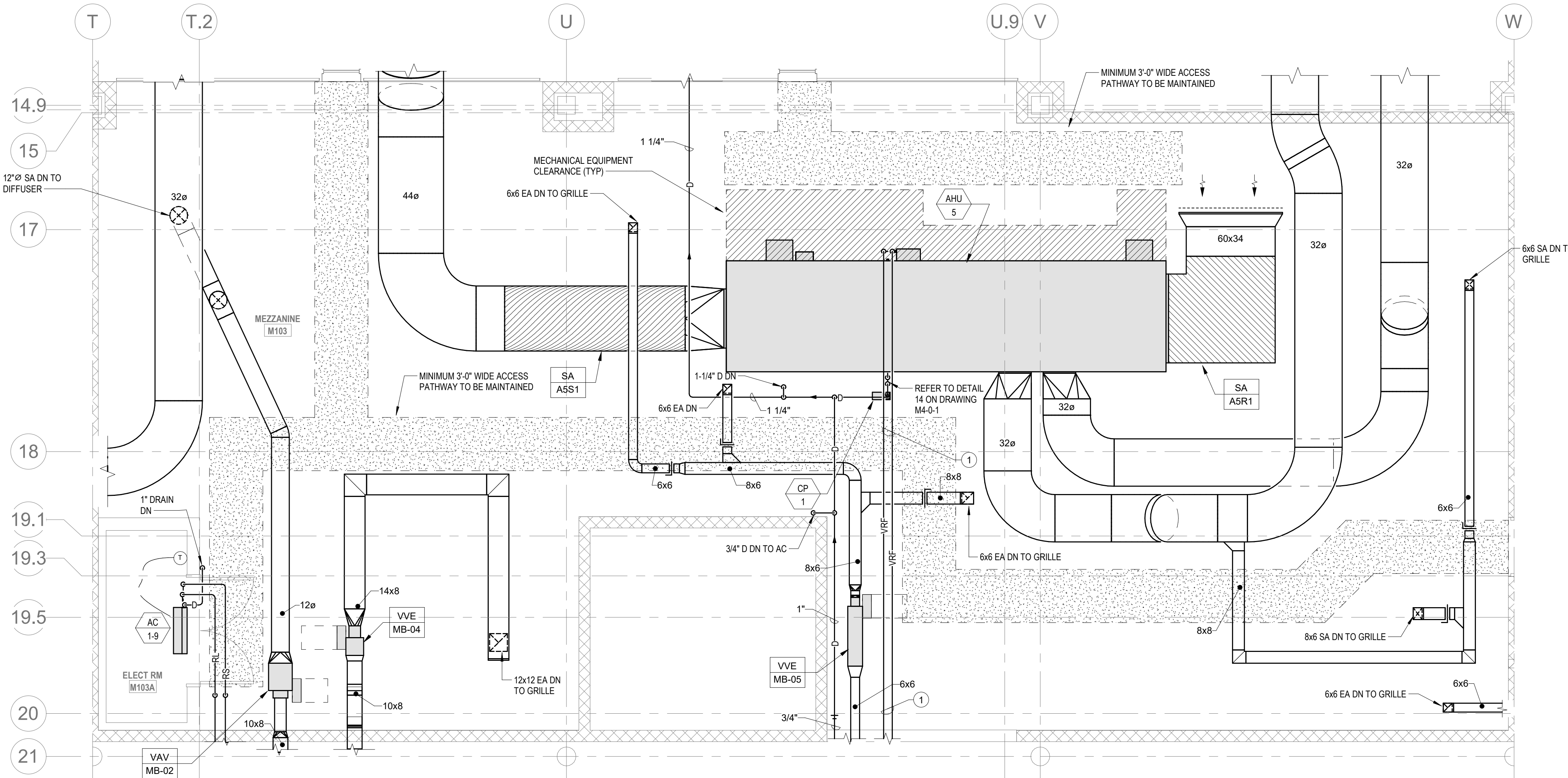
MECHANICAL
ENLARGED
PLANS

Scale: 1/4" = 1'-0"
Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023

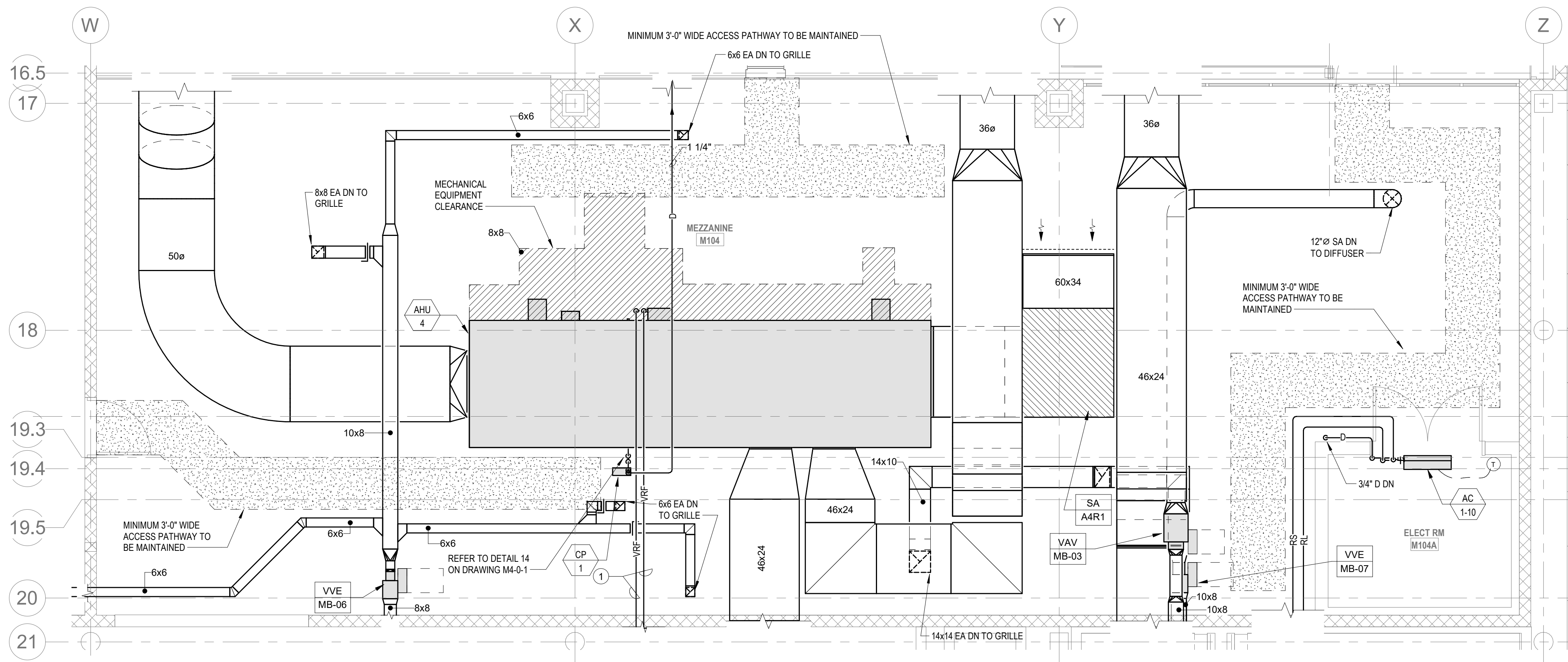
M2-0-1



① B101 PLUMBING & PIPE FITTING MEZZANINE
1/4" = 1'-0"



② B103 HVAC TECHNOLOGY MEZZANINE
1/4" = 1'-0"



③ B104 ELECTRICAL TECHNOLOGY MEZZANINE
1/4" = 1'-0"

HVAC DRAWING NOTES

1. VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE M2 SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.

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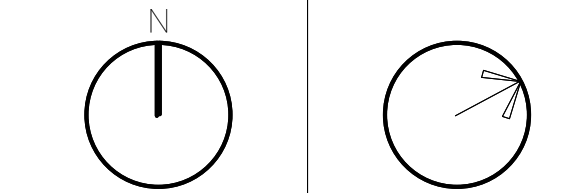
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**MECHANICAL
ENLARGED
PLANS**

Scale: 1/4" = 1'-0"
Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023

M2-0-2

M2-0-2 - VARIABLE AIR VOLUME TERMINAL (VAV)

UNIT NO	SYSTEM	ROOM SERVED	PRIMARY AIR VALVE						SOUND DATA - MAX PWL IN 3RD OCTAVE @ 1.0' INLET PRESSURE				MANUFACTURER	MODEL	NOTES
			PRIMARY INLET DIA (IN)	MAX FLOW (CFM)	MIN FLOW (CFM)	FLOW SETPOINT (CFM)	MINIMUM FLOW (CFM)	INLET AIR PRESSURE (IN WG)	DISCHARGE SIZE W/H (IN)	DISCH	RAD				
VAV-MB-01	HRU-1	1A14CB151E RELATED CR	10	725	220	75	1.50	14x12.5	45	35			TITUS	DESV	SEE NOTES 1-6
VAV-MB-02	HRU-2	B103E RELATED CR	8	365	110	40	1.50	12x10	39	33			TITUS	DESV	SEE NOTES 1-6
VAV-MB-03	HRU-2	B104G RELATED CR	8	400	120	40	1.50	12x10	39	33			TITUS	DESV	SEE NOTES 1-6

- NOTES:
1. REFER TO SPECIFICATIONS SECTION 20000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
2. PROVIDE 1" DOUBLEWALL PERFORATED LINER FOR ALL VAV TERMINALS.
3. REFER TO FLOOR PLANS. VAV TERMINALS ARE PROVIDED WITH AND WITHOUT ELECTRIC RE-HEAT COILS.
4. CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD.
5. PROVIDE INLET VELOCITY SENSOR.
6. CONTROLS AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR.
7. SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.
8. PROVIDE 1" LINER FOR 20'-0" DOWNSTREAM OF ALL VAV BOXES.
9. PROVIDE SOUND ATTENUATOR.

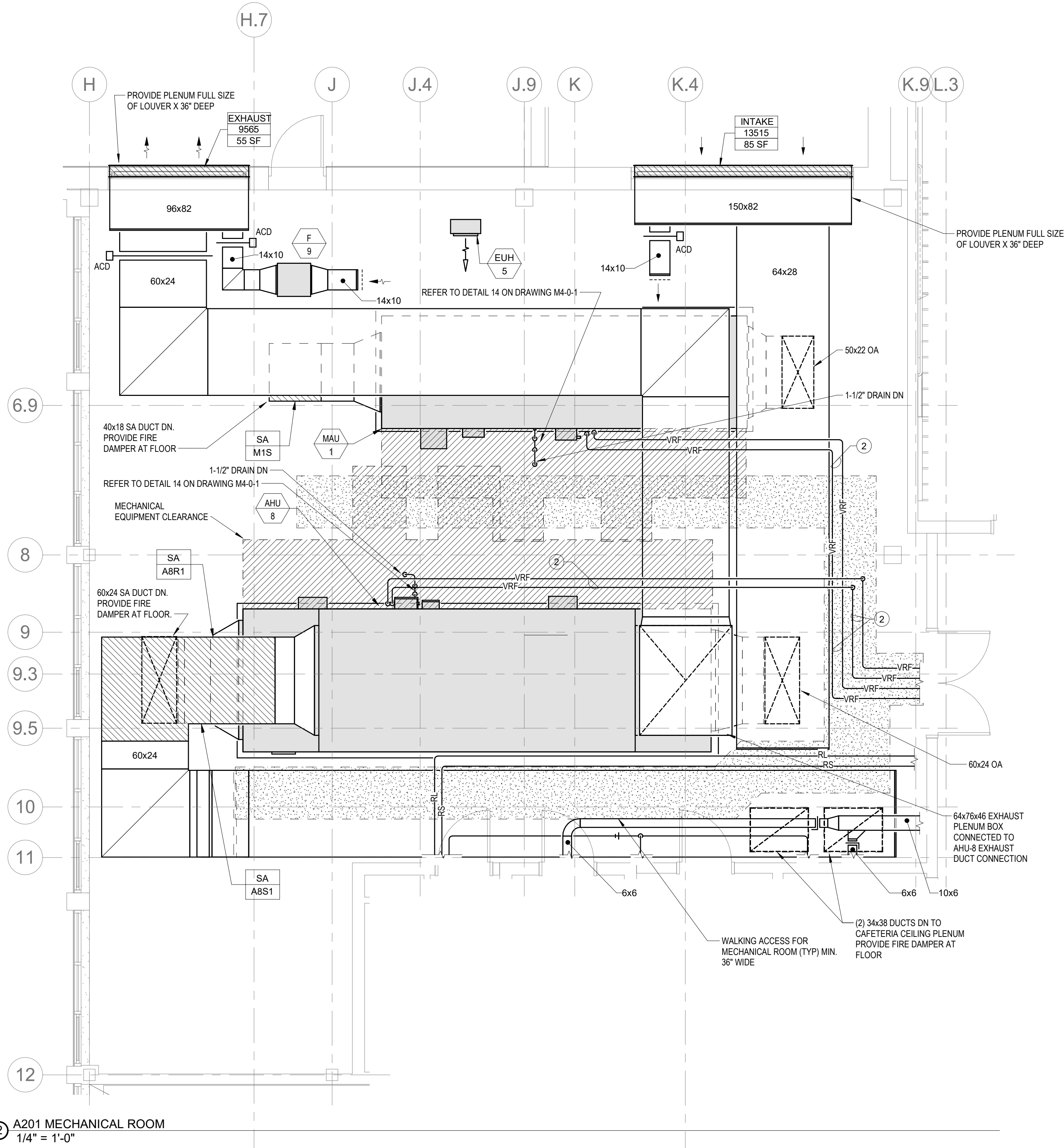
M2-0-2 VARIABLE AIR VOLUME EXHAUST AIR TERMINAL SCHEDULE (VVE)

UNIT NO	TYPE	INLET DIAMETER (IN)	DISCHARGE SIZE W/H (IN)	MAX AIRFLOW (CFM)	MIN TURNDOWN (CFM)	MAX PD (IN WG)	INLET AIR PRESSURE (IN WG)	MAX NC RATING	DISCH. RAD.	MANUFACTURER	MODEL	REMARKS
VVE-MB-01	SINGLE DUCT EXHAUST	6	12x8	420	420	0.50	1.50	29	33	TITUS	DESV	SEE NOTES 1-7
VVE-MB-02	SINGLE DUCT EXHAUST	10	14x12.5	700	210	0.50	1.50	45	35	TITUS	DESV	SEE NOTES 1-6,8
VVE-MB-03	SINGLE DUCT EXHAUST	6	12x8	150	45	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-7
VVE-MB-04	SINGLE DUCT EXHAUST	6	12x8	365	110	0.50	1.50	29	33	TITUS	DESV	SEE NOTES 1-7
VVE-MB-05	SINGLE DUCT EXHAUST	8	12x8	125	125	0.50	1.50	29	28	TITUS	DESV	SEE NOTES 1-6,8
VVE-MB-06	SINGLE DUCT EXHAUST	6	12x8	345	345	0.50	1.50	29	25	TITUS	DESV	SEE NOTES 1-7
VVE-MB-07	SINGLE DUCT EXHAUST	8	12x10	400	40	0.50	1.50	39	33	TITUS	DESV	SEE NOTES 1-7

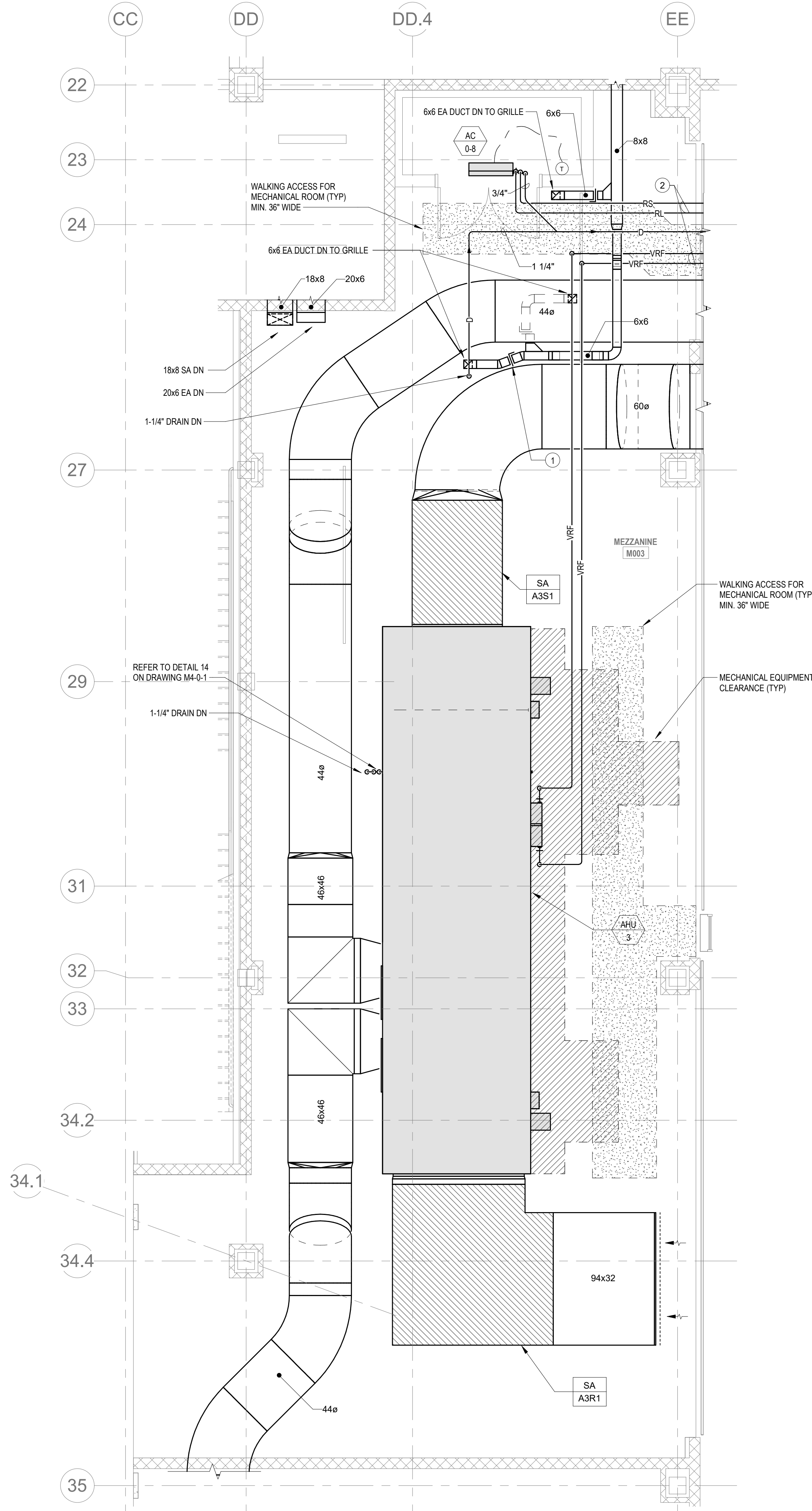
- NOTES:
1. REFER TO SPECIFICATIONS SECTION 20000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.
2. PROVIDE 1" DOUBLEWALL PERFORATED LINER FOR ALL VAV TERMINALS.
3. CONFIRM LEFT OR RIGHT HAND CONTROL LOCATION IN THE FIELD.
4. PROVIDE INLET VELOCITY SENSOR.
5. SCHEDULE TOTAL PRESSURE DROP ACROSS PRIMARY AIR VALVE IS APPLICABLE AT MAXIMUM AIRFLOW SETPOINT.
6. CONTROLS AND CONTROLLER TO BE PROVIDED BY ATC CONTRACTOR.
7. PROVIDE 1" LINER FOR 20'-0" DOWNSTREAM OF ALL VAV BOXES.
8. PROVIDE SOUND ATTENUATOR.

HVAC GENERAL NOTES

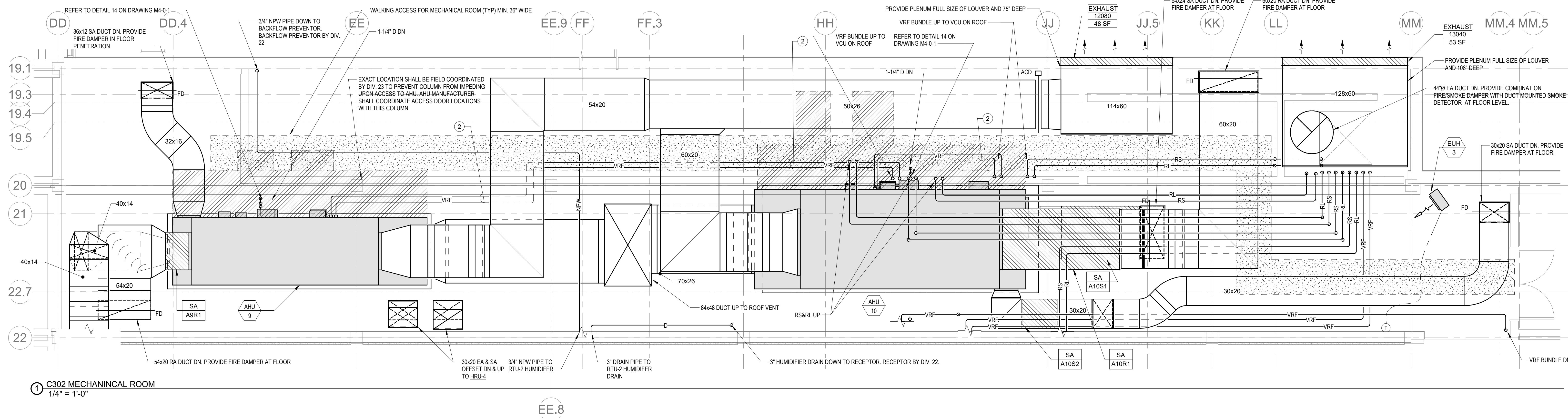
1. PROVIDE MANUAL BALANCING DAMPER, BALANCE DAMPER TO AN AIRFLOW OF 25 CFM.
2. VRF REFRIGERANT PIPING IS SHOWN IN A SINGLE LINE DIAGRAMMATIC LAYOUT FOR CLARITY. REFER TO THE M2 SERIES DRAWINGS FOR DETAILS ON VRF SYSTEM PIPING SIZES AND QUANTITIES. ALL LENGTHS ARE TO BE CONFIRMED IN THE FIELD AND SIZES ARE TO BE COORDINATED WITH THE VRF SYSTEM MANUFACTURER PRIOR TO ORDERING.



② A201 MECHANICAL ROOM
1/4" = 1'-0"



③ D008 AUTO TECHNOLOGY MEZZANINE
1/4" = 1'-0"



① C302 MECHANICAL ROOM
1/4" = 1'-0"

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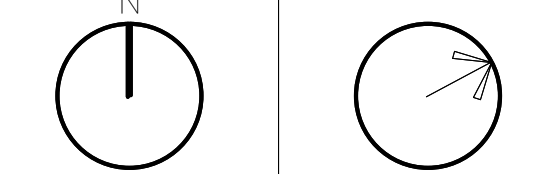
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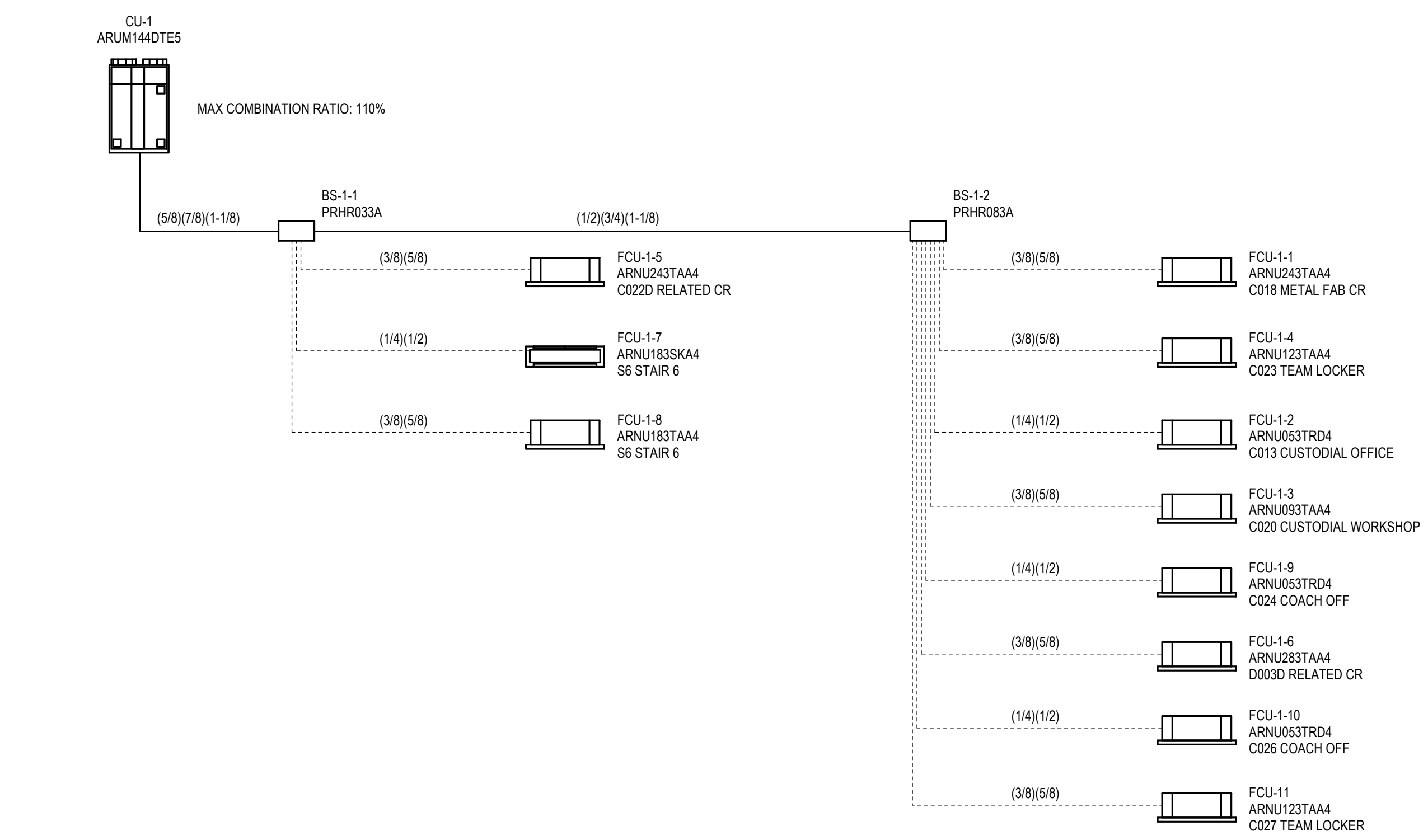
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Job No.: 60-20-409

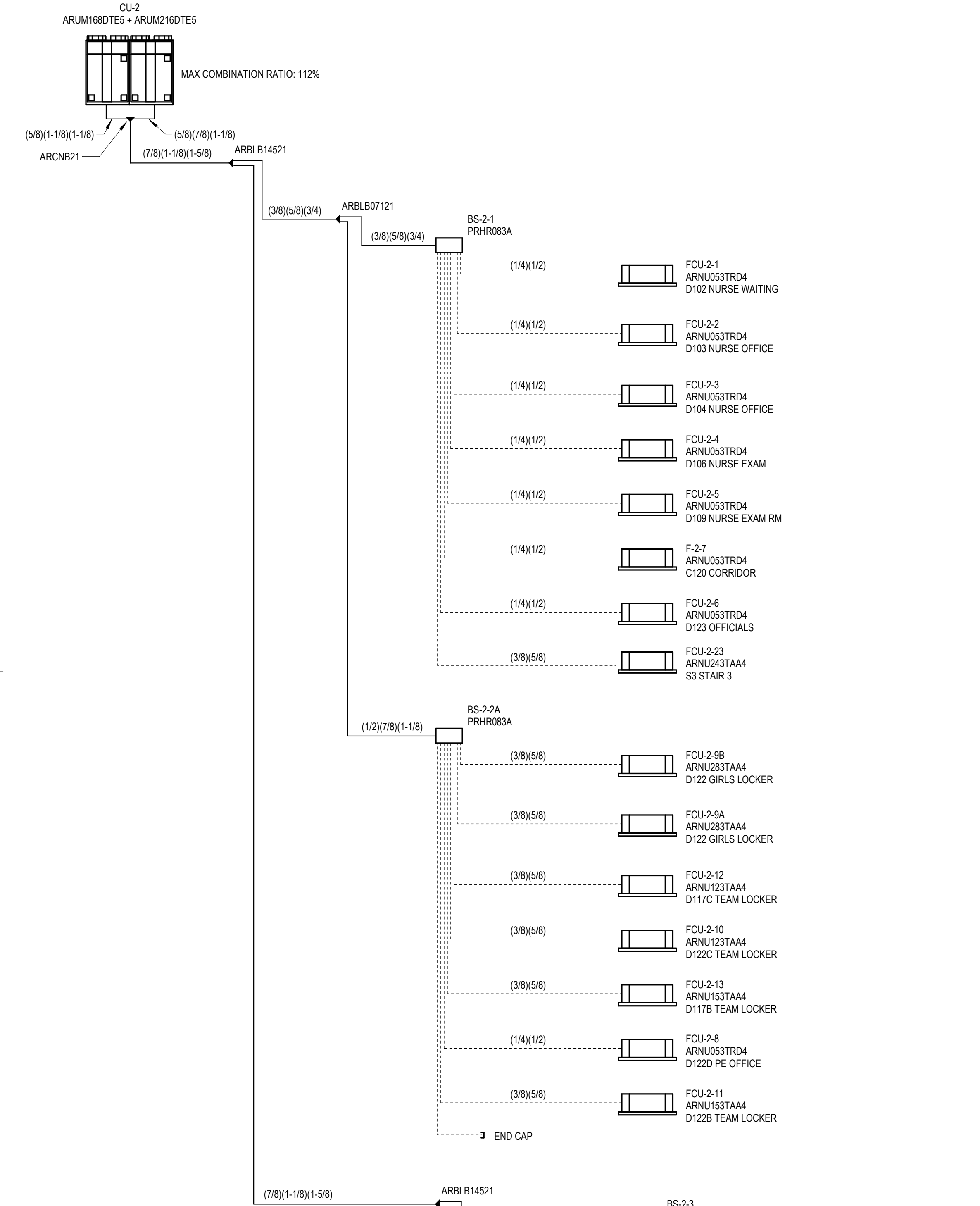
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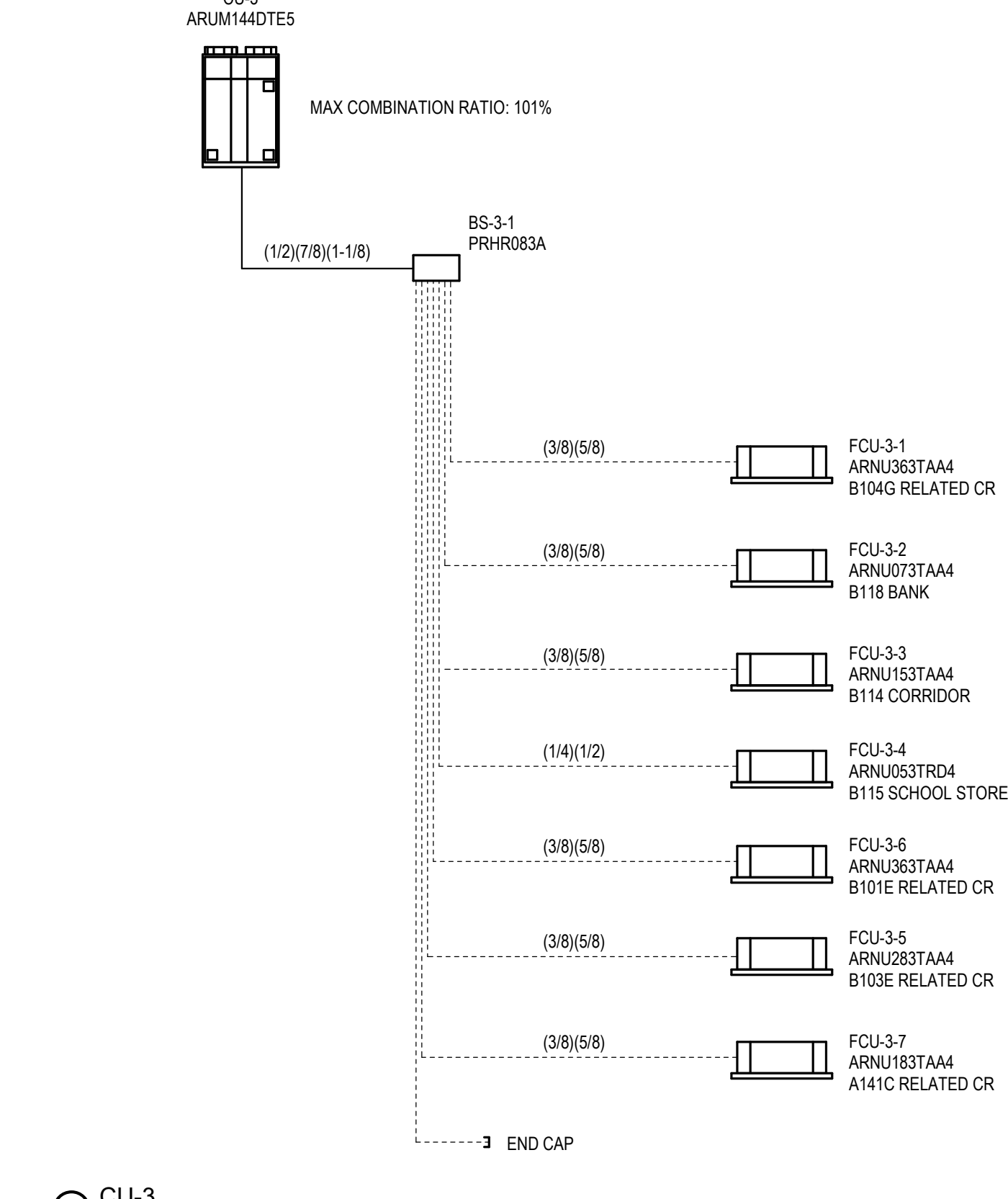
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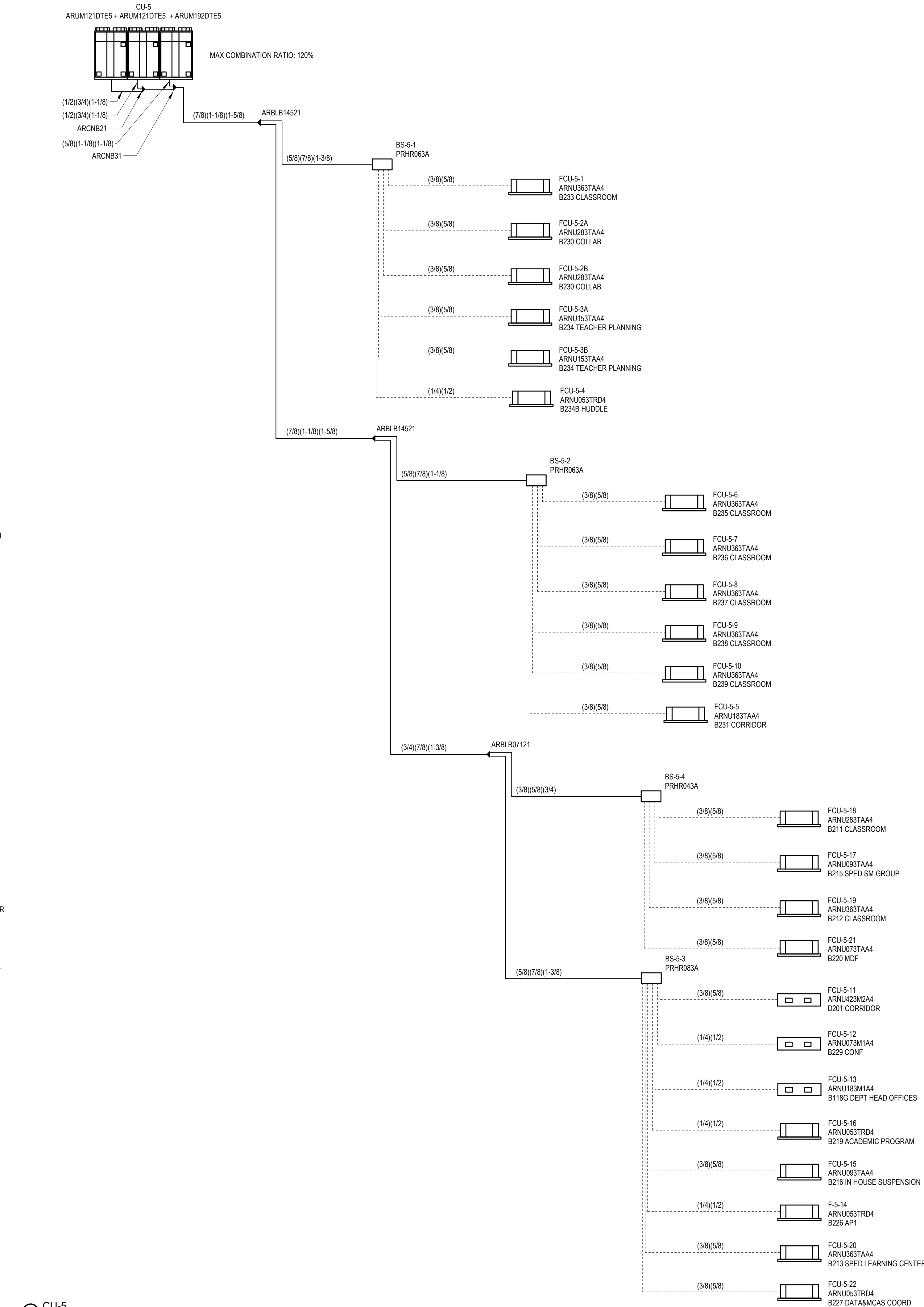
1 CU-1
NTS



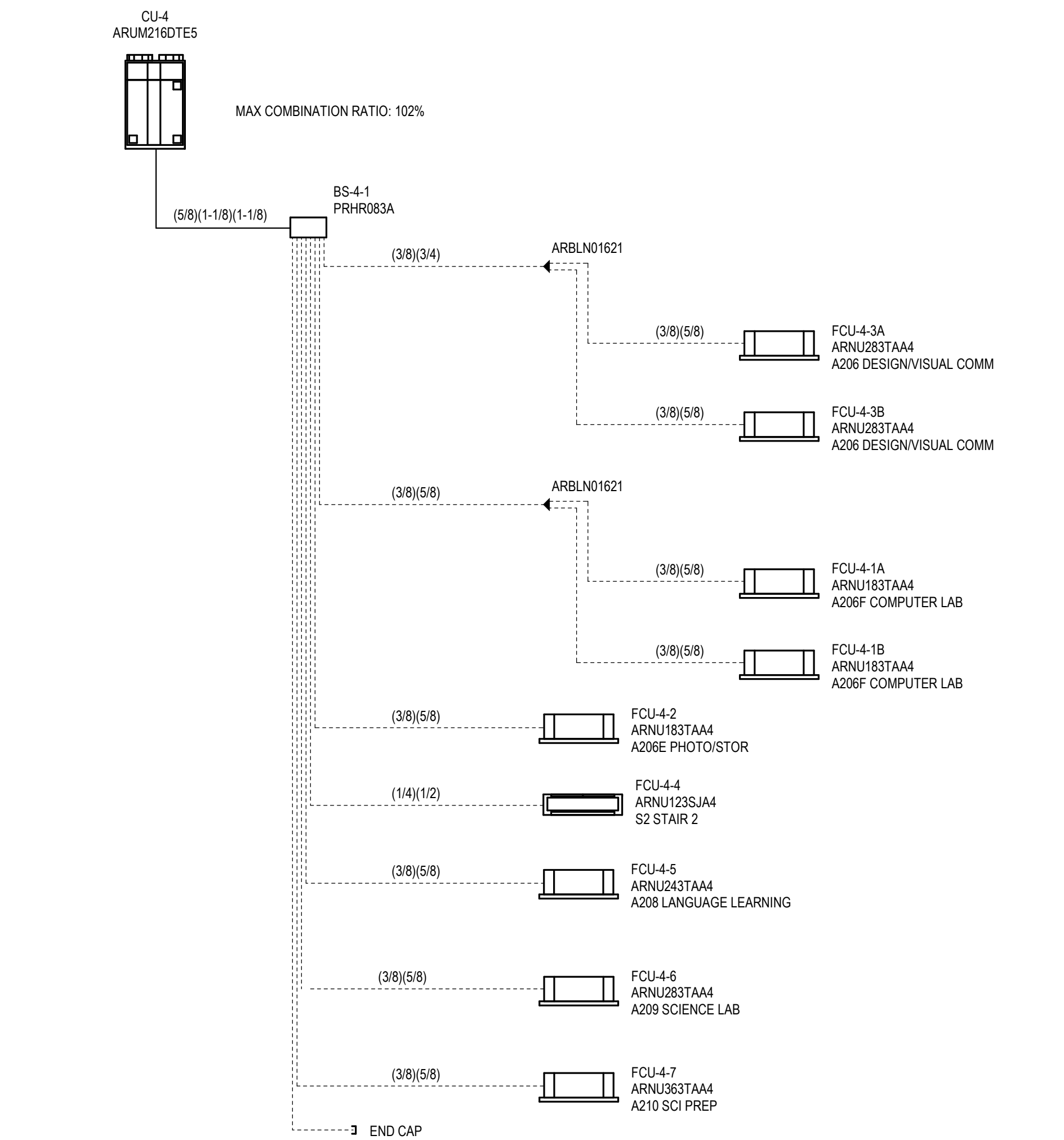
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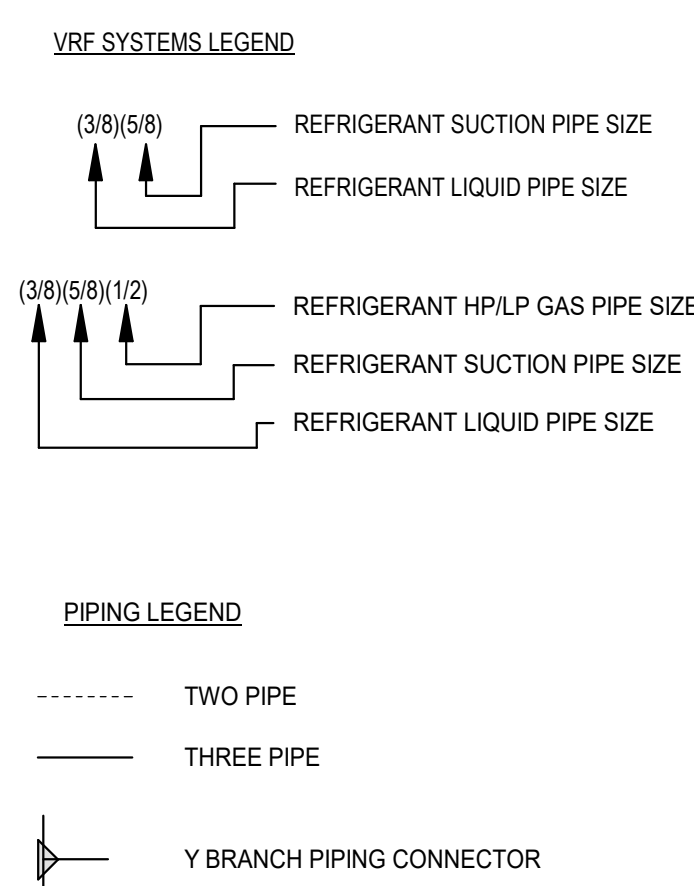
3 CU-3
NTS



4 CU-4
NTS



5 CU-5
NTS



6 VRF PIPING DIAGRAM LEGEND
NTS

- VRF SYSTEM DIAGRAM NOTES:**
1. PIPING SIZES AND OVERALL LENGTHS AS SHOWN IN THESE DIAGRAMS SHALL BE FIELD VERIFIED BY THE HVAC CONTRACTOR AND COORDINATED BETWEEN THE HVAC CONTRACTOR AND THE VRF SYSTEM EQUIPMENT MANUFACTURER, PRIOR TO PROCUREMENT AND INSTALLATION BY THE HVAC CONTRACTOR.
 2. Y BRANCH PIPING KIT, FURNISHED BY EQUIPMENT MANUFACTURER, (TYPICAL).
 3. MODEL AND PART NUMBERS ARE BASED UPON LG.
 4. HVAC CONTRACTOR SHALL NOTE THAT THE LOCATION OF THE FIRST BRANCH IN THE VRF REFRIGERANT PIPING SYSTEM, DOWNSTREAM OF EACH AIR-COOLED CONDENSING UNIT, IS CRITICAL TO THE PROPER OPERATION OF THE SYSTEM AND SHALL BE STRICTLY ADHERED TO AS SHOWN ON THE DRAWINGS. THE HVAC CONTRACTOR SHALL CLOSELY COORDINATE THE INSTALLATION OF THE VRF SYSTEMS WITH THE VRF SYSTEM MANUFACTURER.
 5. ALL IN-LINE SYSTEM EQUIPMENT ARRANGEMENTS AND INSTALLATIONS SHALL STRICTLY ADHERE TO THESE SYSTEM DIAGRAMS, UNLESS OTHERWISE DIRECTED BY THE VRF SYSTEM MANUFACTURER.
 6. HVAC CONTRACTOR IS TO PROVIDE A MINIMUM OF 20 INCHES OF STRAIGHT REFRIGERANT PIPING LENGTH AT CONNECTION OF ALL EQUIPMENT.

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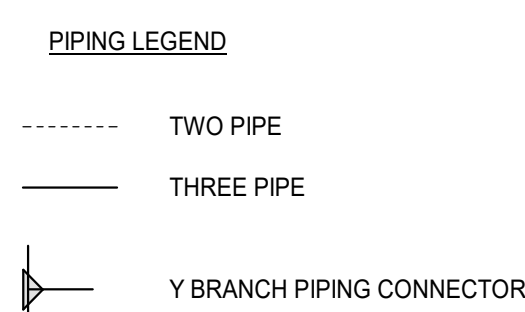
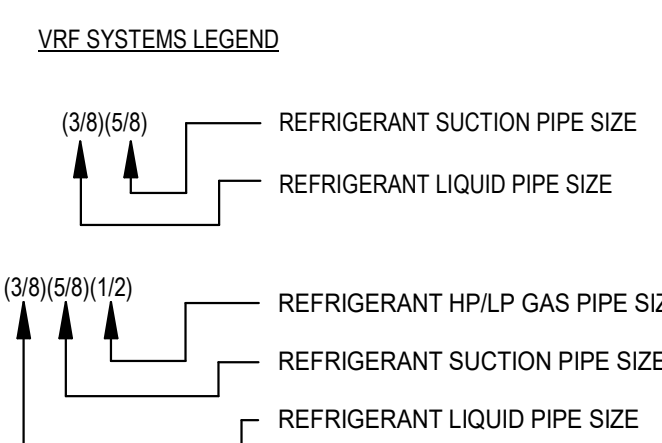
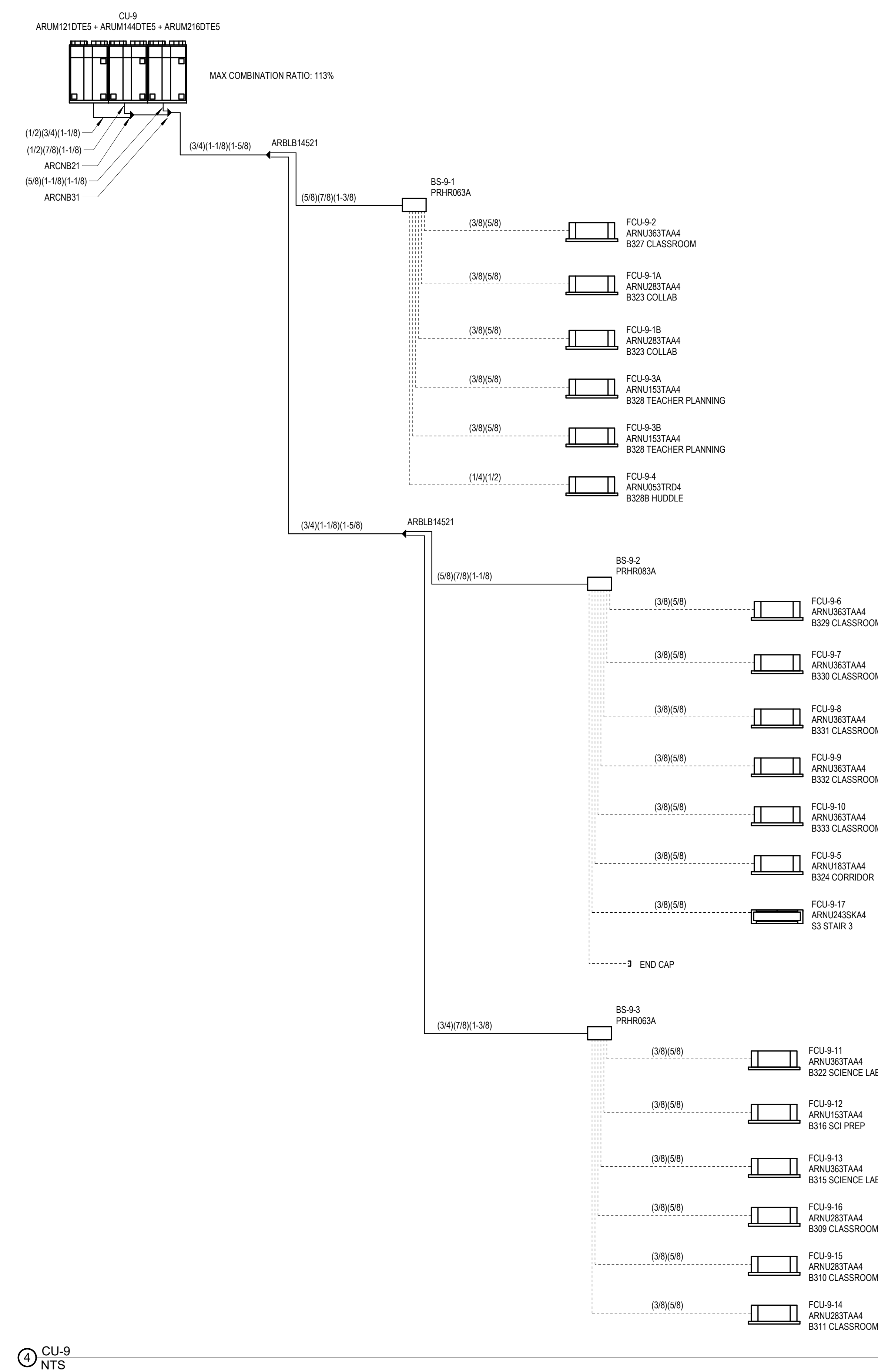
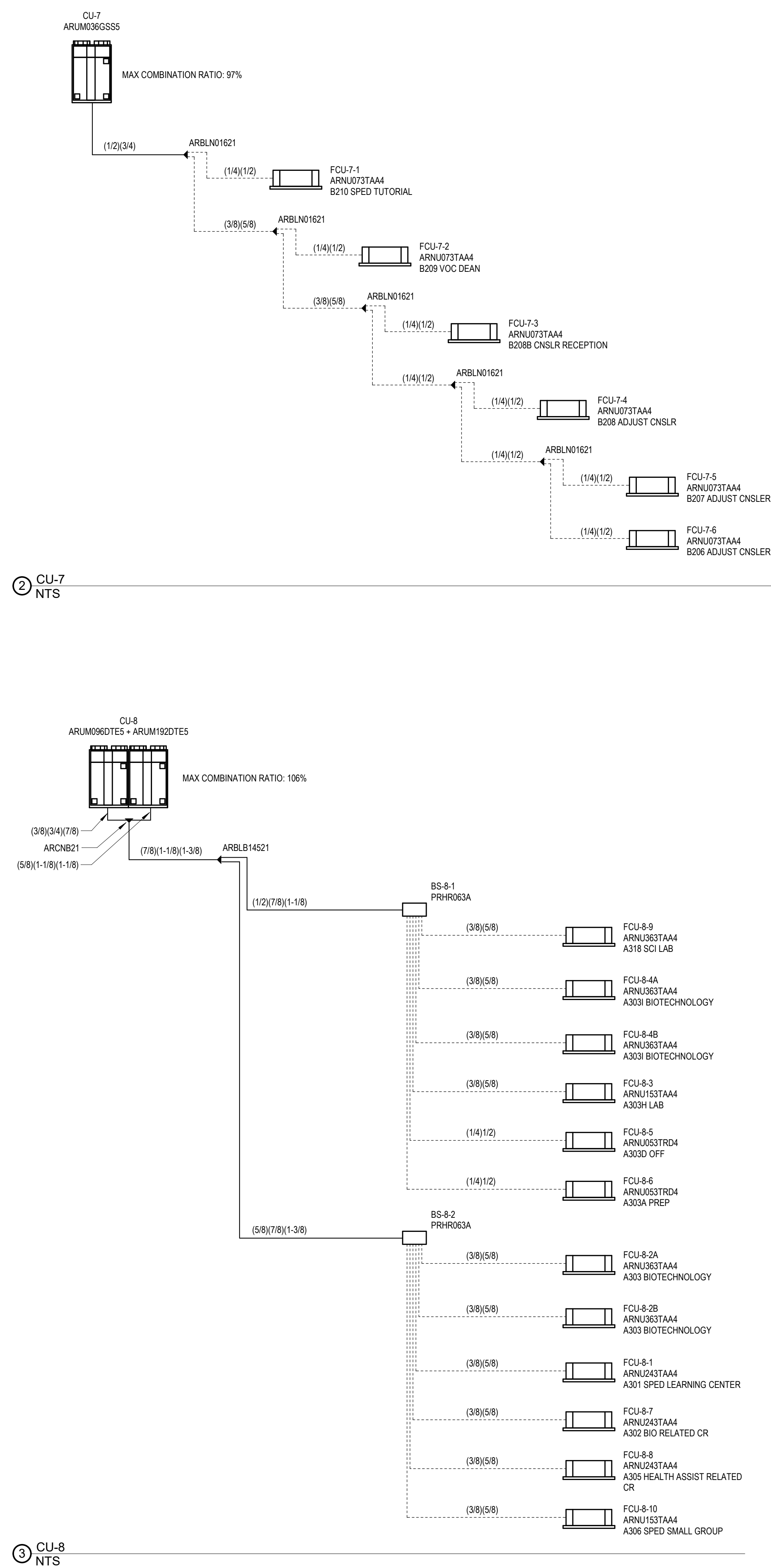
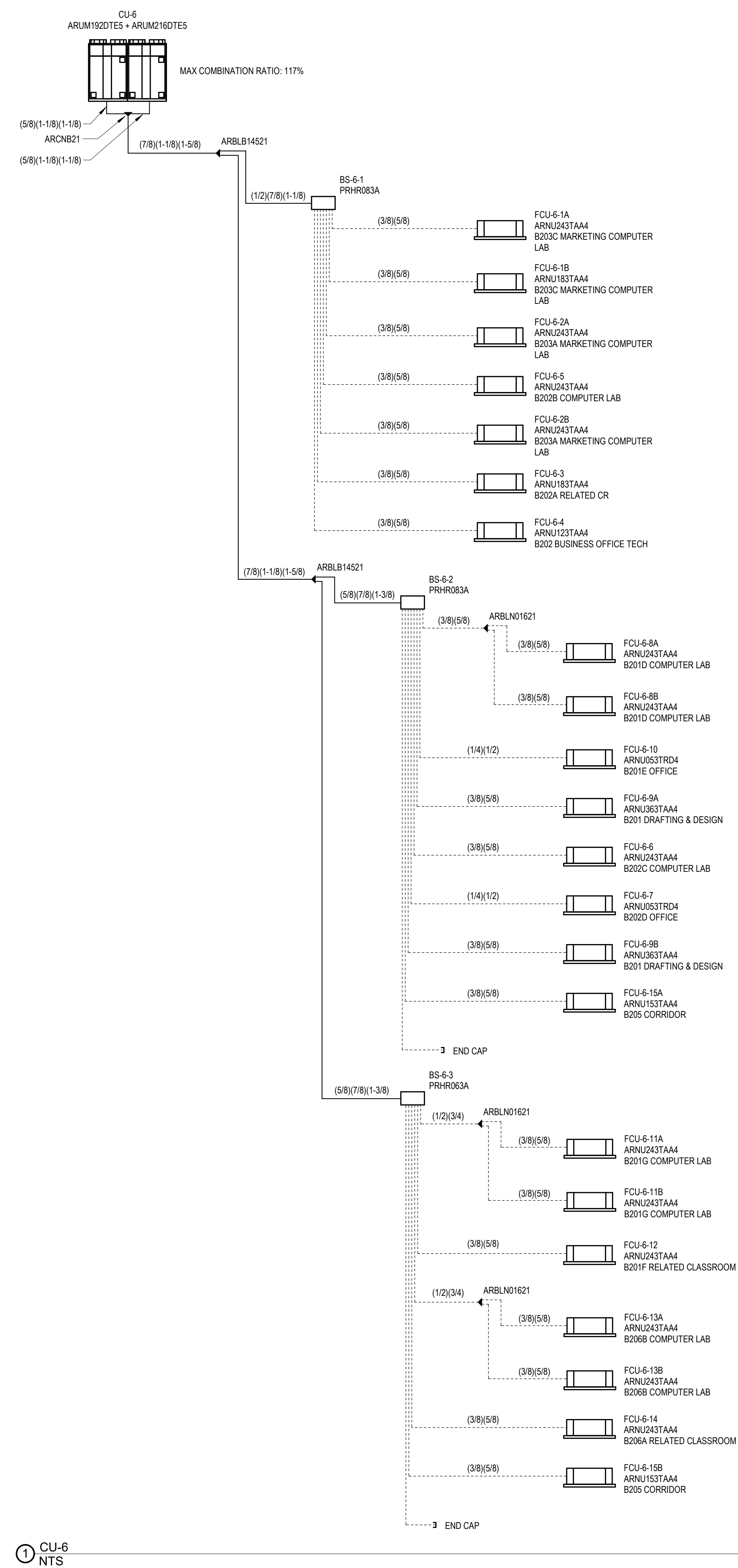
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August 28th, 2023

**MECHANICAL
VRF SYSTEM
DIAGRAMS
SHEET #1**

Scale: NTS
Job No.: 60-20-409
Drawn By: PK
Date: August 28th, 2023

M3-0-1



⑤ VRF PIPING LEGEND
NTS

VRF SYSTEM DIAGRAM NOTES:

1. PIPING SIZES AND OVERALL LENGTHS AS SHOWN IN THESE DIAGRAMS SHALL BE FIELD VERIFIED BY THE HVAC CONTRACTOR AND THE VRF SYSTEM EQUIPMENT MANUFACTURER, PRIOR TO PROCUREMENT AND INSTALLATION OF THE SYSTEMS WITH THE VRF SYSTEM MANUFACTURER.
2. Y BRANCH PIPING KIT, FURNISHED BY EQUIPMENT MANUFACTURER, (TYPICAL).
3. MODEL AND PART NUMBERS ARE BASED UPON LG.
4. HVAC CONTRACTOR SHALL NOTE THAT THE LOCATION OF THE FIRST BRANCH IN THE VRF REFRIGERANT PIPING SYSTEM SHALL BE NEAR THE CONDENSING UNIT. THE CONDENSING UNIT IS CRITICAL TO THE PROPER OPERATION OF THE SYSTEM AND SHALL BE STRICTLY ORIENTED TO THE DOWNWARD DRAINING. THE HVAC CONTRACTOR SHALL CLOSELY COORDINATE THE INSTALLATION OF THE SYSTEMS WITH THE VRF SYSTEM MANUFACTURER.
5. ALL IN-LINE SYSTEM EQUIPMENT ARRANGEMENTS AND INSTALLATIONS SHALL STRICTLY ADHERE TO THESE SYSTEMS MANUALS, UNLESS OTHERWISE DIRECTED BY THE VRF SYSTEM MANUFACTURER.
6. THE CONTRACTOR IS TO PROVIDE A MINIMUM OF 20 INCHES OF STRAIGHT REFRIGERANT PIPE LENGTH AT CONDENSING UNIT INLET.

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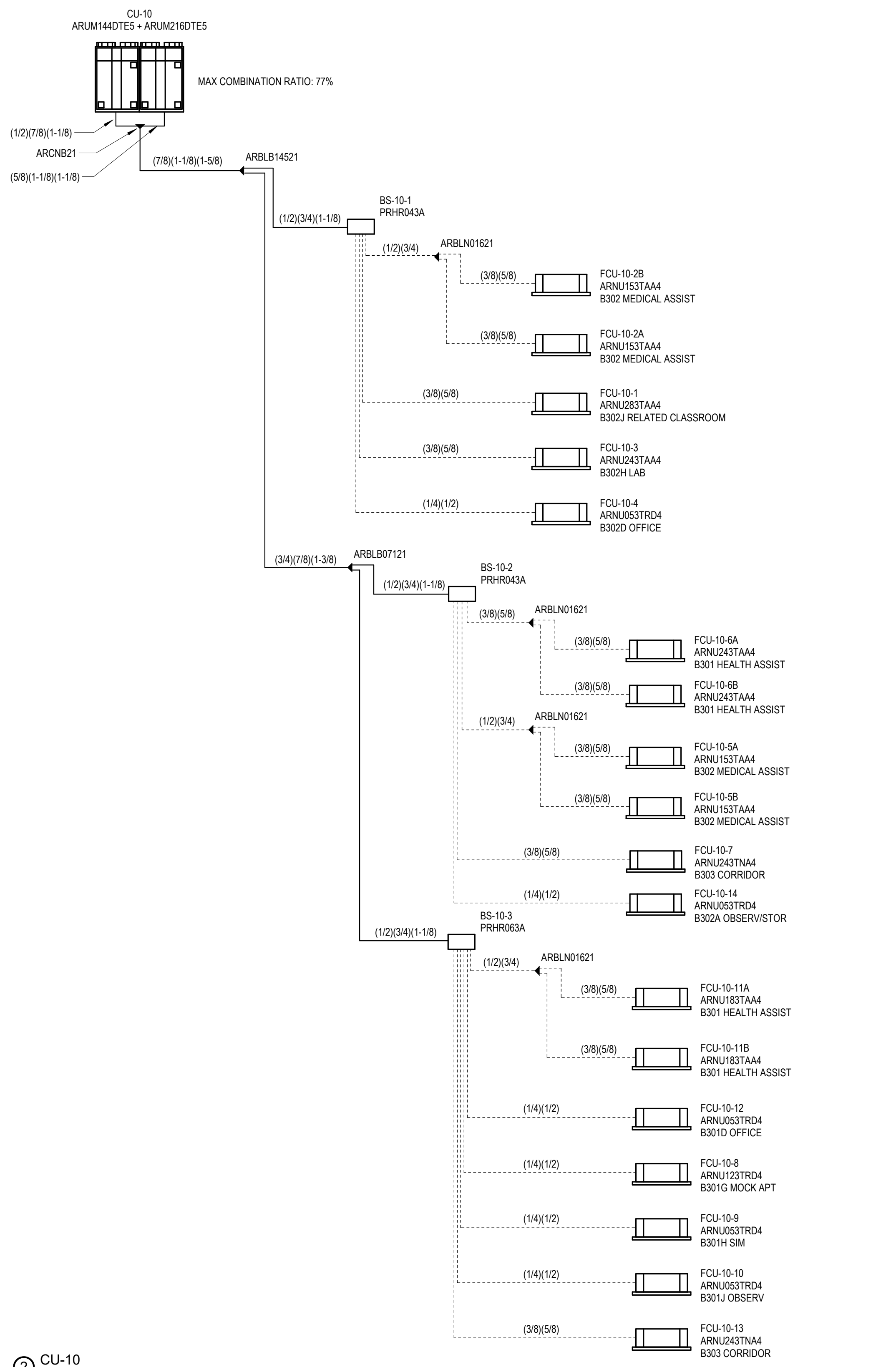
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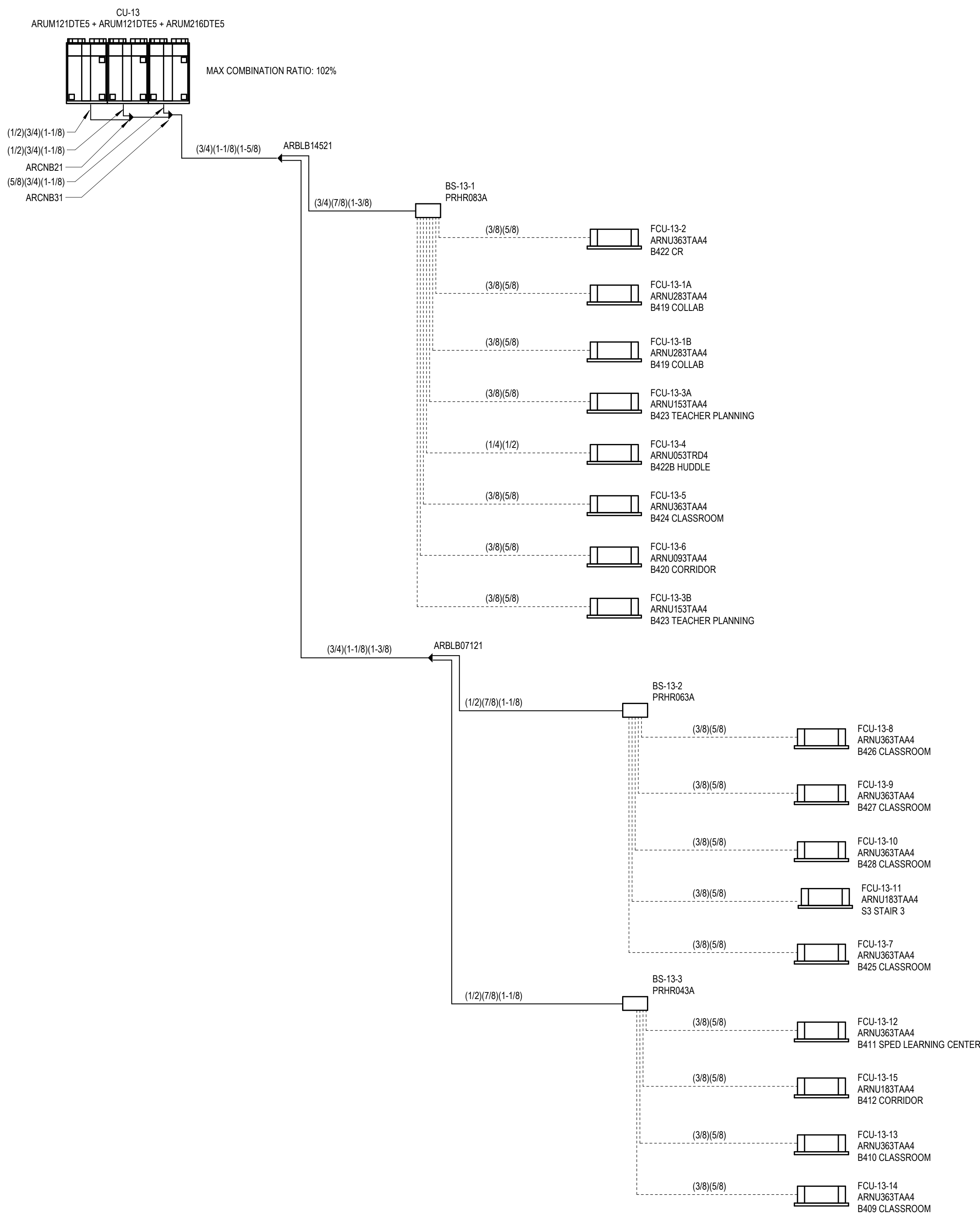
**MECHANICAL
VRF SYSTEM
DIAGRAMS
SHEET #2**

Scale: NTS
Job No.: 60-20-409
Drawn By: PK
Date: August 28th, 2023

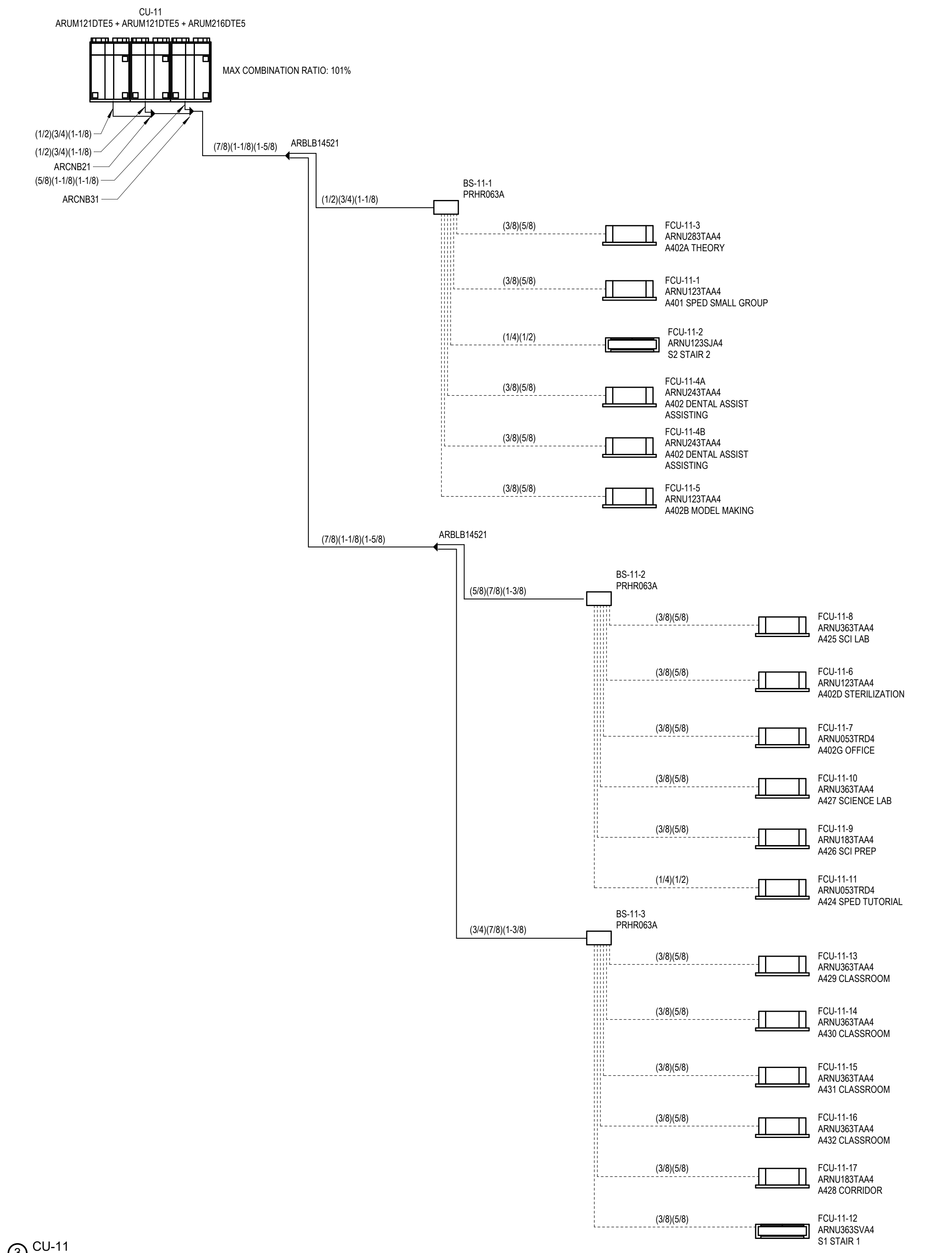
M3-0-2



② CU-10
NTS

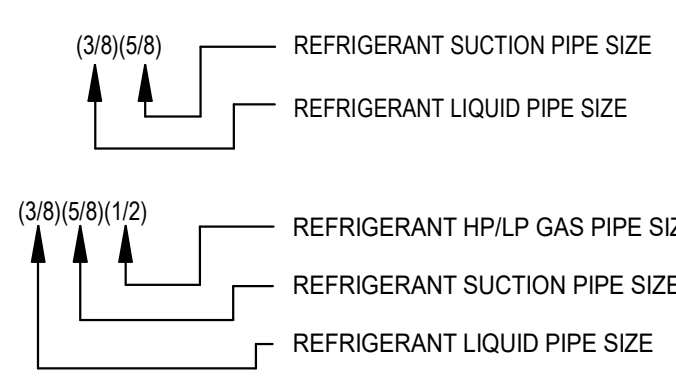


① CU-13
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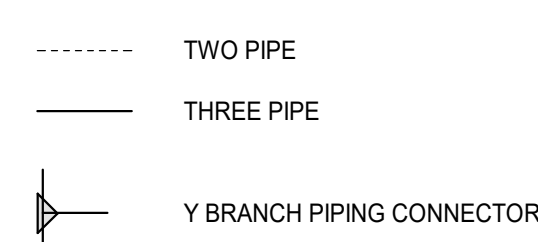


③ CU-11
NTS

VRF SYSTEMS LEGEND



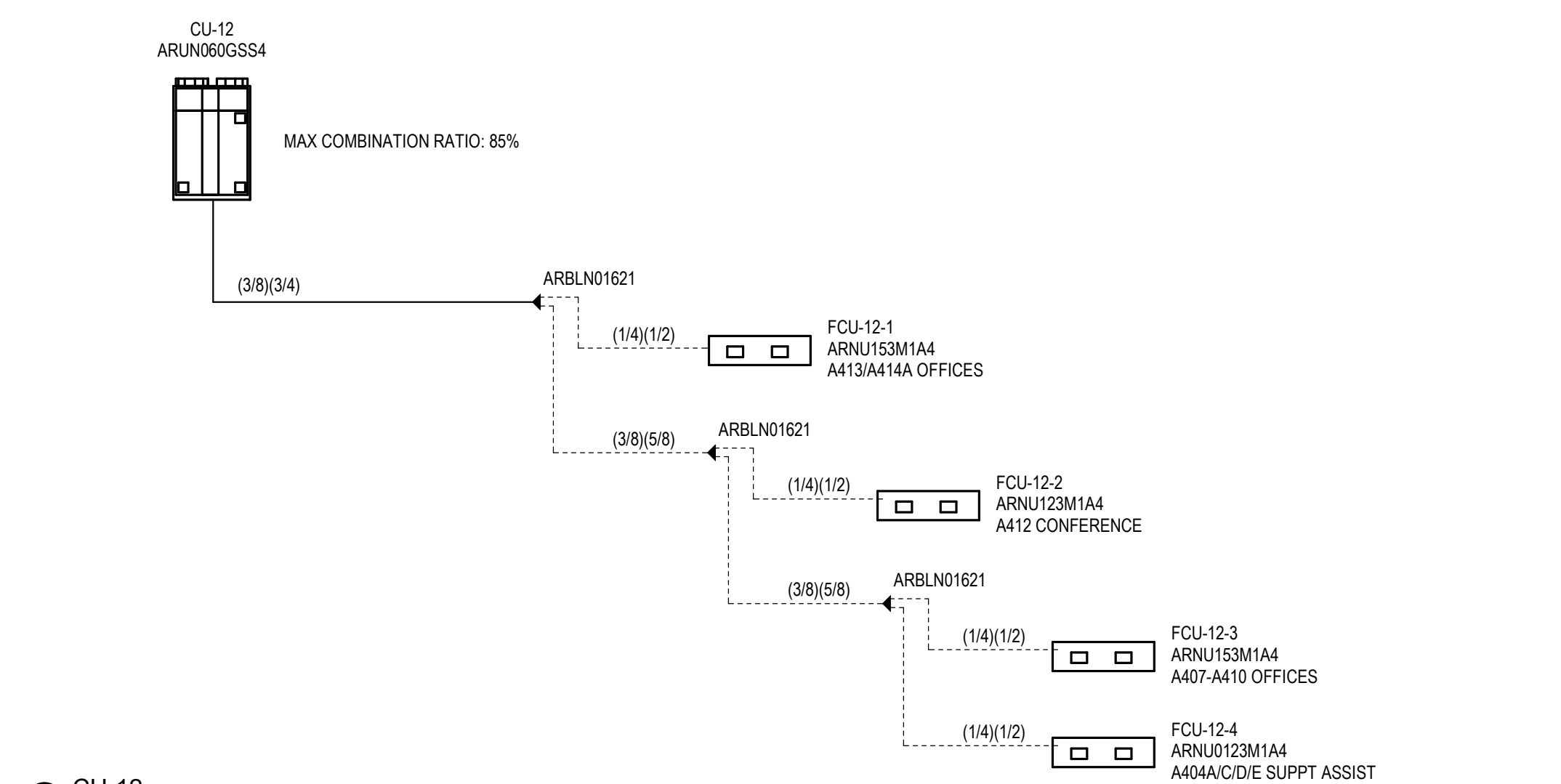
PIPING LEGEND



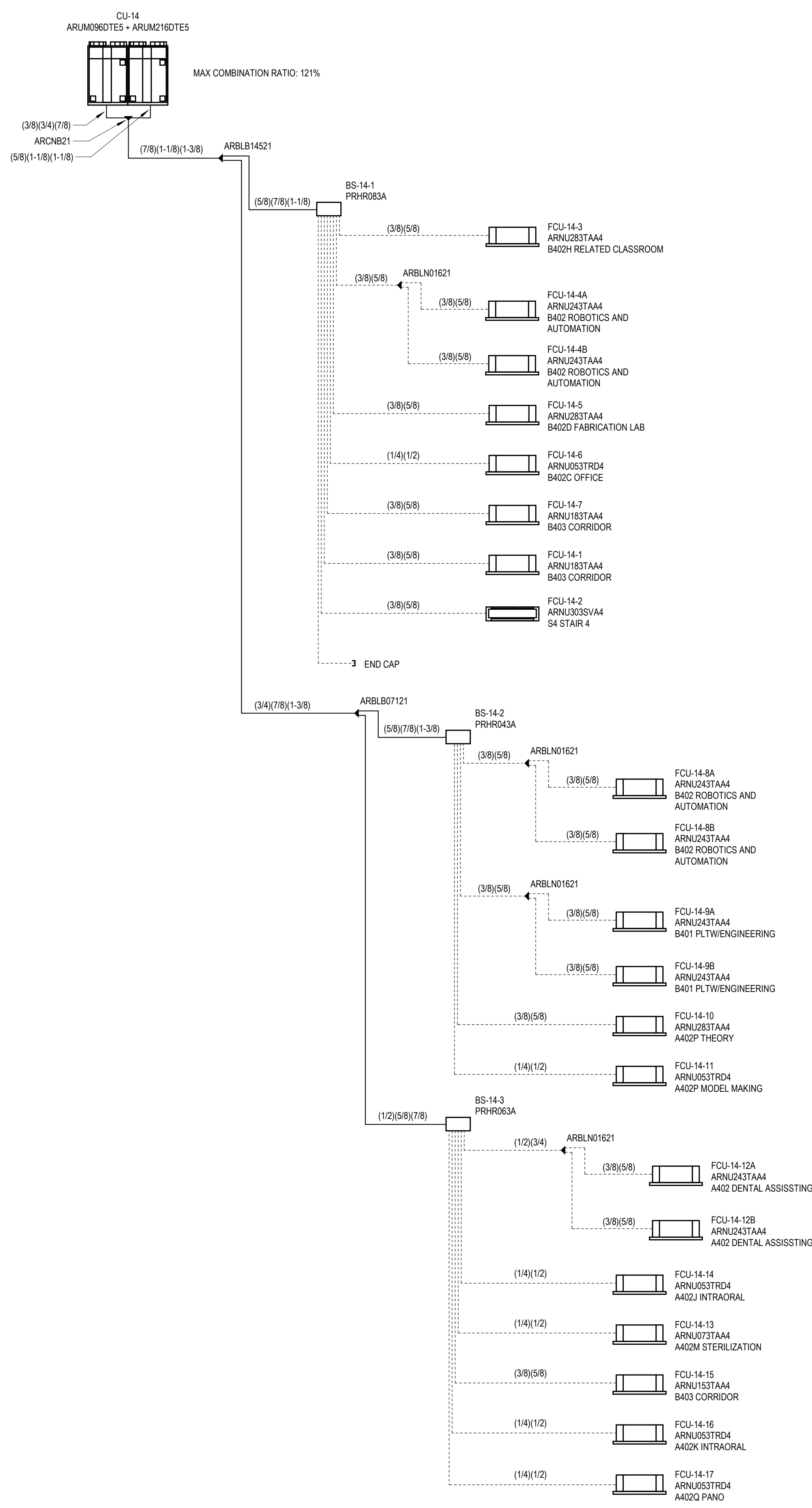
⑥ VRF PIPING LEGEND
NTS

VRF SYSTEM DIAGRAM NOTES:

1. PIPING SIZES AND OVERALL LENGTHS AS SHOWN IN THESE DIAGRAMS SHALL BE FIELD VERIFIED BY THE HVAC CONTRACTOR AND COORDINATED BETWEEN THE HVAC CONTRACTOR AND THE VRF SYSTEM EQUIPMENT MANUFACTURER. PRIOR TO PROCUREMENT AND INSTALLATION BY THE HVAC CONTRACTOR.
2. Y BRANCH PIPING KIT, FURNISHED BY EQUIPMENT MANUFACTURER, (TYPICAL).
3. MODEL AND PART NUMBERS ARE BASED UPON LG.
4. HVAC CONTRACTOR SHALL NOTE THAT THE LOCATION OF THE FIRST BRANCH IN THE VRF REFRIGERANT PIPING SYSTEM, DOWNSTREAM OF EACH AIR-COOLED CONDENSING UNIT, IS CRITICAL TO THE PROPER OPERATION OF THE SYSTEM AND SHALL BE STRICTLY ADHERED TO AS SHOWN ON THE DRAWINGS. THE HVAC CONTRACTOR SHALL CLOSELY COORDINATE THE INSTALLATION OF THE VRF SYSTEMS WITH THE VRF SYSTEM MANUFACTURER.
5. ALL IN-LINE SYSTEM EQUIPMENT ARRANGEMENTS AND INSTALLATIONS SHALL STRICTLY ADHERE TO THESE SYSTEM DIAGRAMS, UNLESS OTHERWISE DIRECTED BY THE VRF SYSTEM MANUFACTURER.
6. HVAC CONTRACTOR IS TO PROVIDE A MINIMUM OF 20 INCHES OF STRAIGHT REFRIGERANT PIPING LENGTH AT CONNECTION OF ALL EQUIPMENT.



④ CU-12
NTS



⑤ CU-14
NTS

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Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074
260 Charles Street
Studio 300
Waltham, MA
02453
Planning | Architecture | Interior Design
Tel: 617.984.1700
www.dra-inc.com

Northeast
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200 WEST 14TH STREET, SUITE 200
NEW YORK, NY 10011-4209
TEL: 212.693.4600 FAX: 212.693.4601
WWW.BALA-ENGINEERS.COM
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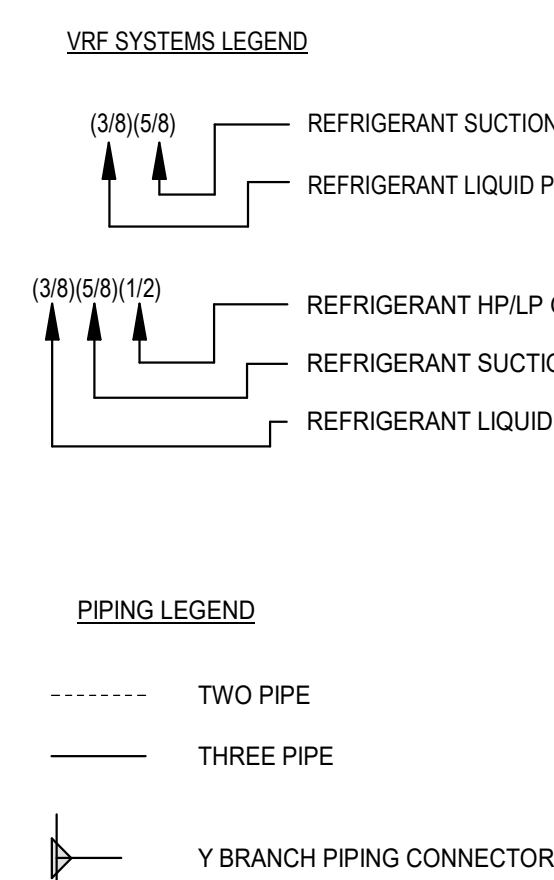
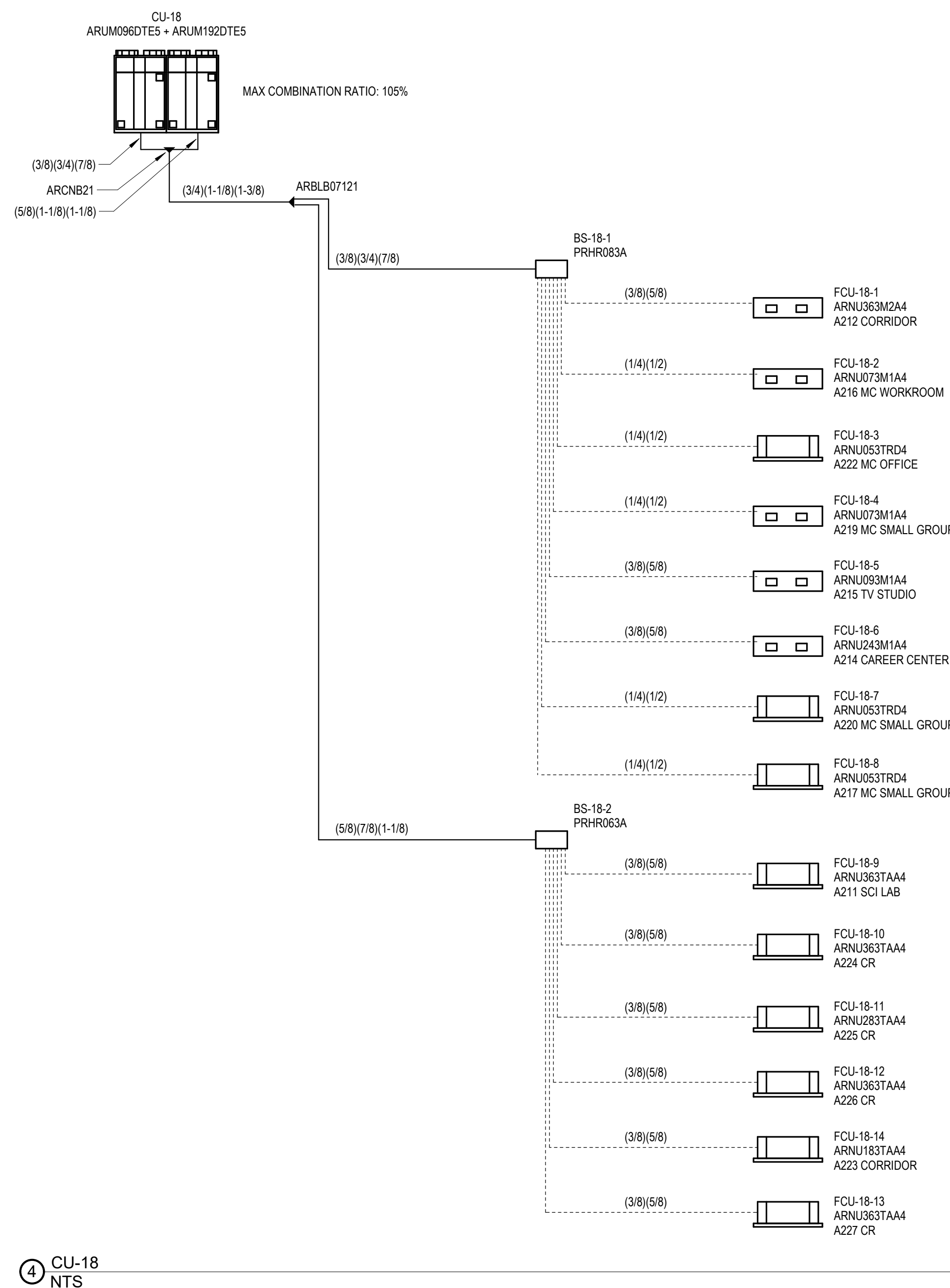
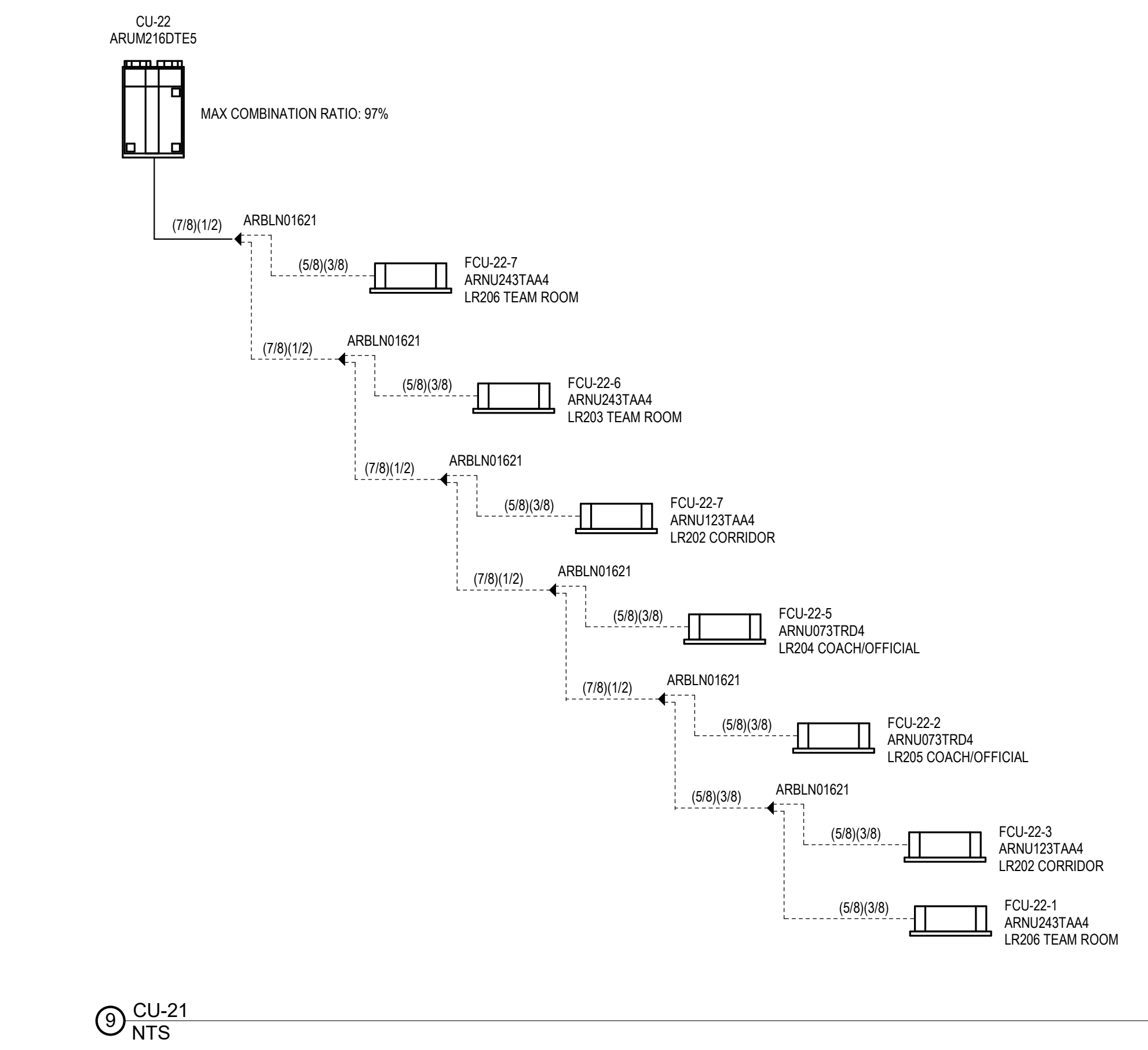
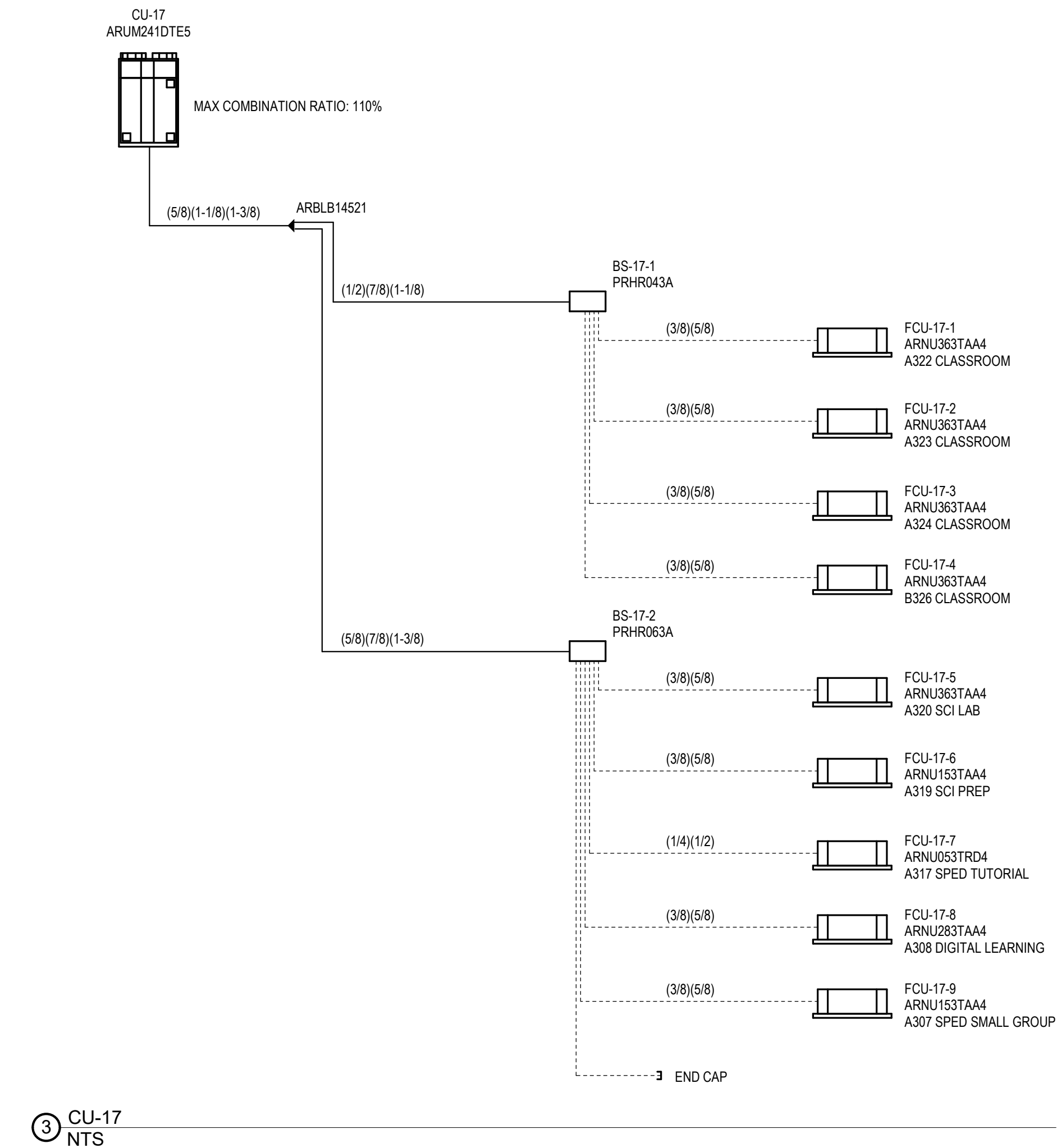
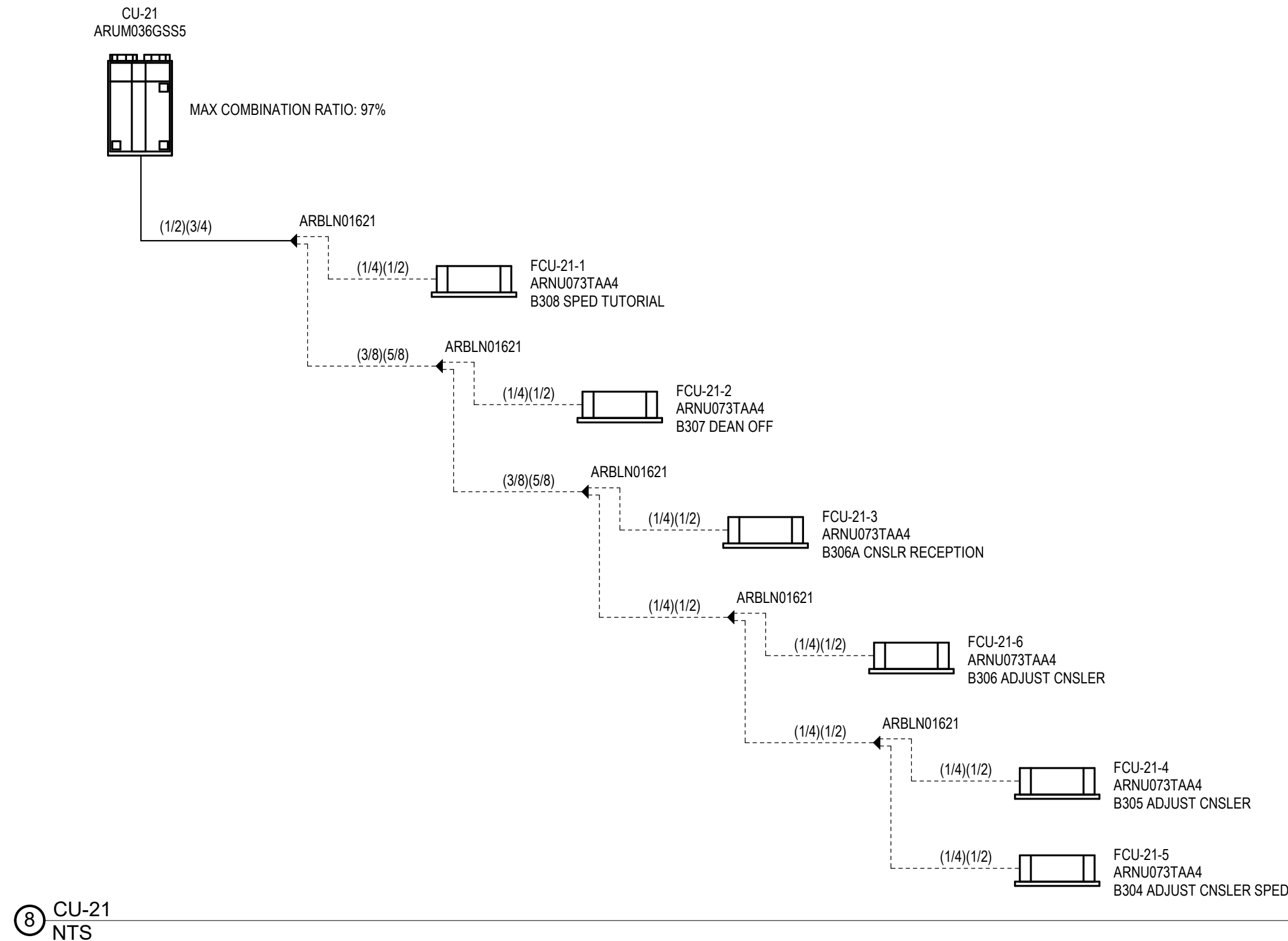
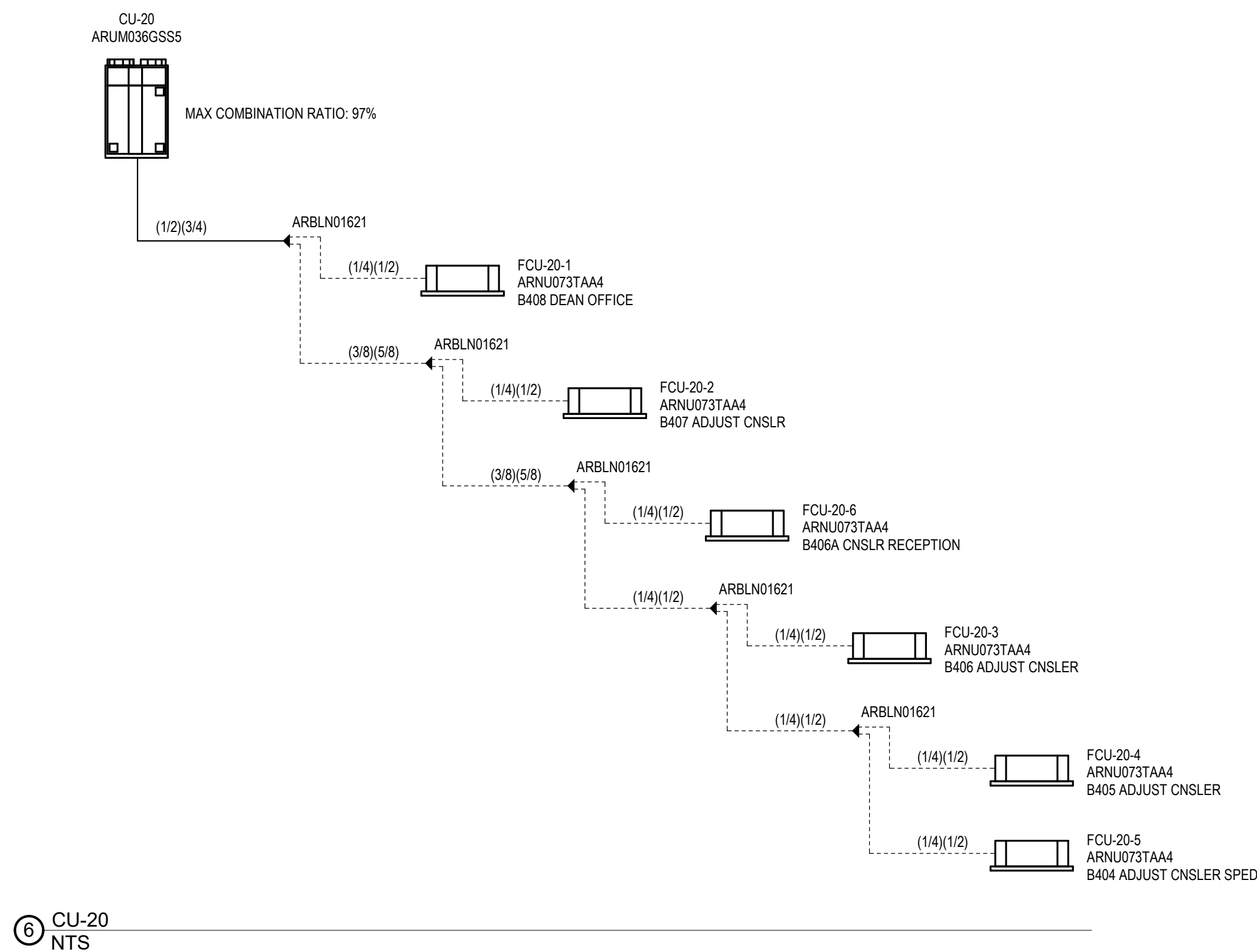
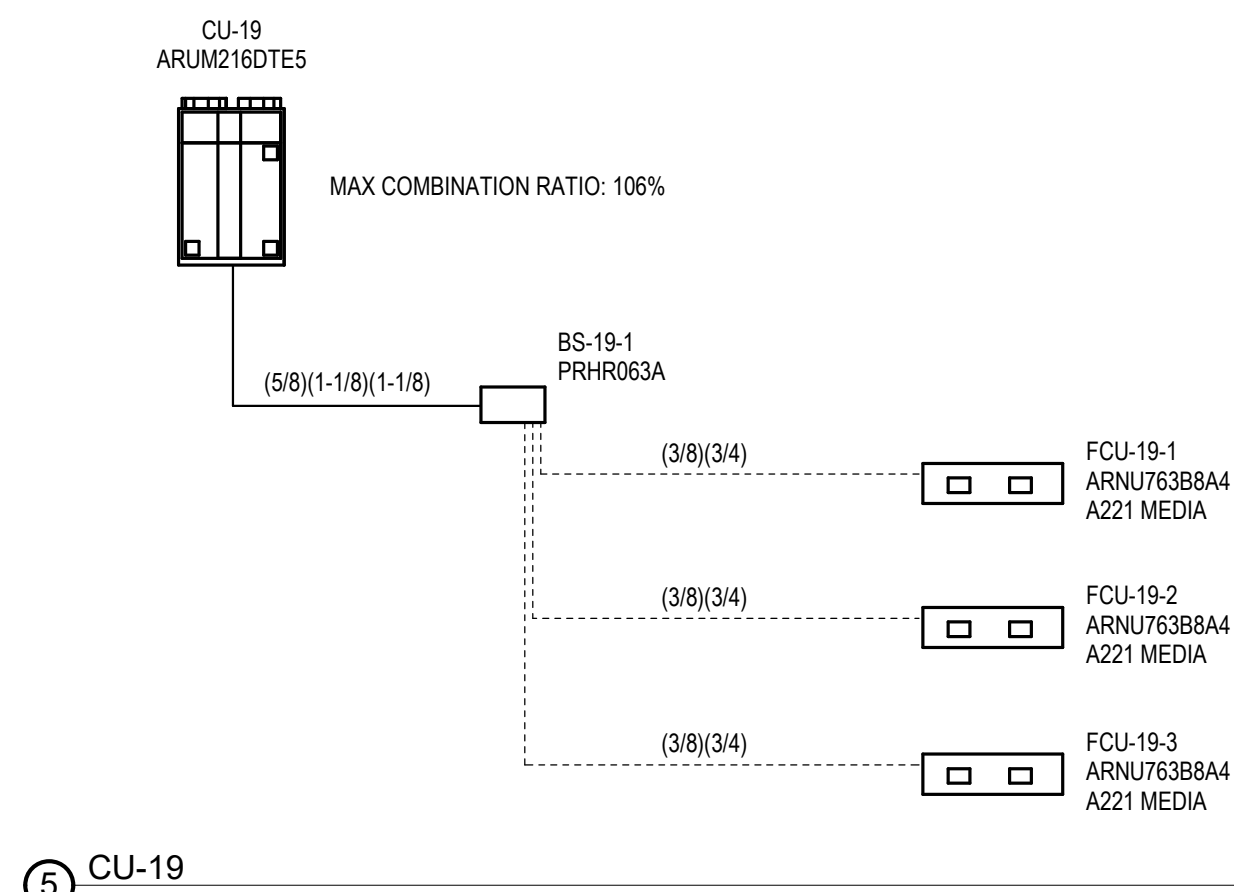
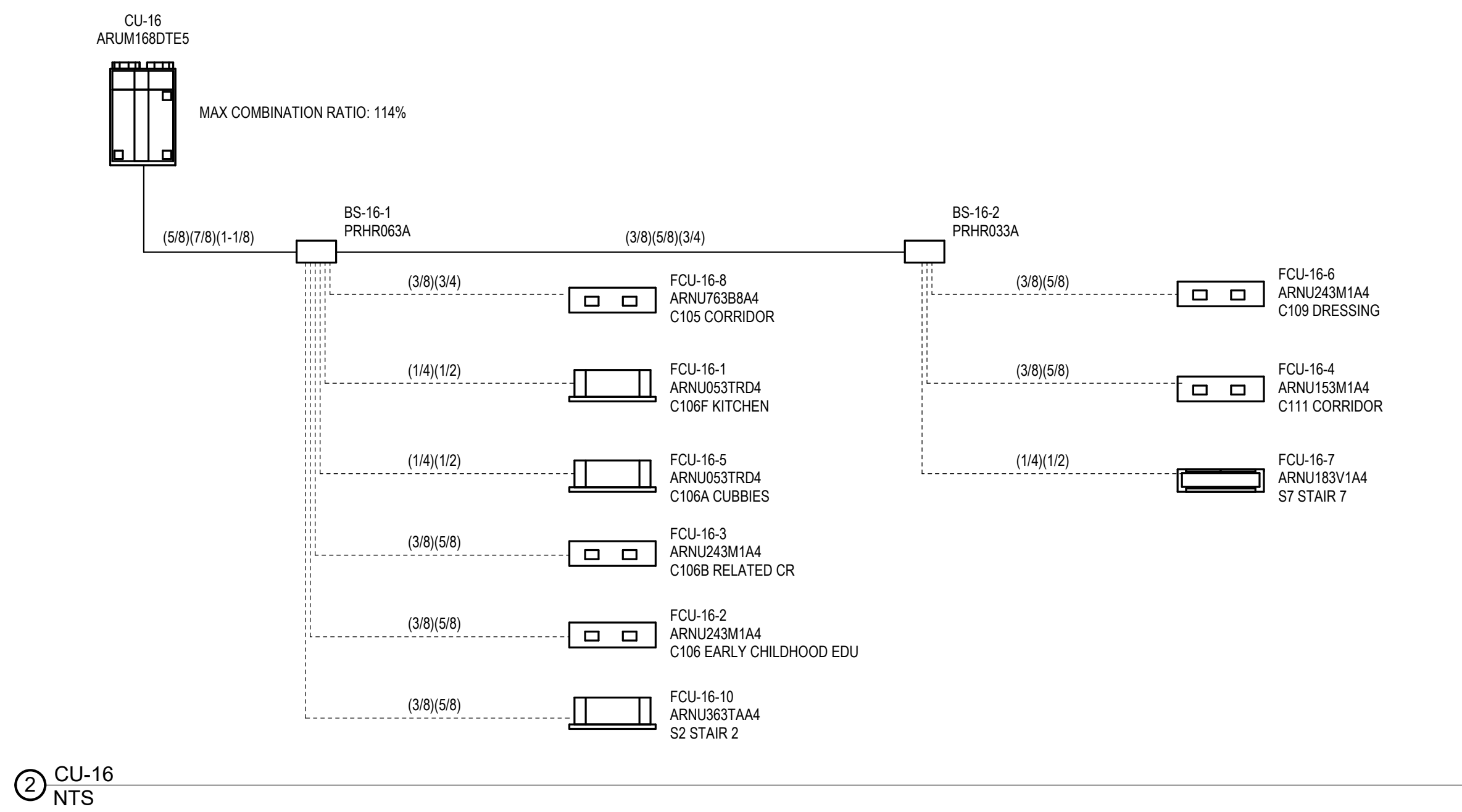
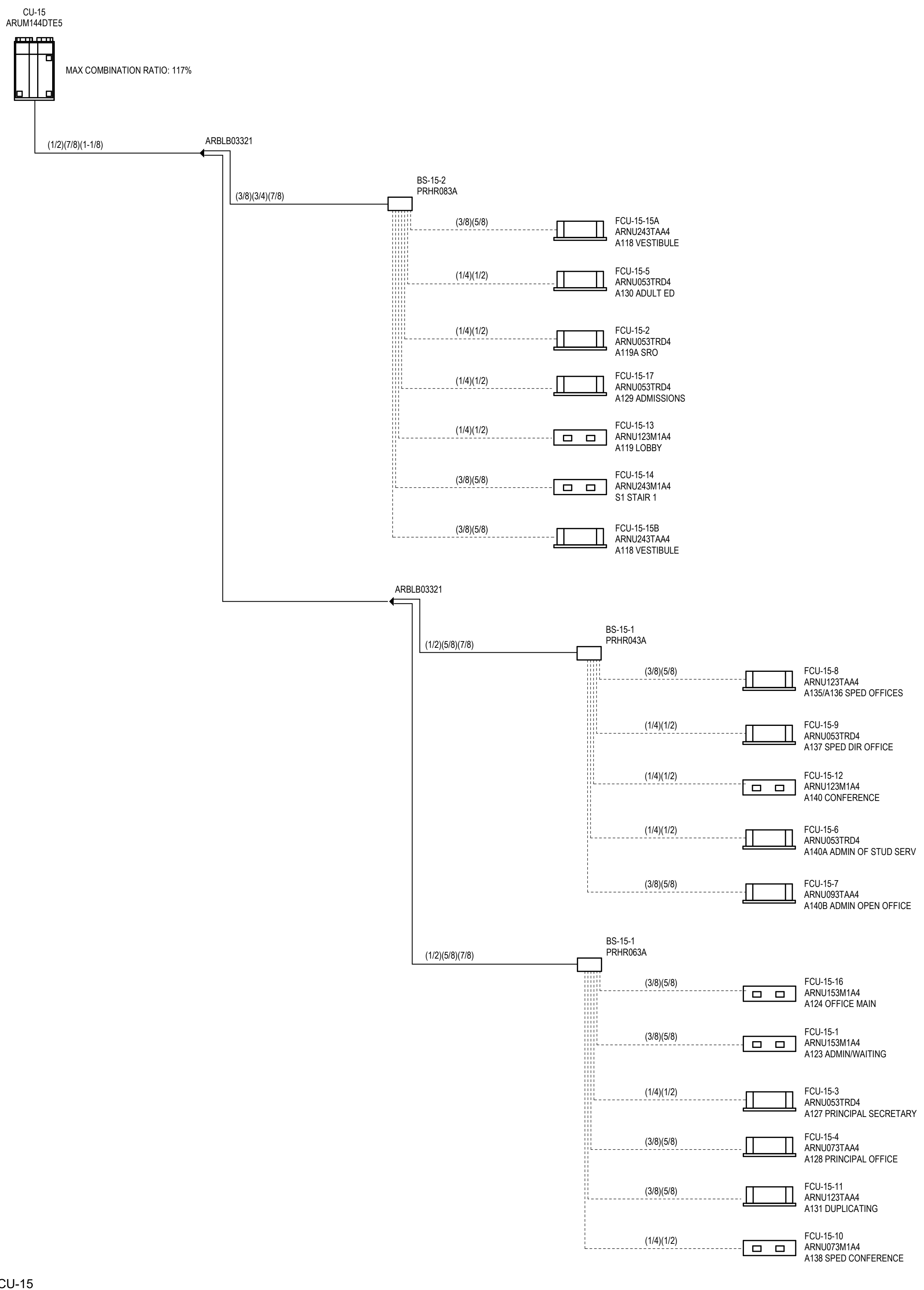
BID SET

August 28th, 2023

MECHANICAL
VRF SYSTEM
DIAGRAMS
SHEET #3

Scale: NTS
Job No.: 60-20-409
Drawn By: PJK
Date: August 28th, 2023

M3-0-3



- VRF SYSTEM DIAGRAM NOTES:
1. PIPING SIZES AND OVERALL LENGTHS AS SHOWN IN THESE DIAGRAMS SHALL BE FIELD VERIFIED BY THE HVAC CONTRACTOR AND COORDINATED BETWEEN THE HVAC CONTRACTOR AND THE VRF SYSTEM EQUIPMENT MANUFACTURER, PRIOR TO PROCUREMENT AND INSTALLATION BY THE HVAC CONTRACTOR.
 2. Y BRANCH PIPING KIT, FURNISHED BY EQUIPMENT MANUFACTURER, (TYPICAL).
 3. MODEL AND PART NUMBERS ARE BASED UPON I.G.
 4. HVAC CONTRACTOR SHALL NOTE THAT THE LOCATION OF THE FIRST BRANCH IN THE VRF REFRIGERANT PIPING SYSTEM, DOWNSTREAM OF EACH AIR-COOLED CONDENSING UNIT, IS CRITICAL TO THE PROPER OPERATION OF THE SYSTEM AND SHALL BE STRICTLY ADHERED TO AS SHOWN ON THE DRAWINGS. THE HVAC CONTRACTOR SHALL CLOSELY COORDINATE THE INSTALLATION OF THE VRF SYSTEMS WITH THE VRF SYSTEM MANUFACTURER.
 5. ALL IN-LINE SYSTEM EQUIPMENT ARRANGEMENTS AND INSTALLATIONS SHALL STRICTLY ADHERE TO THESE SYSTEM DIAGRAMS, UNLESS OTHERWISE DIRECTED BY THE VRF SYSTEM MANUFACTURER.
 6. HVAC CONTRACTOR IS TO PROVIDE A MINIMUM OF 20 INCHES OF STRAIGHT REFRIGERANT PIPING LENGTH AT CONNECTION OF ALL EQUIPMENT.



Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074

280 Charles Street
Studio 300
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02453

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Tel: 617.984.1700
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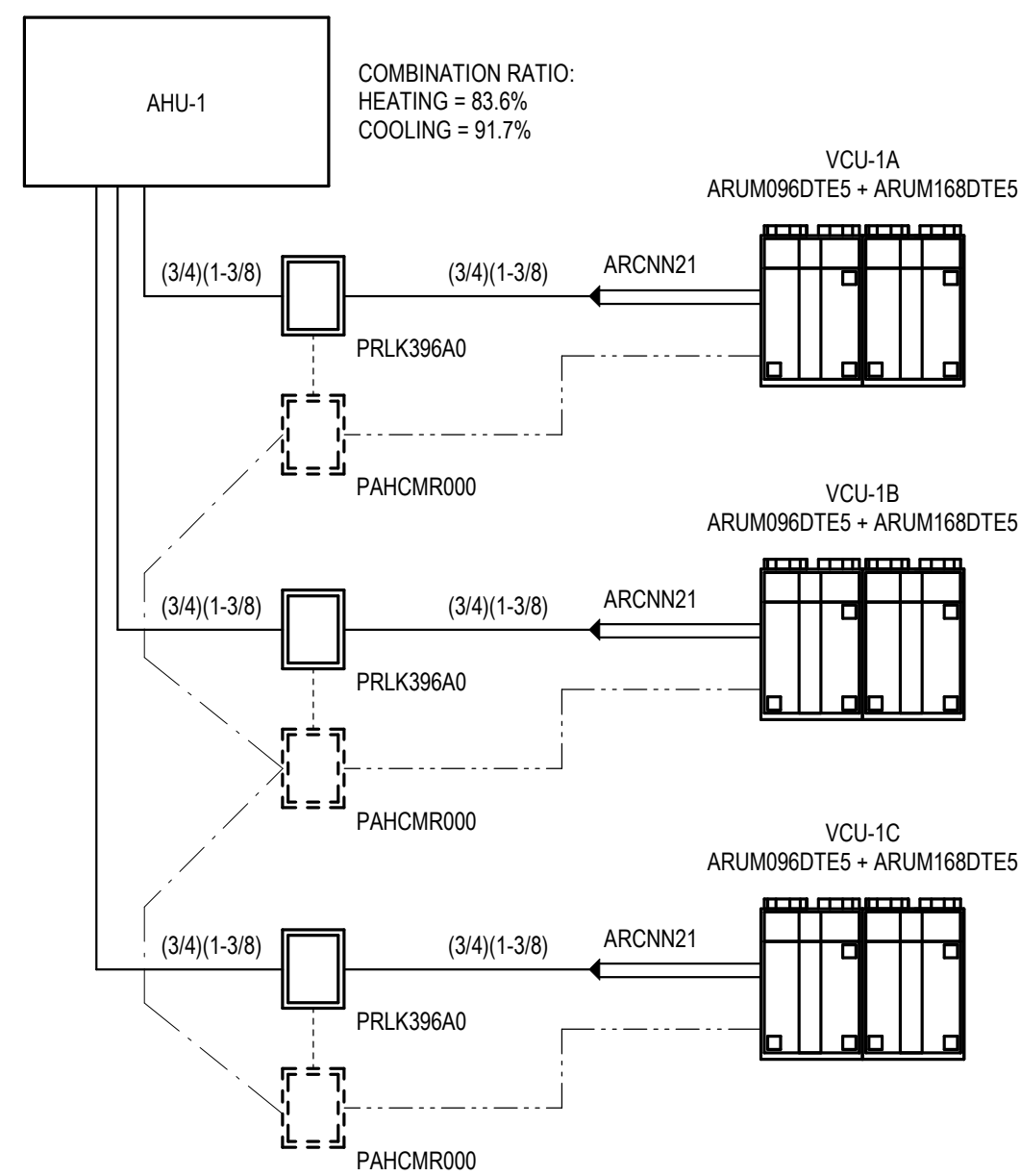
BID SET

August 28th, 2023

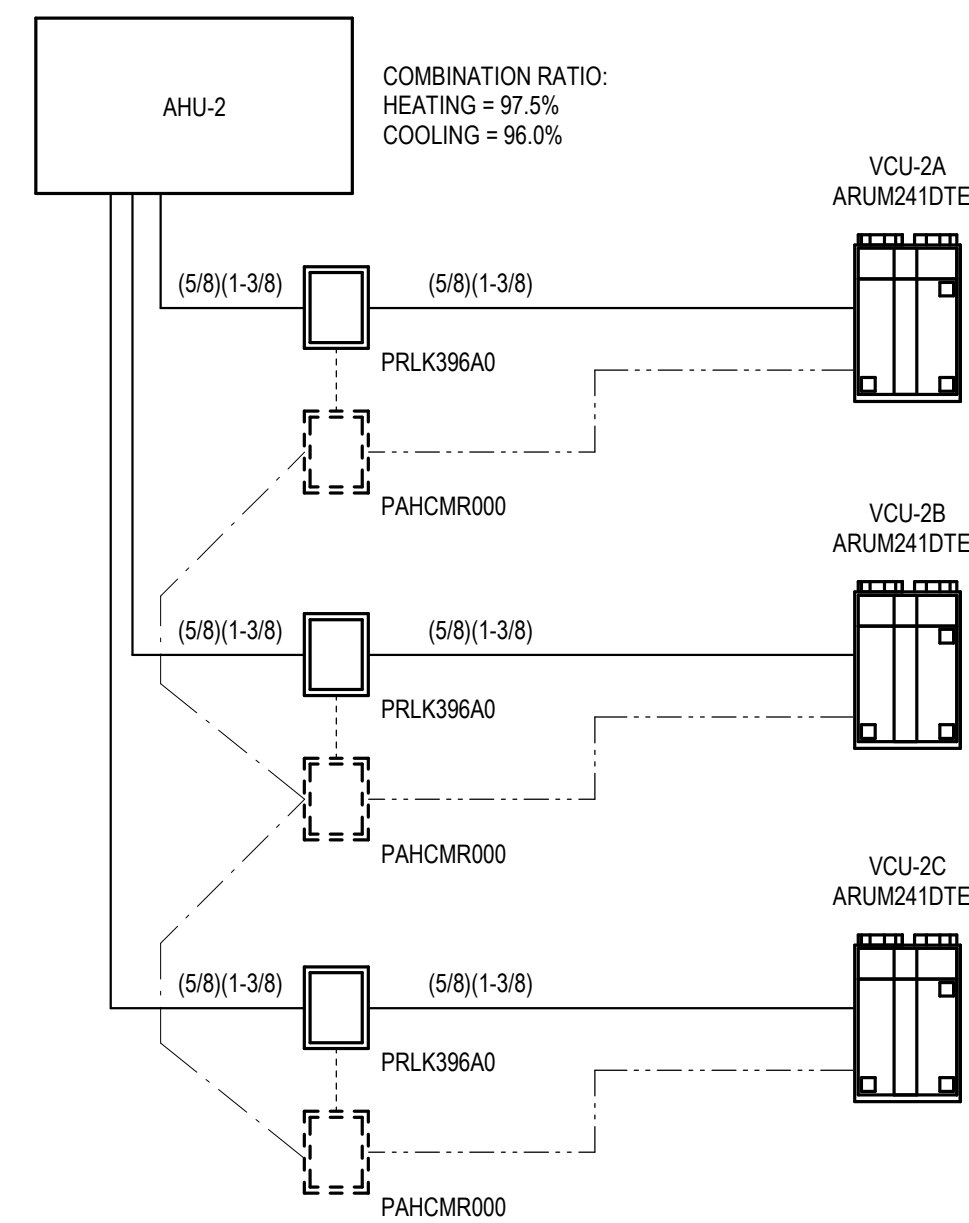
MECHANICAL VRF SYSTEM DIAGRAMS SHEET #4

Scale: NTS
Job No.: 60-20-409
Drawn By: PKJ
Date: August 28th, 2023

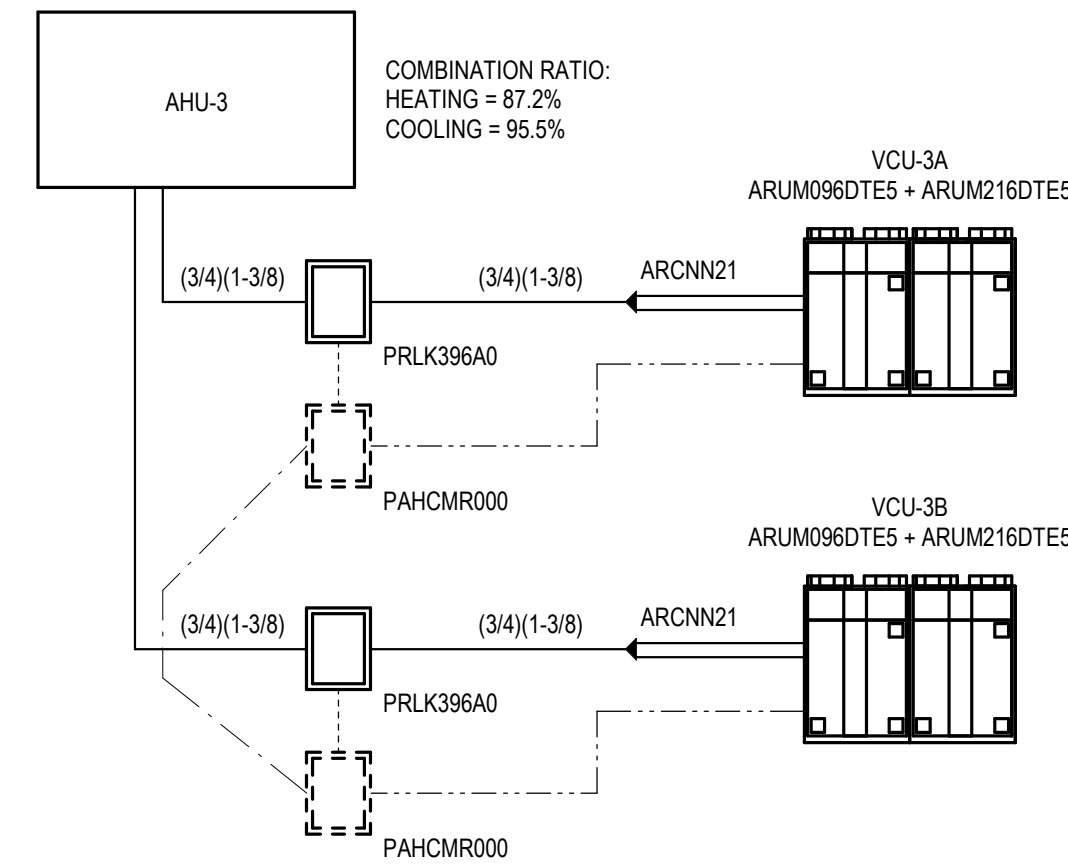
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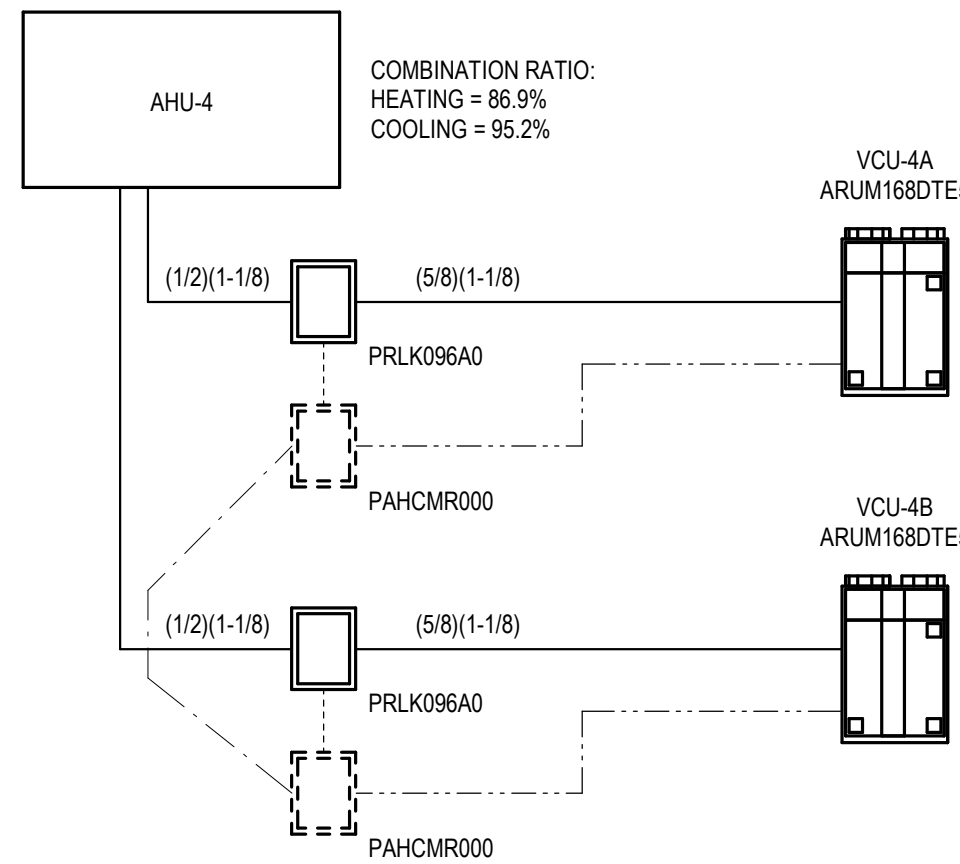
① AHU-1 VRF PIPING & WIRING DIAGRAM NTS



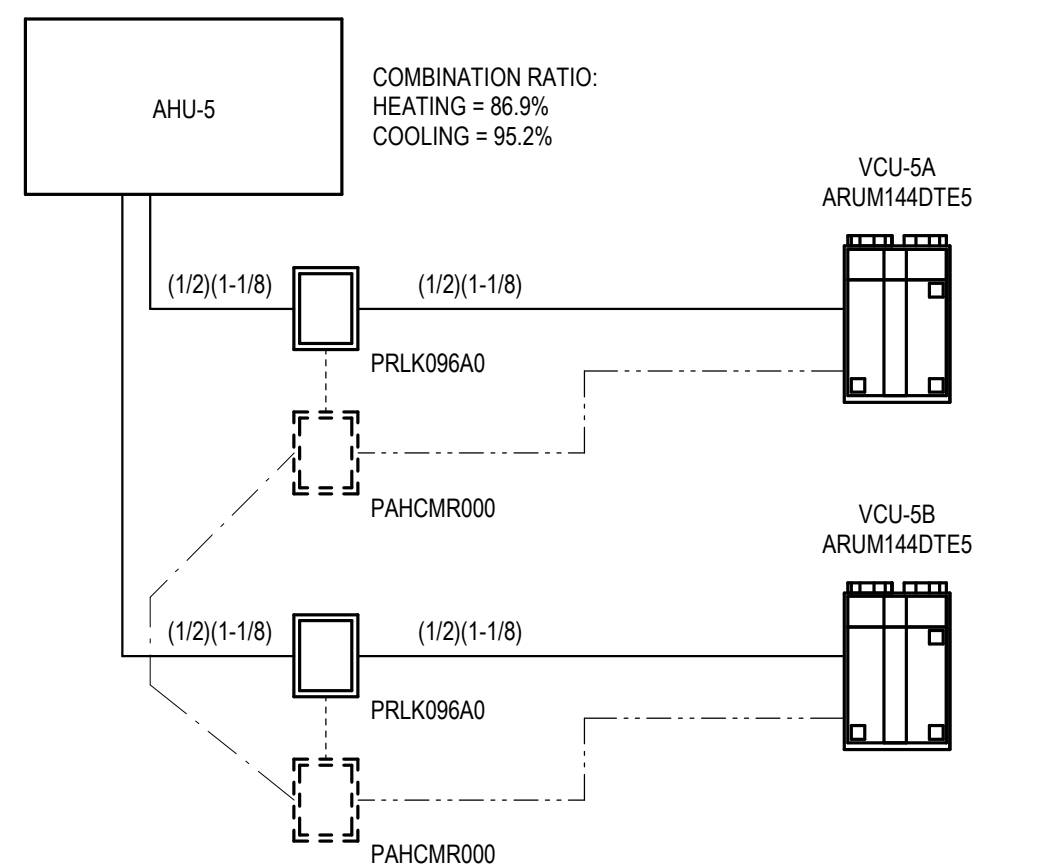
② AHU-2 VRF PIPING & WIRING DIAGRAM NTS



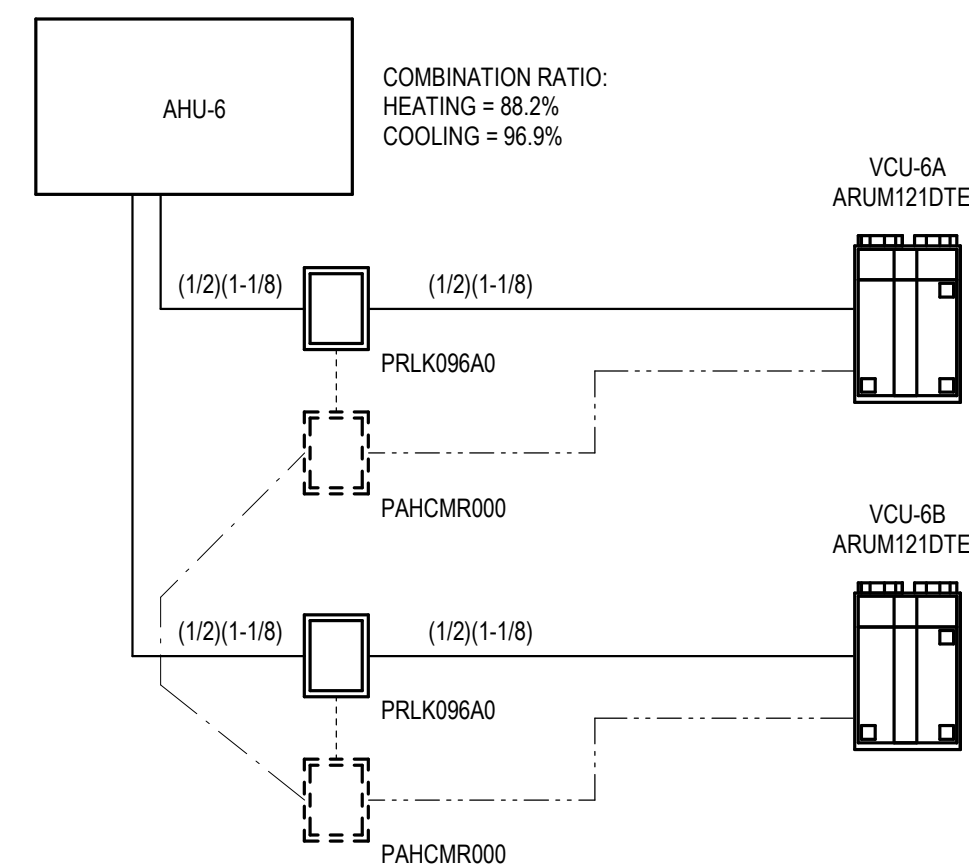
③ AHU-3 VRF PIPING & WIRING DIAGRAM NTS



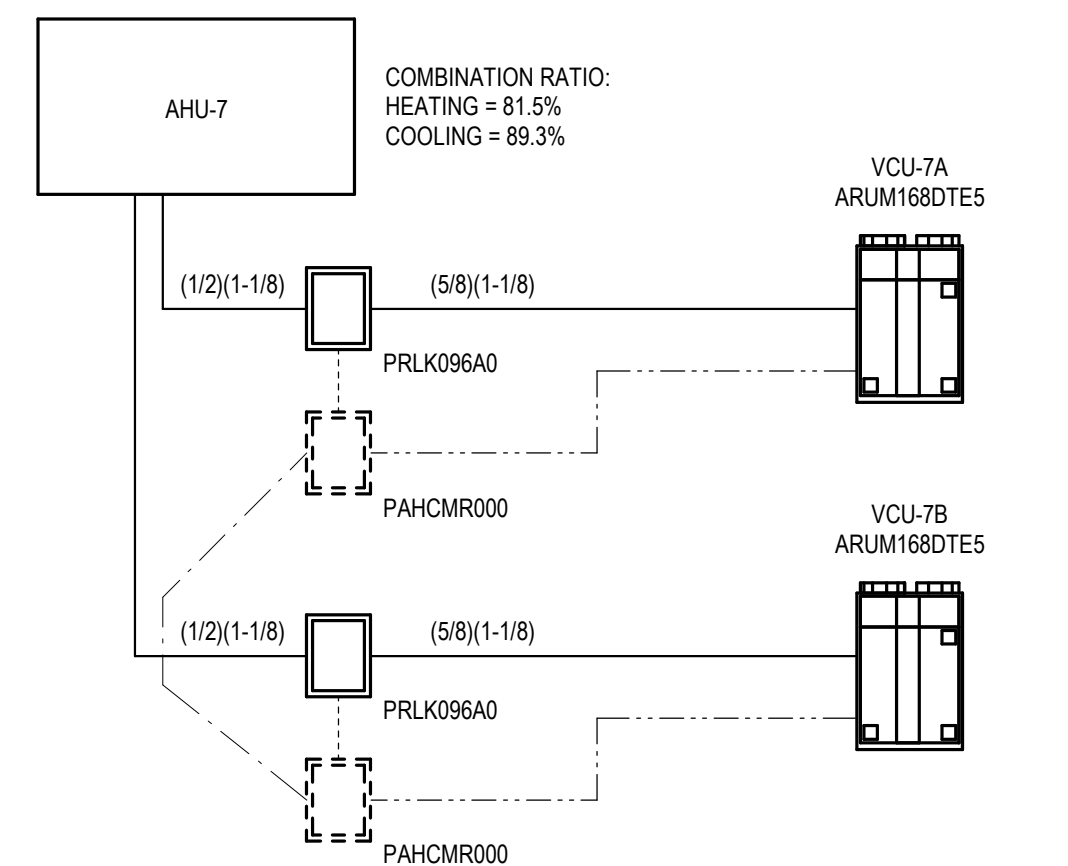
④ AHU-4 VRF PIPING & WIRING DIAGRAM NTS



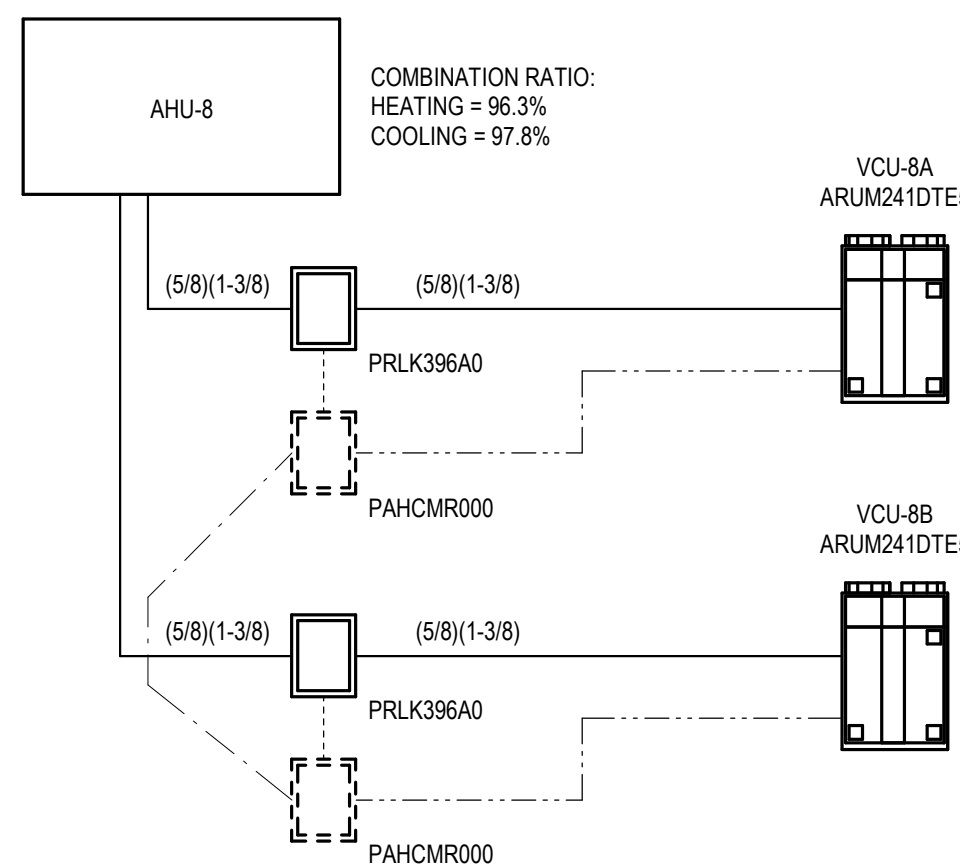
⑤ AHU-5 VRF PIPING & WIRING DIAGRAM NTS



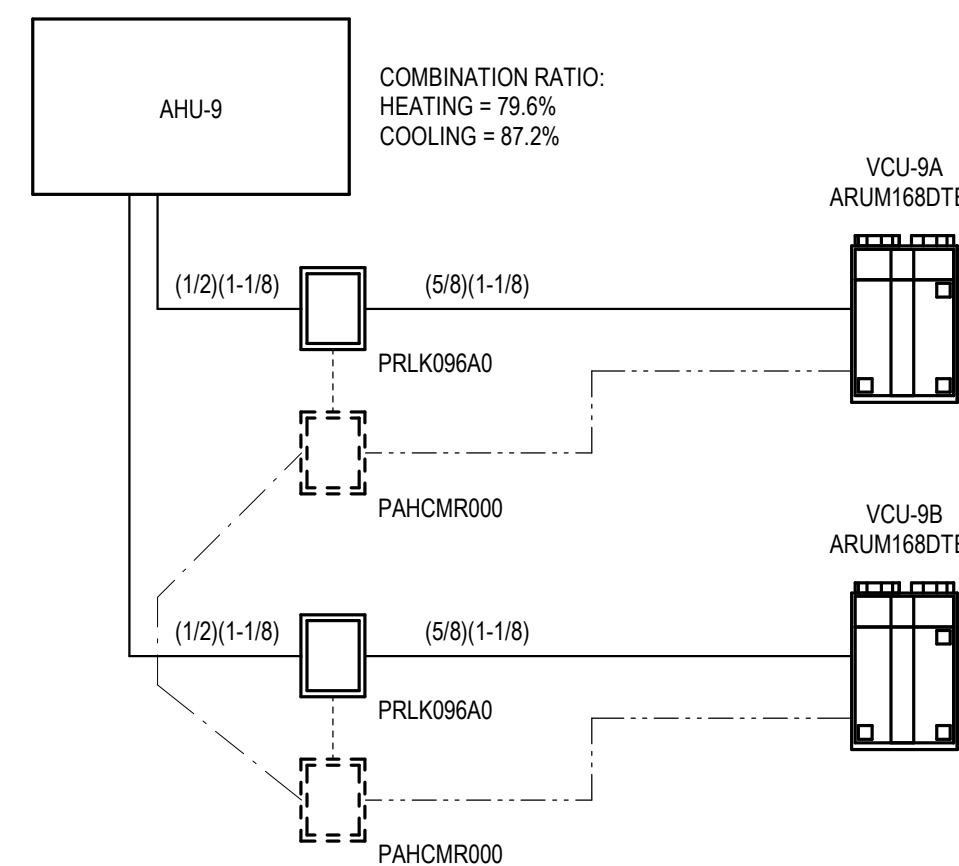
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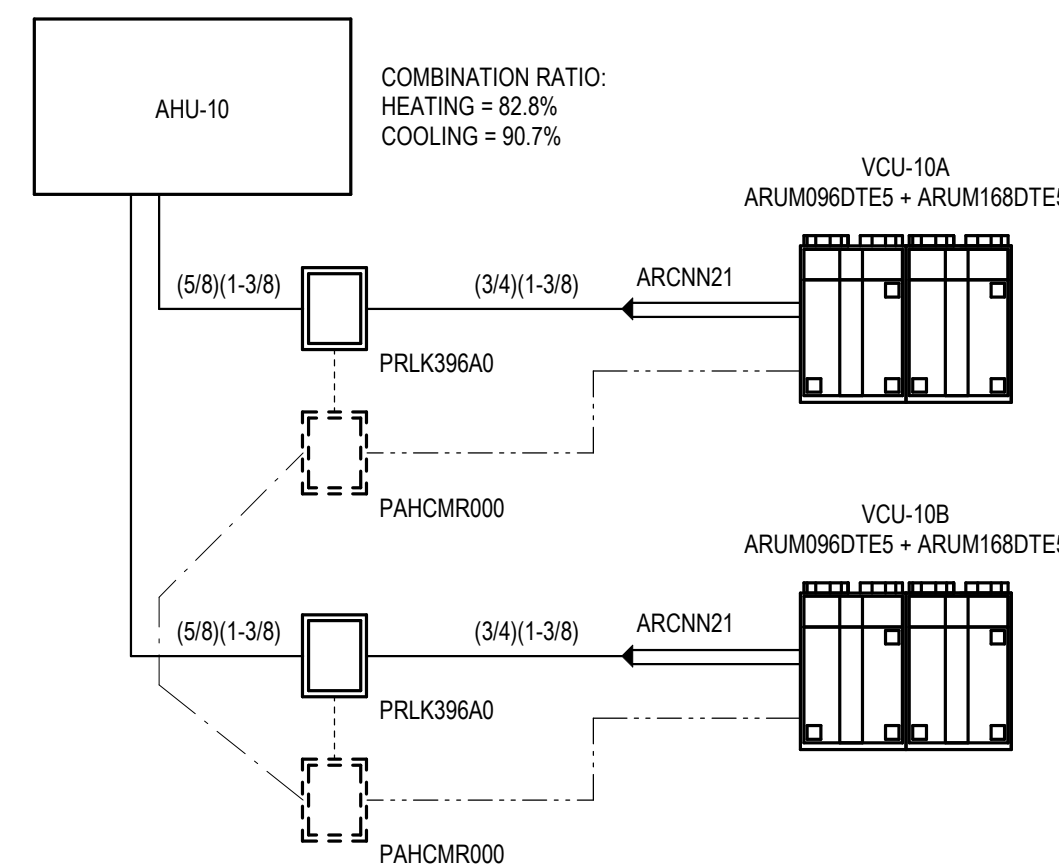
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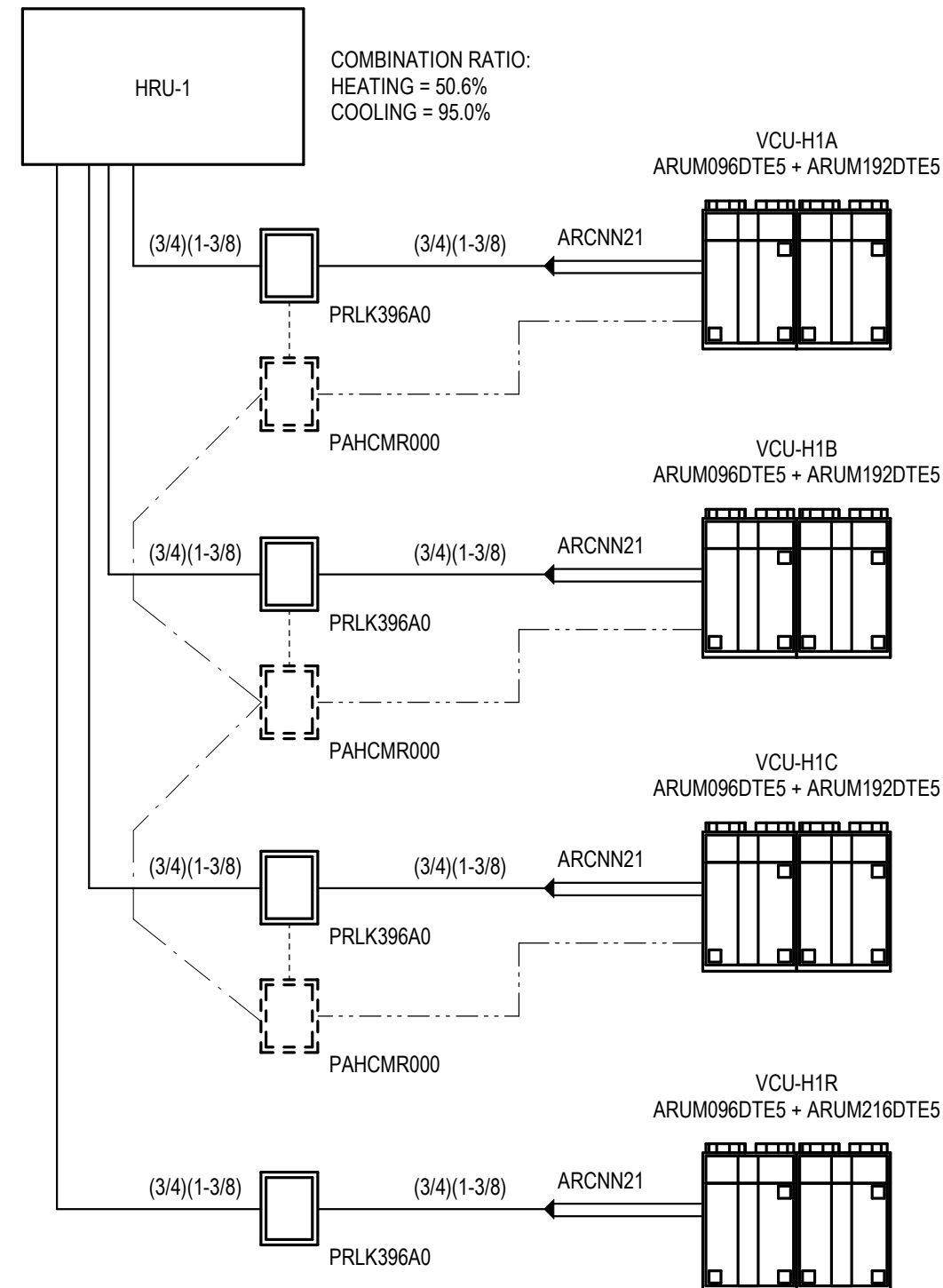
⑧ AHU-8 VRF PIPING & WIRING DIAGRAM NTS



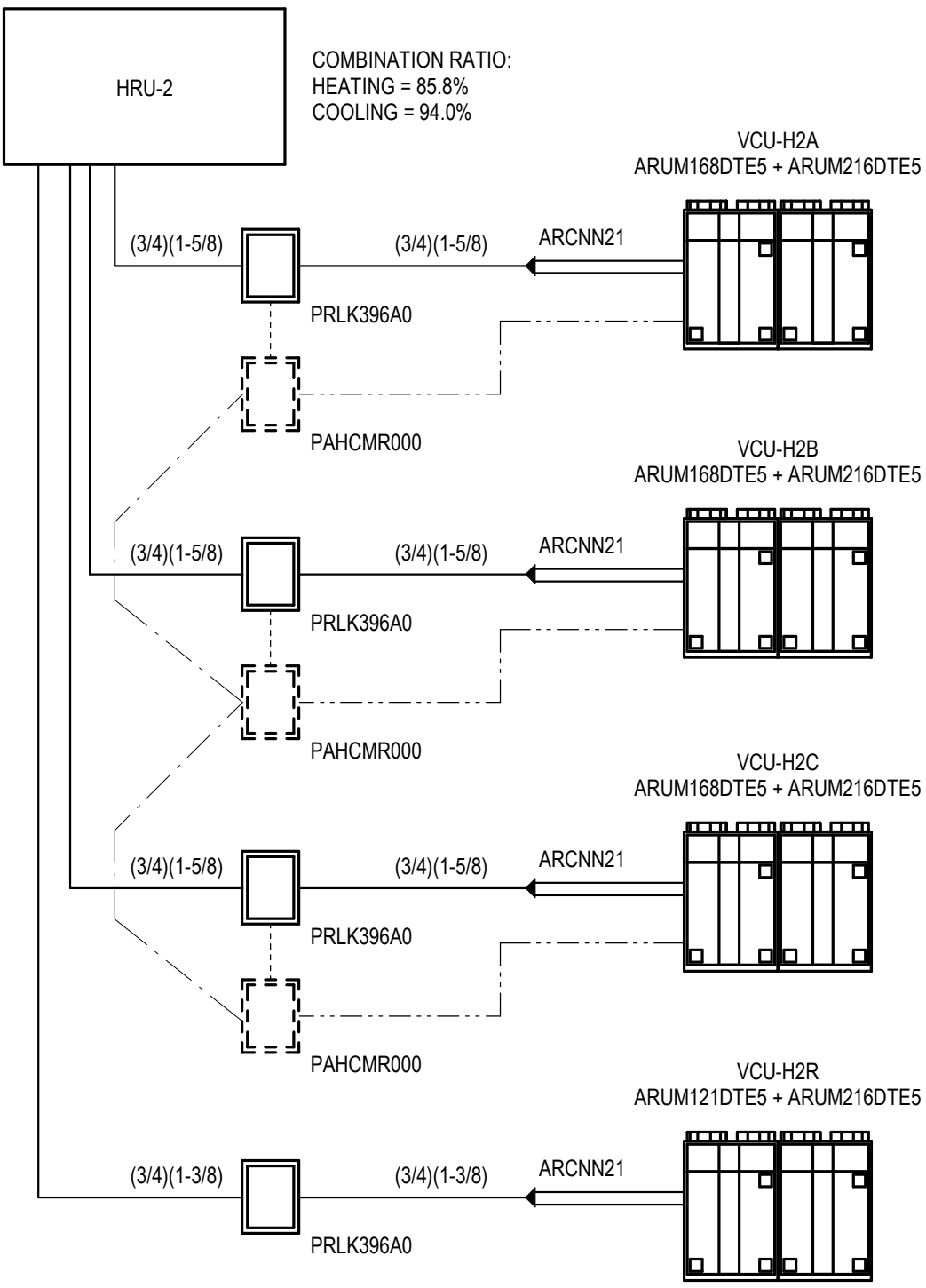
⑨ AHU-9 VRF PIPING & WIRING DIAGRAM NTS



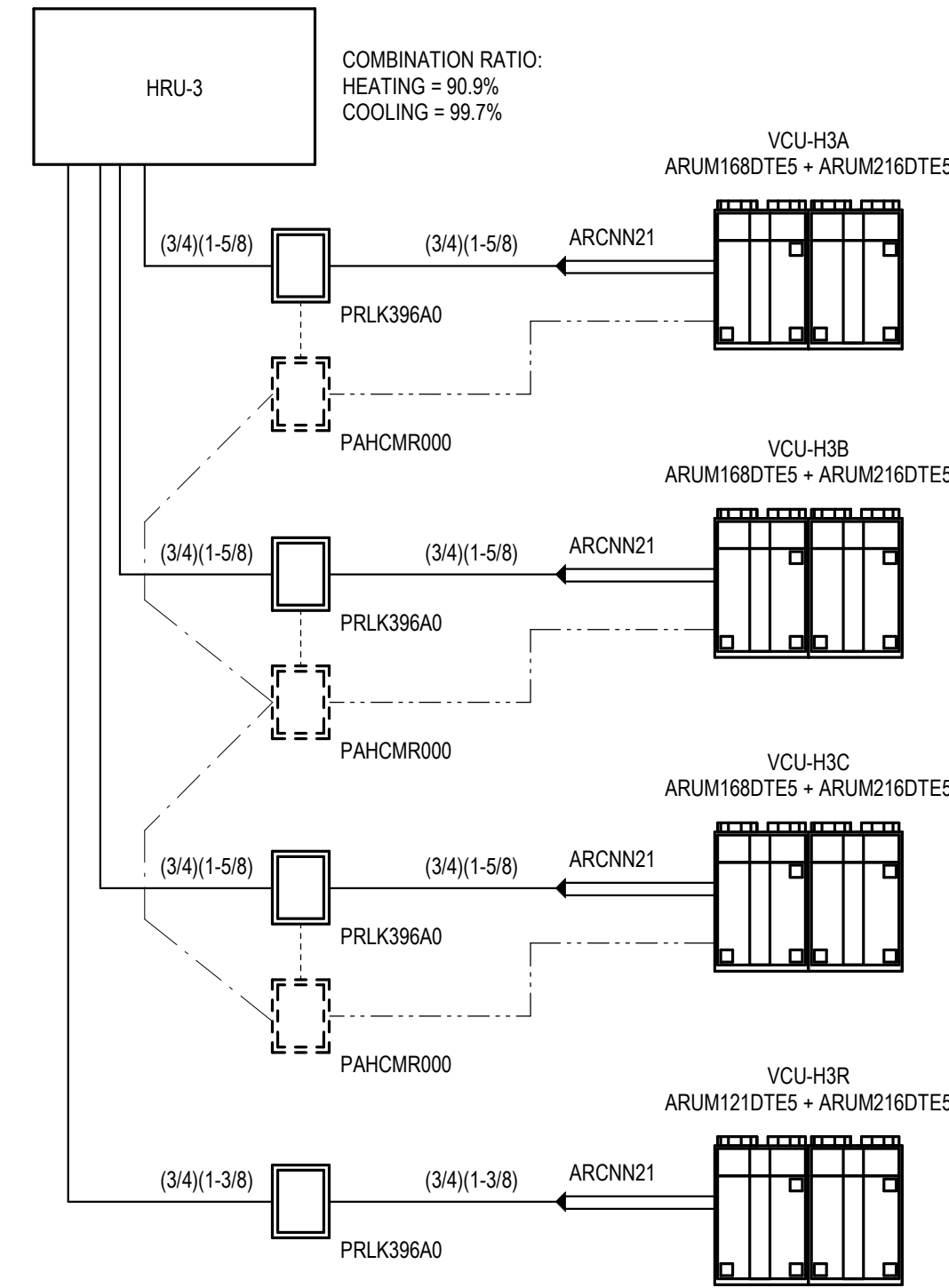
⑩ AHU-10 VRF PIPING & WIRING DIAGRAM NTS



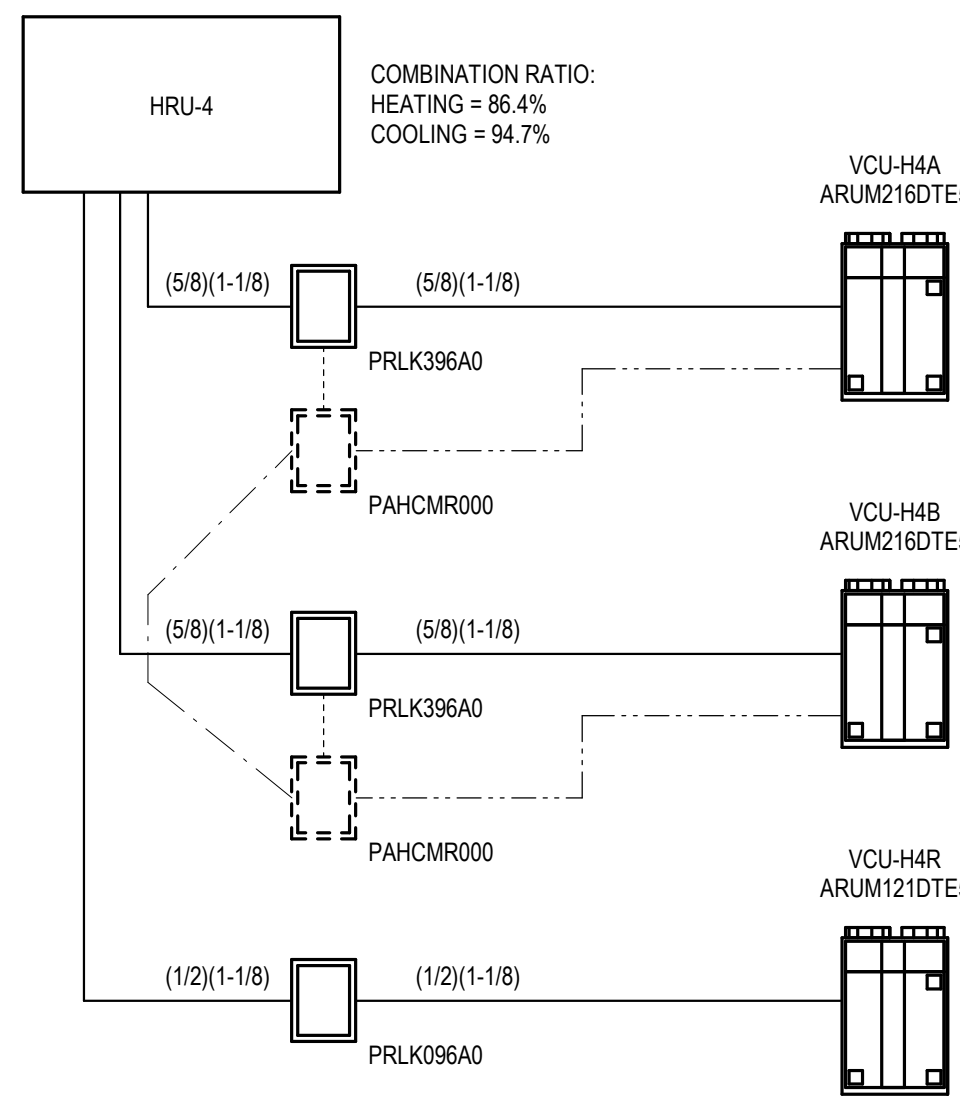
⑪ HRU-1 VRF PIPING & WIRING DIAGRAM NTS



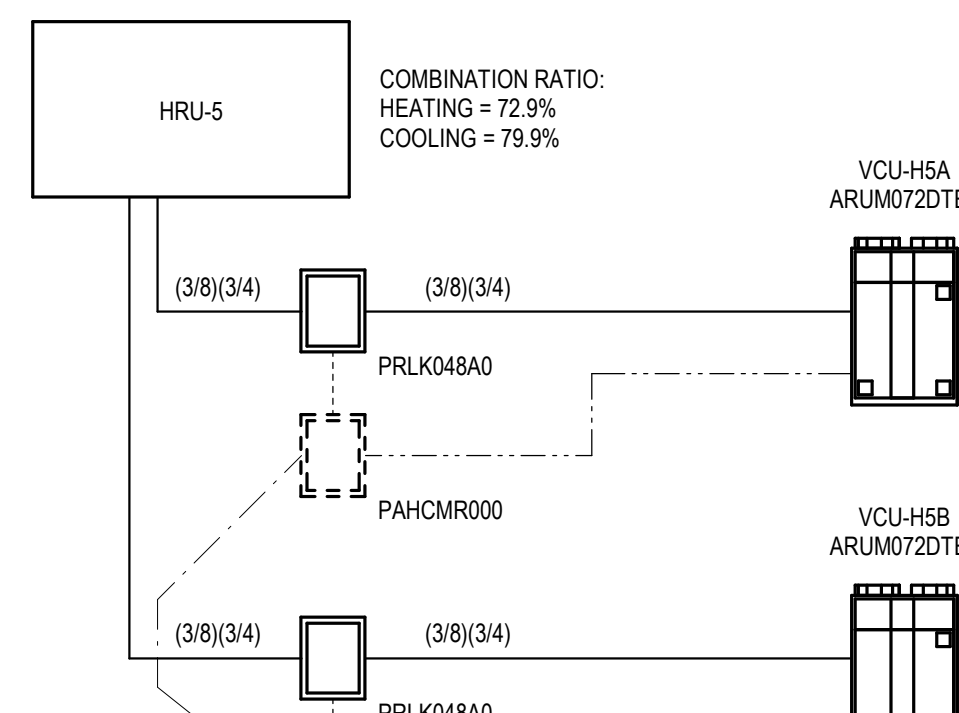
⑫ HRU-2 VRF PIPING & WIRING DIAGRAM NTS



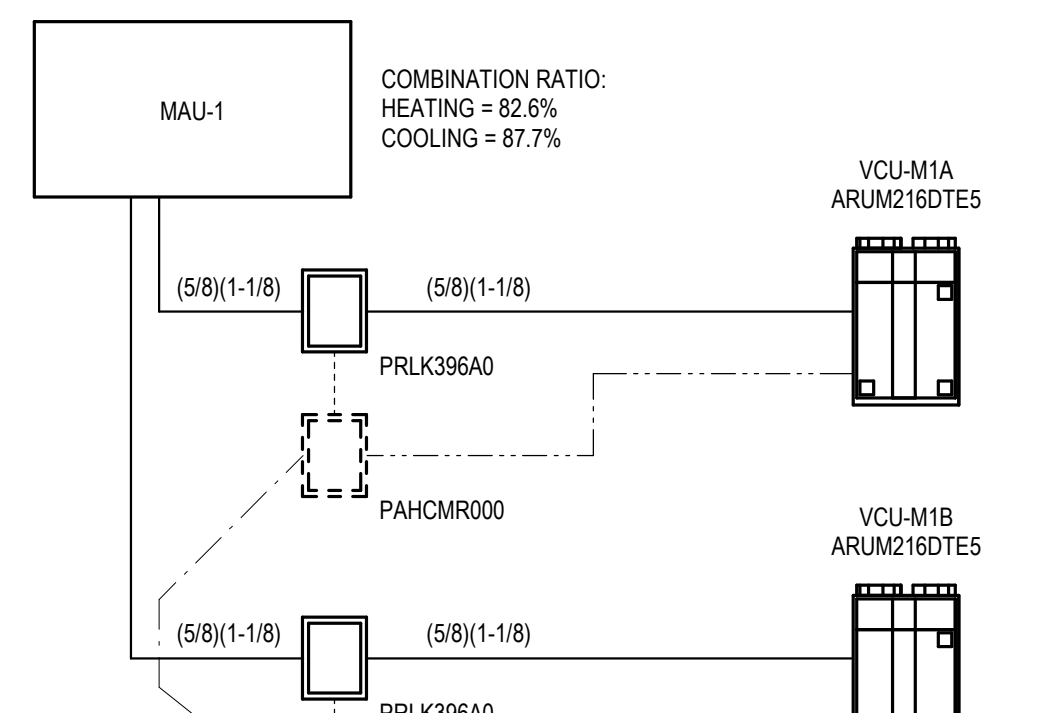
⑬ HRU-3 VRF PIPING & WIRING DIAGRAM NTS



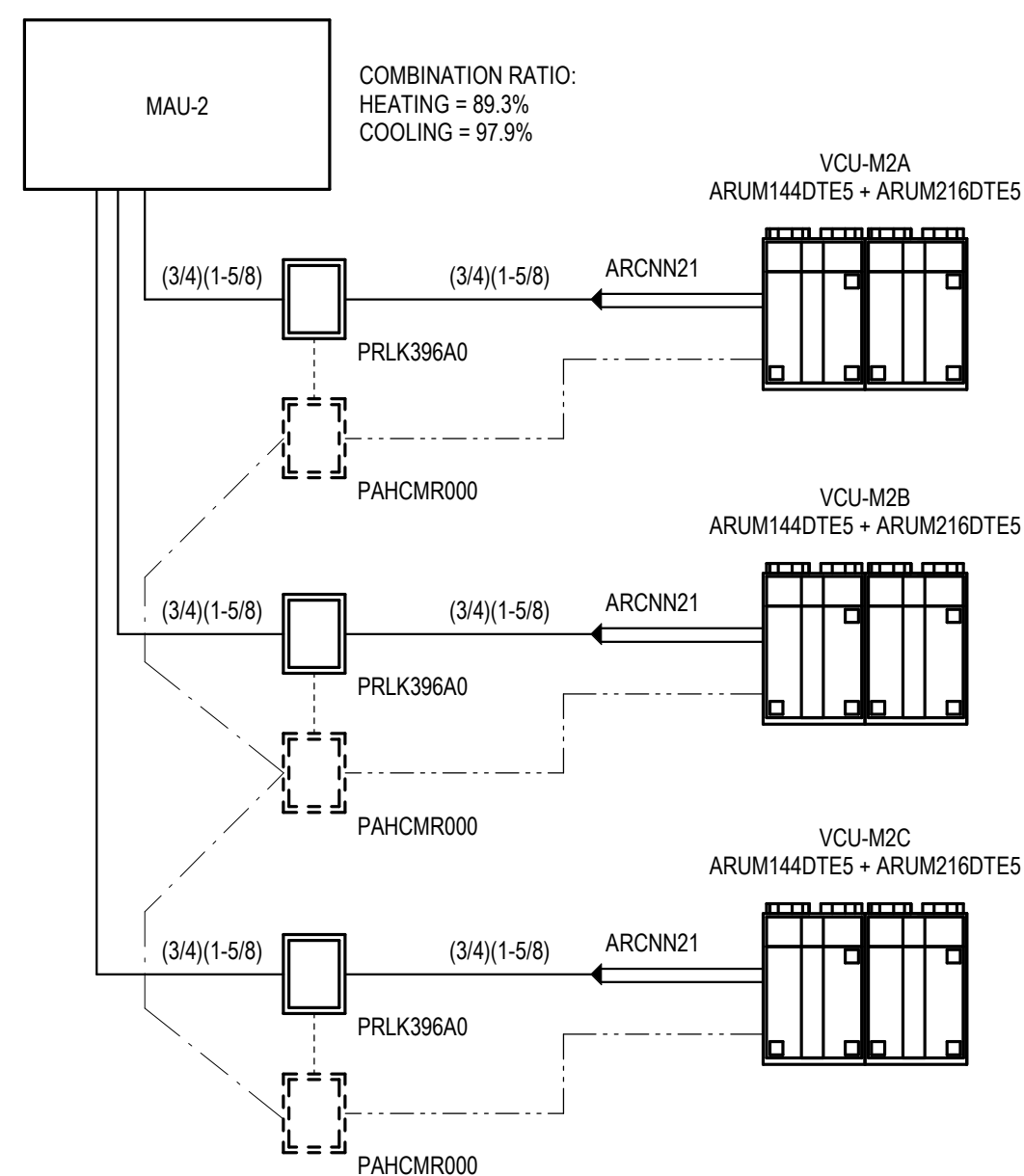
⑭ HRU-4 VRF PIPING & WIRING DIAGRAM NTS



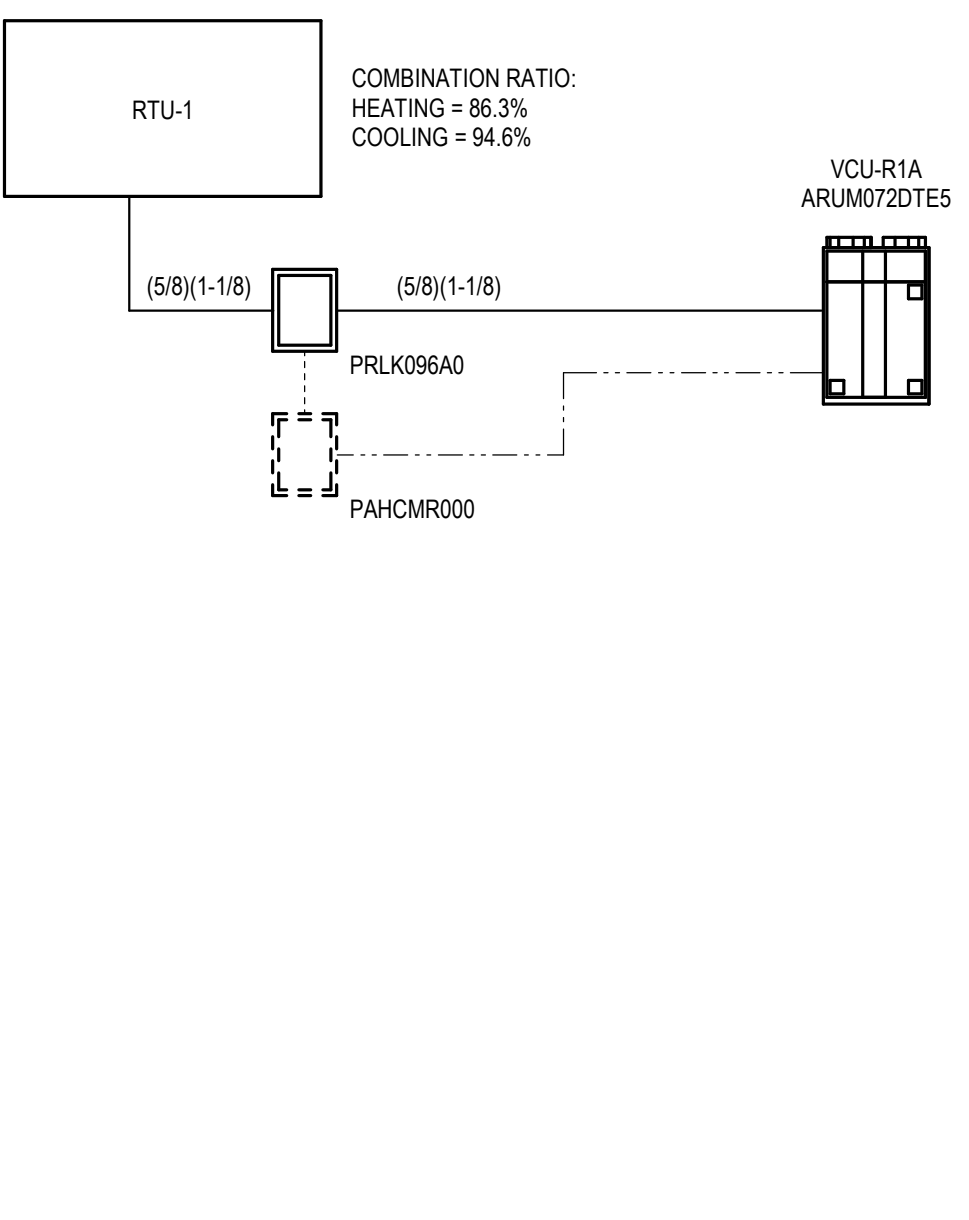
⑮ HRU-5 VRF PIPING & WIRING DIAGRAM NTS



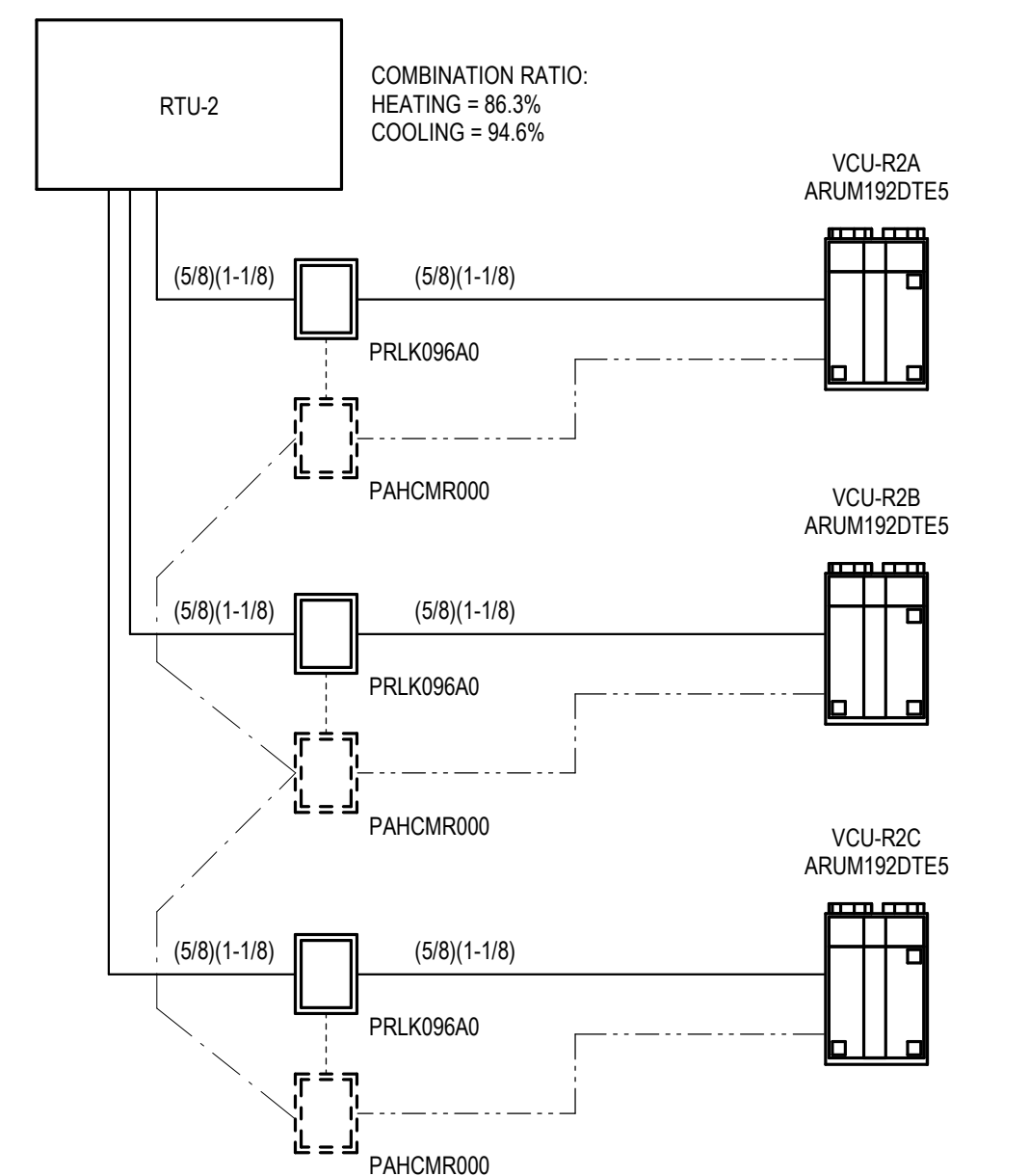
⑯ MAU-1 VRF PIPING & WIRING DIAGRAM NTS



⑰ MAU-2 VRF PIPING & WIRING DIAGRAM NTS

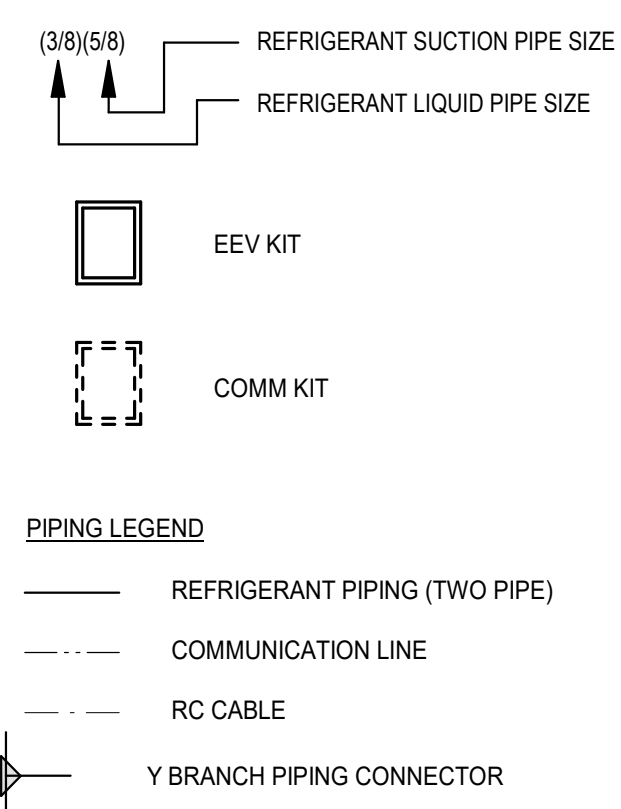


⑱ RTU-1 VRF PIPING & WIRING DIAGRAM NTS

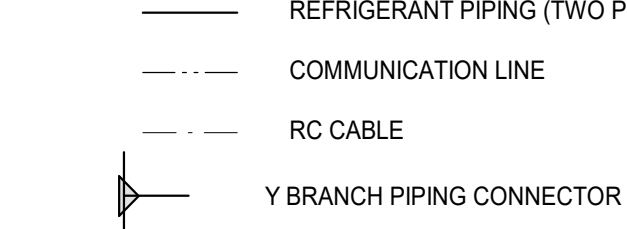


⑲ RTU-2 VRF PIPING & WIRING DIAGRAM NTS

VRF SYSTEMS LEGEND



PIPING LEGEND



○ AHU WITH COMM/EHV KIT VRF PIPING DIAGRAM NTS

VRF SYSTEM DIAGRAM NOTES

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DRA

Drummet Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
www.dra-inc.com

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WWW.BALA-ENGINEERS.COM

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August 28th, 2023

MECHANICAL VRF SYSTEM DIAGRAMS SHEET #5

Scale: NTS

Job No.: 60-20-409

Drawn By: Author

Date: August 28th, 2023

M3-0-5



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225 Oakland Road
Studio 205
South Windsor, CT
06074
Planning | Architecture | Interior Design
Tel: 617.984.1700
www.dra-inc.com

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BALA CONSULTING ENGINEERS, INC.
200 WEST 10TH STREET
NEW YORK, NY 10011-4209
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WWW.BALA-ENGINEERS.COM

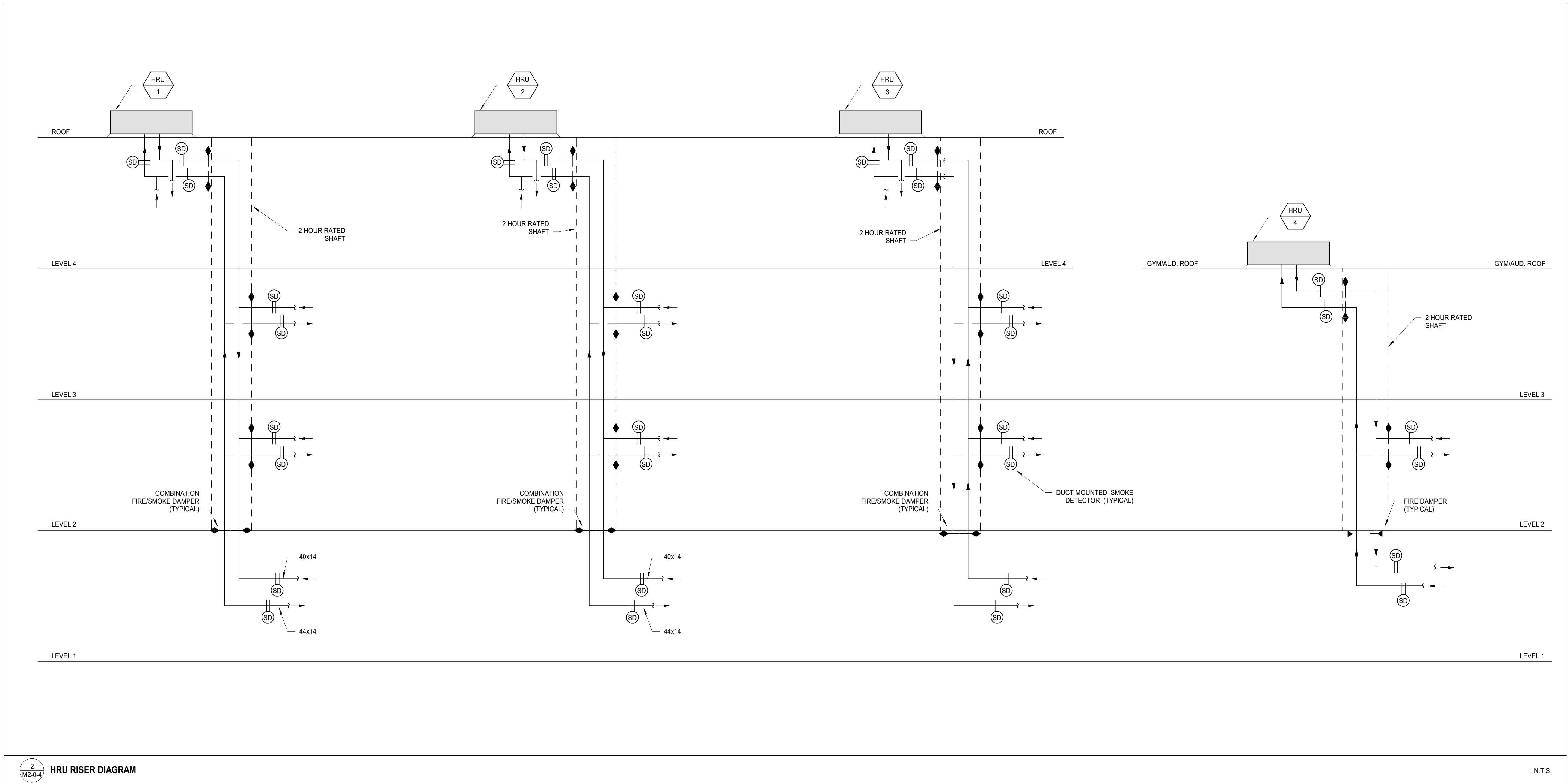
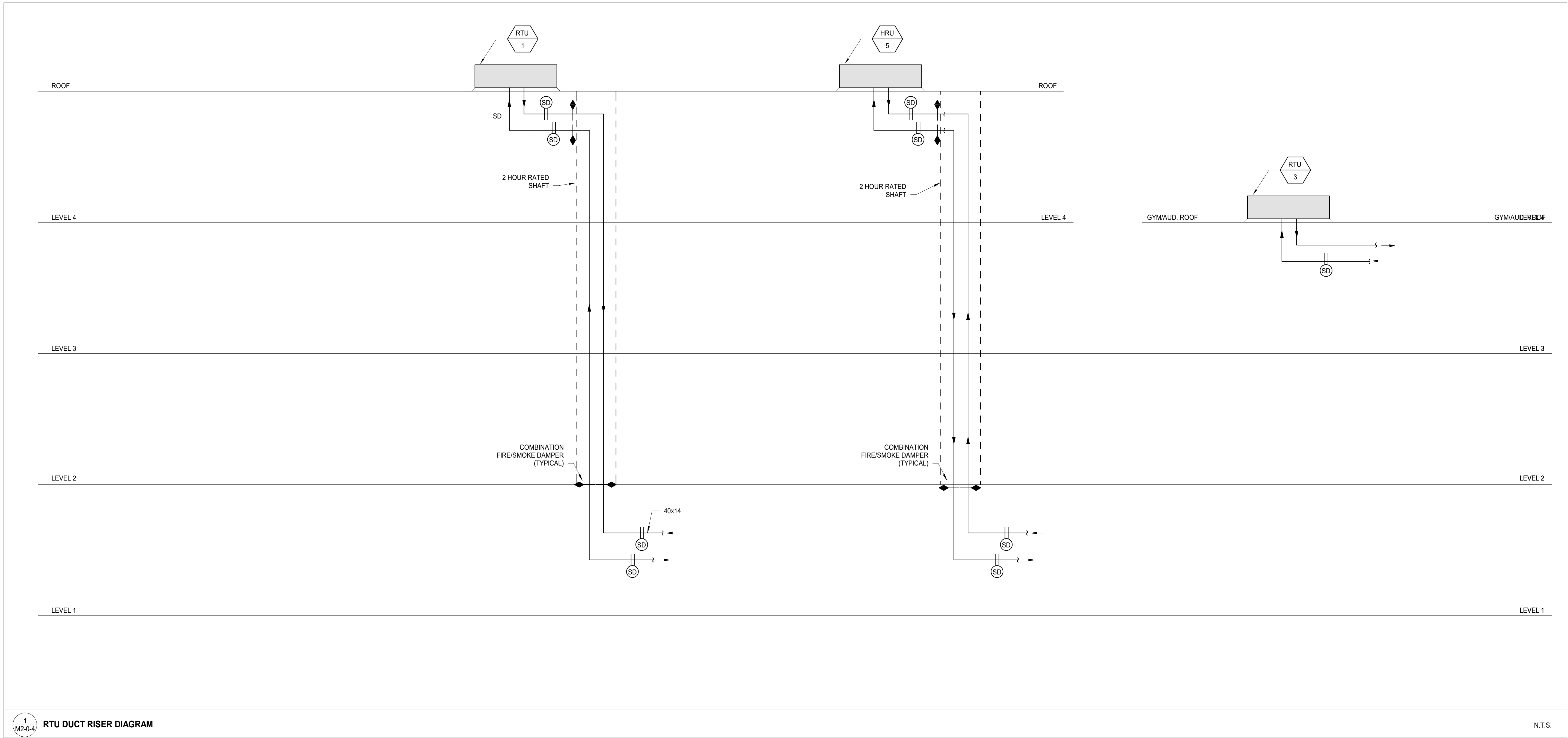
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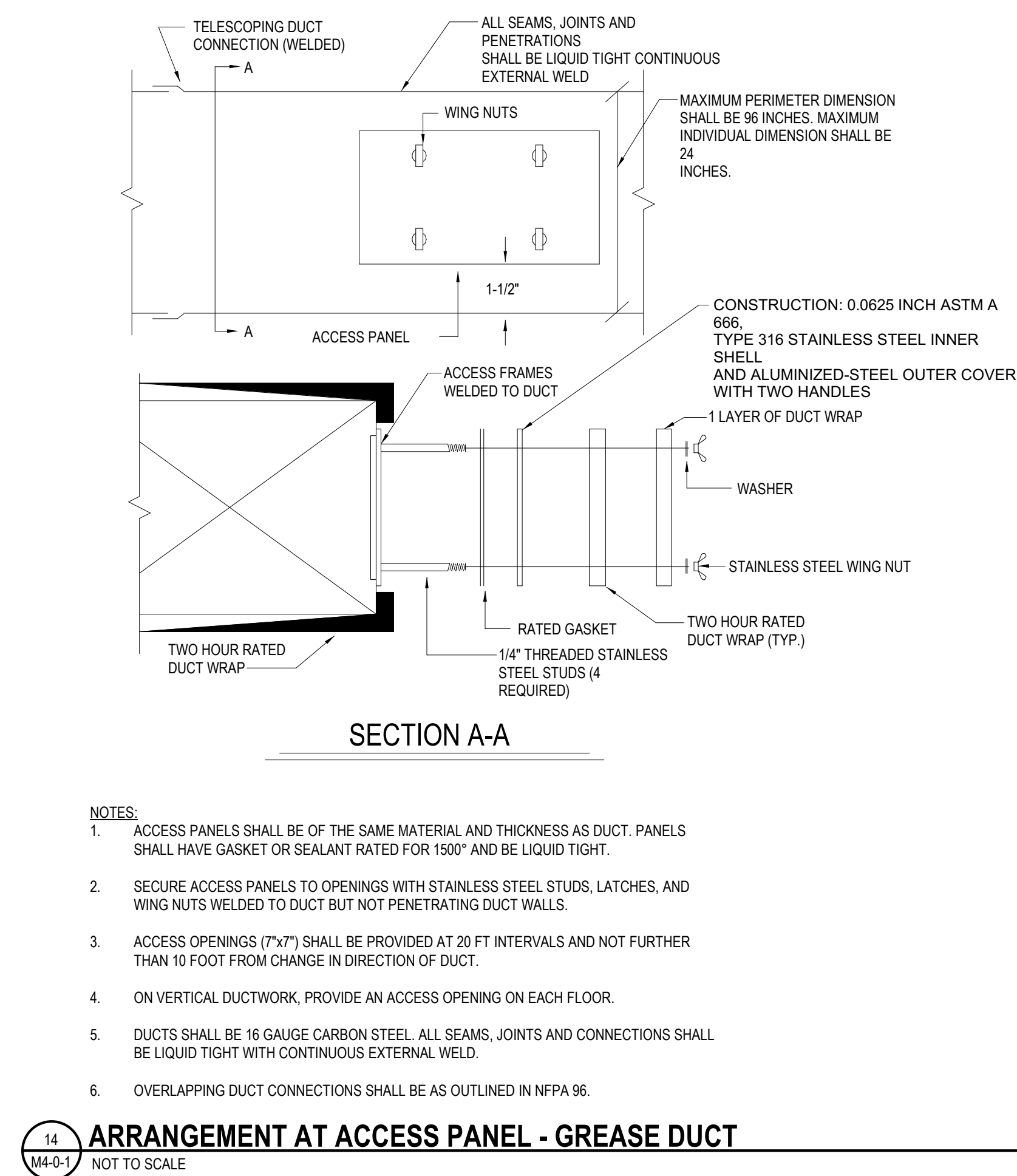
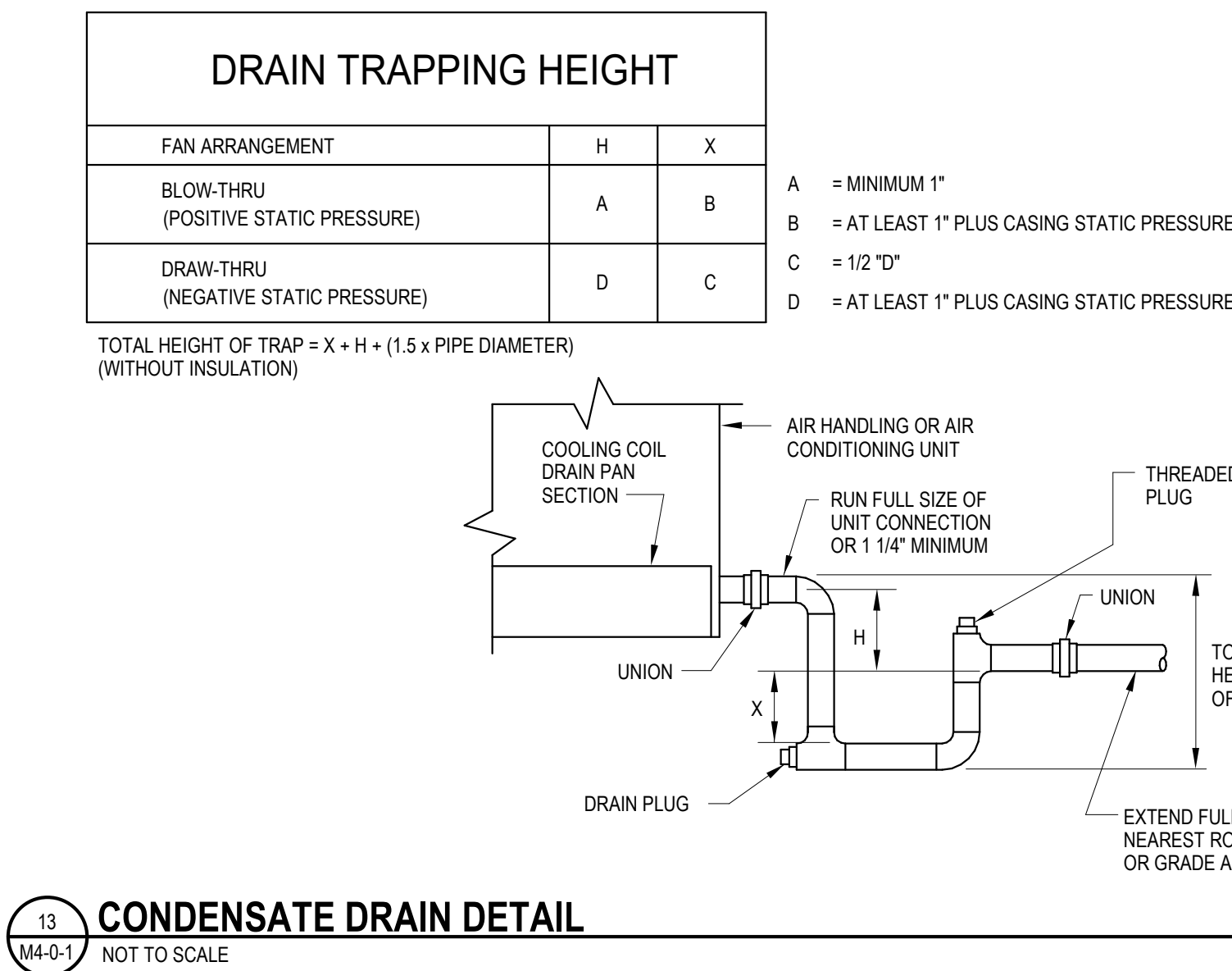
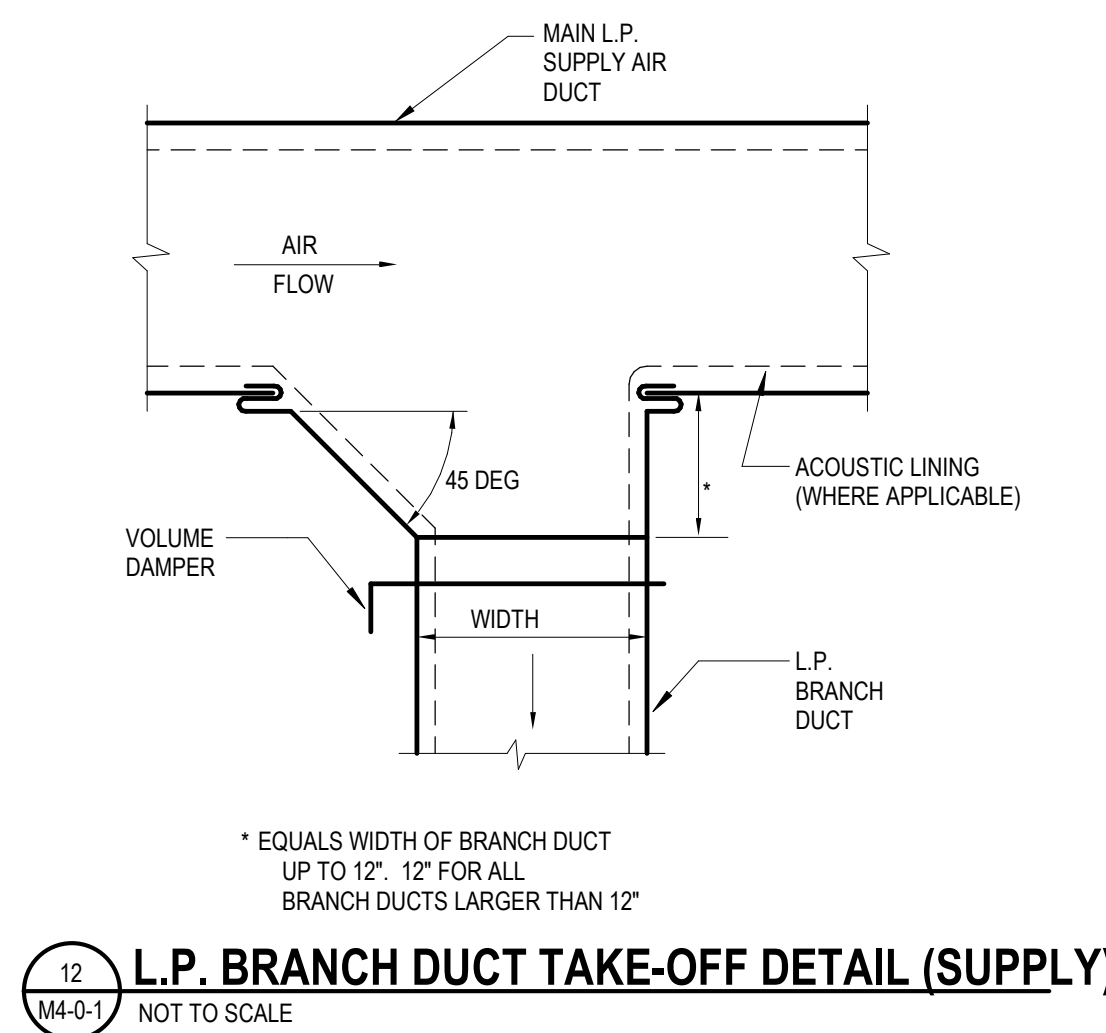
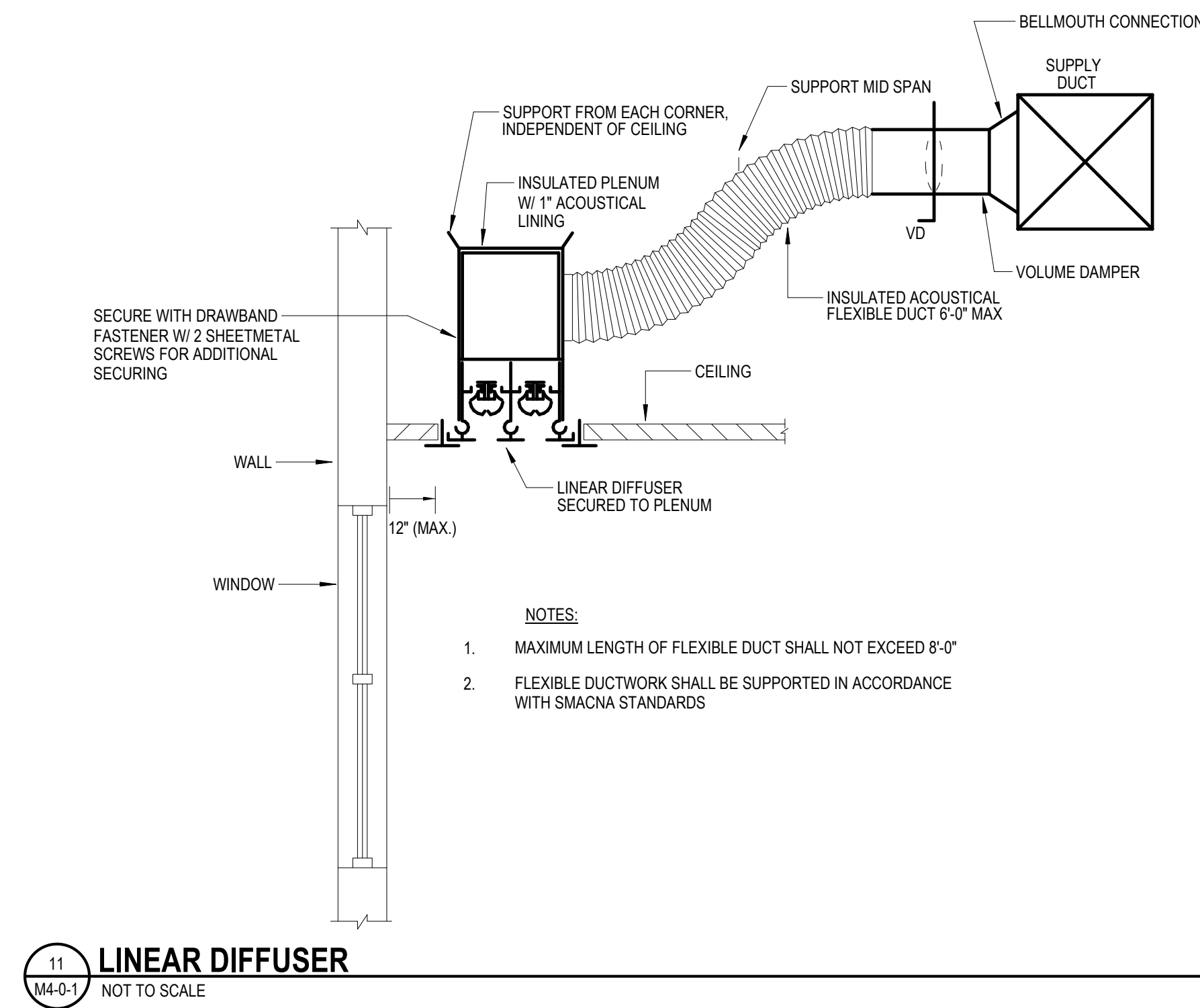
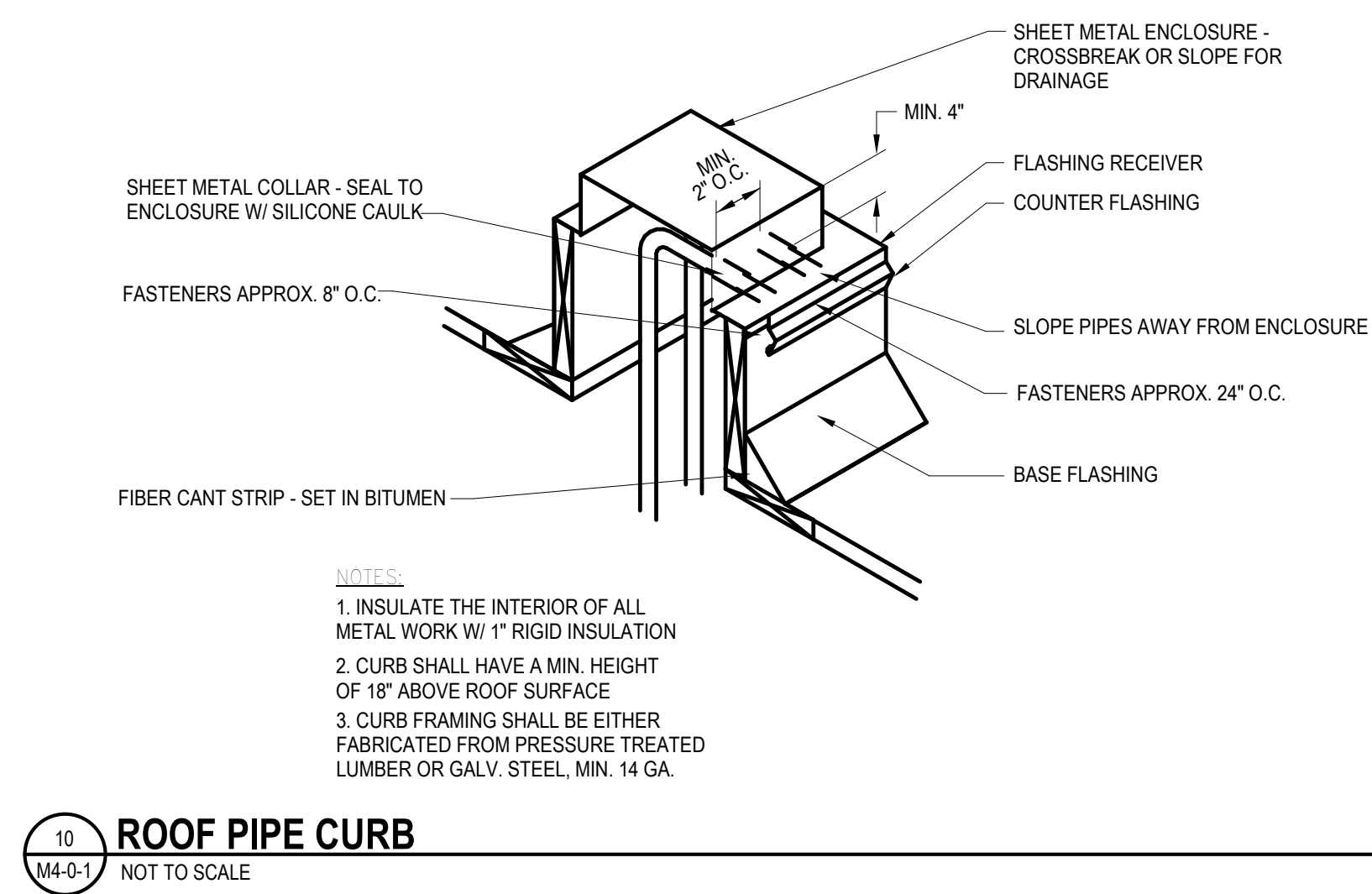
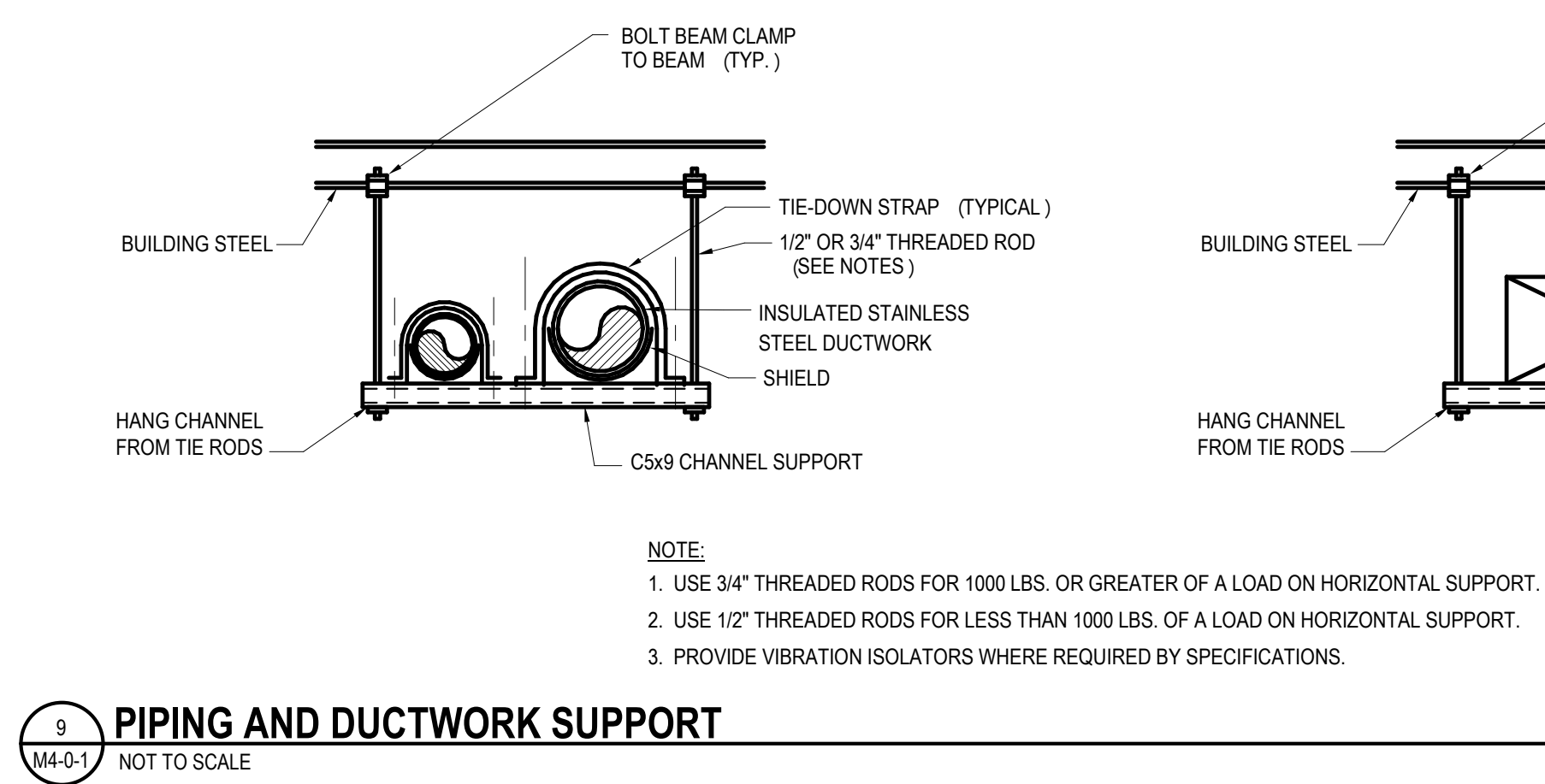
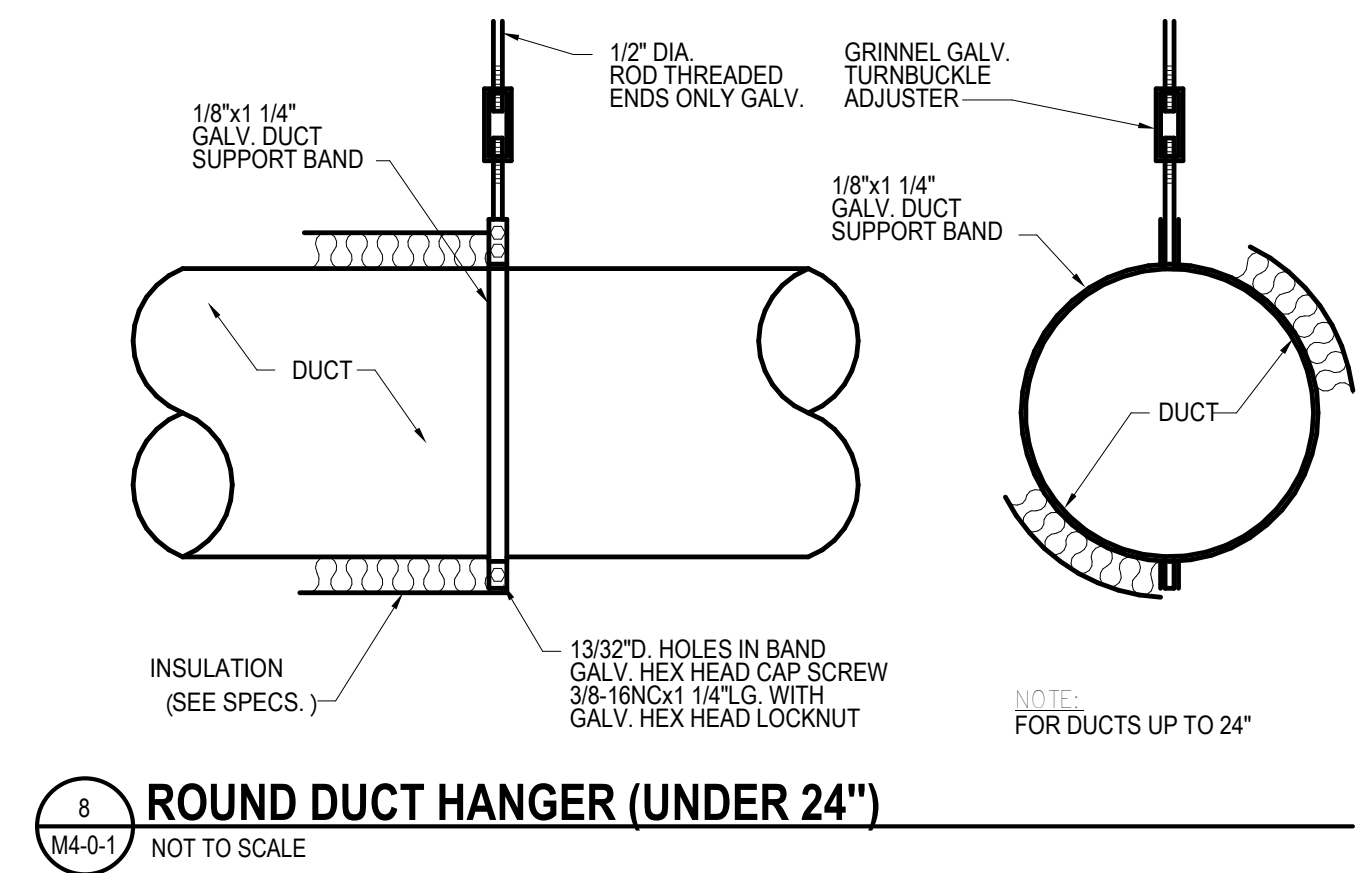
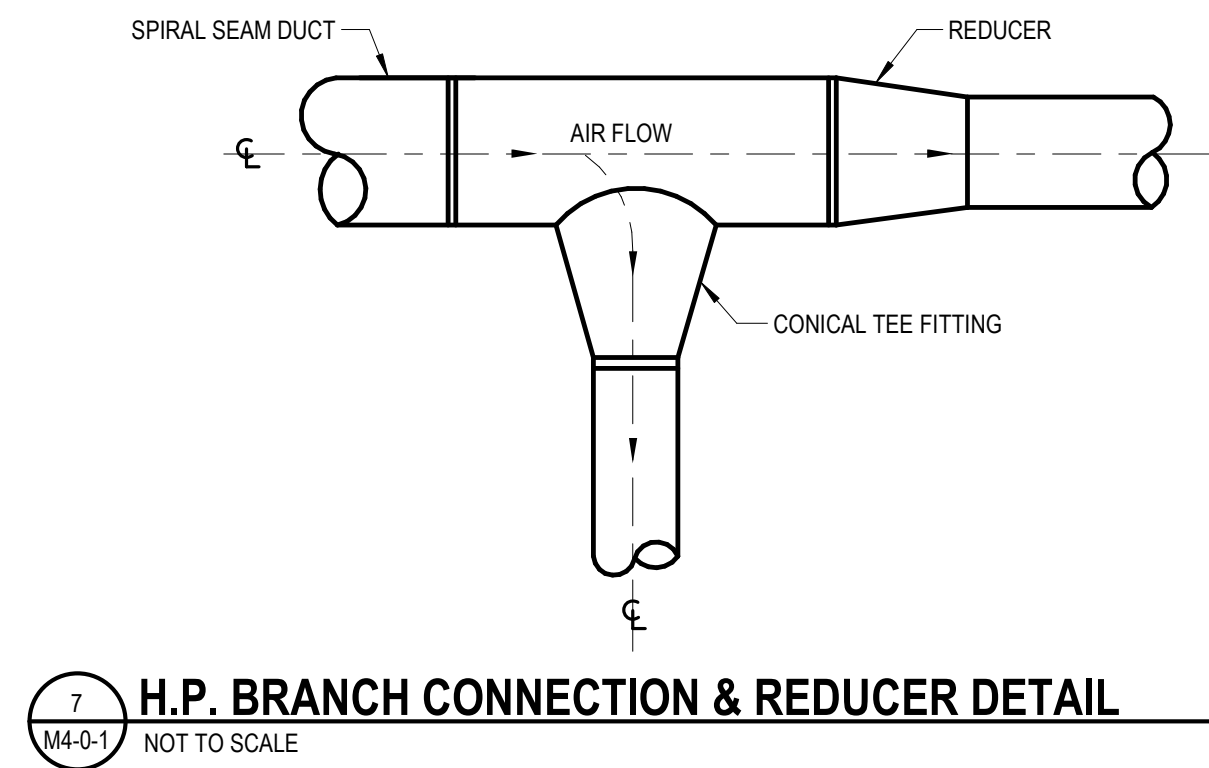
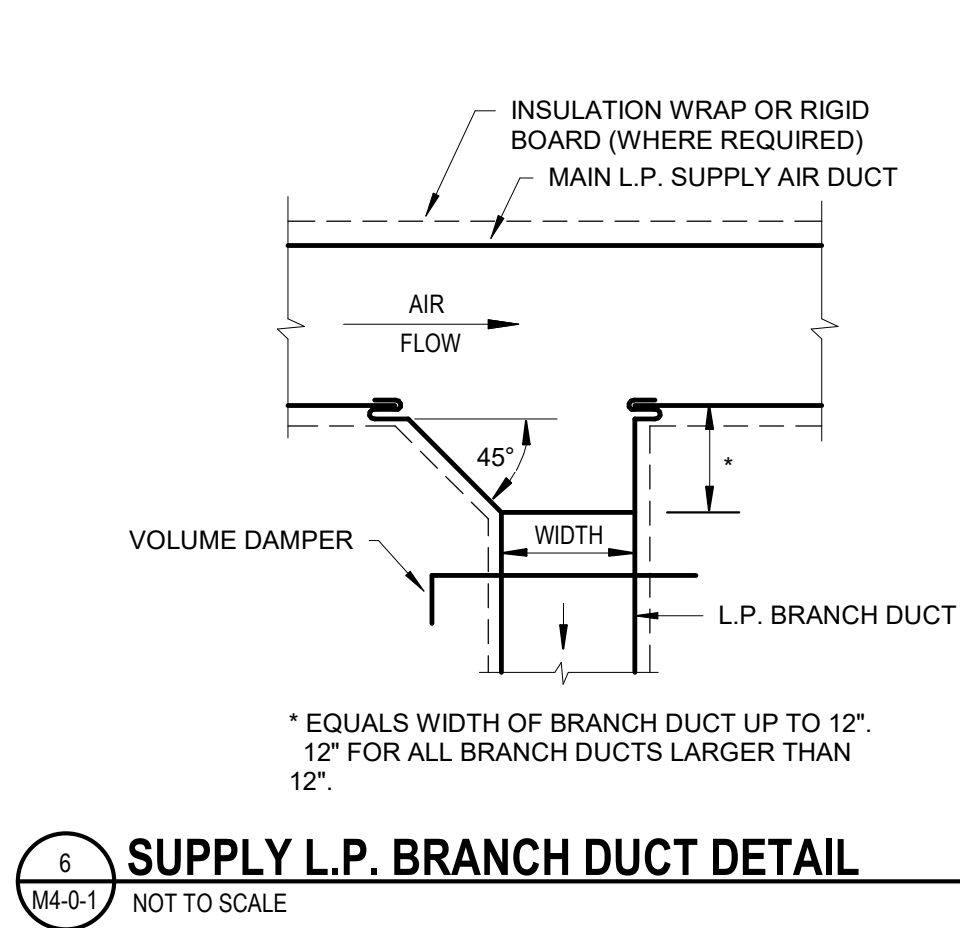
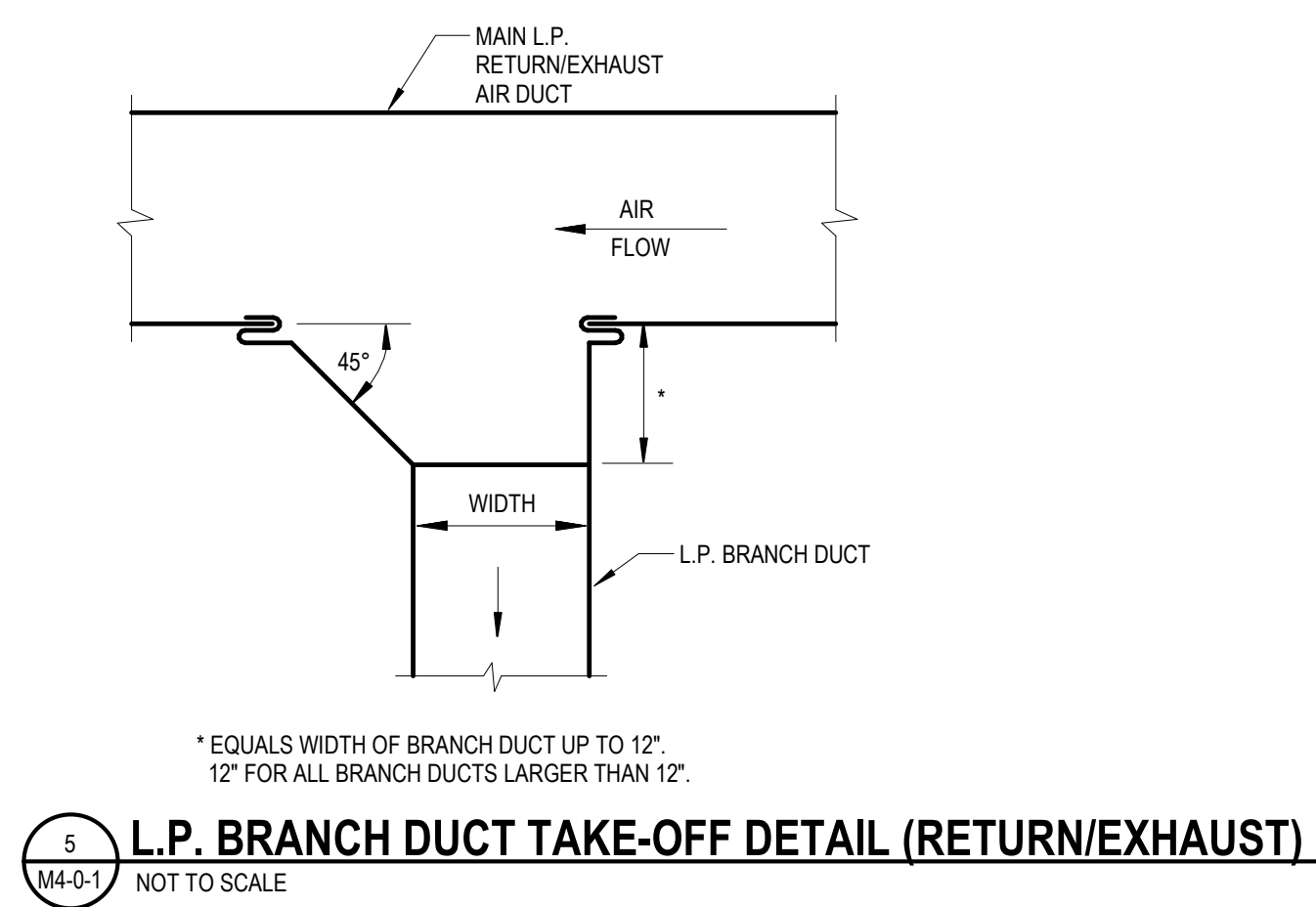
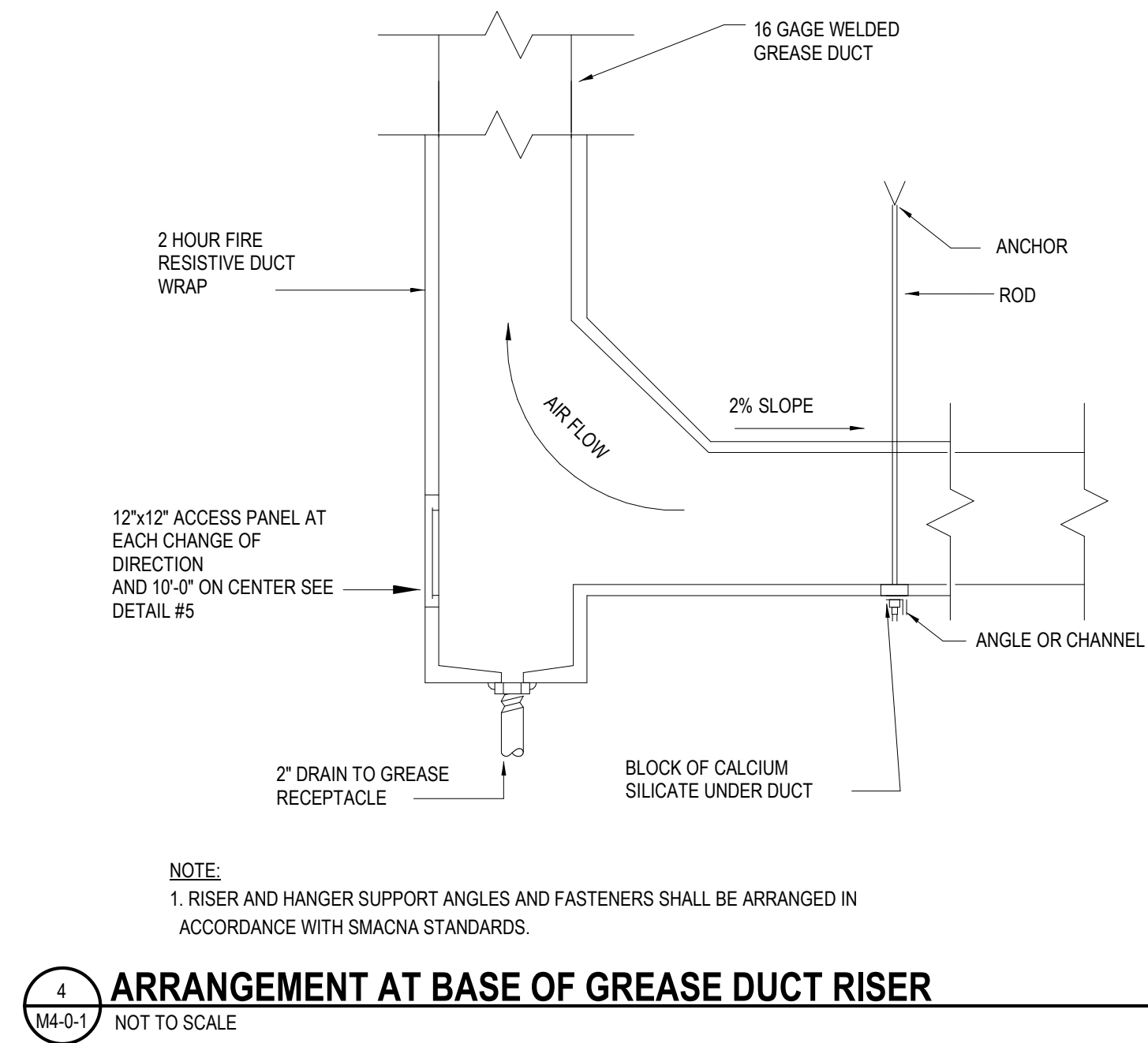
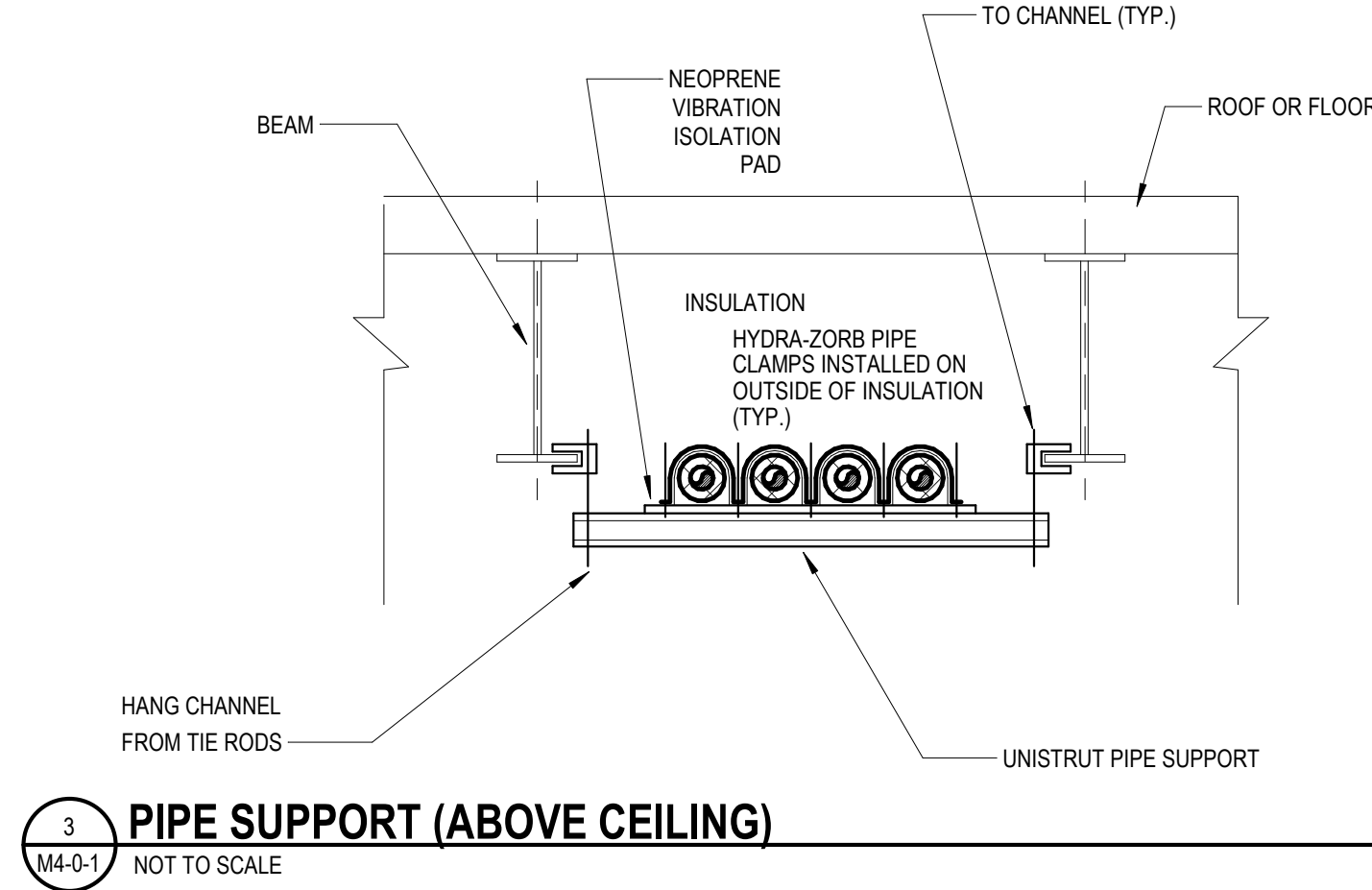
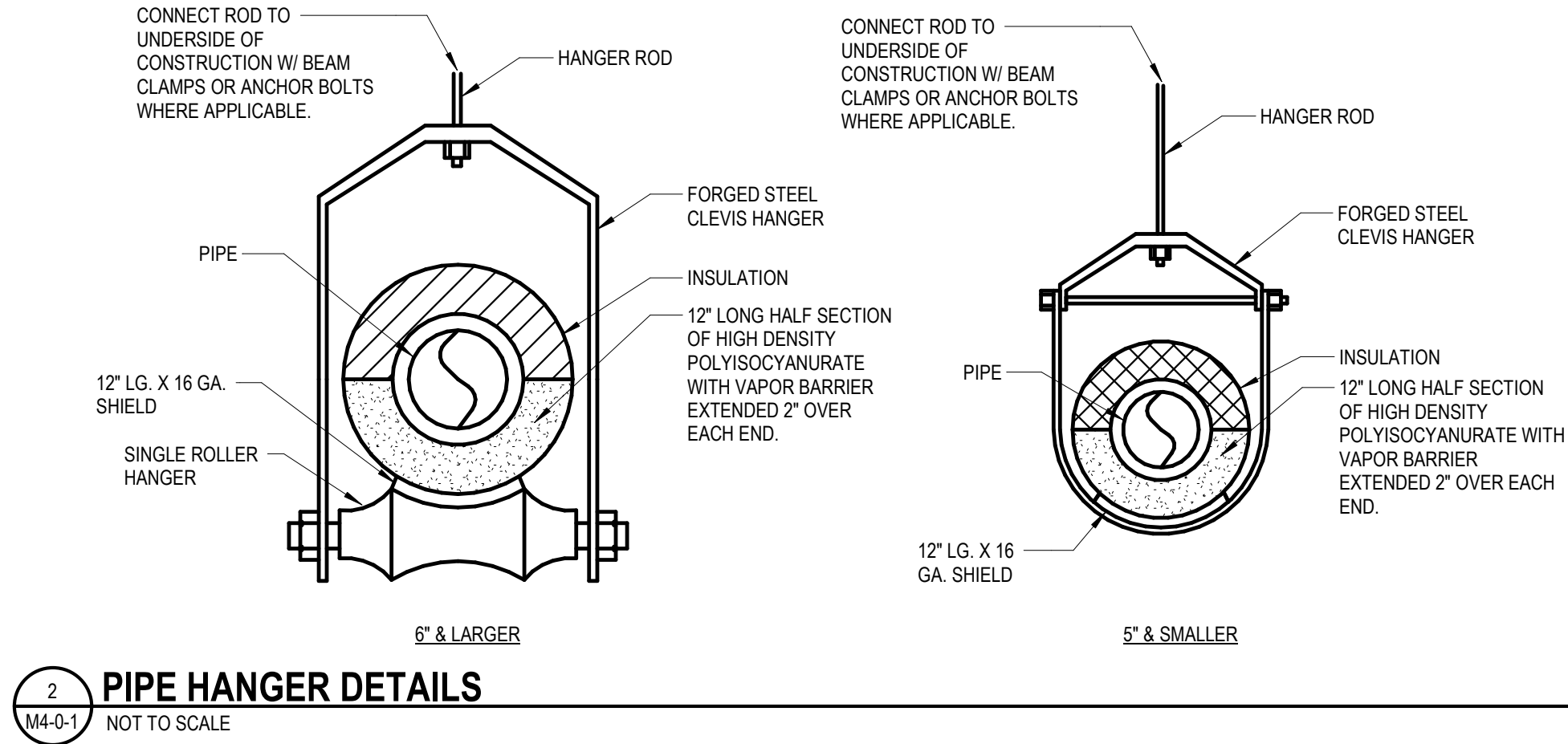
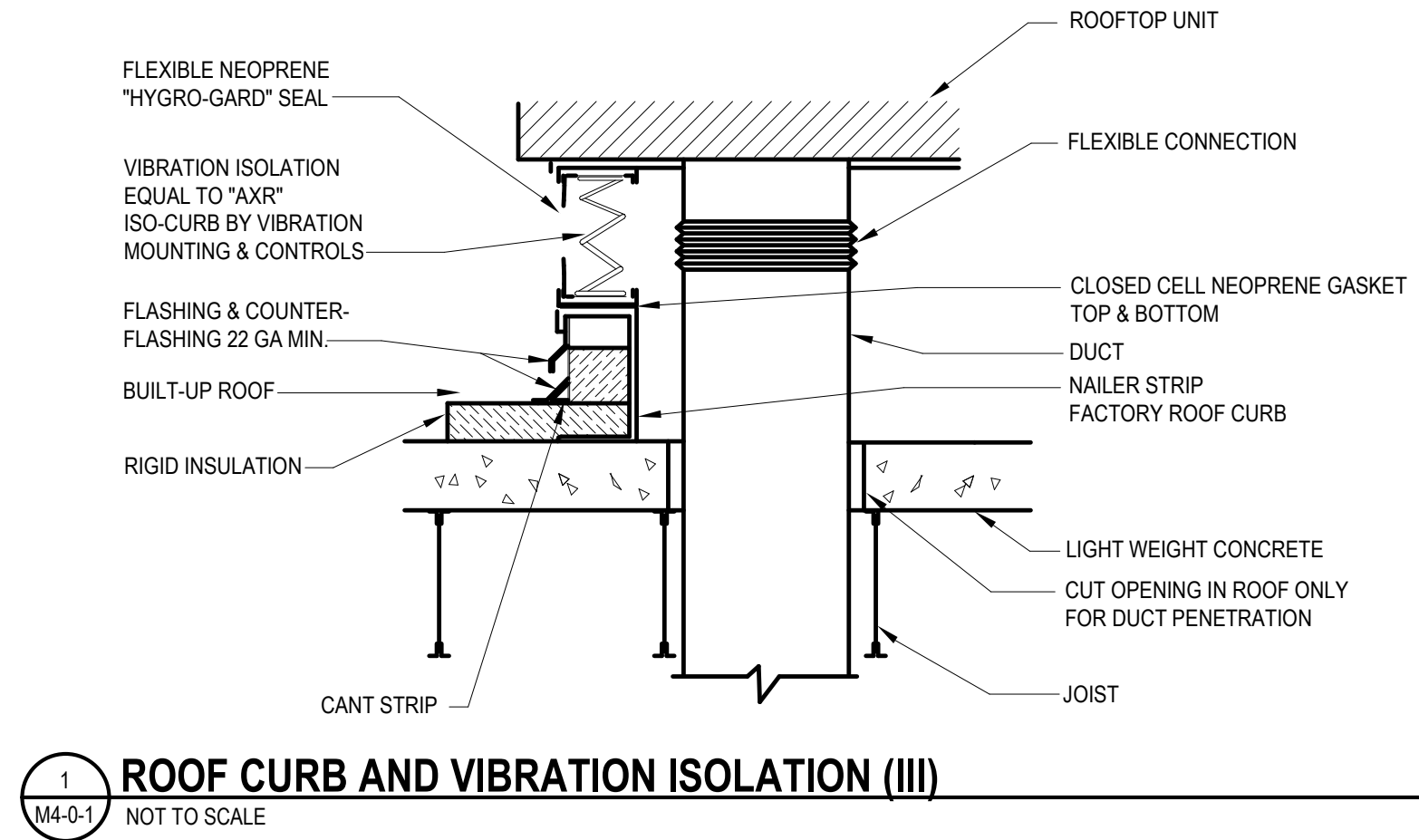
August 28th, 2023

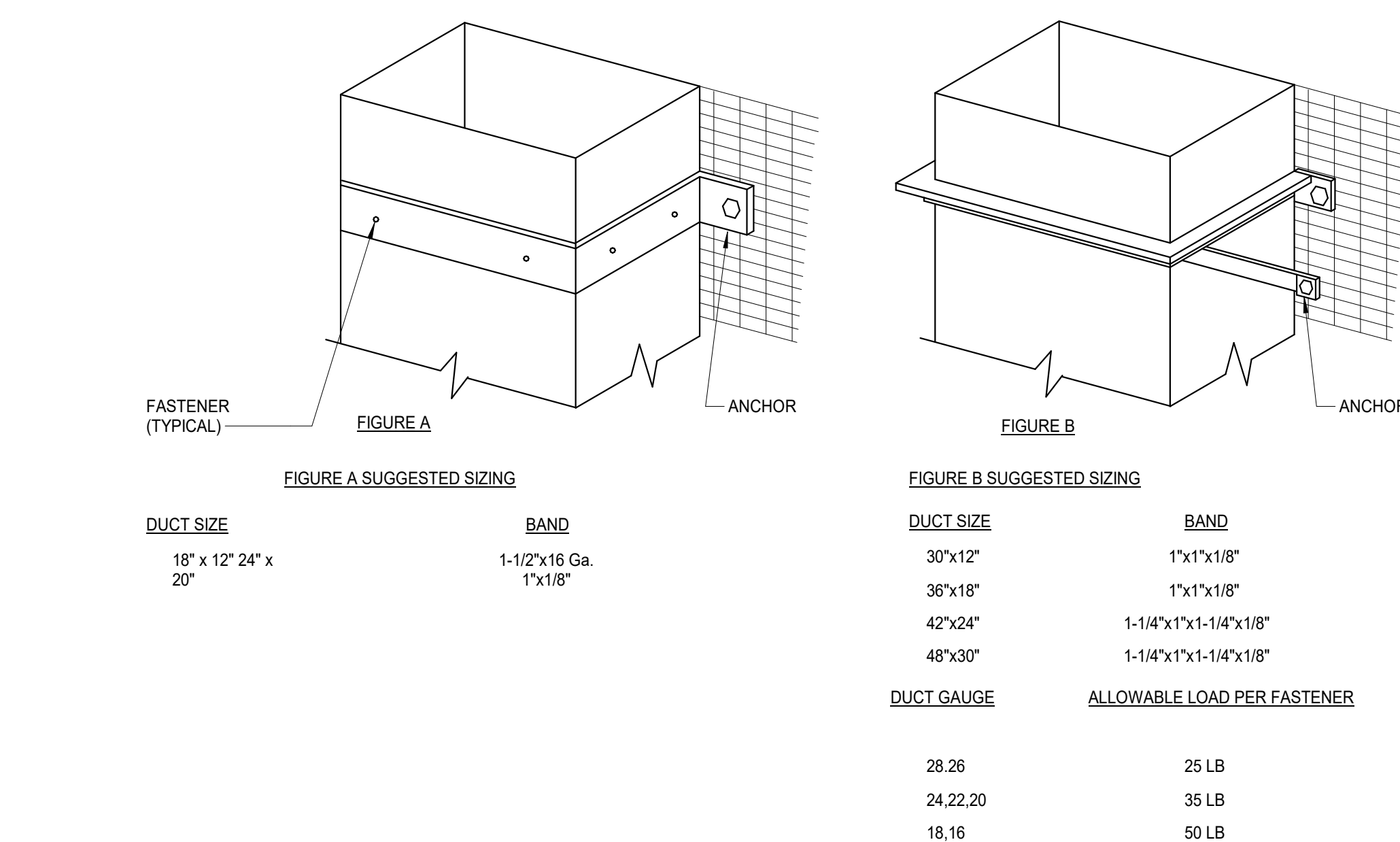
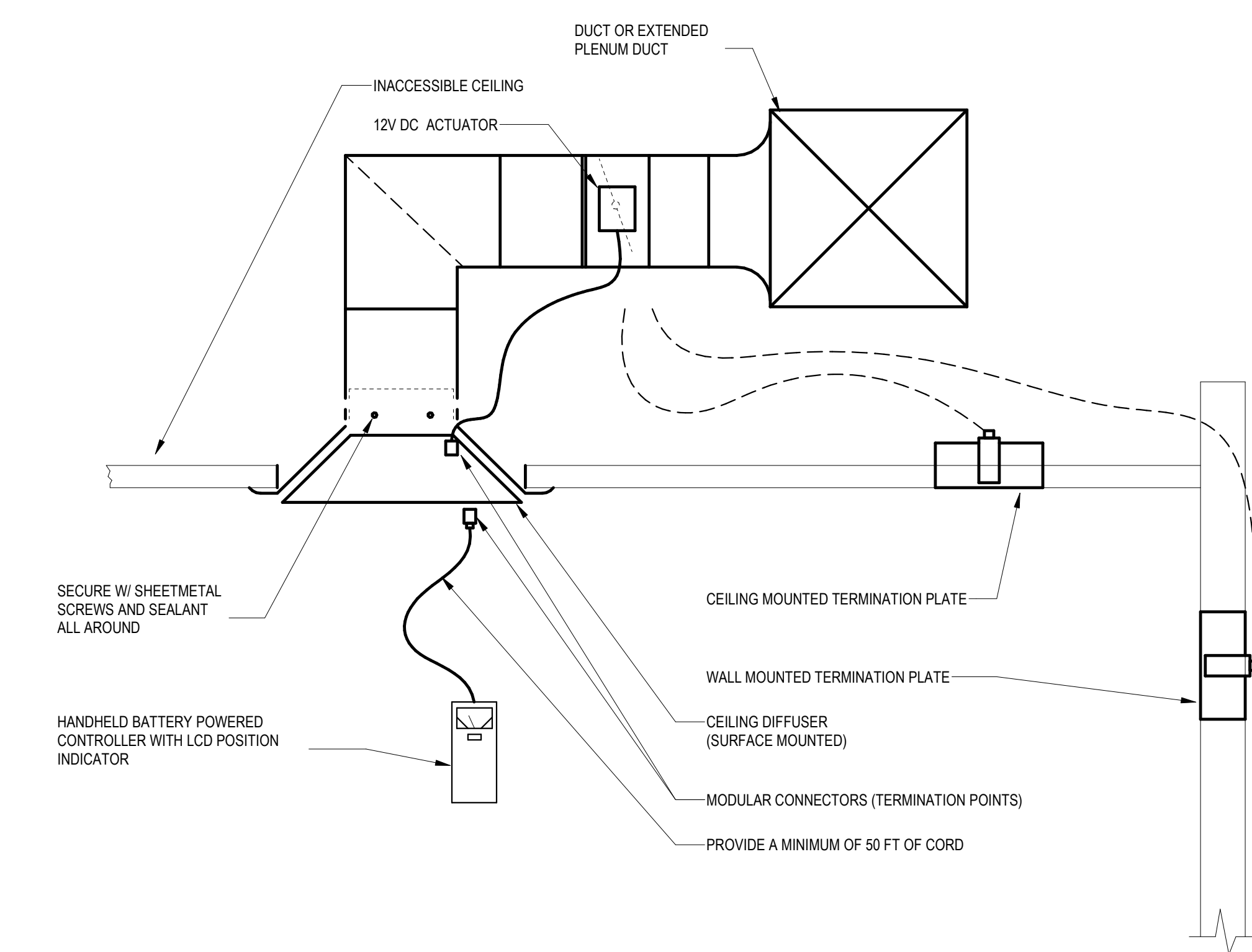
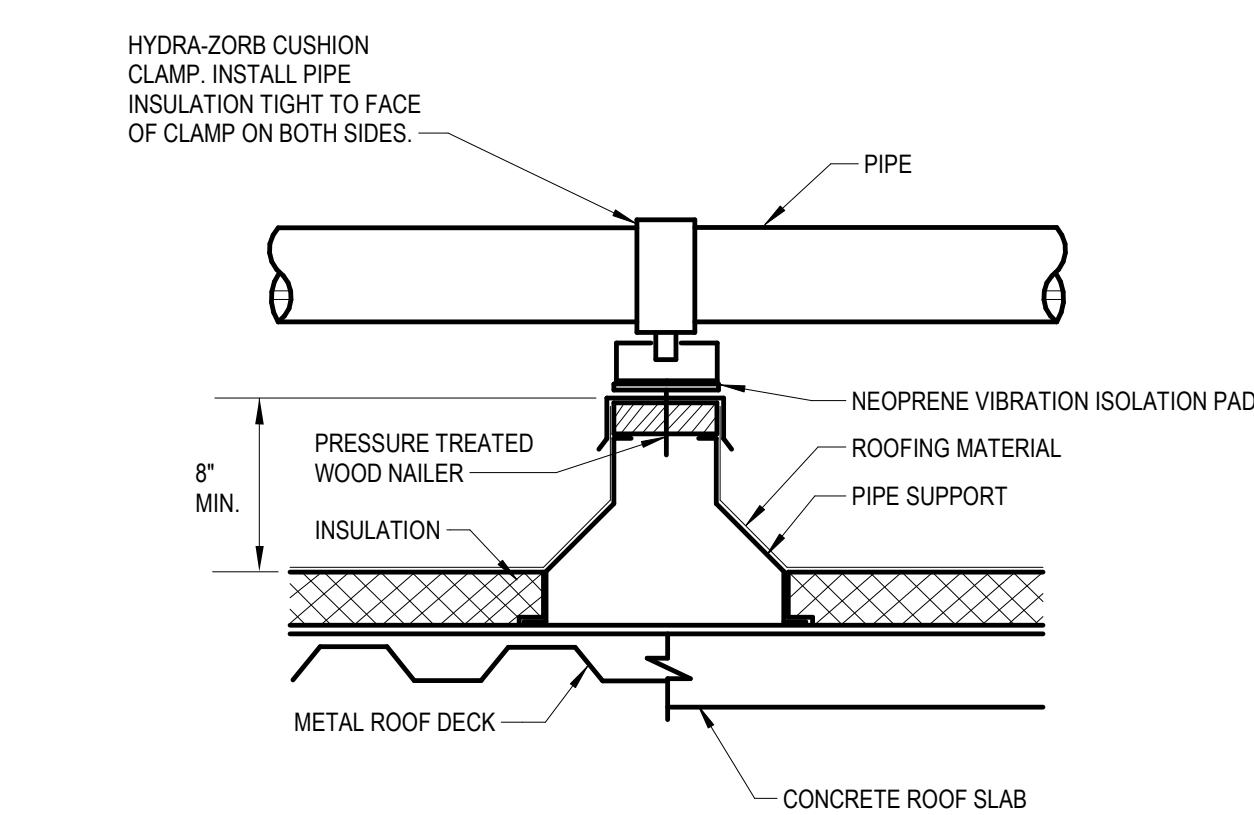
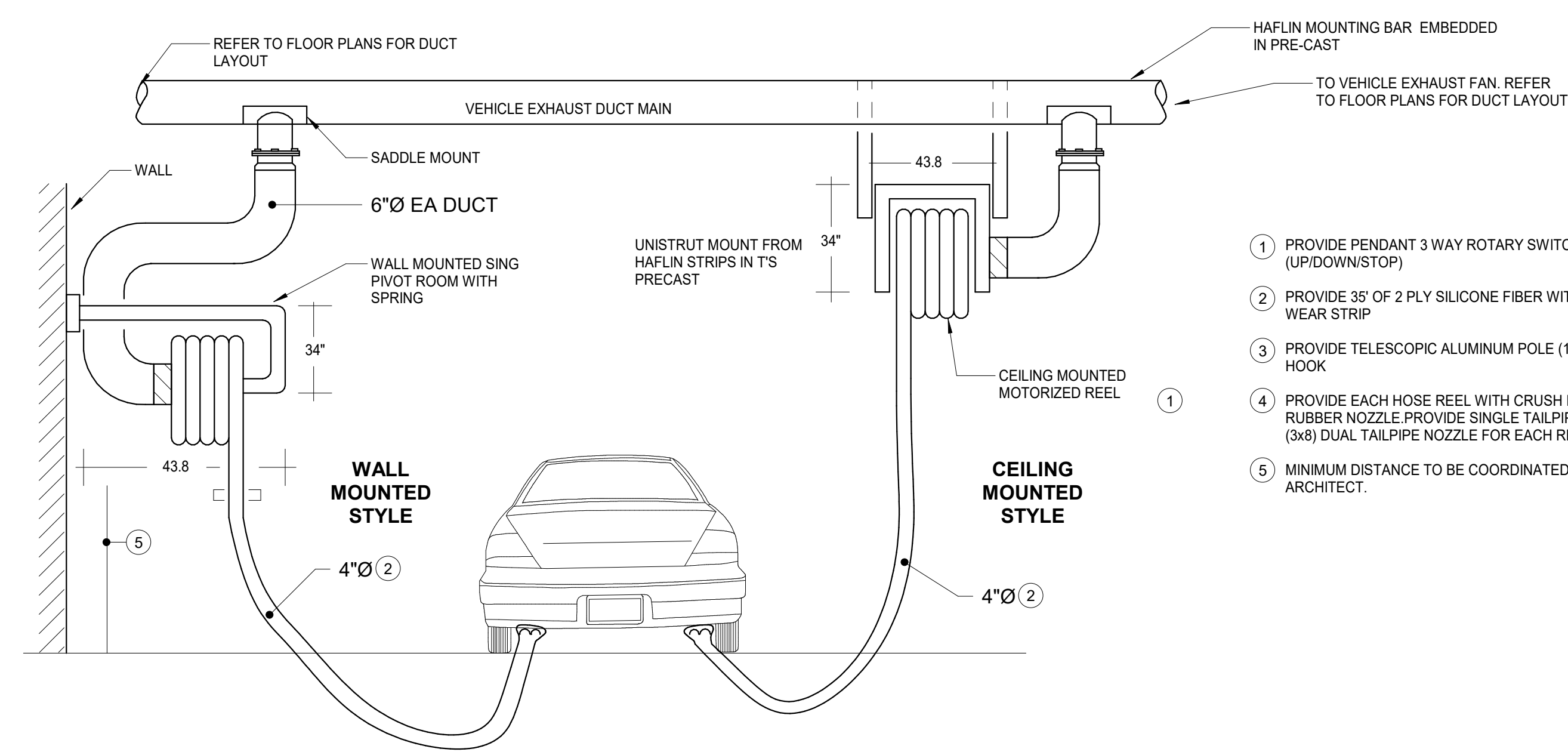
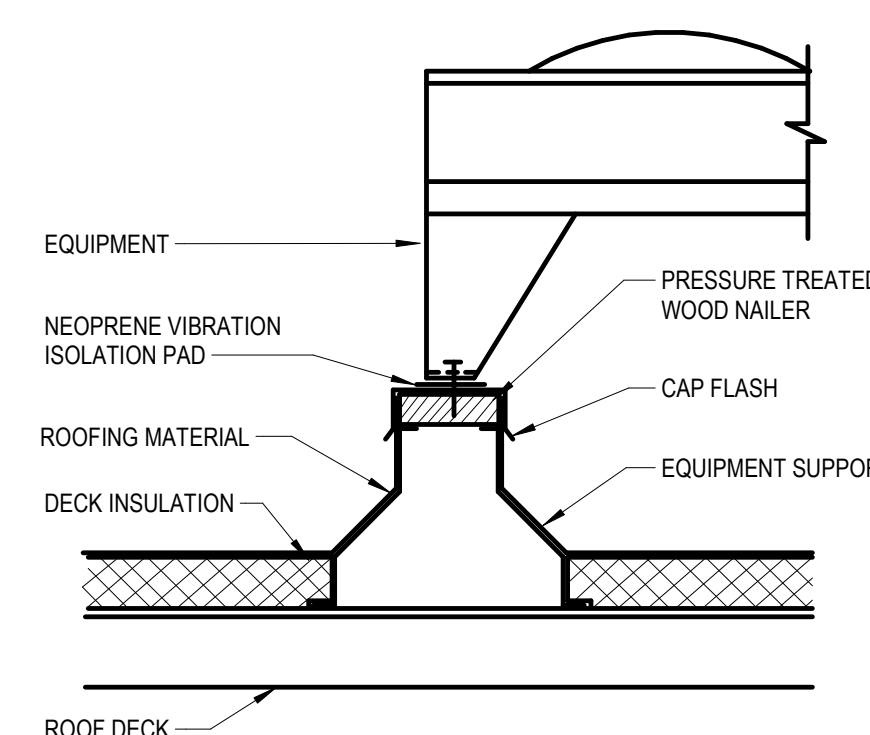
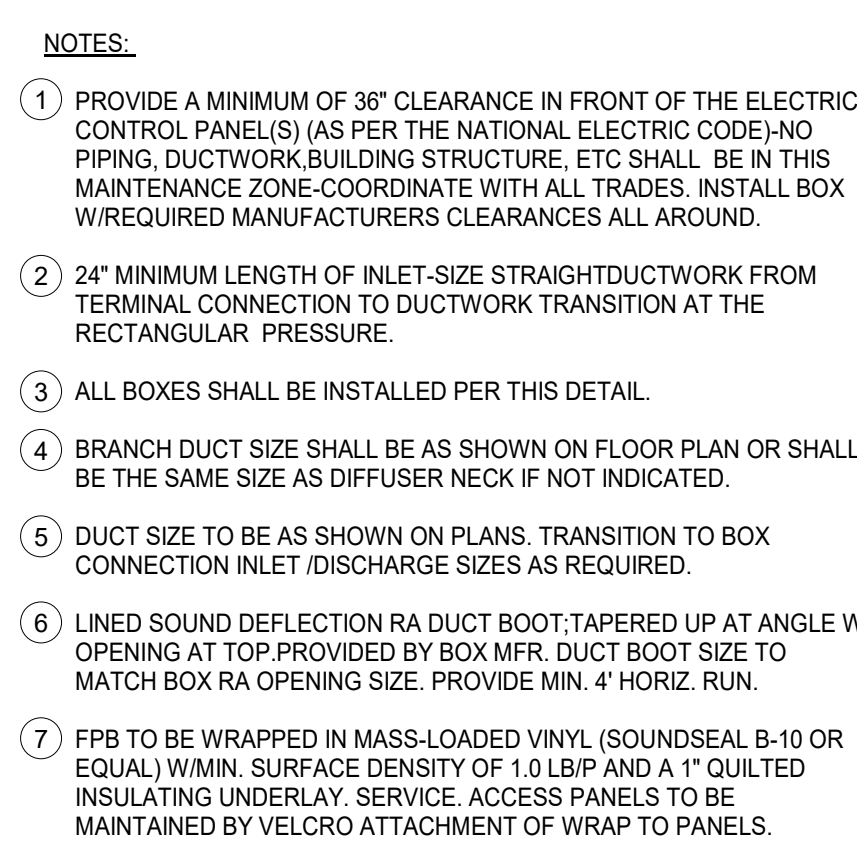
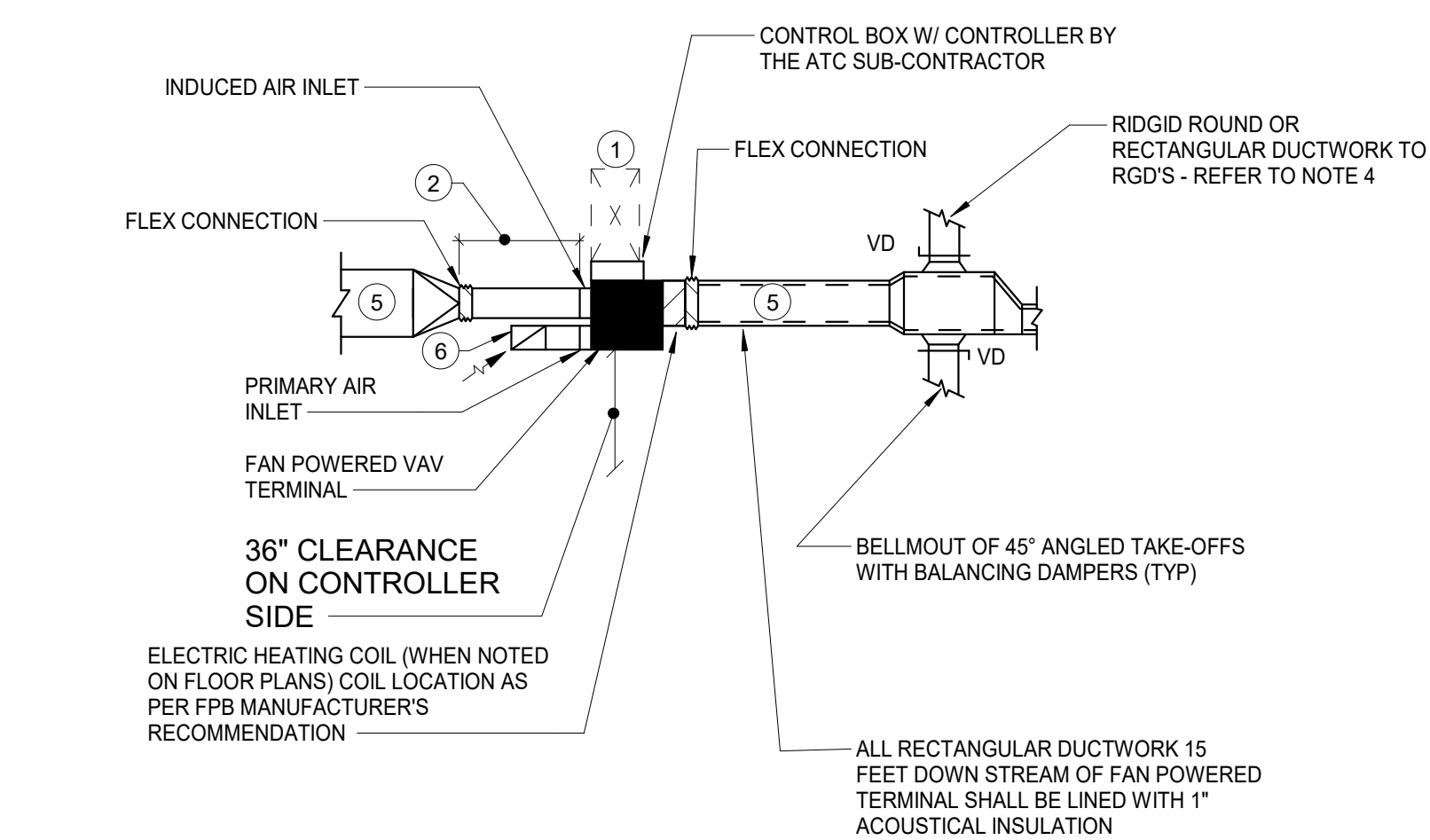
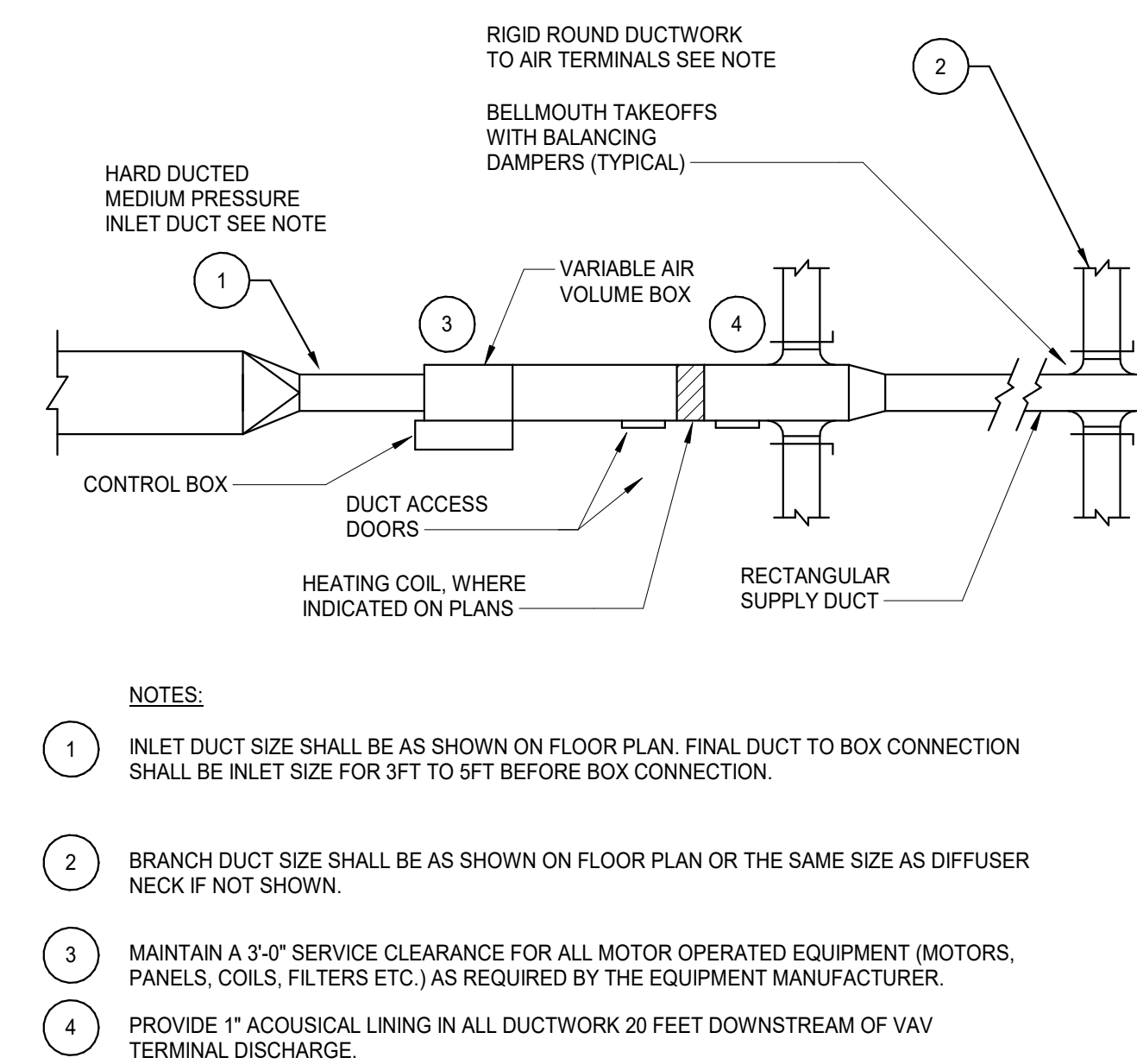
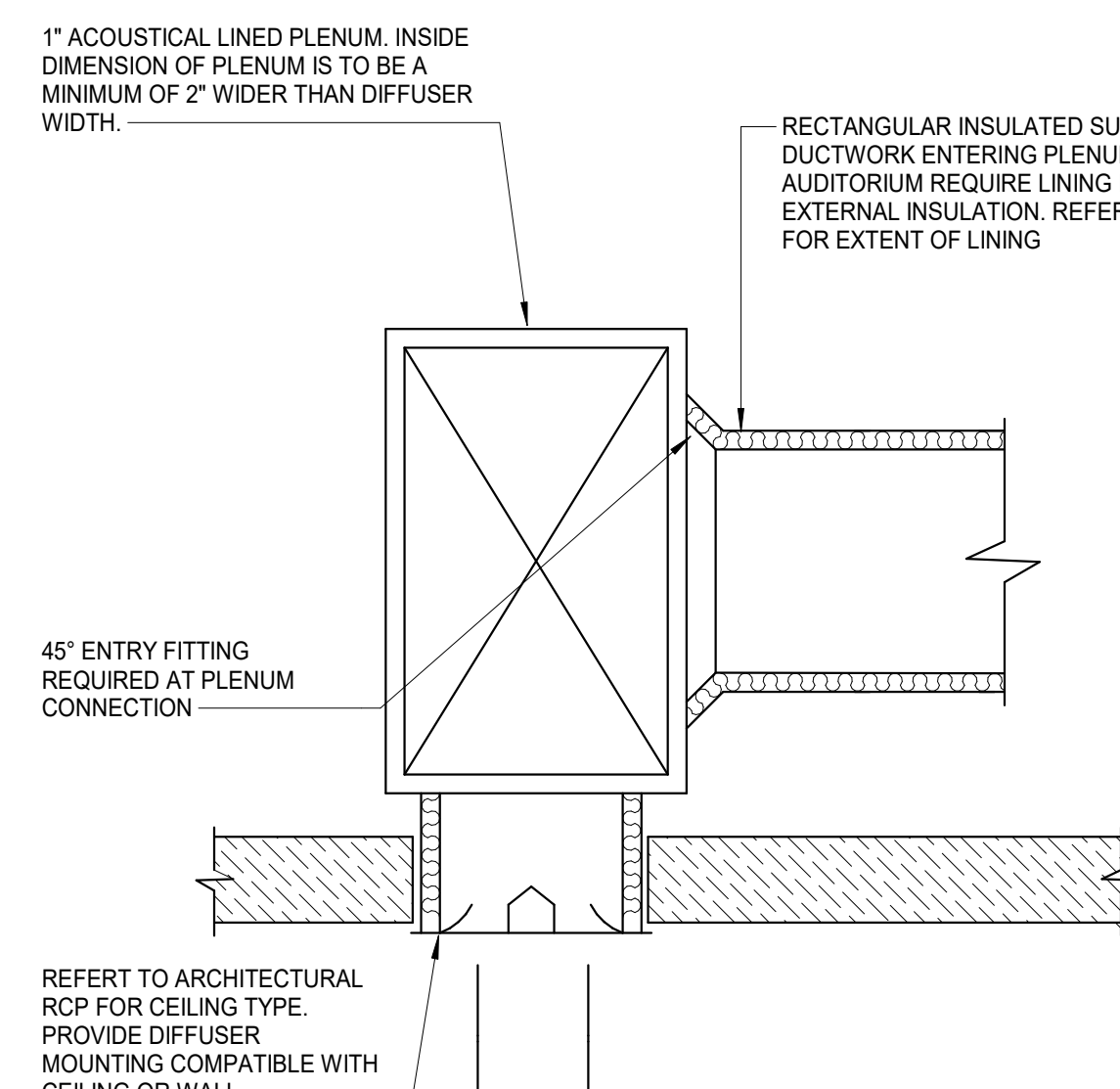
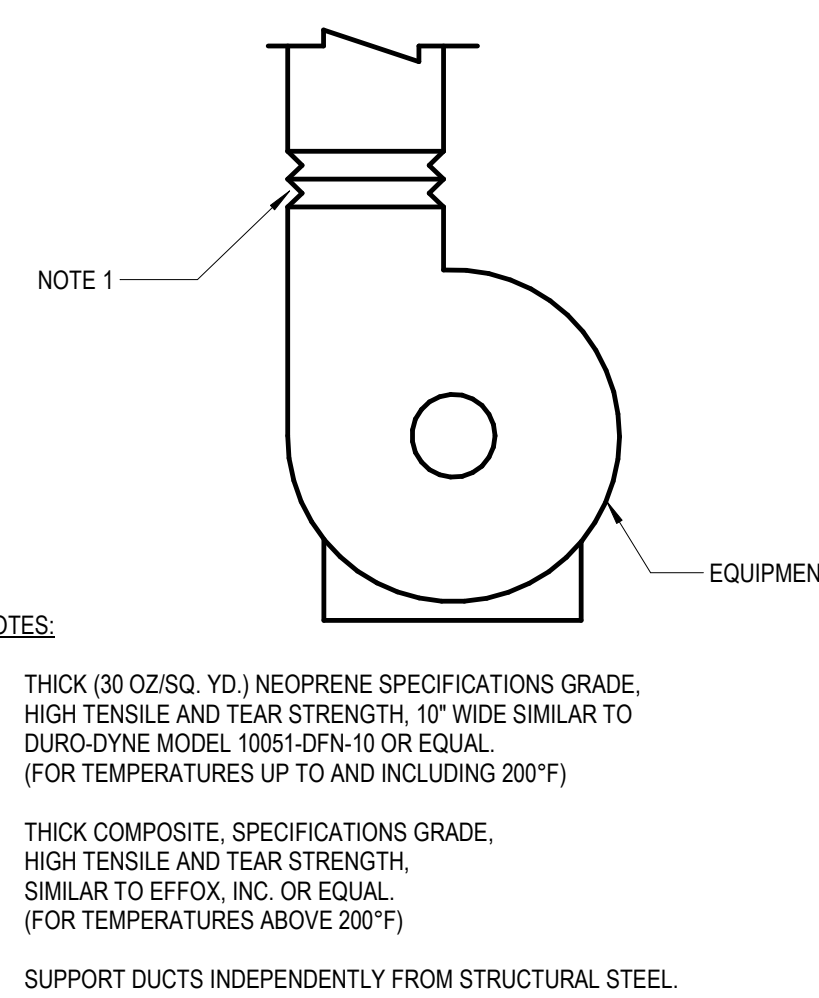
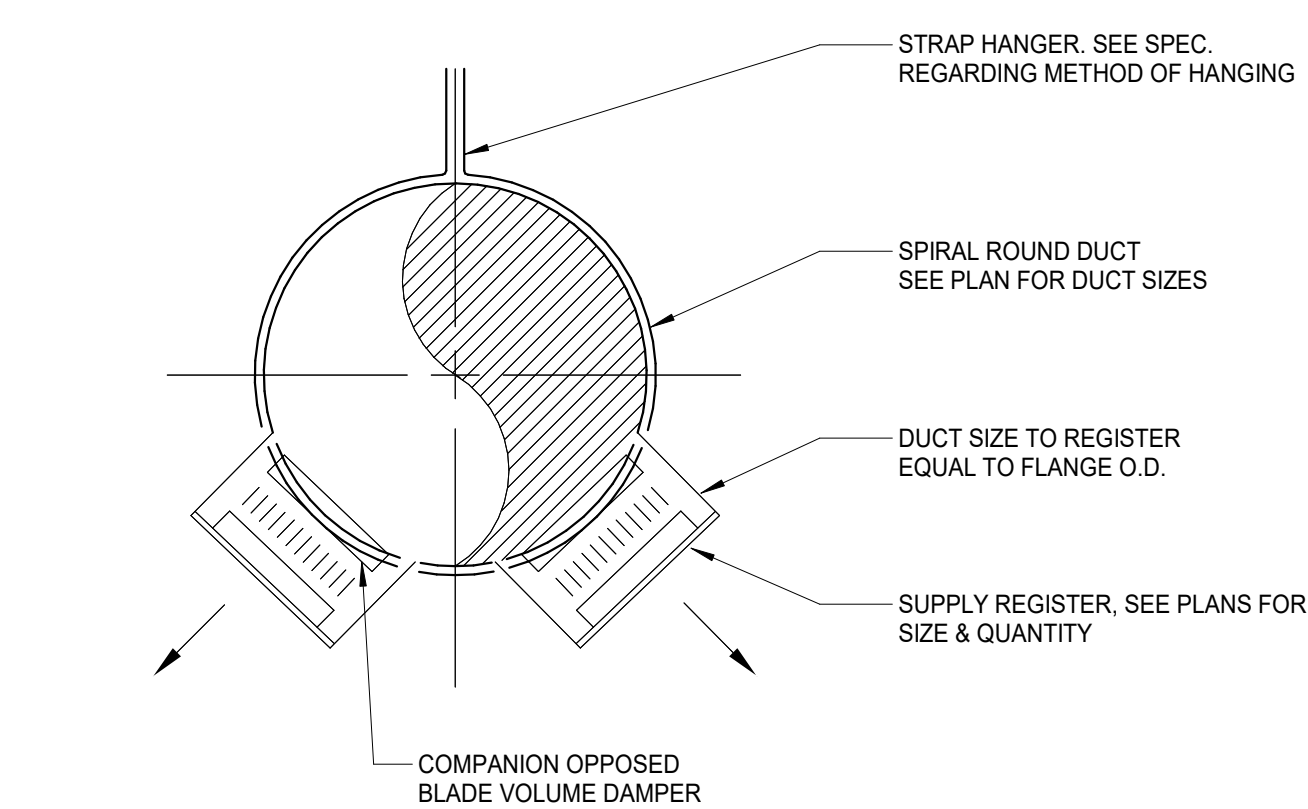
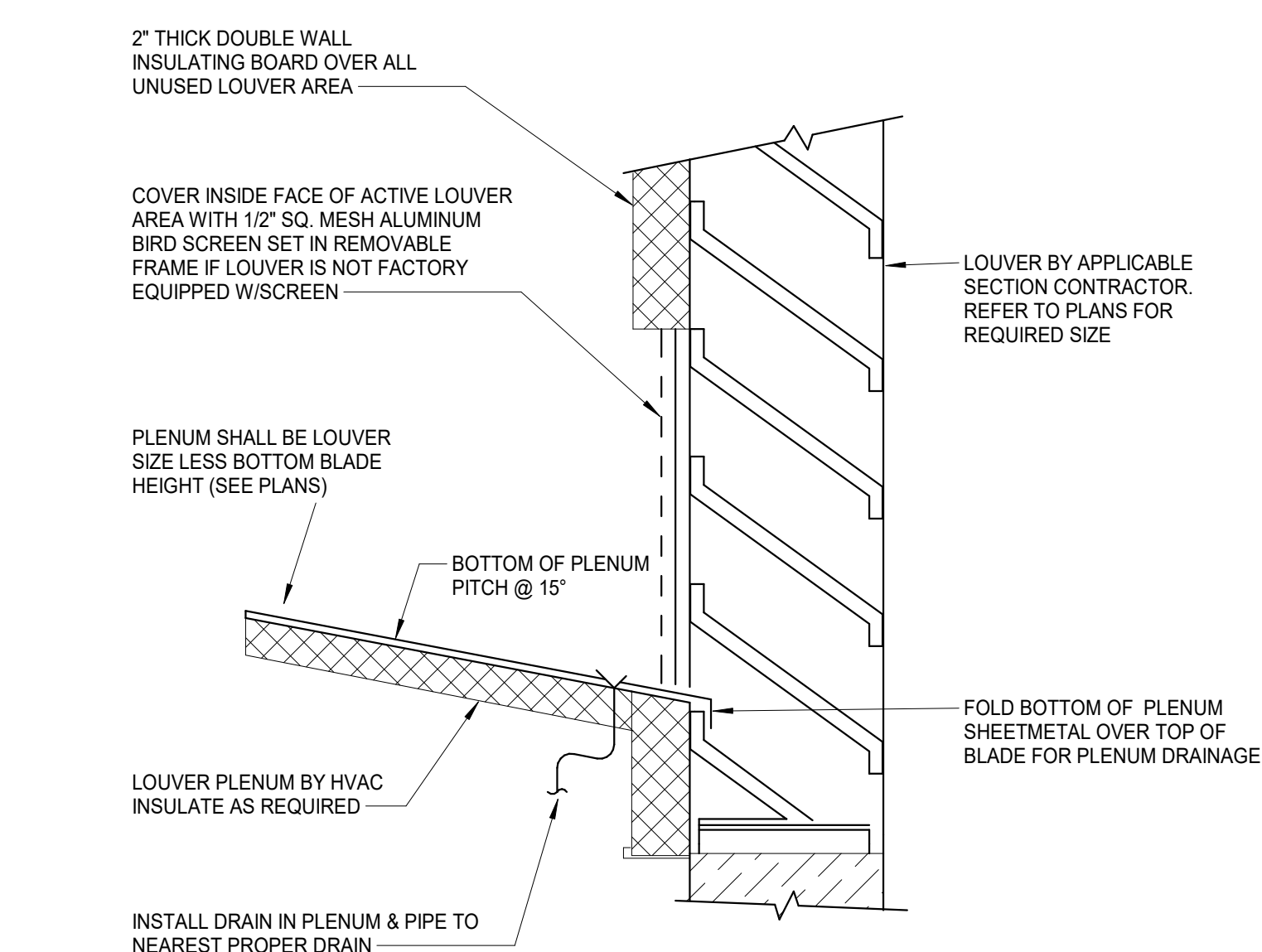
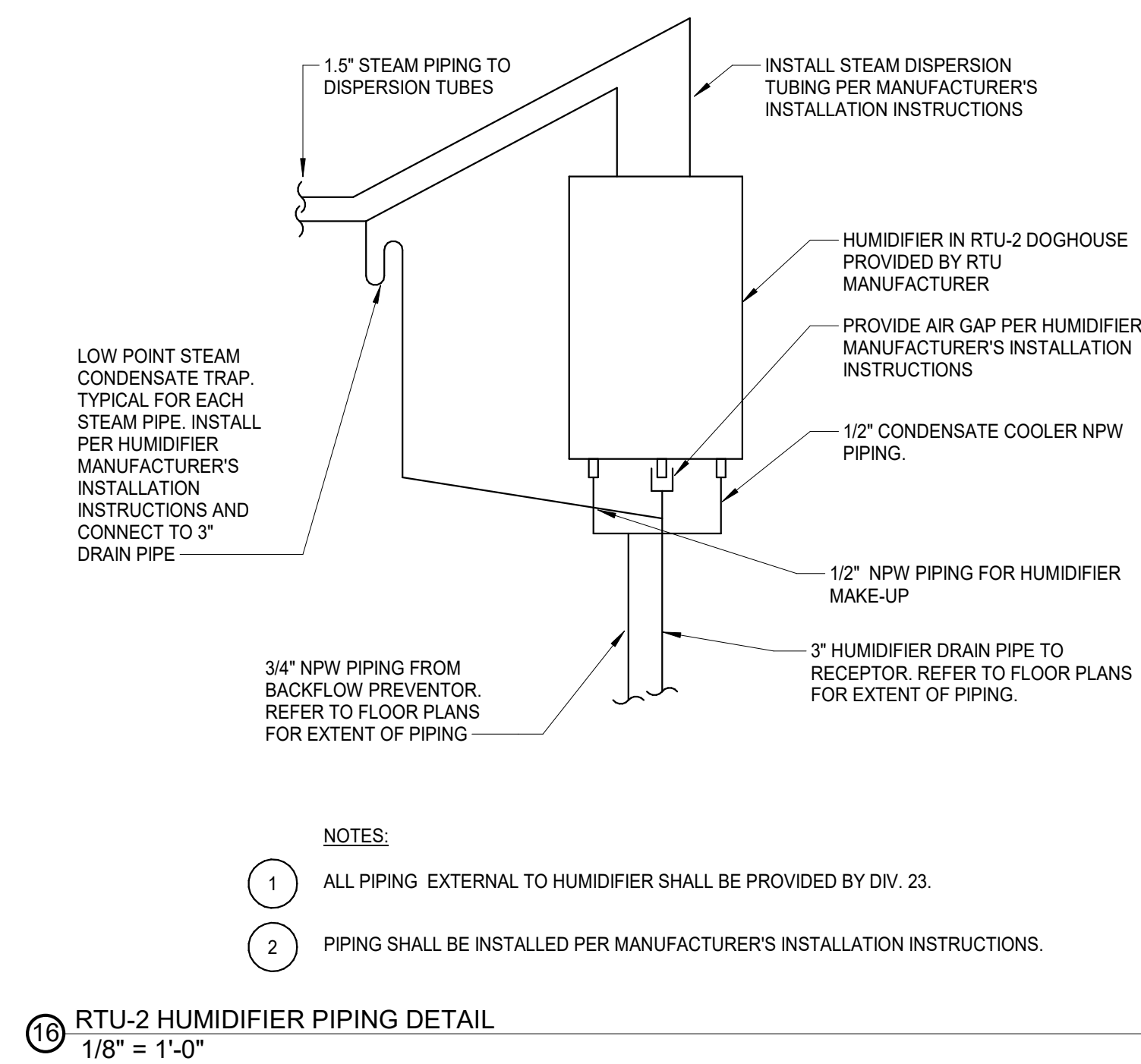
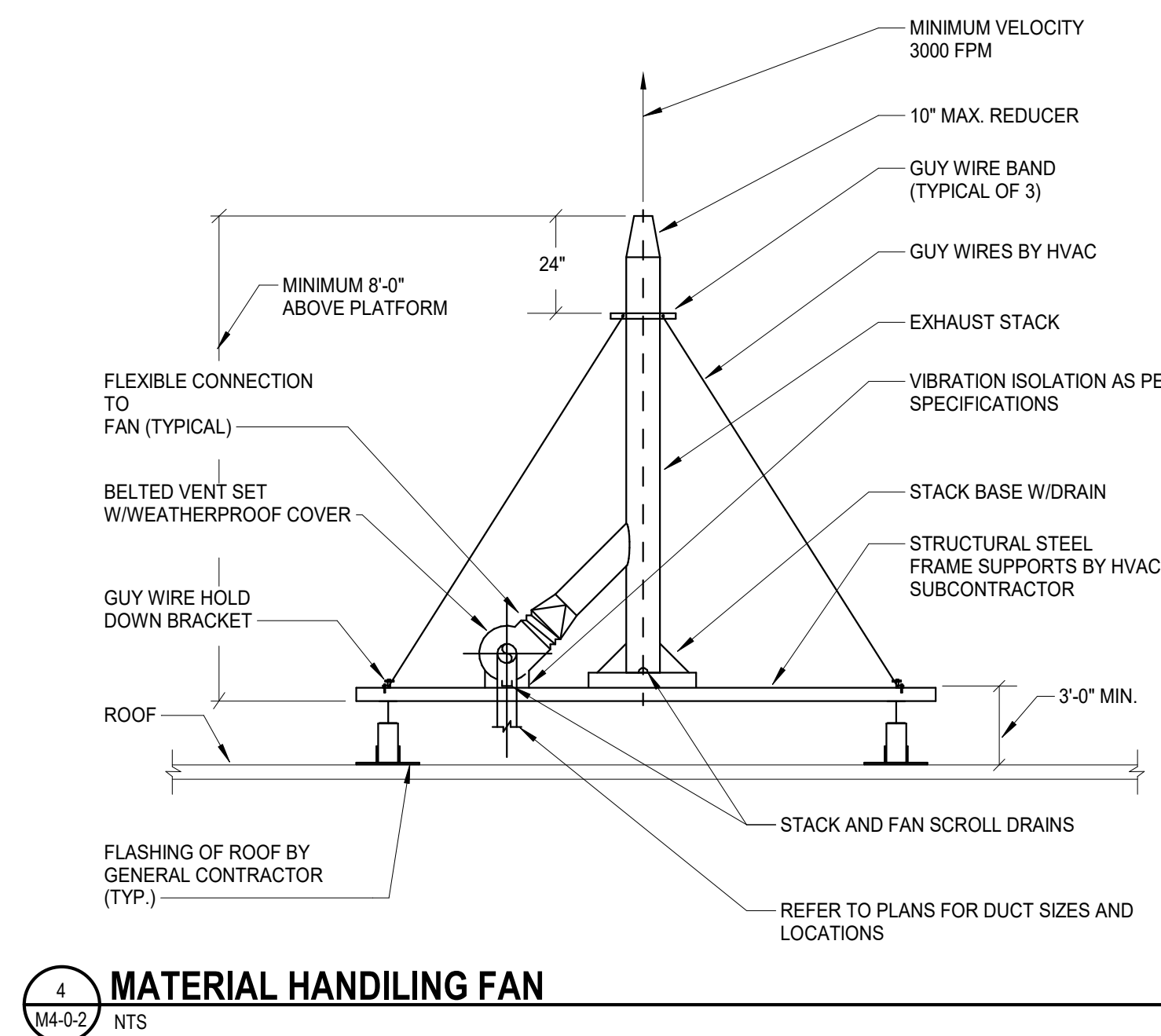
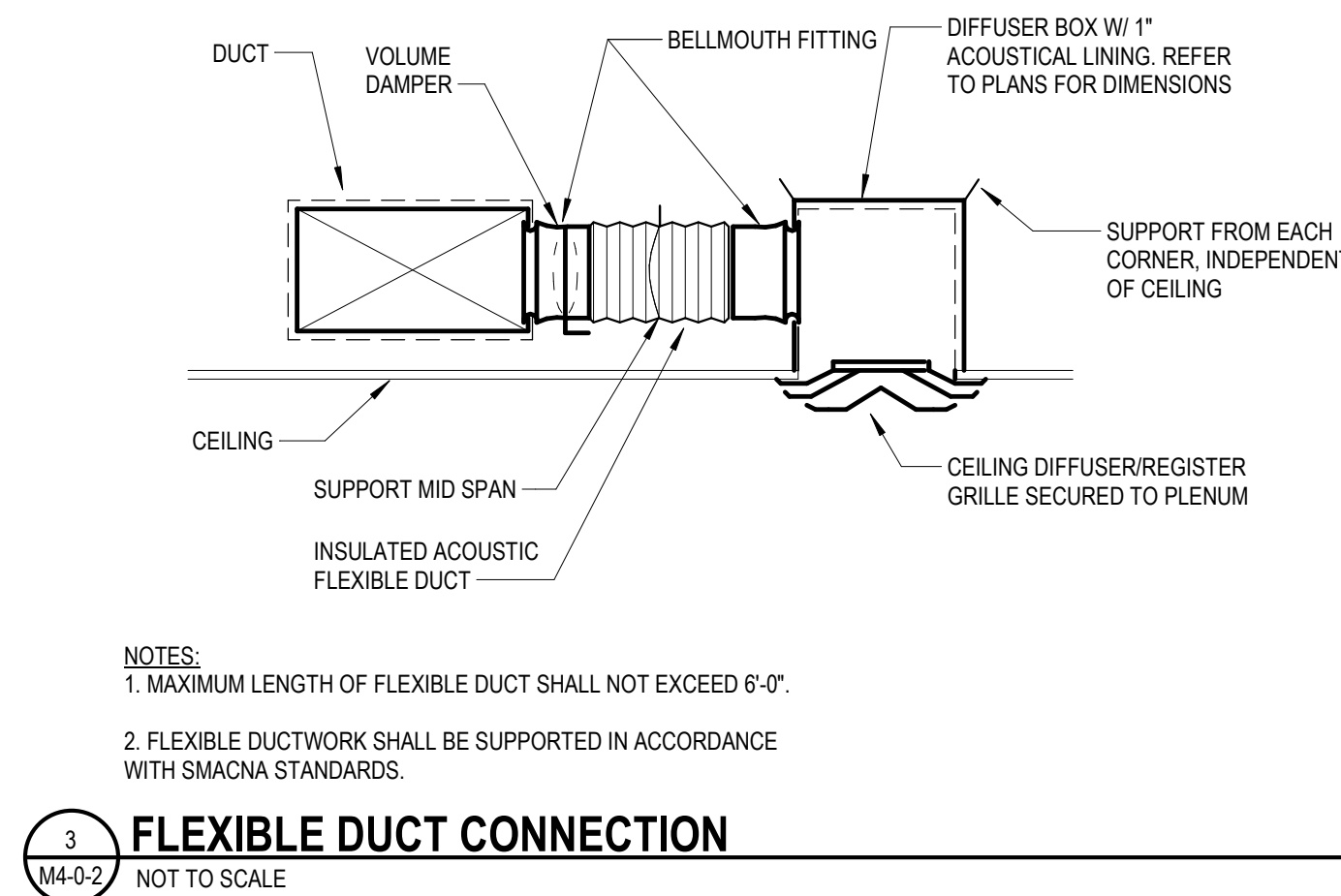
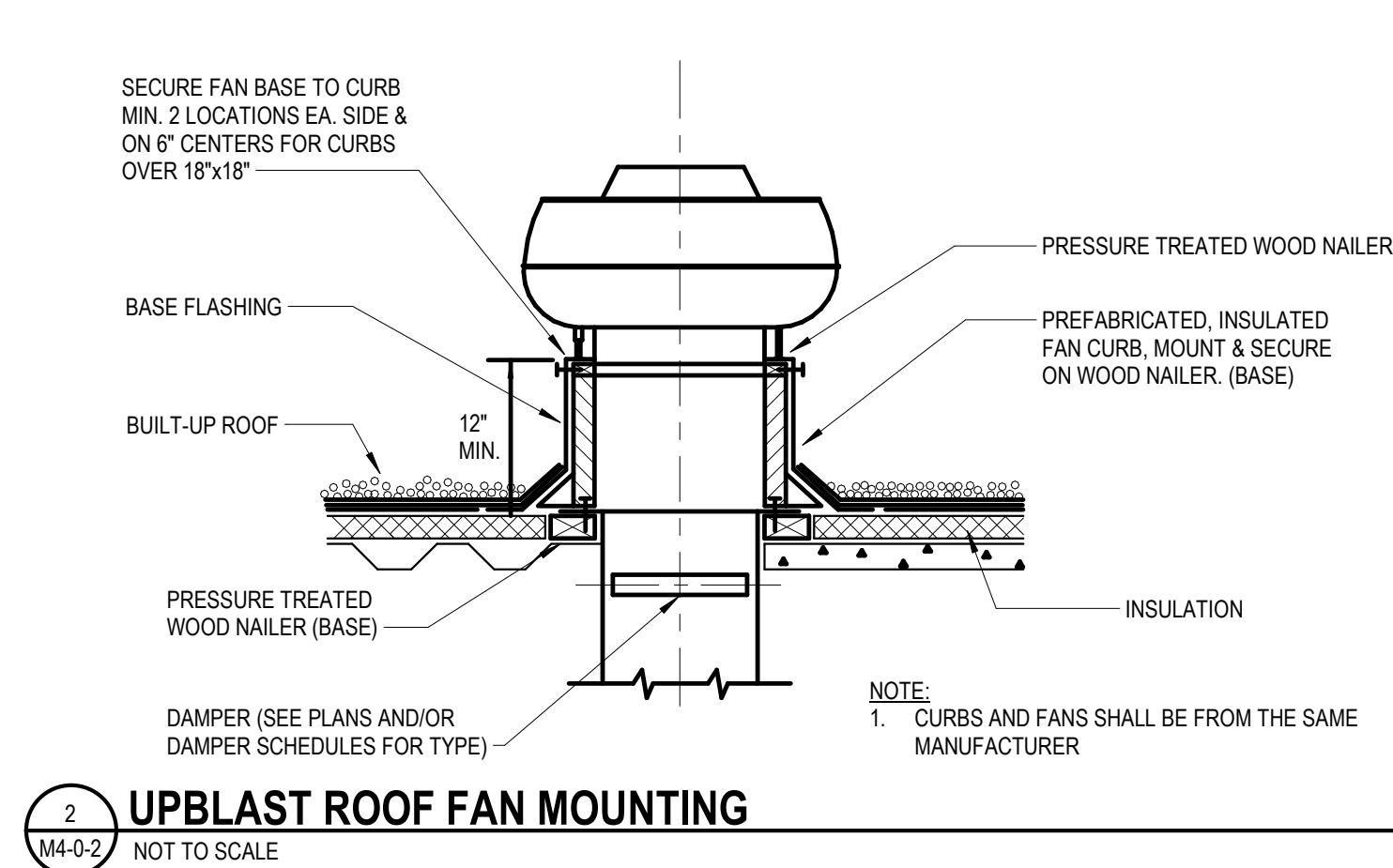
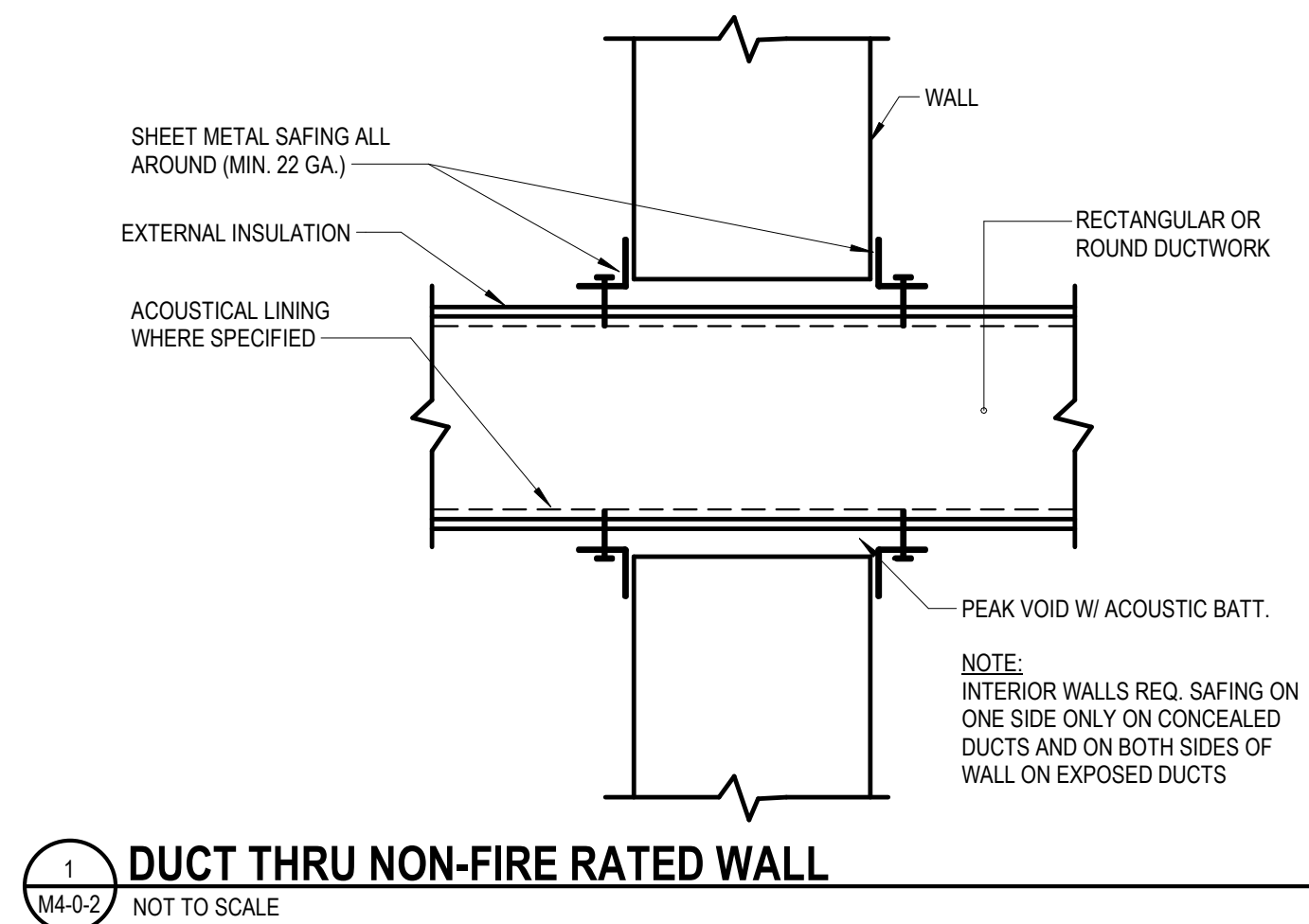
**MECHANICAL
AIR RISER
DIAGRAMS**

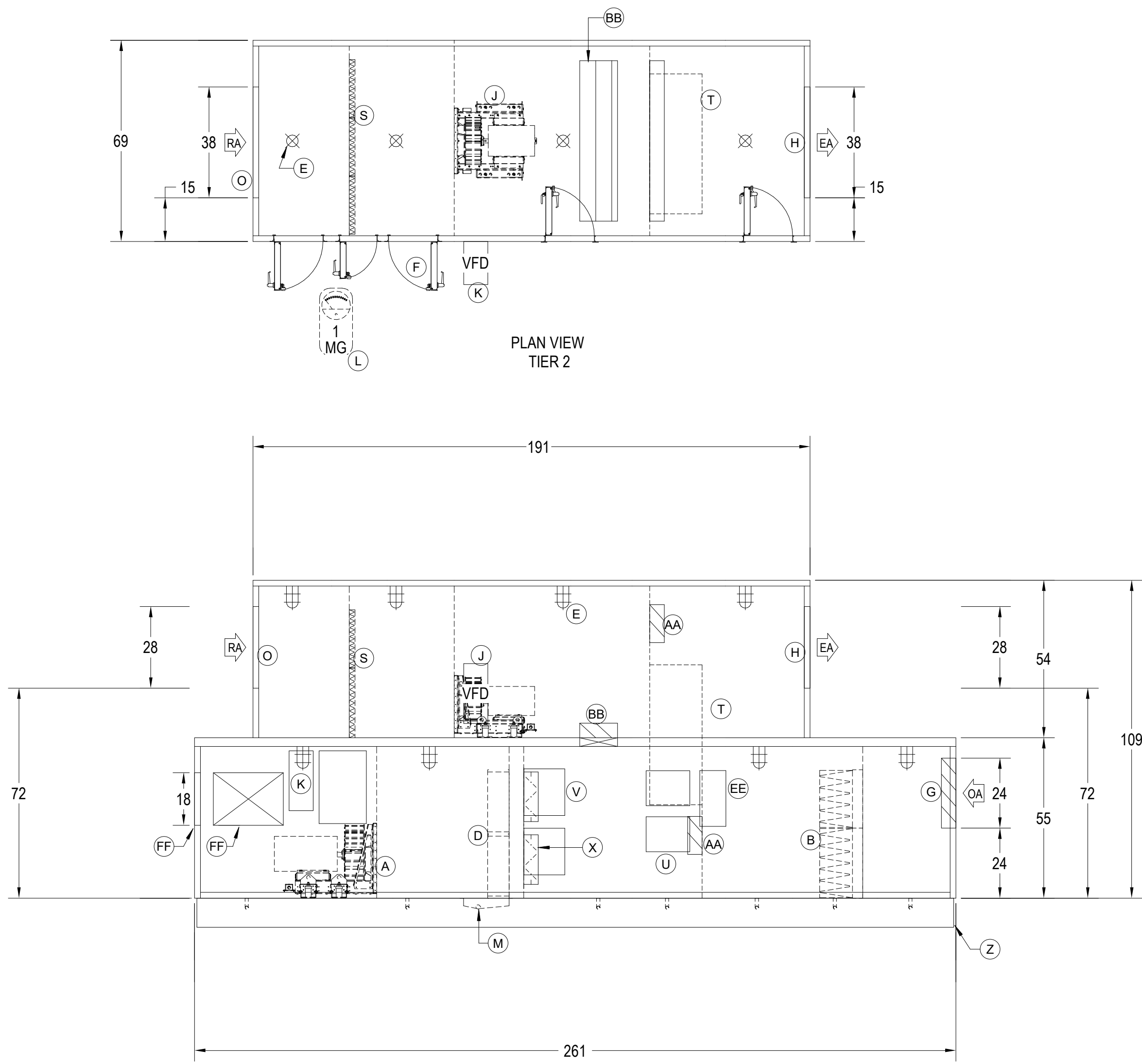
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Job No.: 60-20-409
Drawn By: PKJ
Date: August 28th, 2023

M3-0-6

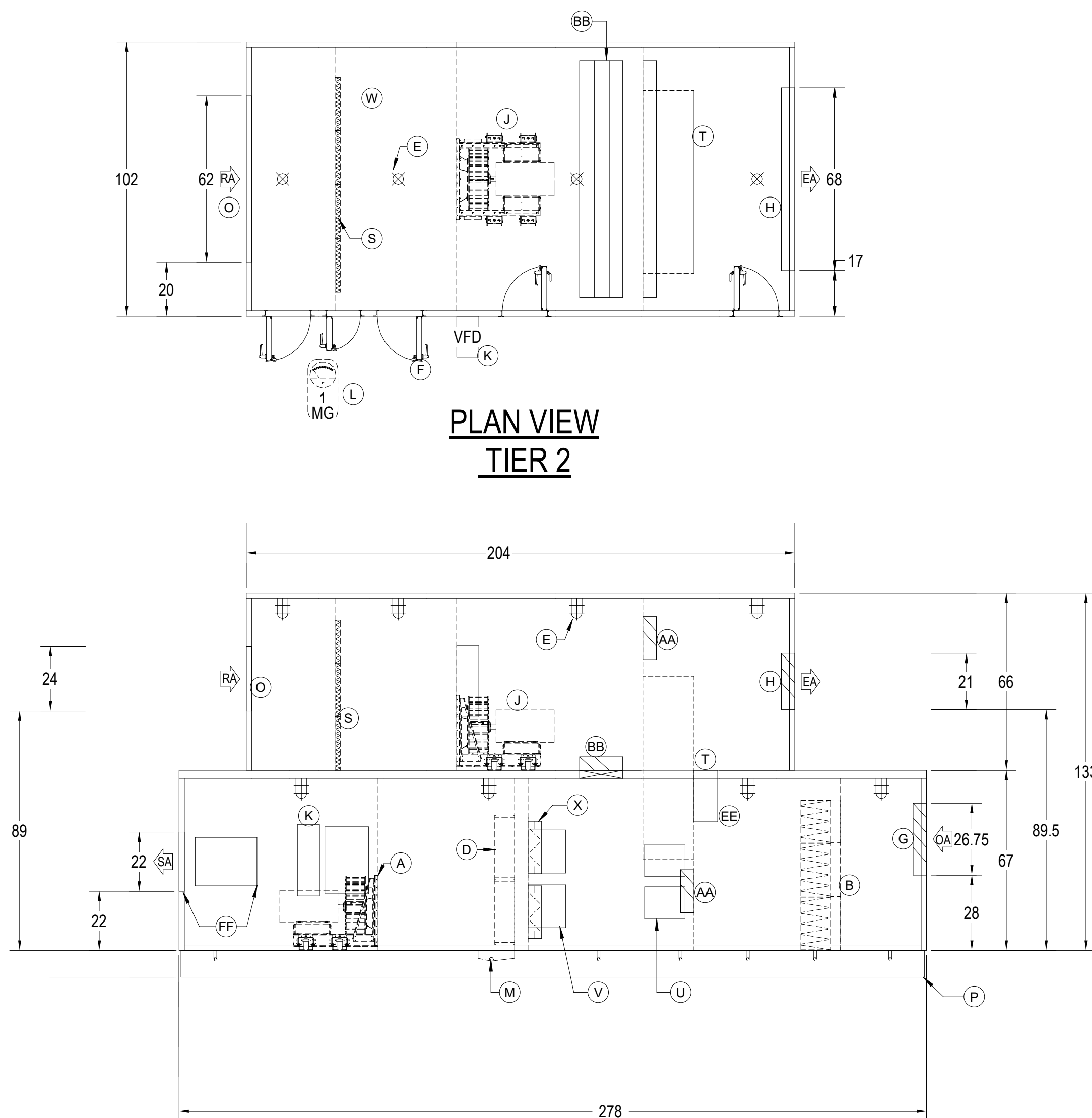








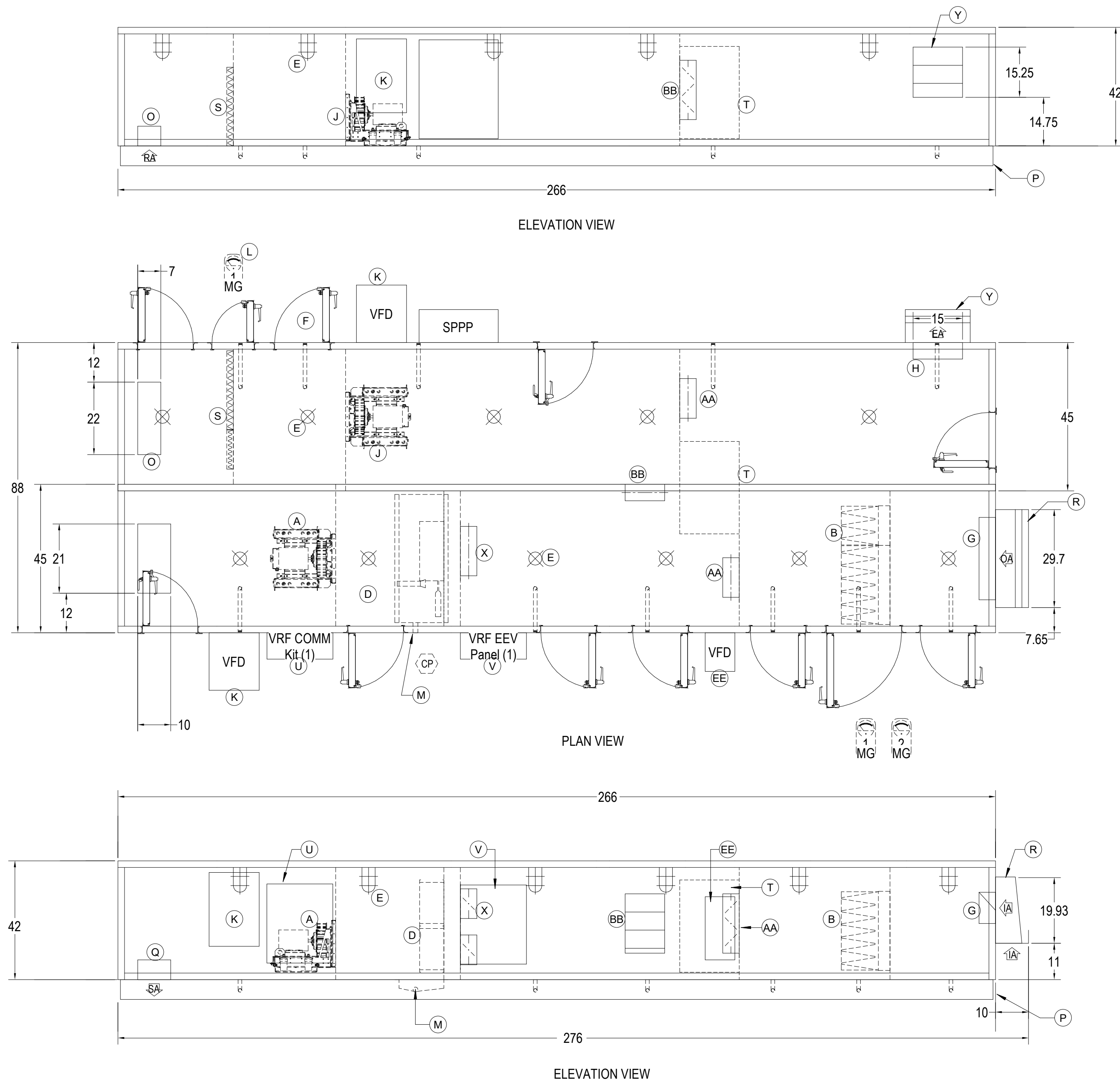
1 AHU-9
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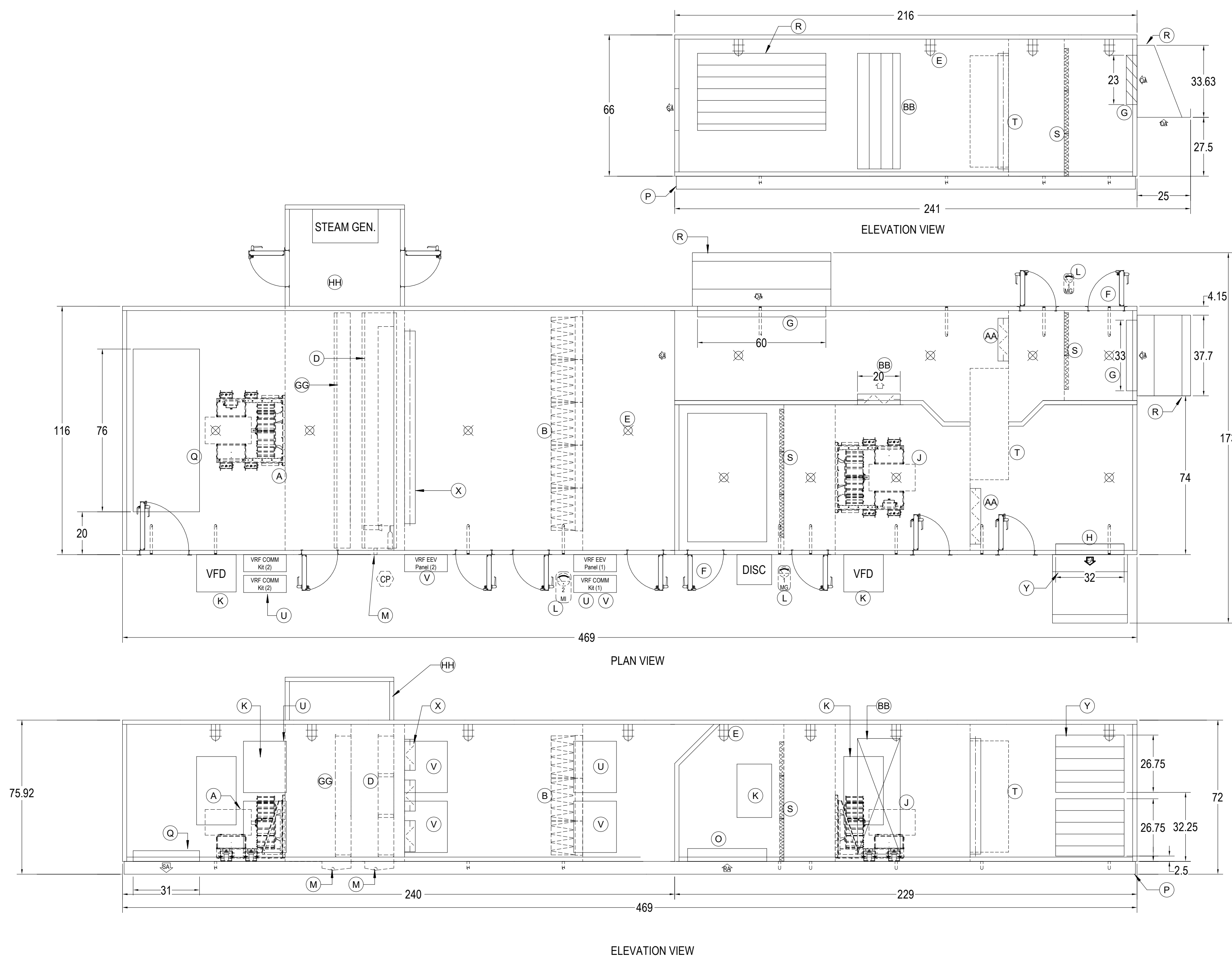
2 AHU-10
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KEY NOTES:			
(A)	SUPPLY FAN	(R)	OUTSIDE AIR INTAKE HOOD
(B)	FILTER BANK 2" MERV-10, 12" MERV-13	(S)	2" MERV-10 FILTER
(C)	ELECTRIC HEATING COIL	(T)	ENERGY RECOVERY WHEEL
(D)	VRF COOLING/HEATING COIL	(U)	VRF REFRIGERANT (EEV KIT) ENCLOSURE
(E)	LIGHT (TYPICAL)	(V)	VRF REFRIGERANT (EEV KIT) ENCLOSURE
(F)	ACCESS DOOR (TYPICAL)	(W)	RETURN AIR INTAKE PLENUM SECTION
(G)	OUTSIDE AIR DAMPER (PARALLEL BLADE) WITH AFMS	(X)	COIL BYPASS DAMPERS
(H)	EA DISCHARGE DAMPER (OPPOSED BLADE)	(Y)	EXHAUST AIR HOOD
(I)	RETURN AIR DAMPER (PARALLEL BLADE) WITH AFMS	(Z)	8" BASE RAIL
(J)	RETURN FAN	(AA)	ENERGY RECOVERY DEVICE BYPASS DAMPER
(K)	FAN VFD	(BB)	RECIRCULATION DAMPER
(L)	MAGNETIC FILTER GAUGE	(CC)	ENERGY RECOVERY PLATE
(M)	CONDENSATE DRAIN OUTLET	(DD)	EEV REHEAT PANEL
(N)	SUPPLY AIR DISCHARGE PLENUM SECTION	(EE)	RECOVERY WHEEL VFD
(O)	RETURN INTAKE OPENING	(FF)	SUPPLY AIR DISCHARGE WITH AFMS
(P)	8" BASE RAIL	(GG)	HUMIDIFICATION DISPERSION TUBES
(Q)	SUPPLY DISCHARGE OPENING	(HH)	HUMIDIFIER ENCLOSURE

3 AHU DRAWINGS LEGEND
NTS



4 RTU-1
NTS



5 RTU-2
NTS

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Drumme Rosane Anderson, Inc.
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South Windsor, CT
06074
Tel: 817.984.1700
www.dra-inc.com

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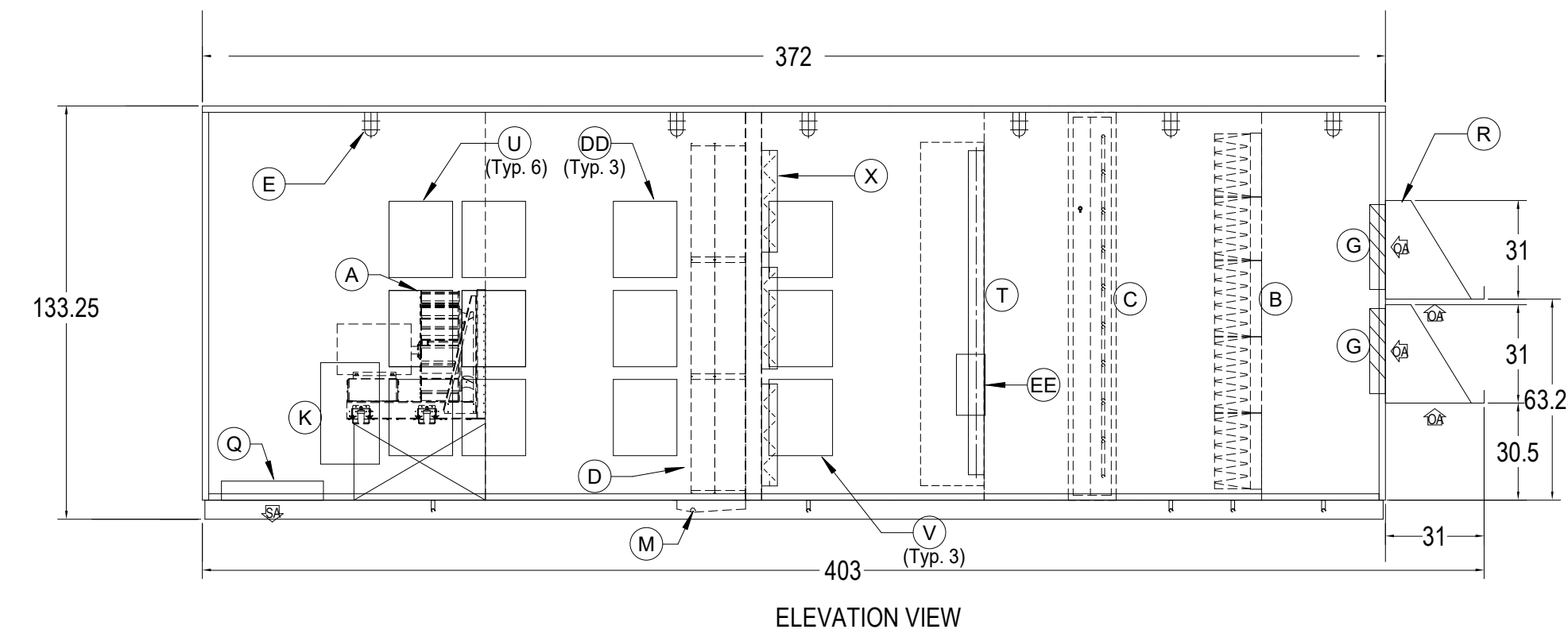
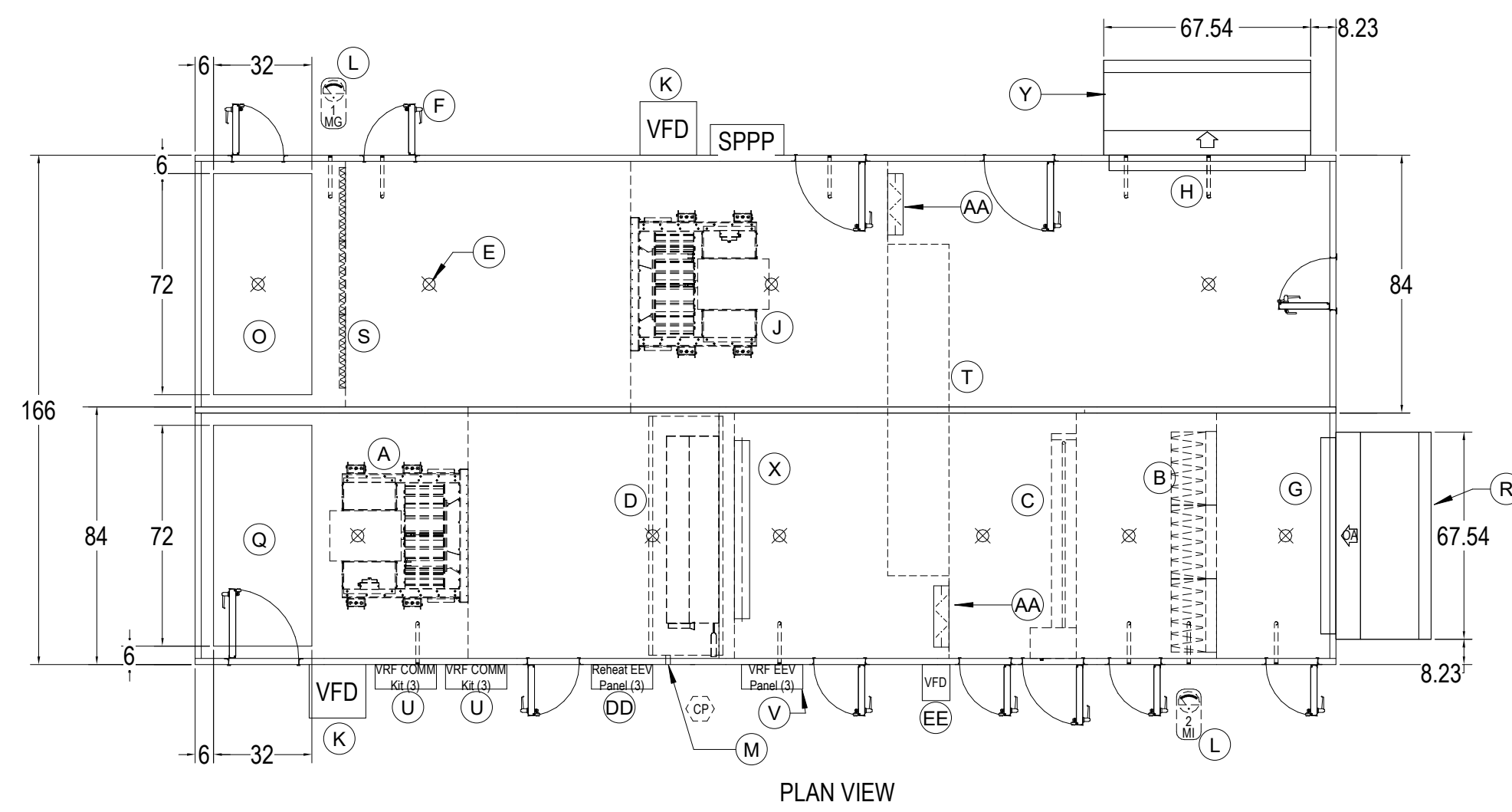
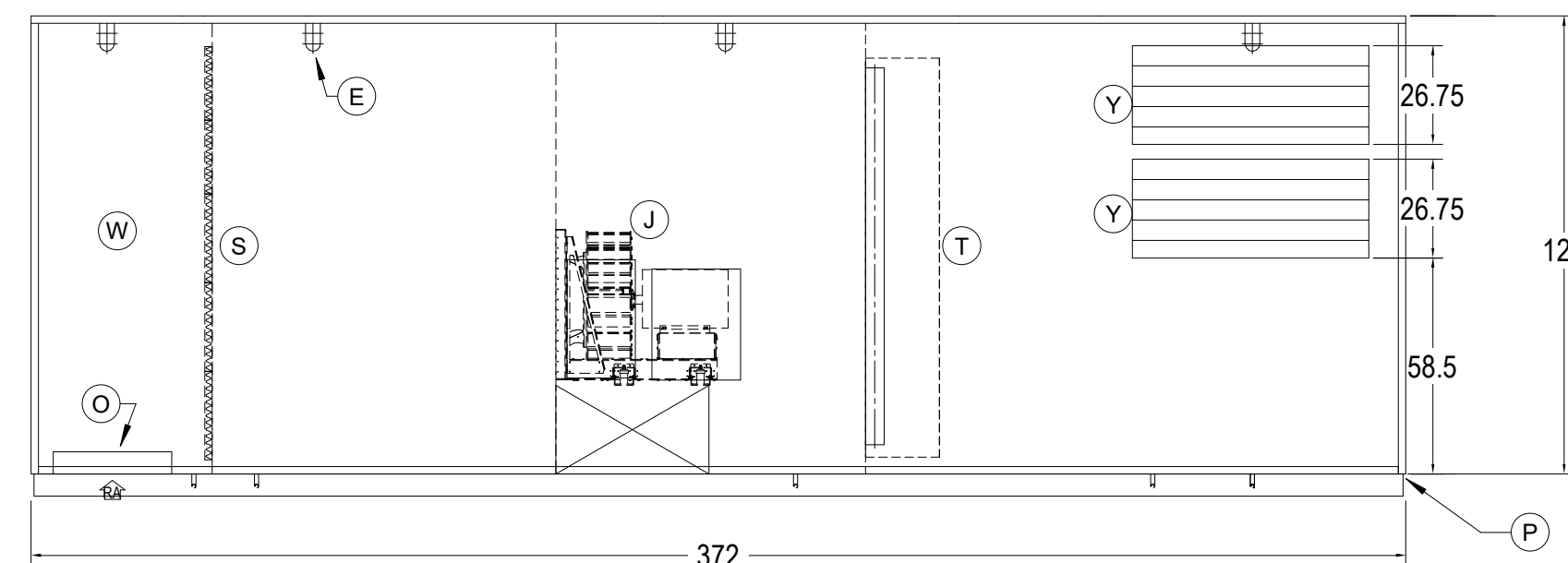
**MECHANICAL
DETAILS SHEET
#5**

Scale: As Indicated
Job No.: 60-20-409
Drawn By: PJK
Date: August 28th, 2023

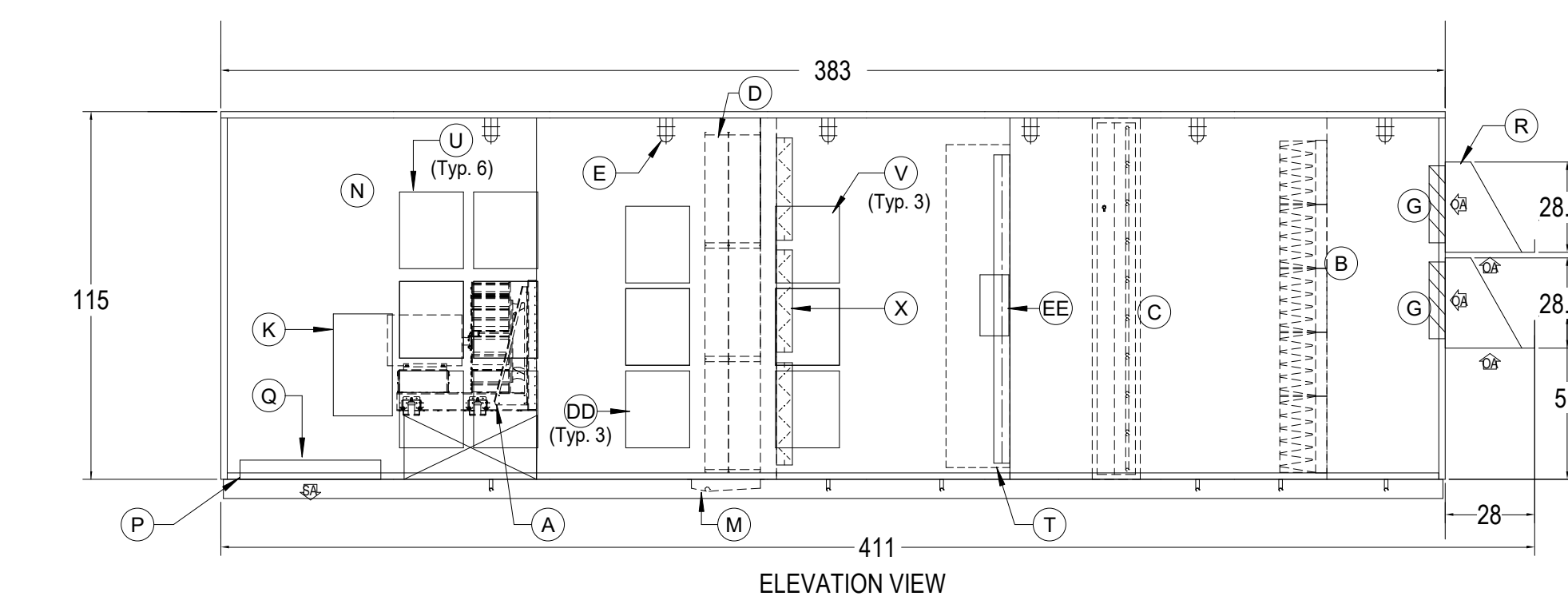
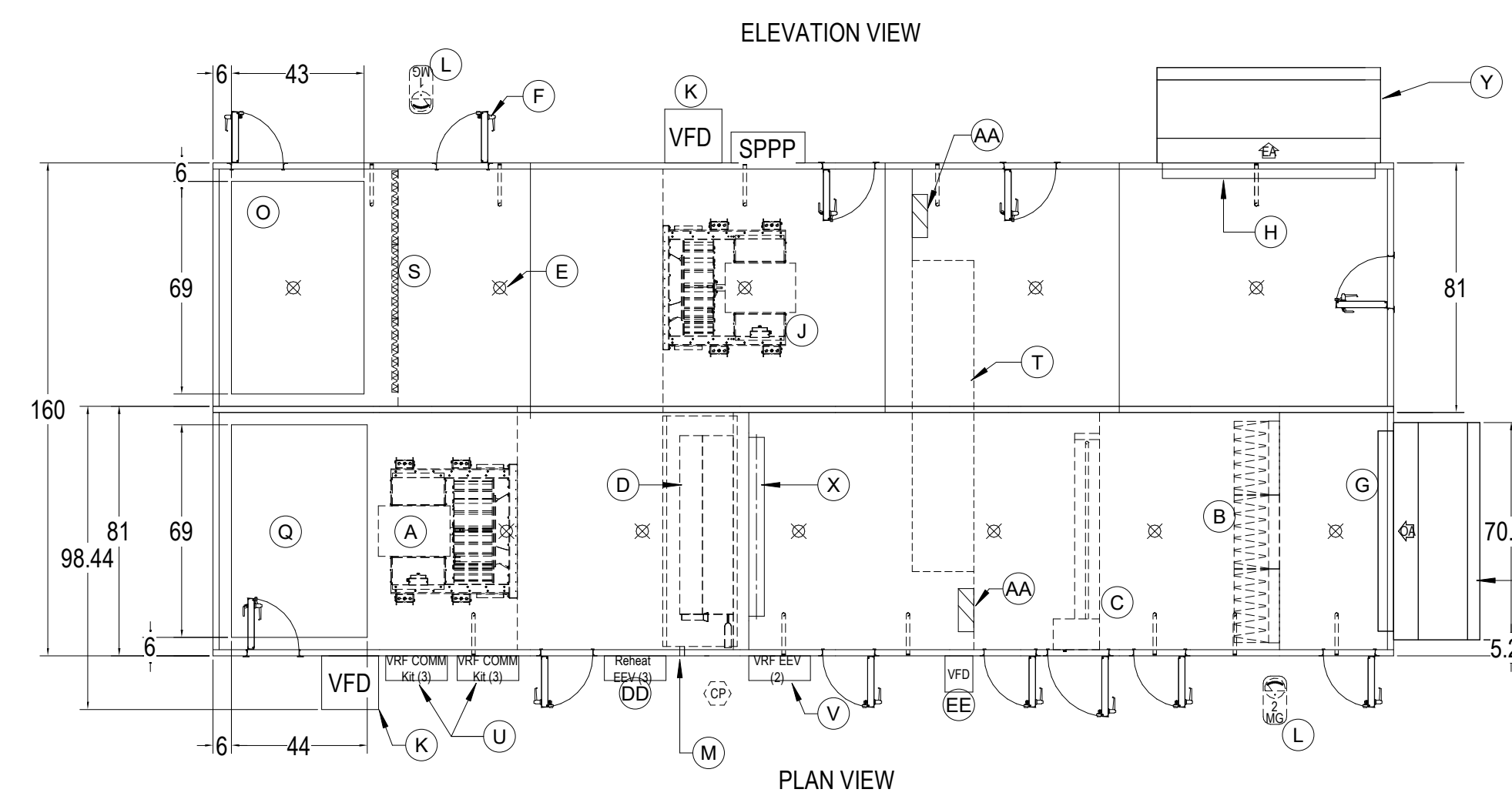
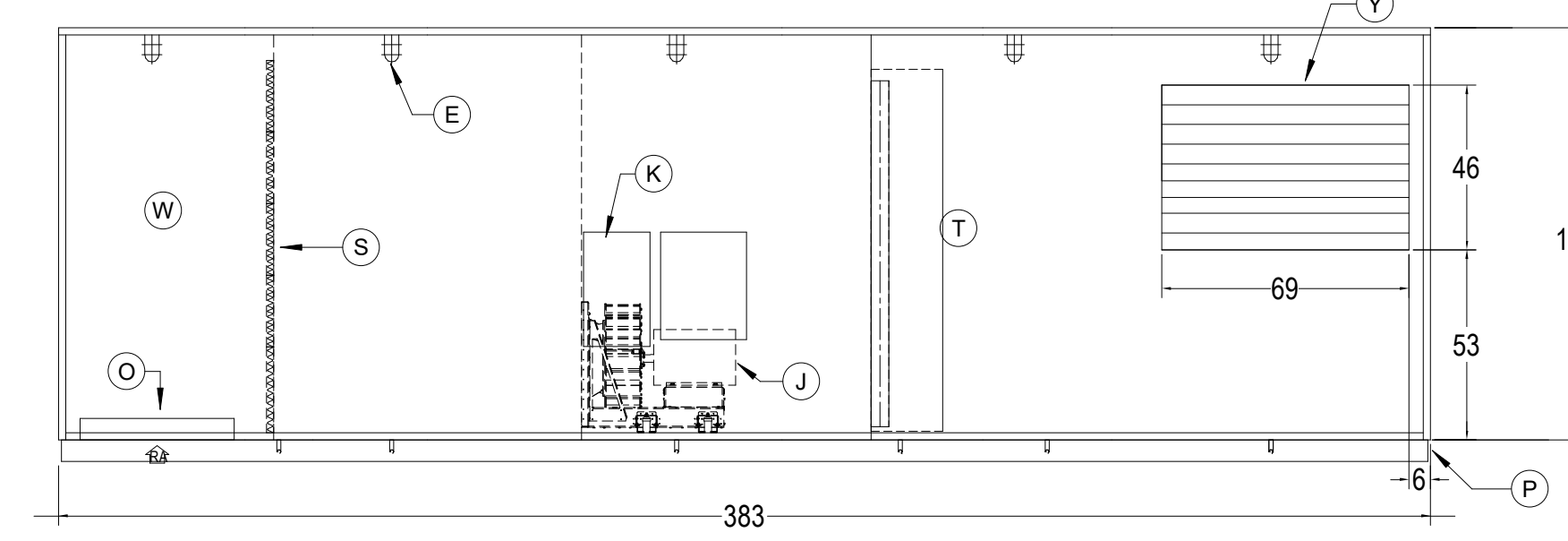
M4-0-5

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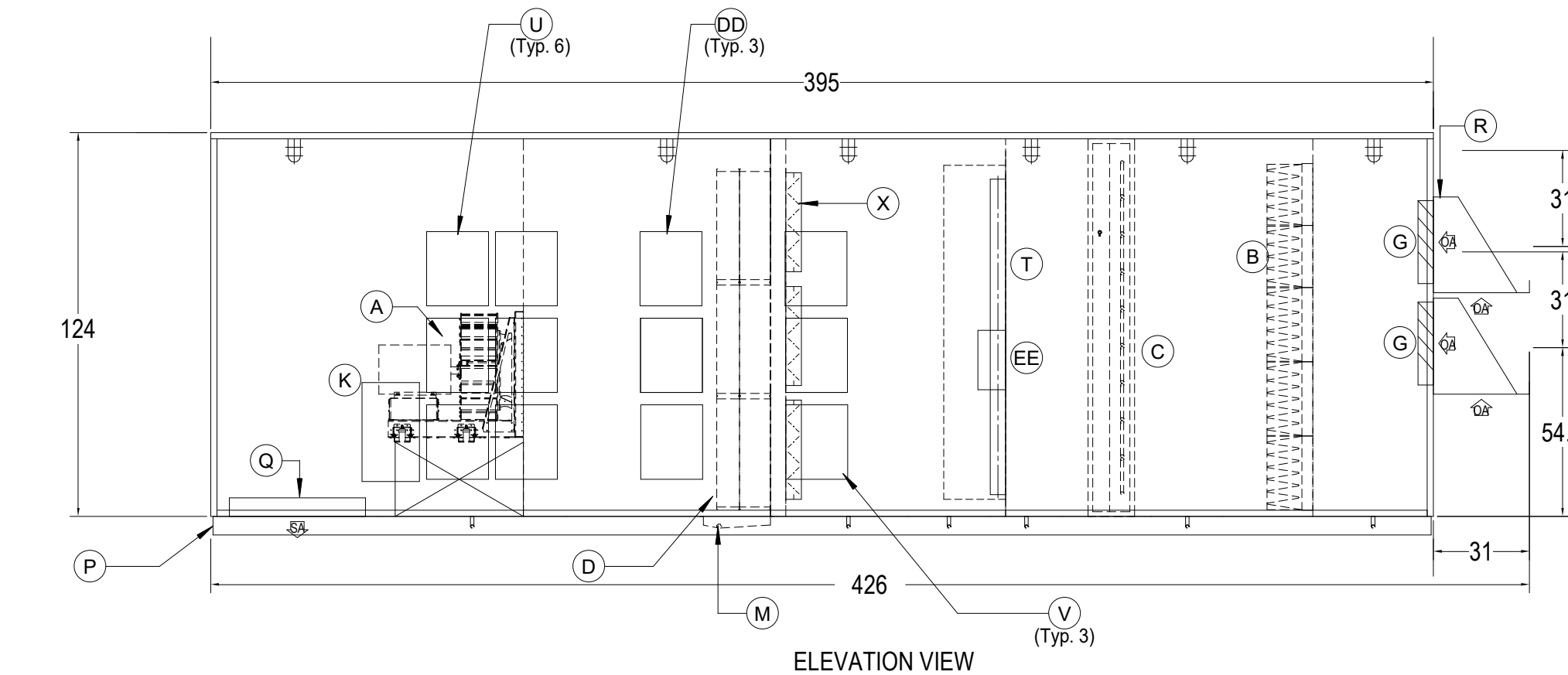
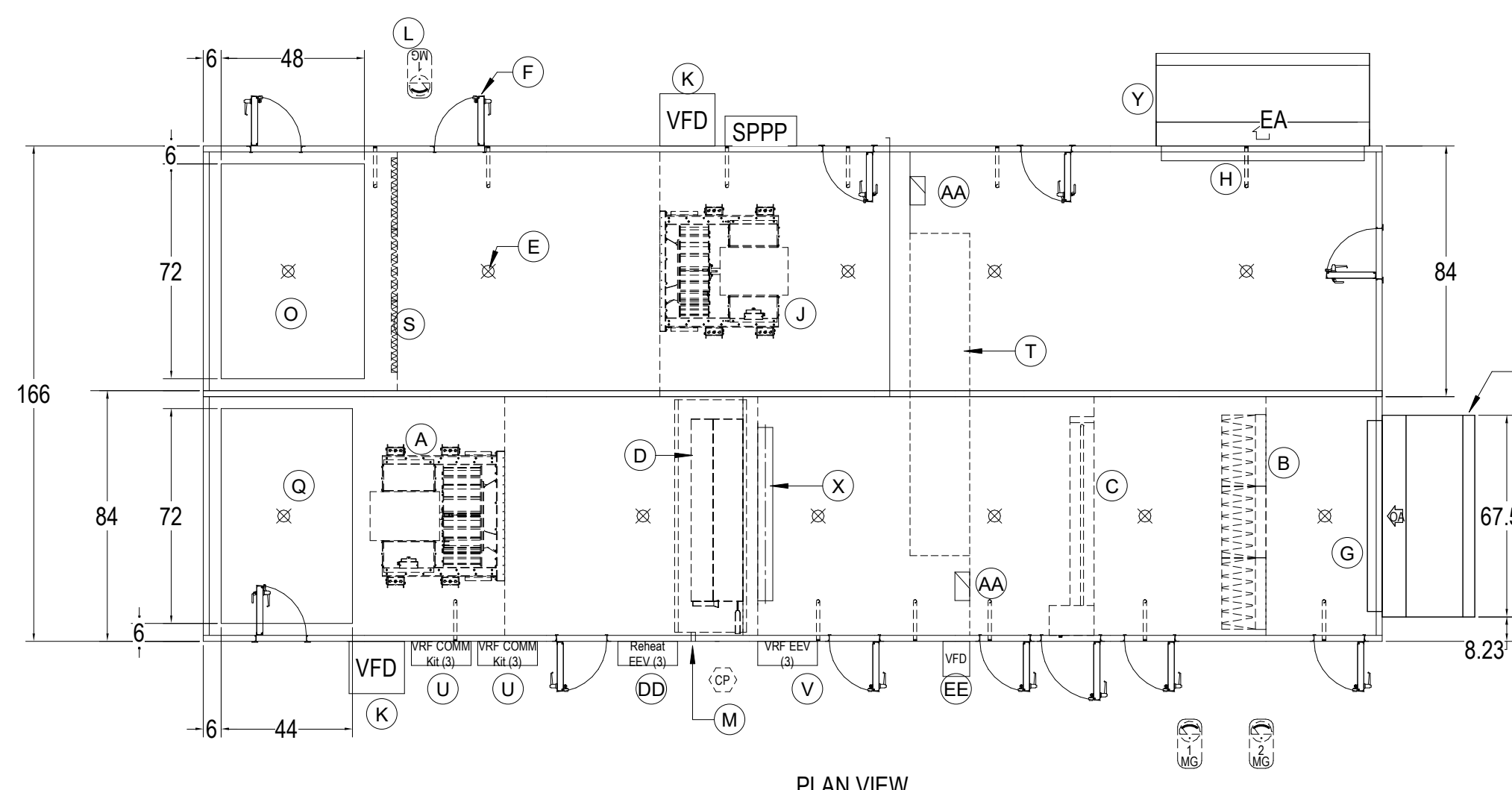
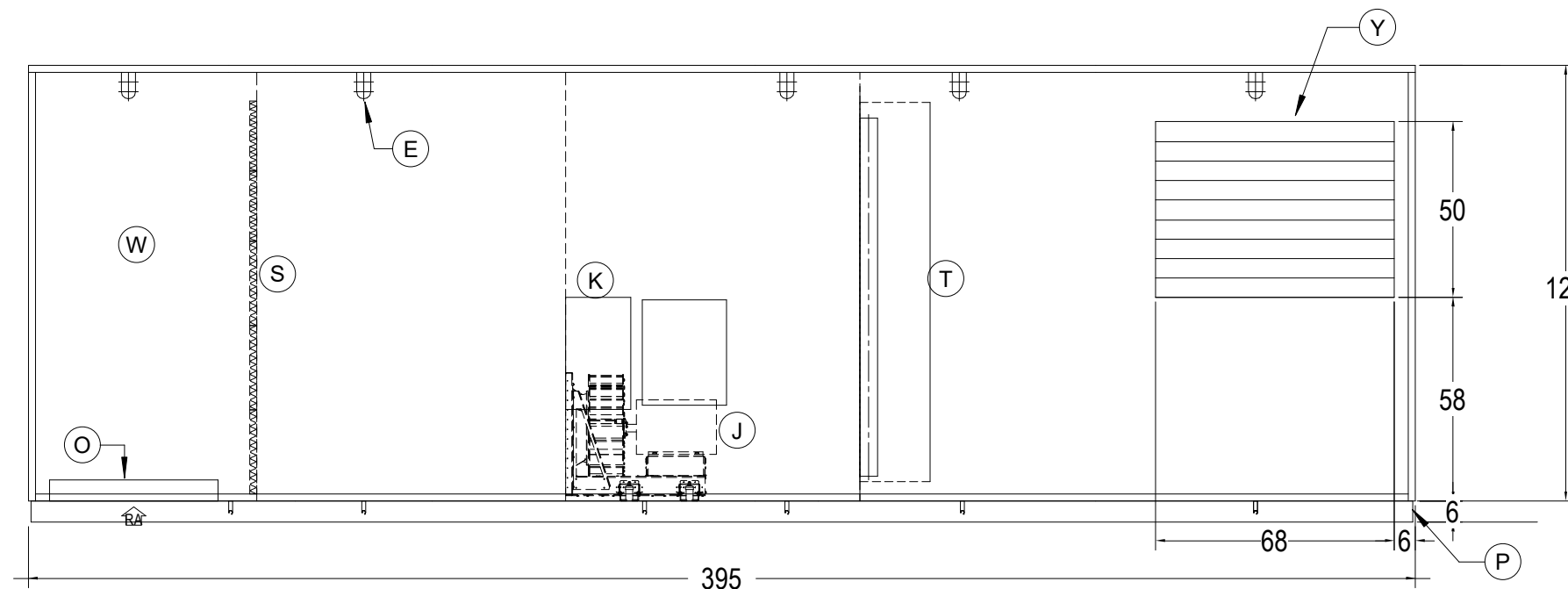
Wakefield, MA 01880



1 HRU-1
NTS



2 HRU-2
NTS



3 HRU-3
NTS

KEY NOTES:			
(A) SUPPLY FAN	(Q) SUPPLY DISCHARGE OPENING	(W) RETURN AIR INTAKE PLENUM SECTION	
(B) FILTER BANK 2" MERV-10, 12" MERV-13	(R) OUTSIDE AIR INTAKE HOOD	(X) COIL BYPASS DAMPERS	
(C) ELECTRIC PRE-HEAT COIL	(S) 2" MERV-10 FILTER	(Y) EXHAUST AIR HOOD	
(D) VRF COOLING/HEATING COIL	(T) ENERGY RECOVERY WHEEL	(Z) 8" BASE RAIL	
(E) LIGHT (TYPICAL)	(U) VRF COMMUNICATION CONTROL ENCLOSURE	AA ENERGY RECOVERY DEVICE BYPASS DAMPER	
(F) ACCESS DOOR (TYPICAL)	(V) VRF REFRIGERANT (EEV KIT) ENCLOSURE	BB RECIRCULATION DAMPER	
(G) OUTSIDE AIR DAMPER (PARALLEL BLADE) WITH AFMS		CC ENERGY RECOVERY PLATE	
(H) EA DISCHARGE DAMPER (OPPOSED BLADE)		DD EEV REHEAT PANEL	
(I) RETURN AIR DAMPER (PARALLEL BLADE) WITH AFMS		EE RECOVERY WHEEL VFD	
(J) RETURN FAN		FF SUPPLY AIR DISCHARGE WITH AFMS	
(K) FAN VFD			
(L) MAGNETIC FILTER GAUGE			
(M) CONDENSATE DRAIN OUTLET			
(N) SUPPLY AIR DISCHARGE PLENUM SECTION			
(O) RETURN INTAKE OPENING			
(P) 6" BASE RAIL			

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BALA CONSULTING ENGINEERS, INC.
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SUITE 200
DENVER, CO 80202
TEL: 303.733.1111 FAX: 303.733.1112
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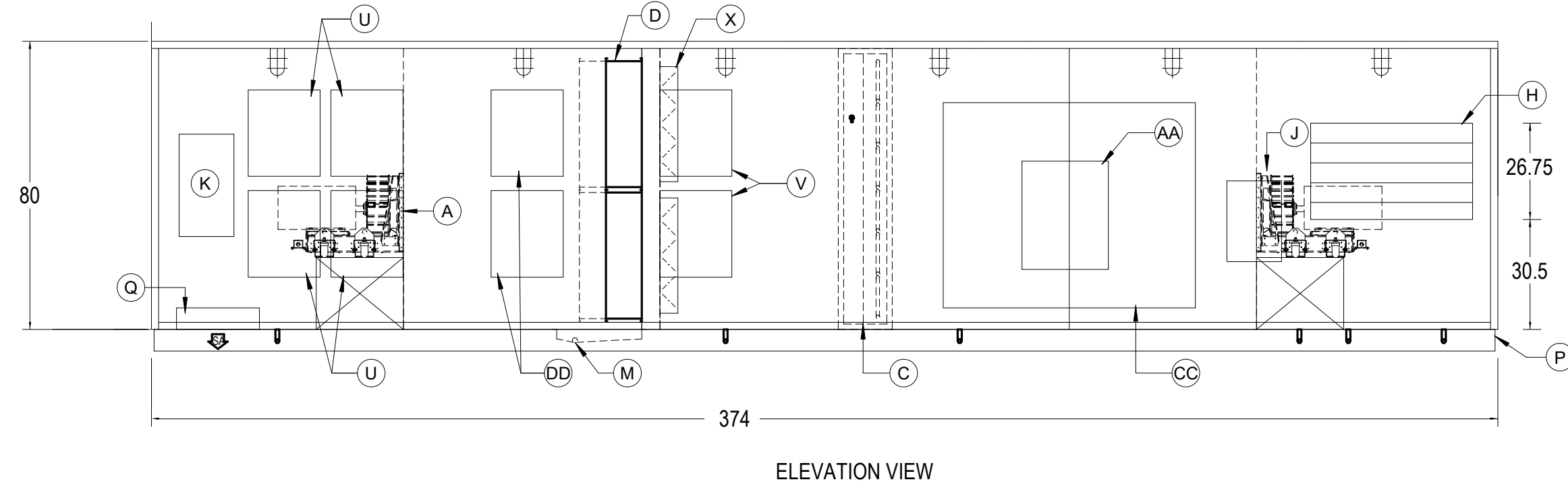
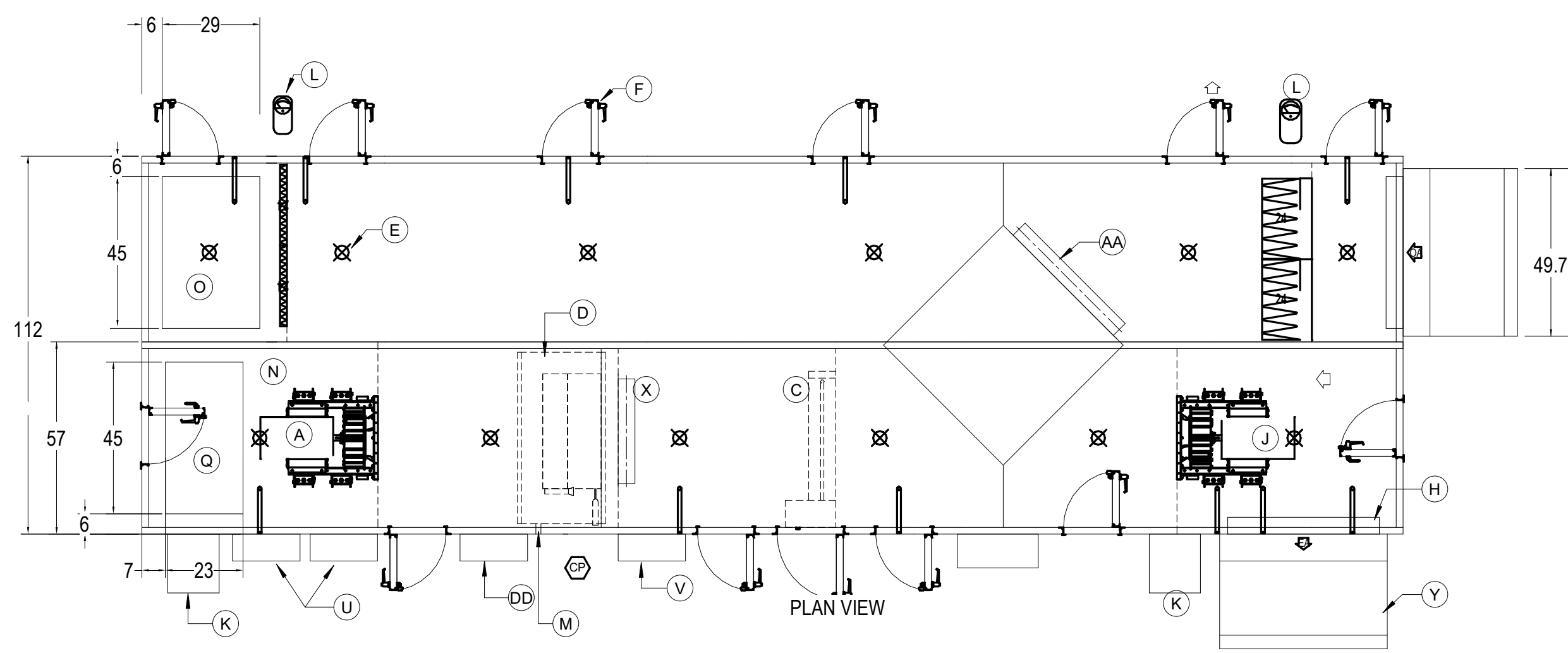
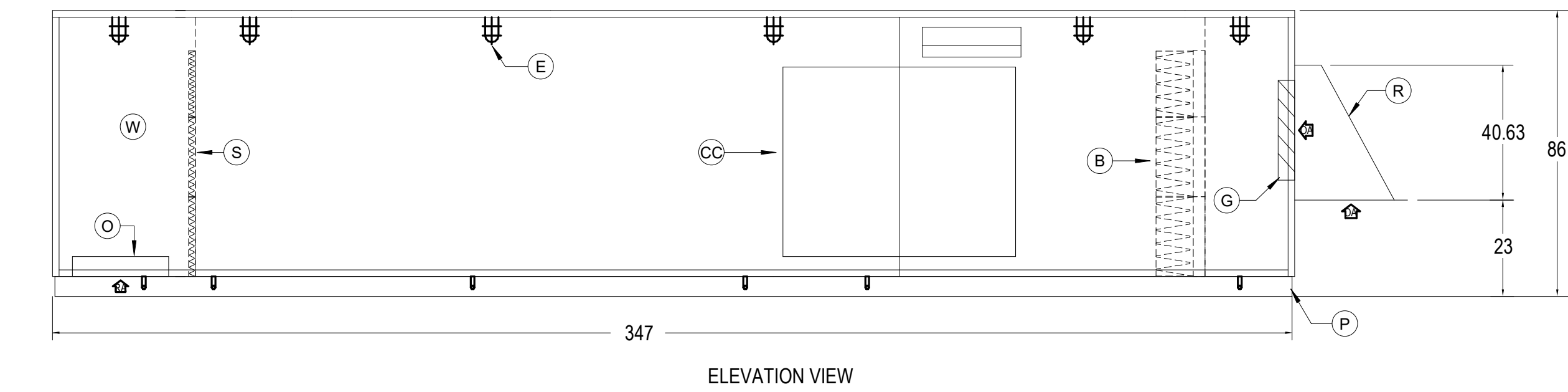
August 28th, 2023

**MECHANICAL
DETAILS SHEET
#6**

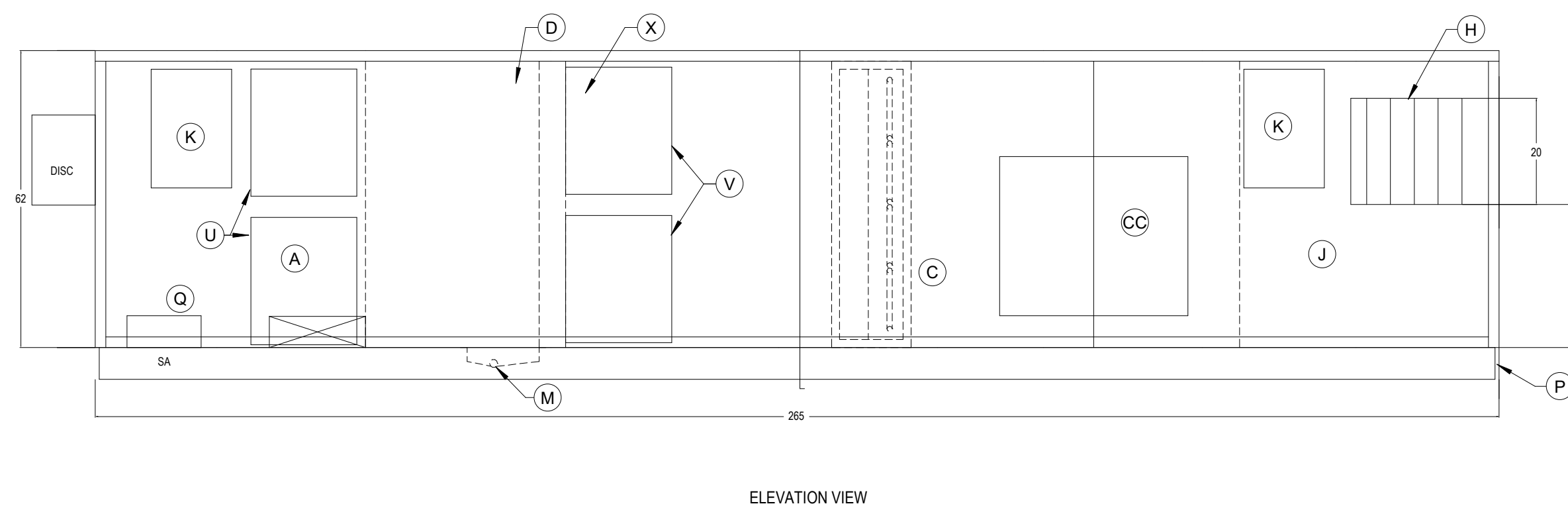
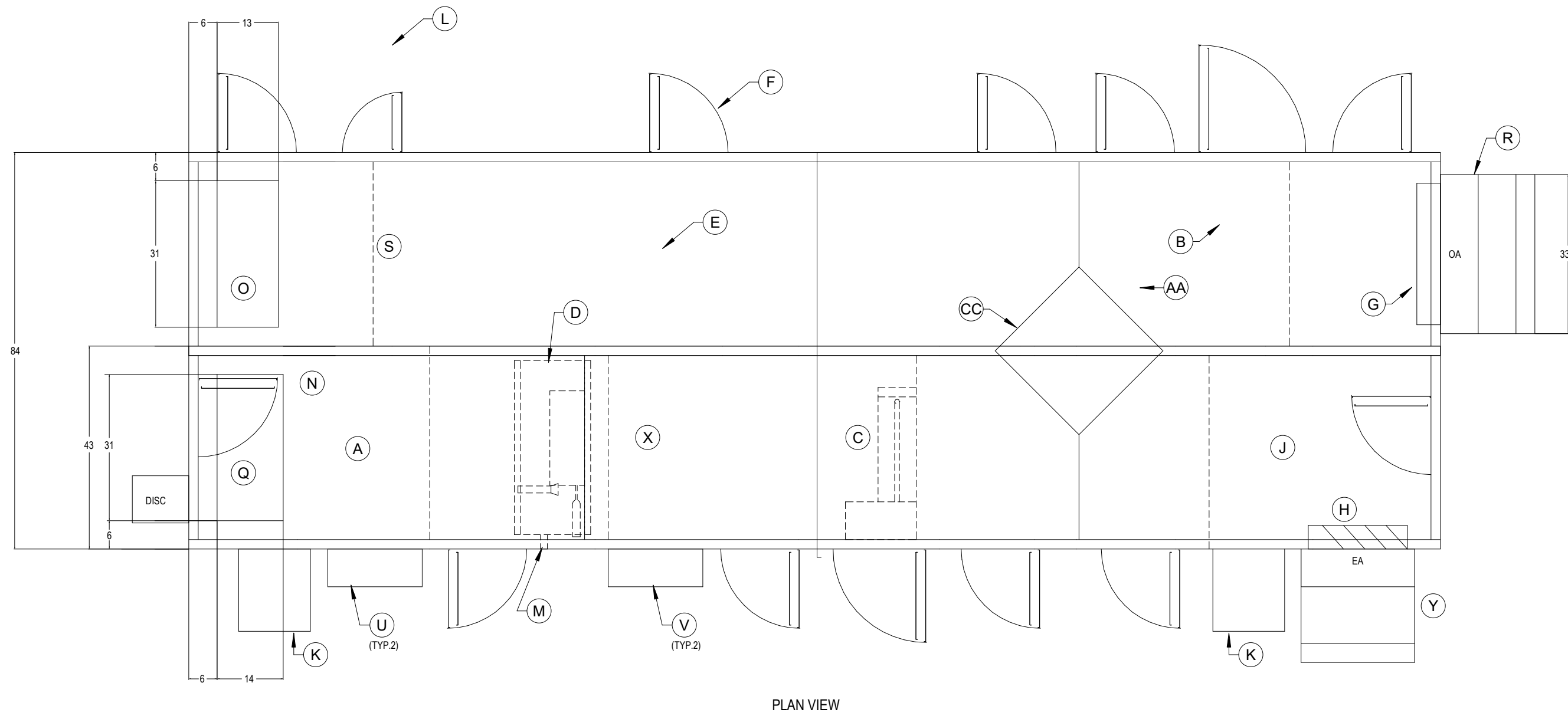
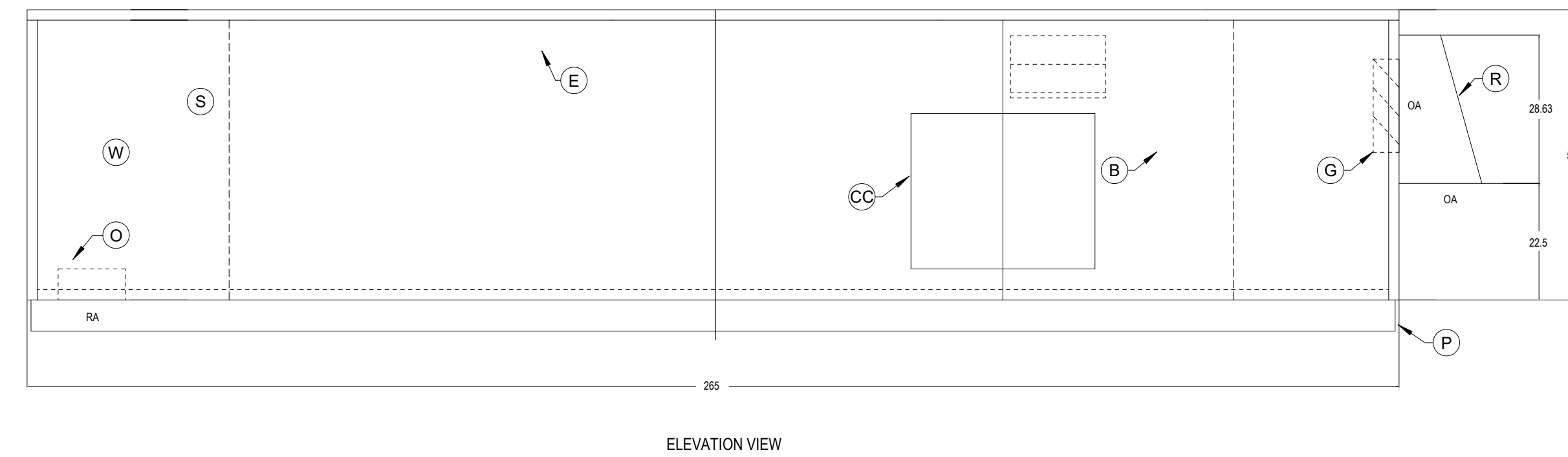
Scale: NTS
Job No.: 60-20-409
Drawn By: PJK
Date: August 28th, 2023

M4-0-6

KEY NOTES:			
(A)	SUPPLY FAN	(O)	SUPPLY DISCHARGE OPENING
(B)	FILTER BANK, 2" MERV-10, 12" MERV-13	(R)	OUTSIDE AIR INTAKE HOOD
(C)	ELECTRIC PRE-HEAT COIL	(S)	2" MERV-10 FILTER
(D)	VRF COOLING/HEATING COIL	(T)	ENERGY RECOVERY WHEEL
(E)	LIGHT (TYPICAL)	(U)	VRF COMMUNICATION CONTROL ENCLOSURE
(F)	ACCESS DOOR (TYPICAL)	(V)	VRF REFRIGERANT (EEV KIT) ENCLOSURE
(G)	OUTSIDE AIR DAMPER (PARALLEL BLADE) WITH AFMS	(W)	RETURN AIR INTAKE PLENUM SECTION
(H)	EA DISCHARGE DAMPER (OPPOSED BLADE)	(X)	COIL BYPASS DAMPERS
(I)	RETURN AIR DAMPER (PARALLEL BLADE) WITH AFMS	(Y)	EXHAUST AIR HOOD
(J)	RETURN FAN	(Z)	6" BASE RAIL
(K)	FAN VFD	(AA)	ENERGY RECOVERY DEVICE BYPASS DAMPER
(L)	MAGNAHELIC FILTER GAUGE	(BB)	RECIRCULATION DAMPER
(M)	CONDENSATE DRAIN OUTLET	(CC)	ENERGY RECOVERY PLATE
(N)	SUPPLY AIR DISCHARGE PLENUM SECTION	(DD)	EEV REHEAT PANEL
(O)	RETURN INTAKE OPENING	(EE)	RECOVERY WHEEL VFD
(P)	6" BASE RAIL	(FF)	SUPPLY AIR DISCHARGE WITH AFMS



2 HRU-4
NTS



1 HRU-5
NTS

DRA

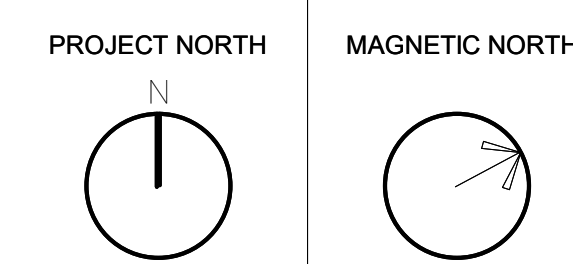
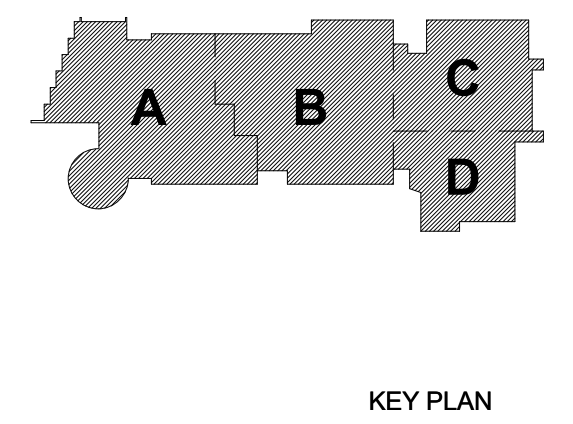
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MECHANICAL
DETAILS SHEET
#7

Scale: As Indicated
Job No.: 60-20-409
Drawn By: KJL
Date: August 28th, 2023
M4-0-7

ELECTRIC UNIT HEATER (EUH)																			
AIR										ELECTRICAL									
UNIT NO	LOCATION	CAPACITY (MBH)	FLOW (CFM)	EAT (°F)	LAT (°F)	KW	CONTROL	MOTOR SIZE (HP)	V	PH	TYPE	DEFLEC (IN)	MANUFACTURER	MODEL	NOTES	NOTES	VIBRATION ISOLATION	TYPE	STARTER TYPE
EUH1	REFER TO PLANS	51.1	910	66.0	130.0	15.0	THERMOSTAT	1/30	480	3	NA	1.5	BERKO	HUNAA1548	SEE NOTES				
EUH2	REFER TO PLANS	5.1	100	70.0	117.0	1.5	THERMOSTAT	1/100	120	1	NA	1.5	BERKO	FRC112F	SEE NOTES				
EUH3	REFER TO PLANS	10.2	350	70.0	97.0	3.0	THERMOSTAT	1/100	480	3	HSN	1.5	BERKO	MJH381	SEE NOTES				
EUH4	REFER TO PLANS	34.1	500	70.0	133.0	10.0	THERMOSTAT	1/30	480	3	NA	NA	BERKO	CUH355	SEE NOTES				
EUH5	REFER TO PLANS	34.1	650	70.0	118.0	10.0	THERMOSTAT	1/30	480	3	HSN	1.5	BERKO	MJH-10-4	SEE NOTES				
EUH6	REFER TO PLANS	5.1	150	70.0	101.0	1.5	THERMOSTAT	1/100	120	1	HSN	1.5	BERKO	QFT1500	SEE NOTES - ADD ALTERNATE				
EUH7	REFER TO PLANS	5.1	150	70.0	101.0	1.5	THERMOSTAT	1/100	120	1	HSN	1.5	BERKO	QFT1500	SEE NOTES				
EUH8	REFER TO PLANS	18.5	250	70.0	136.0	6.0	THERMOSTAT	1/30	480	3	HSN	1.5	BERKO	CUH355	SEE NOTES				
NOTES: 1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE. 2. PROVIDE MOUNTING HARDWARE. 3. MOUNT USING HSN VIBRATION ISOLATOR WITH 1.5" STATIC DEFLECTION. 4. PROVIDE WITH DISCONNECT SWITCH. 5. PROVIDE WITH DIV CONTROL TRANSFORMER FOR WALL MOUNTED BMS THERMOSTAT INTERFACE. 6. PROVIDE RECESS TRIM KIT. 7. PROVIDE ON/OFF SWITCH. 8. PROVIDE KEY LOCK FOR FRONT COVER. 9. CUR SHALL BE SEMI RECESSED. INVERTED FLOW WITH GRILLES ON FRONT. 10. PROVIDE CEILING MOUNTED HEATER WITH T-BAR FRAME WHEN MOUNTED IN TILE CEILING.																			

ENERGY RECOVERY VENTILATOR (ERV)																																	
			AIR FLOWS (CFM)		SUPPLY FAN				EXHAUST FAN				ENERGY RECOVERY DATA			MOTOR DATA				TOTAL UNIT ELEC DATA								VIBRATION ISOLATION					
					STATIC PRESSURE (IN.WG)				PRESSURE STATIC (IN.WG)																								
					TOTAL (W/ DIRTY FILTERS)				TOTAL (W/ DIRTY FILTERS)				WINTER TOTAL EFFEC. (%)			SENSIBLE EFFEC. (%)			SUMMER TOTAL EFFEC. (%)														
UNIT NO	SERVICE	LOCATION	O.A.	EXH	EXTERNAL	INTERNAL	EXTERNAL	INTERNAL	EXTERNAL	INTERNAL	EXTERNAL	INTERNAL	QTY.	HP (EACH)	BHP (EACH)	FLA (EACH)	V	PH	MCA	MOP	MANUFACTURER	MODEL	TYPE	DEFLEC (IN)	REMARKS	STARTER TYPE							
ERV-1	ADMIN AREA 1A	A120 WAITING	740	405	1.50	2.00	1.50	2.00	70	75	60	2	1	NA	3.4	208	1	7.7	15	RENEWARE	HE15XPH	HSN	1.5	SEE NOTES 1-6.8	PS								
ERV-2	ADMIN AREA 2B	B215 DEPT HEADS	255	255	1.50	2.00	1.50	2.00	68	80	76	2	3.4	NA	4.5	208	1	10.1	15	RENEWARE	HE15XPH	HSN	1.5	SEE NOTES 1-6.8	PS								
ERV-3	EARLY CHILDHOOD	EARLY CHILDHOOD	1160	1030	1.25	1.75	1.25	1.75	68	72	57	2	1.5	1.0	2.4	480	3	5.4	15	RENEWARE	HE15XPH	HSN	1.5	SEE NOTES 1-6.8	PS								
ERV-4	MEDIA CENTER	ROOF AREA A	1840	1510	1.50	2.00	1.50	2.00	69	71	58	2	3.0	1.6	4.2	480	3	10.5	15	RENEWARE	HE15XPH	SPRING CURB	1.5	SEE NOTES 1-9	VFD								
ERV-5	CONSESSION BUILDING	CONSESSION BUILDING	1240	1075	1.00	1.50	1.00	1.50	68	72	57	2	1.5	1.0	2.4	480	3	5.4	15	RENEWARE	HE15XPH	HSN	1.5	SEE NOTES 1-6.8	PS								
ERV-6	LOCKER BUILDING	LOCKER BUILDING	1930	1830	1.00	1.50	1.00	1.50	68	75	57	2	2	1.0	2.9	480	3	6.5	15	RENEWARE	HE15XPH	HSN	1.5	SEE NOTES 1-6.8	PS								
ERV-7	ADMIN AREA 4A	A415 CORRIDOR	285	235	1.50	2.00	1.50	2.00	76	80	65	2	3.4	NA	4.5	208	1	10.1	15	RENEWARE	HE15XPH	HSN	1.5	SEE NOTES 1-6.8	PS								
NOTES: 1. REFER TO SPECIFICATIONS SECTION 20000 FOR ALTERNATE MANUFACTURERS FOR PRODCUTS/SYSTEMS LISTED UNDER THIS SCHEDULE. 2. PROVIDE 2-INCH MERV-13 FILTERS FOR OUTDOOR AIR. 3. PROVIDE 2-INCH MERV-8 EXHAUST FILTER. 4. MAXIMUM FILTER VELOCITY TO BE 400 FPM. 5. PROVIDE SINGLE POINT POWER CONNECTION. 6. PROVIDE FROST CONTROL. 7. PROVIDE VFDs FOR EACH FAN. 8. PROVIDE MOTORIZED DAMPERS FOR EXHAUST AND FRESH AIR. 9. PROVIDE 18-INCH ROOF CURB.																																	

DEDICATED OUTDOOR AIR ROOFTOP UNITS - DXCOOLING/HEATING WITH ELECTRIC PRE-HEAT (HRU)

SUPPLY FAN										EXHAUST FAN									
OUTDOOR AIRFLOW (CFM)										MAX AIRFLOW (CFM)									
UNIT NO	LOCATION	SERVICE	MAX	MIN	MAX	MIN	MAX	MIN	MAX	UNIT NO	LOCATION	SERVICE	MAX	MIN	MAX	MIN	MAX	MIN	MAX
HRU-1	ROOF AREA A	CLASSROOMS	1940	1940	5.42	2.50	24.62	30	SWIS AF	19485	1431	2.50	19.6	25.0	SWIS AF	500	0.37	80.0	67.0
HRU-2	ROOF AREA A	CLASSROOMS	1975	1975	5.40	2.48	24.36	30	SWIS AF	1975	1431	2.50	19.6	25.0	SWIS AF	500	0.37	80.0	67.0
HRU-3	ROOF AREA B	CLASSROOMS	1935	1935	5.28	2.50	23.22	30	SWIS AF	19325	1410	2.50	18.2	20.0	SWIS AF	500	0.42	80.0	72.0
HRU-4	ROOF AREA D	LOCKERS/SHOWER	7070	7070	5.39	2.00	6.85	10	SWIS AF	6780	4177	2.00	6.74	7.5	SWIS AF	500	0.41	80.0	72.0
HRU-5	ROOF AREA B	CONVENTION	2790	2790	4.00	1.75	33	5	SWIS AF	2725	1730	2.50	12.7	13.0	SWIS AF	500	0.38	81.4	67.3
NOTES: 1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE. 2. REFER TO ENERGY RECOVERY WHEEL SCHEDULE. 3. THE BREAK HORSEPOWER LISTED HERE IS THE MAXIMUM ALLOWABLE WHICH SHALL INCLUDE ALL UNIT SPECIFIC SYSTEM EFFECTS AND COMPONENT PRESSURE DROPS. 4. PROVIDE MERV-8 PRE-FILTER AND MERV-13 FINAL FILTER FOR SUPPLY AIR FLOW. PROVIDE MERV-8 FILTER FOR THE RETURN/EXHAUST AIRFLOW UPSTREAM OF TOTAL ENERGY WHEEL. 5. ALLOW FOR 1" W.C. FILTER LOADING ON THE SUPPLY AND 0.5" W.C. FILTER LOADING ON THE EXHAUST AIR STREAMS. 6. PROVIDE 22-INCH HIGH FULL PERIMETER SPRING ROOF CURB WITH SLOPE DIRECTION - TYPE PC-4C2. 7. PROVIDE DIRECT DRIVE PLENUM FANS WITH AIRFOIL SHAPED BLADES. 8. PROVIDE REFRIGERANT PIPING BETWEEN HRU AND VCU CONDENSING UNIT. 9. LIGHTS AND OUTLETS SHALL BE ON A SEPARATE 120V/1PH CIRCUIT WITH A MOP OF 20 AMPS. CIRCUIT PROVIDED BY DIV. 28. 10. HRU-1 SHALL BE PROVIDED WITH A 332.2 MBH HOT GAS REHEAT COIL WITH A MAXIMUM FACE VELOCITY OF 500 FPM. 11. HRU-2 SHALL BE PROVIDED WITH A 332.2 MBH HOT GAS REHEAT COIL WITH A MAXIMUM FACE VELOCITY OF 500 FPM. 12. HRU-3 SHALL BE PROVIDED WITH A 341.3 MBH HOT GAS REHEAT COIL WITH A MAXIMUM FACE VELOCITY OF 500 FPM. 13. HRU-4 SHALL BE PROVIDED WITH A 118.0 MBH HOT GAS REHEAT COIL WITH A MAXIMUM FACE VELOCITY OF 500 FPM. 14. PROVIDE 20'-0" OF LINING DOWNSTREAM OF ALL SUPPLY AND RETURN DUCTWORK.																			

MAKE-UP AIR UNIT - DX COOLING/HEATING WITH ELECTRIC PRE-HEAT (MAU)

SUPPLY FAN										EXHAUST FAN									
OUTDOOR AIRFLOW (CFM)										MAX AIRFLOW (CFM)									
UNIT NO	LOCATION	SERVICE	MAX	MIN	MAX	MIN	MAX	MIN	MAX	UNIT NO	LOCATION	SERVICE	MAX	MIN	MAX	MIN	MAX	MIN	MAX
MAU-1	MECHANICAL 281	CULINARY	6210	6210	5.10	1.57	30.0	360.0	42	R-410A	2	500	0.02	0.0	46.0	480	3	1183.5	139.5
MAU-2	ROOF AREA A	CULINARY KITCHEN	15605	15605	3.82	1.67	18.6	20	SWIS AF	500	0.31	91.0	73.0	54.3	53.7	1000.0	615.0	42	R-410A
NOTES: 1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE. 2. INCLUDES UP TO 1" W.C. OF DIRTY FILTER LOADING ALLOWANCE. 3. PROVIDE SEPARATE ELECTRICAL FEED: 20 AMPS, 120V, 1 PH FOR SERVICE OUTLET AND INTERIOR UNIT LIGHTS. 4. PROVIDE 22-INCH SPRING ROOF CURB. 5. PROVIDE REFRIGERANT PIPING BETWEEN MAU AND VCU CONDENSING UNIT. 6. LIGHTS AND OUTLETS SHALL BE ON A SEPARATE 120V/1PH CIRCUIT WITH A MOP OF 20 AMPS. CIRCUIT PROVIDED BY DIV. 28. 7. PROVIDE 20'-0" OF LINING DOWNSTREAM OF ALL SUPPLY DUCTWORK.																			

ROOFTOP AIR HANDLING UNIT - DX COOLING/HEATING WITH ELECTRIC PRE-HEAT (RTU)

SUPPLY FAN										EXHAUST FAN									
OUTDOOR AIRFLOW (CFM)										MAX AIRFLOW (CFM)									
UNIT NO	LOCATION	SERVICE	MAX	MIN	MAX	MIN	MAX	MIN	MAX	UNIT NO	LOCATION	SERVICE	MAX	MIN	MAX	MIN	MAX	MIN	MAX
RTU-1	ROOF AREA A	CULINARY	1165	680	1165	4.30	2.00	1.3	1.5	SWIS AF	1630	3.15	2.00	0.85	15	SWIS AF	ALUMINUM W/MOLECULAR SIEVE 4A	500	0.22
RTU-2	ROOF AREA D	GYMNASIUM	14000	4050	14000	5.40	2.00	18.13	20	SWIS AF	14000	4.01	2.00	14.39	20	SWIS AF	ALUMINUM W/MOLECULAR SIEVE 4A	500	0.27
NOTES: 1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE. 2. PROVIDE 2 INCH MERV-13 FILTER FOR OUTDOOR AIR. 4. PROVIDE OUTSIDE AIR INTAKE HOOD. 5. PROVIDE 2 INCH MERV-8 EXHAUST FILTER. 6. MAXIMUM FILTER VELOCITY TO BE 400 FPM. 7. PROVIDE SINGLE POINT POWER CONNECTION. 8. PROVIDE CONVENIENCE OUTLET POWERED BY DEDICATED 120V/1PH/20AMP FEED (BY DIV. 28). 9. PROVIDE FROST CONTROL. 10. PROVIDE REFRIGERANT PIPING BETWEEN RTU AND VCU CONDENSING UNIT. 11. LIGHTS AND OUTLETS SHALL BE ON A SEPARATE 120V/1PH CIRCUIT WITH A MOP OF 20 AMPS. CIRCUIT PROVIDED BY DIV. 28. 12. RTU-2 RETURN FAN SHALL BE IN THE EXHAUST CONFIGURATION. 13. PROVIDE 20'-0" OF LINING DOWNSTREAM OF ALL SUPPLY AND RETURN DUCTWORK. 14. PROVIDE RTU-2 WITH A ELECTRIC STEAM JUMPER FEED WITH A MINIMUM CAPACITY OF 126 LBS/HR.																			

INDOOR AIR HANDLING UNIT - DX COOLING/HEATING WITH ELECTRIC PRE-HEAT (AHU)

			OUTDOOR AIRFLOW		SUPPLY FAN					RETURN FAN					COOLING COIL										ELECTRIC PRE-HEAT COIL					ELECTRICAL														
UNIT NO.	LOCATION	SERVICE	MAX	MIN	MAX AIRFLOW (CFM)	TSP (IN/NG)	ESP (IN/NG)	BHP	MOTOR HP	BLADE TYPE	MAX VELOC (FPM)	TSP (IN/NG)	ESP (IN/NG)	BHP	MOTOR HP	BLADE TYPE	ENERGY RECOVERY TYPE	MAX FPM (FPM)	WET COIL QAP (IN/NG)	EAT			LAT			SENS (MBH)	DUCTION TEMP (F)	REFRIG RATIO	MIN NO CURTUS	MAX FPM (FPM)	WET COIL QAP (IN/NG)	EAT DB (F)	LAT DB (F)	KW	V	PH	FLA	MCA	OPD	DIMENSIONS (IN/IN/IN)	WEIGHT	MANUFACTURER	MODEL	REMARKS
																				DB (F)	WB (F)	DB (F)	WB (F)	DB (F)	WB (F)																			
AHU-1	METAL FABRICATION MEZZANINE	METAL FABRICATION	18500	3020	18500	3.65	1.40	15.58	20	SWIS AF	18500	2.47	2.00	12.22	15	SWIS AF	NONE	500	0.16	91.0	73.0	68.1	63.7	62.0	438.3	42	R-410A	3	500	0.01	0.0	49.2	286.5	480	3	317.1	422.2	450	375X1262	14769.00	YORK	CUSTOM	YCI-72132	SEE NOTES
AHU-2	AUTO COLLISION MEZZANINE	AUTO COLLISION	15465	7450	15465	3.81	1.50	13.3	15	SWIS AF	15465	2.14	1.50	8.5	10	SWIS AF	NONE	500	0.21	91.0	73.0	68.8	60.4	68.4	420.8	42	R-410A	3	500	0.01	0.0	45.4	220.0	480	345X1068	12297.00	YORK	CUSTOM	YCI-75A105	SEE NOTES				
AHU-3	AUTO TECHNOLOGY MEZZANINE	AUTO TECHNOLOGY	15476	3870	15476	3.74	1.50	15.9	20	SWIS AF	15246	1.80	1.50	9.5	10	SWIS AF	NONE	500	0.16	91.0	73.0	70.3	62.9	57.4	352.4	42	R-410A	2	500	0.01	0.0	45.8	225.0	480	347.7	338.4	400	358X1221	13200.00	YORK	CUSTOM	YCI-75A105	SEE NOTES	
AHU-4	ELECTRICAL TECHNOLOGY MEZZANINE	ELECTRICAL TECHNOLOGY	9405	1965	9405	3.96	1.50	8.78	10	SWIS AF	9405	1.80	1.50	4.4	7.5	SWIS AF	NONE	500	0.19	83.3	71.1	68.8	61.3	30.8	177.5	42	R-410A	2	0	0.00	0.0	0.0	48.0	30.4	33.5	45	306X460	612.00	YORK	CUSTOM	YCI-40804	SEE NOTES		
AHU-5	HVAC TECHNOLOGY MEZZANINE	HVAC TECHNOLOGY	7275	2085	7275	3.68	1.50	8.78	7.5	SWIS AF	7275	1.80	1.50	3.3	5	SWIS AF	NONE	500	0.24	83.7	69.9	69.9	27.0	155.0	42	R-410A	2	0	0.00	0.0	0.0	48.0	3	17.1	16.5	25	297X561	7980.00	YORK	CUSTOM	YCI-55A75	SEE NOTES		
AHU-6	PLUMBING & PIPEFITTING MEZZANINE	PLUMBING & PIPEFITTING	6070	2115	6070	3.80	1.50	6	7.5	SWIS AF	6070	2.13	1.50	4	5	SWIS AF	NONE	500	0.22	84.1	69.9	63.6	58.4	23.2	145.7	42	R-410A	2	0	0.00	0.0	0.0	48.0	3	22.8	25.2	30	290X761	7029.00	YORK	CUSTOM	YCI-51K75	SEE NOTES	
AHU-7	CARPENTRY MEZZANINE	CARPENTRY	8265	2400	8265	3.88	1.50	7.81	10	SWIS AF	8265	2.01	1.50	4.3	7.5	SWIS AF	NONE	500	0.19	86.8	70.7	69.2	60.0	30.6	192.9	42	R-410A	2	0	0.00	0.0	0.0	48.0	3	23.9	27.0	35	320X4657	8098.00	YORK	CUSTOM	YCI-57K64	SEE NOTES	
AHU-8	MECHANICAL 281	CATERING	10565	7100	10565	4.85	1.50	11.7	15	SWIS AF	10000	3.80	1.50	10.9	15	SWIS AF	ALUMINUM W/MOLECULAR SIEVE 4A	500	0.45	161.4	151.1	150.7	43.5	336.7	42	R-410A	2	0.00	0.02	0.05	0.0	48.0	3	32.4	37.8	50	281X1261	15000.00	YORK	CUSTOM	YCI-53A89	SEE NOTES		
AHU-9	MECHANICAL 639	EVENTS ENTRY	6390	1300	6390	4.28	2.00	3.41	7.5	SWIS AF	6390	3.68	2.00	6.2	7.5	SWIS AF	ALUMINUM W/MOLECULAR SIEVE 4A	500	0.36	78.1	65.1	55.4	53.2	226.6	156.8	42	R-410A	2	0	0.00	0.0	0.0	48.0	3	25.5	27.9	35	281X619X109	8398.00	YORK	CUSTOM	YCI-54A69	SEE NOTES	
AHU-10	MECHANICAL 639	AUDITORIUM	9850	6580	9850	4.49	1.99	9.97	15	SWIS AF	9485	3.17	1.50	7.9	10	SWIS AF	ALUMINUM W/MOLECULAR SIEVE 4A	500	0.36	87.3	67.3	51.4	51.0	479.0	343.8	42	R-410A	2	0	0.00	0.0	0.0	48.0	3	38.1	42.6	60	278X102X133	12125.00	YORK	CUSTOM	YCI-66X102	SEE NOTES	
1. REFER TO SPECIFICATIONS SECTION 20000 FOR ALTERNATE MANUFACTURERS FOR PRODUCT/SYSTEMS LISTED UNDER THIS SCHEDULE.																																												
2. MAXIMUM FAN POWER INCLUDES DRIVE LOSSES AND ANY SYSTEM EFFECTS INTERNAL TO ROOFTOP UNIT.																																												
3. THE BREAK horsepower LISTED HERE IS THE MAXIMUM ALLOWABLE WHICH INCLUDE ALL UNIT ENTRY/EXIT LOSSES AND UNIT SPECIFIC SYSTEM EFFECT.																																												
4. PROVIDE DIRECT DRIVE PLUM/FAN FANS WITH AIRFOIL SHAPED BLADES.																																												
5. PROVIDE MERV-4 FILTER AND MERV-10 FINAL FILTER.																																												
6. SUPPLY FAN IS ADJUSTED TO ALLOW FOR A TOTAL AIR SYSTEM LEAKAGE OF 3%.																																												
7. DRY FILTER ALLOWANCE SHALL BE 0.5 P.W.G.																																												
8. PROVIDE 6 INCH BASE RAIL.																																												
9. PROVIDE ECONOMIZER SECTION.																																												
10. PROVIDE SINGLE POINT POWER CONNECTION WITH CONVENIENCE OUTLET FED FROM DISCONNECTED 120V/1PH/2 AMP LINE FROM DV. 26.																																												
UNIT SHALL BE INDOOR TYPE.																																												
12. PROVIDE WITH UNIT DISCONNECT SWITCH.																																												
B. SUPPLY AIR FAN SHALL BE PLUM TYPE.																																												
14. RETURN AIR FAN SHALL BE PLUM TYPE. INNER FACE OF CASING SHALL BE PERFORATED WITH MYLAR OR TEDLAR LINING.																																												
15. PROVIDE CPD MOTORS FOR FAN.																																												
16. PROVIDE WITH VFD COMPATIBLE MOTORS.																																												
17. PROVIDE ELECTRICALLY INSULATED BEARINGS ON VFD DRIVEN MOTORS. SHALL BE MOUNTED STATIONARY DISCHARGE DIAPHRAGM RING WITH CONDUCTIVE MICROSPIRES (ELECTRIC STATIC TECHNOLOGY AEGIS SQR OR APPROVED EQUIVA.)																																												
18. THE BREAKER/POWER LISTED IS THE MAXIMUM ALLOWABLE WHICH SHALL INCLUDE ALL DRIVE LOSSES AND UNIT SPECIFIC FAN SYSTEM EFFECTS.																																												
19. PROVIDE 2" SPRING ISOLATORS.																																												
20. PROVIDE WITH ENERGY RECOVERY SECTION. REFER TO ENERGY RECOVERY SCHEDULE FOR PERFORMANCE REQUIREMENTS.																																												
22. LIGHTS AND OUTLETS SHALL BE ON A SEPARATE 120V/1PH CIRCUIT WITH A MOP OF 20 AMPS. CIRCUIT PROVIDED BY DV. 26.																																												
23. PROVIDE 20' OF LINING DOWNSTREAM OF ALL SUPPLY AND RETURN DUCTWORK.																																												

SOUND ATTENUATOR SCHEDULE (SA)																			
UNIT NO	LOCATION	AIR FLOW (CFM)	OVERALL SIZE (IN) WxHxL	FACE VELOCITY (FPM)	PD (IN WG)	63HZ	125HZ	250HZ	500HZ	1000HZ	2000HZ	4000HZ	8000HZ	FORWARD/REVERSE	HTL CASING (YES/NO)	MANUFACTURER	MODEL	REMARKS	
SA-A1E1	C004 METAL SHOP MEZZ	19400	44x24x48	781	0.07	4	8	18	24	19	15	15	15	FORWARD	NO	VIBRO-ACOUSTICS	RD-HV-F3	SEE NOTES	
SA-A1E1	C004 METAL SHOP MEZZ	19400	44x24x48	781	0.08	5	10	17	23	23	17	13	10	REVERSE	NO	VIBRO-ACOUSTICS	RD-HV-F3	SEE NOTES	
SA-A1S1	C004 METAL SHOP MEZZ	18500	40x24x108	771	0.04	7	18	21	32	44	39	29	18	FORWARD	NO	VIBRO-ACOUSTICS	RED-HV-F4	SEE NOTES	
SA-A1E1	C004 METAL SHOP MEZZ	15405	42x24x48	1197	0.13	7	11	26	35	45	36	25	16	REVERSE	NO	VIBRO-ACOUSTICS	RD-HV-F3	SEE NOTES	
SA-A1S1	C002 AUTO COLL MEZZ	15405	78x24x72	814	0.04	5	9	16	26	24	18	13	10	FORWARD	NO	VIBRO-ACOUSTICS	RD-HV-F3	SEE NOTES	
SA-A1E1	C008 AUTO TECH MEZZ	15745	94x24x108	754	0.04	7	17	17	31	43	38	28	18	REVERSE	NO	VIBRO-ACOUSTICS	RED-HV-F4	SEE NOTES	
SA-A1S1	C008 AUTO TECH MEZZ	15745	94x24x108	736	0.06	9	9	23	45	56	38	25	16	FORWARD	NO	VIBRO-ACOUSTICS	RD-HV-F3	SEE NOTES	
SA-A1E1	B104 ELEC TECH MEZZ	9405	60x24x72	664	0.05	8	11	17	29	26	26	19	17	REVERSE	NO	VIBRO-ACOUSTICS	RED-HV-F1	SEE NOTES	
SA-A1E1	B103 HVAC TECH MEZZ	7525	60x24x72	514	0.02	9	9	12	25	25	26	18	17	REVERSE	NO	VIBRO-ACOUSTICS	RED-HV-F1	SEE NOTES	
SA-A1E1	B103 HVAC TECH MEZZ	7275	44"x122"	547	0.04	5	6	13	22	23	23	15	7	FORWARD	NO	VIBRO-ACOUSTICS	RD-HV-F3	SEE NOTES	
SA-A1E1	M101 PLUMBING MEZZ	6570	56x24x72	845	0.07	6	12	18	30	29	29	22	20	REVERSE	NO	VIBRO-ACOUSTICS	RED-HV-F2	SEE NOTES	
SA-A1S1	M101 PLUMBING MEZZ	6570	56x24x72	860	0.12	3	6	13	20	27	24	17	12	FORWARD	NO	VIBRO-ACOUSTICS	SRD-HV-F6	SEE NOTES	
SA-A1E1	B103 HVAC TECH MEZZ	6575	54x24x48	607	0.04	5	6	13	22	23	23	15	7	REVERSE	NO	VIBRO-ACOUSTICS	RD-HV-F3	SEE NOTES	
SA-A1S1	M101 CARPENTRY MEZZ	8265	54x24x36	920	0.02	1	2	6	12	9	8	6	3	FORWARD	NO	VIBRO-ACOUSTICS	RFL-HV-F2	SEE NOTES	
SA-A1E1	A201 MECHANICAL ROOM	10565	60x24x18	885	0.11	12	23	29	37	49	38	25	28	REVERSE	NO	VIBRO-ACOUSTICS	RED-HV-F1	SEE NOTES	
SA-A1E1	A201 MECHANICAL ROOM	9485	54x24x48	1054	0.08	5	11	19	26	26	18	15	12	FORWARD	NO	VIBRO-ACOUSTICS	RD-HV-F3	SEE NOTES	
SA-A1E1	A201 MECHANICAL ROOM	6360	38x24x24	865	0.12	4	5	12	19	17	12	7	6	REVERSE	NO	VIBRO-ACOUSTICS	SRD-HV-F6	SEE NOTES	
SA-A1E1	A201 MECHANICAL ROOM	9485	62x24x102	918	0.11	8	21	32	47	45	45	40	25	REVERSE	NO	VIBRO-ACOUSTICS	RED-HV-F9	SEE NOTES	
SA-A1E1	A201 MECHANICAL ROOM	9485	54x24x48	1054	0.08	5	11	19	26	26	18	15	12	FORWARD	NO	VIBRO-ACOUSTICS	RD-HV-F3	SEE NOTES	
SA-A1E1	A201 MECHANICAL ROOM	2835	30x24x36	680	0.05	5	9	14	15	18	16	14	12	FORWARD	NO	VIBRO-ACOUSTICS	SRD-HV-F1	SEE NOTES	
SA-A1E1	A201 MECHANICAL ROOM	19840	60x24x36	1984	0.12	2	5	5	6	4	5	5	3	FORWARD	NO	VIBRO-ACOUSTICS	RFMB-HV-F1	SEE NOTES	
SA-A1E1	A202 TOILET	18030	60x24x72	1803	0.20	5	7	15	22	17	16	15	11	REVERSE	NO	VIBRO-ACOUSTICS	RFMB-HV-F1	SEE NOTES	
SA-A1E1	A202 TOILET	18734	60x24x72	1874	0.23	6	6	9	12	21	27	23	18	FORWARD	NO	VIBRO-ACOUSTICS	REFL-HV-F1	SEE NOTES	
SA-A1E1	B403 CORRIDOR	18325	62x24x48	1773	0.24	6	11	19	26	44	42	11	11	REVERSE	NO	VIBRO-ACOUSTICS	RED-HV-F9	SEE NOTES	
SA-A1E1	B402 ROBOTICS	19365	62x24x48	1936	0.30	6	7	10	18	30	38	28	18	FORWARD	NO	VIBRO-ACOUSTICS	REFL-HV-F6	SEE NOTES	
SA-A1E1	LEVEL 4 AREA C SHUTT	2760	28x12x60	1183	0.15	6	11	15	27	27	27	27	18	FORWARD	NO	VIBRO-ACOUSTICS	RED-HV-F2	SEE NOTES	
SA-A1E1	A201 MECHANICAL ROOM	6510	40x18x72	1302	0.13	5	9	15	22	38	39	25	19	FORWARD	NO	VIBRO-ACOUSTICS	RED-HV-F9	SEE NOTES	
SA-A1E1	A402 CORRIDOR	15655	60x24x6	1565	0.18	9	10	13	24	27	27	20	19	FORWARD	NO	VIBRO-ACOUSTICS	RED-HV-F1	SEE NOTES	
SA-A1E1	D202 GYMNASIUM	14000	70x48x72	609	0.02	2	9	20	31	29	15	11	11	REVERSE	NO	VIBRO-ACOUSTICS	RD-HV-F4	SEE NOTES	
SA-A1E1	D202 GYMNASIUM	9120	50"x100"	669	0.01	7	13	22	28	24	16	12	9	FORWARD	NO	VIBRO-ACOUSTICS	CD-HV-F1	SEE NOTES	
SA-A1E1	D202 GYMNASIUM	14000	70x48x6	626	0.07	7	14	14	23	32	41	39	32	REVERSE	NO	VIBRO-ACOUSTICS	RED-HV-F7	SEE NOTES	

1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.

2. PROVIDE ELBOW SOUND ATTENUATORS CUSTOM DESIGNED TO ATTACH TO ROOFTOP UNIT DUCT CONNECTION, ROUTE THROUGH ROOF CURB AND PENETRATE ROOF DECK, EXTEND DOWNWARD TO CLEAR STRUCTURE BEFORE TURNING INTO A HORIZONTAL POSITION. SEAL ROOF PENETRATIONS TO MATCH THE ASSOCIATED AIR HANDLER'S DUCT CONNECTION SIZE. CONTRACTOR TO COORDINATE WITH SUBMITTED AIR HANDLER SHOP DRAWING PRIOR TO ORDERING SOUND ATTENUATORS.

3. ALL SOUND ATTENUATORS OVERALL WIDTH AND LENGTH SHALL EQUAL THE ASSOCIATED AIR HANDLER'S DUCT CONNECTION SIZE. CONTRACTOR TO COORDINATE WITH SUBMITTED AIR HANDLER SHOP DRAWING PRIOR TO ORDERING SOUND ATTENUATORS.

VRF BRANCH CIRCUIT SELECTOR SCHEDULE (BS)

UNIT NO	NUMBER OF PORTS	MAX CAPACITY PER PORT (MBH)	REFRIGERANT USED	ELEC. DATA	RATED AMPS	MANUFACTURER	MODEL	NOTES
BS-1-1	3	60.0	R410A	208	1	0.06	LG	PRHR033A
BS-1-2	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-2-1	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-2-2	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-2-3	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-2-4	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-3-1	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-4-1	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-5-1	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-5-2	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-5-3	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-5-4	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-6-1	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-6-2	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-6-3	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-6-4	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-6-5	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-6-6	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-6-7	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-6-8	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-6-9	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-6-10	4	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-10-2	4	60.0	R410A	208	1	0.06	LG	PRHR043A
BS-10-3	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-11-1	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-11-2	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-11-3	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-13-1	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-13-2	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-13-3	4	60.0	R410A	208	1	0.06	LG	PRHR043A
BS-14-1	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-14-2	4	60.0	R410A	208	1	0.06	LG	PRHR043A
BS-15-1	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-15-2	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-15-3	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-15-4	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-16-1	6	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-16-2	4	60.0	R410A	208	1	0.06	LG	PRHR043A
BS-17-1	4	60.0	R410A	208	1	0.06	LG	PRHR043A
BS-17-2	4	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-18-1	8	60.0	R410A	208	1	0.09	LG	PRHR033A
BS-18-2	6	60.0	R410A	208	1	0.09	LG	PRHR033A

NOTES:
1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.

AIR COOLED VRF CONDENSING UNIT (CU)

UNIT NO	LOCATION	NOMINAL CAPACITY (TONS)	RATED COOLING (MBH)	RATED HEATING (MBH)	REFRIG. TYPE	REFRIGERANT	REFRIGERANT T. CONTROL	CONDENSER COIL	AIRFLOW (CFM)	V. PH	N	FLA	MOCP	SOUND RATING (DB)	MANUFACTURER	MODEL	NOTES	
			COOLING	HEATING														
CU-1	ROOF AREA C	12	144.0	162.0	R410A	EEV	95.0	0.0	9300	480	3	26.4	23.8	35	60	LG	ARUM1440TES	SEE NOTES
CU-2A	ROOF AREA D	12	144.0	162.0	R410A	EEV	95.0	0.0	9300	480	3	26.5	23.8	35	60	LG	ARUM1440TES	CU-2A AND CU-2B ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-2B	ROOF AREA D	18	216.0	243.0	R410A	EEV	95.0	0.0	10300	480	3	38.3	34.4	50	64	LG	ARUM210TES	SEE NOTES
CU-3	ROOF AREA B	10	119.7	135.0	R410A	EEV	95.0	0.0	8400	480	3	18.4	15.7	25	59	LG	ARUM210TES	SEE NOTES
CU-4A	ROOF AREA A	18	216.0	243.0	R410A	EEV	95.0	0.0	10300	480	3	38.3	34.4	50	64	LG	ARUM210TES	SEE NOTES
CU-4B	ROOF AREA B	10	119.7	135.0	R410A	EEV	95.0	0.0	8400	480	3	18.4	15.7	25	59	LG	ARUM210TES	SEE NOTES
CU-5B	ROOF AREA B	10	119.7	135.0	R410A	EEV	95.0	0.0	8400	480	3	18.4	15.7	25	59	LG	ARUM210TES	SEE NOTES
CU-6C	ROOF AREA B	16	192.0	216.0	R410A	EEV	95.0	0.0	10300	480	3	35.7	32.0	50	62	LG	ARUM1920TES	CU-4A AND CU-4B ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-6A	ROOF AREA A	16	192.0	216.0	R410A	EEV	95.0	0.0	10300	480	3	35.7	32.0	50	62	LG	ARUM1920TES	CU-4A AND CU-4B ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-6B	ROOF AREA A	18	216.0	243.0	R410A	EEV	95.0	0.0	10300	480	3	38.3	34.4	50	64	LG	ARUM210TES	CU-4A AND CU-4B ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-7	ROOF AREA B	3	36.0	42.0	R410A	EEV	95.0	0.0	4238	208	1	23.5	18.0	40	53	LG	ARUM360GSSS	SEE NOTES
CU-8A	ROOF AREA A	16	192.0	216.0	R410A	EEV	95.0	0.0	10300	480	3	35.7	32.0	50	62	LG	ARUM1920TES	CU-4A AND CU-4B ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-8B	ROOF AREA A	8	96.0	108.0	R410A	EEV	95.0	0.0	7400	480	3	16.4	14.1	25	58	LG	ARUM960TES	CU-4A AND CU-4B ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-9A	ROOF AREA B	10	119.7	135.0	R410A	EEV	95.0	0.0	8400	480	3	18.4	15.7	25	59	LG	ARUM210TES	CU-4A AND CU-4B ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-9B	ROOF AREA C	12	144.0	162.0	R410A	EEV	95.0	0.0	9300	480	3	26.4	23.8	35	60	LG	ARUM1440TES	CU-4A AND CU-4B ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-9C	ROOF AREA B	18	216.0	243.0	R410A	EEV	95.0	0.0	10300	480	3	38.3	34.4	50	64	LG	ARUM210TES	CU-4A AND CU-4B ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-10A	ROOF AREA B	18	216.0	243.0	R410A	EEV	95.0	0.0	10300	480	3	38.3	34.4	50	64	LG	ARUM210TES	CU-4A AND CU-4B ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-10B	ROOF AREA B	12	144.0	162.0	R410A	EEV	95.0	0.0	9300	480	3	26.4	23.8	35	60	LG	ARUM1440TES	CU-10A AND CU-10B ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-11A	ROOF AREA A	18	216.0	243.0	R410A	EEV	95.0	0.0	10300	480	3	38.3	34.4	50	64	LG	ARUM210TES	CU-11A, CU-11B, AND 11C ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-11B	ROOF AREA A	10	119.7	135.0	R410A	EEV	95.0	0.0	8400	480	3	18.4	15.7	25	59	LG	ARUM210TES	CU-11A, CU-11B, AND 11C ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-11C	ROOF AREA A	10	119.7	135.0	R410A	EEV	95.0	0.0	8400	480	3	18.4	15.7	25	59	LG	ARUM210TES	CU-11A, CU-11B, AND 11C ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-12	ROOF AREA B	6	60.0	64.0	R410A	EEV	95.0	0.0	3885	208	1	23.4	18.0	40	57	LG	ARUM600GSSS	SEE NOTES
CU-13A	ROOF AREA B	10	119.7	135.0	R410A	EEV	95.0	0.0	8400	480	3	18.4	15.7	25	59	LG	ARUM210TES	CU-13A, CU-13B, AND 13C ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-13B	ROOF AREA B	10	119.7	135.0	R410A	EEV	95.0	0.0	8400	480	3	18.4	15.7	25	59	LG	ARUM210TES	CU-13A, CU-13B, AND 13C ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-13C	ROOF AREA B	18	216.0	243.0	R410A	EEV	95.0	0.0	10300	480	3	38.3	34.4	50	64	LG	ARUM210TES	CU-13A, CU-13B, AND 13C ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-14A	ROOF AREA B	18	216.0	243.0	R410A	EEV	95.0	0.0	10300	480	3	38.3	34.4	50	64	LG	ARUM210TES	CU-14A AND CU-14B ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-14B	ROOF AREA B	8	96.0	108.0	R410A	EEV	95.0	0.0	7400	480	3	16.4	14.1	25	58	LG	ARUM960TES	CU-14A AND CU-14B ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-15	ROOF AREA A	12	144.0	162.0	R410A	EEV	95.0	0.0	9300	480	3	26.4	23.8	35	60	LG	ARUM1440TES	SEE NOTES
CU-16	ROOF AREA A	14	168.0	189.0	R410A	EEV	95.0	0.0	10500	480	3	29.5	25.9	41	65	LG	ARUM1680TES	SEE NOTES
CU-17	ROOF AREA A	20	232.1	243.0	R410A	EEV	95.0	0.0	10300	480	3	41.4	37.2	50	65	LG	ARUM210TES	SEE NOTES
CU-18A	ROOF AREA B	16	192.0	216.0	R410A	EEV	95.0	0.0	10300	480	3	35.7	32.0	50	62	LG	ARUM1920TES	CU-18A AND CU-18B ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-18B	ROOF AREA A	8	96.0	108.0	R410A	EEV	95.0	0.0	7400	480	3	16.4	14.1	25	58	LG	ARUM960TES	CU-18A AND CU-18B ARE JOINED TOGETHER TO CREATE ONE VRF CONDENSING SYSTEM (MODEL ARUM4300TES)
CU-19	ROOF AREA A	18	216.0	243.0	R410A	EEV	95.0	0.0	10300	480	3	38.3	34.4	50	64	LG	ARUM210TES	SEE NOTES
CU-20	ROOF AREA C	3	36.0	42.0	R410A	EEV	95.0	0.0	4238	208	1	23.5	18.0	40	53	LG	ARUM360GSSS	SEE NOTES
CU-21	LOCKER BUILDING	16	192.0	162.0	R410A	EEV	95.0	0.0	10300	480	3	38.3	34.4	50	64	LG	ARUM210TES	SEE NOTES
CU-22	LOCKER BUILDING																ALTERNATE #3 - SEE NOTES	

HEATING COIL - ELECTRIC (EHC)																				
UNIT NO.	LOCATION	SERVICE	HEATING COIL										ELECTRICAL				DIMENSIONS L x W (IN/IN)	MANUFACTURER	MODEL	NOTES
			MAX AIRFLOW (CFM)	MAX FACE VELOC (FPM)	APD (IN WG)	EAT DB (°F)	LAT DB (°F)	TOTAL CAP (MBH)	SHEATH TYPE	CONTROL	kW	V	PH							
EHC-1	A120 WAITING	ERV-1	740	500	0.13	47	72	19.9	SLIP IN	SCR	6.5	480	3	10x10	RENEWAIRE	EK SERIES	SEE NOTES			
EHC-2	B2182 DEPT HEATS	ERV-2	255	500	0.13	47	72	6.9	SLIP IN	SCR	2.5	480	3	10x10	RENEWAIRE	EK SERIES	SEE NOTES			
EHC-3	C106F KITCHEN	ERV-3	1160	500	0.13	47	72	31.3	SLIP IN	SCR	10.0	480	3	24x16	RENEWAIRE	EK SERIES	SEE NOTES			
EHC-4	A425 SC LAB	ERV-4	1840	800	0.13	47	72	51.2	SLIP IN	SCR	15.0	480	3	30x12	RENEWAIRE	EK SERIES	SEE NOTES			
EHC-5	C8102 STORAGE	ERV-5	1240	500	0.13	47	72	33.5	SLIP IN	SCR	10.0	480	3	24x16	RENEWAIRE	EK SERIES	SEE NOTES			
EHC-6	LOCKER BUILDING	ERV-6	1930	500	0.13	47	72	51.2	SLIP IN	SCR	15.0	480	3	30x16	RENEWAIRE	EK SERIES	SEE NOTES			
EHC-7	A416 CORRIDOR	ERV-7	285	500	0.13	47	72	9.4	SLIP IN	SCR	3.0	480	3	10x10	RENEWAIRE	EK SERIES	SEE NOTES			
NOTES: 1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE. 2. PROVIDE DUCT ACCESS DOOR FOR COIL MAINTENANCE. 3. PROVIDE WITH UNIT DISCONNECT SWITCH. 4. LEAVING AIR TEMPERATURES LISTED ARE LEAVING COIL TEMPERATURES. 5. PROVIDE AIRFLOW SWITCH.																				

AIR CONDITIONING UNITS - DX SPLIT SYSTEMS (AC)																	
		FAN					ELECTRICAL CHARACTERISTICS			DX REFRIGERANT COOLING							
UNIT NO	AREA SERVED	TYPE	MIN AIRFLOW (CFM)	MAX AIRFLOW (CFM)	MCA (AMP)	V	PH	TOTAL CAPACITY (MBH)	DESIGN SPACE CONDITION	TEMP (°F)	RH (%)	REFRIGERANT USED	SOUND LEVEL (DBA)	MANUFACTURER	MODEL	NOTES	STARTER TYPE
AC-0.1	MAIN ELECTRICAL - C001	WALL MOUNTED	670	915	0.81	208	1	36.0	80.0	50	50	R410A	52	LG	ARNJ3635V4	1,2,3,4,5	PS
AC-0.2	IDF - C008	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-0.3	ELECT VOC - C006A	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-0.4	PLUMBING C008	WALL MOUNTED	670	915	0.81	208	1	36.0	80.0	50	50	R410A	52	LG	ARNJ3635V4	1,2,3,4,5	PS
AC-0.5	ELEV MACHINE RM - C012	WALL MOUNTED	670	915	0.81	208	1	36.0	80.0	50	50	R410A	52	LG	ARNJ3635V4	1,2,3,4,5	PS
AC-0.6	ELECTRIC RM - A002A	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-0.7	ELECT - C024	WALL MOUNTED	360	810	0.00	208	1	24.0	80.0	50	50	R410A	47	LG	LSN243HLV3	1,2,3,4,5,6	PS
AC-0.8	ELECTRIC RM - A003A	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-0.9	C020E IDF	WALL MOUNTED	370	705	0.52	208	1	18.0	80.0	50	50	R410A	47	LG	LSN161HV15	1,2,3,4,5,6	PS
AC-1.1	MAIN KITCHEN ELECTRICAL - A115	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-1.2	IDF - A116	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-1.3	ELECT A144	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-1.4	ELECT RM M101A	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-1.5	PLUMBING - COMPRESSED AIR - B102	WALL MOUNTED	670	915	0.81	208	1	36.0	80.0	50	50	R410A	52	LG	ARNJ3635V4	1,2,3,4,5	PS
AC-1.6	ELECT VOC B108	WALL MOUNTED	670	915	0.81	208	1	36.0	80.0	50	50	R410A	52	LG	ARNJ3635V4	1,2,3,4,5	PS
AC-1.7	IDF B108A	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-1.8	ELECT RM M102A	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-1.9	ELECT RM M103A	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-1.10	ELECT RM M104A	WALL MOUNTED	670	915	0.81	208	1	36.0	80.0	50	50	R410A	52	LG	ARNJ3635V4	1,2,3,4,5	PS
AC-1.11	IDF - C103	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-1.12	AUD/ELECT - C119	WALL MOUNTED	360	810	0.00	208	1	24.0	80.0	50	50	R410A	47	LG	LSN243HLV3	1,2,3,4,5,6	PS
AC-1.13	ELECTRIC RM - D124	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-1.14	IDF - D118	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-2.1	ELECTRIC RM - 370	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-2.2	IDF - 372	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-2.3	MDF - 220	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-2.4	MDF - 220	WALL MOUNTED	360	810	0.00	208	1	24.0	80.0	50	50	R410A	47	LG	LSN243HLV3	1,2,3,4,5,6	PS
AC-2.5	A215 CONTROL ROOM	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-2.6	ELECTRIC RM - 200	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-2.7	D204 GYM STORAGE	WALL MOUNTED	360	810	0.00	208	1	24.0	80.0	50	50	R410A	47	LG	LSN243HLV3	1,2,3,4,5,6	PS
AC-3.1	IDF - 221	WALL MOUNTED	360	810	0.00	208	1	24.0	80.0	50	50	R410A	47	LG	LSN243HLV3	1,2,3,4,5,6	PS
AC-3.2	ELECTRIC RM - 199	WALL MOUNTED	360	810	0.00	208	1	24.0	80.0	50	50	R410A	47	LG	LSN243HLV3	1,2,3,4,5,6	PS
AC-3.3	IDF - 223	WALL MOUNTED	360	810	0.00	208	1	24.0	80.0	50	50	R410A	47	LG	LSN243HLV3	1,2,3,4,5,6	PS
AC-3.4	ELECTRIC RM - 198	WALL MOUNTED	360	810	0.00	208	1	24.0	80.0	50	50	R410A	47	LG	LSN243HLV3	1,2,3,4,5,6	PS
AC-3.5	ELEV MACHINE RM - E1M	WALL MOUNTED	360	810	0.00	208	1	24.0	80.0	50	50	R410A	47	LG	LSN243HLV3	1,2,3,4,5,6	PS
AC-4.1	IDF - 219	WALL MOUNTED	360	810	0.00	208	1	24.0	80.0	50	50	R410A	47	LG	LSN243HLV3	1,2,3,4,5,6	PS
AC-4.2	A4025 DENTAL UTILITY	WALL MOUNTED	360	810	0.00	208	1	24.0	80.0	50	50	R410A	47	LG	LSN243HLV3	1,2,3,4,5,6	PS
AC-4.3	ELECTRIC RM - 195	WALL MOUNTED	360	810	0.00	208	1	24.0	80.0	50	50	R410A	47	LG	LSN243HLV3	1,2,3,4,5,6	PS
AC-4.4	ELECTRIC RM - 196	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-4.5	IDF - 384	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-4.6	402T DENTAL UTILITY	WALL MOUNTED	370	540	0.52	208	1	24.0	80.0	50	50	R410A	49	LG	ARNJ2435K4	1,2,3,4,5	PS
AC-0B-1	ELEV MACHINE RM - E4M	WALL MOUNTED	360	810	0.00	208	1	24.0	80.0	50	50	R410A	47	LG	LSN243HLV3	1,2,3,4,5,6	PS
AC-0B-1	ELEV MACHINE RM - L0209	WALL MOUNTED	360	810	0.00	208	1	24.0	80.0	50	50	R410A	47	LG	LSN243HLV3	1,2,3,4,5,6	PS
ACMB-1	MAINTENANCE BUILDING OFFICE	2x2 CEILING CASSETTE	230	300	0.00	208	1	0.8	75.0	50	50	R410A	51	LG	LC0908HV4	ADD ALTERNATE #3: 1,2,3,4,5,6	PS
NOTES: 1. REFER TO SPECIFICATIONS SECTION 230000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE. 2. PROVIDE BUILT-IN CONDENSATE PUMP. 3. PROVIDE REMOTE WALL MOUNTED WIRED CONTROLLER. 4. UNITS SHALL OPERATE AT HIGH SPEED. 5. UNIT MANUFACTURER IS TO PROVIDE INTEGRAL FLOAT SWITCH FOR ATC TO TIE INTO FOR ALARM. 6. INDOOR UNIT IS POWERED FROM OUTDOOR UNIT. DIV. 26 SHALL PROVIDE FEEDER FROM OUTDOOR UNIT TO INDOOR UNIT.																	

DUST COLLECTOR (DC)

UNIT NO.	LOCATION	TYPE	INLET SIZE	AIRFLOW (CFM)	STATIC PRESSURE (IN WG)	HP	V	PH	MANUFACTURER	MODEL	REMARKS
DC-1	LEVEL 1 AREA A	DOWNFLOW	14	10000	11.50	50	480	3	DONALDSON TORIT	DPE3-24	
NOTES: 1. PROVIDE SIDE DISCHARGE WITH 70 DB ATTENUATOR. DISCHARGE AT 45 DEGREE ANGLE UP. 2. INLET CONNECTION(S) TO DUST COLLECTOR SHALL BE A 1" IS1 ABOVE GRADE. 3. BASIS OF DESIGN UNIT SHALL BE PROVIDED WITH 55 GALLON DRUMS FOR COLLECTION OF DUST. DUST COLLECTOR SHALL BE DESIGNED TO ALLOW REPLACEMENT OF 55 GALLON DRUMS WITH A HOPPER IF THE OWNER CHOOSES TO DO SO IN THE FUTURE.											

AIR-COOLED CONDENSING UNIT (ACCU)

UNIT NO.	SYSTEM	LOCATION	NOMINAL CAPACITY (TONS)	REFRIG	AMBIENT AIR TEMP (°F)	ELECTRIC CONNECTION	VIBRATION ISOLATION	DIMENSIONS LxWxH (MIN/MIN)	WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
ACCU-0-1	AC-0-1	ROOF AREA C	3.0	R410A	95.0	208 1 23.5 40 15.5	NP 0.2	38x16x54	270	LG	ARUM36G585	SEE NOTES
ACCU-0-2	AC-0-2	ROOF AREA C	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-0-3	AC-0-3	ROOF AREA C	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-0-4	AC-0-4	ROOF AREA C	3.0	R410A	95.0	208 1 23.5 40 15.5	NP 0.2	38x16x54	270	LG	ARUM36G585	SEE NOTES
ACCU-0-5	AC-0-5	ROOF AREA C	3.0	R410A	95.0	208 1 23.5 40 15.5	NP 0.2	38x16x54	270	LG	ARUM36G585	SEE NOTES
ACCU-0-6	AC-0-6	ROOF AREA C	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-0-7	AC-0-7	ROOF AREA C	2.0	R410A	95.0	208 1 19.0 30 13	NP 0.2	38x16x33	200	LG	LSN243HLV3	SEE NOTES
ACCU-0-8	AC-0-8	ROOF AREA D	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-0-9	AC-0-9	ROOF AREA C	1.5	R410A	95.0	208 1 19.0 30 12.55	NP 0.2	37x13x32	200	LG	LSU161HV15	SEE NOTES
ACCU-1-1	AC-1-1	ROOF AREA A	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-1-2	AC-1-2	ROOF AREA A	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-1-3	AC-1-3	ROOF AREA A	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-1-4	AC-1-4	ROOF AREA A	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-1-5	AC-1-5	ROOF AREA B	3.0	R410A	95.0	208 1 23.5 40 15.5	NP 0.2	38x16x54	270	LG	ARUM36G585	SEE NOTES
ACCU-1-6	AC-1-6	ROOF AREA B	3.0	R410A	95.0	208 1 23.5 40 15.5	NP 0.2	38x16x54	270	LG	ARUM36G585	SEE NOTES
ACCU-1-7	AC-1-7	ROOF AREA B	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-1-8	AC-1-8	ROOF AREA B	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-1-9	AC-1-9	ROOF AREA B	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-1-10	AC-1-10	ROOF AREA B	3.0	R410A	95.0	208 1 23.5 40 15.5	NP 0.2	38x16x54	270	LG	ARUM36G585	SEE NOTES
ACCU-1-11	AC-1-11	ROOF AREA C	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-1-12	AC-1-12	ROOF AREA C	2.0	R410A	95.0	208 1 19.0 30 13	NP 0.2	38x16x33	200	LG	LSU243HLV3	SEE NOTES
ACCU-1-13	AC-1-13	ROOF AREA C	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-1-14	AC-1-14	ROOF AREA C	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-2-1	AC-2-1	ROOF AREA A	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-2-2	AC-2-2	ROOF AREA A	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-2-3	AC-2-3	ROOF AREA B	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-2-4	AC-2-4	ROOF AREA B	2.0	R410A	95.0	208 1 19.0 30 13	NP 0.2	38x16x33	200	LG	LSU243HLV3	SEE NOTES
ACCU-2-5	AC-2-5	ROOF AREA A	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-2-6	AC-2-6	ROOF AREA A	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-2-7	AC-2-7	ROOF AREA D	1.0	R410A	95.0	208 1 19.0 15 12.5	NP 0.2	38x16x31.5	95	LG	LSU20HV95	SEE NOTES
ACCU-3-1	AC-3-1	ROOF AREA A	2.0	R410A	95.0	208 1 19.0 30 13	NP 0.2	38x16x33	200	LG	LSU243HLV3	SEE NOTES
ACCU-3-2	AC-3-2	ROOF AREA A	2.0	R410A	95.0	208 1 19.0 30 13	NP 0.2	38x16x33	200	LG	LSU243HLV3	SEE NOTES
ACCU-3-3	AC-3-3	ROOF AREA B	2.0	R410A	95.0	208 1 19.0 30 13	NP 0.2	38x16x33	200	LG	LSU243HLV3	SEE NOTES
ACCU-3-4	AC-3-4	ROOF AREA B	2.0	R410A	95.0	208 1 19.0 30 13	NP 0.2	38x16x33	200	LG	LSU243HLV3	SEE NOTES
ACCU-3-5	AC-3-5	ROOF AREA B	2.0	R410A	95.0	208 1 19.0 30 13	NP 0.2	38x16x33	200	LG	LSU243HLV3	SEE NOTES
ACCU-4-1	AC-4-1	ROOF AREA A	2.0	R410A	95.0	208 1 19.0 30 13	NP 0.2	38x16x33	200	LG	LSU243HLV3	SEE NOTES
ACCU-4-2	AC-4-2	ROOF AREA A	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-4-3	AC-4-3	ROOF AREA A	2.0	R410A	95.0	208 1 19.0 30 13	NP 0.2	38x16x33	200	LG	LSU243HLV3	SEE NOTES
ACCU-4-4	AC-4-4	ROOF AREA B	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-4-5	AC-4-5	ROOF AREA B	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-4-6	AC-4-6	ROOF AREA B	2.0	R410A	95.0	208 1 19.6 30 13	NP 0.2	37x13x32	200	LG	ARUN24G584	SEE NOTES
ACCU-CB-1	AC-CB-1	STADIUM ELEVATOR	2.0	R410A	95.0	208 1 19.0 30 13	NP 0.2	38x16x33	200	LG	LSU243HLV3	SEE NOTES
ACCU-CB-2	AC-CB-2	STADIUM PRESS BOX	2.0	R410A	95.0	208 1 19.0 30 13	NP 0.2	38x16x33	200	LG	LSU243HLV3	SEE NOTES
ACCU-LB-1	AC-LB-1	LOCKER BUILDING	2.0	R410A	95.0	208 1 19.0 30 13	NP 0.2	38x16x33	200	LG	LSU243HLV3	SEE NOTES
ACCU-MB-1	AC-MB-1	MAINTENANCE BUILDING OFFICE	0.8	R410A	95.0	208 1 11.9 15 13.6	NP 0.2	33x14x22	82	LG	LSU09HV7	ADD ALTERNATE REE. SEE NOTES. PROVIDE WITH DRAIN PAN HEATER MULTI-STEP REMOTE CONTROLLER.

NOTES:

1. REFER TO SPECIFICATIONS SECTION 20000 FOR ALTERNATE MANUFACTURERS FOR PRODUCTS/SYSTEMS LISTED UNDER THIS SCHEDULE.

2. PROVIDE WITH LOW AMB. CONTROL.

3. PROVIDE 40-60 DB FOR LOW AMBIENT TEMPERATURE CONTROL.

4. INTERLOCK EACH UNIT WITH AC UNIT AS INDICATED IN THE AC UNIT SCHEDULE. BOTH THE INDOOR AND THE OUTDOOR UNITS SHALL BE FURNISHED BY THE SAME MANUFACTURER AND MATCHED WITHIN ONE ANOTHER.

Wakefield, MA 01880

Scale: 12" = 1'-0"

Job No.: 60-20-409

Drawn By: WAM

Date: August 28th, 2023

FA0-0-1

Drumhey Rosane Anderson, Inc.	
225 Oakland Road Studio 205 South Windsor, CT 06074	260 Charles Street Studio 300 Waltham, MA 02453

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Wakefield, MA 01880

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, PROVIDE A FULLY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING TO ALL VENDORS. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK. PROVIDE A FULLY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING TO ALL VENDORS. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK. PROVIDE A FULLY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING TO ALL VENDORS.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO R.O.W.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE/FIRE DEPENDENT, DUCT-MOUNTED SMOKE DETECTORS WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, ELECTRICAL AND MECHANICAL SPECIFICATIONS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM DEVICES. PROVIDE ACCESS TO FIRE ALARM TERMINAL CABINETS (IF FIRE ALARM CONTROL PANEL, OR FIRE COMMAND CENTER PER FIRE ALARM CONTROL MANUFACTURER REQUIREMENTS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT TEMPORARY FIRE DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
8. PROVIDE TEMPORARY FIRE DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW AV DEVICES WITH INTEGRAL, SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPAIR THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING-PROGRAMMING PER REVERSED SPEAK DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SILENT ALL AROUND SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPES/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO FIRE PROTECTION SPECIFICATIONS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

- 1 CARBON MONOXIDE DETECTORS IN THE SHOP AREA SHALL BE COLUMN OR WALL MOUNTED AT THE HEIGHT OF 60".
- 2 PROVIDE A NEW ANALOG ADDRESSABLE FIRE ALARM CONTROL PANEL UNIT IN THE FA ROOM. AN ANNUNCIATOR FOR THE FIRE ALARM CONTROL PANEL SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE FIRE ALARM DRAWINGS.
- 3 PROVIDE A FIRE ALARM DRILL SWITCH TO ACTUATE A FIRE DRILL.
- 4 PROVIDE A REMOTE ANNUNCIATOR FOR THE BI-DIRECTIONAL AMPLIFICATION SYSTEM.

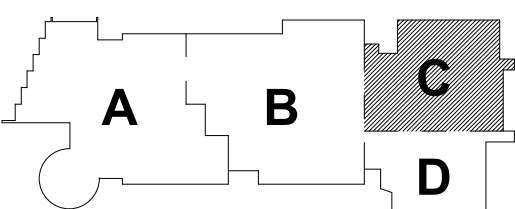


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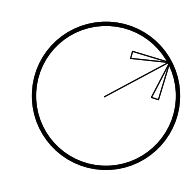
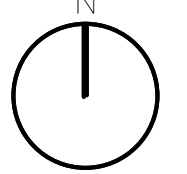
August 28th, 2023



KEY PLAN

PROJECT NORTH

MAGNETIC NORTH



**FIRE ALARM
LOWER LEVEL
FLOOR PLAN -
AREA C**

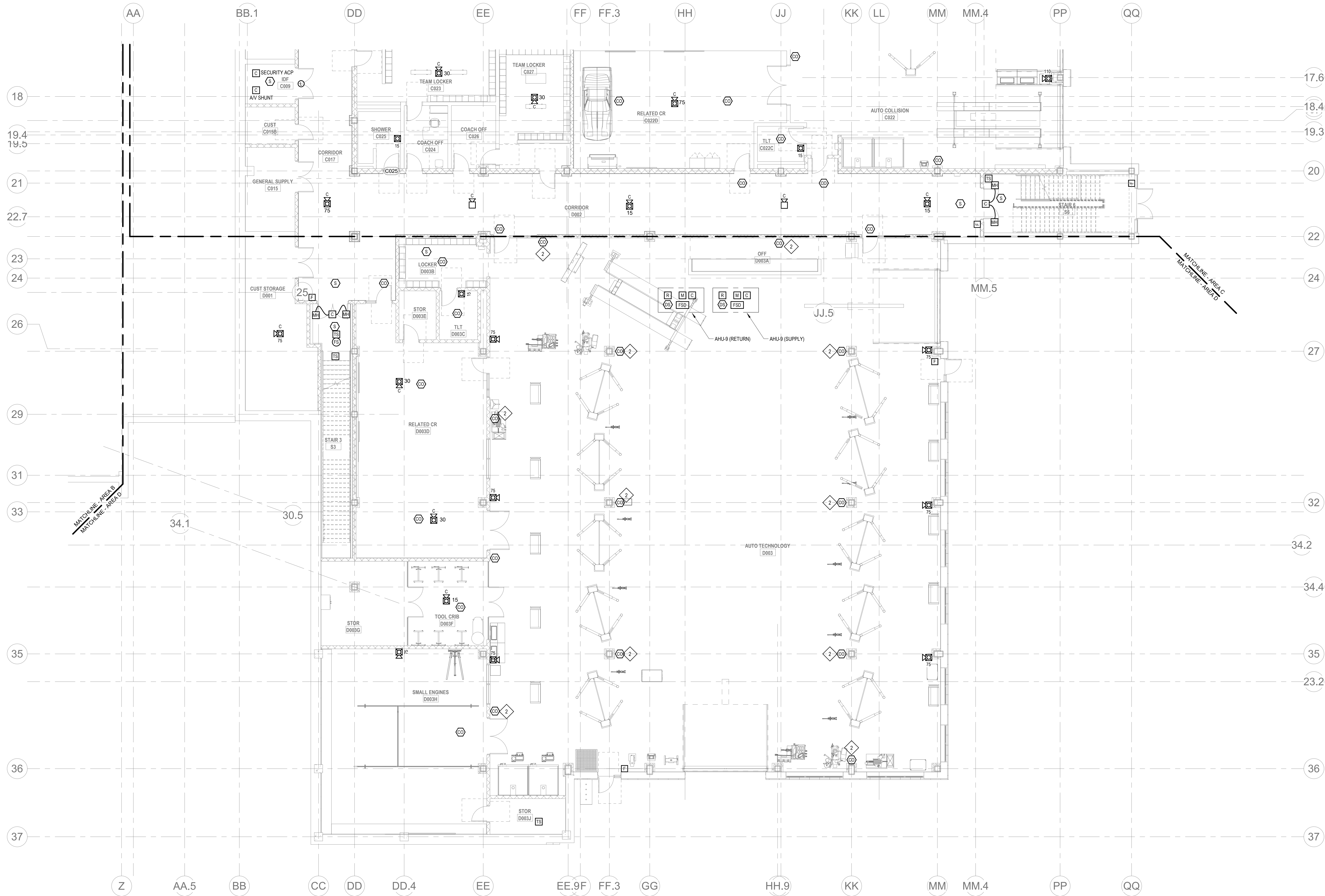
Scale: 1/8" = 1'-0"

Job No.: 60-20-409

Drawn By: WAM

Date: August 28th, 2023

FA1-1-0C



GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT-MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/RAC DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES TO FIRE ALARM TERMINAL CABINETS (OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS).
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/ADDED DEVICES.
8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW AV DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SCENE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STAMPER SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

FIRE ALARM KEYNOTES:

- 1. NOT USED.
- 2. CARBON MONOXIDE DETECTORS IN THE SHOP AREA SHALL BE COLUMN OR WALL MOUNTED AT THE HEIGHT OF 60".



Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
www.dra-inc.com

280 Charles Street
Studio 300
Waltham, MA 02453
Tel: 817.984.1700
www.dra-inc.com

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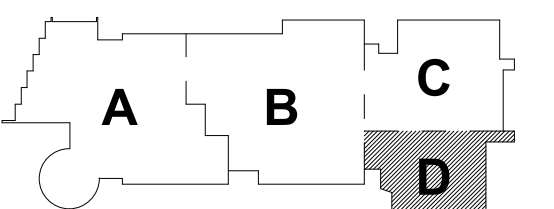
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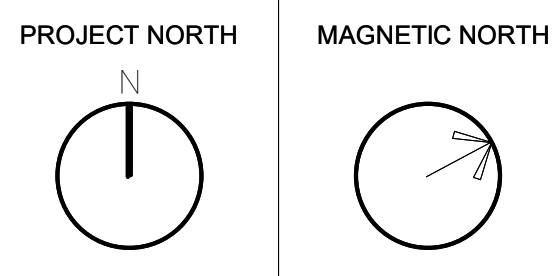


BID SET

August 28th, 2023



KEY PLAN



**FIRE ALARM
LOWER LEVEL
FLOOR PLAN -
AREA D**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023

FA1-1-0D

**Northeast
Metropolitan
Regional
Vocational High
School**

Wakefield, MA 01880

GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.

2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.

3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.

4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT-MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/HVAC DRAWINGS.

5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.

6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICE(S) TO FIRE ALARM TERMINAL CABINET(S) OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER

7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/ADDED DEVICES.

9. PROVIDE NEW AV DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.

11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.

12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.

14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL A/V AND/OR SOUND EQUIPMENT.

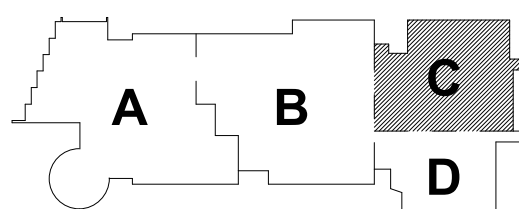
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.



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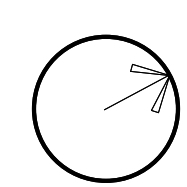
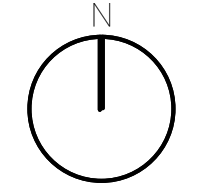
August 28th, 2023



KEY PLAN

PROJECT NORTH

MAGNETIC NORTH



**FIRE ALARM
LOWER LEVEL
MEZZANINE
PLAN - AREA C**

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

Job No.: 60-20

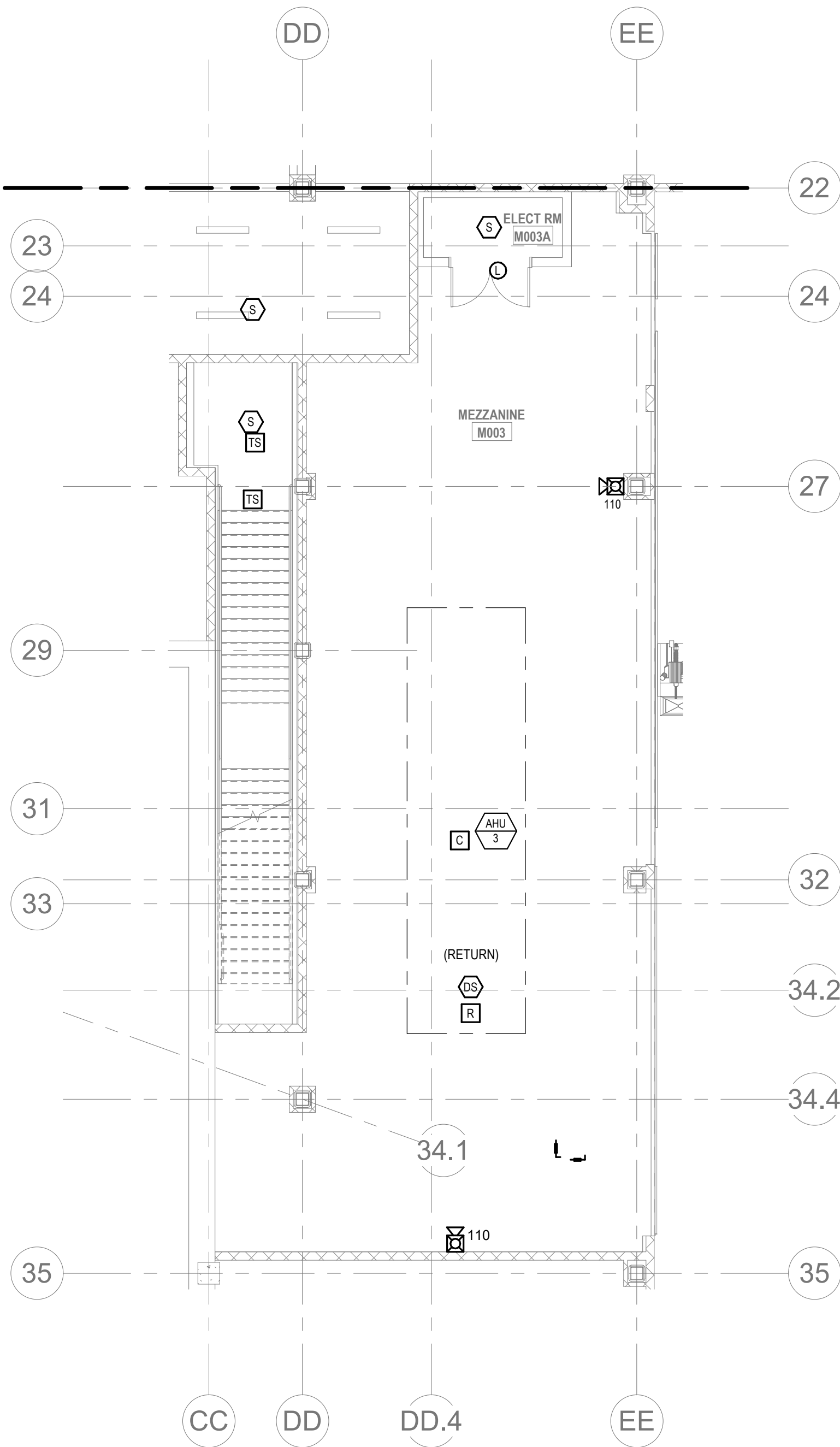
Drawn By: MAAA

Date: August 2016

FA1-1-0MC

GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/INAC DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES TO FIRE ALARM TERMINAL CABINET(S) OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/ADDED DEVICES.
8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW AV DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.



② FIRE ALARM LOWER LEVEL MEZZANINE - AREA D
1/8" = 1'-0"

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South Windsor, CT 06074
260 Charles Street
Studio 300
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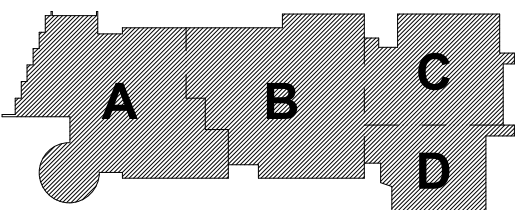
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SUITE 200
NEW YORK, NY 10014
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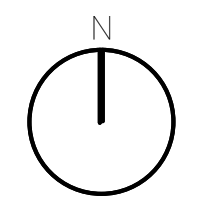
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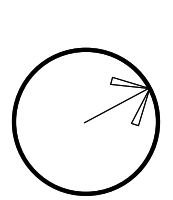


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



FIRE ALARM
LOWER LEVEL
MEZZANINE
PLAN - AREA D

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

Job No.: 60-20-409

Drawn By: Author

Date: August 28th, 2023

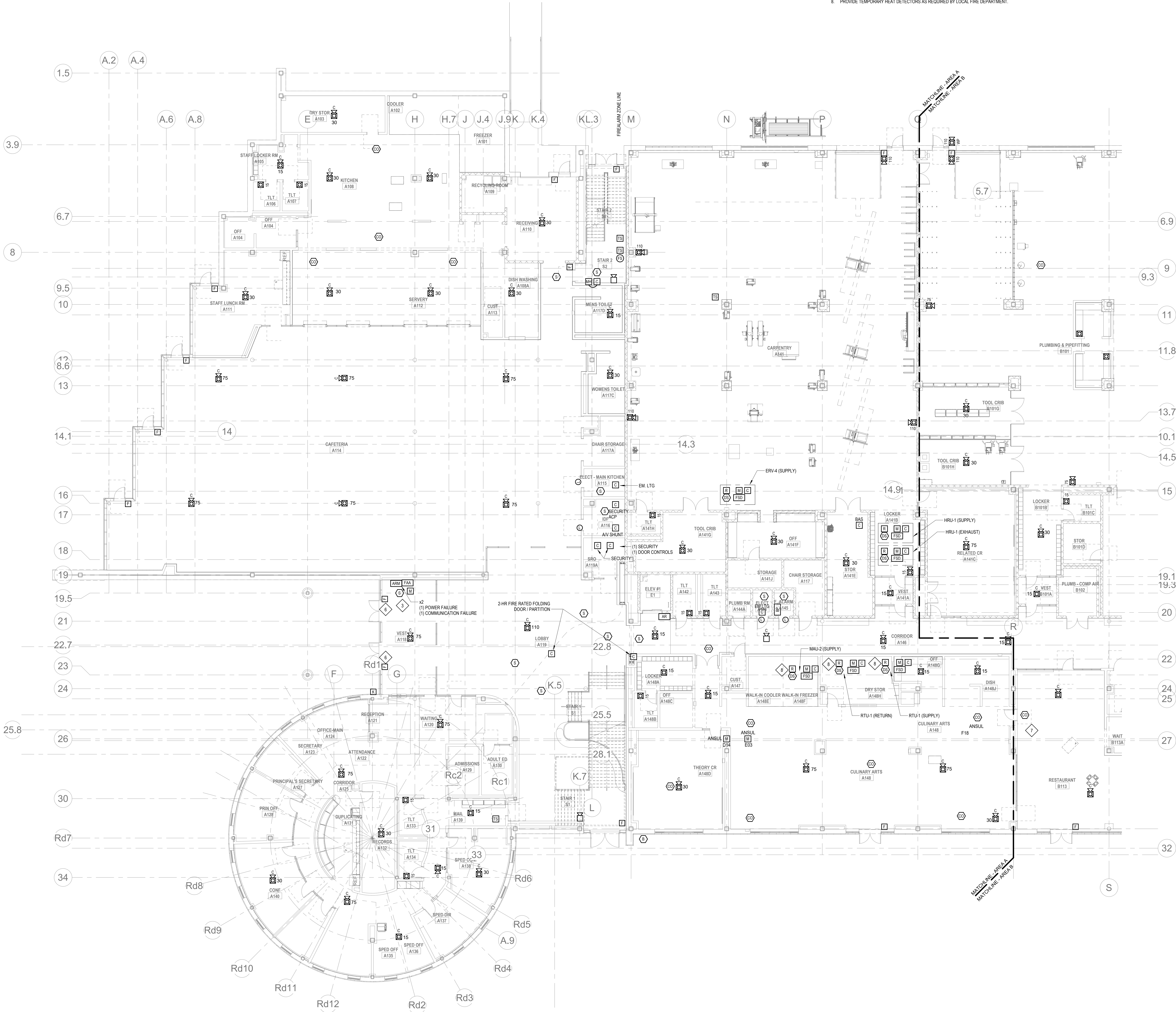
FA1-1-0MD

GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT-MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/HVAC DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES TO FIRE ALARM TERMINAL CABINET(S) OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.
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8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
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11. PROVIDE ALL PROGRAMMING/RE PROGRAMMING PER REVISED SPACE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

KEYNOTES:

- 1 NOT USED.
- 2 NOT USED.
- 3 MONITOR THE CONTACTS OF THE TWO WAY FIRE DEPARTMENT COMMUNICATION SYSTEM.
- 4 NOT USED.
- 5 NOT USED.
- 6 PULL STATION SHALL BE INSTALLED IN THE MULLION WITH WIRING INSIDE THE MULLION CHANNEL.
- 7 WALL MOUNTED CO DETECTOR AT 5'4" AFF.
- 8 REMOTE DUCT SMOKE INDICATOR AND TEST SWITCH SHALL BE INSTALLED ON THE CEILING DIRECTLY BELOW DUCT SMOKE DETECTOR OR ON THE WALL IF THE CEILING INSTALLATION IS NOT POSSIBLE.



FIRE ALARM FIRST FLOOR PLAN - AREA A

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Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074
Tel: 817.984.1700
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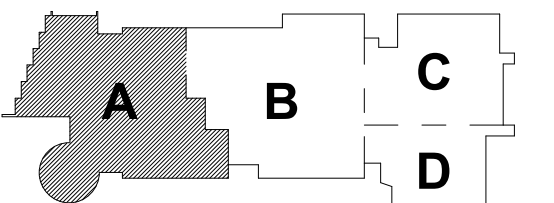
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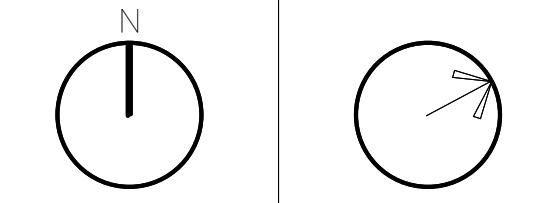
BID SET

August 28th, 2023



KEY PLAN

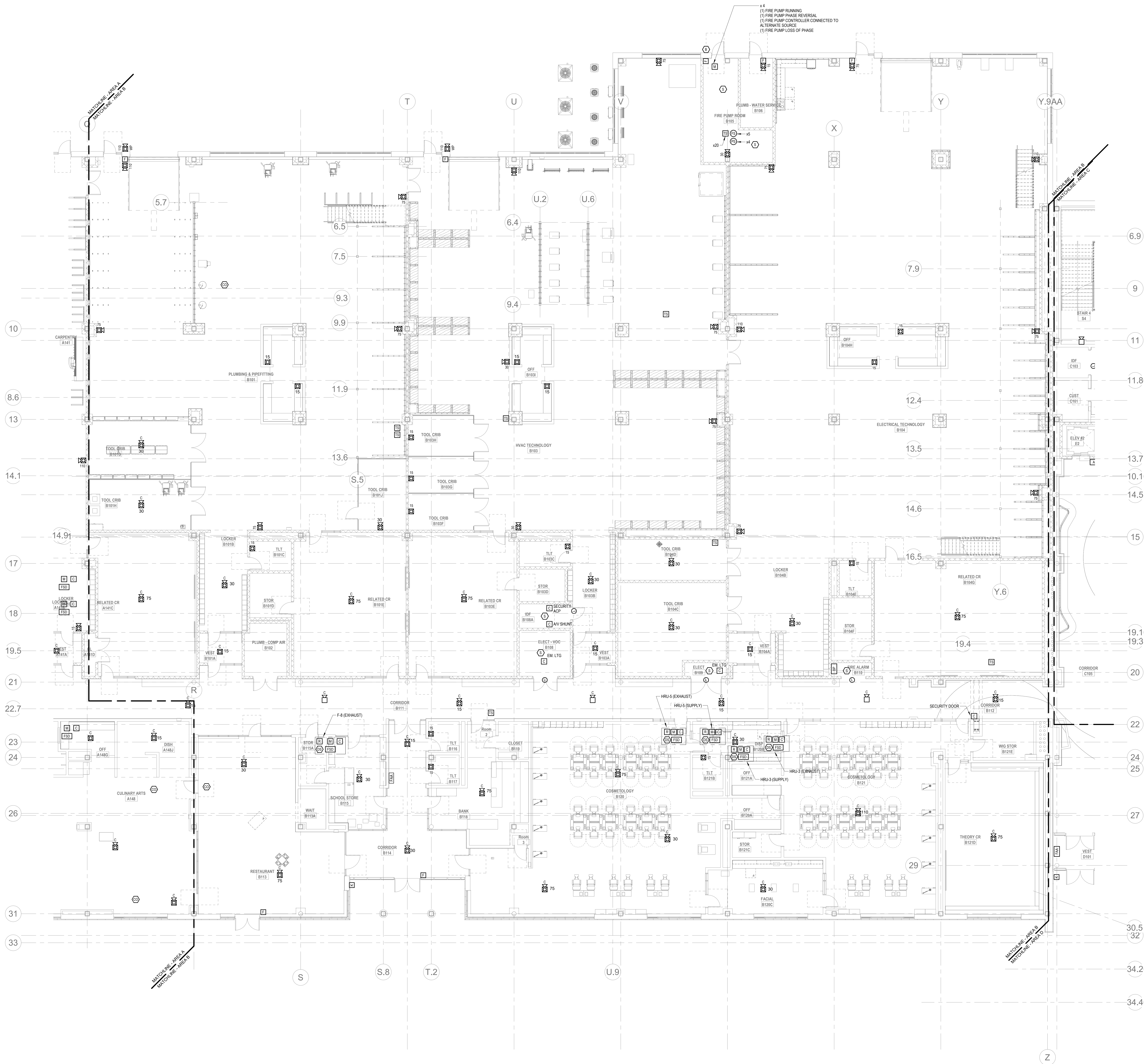
PROJECT NORTH MAGNETIC NORTH



FIRE ALARM
FIRST FLOOR
PLAN - AREA A

Scale: 1" = 10'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023

FA1-1-1A



- GENERAL FIRE ALARM NOTES:**
1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
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 5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
 6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES TO FIRE ALARM TERMINAL CABINET(S) OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.
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 12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
 13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
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South Windsor, CT
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Tel: 817.984.1700
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BID SET

August 28th, 2023

KEY PLAN

PROJECT NORTH
MAGNETIC NORTH

**FIRE ALARM
FIRST FLOOR
PLAN - AREA B**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023

FA1-1-1B

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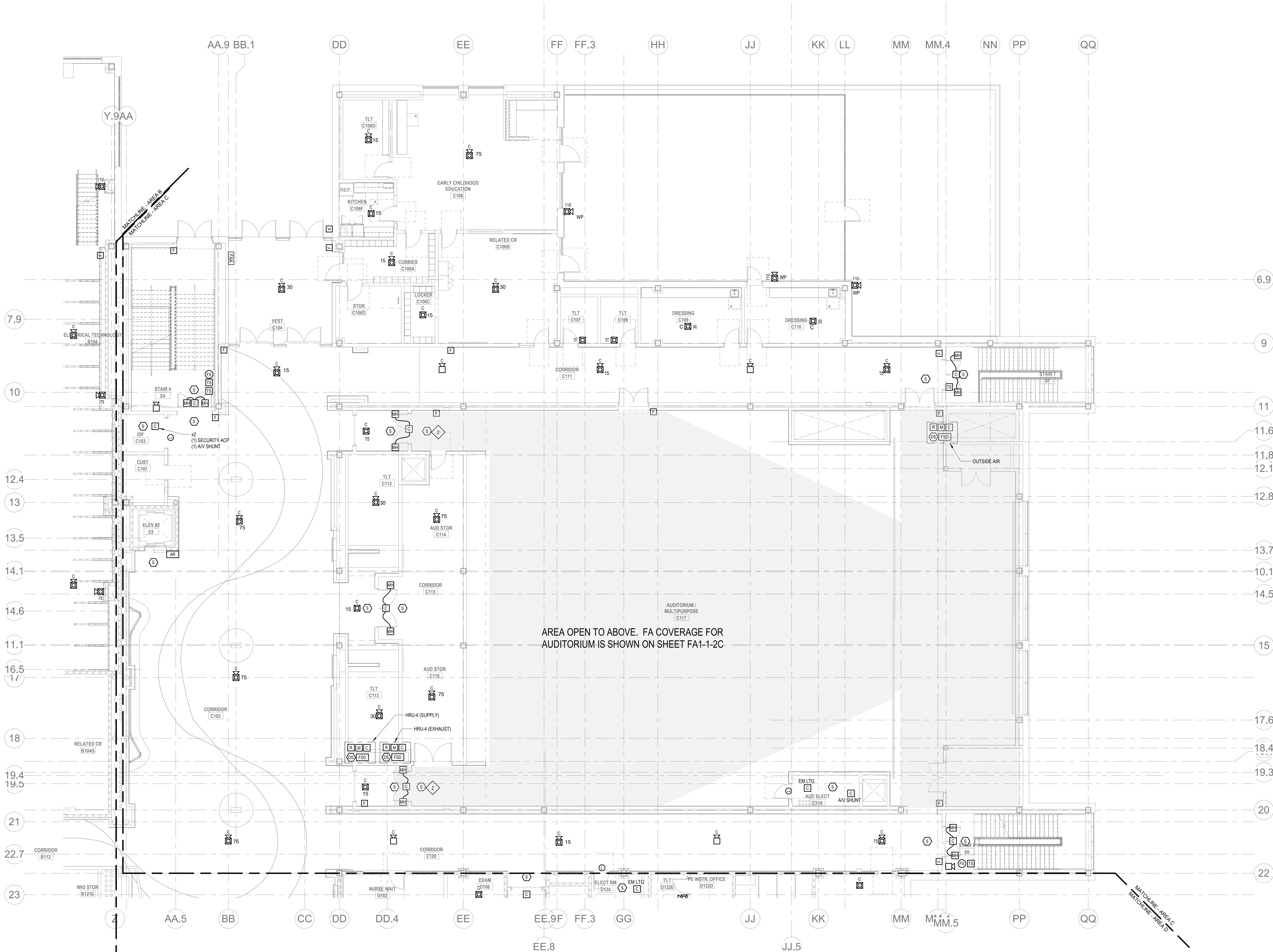
Wakefield, MA 01880

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17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

FIRE ALARM KEYNOTES:

1. NOT USED.
2. SMOKE DETECTOR TO BE MOUNTED ON THE WALL ABOVE THE DOOR.

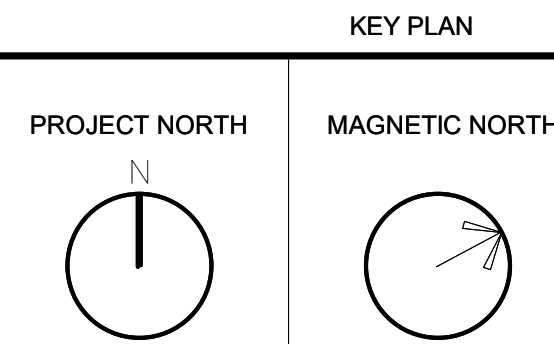
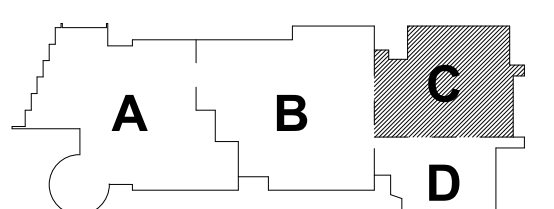


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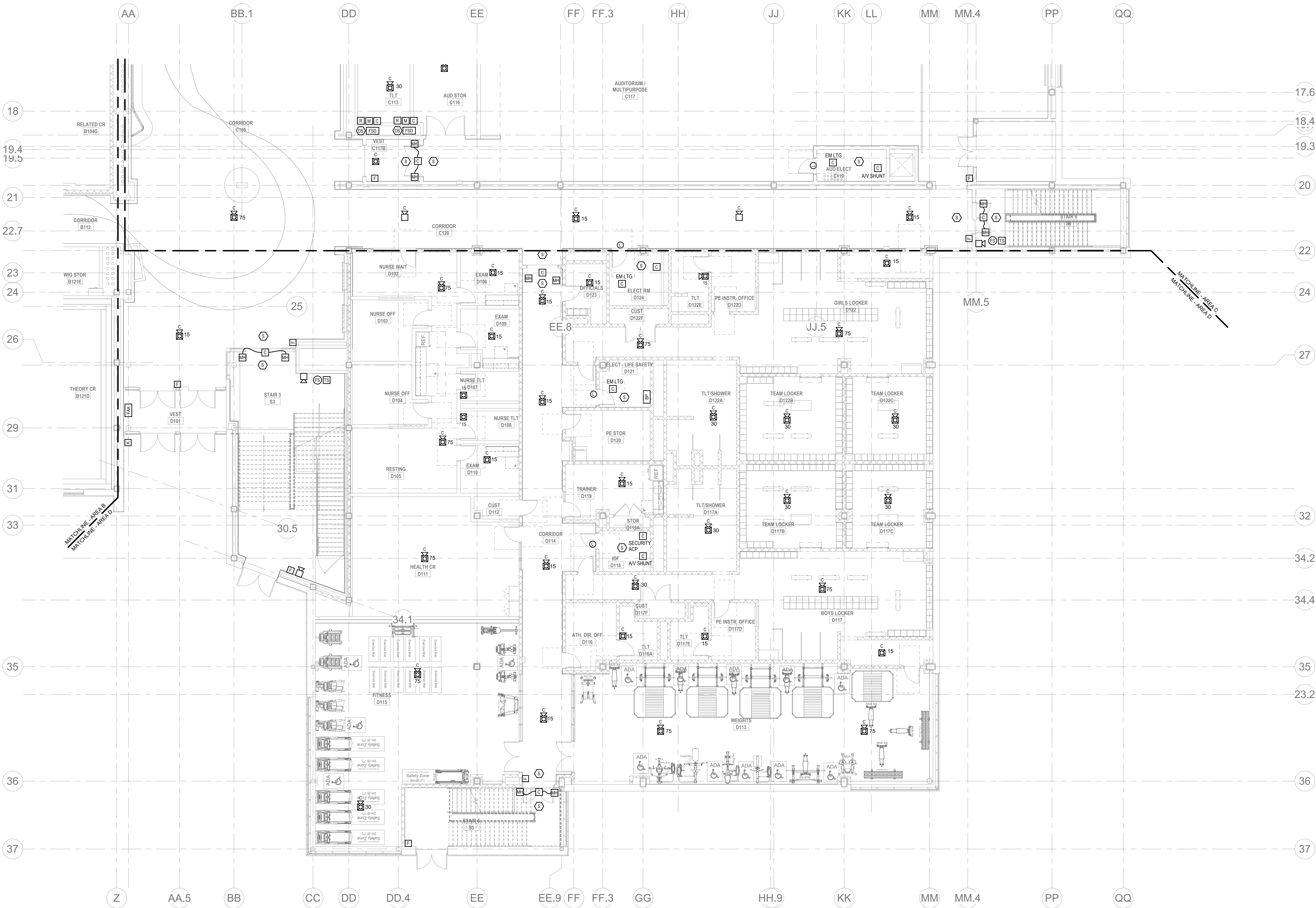
BID SET

August 28th, 2023



FIRE ALARM
FIRST FLOOR
PLAN - AREA C

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023
FA1-1-1C



1 FIRE ALARM FIRST FLOOR PLAN - AREA D
1/8" = 1'-0"

GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK. APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
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BID SET

August 28th, 2023

A B C D

KEY PLAN

PROJECT NORTH

MAGNETIC NORTH

FIRE ALARM
FIRST FLOOR
PLAN - AREA D

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023

FA1-1-1D

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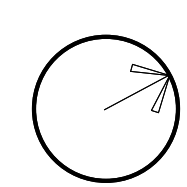
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August 28th, 2023



MAGNETIC NORTH



Scale: 1" = 10'-0"

Job No. 60-20-409

Drawn By: 1A/AA

Date: August 28th, 2023

FA1-1-1MA

DRA

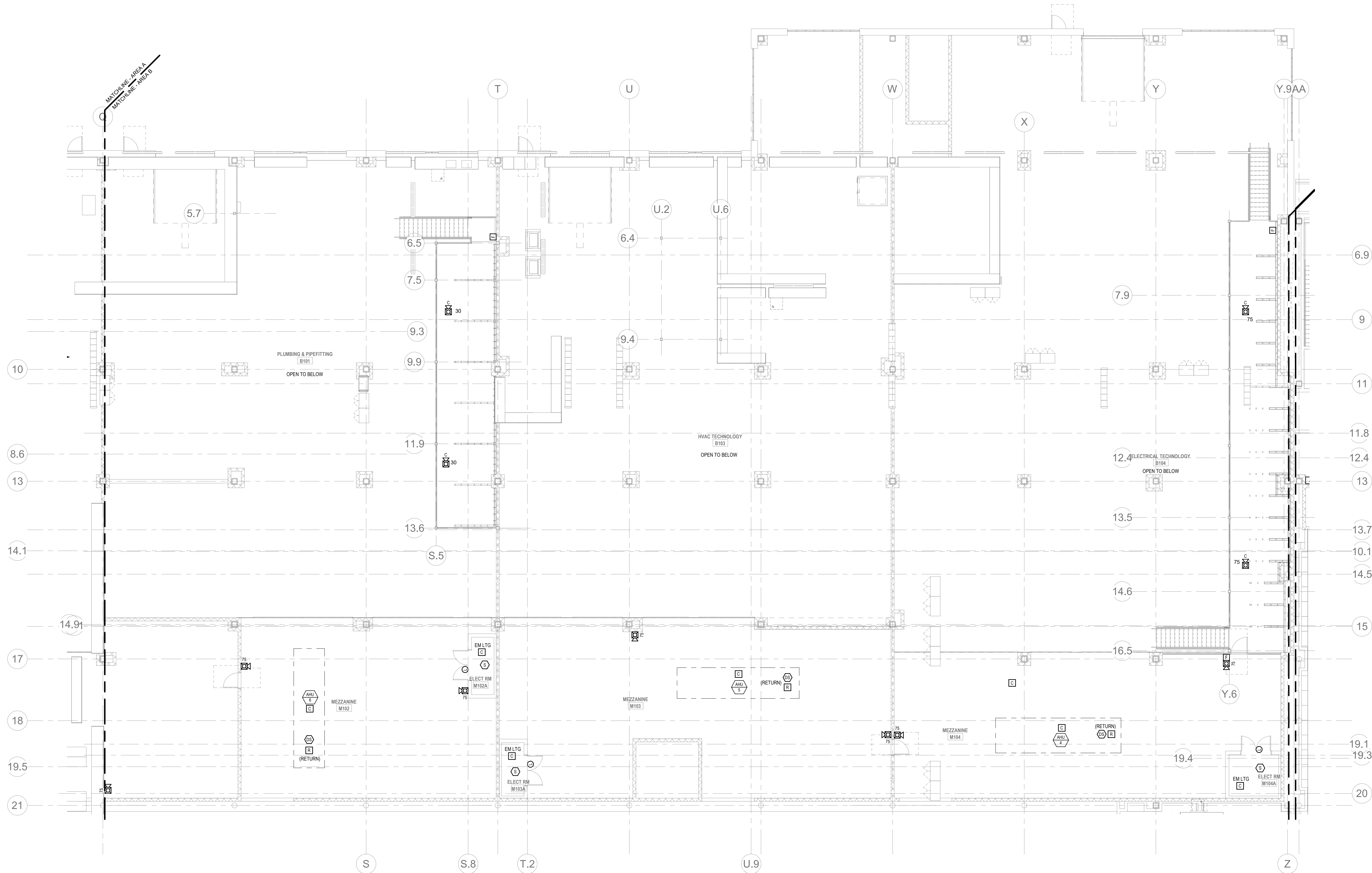
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GENERAL FIRE ALARM NOTES:

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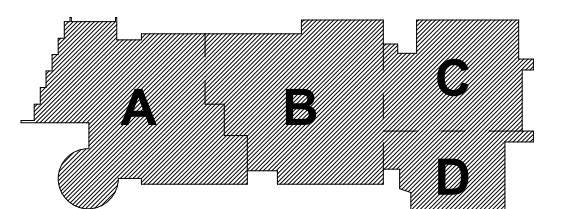


FIRE ALARM FIRST FLOOR MEZZANINE PLAN - AREA B
1/8" = 1'-0"

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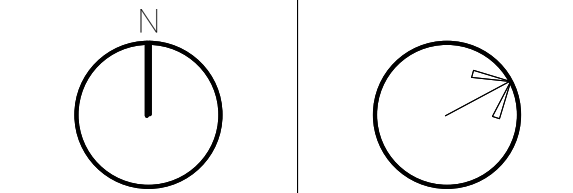
BID SET

August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



**FIRE ALARM
FIRST FLOOR
MEZZANINE
PLAN - AREA B**

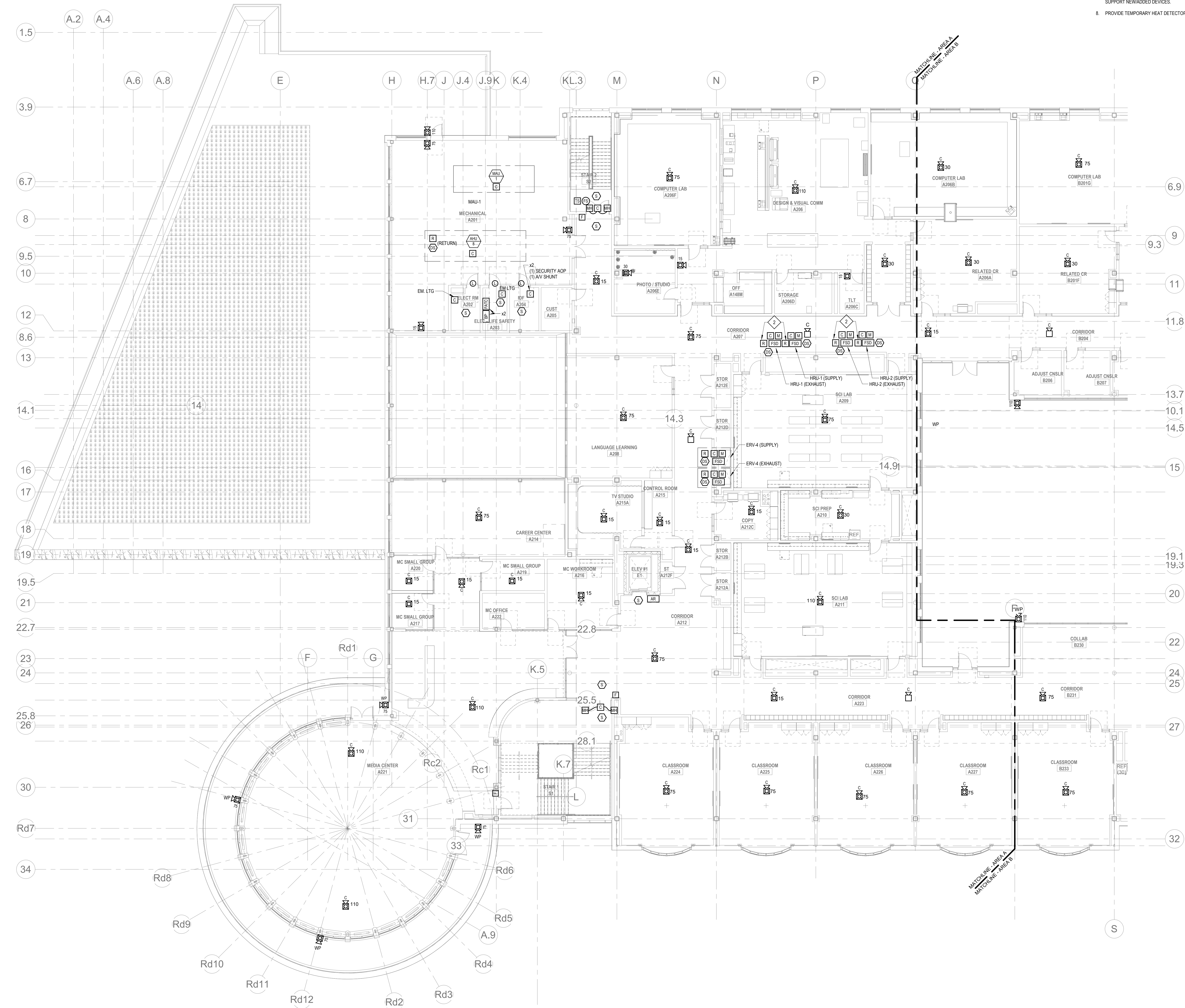
Scale: 1/8" = 1'-0"

Job No.: 60-20-409

Drawn By: DRA

Date: August 28th, 2023

FA1-1-1MB



1 FIRE ALARM SECOND FLOOR PLAN - AREA A
FA1-1-2A 1" = 10'-0"

GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
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4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT-MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/AVG. DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES TO FIRE ALARM TERMINAL CABINETS OR FIRE ALARM CONTROL PANEL, OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/ADDED DEVICES.
8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW AV DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE-SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

FIRE ALARM KEYNOTES:

1. NOT USED
2. REMOTE DUCT SMOKE DETECTOR INDICATOR AND TEST SWITCH SHALL BE INSTALLED ON THE CEILING DIRECTLY BELOW DUCT SMOKE DETECTOR

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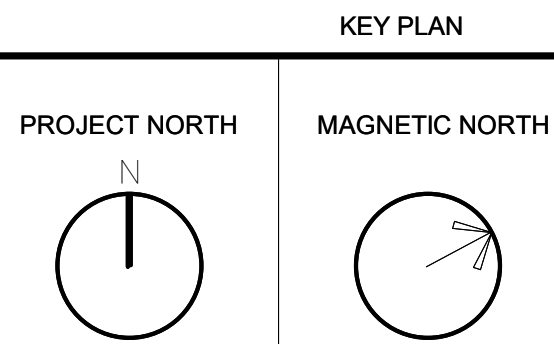
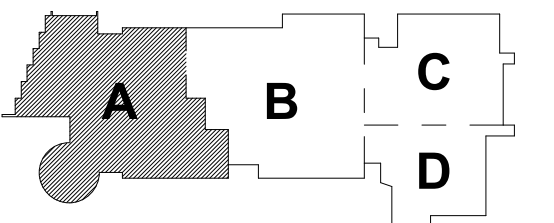
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MASSACHUSETTS LICENSE NO. 0000000000

BID SET
August 28th, 2023



FIRE ALARM
SECOND FLOOR
PLAN - AREA A

Scale: 1" = 10'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023
FA1-1-2A

GENERAL FIRE ALARM NOTES:

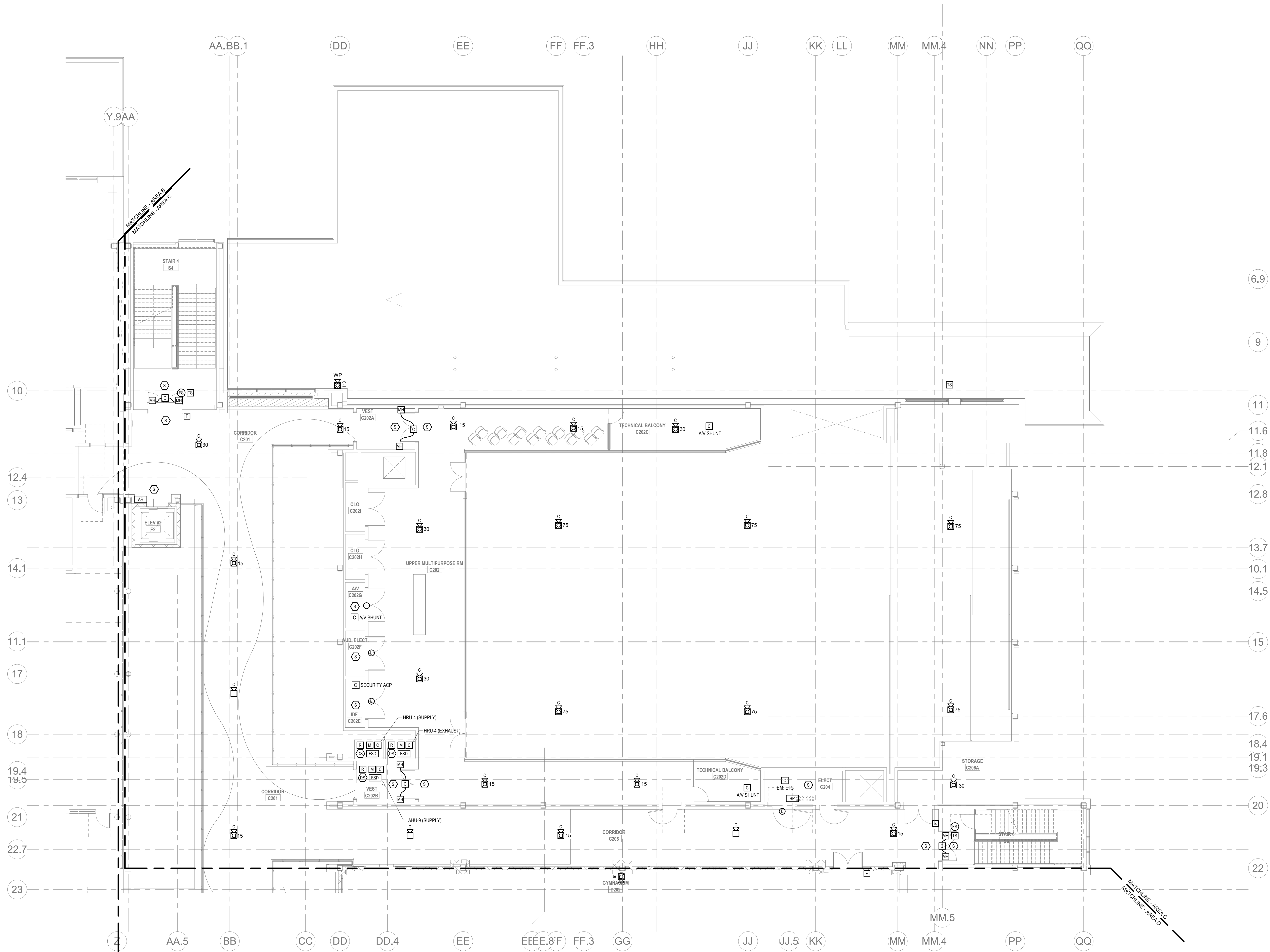
1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK. APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT-MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/MEG DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES TO FIRE ALARM TERMINAL CABINETS OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/ADDED DEVICES.
8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW AV DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STAMPER-SPRINKLER SYSTEM FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

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Drummett Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074
Tel: 817.984.1700
www.dra-inc.com

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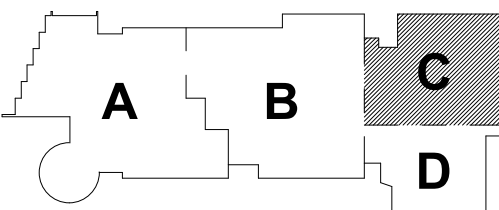


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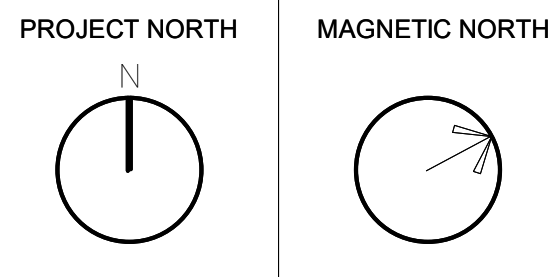
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200 WEST 10TH STREET
SUITE 200
WICHITA, KS 67202
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BID SET

August 28th, 2023



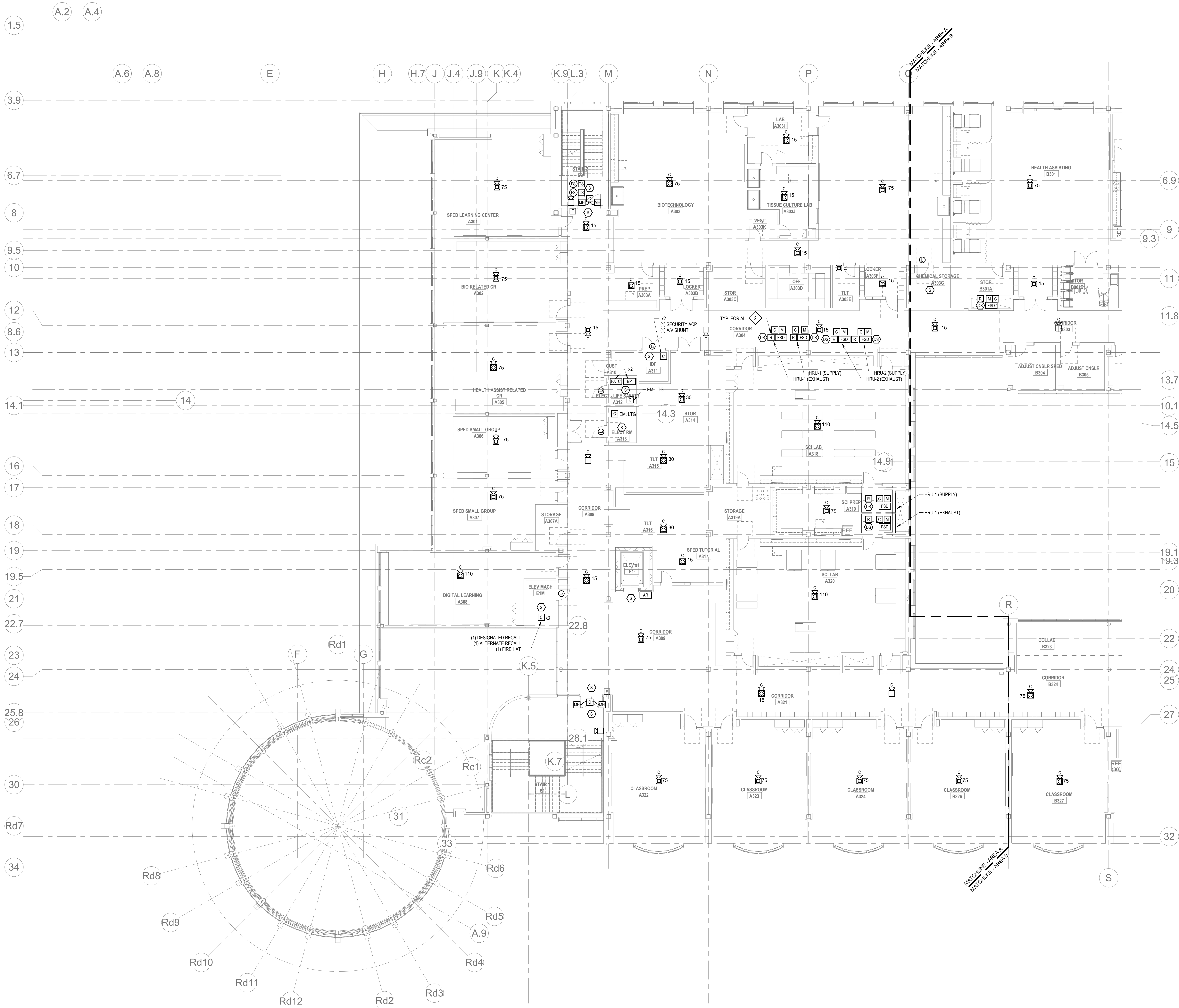
KEY PLAN



FIRE ALARM
SECOND FLOOR
PLAN - AREA C

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023

FA1-1-2C



1 FIRE ALARM THIRD FLOOR PLAN - AREA A
1-1-19 1" = 1/2" = 1/2"

GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK. APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT-MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/HVAC DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES TO FIRE ALARM TERMINAL CABINETS OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/EXISTING DEVICES.
8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW AV DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

FIRE ALARM KEYNOTES:

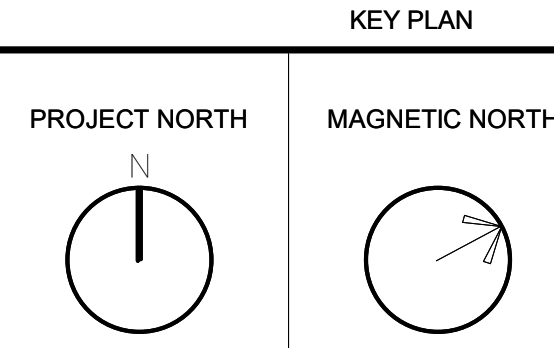
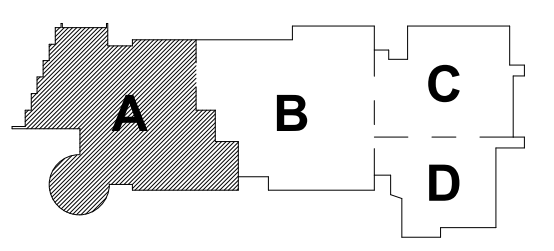
- 1. NOT USED.
- 2. REMOTE DUCT SMOKE DETECTOR INDICATOR WITH TEST SWITCH, SHALL BE INSTALLED ON THE CEILING DIRECTLY BELOW DUCT SMOKE DETECTOR.

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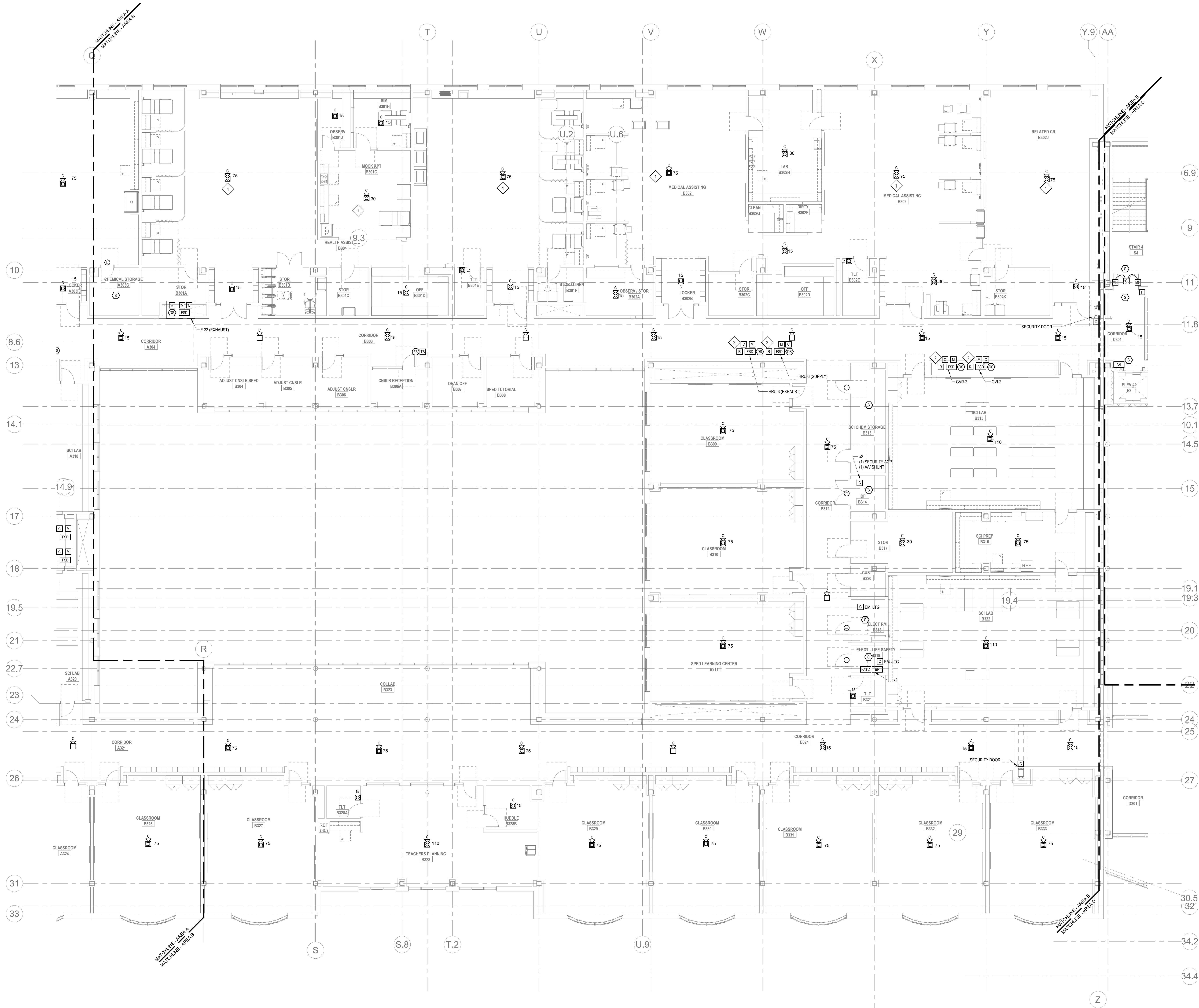


BID SET
August 28th, 2023



FIRE ALARM
THIRD FLOOR
PLAN - AREA A

Scale: 1" = 1/2"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023
FA1-1-3A



GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK. APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT-MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/HVAC DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH (CIRCUITS FROM DEVICES) TO FIRE ALARM TERMINAL CABINET(S) OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/ADDED DEVICES.
8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW AV DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

FIRE ALARM KEYNOTES:

1. CONTRACTOR SHALL PROVIDE CEILING MOUNTED NOTIFICATION APPLIANCES NOT TO EXCEED THE HEIGHT OF THE FLOATING CEILING. COORDINATE WITH ARCHITECT ABOUT THE FINAL MOUNTING HEIGHTS.
2. REMOTE DUCT SMOKE DETECTOR INDICATOR WITH TEST SWITCH SHALL BE INSTALLED ON THE CEILING DIRECTLY BELOW DUCT SMOKE DETECTOR.



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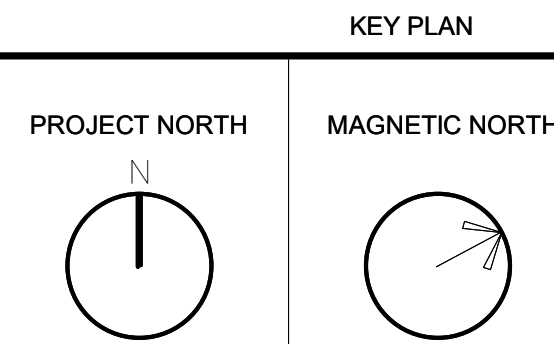
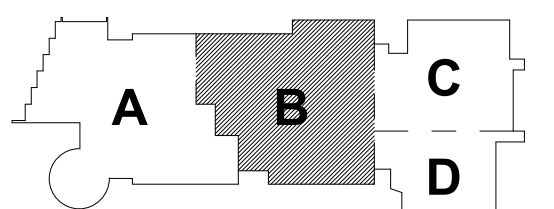
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BID SET
August 28th, 2023



**FIRE ALARM
THIRD FLOOR
PLAN - AREA B**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023
FA1-1-3B

GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL, TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.

2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.

3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.

4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/HVAC DRAWINGS.

5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.

6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICE(S) TO FIRE ALARM TERMINAL CABINET(S) OR FIRE ALARM CONTROL PANEL, OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.

7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/ADDED DEVICES.

8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.

9. PROVIDE NEW AV DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.

10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.

11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.

12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.

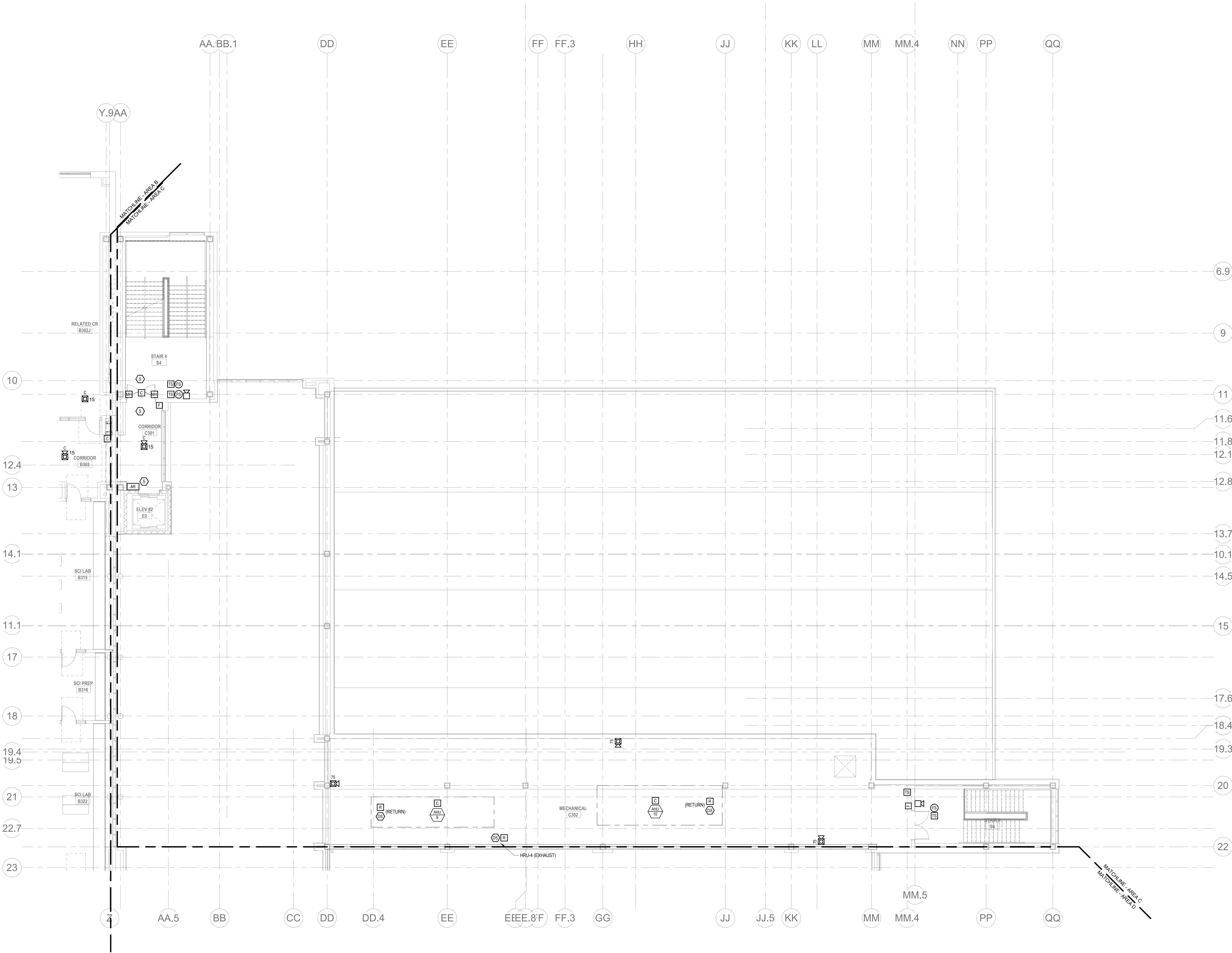
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.

14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.

15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.

16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

17. A FLOW AND SUPERVISORY SNTION SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.



FIRE ALARM THIRD FLOOR PLAN - AREA C
1/8" = 1'-0"

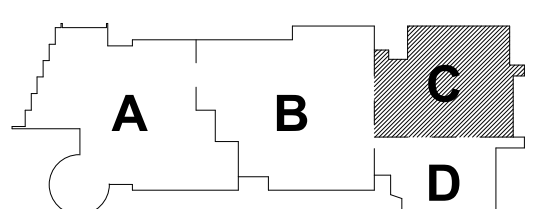
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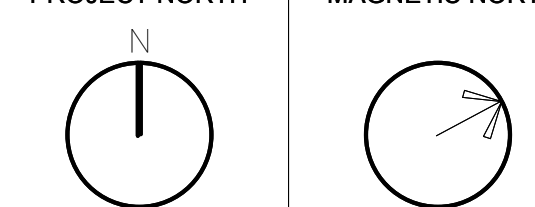
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August 28th, 2023



PROJECT NORTH
MAGNETIC NORTH



FIRE ALARM
THIRD FLOOR
PLAN - AREA C

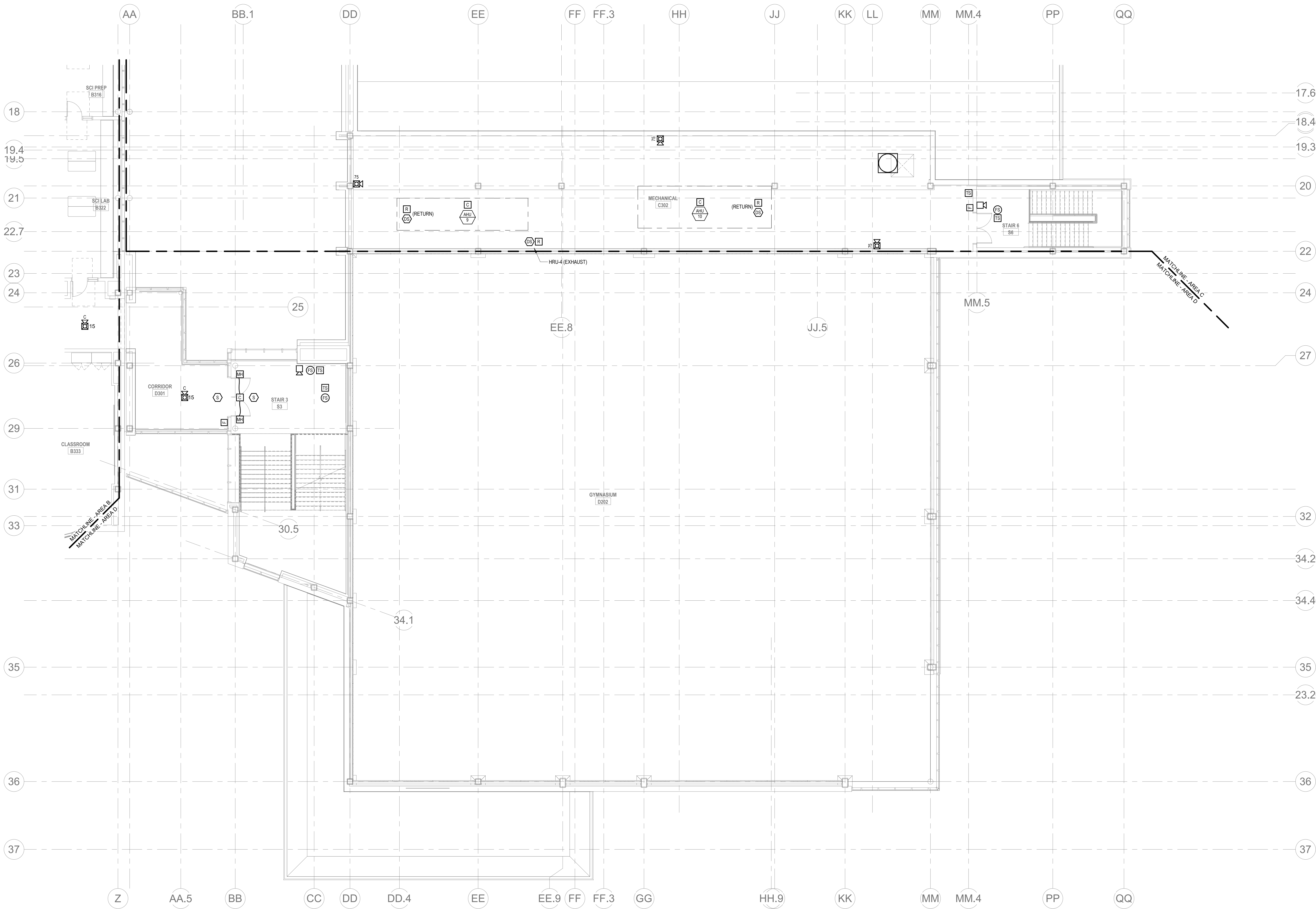
Scale: 1/8" = 1'-0"

Job No.: 60-20-409

Drawn By: WAM

Date: August 28th, 2023

FA1-1-3C



1 FIRE ALARM THIRD FLOOR PLAN - AREA D
1/4" = 1'-0"

GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/HVAC DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES TO FIRE ALARM TERMINAL CABINETS OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/ADDED DEVICES.
8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW AV DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

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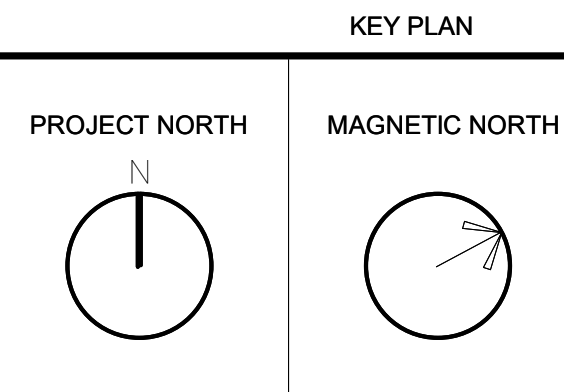
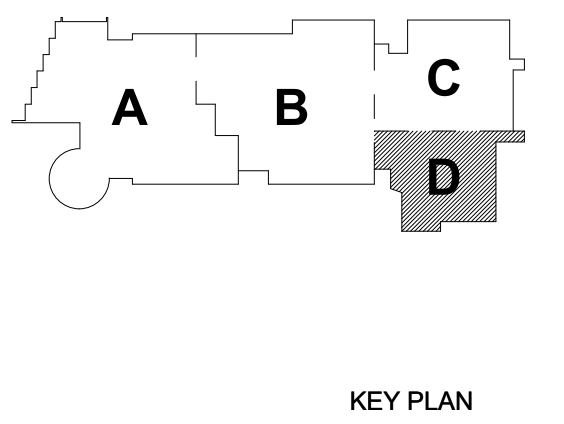
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BID SET
August 28th, 2023



**FIRE ALARM
THIRD FLOOR
PLAN - AREA D**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023
FA1-1-3D

GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK. APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT-MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/HVAC DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES TO FIRE ALARM TERMINAL CABINET(S) OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NETWORKED DEVICES.
8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW AV DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

FIRE ALARM KEYNOTES:

- 1. PROVIDE A BI-DIRECTIONAL AMPLIFIER PANEL FOR POLICE AND FIRE DEPARTMENT RADIO COMMUNICATION.
- 2. THE BASE BID SHALL INCLUDE AN EMERGENCY RESPONDER RADIO COVERAGE SYSTEM (ERRCS) PER IFC §10 REQUIREMENTS. THE CONTRACTOR SHALL INCLUDE ALL COSTS ASSOCIATED WITH IFC §10 REQUIREMENTS INCLUDING DESIGN, ELECTRICAL, FIRE ALARM REQUIREMENTS, PERMITS, INSTALLATION, AND SYSTEM TESTING. PROVIDE DEDUCT ALTERNATE PRICE FOR THIS SCOPE. THE AWJ SHALL DETERMINE IF THE SYSTEM IS REQUIRED IF AT LEAST ONE OF THE ASSOCIATED IFC §10 EXCEPTIONS APPLY UPON RECEIPT OF THE SIGNAL STRENGTH FIELD TEST REPORT SUBMITTAL. THE BASE BID SHALL INCLUDE FIELD TESTING FOR SIGNAL STRENGTH (CERTIFICATION) ONCE THE BUILDING IS ENCLOSED AND THE INTERIOR WALLS AND CEILING HAVE BEEN INSTALLED. TEST RESULTS SHALL BE SUBMITTED TO THE AWJ FOR REVIEW.
- 3. REMOTE DUCT SMOKE DETECTOR MONITORING AND RESET SWITCH, MOUNTED ON THE CEILING DIRECTLY BELOW DUCT SMOKE DETECTOR.

DRA

Drummeys Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
www.dra.com

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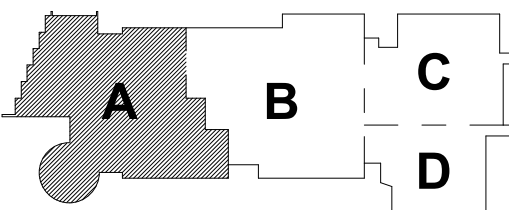
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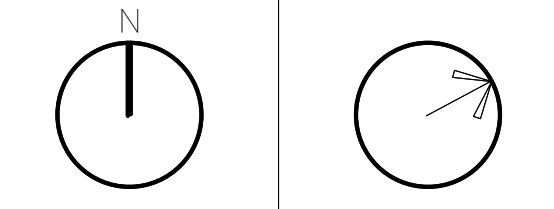
BID SET

August 28th, 2023



KEY PLAN

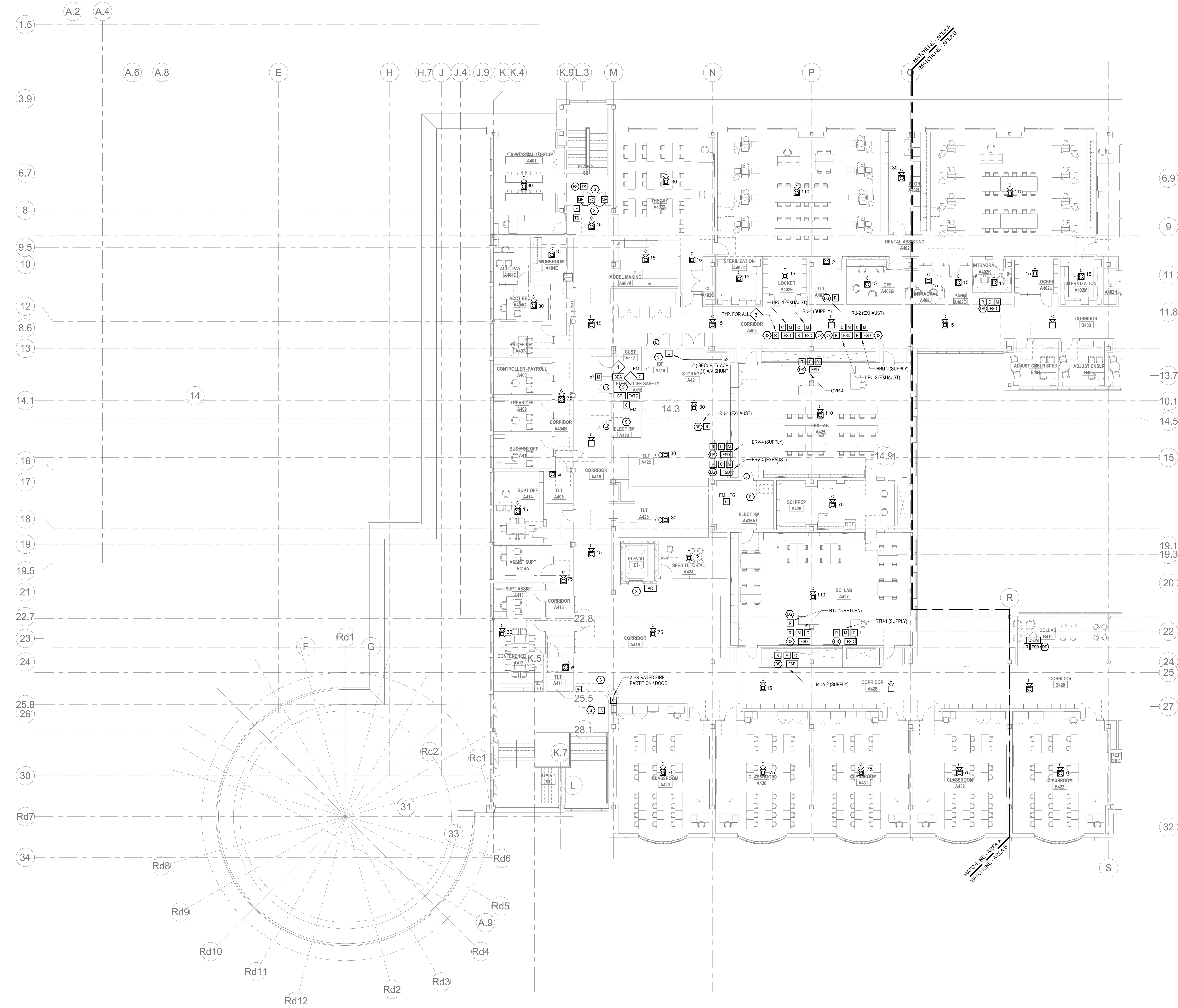
PROJECT NORTH MAGNETIC NORTH



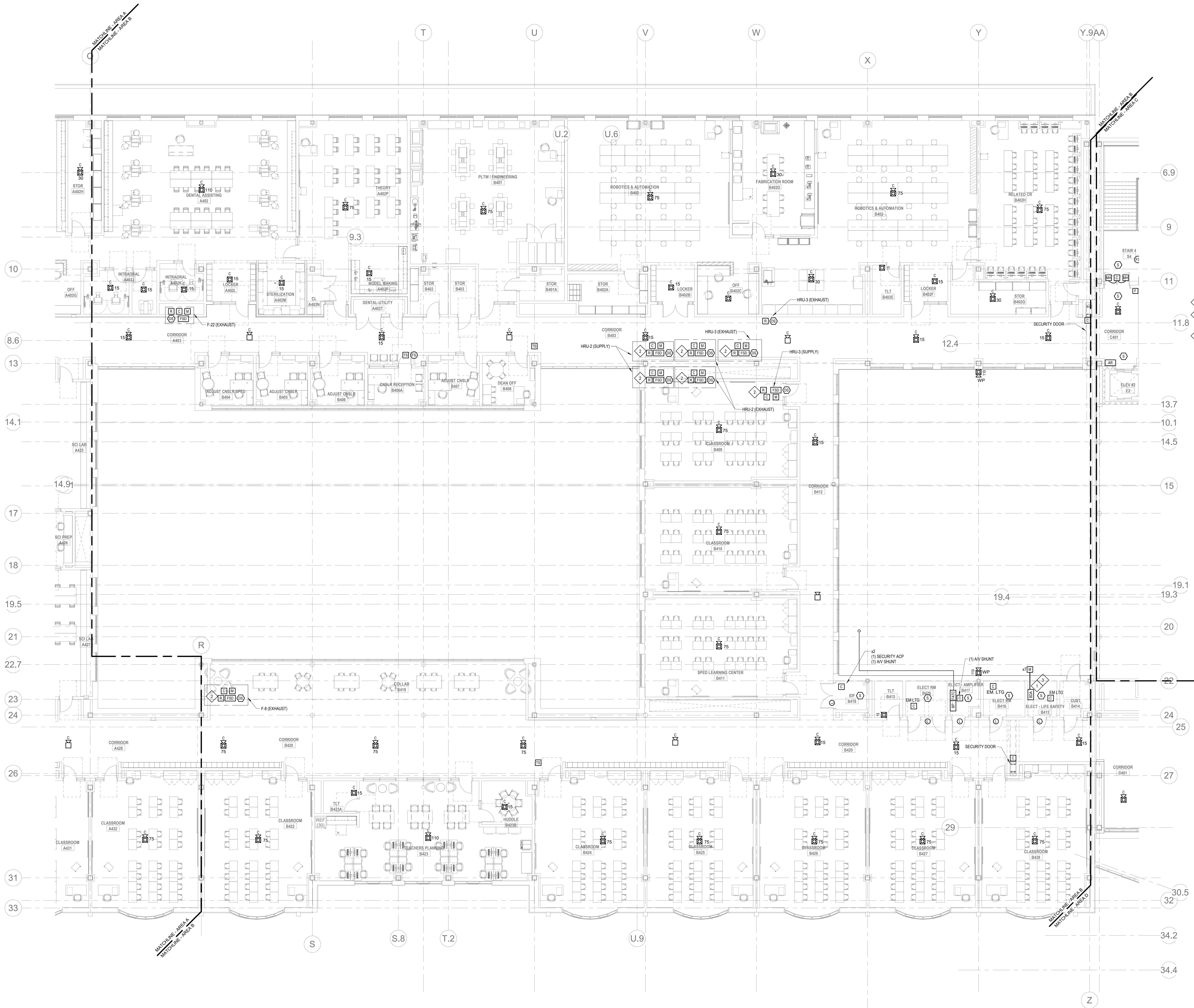
FIRE ALARM
FOURTH FLOOR
PLAN - AREA A

Scale: 1" = 10'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023

FA1-1-4A



1 FIRE ALARM FOURTH FLOOR PLAN - AREA A
R11-1-4A 1" = 10'-0"



1 FIRE ALARM FOURTH FLOOR PLAN - AREA B
A1-1-4B 1/8" = 1'-0"

GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL HVAC DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES TO FIRE ALARM TERMINAL CABINETS OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NETWORKED DEVICES.
8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW ANY DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPIRALLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

FIRE ALARM KEYNOTES:

1. PROVIDE A BI-DIRECTIONAL AMPLIFIER PANEL FOR POLICE AND FIRE DEPARTMENT RADIO COMMUNICATION.
2. REMOTE DUCT DETECTOR MONITORING AND TEST SWITCH. REMOTE MONITORING AND TEST SWITCH SHALL BE INSTALLED ON THE CEILING DIRECTLY BELOW DUCT SMOKE DETECTOR.
3. THE BASE BID SHALL INCLUDE AN EMERGENCY RESPONDER RADIO COVERAGE SYSTEM (ERCS) PER IFC 510 REQUIREMENTS. THE CONTRACTOR SHALL INCLUDE ALL COSTS ASSOCIATED WITH IFC 510 REQUIREMENTS INCLUDING DESIGN, ELECTRICAL & FIRE ALARM REQUIREMENTS, PERMITS, INSTALLATION, AND SYSTEM TESTING. PROVIDE DUCT ALTERNATE PRICE FOR THIS SCOPE. THE A/J SHALL DETERMINE IF THE SYSTEM IS REQUIRED (IF AT LEAST ONE OF THE ASSOCIATED IFC 510 EXCEPTIONS APPLY) UPON RECEIPT OF THE SIGNAL STRENGTH FIELD TEST REPORT SUBMITTAL. THE BASE BID SHALL INCLUDE FIELD TESTING FOR SIGNAL STRENGTH (CERTIFICATION) ONCE THE BUILDING IS ENCLOSED AND THE INTERIOR WALLS AND CEILING HAVE BEEN INSTALLED. TEST RESULTS SHALL BE SUBMITTED TO THE A/J FOR REVIEW.

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Drummeys Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074
Tel: 817.984.1700
www.draam.com

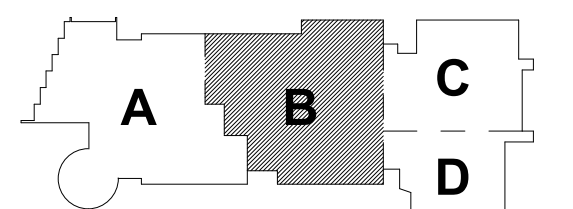
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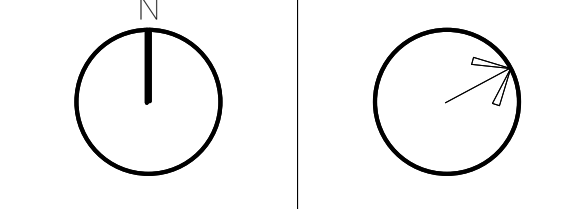
BID SET

August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



**FIRE ALARM
FOURTH FLOOR
PLAN - AREA B**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023
FA1-1-4B

Drummeys Rosane Anderson, Inc.	
225 Oakland Road Studio 205 South Windsor, CT 06074	260 Charles Street Studio 300 Waltham, MA 02453

Planning | Architecture | Interior Design
Tel: 617.964.1700
www.draaaa.com

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Wakefield, MA 01880

GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.

2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.

3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.

4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT-MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/HVAC DRAWINGS.

5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.

6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICE(S) TO FIRE ALARM TERMINAL CABINET(S) OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.

7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/ADDED DEVICES.

8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.

9. PROVIDE NEW A/V DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES

10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.

11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.

12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAREFIELD FIRE DEPARTMENT.

13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.

14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL A/V AND/OR SOUND EQUIPMENT.

16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL.

SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.



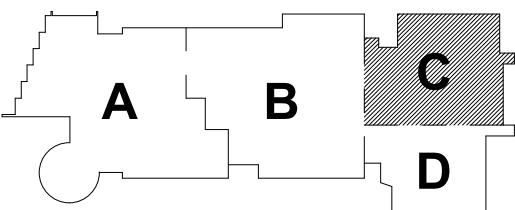
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10 TEMPLE PLACE
BOSTON, MA 02111-1308
TEL: 877 237 8880 FAX: 877 237 8888
WWW.BALA.COM

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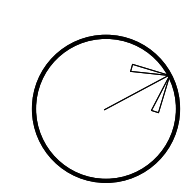
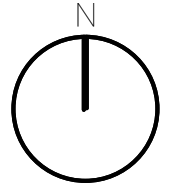
August 28th, 2023



KEY PLAN

PROJECT NORTH

MAGNETIC NORTH



**FIRE ALARM
FOURTH FLOOR
PLAN - AREA C**

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

Job No.: 60-20-409

Drawn By: WAN

Date: August 28th, 2023

FA1-1-4C

Drummeys Rosane Anderson, Inc.

225 Oakland Road	260 Charles Street
Studio 205	Studio 300
South Windsor, CT	Waltham, MA
06074	02453

Planning | Architecture | Interior Design

Tel: 617.964.1700
www.drumsa.com

Wakefield, MA 01880

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK. APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING TO LOCAL FIRE DEPARTMENT. PROVIDE FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FITTINGS, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE-FIRE DAMPERS, DUCT-MOUNTED SMOKE DETECTORS AND WATER FLOW SWITCHES TAKE MEASUREMENTS, RECORD THEM, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/HVAC DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.

6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM DEVICES. PROVIDE WIRING TO FIRE ALARM TERMINAL CABINETS OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER'S INSTALLATION INSTRUCTIONS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NOTICED DEVICES.
8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW AV DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE STANDPIPE/SPRINKLER SPECIFICATIONS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.



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BALA CONSULTING ENGINEERS, INC.
10 TEMPLE PLACE
ROCKFORD, ILL. 61111 USA
TEL.: 815.397.8880 FAX: 815.397.5888
WWW.BALA.COM

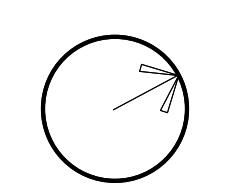
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August 28th, 2023



MAGNETIC NORTH



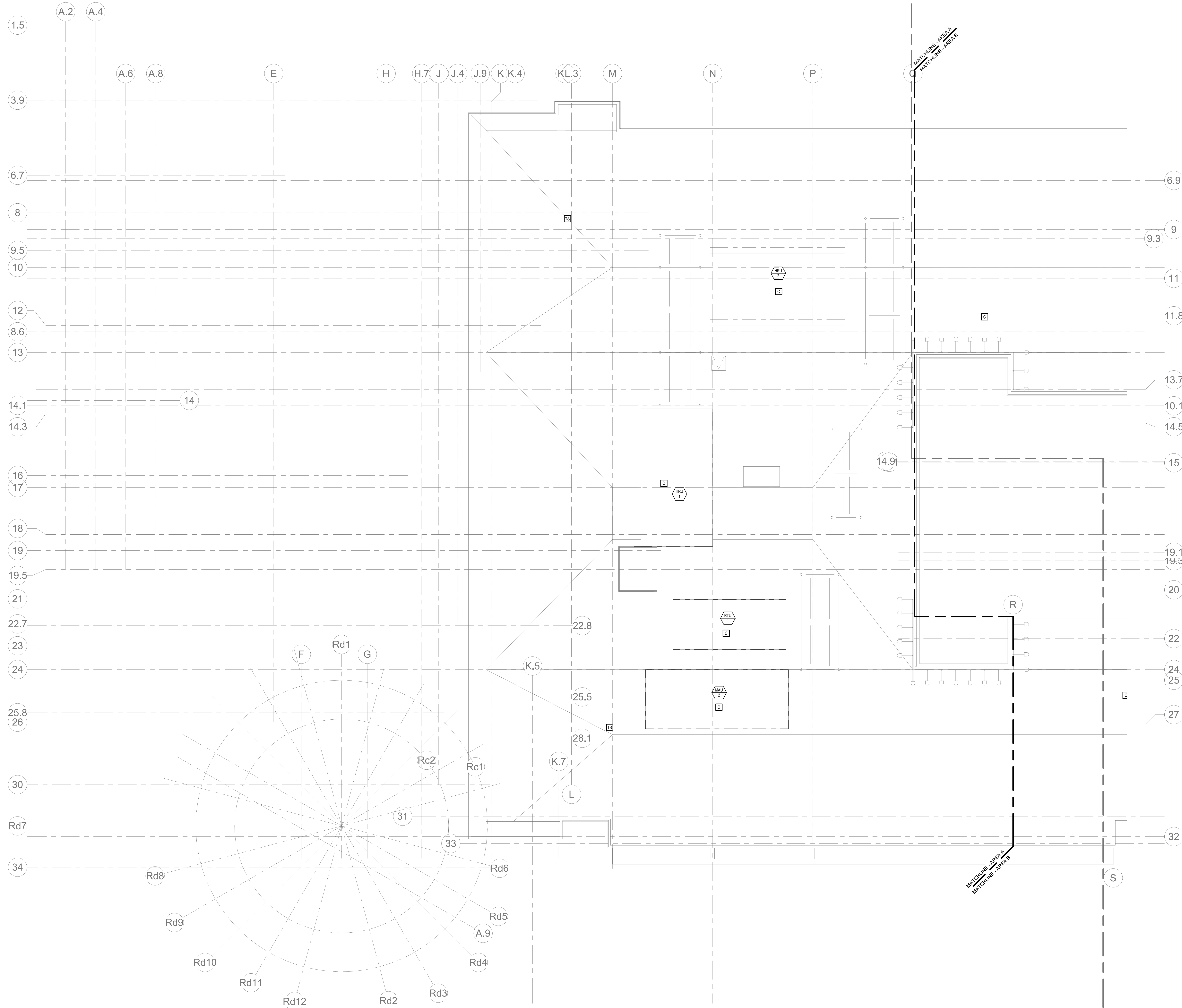
Scale: 1/8" = 1'-0"

Job No.: 60-20-409

Drawn By: WAM

Date: August 28th, 2023

FA1-1-4D



FIRE ALARM ROOF PLAN - AREA A
1" = 10'-0"

GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT-MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/PLUMBING DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES TO FIRE ALARM TERMINAL CABINETS OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/ADDED DEVICES.
8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW ANY DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

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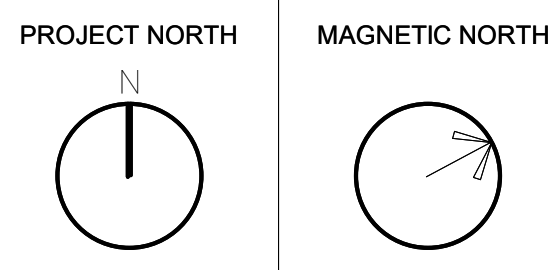
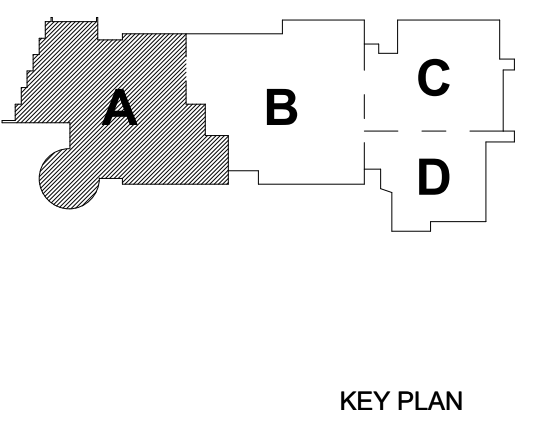
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225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
www.dra-inc.com

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Wakefield, MA 01880

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ENGINEERS**
BALA CONSULTING ENGINEERS, INC.
300 WEST 10TH STREET
SUITE 200
DALLAS, TEXAS 75201
TEL: 214.760.1000 FAX: 214.760.1001
WWW.BALA-ENGINEERS.COM

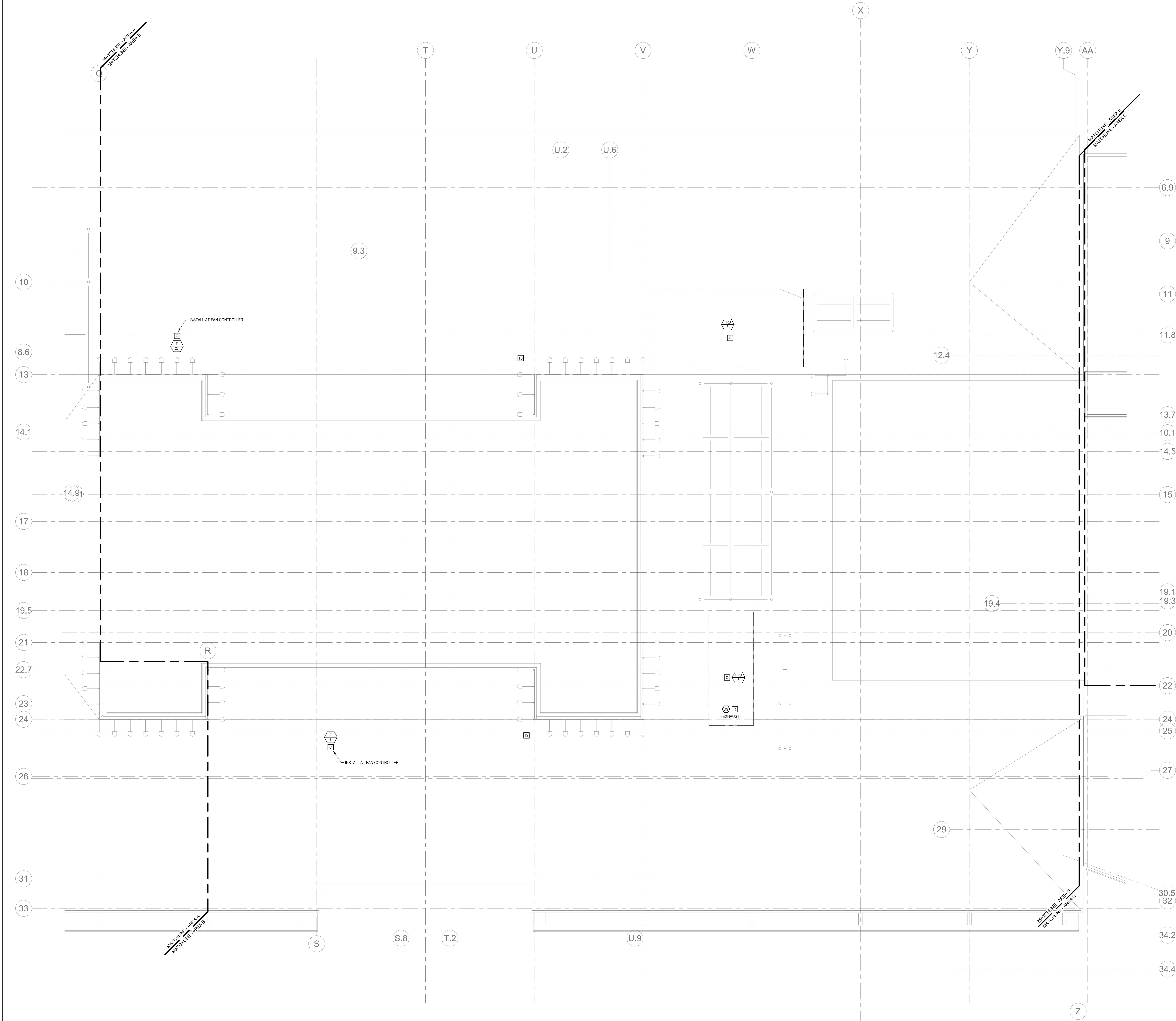
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August 28th, 2023



**FIRE ALARM
ROOF PLAN -
AREA A**

Scale: 1" = 10'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023

FA1-2-1A



GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL, REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT-MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/HVAC DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES TO FIRE ALARM TERMINAL CABINET(S) OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/EXISTING DEVICES.
8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW AV DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.



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225 Oakland Road
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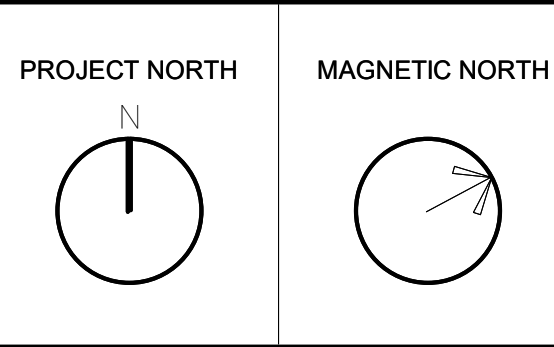
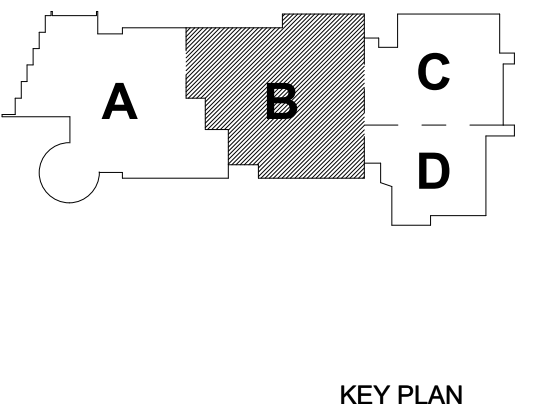
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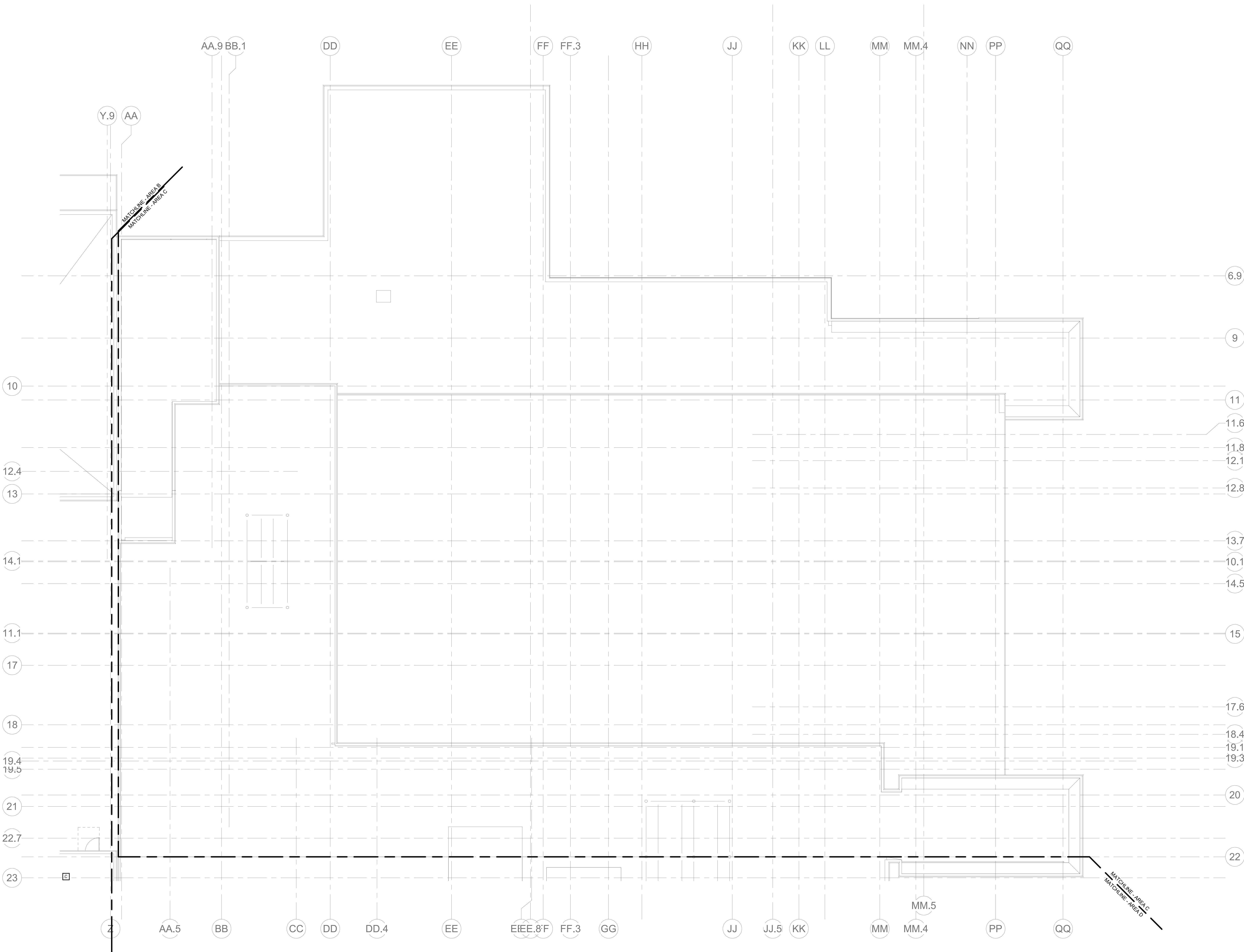
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August 28th, 2023



FIRE ALARM
ROOF PLAN -
AREA B

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023

FA1-2-1B



1 FIRE ALARM ROOF PLAN - AREA C
1/8" = 1'-0"

GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/AVC DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES TO FIRE ALARM TERMINAL CABINET(S) OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/ADOPTED DEVICES.
8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW AV DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

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06074
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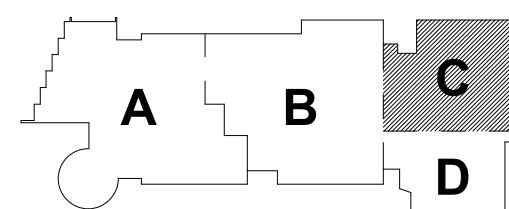
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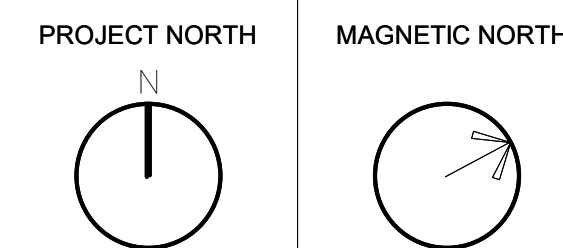
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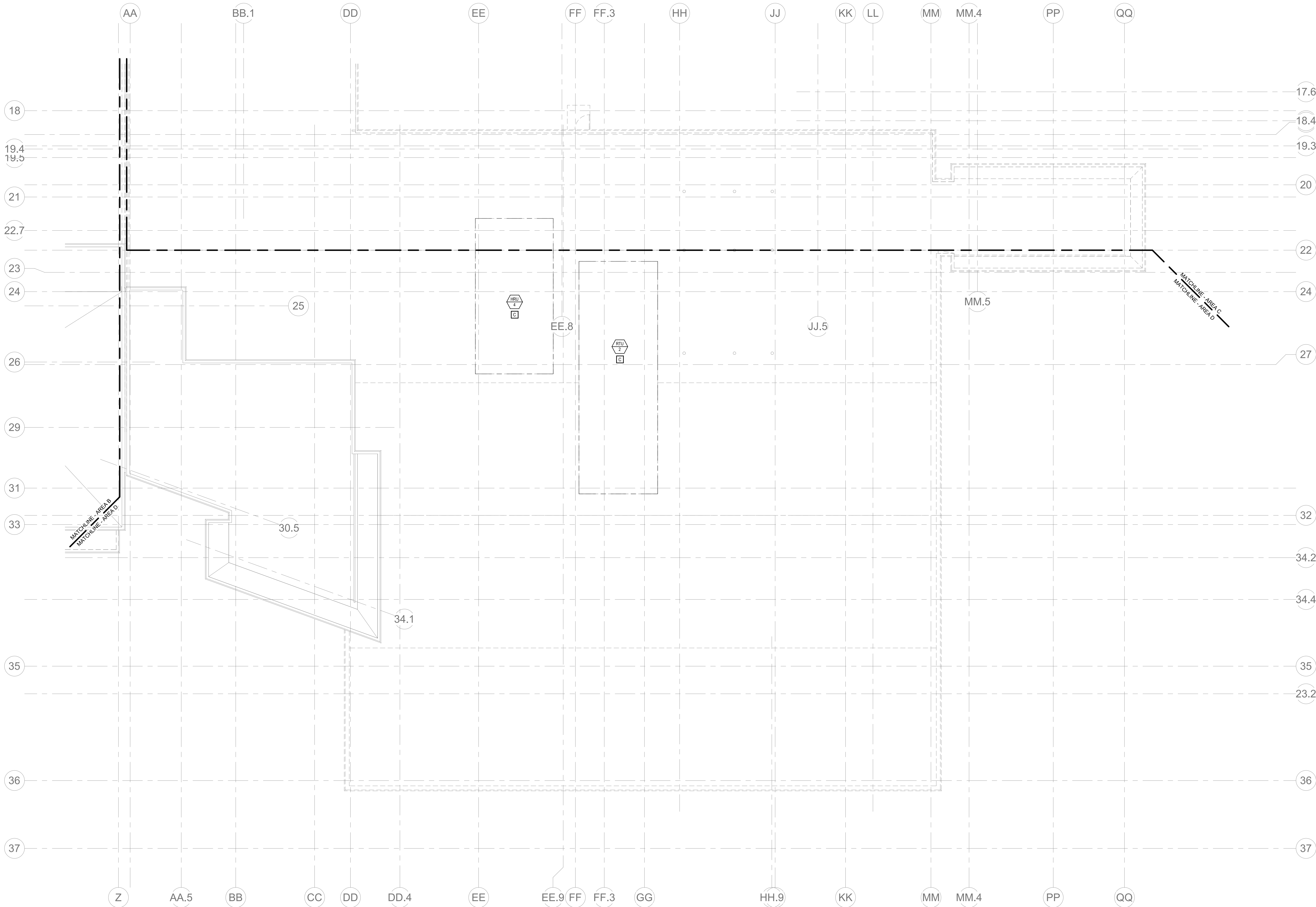
KEY PLAN



**FIRE ALARM
ROOF PLAN -
AREA C**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023

FA1-2-1C



1 FIRE ALARM ROOF PLAN - AREA D
1/8" = 1'-0"

GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT-MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/HVAC DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES TO FIRE ALARM TERMINAL CABINET(S) OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/ADDED DEVICES.
8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW AV DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.



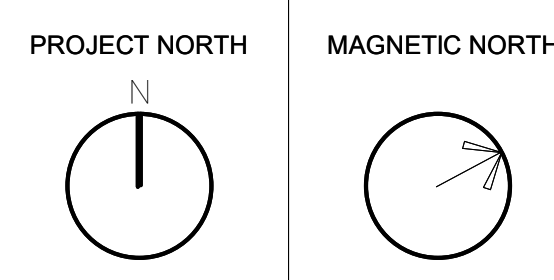
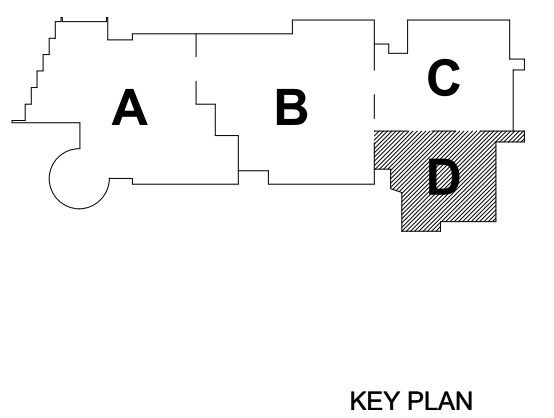
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Studio 205
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BID SET
August 28th, 2023



FIRE ALARM
ROOF PLAN -
AREA D

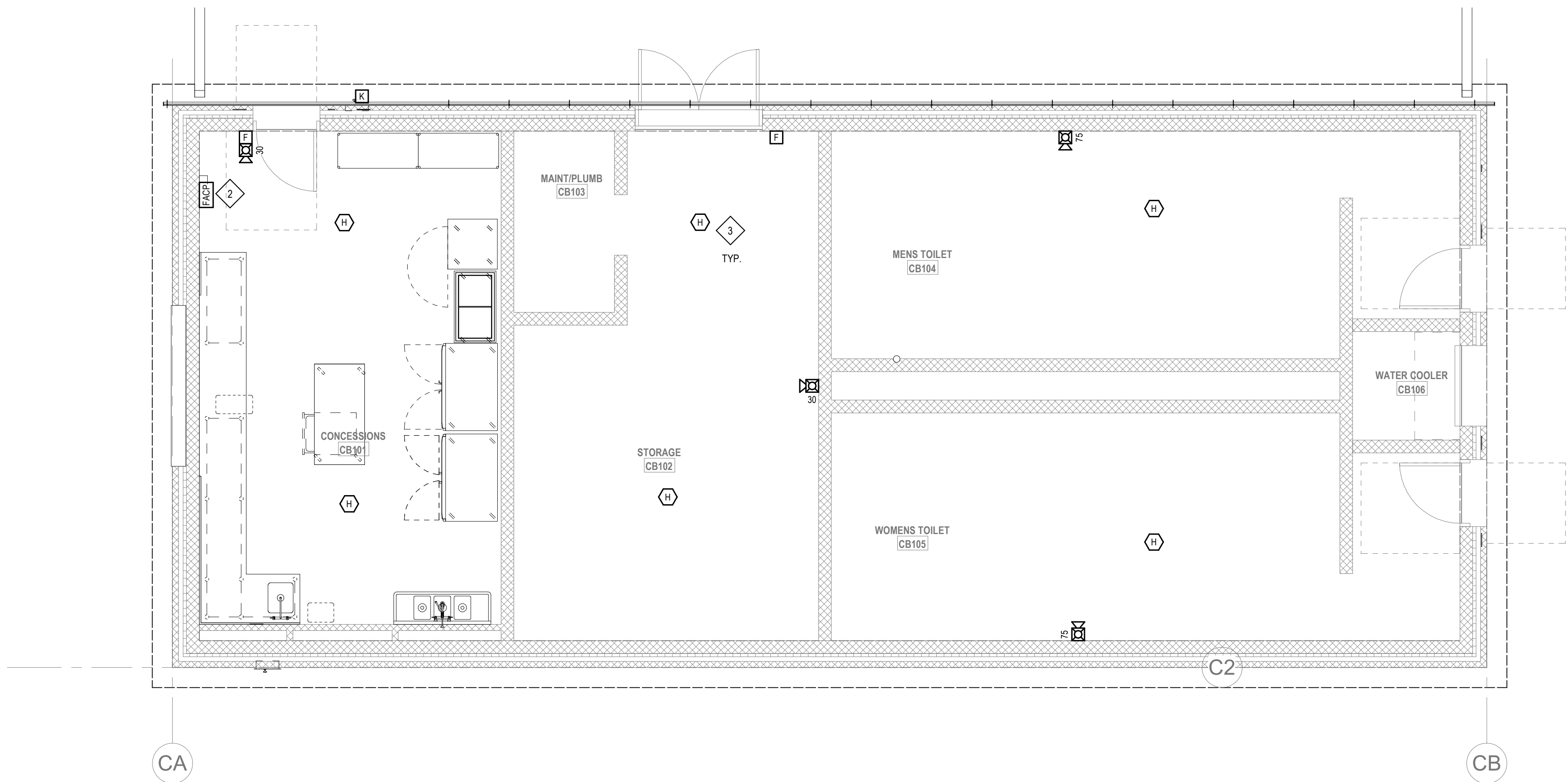
Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023
FA1-2-1D

FIRE ALARM KEYNOTES:

- 1 NOT USED
- 2 PROVIDE A NEW ANALOG ADDRESSABLE FIRE ALARM CONTROL PANEL UNIT. A DIGITAL ALARM COMMUNICATION TRANSMITTER SHALL BE PROVIDED TO TRANSMIT SIGNALS OFF-SITE.
- 3 PROVIDE HEAT DETECTORS RATED AT A FIXED TEMPERATURE OF 155 F.

GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.
3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.
4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/HVAC DRAWINGS.
5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES TO FIRE ALARM TERMINAL CABINET(S) OR FIRE ALARM CONTROL PANEL, OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER'S REQUIREMENTS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/ADDED DEVICES.
8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. PROVIDE NEW AV DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE SYNCHRONIZATION MODULES FOR SYNCHRONIZATION OF ALL VISUAL DEVICES.
10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.
12. PROVIDE ALL PRETESTS AND FINAL TESTS PER TOWN OF WAKEFIELD FIRE DEPARTMENT.
13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL AV AND/OR SOUND EQUIPMENT.
15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES.
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.
17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.



1 FIRE ALARM - CONCESSIONS FLOOR LEVEL PLAN
1/4" = 1'-0"

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225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817-984-1700
www.dra.com

280 Charles Street
Studio 300
Waltham, MA 02453
Tel: 817-984-1700
www.dra.com

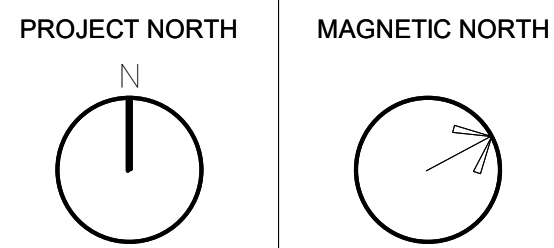
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BID SET
August 28th, 2023



FIRE ALARM
CONCESSION
BUILDING PLAN

Scale: 1/4" = 1'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023

FA1-1-CB

1

➤ PROVIDE A NEW ANALOG ADDRESSABLE FIRE ALARM CONTROL PANEL UNIT. A DIGITAL ALARM COMMUNICATION TRANSMITTER SHALL BE PROVIDED TO TRANSMIT SIGNALS OFF-SITE.

1. PROVIDE A FULLY OPERATIONAL TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.

2. COORDINATE LOCATION OF FIRE ALARM APPLIANCES AND DEVICES IN AREAS WITH CEILING SYSTEM, DUCTWORK, FIXTURES, FURNITURE, AND OTHER EQUIPMENT PRIOR TO ALL WORK.

3. FINAL LOCATIONS AND ARRANGEMENTS OF FIRE ALARM DEVICES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATION VIEWS.

4. FOR EXACT LOCATIONS OF SMOKE/FIRE DAMPERS, DUCT-MOUNTED SMOKE DETECTORS, WATER FLOW SWITCHES AND VALVE TAMPER SWITCHES, REFER TO FIRE PROTECTION, PLUMBING AND MECHANICAL/HVAC DRAWINGS.

5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.

6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICE(S) TO FIRE ALARM TERMINAL CABINET(S) OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.

7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/ADDED DEVICES.

8. PROVIDE TEMPORARY HEAT DETECTORS AS REQUIRED BY LOCAL FIRE DEPARTMENT

9. PROVIDE NEW A/V DEVICES WITH INTEGRAL SYNCHRONIZATION CAPABILITIES AND/OR PROVIDE

49. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF

IN THE COURSE OF THIS PROJECT, CONSULTING WITH THE FIRST THE BRIG OF EXTINCTION ON THE OPERATION OF THE EXISTING FIRE ALARM SYSTEM.

11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.

13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM

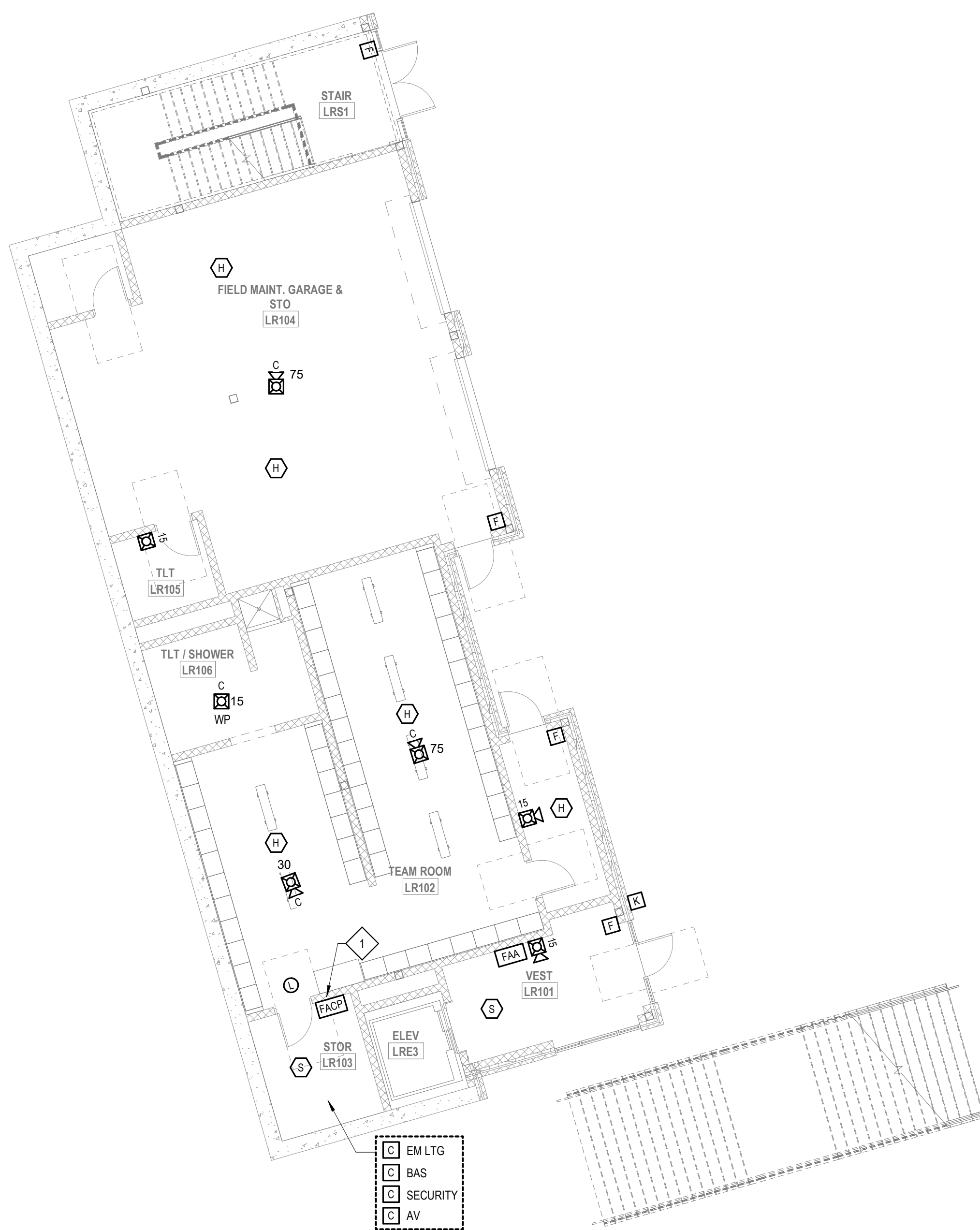
14. PROVIDE FIRE ALARM INTERFACE TO SHUNT ALL A/V AND/OR SOUND EQUIPMENT

15. PROVIDE FIRE ALARM INTERFACE TO RELEASE ALL SECURITY DEVICES

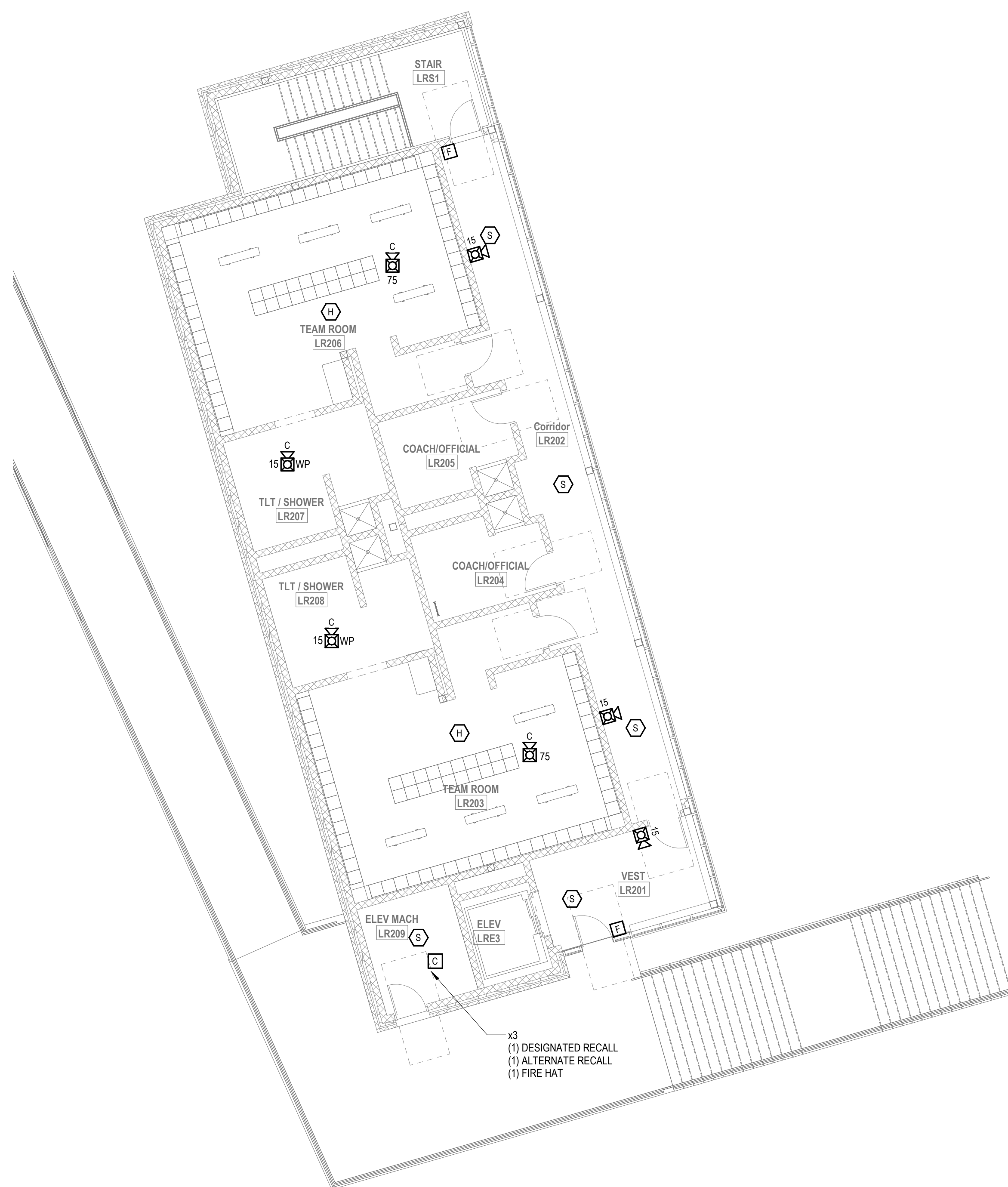
16. A TAMPER SWITCH SHALL BE PROVIDED AT EACH ISOLATION CONTROL VALVE SERVING THE COMBINATION STANDPIPE/SPRINKLER SYSTEM. FOR MORE INFORMATION

REFER TO THE FIRE PROTECTION DRAWINGS.

17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.



1 FIRE ALARM LOCKER BUILDING FIRST FLOOR
FA1-1-LB 1/8" = 1'-0"



2 FIRE ALARM LOCKER BUILDING SECOND LEVEL
FA1-1-LB 1/8" = 1'-0"

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August 28th, 2023

PROJECT NORT

MAGNETIC NORTH

FIRE ALARM LOCKER BUILDING PLAN

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

Job No.: 60-20-405

Drawn By: WAN

Date: August 28th, 2023

FA1-1-LB



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225 Oakland Road
Studio 205
South Windsor, CT 06074
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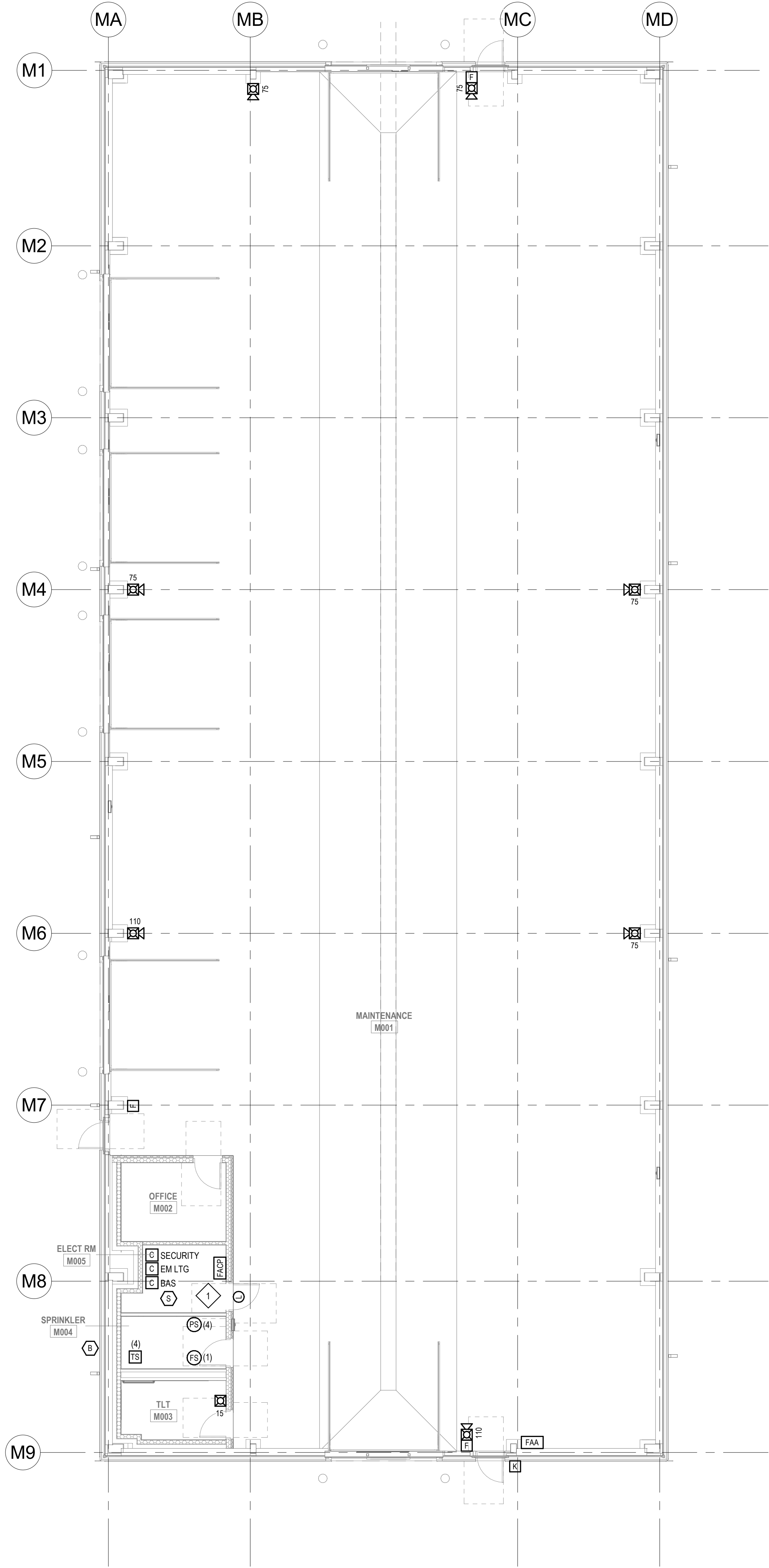
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GENERAL FIRE ALARM NOTES:

1. PROVIDE A FULLY OPERATIONAL, TEMPORARY FIRE ALARM SYSTEM DURING ALL WORK, APPROVED BY LOCAL FIRE DEPARTMENT. PROVIDE FIRE ALARM SYSTEM PROGRAMMING AND TESTING ACCORDING TO LOCAL FIRE DEPARTMENT REQUESTS. TEMPORARY SYSTEM SHALL REMAIN UNTIL NEW SYSTEM HAS BEEN APPROVED FOR OPERATION.
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5. MOUNTING HEIGHTS SHALL BE TO CENTER OF DEVICE OR EQUIPMENT, UNLESS OTHERWISE NOTED.
6. PROVIDE RACEWAY, CONDUCTORS AND CABLE, ASSOCIATED FITTINGS AND CONNECTORS, AND COMPLETE CONNECTIONS REQUIRED FOR DESIGNATED FIRE ALARM BRANCH CIRCUITS FROM DEVICES(S) TO FIRE ALARM TERMINAL CABINET(S) OR FIRE ALARM CONTROL PANEL OR FIRE COMMAND CENTER PER FIRE ALARM PRODUCT MANUFACTURER REQUIREMENTS.
7. PROVIDE ADDITIONAL POWER SUPPLIES, AMPLIFICATION AND BATTERY BACKUP TO SUPPORT NEW/ADDED DEVICES.
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10. THE SCOPE OF THIS PROJECT SHALL IN NO WAY IMPACT THE DAILY OPERATION OR THE SEQUENCE OF OPERATION OF THE EXISTING FIRE ALARM SYSTEM.
11. PROVIDE ALL PROGRAMMING/RE-PROGRAMMING PER REVISED SPACE DESIGNATIONS.
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13. PROVIDE FIRE ALARM INTERFACE TO BRING ALL DIMMED LUMINAIRES TO FULL BRIGHTNESS UPON ALARM.
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17. A FLOW AND SUPERVISORY SWITCH SHALL BE PROVIDED FOR EACH CONTROL VALVE ASSEMBLY. FOR MORE INFORMATION REFER TO THE FIRE PROTECTION DRAWINGS.

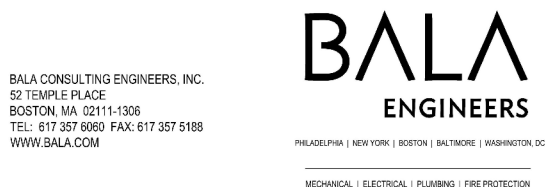
FIRE ALARM KEYNOTES:

1. PROVIDE NEW ANALOG ADDRESSABLE FIRE ALARM CONTROL PANEL UNIT A DIGITAL ALARM COMMUNICATION TRANSMITTER. TRANSMITTER SHALL TRANSMIT SIGNAL OFF-SITE.



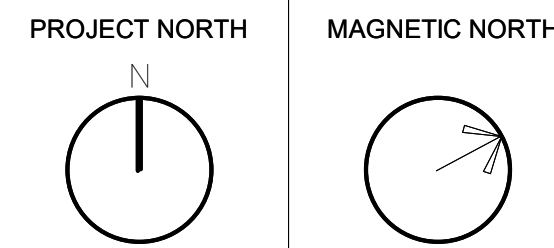
1 FIRE ALARM MAINTENANCE BUILDING PLAN
1/8" = 1'-0"

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BID SET

August 28th, 2023



FIRE ALARM
MAINTENANCE
BUILDING PLAN

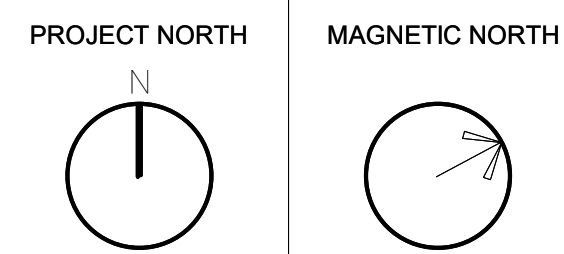
Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023

FA1-1-MB

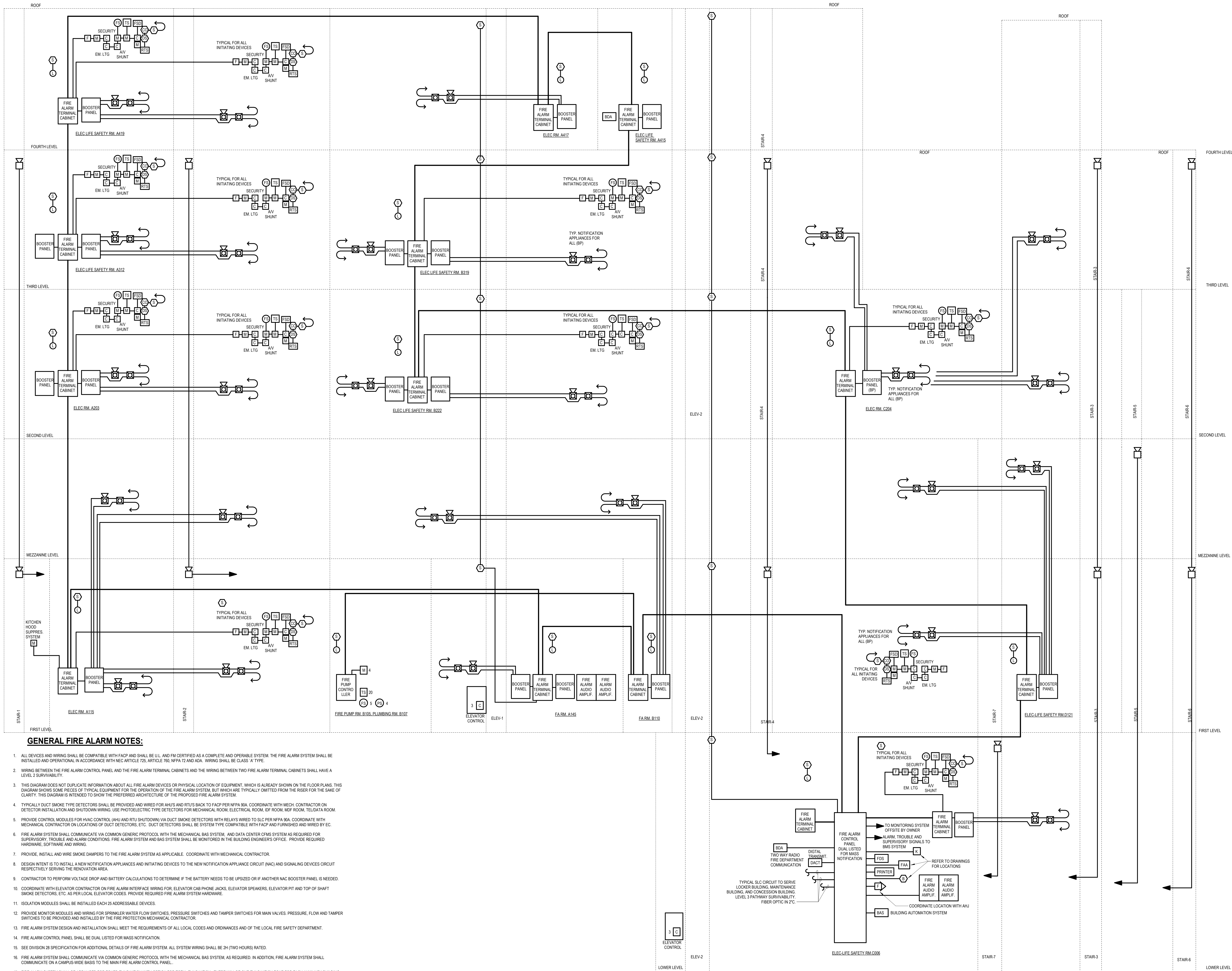
NORTH-EAST METROPOLITAN REGIONAL VACATIONAL SCHOOL	SYSTEM INPUT																			SYSTEM OUTPUT																		
	CONTROL UNIT ANNUNCIATION										NOTIFICATION									REQUIRED FIRE SAFETY CONTROL										SUPPLEMENTARY								
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	GG	HH	II			
ACTIVATE COMMON ALARM INDICATOR																																						
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ACTIVATE AUDIBLE SUPERVISORY SIGNAL																																						
ACTIVATE COMMON TROUBLE SIGNAL INDICATOR																																						
ACTIVATE AUDIBLE TROUBLE SIGNAL																																						
ACTIVATE NOTIFICATION APPLIANCES STROBES																																						
ACTIVATE AUDIO EVACUATION SIGNALS																																						
DISPLAY CHANGE OF STATUS																																						
TRANSMIT FIRE ALARM SIGNAL TO SUPERVISING STATION																																						
TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION																																						
TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION																																						
ENABLE LIGHTING TO FULL OUTPUT																																						
RECALL ELEVATOR #1 TO PRIMARY RECALL FLOOR																																						
RECALL ELEVATOR #1 TO ALTERNATE RECALL FLOOR																																						
RECALL ELEVATOR #2 TO PRIMARY RECALL FLOOR																																						
RECALL ELEVATOR #2 TO ALTERNATE RECALL FLOOR																																						
ACTIVATE HIGH SCHOOL BUILDING FF FLASHING HAT																																						
CLOSE SMOKE DAMPER																																						
ACTIVATE REMOTE INDICATOR LIGHT																																						
ACTIVATE FF FLASHING HAT - STADIUM BUILDING																																						
RELEASE SMOKE DOORS TO CLOSE																																						
UNLOCK EXITS																																						
ACTIVATE EXTERIOR STROBE																																						
ACTIVATE TEMPORA-4 SOUNDER BASE LOCAL ALARM																																						
ACTIVATE MASTER BOX																																						
ACTIVATE KITCHEN HOOD INDICATOR																																						
ACTIVATE SPRINKLER BELL ON EXTERIOR OF THE BUILDING																																						
ACTIVATE REMOTE ANNUNCIATORS																																						
ACTIVATE HIGH SCHOOL MAIN BUILDING INDICATOR																																						
ACTIVATE CONCESSIONS BUILDING INDICATOR																																						
ACTIVATE LOCKER ROOM BUILDING INDICATOR																																						
ACTIVATE MAINTENANCE BUILDING INDICATOR																																						
SYSTEM INPUTS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
HIGH SCHOOL MAIN BUILDING MANUAL PULL STATIONS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
HIGH SCHOOL MAIN BUILDING AREA SMOKE DETECTOR	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
HIGH SCHOOL MAIN BUILDING SMOKE DETECTOR AT THE LOCATION OF FA EQUIPMENT	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
HIGH SCHOOL MAIN BUILDING ELEVATOR LOBBY SMOKE DETECTOR - PRIMARY LEVEL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
HIGH SCHOOL MAIN BUILDING ELEVATOR LOBBY SMOKE DETECTOR - NON-PRIMARY LEVEL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
HIGH SCHOOL MAIN BUILDING ELEVATOR MACHINE ROOM SMOKE DETECTOR	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
HIGH SCHOOL MAIN BUILDING ELECTRICAL RM. & IT TEL RM. SMOKE DETECTORS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																		

BID SET

August 28th, 2023



FIRE ALARM SEQUENCE OF OPERATION MATRIX

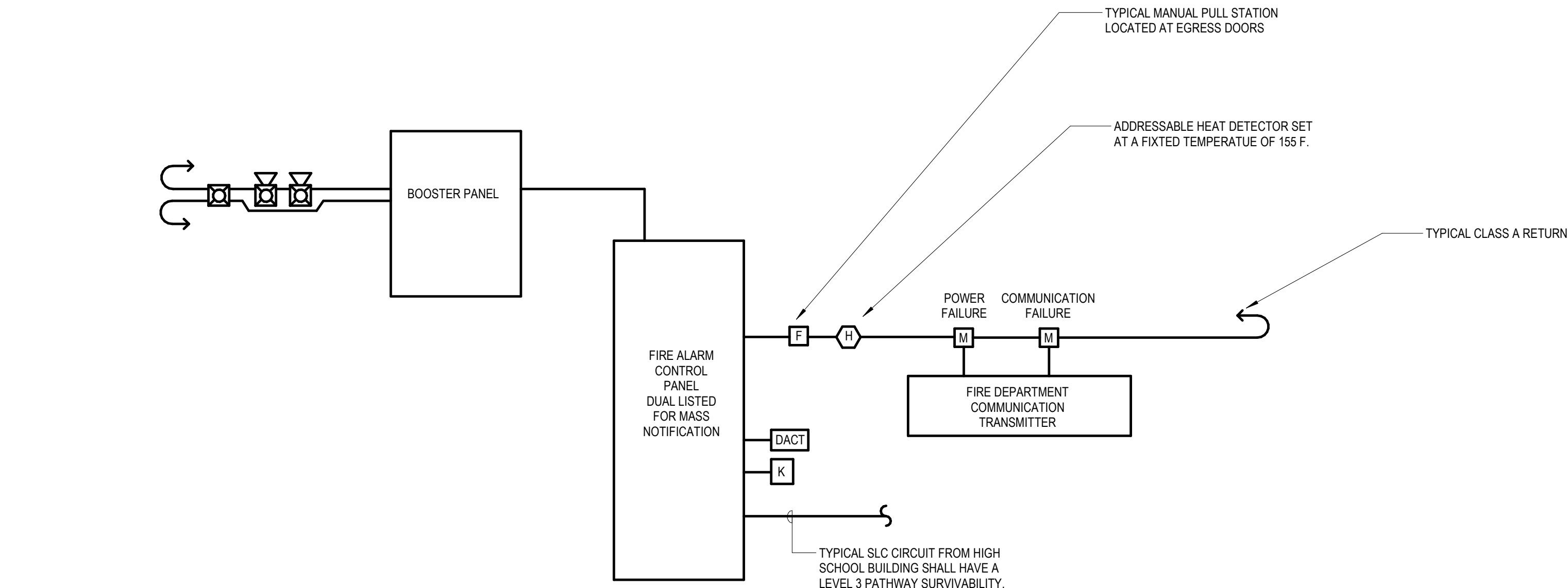


GENERAL FIRE ALARM NOTES:

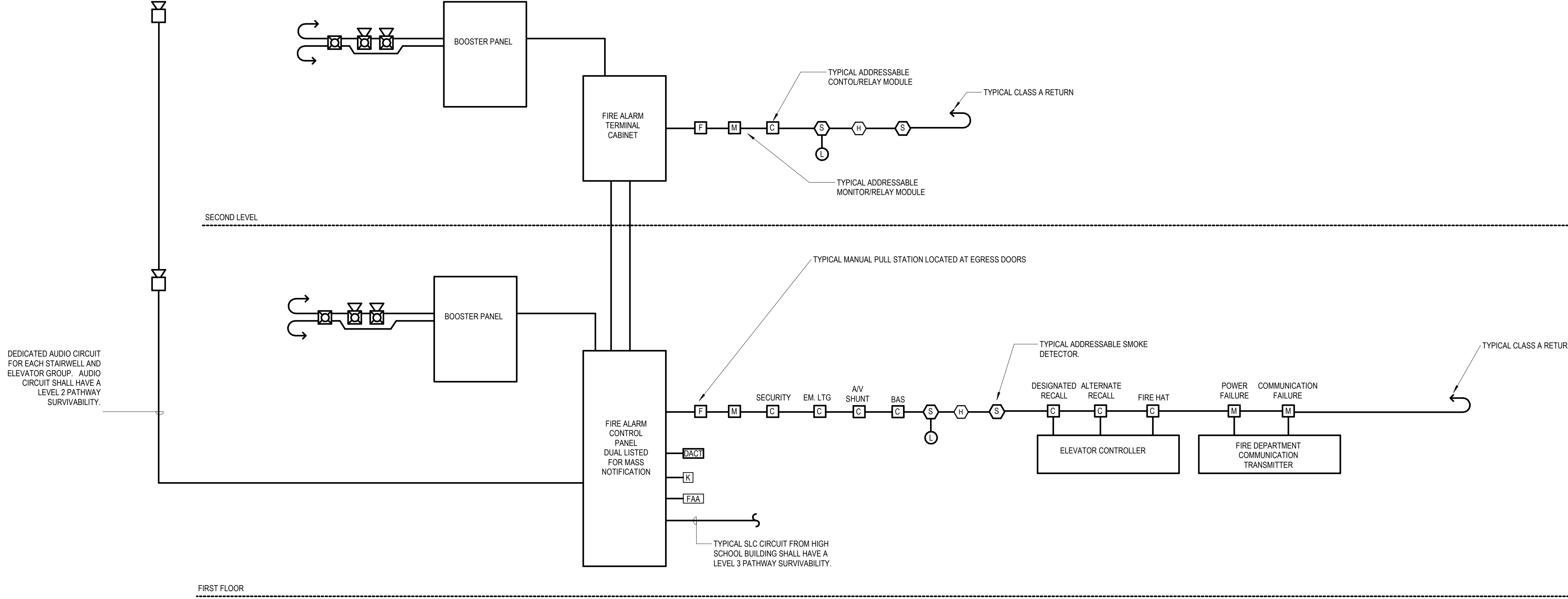
1. ALL DEVICES AND WIRING SHALL BE COMPATIBLE WITH FACD AND SHALL BE UL, AND IF CERTIFIED AS A COMPLETE AND OPERABLE SYSTEM, THE FIRE ALARM SYSTEM SHALL BE INSTALLED AND OPERATIONAL IN ACCORDANCE WITH NEC ARTICLE 725, ARTICLE 760, NFPA 72 AND ADA. WIRING SHALL BE CLASS "A" TYPE.
2. WIRING BETWEEN THE FIRE ALARM CONTROL PANEL AND THE FIRE ALARM TERMINAL CABINETS AND THE WIRING BETWEEN TWO FIRE ALARM TERMINAL CABINETS SHALL HAVE A LEVEL 2 SURVIVABILITY.
3. THIS DIAGRAM DOES NOT DUPLICATE INFORMATION ABOUT ALL FIRE ALARM DEVICES OR PHYSICAL LOCATION OF EQUIPMENT, WHICH IS ALREADY SHOWN ON THE FLOOR PLANS. THIS DIAGRAM SHOWS SOME PIECES OF TYPICAL EQUIPMENT FOR THE OPERATION OF THE FIRE ALARM SYSTEM, BUT WHICH ARE TYPICALLY OMITTED FROM THE RISER FOR THE SAKE OF CLARITY. THIS DIAGRAM IS INTENDED TO SHOW THE PREFERRED ARCHITECTURE OF THE PROPOSED FIRE ALARM SYSTEM.
4. TYPICALLY DUCT SMOKE TYPE DETECTORS SHALL BE PROVIDED AND WIRED FOR AHU/S AND RTU/S BACK TO FACD PER NFPA 80A. COORDINATE WITH MECH. CONTRACTOR ON DETECTOR INSTALLATION AND SHUTDOWN WIRING. USE PHOTOELECTRIC TYPE DETECTORS FOR MECHANICAL ROOM, ELECTRICAL ROOM, IDF ROOM, MDF ROOM, TEL/DATA ROOM.
5. PROVIDE CONTROL MODULES FOR HVAC CONTROL (AHU AND RTU SHUTDOWN) VIA DUCT SMOKE DETECTORS WITH RELAYS WIRED TO SLC PER NFPA 80A. COORDINATE WITH MECHANICAL CONTRACTOR ON LOCATIONS OF DUCT DETECTORS, ETC. DUCT DETECTORS SHALL BE SYSTEM TYPE COMPATIBLE WITH FACD AND FURNISHED AND WIRED BY EC.
6. FIRE ALARM SYSTEM SHALL COMMUNICATE VIA COMMON GENERIC PROTOCOL WITH THE MECHANICAL BAS SYSTEM, AND DATA CENTER CPMS SYSTEM AS REQUIRED FOR SUPERVISORY, TROUBLE AND ALARM CONDITIONS. FIRE ALARM SYSTEM AND BAS SYSTEM SHALL BE MONITORED IN THE BUILDING ENGINEERS' OFFICE. PROVIDE REQUIRED HARDWARE, SOFTWARE AND WIRING.
7. PROVIDE, INSTALL AND WIRE SMOKE DAMPERS TO THE FIRE ALARM SYSTEM AS APPLICABLE. COORDINATE WITH MECHANICAL CONTRACTOR.
8. DESIGN INTENT IS TO INSTALL A NEW NOTIFICATION APPLIANCES AND INITIATING DEVICES TO THE NEW NOTIFICATION APPLIANCE CIRCUIT (NAC) AND SIGNALING DEVICES CIRCUIT RESPECTIVELY SERVING THE RENOVATION AREA.
9. CONTRACTOR TO PERFORM VOLTAGE DROP AND BATTERY CALCULATIONS TO DETERMINE IF THE BATTERY NEEDS TO BE UPSIZED OR IF ANOTHER NAC BOOSTER PANEL IS NEEDED.
10. COORDINATE WITH ELEVATOR CONTRACTOR ON FIRE ALARM INTERFACE WIRING FOR ELEVATOR CAB PHONE JACKS, ELEVATOR SPEAKERS, ELEVATOR PIT AND TOP OF SHAFT SMOKE DETECTORS, ETC. AS PER LOCAL ELEVATOR CODES. PROVIDE REQUIRED FIRE ALARM SYSTEM HARDWARE.
11. ISOLATION MODULES SHALL BE INSTALLED EACH 25 ADDRESSABLE DEVICES.
12. PROVIDE MONITOR MODULES AND WIRING FOR SPRINKLER WATER FLOW SWITCHES, PRESSURE SWITCHES AND TAMPER SWITCHES FOR MAIN VALVES. PRESSURE, FLOW AND TAMPER SWITCHES TO BE PROVIDED AND INSTALLED BY THE FIRE PROTECTION MECHANICAL CONTRACTOR.
13. FIRE ALARM SYSTEM DESIGN AND INSTALLATION SHALL MEET THE REQUIREMENTS OF ALL LOCAL CODES AND ORDINANCES AND OF THE LOCAL FIRE SAFETY DEPARTMENT.
14. FIRE ALARM CONTROL PANEL SHALL BE DUAL LISTED FOR MASS NOTIFICATION.
15. SEE DIVISION 28 SPECIFICATION FOR ADDITIONAL DETAILS OF FIRE ALARM SYSTEM. ALL SYSTEM WIRING SHALL BE 2H (TWO HOURS) RATED.
16. FIRE ALARM SYSTEM SHALL COMMUNICATE VIA COMMON GENERIC PROTOCOL WITH THE MECHANICAL BAS SYSTEM, AS REQUIRED. IN ADDITION, FIRE ALARM SYSTEM SHALL COMMUNICATE ON A CAMPUS WIDE BASIS TO THE MAIN FIRE ALARM CONTROL PANEL.
17. FIRE ALARM SYSTEM SHALL BE ARRANGED FOR ZONED EVACUATION WITH OPTION FOR TOTAL EVACUATION. THERE WILL BE ONE EVACUATION ZONE FOR EACH AUXILIARY BUILDING. INITIATING DEVICES THAT ARE ACTUATED WITHIN THE HIGH SCHOOL BUILDING WILL ONLY NOTIFY OCCUPANTS WITHIN THE HIGH SCHOOL BUILDING AND NOT IN AUXILIARY BUILDINGS. THE CORRESPONDING FIRE ALARM SIGNALS SHALL BE DISTINGUISH IF IT IS ORIGINATED FROM THE FIRE/ SMOKE SENSING DETECTORS OR CARBON MONOXIDE DETECTORS.
18. PROVIDE 3/4" CONDUIT TO ELEVATOR CONTROLLERS FOR FIRE ALARM SYSTEM WIRING.

GENERAL FIRE ALARM NOTES:

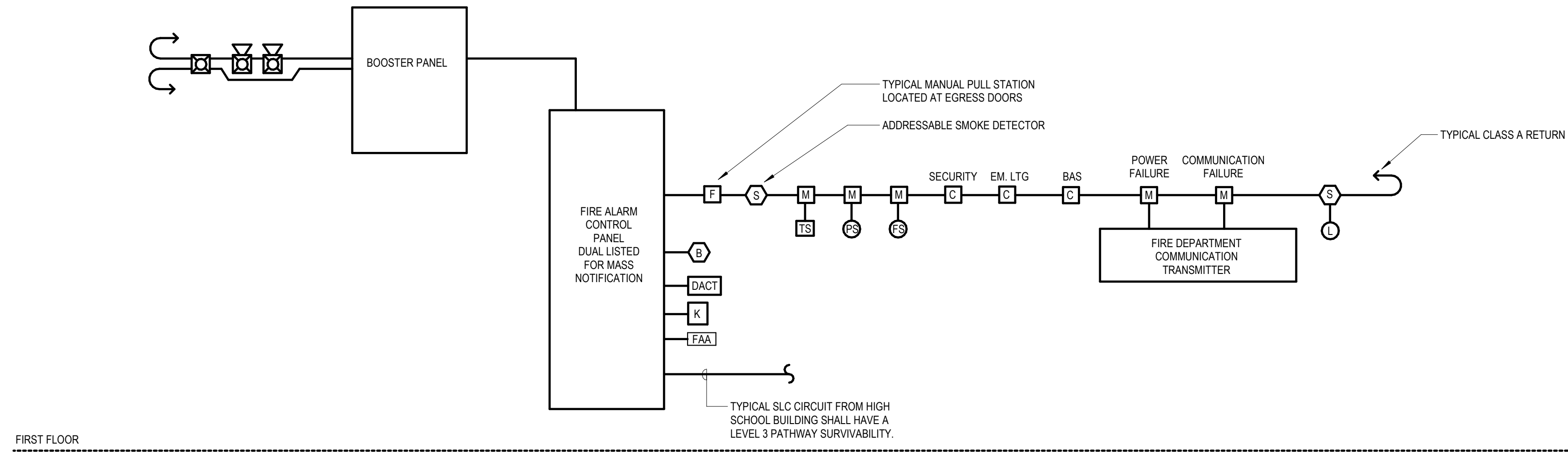
1. ALL DEVICES AND WIRING SHALL BE COMPATIBLE WITH FACP AND SHALL BE U.L. AND FM CERTIFIED AS A COMPLETE AND OPERABLE SYSTEM. THE FIRE ALARM SYSTEM SHALL BE INSTALLED AND OPERATIONAL IN ACCORDANCE WITH NEC ARTICLE 725, ARTICLE 760, NFPA 72 AND ADA. WIRING SHALL BE CLASS 'A' TYPE.
2. THIS DIAGRAM DOES NOT DUPLICATE INFORMATION ABOUT PHYSICAL LOCATION OF EQUIPMENT, WHICH IS ALREADY SHOWN ON THE PLANS. THIS DIAGRAM SHOWS SOME PIECES OF EQUIPMENT NECESSARY FOR THE OPERATION OF THE FIRE ALARM SYSTEM, BUT WHICH ARE TYPICALLY OMITTED FROM THE PLANS FOR THE SAKE OF CLARITY.
3. TYPICALLY IONIZATION TYPE SMOKE DETECTORS SHALL BE PROVIDED AND WIRED FOR AHUS AND RTUS BACK TO FACP PER NFPA 90A. COORDINATE WITH MECH. CONTRACTOR ON DETECTOR INSTALLATION AND SHUTDOWN WIRING. USE PHOTOELECTRIC TYPE DETECTORS FOR MECHANICAL ROOM, ELECTRICAL ROOM, IDF ROOM, MDF ROOM, TEL/DATA ROOM.
4. PROVIDE CONTROL MODULES FOR HVAC CONTROL, WHU AND RTU SHUTDOWN VIA DUCT SMOKE DETECTORS WITH RELAY'S WIRED TO SLC PER NFPA 90A. COORDINATE WITH MECHANICAL CONTRACTOR ON LOCATIONS OF DUCT DETECTORS, ETC. DUCT DETECTORS SHALL BE SYSTEM TYPE COMPATIBLE WITH FACP AND FURNISHED AND WIRED BY EC.
5. FIRE ALARM SYSTEM SHALL COMMUNICATE VIA COMMON GENERIC PROTOCOL WITH THE MECHANICAL BAS SYSTEM. AND DATA CENTER CFMS SYSTEM AS REQUIRED FOR SUPERVISORY TROUBLE AND ALARM CONDITIONS. FIRE ALARM SYSTEM AND BAS SYSTEM SHALL BE MONITORED IN THE BUILDING ENGINEERS OFFICE. PROVIDE REQUIRED HARDWARE, SOFTWARE AND WIRING.
6. PROVIDE, INSTALL AND WIRE SMOKE DAMPERS TO THE FIRE ALARM SYSTEM AS APPLICABLE. COORDINATE WITH MECHANICAL CONTRACTOR.
7. DESIGN INTENT IS TO INSTALL A NEW NOTIFICATION APPLIANCES AND INITIATING DEVICES TO THE NEW NOTIFICATION APPLIANCE CIRCUIT (NAC) AND SIGNALING DEVICES CIRCUIT RESPECTIVELY SERVING THE RENOVATION AREA.
8. CONTRACTOR TO PERFORM VOLTAGE DROP AND BATTERY CALCULATIONS TO DETERMINE IF THE BATTERY NEEDS TO BE UPSIZED OR IF ANOTHER NAC BOOSTER PANEL IS NEEDED.
9. COORDINATE WITH ELEVATOR CONTRACTOR ON FIRE ALARM INTERFACE WIRING FOR SHUNT TRIP OF ELEVATOR MAIN DISCONNECT, ELEVATOR CAB PHONE JACKS, ELEVATOR PIT AND TOP OF SHAFT HEAT AND SMOKE DETECTORS, ETC. AS PER LOCAL ELEVATOR CODES. PROVIDE REQUIRED FIRE ALARM SYSTEM HARDWARE.
10. ISOLATION MODULES SHALL BE INSTALLED EACH 25 ADDRESSABLE DEVICES.
11. PROVIDE MONITOR MODULES AND WIRING FOR SPRINKLER WATER FLOW SWITCHES, PRESSURE SWITCHES AND TAMPER SWITCHES FOR MAIN VALVES, PRESSURE, FLOW AND TAMPER SWITCHES TO BE PROVIDED AND INSTALLED BY THE FIRE PROTECTION MECHANICAL CONTRACTOR.
12. FIRE ALARM SYSTEM DESIGN AND INSTALLATION SHALL MEET THE REQUIREMENTS OF ALL LOCAL CODES AND ORDINANCES AND OF THE LOCAL WAKEFIELD SAFETY DEPARTMENT.
13. FIRE ALARM CONTROL PANEL SHALL BE DUAL LISTED FOR MASS NOTIFICATION.
14. SEE DIVISION 28 SPECIFICATION FOR ADDITIONAL DETAILS OF FIRE ALARM SYSTEM.
15. FIRE ALARM SYSTEM SHALL COMMUNICATE VIA COMMON GENERIC PROTOCOL WITH THE MECHANICAL BAS SYSTEM, AS REQUIRED. IN ADDITION, FIRE ALARM SYSTEM SHALL COMMUNICATE ON A CAMPUS-WIDE BASIS TO THE MAIN FIRE ALARM CONTROL PANEL.
16. FIRE ALARM SYSTEM SHALL BE ARRANGED FOR ZONED EVACUATION. THERE WILL BE ONE ZONE FOR THE STADIUM BUILDING AND ONE ZONE FOR THE HIGH SCHOOL BUILDING. THUS, INITIATING DEVICES THAT ARE ACTUATED WITHIN THE HIGH SCHOOL BUILDING WILL ONLY NOTIFY OCCUPANTS WITHIN THE HIGH SCHOOL BUILDING AND VICE VERSA. THE CORRESPONDING FIRE ALARM SIGNALS WILL DISTINGUISH IF IT IS FROM THE STADIUM BUILDING OR FROM THE HIGH SCHOOL BUILDING.



1 FIRE ALARM CONCESSION BUILDING RISER DIAGRAM
12" = 1'-0"



2 FIRE ALARM LOCKER BUILDING RISER DIAGRAM
12" = 1'-0"



3 FIRE ALARM MAINTENANCE BUILDING RISER DIAGRAM
12" = 1'-0"



Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074
260 Charles Street
Studio 300
Waltham, MA
02453
Tel: 617.984.1700
www.dra-inc.com

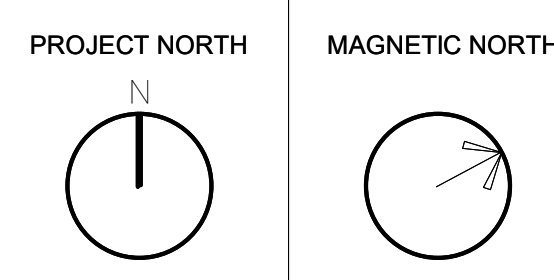
Northeast
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School

Wakefield, MA 01880

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BALA
ENGINEERS
Bala Controls and Engineers, Inc.
200 West 10th Street
Suite 200
Wilmington, DE 19801
Tel: 302.441.1111
Fax: 302.441.1112
www.bala-engineers.com

BID SET
August 28th, 2023



FIRE ALARM
RISER
DIAGRAMS

Scale: 12" = 1'-0"
Job No.: 60-20-409
Drawn By: WAM
Date: August 28th, 2023
FA4-0-3

GENERAL NOTES	
1.	THE WORK TO BE DONE UNDER THESE SPECIFICATIONS AND THE DRAWINGS CONSISTS OF PROVIDING ALL EQUIPMENT, MATERIALS, LABOR AND SERVICES AND PERFORMING ALL OPERATIONS TO COMPLETE THE CONSTRUCTION WORK FOR THIS PROJECT. ANY WORK NOT SPECIFICALLY COVERED BY THESE SPECIFICATIONS OR INDICATED ON THE CONTRACT DRAWINGS, BUT NECESSARY TO COMPLETE OR PERFECT ANY PART OF THIS INSTALLATION IN A SUBSTANTIAL MANNER, SHALL BE PROVIDED WITHOUT EXTRA COST TO THE OWNER.
2.	THE WORK SHALL CONFORM TO THE MORE STRINGENT OF ALL APPLICABLE CODES & REGULATIONS, UL AND FM GUIDELINES, LEED REQUIREMENTS, MANUFACTURERS LITERATURE AND RECOMMENDATIONS, BUILDING OPERATOR'S REQUIREMENTS, AND TO THE REQUIREMENTS OF FEDERAL, STATE AND LOCAL REGULATORY AGENCIES AND AUTHORITIES HAVING JURISDICTION.
3.	THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE EXTENT, GENERAL CHARACTER, LOCATION AND ARRANGEMENT OF THE WORK UNDER THIS CONTRACT. EXACT LOCATION OF ALL COMPONENTS ARE TO BE DETERMINED IN THE FIELD AND BY THE ACTUAL BUILDING CONDITIONS. WHERE JOB CONDITIONS REQUIRE MINOR CHANGES OR ADJUSTMENTS IN THE INDICATED LOCATIONS OR ARRANGEMENT OF THE WORK, SUCH CHANGES SHALL BE PROVIDED WITHOUT EXTRA COST. THE ELECTRICAL SUBCONTRACTOR SHALL RE-INSTALL EQUIPMENT THAT HAS INADEQUATE OR UNSAFE ACCESSIBILITY.
4.	INSTALLATION OF WORK SHALL PROVIDE REASONABLE ACCESSIBILITY FOR OPERATION, INSPECTION AND MAINTENANCE OF EQUIPMENT AND ACCESSORIES. PROVIDE CLEARANCES REQUIRED BY MANUFACTURERS AND APPLICABLE CODES. ALL CEILING MOUNTED EQUIPMENT SHALL BE INSTALLED IN SUCH A MANNER THAT LIGHTS, PIPING, AND DUCTWORK DO NOT BLOCK ACCESS TO EQUIPMENT AND RELATED ACCESSORIES.
5.	THE TERM "FURNISH" SHALL MEAN TO OBTAIN AND SUPPLY TO THE JOB SITE. THE TERM "INSTALL" SHALL MEAN TO FIX IN POSITION AND CONNECT FOR USE. THE TERM "PROVIDE" SHALL MEAN TO FURNISH AND INSTALL. THE TERM "MECHANICAL WORK," "ELECTRICAL WORK," "PLUMBING WORK," ETC. SHALL MEAN ALL LABOR, MATERIAL, EQUIPMENT, SCAFFOLDING, RIGGING, TOOLS, SUPERVISION, SERVICES AND OTHER INCIDENTALS NECESSARY FOR COMPLETE AND OPERABLE INSTALLATION.
6.	THE CM/AG SHALL MAKE SETS OF THE BID DOCUMENTS CONSISTING OF COMPLETE SETS OF DRAWINGS AND SPECIFICATIONS AND ISSUE THEM TO EACH OF THE PRIME AND SUB-CONTRACTORS. EVERY PRIME AND SUB-CONTRACTOR ON EACH BIDDING TEAM SHALL RECEIVE COMPLETE SETS OF DRAWINGS AND SPECIFICATIONS. THERE ARE NOTES AND CROSS REFERENCES FOR VARIOUS TRADE CONTRACTORS IN MULTIPLE TRADE OR DISCIPLINE DRAWINGS AND SPECIFICATIONS. THIS EACH CONTRACTOR IS TO RECEIVE COMPLETE SETS OF THE BID DOCUMENTS. IT IS THE ELECTRICAL SUBCONTRACTOR'S RESPONSIBILITY TO OBTAIN THESE DRAWINGS FROM CM/AG. EACH SUBCONTRACTOR IS RESPONSIBLE FOR THEIR WORK. AS NOTED ON THE OTHER DISCIPLINE DOCUMENTS. BIDDERS ARE RESPONSIBLE FOR ALL COSTS FOR EACH SET OF BID DOCUMENTS REQUESTED.
7.	ELECTRICAL SUBCONTRACTOR IS RESPONSIBLE FOR PROVIDING A FULL COORDINATION EFFORT IN ORDER TO CREATE A FINALIZED COORDINATED LAYOUT OF ALL EQUIPMENT, SYSTEMS, DUCTWORK, PIPING AND ALL OTHER ITEMS WITHIN THEIR RESPECTIVE SCOPE. THE CONTRACTORS COORDINATION EFFORT SHALL INCLUDE COORDINATED INFORMATION FROM ALL OTHER TRADE CONTRACTORS INVOLVED IN THE PROJECT SCOPE IN ORDER TO PROVIDE COORDINATION BETWEEN TRADES AND ALL EXISTING CONDITIONS. ALL ERRORS MADE AS A RESULT OF A LACK OF COORDINATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND CORRECTED AT NO ADDITIONAL COST TO THE PROJECT. MINOR RELOCATIONS AND SHIFTS OF EQUIPMENT, DUCTWORK, AND PIPING WHICH DO NOT CHANGE THE DESIGN INTENT INDICATED ON THE CONTRACT DOCUMENTS, REQUIRED TO ACCOMMODATE FIELD CONDITIONS ARE AT THE CONTRACTORS DISCRETION AND DO NOT REQUIRE ENGINEER APPROVAL.
8.	ELECTRICAL SUBCONTRACTOR SHALL ARRANGE AND OBTAIN ALL PERMITS, INSPECTIONS AND APPROVALS, AND PAY ALL RELATED FEES.
9.	FOR ANY DISCREPANCY BETWEEN DRAWINGS AND/OR SPECIFICATIONS, THE ELECTRICAL SUBCONTRACTOR SHALL BASE THEIR BID UPON THE MOST STRINGENT REQUIREMENT (QUALITY, QUANTITY, SIZE, ETC.). THE ELECTRICAL SUBCONTRACTOR SHALL IDENTIFY DISCREPANCIES AS PART OF THEIR BID.
10.	ALL SERVICES TO EXISTING BUILDINGS SHALL BE MAINTAINED DURING CONSTRUCTION UNLESS OTHERWISE INDICATED. ELECTRICAL SUBCONTRACTOR SHALL COORDINATE ALL SYSTEM SHUT DOWNS AND TIMING WITH OWNER.
11.	THE ELECTRICAL SUBCONTRACTOR SHALL EFFECTIVELY PROTECT ALL MATERIALS AND EQUIPMENT FROM ENVIRONMENTAL AND PHYSICAL DAMAGE UNTIL FINAL ACCEPTANCE. CLOSE AND PROTECT ALL OPENINGS DURING CONSTRUCTION. PROVIDE NEW MATERIALS AND EQUIPMENT TO REPLACE ITEMS DAMAGED.
12.	WHERE BEAMS ARE INDICATED TO BE PENETRATED WITH DUCTWORK AND/OR PIPING, CAREFULLY COORDINATE SIZES AND LOCATIONS OF THE ELEMENTS BEFORE FABRICATION. COORDINATE WITH FINAL LOCATION OF BEAM PENETRATIONS AND SHEAR WALL PENETRATIONS.
13.	ELECTRICAL SUBCONTRACTOR SHALL COORDINATE LOCATION OF ALL WALL, FLOOR AND ROOF OPENINGS WITH STRUCTURAL AND OTHER TRADES.
14.	WHEN WORK INVOLVES CONTACT WITH MATERIALS CONTAINING ASBESTOS, PCB, OR OTHER TOXIC MATERIALS, NOTIFY OWNER, WHO WILL ESTABLISH PROCEDURES FOR REMEDIATION AND REMOVAL.
15.	ELECTRICAL SUBCONTRACTOR SHALL SCHEDULE THE WORK UNDER THIS CONTRACT WITH WORK OF OTHER TRADES AS NOT TO DELAY THE OVERALL PROGRESS OF THE PROJECT.
16.	ELECTRICAL SUBCONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER OF ANY CONFLICTS PRIOR TO PURCHASING EQUIPMENT AND PRIOR TO CUTTING OPENINGS.
17.	ELECTRICAL SUBCONTRACTOR SHALL PROVIDE SHOP DRAWINGS PER SPECIFICATIONS PRIOR TO PURCHASING OR INSTALLING EQUIPMENT AND SYSTEMS INDICATED ON CONTRACT DOCUMENTS. PRIOR TO SUBMITTAL, CONTRACTOR SHALL VERIFY THAT ADEQUATE SPACE EXISTS FOR THE SUBMITTED EQUIPMENT. SHOP DRAWINGS MUST BE REVIEWED BY ARCHITECT/ENGINEER.
18.	ELECTRICAL SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED BY OTHER TRADES DUE TO SUBSTITUTION OF OTHER THAN SCHEDULED EQUIPMENT. WHEN EQUIPMENT FURNISHED IS DIFFERENT THAN INDICATED, THE COST OF ADDITIONAL ELECTRICAL SERVICE, STRUCTURAL AND RELATED WORK SHALL BE PAID BY THIS CONTRACTOR.
19.	ALL WORK SHALL BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER AND SHALL BE DONE IN ACCORDANCE WITH GOOD TRADE PRACTICE AND IN CONFORMANCE WITH APPLICABLE MANUFACTURERS' RECOMMENDATIONS.
20.	ELECTRICAL SUBCONTRACTOR SHALL REMOVE ALL TRASH, DEBRIS AND DEMOLITION MATERIAL FROM PREMISES AT THE END OF EACH DAY.
21.	RESTORE ALL SURFACES (WALLS, CEILINGS, FLOORS AND ROOFS) THAT ARE DAMAGED BY THE WORK OF THIS CONTRACT TO THEIR ORIGINAL CONDITION AT NO EXTRA COST TO THE OWNER.
22.	PRIOR TO EQUIPMENT STARTUP, ELECTRICAL SUBCONTRACTOR SHALL PERFORM THE SPECIFIED STARTUP AND COMMISSIONING PROCEDURES.
23.	IN THE ABSENCE OF OTHER SPECIFIC INSTRUCTIONS, ALL WORK AND MATERIALS SUPPLIED SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF THEIR ACCEPTANCE BY THE OWNER.
24.	BALA CONSULTING ENGINEERS, INC. (BALA) MAY PROVIDE THE ELECTRICAL SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD COORDINATION, DIMENSIONING AND ADHERENCE TO THE SHOP DRAWING REQUIREMENTS AS NOTED IN THE SPECIFICATIONS. SHOULD THE SHOP DRAWINGS SUBMITTED PROVE TO BE A DIRECT COPY OF OUR FILES WITHOUT THE NECESSARY FIELD COORDINATION, DIMENSIONING AND ADHERENCE TO THE SHOP DRAWING REQUIREMENTS AS NOTED IN THE SPECIFICATIONS, THESE SHOP DRAWINGS WILL BE RETURNED AS REJECTED. BALA'S ELECTRONIC FILES ARE SAVED IN VERSION REVIT 2021 AND ARE COMPATIBLE WITH ALL VERSIONS AFTER THAT. BALA MAKES NO REPRESENTATION AS TO THE COMPATIBILITY OF THESE FILES WITH THE ELECTRICAL SUBCONTRACTOR'S HARDWARE OR THEIR SOFTWARE. DATA CONTAINED ON THESE ELECTRONIC FILES ARE PART OF BALA'S INSTRUMENTS OF SERVICE AND ARE COPYRIGHTED. ELECTRICAL SUBCONTRACTORS USE OF FILES IS FOR THE SOLE PURPOSE AS A CONVENIENCE IN THE PREPARATION OF DRAWINGS FOR THE REFERENCED PROJECT. ANY OTHER USE OR REUSE BY ELECTRICAL SUBCONTRACTOR IS UNLAWFUL.
25.	T.O. SLAB AT FIRST FLOOR DATUM ELEVATION OF 102'-0" CORRESPONDS TO 163.5' MEAN SEA LEVEL, AS SHOWN ON SITE AND CIVIL DRAWINGS.

ELECTRICAL GENERAL NOTES	
1.	ENTIRE INSTALLATION, INCLUDING MATERIALS, EQUIPMENT AND WORKMANSHIP SHALL CONFORM WITH THE ENTIRELY ADOPTED NATIONAL ELECTRICAL CODE, WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS AND REGULATORY BODIES HAVING JURISDICTION OVER THIS WORK.
2.	ELECTRICAL SUBCONTRACTOR SHALL PROVIDE FIRE STOPPING, WHERE EQUIPMENT AND CONDUITS PENETRATE FIRE AND SMOKE BARRIERS INCLUDING WALLS, PARTITIONS, FLOORS, AND CEILINGS, INSTALL FIRE-STOPPING AT PENETRATIONS AFTER CABLES ARE INSTALLED.
3.	UNLESS OTHERWISE NOTED ALL INDOOR ELECTRICAL EQUIPMENT SHALL BE PROVIDED WITH, AND HOUSED IN, A NEMA 1 ENCLOSURE.
4.	THE ELECTRICAL SUBCONTRACTOR SHALL PROVIDE BACK BOXES AND CONDUITS WITH PULL STRINGS TO 6" ABOVE CEILING FOR TELECOMMUNICATION, DATA, AUDIO/VIDEO AND SECURITY DEVICES. COORDINATE WITH RESPECTIVE TRADES FOR LOCATIONS AND CONDUIT REQUIREMENTS.
5.	THE ELECTRICAL SUBCONTRACTOR SHALL COORDINATE ALL MOUNTING HEIGHTS, LOCATIONS AND ARCHITECTURAL/SPATIAL REQUIREMENTS PER THE ARCHITECTURAL DRAWINGS AND RELATED SPECIFICATIONS.
6.	AFTER-HOURS SHUTDOWN WORK SHALL BE AT SUCH TIME AND IN SUCH MANNER AS DIRECTED BY THE OWNER. PROVIDE A MINIMUM ONE (1) WEEK NOTICE. WHERE SHUTDOWN PERIODS CANNOT BE OF DURATION TO ACCOMMODATE THE NEW WORK, THE ELECTRICAL CONTRACTOR SHALL PERFORM THE WORK IN A SERIES OF PRE-PLANNED STAGES OF MINIMAL ALLOWABLE SHUTDOWN PERIODS. PROVIDE TEMPORARY FACILITIES TO ALLOW RE-ENERGIZING OF SERVICE BETWEEN WORKING STAGES.
7.	THE ELECTRICAL SUBCONTRACTOR SHALL PROVIDE TEMPORARY POWER, LIGHTING, AND FIRE DETECTION FOR ALL WORK AREAS AND TRADES UNDER THIS CONTRACT AS REQUIRED FOR CONSTRUCTION OR AS REQUIRED TO MAINTAIN NORMAL OPERATIONS OF THE SITE AND/OR BUILDINGS ACTIVITIES. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL EQUIPMENT, MAKING ALL ARRANGEMENTS WITH THE UTILITY CO. WHERE ADEQUATE EXISTING SERVICES MAY BE USED.
8.	"DIVISION 26" AND EC ARE USED INTERCHANGEABLY AND SHALL INDICATE WORK INCLUDED UNDER THE ELECTRICAL SUBCONTRACTOR'S SCOPE.
9.	THE ELECTRICAL SUBCONTRACTOR SHALL PROVIDE AND INSTALL ALL LOOSE VEDS, MOTOR STARTERS, AND FUSED DISCONNECT SWITCHES NOT FURNISHED WITH THE EQUIPMENT. COORDINATE SCOPE WITH CM PRIOR TO SUBMITTING BID.
10.	ELECTRICAL SUBCONTRACTOR SHALL PROVIDE AND INSTALL ALL BOXES (INCLUDING CHIEF BOXES) AND RACEWAYS AS REQUIRED BY THE LOW VOLTAGE (DATA, SECURITY, AV, SOUND MASKING) DESIGN DOCUMENTATION AND/OR THE LOW VOLTAGE CONTRACTORS. COORDINATE SCOPE WITH CM PRIOR TO SUBMITTING BID.
11.	ELECTRICAL SUBCONTRACTOR SHALL PROVIDE AND INSTALL ALL DISCONNECT SWITCHES NOT FURNISHED WITH THE EQUIPMENT. COORDINATE SCOPE WITH CM PRIOR TO SUBMITTING BID.
12.	ELECTRICAL SUBCONTRACTOR SHALL PROVIDE AND INSTALL ALL BOXES (INCLUDING CHIEF BOXES) AND RACEWAYS AS REQUIRED BY THE LOW VOLTAGE (DATA, SECURITY, AV, SOUND MASKING) DESIGN DOCUMENTATION AND/OR THE LOW VOLTAGE CONTRACTORS. COORDINATE SCOPE WITH CM PRIOR TO SUBMITTING BID.

REVISION LEGEND		NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED							
05-12-2023 REMOVED FROM DRAWING SET		NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED							
DRAWING LIST - ELECTRICAL											
DRAWING NUMBER	DRAWING TITLE	05-12-2023 - SCHEMATIC DESIGN	06-25-2023 - DESIGN DEVELOPMENT COST ESTIMATE SET	08-04-2023 - MSHA DESIGN DEVELOPMENT SUBMISSION	11-16-2023 80% CD COST ESTIMATE SET	01-12-2023 - MSHA 90% CD SUBMISSION	03-26-2023 90% CD COST ESTIMATE	06-12-2023 - MSHA 90% CD CONSTRUCTION DOCUMENT SUBMITTAL	06-16-2023 - PERMIT SET	08-28-23 - BID SET	
E0-0-1	ELECTRICAL TITLE SHEET (NOTES & DWG LIST)	✓	•	□	•	•	•	•	•	•	
E0-0-2	ELECTRICAL LEGENDS AND ABBREVIATIONS	✓	•	□	•	•	•	•	•	•	
E0-1-1	ELECTRICAL SITE PLAN	✓	•	□	•	•	•	•	•	•	
E0-1-2	ELECTRICAL SITE PLAN	✓	•	□	•	•	•	•	•	•	
E0-1-3	ELECTRICAL SITE PLAN	✓	•	□	•	•	•	•	•	•	
E0-1-4	SITE DETAILS	✓	•	□	•	•	•	•	•	•	
E0-1-5	SITE DETAILS	✓	•	□	•	•	•	•	•	•	
E0-1-6	SPORTS LIGHTING DETAILS	✓	•	□	•	•	•	•	•	•	
E0-1-7	TYPICAL EYE DETAILS	✓	•	□	•	•	•	•	•	•	
E1-1-0	ELECTRICAL LOWER LEVEL FLOOR PLAN - OVERALL PLAN	✓	•	□	•	•	•	•	•	•	
E1-1-0C	ELECTRICAL POWER LOWER LEVEL FLOOR PLAN - AREA C	✓	•	□	•	•	•	•	•	•	
E1-1-0D	ELECTRICAL POWER LOWER LEVEL FLOOR PLAN - AREA D	✓	•	□	•	•	•	•	•	•	
E1-1-0M	ELECTRICAL POWER LOWER LEVEL FLOOR PLAN - MEZZANINES	✓	•	□	•	•	•	•	•	•	
E1-1-1	ELECTRICAL FIRST FLOOR PLAN - OVERALL PLAN	✓	•	□	•	•	•	•	•	•	
E1-1-1A	ELECTRICAL POWER FIRST FLOOR PLAN - AREA A	✓	•	□	•	•	•	•	•	•	
E1-1-1B	ELECTRICAL POWER FIRST FLOOR PLAN - AREA B	✓	•	□	•	•	•	•	•	•	
E1-1-1C	ELECTRICAL POWER FIRST FLOOR PLAN - AREA C	✓	•	□	•	•	•	•	•	•	
E1-1-1D	ELECTRICAL POWER FIRST FLOOR PLAN - AREA D	✓	•	□	•	•	•	•	•	•	
E1-1-1MA	ELECTRICAL POWER FIRST FLOOR MEZZANINE PLAN - AREA A	✓	•	□	•	•	•	•	•	•	
E1-1-1MB	ELECTRICAL POWER FIRST FLOOR MEZZANINE PLAN - AREA B	✓	•	□	•	•	•	•	•	•	
E1-1-2	ELECTRICAL SECOND FLOOR PLAN - OVERALL PLAN	✓	•	□	•	•	•	•	•	•	
E1-1-2A	ELECTRICAL POWER SECOND FLOOR PLAN - AREA A	✓	•	□	•	•	•	•	•	•	
E1-1-2B	ELECTRICAL POWER SECOND FLOOR PLAN - AREA B	✓	•	□	•	•	•	•	•	•	
E1-1-2C	ELECTRICAL POWER SECOND FLOOR PLAN - AREA C	✓	•	□	•	•	•	•	•	•	
E1-1-2D	ELECTRICAL POWER SECOND FLOOR PLAN - AREA D	✓	•	□	•	•	•	•	•	•	
E1-1-3	ELECTRICAL THIRD FLOOR PLAN - OVERALL PLAN	✓	•	□	•	•	•	•	•	•	
E1-1-3A	ELECTRICAL POWER THIRD FLOOR PLAN - AREA A	✓	•	□	•	•	•	•	•	•	
E1-1-3B	ELECTRICAL POWER THIRD FLOOR PLAN - AREA B	✓	•	□	•	•	•	•	•	•	
E1-1-3C	ELECTRICAL POWER THIRD FLOOR PLAN - AREA C	✓	•	□	•	•	•	•	•	•	
E1-1-3D	ELECTRICAL POWER THIRD FLOOR PLAN - AREA D	✓	•	□	•	•	•	•	•	•	
E1-1-4	ELECTRICAL FOURTH FLOOR PLAN - OVERALL PLAN	✓	•	□	•	•	•	•	•	•	
E1-1-4A	ELECTRICAL POWER FOURTH FLOOR PLAN - AREA A	✓	•	□	•	•	•	•	•	•	
E1-1-4B	ELECTRICAL POWER FOURTH FLOOR PLAN - AREA B	✓	•	□	•	•	•	•	•	•	
E1-1-5	ELECTRICAL POWER ROOF PLAN - OVERALL PLAN	✓	•	□	•	•	•	•	•	•	
E1-1-5A	ELECTRICAL POWER ROOF PLAN - AREA A	✓	•	□	•	•	•	•	•	•	
E1-1-5B	ELECTRICAL POWER ROOF PLAN - AREA B	✓	•	□	•	•	•	•	•	•	
E1-1-6	ELECTRICAL POWER ROOF PLAN - AREA C	✓	•	□	•	•	•	•	•	•	
E1-1-6D	ELECTRICAL POWER ROOF PLAN - AREA D	✓	•	□	•	•	•	•	•	•	
E1-1-6B	ELECTRICAL POWER CONCESSIONS BUILDING PLAN	✓	•	□	•	•	•	•	•	•	
E1-1-1B	ELECTRICAL POWER LOCKER BUILDING PLAN (ADD ALT NO. 1)	✓	•	□	•	•	•	•	•	•	
E1-1-1MB	ELECTRICAL POWER MAINTENANCE BUILDING PLAN (ADD ALT NO. 3)	✓	•	□	•	•	•	•	•	•	
E1-2-1	ELECTRICAL ROOMS POWER PART PLANS	✓	•	□	•	•	•	•	•	•	
E1-2-2	DF ROOMS POWER PART PLANS	✓	•	□	•	•	•	•	•	•	
E1-2-3	ELECTRICAL POWER BOOTHS ENLARGED PLANS	✓	•	□	•	•	•	•	•	•	
E2-1-0C	ELECTRICAL LIGHTING LOWER LEVEL REFLECTED CLG PLAN - AREA C	✓	•	□	•	•	•	•	•	•	
E2-1-0D	ELECTRICAL LIGHTING LOWER LEVEL REFLECTED CLG PLAN - AREA D	✓	•	□	•	•	•	•	•	•	
E2-1-0M	ELECTRICAL LIGHTING LOWER LEVEL REFLECTED CLG PLAN - MEZZ	✓	•	□	•	•	•	•	•	•	
E2-1-1A	ELECTRICAL LIGHTING FIRST FLOOR REFLECTED CLG PLAN - AREA A	✓	•	□	•	•	•	•	•	•	
E2-1-1B	ELECTRICAL LIGHTING FIRST FLOOR REFLECTED CLG PLAN - AREA B	✓	•	□	•	•	•	•	•	•	
E2-1-1C	ELECTRICAL LIGHTING FIRST FLOOR REFLECTED CLG PLAN - AREA C	✓	•	□	•	•	•	•	•	•	
E2-1-1D	ELECTRICAL LIGHTING FIRST FLOOR REFLECTED CLG PLAN - AREA D	✓	•	□	•	•	•	•	•	•	
E2-1-1M	ELECTRICAL LIGHTING FIRST FLOOR REFLECTED CLG PLAN - MEZZ	✓	•	□	•	•	•	•	•	•	
E2-1-2A	ELECTRICAL LIGHTING SECOND FLOOR REFLECTED CLG PLAN - AREA A	✓	•	□	•	•	•	•	•	•	
E2-1-2B	ELECTRICAL LIGHTING SECOND FLOOR REFLECTED CLG PLAN - AREA B	✓	•	□	•	•	•	•	•	•	
E2-1-2C	ELECTRICAL LIGHTING SECOND FLOOR REFLECTED CLG PLAN - AREA C	✓	•	□	•	•	•	•	•	•	
E2-1-2D	ELECTRICAL LIGHTING SECOND FLOOR REFLECTED CLG PLAN - AREA D	✓	•	□	•	•	•	•	•	•	
E2-1-3A	ELECTRICAL LIGHTING THIRD FLOOR REFLECTED CLG PLAN - AREA A	✓	•	□	•	•	•	•	•	•	
E2-1-3B	ELECTRICAL LIGHTING THIRD FLOOR REFLECTED CLG PLAN - AREA B	✓	•	□	•	•	•	•	•	•	
E2-1-3C	ELECTRICAL LIGHTING THIRD FLOOR REFLECTED CLG PLAN - AREA C	✓	•	□	•	•	•	•	•	•	
E2-1-3D	ELECTRICAL LIGHTING THIRD FLOOR REFLECTED CLG PLAN - AREA D	✓	•	□	•	•	•	•	•	•	
E2-1-4A	ELECTRICAL LIGHTING FOURTH FLOOR REFLECTED CLG PLAN - AREA A	✓	•	□	•	•	•	•	•	•	
E2-1-4B	ELECTRICAL LIGHTING FOURTH FLOOR REFLECTED CLG PLAN - AREA B	✓	•	□	•	•	•	•	•	•	
E2-1-4C	ELECTRICAL LIGHTING FOURTH FLOOR REFLECTED CLG PLAN - AREA C	✓	•	□	•	•	•	•	•	•	
E2-1-4D	ELECTRICAL LIGHTING FOURTH FLOOR REFLECTED CLG PLAN - AREA D	✓	•	□	•	•	•	•	•	•	
E2-1-6B	ELECTRICAL LIGHTING CONCESSIONS BUILDING PLAN	✓	•	□	•	•	•	•	•	•	
E2-1-1B	ELECTRICAL LIGHTING LOCKER BUILDING PLAN	✓	•	□	•	•	•	•	•	•	
E2-1-1MB	ELECTRICAL LIGHTING MAINTENANCE BUILDING PLAN	✓	•	□	•	•	•	•	•	•	
E2-2-1	LIGHTNING PROTECTION PLAN - ROOFTOP LAYOUT	✓	•	□	•	•	•	•	•	•	
E2-2-2	LIGHTNING PROTECTION PLAN - UNDERSLAB LAYOUT	✓	•	□	•	•	•	•	•	•	
E3-0-0	ELECTRICAL SINGLE LINE DIAGRAM SHEET #1	✓	•	□	•	•	•	•	•	•	
E3-0-1	ELECTRICAL SINGLE LINE DIAGRAM SHEET #2	✓	•	□	•	•	•	•	•	•	
E3-0-2	ELECTRICAL SINGLE LINE DIAGRAM SHEET #3	✓	•	□	•	•	•	•	•	•	
E3-0-3	GROUNDING RISER DIAGRAM	✓	•	□	•	•	•	•	•	•	
E3-0-4	ELECTRICAL SINGLE LINE DIAGRAM - PV SYSTEM	✓	•	□	•	•	•	•	•	•	
E4-0-0	ELECTRICAL POWER SCHEDULES	✓	•	□	•	•	•	•	•	•	
E4-0-1	ELECTRICAL SCHEDULES SHEET 1	✓	•	□	•	•	•	•	•	•	
E4-0-2	ELECTRICAL SCHEDULES SHEET 2	✓	•	□	•	•	•	•	•	•	
E4-0-3	ELECTRICAL SCHEDULES SHEET 3	✓	•	□	•	•	•	•	•	•	
E4-0-4	ELECTRICAL SCHEDULES SHEET 4	✓	•	□	•	•	•	•	•	•	
E4-0-5	ELECTRICAL SCHEDULES SHEET 5	✓	•	□	•	•	•	•	•	•	
E4-0-6	ELECTRICAL SCHEDULES SHEET 6	✓	•	□	•	•	•	•	•	•	
E4-0-7	ELECTRICAL SCHEDULES SHEET 7	✓	•	□	•	•	•	•	•	•	
E4-0-8	ELECTRICAL SCHEDULES SHEET 8	✓	•	□	•	•	•	•	•	•	
E4-0-9	ELECTRICAL SCHEDULES SHEET 9	✓	•	□	•	•	•	•	•	•	
E4-0-10	ELECTRICAL SCHEDULES SHEET 10	✓	•	□	•	•	•	•	•	•	
E4-0-11	ELECTRICAL SCHEDULES SHEET 11	✓	•	□	•	•	•	•	•	•	
E4-0-12	ELECTRICAL SCHEDULES SHEET 12	✓	•	□	•	•	•	•	•	•	
E4-0-13	ELECTRICAL SCHEDULES SHEET 13	✓	•	□	•	•	•	•	•	•	
E4-0-14	ELECTRICAL SCHEDULES SHEET 14	✓	•	□	•	•	•	•	•	•	
E4-0-15	ELECTRICAL DETAILS SHEET 1	✓	•	□	•	•	•	•	•	•	
E4-0-16	ELECTRICAL DETAILS SHEET 2	✓	•	□	•	•	•	•	•	•	
E4-0-17	ELECTRICAL DETAILS SHEET 3	✓	•	□	•	•	•	•	•	•	
E4-0-18	ELECTRICAL DETAILS SHEET 4	✓	•	□	•	•	•	•	•	•	
E4-0-19	ELECTRICAL DETAILS SHEET 5	✓	•	□	•	•	•	•	•	•	
E4-0-20	LIGHTING CONTROL SINGLE LINE DIAGRAM	✓	•	□	•	•	•	•	•	•	
E4-0-21	LUMINAIRE SCHEDULE	✓	•	□	•	•	•	•	•	•	
E4-0-22	LUMINAIRE SCHEDULE	✓	•	□	•	•	•	•	•	•	
E4-0-23	LUMINAIRE SCHEDULE	✓	•	□	•	•	•	•	•	•	
E4-0-24	LUMINAIRE SCHEDULE	✓	•	□	•	•	•	•	•	•	
E4-0-25	LIGHTING FIXTURE DETAILS SHEET 1	✓	•	□	•	•	•	•	•	•	
E4-0-26	LIGHTING FIXTURE DETAILS SHEET 2	✓	•	□	•	•	•	•	•	•	
E4-0-27	LIGHTING FIXTURE DETAILS SHEET 3	✓	•	□	•	•	•	•	•	•	
E4-0-28	LIGHTING FIXTURE DETAILS SHEET 4	✓	•	□	•	•	•	•	•	•	
E4-0-29	LIGHTING FIXTURE DETAILS SHEET 5	✓	•	□	•	•	•	•	•	•	



Drummeys Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
www.draam.com

260 Charles Street
Studio 300
Waltham, MA 02453
Tel: 817.984.1700
www.draam.com

Northeast Metropolitan Regional Vocational High School

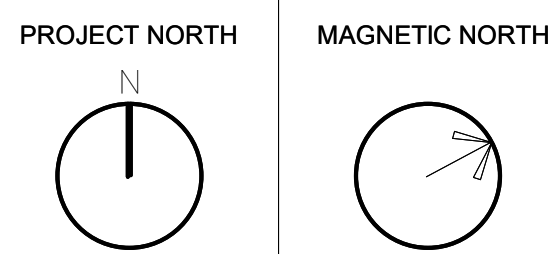
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BID SET

August 28th, 2023



ELECTRICAL TITLE SHEET (NOTES & DWG LIST)

Scale: 1/2" = 1'-0"
Job No.: 60-20-409
Drawn By: ZMB
Date: August 28th, 2023

E0-0-1

ABBREVIATIONS

(B)	EXISTING TO BE BLANKED
(E)	EXISTING DEVICE OR EQUIPMENT
(F)	NEEDING TO BE REMOVED
(ER)	EXISTING TO BE RELOCATED
(F)	FLUID DEVICE OR EQUIPMENT
(G)	NEEDING TO BE REMOVED
(PL)	OUTLET BLANKED WITH PLATE ONLY
(RL)	EXISTING SHOWN TO EQUIPMENT
AF	AMP
AF/AT	AMP AIR CONDITIONING
AF/AT	AMP FRAME / AMP TRIP
AF/AT	AMP FINISHED FLOOR TO/OF
AWJ	AUTOMATIC WELDING JURISDICTION
ACS	AMPS INTERRUPTING CIRCUIT
AL	ALUMINUM
AS	AMP/AMPS
AS/	AMP SWITCH / AMP FUSE
ATF	AMP
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIO VISUAL
AWG	AMERICAN WIRE GAUGE
B	BUILDING
C	CONDUIT
CAB	CABINET
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CL	CENTER LINE
CLT	CURRENT LIMITING FUSE
CLG	CEILING
CONTR	CONTRACTOR
CONV	CONVENIENCE
CT	CURRENT TRANSFORMER
CU	COPPER
D	DRINK
D.O.	DRAWOUT
DC	DC POWER CONTACT
DISC	DISCONNECT
DIST	DISTRIBUTION
DW	DISHWASHER
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ELEC	ELECTRIC
EM	EMERGENCY
EMERG	EMERGENCY NIGHT LIGHT
EMNL	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EPO	EMERGENCY POWER OFF
EQUIP	EQUIPMENT
EWG	ELECTRIC WATER COOLER
EWI	ELECTRIC WATER HEATER
FA	FIRE ALARM
FIR	FIRE RESISTANCE
FIXT	FIXTURE
FL	FLOOR
FP	FIRE PROTECTION
G	GROUND
GEN	GENERATOR
GF	GROUND FAULT
GFI	GROUND FAULT INTERRUPTER
HDA	HAND OFF AUTOMATIC SWITCH
HP	HORSE POWER
HVAC	HEATING VENTILATION AND AIR CONDITIONING
HWH	HOT WATER HEATER
HZ	HERTZ
IG	ISOLATED GROUND
IAC	INSTANTANEOUS INTERRUPTING CURRENT
KM/LMS	THOUSAND CIRCULAR MILLS
KVA	KILOVOLT AMP
KW/LTS	KILOWATTS
L	LIGHTING
LCP	LIGHTING CONTROLLER, OR RELAY PANEL
LSG	LOAD SHORT, INSTANTANEOUS AND GROUND FAULT TRIP FUNCTION
LTG	LIGHTING
MA	MAINTENANCE
MB	MOTORIZED BACKGARD
MC	METAL COLD
MCC	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MFG	MANUFACTURER
MH	MONTHLY HEATING
MI	MINERAL INSULATED
MLO	MAN LIVES ONLY
MDO	MOTORIZED OVERHEAD DOOR
MPS	MOTORIZED PROTECTION
MPS	MOTORIZED PROTECTION SCREEN
MS	MOTORIZED SHADES
MTD	MOUNTED
MW	MIKROWAVE
N	NEUTRAL
N	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NO	NUMBER
NTS	NOT TO SCALE
QCE	QUADRAQUAD FURNISHED EQUIPMENT
P	POLES
PB	PALM BOX
PC	PLUMBING CONTRACTOR
PH	PHASE
PML	PANEL
PPE	PRE-PURCHASED EQUIPMENT
PNE	PNEUMATIC
PT	PRINTER
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
PWR	POWER
QAD	QUADREXCEL RECEPTACLE
REC	RECESSED
RECEPT	RECEPTACLE
REF	REFRIGERATOR
RF	RETURN FAN
RGS	RIGID GALVANIZED STEEL
RM	ROOM
SB	SCORE BOARD
SEC	SECONDARY
SF	SUPPLY FAN
SKRU	SKID RIGID RELEASE UNIT
SPD	SHORT PROTECTION DEVICE
SSCAF	SHORT CIRCUIT COORDINATION ARC FLASH
ST	STEEL TRIP
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TC	TELECOMMUNICATIONS
TDR	TIME DELAY RELAY
TEL	TELEPHONE
TF	TRANSFER
TP	TRANSFER PROOF
TPS	TWISTED PAIR SHIELDED
U	UNDERCOUNTER
UCR	UNDER COUNTER REFRIGERATOR
UF	UNDER FLOOR
UH	UNIT HEATER
UN	UNLESS OTHERWISE NOTED
V	VOLTS
V	VOLT AMPERS
W	WATTS
WP	WATER PROOF
XMR	TRANSFER PROOF

POWER DISTRIBUTION

MOTOR

MANUAL MOTOR SWITCH WITH THERMAL OVERLOAD

NON FUSED DISCONNECT SWITCH (AMPERE RATING SHOWN)

FUSED DISCONNECT SWITCH (AMPERE RATING SHOWN)

ENCLOSED CIRCUIT BREAKER (AMPERE RATING SHOWN)

MAGNETIC MOTOR STARTER

COMBINATION MAGNETIC MOTOR STARTER/DISCONNECT

VARIABLE FREQUENCY DRIVE (COORDINATE FURNISHED EQUIPMENT WITH MECHANICAL SCHEDULES)
(REFER TO SPECIFICATIONS FOR VFD AND STARTER REQUIREMENTS)

JUNCTION BOX OR DIRECT CONNECTION POINT

EMERGENCY POWER OFF STATION

INDICATES CONDUIT UP

INDICATES CONDUIT DOWN

CONCEALED CONDUIT / WIRING IN OR UNDER FLOOR SLAB OR RAISED FLOOR

FLEXIBLE METAL CONDUIT OR CABLE

HOMERUN TO PANEL "LHM," CIRCUITS 1 AND 3.

SURFACE MOUNTED 208 / 120V PANEL BOARD

SURFACE MOUNTED 480 / 277V PANEL BOARD

FLUSH MOUNTED 208 / 120V PANEL BOARD

FLUSH MOUNTED 480 / 277V PANEL BOARD

POWERED MECHANICAL EQUIPMENT TAG FOR ELECTRICAL CONNECTION, SEE
POWERED MECHANICAL EQUIPMENT SCHEDULE AND DISTRIBUTION
SCHEDULES

TRANSFORMER

MANHOLE

ELECTRICAL OUTLETS

CENTERLINE 1/8" AFF EXCEPT AS NOTED. REFER TO SPECIFICATIONS FOR MANUFACTURER AND CATALOG NUMBER. NUMERAL INDICATES BRANCH CIRCUIT DESIGNATION.

OUTLET DESIGNATION

R RECEPTACLE MOUNTED HIGHER THAN STANDARD 1/8" AFF

G RECEPTACLE PROTECTED WITH GROUND FAULT PANEL CIRCUIT BREAKER

I RECEPTACLE, ISOLATED GROUND

SR RECEPTACLE WITH SURGE PROTECTION

T RECEPTACLE - TAMPER RESISTANT

E RECEPTACLE - EXPLOSION PROOF

P RECEPTACLE - PEDESTAL MOUNTED

WP RECEPTACLE - WEATHER PROOF-INSTANT TYPE IN WEATHER PROOF-IN USE ENCLOSURE

U RECEPTACLE - UNDERGROUND

C EILING MOUNTED RECEPTACLE

F FLUSH FLOOR BOX WITH DUPLEX RECEPTACLE

F FLUSH FLOOR BOX WITH QUAD/DUPLEX RECEPTACLE

D STANDARD DUPLEX RECEPTACLE

Q STANDARD QUAD/DUPLEX RECEPTACLE

GFCI DUPLEX RECEPTACLE

GFCI QUAD/DUPLEX RECEPTACLE

DUPLEX RECEPTACLE WITH INTEGRAL USB

DUPLEX RECEPTACLE - ONE OUTLET SWITCHED

DUPLEX RECEPTACLE - ALL OUTLETS SWITCHED

QUAD RECEPTACLE - ONE DUPLEX SWITCHED

QUAD RECEPTACLE - ALL OUTLETS SWITCHED

S SIMPLEX SINGLE RECEPTACLE

U SB ONLY RECEPTACLE

R RECESSED CLOCK RECEPTACLE

H HEAVY DUTY NEMA STRAIGHT BLADE RECEPTACLE. SEE SCHEDULE FOR TYPES

H HEAVY DUTY NEMA TWIST LOCK RECEPTACLE. SEE SCHEDULE FOR TYPES

AV FLAT PANEL DISPLAY WALL BOX WITH POWER, TELCOM AND/OR AV CONNECTIVITY

FLUSH WALL MOUNTED JUNCTION BOX WITH CONDUIT OPENINGS FOR FURNITURE FEED WHPS (POWER AND TELECOM)

S SINGLE POINT OUTLET: 0-DATA OUTLET, 1-TELEPHONE OUTLET, 2-FIRE FIGHTERS CALL STATION, CATV-CABLE TV OUTLET, AV-AV OUTLET

CATV

T

F

AV

0 "1 GANG BACKBOX

1 "1 GANG REDUCER

2 "1 GANG REDUCER

1-1/2 "1 GANG REDUCER

2-1/2 "1 GANG REDUCER

COORDINATION WITH CONTRACTOR REQUIREMENTS

COMBINATION TELEPHONE/DATA OUTLET

CONDUIT BACKBOX REQUIREMENTS (UNLESS OTHERWISE NOTED)

1-1/2" CONDUIT, 2-GANG BACKBOX WITH 1-GANG REDUCER

1-1/2" CONDUIT, 2-GANG BACKBOX WITH 1-GANG REDUCER

O VERHEAD POWER CONNECTION RECEPTACLE AND EXTENSION ARM. HUBBELL HBLHS12300 EXTENSION CORD REEL, 45 FEET 12 GAUGE NEMA 5-20 RECEPTACLE OR APPROVED EQUAL

C EILING MOUNTED OR ABOVE CEILING MOUNTED MONITOR DISPLAY OR PROJECTOR BOX WITH POWER, TELCOM AND/OR AV CONNECTIVITY

F FLUSH FLOOR BOX ASSEMBLY WITH CONDUIT OPENINGS FOR FURNITURE FEEDS (POWER, TELECOM AND AV) COORDINATE COLOR WITH ARCHITECT.

F FLUSH FLOOR BOX WITH QUAD RECEPTACLE. PROVISIONS FOR TELCOM OUTLETS COORDINATE COLOR WITH ARCHITECT.

F FLUSH FLOOR BOX WITH QUAD RECEPTACLE. PROVISIONS FOR VOICE / DATA AND AV OUTLETS COORDINATE COLOR WITH ARCHITECT.

CONDUIT STUB-UPS INTO TABLE LEGS FOR POWER, VOICE/DATA AND AV. DATA AND AV CONDUIT SHALL RUN IN CEILING SPACE OF FLOOR BELOW TO BEHIND WALL MOUNTED DISPLAY. POWER SHALL RUN TO NEAREST WALL AND EXTEND TO JUNCTION BOX OR PANEL BOARD NOTED. PROVIDE 3/4" CONDUIT FOR POWER, 1/2" CONDUIT FOR VOICE/DATA AND 1/2" CONDUIT FOR AV. SIZE OF PIPE SHALL BE BASED ON IRP/ROP MANUFACTURERS INSTRUCTIONS AND UL GUIDELINES. PROVIDE PROTECTIVE BUSHING AT EACH END OF CONDUIT AND INTERIOR REINFORCING MATERIAL AT THE TOP OF CONDUITS ABOVE PENETRATION

F FLUSH FLOOR POKETHRU ASSEMBLY WITH CONDUIT OPENINGS FOR FURNITURE FEEDS (POWER, TELECOM AND AV) COORDINATE COLOR WITH ARCHITECT.

F FLUSH FLOOR POKETHRU ASSEMBLY WITH SURFACE MOUNTED QUAD RECEPTACLE AND PROVISIONS FOR TELCOM CONNECTIVITY (COORDINATE COLOR WITH ARCHITECT).

F FLUSH FLOOR POKETHRU ASSEMBLY WITH RECESSED RECEPTACLE AND PROVISIONS FOR TELCOM CONNECTIVITY (COORDINATE COLOR WITH ARCHITECT).

F LARGE CAPACITY FLUSH FLOOR POKETHRU ASSEMBLY WITH CONDUIT OPENINGS FOR FURNITURE FEEDS (POWER, TELECOM AND AV) COORDINATE COLOR WITH ARCHITECT.

F LARGE CAPACITY FLUSH FLOOR POKETHRU ASSEMBLY WITH QUAD RECEPTACLE AND PROVISIONS FOR TELCOM CONNECTIVITY (COORDINATE COLOR WITH ARCHITECT).

F LARGE CAPACITY FLUSH FLOOR POKETHRU ASSEMBLY WITH QUAD RECEPTACLE AND PROVISIONS FOR VOICE / DATA AND AV CONNECTIVITY (COORDINATE COLOR WITH ARCHITECT).

MULTI-OUTLET ASSEMBLIES

REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND MANUFACTURER EQUALLY. VERIFY MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS.

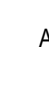
MULTI-OUTLET ASSEMBLY AS SPECIFIED ON ELECTRICAL PLAN DRAWINGS

MULTI-OUTLET ASSEMBLY WITH 20A-120V SINGLE OUTLETS MOUNTED 0" ON CENTER ALTERNATELY WIRED. (EQUIVALENT TO WIREMOLD 2000 SERIES).

MULTI-OUTLET ASSEMBLY WITH DUPLEX RECEPTACES MOUNTED 3" 0" ON CENTER (MINIMUM). (EQUIVALENT TO WIREMOLD 3000 SERIES).

MULTI-OUTLET ASSEMBLY, BARRIERED WITH DUPLEX RECEPTACES MOUNTED 0" 0" ON CENTER (MINIMUM). (EQUIVALENT TO WIREMOLD 4000 SERIES).

MULTI-OUTLET ASSEMBLY, BARRIERED WITH DUPLEX RECEPTACES MOUNTED 0" 0" ON CENTER (MINIMUM). (EQUIVALENT TO WIREMOLD 8000 SERIES).

LUMINAIRES	
	1X4 RECESSED TROFFER
	2X4 RECESSED TROFFER
	2X2 RECESSED TROFFER
	1X4 INDUSTRIAL STRIP LIGHT LUMINAIRE
	RECESSED OR PENDANT DOWN LIGHT
	RECESSED WALL WASH LUMINAIRE
	WALL MOUNTED LUMINAIRE
	PENDANT LUMINAIRE
	TRACK LIGHTING
	ELU REMOTE BATTERY BACK UP
	BATTERY BACK UP ELU
	REMOTE BATTERY BACK UP ELU
	WALL MOUNTED EXIT SIGN ARROW DESIGNATES DIRECTION
	CEILING MOUNTED EXIT SIGN ARROW DESIGNATES DIRECTION
SINGLE LINE DIAGRAM	
	GENERATOR
	TRANSFORMER
	AF - INDICATES AMPERE FRAME AT - INDICATES AMP TRIP DRAW-OUT CIRCUIT BREAKER
	CIRCUIT BREAKER: 1P SINGLE POLE 2P TWO POLE 3P THREE POLE
	CIRCUIT BREAKER WITH SHUNT TRIP
	ENCLOSED CIRCUIT BREAKER
	TRANSFER SWITCH
	DISCONNECT DEVICE FOR DRAWOUT EQUIPMENT NON-FUSED SWITCH
	FUSE
	FUSED SWITCH OR FUSED DISCONNECT
	LIGHTNING ARRESTOR
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	POTENTIAL TRANSFORMER WITH FUSE
	DELTA CONNECTION
	GROUNDED WYE CONNECTION
	OVERLOAD RELAY
	CONTACTOR
	RELAY
	ELECTRICALLY OPERATED
	SOLENOID KEY OPERATED RELEASE UNIT
	POWER FACTOR CORRECTION CAPACITOR
	SURGE PROTECTION DEVICE
	INDICATING LAMP
	CONDUIT FEEDER IDENTIFICATION
	DIGITAL MULTI-PURPOSE METER
	AMMETER
	AMMETER SWITCH
	VOLTMETER
	VOLTMETER SWITCH
	KIRK KEY INTERLOCK
	WATTHOUR METER
	STOP BUTTON MOMENTARY CONTACT
	START BUTTON MOMENTARY CONTACT
	GROUND CONNECTION
	BATTERY
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT

	LIGHTING CONTROLS	
	NXP2 SITE LIGHTING RELAY PANEL (16-2P CIRCUITS) WITH EM BARRIER LUTRON NXP2 PANEL. PROVIDE QUANTITY AS DETERMINED BY THE CIRCUITING INDICATED ON THE SITE LIGHTING DRAWINGS. INCLUDE 20% SPARE BREAKERS IN EACH PANEL. \$D 3 BUTTON WITH RAISE/LOWER AND LIGHT ICON - PICO KEYPAD LUTRON P-LP-3BRL-GWH \$LV 4 BUTTON SCENE WITH LIGHT ICON - PICO KEYPAD LUTRON P-LP-4B-GWH \$L(V)ON(OFF) 2 BUTTON WITH LIGHT ICON - PICO KEYPAD LUTRON P-LP-2B-GWH (VSD) RADIO POWER SWIR WIRELESS CEILING OCCUPANCY / VACANCY LUTRON LRF-COR2B-P-WH (HUB) LUTRON VIVE HUB (3-AXIS 2-FM) \$VS \$OG OCCUPANCY / VACANCY SENSOR SWITCH LUTRON MS-A102 (1-CIRCUIT) LUTRON MS-A302 (2-CIRCUIT) (DS) DAY/LIGHT DIMMING SENSOR LUTRON LRF-S-DORB-WH \$OSD \$VSD LUTRON LIVE ENABLED LINE VOL TAGE DIMMER/SENSOR MRP75-8S2010-WH	
SECURITY/PAGING		
(RD)	CARD READER SHALL BE FAIL SAFE OPEN IN EMERGENCY	
(EM)	DRESS BUTTON	
(DM)	DOOR CONTACT	
(ML)	DOUBLE MAGNETIC LOCK	
(RM)	DOOR RELEASE (BUTTON (REMOTE))	
(ET)	EXIT BUTTON	
(EH)	ELECTRIC HANDSET	
(EL)	ELECTRIC LOCKSET	
(RO)	OVERHEAD DOOR CONTACT	
(MD)	MOTION DETECTOR	
(RE)	REQUEST TO EXIT	
(SL)	SOUNDER (DOOR ALARM)	
(SM)	SINGLE MAGNETIC LOCK	
(SC)	SECURITY CAMERA	
(SP)	SPEAKER	
(SV)	SPEAKER VOLUME CONTROL	

POWER AND LIGHTING CIRCUIT DESIGNATIONS	
TRPA#2	TYPICAL CIRCUIT DESIGNATION ADJACENT TO DEVICE NOTING PANELBOARD ID AND CIRCUIT NO.
TRPA#2	TYPICAL CIRCUIT DESIGNATION NOTING PANELBOARD ID AND CIRCUIT NUMBER FOR ALL DEVICES IN A ROOM OR SPACE
TRPA#	TYPICAL CIRCUIT DESIGNATION NOTING PANELBOARD ID AND CIRCUIT NUMBER FOR ALL DEVICES IN A ROOM OR SPACE. CIRCUIT NUMBER IS SHOWN ONLY WITH DEVICE
LIGHTING ID AND CIRCUIT DESIGNATIONS	
 L3 2/01 1/18 EM	LUMINAIRE TYPE SWITCH CONTROL OR LIGHTING CONTROL ZONE BRANCH CIRCUIT DESIGNATION EMERGENCY FIXTURE DESIGNATION DENOTED BY "EM" AND/OR BY FILLED DOT INSIDE FIXTURE
 L3 1/18 A	LUMINAIRE TYPE SWITCH CONTROL OR LIGHTING CONTROL ZONE
MOUNTING HEIGHTS - ELECTRICAL EQUIPMENT	
8" BELOW FINISH CEILING CENTERED ABOVE DOOR OR WINDOW OPENINGS	- WALL MOUNTED BELLS AND FIRE ALARM SOUNDING DEVICE OR AS SHOWN ON ARCHITECTURAL DETAILS - TV MONITOR OUTLET AND SERVICE RECEPTACLE FOR SHELVED MOUNTED TV
6'-8"	FIRE ALARM STROBES OR COMBINATION DEVICES WITH STROBES SHALL BE MOUNTED SO THAT THE STROBE LENS IS NOT LESS THAN 8" AND NOT GREATER THAN 8" ABOVE FINISHED FLOOR. IF CEILING DOES NOT PERMIT A MOUNTING HEIGHT OF AT LEAST 8" ABOVE FINISHED FLOOR, THE LENS OF THE DEVICE SHALL BE 6" OFF THE FINISHED CEILING
6'-5"	TOP OF FLUSH AND SURFACE MOUNTED ELECTRICAL LIGHTING OR POWER PANEL BOARDS AND TELEPHONE CABINETS
6'-6"	TOP OF BACK MOUNTED WALL EXIT FIXTURES (NOT MOUNTED ABOVE DOORS)
6'-0"	TOP OF HIGHEST ELECTRICAL SAFETY DISCONNECT SWITCHES, MAGNETIC STARTERS, COMBINATION STARTERS, VFDs AND CONTACTORS
4'-6"	TOP OF WALL MOUNTED TELEPHONE AND PAX STATIONS, WALL MOUNTED INTERCOM, NURSE CALL STATIONS AND CLOCK CONTROL PANELS (3" IF AT ADA LOCATIONS)
4'-0" TOP OF BOX	- WALL MOUNTED ELECTRICAL DEVICES SUCH AS: LIGHTING SWITCHES, MANUAL MOTOR STARTERS, THERMOSTATS, AND FIRE ALARM PULL STATIONS. - GR OUTLET IN TOILET ROOMS - LOAD CENTERS IN DWELLING UNITS - INCLUDE ALL FLOOR EQUIPMENT IN LAIS AND EQUIPMENT ROOMS.
1'-6"	- ELECTRICAL RECEPTACLES INCLUDING THOSE USED WITH MECHANICAL SPACES AND ELEVATOR ROOMS - TELEPHONE, DATA AND COMMUNICATION OUTLETS - CATV AND JUNCTION BOXES
MOUNTING HEIGHT NOTES	
1. MOUNTING HEIGHTS SHALL BE 1/2" TO CENTER OF OUTLETS UNLESS OTHERWISE NOTED. IF ELECTRICAL OUTLET HEIGHT OR ANGLE VARIES, COORDINATE WITH GC FOR INSTALLATION. IF IN MASONRY CONSTRUCTION, THE ABOVE HEIGHTS SHALL BE USED FOR REFERENCE TO NEAREST BLOCK OR BRICK COURSE.	
2. MOUNTING HEIGHTS SHALL BE ADHERED TO UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE ON THE ARCHITECTURE DRAWING OR SPECIFICATIONS.	
3. **/ BESIDE DEVICE INDICATES THAT DEVICE IS MOUNTED ABOVE COUNTER OR CASEWORK. COORDINATE THE MOUNTING HEIGHT WITH ARCHITECTURAL DETAILS AND CASEWORK CONTRACTOR.	
4. ALL DEVICES SHOWN ON DRAWINGS ARE DIAGNOSTIC/ LOCATION AND SHOWN FOR GENERAL WIRING PURPOSES ONLY. ALL DEVICES INDICATED TO BE INSTALLED IN THE SAME LOCATIONS WITH DIFFERENT ELEVATIONS SHALL BE ALIGNED VERTICALLY AND HORIZONTALLY. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING DETAILS OF SWITCHES, OUTLETS, FIRE ALARM NOTIFICATION DEVICES, FIRE ALARM PULL STATIONS, CLOCKS, CARD READERS AND OTHER SECURITY DEVICES, THERMOSTATS, SENSORS, ETC.	
5. COORDINATE ALL LOCATIONS AND MOUNTING HEIGHTS WITH AHJ, ADA REQUIREMENTS AND OTHER TRADES.	

NEMA RECEPTACLE SCHEDULE - TWIST-LOCK				
TYPE	NEMA ID	NEMA CONFIGURATION	VOLTAGE	CB
1	L5-20R	20A, 125V, 1-POLE, 3-WIRE GROUNDING	125V	20A, 1-POLE
2	L5-30R	30A, 125V, 1-POLE, 3-WIRE GROUNDING	125V	30A, 1-POLE
3	L5-50R	50A, 125V, 2-POLE, 3-WIRE GROUNDING	125V	50A, 1-POLE
4	L6-20R	20A, 250V, 2-POLE, 3-WIRE GROUNDING	250V	20A, 2-POLE
5	L6-30R	30A, 208V, 2-POLE, 3-WIRE GROUNDING	208V	30A, 2-POLE

TYPE	NEMA ID	NEMA CONFIGURATION	VOLTAGE	CB
1	5-20R	20A, 120V, 2-POLE, 3-WIRE GROUNDING	125V	20A, 1-POLE
3	5-50R	50A, 125V, 2-POLE, 3-WIRE GROUNDING	125V	50A, 1-POLE
4	6-20R	20A, 250V, 2-POLE, 3-WIRE GROUNDING	250V	20A, 2-POLE
5	6-30R	30A, 250V, 2-POLE, 3-WIRE GROUNDING	250V	30A, 2-POLE

DRA Drumme 225 Oakland Road Studio 205 South Windsor, CT 06074 260 Charles Street Studio 300 Waltham, MA 02453	
Planning Architecture Interior Design Tel: 617-564-1700 www.dra.com	
Northeast Metropolitan Regional Vocational High School Wakefield, MA 01880	
BALA ENGINEERS 300 Main Street, Suite 200 Waltham, MA 02453 Tel: 617-564-1700 www.bala.com Architectural, Mechanical, Electrical, Plumbing, Fire Protection, Energy, and Construction Management Services	
BID SET August 28th, 2023	
PROJECT NORTH 	MAGNETIC NORTH 
ELECTRICAL LEGENDS AND ABBREVIATIONS	
Scale: Job No.: 60-20-409 Drawn By: ZMB Date: August 28th, 2023	E0-0-2

GENERAL NOTES:

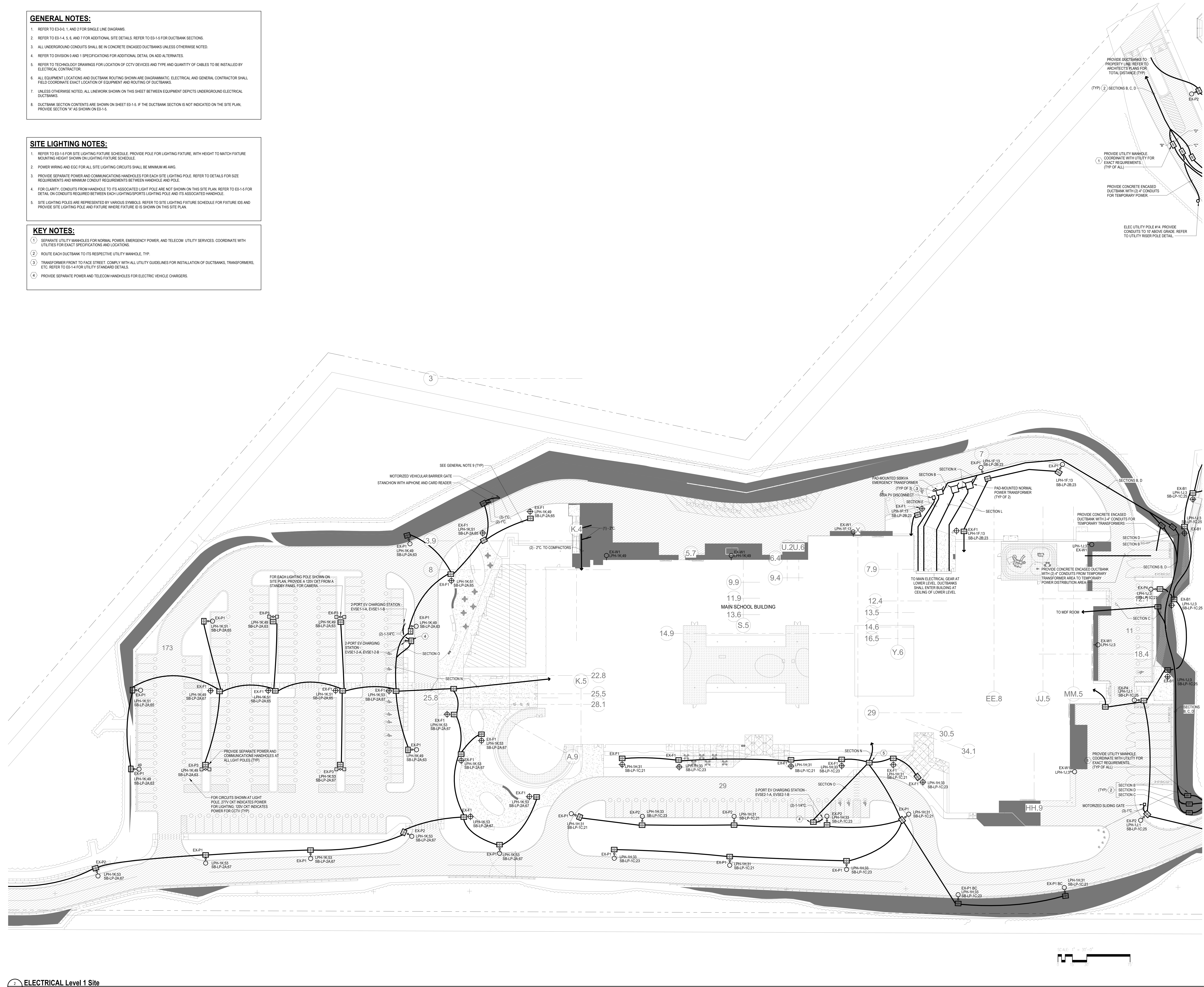
1. REFER TO E3-0.0, 1, AND 2 FOR SINGLE LINE DIAGRAM.
2. REFER TO E3-1.4, 5, 6, AND 7 FOR ADDITIONAL SITE DETAILS. REFER TO E0-1.5 FOR DUCTBANK SECTIONS.
3. ALL UNDERGROUND CONDUITS SHALL BE IN CONCRETE ENCASED DUCTBANKS UNLESS OTHERWISE NOTED.
4. REFER TO DIVISION 0 AND 1 SPECIFICATIONS FOR ADDITIONAL DETAIL, ON ADD ALTERNATES.
5. REFER TO TECHNOLOGY DRAWINGS FOR LOCATION OF CCTV DEVICES AND TYPE AND QUANTITY OF CABLES TO BE INSTALLED BY ELECTRICAL CONTRACTOR.
6. ALL EQUIPMENT LOCATIONS AND DUCTBANK ROUTING SHOWN ARE DIAGRAMMATIC. ELECTRICAL AND GENERAL CONTRACTOR SHALL FIELD COORDINATE EXACT LOCATION OF EQUIPMENT AND ROUTING OF DUCTBANKS.
7. UNLESS OTHERWISE NOTED, ALL LINework SHOWN ON THIS SHEET BETWEEN EQUIPMENT DEPICTS UNDERGROUND ELECTRICAL DUCTBANKS.
8. DUCTBANK SECTION CONTENTS ARE SHOWN ON SHEET E0-1.5. IF THE DUCTBANK SECTION IS NOT INDICATED ON THE SITE PLAN, PROVIDE SECTION "A" AS SHOWN ON E0-1.5.

SITE LIGHTING NOTES:

1. REFER TO E0-1.5 FOR SITE LIGHTING FIXTURE SCHEDULE. PROVIDE POLE FOR LIGHTING FIXTURE, WITH HEIGHT TO MATCH FIXTURE MOUNTING HEIGHT SHOWN ON LIGHTING FIXTURE SCHEDULE.
2. POWER WIRING AND EGC FOR ALL SITE LIGHTING CIRCUITS SHALL BE MINIMUM #6 AWG.
3. PROVIDE SEPARATE POWER AND COMMUNICATIONS HANDHOLES FOR EACH SITE LIGHTING POLE. REFER TO DETAILS FOR SIZE REQUIREMENTS AND MINIMUM CONDUIT REQUIREMENTS BETWEEN HANDHOLE AND POLE.
4. FOR CLARITY, CONDUITS FROM HANDHOLE TO ITS ASSOCIATED LIGHT POLE ARE NOT SHOWN ON THIS SITE PLAN. REFER TO E0-1.5 FOR DETAIL ON CONDUITS REQUIRED BETWEEN EACH LIGHTING/SPORTS LIGHTING POLE AND ITS ASSOCIATED HANDHOLE.
5. SITE LIGHTING POLES ARE REPRESENTED BY VARIOUS SYMBOLS. REFER TO SITE LIGHTING FIXTURE SCHEDULE FOR FIXTURE IDS AND PROVIDE SITE LIGHTING POLE AND FIXTURE WHERE FIXTURE ID IS SHOWN ON THIS SITE PLAN.

KEY NOTES:

1. SEPARATE UTILITY MANHOLES FOR NORMAL, POWER, EMERGENCY POWER, AND TELECOM UTILITY SERVICES. COORDINATE WITH UTILITIES FOR EXACT SPECIFICATIONS AND LOCATIONS.
2. ROUTE EACH DUCTBANK TO ITS RESPECTIVE UTILITY MANHOLE, TYP.
3. TRANSFORMER FRONT TO FACE STREET. COMPLY WITH ALL UTILITY GUIDELINES FOR INSTALLATION OF DUCTBANKS, TRANSFORMERS, ETC. REFER TO E0-1.4 FOR UTILITY STANDARD DETAILS.
4. PROVIDE SEPARATE POWER AND TELECOM HANDHOLES FOR ELECTRIC VEHICLE CHARGERS.



DRA

Drummay Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
www.dra.com

260 Charles Street
Studio 300
Waltham, MA 02453
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ENGINEERS

BALA CONSULTING ENGINEERS, INC.
300 NORTH MAIN STREET
SUITE 200
WILMINGTON, MA 01897
TEL: 978.659.1100
WWW.BALA-ENGINEERS.COM

BID SET
August 28th, 2023

PROJECT NORTH
MAGNETIC NORTH

ELECTRICAL
SITE PLAN

Scale: 1" = 30'-0"
Job No.: 60-20-409
Drawn By: ZMB
Date: August 28th, 2023

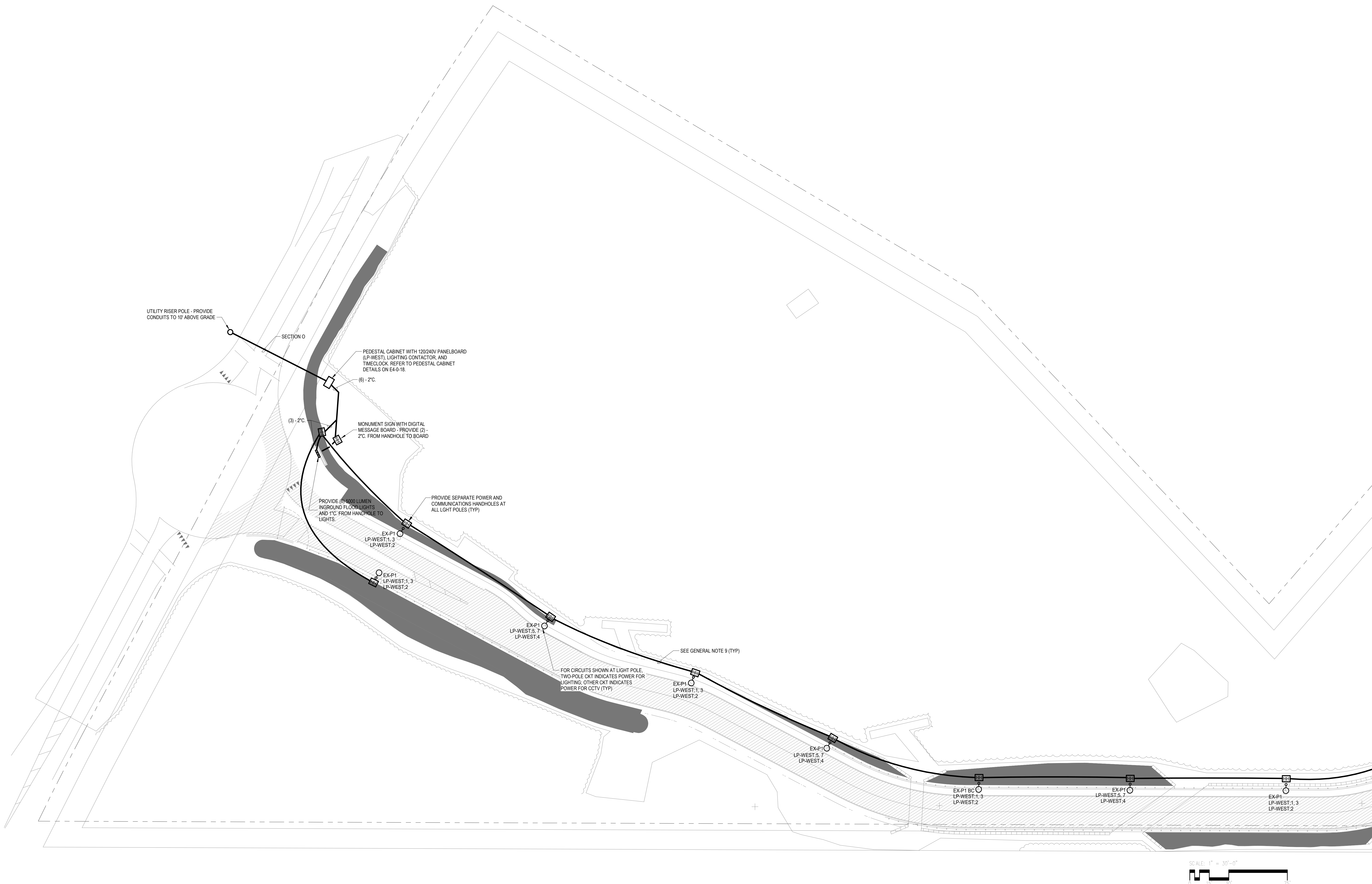
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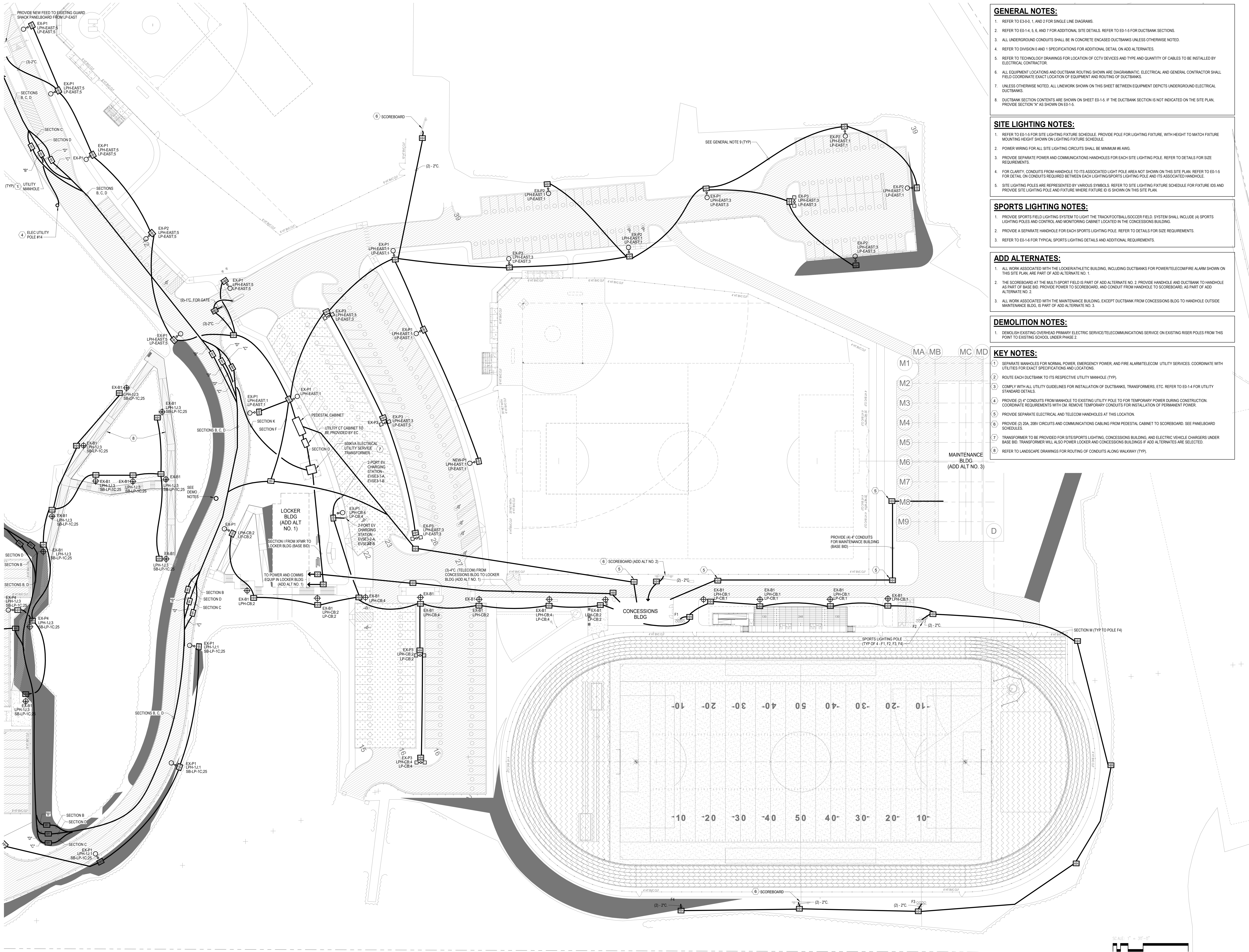
GENERAL NOTES:

1. REFER TO E3-0-0, 1, AND 2 FOR SINGLE LINE DIAGRAM.
2. REFER TO E0-1-4, 5, 6, AND 7 FOR ADDITIONAL SITE DETAILS. REFER TO E0-1-5 FOR DUCTBANK SECTIONS.
3. ALL UNDERGROUND CONDUITS SHALL BE IN CONCRETE ENCASED DUCTBANKS UNLESS OTHERWISE NOTED.
4. REFER TO DIVISION 0 AND 1 SPECIFICATIONS FOR ADDITIONAL DETAIL ON ADD ALTERNATES.
5. REFER TO TECHNOLOGY DRAWINGS FOR LOCATION OF CCTV DEVICES AND TYPE AND QUANTITY OF CABLES TO BE INSTALLED BY ELECTRICAL CONTRACTOR.
6. ALL EQUIPMENT LOCATIONS AND DUCTBANK ROUTING SHOWN ARE DIAGRAMMATIC. ELECTRICAL AND GENERAL CONTRACTOR SHALL FIELD COORDINATE EXACT LOCATION OF EQUIPMENT AND ROUTING OF DUCTBANKS.
7. UNLESS OTHERWISE NOTED, ALL LINEWORK SHOWN ON THIS SHEET BETWEEN EQUIPMENT DEPICTS UNDERGROUND ELECTRICAL DUCTBANKS.
8. DUCTBANK SECTION CONTENTS ARE SHOWN ON SHEET E0-1-5. IF THE DUCTBANK SECTION IS NOT INDICATED ON THE SITE PLAN, PROVIDE SECTION 'A' AS SHOWN ON E0-1-5.

SITE LIGHTING NOTES:

1. REFER TO E0-1-5 FOR SITE LIGHTING FIXTURE SCHEDULE. PROVIDE POLE FOR LIGHTING FIXTURE, WITH HEIGHT TO MATCH FIXTURE MOUNTING HEIGHT SHOWN ON LIGHTING FIXTURE SCHEDULE.
2. POWER WIRING FOR ALL SITE LIGHTING CIRCUITS SHALL BE MINIMUM #6 AWG.
3. PROVIDE SEPARATE POWER AND COMMUNICATIONS HANDHOLES FOR EACH SITE LIGHTING POLE. REFER TO DETAIL FOR SIZE REQUIREMENTS.
4. FOR CLARITY, CONDUITS FROM HANDHOLE TO ITS ASSOCIATED LIGHT POLE AREA NOT SHOWN ON THIS SITE PLAN. REFER TO E0-1-5 FOR DETAIL ON CONDUITS REQUIRED BETWEEN EACH LIGHTING SUPPORTS LIGHTING POLE AND ITS ASSOCIATED HANDHOLE.
5. SITE LIGHTING POLES ARE REPRESENTED BY VARIOUS SYMBOLS. REFER TO SITE LIGHTING FIXTURE SCHEDULE FOR FIXTURE IDS AND PROVIDE SITE LIGHTING POLE AND FIXTURE WHERE FIXTURE ID IS SHOWN ON THIS SITE PLAN.





- GENERAL NOTES:**
1. REFER TO E3-0.0, 1, AND 2 FOR SINGLE LINE DIAGRAMS.
 2. REFER TO E6-1.4, 5, 6, AND 7 FOR ADDITIONAL SITE DETAILS. REFER TO E6-1.5 FOR DUCTBANK SECTIONS.
 3. ALL UNDERGROUND CONDUITS SHALL BE IN CONCRETE ENCASED DUCTBANKS UNLESS OTHERWISE NOTED.
 4. REFER TO DIVISION 0 AND 1 SPECIFICATIONS FOR ADDITIONAL DETAIL ON ADD ALTERNATES.
 5. REFER TO TECHNOLOGY DRAWINGS FOR LOCATION OF CCTV DEVICES AND TYPE AND QUANTITY OF CABLES TO BE INSTALLED BY ELECTRICAL CONTRACTOR.
 6. ALL EQUIPMENT LOCATIONS AND DUCTBANK ROUTING SHOWN ARE DIAGRAMMATIC. ELECTRICAL AND GENERAL CONTRACTOR SHALL FIELD COORDINATE EXACT LOCATION OF EQUIPMENT AND ROUTING OF DUCTBANKS.
 7. UNLESS OTHERWISE NOTED, ALL LINEWORK SHOWN ON THIS SHEET BETWEEN EQUIPMENT DEPICTS UNDERGROUND ELECTRICAL DUCTBANKS.
 8. DUCTBANK SECTION CONTENTS ARE SHOWN ON SHEET E6-1.5. IF THE DUCTBANK SECTION IS NOT INDICATED ON THE SITE PLAN, PROVIDE SECTION "A" AS SHOWN ON E6-1.5.

- SITE LIGHTING NOTES:**
1. REFER TO E3-0.0, 1, AND 2 FOR SITE LIGHTING FIXTURE SCHEDULE. PROVIDE POLE FOR LIGHTING FIXTURE, WITH HEIGHT TO MATCH FIXTURE MOUNTING HEIGHT SHOWN ON LIGHTING FIXTURE SCHEDULE.
 2. POWER WIRING FOR ALL SITE LIGHTING CIRCUITS SHALL BE MINIMUM #6 AWG.
 3. PROVIDE SEPARATE POWER AND COMMUNICATIONS HANDHOLES FOR EACH SITE LIGHTING POLE. REFER TO DETAILS FOR SIZE REQUIREMENTS.
 4. FOR CLARITY, CONDUITS FROM HANDHOLE TO ITS ASSOCIATED LIGHT POLE AREA NOT SHOWN ON THIS SITE PLAN. REFER TO E6-1.5 FOR DETAIL ON CONDUITS REQUIRED BETWEEN EACH LIGHTING/SPORTS LIGHTING POLE AND ITS ASSOCIATED HANDHOLE.
 5. SITE LIGHTING POLES ARE REPRESENTED BY VARIOUS SYMBOLS. REFER TO SITE LIGHTING FIXTURE SCHEDULE FOR FIXTURE IDS AND PROVIDE SITE LIGHTING POLE AND FIXTURE WHERE FIXTURE ID IS SHOWN ON THIS SITE PLAN.

- SPORTS LIGHTING NOTES:**
1. PROVIDE SPORTS FIELD LIGHTING SYSTEM TO LIGHT THE TRACK/FOOTBALL/SOCCER FIELD. SYSTEM SHALL INCLUDE (4) SPORTS LIGHTING POLES AND CONTROL AND MONITORING CABINET LOCATED IN THE CONCESSIONS BUILDING.
 2. PROVIDE A SEPARATE HANDHOLE FOR EACH SPORTS LIGHTING POLE. REFER TO DETAILS FOR SIZE REQUIREMENTS.
 3. REFER TO E6-1.6 FOR TYPICAL SPORTS LIGHTING DETAILS AND ADDITIONAL REQUIREMENTS.

- ADD ALTERNATES:**
1. ALL WORK ASSOCIATED WITH THE LOCKER/ATHLETIC BUILDING, INCLUDING DUCTBANKS FOR POWER/TELECOM/FIRE ALARM SHOWN ON THIS SITE PLAN, ARE PART OF ADD ALTERNATE NO. 1.
 2. THE SCOREBOARD AT THE MULTI-SPORT FIELD IS PART OF ADD ALTERNATE NO. 2. PROVIDE HANDHOLE AND DUCTBANK TO HANDHOLE AS PART OF BASE BID. PROVIDE POWER TO SCOREBOARD, AND CONDUIT FROM HANDHOLE TO SCOREBOARD, AS PART OF ADD ALTERNATE NO. 2.
 3. ALL WORK ASSOCIATED WITH THE MAINTENANCE BUILDING, EXCEPT DUCTBANK FROM CONCESSIONS BLDG TO HANDHOLE OUTSIDE MAINTENANCE BLDG, IS PART OF ADD ALTERNATE NO. 3.

- DEMOLITION NOTES:**
1. DEMOLISH EXISTING OVERHEAD PRIMARY ELECTRIC SERVICE/TELECOMMUNICATIONS SERVICE ON EXISTING RISER POLES FROM THIS POINT TO EXISTING SCHOOL, UNDER PHASE 2.

- KEY NOTES:**
- (1) SEPARATE MANHOLES FOR NORMAL, POWER, EMERGENCY POWER, AND FIRE ALARM/TELECOM UTILITY SERVICES. COORDINATE WITH UTILITIES FOR EXACT SPECIFICATIONS AND LOCATIONS.
 - (2) ROUTE EACH DUCTBANK TO ITS RESPECTIVE UTILITY MANHOLE (TYP).
 - (3) COMPLY WITH ALL UTILITY GUIDELINES FOR INSTALLATION OF DUCTBANKS, TRANSFORMERS, ETC. REFER TO E6-1.4 FOR UTILITY STANDARD DETAILS.
 - (4) PROVIDE (2) 4" CONDUITS FROM MANHOLE TO EXISTING UTILITY POLE TO FOR TEMPORARY POWER DURING CONSTRUCTION. COORDINATE REQUIREMENTS WITH CM. REMOVE TEMPORARY CONDUITS FOR INSTALLATION OF PERMANENT POWER.
 - (5) PROVIDE SEPARATE ELECTRICAL AND TELECOM HANDHOLES AT THIS LOCATION.
 - (6) PROVIDE (2) 20A, 208V CIRCUITS AND COMMUNICATIONS CABLEING FROM PEDESTAL CABINET TO SCOREBOARD. SEE PANELBOARD SCHEDULES.
 - (7) TRANSFORMER TO BE PROVIDED FOR SITE/SPORTS LIGHTING, CONCESSIONS BUILDING, AND ELECTRIC VEHICLE CHARGERS UNDER BASE BID. TRANSFORMER WILL ALSO POWER LOCKER AND CONCESSIONS BUILDINGS IF ADD ALTERNATES ARE SELECTED.
 - (8) REFER TO LANDSCAPE DRAWINGS FOR ROUTING OF CONDUITS ALONG WALKWAY (TYP).

DRA

Drummett Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
www.dra.com

260 Charles Street
Studio 300
Waltham, MA 02453
Tel: 617.984.1700
www.dra.com

Northeast
Metropolitan
Regional
Vocational High
School

Wakefield, MA 01880

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ENGINEERS

BALA CONSULTING ENGINEERS, INC.
200 WILSON AVENUE, SUITE 200
WILSON, MA 01890
TEL: 978.261.1111 FAX: 978.261.1112
WWW.BALA-ENGINEERS.COM

BID SET

August 28th, 2023

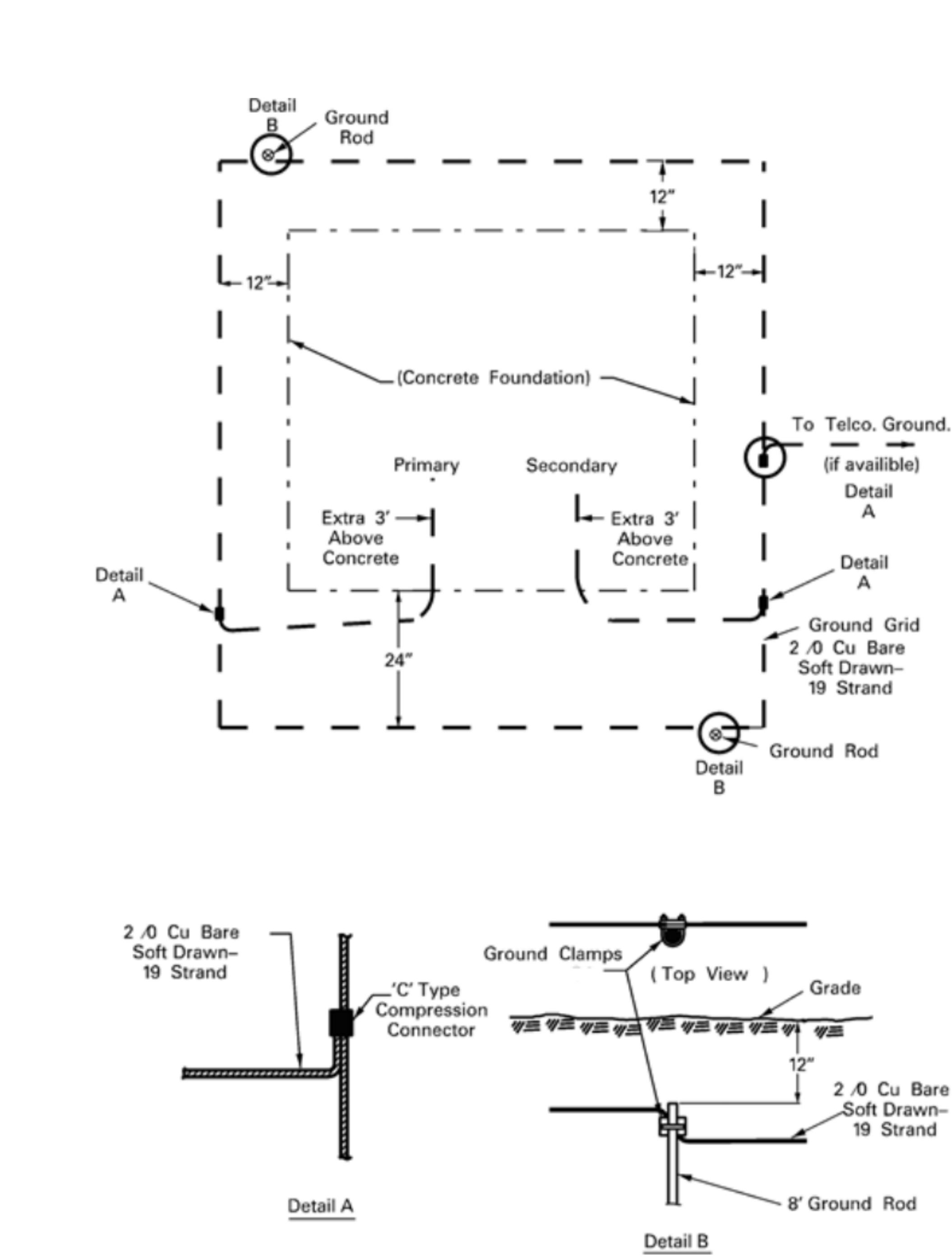
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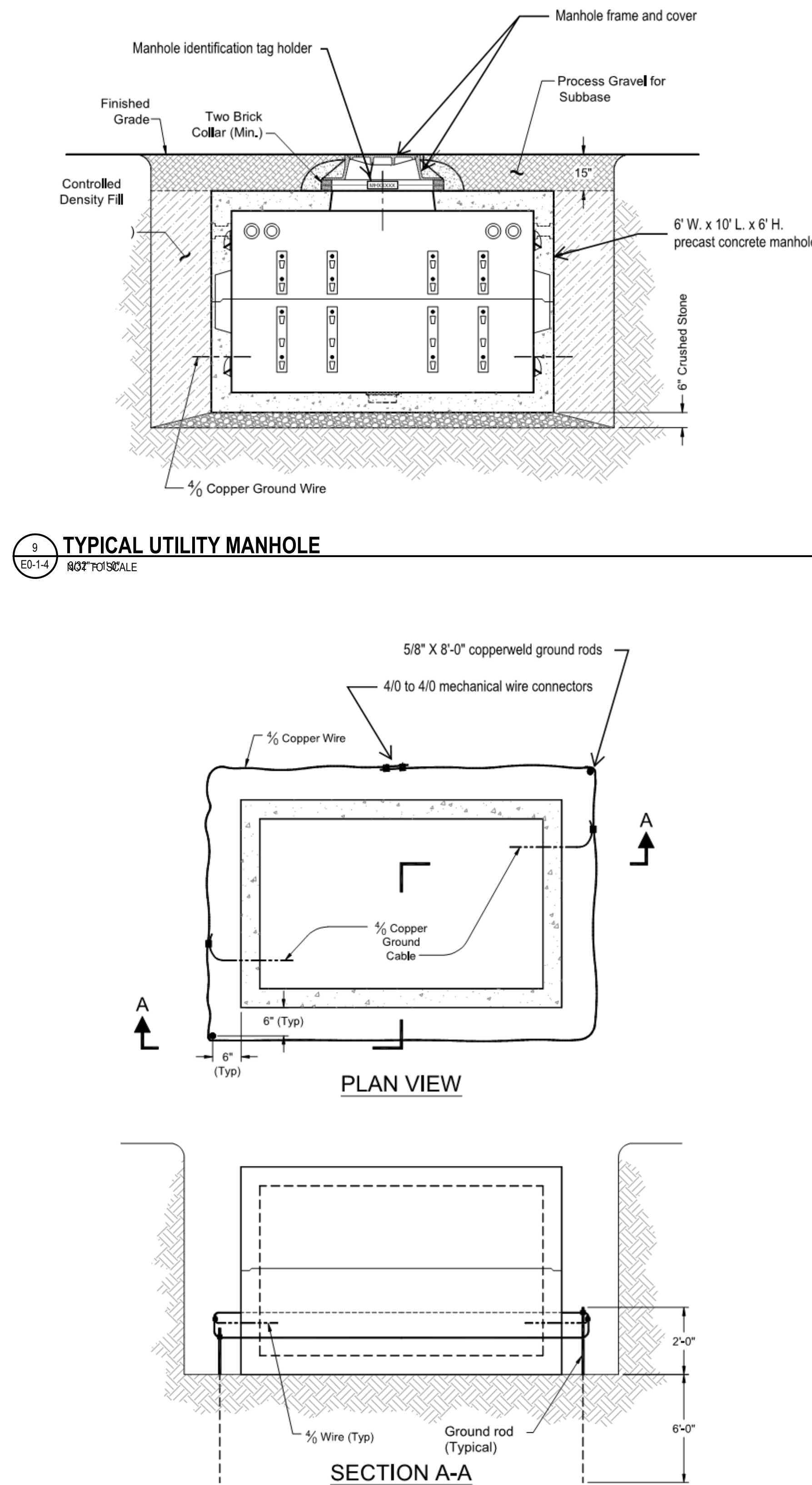
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E0-1-3

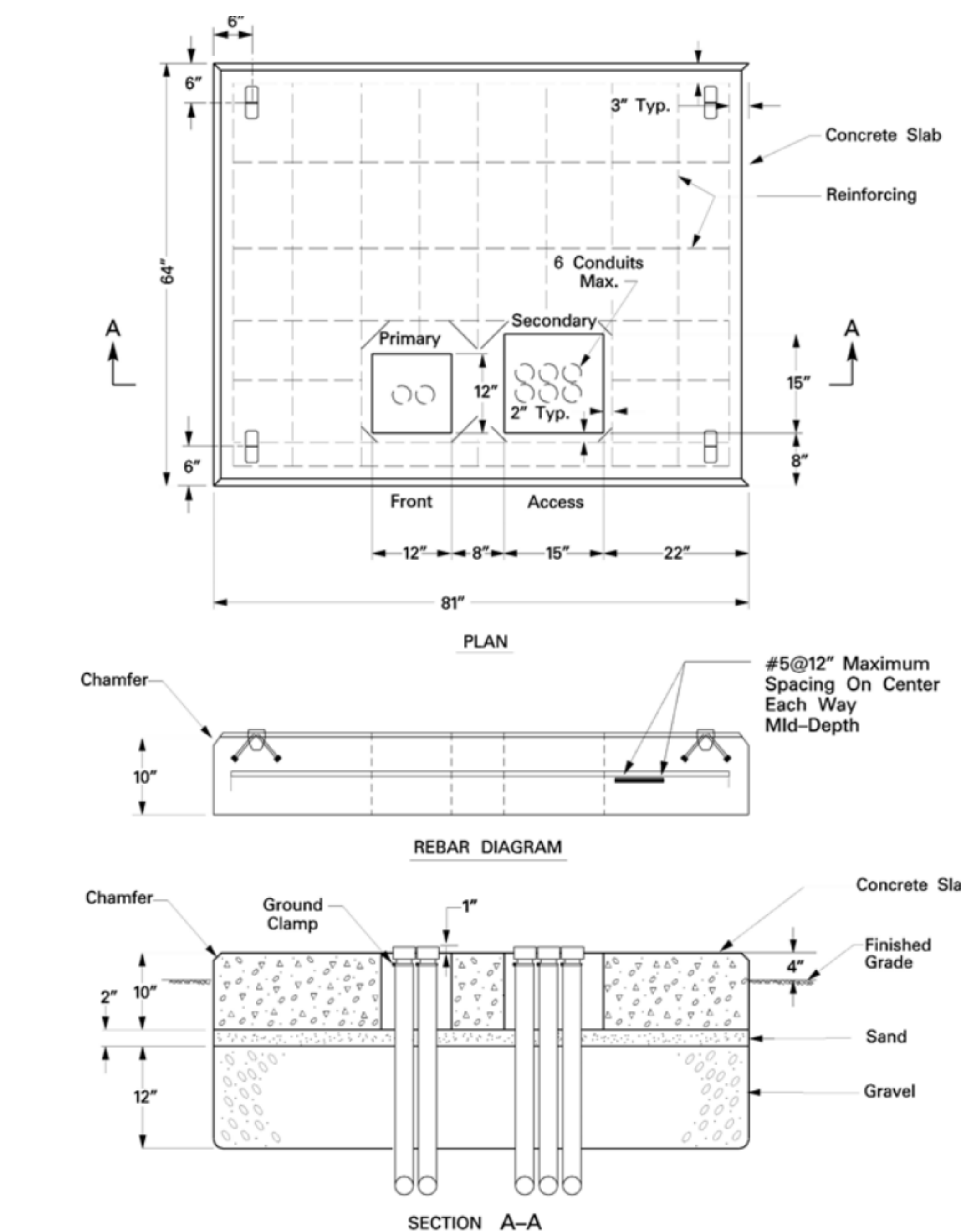
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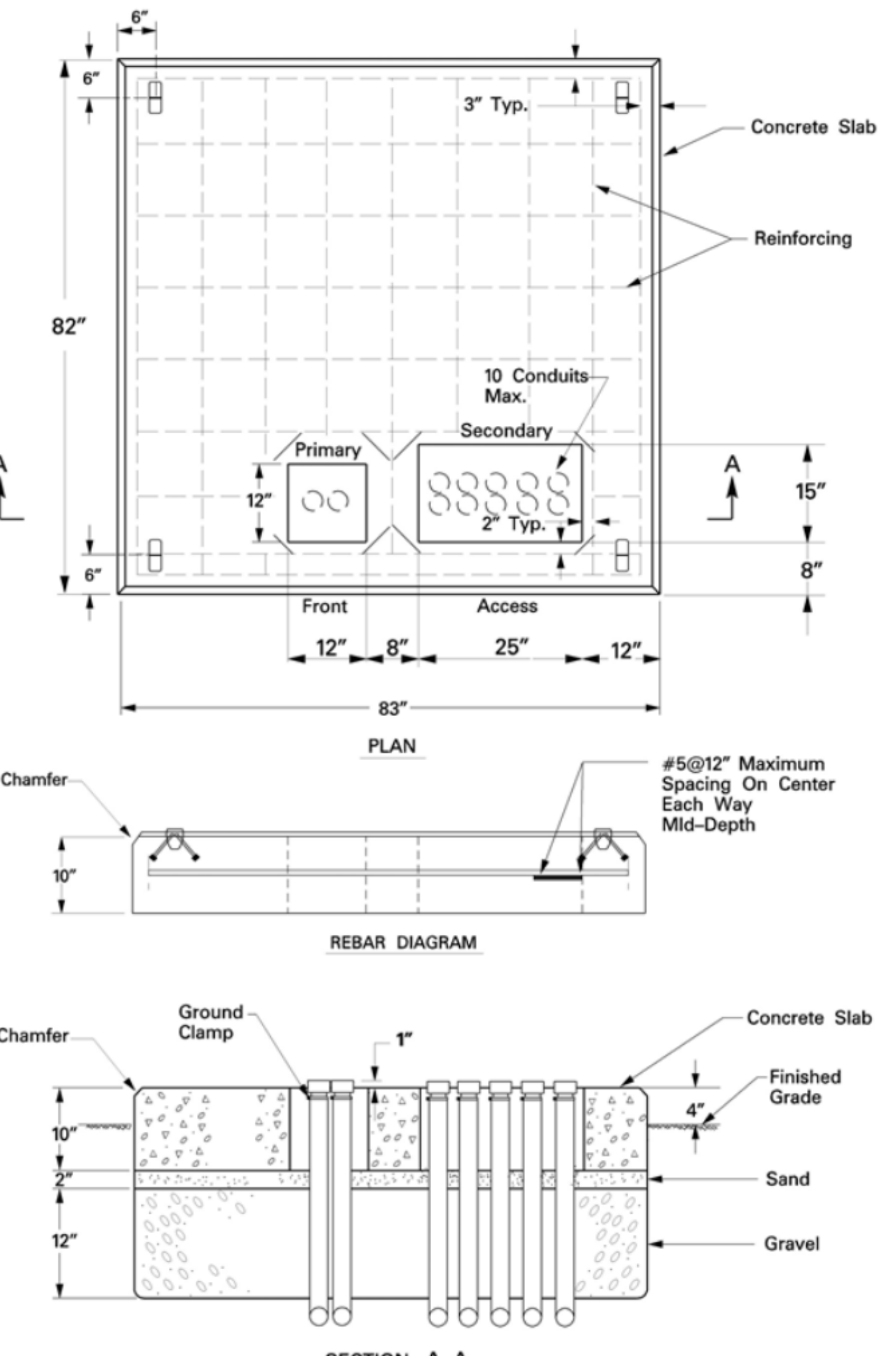
9 TYPICAL UTILITY MANHOLE
E0-14 NOT TO SCALE



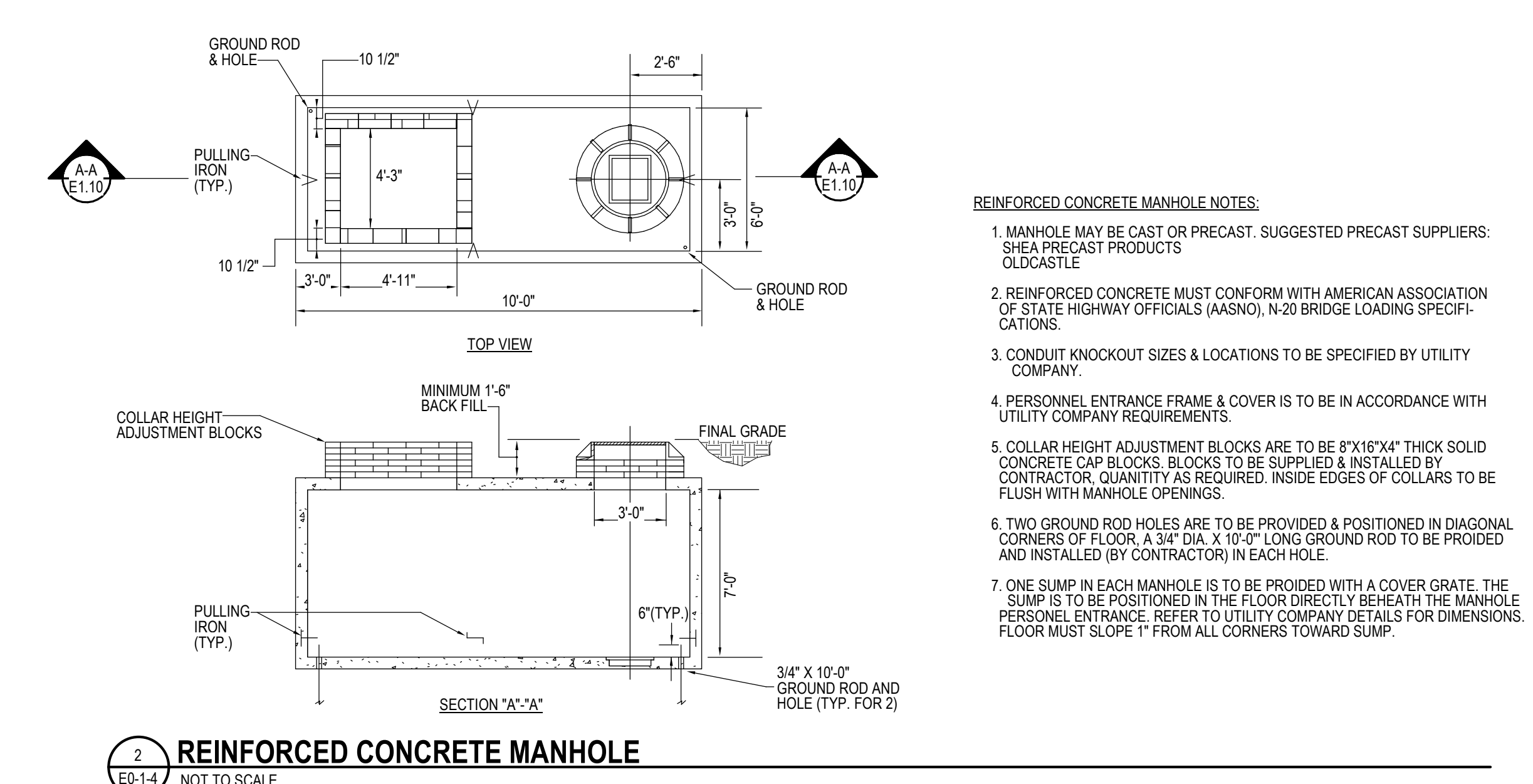
10 TYPICAL UTILITY MANHOLE GROUNDING
E0-14 NOT TO SCALE



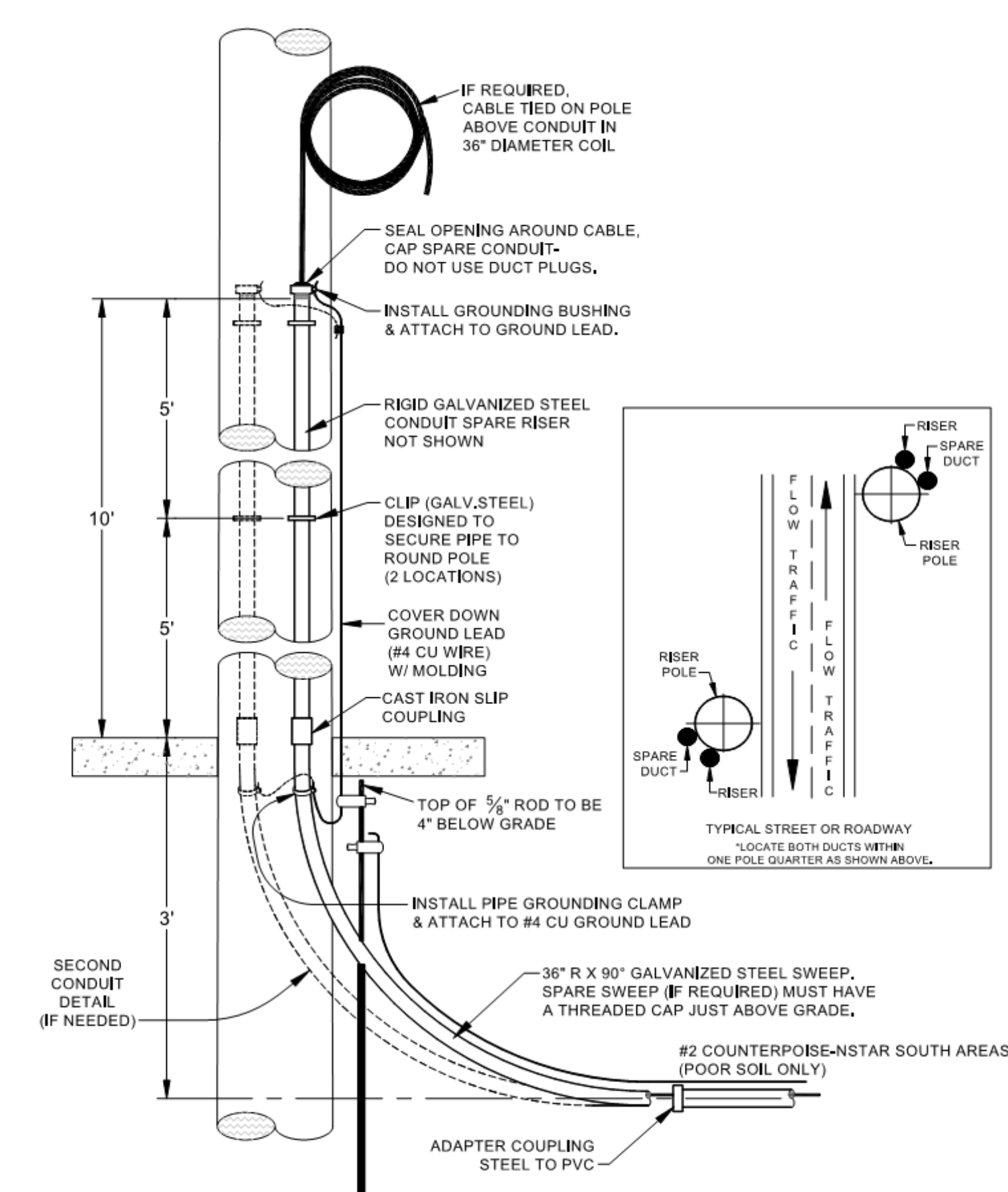
11 WMLD 15KV 75-500KVA TRANSFORMER PAD DETAIL
E0-14 1/8\"/>



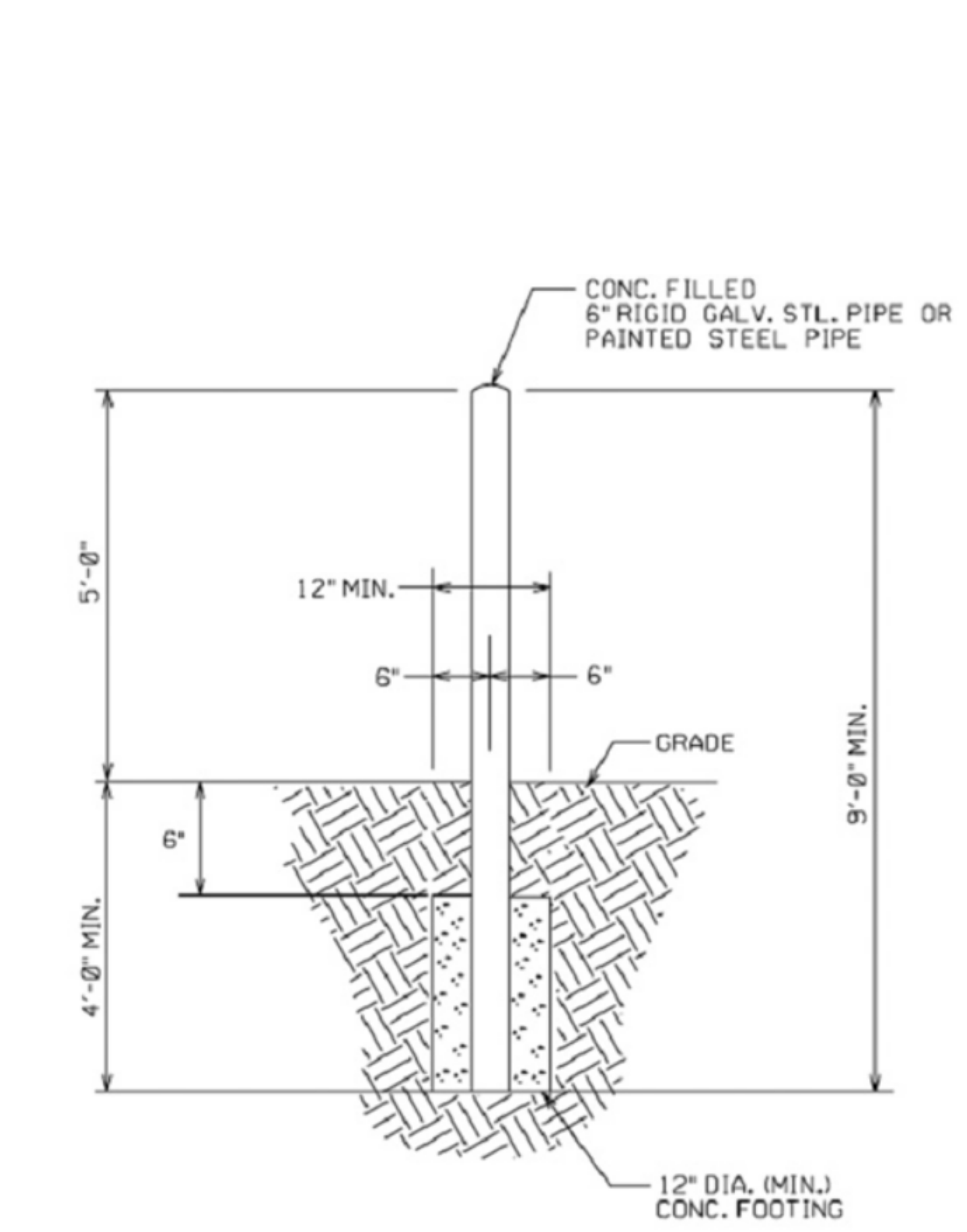
12 WMLD 15KV 750-2500KVA TRANSFORMER PAD DETAIL
E0-14 1/8\"/>



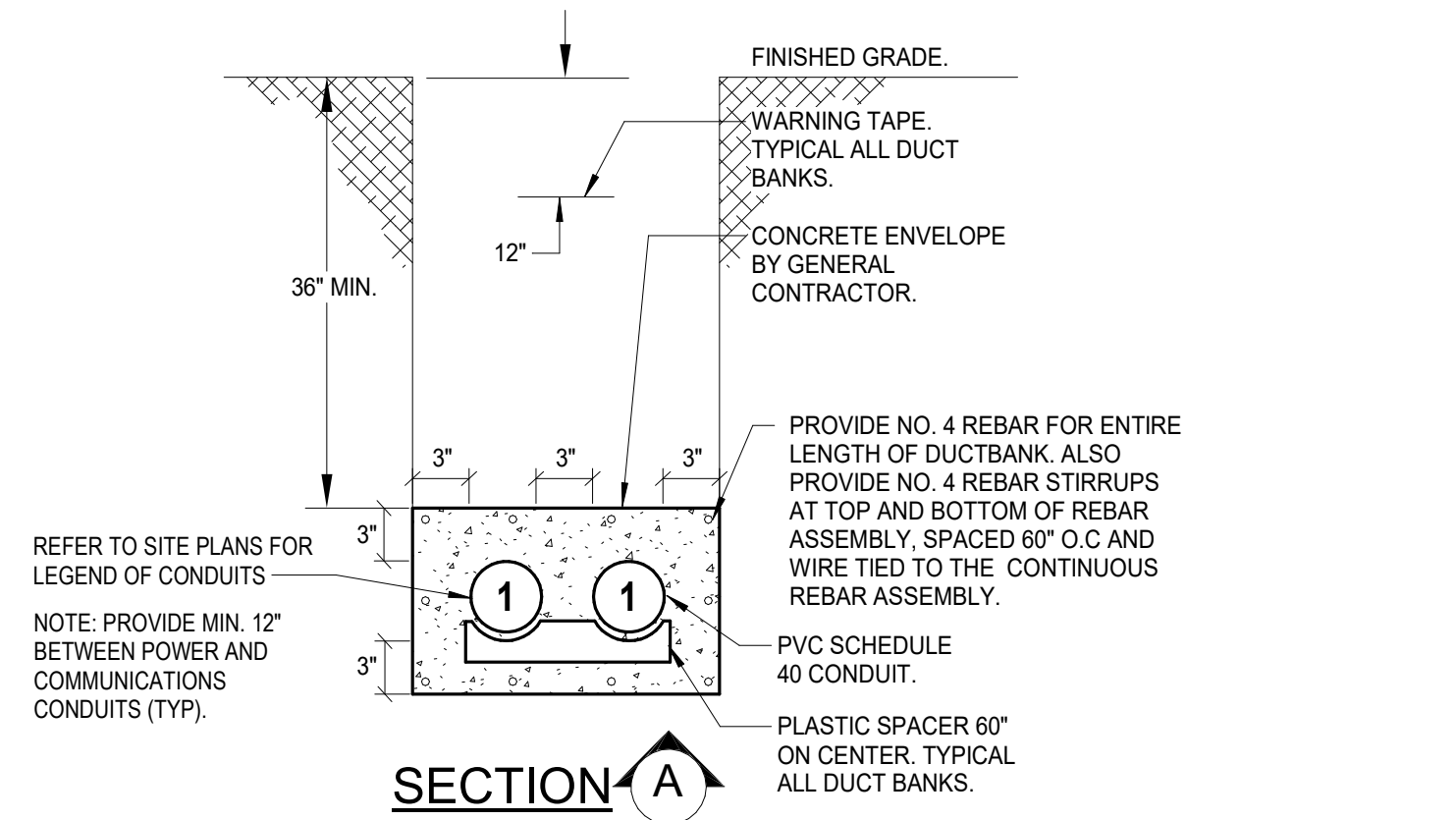
13 REINFORCED CONCRETE MANHOLE
E0-14 NOT TO SCALE



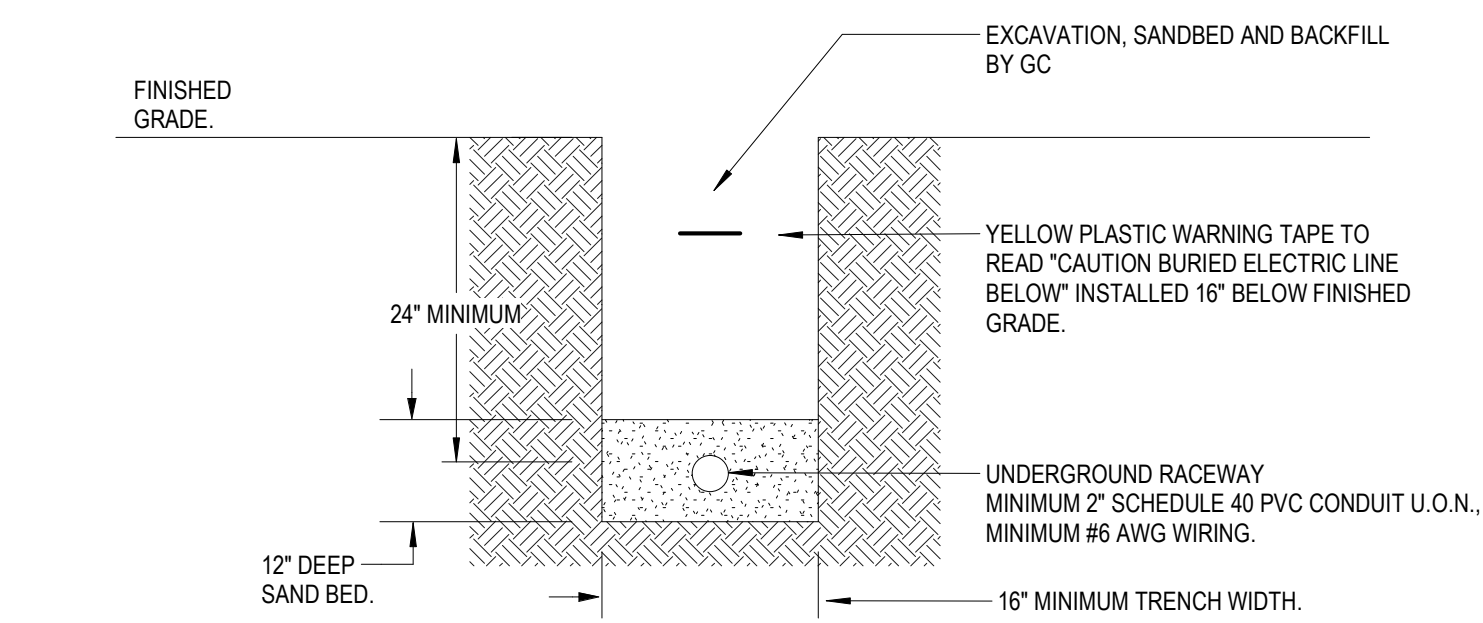
14 TYPICAL UTILITY RISER POLE CONSTRUCTION DETAIL
E0-14 NOT TO SCALE



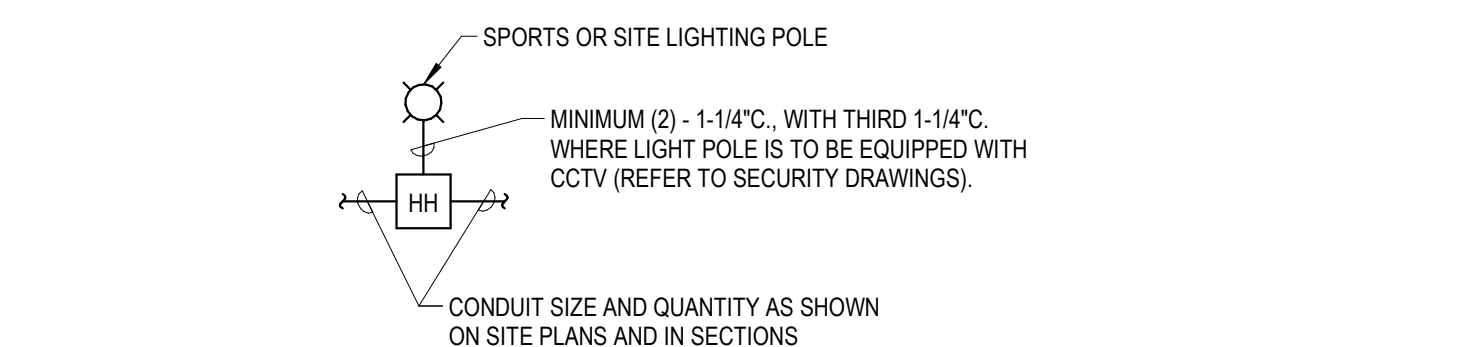
15 WMLD BOLLARD DETAIL
E0-14 1/8\"/>



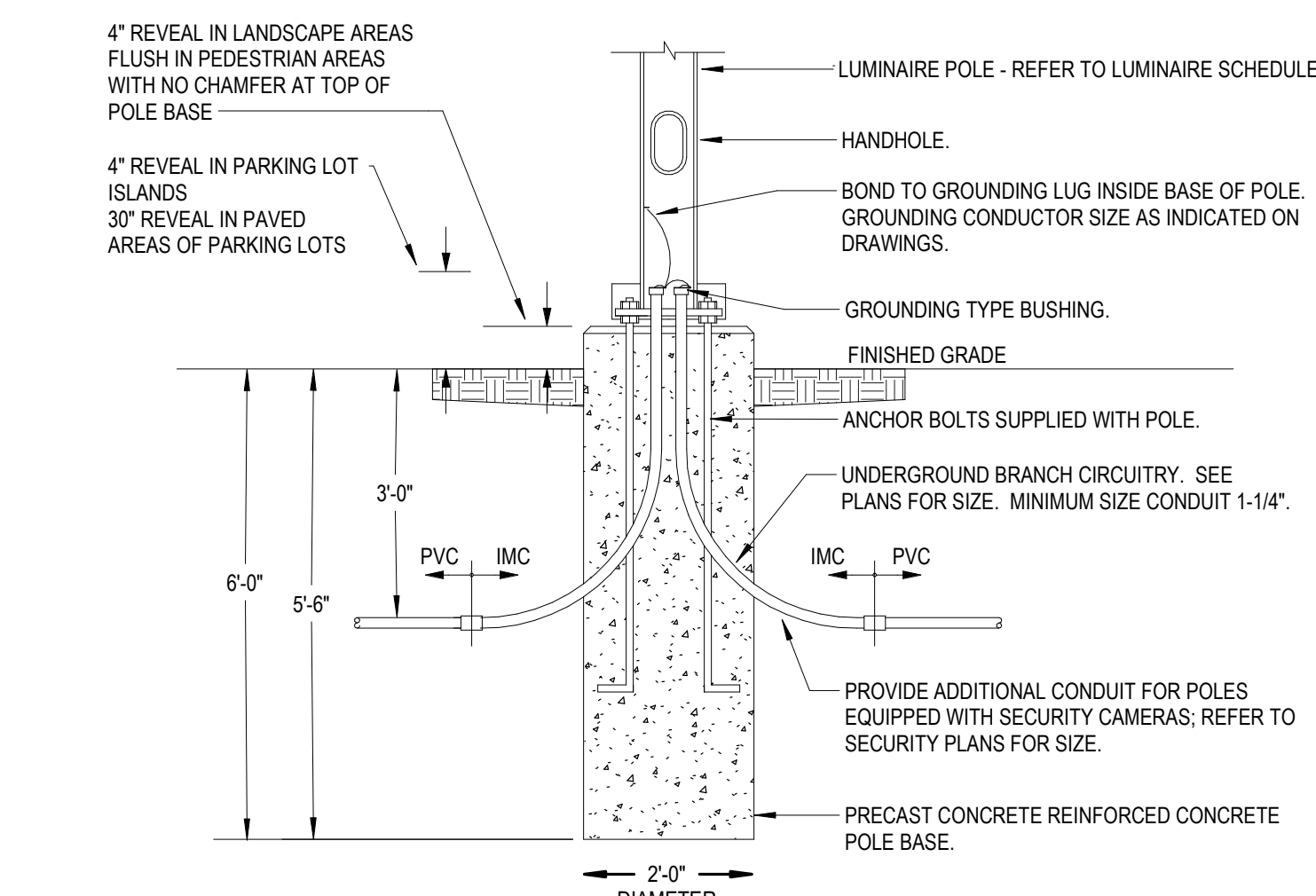
1
REV 1.5
TYPICAL CONCRETE ENCASED DUCTBANK DETAIL
NOT TO SCALE



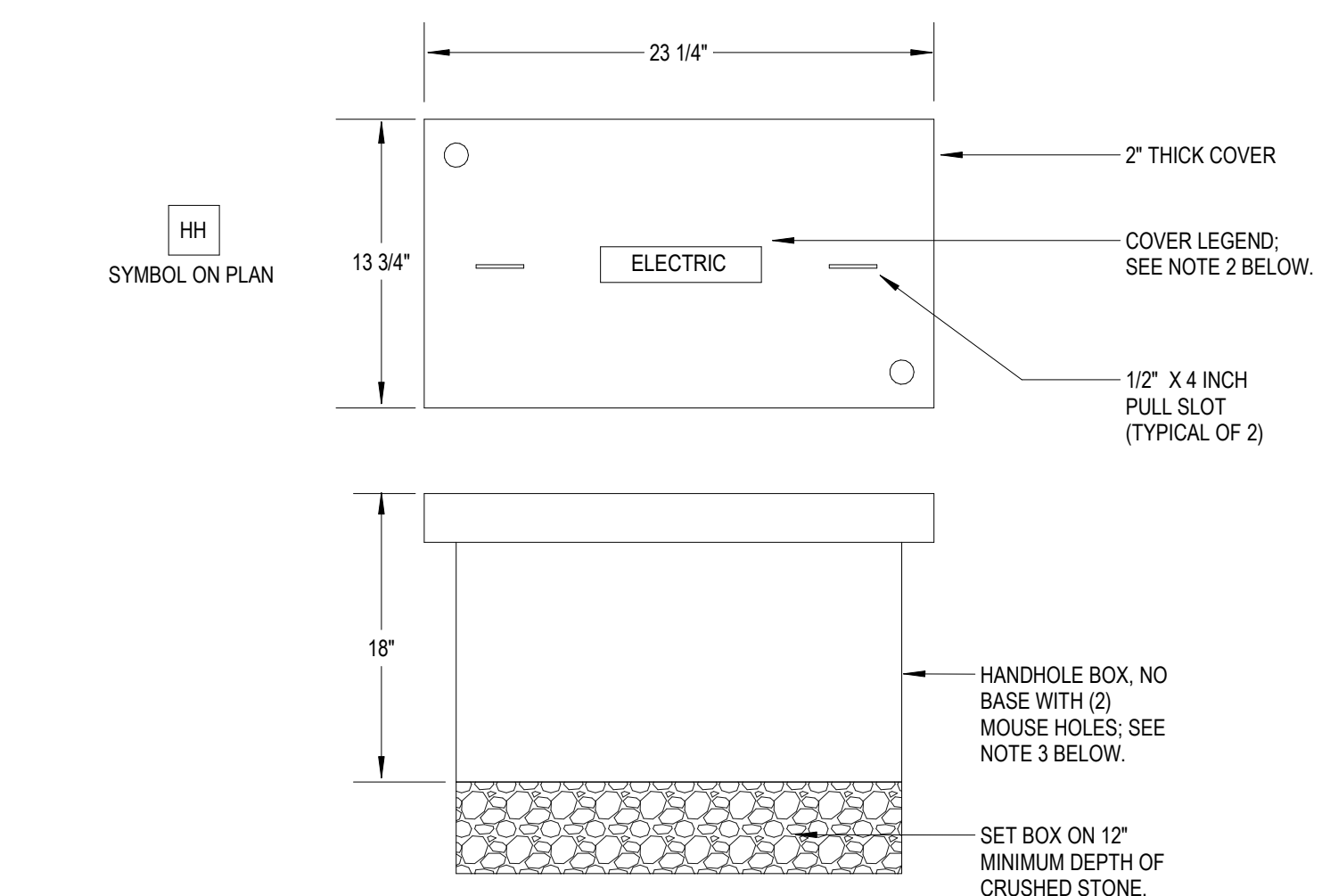
3
REV 1.5
TYPICAL DIRECT BURIED RACEWAY DETAIL
NOT TO SCALE



5
REV 1.5
SITE LIGHTING - CONDUITS FROM HANDHOLE
NOT TO SCALE
(TYPICAL FOR ALL SITE AND SPORTS LIGHTING POLES UNLESS OTHERWISE NOTED)

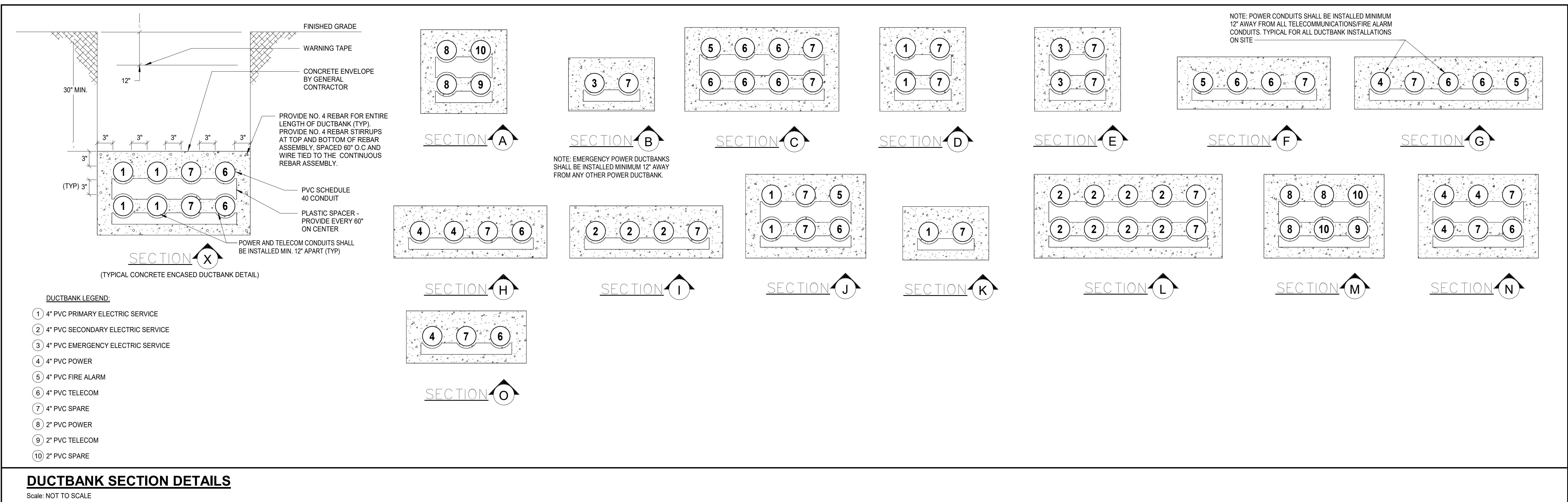


4
REV 1.5
PRECAST CONCRETE POLE BASE DETAIL
NOT TO SCALE
(TYP FOR SITE LIGHTING POLES UNLESS OTHERWISE NOTED)

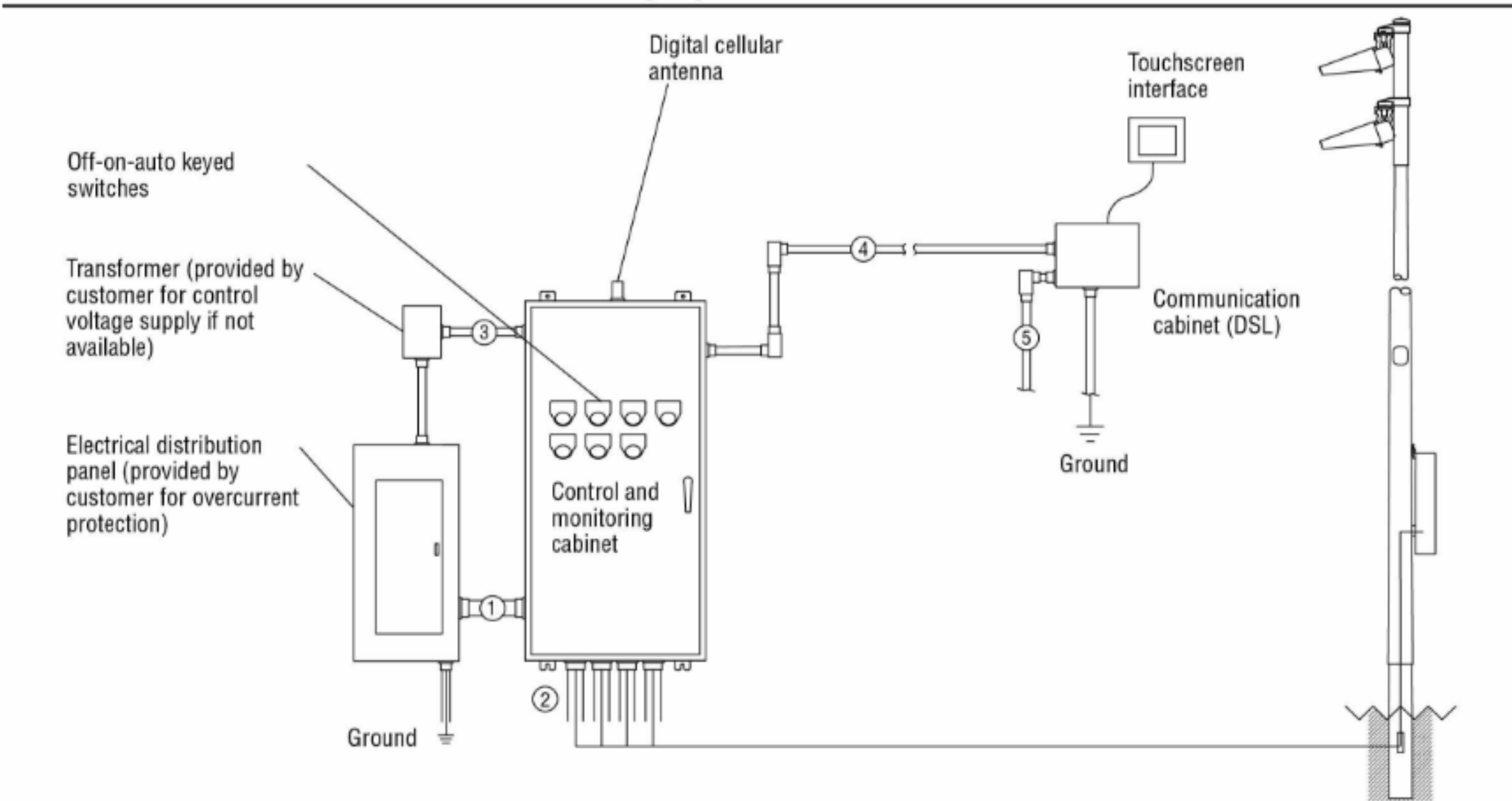


2
REV 1.5
TYPICAL STACKABLE HANDHOLE DETAIL
NOT TO SCALE

NORTHEAST METROTECH SITE LIGHTING FIXTURE SCHEDULE									
TYPE	MANUFACTURER	CATALOG NUMBER	MOUNTING HEIGHT (FT)	DIST. TYPE	VOLTS	LUMENS	WATTS	CCT	PRODUCT LINKS
EX-B1	STERNBERG	PT16-RT403-26L30T2-MDL05-SV2-FINISH	16	TYPE 2	120V-277V	3440lm	49W	3000K LED	https://www.sternberglighting.com/files/view-file/supportfiles/2bfe6fb155b3e1b63aa18a17e567dbb9/504/locale_file/rt403-rialta-spec-sheet.pdf
EX-F1	STERNBERG	1A-FL530-1L30T5-MDL07-SV2-FO1S-FINISH	14	TYPE 5	120V-277V	4280lm	41W	3000K LED	https://www.sternberglighting.com/files/view-file/supportfiles/d7a8e9cff7d1e0518af05ae81b2a13ee/16/locale_file/fl530-cob-flight-series.pdf
EX-F1	STERNBERG	RSS14F400-D1-SL900-4-FINISH	14	N/A	N/A	N/A	N/A	N/A	https://www.sternberglighting.com/files/view-file/supportfiles/b3c3cbcddeb2a3ce920929055718fa5c/483/locale_file/rss-urban-line-round-straight-steel-poles-spec-sheet.pdf
EX-P1	BEACON	VP-1-160L-100-3K7-2-UNV-A4-FINISH	24	TYPE 2	120V-277V	12500lm	98W	3000K LED	https://cdn.currentlighting.com/site/specsheet/BEA_VIPERSPEC.pdf
EX-P1	BEACON	RSS-B-24-50-B-1-B3-FINISH-RBC	24	N/A	N/A	N/A	N/A	N/A	https://cdn.currentlighting.com/site/specsheet/spec_sheet_rss_pole_beacon.pdf
EX-P1 BC	BEACON	VP-1-160L-100-3K7-2-UNV-A4-FINISH-BC	24	TYPE 2	120V-277V	5892lm	98W	3000K LED	https://cdn.currentlighting.com/site/specsheet/BEA_VIPERSPEC.pdf
EX-P1 BC	BEACON	RSS-B-24-50-B-1-B3-FINISH-RBC	24	N/A	N/A	N/A	N/A	N/A	https://cdn.currentlighting.com/site/specsheet/spec_sheet_rss_pole_beacon.pdf
EX-P2	BEACON	VP-1-160L-100-3K7-4W-UNV-A4-FINISH	24	TYPE 4W	120V-277V	12500lm	98W	3000K LED	https://cdn.currentlighting.com/site/specsheet/BEA_VIPERSPEC.pdf
EX-P2	BEACON	RSS-B-24-50-B-1-B3-FINISH-RBC	24	N/A	N/A	N/A	N/A	N/A	https://cdn.currentlighting.com/site/specsheet/spec_sheet_rss_pole_beacon.pdf
EX-P3	BEACON	VP-1-160L-100-3K7-4W-UNV-A4-FINISH	24	TYPE 4W	120V-277V	12500lm	98W	3000K LED	https://cdn.currentlighting.com/site/specsheet/BEA_VIPERSPEC.pdf
EX-P3	BEACON	RSS-B-24-50-B-2-B3-FINISH-RBC	24	N/A	N/A	N/A	N/A	N/A	https://cdn.currentlighting.com/site/specsheet/spec_sheet_rss_pole_beacon.pdf
EX-P4	BEACON	VP-1-160L-100-3K7-5QW-UNV-A4-FINISH	24	TYPE 5QW	120V-277V	12500lm	98W	3000K LED	https://cdn.currentlighting.com/site/specsheet/BEA_VIPERSPEC.pdf
EX-P4	BEACON	RSS-B-24-50-B-1-B3-FINISH-RBC	24	N/A	N/A	N/A	N/A	N/A	https://cdn.currentlighting.com/site/specsheet/spec_sheet_rss_pole_beacon.pdf
EX-W1	CREE	OSQ-M-B-16L-30K7-4M-UL-OSQ-ML-B-DA-FINISH	25	TYPE 4M	120V-277V	16000lm	104W	3000K LED	https://cree.widen.net/s/nv688mlj6n/osq-series-version-b-spec-sheet
EX-W1	CREE	WM-DM-FINISH	25	N/A	N/A	N/A	N/A	N/A	https://cree.widen.net/s/h58g7wg9bp/bracket-and-tenon-spec-sheet-for-pole-and-wall-mount



Control and Monitoring System



Conduit ID	Description	# of Wires	Wire (AWG)	Conduit (in)	Max. Wire Length (ft)	Vendor Supplied	Notes
1	Line power to contactors, and equipment grounding conductor	*A	*B	*C	N/A	No	A-E
2	Load power to lighting circuits, and equipment grounding conductor	*A	*B	*C	N/A	No	A-E
3	Control power (dedicated, 20A)	3	12	*C	N/A	No	C,E
4	Communication cable to touchscreen	*F	*F	*C	1500	No	C,E,F
5	Control power	3	*B	*C	N/A	No	A-E

* Notes:
A. See voltage and phasing per the notes on cover page.
B. Calculate per load and voltage drop.
C. All conduit diameters should be per code unless otherwise specified to allow for connector size.
D. Equipment grounding conductor and any splices must be insulated.
E. Refer to control and monitoring system installation instructions for more details on equipment information and the installation requirements.
F. Cat5e cable (Belden 7937A or equal) is required. Communication cabinet requires control power circuit and connection to earth ground. Standard wall outlet is required to power touchscreen. Touchscreen connects to communication cabinet with Ethernet cable (<300 ft.).

IMPORTANT: Control wires (3,5) and communication wire (4) must be in separate conduit from line and load power wires (1, 2).

Lighting System

Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
F1-F2	80'	80'	9	1200W LED	10.53 kW	A
	16'	16'	1	100W LED	0.10 kW	E
	16'	16'	2	575W LED	1.15 kW	A
F3-F4	80'	80'	7	1200W LED	8.19 kW	A
	16'	16'	2	900W LED	1.76 kW	A
	16'	16'	2	575W LED	1.15 kW	A
4			46		45.77 kW	

Circuit	Description	Load	Fixture Qty
A	Football	45.56 kW	44
E	Security	0.21 kW	2

Fixture Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
575W LED	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	8
1200W LED	LED 5700K - 75 CRI	1170W	150,000	>120,000	>120,000	>120,000	32
900W LED	LED 5700K - 75 CRI	880W	104,000	>120,000	>120,000	>120,000	4
100W LED	LED 3000K - 70 CRI	104W	15,345	--	--	--	2

Driver (90 min power factor)	Max Line Amperage Per Luminaire
Single Phase Voltage	208 220 240 277 347 380 480 (60) (60) (60) (60) (60) (60)
575W LED	3.4 3.2 2.9 2.5 2.0 1.8 1.5
1200W LED	6.9 6.5 6.0 5.2 4.2 3.8 3.0
900W LED	5.2 4.9 4.5 3.9 3.1 2.9 2.3
100W LED	- - - - 0.3 - 0.2

Light Level Summary

Grid Name	Calculation Metric	Avg	Min	Max	Max/Min	Avg/Min	Circuits	Fixture Qty
Football	Horizontal Illuminance	53.5	43	61	1.42	1.24	A	44
Pathway	Horizontal Illuminance	0.70	0	19	17065.41		E	2
Property Line Spill (Cd)	Max Candela (by Fixture)	509	0	9161	0.00		A,B,C,D	44
Property Line Spill	Horizontal	0.02	0	0.44	0.00		A,B,C,D	44
Property Line Spill	Max Vertical Illuminance Metric	0.03	0	0.55	0.00		A,B,C,D	44
Soccer	Horizontal Illuminance	52.2	43	62	1.46	1.21	A	44
Zero Grid	Horizontal Illuminance	13.7	0	66	0.00		A	44

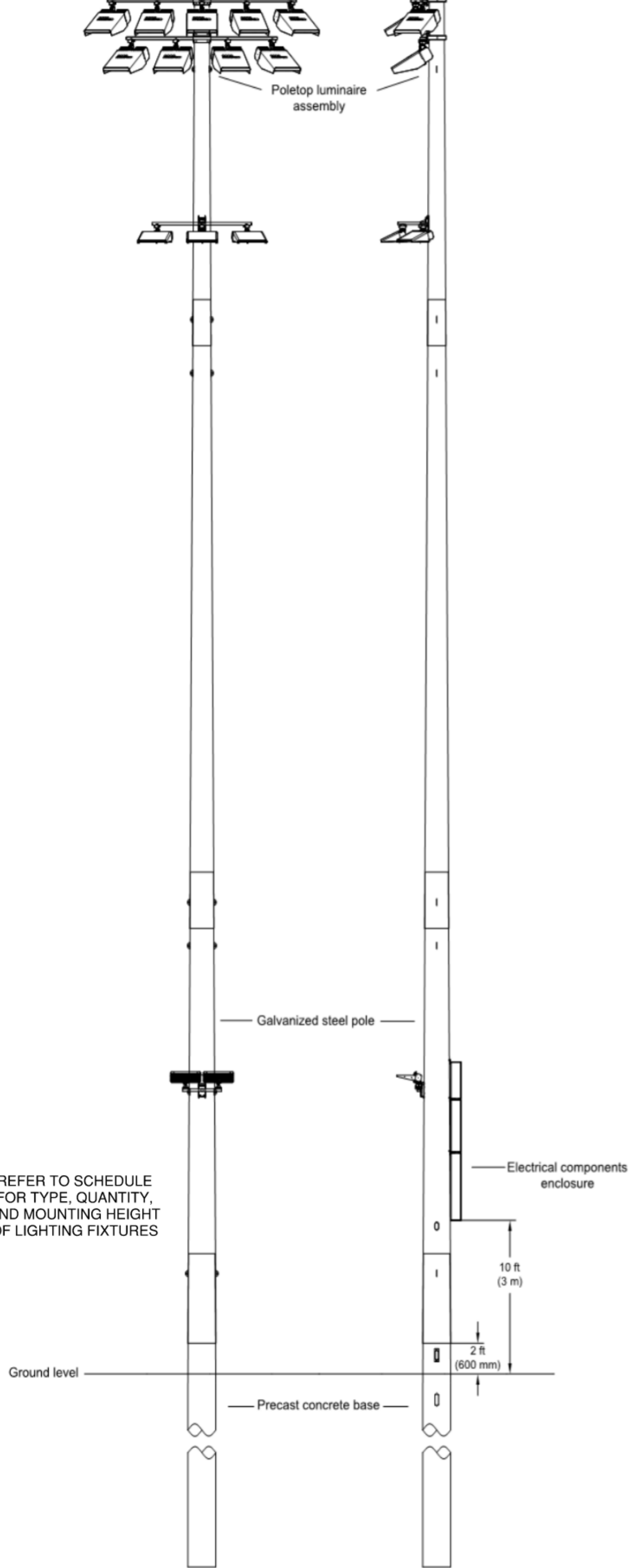
SWITCHING SCHEDULE

Field/Zone Description	Zones
Football	1
Security	2

CONTROL POWER CONSUMPTION	
120V Single Phase	
VA loading	INRUSH: 1470.0
	SEALED: 156.0

POLE	CIRCUIT DESCRIPTION	# OF FIXTURES	# OF DRIVERS	*FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
F1	Football	12	12	18.3	30	C1	1
F2	Football	12	12	18.3	30	C2	1
F3	Football	11	11	18.3	30	C3	1
F4	Football	11	11	18.3	30	C4	1
F1	Security	1	1	0.2	30	C5	2
F2	Security	1	1	0.2	30	C6	2

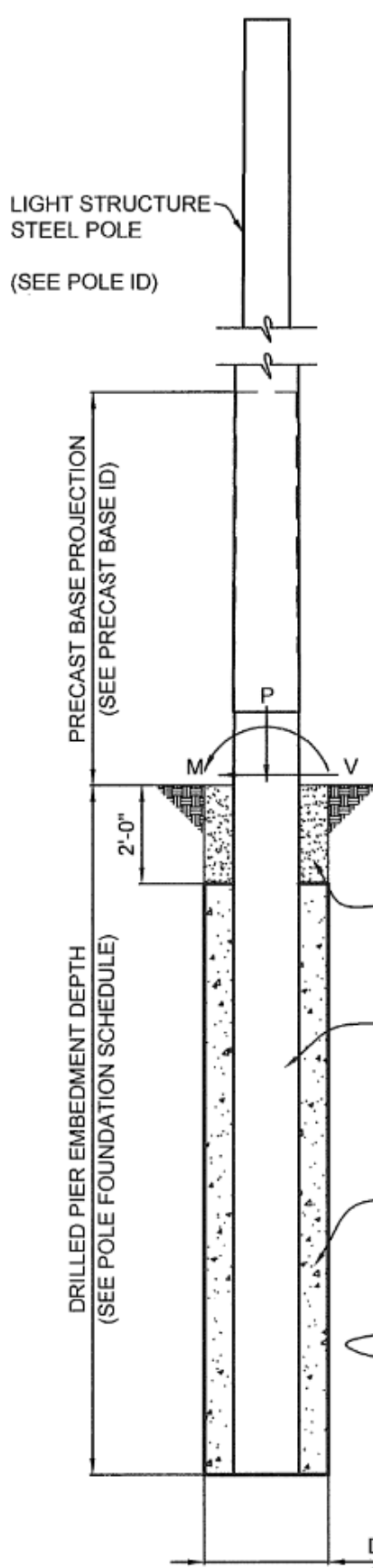
*Full Load Amps based on amps per driver.



REFER TO SCHEDULE FOR TYPE, QUANTITY, AND MOUNTING HEIGHT OF LIGHTING FIXTURES

GENERAL NOTES:

- PROVIDE FULL FUNCTIONAL SPORTS LIGHTING SYSTEM AT FOOTBALL FIELD PER DETAILS AND SPECIFICATIONS INDICATED ON THIS DRAWING. SPORTS LIGHTING SPORTS POLES ARE INDICATED ON SITE PLANS AT F1, F2, F3, AND F4.
- PROVIDE SPORTS LIGHTING AND MONITORING CABINET IN CONCESSIONS BUILDING.
- SPORTS LIGHTING POLES SHALL BE POWERED BY PANELBOARD UP-SHIFT IN CONCESSIONS BUILDING.



POLE FOUNDATION ELEV.

SCALE: NOT TO SCALE
SOIL BACKFILL NOTE:
THE TOP TWO FEET OF ANNULUS SHALL BE BACKFILLED WITH SOIL WITH A CLASSIFICATION OF CLASS 5 (TABLE 1808.2) OR BETTER. COMPACTION 90% FOR COHESIVE SOIL AND 90% FOR A COHESIONLESS SOIL BASED UPON STANDARD PROCTOR TESTING (ASTM D698).

POLE FOUNDATION SCHEDULE						
POLE DESIGNATION	FORCES (1)			DRILLED PIER		
	MOMENT (M) FT-LBS	SHEAR (V) LBS	VERTICAL (P) LBS	DIAMETER INCHES	EMBEDMENT DEPTH (D) FT	CONCRETE BACKFILL YD ³ (2)
F1, F2	119,777	2,446	3,364	30	16'-0"	1.7
F3, F4	121,475	2,453	3,284	30	16'-0"	1.7

- ADD LOAD COMBINATION D + 0.9W.
- VERTICAL FORCE IS WEIGHT OF DRESSED POLE (DOES NOT INCLUDE PRECAST BASE WEIGHT).
- MINIMUM CONCRETE BACKFILL VOLUME, SITE CONDITIONS MAY REQUIRE ADDITIONAL BACKFILL.
- SHALLOW BEDROCK IS ANTICIPATED AT MULTIPLE POLE LOCATIONS - SEE SOIL BORING LOGS. ROCK ANCHERING EQUIPMENT MAY BE REQUIRED.

PRECAST BASE IDENTIFICATION						
PRECAST BASE TYPE	PRECAST BASE WEIGHT	PRECAST BASE LENGTH ABOVE GROUND	PROJECTION	STANDARD	OUTSIDE	
58	4,580 LBS	23'-11"	7'-11"	16'-0"	18'-25"	

POLE IDENTIFICATION						
POLE DESIGNATION	POLE TYPE	PRECAST BASE TYPE	FIXTURE CONFIGURATION (FIX. PER XARM)	FIXTURE AND ACCESSORIES EPA (FT ²)		
F1, F2	LSS800	58	12 (5+4)	23.1		
F3, F4	LSS800	58	11 (5+4)	23.2		

- POLES F1 & F2 HAVE (1) CREE C50 FXTURE AT 30'-0" AGL INCLUDED ABOVE.
- POLES F1 - F4 HAVE (2) MUSCO LED FIXTURES AT 15'-4" AGL INCLUDED ABOVE.

Lighting System with LED Light Source

PART 1 - GENERAL

1. SUMMARY

- Work covered by these specifications shall conform to the contract documents, engineering plans as well as state and local codes.
- The purpose of these specifications is to define the lighting system performance and design standards for the Northeast Metro Tech High School lighting project using an LED lighting source. The manufacturer / contractor shall supply lighting equipment to meet or exceed the standards set forth in these specifications.
- The sports lighting will be for the following venues:
 - Football
- The primary goals of this sports lighting project are:
 - Guaranteed Light Levels: Selection of appropriate light levels impact the safety of the players and the enjoyment of spectators. Therefore light levels are guaranteed to not drop below specified target values for a period of 25 years.
 - Environmental Light Control: It is the primary goal of this project to minimize spill light to adjoining properties and glare to the players, spectators and neighbors.
 - Control and Monitoring: To allow for optimized use of labor resources and avoid unwanted operation of the facility, customer requires a remote on/off control system for the lighting system. Fields should be proactively monitored to detect luminaire sagging over a 25-year life cycle. All communication and monitoring costs for 25-year period shall be included in the bid.
 - Entertainment Features: Incorporation of theatrical light shows enhance the presentation and enjoyment of players and spectators. Control system shall incorporate pre-programmed light shows such as "chase", "wave", and "scan." Control system shall incorporate the ability to rotate these shows locally. Systems shall be able to time light shows to customer-supplied music.

12. LIGHTING PERFORMANCE

- Illumination Levels and Design Factors: Playing surfaces shall be lit to an average target illumination level and uniformity as specified in the chart below. Lighting calculations shall be developed and field measurements taken on the grid spacing with the minimum number of grid points specified below. Appropriate light loss factors shall be applied and submitted for the basis of design. Average illumination level shall be measured in accordance with the IESNA LM-54 (IESNA Guide for Photometric Measurements of Area and Sports Lighting Installations). Illumination levels shall not drop below desired target values in accordance to IES RP-6-15, Page 2, Maintained Average Illuminance and shall be guaranteed for the full warranty period.
- Color: The lighting system shall have a minimum color temperature of 5700K and a CRI of 75.
- Mounting Heights: To ensure proper aiming angles for reduced glare and to provide better playability, minimum mounting heights shall be as described below. Higher mounting heights may be required based on photometric report and ability to ensure the top of the field angle is a minimum of 10 degrees below horizontal.

13. ENVIRONMENTAL LIGHT CONTROL

- Light Control Luminaires: All luminaires shall utilize spill light and glare control devices including, but not limited to, internal shields, louvers and external shields. No symmetrical beam patterns are accepted.
- Spill Light and Glare Control: To minimize impact on adjacent properties, spill light and canopy values must not exceed the following levels taken at 3 feet above grade:
 - Spill Scans: Spill scans must be submitted indicating the amount of horizontal and vertical footcandles along the specified lines. Light levels shall be taken at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense beam of light. Illumination level shall be measured in accordance with the IESNA LM-54 after 1 hour warm up.
 - The first page of a photometric report for all luminaires types proposed showing horizontal and vertical axial candle power shall be provided to demonstrate the capability of achieving the specified performance. Reports shall be certified by a qualified testing laboratory with a minimum of five years experience or by a manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products. A summary of the horizontal and vertical aiming angles for each luminaire shall be included in the photometric report.

PART 2 - PRODUCT

21. SPORTS LIGHTING SYSTEM CONSTRUCTION

- Manufacturing Requirements: All components shall be designed and manufactured as a system. All luminaires, wire harnesses, drivers and other enclosures shall be factory assembled, aimed, wired and tested.
- Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed carbon steel shall be hot dip galvanized per ASTM A123. All exposed aluminum shall be powder coated with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All exposed fasteners and fasteners shall be stainless steel of 1/8" grade or better, passivated and coated with aluminum-based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Structural fasteners may be carbon steel and galvanized meeting ASTM A153 and ISOEN 1461 (for hot dip galvanized), or ASTM A563 (for mechanical galvanizing). All wiring shall be enclosed within the cross-arm, pole, or electrical components enclosure.
- System Description: Lighting system shall consist of the following:
 - Galvanized steel pole and cross-arm assembly.
 - Non-approved pole technology:
 - Square static cast concrete poles will not be accepted.
 - Direct bury steel poles which utilize the extended portion of the steel shaft for their foundation will not be accepted due to potential for internal and external corrosion reaction to the soils and long term performance concerns.
 - Lighting systems shall use concrete foundations. See Section 2.4 for details.
- For a foundation using a pre-stressed concrete base embedded in concrete backfill the concrete shall be air-entrained and have a minimum compressive design strength at 28 days of 3,000 PSI. 3,000 PSI concrete specified for early pole erection, actual required minimum allowable concrete strength is 1,000 PSI. All piers and concrete backfill must bear on and against firm undisturbed soil.
- For anchor bolt foundations using a pre-stressed concrete base in a suspended pier or inverted pier design pole erection may occur after 7 days. Or after a concrete sample from the same batch achieves a certain strength.
- Manufacturer will supply all drivers and supporting electrical equipment:
 - Remote drivers and supporting electrical equipment shall be mounted approximately 10' above grade in aluminum enclosure. The enclosures shall be touch-safe and include drivers and fusing with indicator lights on fuses to notify when a fuse is to be replaced for each luminaire. Disconnect per circuit for each pole structure will be located in the enclosure. Integral drivers are not allowed.
 - Manufacturer shall provide surge protection at the pole equal to or greater than 40 kA for each line to ground (Common Mode) as recommended by IEEE C62.4 2, 2002.
- Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connection for fast, trouble-free installation.
- All luminaires, visors, and cross-arm assemblies shall withstand 150 mph winds and maintain luminaire aiming alignment.
- Control cabinet to provide remote on/off control, monitoring, and entertainment features of the lighting system. See Section 2.3 for further details.
- Manufacturer shall provide lightning grounding as defined by NFPA 780 and be UL Listed per UL 96 and UL 96A.
 - Integrated grounding via concrete encased electrode grounding system.
 - If grounding is not integrated into the structure, the manufacturer shall supply grounding electrodes, copper down conductors, and electrothim weld kits. Electrodes and conductors shall be sized as required by NFPA 780. The grounding electrode shall be minimum size of 5/8 inch diameter and 8 feet long, with a minimum of 10 feet embedment. Grounding electrode shall be connected to the structure by a grounding electrode conductor with a minimum size of 2 AWG/gal with 75 feet mounting height or less, and 20 AWG for poles with more than 75 feet mounting height.
 - Enhanced corrosion protection package. Due to the potentially corrosive environment for this project, manufacturers must provide documentation that their products meet the following enhanced requirements in addition to the standard durability protection specified above:
 - Exposed carbon steel horizontal surfaces on the crossarm assembly shall be galvanized to no less than 5 mil (5 mil) average thickness.
 - Exposed die cast aluminum components shall be Type I anodized per MIL-STD-882 and coated with high performance polyester.
 - Exposed extruded aluminum components shall be Type II anodized per MIL-STD-882 and coated with high performance polyester.
- Safety: All system components shall be UL listed for the appropriate application.

22. ELECTRICAL

- Electric Power Requirements for the Sports Lighting Equipment:
 - Electric power 480 VAC, 3 Phase.
 - Maximum total voltage drop: Voltage drop to the disconnect switch located on the poles shall not exceed three (3) percent of the rated voltage.
 - Energy Consumption: The kW consumption for the field lighting system shall be 47kW, or less.

CONTROL

- Instant On/Off Capabilities: System shall provide for instant on/off of luminaires.
- Lighting controller (cabinet) constructed of NEMA Type 4 aluminum, designed for easy installation with contactors, labeled to match field diagrams and electrical design. Manual on-off auto selector switches shall be provided.
- Dimming: System shall provide for 3-stage dimming (high-medium-low-blackout). Dimming with be set via scheduling options (Website, app, phone, fax, email) or via an onsite user interface tablet or device.
- Remote Lighting Control System: System shall allow owner and users with a security code to schedule on/off system operation via a web site, phone, fax or email up to ten years in advance. Manufacturer shall provide and maintain a two-way TCP/IP communication link. Trained staff shall be available 24/7 to provide scheduling support and assist with reporting needs.
 - The owner may assign various security levels to schedulers by function and/or fields. This function must be flexible to allow a range of privileges such as full scheduling capabilities for all fields to only having permission to execute "early off" commands by phone. Scheduling tool shall be capable of setting curves limits.
 - Controller shall assign and store 7-day schedules, be protected against memory loss during power outages, and shall reboot once power is regained and execute any commands that would have occurred during outage.
- Remote Monitoring System: System shall monitor lighting performance and notify manufacturer if individual luminaire outage is detected so that appropriate maintenance can be scheduled. The controller shall determine switch position (manual or auto) and contactor status (open or closed).
- Management Tools: Manufacturer shall provide a web-based database and dashboard tool of actual field usage and provide reports by facility and user group. Dashboard shall also show current status of luminaire outages, control operation and service. Mobile application will be provided suitable for iOS, Android and BlackBerry devices.
- Hours of Usage: Manufacturer shall provide a means of tracking actual hours of usage for the field lighting system that is readily accessible to the owner:
 - Cumulative hours: shall be tracked to show the total hours used by the facility.
 - Report hours: shall be available by day, week, month, and year.
 - Communication Code: Manufacturer shall include communication costs for operating the control and monitoring system for a period of 25 years.
 - Communication with luminaire drivers: Control system shall interface with drivers in electrical components enclosure by means of powerline communication.
- Entertainment Features: Show controller shall provide six (6) preprogrammed light shows per field with option for customized scenes, plus six (6) minutes of custom preprogrammed light shows set to music supplied by customer. Manufacturer-provided user interfaces include touchscreens, pushbuttons, and/or other external control devices.

STRUCTURAL PARAMETERS

- Wind Loads: Wind loads shall be based on the 2015 International Building Code. Wind loads to be calculated using ASCE 7-10, an ultimate design wind speed of 130 and exposure category C.
- Pole Structural Design: The stress analysis and safety factor shall conform to the 2015 AISC 360 Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (LTS-6).
- Foundation Design: The foundation design shall be based on soil parameters as outlined in geotechnical report. Lahai Geotechnical Consulting, Inc. Report # 2025, August 12, 2022.

- Foundation Drawings: Project specific foundation drawings stamped by a registered engineer in the state where the project is located are required. The foundation drawings must list the moment, shear (horizontal) force, and axial (vertical) force at ground level for each pole. These drawings must be submitted at time of bid to allow for accurate pricing.

PART 3 - EXECUTION

31. SOIL QUALITY CONTROL

- It shall be the Contractor's responsibility to notify the Owner if soil conditions exist other than those on which the foundation design is based, or if the soil cannot be readily excavated. Contractor may issue a change order request / estimate for the Owner's approval / payment for additional costs associated with:
 - Providing engineered foundation embedment design by a registered engineer in the State of Massachusetts for soils other than specified soil conditions;
 - Additional materials required to achieve alternate foundation.

32. DELIVERY / TIME

- Delivery Timing Equipment On-Site: The equipment must be on-site 10-12 weeks from receipt of approved submittals and receipt of complete order information.

33. FIELD QUALITY CONTROL

- Illumination Measurements: Upon substantial completion of the project and in the presence of the Contractor, Project Engineer, Owner's Representative, and Manufacturer's Representative, illumination measurements shall be taken and verified. The illumination measurements shall be conducted in accordance with IESNA LM-54-04.
 - Field Light Level Acceptability:
 - Light levels are guaranteed not to fall below the target maintained light levels for the entire warranty period of 25 years. These levels will be specifically stated as "guaranteed" on the illumination summary provided by the manufacturer.
 - The contractor/manufacturer shall be responsible for conducting initial light level testing and an additional inspection of the system, in the presence of the owner, one year from the date of commissioning of the lighting.
 - The contractor/manufacturer will be responsible for providing the owner with a report of the light level testing and an additional inspection of the system, in the presence of the owner, one year from the date of commissioning of the lighting.
 - Correcting Non-Conformance: If, in the opinion of the Owner or his appointed Representative, the actual performance levels including footcandles and uniformity ratios are not in conformance with the requirements of the performance specifications and submitted information, the Manufacturer shall be required to make adjustments to meet specifications and safety Owner.

34. WARRANTY AND GUARANTEE

- 25-Year Warranty: Each manufacturer shall supply a signed warranty covering the entire system for 25 years from the date of shipment. Warranty shall guarantee specified light levels. Manufacturer shall maintain specifically-funded financial reserves to assure fulfillment of the warranty for the full term. Warranty does not cover weather conditions events such as lightning or hail damage, improper installation, vandalism or abuse, unauthorized repairs or alterations, or product made by other manufacturers.
- Maintenance: Manufacturer shall monitor the performance of the lighting system, including on/off status, hours of usage and luminaire outage for 25 years from the date of equipment shipment. Parts and labor shall be covered such that individual luminaire outages will be repaired when the usage of any field is materially impacted. Manufacturer is responsible for removal and replacement of failed luminaires, including all parts, labor, shipping, and equipment rental associated with maintenance. Owner agrees to check lines in the event of a luminaire outage.

DESIGN NOTES

DESIGN PARAMETERS:
WIND: V_W = 126 MPH, V_W = 98 MPH (EXPOSURE C, RISK CATEGORY II) PER MASSACHUSETTS STATE BUILDING CODE - 780 CMR, 9TH EDITION (IBC 2015 / ASCE 7-10).

GEOTECHNICAL PARAMETERS:
ALLOWABLE END BEARING SOIL PRESSURE: 4 KSF
ALLOWABLE LATERAL SOIL BEARING PRESSURE:
1 PERFT (GRADE TO 2'-0", VARIES BY LOCATION BELOW 2'-0")
IN ACCORDANCE WITH MASSACHUSETTS STATE BUILDING CODE - 780 CMR, 9TH EDITION, CHAPTER 18.

DESIGN SOIL PARAMETERS ARE AS NOTED. ACTUAL ALLOWABLE SOIL PARAMETERS MUST BE VERIFIED ON SITE. REFERENCE GEOTECHNICAL REPORT, PROJECT NO. 2025, PREPARED BY LAHAI GEOTECHNICAL CONSULTING, INC. (LGC), BILLERICA, MA.

A GEOTECHNICAL ENGINEER OR REPRESENTATIVE OF IS RECOMMENDED (NOT REQUIRED) TO BE AVAILABLE AT THE TIME OF THE FOUNDATION INSTALLATION TO VERIFY THE SOIL DESIGN PARAMETERS AND TO PROVIDE ASSISTANCE IF ANY PROBLEMS ARISE IN FOUNDATION INSTALLATION.

FNCO MITIGATING SOIL FORMATIONS THAT WILL REQUIRE SPECIAL DESIGN CONSIDERATIONS OR EXCAVATION PROCEDURES MAY OCCUR. POLE FOUNDATIONS WILL NEED TO BE ANALYZED ACCORDING TO THE SOIL CONDITIONS THAT EXIST. IF ANY DISCREPANCIES OR INCONSISTENCIES ARISE, NOTIFY THE ENGINEER OF SUCH DISCREPANCIES. FOUNDATIONS WILL THEN BE REVISED ACCORDINGLY. REVISIONS WILL BE ANALYZED PER RECOMMENDATIONS DIRECTED BY A REGISTERED ENGINEER.

ALL EXCAVATIONS MUST BE FREE OF LOOSE SOIL AND DEBRIS PRIOR TO FOUNDATION INSTALLATION AND CONCRETE BACKFILL PLACEMENT. TEMPORARY CASINGS OR DRILLERS SLURRY MAY BE USED TO STABILIZE THE EXCAVATION DURING INSTALLATION. CASINGS MUST BE REMOVED DURING CONCRETE BACKFILL PLACEMENT. CONCRETE BACKFILL MUST BE PLACED WITH A FREE DROP EXCEEDS 6'-0". CONTRACTOR MUST BE FAMILIAR WITH THE COMPLETE SOIL INVESTIGATION REPORT AND BORINGS, AND CONTACT THE GEOTECHNICAL FIRM (IF NECESSARY) TO UNDERSTAND THE SOIL CONDITIONS AND THE POSSIBILITY OF GROUND WATER PUMPING AND EXCAVATION STABILIZATION OR BRACING DURING PRECAST BASE INSTALLATION AND PLACEMENT OF CONCRETE BACKFILL.

CONCRETE:
CONCRETE SHALL BE AIR-ENTRAINED AND HAVE A MINIMUM COMPRESSIVE DESIGN STRENGTH AT 28 DAYS OF 3,000 PSI. 3,000 PSI CONCRETE SPECIFIED FOR EARLY POLE ERECTION. ACTUAL REQUIRED MINIMUM ALLOWABLE CONCRETE STRENGTH IS 1,000 PSI. ALL PIERS AND CONCRETE BACKFILL MUST BEAR ON AND AGAINST FIRM UNDISTURBED SOIL.

GENERAL NOTES:
FIXTURES MUST BE LOCATED TO MAINTAIN 10'-0" MINIMUM HORIZONTAL CLEARANCE FROM ANY OBSTRUCTION. ENGINEER MUST BE NOTIFIED IF FOUNDATIONS ARE NEAR ANY RETAINING WALLS OR WITHIN NEAR ANY SLOPES STEEPER THAN 3H:1V. POLES, FIXTURES, PRECAST BASES, ELECTRICAL ITEMS AND INSTALLATION PER MUSCO LIGHTING.

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Drummeys Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074

260 Charles Street
Studio 300
Waltham, MA 02453

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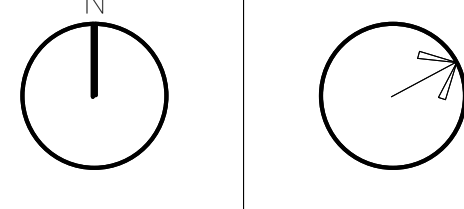
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August 28th, 2023

PROJECT NORTH MAGNETIC NORTH

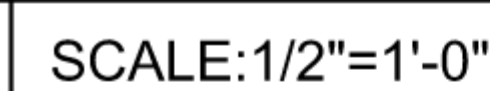
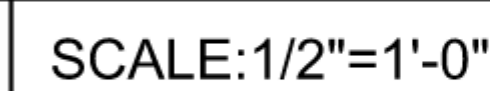


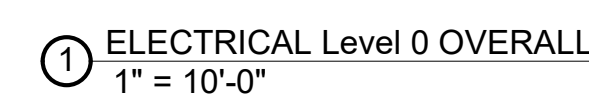
SPORTS LIGHTING DETAILS

Scale:
Job No.: 60-20-409
Drawn By: ZMB
Date: August 28th, 2023

E0-1-6

1. DETAILS ARE STANDARD DETAILS SHOWN FOR REFERENCE ONLY. EC SHALL INSTALL ALL 2-PORT ELECTRIC VEHICLE CHARGING STATIONS SHOWN ON THE SITE PLAN (6 TOTAL). CHARGING STATIONS TO BE FURNISHED BY OTHERS. PROVIDE BRANCH CIRCUITS TO STATIONS AS SHOWN ON SITE PLANS AND PANELBOARD SCHEDULES.





- 1 CONDUIT FOR NORMAL, STANDBY, AND EMERGENCY POWER WIRING SERVING EQUIPMENT ON LEVELS 1-4 SHALL BE ROUTED THROUGH THE VERTICAL SHAFT. PROVIDE ALL SUPPORTS REQUIRED WITHIN SHAFT.

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Studio 205	Studio 300
South Windsor, CT	Waltham, MA
06074	02453

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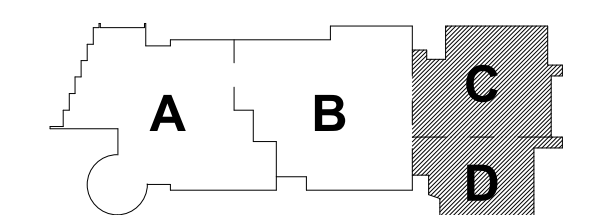
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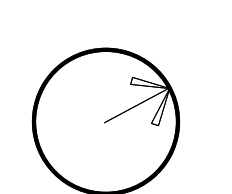
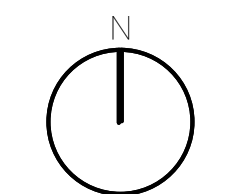
August 28th, 2023



KEY PLAN

PROJECT NORTH

MAGNETIC NORTH



**ELECTRICAL
LOWER LEVEL
FLOOR PLAN -
OVERALL PLAN**

Scale: 1" = 100.0'

Job No.: 60-20-409

Drawn By: ZMB

Date: August 28th, 2023

E1-1-0



```

A: # - DENOTES BRANCH CIRCUIT PANELBOARD UPHLLA; CIRCUIT #
U: # - DENOTES BRANCH CIRCUIT PANELBOARD UPHLB; CIRCUIT #
V: # - DENOTES BRANCH CIRCUIT PANELBOARD UPHLLC; CIRCUIT #
E: # - DENOTES BRANCH CIRCUIT PANELBOARD UPH1M; CIRCUIT #
AA: # - DENOTES BRANCH CIRCUIT PANELBOARD UPL1A; CIRCUIT #
BD: # - DENOTES BRANCH CIRCUIT PANELBOARD UPL1B; CIRCUIT #
BF: # - DENOTES BRANCH CIRCUIT PANELBOARD UPL1C; CIRCUIT #
EJ: # - DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-1LA; CIRCUIT #
SA: # - DENOTES BRANCH CIRCUIT PANELBOARD SB-UPHLLA; CIRCUIT #
SJ: # - DENOTES BRANCH CIRCUIT PANELBOARD SB-UPHLLA; CIRCUIT #

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Wakefield, MA 01880

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-0C

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Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074
Tel: 817.984.1700
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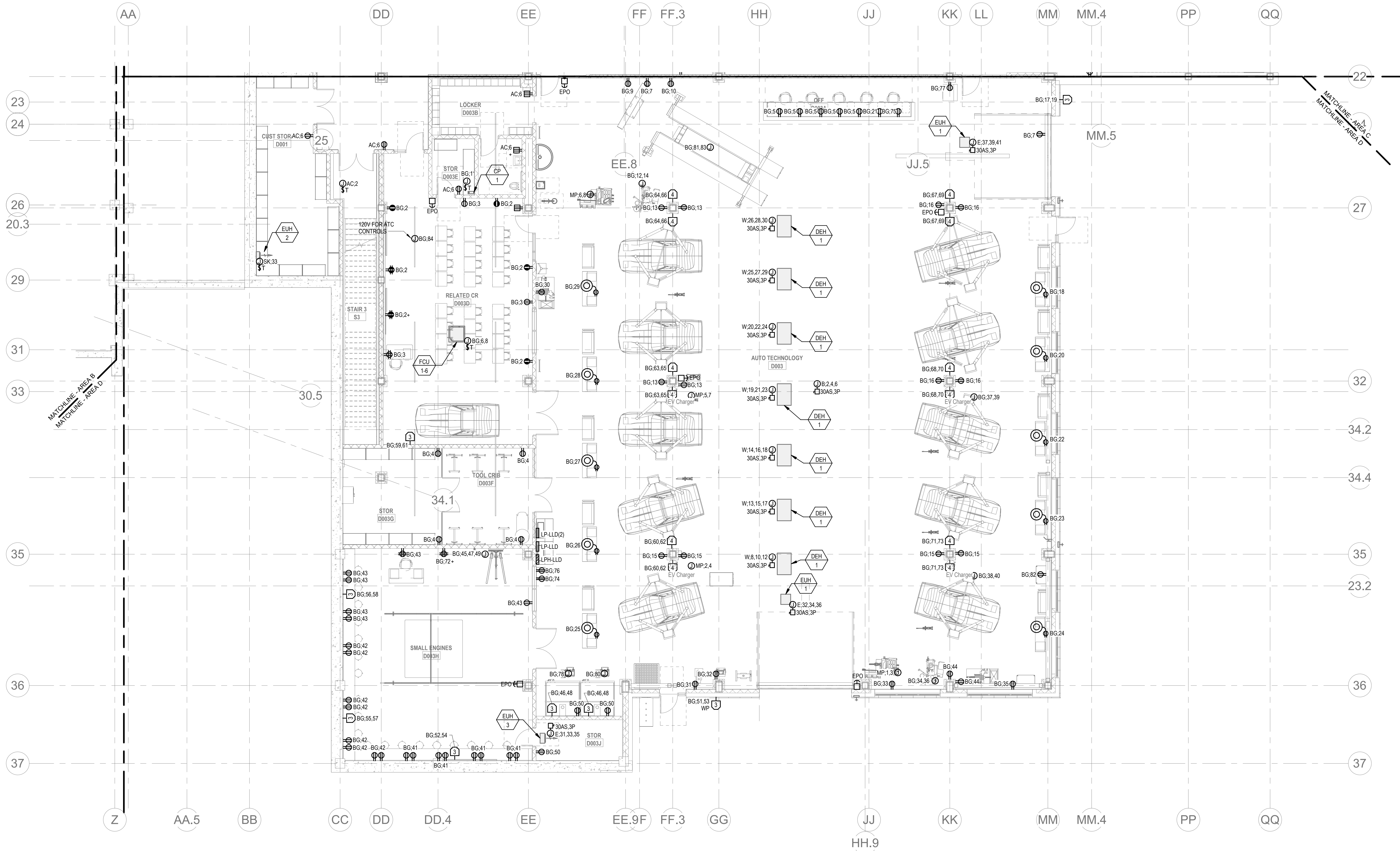
Wakefield, MA 01880

POWER GENERAL NOTES:

1. REFER TO ES-0.0, 1, AND 2 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND ANY RELATED DEVICES. REFER TO ES-0.2 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
4. PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH PIECE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELECOM DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

CIRCUIT LEGEND:

- A.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-LIA, CIRCUIT #
W.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-LID, CIRCUIT #
E.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-MI, CIRCUIT #
AA.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-LIA, CIRCUIT #
BG.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-LID, CIRCUIT #
EJ.# - DENOTES BRANCH CIRCUIT PANELBOARD EML-LIA, CIRCUIT #
SA.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-LIA, CIRCUIT #
SI.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-LIA, CIRCUIT #



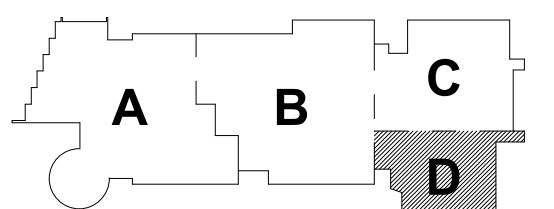
ELECTRICAL POWER Level 0 Area D
1/8" = 1'-0"

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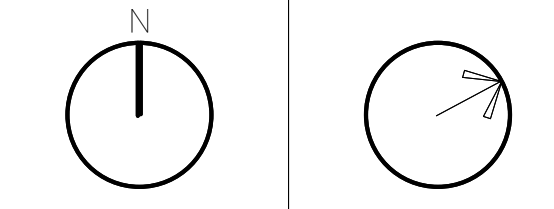
BID SET

August 28th, 2023



KEY PLAN

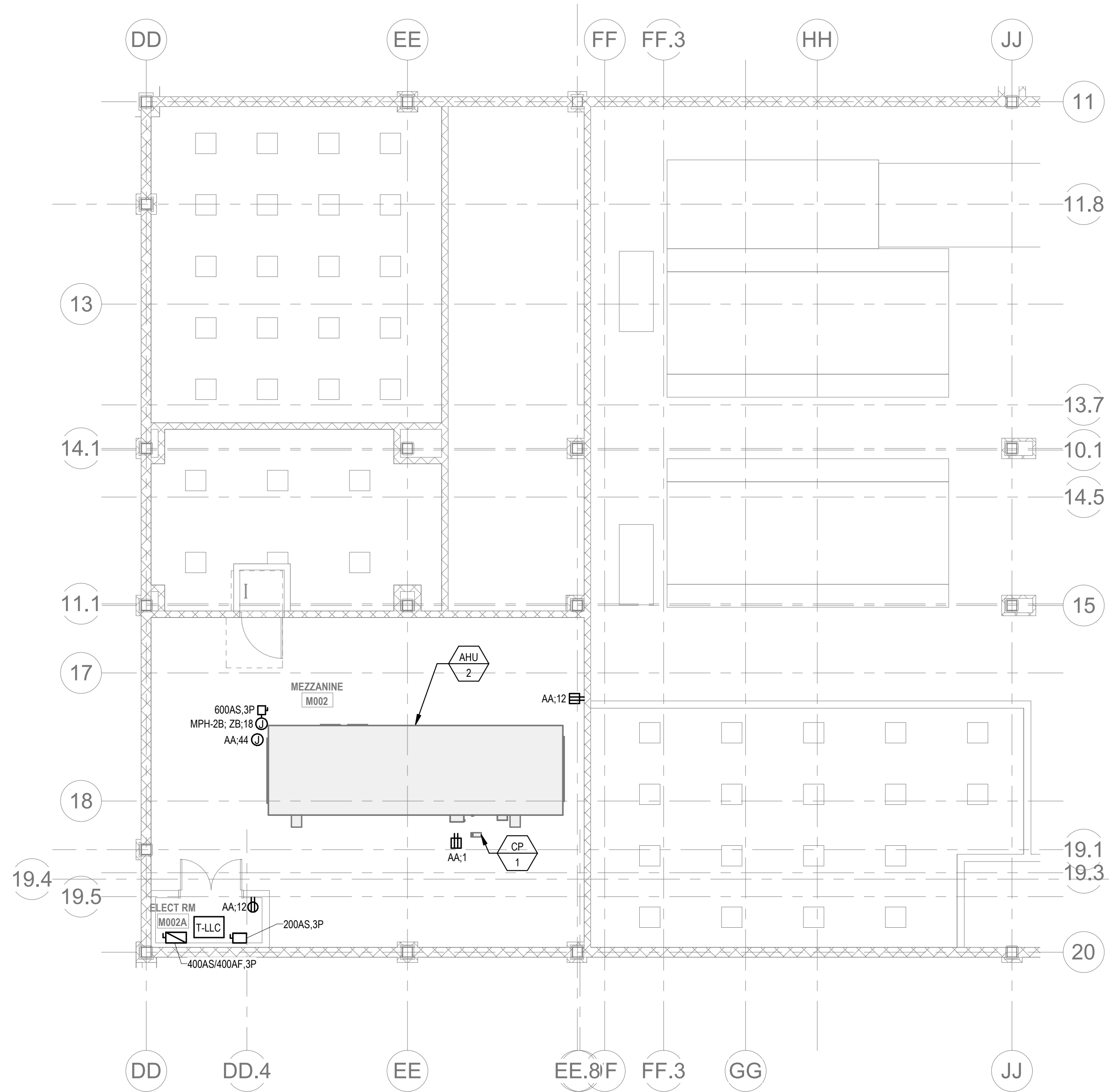
PROJECT NORTH MAGNETIC NORTH



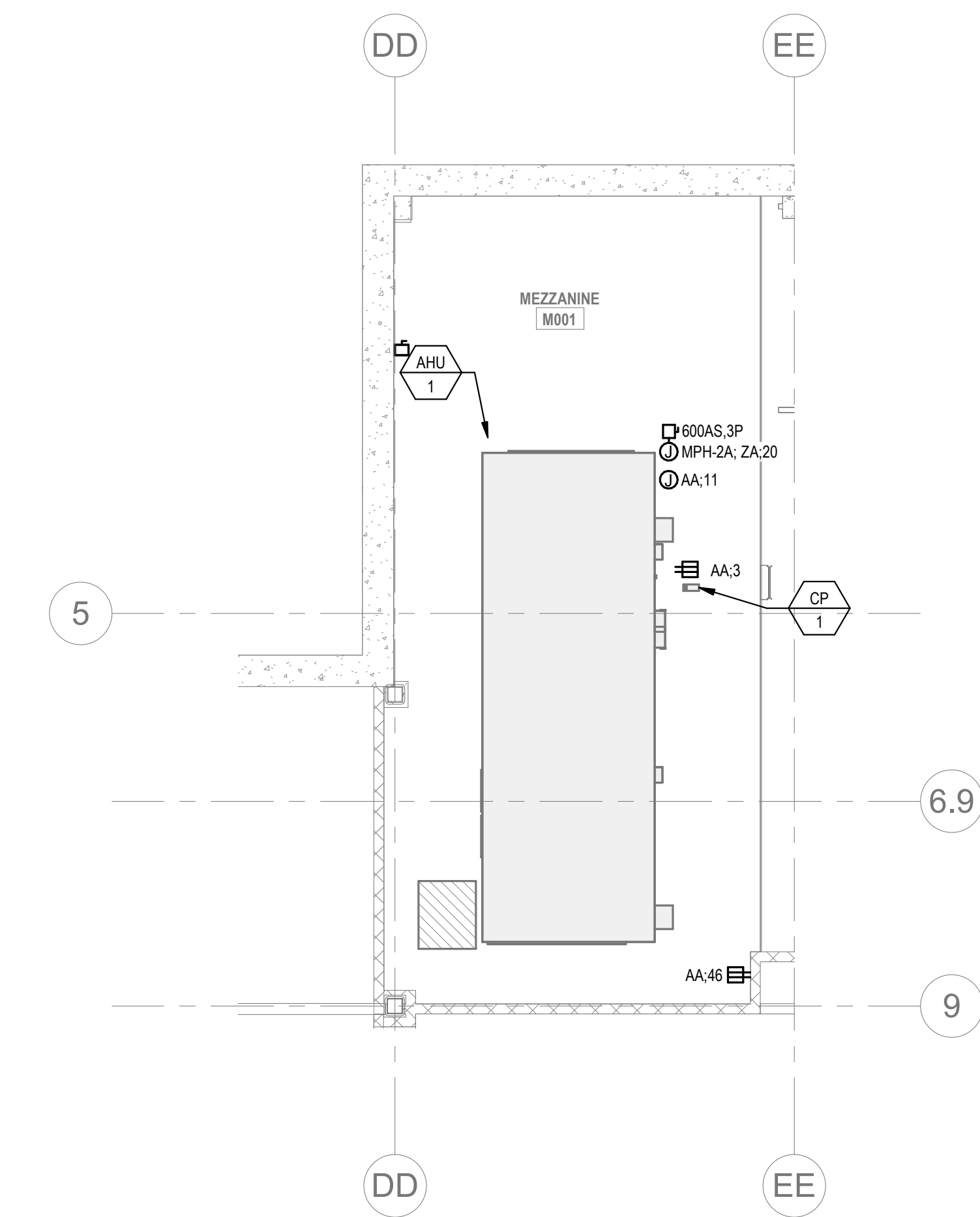
ELECTRICAL
POWER LOWER
LEVEL FLOOR
PLAN - AREA D

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

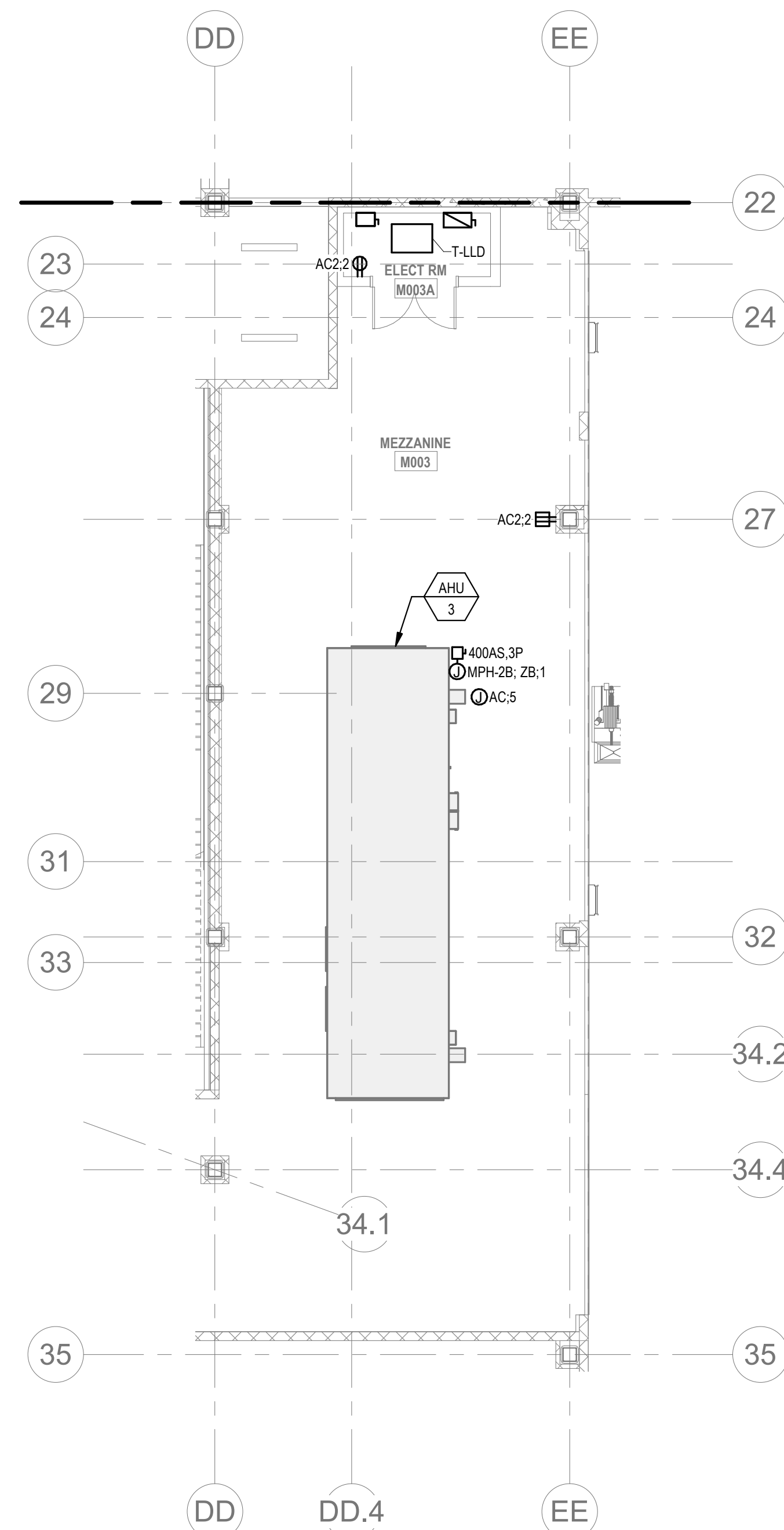
E1-1-0D



2 ELECTRICAL POWER 0.5-Lower Level Mezzanine - Area C Partial 1
1/8" = 1'-0"



1 ELECTRICAL POWER 0.5-Lower Level Mezzanine - Area C Partial 2
1/8" = 1'-0"



3 ELECTRICAL POWER 0.5-Lower Level Mezzanine - Area D Partial
1/8" = 1'-0"

POWER GENERAL NOTES:

1. REFER TO E3-0.1, AND 2 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND AV RELATED DEVICES. REFER TO E0-0.2 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
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5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ALL MECHANICAL, ELECTRICAL, AND FIRE PROTECTION (MEP/FP) SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE MEP/FP COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.
7. MECHANICAL, ELECTRICAL AND FIRE PROTECTION (MEP/FP) CONTRACTORS NOTE: BETWEEN COLUMN LINES, A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEP/FP SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNSTRUT SUPPORTS ATTACHED TO BOTTOM CORN OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEP/FP SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEP/FP SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON THE LIMITED BASES AT LOCATIONS SPECIFICALLY INDICATED ON THE MEP/FP DRAWINGS.
8. ALL MEP/FP SYSTEMS COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINES FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEP/FP COORDINATION PROCESS.
9. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELECOM DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

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225 Oakland Road
Studio 205
South Windsor, CT
06074
Tel: 817.984.1700
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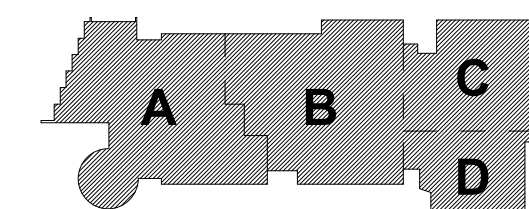
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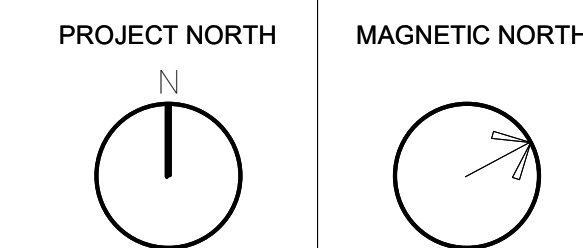
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August 28th, 2023



KEY PLAN



**ELECTRICAL
POWER LOWER
LEVEL FLOOR
PLAN -
MEZZANINES**

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

Job No.: 60-20-409

Drawn By: QAA

Date: August 28th, 2023

E1-1-0M

GENERAL NOTES:

- REFER TO E3-0.0.1, AND 2 FOR SINGLE LINE DIAGRAM.
- OVERALL ELECTRICAL FLOOR PLANS SHOW LOCATIONS OF MAJOR DISTRIBUTION EQUIPMENT - SWITCHBOARDS, TRANSFER SWITCHES, TRANSFORMERS, PANELBOARDS, AND CONDUIT RUNS FOR MAIN FEEDERS. REFER TO POWER AND LIGHTING AREA PLANS AND ENLARGED PLANS FOR LOCATIONS OF OTHER ELECTRICAL EQUIPMENT.

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Studio 205
South Windsor, CT
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Tel: 817.984.1700
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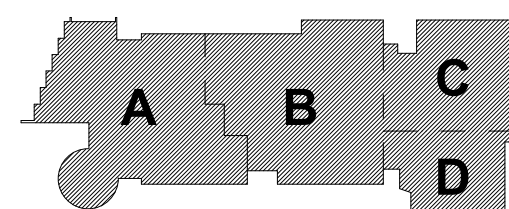
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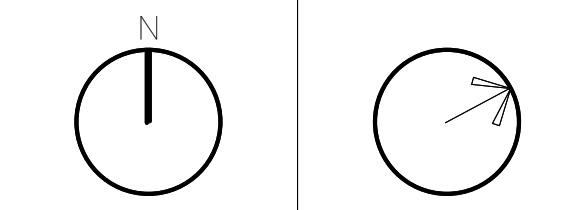
BID SET

August 28th, 2023



KEY PLAN

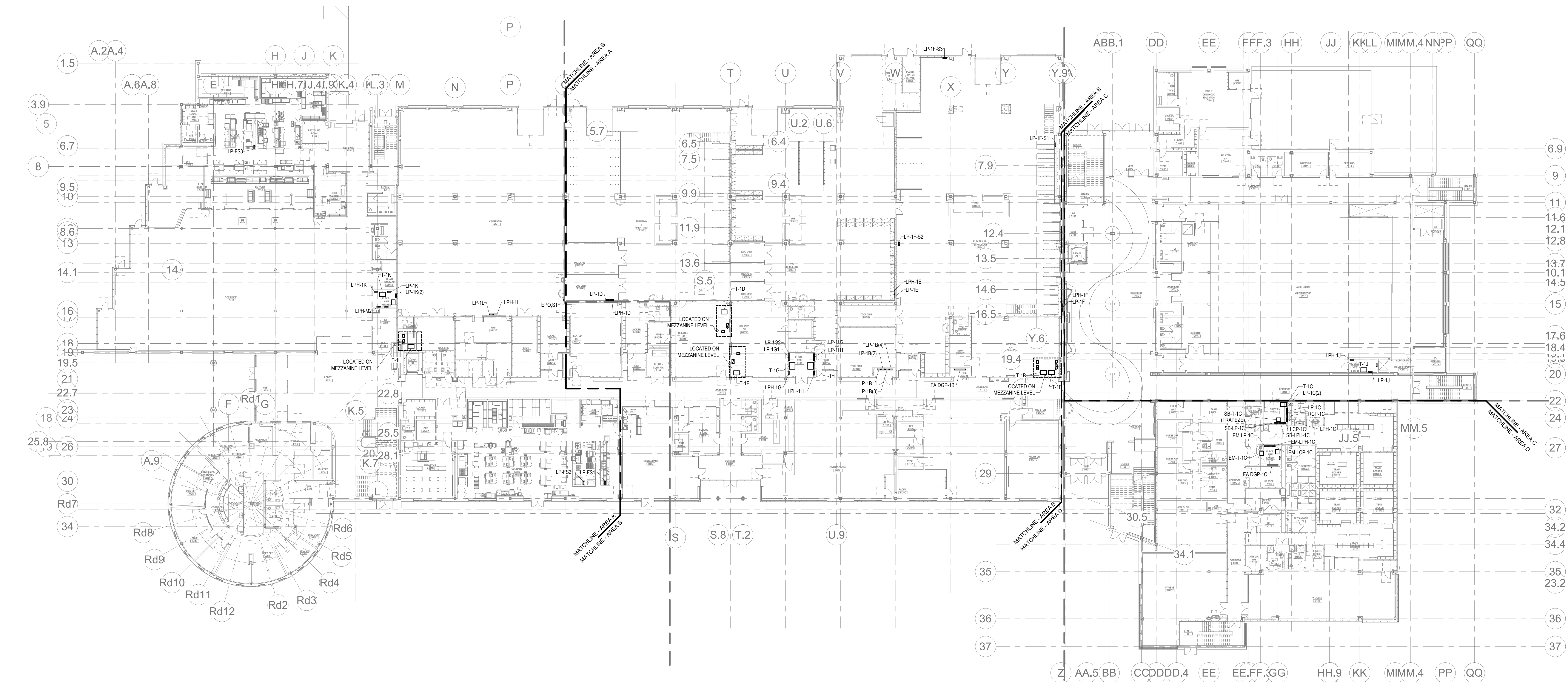
PROJECT NORTH MAGNETIC NORTH



ELECTRICAL
FIRST FLOOR
PLAN - OVERALL
PLAN

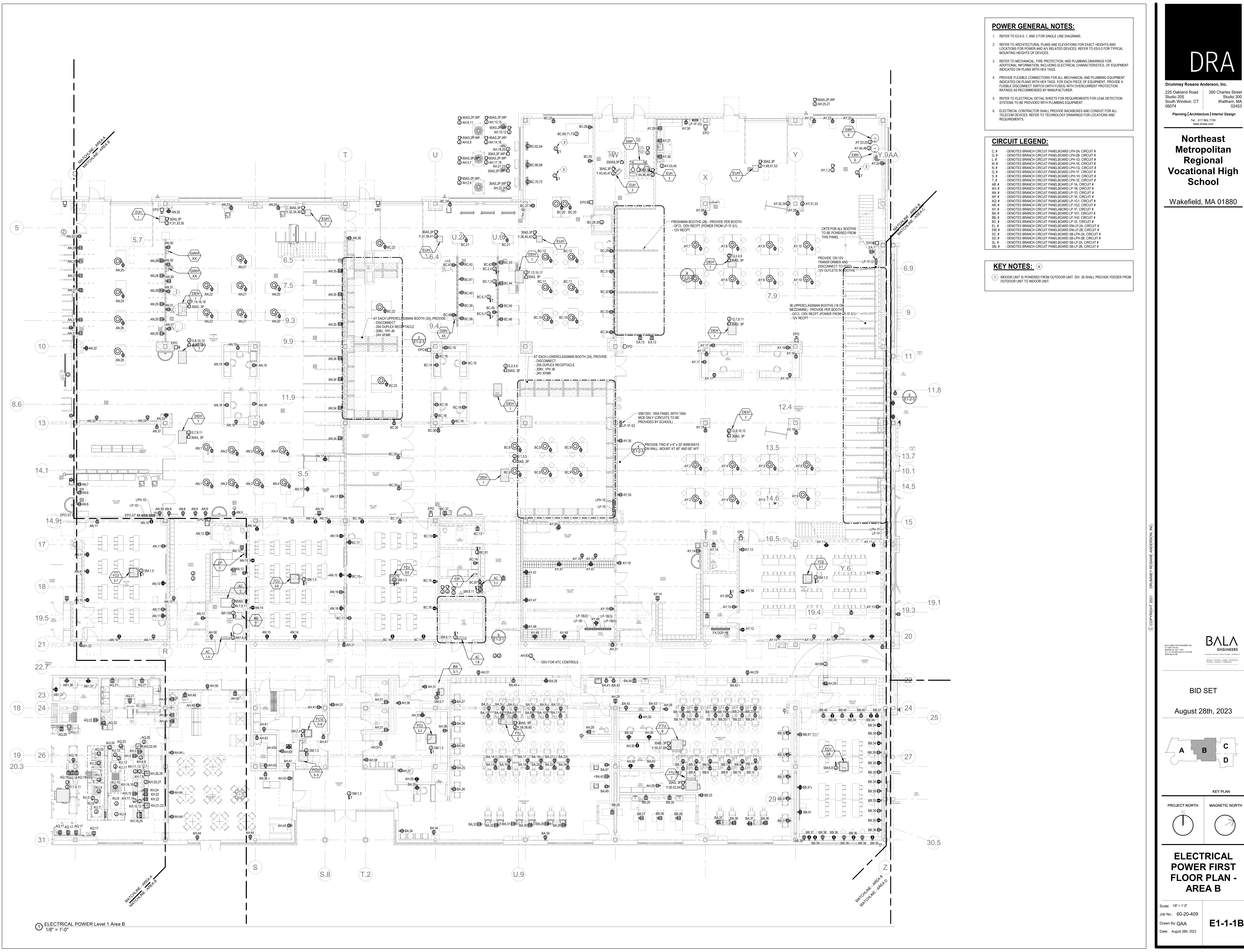
Scale: 1" = 20'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-1





E1-1-1A



POWER GENERAL NOTES:

- REFER TO E3-0.0, 1, AND 2 FOR SINGLE LINE DIAGRAMS.
- REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND ALL RELATED DEVICES. REFER TO E3-0.2 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
- REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
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- REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
- ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELECOM DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

CIRCUIT LEGEND:

C # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A, CIRCUIT #
G # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2B, CIRCUIT #
L # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-10, CIRCUIT #
M # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-16, CIRCUIT #
N # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-16, CIRCUIT #
Q # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1F, CIRCUIT #
S # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1H, CIRCUIT #
T # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1E, CIRCUIT #
AB # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1A, CIRCUIT #
AN # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1B, CIRCUIT #
AP # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1C, CIRCUIT #
AQ # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1D, CIRCUIT #
AR # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1G, CIRCUIT #
AY # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1F, CIRCUIT #
BA # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1H, CIRCUIT #
BB # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1I, CIRCUIT #
BC # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1J, CIRCUIT #
EL # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A, CIRCUIT #
EM # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2B, CIRCUIT #
SC # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A, CIRCUIT #
SD # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2B, CIRCUIT #
SL # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A, CIRCUIT #
SM # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2B, CIRCUIT #

KEY NOTES:

- INDOOR UNIT IS POWERED FROM OUTDOOR UNIT. DIV. 26 SHALL PROVIDE FEEDER FROM OUTDOOR UNIT TO INDOOR UNIT.

ELECTRICAL POWER Level 1 Area B
1/8" = 1'-0"

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Drummeys Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
www.dra.com

260 Charles Street
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WILSON, MA 01890
TEL: 978.261.1111 FAX: 978.261.1112
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BID SET

August 28th, 2023

KEY PLAN

PROJECT NORTH

MAGNETIC NORTH

ELECTRICAL
POWER FIRST
FLOOR PLAN -
AREA B

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-1B

POWER GENERAL NOTES:

- REFER TO E3-0, 1, AND 2 FOR SINGLE LINE DIAGRAMS.
- REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND ANY RELATED DEVICES. REFER TO E3-0.2 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
- REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
- PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH PIECE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
- REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
- ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELECOM DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

CIRCUIT LEGEND:

- B.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1C, CIRCUIT #
C.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A, CIRCUIT #
E.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-41, CIRCUIT #
G.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2B, CIRCUIT #
K.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1L, CIRCUIT #
L.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1D, CIRCUIT #
M.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1K, CIRCUIT #
N.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1C, CIRCUIT #
R.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1J, CIRCUIT #
AB.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1A, CIRCUIT #
AC.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1C, CIRCUIT #
AH.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1B, CIRCUIT #
AM.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1L, CIRCUIT #
AN.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1D, CIRCUIT #
AP.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1K, CIRCUIT #
AQ.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1G, CIRCUIT #
AR.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1C, CIRCUIT #
AZ.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1J, CIRCUIT #
EA.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-1C, CIRCUIT #
EL.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-2A, CIRCUIT #
EM.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-2B, CIRCUIT #
SB.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-1C, CIRCUIT #
SC.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-2A, CIRCUIT #
SD.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-2B, CIRCUIT #
SK.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-1C, CIRCUIT #
SL.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-2A, CIRCUIT #
SM.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-2B, CIRCUIT #

KEY NOTES:

- 1 INDOOR UNIT IS POWERED FROM OUTDOOR UNIT. DIV. 26 SHALL PROVIDE FEEDER FROM OUTDOOR UNIT TO INDOOR UNIT.

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225 Oakland Road
Studio 205
South Windsor, CT
06074

280 Charles Street
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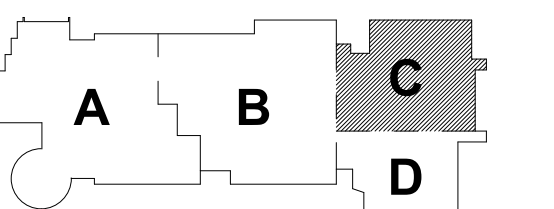
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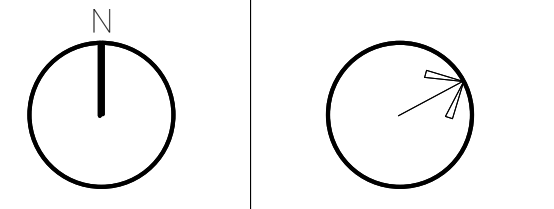
BID SET

August 28th, 2023



KEY PLAN

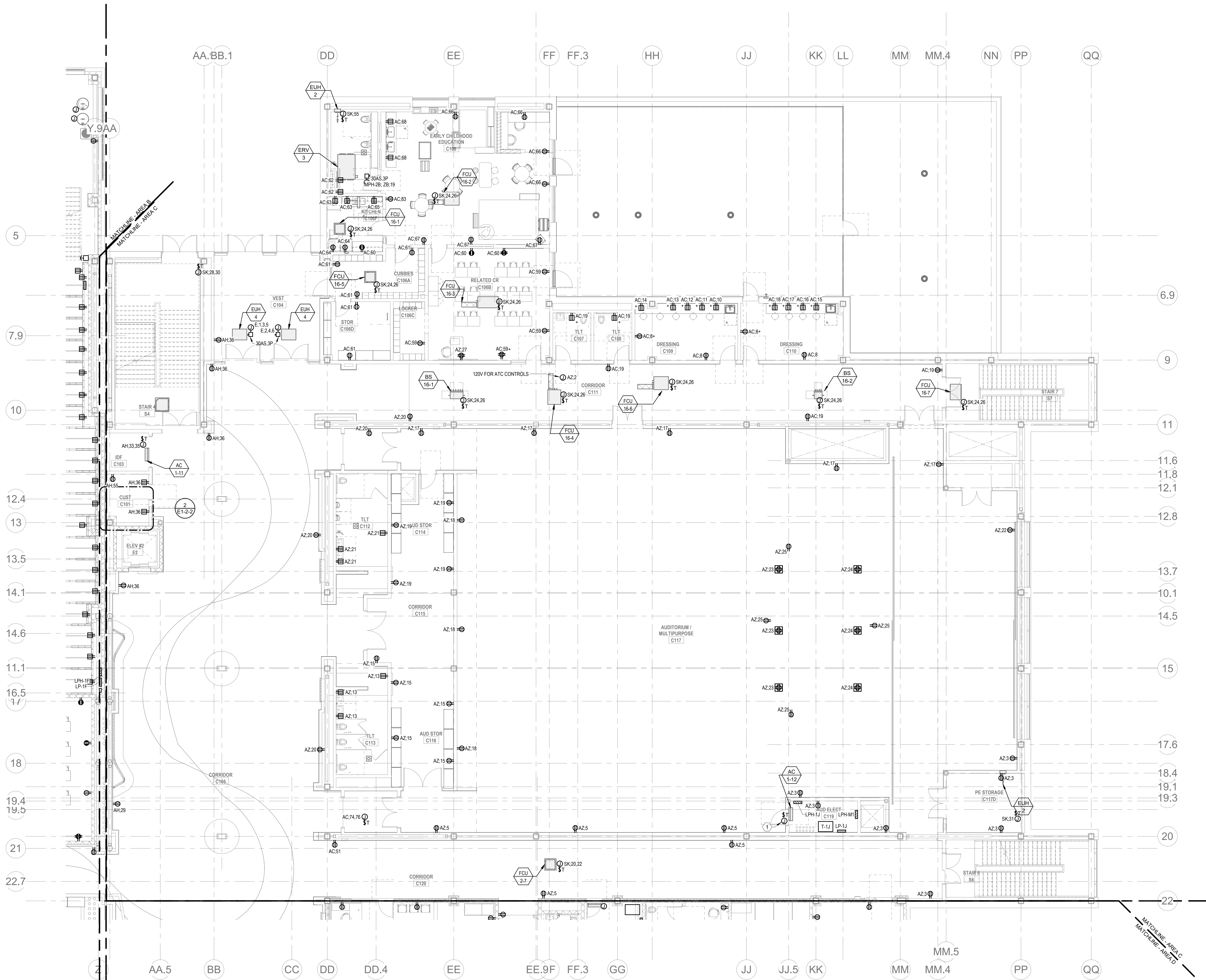
PROJECT NORTH MAGNETIC NORTH



ELECTRICAL
POWER FIRST
FLOOR PLAN -
AREA C

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-1C



1 ELECTRICAL POWER Level 1 Area C
E1-1-1C
1/8" = 1'-0"

1. REFER TO E0-0.0, 1 AND 2 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND AIR RELATED DEVICES. REFER TO E0-0.2 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
4. PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH TYPE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL ELECTRICAL DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATION AND REQUIREMENTS.

G	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-2A; CIRCUIT #
G #	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-2A; CIRCUIT #
K	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-1K; CIRCUIT #
K #	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-1K; CIRCUIT #
L	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-10; CIRCUIT #
L #	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-10; CIRCUIT #
M	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-1M; CIRCUIT #
M #	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-1M; CIRCUIT #
NB	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-15; CIRCUIT #
NB #	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-15; CIRCUIT #
AN	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-18; CIRCUIT #
AN #	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-18; CIRCUIT #
AM	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-1L; CIRCUIT #
AM #	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-1L; CIRCUIT #
AP	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-10; CIRCUIT #
AP #	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-10; CIRCUIT #
AQ	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-1G; CIRCUIT #
AQ #	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-1G; CIRCUIT #
AR	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-10; CIRCUIT #
AR #	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-10; CIRCUIT #
EL	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-1K; CIRCUIT #
EL #	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-1K; CIRCUIT #
EM	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-20; CIRCUIT #
EM #	-	DENOTES BRANCH CIRCUIT PANELBOARD LP-20; CIRCUIT #
SC	-	DENOTES BRANCH CIRCUIT PANELBOARD SB-UP-2A; CIRCUIT #
SC #	-	DENOTES BRANCH CIRCUIT PANELBOARD SB-UP-2A; CIRCUIT #
SD	-	DENOTES BRANCH CIRCUIT PANELBOARD SB-UP-2B; CIRCUIT #
SD #	-	DENOTES BRANCH CIRCUIT PANELBOARD SB-UP-2B; CIRCUIT #
SL	-	DENOTES BRANCH CIRCUIT PANELBOARD SB-UP-2A; CIRCUIT #
SL #	-	DENOTES BRANCH CIRCUIT PANELBOARD SB-UP-2A; CIRCUIT #
SM	-	DENOTES BRANCH CIRCUIT PANELBOARD SB-UP-2B; CIRCUIT #
SM #	-	DENOTES BRANCH CIRCUIT PANELBOARD SB-UP-2B; CIRCUIT #

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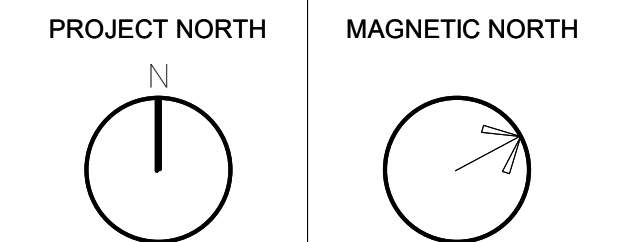
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WUJIAHUO | XUE KONGJINGDONG | YINCHENG | WANGJIAO, JC

August 28th, 2023

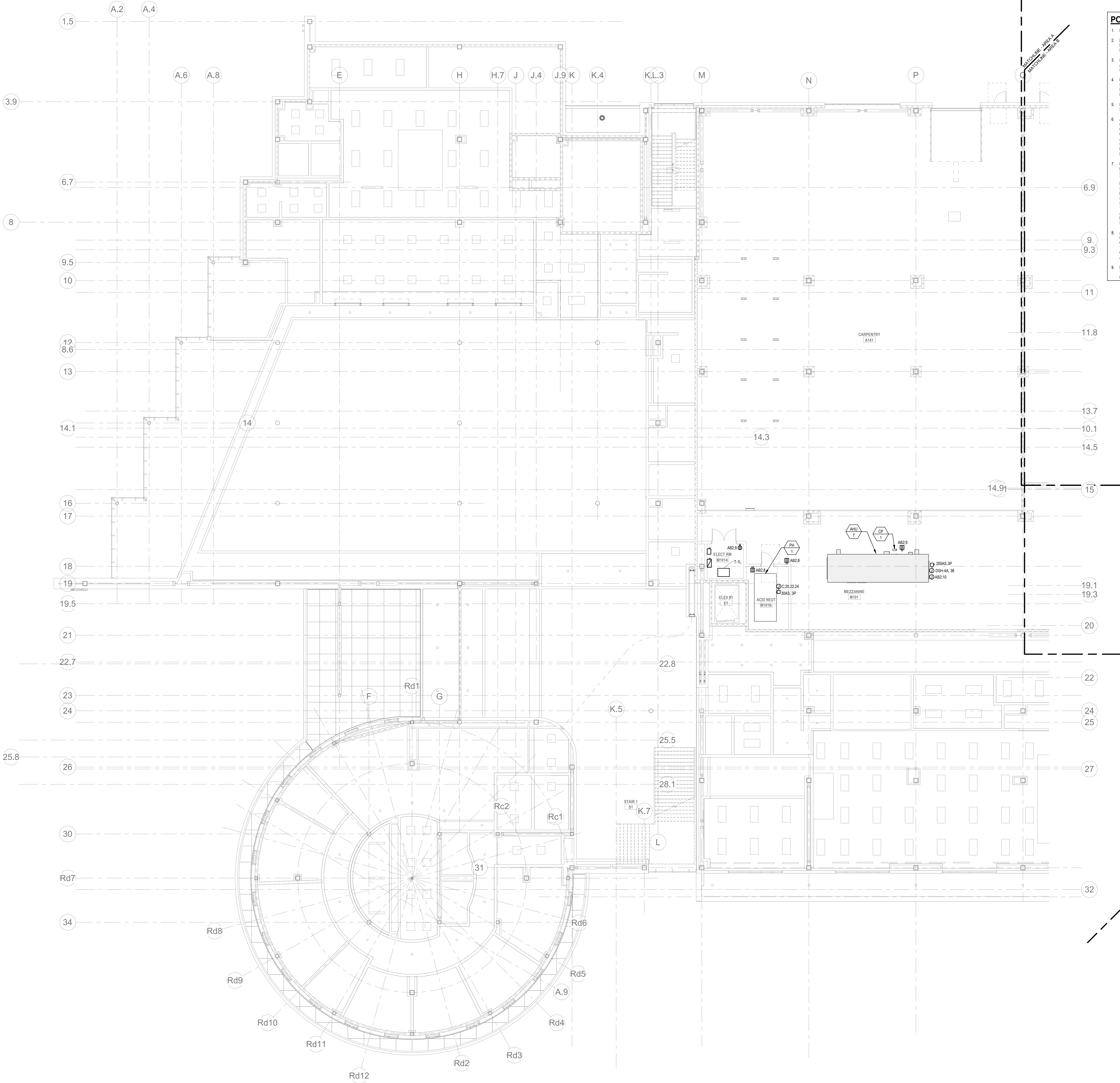


Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-1D

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-1D



POWER GENERAL NOTES:

1. REFER TO E3-0-1, AND 2 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND AV RELATED DEVICES. REFER TO E3-0-2 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
4. PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH PIECE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ALL MECHANICAL, ELECTRICAL AND FIRE PROTECTION (MEP/FP) SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE MEP/FP COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.
7. MECHANICAL, ELECTRICAL AND FIRE PROTECTION (MEP/FP) CONTRACTORS NOTE: BETWEEN COLUMN LINES, A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEP/FP SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUPPORTED OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNSTRUT SUPPORTS ATTACHED TO BOTTOM CHORD OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEP/FP SYSTEMS COMPONENTS. SPECIALLY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEP/FP SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON THE LIMITED BASES AT LOCATIONS SPECIFICALLY INDICATED ON THE MEP/FP DRAWINGS.
8. ALL MEP/FP SYSTEMS COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINES FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEP/FP COORDINATION PROCESS.
9. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELECOM DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

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225 Oakland Road
Studio 205
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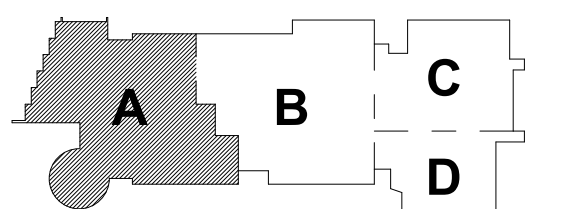
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SUITE 200
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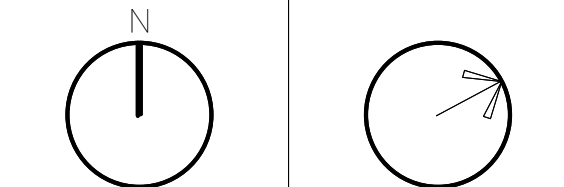
BID SET

August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



ELECTRICAL
POWER FIRST
FLOOR
MEZZANINE
PLAN - AREA A

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-1MA

DRA

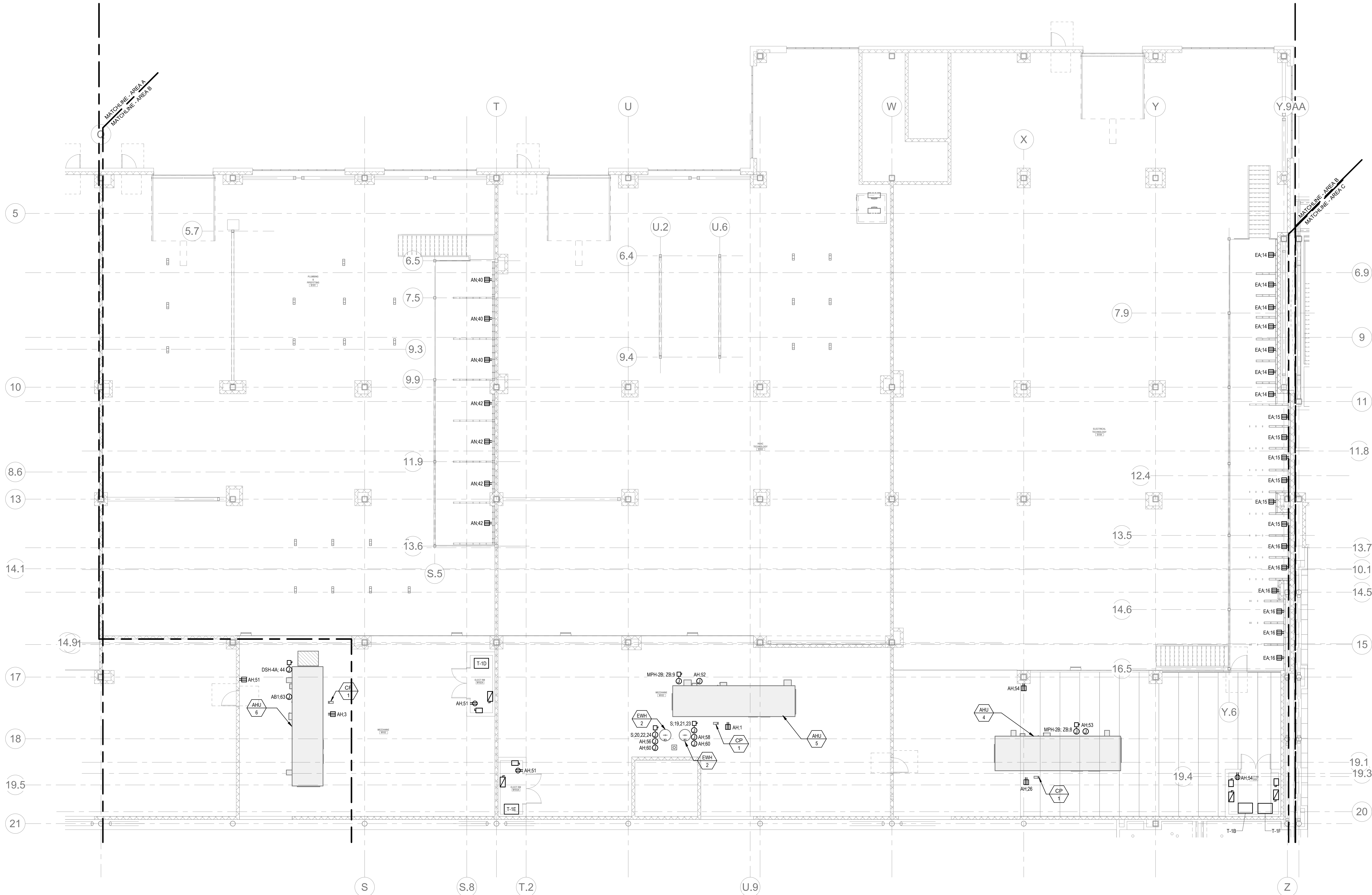
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POWER GENERAL NOTES:

1. REFER TO E3-0.0, 1, AND 2 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND ANY RELATED DEVICES. REFER TO E3-0.2 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
4. PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH PIECE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ALL MECHANICAL, ELECTRICAL AND FIRE PROTECTION (MEP/FP) SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE MEP/FP COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.
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8. ALL MEP/FP SYSTEMS COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINES FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANK AS PART OF THE MEP/FP COORDINATION PROCESS.
9. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELECOM DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.



GENERAL NOTES:

1. REFER TO E3-0.0, 1, AND 2 FOR SINGLE LINE DIAGRAM.
2. OVERALL ELECTRICAL FLOOR PLANS SHOW LOCATIONS OF MAJOR DISTRIBUTION EQUIPMENT: SWITCHBOARDS, TRANSFER SWITCHES, TRANSFORMERS, PANELBOARDS AND CONDUIT RUNS FOR MAIN FEEDERS. REFER TO POWER AND LIGHTING AREA PLANS AND ENLARGED PLANS FOR LOCATIONS OF OTHER ELECTRICAL EQUIPMENT.

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Studio 205
South Windsor, CT
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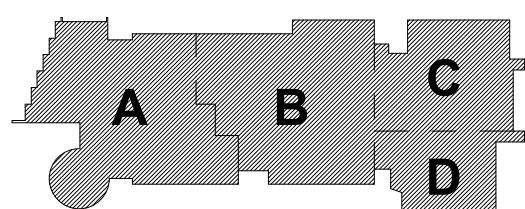
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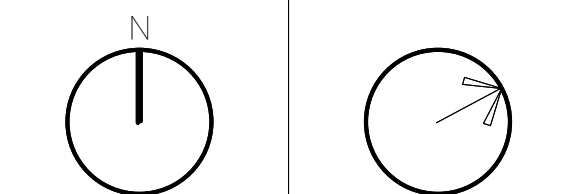
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August 28th, 2023



KEY PLAN

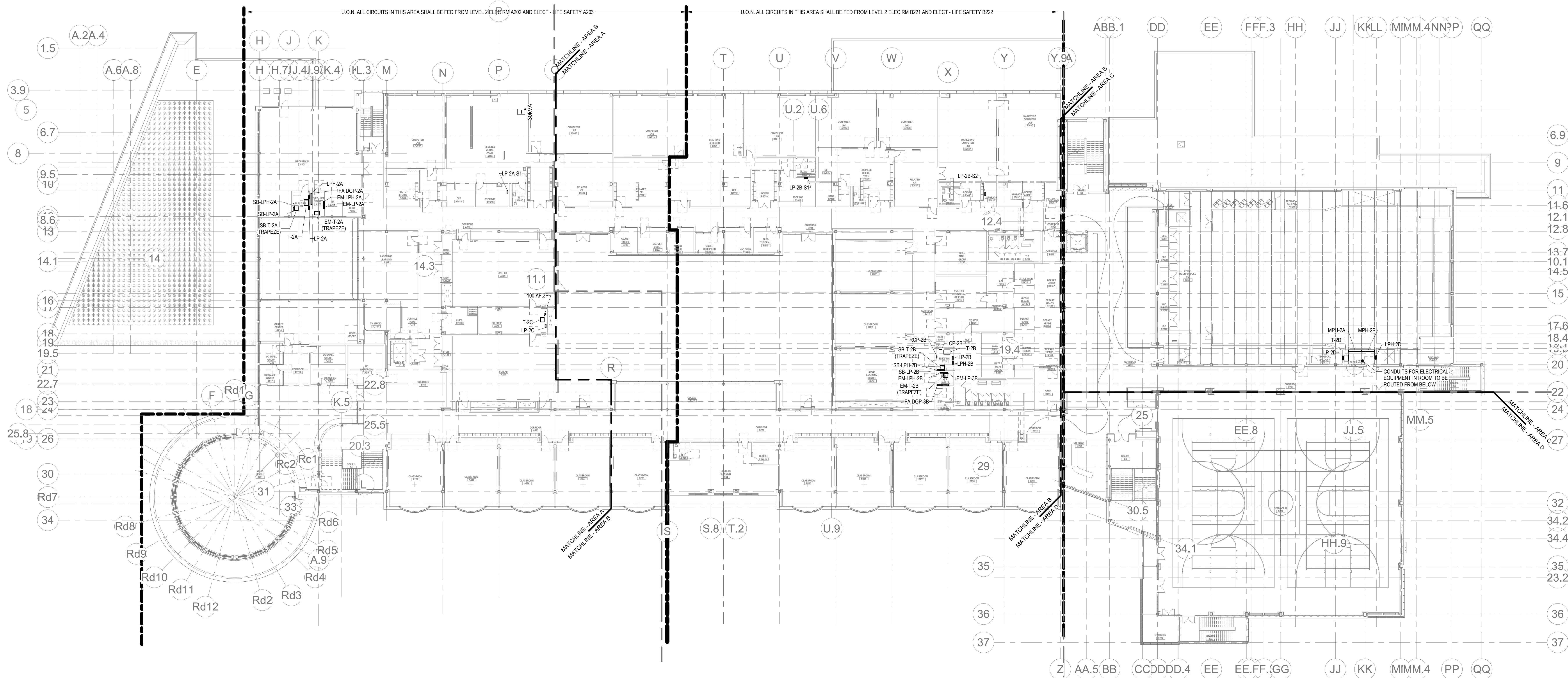
PROJECT NORTH MAGNETIC NORTH



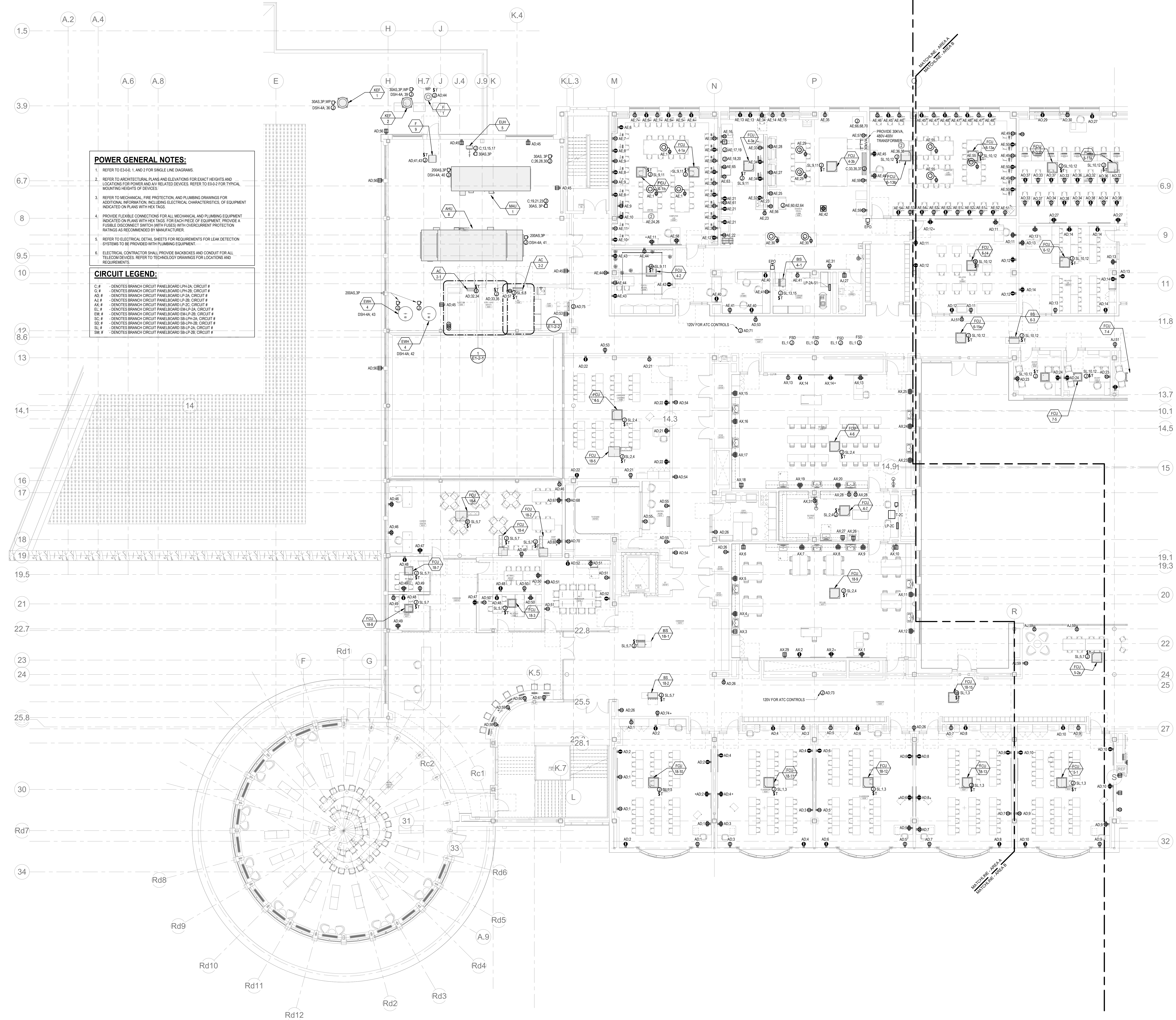
ELECTRICAL
SECOND FLOOR
PLAN - OVERALL
PLAN

Scale: 1" = 20'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-2



① ELECTRICAL Level 2 OVERALL
1" = 20'-0"

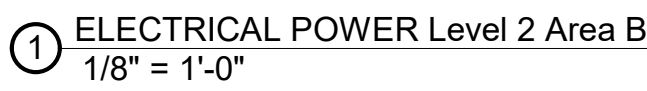


POWER GENERAL NOTES:

1. REFER TO E3-40, 1, AND 2 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND AV RELATED DEVICES. REFER TO E6-42 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
4. PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH PIECE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELECOM DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

CIRCUIT LEGEND:

- C.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A, CIRCUIT #
G.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2B, CIRCUIT #
AD.# - DENOTES BRANCH CIRCUIT PANELBOARD LP-2A, CIRCUIT #
AJ.# - DENOTES BRANCH CIRCUIT PANELBOARD LP-2B, CIRCUIT #
AX.# - DENOTES BRANCH CIRCUIT PANELBOARD LP-2C, CIRCUIT #
EL.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-2A, CIRCUIT #
EM.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-2B, CIRCUIT #
SC.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-2A, CIRCUIT #
SD.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-2B, CIRCUIT #
SL.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-2A, CIRCUIT #
SM.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-2B, CIRCUIT #



- C#; - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A; CIRCUIT #
C#; - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2B; CIRCUIT #
AD; - DENOTES BRANCH CIRCUIT PANELBOARD LP-2A; CIRCUIT #
AJ; - DENOTES BRANCH CIRCUIT PANELBOARD LP-2B; CIRCUIT #
EL; - DENOTES BRANCH CIRCUIT PANELBOARD EMLP-2A; CIRCUIT #
EM; - DENOTES BRANCH CIRCUIT PANELBOARD EMLP-2B; CIRCUIT #
SC; - DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-2A; CIRCUIT #
SD; - DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-2B; CIRCUIT #
SL; - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-2A; CIRCUIT #
SM; - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-2B; CIRCUIT #

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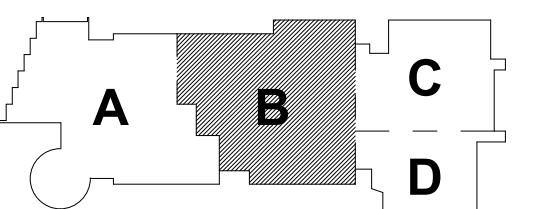
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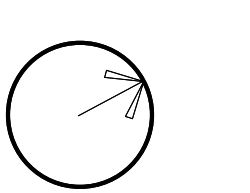
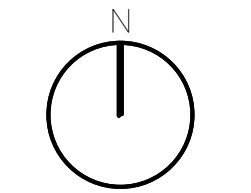
August 28th, 2023



KEY PLAN

PROJECT NORTH

MAGNETIC NORTH



**ELECTRICAL
POWER SECOND
FLOOR PLAN -
AREA B**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-2B

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South Windsor, CT
06074
260 Charles Street
Studio 300
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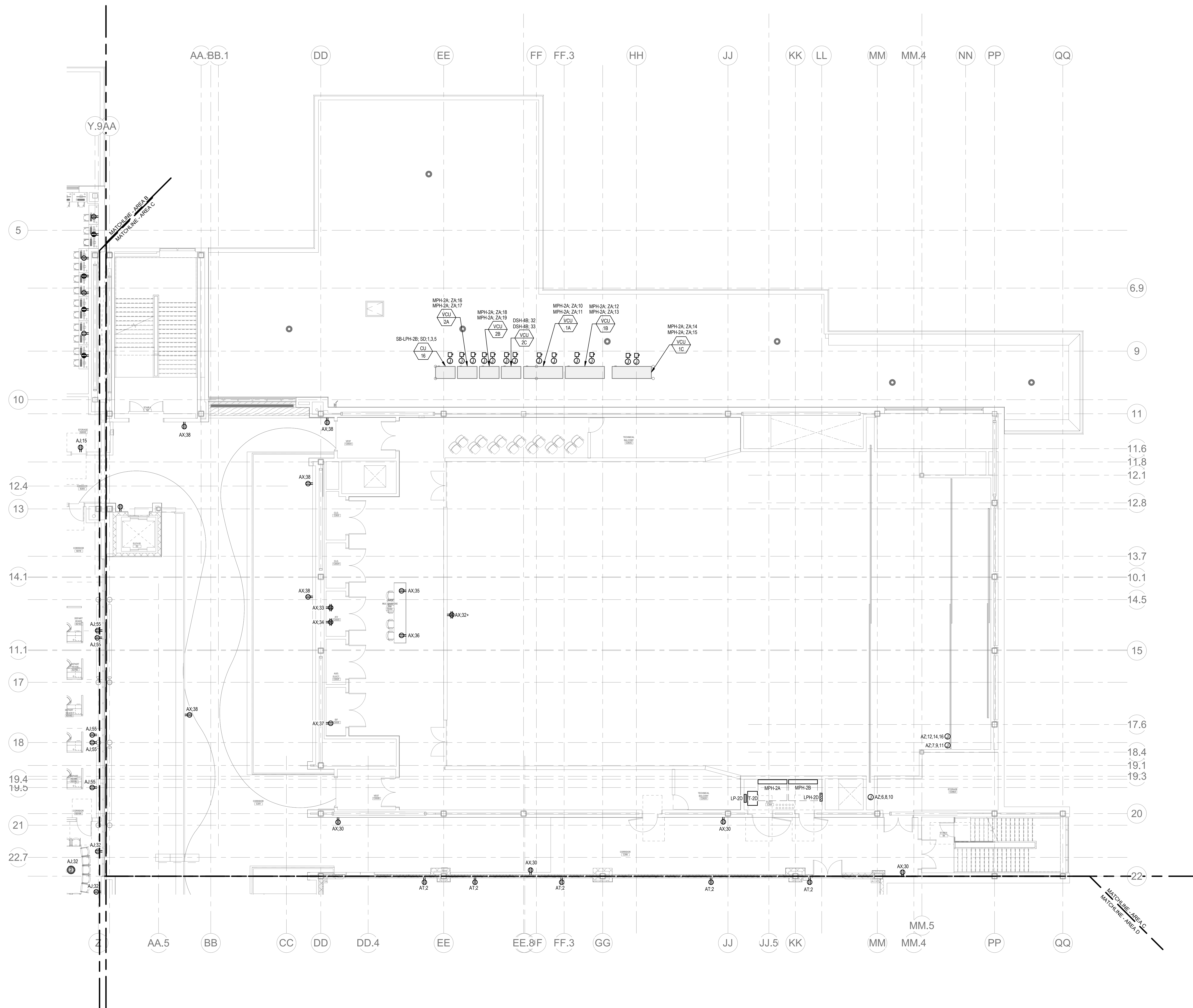
Wakefield, MA 01880

POWER GENERAL NOTES:

- REFER TO E3-0.0, 1, AND 2 FOR SINGLE LINE DIAGRAMS.
- REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND ANY RELATED DEVICES. REFER TO E3-0.2 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
- REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
- PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH PIECE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
- REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
- ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELECOM DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

CIRCUIT LEGEND:

C: # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A, CIRCUIT #
Q: # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2B, CIRCUIT #
R: # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1J, CIRCUIT #
AD: # - DENOTES BRANCH CIRCUIT PANELBOARD LP-2A, CIRCUIT #
AJ: # - DENOTES BRANCH CIRCUIT PANELBOARD LP-2B, CIRCUIT #
AZ: # - DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-2A, CIRCUIT #
EL: # - DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-2B, CIRCUIT #
EM: # - DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-2B, CIRCUIT #
SC: # - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-2A, CIRCUIT #
SD: # - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-2B, CIRCUIT #
SL: # - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-2A, CIRCUIT #
SM: # - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-2B, CIRCUIT #

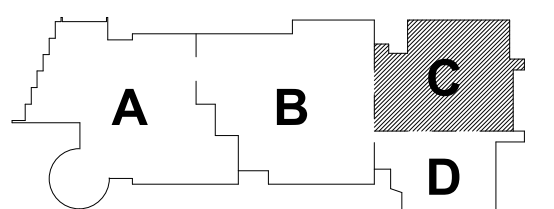


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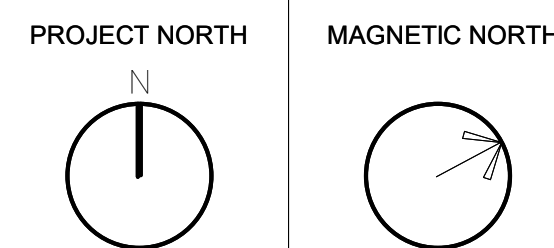
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BID SET

August 28th, 2023



KEY PLAN



ELECTRICAL
POWER SECOND
FLOOR PLAN -
AREA C

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-2C

1 ELECTRICAL POWER Level 2 Area C
1/8" = 1'-0"

1. REFER TO E0-00.1, 1 AND 2 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND AIR RELATED DEVICES. REFER TO E0-02 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
4. PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH TYPE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELEPHONE DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATION AND REQUIREMENTS.

1. REFER TO E0-00.1, 1 AND 2 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND AIR RELATED DEVICES. REFER TO E0-02 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
4. PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH TYPE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELEPHONE DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATION AND REQUIREMENTS.

C.#	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A; CIRCUIT #
G.#	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-2B; CIRCUIT #
P.#	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-2D; CIRCUIT #
AD.#	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A; CIRCUIT #
AJ.#	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A; CIRCUIT #
AT.#	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-2C; CIRCUIT #
EL.#	- DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-2A; CIRCUIT #
EM.#	- DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-2B; CIRCUIT #
SC.#	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-2A; CIRCUIT #
SD.#	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-2B; CIRCUIT #
SM.#	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-2B; CIRCUIT #
SM.#	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-2B; CIRCUIT #

C.#	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A; CIRCUIT #
G.#	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-2B; CIRCUIT #
P.#	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-2D; CIRCUIT #
AD.#	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A; CIRCUIT #
AJ.#	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A; CIRCUIT #
AT.#	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-2C; CIRCUIT #
EL.#	- DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-2A; CIRCUIT #
EM.#	- DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-2B; CIRCUIT #
SC.#	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-2A; CIRCUIT #
SD.#	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-2B; CIRCUIT #
SM.#	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-2B; CIRCUIT #
SM.#	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-2B; CIRCUIT #



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August 28th, 2023



PROJECT NORTH	MAGNETIC NORTH
100	100
90	90
80	80
70	70
60	60
50	50
40	40
30	30
20	20
10	10
0	0
330	330
320	320
310	310
300	300
290	290
280	280
270	270
260	260
250	250
240	240
230	230
220	220
210	210
200	200
190	190
180	180
170	170
160	160
150	150
140	140
130	130
120	120
110	110
100	100



Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-2D

E1-1-2D

GENERAL NOTES:

1. REFER TO E3-0.0, 1, AND 2 FOR SINGLE LINE DIAGRAM.
2. OVERALL ELECTRICAL FLOOR PLANS SHOW LOCATIONS OF MAJOR DISTRIBUTION EQUIPMENT - SWITCHBOARDS, TRANSFER SWITCHES, TRANSFORMERS, PANELBOARDS AND CONDUIT RUNS FOR MAIN FEEDERS. REFER TO POWER AND LIGHTING AREA PLANS AND ENLARGED PLANS FOR LOCATIONS OF OTHER ELECTRICAL EQUIPMENT.

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Tel: 817.984.1700
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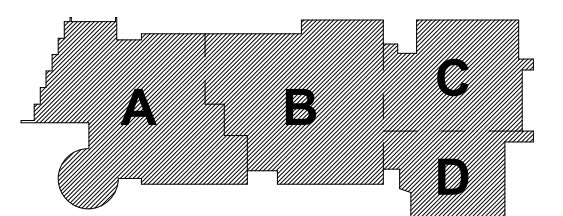
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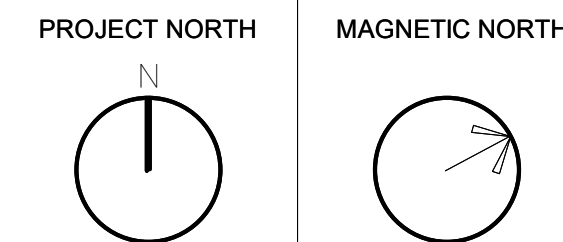
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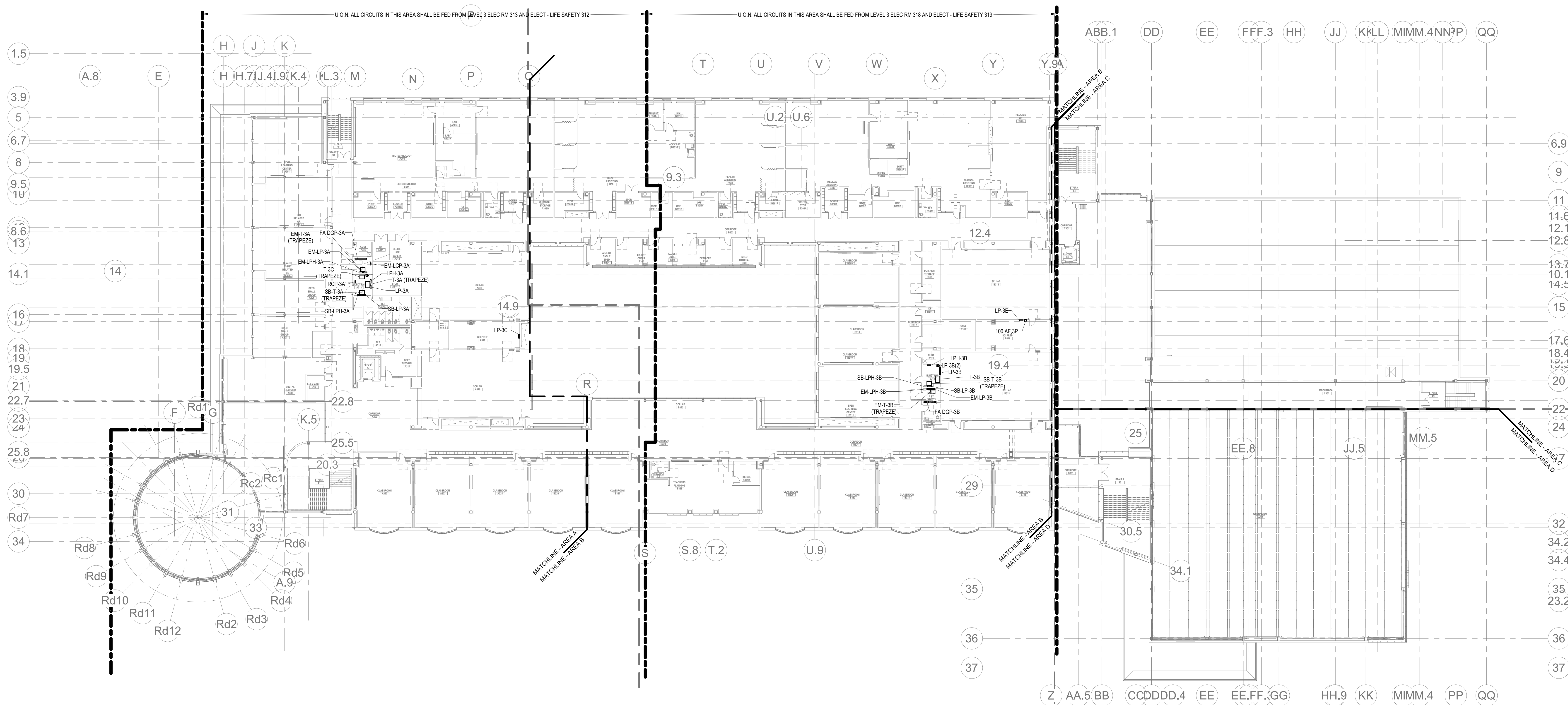
KEY PLAN



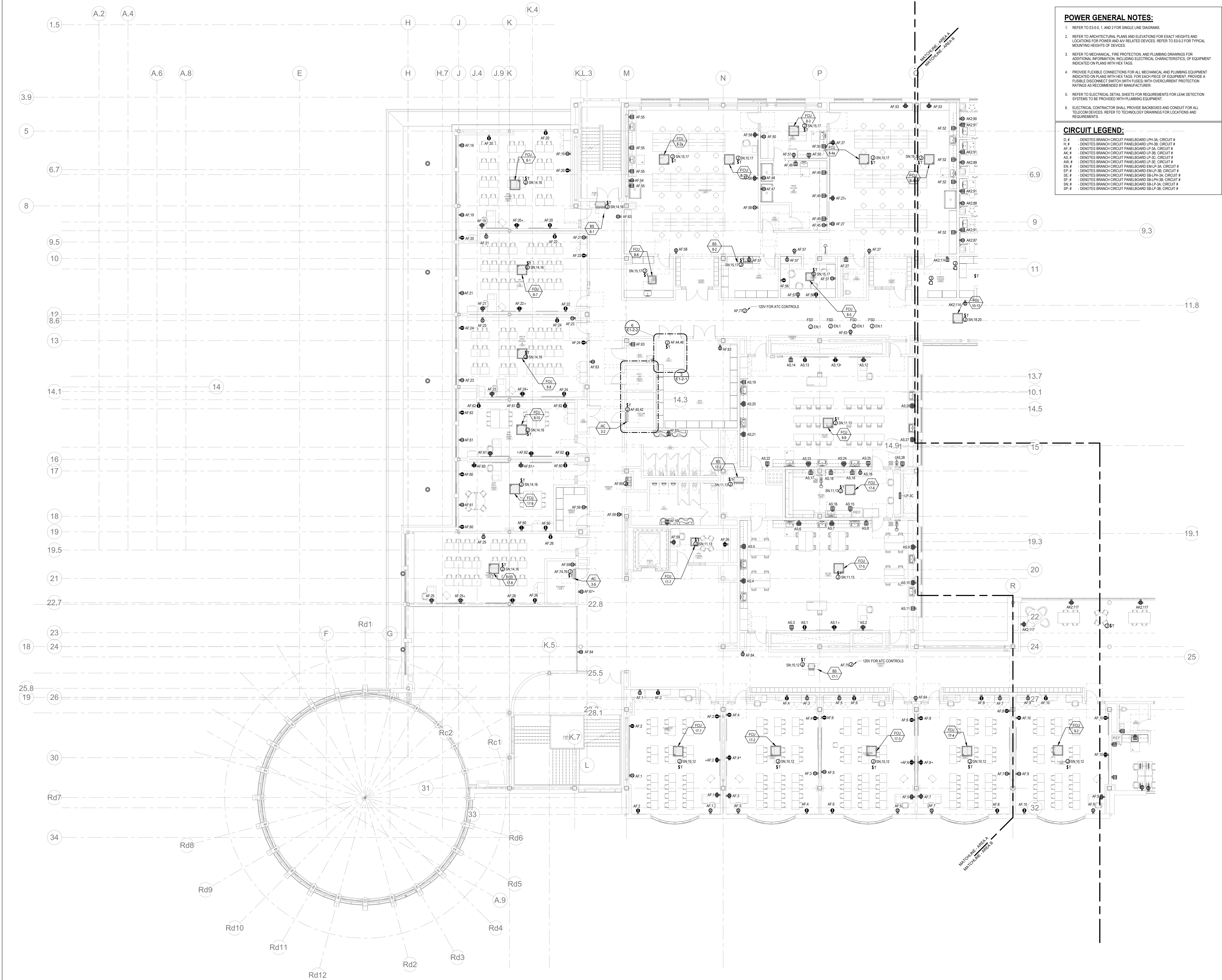
ELECTRICAL
THIRD FLOOR
PLAN - OVERALL
PLAN

Scale: 1" = 20'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-3



1 ELECTRICAL Level 3 OVERALL
1" = 20'-0"



POWER GENERAL NOTES:

- REFER TO E3-0, 1, AND 2 FOR SINGLE LINE DIAGRAMS.
- REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND ALL RELATED DEVICES. REFER TO E3-0.3 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
- REFER TO MECHANICAL FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
- PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH PIECE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
- REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
- ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELECOM DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

CIRCUIT LEGEND:

D. #	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-3A, CIRCUIT #
H. #	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-3B, CIRCUIT #
AF. #	- DENOTES BRANCH CIRCUIT PANELBOARD LP-3A, CIRCUIT #
AK. #	- DENOTES BRANCH CIRCUIT PANELBOARD LP-3B, CIRCUIT #
AS. #	- DENOTES BRANCH CIRCUIT PANELBOARD LP-3C, CIRCUIT #
AW. #	- DENOTES BRANCH CIRCUIT PANELBOARD LP-3E, CIRCUIT #
EN. #	- DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-3A, CIRCUIT #
EP. #	- DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-3B, CIRCUIT #
SE. #	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-3A, CIRCUIT #
SP. #	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-3B, CIRCUIT #
SN. #	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-3A, CIRCUIT #
SP. #	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-3B, CIRCUIT #

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Studio 205
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Tel: 817.984.1700
www.dra.com

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BID SET

August 28th, 2023

KEY PLAN

PROJECT NORTH
MAGNETIC NORTH

**ELECTRICAL
POWER THIRD
FLOOR PLAN -
AREA A**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-3A

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06074
Tel: 817.984.1700
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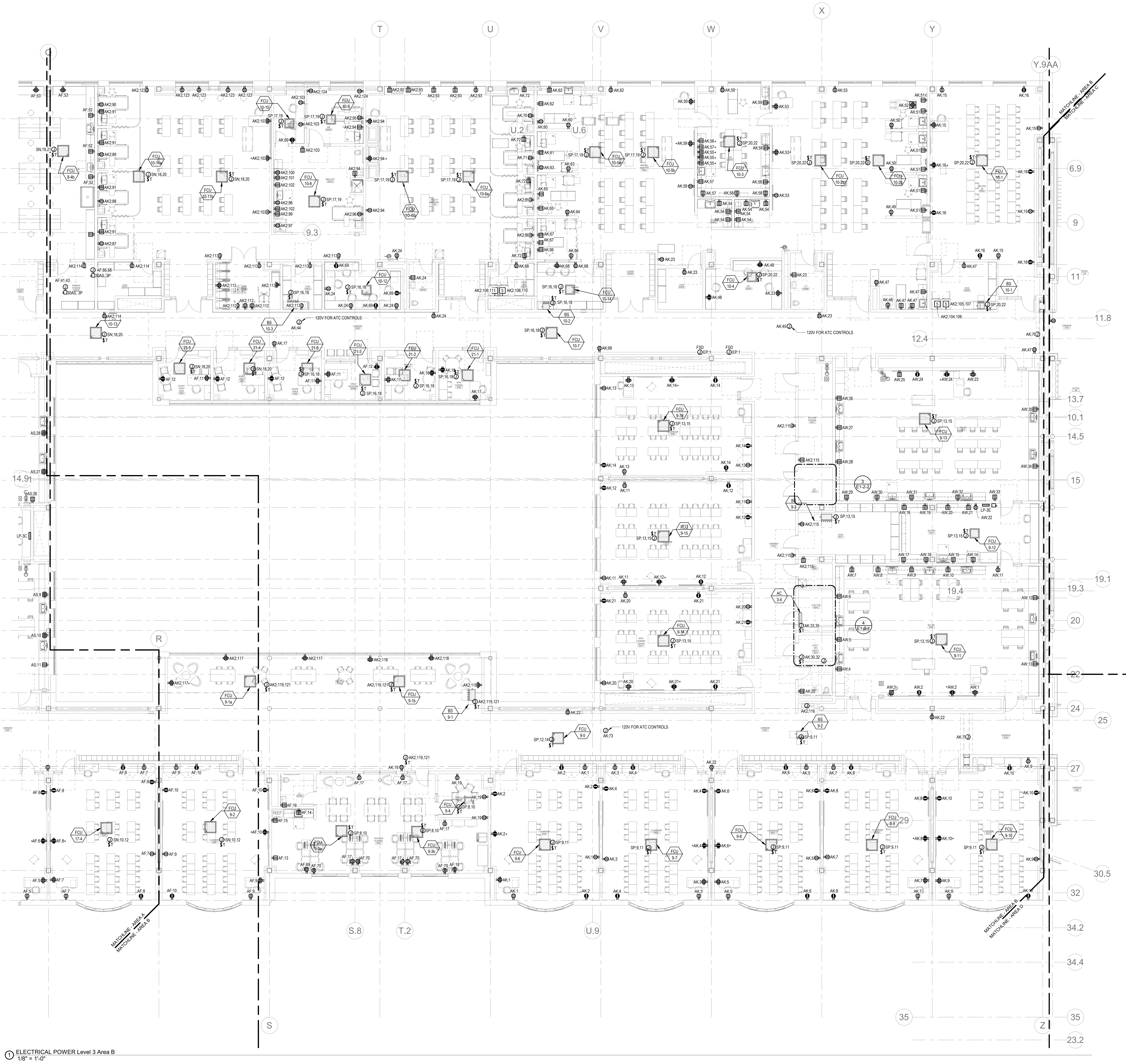
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POWER GENERAL NOTES:

1. REFER TO E3-0-0, 1, AND 2 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND A/V RELATED DEVICES. REFER TO E3-0-2 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
4. PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH PIECE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELECOM DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

CIRCUIT LEGEND:

- D.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-3A, CIRCUIT #
H.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-3B, CIRCUIT #
AF.# - DENOTES BRANCH CIRCUIT PANELBOARD LP-3A, CIRCUIT #
AS.# - DENOTES BRANCH CIRCUIT PANELBOARD LP-3C, CIRCUIT #
AW.# - DENOTES BRANCH CIRCUIT PANELBOARD LP-3E, CIRCUIT #
EN.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-3A, CIRCUIT #
EP.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-3B, CIRCUIT #
SE.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-3A, CIRCUIT #
SF.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-3B, CIRCUIT #
SP.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-3C, CIRCUIT #



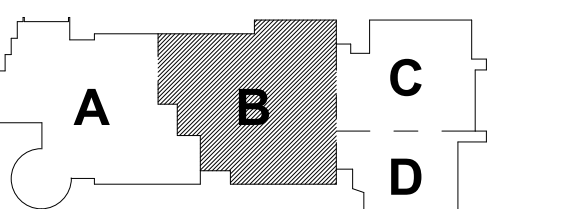
1 ELECTRICAL POWER Level 3 Area B
1/8" = 1'-0"

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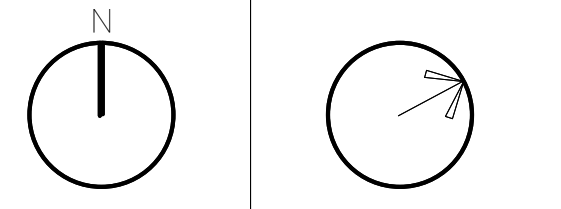
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August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



ELECTRICAL
POWER THIRD
FLOOR PLAN -
AREA B

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-3B

1. REFER TO E3-00, 1 AND 2 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND/or RELATED DEVICES. REFER TO E3-02 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
4. PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH PIECE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL RELOCATED DEVICES. PROVIDE TECHNICAL DRAWINGS FOR LOCATIONS AND HEIGHTS.

D #	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-3A; CIRCUIT #
H #	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-3B; CIRCUIT #
AF #	- DENOTES BRANCH CIRCUIT PANELBOARD LP-3A; CIRCUIT #
AK #	- DENOTES BRANCH CIRCUIT PANELBOARD LP-3B; CIRCUIT #
EN #	- DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-3A; CIRCUIT #
EP #	- DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-3B; CIRCUIT #
SE #	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-3A; CIRCUIT #
SP #	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-3B; CIRCUIT #
SN #	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-3A; CIRCUIT #
SS #	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-3B; CIRCUIT #

D #	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-3A; CIRCUIT #
H #	- DENOTES BRANCH CIRCUIT PANELBOARD LPH-3B; CIRCUIT #
AF #	- DENOTES BRANCH CIRCUIT PANELBOARD LP-3A; CIRCUIT #
AK #	- DENOTES BRANCH CIRCUIT PANELBOARD LP-3B; CIRCUIT #
EN #	- DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-3A; CIRCUIT #
EP #	- DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-3B; CIRCUIT #
SE #	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-3A; CIRCUIT #
SP #	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-3B; CIRCUIT #
SN #	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-3A; CIRCUIT #
SS #	- DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-3B; CIRCUIT #

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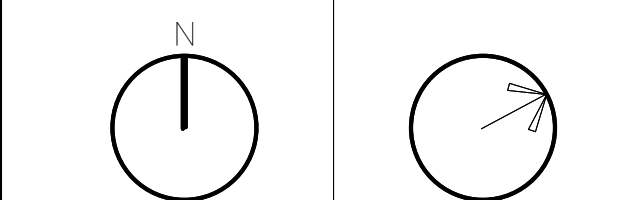
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PROJECT NORTH	MAGNETIC NORTH
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Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-3C

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

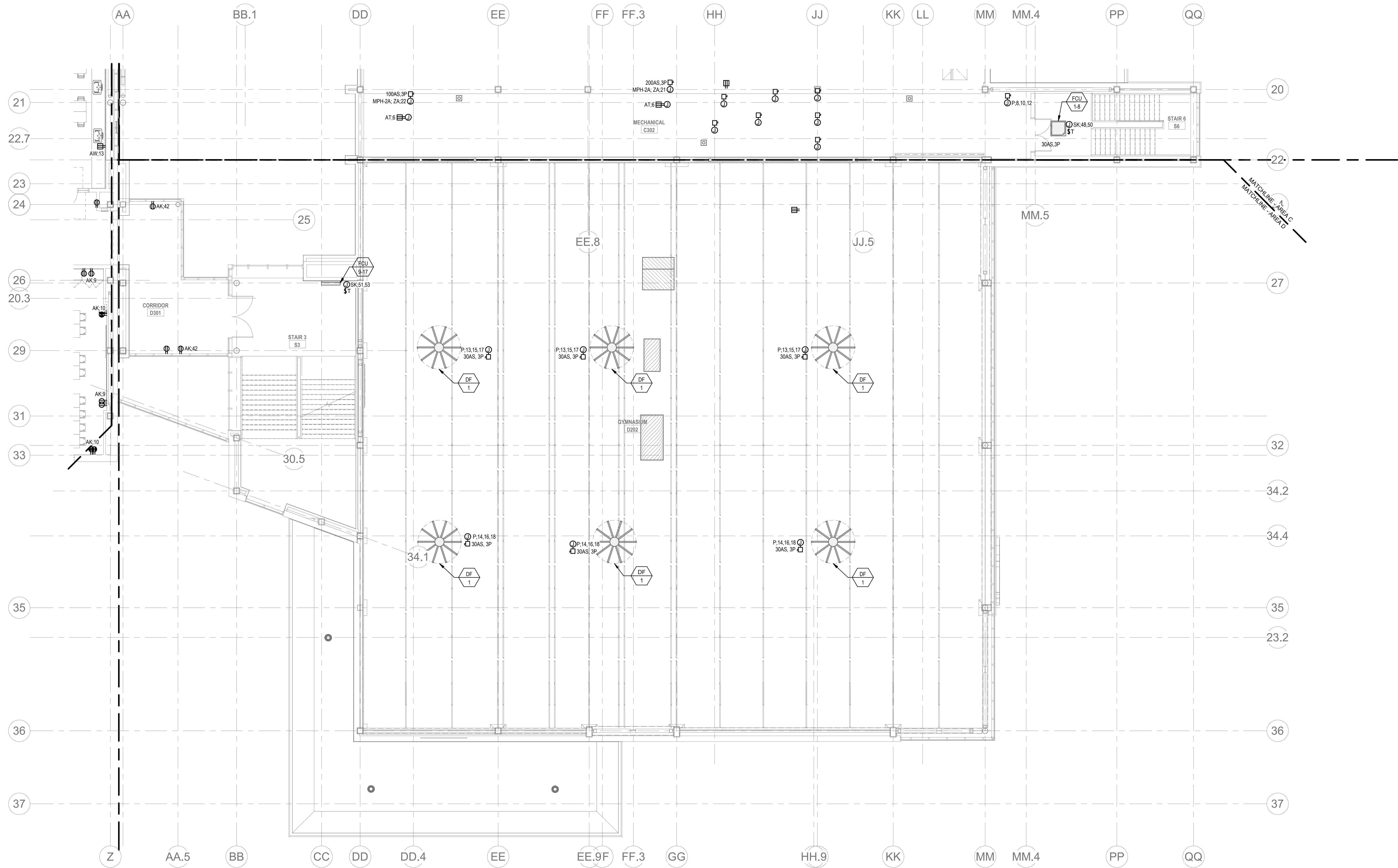
E1-1-3C

POWER GENERAL NOTES:

1. REFER TO E3-0-1, AND 2 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND AV RELATED DEVICES. REFER TO E3-0-2 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
4. PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH PIECE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELECOM DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

CIRCUIT LEGEND:

- D.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-3A, CIRCUIT #
H.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-3B, CIRCUIT #
AF.# - DENOTES BRANCH CIRCUIT PANELBOARD LP-3A, CIRCUIT #
AK.# - DENOTES BRANCH CIRCUIT PANELBOARD LP-3B, CIRCUIT #
EN.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-3A, CIRCUIT #
EP.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LP-3B, CIRCUIT #
SE.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-3A, CIRCUIT #
SF.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LPH-3B, CIRCUIT #
SN.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-3A, CIRCUIT #
SP.# - DENOTES BRANCH CIRCUIT PANELBOARD SB-LP-3B, CIRCUIT #



1 ELECTRICAL POWER Level 3 Area D
1/8" = 1'-0"

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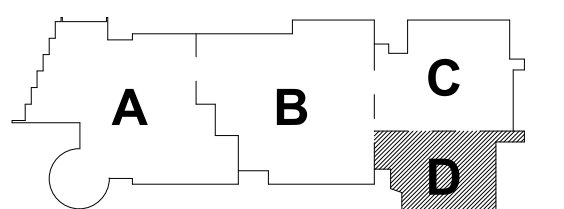
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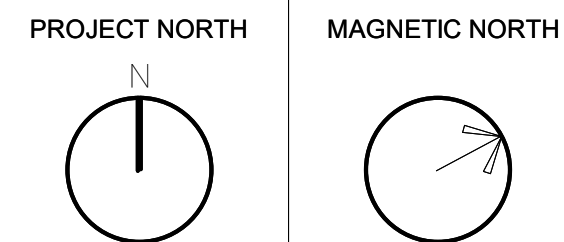
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BID SET

August 28th, 2023



KEY PLAN



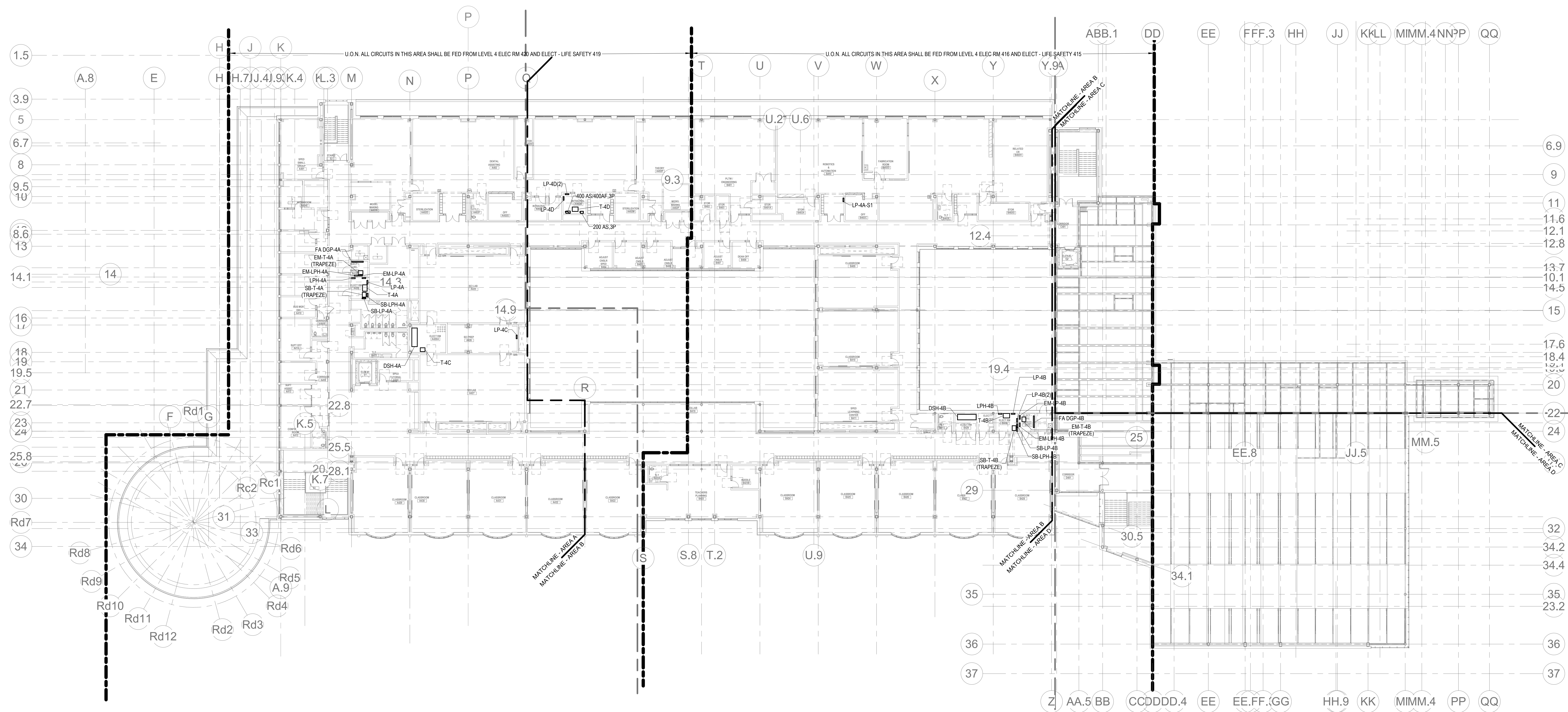
ELECTRICAL
POWER THIRD
FLOOR PLAN -
AREA D

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-3D

GENERAL NOTES:

1. REFER TO E3-0.0, 1, AND 2 FOR SINGLE LINE DIAGRAM.
2. OVERALL ELECTRICAL FLOOR PLANS SHOW LOCATIONS OF MAJOR DISTRIBUTION EQUIPMENT - SWITCHBOARDS, TRANSFER SWITCHES, TRANSFORMERS, PANELBOARDS AND CONDUIT RUNS FOR MAIN FEEDERS. REFER TO POWER AND LIGHTING AREA PLANS AND ENLARGED PLANS FOR LOCATIONS OF OTHER ELECTRICAL EQUIPMENT.



1 ELECTRICAL Level 4 OVERALL
1" = 20'-0"

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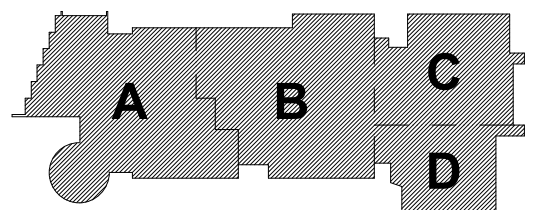
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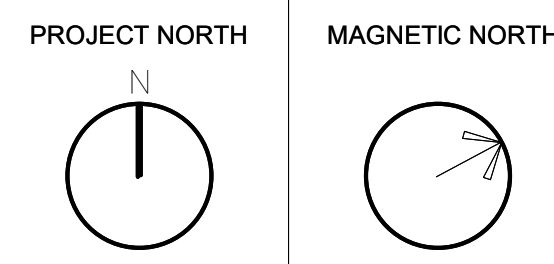
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August 28th, 2023



KEY PLAN



ELECTRICAL
FOURTH FLOOR
PLAN - OVERALL
PLAN

Scale: 1" = 20'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-4

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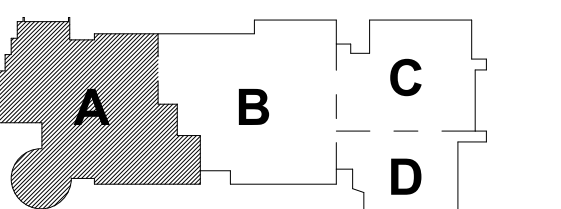
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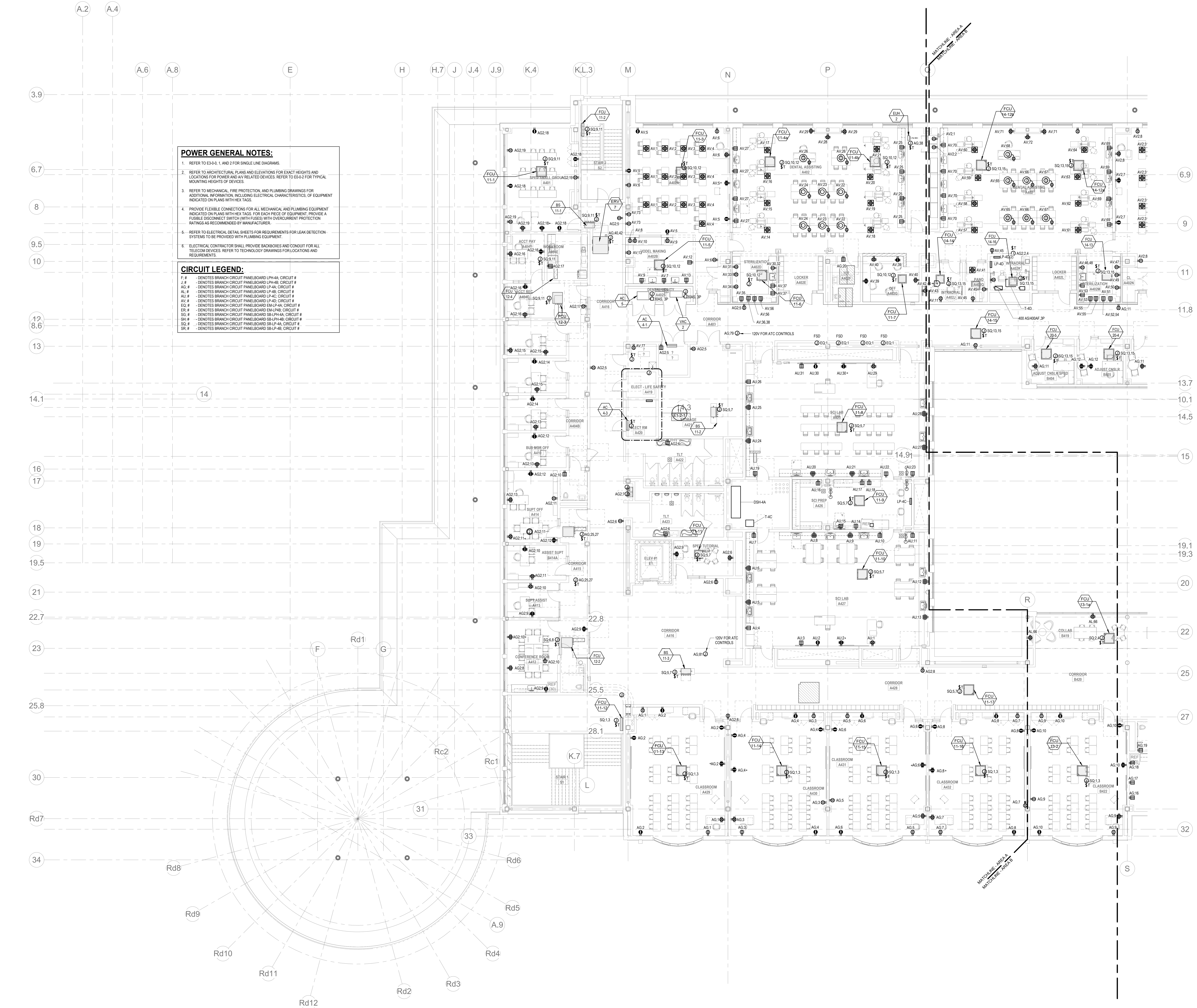
KEY PLAN

PROJECT NORTH
MAGNETIC NORTH

**ELECTRICAL
POWER FOURTH
FLOOR PLAN -
AREA A**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-4A



1 ELECTRICAL POWER Level 4 Area A
1/8" = 1'-0"

GENERAL NOTES:

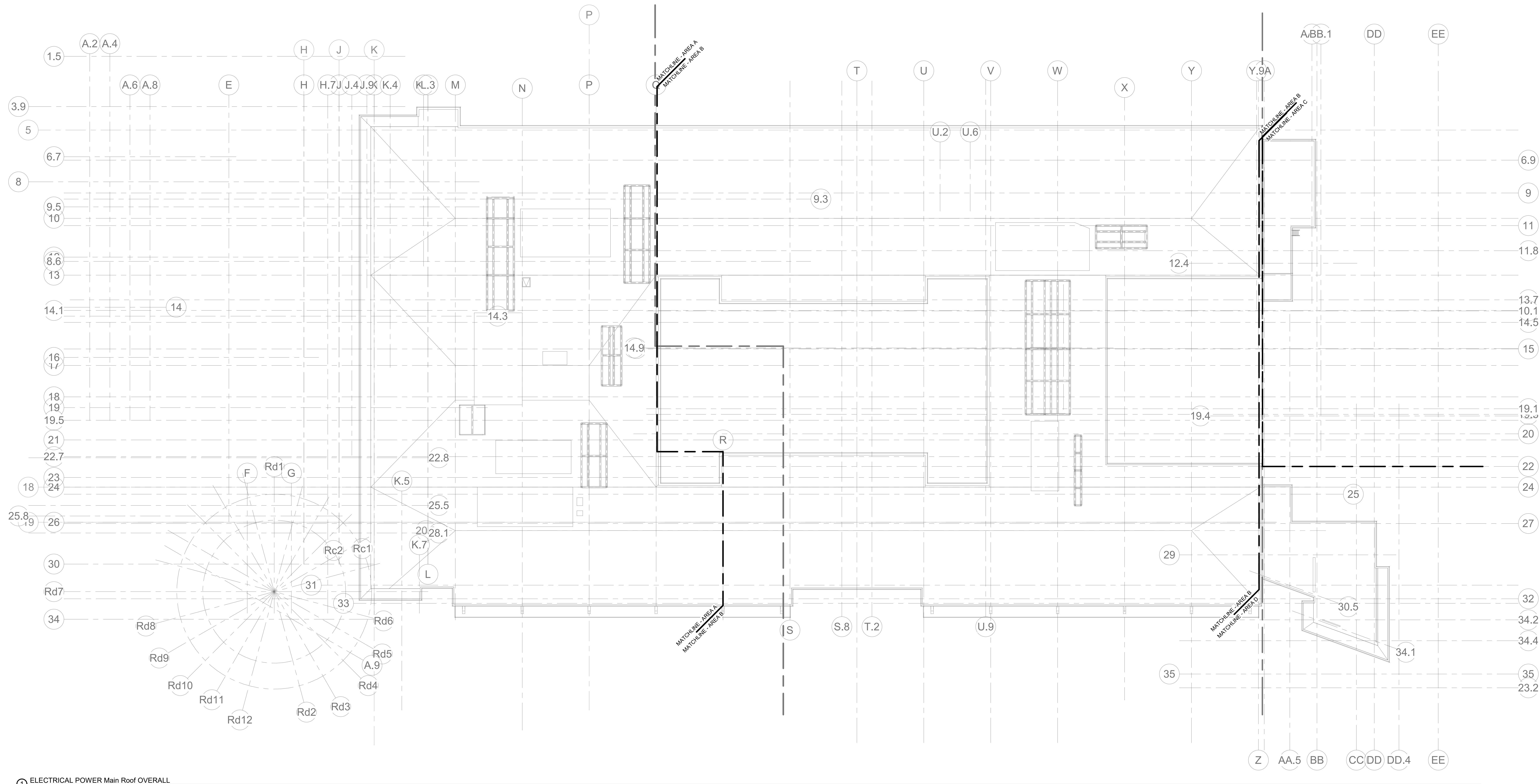
- REFER TO E3-0.0, 1, AND 2 FOR SINGLE LINE DIAGRAM.
- OVERALL ELECTRICAL FLOOR PLANS SHOW LOCATIONS OF MAJOR DISTRIBUTION EQUIPMENT: SWITCHBOARDS, TRANSFER SWITCHES, TRANSFORMERS, PANELBOARDS AND CONDUIT RUNS FOR MAIN FEEDERS. REFER TO POWER AND LIGHTING AREA PLANS AND ENLARGED PLANS FOR LOCATIONS OF OTHER ELECTRICAL EQUIPMENT.

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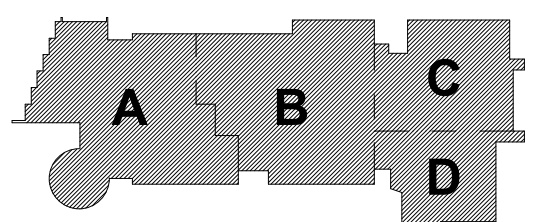
1 ELECTRICAL POWER Main Roof OVERALL
1/16" = 1'-0"

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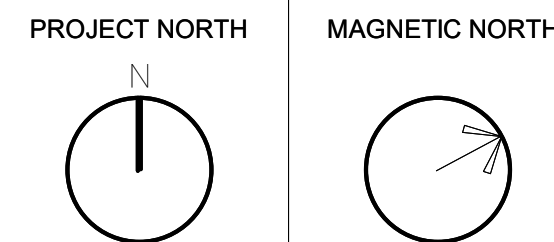
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KEY PLAN



ELECTRICAL
POWER ROOF
PLAN - OVERALL
PLAN

Scale: 1/16" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

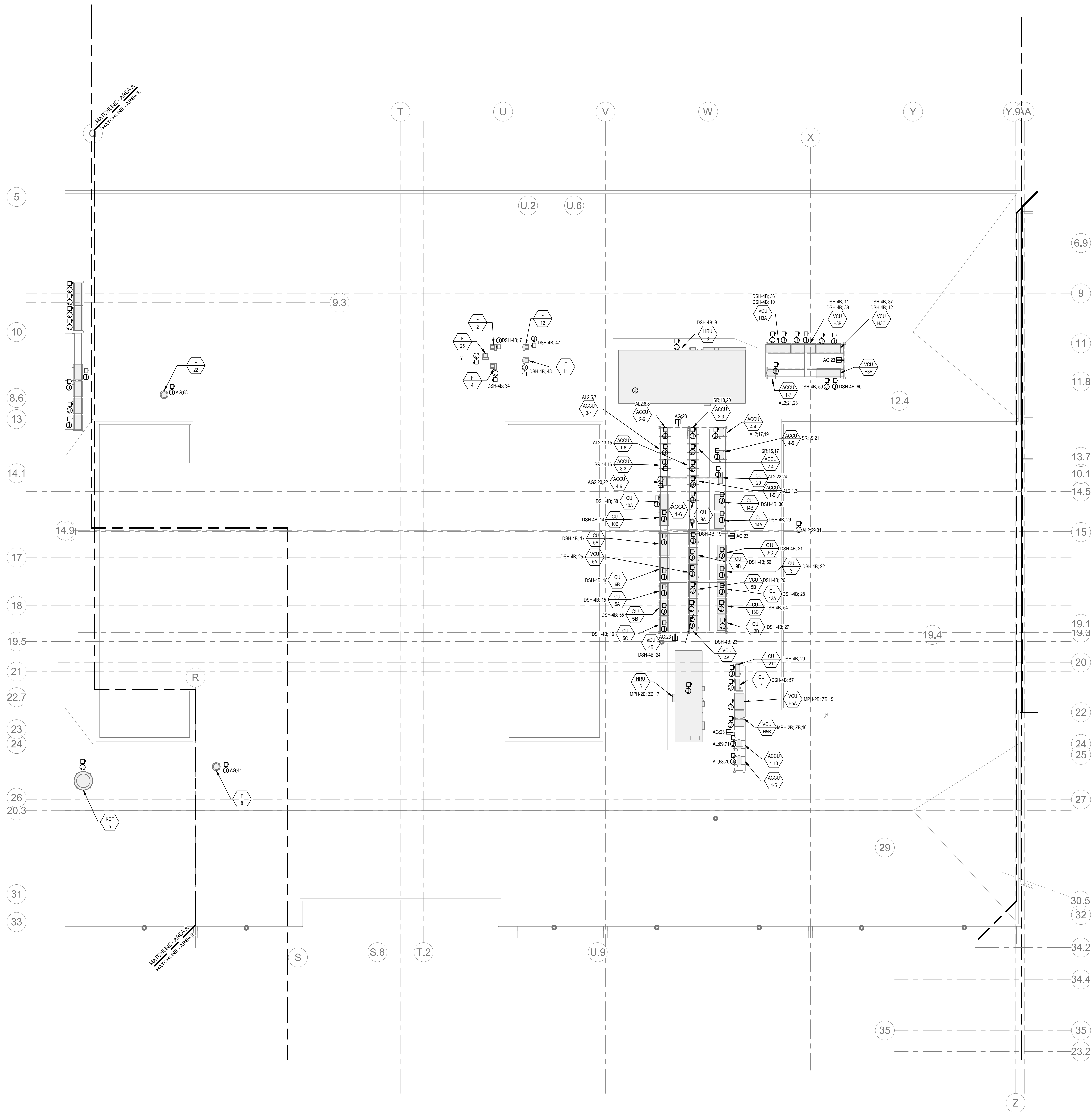
E1-1-5



X; # - DENOTES BRANCH CIRCUIT PANELBOARD DSH-4A; CIRCUIT #

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E1-1-5A



ELECTRICAL POWER Main Roof Area B
1" = 10'-0"

POWER GENERAL NOTES:

1. REFER TO ES-0-0, 1, AND 2 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND ANY RELATED DEVICES. REFER TO ES-0-3 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
4. PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH PIECE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELECOM DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

CIRCUIT LEGEND:

Y: # - DENOTES BRANCH CIRCUIT PANELBOARD DSH-4B; CIRCUIT #

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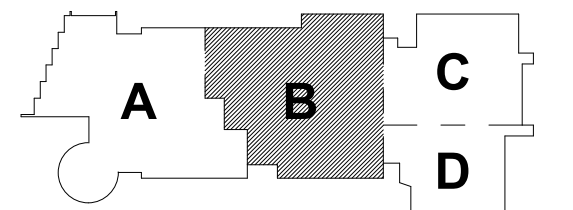
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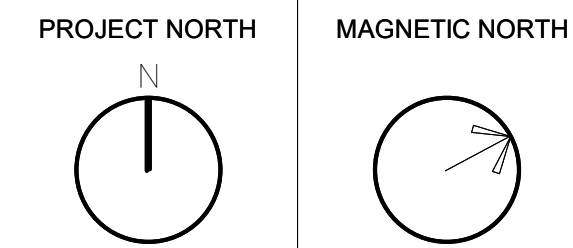
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August 28th, 2023



KEY PLAN



**ELECTRICAL
POWER ROOF
PLAN - AREA B**

Scale: 1" = 10'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-5B

1. REFER TO EX-004, 1 AND 2 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND A/V RELATED DEVICES. REFER TO EX-04 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH THE TAGS.
4. PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH THE TAGS. FOR EACH TYPE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKSIZES AND CONDUIT FOR ALL TELEPHONE, DATA, AND VIDEO DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

ZA; # - DENOTES BRANCH CIRCUIT PANELBOARD MPH-2A; CIRCUIT #
ZB; # - DENOTES BRANCH CIRCUIT PANELBOARD MPH-2B; CIRCUIT #

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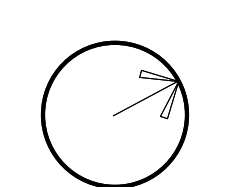
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August 28th, 2023



MAGNETIC NORTH



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

Job No.: 60-20-409

Drawn By: QAA

Date: August 28th, 2023

E1-1-5C

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--	--

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1. REFER TO E-3-0-1, 1 AND 2 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND AIR RELATED DEVICES. REFER TO E-6-0 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED IN PLANS WITH TAGS. PROVIDE EACH PRICE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELEPHONE DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

ZA;# - DENOTES BRANCH CIRCUIT PANELBOARD MPH-2A; CIRCUIT #
ZB;# - DENOTES BRANCH CIRCUIT PANELBOARD MPH-2B; CIRCUIT #



E1-1-5AELECTRICAL POWER ROOF PLAN – AREA A

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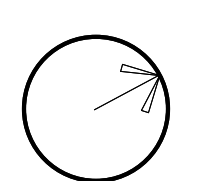
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August 28th, 2023



MAGNETIC NORTH



Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

E1-1-5D

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POWER GENERAL NOTES:

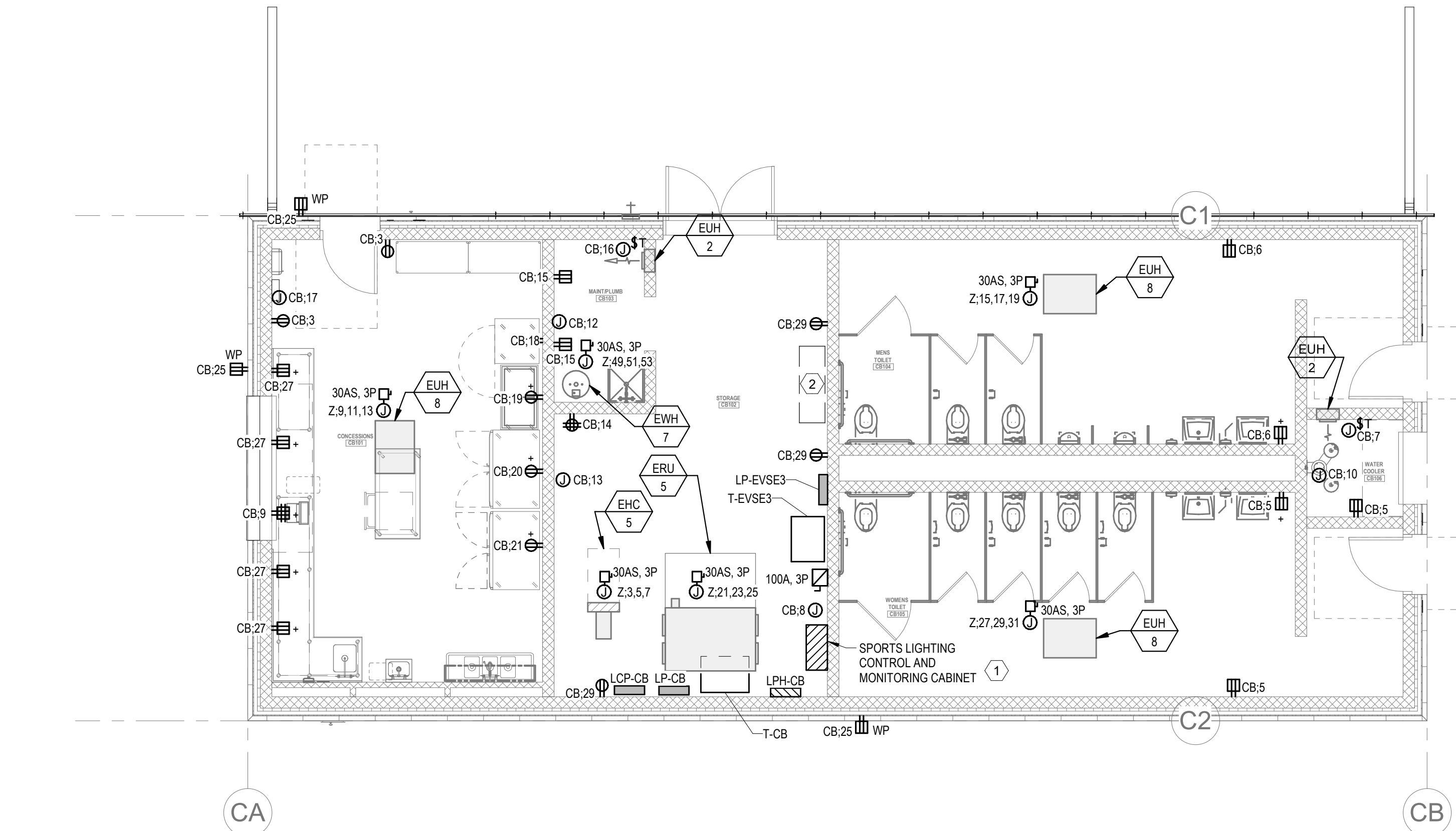
1. REFER TO E3-0-0, 1, AND 2 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND AV RELATED DEVICES. REFER TO E3-0-2 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
4. PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH PIECE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELECOM DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

KEY NOTES: (X)

1. REFER TO E3-1-6 FOR SPORTS LIGHTING DETAILS. PROVIDE 480V WIRING FROM LPH-CB THROUGH CONTROL AND MONITORING CABINET AND TO THE SPORTS LIGHTING POLES.
2. AREA FOR CONDUITS TO PENETRATE SLAB. ALL CONDUITS LEAVING BUILDING SHALL EXIT UNDER SLAB UNLESS OTHERWISE NOTED.

CIRCUIT LEGEND:

CB, # - DENOTES BRANCH CIRCUIT PANELBOARD LP-CB, CIRCUIT #
Z, # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-CB, CIRCUIT #



1
11-1-09
ELECTRICAL - CONCESSIONS FLOOR LEVEL POWER PLAN
3/16" = 1'-0"

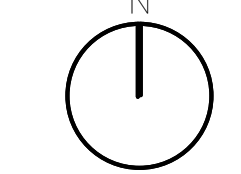
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SUITE 200
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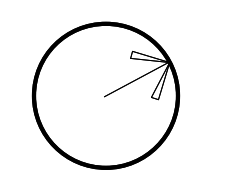
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August 28th, 2023

PROJECT NORTH



MAGNETIC NORTH



ELECTRICAL
POWER
CONCESSIONS
BUILDING PLAN

Scale: 3/16" = 1'-0"

Job No.: 60-20-409

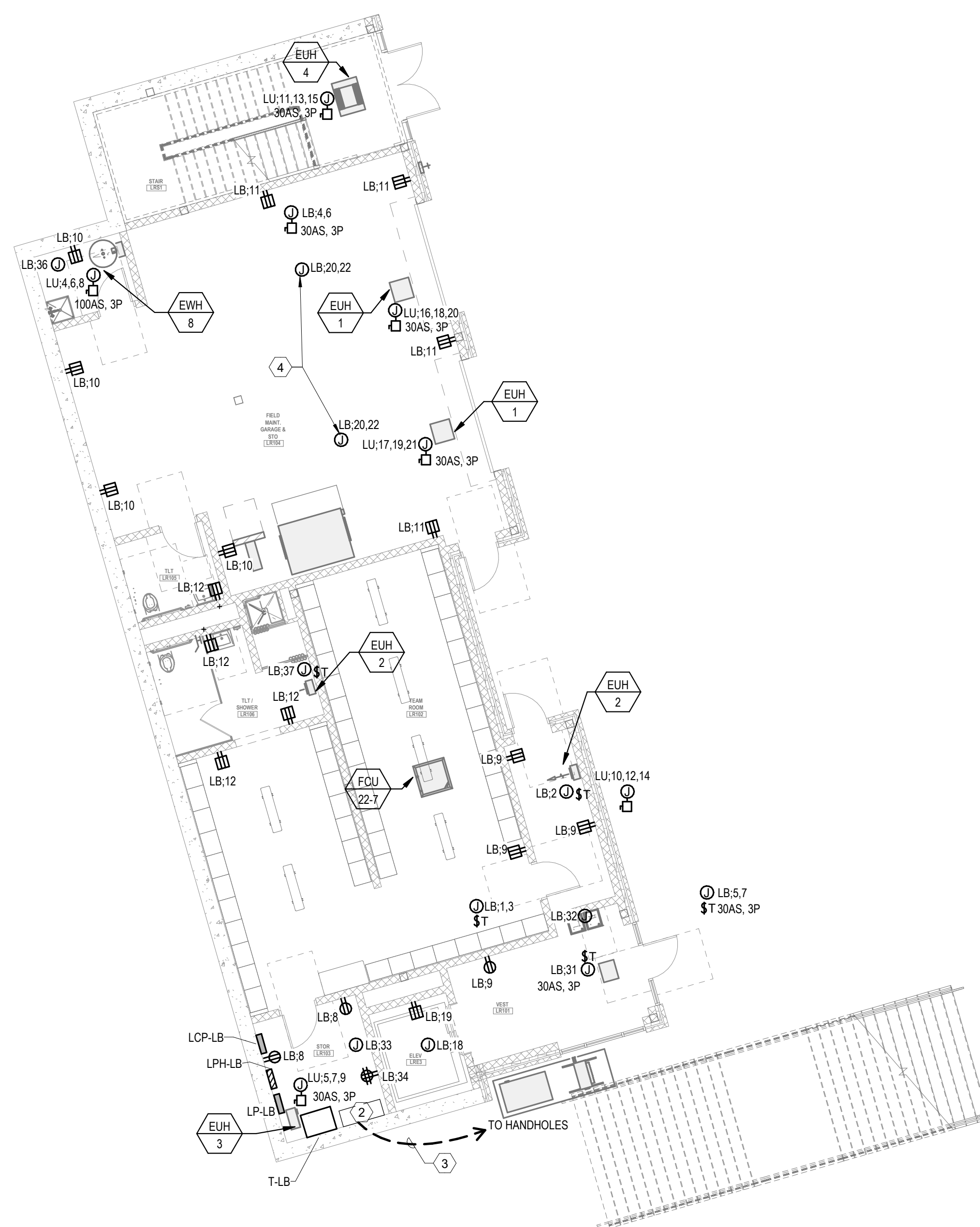
Drawn By: QAA

Date: August 28th, 2023

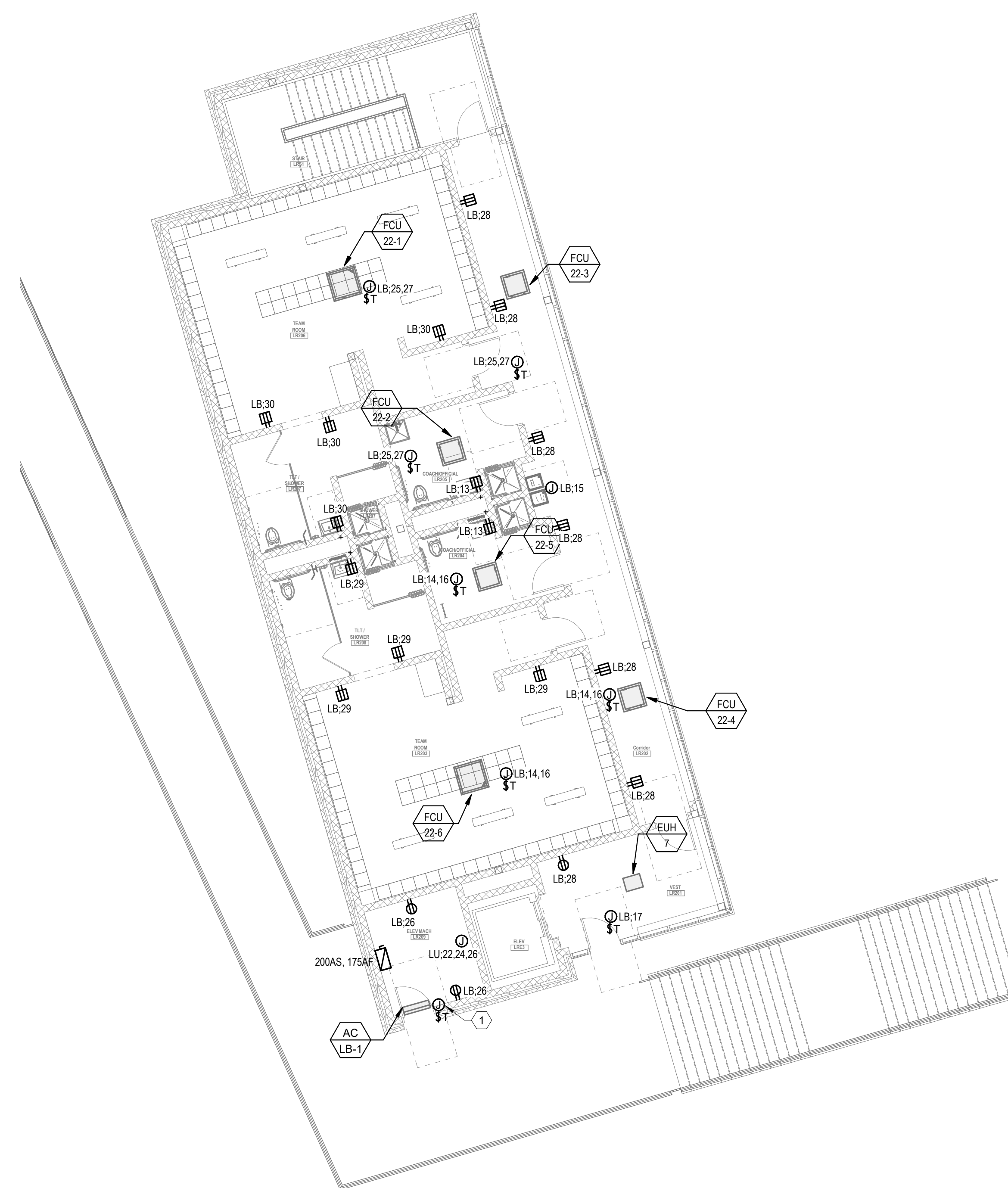
E1-1-CB

1. REFER TO E03-0.1, AND E04-0 FOR SINGLE LINE DIAGRAMS.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND AIR RELATED DEVICES. REFER TO E03-0 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH THE TAGS. FOR EACH PIECE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
4. REFER TO ELECTRICAL, DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
5. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL SECOND DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

- ① INDOOR UNIT POWERED IS POWERED FROM OUTDOOR UNIT. DIV. 26 SHALL PROVIDE CONDUIT AND WIRE FROM OUTDOOR UNIT TO INDOOR UNIT.
- ② AREA FOR CONDUITS TO PENETRATE SLAB. ALL CONDUITS LEAVING BUILDING SHALL EXIT UNDER SLAB UNLESS OTHERWISE NOTED.
- ③ CONCRETE ENCASED CONDUIT. REFER TO SITE PLAN FOR LOCATION OF HANDHOLES ADJACENT TO LOCKER ROOM BUILDING. CONDUITS FROM ABOVEGROUND ON SITE TO THE HANDHOLES OUTSIDE. CONDUIT TYPE OF BASE BID. CONDUIT AND CONDUITS FROM HANDHOLES INTO THE LOCKER BUILDING ARE PART OF ALTERNATE NO. 1. SIZE AND QTY OF CONDUITS IN CONDUITBANK SHALL BE THE SAME AS THE CONDUITS BEING PROVIDED TO THE HANDHOLES AS PART OF THE BASE BID.
- ④ MOTORIZED ROLL-UP DOORS. REFER TO DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS FOR ELECTRICAL CONTRACTOR.



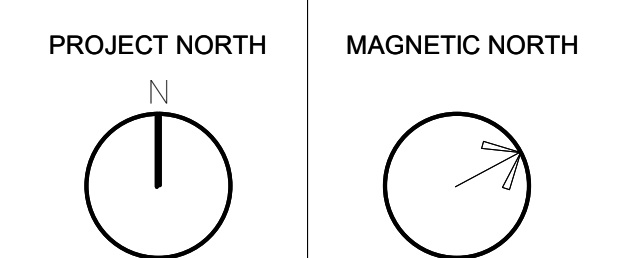
1 ELECTRICAL POWER Locker Building First Floor (ADD ALTERNATE NO. 1)
E1-1-LB 1/8" = 1'-0"



2 ELECTRICAL POWER Locker Building Second Level (ADD ALTERNATE NO. 1)
E1-1-LB 1/8" = 1'-0"

Wakefield, MA 01880

August 28th, 2023



Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: QAA
Date: August 28th, 2023

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POWER GENERAL NOTES:

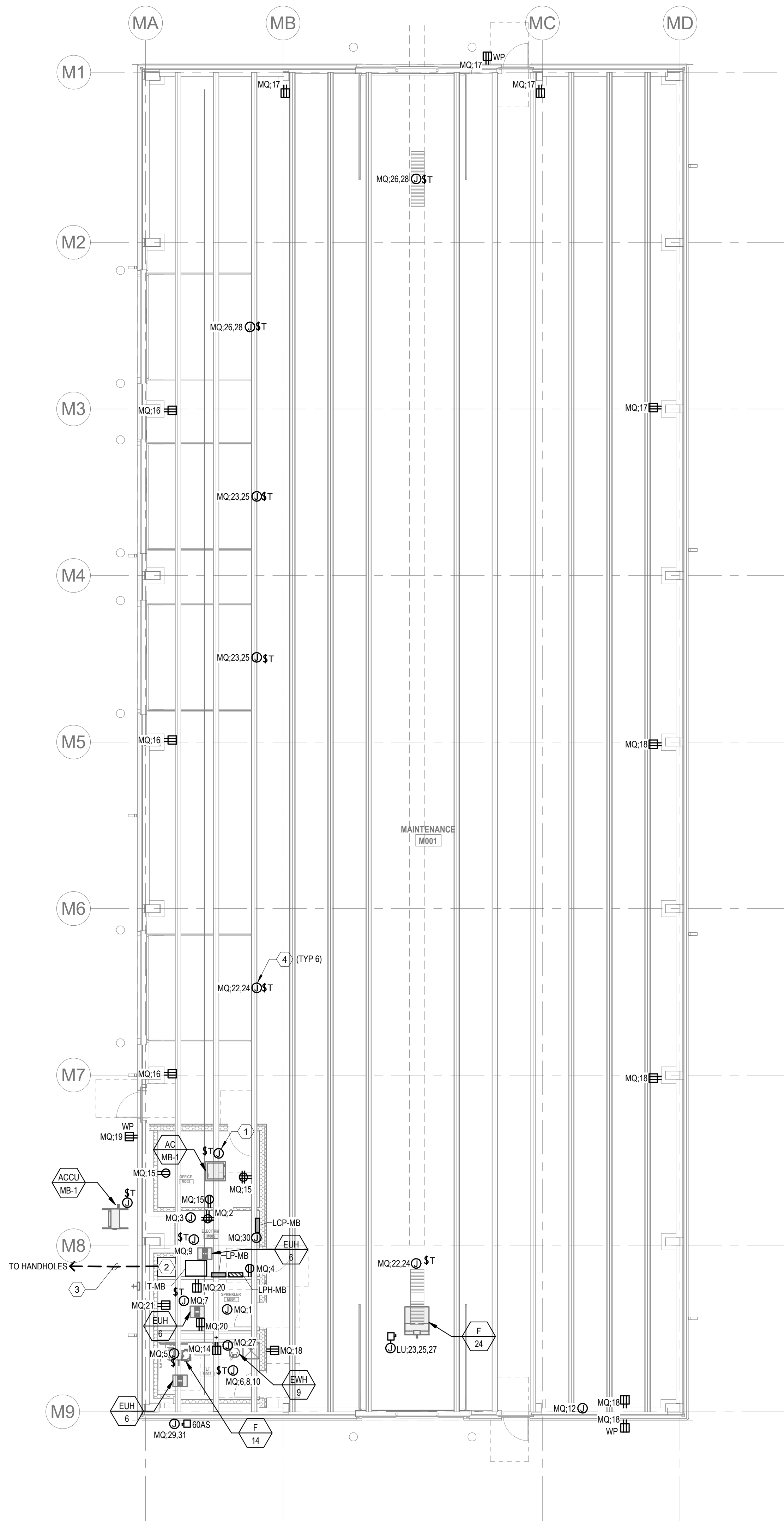
- REFER TO E3-0.1, 1, AND 2 FOR SINGLE LINE DIAGRAMS.
- REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND AV RELATED DEVICES. REFER TO E3-0.2 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
- REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
- PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH PIECE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
- REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
- ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELECOM DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

KEY NOTES: (X)

- INDOOR UNIT POWERED FROM OUTDOOR UNIT. DIV. 26 SHALL PROVIDE CONDUIT AND WIRE FROM OUTDOOR UNIT TO INDOOR UNIT.
- AREA FOR CONDUITS TO PENETRATE SLAB. ALL CONDUITS LEAVING BUILDING SHALL EXIT UNDER SLAB UNLESS OTHERWISE NOTED.
- CONCRETE ENCASED DUCTBANK. REFER TO SITE PLAN FOR LOCATION OF HANDHOLES ADJACENT TO LOCKER ROOM BUILDING. DUCTBANKS FROM ELSEWHERE ON SITE TO THE HANDHOLES OUTSIDE THE BUILDING ARE PART OF BASE BID. DUCTBANK AND CONDUITS FROM HANDHOLES TO INSIDE THE LOCKER BLDG ARE PART OF ADD ALTERNATE NO. 3. SIZE AND QTY OF CONDUITS IN DUCTBANK SHALL BE THE SAME AS THE CONDUITS BEING PROVIDED TO THE HANDHOLES AS PART OF THE BASE BID.
- MOTORIZED ROLL-UP DOORS. REFER TO DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS FOR ELECTRICAL CONTRACTOR.

CIRCUIT LEGEND:

- MQ # - DENOTES BRANCH CIRCUIT PANELBOARD LPM; CIRCUIT #
RA # - DENOTES BRANCH CIRCUIT PANELBOARD LPM; CIRCUIT #

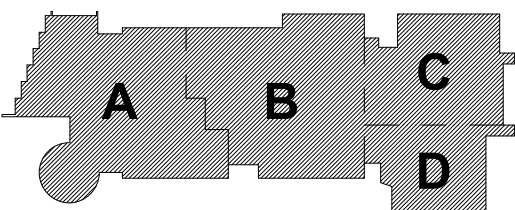


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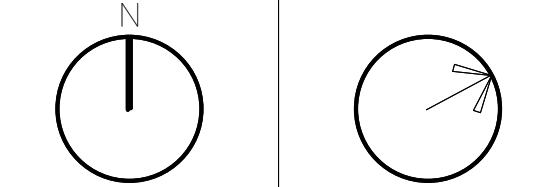
BID SET

August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



ELECTRICAL
POWER
MAINTENANCE
BUILDING PLAN
(ADD ALT NO. 3)

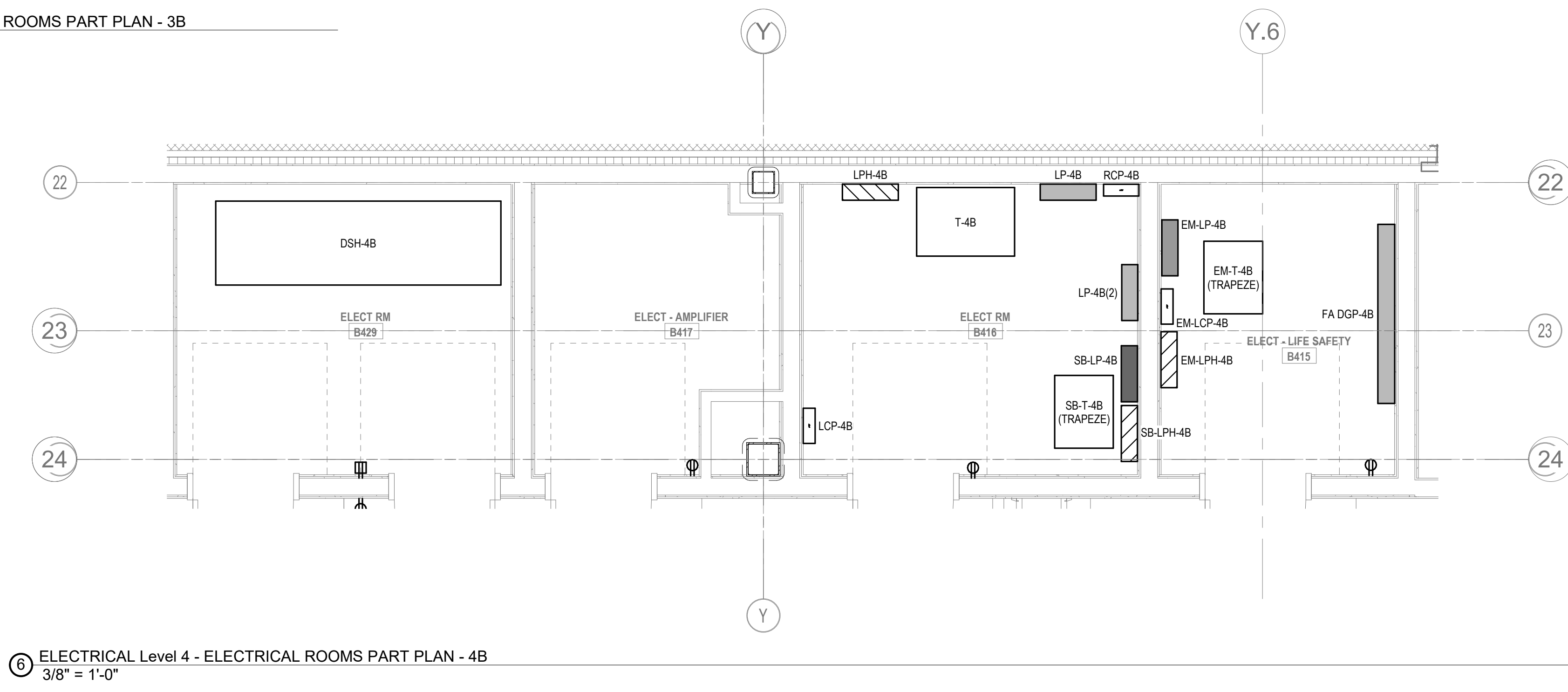
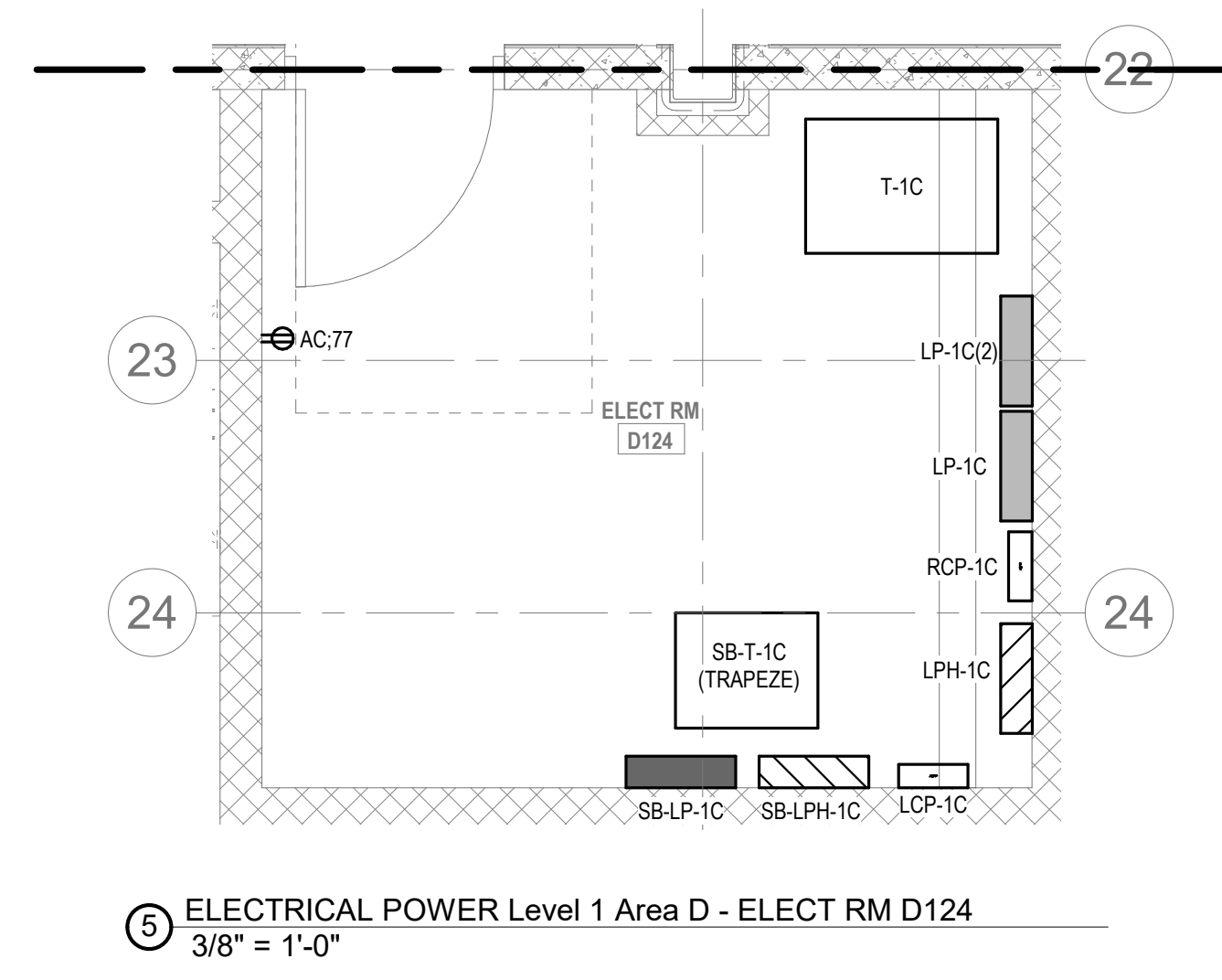
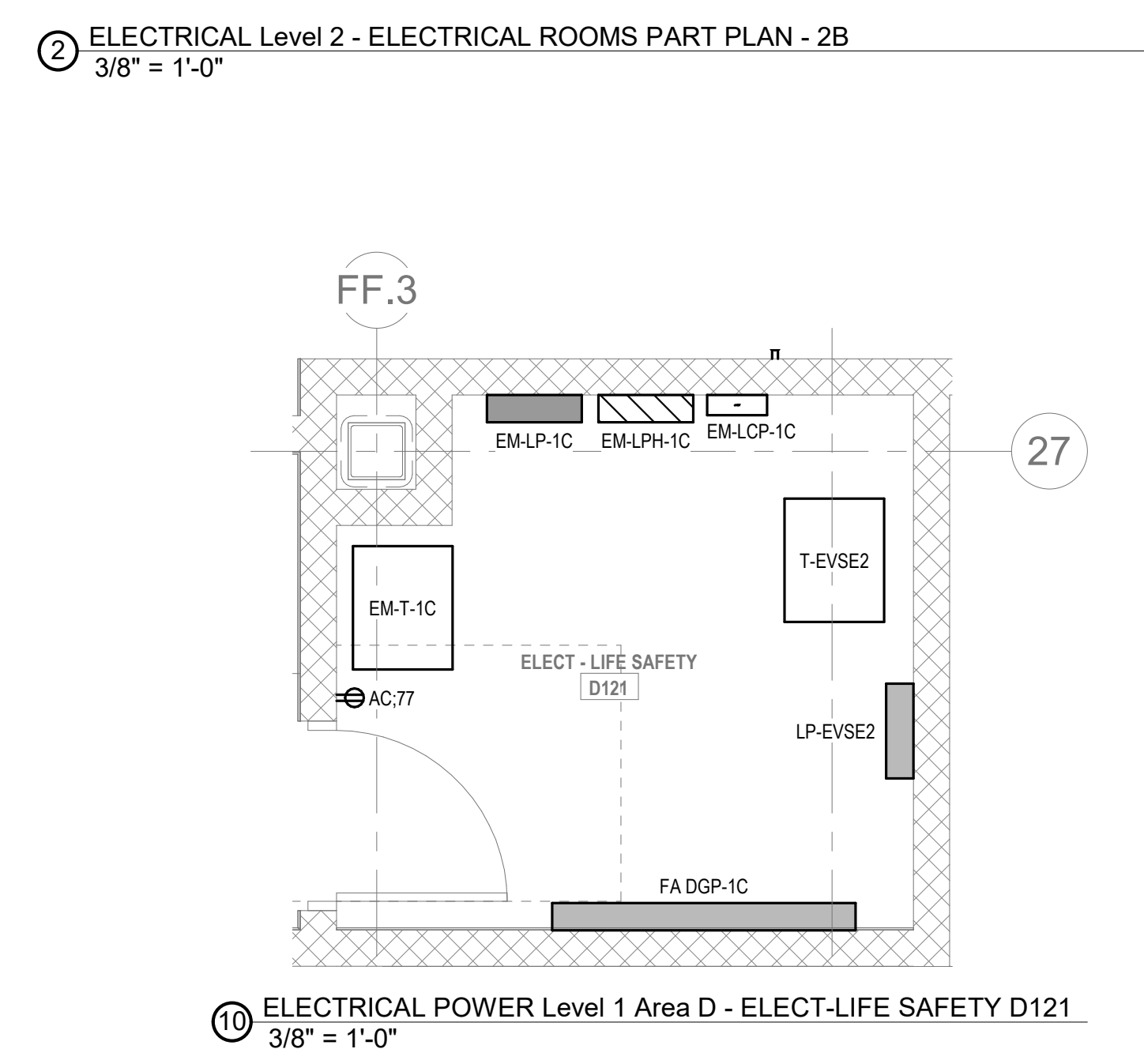
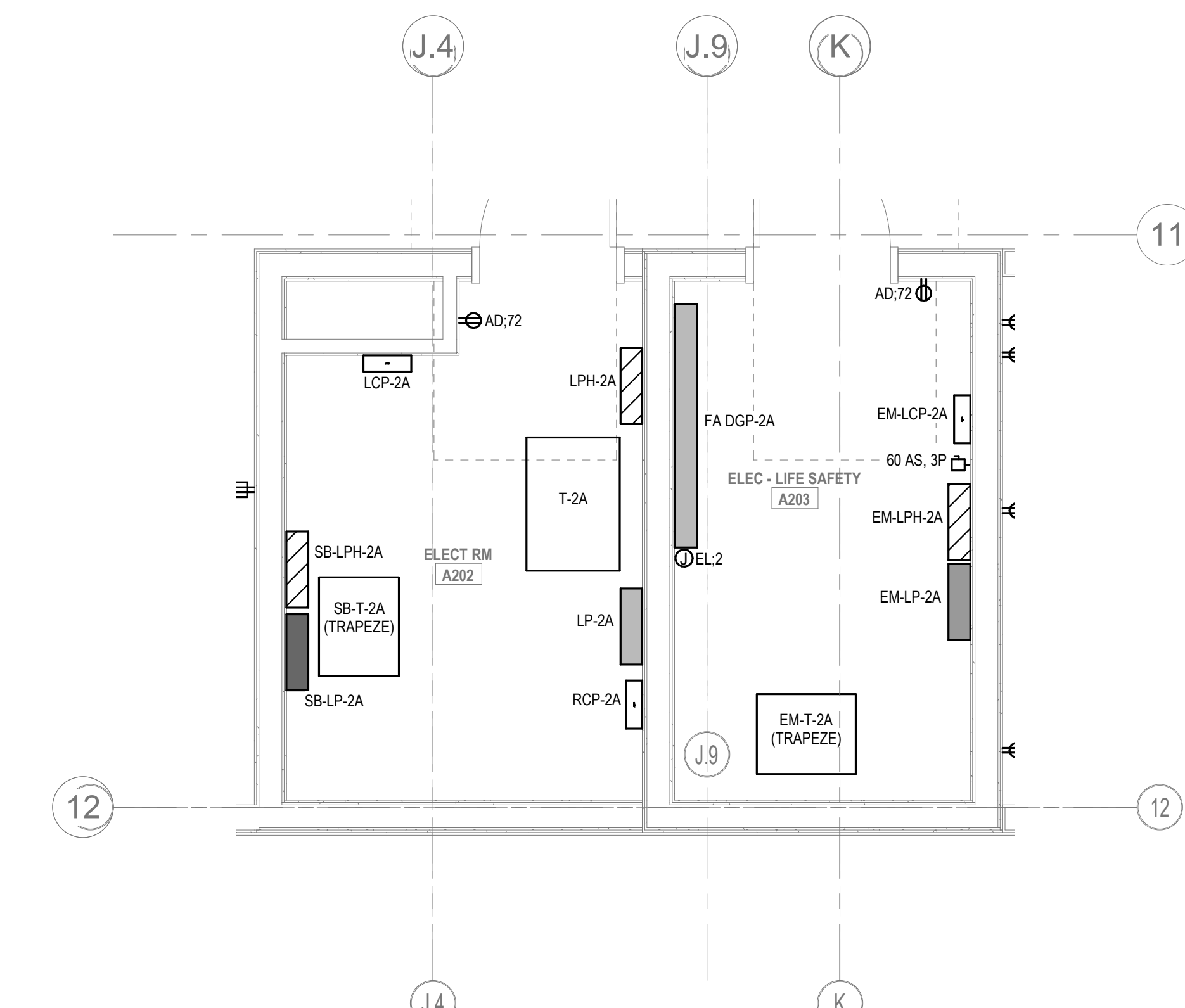
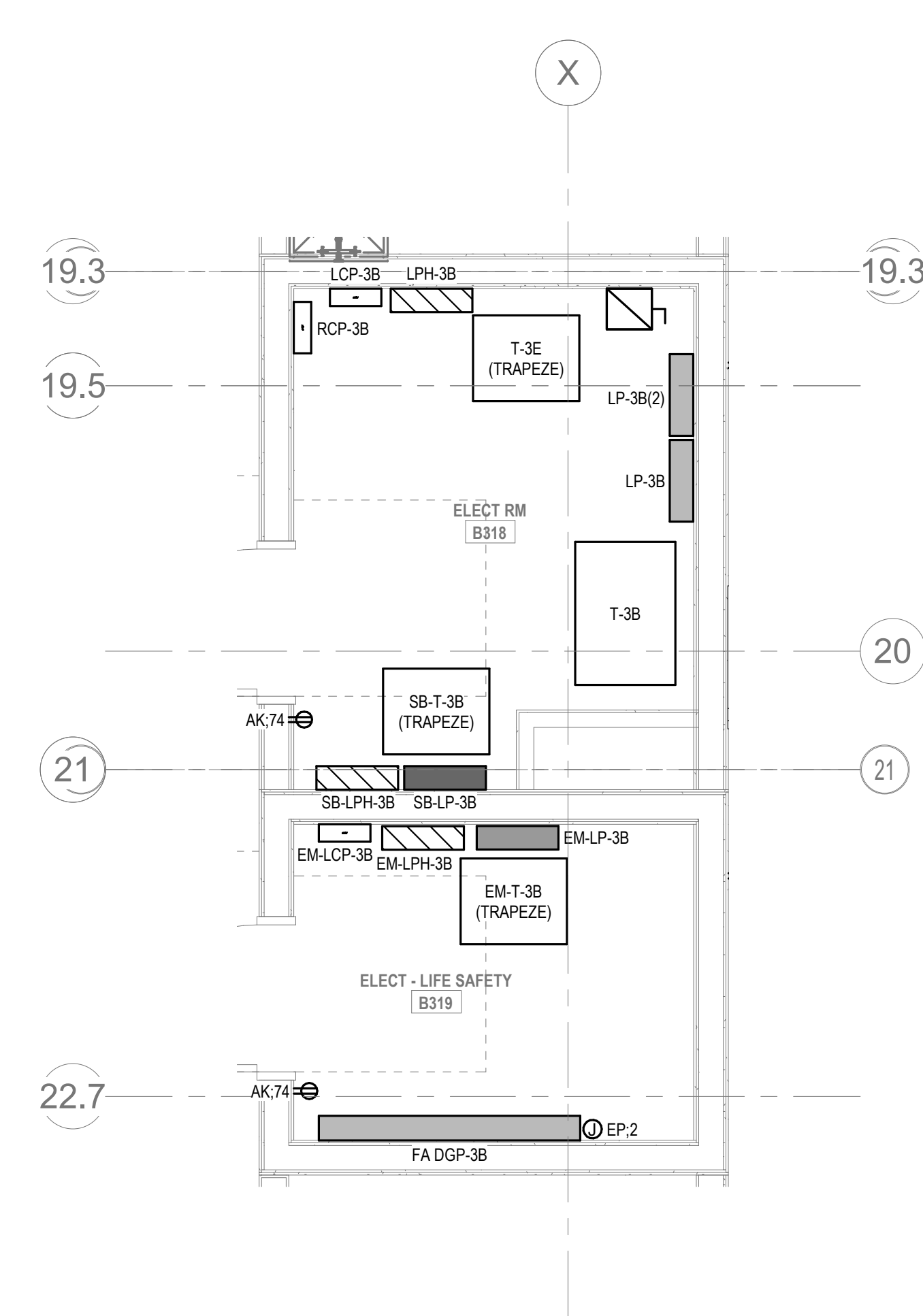
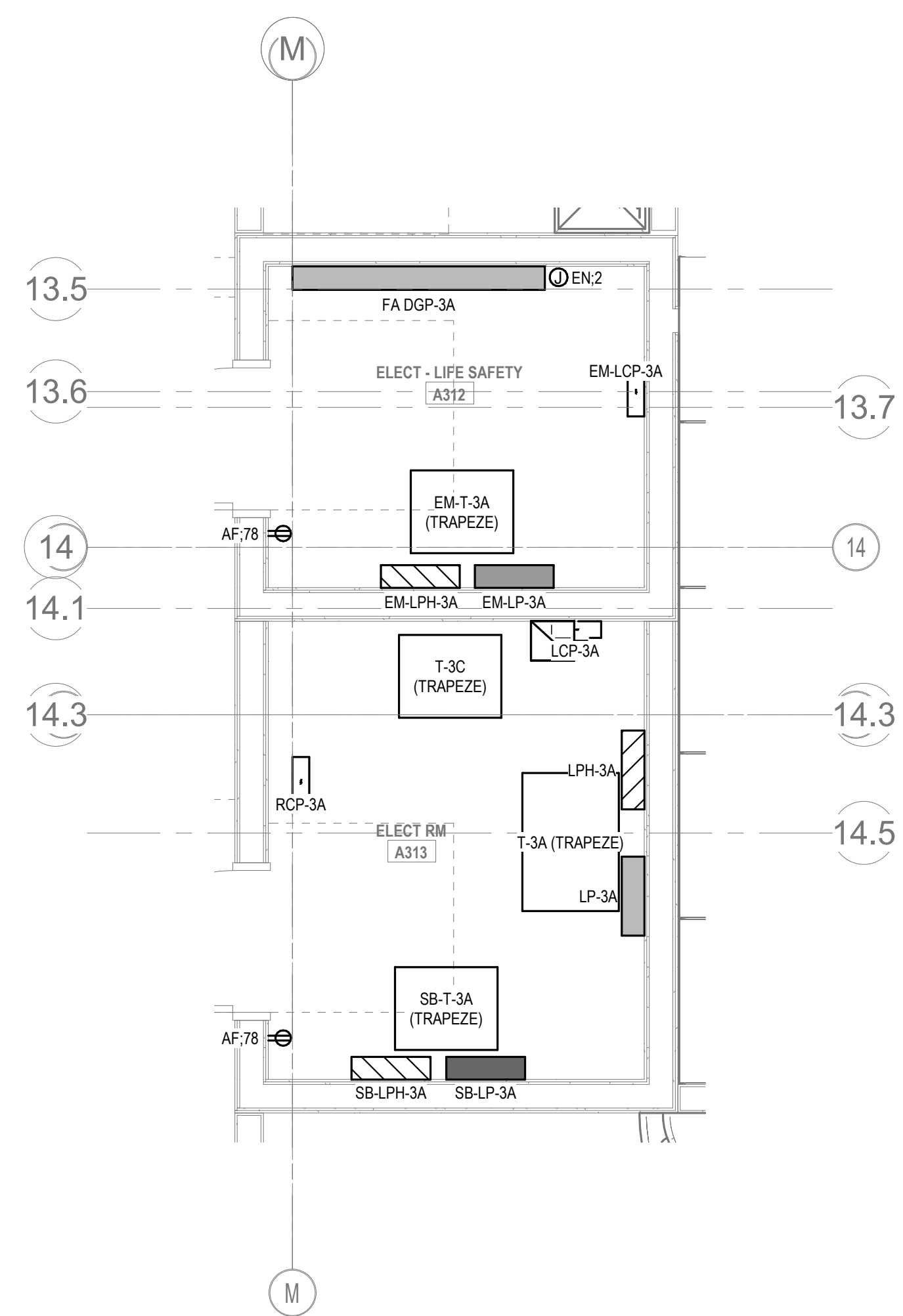
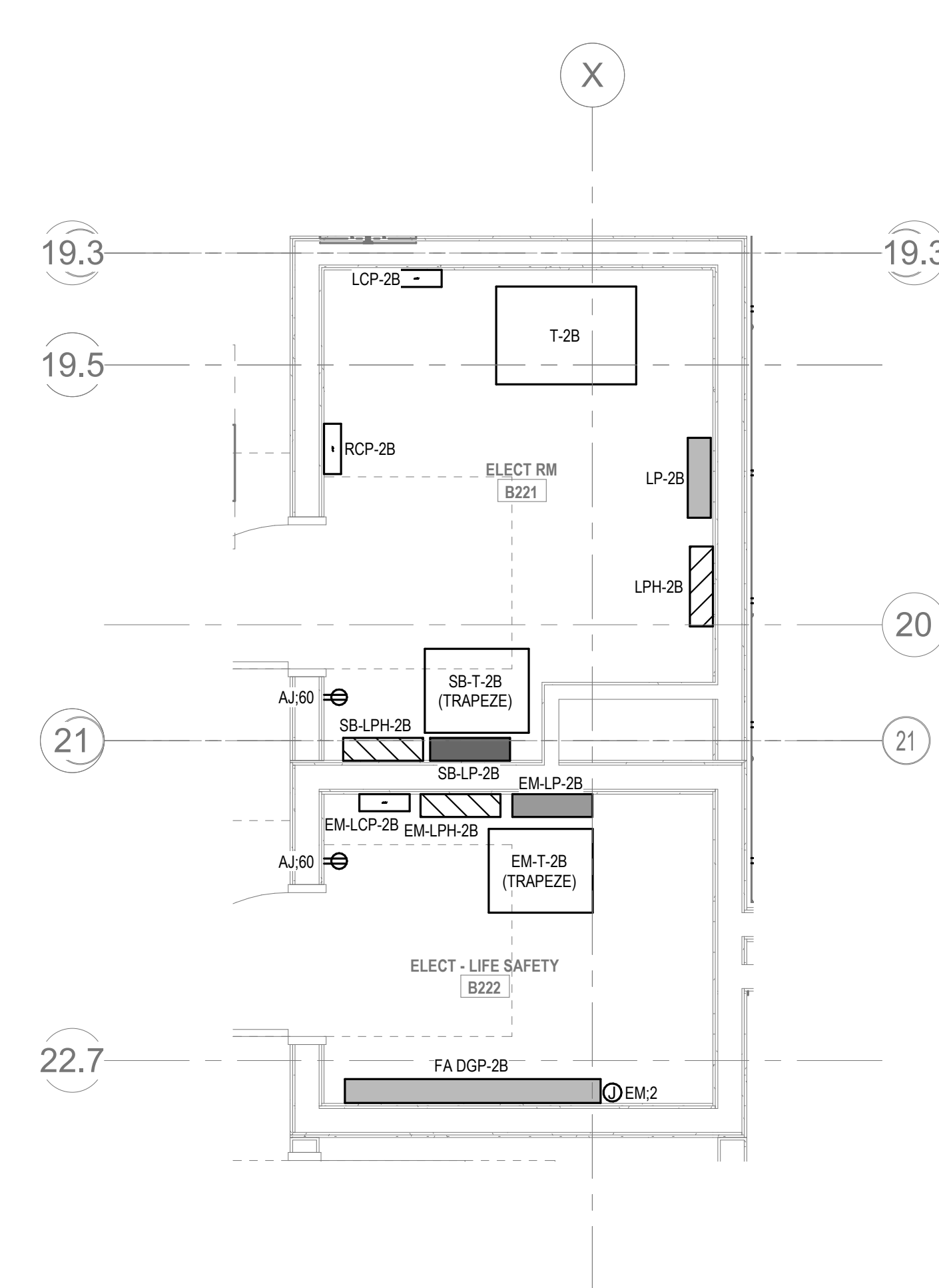
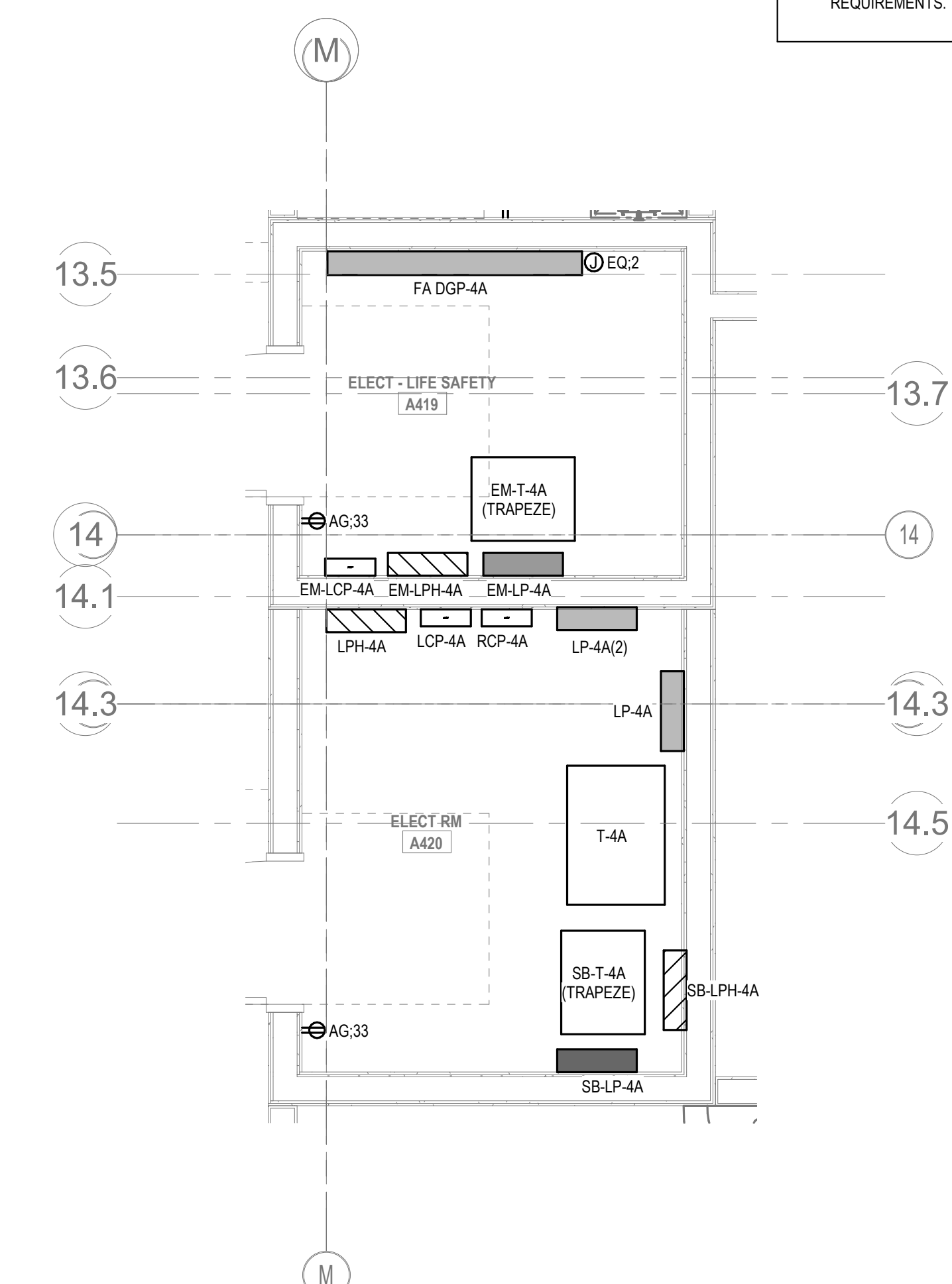
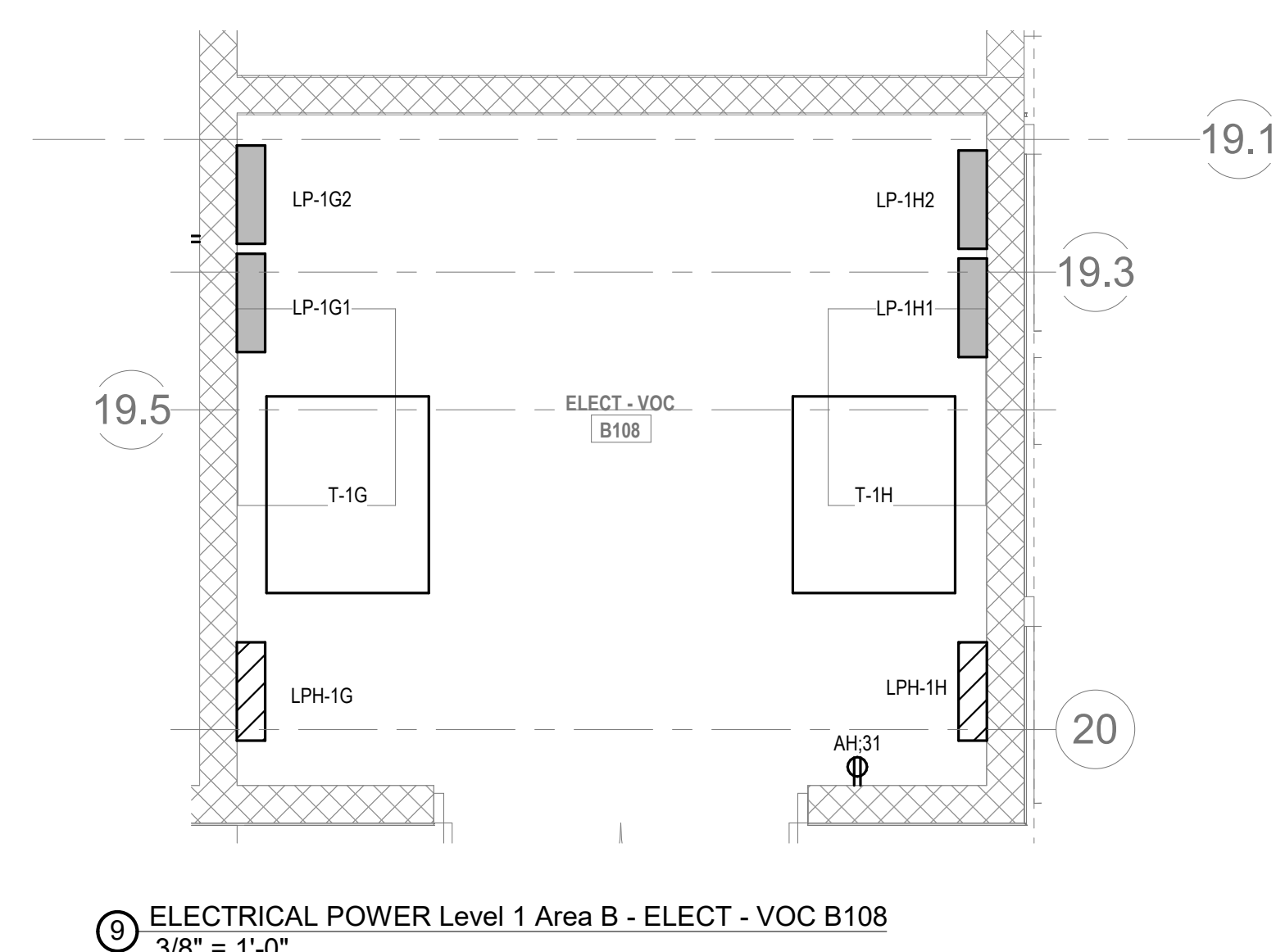
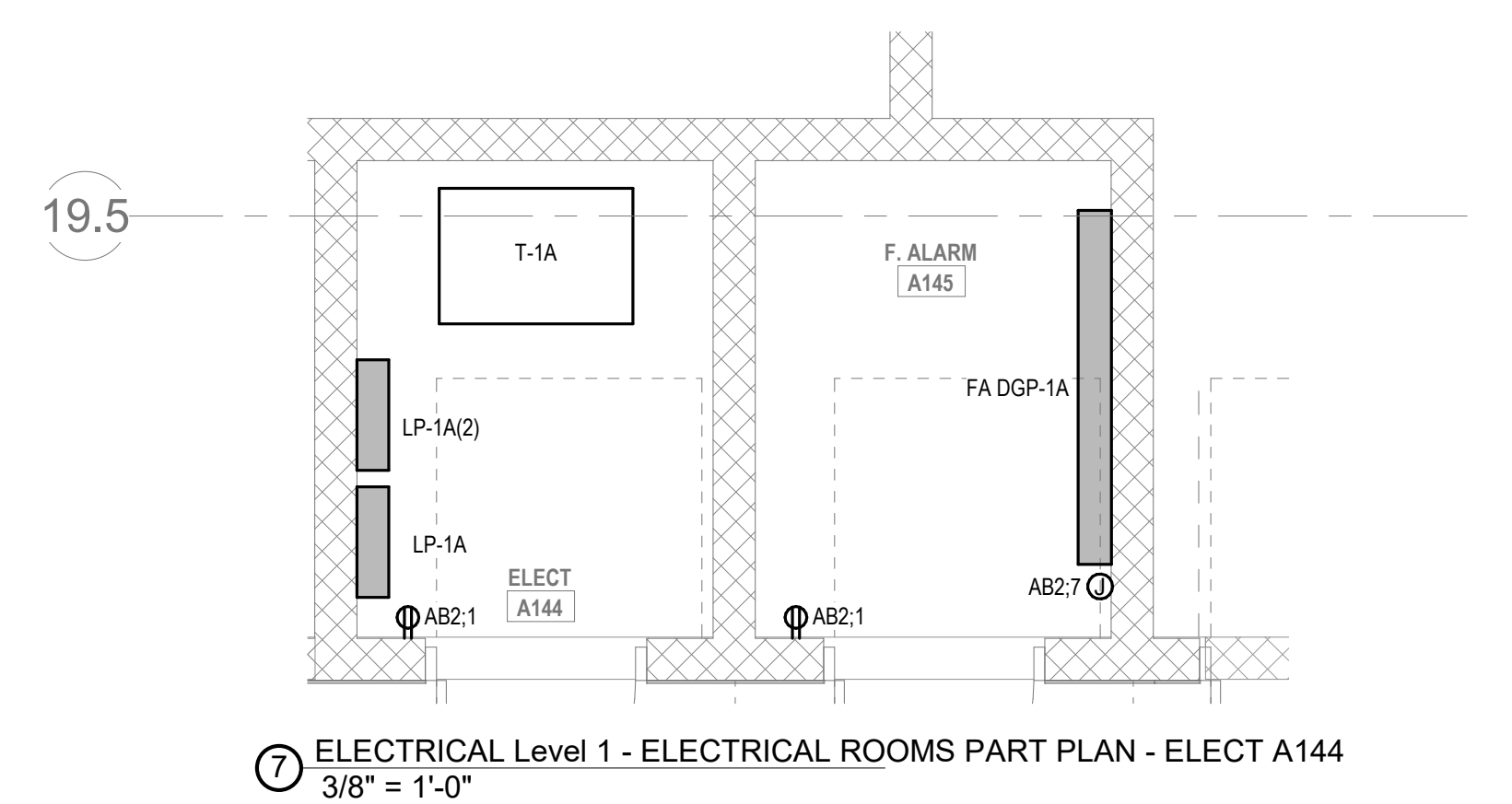
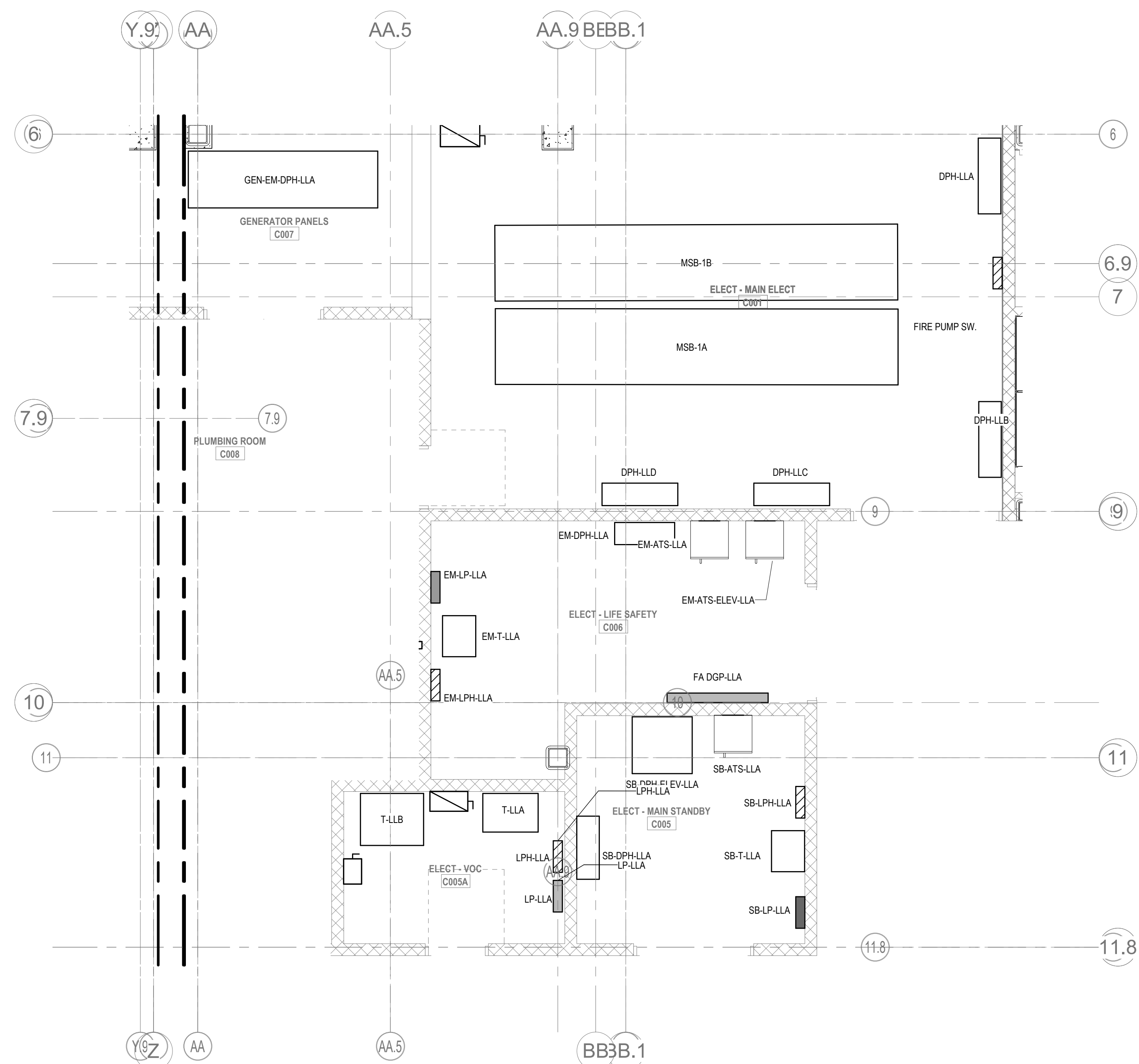
Scale: 1/8" = 1'-0"

Job No.: 60-20-409

Drawn By: Author

Date: August 28th, 2023

E1-1-MB



- ## **POWER GENERAL NOTES:**
1. REFER TO E3-0.1, 1 AND 2 FOR SINGLE LINE DIAGRAMS.
 2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND AIR RELATED DEVICES. REFER TO E-0.2 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
 3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT AND DEVICES WITH WHICH THE SYSTEMS WILL INTERACT.
 4. PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITHIN 75 FEET. FOR EACH TYPE OF EQUIPMENT, PROVIDE A PLUMBING AND/OR SHIELDING DETAIL TO SHOW OVERCURRENT PROTECTION RATING AS RECOMMENDED BY MANUFACTURER.
 5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
 6. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELEPHONE DEVICES. REFERS TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

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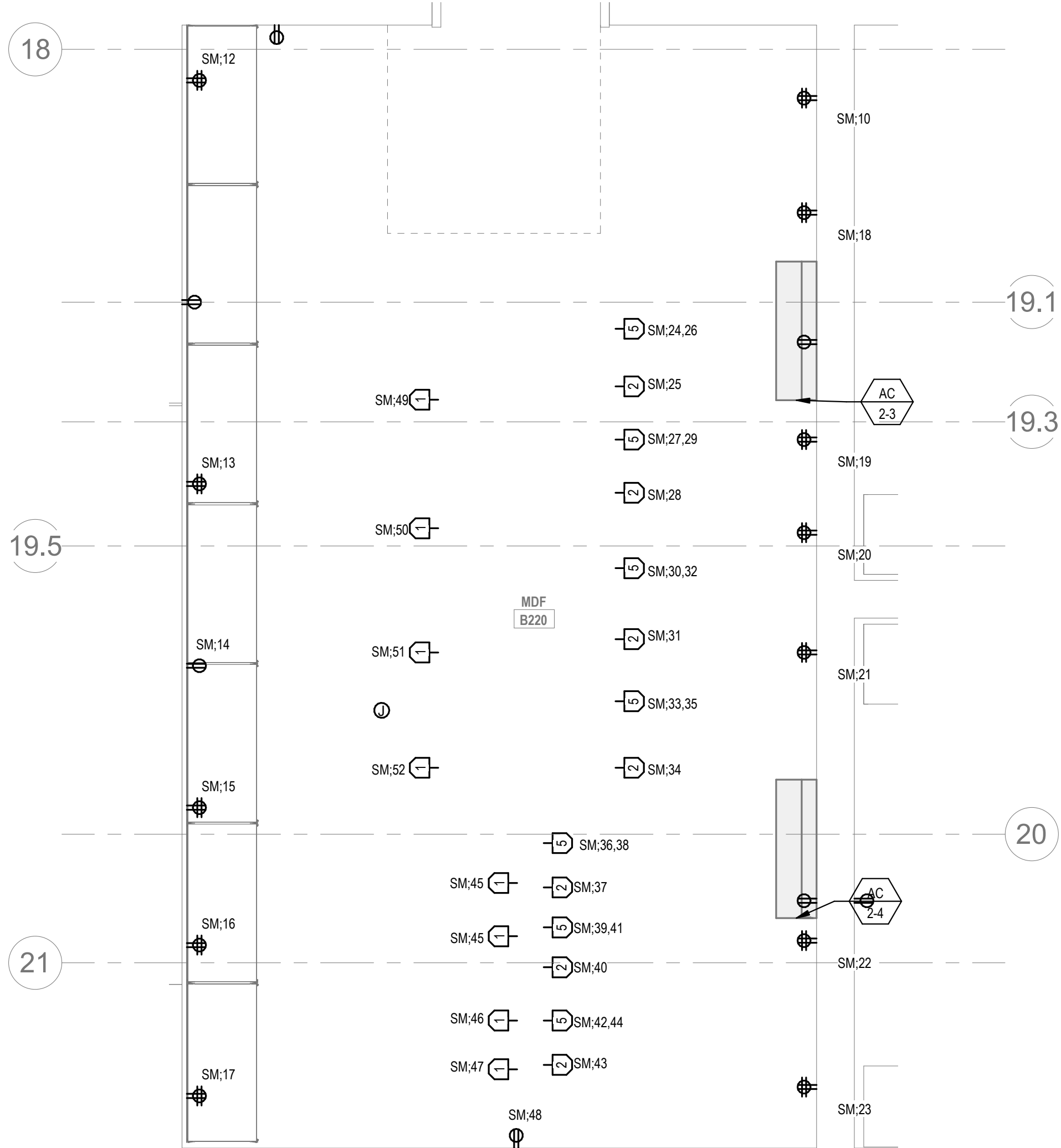
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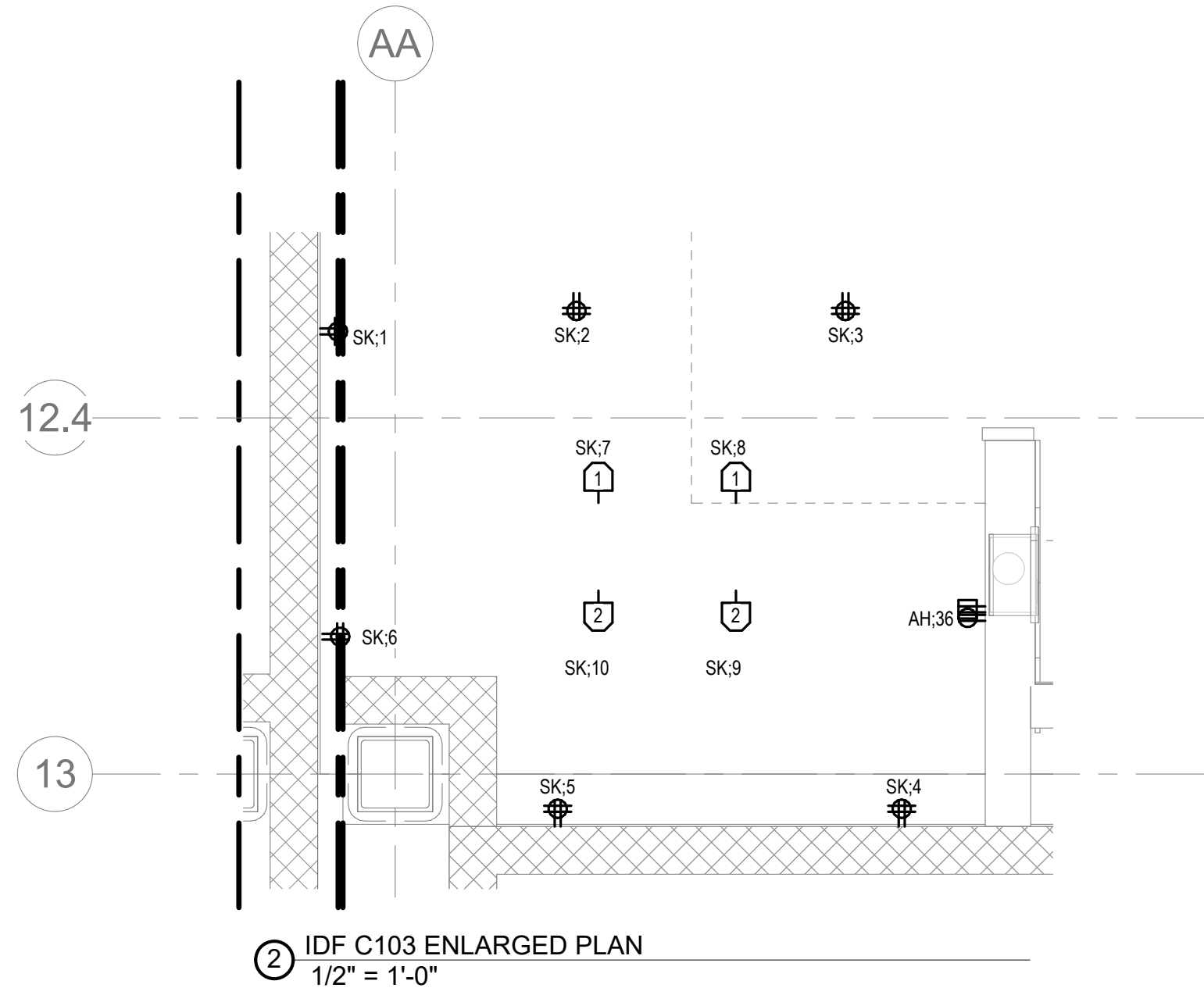
Wakefield, MA 01880

POWER GENERAL NOTES:

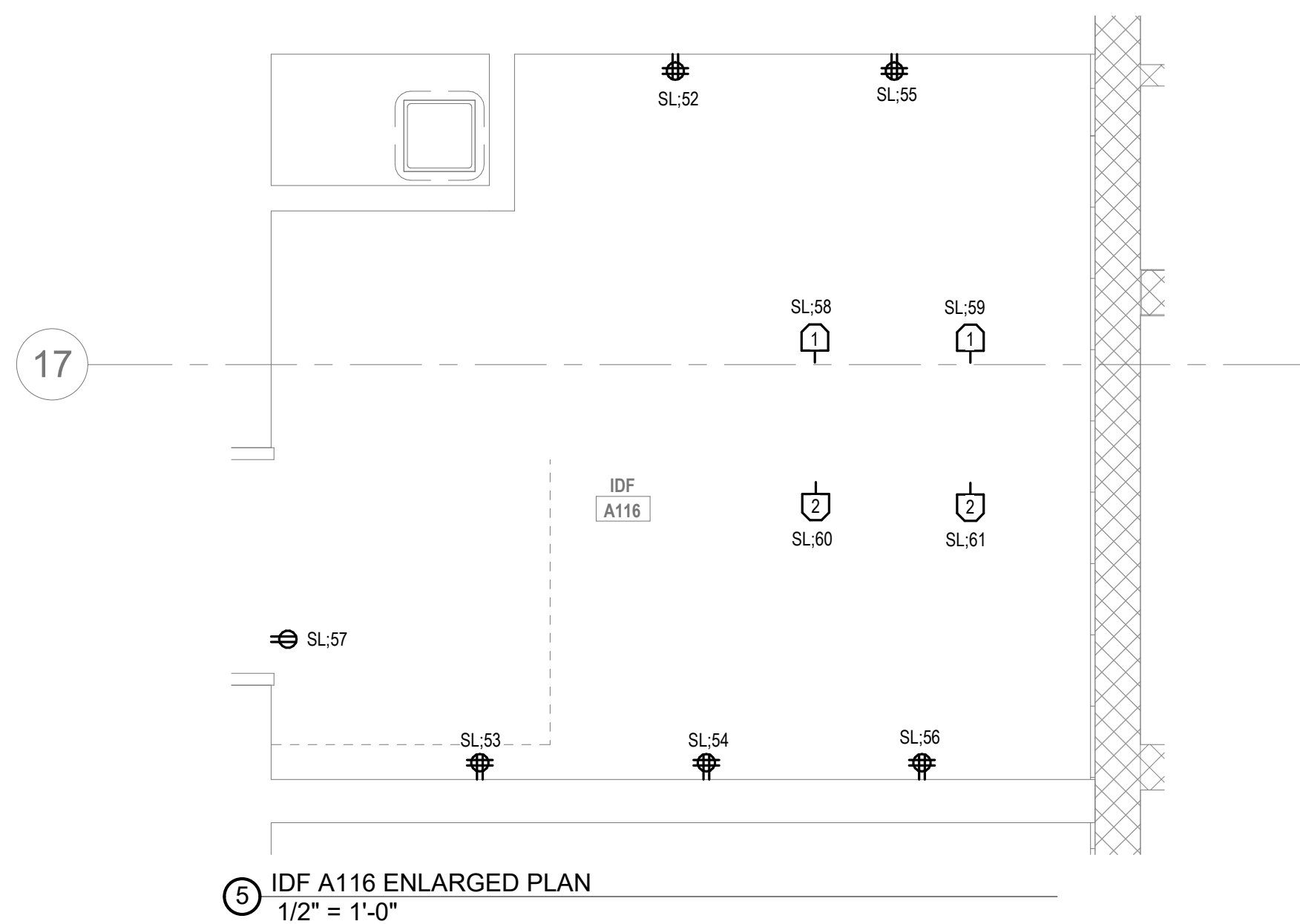
1. REFER TO E3-0.1 AND 2 FOR SINGLE LINE DIAGRAM.
2. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT HEIGHTS AND LOCATIONS FOR POWER AND ALL RELATED DEVICES. REFER TO E3-0.2 FOR TYPICAL MOUNTING HEIGHTS OF DEVICES.
3. REFER TO MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION, INCLUDING ELECTRICAL CHARACTERISTICS, OF EQUIPMENT INDICATED ON PLANS WITH HEX TAGS.
4. PROVIDE FLEXIBLE CONNECTIONS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON PLANS WITH HEX TAGS. FOR EACH PIECE OF EQUIPMENT, PROVIDE A FUSIBLE DISCONNECT SWITCH (WITH FUSES) WITH OVERCURRENT PROTECTION RATINGS AS RECOMMENDED BY MANUFACTURER.
5. REFER TO ELECTRICAL DETAIL SHEETS FOR REQUIREMENTS FOR LEAK DETECTION SYSTEMS TO BE PROVIDED WITH PLUMBING EQUIPMENT.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOXES AND CONDUIT FOR ALL TELECOM DEVICES. REFER TO TECHNOLOGY DRAWINGS FOR LOCATIONS AND REQUIREMENTS.



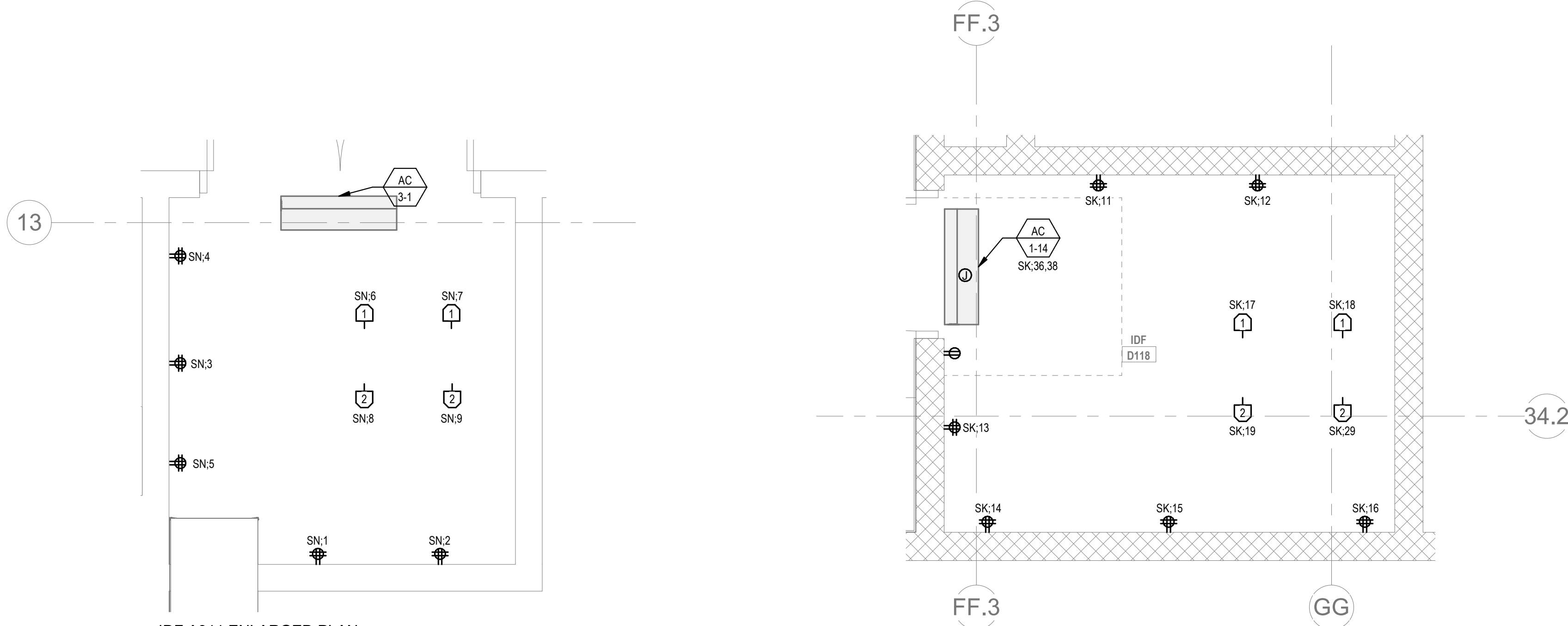
1 MDF B220 ENLARGED PLAN
1/2" = 1'-0"



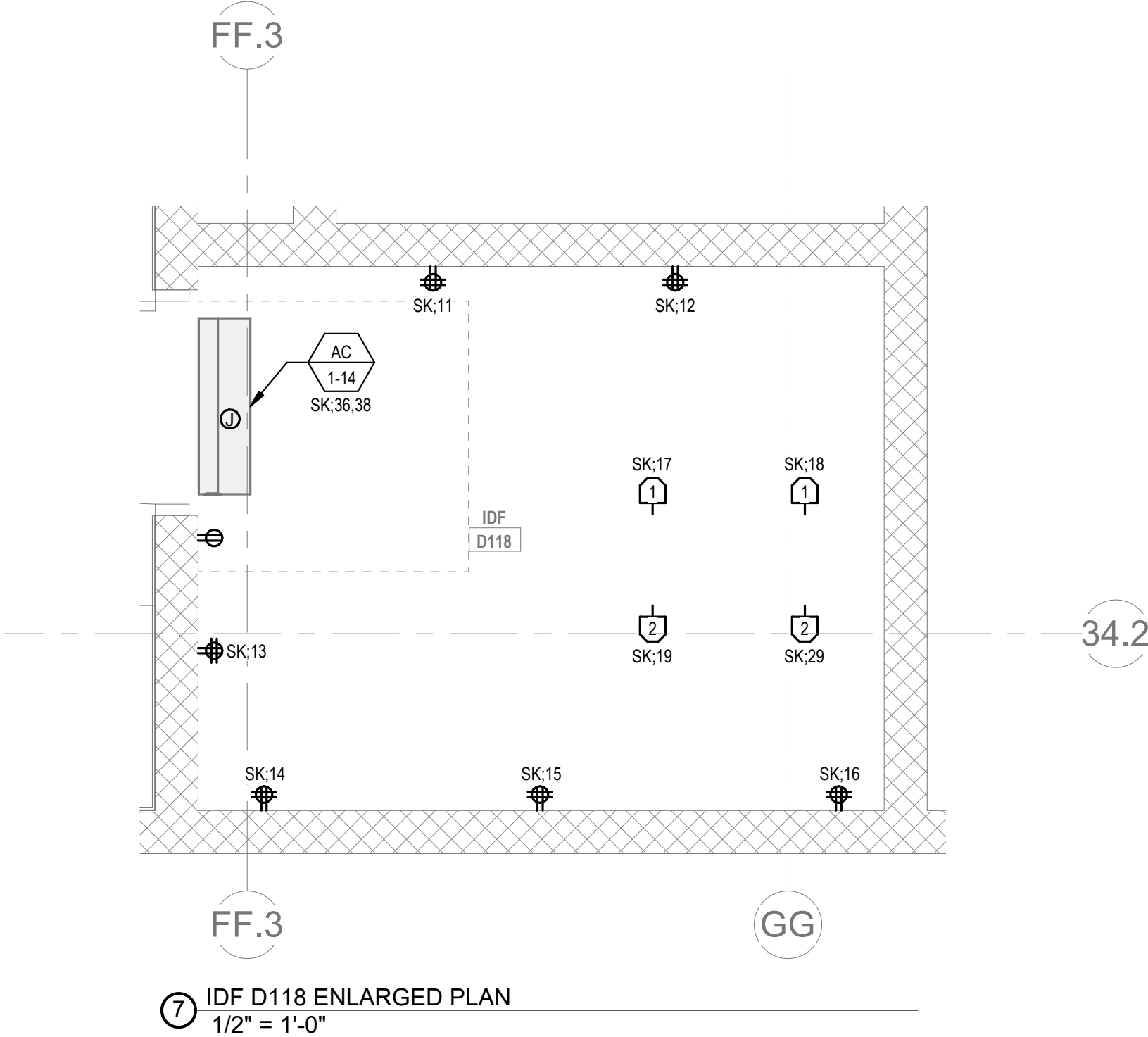
2 IDF C163 ENLARGED PLAN
1/2" = 1'-0"



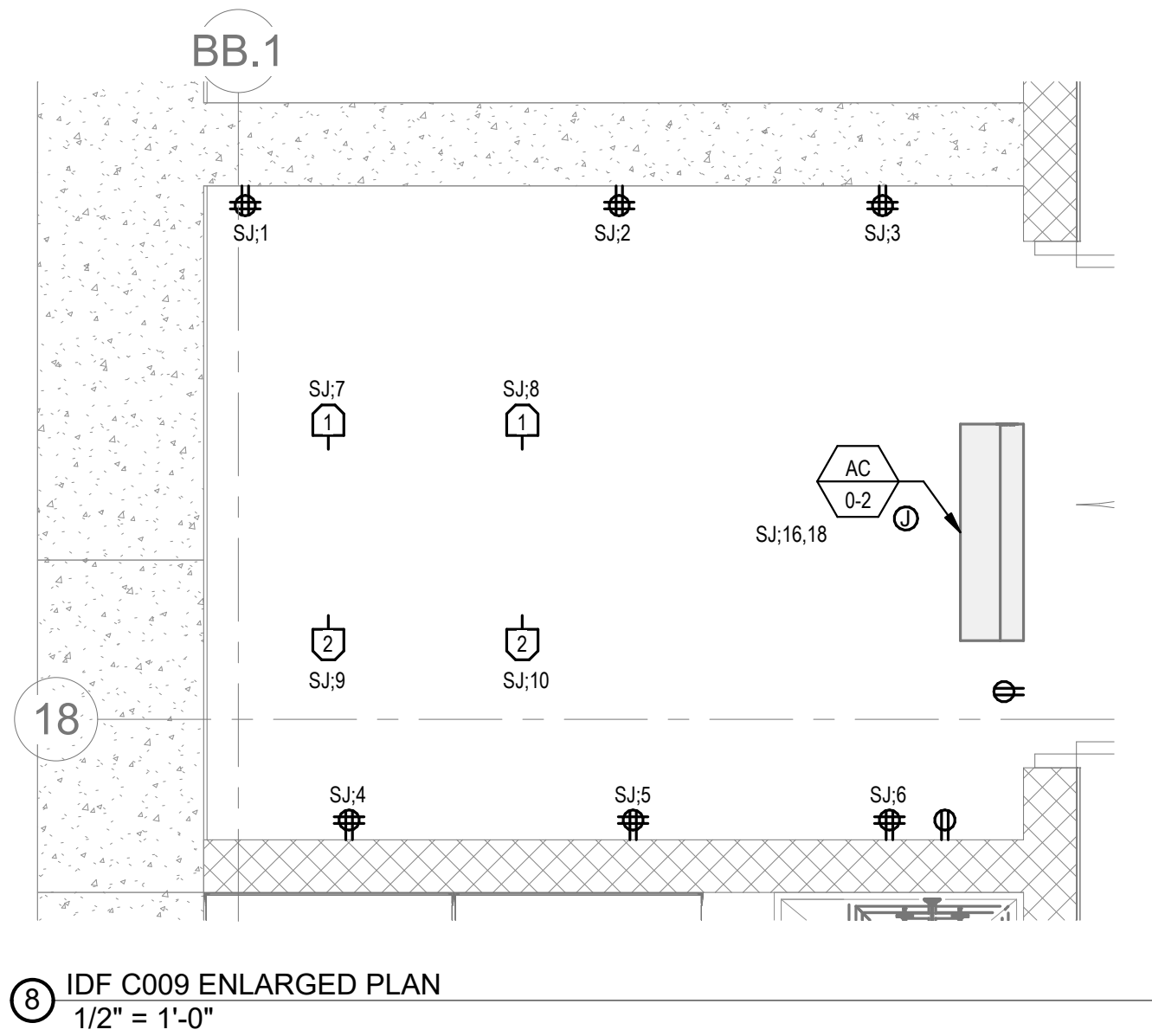
5 IDF A116 ENLARGED PLAN
1/2" = 1'-0"



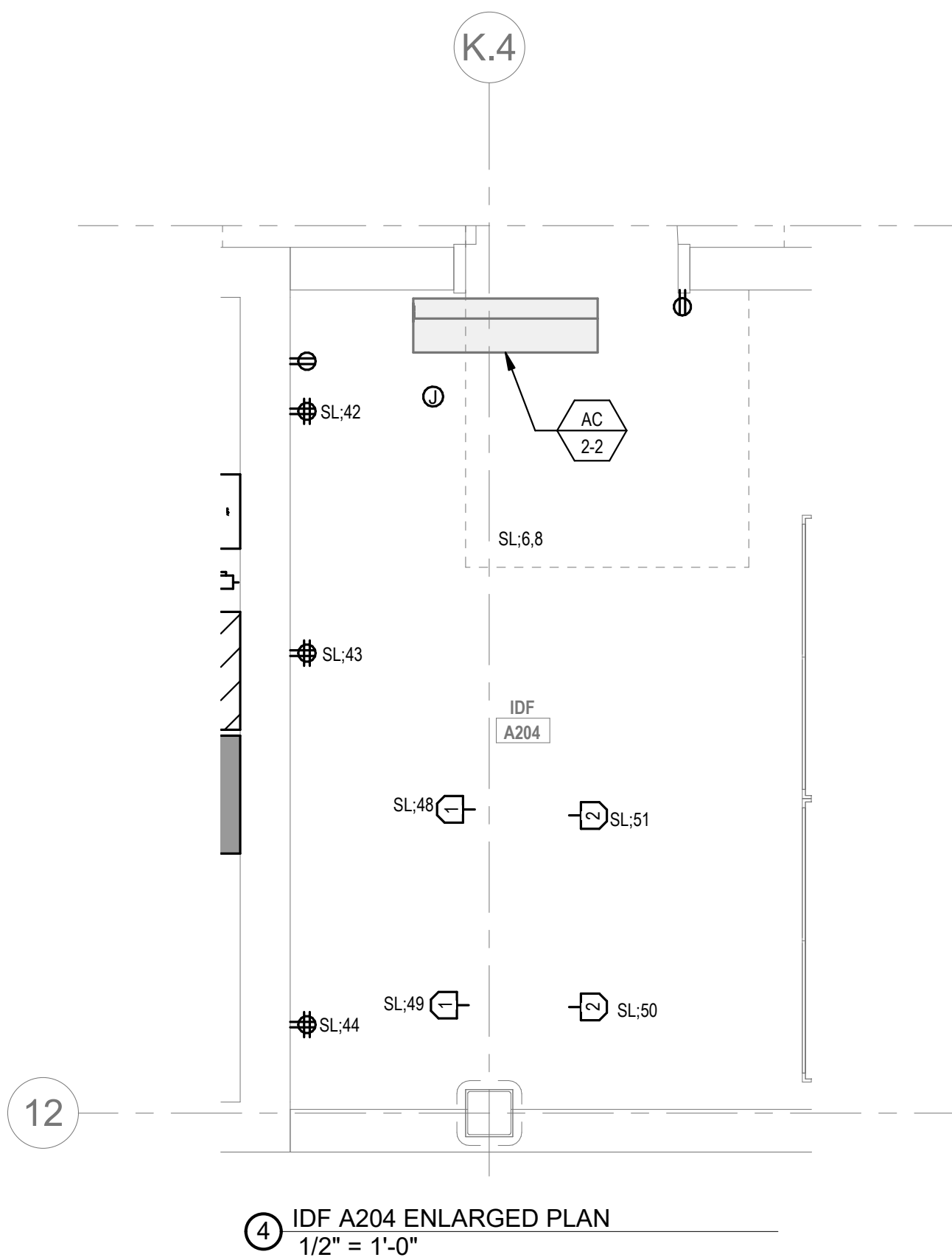
6 IDF A311 ENLARGED PLAN
1/2" = 1'-0"



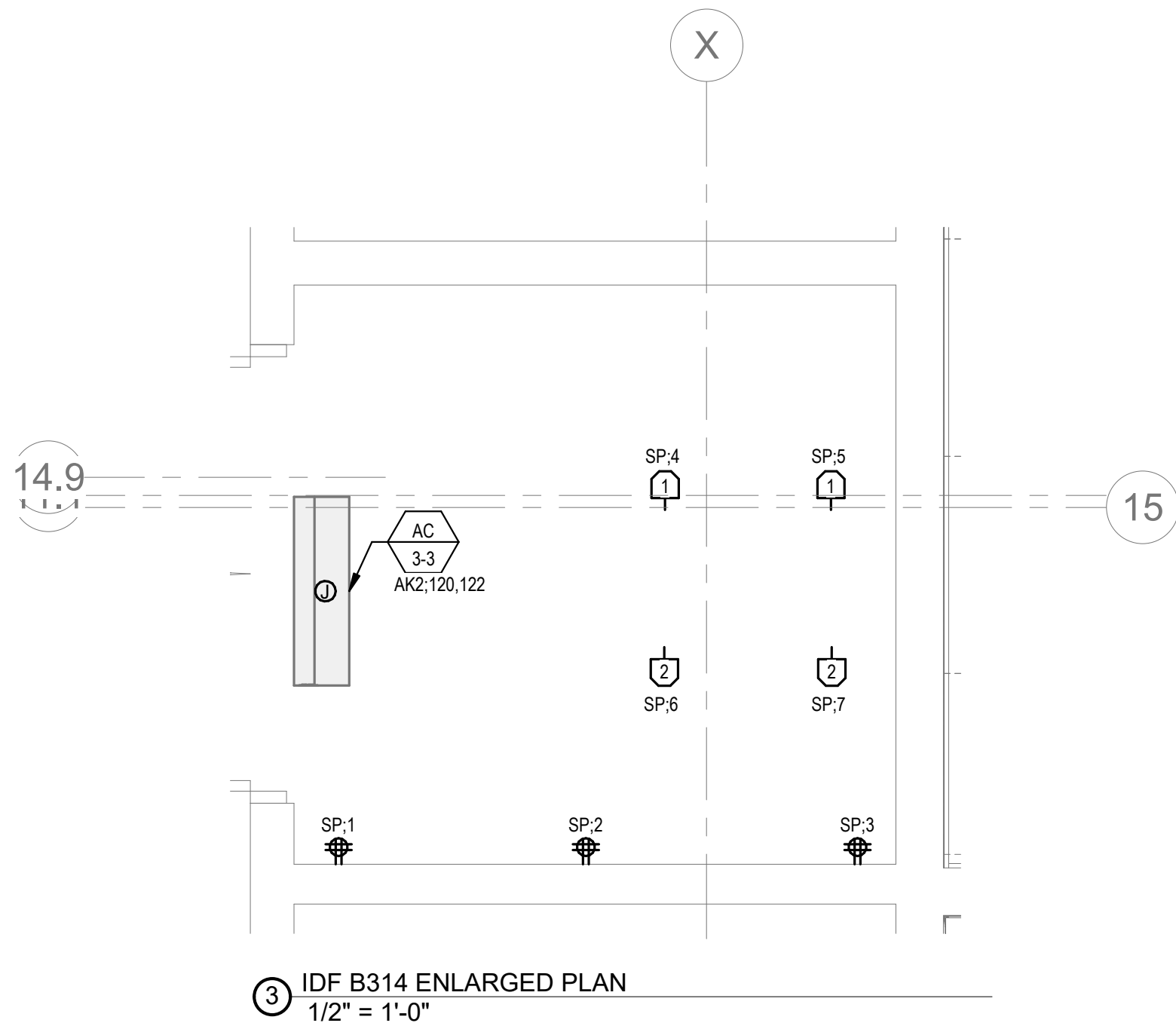
7 IDF D118 ENLARGED PLAN
1/2" = 1'-0"



8 IDF C009 ENLARGED PLAN
1/2" = 1'-0"



4 IDF A204 ENLARGED PLAN
1/2" = 1'-0"



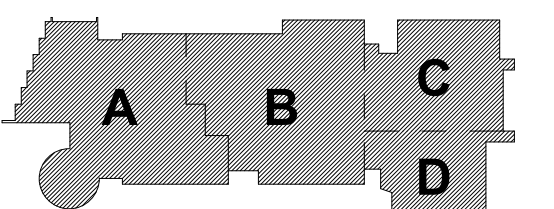
3 IDF B314 ENLARGED PLAN
1/2" = 1'-0"

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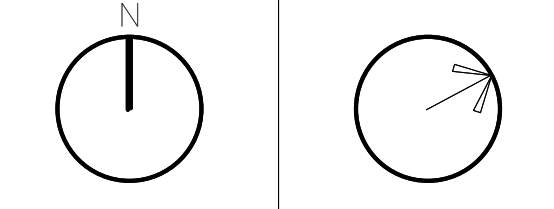
BID SET

August 28th, 2023



KEY PLAN

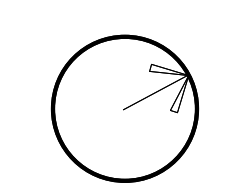
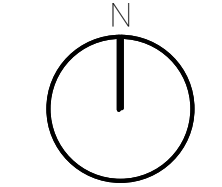
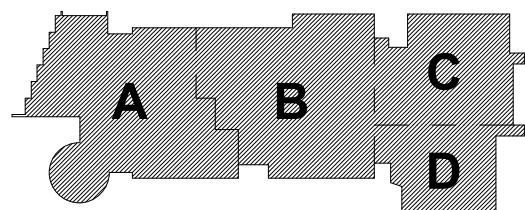
PROJECT NORTH MAGNETIC NORTH



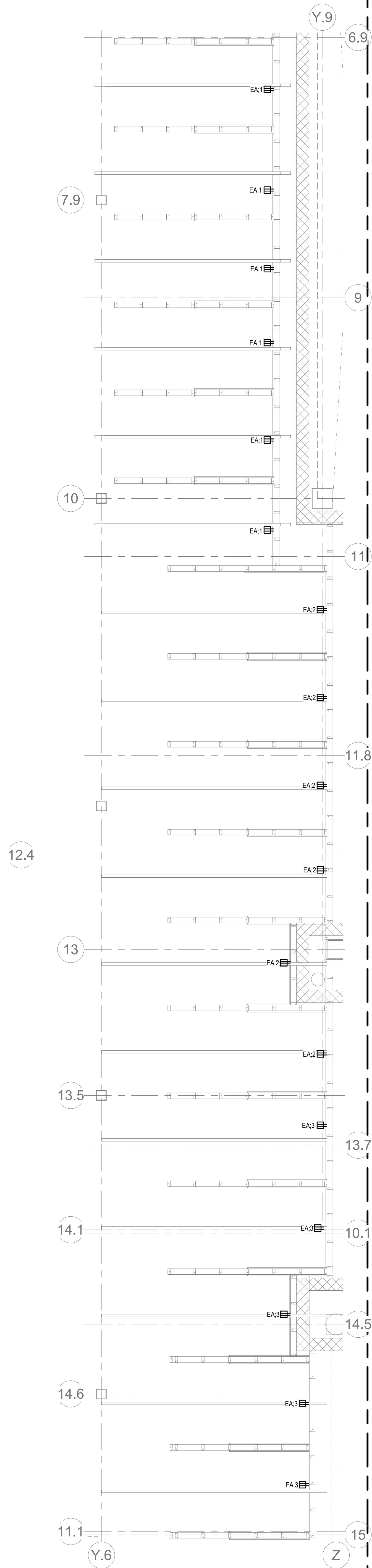
IDF ROOMS
POWER PART
PLANS

Scale: 1/2" = 1'-0"
Job No.: 60-20-409
Drawn By: ZMB
Date: August 28th, 2023

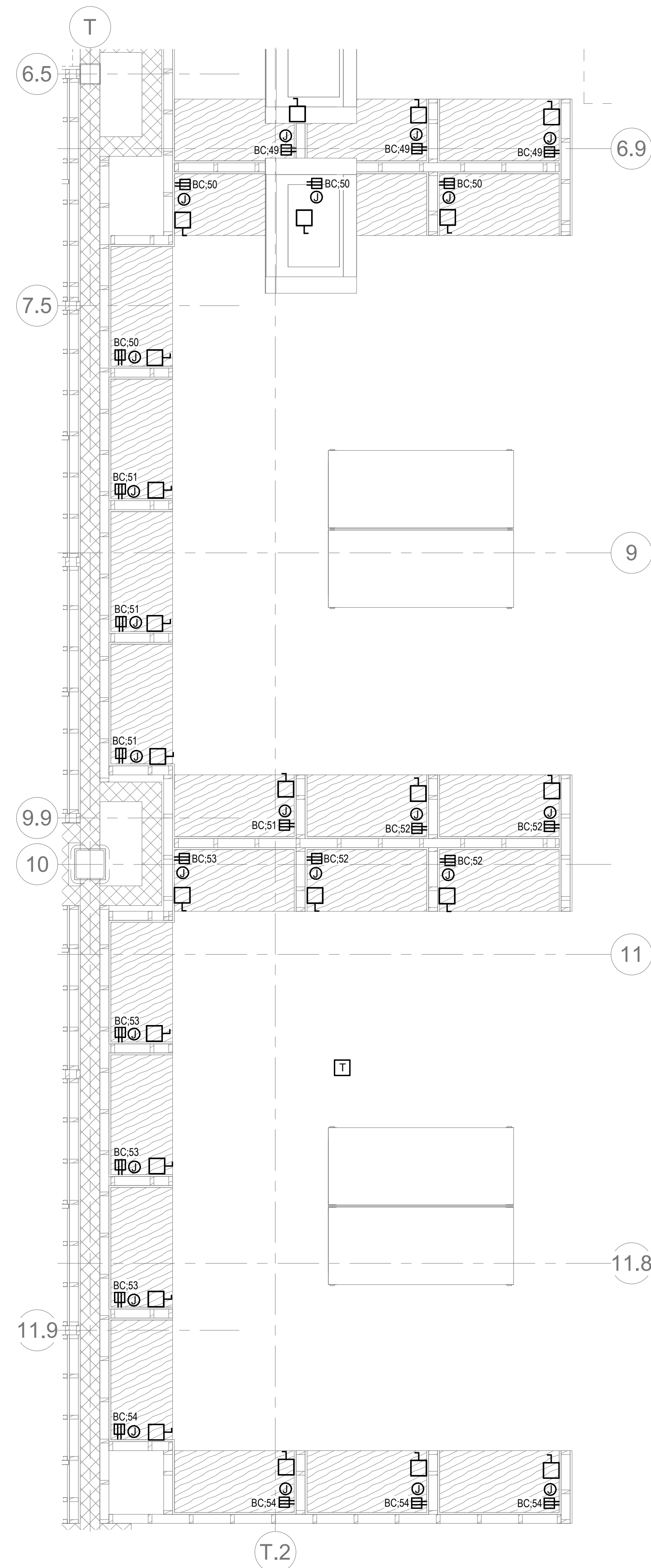
E1-2-2



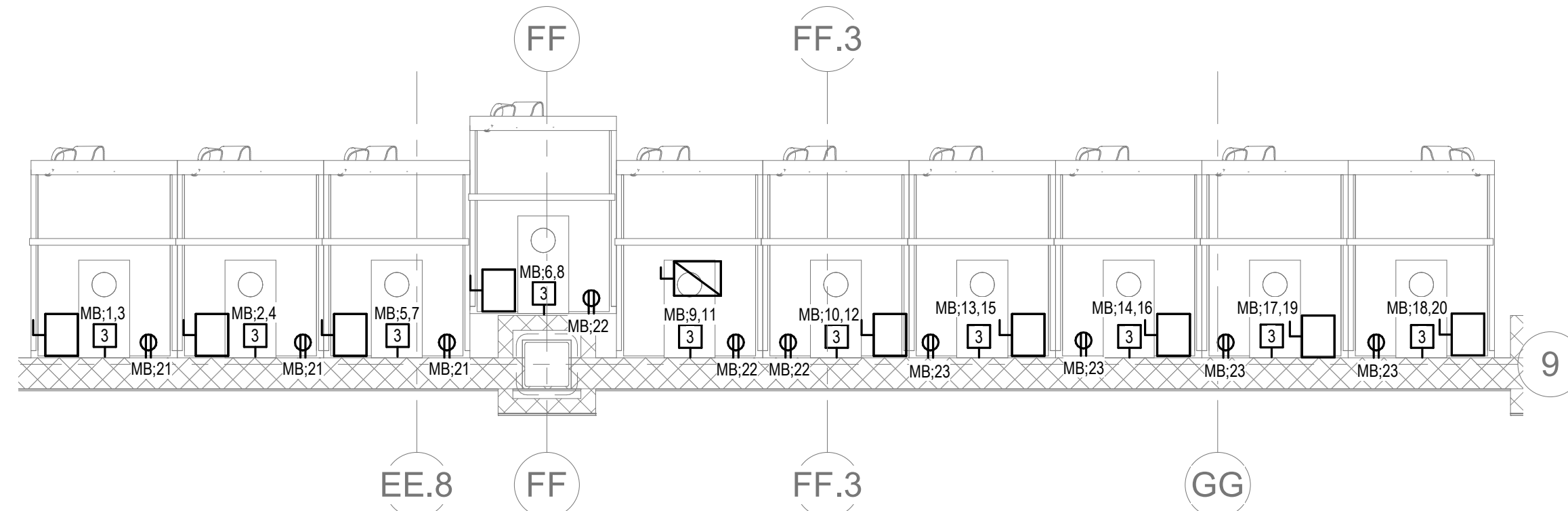
**ELECTRICAL
POWER BOOTHS
ENLARGED
PLANS**



ELECTRICAL POWER Level 1 Area B - Electrical Technology
Underclassmen Booths
Enlarged
3/8" = 1'-0"



ELECTRICAL POWER Level 1 Area B - HVAC Tech Upperclassman Booths
Enlarged
3/8" = 1'-0"



Northeast Metropolitan Regional Vocational High School

Wakefield, MA 01880

LIGHTING GENERAL NOTES:

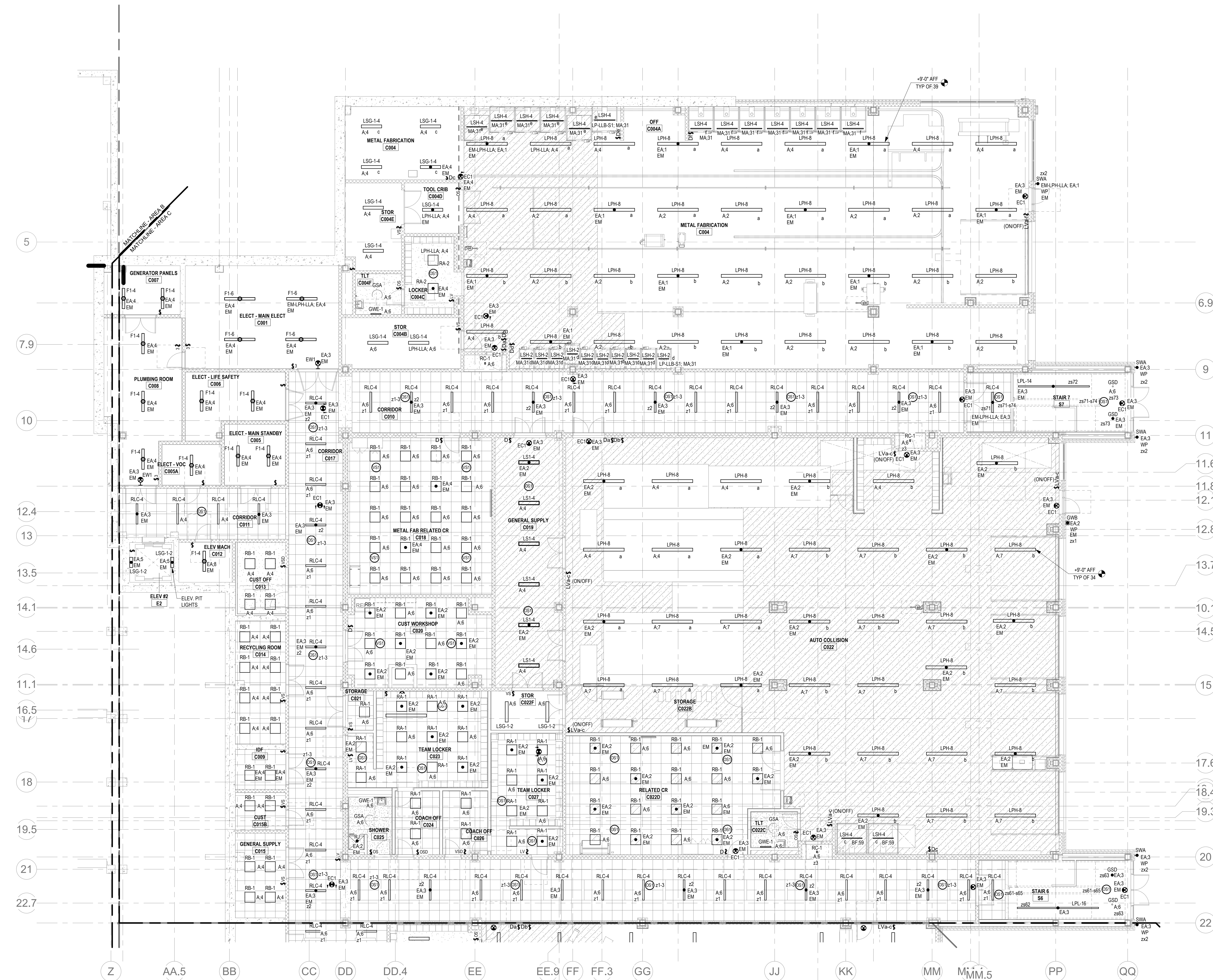
1. REFER TO E4-0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0-20 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-0-21 - E4-0-24 FOR LIGHTING FIXTURE SCHEDULES.
2. REFER TO ARCHITECTURAL RCPs FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM, AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
4. ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
5. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

CIRCUIT LEGEND:

- EA # - DENOTES BRANCH CIRCUIT PANELBOARD EMPLH-LA, CIRCUIT #
A # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-LA, CIRCUIT #
BFC - (BELOW FINISHED CEILING TO BOF)
APF - (ABOVE FINISHED FLOOR TO BOF)
BOF - (BOTTOM OF FIXTURE)

LIGHTING CONTROL NOTES:

1. THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
2. LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
3. ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES), AND SITE PARKING LOT LIGHTING POLES.
4. PROVIDE & INSTALL ALL 0-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
5. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
6. ALL CONCEALED RACEWAYS SHALL BE MC LUMINAIRE CABLE.
7. EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
8. ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.
9. EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC) WITHIN OPEN CEILING SPACES.
10. EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
11. EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
12. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
13. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
14. EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
15. EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
16. THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.



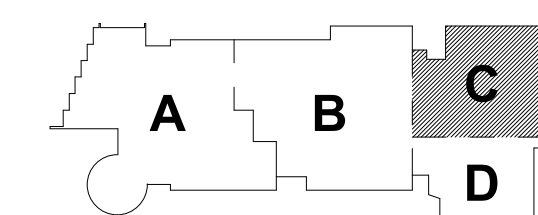
① Level 0 Area C RCP.
1/8" = 1'-0"

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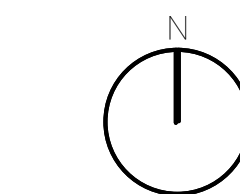
BID SET

August 28th, 2023

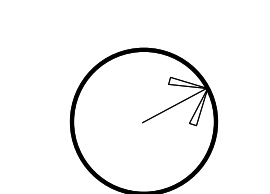


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



**ELECTRICAL
LIGHTING
LOWER LEVEL
REFLECTED CLG
PLAN - AREA C**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: ERA
Date: August 28th, 2023

E2-1-0C

DRA

Drummeys Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074
Tel: 817.984.1700
www.dra.com

Northeast
Metropolitan
Regional
Vocational High
School

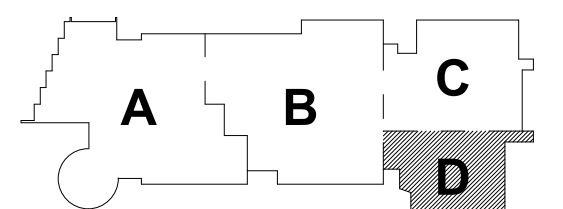
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BALA
ENGINEERS
BALA CONSULTING ENGINEERS, INC.
300 WEST 10TH STREET
SUITE 200
DALLAS, TEXAS 75201
TEL: 214.742.1000
FAX: 214.742.1001
WWW.BALA-ENGINEERS.COM

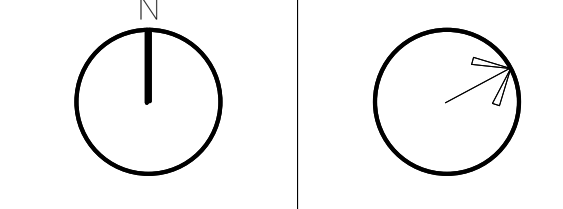
BID SET

August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



ELECTRICAL
LIGHTING
LOWER LEVEL
REFLECTED CLG
PLAN - AREA D

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: ERA
Date: August 28th, 2023
E2-1-0D

LIGHTING GENERAL NOTES:

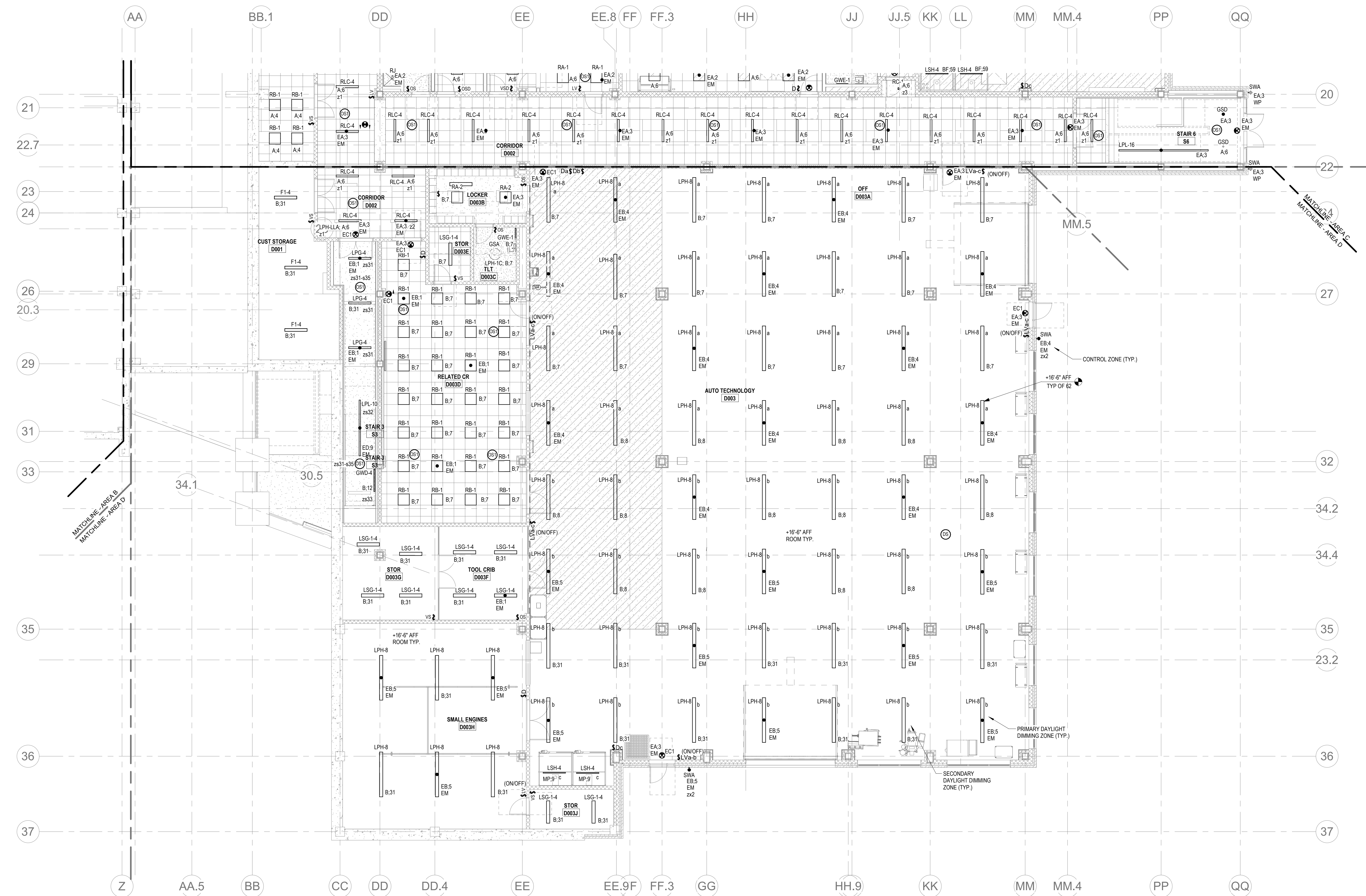
1. REFER TO E4-0.0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0.20 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-0.21 - E4-0.24 FOR LIGHTING FIXTURE SCHEDULES.
2. REFER TO ARCHITECTURAL RCPs FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
4. ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
5. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

CIRCUIT LEGEND:

- A-# DENOTES BRANCH CIRCUIT PANELBOARD LPH-LLA; CIRCUIT #
EA-# DENOTES BRANCH CIRCUIT PANELBOARD EM-LPH-LLA; CIRCUIT #
B-# DENOTES BRANCH CIRCUIT PANELBOARD LPH-1C; CIRCUIT #
EB-# DENOTES BRANCH CIRCUIT PANELBOARD EM-LPH-1C; CIRCUIT #

LIGHTING CONTROL NOTES:

1. THE LIGHTING CONTROL SYSTEM SHALL BE LITRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
2. LITRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
3. ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES) AND SITE PARKING LOT LIGHTING POLES.
4. PROVIDE & INSTALL ALL 0-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
5. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
6. ALL CONCEALED RACEWAYS SHALL BE MC LUMINARY CABLE.
7. EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
8. ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.
9. EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
10. EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
11. EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
12. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
13. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
14. EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
15. EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
16. THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.



1 Level 0 Area D RCP
1/8" = 1'-0"

DRA

DrummeY Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074

280 Charles Street
Studio 300
Waltham, MA
02453

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Tel: 817.984.1700
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**Northeast
Metropolitan
Regional
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School**

Wakefield, MA 01880

LIGHTING GENERAL NOTES:

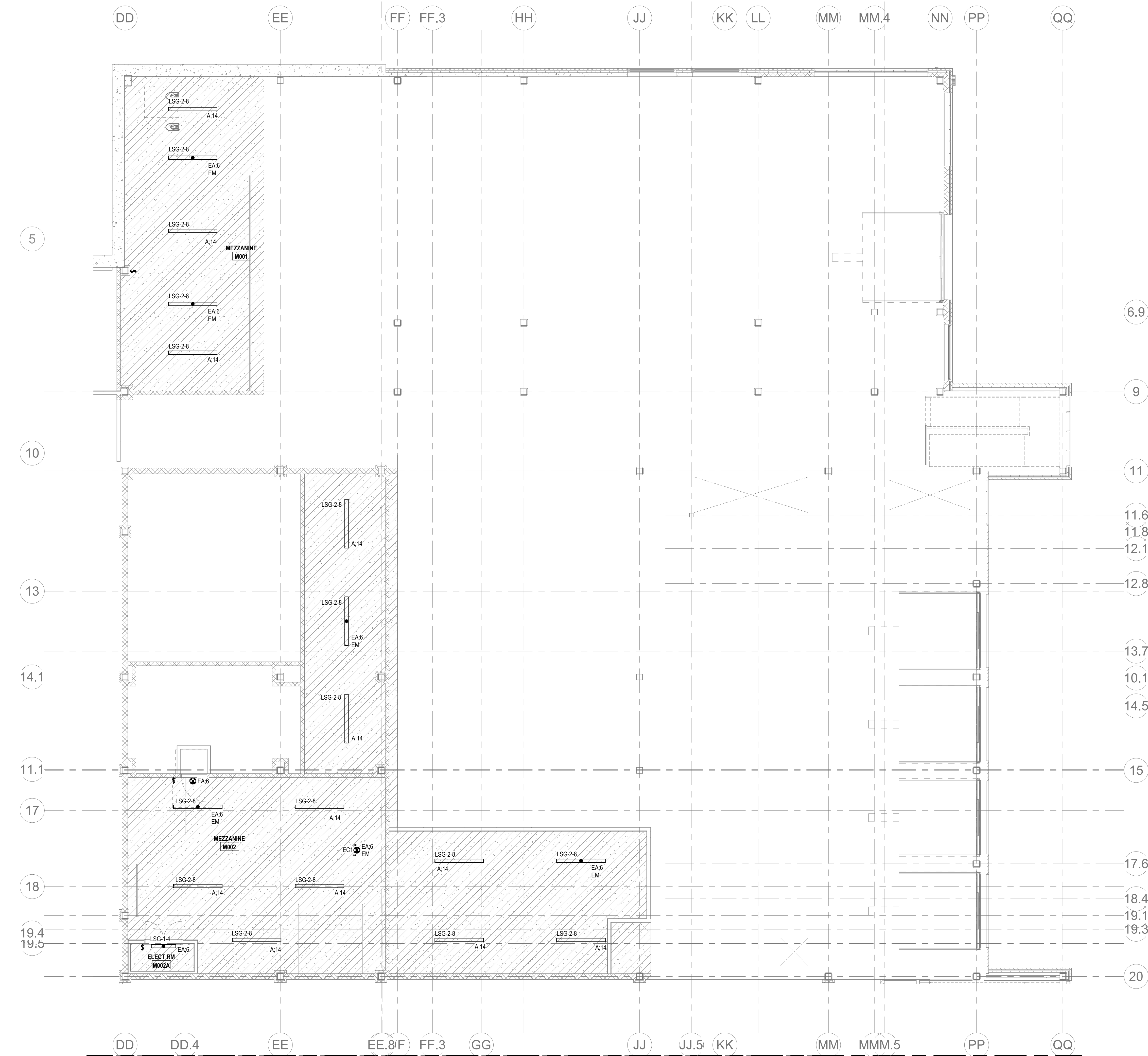
1. REFER TO E4-0.0 FOR LIGHTING SEQUENCE OF OPERATIONS; REFER TO E4-0.20 FOR LIGHTING CONTROL RISER DIAGRAM; REFER TO E4-0.21 - E4-0.24 FOR LIGHTING FIXTURE SCHEDULES.
2. REFER TO ARCHITECTURAL RCPs FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
4. ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
5. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

CIRCUIT LEGEND:

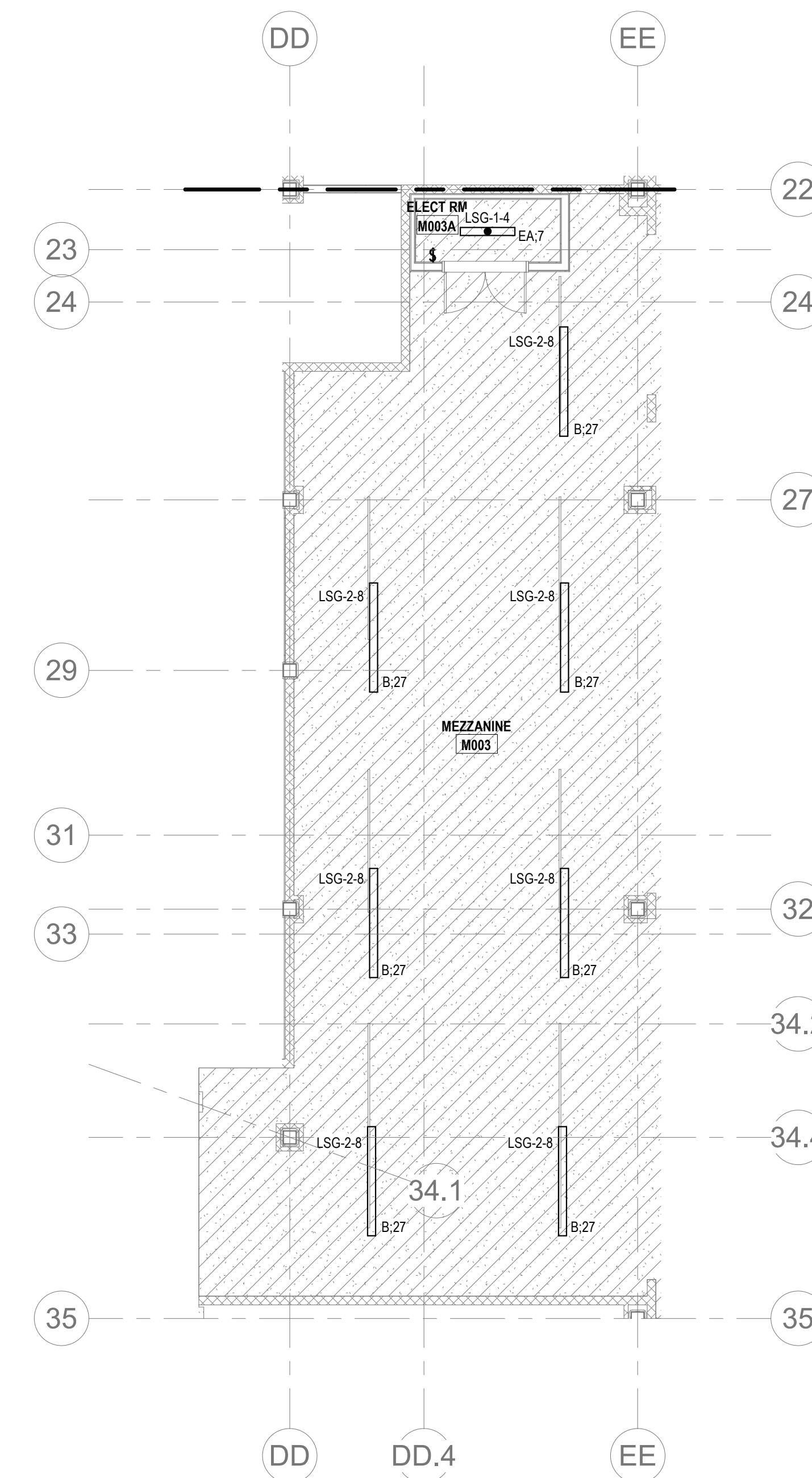
- A # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-LLA, CIRCUIT #
B # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1C, CIRCUIT #

LIGHTING CONTROL NOTES:

1. THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
2. LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
3. ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED), THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES), AND SITE PARKING LOT LIGHTING POLES.
4. PROVIDE & INSTALL ALL 0-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
5. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
6. ALL CONCEALED RACEWAYS SHALL BE MC LUMINAIR CABLE.
7. EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
8. ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING-MOUNTED & WIRELESS (UNLESS OTHERWISE DOCUMENTED).
9. EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
10. EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
11. EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
12. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
13. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONE.
14. EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
15. EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
16. THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.



1 ELECTRICAL LIGHTING 0.5-Lower Level Mezzanine - Area C - RCP
1/8" = 1'-0"



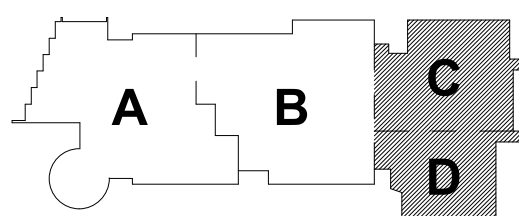
2 ELECTRICAL LIGHTING 0.5-Lower Level Mezzanine - Area D - RCP
1/8" = 1'-0"

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ENGINEERS
BALA CONSULTING ENGINEERS, INC.
300 NORTH 10TH STREET
SUITE 200
MINNEAPOLIS, MN 55401
TEL: 612.338.1100
WWW.BALA-ENGINEERS.COM

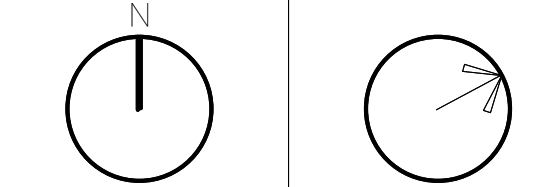
BID SET

August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



**ELECTRICAL
LIGHTING
LOWER LEVEL
REFLECTED CLG
PLAN - MEZZ**

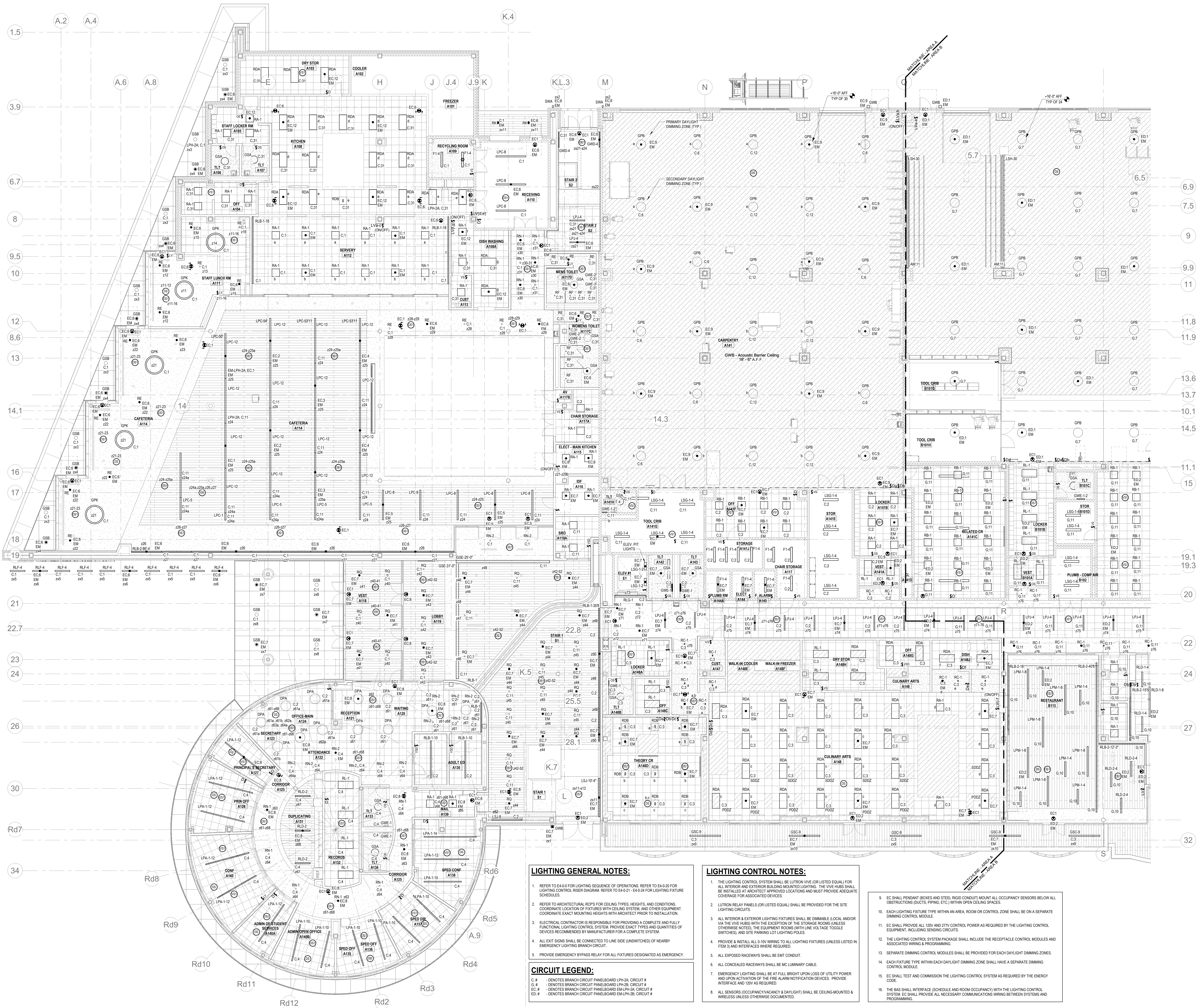
Scale: 1/8" = 1'-0"

Job No.: 60-20-409

Drawn By: ERA

Date: August 28th, 2023

E2-1-0M



LIGHTING GENERAL NOTES:

1. REFER TO E4-0.0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0.20 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-0.21, E4-0.24 FOR LIGHTING FIXTURE SCHEDULES.
2. REFER TO ARCHITECTURAL ROPS FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
4. ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
5. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

CIRCUIT LEGEND:

- C-# DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A, CIRCUIT #
G-# DENOTES BRANCH CIRCUIT PANELBOARD LPH-2B, CIRCUIT #
EC-# DENOTES BRANCH CIRCUIT PANELBOARD LPH-2A, CIRCUIT #
ED-# DENOTES BRANCH CIRCUIT PANELBOARD LPH-2B, CIRCUIT #

LIGHTING CONTROL NOTES:

1. THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
2. LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
3. ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE LIGHTING CONTROL SYSTEM PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
4. PROVIDE & INSTALL ALL 8-0V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
5. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
6. ALL CONCEALED RACEWAYS SHALL BE MC LUMINAIRE CABLE.
7. EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE CODE.
8. ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.

9. EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
10. EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
11. EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
12. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
13. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
14. EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
15. EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
16. THE BAS SHALL INTERFACE (SCHEDULES AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.

DRA

Drumrey Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074
Tel: 817.984.1700
www.draam.com

200 Charles Street
Studio 300
Waltham, MA
02453
Tel: 617.984.1700
www.draam.com

**Northeast
Metropolitan
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Vocational High
School**

Wakefield, MA 01880

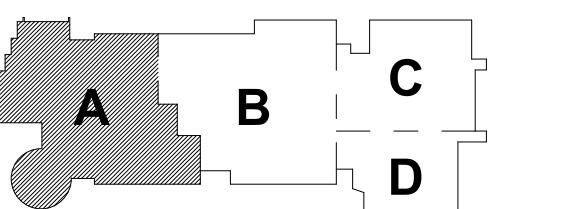
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SUITE 200
WALTHAM, MA 02453
TEL: 617.984.1700
WWW.BALA-ENGINEERS.COM

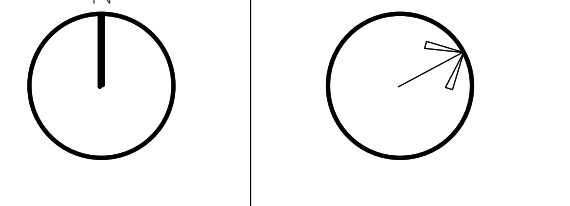
BID SET

August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



**ELECTRICAL
LIGHTING FIRST
FLOOR
REFLECTED CLG
PLAN - AREA A**

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

Job No.: 60-20-409

Drawn By: ERA

Date: August 28th, 2023

E2-1-1A

1 Level 1 Area B RCP
1/8" = 1'-0"



- LIGHTING GENERAL NOTES:**
1. REFER TO E4-0.0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0.20 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-0.21 - E4-0.24 FOR LIGHTING FUTURE SCHEDULES.
 2. REFER TO ARCHITECTURAL RCP'S FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM, AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
 3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
 4. ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
 5. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

- CIRCUIT LEGEND:**
- C-# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-24; CIRCUIT #
 - G-# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-26; CIRCUIT #
 - EC-# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-28; CIRCUIT #
 - ED-# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-28; CIRCUIT #

- LIGHTING CONTROL NOTES:**
1. THE LIGHTING CONTROL SYSTEM SHALL BE LITRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE-HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
 2. LITRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
 3. ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES) AND SITE PARKING LOT LIGHTING POLES.
 4. PROVIDE & INSTALL ALL 0-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
 5. ALL CONCEALED RACEWAYS SHALL BE EMT CONDUIT.
 6. EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
 7. ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.
 8. EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
 9. EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
 10. EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
 11. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
 12. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
 13. EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
 14. EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
 15. THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.

DRA

Drummeys Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
www.dra.com

260 Charles Street
Studio 300
Waltham, MA 02453
Tel: 617.984.1700
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BID SET

August 28th, 2023

KEY PLAN

PROJECT NORTH

MAGNETIC NORTH

ELECTRICAL LIGHTING FIRST FLOOR REFLECTED CLG PLAN - AREA B

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

Job No.: 60-20-409

Drawn By: ERA

Date: August 28th, 2023

E2-1-1B

DRA

Drummeys Road, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074
260 Charles Street
Studio 300
Waltham, MA
02453
Planning | Architecture | Interior Design
Tel: 817.984.1700
www.draam.com

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LIGHTING GENERAL NOTES:

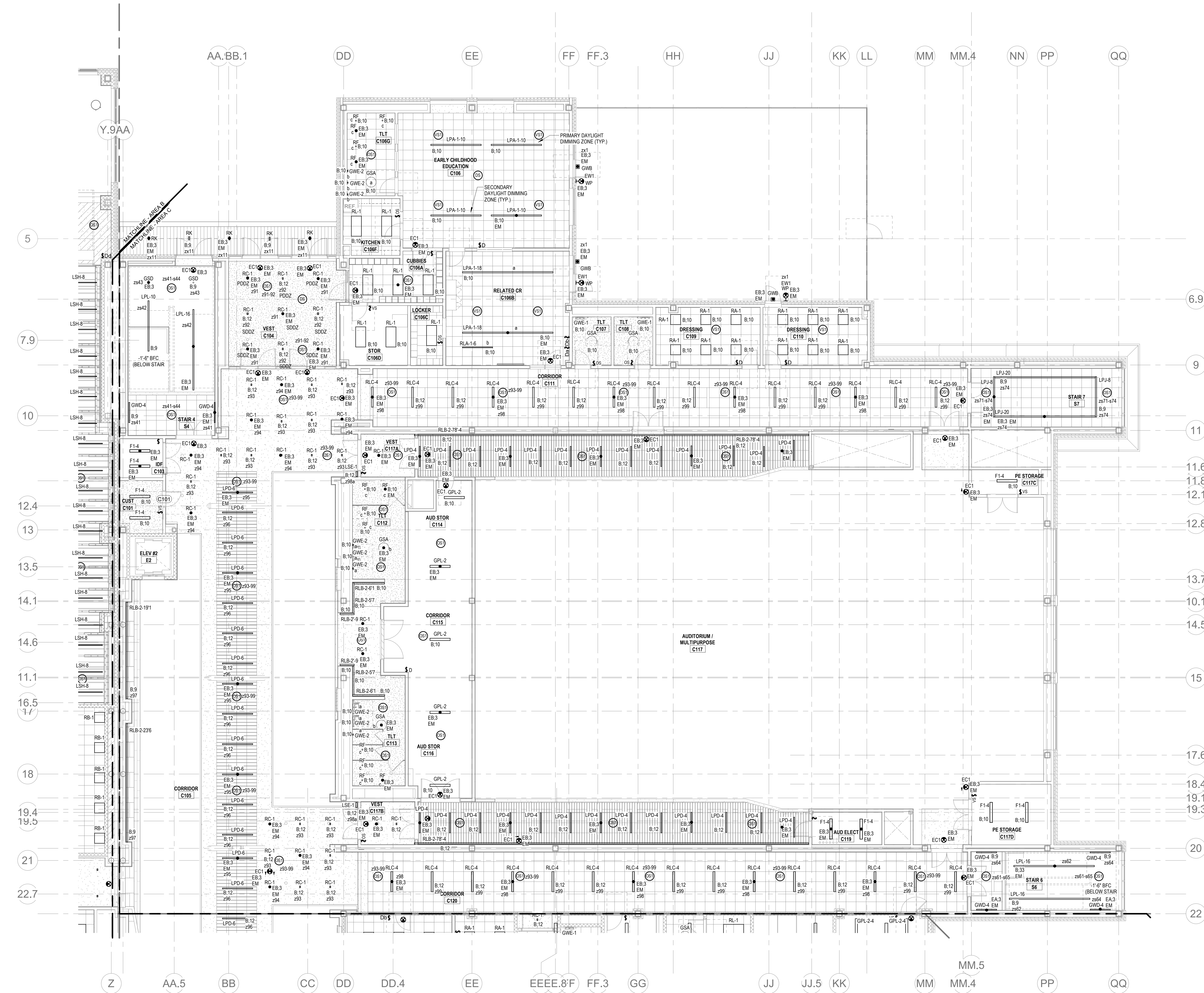
- REFER TO E4-0.0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0.20 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-0.21, E4-0.24 FOR LIGHTING FIXTURE SCHEDULES.
- REFER TO ARCHITECTURAL ROPS FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
- ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
- PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

CIRCUIT LEGEND:

B.# - DENOTES BRANCH CIRCUIT PANELBOARD LPA-1C, CIRCUIT #
G.# - DENOTES BRANCH CIRCUIT PANELBOARD LPA-2C, CIRCUIT #
EB.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-1C, CIRCUIT #

LIGHTING CONTROL NOTES:

- THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
- LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
- ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE LOCAL AND/OR VIA THE VIVE HUBS WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES), AND SITE PARKING LOT LIGHTING POLES.
- PROVIDE & INSTALL ALL 120V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
- ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
- ALL CONCEALED RACEWAYS SHALL BE MC LUMINAIR CABLE.
- EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
- ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.
- EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
- THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
- SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONE.
- EACH FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
- EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
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- EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
- THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.



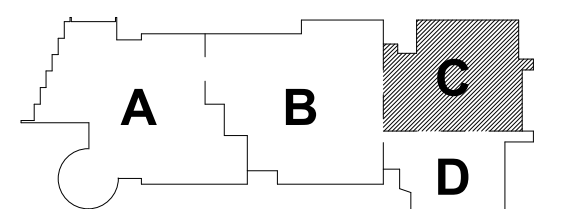
Level 1 Area C RCP
1/8" = 1'-0"

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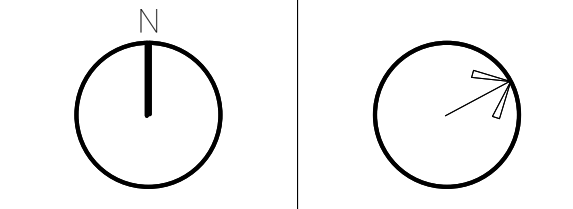
BID SET

August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



**ELECTRICAL
LIGHTING FIRST
FLOOR
REFLECTED CLG
PLAN - AREA C**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: ERA
Date: August 28th, 2023

E2-1-1C

DRA

Drummett Rosane Anderson, Inc.

225 Oakland Road
Studio 205
South Windsor, CT
06074

260 Charles Street
Studio 300
Waltham, MA
02453

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LIGHTING GENERAL NOTES:

1. REFER TO EA-0.0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO EA-0.20 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO EA-0.21 - EA-0.24 FOR LIGHTING FIXTURE SCHEDULES.
2. REFER TO ARCHITECTURAL ROPS FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
4. ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
5. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

CIRCUIT LEGEND:

B.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1C, CIRCUIT #
G.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2B, CIRCUIT #
EB.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LPH-1C, CIRCUIT #

LIGHTING CONTROL NOTES:

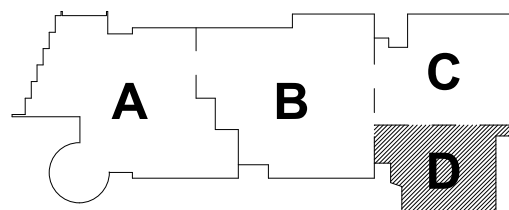
1. THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
2. LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
3. ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES) AND SITE PARKING LOT LIGHTING POLES.
4. PROVIDE & INSTALL ALL 0-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
5. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
6. ALL CONCEALED RACEWAYS SHALL BE MC LUMINAIRE CABLE.
7. EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
8. ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.
9. EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
10. EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
11. EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
12. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
13. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONE.
14. EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
15. EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
16. THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.

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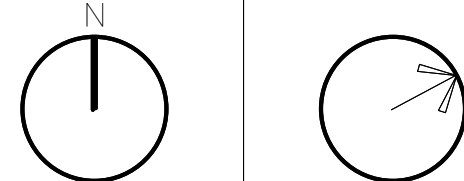
BID SET

August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH



**ELECTRICAL
LIGHTING FIRST
FLOOR
REFLECTED CLG
PLAN - AREA D**

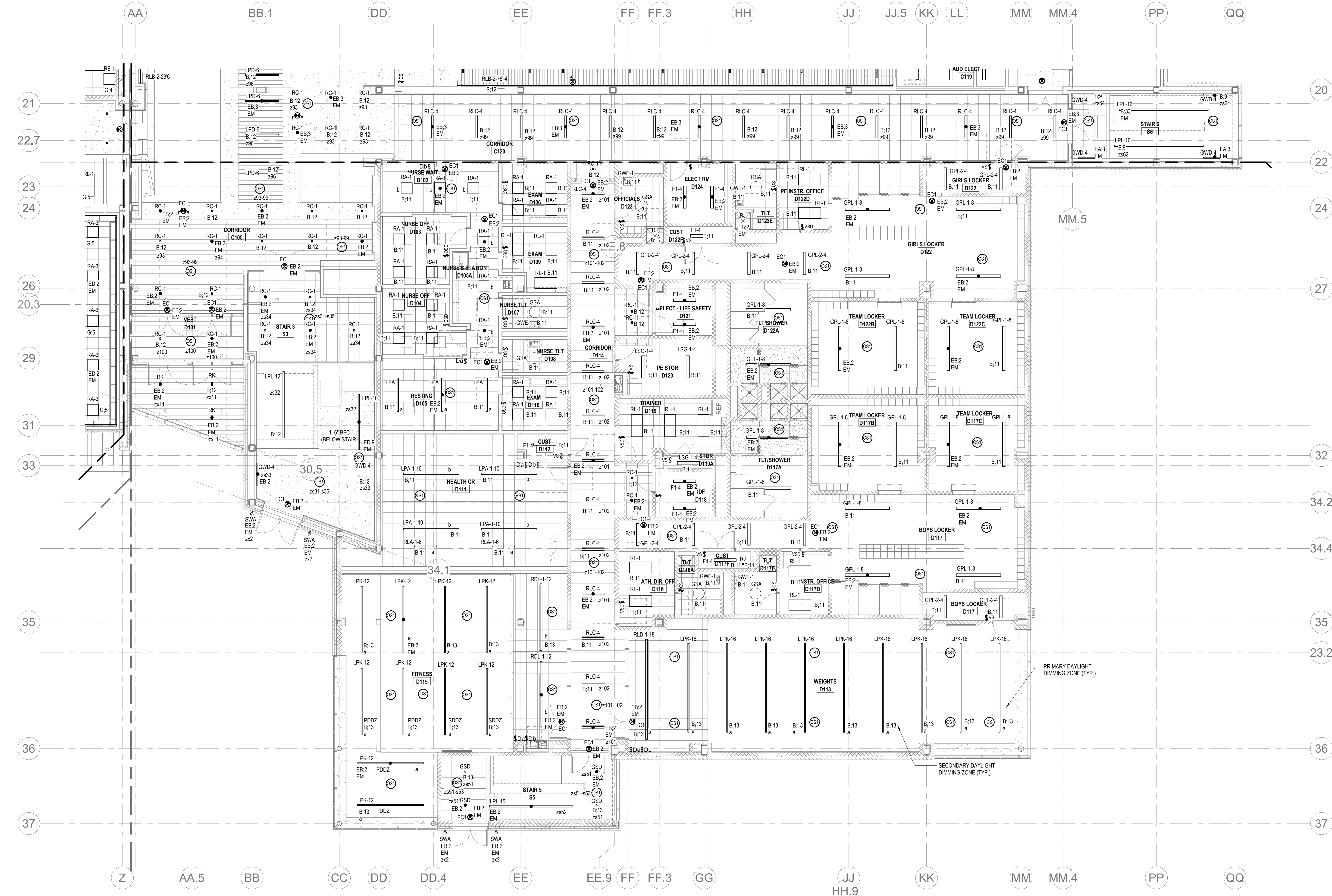
Scale: 1/8" = 1'-0"

Job No.: 60-20-409

Drawn By: ERA

Date: August 28th, 2023

E2-1-1D



① Level 1 Area D RCP For Sheet
1/8" = 1'-0"

LIGHTING GENERAL NOTES:

1. REFER TO E4-04 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-020 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-021 - E4-024 FOR LIGHTING FIXTURE SCHEDULES.
2. REFER TO ARCHITECTURAL ROPS FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
4. ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
5. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.
6. ALL MECHANICAL, ELECTRICAL, AND FIRE PROTECTION (MEP/FP) SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE MEP/FP COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.
7. MECHANICAL, ELECTRICAL, AND FIRE PROTECTION (MEP/FP) CONTRACTORS NOTE: BETWEEN COLUMN LINES, A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEP/FP SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNISUB/IT SUPPORTS ATTACHED TO BOTTOM CORN OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEP/FP SYSTEMS COMPONENTS. SPECIALTY ACoustically RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEP/FP SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON THE LIMITED BASES AT LOCATIONS SPECIFICALLY INDICATED ON THE MEP/FP DRAWINGS.
8. ALL MEP/FP SYSTEMS COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINES FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONCRETE PLANKS AS PART OF THE MEP/FP COORDINATION PROCESS.

CIRCUIT LEGEND:

- B # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-1C, CIRCUIT #
G # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2B, CIRCUIT #
ED # - DENOTES BRANCH CIRCUIT PANELBOARD EM-LPH-2B, CIRCUIT #

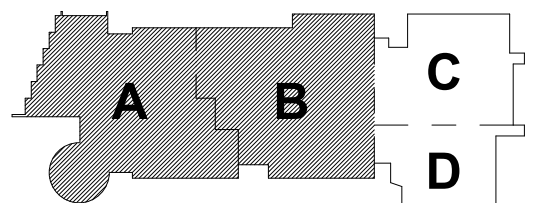
LIGHTING CONTROL NOTES:

1. THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
2. LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
3. ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED), THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES), AND SITE PARKING LOT LIGHTING POLES.
4. PROVIDE & INSTALL ALL 0-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
5. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
6. ALL CONCEALED RACEWAYS SHALL BE MC LUMINAIR CABLE.
7. EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
8. ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.
9. EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
10. EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
11. EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
12. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
13. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
14. EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
15. EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
16. THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.

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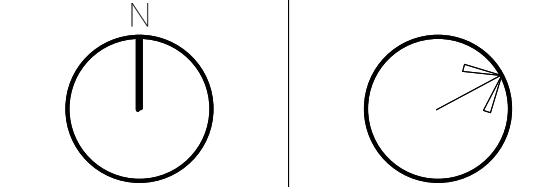
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August 28th, 2023



KEY PLAN

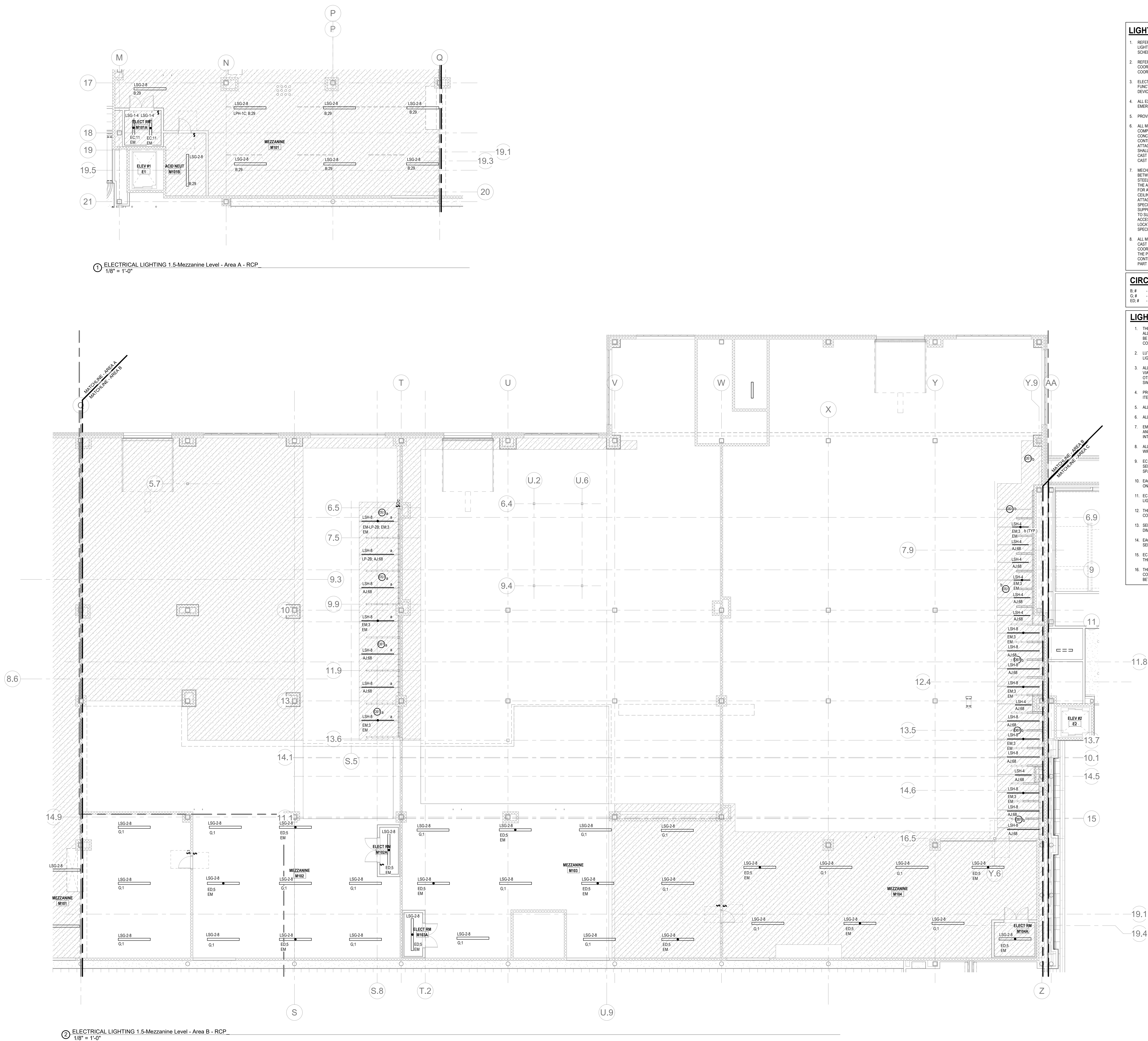
PROJECT NORTH MAGNETIC NORTH

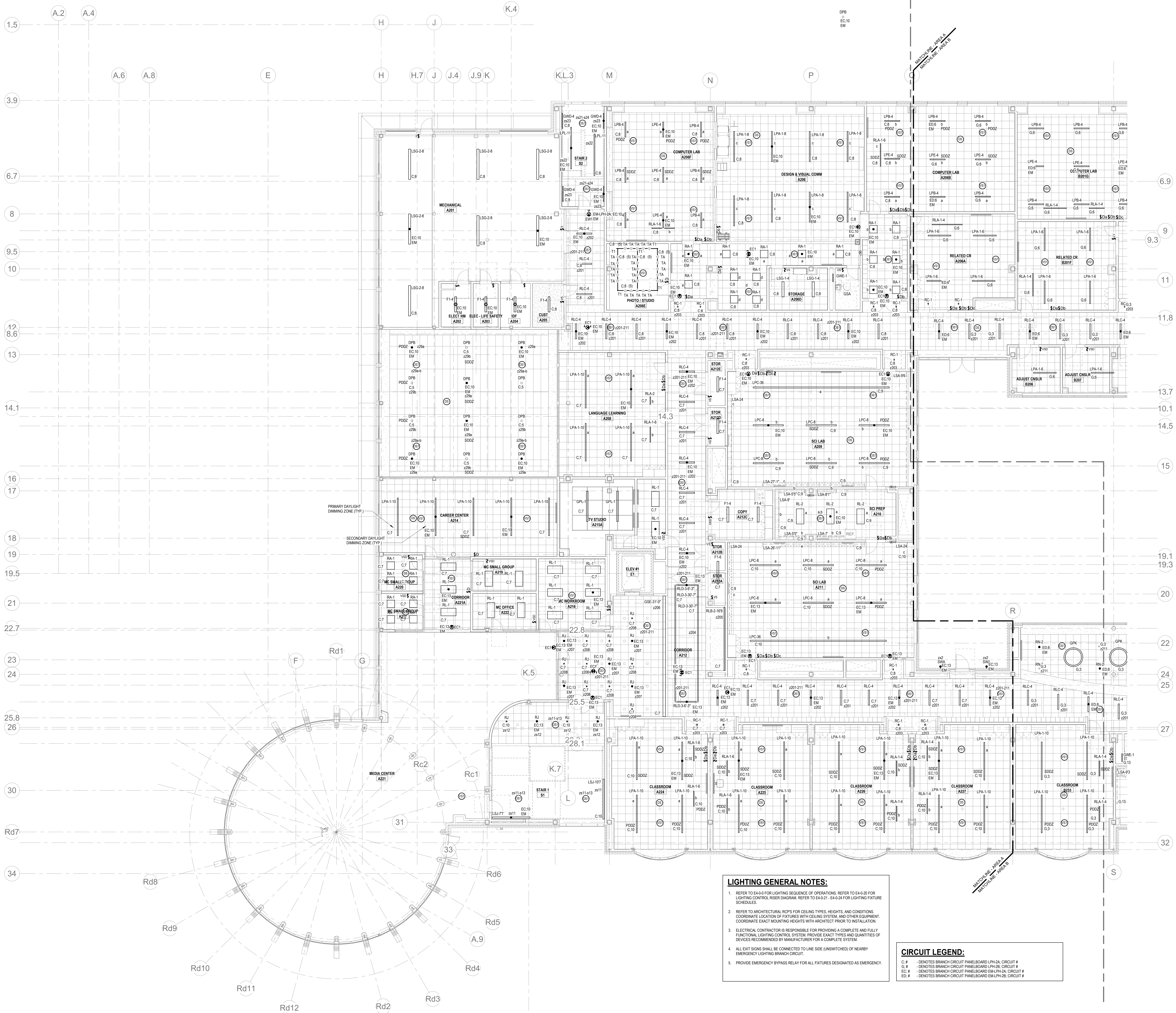


ELECTRICAL LIGHTING FIRST FLOOR REFLECTED CLG PLAN - MEZZ

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: ERA
Date: August 28th, 2023

E2-1-1M





- LIGHTING CONTROL NOTES:**
1. THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
 2. LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
 3. ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES), AND SITE PARKING LOT LIGHTING POLES.
 4. PROVIDE & INSTALL ALL 0-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
 5. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
 6. ALL CONCEALED RACEWAYS SHALL BE MC LUMINARY CABLE.
 7. EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
 8. ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.
 9. EC SHALL PENDANT BOXES AND STEEL RIGID CONDUIT MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (OUTLETS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
 10. EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
 11. EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
 12. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
 13. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
 14. EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
 15. EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
 16. THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.

- LIGHTING GENERAL NOTES:**
1. REFER TO E4-0.0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0.20 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-0.21 - E4-0.24 FOR LIGHTING FIXTURE SCHEDULES.
 2. REFER TO ARCHITECTURAL ROPS FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
 3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
 4. ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
 5. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

CIRCUIT LEGEND:

C-# - DENOTES BRANCH CIRCUIT PANELBOARD LPA-2A, CIRCUIT #
C-# - DENOTES BRANCH CIRCUIT PANELBOARD LPA-2B, CIRCUIT #
EC-# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LPA-2A, CIRCUIT #
ED-# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LPA-2B, CIRCUIT #

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Drummeys Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
www.dra.com

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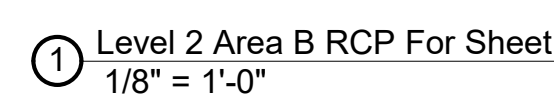
BID SET
August 28th, 2023

KEY PLAN

PROJECT NORTH
MAGNETIC NORTH

ELECTRICAL
LIGHTING
SECOND FLOOR
REFLECTED CLG
PLAN - AREA A

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: ERA
Date: August 28th, 2023
E2-1-2A



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LIGHTING GENERAL NOTES:

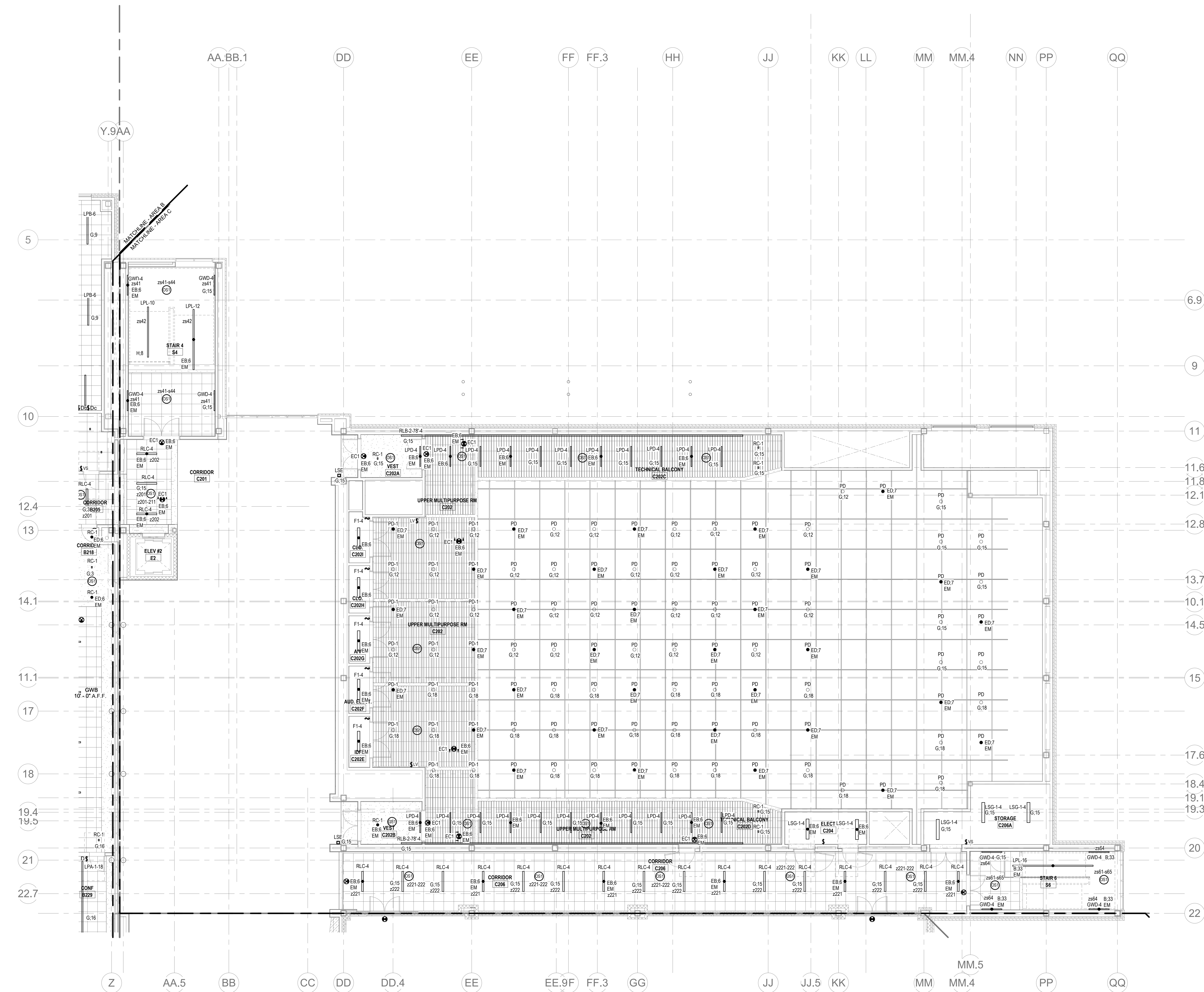
1. REFER TO E4-0.3 FOR NOTES ON ELECTRICAL SCOPE OF WORK.
2. REFER TO E4-0.0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0.20 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-0.21 - E4-0.24 FOR LIGHTING FIXTURE SCHEDULES.
3. REFER TO ARCHITECTURAL RCP'S FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM, AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
4. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
5. ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
6. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

CIRCUIT LEGEND:

G.# - DENOTES BRANCH CIRCUIT PANELBOARD UPH-26; CIRCUIT #
ED.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-UPH-26; CIRCUIT #

LIGHTING CONTROL NOTES:

1. THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ACCURATE COVERAGE FOR ASSOCIATED DEVICES.
2. LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
3. ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES) AND SITE PARKING LOT LIGHTING POLES.
4. PROVIDE & INSTALL ALL 8-10' WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
5. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
6. ALL CONCEALED RACEWAYS SHALL BE MC LUMINARY CABLE.
7. EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
8. ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING MOUNTED & WIRELESS (UNLESS OTHERWISE DOCUMENTED).
9. EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
10. EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
11. EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
12. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
13. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
14. EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
15. EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
16. THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.



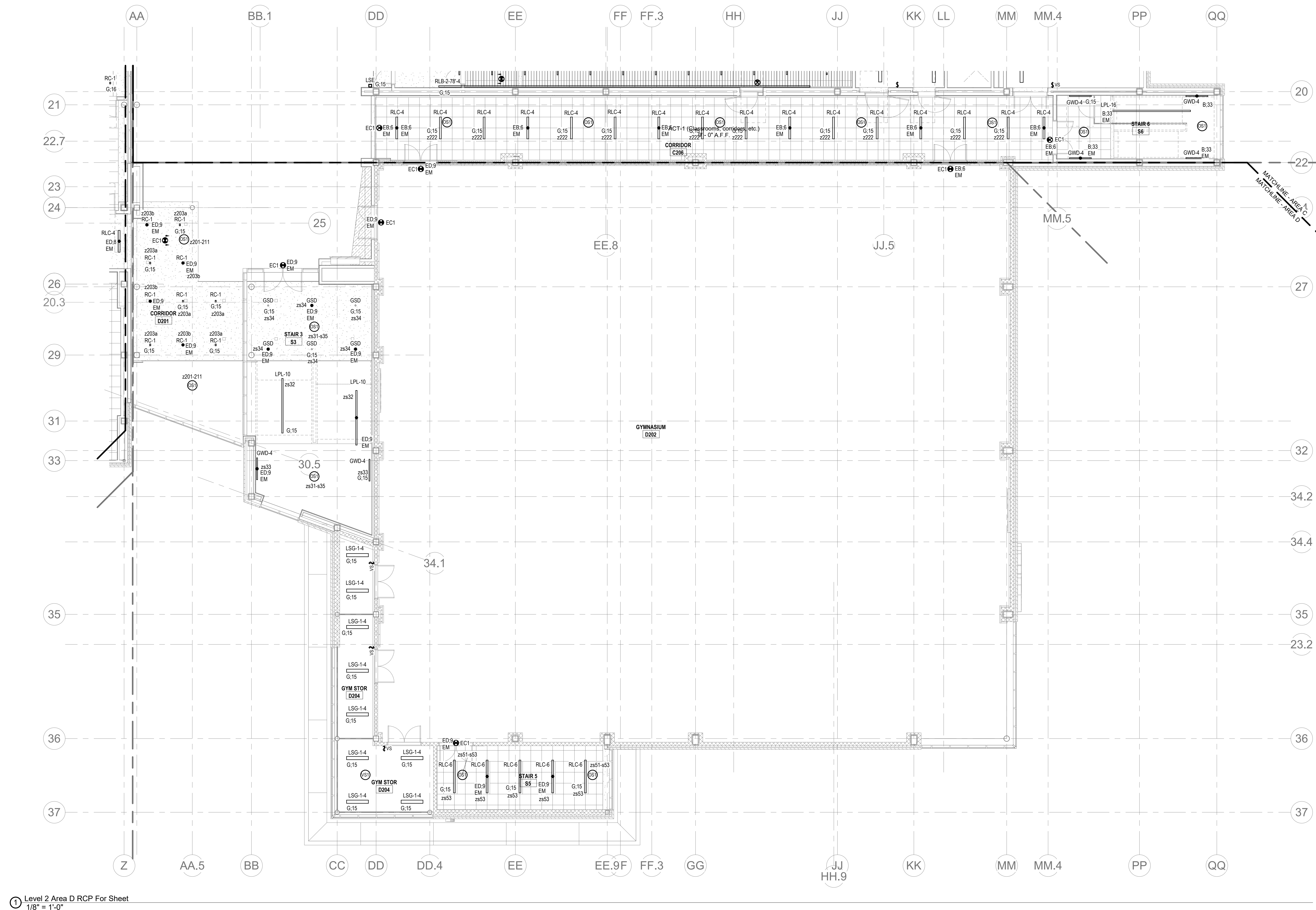
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1. REFLECT TO E-4-0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFLECT TO E-4-0 FOR LIGHTING CONTROL RISER DIAGRAM. REFLECT TO E-4-01, E-4-02, E-4-04 FOR LIGHTING FIXTURE SCHEDULES.
2. REFLECT TO ARCHITECTURAL RCPs FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM, AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONING LIGHTING SYSTEM. THE CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
4. ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
5. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

G: # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-2B; CIRCUIT #
ED: # - DENOTES BRANCH CIRCUIT PANELBOARD EM-LPH-2B; CIRCUIT #

1. THE LIGHTING CONTROL SYSTEM SHALL BE ULTRAVIOLET (OR LISTED EQUIVA) FOR ALL INTERIOR AND EXTERIOR BUILT-IN MOUNTED LIGHTING. THE VIVE HUBS SHALL BE A SHORTER THAN THE OTHER LOCATIONS AND MUST PROVIDE NECESSARY COVERAGE FOR ASSOCIATED DEVICES.
2. ULTRON RELAY PANELS (OR LISTED EQUIVA) SHALL BE PROVIDED FOR THE LIGHTING CIRCUITS.
3. ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIVE) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LOW VOLTAGE TOGGLE SWITCHES) AND STORAGE ROOMS (WITH TOGGLE POLES).
4. PROVIDE & INSTALL ALL 120V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IF ITEM 3) AND INTERFACES WHERE REQUIRED.
5. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
6. ALL CONCEALED RACEWAYS SHALL BE 1/2" CUMMANY CABLE.
7. EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT 100% OFS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFERENCE AND 120V AS REQUIRED.
8. ALL SENSORS (OCCUPANCY/VAUGHN & DAYLIGHT) SHALL BE CEILING MOUNTED & WIRELESS UNLESS OTHERWISE SPECIFIED OR LIMITED.
9. EC SHALL PENDANT (BOXES AND STEEL BUSH CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
10. EACH LIGHTING FIXTURE TYPE WITHIN AN AREA ROOM CONTROL SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
11. EC SHALL PROVIDE ALL 120V AND 277V AC POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
12. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEIPTABLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
13. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH LIGHTING DIMMING ZONE.
14. EACH FIXTURE TYPE WITHIN EACH LIGHTING DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
15. EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
16. THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING AND INTERFACING.

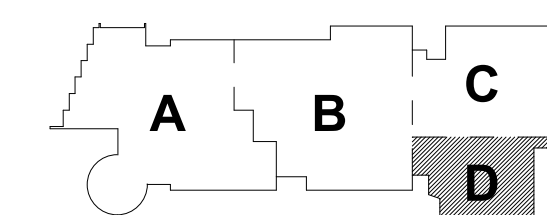


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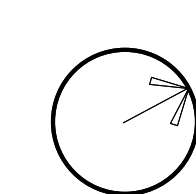
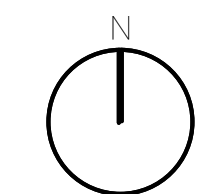
August 28th, 2023



KEY PLAN

PROJECT NORTH

MAGNETIC NORTH



**ELECTRICAL
LIGHTING
SECOND FLOOR
REFLECTED CLG
PLAN - AREA D**

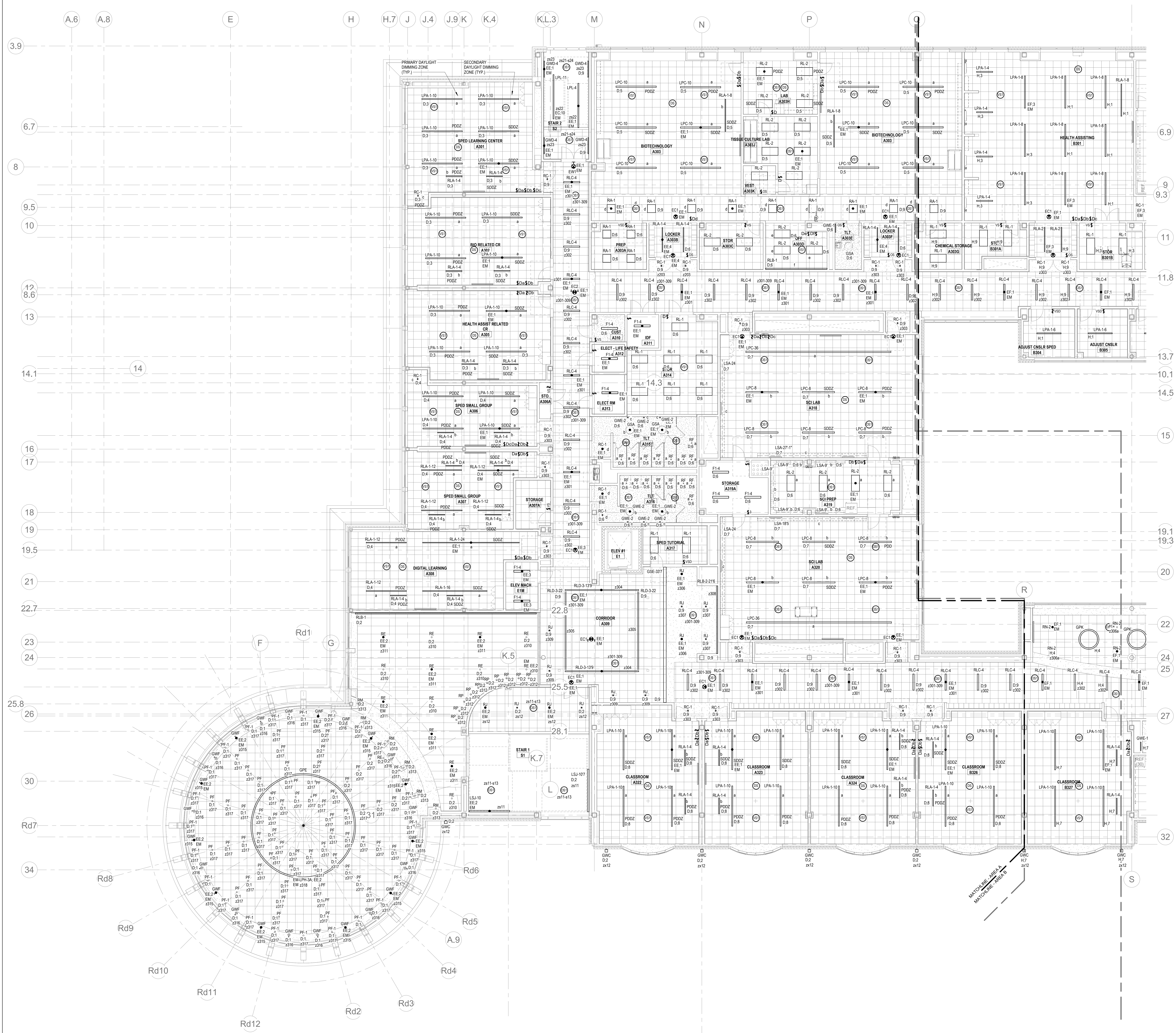
Scale: 1/8" = 1'-0"

Job No.: 60-20-40

Drawn By: ERA

Date: August 28th, 2023

E2-1-2D



- LIGHTING GENERAL NOTES:**
- REFER TO E4-0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0-20 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-21, E4-24 FOR LIGHTING FIXTURE SCHEDULES.
 - REFER TO ARCHITECTURAL ROPS FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM, AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
 - ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
 - ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
 - PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.
- CIRCUIT LEGEND:**
- D.# - DENOTES BRANCH CIRCUIT PANELBOARD LPA-3A, CIRCUIT #
H.# - DENOTES BRANCH CIRCUIT PANELBOARD LPA-3B, CIRCUIT #
EE.# - DENOTES BRANCH CIRCUIT PANELBOARD LPA-3A, CIRCUIT #
EF.# - DENOTES BRANCH CIRCUIT PANELBOARD LPA-3B, CIRCUIT #
- LIGHTING CONTROL NOTES:**
- THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
 - LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
 - ALL INTERIOR AND EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES) AND SITE PARKING LOT LIGHTING POLES.
 - PROVIDE A INSTALL ALL 5-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
 - ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
 - ALL CONCEALED RACEWAYS SHALL BE MC LUMINARY CABLE.
 - EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
 - ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.
 - EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
 - EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
 - EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
 - THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE, CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
 - SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
 - EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
 - EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
 - THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.

Level 3 Area A RCP
1/8" = 1'-0"

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Drummeys Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
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BID SET

August 28th, 2023

KEY PLAN

PROJECT NORTH

MAGNETIC NORTH

ELECTRICAL
LIGHTING THIRD
FLOOR
REFLECTED CLG
PLAN - AREA A

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

Job No.: 60-20-409

Drawn by: ERA

Date: August 28th, 2023

E2-1-3A

Level 3 Area B RCP
1/8" = 1'-0"

LIGHTING GENERAL NOTES:

1. REFER TO E4-0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-21 - E4-24 FOR LIGHTING FIXTURE SCHEDULES.
2. REFER TO ARCHITECTURAL RCPs FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM, AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
4. ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
5. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

CIRCUIT LEGEND:

- D-# - DENOTES BRANCH CIRCUIT PANELBOARD LPA-3A, CIRCUIT #
H-# - DENOTES BRANCH CIRCUIT PANELBOARD LPA-3B, CIRCUIT #
EE-# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LPA-3A, CIRCUIT #
EF-# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LPA-3B, CIRCUIT #

LIGHTING CONTROL NOTES:

1. THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
2. LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
3. ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES), AND SITE PARKING LOT LIGHTING POLES.
4. PROVIDE & INSTALL ALL 0-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
5. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
6. ALL CONCEALED RACEWAYS SHALL BE EMT LUMINAIRE CABLE.
7. EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
8. ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.
9. EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
10. EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
11. EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
12. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
13. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
14. EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
15. EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
16. THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.

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South Windsor, CT
06074

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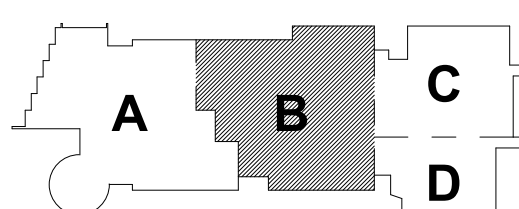
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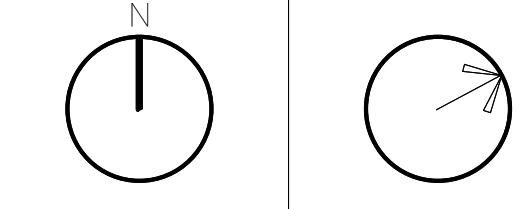
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August 28th, 2023



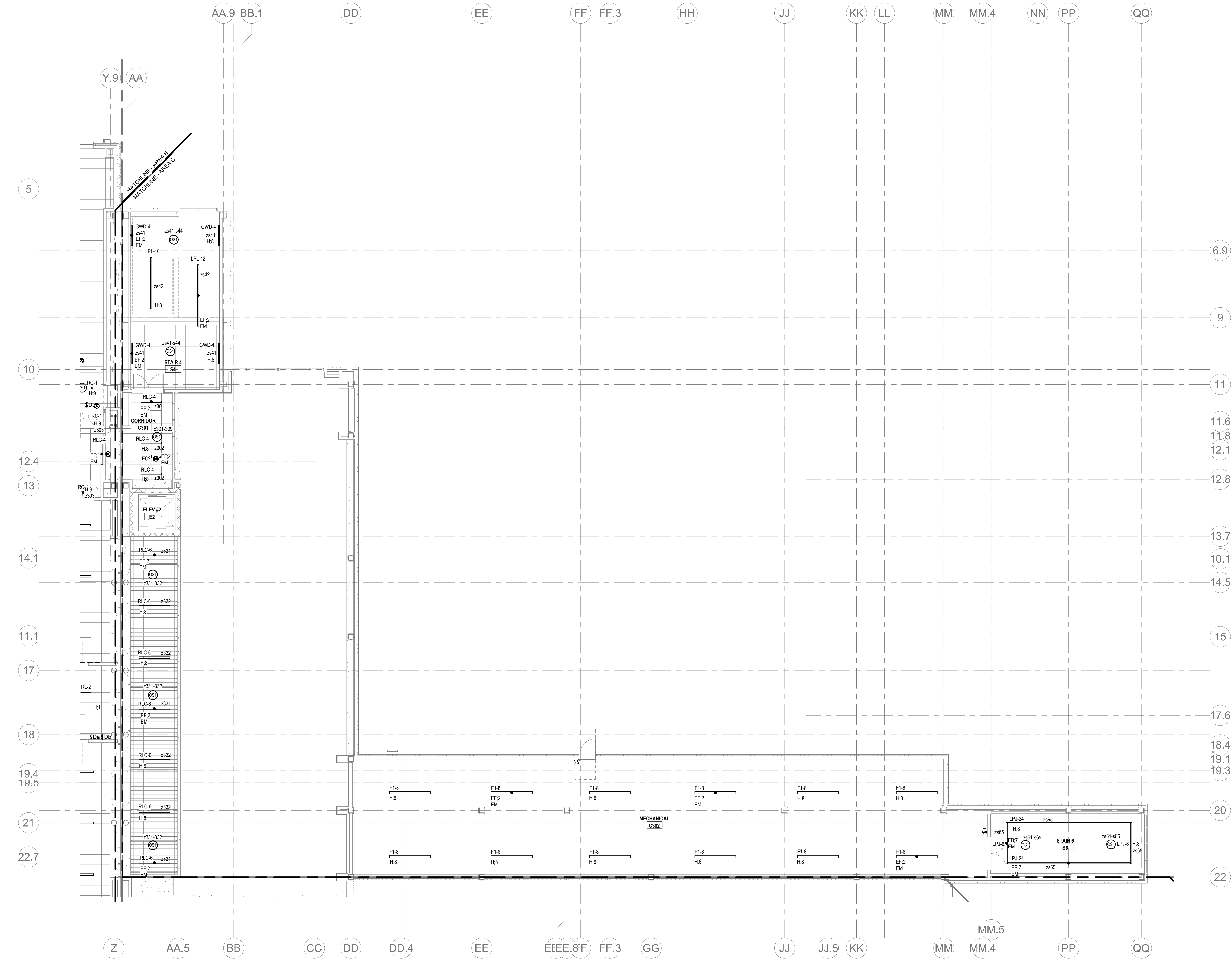
KEY PLAN

PROJECT NORTH
MAGNETIC NORTH



**ELECTRICAL
LIGHTING THIRD
FLOOR
REFLECTED CLG
PLAN - AREA B**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: ERA
Date: August 28th, 2023
E2-1-3B



LIGHTING GENERAL NOTES:

- REFER TO E4-0-0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0-20 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-0-21 - E4-0-24 FOR LIGHTING FIXTURE SCHEDULES.
- REFER TO ARCHITECTURAL RCPs FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM, AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
- ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
- PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

CIRCUIT LEGEND:

H # - DENOTES BRANCH CIRCUIT PANEL/BOARD LPH-3B; CIRCUIT #
EF # - DENOTES BRANCH CIRCUIT PANEL/BOARD EM-LPH-3B; CIRCUIT #

LIGHTING CONTROL NOTES:

- THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON WVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE WVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
- LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
- ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE WVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES) AND SITE PARKING LOT LIGHTING POLES.
- PROVIDE & INSTALL ALL 0-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
- ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
- ALL CONCEALED RACEWAYS SHALL BE MC LUMINARY CABLE.
- EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
- ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING-MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.
- EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
- EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
- EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
- THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
- SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
- EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
- EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
- THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.

DRA

Drummett Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074

260 Charles Street
Studio 300
Waltham, MA 02453

Tel: 617.984.1700
www.dra-inc.com

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BID SET

August 28th, 2023

KEY PLAN

PROJECT NORTH
MAGNETIC NORTH

ELECTRICAL LIGHTING THIRD FLOOR REFLECTED CLG PLAN - AREA C

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

Job No.: 60-20-409

Drawn By: ERA

Date: August 28th, 2023

E2-1-3C

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Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
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Studio 300
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LIGHTING GENERAL NOTES:

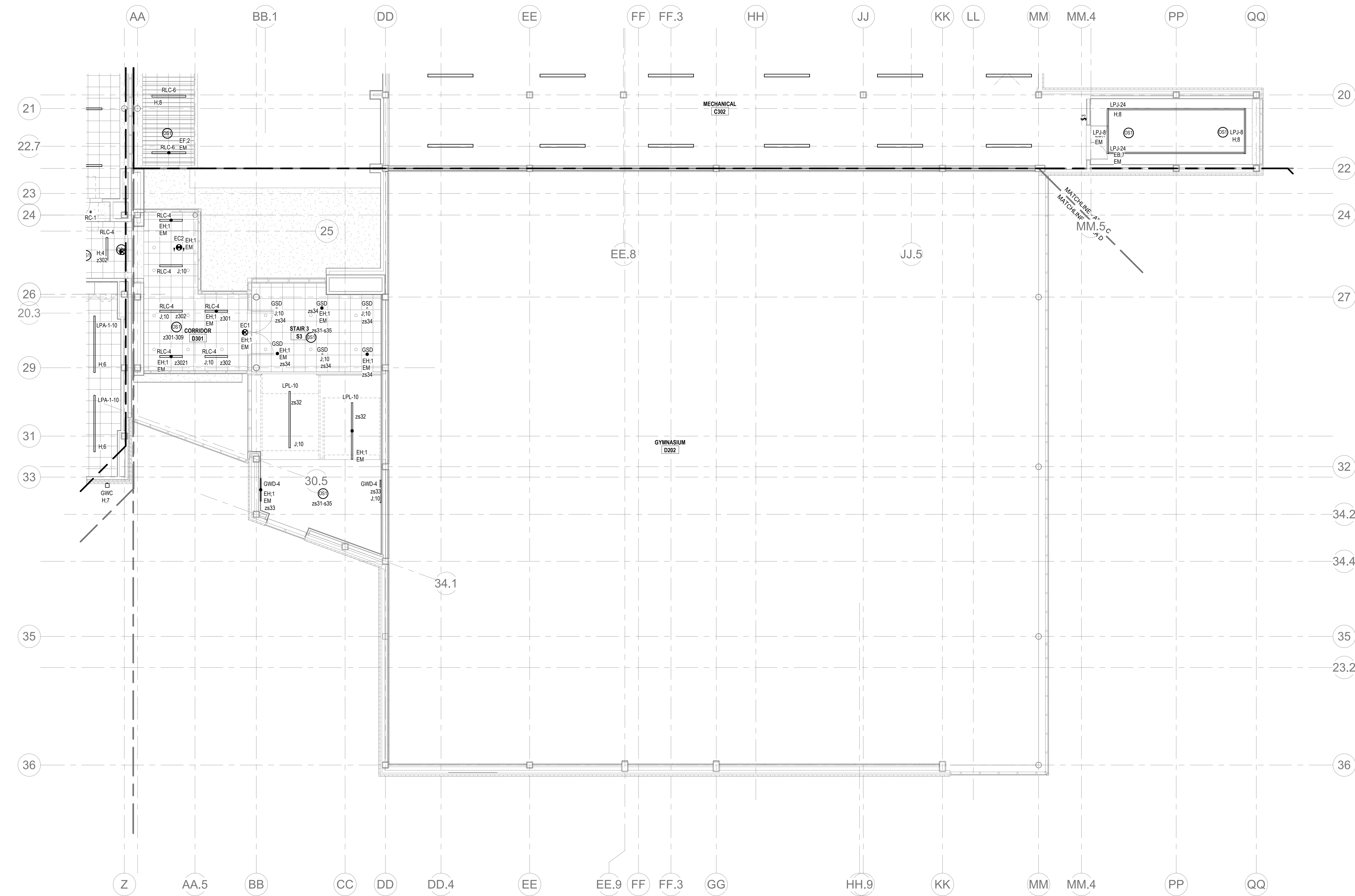
1. REFER TO E4-0-0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0-20 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-0-21, E4-0-24 FOR LIGHTING FIXTURE SCHEDULES.
2. REFER TO ARCHITECTURAL RCPs FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM, AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
4. ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
5. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

CIRCUIT LEGEND:

- J.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-48, CIRCUIT #
H.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-38, CIRCUIT #
EH.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LPH-48, CIRCUIT #
EF.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LPH-38, CIRCUIT #

LIGHTING CONTROL NOTES:

1. THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON WVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE WVE-HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
2. LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
3. ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE WVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES), AND SITE PARKING LOT LIGHTING POLES.
4. PROVIDE & INSTALL ALL 0-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
5. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
6. ALL CONCEALED RACEWAYS SHALL BE MC LUMINARY CABLE.
7. EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
8. ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING-MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.
9. EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
10. EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
11. EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
12. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
13. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
14. EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
15. EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
16. THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.



Level 3 Area D RCP
1/8" = 1'-0"

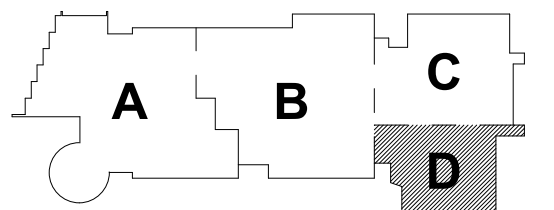
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SUITE 200
DALLAS, TEXAS 75201
TEL: 214.760.1234 FAX: 214.760.1235
WWW.BALA-ENGINEERS.COM

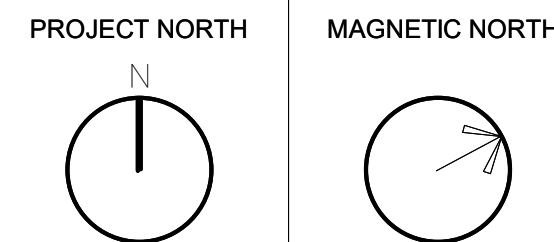
ARCHITECT: DRUMMETT ROSANE ANDERSON, INC.
ELECTRICAL: BALA ENGINEERS
MECHANICAL: BALA ENGINEERS
PLUMBING: BALA ENGINEERS

BID SET

August 28th, 2023



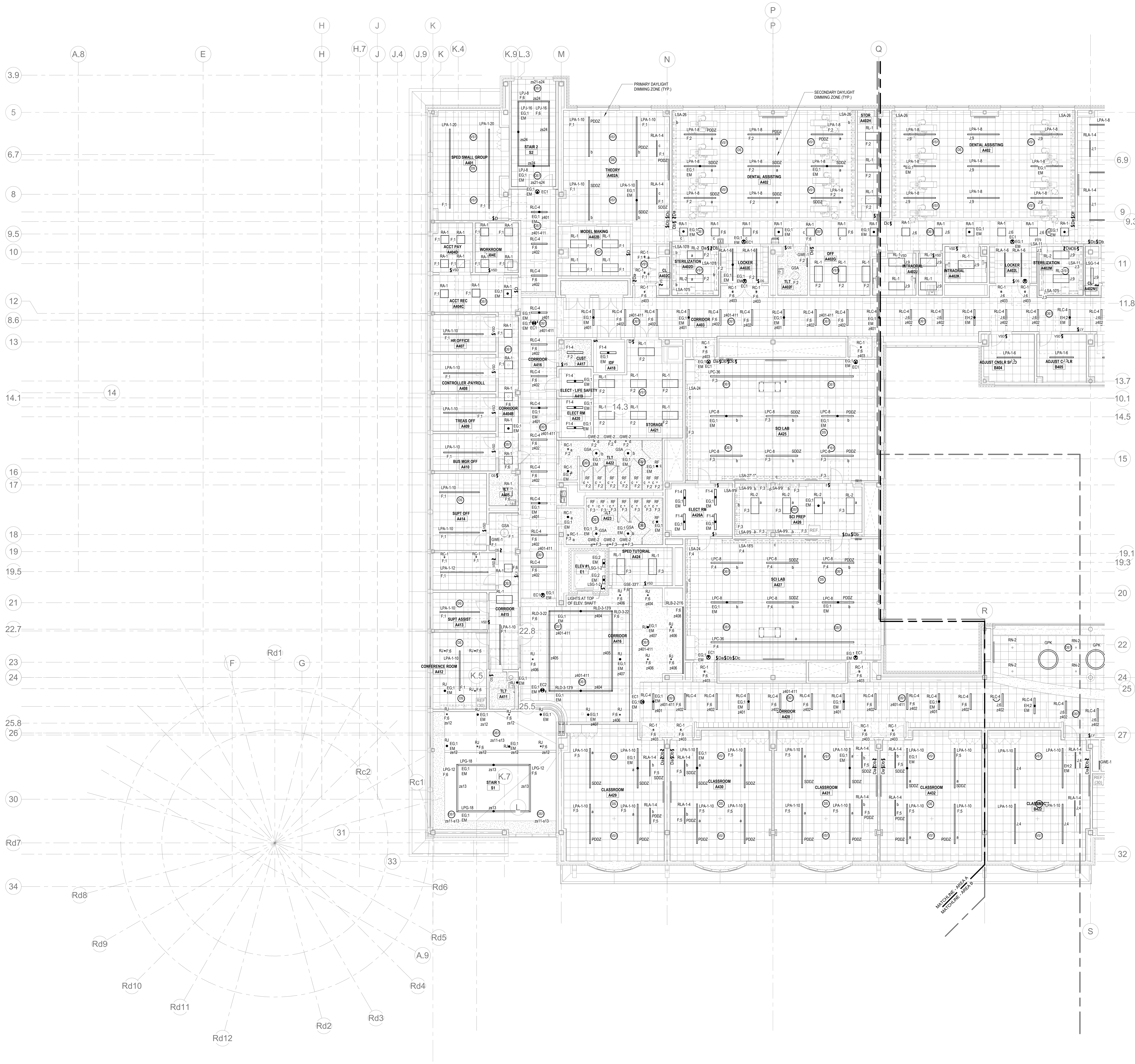
KEY PLAN



**ELECTRICAL
LIGHTING THIRD
FLOOR
REFLECTED CLG
PLAN - AREA D**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: ERA
Date: August 28th, 2023

E2-1-3D



LIGHTING GENERAL NOTES:

- REFER TO E4-00 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-020 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-021 - E4-024 FOR LIGHTING FIXTURE SCHEDULES.
- REFER TO ARCHITECTURAL RCPs FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM, AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
- ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
- PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

CIRCUIT LEGEND:

F # - DENOTES BRANCH CIRCUIT PANELBOARD LPA-4A; CIRCUIT #
J # - DENOTES BRANCH CIRCUIT PANELBOARD LPA-4B; CIRCUIT #
EG # - DENOTES BRANCH CIRCUIT PANELBOARD EM-LPA-4A; CIRCUIT #
EH # - DENOTES BRANCH CIRCUIT PANELBOARD EM-LPA-4B; CIRCUIT #

LIGHTING CONTROL NOTES:

- THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
- LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
- ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES), AND SITE PARKING LOT LIGHTING POLES.
- PROVIDE & INSTALL ALL 0-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
- ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
- ALL CONCEALED RACEWAYS SHALL BE IN CULINARY CABLE.
- EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
- ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING-MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.
- EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
- EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
- EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
- THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
- SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
- EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
- EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
- THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.

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225 Oakland Road
Studio 205
South Windsor, CT 06094

260 Charles Street
Studio 300
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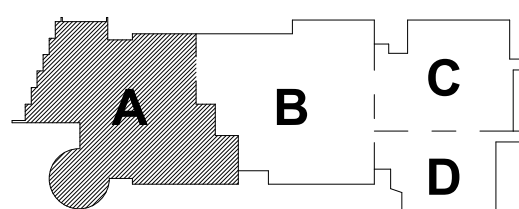
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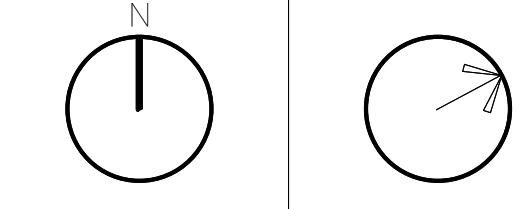
BID SET

August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH

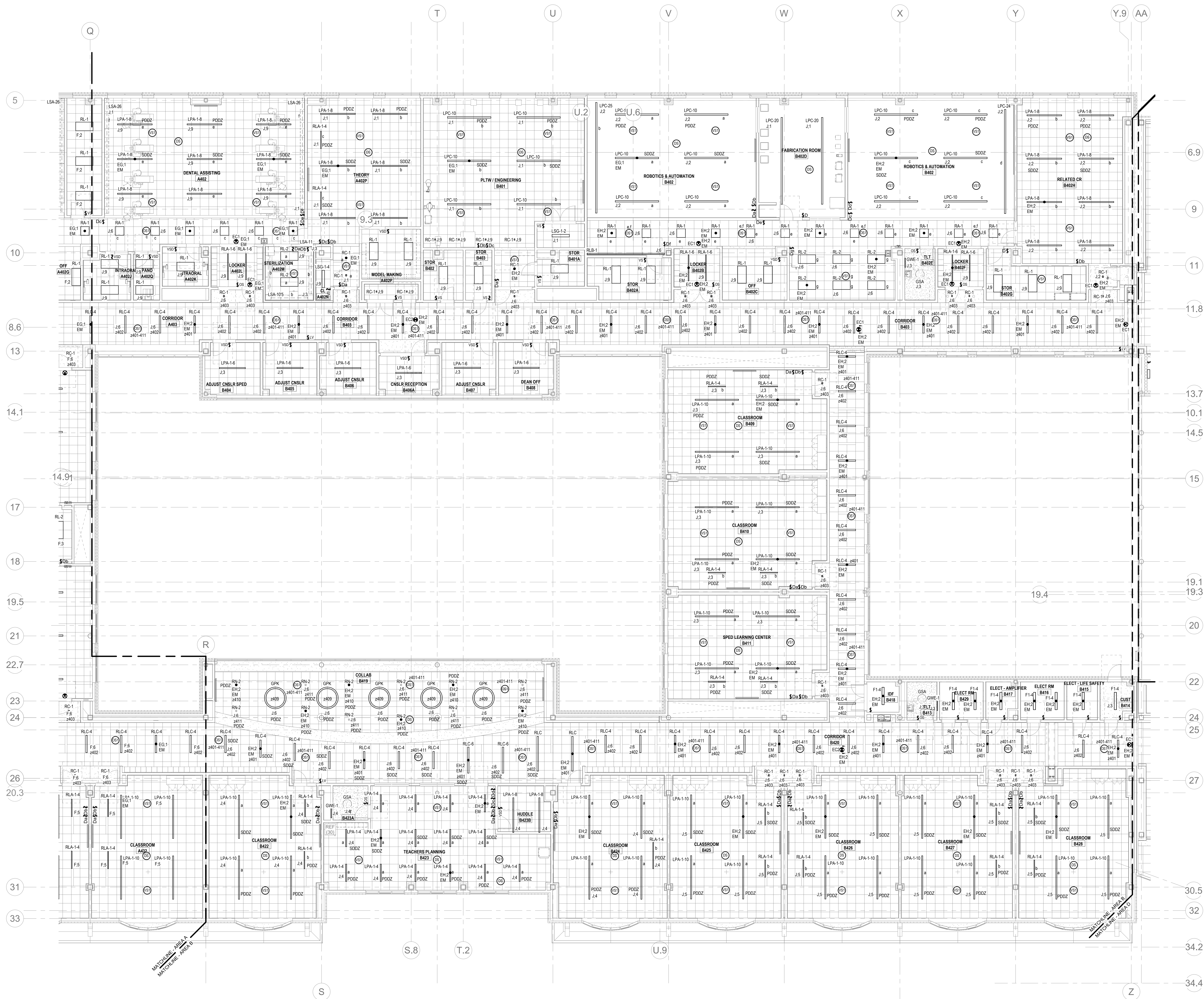


**ELECTRICAL
LIGHTING
FOURTH FLOOR
REFLECTED CLG
PLAN - AREA A**

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: ERA
Date: August 28th, 2023

E2-1-4A

Level 4 Area A RCP
1/8" = 1'-0"



- LIGHTING GENERAL NOTES:**
1. REFER TO E4-0.0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0.20 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-0.21 - E4-0.24 FOR LIGHTING FIXTURE SCHEDULES.
 2. REFER TO ARCHITECTURAL RCPs FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM, AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
 3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
 4. ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
 5. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

- CIRCUIT LEGEND:**
- F # - DENOTES BRANCH CIRCUIT PANELBOARD LPA-4A, CIRCUIT #
J # - DENOTES BRANCH CIRCUIT PANELBOARD LPA-4B, CIRCUIT #
EG # - DENOTES BRANCH CIRCUIT PANELBOARD LPA-4A, CIRCUIT #
EH # - DENOTES BRANCH CIRCUIT PANELBOARD LPA-4B, CIRCUIT #

- LIGHTING CONTROL NOTES:**
1. THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
 2. LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
 3. ALL INTERIOR AND EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES) AND SITE PARKING LOT LIGHTING POLES.
 4. PROVIDE & INSTALL ALL 0-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
 5. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
 6. ALL CONCEALED RACEWAYS SHALL BE MC LUMINAIRE CABLE.
 7. EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
 8. ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.
 9. EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
 10. EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
 11. EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
 12. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
 13. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
 14. EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
 15. EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
 16. THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.

2 Level 4 Area B RCP
1/8" = 1'-0"

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Drummett Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
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BID SET

August 28th, 2023

A

B

C

D

KEY PLAN

PROJECT NORTH

MAGNETIC NORTH

ELECTRICAL
LIGHTING
FOURTH FLOOR
REFLECTED CLG
PLAN - AREA B

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: ERA
Date: August 28th, 2023

E2-1-4B

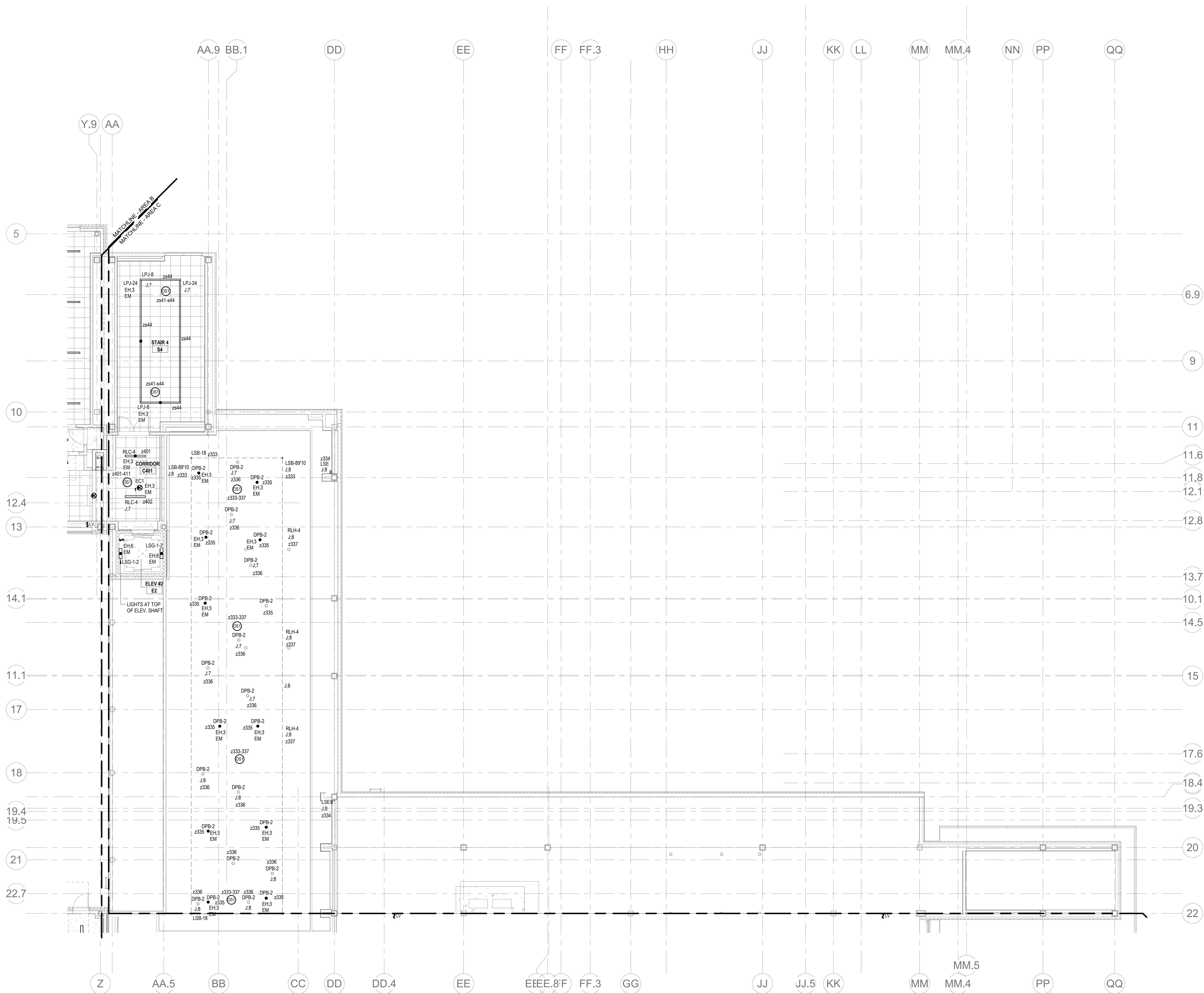
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1. REFER TO E-4-00 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E-4-02 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E-4-01 - E-4-24 FOR LIGHTING FIXTURE SCHEDULES.
2. REFER TO ARCHITECTURAL ROPS FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM, AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURERS FOR A COMPLETE SYSTEM.
4. ALL EXIST SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
5. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

J, # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-4B; CIRCUIT #
EH; # - DENOTES BRANCH CIRCUIT PANELBOARD EM-LPH-4B; CIRCUIT :

1. THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VUE (OR LISTED EQUIVALENT) WITH DIMMING CAPABILITY. THE DIMMING SYSTEM SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
2. LUTRON RAIL PANELS (OR LISTED EQUIVALENT) SHALL BE PROVIDED FOR THE SITE LIGHTING FIXTURES.
3. ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA WIRE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS WITH LINE VOLTAGE TOGGLE SWITCHES SHALL BE DIMMABLE VIA THE DIMMING SYSTEM.
4. PROVIDE A INSTALL ALL 1/0 WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
5. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
6. ALL CONCEALED RACEWAYS SHALL BE FULLY CABLED.
7. EMERGENCY LIGHTING SHALL BE AT FLIGHT BRIT PROP LSON OF UTILITY POWER AND INTERFERENCE AND THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE OPERATION AND 120V AS REQUIRED.
8. ALL SENSORS (OCCUPANCY SENSING & DAYLIGHT) SHALL BE CEILING-MOUNTED & WIRED UNLESS OTHERWISE DOCUMENTED.
9. EC-SHALL PENANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
10. EACH LIGHTING FIXTURE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL CIRCUIT.
11. EC-SHALL PROVIDE ALL 120V & 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
12. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL DIMMING AND ASSOCIATED WIRING & PROGRAMMING.
13. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONE.
14. EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
15. EC-SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
16. THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC-SHALL PROVIDE NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.



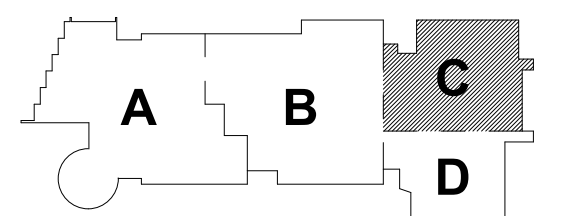
② Level 4 Area C RCP
1/8" = 1'-0"

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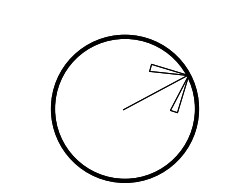
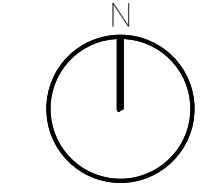
August 28th, 2023



KEY PLAN

PROJECT NORT

MAGNETIC NORTH



**ELECTRICAL
LIGHTING
FOURTH FLOOR
REFLECTED CLG
PLAN - AREA C**

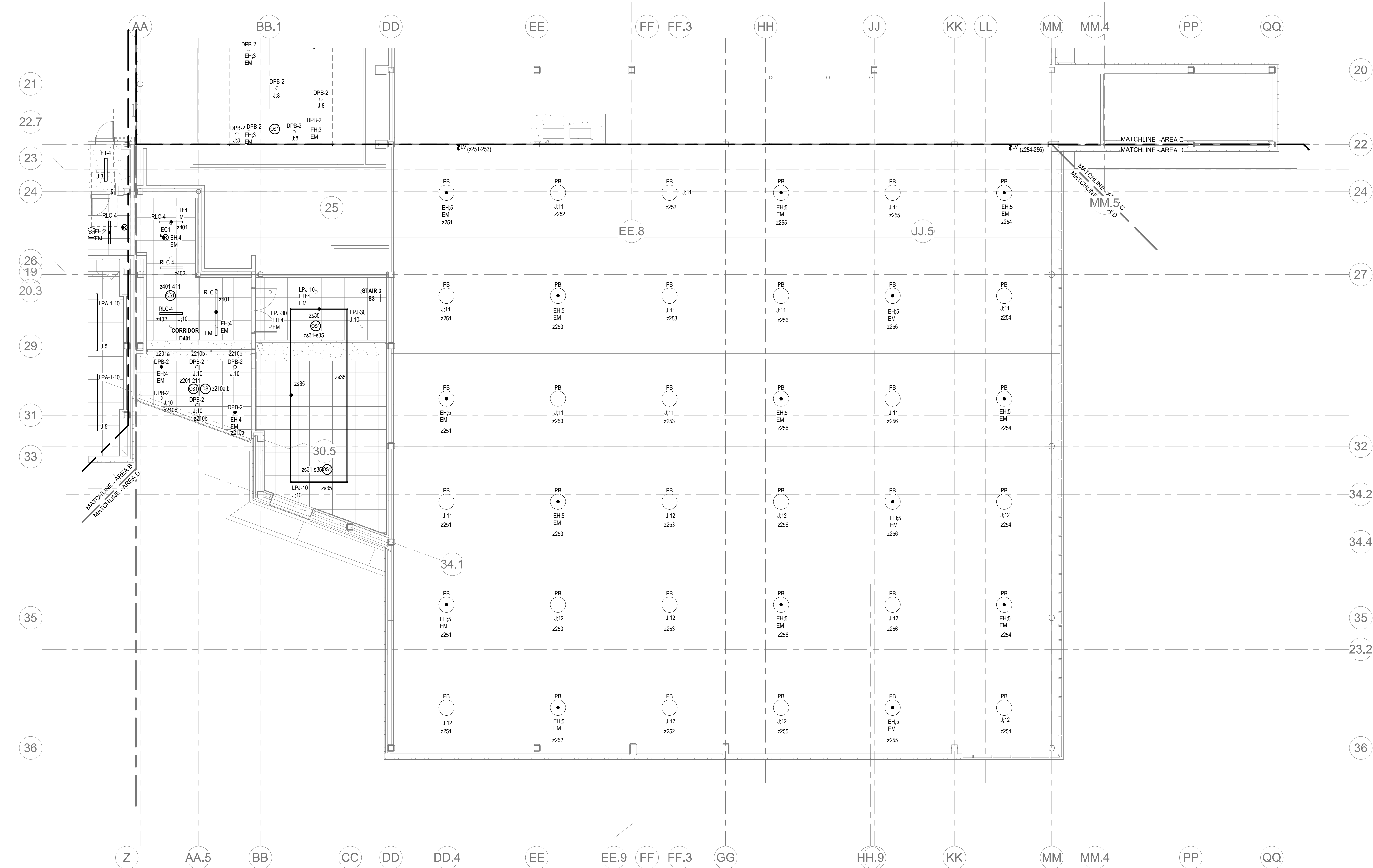
Scale: 1/8" = 1'-0"

Job No.: 60-20-40

Drawn By: FRA

Date: August 28th, 2023

E2-1-4C



Level 4 Area D RCP
1/8" = 1'-0"

LIGHTING GENERAL NOTES:

- REFER TO E4-0-0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0-20 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-0-21 - E4-0-24 FOR LIGHTING FIXTURE SCHEDULES.
- REFER TO ARCHITECTURAL RCPs FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM, AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
- ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
- PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

CIRCUIT LEGEND:

F.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-4A, CIRCUIT #
J.# - DENOTES BRANCH CIRCUIT PANELBOARD LPH-4B, CIRCUIT #
EH.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LPH-4A, CIRCUIT #
EM.# - DENOTES BRANCH CIRCUIT PANELBOARD EM-LPH-4B, CIRCUIT #

LIGHTING CONTROL NOTES:

- THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
- LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
- ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES) AND SITE PARKING LOT LIGHTING POLES.
- PROVIDE & INSTALL ALL 0-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
- ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
- ALL CONCEALED RACEWAYS SHALL BE MC LUMINARY CABLE.
- EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
- ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING-MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.
- EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
- EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
- EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
- THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
- SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
- EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
- EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
- THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.

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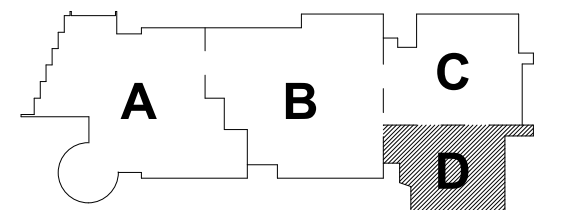
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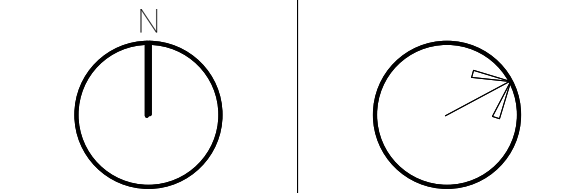
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August 28th, 2023



KEY PLAN

PROJECT NORTH
MAGNETIC NORTH



ELECTRICAL LIGHTING FOURTH FLOOR REFLECTED CLG PLAN - AREA D

Scale: 1/8" = 1'-0"
Job No.: 60-20-409
Drawn By: ERA
Date: August 28th, 2023

E2-1-4D

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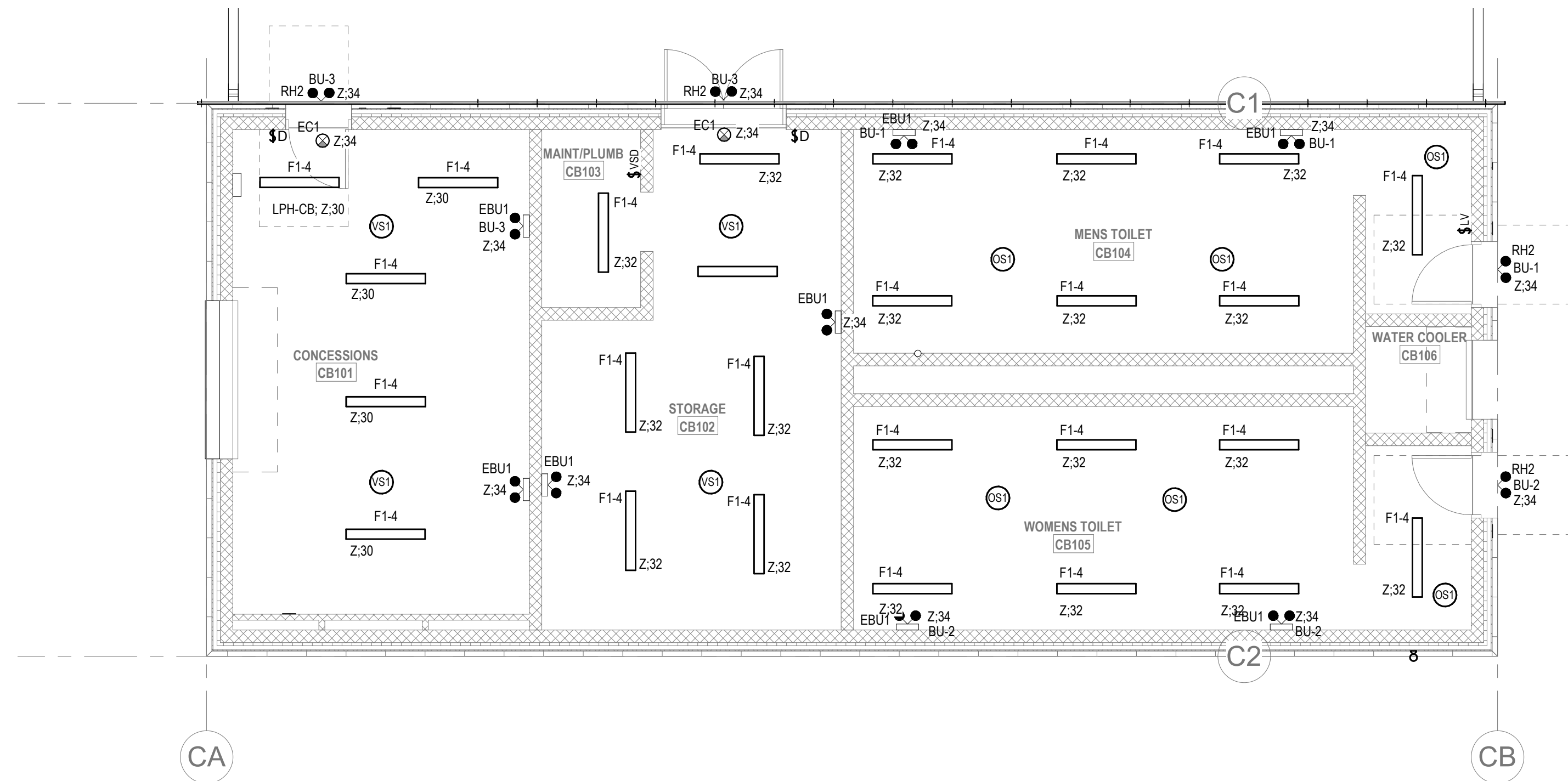
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LIGHTING GENERAL NOTES:

1. REFER TO E4-0.0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0.16 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-0.18 - E4-0.20 FOR LIGHTING FIXTURE SCHEDULES.
2. REFER TO ARCHITECTURAL RCP'S FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM, AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
4. ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
5. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

LIGHTING CONTROL NOTES:

1. THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
2. LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
3. ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED), THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES), AND SITE PARKING LOT LIGHTING POLES.
4. PROVIDE & INSTALL ALL 0-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
5. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
6. ALL CONCEALED RACEWAYS SHALL BE MC LUMINAIR CABLE.
7. EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
8. ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING-MOUNTED & WIRELESS (UNLESS OTHERWISE DOCUMENTED).
9. EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
10. EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
11. EC SHALL PROVIDE ALL 120V AND 317V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
12. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
13. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
14. EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
15. EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
16. THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.



1 ELECTRICAL - CONCESSIONS FLOOR LEVEL LIGHTING PLAN
E2-1-CB 3/16" = 1'-0"

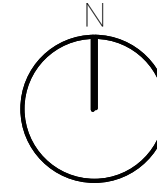
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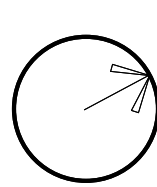
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PROJECT NORTH



MAGNETIC NORTH



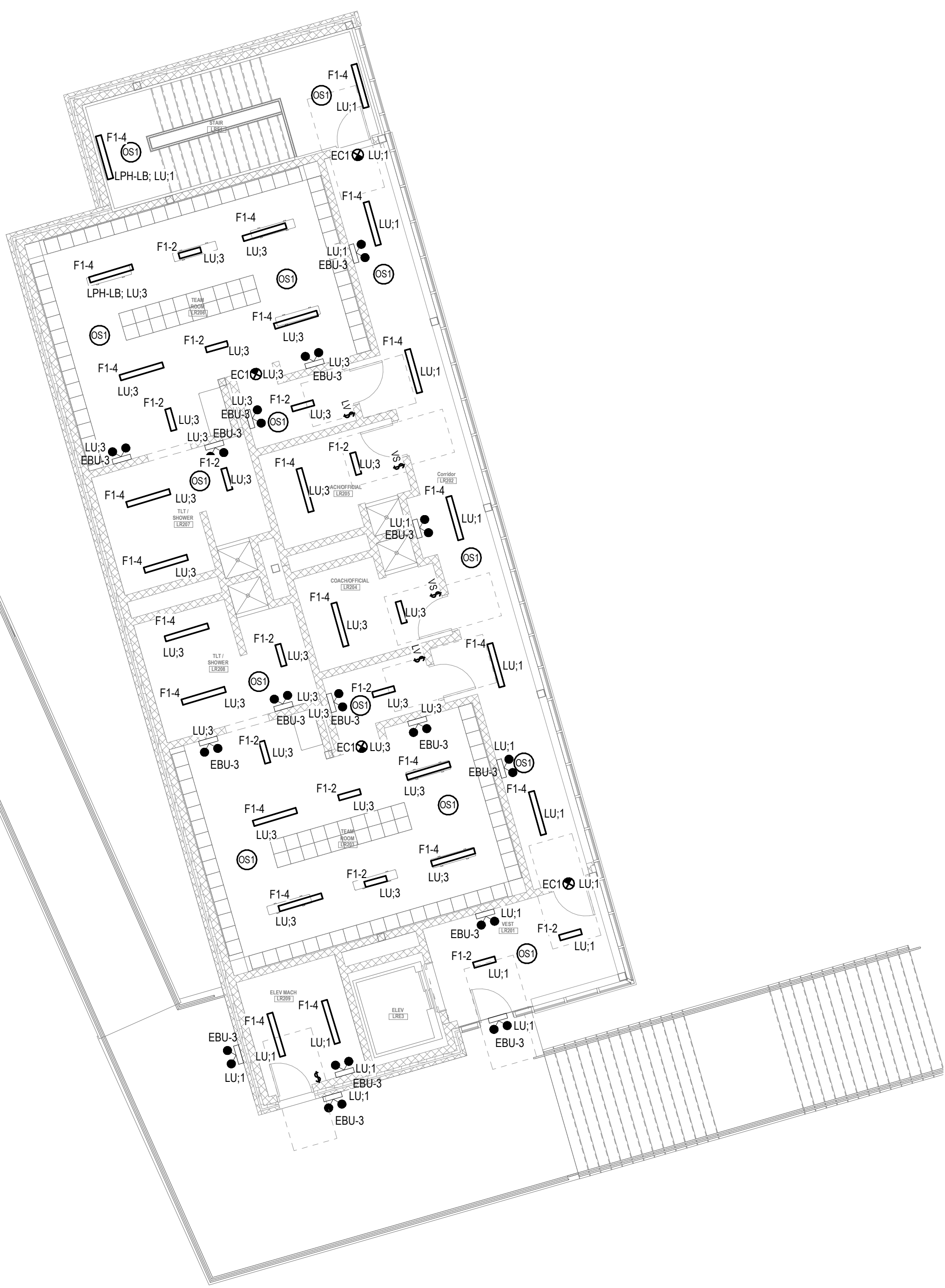
ELECTRICAL
LIGHTING
CONCESSIONS
BUILDING PLAN

Scale: 3/16" = 1'-0"
Job No.: 60-20-409
Drawn By: ERA
Date: August 28th, 2023

E2-1-CB



1 ELECTRICAL LIGHTING Locker Building First Floor (ADD ALTERNATE NO. 1)
E2-1-LB
1/8" = 1'-0"



2 ELECTRICAL LIGHTING Locker Building Second Level (ADD ALTERNATE NO. 1)
E2-1-LB
1/8" = 1'-0"

LIGHTING GENERAL NOTES:

- REFER TO E4-0-3 FOR NOTES ON ELECTRICAL SCOPE OF WORK.
- REFER TO E4-0-0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0-16 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-0-18 - E4-0-20 FOR LIGHTING FIXTURE SCHEDULES.
- REFER TO ARCHITECTURAL RCPs FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM, AND OTHER EQUIPMENT. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
- ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
- PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY.

CIRCUIT LEGEND:

LU: # DENOTES BRANCH CIRCUIT PANELBOARD LPH: #, CIRCUIT #

LIGHTING CONTROL NOTES:

- THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VIVE (OR LISTED EQUAL) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VIVE HUBS SHALL BE INSTALLED AT ARCHITECT APPROVED LOCATIONS AND MUST PROVIDE ADEQUATE COVERAGE FOR ASSOCIATED DEVICES.
- LUTRON RELAY PANELS (OR LISTED EQUAL) SHALL BE PROVIDED FOR THE SITE LIGHTING CIRCUITS.
- ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA THE VIVE HUBS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WITH LINE VOLTAGE TOGGLE SWITCHES), AND SITE PARKING LOT LIGHTING POLES.
- PROVIDE & INSTALL ALL 0-10V WIRING TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
- ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
- ALL CONCEALED RACEWAYS SHALL BE MC LUMINARY CABLE.
- EMERGENCY LIGHTING SHALL BE AT FULL BRIGHT UPON LOSS OF UTILITY POWER AND UPON ACTIVATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERFACE AND 120V AS REQUIRED.
- ALL SENSORS (OCCUPANCY/VACANCY & DAYLIGHT) SHALL BE CEILING-MOUNTED & WIRELESS UNLESS OTHERWISE DOCUMENTED.
- EC SHALL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL OCCUPANCY SENSORS BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
- EACH LIGHTING FIXTURE TYPE WITHIN AN AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL MODULE.
- EC SHALL PROVIDE ALL 120V AND 277V CONTROL POWER AS REQUIRED BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
- THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL MODULES AND ASSOCIATED WIRING & PROGRAMMING.
- SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONES.
- EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL MODULE.
- EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
- THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING BETWEEN SYSTEMS AND PROGRAMMING.

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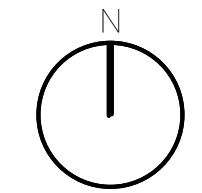
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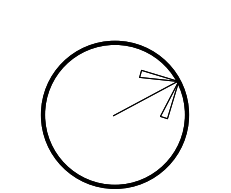
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August 28th, 2023

PROJECT NORTH



MAGNETIC NORTH



ELECTRICAL
LIGHTING
LOCKER
BUILDING PLAN

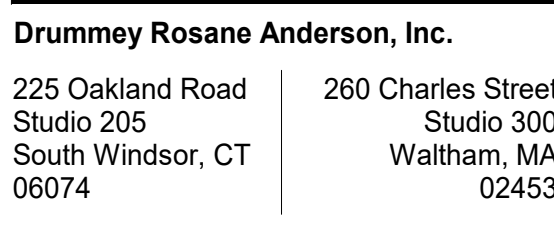
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Job No.: 60-20-409

Drawn By: ERA

Date: August 28th, 2023

E2-1-LB



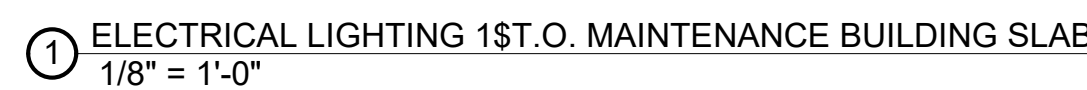
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1. REFER TO E4-0.0 FOR LIGHTING SEQUENCE OF OPERATIONS. REFER TO E4-0.15 FOR LIGHTING CONTROL RISER DIAGRAM. REFER TO E4-0.18 - E4-0.20 FOR LIGHTING FIXTURE SCHEDULES.
2. REFER TO ARCHITECTURAL RCP'S FOR CEILING TYPES, HEIGHTS, AND CONDITIONS. COORDINATE LOCATION OF FIXTURES WITH CEILING SYSTEM, AND OTHER EQUIPMENT. COORDINATE CEILING MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM. PROVIDE EXACT FIXTURE TYPES AND QUANTITIES OF DEVICES RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.
4. ALL EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE (UNSWITCHED) OF NEARBY EMERGENCY LIGHTING BRANCH CIRCUIT.
5. PROVIDE EMERGENCY BYPASS RELAY FOR ALL FIXTURES DESIGNATED AS EMERGENCY

RA; # - DENOTES BRANCH CIRCUIT PANELBOARD LPH-MB; CIRCUIT #

1. THE LIGHTING CONTROL SYSTEM SHALL BE LUTRON VUE (OR LISTED EQUIVALENT) FOR ALL INTERIOR AND EXTERIOR BUILDING MOUNTED LIGHTING. THE VUE HUBS SHALL BE PROVIDED BY THE ARCHITECT. THE CONTRACTORS MUST PROVIDE NECESSARY MOUNTING AND CABLEWAY FOR ASSOCIATED DEVICES.
2. LUTRON RELAY PANELS (OR LISTED EQUIVALENT) SHALL PROVIDED FOR THE SITE LIGHTING CIRCUITS.
3. ALL INTERIOR & EXTERIOR LIGHTING FIXTURES SHALL BE DIMMABLE (LOCAL AND/OR VIA WIRELESS) WITH THE EXCEPTION OF THE STORAGE ROOMS (UNLESS OTHERWISE NOTED). THE EQUIPMENT ROOMS (WHEN VOLTAGE TOGGLE AND/OR DIMMING IS REQUIRED) SHALL BE WIRELESS.
4. PROVIDE A RETAIL, ALL 0-9 WATT, DIM TO ALL LIGHTING FIXTURES (UNLESS LISTED IN ITEM 3) AND INTERFACES WHERE REQUIRED.
5. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT.
6. ALL CONCEALED RACEWAYS SHALL BE MC LUMINARY CABLE.
7. EMERGENCY LIGHTING SHALL BE AT ALL BRIGHT UNLESS OF UTILITY POWER AND UNOCCUPATION OF THE FIRE ALARM NOTIFICATION DEVICES. PROVIDE INTERCOM AND 120V AS REQUIRED.
8. ALL SENSORS (OCCUPANCY AND VACANCY & DAYLIGHT) SHALL BE CEILING-MOUNTED & WIRELESS (UNLESS OTHERWISE NOTED).
9. SHALL SAIL PENDANT (BOXES AND STEEL RIGID CONDUIT) MOUNT ALL LIGHTING FIXTURES BELOW ALL OBSTRUCTIONS (DUCTS, PIPING, ETC.) WITHIN OPEN CEILING SPACES.
10. EACH LIGHTING FIXTURE WITHIN A HALL AREA, ROOM OR CONTROL ZONE SHALL BE ON A SEPARATE DIMMING CONTROL CIRCUIT.
11. EACH LIGHTING FIXTURE, ALL 120V AND 277V CONTROL, POWER OR CONTROL, SHALL BE BY THE LIGHTING CONTROL EQUIPMENT, INCLUDING SENSING CIRCUITS.
12. THE LIGHTING CONTROL SYSTEM PACKAGE SHALL INCLUDE THE RECEPTACLE CONTROL, MODULES AND ASSOCIATED WIRING & PROGRAMMING.
13. SEPARATE DIMMING CONTROL MODULES SHALL BE PROVIDED FOR EACH DAYLIGHT DIMMING ZONE.
14. EACH FIXTURE TYPE WITHIN EACH DAYLIGHT DIMMING ZONE SHALL HAVE A SEPARATE DIMMING CONTROL CIRCUIT.
15. EC SHALL TEST AND COMMISSION THE LIGHTING CONTROL SYSTEM AS REQUIRED BY THE ENERGY CODE.
16. THE BAS SHALL INTERFACE (SCHEDULE AND ROOM OCCUPANCY) WITH THE LIGHTING CONTROL SYSTEM. EC SHALL PROVIDE ALL NECESSARY COMMUNICATIONS WIRING AND INTERFACING AND PROVIDE THE BAS WITH THE NECESSARY COMMUNICATIONS



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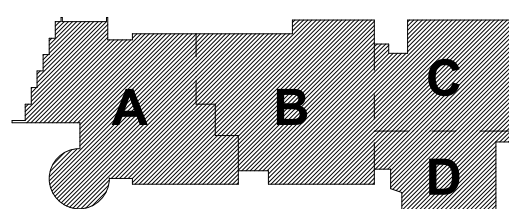
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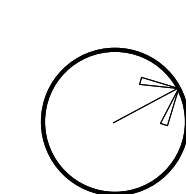
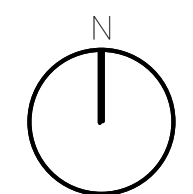
August 28th, 2023



KEY PLAN

PROJECT NORT

MAGNETIC NORTH



ELECTRICAL LIGHTING MAINTENANANCE BUILDING PLAN

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

E2-1-MB

LIGHTNING PROTECTION LEGEND	
•	AIR TERMINAL REFER TO DRAWING E4-0-14 FOR DETAILS.
—	TERRACE HAND RAILING RAILING SHALL BE AT LEAST 1/8" THICK AND EXTEND AT LEAST 10" ABOVE THE PARAPET AND MUST BE LOCATED WITHIN 24" OF THE OUTSIDE EDGE OF THE PARAPET.
△	THRU-ROOF ROD AND BOND PLATE CONNECTION TO STRUCTURAL STEEL FRAMING REFER TO DRAWING E-400 FOR DETAILS.
○	CONNECTION FROM METAL RAILING TO CONDUCTOR CABLE APPROXIMATE LOCATIONS SHOWN. FINAL LOCATIONS SHALL BE CONFIRMED ON SITE.

- LIGHTNING PROTECTION NOTES:**
- REFER TO DRAWING E4-0-14 FOR LIGHTNING PROTECTION DETAILS.
 - LIGHTNING PROTECTION AIR TERMINAL LAYOUT AND THRU-ROOF LOCATIONS ARE PRELIMINARY ONLY. FINAL SYSTEM SHALL BE DESIGNED BY LIGHTNING PROTECTION CONTRACTORS.
 - AIR TERMINALS MUST BE OF TIP-OVER TYPE (SPRING ADAPTOR AND LANYARD).
 - ELECTRICAL CONTRACTOR SHALL TIE-IN PV SYSTEM TO LIGHTNING PROTECTION SYSTEM.

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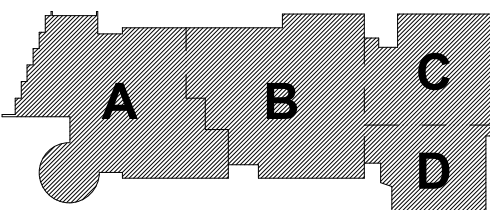
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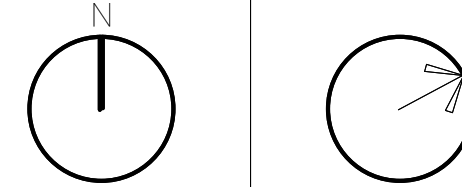
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KEY PLAN

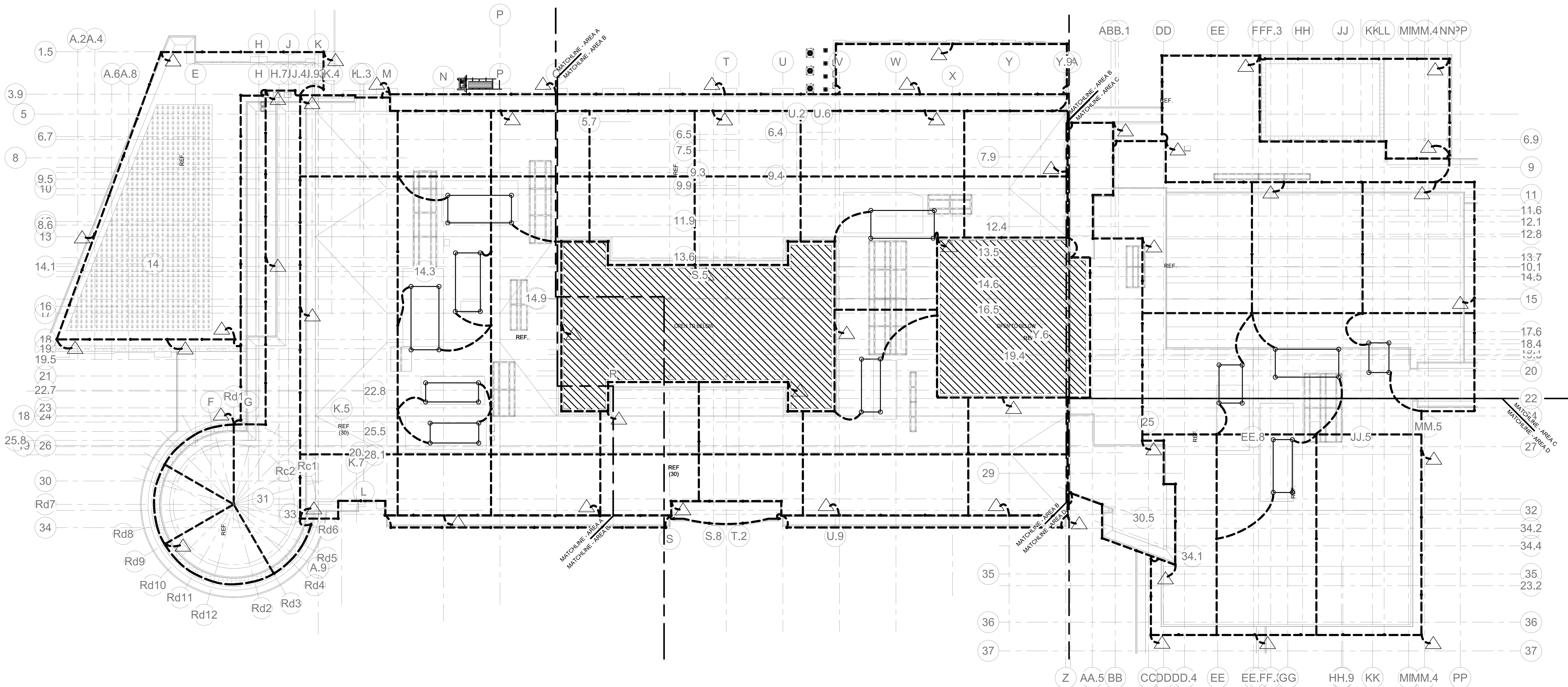
PROJECT NORTH MAGNETIC NORTH



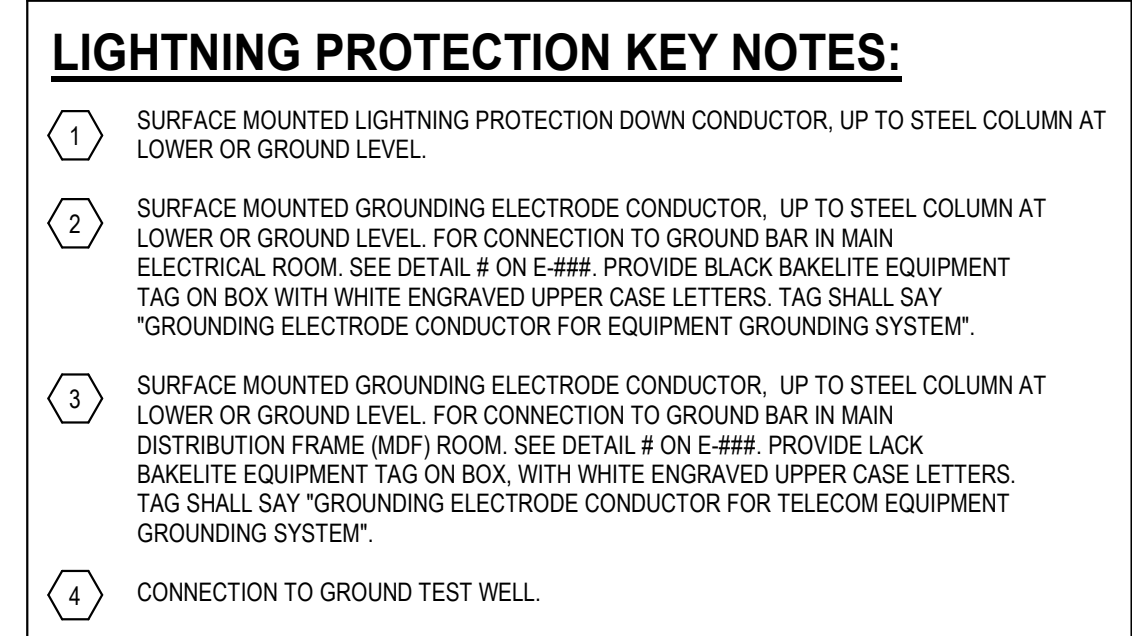
**LIGHTNING
PROTECTION
PLAN -
ROOFTOP
LAYOUT**

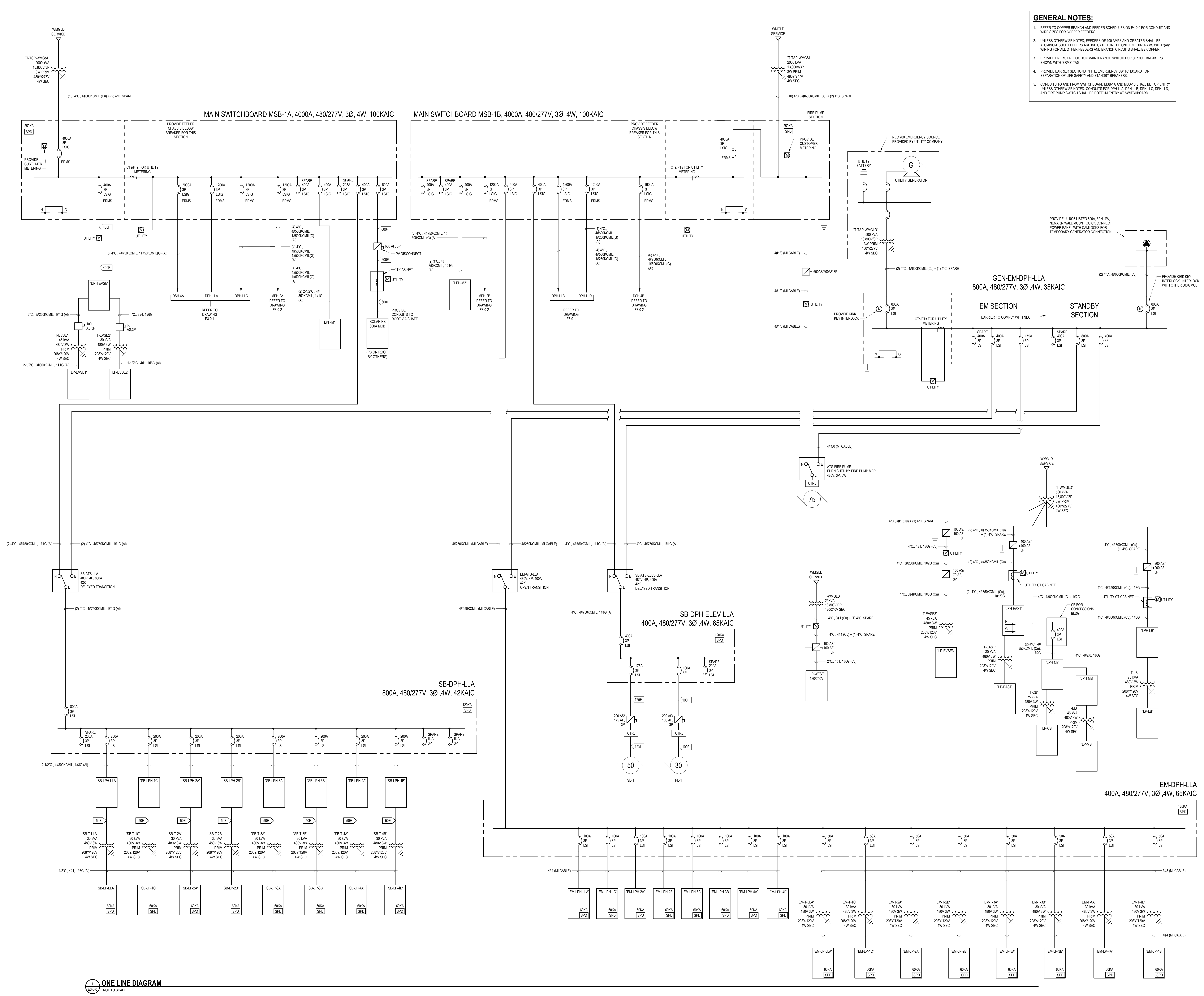
Scale: 1" = 20'-0"
Job No.: 60-20-409
Drawn By: ZMB
Date: August 28th, 2023

E2-2-1



Ⓢ ELECTRICAL POWER Main Roof OVERALL LIGHTNING PROTECTION 1
1" = 20'-0"





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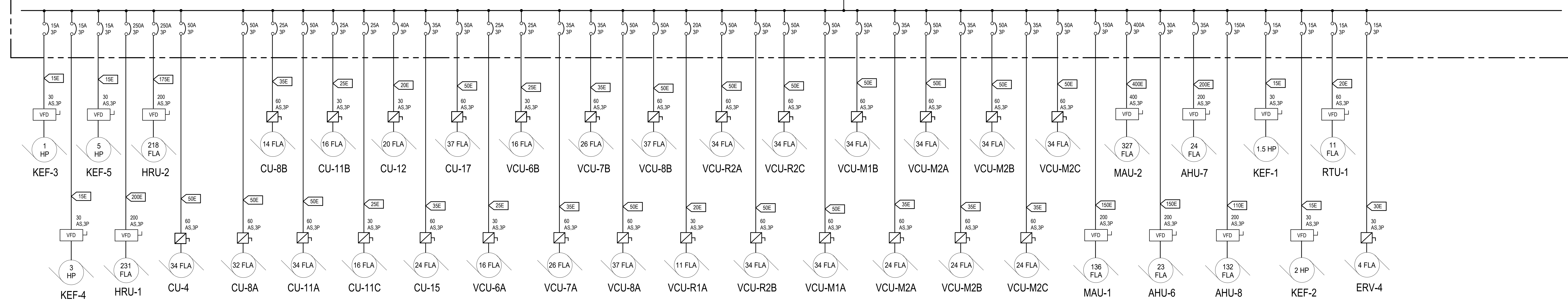
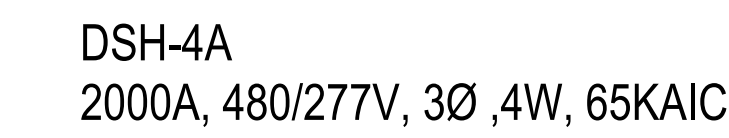
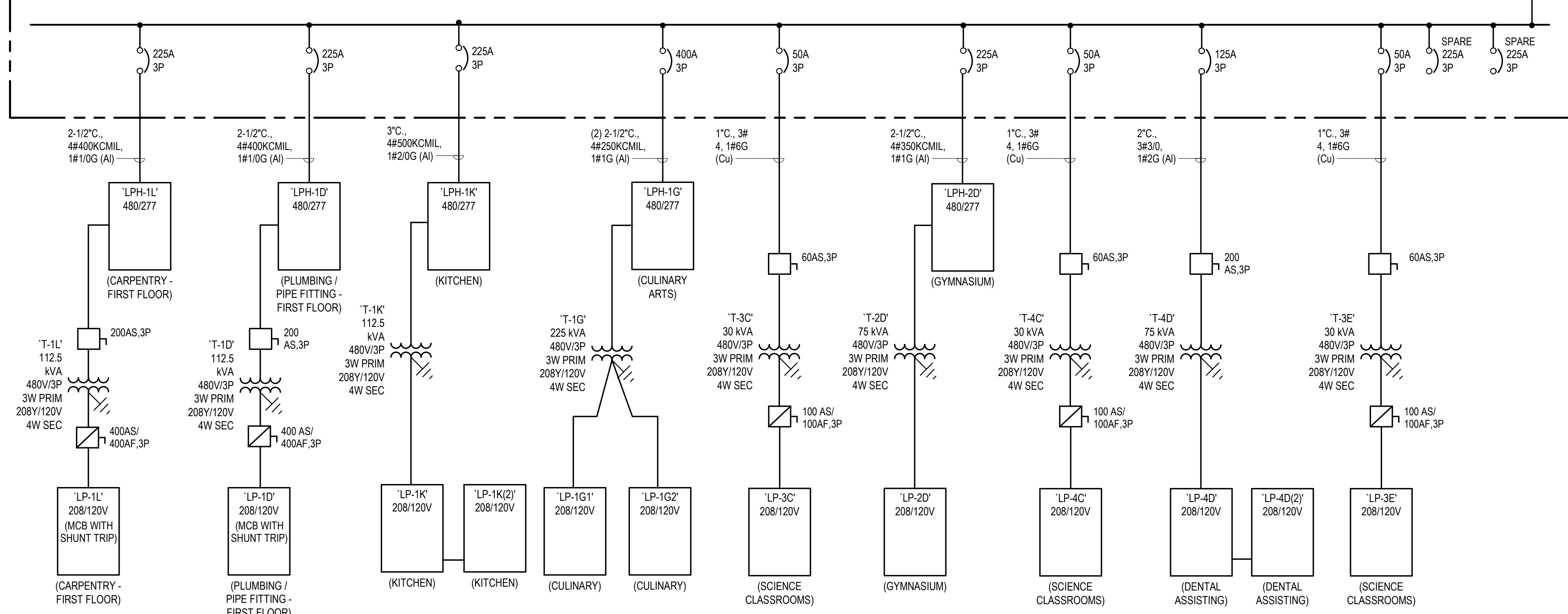
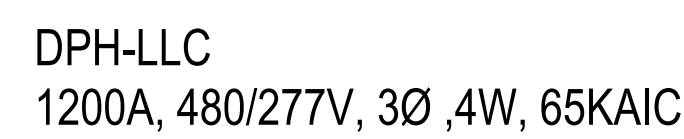
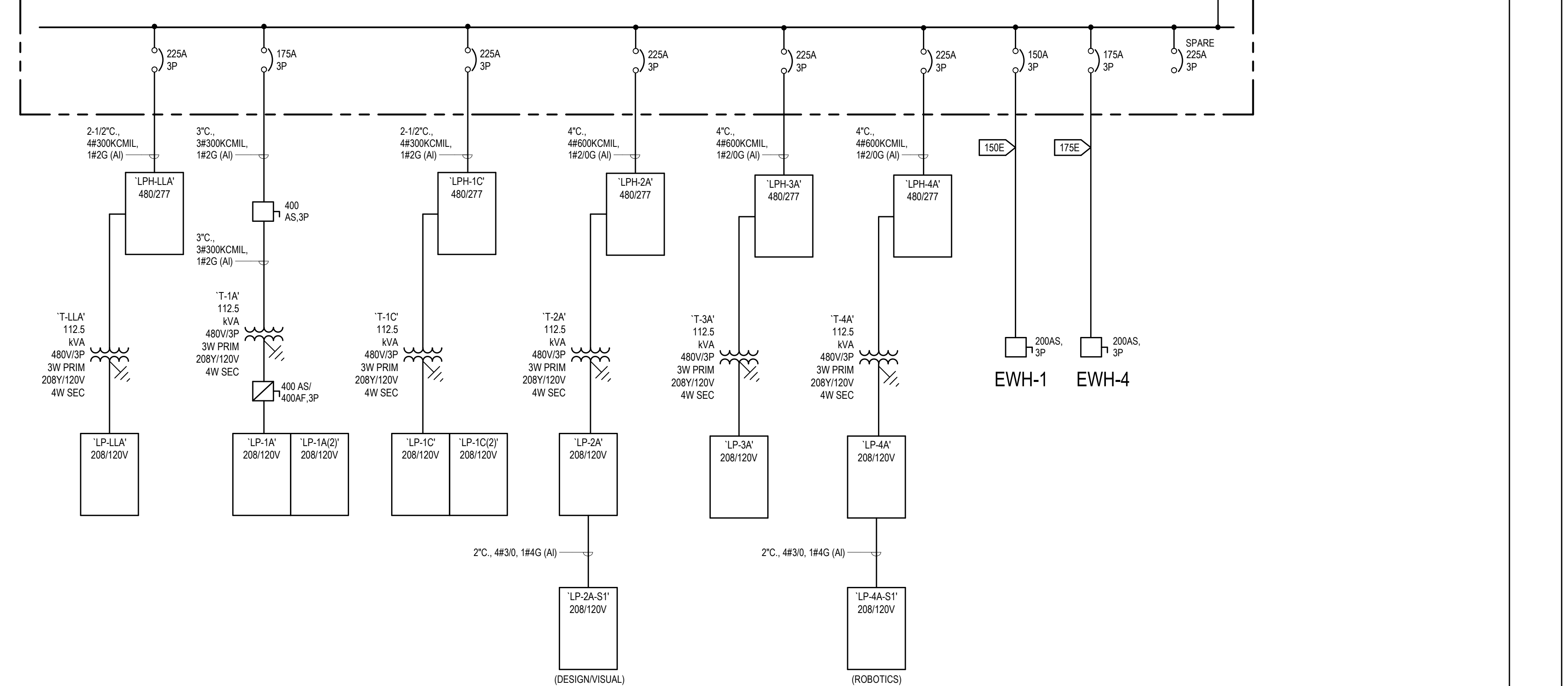
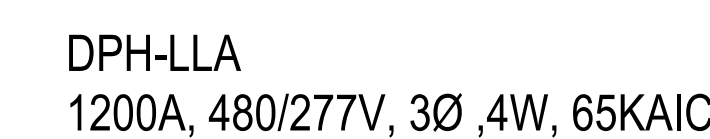
PROJECT NORTH

MAGNETIC NORTH

ELECTRICAL SINGLE LINE DIAGRAM SHEET #1

Scale: 12" = 1'-0"
Job No.: 60-20-409
Drawn By: ZMB
Date: August 28th, 2023

E3-0-0



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August 28th, 2023

PROJECT NORTH	MAGNETIC NORTH
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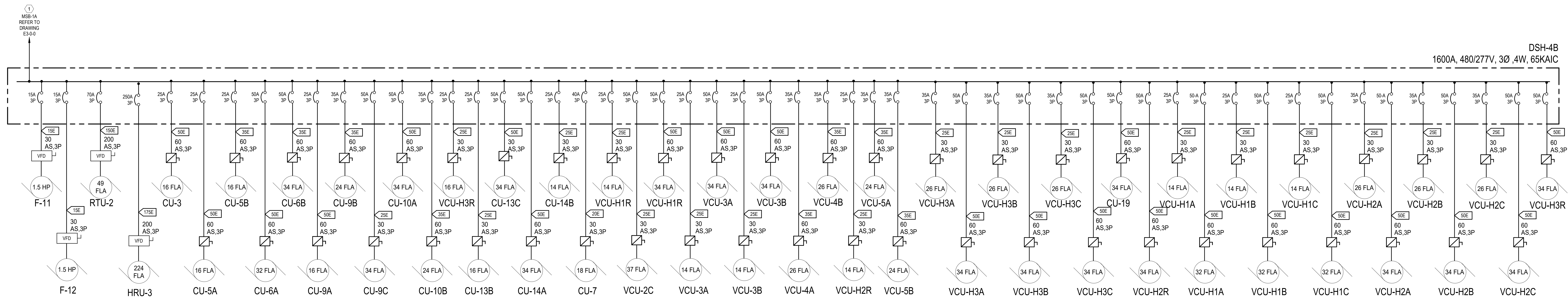
MAGNETIC NORTH

**ELECTRICAL
SINGLE LINE
DIAGRAM SHEET
#2**

Scale: 12" = 1'-0"

Job No.: 60-20-409

E3-0-1



Scale: 12" = 1'-0"
Job No.: 60-20-409
Drawn By: ZMB
Date: August 28th, 2023



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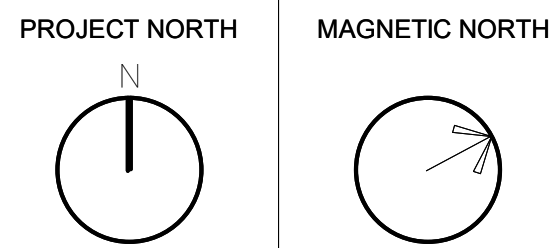
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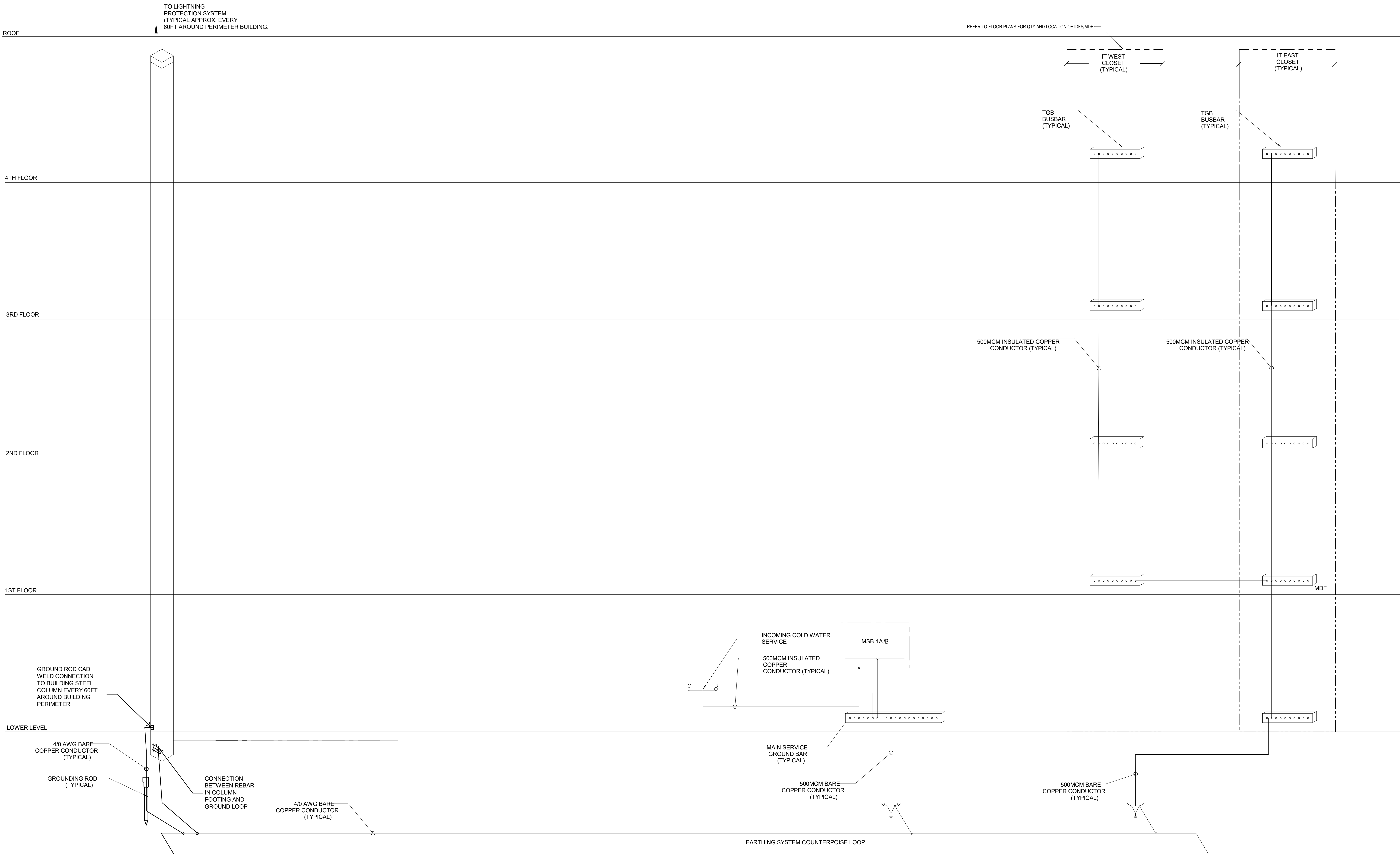
BID SET

August 28th, 2023



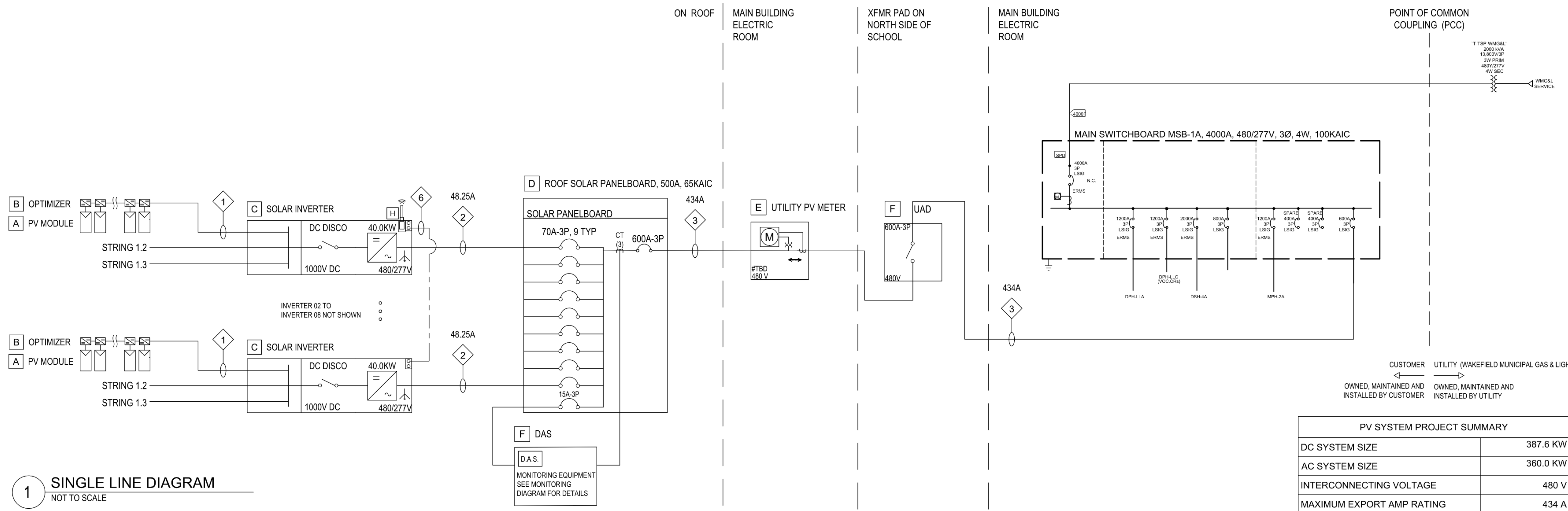
GROUNDING
RISER DIAGRAM

Scale:
Job No.: 60-20-409
Drawn By: ZMB
Date: August 28th, 2023
E3-0-3



**Northeast
Metropolitan
Regional
Vocational High
School**

Wakefield, MA 01880



GRID SUPPORT UTILITY INTERACTIVE INVERTER FUNCTIONS STATUS	
FUNCTION	DEFAULT ACTIVATION STATE
SPECIFIED POWER FACTOR	OFF, OR OPERATING AT UNITY POWER FACTOR
Q(V), VOLT-VAR FUNCTION	OFF, DEFAULT: 2% OF MAX AMP OUTPUT PER SEC
SOFT-START RAMP RATE	ON
F.W. FREQ-WATT FUNCTION OFF	OFF
SELF-PROTECTIVE OVER VOLTAGE*	ENABLED

REQUIRED INVERTER SETTINGS: FREQUENCY TRIP SETTINGS, $V_{NOM} = 60$ HZ			REQUIRED INVERTER SETTINGS: VOLTAGE TRIP SETTINGS VOLTAGE = 480/277 V, $V_{NOM} = 277$ V _{L-N}			
SHALL TRIP FUNCTION	FREQUENCY (HZ)	CLEARING TIME (S)	SHALL TRIP FUNCTION	P.U. OF V_{NOM}	DEFAULT SET VOLTAGE (V _{L-N})	CLEARING TIME (S)
OF2	62.00	0.16	OV2	1.20	332.4	0.16
OF1	61.20	300	OV1	1.10	304.7	2.00
UF1	58.50	300	UV1	0.88	243.8	2.00
UF2	56.50	0.16	UV2	0.50	138.5	1.10

REQUIRED INVERTER SETTINGS: VOLTAGE RIDE-THROUGH VOLTAGE = 480/277 V, $V_{NOM} = 277$ V _{L-N}				
VOLTAGE RANGE (P.U. OF V_{NOM})	VOLTAGE RANGE (V _{L-N})	OPERATING MODE/ RESPONSE	MINIMUM RIDE THROUGH TIME (S)	MAXIMUM RESPONSE TIME (S)
$V > 1.20$	$V > 332.4$	CEASE TO ENERGIZE	N/A	0.16
$1.175 < V \leq 1.20$	$325.5 < V \leq 332.4$	PERMISSIVE OPERATION	0.2	N/A
$1.15 < V \leq 1.175$	$318.6 < V \leq 325.5$	PERMISSIVE OPERATION	0.5	N/A
$1.10 < V \leq 1.15$	$305.2 < V \leq 318.6$	PERMISSIVE OPERATION	1	N/A
$0.88 \leq V \leq 1.10$	$243.8 \leq V \leq 305.2$	CONTINUOUS OPERATION	INFINITE	N/A
$0.65 \leq V < 0.88$	$180.1 \leq V < 243.8$	MANDATORY OPERATION	$T_{VRT} = 3 + 8.7 \cdot [(V - 0.65) \text{ p.u.}]$	N/A
$0.45 \leq V < 0.65$	$124.7 \leq V < 180.1$	PERMISSIVE OPERATION [a,b]	0.32	N/A
$0.30 \leq V < 0.45$	$83.1 \leq V < 124.7$	PERMISSIVE OPERATION [b]	0.16	N/A
$V < 0.30$	$V < 83.1$	CEASE TO ENERGIZE	N/A	0.16

THE FOLLOWING ADDITIONAL OPERATIONAL REQUIREMENTS SHALL APPLY FOR ALL INVERTERS:

a. IN THE PERMISSIVE OPERATION REGION ABOVE 0.5 p.u., INVERTERS SHALL RIDE-THROUGH IN MANDATORY OPERATION MODE, AND

b. IN THE PERMISSIVE OPERATION REGION BELOW 0.5 p.u., INVERTERS SHALL RIDE-THROUGH IN MOMENTARY CESSATION MODE WITH A MAXIMUM RESPONSE TIME OF 0.083 SECONDS.

REQUIRED INVERTER SETTINGS: FREQUENCY RIDE-THROUGH CAPABILITY AND REQUIREMENTS		
FREQUENCY RANGE (HZ)	OPERATING MODE/ RESPONSE	MINIMUM RIDE THROUGH TIME (S)
$F > 62.0$	NO RIDE THROUGH REQUIREMENTS APPLY TO THIS RANGE	
$61.2 < F \leq 61.8$	MANDATORY OPERATION	299
$58.8 \leq F \leq 61.2$	CONTINUOUS OPERATION	INFINITE
$57.0 \leq F < 58.8$	MANDATORY OPERATION	299
$F < 57.0$	NO RIDE THROUGH REQUIREMENTS APPLY TO THIS RANGE	

2 REQUIRED GRID SUPPORT INVERTER SETTINGS

PER ISO NEW ENGLAND INVERTER SRD AND IEEE STD 1547-2018 (2ND ED.) CATEGORY I, II, AND III.

RETURN TO SERVICE PARAMETERS $V_{NOM} = 277$ V _{L-N} , $F_{NOM} = 60$ HZ		
PARAMETER	DEFAULT VALUE	DER SHALL NOT CONNECT OR RETURN TO SERVICE, FOLLOWING A TRIP, UNTIL DETECTING 5 MINUTES OF HEALTHY UTILITY VOLTAGE AND FREQUENCY AS DEFINED IN "RETURN TO SERVICE" PARAMETERS TABLE
V_{MIN}	263.2 V (0.95PU OF V_{NOM})	
V_{MAX}	290.9 V (1.06PU OF V_{NOM})	
F_{MIN}	59.5 HZ	
F_{MAX}	60.5 HZ	

3 RETURN TO SERVICE PARAMETERS

PER IEEE 1547-2018 (2ND ED.)

PROPOSED RELAY SETTINGS, VOLTAGE = 13.8KV/8.4KV, $V_{NOM} = 8.4$ kV _{L-N}			
DEVICE (3)	PICKUP	DELAY SETTING	TOTAL CLEAR *
27-2	3983.5 V _{L-N}	63 CYCLES	66 CYCLES (1.1 SEC)
27-1	7011.0 V _{L-N}	117 CYCLES	120 CYCLES (2.0 SEC)
59-1	8763.7 V _{L-N}	117 CYCLES	120 CYCLES (2.0 SEC)
59-2	9560.4 V _{L-N}	6.5 CYCLES	9.5 CYCLES (0.16 SEC)
81U-2	56.5 HZ	6.5 CYCLES	9.5 CYCLES (0.16 SEC)
81U-1	58.5 HZ	17997 CYCLES	18000 CYCLES (300 SEC)
81O-1	61.2 HZ	17997 CYCLES	18000 CYCLES (300 SEC)
81O-2	62.0 HZ	6.5 CYCLES	9.5 CYCLES (0.16 SEC)

*TOTAL CLEAR TIME = 3 CYCLE BREAKER OPENING TIME + DELAY

A RELAY ALARM CONTACT SHALL BE INCLUDED WIRED TO TRIP THE GENERATOR WHEN THE RELAY FAILS, IS NOT IN SERVICE, OR SUPPLY VOLTAGE TO THE RELAY IS LOST. THERE SHALL BE A 2 SECOND TIME DELAY IN TRIPPING, ANSI 62

4 UTILITY GRADE RELAY SETTINGS

PER NATIONAL GRID ESB 756 REQUIREMENTS

WIRE SCHEDULE													
ID	NAME	VOLTAGE	IMAX	OC PD	CONDUCTOR				CONDUIT				
		(V)	(A)	(A)	PARALLEL	LINE	NEUTRAL	EGC/GEC	QTY	SIZE	TYPE	MAX LENGTH	VDROP (%)
1	PV SOURCE CIRCUIT	1000V DC	15 A	20A-1P	1	#10, PV WIRE	-	#6 AWG, BARE	1		IN AIR	100 LF	0.39%
2	INVERTER OUTPUT	480V AC	48.25 A	60A-3P	1	#3 AWG	#3 AWG	#6 AWG	1	1.5"	RMC	450 LF	1.67%
3	PV SWITCHBOARD	480V AC	434 A	600A-3P	2	350 KCMIL	350 KCMIL	#1 AWG	2	3"	RMC / PVC	250 LF	0.72%
4	COMMUNICATION CIRCUIT	-	-	-		RS-485 CABLE			1	3/4"	RMC	-	-
EX	EXISTING WIRE					EXISTING BUILDING WIRE							

5 ELECTRICAL WIRE SCHEDULE

PER NATIONAL ELECTRIC CODE (NEC) 2020

EQUIPMENT SCHEDULE				
ID	DESCRIPTION	QTY	MANUFACTURER / PRODUCT ID	DESCRIPTION
A	PV MODULE	816	LG ELECTRONICS / JKM475M-7RL3	475W, 72 CELL, MONO CRYSTALLINE, MC 4 CONNECTOR, UL 1703, UL 790
B	OPTIMIZER	816	SOLAREDGE / P505	505W DC INPUT, DC-DC CONVERTER, NEC 2017 RSS COMPLIANT, UL CERTIFIED WITH SOLAREDGE INVERTERS
C	INVERTER	9	SOLAREDGE / SE40KUS	UL 1741-SA, UL 1699B, GRID SUPPORT UTILITY INTERACTIVE, NEMA 4X, INTEGRATED DC DISCONNECT, 4 INPUTS
D	SOLAR SWITCHBOARD	1	TBD	600A COPPER BUS, 65 KAIC, 480Y/277V, 3Ø, 4W
E	UTILITY PV GENERATION METER	1	SPECIFIED BY UTILITY	UTILITY CT CABINET, 24/7 ACCESSIBLE, LOCKABLE BY UTILITY, FORM 16S INTERVAL TYPE WITH TELEMETRY
F	UTILITY ACCESSIBLE DISCONNECT	1	TBD	600A, UTILITY LOCKABLE GANG OPERATED LOADBREAK SWITCH, LOCATED IN 24-HOUR ACCESSIBLE LOCATION
G	DATA ACQUISITION SYSTEM (D.A.S.)	1	POWERDASH / PDH-RBAIO	VERIS REVENUE GRADE METERING, INTEGRATED DIGI CELLULAR COMMUNICATIONS EQUIPMENT, NEMA 3R
H	GSM MODEM KIT	1	SOLAREDGE / CELL-B-R05-US-T-S5	GSM MODEM WITH ANTENNA, FOR REMOTE ANALYSIS AND MONITORING, INSTALLED IN INVERTER, LOW BANDWIDTH, CONTINUOUS CONNECTION WITH 5 MINUTE TELEMETRY, 5 YEAR CELLULAR PLAN

6 ELECTRICAL EQUIPMENT SCHEDULE

FOR REFERENCE ONLY - REFER TO EQUIPMENT SUBMITTALS FOR DETAILS

GENERAL NOTES:

THE FOLLOWING WORK FOR THE PV SYSTEM SHALL BE INCLUDED AS PART OF DIV. 28 FOR THIS CONTRACT:

1. PROVIDE PV UTILITY DISCONNECT AT XFMR PAD ON NORTH SIDE OF SCHOOL. PROVIDE CT CABINET AND METER IN MAIN ELECTRICAL ROOM. PROVIDE CIRCUIT BREAKER AT SWITCHBOARD AND CONDUITS BETWEEN SWITCHBOARD, UTILITY DISCONNECT AND CT CABINET. EXTERIOR CONDUITS SHALL BE IN CONCRETE ENCASED DUCTBANK.

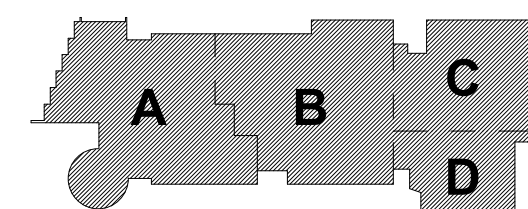
2. PROVIDE 3/4" CONDUITS FROM METERS UP TO ROOF / VA SHAFT.

ROOFTOP EQUIPMENT, INCLUDING INVERTERS, ROOFTOP PANELBOARD, AND PV PANELS ARE TO BE PROVIDED BY OTHERS AS PART OF A PV SYSTEM CONTRACT.

(NOTE: PV SYSTEM BY OTHERS UNLESS OTHERWISE NOTED- SINGLE LINE DIAGRAM IS INCLUDED FOR REFERENCE ONLY)

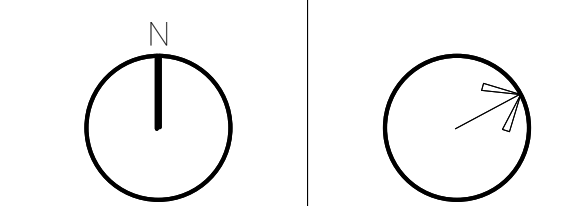
BID SET

August 28th, 2023



KEY PLAN

PROJECT NORTH MAGNETIC NORTH

**ELECTRICAL
SINGLE LINE
DIAGRAM - PV
SYSTEM**

Scale:

Job No.: 60-20-409

Drawn By: DRA

Date: August 28th, 2023

E3-0-4

General Notes: • Overall system design shall strive for simple and effective methods of lighting control that are robust and easy to maintain while meeting all required standard and applicable codes. • All fixtures will be dimmable. Exceptions include back of house and MEP spaces.					
Area Description Name	Lighting Control Zones Description ¹	ON ^{1,5}	ADJUST ^{1,3}	OFF ³	Sensors, Interfaces
Circulation	• Provide (1) dimmable zone for each Fixture Type.	• Auto-on via timesock during occupied hours. During unoccupied hours, fixtures turn on via an occupancy sensor.	• Each zone to have its own manual Set-and-forget dimmer, located in access-controlled location.	• Manual off via local override wall control located in access-controlled location. • During unoccupied hours, auto-off after no occupancy sensed for 15 minutes.	• Occupancy sensors • Timeslock
Typical Classroom	Provide up to 6 zones total per classroom: 1. Direct (Front of room) 2. Direct (Daylight Pit of room) 3. Direct (Rest of Room) 4. Direct (Daylight Rest of Room) 5. Indirect 6. Whiteboards DECEMBER 2022 VE PROCESS BALA IDENTIFIED QUANTITY OF CONTROL CHANNELS IN CLASSROOM AS AN ITEM FOR VE BALA TO CONFIRM INTENDED REDUCTION, AVAILABLE LIGHT SPECIFICS AT MINIMUM SEPARATE CONTROL, MUST BE PROVIDED FOR DIRECT, INDIRECT, AND WHITEBOARD .	• Manual on to 100% • Alternate Auto-on to 50%. Manual override to 100%.	• Each zone to have its own single switch keypad, located at entry of room. Keypads to offer dimming or at least 3 light levels, 100%, 50%, and Off. • Automatic daylight dimming with minimum 30% available from daylight.	Manual off via local override wall control. Auto-off after no occupancy sensed for 15 minutes.	• Vacancy Sensors • Photocells in select perimeter studios where daylight is available.
Typical Offices	• Provide (1) zone for overhead lighting • Provide (1) zone for task lighting (desk control only)	• Manual-on to 50% or 100%.	• Each zone to have its own single switch keypad, located at entry to room. Keypads to offer dimming or at least 3 light levels, 100%, 50%, & Off. • Automatic daylight dimming with minimum 25% available from daylight.	Manual off via local override wall control. Auto-off after no occupancy sensed for 15 minutes.	• Occupancy & photocell sensors.
Typical Shops	• Provide (1) zone for overhead lighting • Provide (1) zone for task lighting (desk control only)	• Manual-on to 50% or 100%.	• Each zone to have its own single switch keypad, located at entry to room. Keypads to offer dimming or at least 3 light levels, 100%, 50%, & Off. • Automatic daylight dimming with minimum 25% available from daylight.	Manual off via local override wall control. Auto-off after no occupancy sensed for 30 minutes.	•
Typical Trade-Specific Spaces	Provide (1) zone per fixture type.	• Manual on to 100% • Alternate Auto-on to 50%. Manual override to 100%.	• Each zone to have its own single switch keypad, located at entry of room. Keypads to offer dimming or at least 3 light levels, 100%, 50%, and Off. • Automatic daylight dimming with minimum 30% available from daylight.	Manual off via local override wall control. Auto-off after no occupancy sensed for 15 minutes.	•
Cafeteria	Provide (1) zone per fixture type.	• Manual on to 100% • Alternate Auto-on to 50%. Manual override to 100%.	• Each zone to have its own single switch keypad, located at entry of room. Keypads to offer dimming or at least 3 light levels, 100%, 50%, and Off. • Automatic daylight dimming with minimum 30% available from daylight.	Manual off via local override wall control. Auto-off after no occupancy sensed for 15 minutes.	• Vacancy Sensors • Photocells in select perimeter spaces where daylight is available.
Lecture Hall	1. Provide (1) zone for front of room downlight linear and (1) zone for back of room linear downlights (2 zones total) 2. Provide (1) zone per plan north (3) downlights and (1) zone for plan south (3) downlights 3. Provide (1) zone per wall for wall washers (4 zones total) 4. Provide (1) zone for wall grater	• Manual on to 100% • Alternate Auto-on to 50%. Manual override to 100%.	• Each zone to have its own single switch keypad, located at entry of room. Keypads to offer dimming or at least 3 light levels, 100%, 50%, and Off. • Automatic daylight dimming with minimum 30% available from daylight.	Manual off via local override wall control. Auto-off after no occupancy sensed for 15 minutes.	• Vacancy Sensors • Photocells in select perimeter spaces where daylight is available.
Theater (For Theatrical Lighting controls see Theatrical Consultant documents.)	• Theatrical Lighting consistent to specify DMX Control System for Theater. • Provide DMX control system for Architectural Lighting fixtures that connects natively to theatrical system for unified control.	• Manual-on to Preset Level • Provide Preset Recall System	• Provide Preset Recall System with at least (8) presets + off. Presets to be coordinated with theatrical lighting consultant. • Provide DMX connection or interface to theatrical lighting system. • Provide connection to AV System for Preset Recall	Manual off via local override wall control.	• 2x Touchscreens or preset recall station.
Gymnasium	• Provide (1) zone for overhead lighting	• Manual-on to 50% or 100%.	• Each zone to have its own single switch keypad, located at entry to room. Keypads to offer dimming or at least 3 light levels, 100%, 50%, & Off. • Automatic daylight dimming with minimum 25% available from daylight.	Manual off via local override wall control. Auto-off after no occupancy sensed for 30 minutes.	• Occupancy & photocell sensors.
Building Wide					
Restrooms	• Provide (1) dimmable zone for each Fixture Type.	• Occupancy on to 100% output (as set by dimmers.)	• Each zone to have its own manual Set-and-forget dimmer located in space inaccessible to visitors.	• Auto-off after no occupancy sensed for 30 minutes.	• Occupancy sensors

Area Description Name	Lighting Control Zones Description ¹	ON ^{1,5}	ADJUST ^{1,3}	OFF ³	Sensors, Interfaces
Corridors	• Provide (1) dimmable zone for each Fixture Type.	• Auto-on to preset level via timeslock during regularly occupied hours. • During unoccupied hours, auto-on via occupancy sensor.	• Each zone to have its own manual Set-and-forget dimmer located in space inaccessible to visitors.	• Manual off via local override wall control located in space inaccessible to visitors. Auto-off after no occupancy sensed for 15 minutes.	• Occupancy sensors
Stairs	• Provide (1) dimmable zone for each Fixture Type.	• Auto-on to preset level via timeslock during regularly occupied hours. • During unoccupied hours, auto-on to preset level via occupancy sensor.	• During unoccupied hours, fixtures to dim to 50% preset level until occupancy is detected.	• None	• Occupancy sensors • Timeslock
Storage Areas	• Provide (1) Non Dim Zone	• Auto-on when occupancy is sensed	• None	• Auto-off after no occupancy sensed for 30 minutes.	• Occupancy Sensors
MEP Spaces	• Provide (1) Non Dim Zone	• Manual On	• None	• Manual Off	
Exterior Building Lighting	Provide 1 Zone for each Fixture Type	Auto-On via Photocell Sensor and/or Timeslock	• Each zone to have its own manual Set-and-forget dimmer. • For late-night turn off non-egress fixtures. • Manual override of time clock mode for scheduled events.	Auto-Off via Photocell Sensor	• Photocell sensors. • Timeslock

- Notes:
- Choice of wired or wireless sensors & keypads is TBD by Electrical Engineer based on factors including Owner preference, cost and ease of installation and maintenance.
 - Dimming is assumed to be via 0-10V unless otherwise noted.
 - Occupancy sensors should also communicate room status to other building controls such as HVAC. Engineer to specify exact method for this.
 - For fixtures that cannot physically accommodate a sensor, external sensors will be used and will control all non-cessored fixtures within a room.

COPPER BRANCH AND FEEDER SCHEDULE					
AMPS	1P+N+G	2P+G	2P+N+G	3P+G	3P+N+G
	A	C	D	E	F
15	2#12+1#12G, 3/4°C	2#12+1#12G, 3/4°C	3#12+1#12G, 3/4°C	3#12+1#12G, 3/4°C	4#12+1#12G, 3/4°C
20	2#12+1#12G, 3/4°C	2#12+1#12G, 3/4°C	3#12+1#12G, 3/4°C	3#12+1#12G, 3/4°C	4#12+1#12G, 3/4°C
25	2#10+1#10G, 3/4°C	2#10+1#10G, 3/4°C	3#10+1#10G, 3/4°C	3#10+1#10G, 3/4°C	4#10+1#10G, 3/4°C
30	2#10+1#10G, 3/4°C	2#10+1#10G, 3/4°C	3#10+1#10G, 3/4°C	3#10+1#10G, 3/4°C	4#10+1#10G, 3/4°C
35	2#8+1#10G, 3/4°C	2#8+1#10G, 3/4°C	3#8+1#10G, 3/4°C	3#8+1#10G, 3/4°C	4#8+1#10G, 3/4°C
40	2#8+1#10G, 3/4°C	2#8+1#10G, 3/4°C	3#8+1#10G, 3/4°C	3#8+1#10G, 3/4°C	4#8+1#10G, 3/4°C
45	2#6+1#10G, 3/4°C	2#6+1#10G, 3/4°C	3#6+1#10G, 1°C	3#6+1#10G, 1°C	4#6+1#10G, 1°C
50	2#6+1#10G, 3/4°C	2#6+1#10G, 3/4°C	3#6+1#10G, 1°C	3#6+1#10G, 1°C	4#6+1#10G, 1°C
60	2#4+1#10G, 1°C	2#4+1#10G, 1°C	3#4+1#10G, 1°C	3#4+1#10G, 1°C	4#4+1#10G, 1-1/4°C
70	2#4+1#8G, 1°C	2#4+1#8G, 1°C	3#4+1#8G, 1-1/4°C	3#4+1#8G, 1-1/4°C	4#4+1#8G, 1-1/4°C
80	2#3+1#8G, 1°C	2#3+1#8G, 1°C	3#3+1#8G, 1-1/4°C	3#3+1#8G, 1-1/4°C	4#3+1#8G, 1-1/4°C
90	2#2+1#8G, 1°C	2#2+1#8G, 1°C	3#2+1#8G, 1-1/4°C	3#2+1#8G, 1-1/4°C	4#2+1#8G, 1-1/2°C
100	2#1+1#8G, 1-1/4°C	2#1+1#8G, 1-1/4°C	3#1+1#8G, 1-1/2°C	3#1+1#8G, 1-1/2°C	4#1+1#8G, 2°C
110		2#2+1#6G, 1-1/4°C	3#2+1#6G, 1-1/4°C	3#2+1#6G, 1-1/4°C	4#2+1#6G, 1-1/2°C
125		2#1+1#6G, 1-1/4°C	3#1+1#6G, 1-1/2°C	3#1+1#6G, 1-1/2°C	4#1+1#6G, 2°C
150		2#10+1#6G, 1-1/2°C	3#10+1#6G, 1-1/2°C	3#10+1#6G, 1-1/2°C	4#10+1#6G, 2°C
175		2#2/0+1#6G, 1-1/2°C	3#2/0+1#6G, 2°C	3#2/0+1#6G, 2°C	4#2/0+1#6G, 2°C
200		2#3/0+1#6G, 1-1/2°C	3#3/0+1#6G, 2°C	3#3/0+1#6G, 2°C	4#3/0+1#6G, 2-1/2°C
225		2#4/0+1#4G, 2°C	3#4/0+1#4G, 2°C	3#4/0+1#4G, 2°C	4#4/0+1#4G, 2-1/2°C
250		2#250+1#4G, 2°C	3#250+1#4G, 2-1/2°C	3#250+1#4G, 2-1/2°C	4#250+1#4G, 3°C
300		2#350+1#4G, 2°C	3#350+1#4G, 3°C	3#350+1#4G, 3°C	4#350+1#4G, 3°C
350		2#500+1#3G, 2-1/2°C	3#500+1#3G, 3°C	3#500+1#3G, 3°C	4#500+1#3G, 3-1/2°C
400		2#600+1#3G, 3°C	3#600+1#3G, 3-1/2°C	3#600+1#3G, 3-1/2°C	4#600+1#3G, 4°C
450				(2 Sets) 3#4/0+1#2G, (2) 2°C	(2 Sets) 4#4/0+1#2G, (2) 2-1/2°C
500				(2 Sets) 3#250+1#2G, (2) 2-1/2°C	(2 Sets) 4#250+1#2G, (2) 3°C
600				(2 Sets) 3#350+1#1G, (2) 3°C	(2 Sets) 4#350+1#1G, (2) 3°C
700				(2 Sets) 3#500+1#1/0G, (2) 3°C	(2 Sets) 4#500+1#1/0G, (2) 3-1/2°C
800				(2 Sets) 3#600+1#1/0G, (2) 3-1/2°C	(2 Sets) 4#600+1#1/0G, (2) 4°C
1000				(3 Sets) 3#400+1#2/0G, (3) 3°C	(3 Sets) 4#400+1#2/0G, (3) 3-1/2°C
1200				(3 Sets) 3#600+1#3/0G, (3) 3-1/2°C	(3 Sets) 4#600+1#3/0G, (3) 4°C
1600				(4 Sets) 3#600+1#4/0G, (4) 3-1/2°C	(4 Sets) 4#600+1#4/0G, (4) 4°C
2000				(5 Sets) 3#600+1#250G, (5) 3-1/2°C	(5 Sets) 4#600+1#250G, (5) 4°C
2500				(6 Sets) 3#600+1#350G, (6) 3-1/2°C	(6 Sets) 4#600+1#350G, (6) 4°C
3000				(8 Sets) 3#500+1#400G, (8) 3-1/2°C	(8 Sets) 4#500+1#400G, (8) 3-1/2°C
4000				(10 Sets) 3#600+1#500G, (10) 3-1/2°C	(10 Sets) 4#600+1#500G, (10) 4°C

- NOTES:
- DESIGN BASIS:
 - CONDUCTOR SIZES BASED ON AMBIENT TEMPERATURE OF 78F TO 86F (26C TO 30C). FOR AMBIENT TEMPERATURES ABOVE 30C, THE AMPACITY SHALL BE REDUCED PER NEC TABLE 310.15(B)(2)(a). WIRE SIZES SHALL NOT BE REDUCED BELOW THE 30C RATING.
 - OCDP SIZES FOR SMALL CONDUCTORS BASED ON NEC 240.4(D)(3), NEC 240.4(D)(5) AND NEC 240.4(D)(7).
 - CONDUCTOR SIZES BASED ON 60C COLUMN OF NEC 2023 TABLE 310.15(B)(16) FOR 100A AND SMALLER OCPDs. WIRES ARE ALLOWED TO BE SIZED BASED ON THE 75C COLUMN AS PERMITTED BY THE NEC AND WHEN COORDINATED WITH EQUIPMENT TERMINATION TEMPERATURE RATINGS AT EACH WIRE TERMINATION POINT.
 - CONDUCTOR SIZES BASED ON 75C COLUMN OF NEC 2023 TABLE 310.15(B)(16) FOR OCPDs LARGER THAN 100A.
 - WHEN TYPE NM CABLE IS ALLOWED ON THE PROJECT, THE WIRE SIZES SHALL BE BASED ON THE 60C COLUMN OF NEC 2023 TABLE 310.15(B)(16).
 - CONDUIT SIZES ARE BASED ON THHW COPPER CONDUCTORS AND DO NOT APPLY TO CONDUCTORS WITH LARGER DIAMETERS THAN THHW. REFER TO THE PROJECT SPECIFICATIONS FOR SPECIFIC WIRE REQUIREMENTS.
 - RACEWAY SIZES SHOWN IN THE ABOVE TABLE APPLY TO TYPES EMT, FMC, IMC, LFMC, RMC AND PVC SCHEDULE 40. THE ABOVE RACEWAY SIZES DO NOT APPLY TO PVC SCHEDULE 80 CONDUIT. IF PVC SCHEDULE 80 CONDUIT IS REQUIRED, CONSULT THE ENGINEER OF RECORD FOR CONDUIT SIZING OR SEE THE SPECIFIC WIRE/CONDUIT CALLOUT ON THE SINGLE LINE DIAGRAM. REFER TO THE PROJECT SPECIFICATIONS FOR SPECIFIC RACEWAY REQUIREMENTS.
 - CONDUCTOR SIZES SHOWN IN THE ABOVE TABLE ARE IN AWG FOR WIRES SMALLER THAN 250KCMIL AND ARE IN KCMIL FOR 250KCMIL WIRES AND LARGER.
 - IF ALUMINUM CONDUCTORS ARE APPROVED DURING THE BIDDING PROCESS BY THE OWNER & THE ENGINEER, THE CONTRACTOR SHALL PROVIDE A SUBMITTAL INDICATING EQUIVALENT FEEDERS AND CONDUITS.
 - THE CONTRACTOR IS RESPONSIBLE TO COORDINATE ALL EQUIPMENT LUG SIZES AND RATINGS WITH THE CONDUCTORS.
 - PARALLEL SETS OF SMALLER CONDUCTORS IN LIEU OF 600KCMIL IS PERMITTED AS ALLOWED BY CODE AND UPON APPROVAL BY THE ENGINEER.
 - ALL WIRING SHALL BE RATED AT 90C MINIMUM BASED ON THE INSTALLATION CONDITIONS. UNDERGROUND CONDUITS SHALL BE CONSIDERED WET LOCATIONS.

DRY-TYPE TRANSFORMER SCHEDULE							
I.D.	NAME/PLATE	KVA	480V 3Ø 3W PRIMARY		120/208V 3Ø 4W SECONDARY		
			PRIMARY AMPS	480V OVERCURRENT	SECONDARY AMPS	208V OVERCURRENT	120/208V FEEDER
9/T1	9	11	20A-3P	3#12, 1#12 GND., 3/4°C	25	30A-3P	4#10, 1#10 GND., 3/4°C
15/T2	15	18	30A-3P	3#10, 1#10 GND., 3/4°C	42	50A-3P	4#6, 1#10 GND., 1°C
30/T3	30	36	50A-3P	3#8, 1#10 GND., 1°C	83	100A-3P	4#2, 1#6 GND., 1 1/2°C
45/T4	45	54	70A-3P	3#4, 1#6 GND., 1 1/4°C	125	150A-3P	4#1/0, 1#6 GND., 2°C
75/T5	75	90	125A-3P	3#1, 1#6 GND., 1 1/2°C	208	225A-3P	4#4/0, 1#4 GND., 2 1/2°C
112.5/T6	112.5	135	175A-3P	3#2/0, 1#6 GND., 2°C	313	400A-3P	4-500KCM, 1#3 GND., 4°C
150/T7	150	181	250A-3P	3-250 KCM, 1#4 GND., 2 1/2°C	417	500A-3P	2 SETS (4-250 KCM, 1#1 GND., 3°C)
225/T8	225	270	350A-3P	3-500 KCM, 1#3 GND., 4°C	625	800A-3P	2 SETS (4-500 KCM, 1#1/0 GND., 4°C)
300/T9	300	360	450A-3P	2 SETS (3#4/0, 1#2 GND., 2 1/2°C)	833	1,000A-3P	3 SETS (4-350 KCM, 1#3/0 GND., 3 1/2°C)

- NOTES:
- CONDUCTOR SIZES ARE FOR COPPER CONDUCTORS AND ARE MINIMUM. LARGER SIZES SHALL BE USED WHERE INDICATED ON DRAWINGS.

DRA

DrummeY Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 617.984.1700
www.dra-inc.com

260 Charles Street
Studio 300
Waltham, MA 02453

Planning | Architecture | Interior Design

Northeast
Metropolitan
Regional
Vocational High
School

Wakefield, MA 01880

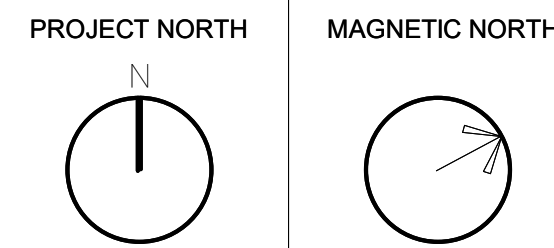
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BALA
ENGINEERS

BALA CONSULTING ENGINEERS, INC.
200 WEST 14TH STREET, SUITE 200
NEW YORK, NY 10011-4209
PHONE: 212.693.4000 FAX: 212.693.4001
WWW.BALA-ENGINEERS.COM

BID SET

August 28th, 2023



ELECTRICAL
POWER
SCHEDULES

Scale: As Indicated
Job No.: 60-20-409
Drawn By: ZMB
Date: August 28th, 2023

E4-0-0

Panelboard: EM-LPH-LLA														
Location:			Distribution System: 480/277 Wye					A.I.C. Rating: 42kAIC						
Supply From: EM-DPH-LLA			Phases: 3					Main Type: MLO						
Mounting: SURFACE			Wires: 4					Main Rating: 100 A						
Enclosure: TYPE 1			Modifications:											
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description	Ckt. No.	Wiring	Notes
	30A	EA1	LIGHTING	20 A	1	2007 / 2706	1163 / 966		1	20 A	LIGHTING	EA2	30A	
	30A	EA2	LIGHTING	20 A	1				1	20 A	LIGHTING	EA3	30A	
	30A	EA3	LIGHTING	20 A	1			52 / 293	1	20 A	LIGHTING	EA6	30A	
--	--	EA4	LIGHTING	20 A	1	18 / 42	0 / 0		1	20 A	LIGHTING ELEV MACH	EA9	--	--
--	--	EA5	SPARE	20 A	1				1	20 A	SPARE	EA10	--	--
--	--	EA11	SPARE	20 A	1			0 / 0	1	20 A	SPARE	EA12	--	--
--	--	EA13	SPARE	20 A	1				1	20 A	SPARE	EA14	--	--
--	--	EA15	SPARE	20 A	1	0 / 0	0 / 0		1	20 A	SPARE	EA16	--	--
--	--	EA17	SPARE	20 A	1			0 / 0	1	20 A	SPARE	EA18	--	--
Load Per...				4773 VA		1831 VA		345 VA						
Load Classification				Connected...		Demand...		Est. Demand		Panel Totals				
LIGHTING				590 VA		125.00%		738 VA		TOTAL CONNECTED LOAD: 6990 VA				
Other				6248 VA		100.00%		6248 VA		TOTAL ESTIMATED DEMAND: 7125 VA				
LIGHTING-EXIT				112 VA		125.00%		140 VA		TOTAL CONNECTED CURRENT: 9 A				
										TOTAL ESTIMATED DEMAND CURRENT: 9 A				
NOTES:														

Panelboard: EM-LPH-1C														
Location:			Distribution System: 480/277 Wye						A.I.C. Rating: 42kAIC					
Supply From: EM-DPH-LLA			Phases: 3						Main Type: MLO					
Mounting: SURFACE			Wires: 4						Main Rating: 100 A					
Enclosure: TYPE 1			Modifications:						MCB Rating:					
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description	Ckt. No.	Wiring	Notes
		30A	EB1 LIGHTING	20 A	1	135 / 1568			1	20 A	LIGHTING	EB2	30A	
		30A	EB2 LIGHTING	20 A	1		1921 / 2007		1	20 A	LIGHTING	EB4	30A	
		30A	EB3 LIGHTING	20 A	1			1841 / 945	1	20 A	LIGHTING	EB6	30A	
		30A	EB7 LIGHTING	20 A	1	362 / 0			1	20 A	SPARE	EB8	--	--
--	--	EB9 SPARE	20 A	1			0 / 0		1	20 A	SPARE	EB10	--	--
--	--	EB11 SPARE	20 A	1				0 / 0	1	20 A	SPARE	EB12	--	--
--	--	EB13 SPARE	20 A	1		0 / 0			1	20 A	SPARE	EB14	--	--
--	--	EB15 SPARE	20 A	1			0 / 0		1	20 A	SPARE	EB16	--	--
--	--	EB17 SPARE	20 A	1				0 / 0	1	20 A	SPARE	EB18	--	--
Load Per...			2064 VA			3628 VA		2786 VA						
Load Classification			Connected...			Demand...		Est. Demand			Panel Totals			
LIGHTING			630 VA			125.00%		788 VA			TOTAL CONNECTED LOAD: 8778 VA			
Other			7904 VA			100.00%		7904 VA			TOTAL ESTIMATED DEMAND: 8696 VA			
LIGHTING-EXIT			244 VA			125.00%		305 VA			TOTAL CONNECTED CURRENT: 11 A			
											TOTAL ESTIMATED DEMAND CURRENT: 11 A			
NOTES:														

Panelboard: EM-LPH-2A														
Location:			Distribution System: 480/277 Wye						A.I.C. Rating: 42kAIC					
Supply From: EM-DPH-LLA			Phases: 3						Main Type: MLO					
Mounting: SURFACE			Wires: 4						Main Rating: 100 A					
Enclosure: TYPE 1			Modifications:						MCB Rating:					
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description	Ckt. No.	Wiring	Notes
	30A	EC1	LIGHTING	20 A	1	308 / 292			1	20 A	LIGHTING	EC2	30A	
	30A	EC2	LIGHTING	20 A	1		292 / 292		1	20 A	LIGHTING	EC4	30A	
	30A	EC5	LIGHTING	20 A	1			202 / 1324	1	20 A	LIGHTING	EC6	30A	
	30A	EC7	LIGHTING	20 A	1	1806 / 486			1	20 A	LIGHTING	EC8	30A	
	30A	EC9	LIGHTING	20 A	1		2067 / 2467		1	20 A	LIGHTING	EC10	30A	
	30A	EC11	LIGHTING	20 A	1			36 / 361	1	20 A	LIGHTING	EC12	30A	
--	--	EC13	LIGHTING	20 A	1	969 / 0			1	20 A	SPARE	EC14	--	--
--	--	EC15	SPARE	20 A	1		0 / 0		1	20 A	SPARE	EC16	--	--
--	--	EC17	SPARE	20 A	1			0 / 0	1	20 A	SPARE	EC18	--	--
Load Per...			3880 VA			5117 VA		1983 VA						
Load Classification			Connected...			Demand...		Est. Demand			Panel Totals			
LIGHTING			252 VA			125.00%		315 VA			TOTAL CONNECTED LOAD: 10986 VA			
Other			10391 VA			100.00%		10391 VA			TOTAL ESTIMATED DEMAND: 11026 VA			
LIGHTING-EXIT			256 VA			125.00%		320 VA			TOTAL CONNECTED CURRENT: 13 A			
											TOTAL ESTIMATED DEMAND CURRENT: 13 A			
NOTES:														

Panelboard: EM-LPH-2B														
Location:			Distribution System: 480/277 Wye						A.I.C. Rating: 42kAIC					
Supply From: EM-DPH-LLA			Phases: 3						Main Type: MLO					
Mounting: SURFACE			Wires: 4						Main Rating: 100 A					
Enclosure: TYPE 1			Modifications:						MCB Rating:					
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description	Ckt. No.	Wiring	Notes
	30A	ED1	LIGHTING	20 A	1	1723 / 2074			1	20 A	LIGHTING	ED2	30A	
	30A	ED3	LIGHTING	20 A	1		2201 / 2611		1	20 A	LIGHTING	ED4	30A	
	30A	ED5	LIGHTING	20 A	1			694 / 2127	1	20 A	LIGHTING	ED6	30A	
	30A	ED7	LIGHTING	20 A	1	1941 / 2099			1	20 A	LIGHTING	ED8	30A	
	30A	ED9	LIGHTING	20 A	1		331 / 0		1	20 A	SPARE	ED10	--	--
--	--	ED11	SPARE	20 A	1			0 / 0	1	20 A	SPARE	ED12	--	--
	--	ED13	SPARE	20 A	1	0 / 0			1	20 A	SPARE	ED14	--	--
	--	ED15	SPARE	20 A	1		0 / 0		1	20 A	SPARE	ED16	--	--
	--	ED17	SPARE	20 A	1			0 / 0	1	20 A	SPARE	ED18	--	--
Load Per...				7838 VA		5143 VA		2822 VA						
Load Classification				Connected...		Demand...		Est. Demand		Panel Totals				
LIGHTING				924 VA		125.00%		1155 VA		TOTAL CONNECTED LOAD: 15802 VA				
Other				14662 VA		100.00%		14662 VA		TOTAL ESTIMATED DEMAND: 16067 VA				
LIGHTING-EXIT				216 VA		125.00%		270 VA		TOTAL CONNECTED CURRENT: 19 A				
										TOTAL ESTIMATED DEMAND CURRENT: 19 A				
NOTES:														

Panelboard: EM-LPH-3A														
Location:			Distribution System: 480/277 Wye			A.I.C. Rating: 42kAIC								
Supply From: EM-DPH4LLA			Phases: 3			Main Type: MLO								
Mounting: SURFFACE			Wires: 4			Main Rating: 100 A								
Enclosure: TYPE 1			Modifications:			MCB Rating:								
Notes	Wiring	Ckt. No.	Load Description	Tripo	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Tripo	Load Description	Ckt. No.	Wiring	Notes
		30A	EE-1 LIGHTING	20A	1	2749 / 1576			1	20A	LIGHTING	EE-2	30A	
		30A	EE-3 LIGHTING ELEV MACH ROOM	20A	1		88 / 85		1	20A	LIGHTING	EE-4	30A	
--	--	--	EE-5 SPARE	20A	1			0 / 0	1	20A	SPARE	EE-6	--	--
--	--	--	EE-7 SPARE	20A	1	0 / 0			1	20A	SPARE	EE-8	--	--
--	--	--	EE-8 SPARE	20A	1		0 / 0		1	20A	SPARE	EE-10	--	--
--	--	--	EE-11 SPARE	20A	1			0 / 0	1	20A	SPARE	EE-12	--	--
--	--	--	EE-12 SPARE	20A	1	0 / 0			1	20A	SPARE	EE-14	--	--
--	--	--	EE-15 SPARE	20A	1		0 / 0		1	20A	SPARE	EE-16	--	--
--	--	--	EE-17 SPARE	20A	1			0 / 0	1	20A	SPARE	EE-18	--	--
Load Per...						4325 VA	173 VA	0 VA						
Load Classification				Connected...		Demand...		Est. Demand		Panel Totals				
LIGHTING				210 VA		125.0%		263 VA		TOTAL CONNECTED LOAD: 1498 VA				
Other				4322 VA		100.0%		4232 VA		TOTAL ESTIMATED DEMAND: 1466 VA				
LIGHTING-EXT				56 VA		125.0%		70 VA		TOTAL CONNECTED CURRENT: 5 A				
										TOTAL ESTIMATED DEMAND CURRENT: 5 A				
NOTES:														

Panelboard: EM-LP-LLA																	
Location: Supply From: EM-T-LLA Mounting: SURFACE Enclosure: TYPE 1					Distribution System: 120/208 Wye Phases: 3 Wires: 4					A.I.C. Rating: 10kAIC Mains Type: MCB Mains Rating: 100 A MCB Rating: 100 A							
Modifications:					LOAD PHASE-A (VA)		LOAD PHASE-B (VA)		LOAD PHASE-C (VA)								
Notes	Wiring	Qty. No.	Load Description		Trip	Poles	A	B	C	Poles	Trip	Load Description		Qty. No.	Wiring	Notes	
--	--	ET-1	SPARE		20 A	1	0 / 0				1	20 A	SPARE		ET-2	--	--
--	--	ET-3	SPARE		20 A	1		0 / 0			1	20 A	SPARE		ET-4	--	--
--	--	ET-5	SPARE		20 A	1			0 / 0		1	20 A	SPARE		ET-6	--	--
--	--	ET-7	SPARE		20 A	1	0 / 0				1	20 A	SPARE		ET-8	--	--
--	--	ET-9	SPARE		20 A	1		0 / 0			1	20 A	SPARE		ET-10	--	--
--	--	ET-11	SPARE		20 A	1			0 / 0		1	20 A	SPARE		ET-12	--	--
--	--	ET-13	SPARE		20 A	1	0 / 0				1	20 A	SPARE		ET-14	--	--
--	--	ET-15	SPARE		20 A	1		0 / 0			1	20 A	SPARE		ET-16	--	--
--	--	ET-17	SPARE		20 A	1			0 / 0		1	20 A	SPARE		ET-18	--	--
Load Per...					0 VA		0 VA		0 VA								
Load Classification					Connected...		Demand...		Est. Demand		Panel Totals						
											TOTAL CONNECTED LOAD: 0 VA						
											TOTAL ESTIMATED DEMAND: 0 VA						
											TOTAL CONNECTED CURRENT: 0 A						
											TOTAL ESTIMATED DEMAND CURRENT: 0 A						
NOTES:																	

Panelboard: EM-LP-2B														
Location: Supply From: EM-T-2B (TRAPEZE) Mounting: SURFACE Enclosure: TYPE 1					Distribution System: 120/208 Wye Phases: 3 Wires: 4 Modifications:					A.I.C. Rating: 10kAIC Mains Type: MCB Mains Rating: 100 A MCB Rating: 100 A				
Notes	Wiring	Qty. No.	Load Description	Trip	Poles	A	B	C	Poles	Trip	Load Description	Qty. No.	Wiring	Notes
--	--	20A	EM-1 FSD	20 A	1	1000 / 500				1	20 A FA DGP-2B	EM-2	20A	--
--	--	30A	EM-3 LIGHTING	20 A	1		320 / 0			1	20 A SPARE	EM-4	--	--
--	--	--	EM-5 SPARE	20 A	1			0 / 0		1	20 A SPARE	EM-6	--	--
--	--	--	EM-7 SPARE	20 A	1	0 / 0				1	20 A SPARE	EM-8	--	--
--	--	--	EM-9 SPARE	20 A	1		0 / 0			1	20 A SPARE	EM-10	--	--
--	--	--	EM-11 SPARE	20 A	1			0 / 0		1	20 A SPARE	EM-12	--	--
--	--	--	EM-13 SPARE	20 A	1	0 / 0				1	20 A SPARE	EM-14	--	--
--	--	--	EM-15 SPARE	20 A	1		0 / 0			1	20 A SPARE	EM-16	--	--
--	--	--	EM-17 SPARE	20 A	1			0 / 0		1	20 A SPARE	EM-18	--	--
Load Per...						1500 VA	320 VA		0 VA					
Load Classification						Connected...	Demand...	Est. Demand	Panel Totals					
EQUIPMENT						320 VA	100.00%	320 VA	TOTAL CONNECTED LOAD: 1820 VA					
						1500 VA	75.00%	1125 VA	TOTAL ESTIMATED DEMAND: 1445 VA					
									TOTAL CONNECTED CURRENT: 5 A					
									TOTAL ESTIMATED DEMAND CURRENT: 4 A					
NOTES:														

Panelboard: EM-LP-4A														
Location: Supply From: EM-T-4A (TRAPEZE) Mounting: SURFACE Enclosure: TYPE 1				Distribution System: 120/208 Wye Phases: 3 Wires: 4 Modifications:				A.I.C. Rating: 10kAIC Mains Type: MCB Mains Rating: 100 A MCB Rating: 100 A						
Notes	Wiring	Qty. No.	Load Description	Trip	Poles	A	B	C	Poles	Trip	Load Description	Qty. No.	Wiring	Notes
--	--	EQ-1	FSD CORRIDOR A803	20 A	1	480 / 180				1	20 A FA DGP-4A	EQ-2	20A	--
--	--	EQ-3	SPARE	20 A	1		0 / 0			1	20 A SPARE	EQ-4	--	--
--	--	EQ-5	SPARE	20 A	1			0 / 0		1	20 A SPARE	EQ-6	--	--
--	--	EQ-7	SPARE	20 A	1	0 / 0				1	20 A SPARE	EQ-8	--	--
--	--	EQ-9	SPARE	20 A	1		0 / 0			1	20 A SPARE	EQ-10	--	--
--	--	EQ-11	SPARE	20 A	1			0 / 0		1	20 A SPARE	EQ-12	--	--
--	--	EQ-13	SPARE	20 A	1	0 / 0				1	20 A SPARE	EQ-14	--	--
--	--	EQ-15	SPARE	20 A	1		0 / 0			1	20 A SPARE	EQ-16	--	--
--	--	EQ-17	SPARE	20 A	1			0 / 0		1	20 A SPARE	EQ-18	--	--
Load Per...				660 VA		0 VA		0 VA						
Load Classification			Connected...			Demand...			Est. Demand			Panel Totals		
EQUIPMENT												TOTAL CONNECTED LOAD: 1820 VA		
												TOTAL ESTIMATED DEMAND: 466 VA		
												TOTAL CONNECTED CURRENT: 2 A		
												TOTAL ESTIMATED DEMAND CURRENT: 1 A		
NOTES:														

Panelboard: EM-LP-1C														
Location: Supply From: EM-T-1C Mounting: SURFACE Enclosure: TYPE 1					Distribution System: 120/208 Wye Phases: 3 Wires: 4 Modifications:					A.I.C. Rating: 10kAIC Mains Type: MCB Mains Rating: 100 A MCB Rating: 100 A				
Notes	Wiring	Qty. No.	Load Description	Trip	Poles	A	B	C	Poles	Trip	Load Description	Qty. No.	Wiring	Notes
--	--	EK-1	SPARE	20 A	1	0 / 0				1	20 A SPARE	EK-2	--	--
--	--	EK-3	SPARE	20 A	1		0 / 0			1	20 A SPARE	EK-4	--	--
--	--	EK-5	SPARE	20 A	1			0 / 0		1	20 A SPARE	EK-6	--	--
--	--	EK-7	SPARE	20 A	1	0 / 0				1	20 A SPARE	EK-8	--	--
--	--	EK-9	SPARE	20 A	1		0 / 0			1	20 A SPARE	EK-10	--	--
--	--	EK-11	SPARE	20 A	1			0 / 0		1	20 A SPARE	EK-12	--	--
--	--	EK-13	SPARE	20 A	1	0 / 0				1	20 A SPARE	EK-14	--	--
--	--	EK-15	SPARE	20 A	1		0 / 0			1	20 A SPARE	EK-16	--	--
--	--	EK-17	SPARE	20 A	1			0 / 0		1	20 A SPARE	EK-18	--	--
Load Per...					0 VA		0 VA		0 VA					
Load Classification					Connected...		Demand...		Est. Demand		Panel Totals			
											TOTAL CONNECTED LOAD: 0 VA			
											TOTAL ESTIMATED DEMAND: 0 VA			
											TOTAL CONNECTED CURRENT: 0 A			
											TOTAL ESTIMATED DEMAND CURRENT: 0 A			
NOTES:														

Panelboard: EM-LP-3A														
Location: Supply From: EM-T-3A (TRAPEZE) Mounting: SURFACE Enclosure: TYPE 1				Distribution System: 120/208 Wye Phases: 3 Wires: 4 Modifications:					A.I.C. Rating: 10kAIC Mains Type: MCB Mains Rating: 100 A MCB Rating: 100 A					
Notes	Wiring	Qty. No.	Load Description	Trip	Poles	A	B	C	Poles	Trip	Load Description	Qty. No.	Wiring	Notes
--	--	20A	EN1 FSD CORRIDOR-2 A304-2	20 A	1	480 / 500				1	20 A FA DGP-3A	EN-2	20A	--
--	--		EN3 SPARE	20 A	1		0 / 0			1	20 A SPARE	EN-4	--	--
--	--		EN5 SPARE	20 A	1			0 / 0		1	20 A SPARE	EN-6	--	--
--	--		EN7 SPARE	20 A	1	0 / 0				1	20 A SPARE	EN-8	--	--
--	--		EN9 SPARE	20 A	1		0 / 0			1	20 A SPARE	EN-10	--	--
--	--		EN11 SPARE	20 A	1			0 / 0		1	20 A SPARE	EN-12	--	--
--	--		EN13 SPARE	20 A	1	0 / 0				1	20 A SPARE	EN-14	--	--
--	--		EN15 SPARE	20 A	1		0 / 0			1	20 A SPARE	EN-16	--	--
--	--		EN17 SPARE	20 A	1			0 / 0		1	20 A SPARE	EN-18	--	--
Load Per...						980 VA	0 VA	0 VA						
Load Classification				Connected...		Demand...		Est. Demand		Panel Totals				
EQUIPMENT				980 VA		75.00%		752 VA		TOTAL CONNECTED LOAD: 980 VA				
										TOTAL ESTIMATED DEMAND: 755 VA				
										TOTAL CONNECTED CURRENT: 3 A				
										TOTAL ESTIMATED DEMAND CURRENT: 2 A				
NOTES:														

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South Windsor, CT
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Northeast Metropolitan Regional Vocational High School

Wakefield, MA 01880

Panelboard: SB-LPH-LLA														
Location: Supply From: SB-DPH-LLA Mounting: SURFACE Enclosure: TYPE 1			Distribution System: 480/277 Wye Phases: 3 Wires: 4			A.I.C. Rating: 42KAIC Main Type: MLO Main Rating: 200 A MCB Rating:								
Modifications:			LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description			Ckt. No.	Writing	Notes	
Notes	Wiring	Ckt. No.	Trip	Poles										
--	--	SA-1 SPARE	20 A	1	0 / 0			1	20 A	SPARE	SA-2	--	--	
--	--	SA-3 SPARE	20 A	1		0 / 0		1	20 A	SPARE	SA-4	--	--	
--	--	SA-5 SPARE	20 A	1			0 / 0	1	20 A	SPARE	SA-6	--	--	
--	--	SA-7 SPARE	20 A	1	0 / 0			1	20 A	SPARE	SA-8	--	--	
--	--	SA-9 SPARE	20 A	1		0 / 0		1	20 A	SPARE	SA-10	--	--	
--	--	SA-11 SPARE	20 A	1			0 / 0	1	20 A	SPARE	SA-12	--	--	
--	--	SA-13 SPARE	20 A	1	0 / 3912						SA-14 SEE	--	--	
--	--	SA-15 SPARE	20 A	1		0 / 3133			3	50 A	SB-T-LLA	SA-16 ONE	--	
--	--	SA-17 SPARE	20 A	1			0 / 1825				SA-18 LINE	--	--	
Load Per...			3912 VA	3133 VA										
Load Classification			Connected...	Demand...	Est. Demand	Panel Totals								
EQUIPMENT			2711 VA	75.00%	2033 VA	TOTAL CONNECTED LOAD: 1873 VA								
RECEIPT			6160 VA	100.00%	6160 VA	TOTAL ESTIMATED DEMAND: 6163 VA								
						TOTAL CONNECTED CURRENT: 11 A								
						TOTAL ESTIMATED DEMAND CURRENT: 10 A								
NOTES:														

Panelboard: EM-LPH-3A																
Location: Supply From: EM-DPH-LLA Mounting: SURFACE Enclosure: TYPE 1			Distribution System: 480/277 Wye Phases: 3 Wires: 4 Modifications:					A.I.C. Rating: 42KAIC Main Type: MLO Main Rating: 100 A MCB Rating:								
Notes	Wiring	Ckt. No.	Load Description		Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description		Ckt. No.	Writing	Notes
--	--	30A EE-1 LIGHTING	20 A	1	2749 / 1576					1	20 A	LIGHTING	EE-2	30A	--	
--	--	30A EE-3 LIGHTING ELEV MACH ROOM	20 A	1			88 / 85			1	20 A	LIGHTING	EE-4	30A	--	
--	--	EE-5 SPARE	20 A	1				0 / 0		1	20 A	SPARE	EE-6	--	--	
--	--	EE-7 SPARE	20 A	1	0 / 0					1	20 A	SPARE	EE-8	--	--	
--	--	EE-9 SPARE	20 A	1			0 / 0			1	20 A	SPARE	EE-10	--	--	
--	--	EE-11 SPARE	20 A	1				0 / 0		1	20 A	SPARE	EE-12	--	--	
--	--	EE-13 SPARE	20 A	1	0 / 0					1	20 A	SPARE	EE-14	--	--	
--	--	EE-15 SPARE	20 A	1				0 / 0		1	20 A	SPARE	EE-16	--	--	
--	--	EE-17 SPARE	20 A	1					0 / 0	1	20 A	SPARE	EE-18	--	--	
Load Per...						4325 VA	173 VA			0 VA						
Load Classification						Connected...	Demand...	Est. Demand		Panel Totals						
EQUIPMENT						210 VA	125.00%	263 VA		TOTAL CONNECTED LOAD: 1468 VA						
Other						4325 VA	100.00%	4325 VA		TOTAL ESTIMATED DEMAND: 4665 VA						
LIGHTING-EXIT						56 VA	125.00%	70 VA		TOTAL CONNECTED CURRENT: 5 A						
										TOTAL ESTIMATED DEMAND CURRENT: 5 A						
NOTES:																

Panelboard: SB-LP-LLA														
Location: Supply From: SB-T-LLA Mounting: SURFACE Enclosure: TYPE 1					Distribution System: 120/208 Wye Phases: 3 Wires: 4					A.I.C. Rating: 10KAIC Main Type: MCB Main Rating: 100 A MCB Rating: 100 A				
Modifications:														
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	A	B	C	Poles	Trip	Load Description	Ckt. No.	Writing	Notes
--	--	20A SK-1 RECEPT OF C009	20 A	1		360 / 360			1	20 A	RECEPT OF C009	SK-2	20A	--
--	--	20A SK-3 RECEPT OF C009	20 A	1			360 / 360		1	20 A	RECEPT OF C009	SK-4	20A	--
--	--	20A SK-5 RECEPT OF C009	20 A	1				360 / 360	1	20 A	RECEPT OF C009	SK-6	20A	--
--	--	20A SK-7 RECEPT GENERAL SUPPLY-1 C015-1	20 A	1		1000 / 1000			1	20 A	RECEPT GENERAL SUPPLY-1 C015-1	SK-8	20A	--
--	--	20A SK-9 RECEPT GENERAL SUPPLY-1 C015-1	20 A	1			1000 / 1000		1	20 A	RECEPT GENERAL SUPPLY-1 C015-1	SK-10	20A	--
200		SK-11 FCU-1-5	20 A	2				672 / 21	2	20 A	BS-1-2	SK-12	20C	--
200		SK-15 FCU- LOWER LEVEL	20 A	2				52 / 361	2	15 A	AC- LOWER LEVEL	SK-16	15C	--
200		SK-17 BMS GATEWAY, VRF CENTRAL...	20 A	1		500 / 0			1	20 A	SPARE	SK-20	--	--
--	--	SK-21 SPARE	20 A	1			0 / 0		1	20 A	SPARE	SK-22	--	--
--	--	SK-23 SPARE	20 A	1				0 / 0	1	20 A	SPARE	SK-24	--	--
--	--	SK-25 SPARE	20 A	1		0 / 0			1	20 A	SPARE	SK-26	--	--
--	--	SK-27 SPARE	20 A	1			0 / 0		1	20 A	SPARE	SK-28	--	--
--	--	SK-29 SPARE	20 A	1				0 / 0	1	20 A	SPARE	SK-30	--	--
--	--	SK-31 SPARE	20 A	1		0 / 0			1	20 A	SPARE	SK-32	--	--
--	--	SK-33 SPARE	20 A	1			0 / 0		1	20 A	SPARE	SK-34	--	--
--	--	SK-35 SPARE	20 A	1				0 / 0	1	20 A	SPARE	SK-36	--	--
--	--	SK-37 SPARE	20 A	1					1	20 A	SPARE	SK-38	--	--
--	--	SK-39 SPARE	20 A	1		0 / 0			1	20 A	SPARE	SK-40	--	--
--	--	SK-41 SPARE	20 A	1				0 / 0	1	20 A	SPARE	SK-42	--	--
Load Per...				3912 VA	3133 VA			1825 VA						
Load Classification				Connected...	Demand...	Est. Demand			Panel Totals					
EQUIPMENT				2711 VA	75.00%	2033 VA			TOTAL CONNECTED LOAD: 1871 VA					
RECEIPT				6160 VA	100.00%	6160 VA			TOTAL ESTIMATED DEMAND: 6160 VA					
									TOTAL CONNECTED CURRENT: 25 A					
									TOTAL ESTIMATED DEMAND CURRENT: 23 A					
NOTES:														

Panelboard: SB-LPH-1C															
Location: Supply From: SB-DPH-LLA Mounting: SURFACE Enclosure: TYPE 1			Distribution System: 480/277 Wye Phases: 3 Wires: 4 Modifications:					A.I.C. Rating: 42KAIC Main Type: MLO Main Rating: 200 A MCB Rating:							
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description	Ckt. No.	Wiring	Notes	
--	--	SB-1 SPARE	20 A	1		0 / 29604			3	150 A	RTU-2	SB-2			
--	--	SB-3 SPARE	20 A	1			0 / 29604					SB-4	150E		
--	--	SB-5 SPARE	20 A	1								SB-6			
--	--	SB-7				6905 / 9522			3	50 A	VCU-HHB	SB-8	39B		
35E		SB-9 VCU-9B	35 A	3			6905 / 9522					SB-10	50E		
--	--	SB-11						6905 / 9522				SB-12			
50E		SB-15 VCU-HHA	50 A	3		9522 / 0			1	20 A	SPARE	SB-14	--	--	
--	--	SB-17						9522 / 0			1	20 A	SPARE	SB-16	--
--	--	SB-19 SPARE	20 A	1	0 / 0				1	20 A	SPARE	SB-18	--	--	
--	--	SB-21 SPARE	20 A	1		0 / 0			1	20 A	SPARE	SB-20	--	--	
--	--	SB-23 SPARE	20 A	1				0 / 0	1	20 A	SPARE	SB-22	--	--	
--	--	SB-25 SPARE	20 A	1	0 / 0				1	20 A	SPARE	SB-24	--	--	
--	--	SB-27 SPARE	20 A	1		0 / 0			1	20 A	SPARE	SB-26	--	--	
--	--	SB-29 SPARE	20 A	1				0 / 0	1	20 A	SPARE	SB-28	--	--	
--	--	SB-31 SPARE	20 A	1	0 / 0				1	20 A	SPARE	SB-30	--	--	
--	--	SB-33 SPARE	20 A	1			0 / 0		1	20 A	SPARE	SB-32	--	--	
--	--	SB-35 SPARE	20 A	1				0 / 0	1	20 A	SPARE	SB-34	--	--	
--	--	SB-37 SPARE	20 A	1					0	20 A	SPARE	SB-36	--	--	
--	--	SB-39 SPARE	20 A	1	0 / 10176							SB-38	SEE		
--	--	SB-41 SPARE	20 A	1			0 / 8196		3	50 A	SB-T-1C	SB-40	ONE		
--	--		Load Per...			65728 VA	63749 VA					SB-42	LINE		
Load Classification				Connected...			Demand...			Est. Demand			Panel Totals		
EQUIPMENT				17985 VA			75.00%			13488 VA			TOTAL CONNECTED LOAD: 192305 VA		
RECEIPT				12220 VA			90.98%			11160 VA			TOTAL ESTIMATED DEMAND: 146149 VA		
													TOTAL CONNECTED CURRENT: 21 A		
													TOTAL ESTIMATED DEMAND CURRENT: 176 A		
NOTES:															

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Studio 205
South Windsor, CT
06074260 Charles Street
Studio 300
Waltham, MA
02453Planning | Architecture | Interior Design
Tel: 617.984.1700
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Panelboard: SB-LP-2A													
Location:				Distribution System: 120/208 Wye				A.I.C. Rating: 10kAIC					
Supply From: SB-T-2A (TRAPEZE)				Phases: 3				Mains Type: MCB					
Mounting: SURFACE				Wires: 4				Mains Rating: 100 A					
Enclosure: TYPE 1				Modifications:				MCB Rating: 100 A					
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	A	B	C	Poles	Trip	Load Description	Ckt. No.	Wiring Notes
	20C	SL-1	EQUIPMENT CR B233	20A	2	1042 / 878	1042 / 878		2	20 A	FCU	SL-2	20C
	20C	SL-5	FOU 5-2a	20A	2	470 / 54		470 / 54	2	30 A	AC 2-3 IDF A204	SL-8	30C
	20C	SL-7	FOU	20A	2		881 / 1440		2	20 A	FCU	SL-10	20C
	20C	SL-11	BS-41	20A	2	9 / 1500		881 / 1440	1	20 A	ELH-2	SL-12	20A
	20A	SL-15	EUH-7 OFF A104	20A	1		9 / 1500		1	20 A	EUH-2 STAFF LOCKER A105	SL-16	20A
	20C	SL-19	MOTORIZED VEHICULAR GATE	20A	2	250 / 0		1500 / 2400	1	20 A	IMS GATEWAY - VRF CENTRAL...	SL-18	20A
--	20C	SL-21		20A	1		250 / 0		1	20 A	SPARE	SL-20	--
--	20C	SL-23		20A	1			0 / 0	1	20 A	SPARE	SL-22	--
--	20C	SL-25		20A	1	0 / 0			1	20 A	SPARE	SL-26	--
--	20C	SL-27		20A	1		0 / 0		1	20 A	SPARE	SL-28	--
--	20C	SL-29		20A	1			0 / 0	1	20 A	SPARE	SL-30	--
--	20C	SL-31		20A	1	0 / 0			1	20 A	SPARE	SL-32	--
--	20C	SL-33		20A	1		0 / 0		1	20 A	SPARE	SL-34	--
--	20C	SL-35		20A	1			0 / 0	1	20 A	SPARE	SL-36	--
--	20C	SL-37		20A	1	0 / 0			1	20 A	SPARE	SL-38	--
--	20C	SL-39		20A	1		0 / 0		1	20 A	SPARE	SL-40	--
--	20C	SL-41		20A	1			0 / 360	1	20 A	RECEPT DF A204	SL-42	20A
	20A	SL-43	RECEPT DF A204	20A	1	360 / 360			1	20 A	RECEPT DF A204	SL-44	20A
	20A	SL-45	RECEPT DF A204	20A	1		360 / 360		1	20 A	RECEPT DF A204	SL-46	20A
	20A	SL-47	RECEPT DF A204	20A	1			360 / 1000	1	20 A	RECEPT DF A204	SL-48	20A
	20A	SL-49	RECEPT DF A204	20A	1	1000 / 1000			1	20 A	RECEPT DF A204	SL-50	20A
	20A	SL-51	RECEPT DF A204	20A	1		1000 / 360		1	20 A	RECEPT SPACE LR260	SL-52	20A
	20A	SL-53	RECEPT SPACE LR260	20A	1			360 / 360	1	20 A	RECEPT SPACE LR260	SL-54	20A
	20A	SL-55	RECEPT SPACE LR260	20A	1	360 / 360			1	20 A	RECEPT SPACE LR260	SL-56	20A
	20A	SL-57	RECEPT SPACE LR260	20A	1		180 / 1000		1	20 A	RECEPT SPACE LR260	SL-58	20A
	20A	SL-59	RECEPT SPACE LR260	20A	1			1000 / 1000	1	20 A	RECEPT SPACE LR260	SL-60	20A
	20A	SL-61	RECEPT SPACE LR260	20A	1	1000 / 597			2	20 A	FCU 15-9	SL-62	20C
	20A	SL-63	SITE CAMERAS	20A	1		500 / 597					SL-64	
	20A	SL-65	SITE CAMERAS	20A	1			500 / 1610	2	20 A	FCU 15-17	SL-66	20C
	20A	SL-67	SITE CAMERAS	20A	1	500 / 1610						SL-68	
	20C	SL-69	FOU 15-3	20A	2		344 / 28		2	20 A	FCU	SL-70	20C
	20C	SL-71	FOU 15-1	20A	2		166 / 54		2	20 A	FCU 15-14	SL-72	20C
	20C	SL-73	FOU 15-5	20A	2		166 / 54		2	20 A	FCU	SL-74	20C
	20C	SL-75	FOU 15-5	20A	2	21 / 521		21 / 521	2	20 A	FCU	SL-76	20C
	20C	SL-77	FOU 15-2	20A	2				2	30 A	AC-1-2 ELEC - MAIN KITCH A115	SL-78	20C
	20C	SL-79	FOU 15-2	20A	2							SL-80	
	20C	SL-81	FOU 15-2	20A	2							SL-82	30C
	20C	SL-83	FOU 15-2	20A	2							SL-84	
Load Per...				12112 VA				11022 VA				21 / 54	
Load Per...				12112 VA				11022 VA				14280 VA	
Load Classification				Connected...				Demand...				Est. Demand	
EQUIPMENT				25275 VA				75.00%				1866 VA	
RECEPT				12140 VA				91.19%				11070 VA	
												TOTAL CONNECTED LOAD: 27415 VA	
												TOTAL ESTIMATED DEMAND: 3008 VA	
												TOTAL CONNECTED CURRENT: 104 A	
												TOTAL ESTIMATED DEMAND CURRENT: 83 A	
NOTES:													

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Panelboard: LPH-M1													
Location: Supply From: MSB-1A Mounting: SURFACE Enclosure: TYPE 1				Distribution System: 480/277 Vye Phases: 3 Wires: 4				A.I.C. Rating: 42KAIC Mains Type: MLO Mains Rating: 400 A MCB Rating: 400 A					
Modifications:													
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	A	B	C	Poles	Trip	Load Description	Ckt. No.	Wiring Notes
	20E	E1 E3 E5	EUH-4 CORRIDOR C104	20 A	3	3333 / 3333	3333 / 3333	3333 / 3333	3	20 A	EUH-4 CORRIDOR C104	E4 E6 E8	20E
	20E	E9 E11 E13	EUH-10	20 A	3	3333 / 5000	3333 / 5000	3333 / 5000	3	25 A	EUH-1	E10 E12 E14	25E
	25E	E15 E17 E19	EUH-1	25 A	3	5000 / 5000	5000 / 5000	5000 / 5000	3	25 A	EUH-1	E16 E18 E20	25E
	25E	E21 E23 E25	EUH-1	25 A	3	5000 / 3333	5000 / 3333	5000 / 3333	3	20 A	EUH-4 STAIR S7	E22 E24 E26	20E
	25E	E27 E29 E31	EUH-1	25 A	3	5000 / 5000	5000 / 5000	5000 / 5000	3	25 A	EUH-1	E28 E30 E32	25E
	15E	E33 E35 E37	EUH-3 STOR D003J	15 A	3	1000 / 5000	1000 / 5000	1000 / 5000	3	25 A	EUH-1 AUTO TECH D003	E34 E36 E38	25E
	25E	E39 E41 E43	EUH-1 AUTO TECH D003	25 A	3	5000 / 3333	5000 / 3333	5000 / 3333	3	20 A	EUH-4 STAIR S-1	E40 E42 E44	20E
	20E	E45 E47 E49	EUH-4 STAIR S-5	20 A	3	2215 / 3333	2215 / 3333	2215 / 3333	3	20 A	EUH-4 VEST D101	E46 E48 E50	20E
	20E	E51 E53	EUH-4 VEST D101	20 A	3	3333 / 0	3333 / 0	3333 / 0	1	20 A	SPARE	E52 E54	--
--	--	E55 SPARE	20 A	1		0 / 0			1	20 A	SPARE	E56 E58	--
--	--	E57 SPARE	20 A	1			0 / 0		1	20 A	SPARE	E60 E62	--
--	--	E59 SPARE	20 A	1				0 / 0	1	20 A	SPARE	E64 E66	--
--	--	E61 SPARE	20 A	1		0 / 0			1	20 A	SPARE	E68 E70	--
--	--	E63 SPARE	20 A	1			0 / 0		1	20 A	SPARE	E72 E74	--
--	--	E65 SPARE	20 A	1		0 / 0			1	20 A	SPARE	E76 E78	--
--	--	E67 SPARE	20 A	1			0 / 0		1	20 A	SPARE	E80 E82	--
--	--	E69 SPARE	20 A	1				0 / 0	1	20 A	SPARE	E84 E86	--
--	--	E71 SPARE	20 A	1					1	20 A	SPARE	E88 E90	--
--	--	E73 SPARE	20 A	1		0 / 0			1	20 A	SPARE	E92 E94	--
--	--	E75 SPARE	20 A	1			0 / 0		1	20 A	SPARE	E96 E98	--
--	--	E77 SPARE	20 A	1				0 / 0	1	20 A	SPARE	E100 E102	--
--	--	E79 SPARE	20 A	1		0 / 0			1	20 A	SPARE	E104 E106	--
--	--	E81 SPARE	20 A	1			0 / 0		1	20 A	SPARE	E108 E110	--
--	--	E83 SPARE	20 A	1				0 / 0	1	20 A	SPARE	E112 E114	--
Load Per...						66548 VA	66548 VA	66548 VA					
Connected...						19964 VA	75.00%	14973 VA	Panel Totals				
EQUIPMENT									TOTAL CONNECTED LOAD: 19964 VA				
									TOTAL ESTIMATED DEMAND: 14973 VA				
									TOTAL CONNECTED CURRENT: 1497A				
									TOTAL ESTIMATED DEMAND CURRENT: 110 A				
NOTES:													

Panelboard: LPH-M2													
Location: Supply From: MSB-1B Mounting: SURFACE Enclosure: TYPE 1				Distribution System: 480/277 Vye Phases: 3 Wires: 4				A.I.C. Rating: 42KAIC Mains Type: MCB Mains Rating: 400 A MCB Rating: 400A					
Modifications:													
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	A	B	C	Poles	Trip	Load Description	Ckt. No.	Wiring Notes
	Y1 Y3 Y5	FTU-7 THEORY CR A148D	15 A 3			2667 / 8000	2667 / 8000		3	45 A	FTU-8 CULINARY ARTS A148	Y2 Y4 Y6	45E
	Y7							2667 / 8000				Y8	
45E	Y9	FTU-9 CULINARY ARTS A148	45 A 3			8000 / 5000	8000 / 5000	8000 / 5000	3	25 A	EUH-1 CARPENTRY A141	Y10 Y12	25E
	Y13											Y14	
15E	Y15	EUH-3 RECEIVING A110	15 A 3			996 / 996	996 / 996	996 / 996	3	15 A	EUH-3 DRY STOR A103	Y16 Y18	15E
	Y17											Y20	
20E	Y19	FTU-4 STAFF LUNCH RM A111	20 A 3			2667 / 4167	2667 / 4167	2667 / 4167	3	25 A	FTU-3 CAFETERIA A114	Y22 Y24	25E
	Y25											Y26	
25E	Y27	FTU-2 CAFETERIA A114	25 A 3			4167 / 4167	4167 / 4167	4167 / 4167	3	25 A	FTU-1 CAFETERIA A114	Y28 Y30	25E
	Y31											Y32	
25E	Y33	EUH-1 PLUMBING & PIPEFITTING B101	25 A 3			5000 / 5000	5000 / 5000	5000 / 5000	3	25 A	EUH-1 PLUMBING & PIPEFITTING B101	Y34 Y36	25E
	Y37											Y38	
25E	Y39	EUH-1 HVAC TECH B103-1	25 A 3			5000 / 5000	5000 / 5000	5000 / 5000	3	25 A	EUH-1 HVAC TECHNOLOGY 1-B103-1	Y40 Y42	25E
	Y43											Y44	
15E	Y45	EUH-3 FIRE PUMP ROOM B105	15 A 3			1000 / 1000	1000 / 1000	1000 / 1000	3	15 A	EUH-3 PLUMB - WATER SERVICE B106	Y46 Y48	15E
	Y47											Y50	
25E	Y49	EUH-1 ELEC. TECH. B104	25 A 3			5000 / 2667	5000 / 2667	5000 / 2667	3	15 A	FTU-7 COSMETOLOGY B121	Y52 Y54	15E
	Y55											Y56	
25E	Y57	FTU-6 COSMETOLOGY B121	25 A 3			4333 / 4333	4333 / 4333	4333 / 4333	3	30 A	FTU-5 COSMETOLOGY B121	Y58 Y60	30E
	Y59											Y62	
--	Y61	SPARE	20 A 1			0 / 0	0 / 0	0 / 0	1	20 A	SPARE	Y64 Y66	--
--	Y63	SPARE	20 A 1			0 / 0	0 / 0	0 / 0	1	20 A	SPARE	Y68 Y70	--
--	Y65	SPARE	20 A 1			0 / 0	0 / 0	0 / 0	1	20 A	SPARE	Y72 Y74	--
--	Y67	SPARE	20 A 1			0 / 0	0 / 0	0 / 0	1	20 A	SPARE	Y76 Y78	--
--	Y69	SPARE	20 A 1			0 / 0	0 / 0	0 / 0	1	20 A	SPARE	Y80 Y82	--
--	Y71	SPARE	20 A 1			0 / 0	0 / 0	0 / 0	1	20 A	SPARE	Y84 Y86	--
--	Y73	SPARE	20 A 1			0 / 0	0 / 0	0 / 0	1	20 A	SPARE	Y88 Y90	--
--	Y75	SPARE	20 A 1			0 / 0	0 / 0	0 / 0	1	20 A	SPARE	Y92 Y94	--
--	Y77	SPARE	20 A 1			0 / 0	0 / 0	0 / 0	1	20 A	SPARE	Y96 Y98	--
--	Y79	SPARE	20 A 1			0 / 0	0 / 0	0 / 0	1	20 A	SPARE	Y100 Y102	--
--	Y81	SPARE	20 A 1			0 / 0	0 / 0	0 / 0	1	20 A	SPARE	Y104 Y106	--
--	Y83	SPARE	20 A 1			0 / 0	0 / 0	0 / 0	1	20 A	SPARE	Y108 Y110	--
Load Per...													
Load Classification													
EQUIPMENT													

Panelboard: LPH-LLA													
Location: Supply From: DPH-LLA Mounting: SURFACE Enclosure: TYPE 1				Distribution System: 480/277 Vye Phases: 3 Wires: 4				A.I.C. Rating: 22KAIC Mains Type: MLO Mains Rating: 225 A MCB Rating:					
Modifications:													
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description	Ckt. No.	Wiring Notes
--	--	A-1 SPARE	20 A 1			0 / 2656			1	20 A	LIGHTING	A-2 A-4 A-6	--
--	--	A-3 SPARE	20 A 1				0 / 2773		1	20 A	LIGHTING	A-8 A-10 A-12	--
--	--	A-5 SPARE	20 A 1					0 / 2044	1	20 A	LIGHTING	A-14 A-16 A-18	--
--	--	A-7 LIGHTING	20 A 1			2656 / 667			3	20 A	AD-1 -AIR DRYER	A-20 A-22 A-24	20E
20E	A-11	AD-1 -AIR COMPRESSOR	20 A 3				20426 / 667	20426 / 667	1	20 A	LIGHTING	A-26 A-28 A-30	20E
--	--	A-13 SPARE	20 A 1			20426 / 641			1	20 A	LIGHTING	A-32 A-34 A-36	--
--	--	A-15 SPARE	20 A 1				0 / 0		1	20 A	SPARE	A-38 A-40 A-42	--
--	--	A-17 SPARE	20 A 1			0 / 0		0 / 0	1	20 A	SPARE	A-44 A-46 A-48	--
--	--	A-19 SPARE	20 A 1				0 / 0		1	20 A	SPARE	A-50 A-52 A-54	--
--	--	A-21 SPARE	20 A 1					0 / 0	1	20 A	SPARE	A-56 A-58 A-60	--
--	--	A-23 SPARE	20 A 1						1	20 A	SPARE	A-62 A-64 A-66	--
--	--	A-25 SPARE	20 A 1			0 / 0			1	20 A	SPARE	A-68 A-70 A-72	--
--	--	A-27 SPARE	20 A 1				0 / 0		1	20 A	SPARE	A-74 A-76 A-78	--
--	--	A-29 SPARE	20 A 1					0 / 0	1	20 A	SPARE	A-80 A-82 A-84	--
--	--	A-31 SPARE	20 A 1			0 / 0			1	20 A	SPARE	A-86 A-88 A-90	--
--	--	A-33 SPARE	20 A 1				0 / 0		1	20 A	SPARE	A-92 A-94 A-96	--
--	--	A-35 SPARE	20 A 1						1	20 A	SPARE	A-98 A-100 A-102	--
--	--	A-37 SPARE	20 A 1			0 / 18436	0 / 14156		3	175 A	T-LA	A-104 A-106 A-108	--
--	--	A-39 SPARE	20 A 1									A-110 A-112 A-114	--
--	--	A-41 SPARE	20 A 1									A-116 A-118 A-120	--
Load Per...													
Load Classification													
EQUIPMENT													
RECEIPT													

Panelboard: LPH-2B													
Location: Supply From: DPH4LLB Mounting: SURFACE Enclosure: TYPE 1				Distribution System: 480/277 Wye Phases: 3 Wires: 4 Modifications:				A.I.C. Rating: 42kAIC Main Type: MLO Main Rating: 225 A MCB Rating:					
Notes	Ckt. No.	Wiring	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description	Ckt. No.	Wiring Notes
--	30A	G-1	LIGHTING	20A	1	1015 / 1658			1	20 A	LIGHTING	G-2 30A	--
--	30A	G-3	LIGHTING	20A	1		2734 / 1506		1	20 A	LIGHTING	G-4 30A	--
--	30A	G-5	LIGHTING	20A	1			1808 / 2538	1	20 A	LIGHTING	G-6 30A	--
--	30A	G-7	LIGHTING	20A	1	2720 / 2550			1	20 A	LIGHTING	G-8 30A	--
--	30A	G-9	LIGHTING	20A	1		2314 / 1439		1	20 A	LIGHTING	G-10 30A	--
--	30A	G-11	LIGHTING	20A	1			2698 / 2077	1	20 A	LIGHTING	G-12 30A	--
--	30A	G-13	LIGHTING	20A	1	2692 / 2040			1	20 A	LIGHTING	G-14 30A	--
--	30A	G-15	LIGHTING	20A	1		2463 / 2455		1	20 A	LIGHTING	G-16 30A	--
--	30A	G-17	LIGHTING	20A	1			2040 / 1668	1	20 A	LIGHTING	G-18 30A	--
--	30A	G-19	SPARE	20A	1	0 / 0			1	20 A	SPARE	G-20 --	--
--	30A	G-21	SPARE	20A	1		0 / 0		1	20 A	SPARE	G-22 --	--
--	30A	G-23	SPARE	20A	1			0 / 0	1	20 A	SPARE	G-24 --	--
--	30A	G-25	SPARE	20A	1	0 / 0			1	20 A	SPARE	G-26 --	--
--	30A	G-27	SPARE	20A	1		0 / 0		1	20 A	SPARE	G-28 --	--
--	30A	G-29	SPARE	20A	1			0 / 0	1	20 A	SPARE	G-30 --	--
--	30A	G-31	SPARE	20A	1	0 / 0			1	20 A	SPARE	G-32 --	--
--	30A	G-33	SPARE	20A	1		0 / 0		1	20 A	SPARE	G-34 --	--
--	30A	G-35	SPARE	20A	1			0 / 0	1	20 A	SPARE	G-36 --	--
--	30A	G-37	SPARE	20A	1	0 / 35626						G-38 SEE	--
--	30A	G-39	SPARE	20A	1		0 / 35998		3	175 A	1-2B	G-40 ONE	--
--	30A	G-41	SPARE	20A	1			0 / 35412				G-42 ONE	--
Load Per...						51300 VA	48910 VA	48398 VA					
Load Classification						Connected...	Demand...	Est. Demand	Panel Totals				
LIGHTING						126 VA	125.00%	158 VA	TOTAL CONNECTED LOAD: 148248 VA				
Other						38606 VA	100.00%	38606 VA	TOTAL ESTIMATED DEMAND: 101286 VA				
EQUIPMENT						11056 VA	75.00%	8290 VA	TOTAL CONNECTED CURRENT: 176 A				
RECEIPT						96460 VA	55.68%	54230 VA	TOTAL ESTIMATED DEMAND CURRENT: 122 A				
NOTES:													

Panelboard: LPH-3B													
Location: Supply From: DPH-LLB Mounting: SURFACE Enclosure: TYPE 1				Distribution System: 480/277 Wye Phases: 3 Wires: 4 Modifications:				A.I.C. Rating: 42kAIC Main Type: MLO Main Rating: 225 A MCB Rating:					
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description	Ckt. No.	Wiring Notes
--	--	H1	30A L13 LIGHTING	20A	1	2282 / 2271			1	20 A	LIGHTING	H2 30A	--
--	--	H3	30A H13 LIGHTING	20A	1		2455 / 2406		1	20 A	LIGHTING	H4 30A	--
--	--	H5	30A H15 LIGHTING	20A	1			1726 / 1605	1	20 A	LIGHTING	H6 30A	--
--	--	H7	30A H17 LIGHTING	20A	1	2376 / 1143			1	20 A	LIGHTING	H8 30A	--
--	--	H9	30A H19 LIGHTING	20A	1		1864 / 0	0 / 0	1	20 A	SPARE	H10 --	--
--	--	H11	30A H11 SPARE	20A	1				1	20 A	SPARE	H12 --	--
--	--	H13	30A H13 SPARE	20A	1	0 / 0			1	20 A	SPARE	H14 --	--
--	--	H15	30A H15 SPARE	20A	1		0 / 0	0 / 0	1	20 A	SPARE	H16 --	--
--	--	H17	30A H17 SPARE	20A	1			0 / 0	1	20 A	SPARE	H18 --	--
--	--	H19	30A H19 SPARE	20A	1	0 / 0			1	20 A	SPARE	H20 --	--
--	--	H21	30A H21 SPARE	20A	1		0 / 0		1	20 A	SPARE	H22 --	--
--	--	H23	30A H23 SPARE	20A	1			0 / 0	1	20 A	SPARE	H24 --	--
--	--	H25	30A H25 SPARE	20A	1	0 / 0			1	20 A	SPARE	H26 --	--
--	--	H27	30A H27 SPARE	20A	1		0 / 0		1	20 A	SPARE	H28 --	--
--	--	H29	30A H29 SPARE	20A	1			0 / 0	1	20 A	SPARE	H30 --	--
--	--	H31	30A H31 SPARE	20A	1	0 / 0			1	20 A	SPARE	H32 --	--
--	--	H33	30A H33 SPARE	20A	1		0 / 0	0 / 0	1	20 A	SPARE	H34 --	--
--	--	H35	30A H35 SPARE	20A	1							H38 SPARE	--
--	--	H37	30A H37 SPARE	20A	1	0 / 33605						H40 SPARE	--
--	--	H39	30A H39 SPARE	20A	1		0 / 34844					H42 ONE	--
--	--	H41	30A H41 SPARE	20A	1			0 / 31305	3	175 A	1-3B	H42 LINE	--
Load Per...						41677 VA	41670 VA	34638 VA					
Load Classification				Connected...	Demand...	Est. Demand	Panel Totals						
LIGHTING				462 VA	125.00%	578 VA	TOTAL CONNECTED LOAD: 117892 VA						
Other				17867 VA	100.00%	17867 VA	TOTAL ESTIMATED DEMAND: 16177 VA						
EQUIPMENT				12028 VA	75.00%	8719 VA	TOTAL CONNECTED CURRENT: 162 A						
RECEIPT				87828 VA	55.66%	48914 VA	TOTAL ESTIMATED DEMAND CURRENT: 92 A						
NOTES:													

Panelboard: LPH-4B													
Location: Supply From: DPH-LLB Mounting: SURFACE Enclosure: TYPE 1				Distribution System: 480/277 Wye Phases: 3 Wires: 4 Modifications:				A.I.C. Rating: 42kAIC Main Type: MLO Main Rating: 225 A MCB Rating:					
Notes	Ckt. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description	Ckt. No.	Wiring Notes	
--	J01	LIGHTING	20A	1	1950 / 2424			1	20 A	LIGHTING	J2 30A	--	
--	J03	LIGHTING	20A	1		1916 / 1473		1	20 A	LIGHTING	J4 30A	--	
--	J05	LIGHTING	20A	1			1605 / 2631	1	20 A	LIGHTING	J6 30A	--	
--	J07	LIGHTING	20A	1	832 / 2316			1	20 A	LIGHTING	J8 30A	--	
--	J09	LIGHTING	20A	1		1531 / 1075		1	20 A	LIGHTING	J10 30A	--	
--	J11	LIGHTING	20A	1			1870 / 1700	1	20 A	LIGHTING	J12 30A	--	
--	J13				7772 / 0			1	20 A	SPARE	J14 --	--	
AOE	J15	AC-4 SPACE 855	40A	3		7772 / 0			1	20 A	SPARE	J16 --	--
--	J17						7772 / 0	1	20 A	SPARE	J18 --	--	
--	J19	SPARE	20A	1	0 / 0			1	20 A	SPARE	J20 --	--	
--	J21	SPARE	20A	1		0 / 0		1	20 A	SPARE	J22 --	--	
--	J23	SPARE	20A	1			0 / 0	1	20 A	SPARE	J24 --	--	
--	J25	SPARE	20A	1	0 / 0			1	20 A	SPARE	J26 --	--	
--	J27	SPARE	20A	1		0 / 0		1	20 A	SPARE	J28 --	--	
--	J29	SPARE	20A	1			0 / 0	1	20 A	SPARE	J30 --	--	
--	J31	SPARE	20A	1	0 / 0			1	20 A	SPARE	J32 --	--	
--	J33	SPARE	20A	1		0 / 0		1	20 A	SPARE	J34 --	--	
--	J35	SPARE	20A	1			0 / 0	1	20 A	SPARE	J36 --	--	
--	J37	SPARE	20A	1	0 / 35346			3	175 A	1-4B	J38 SEE	--	
--	J39	SPARE	20A	1		0 / 29208					J40 ONE	--	
--	J41	SPARE	20A	1			0 / 24804				J42 LINE	--	
Load Per...					55641 VA	42976 VA	42653 VA						
Load Classification					Connected...	Demand...	Est. Demand	Panel Totals					
LIGHTING					42 VA	125.00%	53 VA	TOTAL CONNECTED LOAD: 13410 VA					
Other					21282 VA	100.00%	21282 VA	TOTAL ESTIMATED DEMAND: 10282 VA					
EQUIPMENT					8558 VA	75.00%	6847 VA	TOTAL CONNECTED CURRENT: 161 A					
RECEIPT					32220 VA	65.92%	21110 VA	TOTAL ESTIMATED DEMAND CURRENT: 124 A					
NOTES:													

Panelboard: LPH-1L													
Location: Supply From: DPH-LLC Mounting: SURFACE Enclosure: TYPE 1				Distribution System: 480/277 Wye Phases: 3 Wires: 4 Modifications:				A.I.C. Rating: 42KAIC Main Type: MLO Main Rating: 225 A MCB Rating:					
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description	Ckt. No.	Wiring Notes
--	--	K-1	SPARE	20 A	1	0 / 1800			3	15 A	DEH-1 CARPENTRY A141	K-4	15E
--	--	K-3	SPARE	20 A	1		0 / 1800	0 / 1800				K-5	
--	--	K-5	SPARE	20 A	1		1800 / 1800					K-6	
15E	K-9	DEH-1 CARPENTRY A141	15 A	3		1800 / 1800	1800 / 1800		3	15 A	DEH-1 CARPENTRY A141	K-10	15E
--	--	K-11	SPARE	20 A	1	0 / 0		1800 / 1800	1	20 A	SPARE	K-12	
--	--	K-15	SPARE	20 A	1		0 / 0		1	20 A	SPARE	K-16	--
--	--	K-17	SPARE	20 A	1		0 / 0	0 / 0	1	20 A	SPARE	K-18	--
--	--	K-19	SPARE	20 A	1	0 / 0			1	20 A	SPARE	K-20	--
--	--	K-21	SPARE	20 A	1		0 / 0		1	20 A	SPARE	K-22	--
--	--	K-23	SPARE	20 A	1			0 / 0	1	20 A	SPARE	K-24	--
--	--	K-25	SPARE	20 A	1	0 / 0			1	20 A	SPARE	K-26	--
--	--	K-27	SPARE	20 A	1		0 / 0		1	20 A	SPARE	K-28	--
--	--	K-29	SPARE	20 A	1			0 / 0	1	20 A	SPARE	K-30	--
--	--	K-31	SPARE	20 A	1	0 / 0			1	20 A	SPARE	K-32	--
--	--	K-33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	K-34	--
--	--	K-35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	K-36	--
--	--	K-37	SPARE	20 A	1	0 / 47554			3	175 A	T-1L	K-38	SEE
--	--	K-39	SPARE	20 A	1		0 / 47194					K-40	ONE
--	--	K-41	SPARE	20 A	1			0 / 40334				K-42	LINE
Load Per:						52854 VA	52894 VA	45734 VA					
Connected...						Demand...		Est. Demand		Panel Totals			
Other						300 VA		100.00%		300 VA		TOTAL CONNECTED LOAD: 151201 VA	
EQUIPMENT						107673 VA		75.00%		76564 VA		TOTAL ESTIMATED DEMAND: 180208 VA	
RECEPT						49082 VA		65.14%		28664 VA		TOTAL CONNECTED CURRENT: 182 A	
												TOTAL ESTIMATED DEMAND CURRENT: 128 A	
NOTES:													

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Panelboard: LPH-1H														
Location:			Distribution System: 480/277 Vye						A.I.C. Rating: 42KAIC					
Supply From: DPH-LLD			Phases: 3						Mains Type: MCB					
Mounting: SURFACE			Wires: 4						Mains Rating: 400 A					
Enclosure: TYPE 1			Modifications:						MCB Rating: 400 A					
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description	Ckt. No.	Wiring	Notes
	20E	S.1 S.3 S.5 S.7	EQUIPMENT HVAC TECHNOLOGY-1 B103-1	20 A	3	1800 / 1800	1800 / 1800	1800 / 1800	3	20 A	EQUIPMENT HVAC TECHNOLOGY-1 B103-1	S.2 S.4 S.6 S.8	20E	
	20E	S.9	DEH-1 PLUMBING & PIPEFITTING B101	20 A	3	1800 / 1800	1800 / 1800	1800 / 1800	3	20 A	DEH-1 PLUMBING & PIPEFITTING B101	S.10 S.12 S.14	20E	
--	--	S.13	SPARE	20 A	1	0 / 0		1800 / 1800	1	20 A	SPARE	S.16	--	--
--	--	S.15	SPARE	20 A	1		0 / 0		1	20 A	SPARE	S.18	--	--
--	--	S.17	SPARE	20 A	1			0 / 0	1	20 A	SPARE	S.20	--	--
		S.19				18000 / 18000	18000 / 18000	18000 / 18000	3	30 A	EW-2 MEZZ. M103	S.22 S.24 S.26 S.28	30F	
		S.21		20 A	1	0 / 0			1	20 A	SPARE	S.30	--	
		S.23	SPARE	20 A	1		0 / 0		1	20 A	SPARE	S.32	--	
		S.25	SPARE	20 A	1			0 / 0	1	20 A	SPARE	S.34	--	
		S.27	SPARE	20 A	1	800 / 0			1	20 A	SPARE	S.36	--	
		S.29	SPARE	20 A	1		800 / 0		1	20 A	SPARE	S.38	--	
		S.31	SITE LTG	20 A	1			0 / 0	1	20 A	SPARE	S.40	--	
		S.33	SITE LTG	20 A	1			0 / 0	1	20 A	SPARE	S.42	--	
		S.35	SPARE	20 A	1	0 / 3960						S.44	SEE	
		S.37	SPARE	20 A	1		0 / 3060		3	350 A	T-1H	S.46	ONE	
		S.39	SPARE	20 A	1			0 / 3060				S.48	LINE	
		S.41	SPARE	20 A	1							S.50		
Load Classification			Load Per...			47960 VA	47960 VA	46280 VA	Panel Totals					
EQUIPMENT			Connected...	Demand...		131200 VA	75.00%	98400 VA	TOTAL CONNECTED LOAD: 141280 VA					
RECEPT			10080 VA	99.62%		10080 VA		10040 VA	TOTAL ESTIMATED DEMAND: 108440 VA					
									TOTAL CONNECTED CURRENT: 170 A					
									TOTAL ESTIMATED DEMAND CURRENT: 130 A					
NOTES:														

Panelboard: LPH-1E														
Location:			Distribution System: 480/277 Vye						A.I.C. Rating: 42KAIC					
Supply From: DPH-LLD			Phases: 3						Mains Type: MCB					
Mounting: SURFACE			Wires: 4						Mains Rating: 225 A					
Enclosure: TYPE 1			Modifications:						MCB Rating: 225 A					
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description	Ckt. No.	Wiring	Notes
--	T-1	SPARE	20 A	1		0 / 0			1	20 A	SPARE	T-2	--	
--	T-3	SPARE	20 A	1			0 / 0		1	20 A	SPARE	T-4	--	
--	T-5	SPARE	20 A	1				0 / 0	1	20 A	SPARE	T-6	--	
--	T-7	SPARE	20 A	1		0 / 0			1	20 A	SPARE	T-8	--	
--	T-9	SPARE	20 A	1			0 / 0		1	20 A	SPARE	T-10	--	
--	T-11	SPARE	20 A	1				0 / 0	1	20 A	SPARE	T-12	--	
20E	T-13	DEH-1 HVAC TECHNOLOGY-1 B103-1	20 A	3	1800 / 1800	1800 / 1800	1800 / 1800	3	20 A	DEH-1 PLUMBING & PIPEFITTING B101	T-16	20E		
	T-17										T-18			
	T-19					4000 / 0					T-20			
20E	T-21	DWP-1 - WATER SERVICE B106	20 A	3		4000 / 0			3	20 A	SPARE	T-22	--	
	T-23							4000 / 0	1	20 A	SPARE	T-24	--	
--	T-25	SPARE	20 A	1		0 / 0			1	20 A	SPARE	T-26	--	
--	T-27	SPARE	20 A	1				4000 / 0	1	20 A	SPARE	T-28	--	
--	T-29	SPARE	20 A	1				0 / 0	1	20 A	SPARE	T-30	--	
--	T-31	SPARE	20 A	1					1	20 A	SPARE	T-32	--	
--	T-33	SPARE	20 A	1		0 / 0			1	20 A	SPARE	T-34	--	
--	T-35	SPARE	20 A	1			0 / 0		1	20 A	SPARE	T-36	--	
--	T-37	SPARE	20 A	1	0 / 17929						T-38	SEE		
--	T-39	SPARE	20 A	1		0 / 21090			3	175 A	T-1E	T-40	ONE	
--	T-41	SPARE	20 A	1				0 / 18865			T-42	LINE		
			Load Per...			25529 VA	26690 VA	24655 VA						
Load Classification			Connected...	Demand...	Est. Demand	Panel Totals								
EQUIPMENT			52764 VA	75.00%	39573 VA	TOTAL CONNECTED LOAD: 17668 VA								
RECEPT			29520 VA	69.29%	17960 VA	TOTAL ESTIMATED DEMAND: 15753 VA								
						TOTAL CONNECTED CURRENT: 85 A								
						TOTAL ESTIMATED DEMAND CURRENT: 69 A								
NOTES:														

Panelboard: LPH-LLB														
Location:			Distribution System: 480/277 Vye						A.I.C. Rating: 42KAIC					
Supply From: DPH-LLB			Phases: 3						Mains Type: MCB					
Mounting: SURFACE			Wires: 4						Mains Rating: 600 A					
Enclosure: TYPE 1			Modifications:						MCB Rating: 600 A					
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	A	B	C	Poles	Trip	Load Description	Ckt. No.	Wiring	Notes
30E	U-1	U-1	EUH-1 METAL FAB C004	30 A	3	5000 / 5000	5000 / 5000		3	30 A	EUH-1 METAL FAB C004	U-2	U-4	30E
--	U-3	SPARE	20 A	1	0 / 53392			5000 / 5000				U-8	15E	
--	U-5	SPARE	20 A	1		0 / 51757		0 / 52980		3	175 A	T-LLB	U-10	ONE LINE
--	U-7	SPARE	20 A	1								U-12	U-14	
--	U-11	SPARE	20 A	1	0 / 1800							U-16	15E	
--	U-13	SPARE	20 A	1			0 / 1800					U-18		
--	U-15	SPARE	20 A	1				0 / 1800				U-20		
--	U-17	SPARE	20 A	1					0 / 1800			U-22		
15E	U-21	DEH-1	15 A	3	1800 / 1800	1800 / 1800	1800 / 1800	1800 / 1800	3	15 A	DEH-1	U-24	U-26	15E
	U-23											U-28		
15E	U-25	DEH-1	15 A	3	1800 / 1800	1800 / 1800	1800 / 1800	1800 / 1800	3	15 A	DEH-1	U-30	U-32	15E
	U-27											U-34		
15E	U-29	DEH-1	15 A	3	1800 / 1800	1800 / 1800	1800 / 1800	1800 / 1800	3	15 A	DEH-1	U-36	U-38	15E
	U-31											U-40		
15E	U-33	DEH-1	15 A	3	1800 / 17992	1800 / 17992	1800 / 17992	1800 / 17992	3	30 A	MF65 - PLASMA CUTTER	U-42	U-44	30E
	U-35											U-46		
	U-37											U-50		
	U-39	DEH-1	15 A	3	1800 / 17992	1800 / 17992	1800 / 17992	1800 / 17992	3	30 A	MF65 - PLASMA CUTTER	U-52	U-54	30E
	U-41											U-56		
Load Per...						96384 VA	94149 VA	1800 / 17992						
								56372 VA						
Load Classification			Connected...	Demand...	Est. Demand	Panel Totals								
Other			360 VA	100.00%	360 VA	TOTAL CONNECTED LOAD: 265926 VA								
EQUIPMENT			190640 VA	75.00%	142867 VA	TOTAL ESTIMATED DEMAND: 190795 VA								
RECEPT			94886 VA	55.27%	52448 VA	TOTAL CONNECTED CURRENT: 244 A								
						TOTAL ESTIMATED DEMAND CURRENT: 236 A								
NOTES:														

Panelboard: LPH-LLC														
Location:					Distribution System: 480/277 Vye					A.I.C. Rating: 42KAIC				
Supply From: DPH-LLD					Phases: 3					Main Term: MCB				
Mounting: SURFACE					Wires: 4					MCB Rating: 225 A				
Enclosure: TYPE 1					Modifications:									
Notes	Wiring	Qty.	Load Description		Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Tripp	Load Description		Qty.	Wiring
			V-1			5000 / 5000					V-2			
	30E	V-3	EH-1 AUTO COLLISION C022	30 A	3		5000 / 5000		3	30 A	EH-1 AUTO COLLISION C022	V-4	30E	
		V-5						5000 / 5000				V-6		
		V-7				5000 / 5000						V-8		
	30E	V-9	EH-1 AUTO COLLISION C022	30 A	3		5000 / 5000		3	30 A	EH-1 AUTO COLLISION C022	V-10	30E	
		V-11						5000 / 5000				V-12		
		V-13				3600 / 3600						V-14		
	30E	V-15	DEH-1	30 A	3		3600 / 3600		3	30 A	DEH-1	V-16	30E	
		V-17						3600 / 3600				V-18		
		V-19				3600 / 3600						V-20		
		V-21	DEH-1	30 A	3		3600 / 3600		3	30 A	DEH-1	V-22		
		V-23						3600 / 3600				V-24		
	80F	V-25	SPRAY BOOTH	80 A	3	167 / 167	167 / 167		3	45 A	POWDER COATING	V-26	45F	
		V-27						167 / 167				V-28		
		V-29				167 / 167						V-30		
	80F	V-31	SPRAY BOOTH	80 A	3	167 / 167	167 / 167		3	100 A	SPRAY BOOTH	V-32	100F	
		V-33						167 / 167				V-34		
--	--	V-35	SPARE	20 A	1	0 / 24730			3	175 A	T-LLC	V-36	SEE	
--	--	V-39	SPARE	20 A	1	0 / 19710	0 / 19710	0 / 19030				V-38	ONE	
--	--	V-41	SPARE	20 A	1			5600 VA				V-40	ONE	
			Load Per...			5885 VA	5477 VA					V-42	LINE	
Load Classification						Connected...	Demand...	Est. Demand	Panel Totals					
Other						40 VA	100.00%	40 VA	TOTAL CONNECTED LOAD: 168730 VA					
EQUIPMENT						148210 VA	75.00%	105058 VA	TOTAL ESTIMATED DEMAND: 124598 VA					
RECEPI						27880 VA	67.83%	18940 VA	TOTAL CONNECTED CURRENT: 203 A					
						TOTAL ESTIMATED DEMAND CURRENT: 159 A								
NOTES:														

Panelboard: LP-1C															
Location: Supply From: T-1C Mounting: SURFACE Enclosure: TYPE 1				Distribution System: 120/208 Vye Phases: 3 Wires: 4 Modifications:				A.I.C. Rating: 10kAIC Maine Type: MCB Maine Rating: 400 A MCB Rating: 400 A							
Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description	Ckt. No.	Wiring	Notes	
	20A	AC1	RECEPT FITNESS D113B	20A	1	180 / 1500			1	20A	ELJ42	AC2	20A		
	20A	AC2	RECEPT FITNESS D113B	20A	1		180 / 180		1	20A	RECEPT FITNESS D113B	AC4	20A		
	20A	AC3	ANJ3 - MEZ2, M03	20A	1	180 / 720		180 / 1260	1	20A	CONV. RECEPT	AC8	20A		
	20A	AC4	RECEPT FITNESS D113B	20A	1			180 / 1260	1	20A	CONV. RECEPT DRESSING C10B & C110	AC8	20A		
	20A	AC5	RECEPT FITNESS D113B	20A	1	180 / 720		180 / 1200	1	20A	HAIR DRYER DRESSING 109	AC10	20A		
	20A	AC11	HAIR DRYER DRESSING 109	20A	1			1200 / 1200	1	20A	HAIR DRYER DRESSING 109	AC12	20A		
	20A	AC13	HAIR DRYER DRESSING 109	20A	1	1200 / 1200		1200 / 1200	1	20A	HAIR DRYER DRESSING 109	AC14	20A		
	20A	AC15	RECEPT DRESSING C110	20A	1		1200 / 1200		1	20A	HAIR DRYER DRESSING 110	AC16	20A		
	20A	AC17	RECEPT DRESSING C110	20A	1			1200 / 1200	1	20A	HAIR DRYER DRESSING 110	AC18	20A		
	20A	AC19	CONV. RECEPT	20A	1	900 / 180			1	20A	RECEPT FITNESS D113B	AC20	20A		
	20A	AC21	RECEPT FITNESS D113B	20A	1		180 / 180		1	20A	RECEPT FITNESS D113B	AC22	20A		
	20A	AC23	RECEPT FITNESS D113B	20A	1			180 / 180	1	20A	RECEPT FITNESS D113B	AC24	20A		
	20A	AC25	RECEPT FITNESS D113B	20A	1	180 / 180			1	20A	RECEPT FITNESS D113B	AC26	20A		
	20A	AC27	RECEPT FITNESS D113B	20A	1		180 / 180		0 / 0	1	20A	RECEPT SPACE 016	AC28	20A	
--	--	AC28	SPARE	20A	1				1	20A	SPARE	AC30	20A	--	
--	--	AC31	SPARE	20A	1	0 / 1976			2	30A	AC 1-7	AC32	30A		
	30C	AC 1-11		30A	2	54 / 1976		54 / 1980		20A	RECEPT - INTERACTIVE PROJECTOR	AC38	20A		
	20A	AC37	RECEPT HEALTH TR D111	20A	1	1440 / 720			1	20A	RECEPT TESTING D105	AC40	20A		
	20A	AC42	RECEPT TESTING D105	20A	1		180 / 180		1	20A	RECEPT EXAM D101	AC42	20A		
	20A	AC41	RECEPT NURSE OFF D104	20A	1			540 / 720	1	20A	RECEPT EXAM D101	AC42	20A		
	20A	AC43	RECEPT AIT. DRK. OFF D117	20A	1	180 / 720			1	20A	RECEPT AIT. DRK. OFF D117	AC44	20A		
	20A	AC45	RECEPT BOYS LOCKER D116	20A	1		900 / 900		1	20A	RECEPT ROOM D128, D116G, D129	AC46	20A		
	20A	AC47	RECEPT ROOM D128, D116G, D129	20A	1			1980 / 1080	1	20A	RECEPT ROOM D128, D116G, D129	AC48	20A		
	20A	AC48	RECEPT ROOM D128, D116G, D129	20A	1	720 / 1080			1	20A	RECEPT ROOM D128, D116G, D129	AC50	20A		
	20A	AC51	RECEPT ROOM C102, C110B, D114	20A	1		1080 / 540		1	20A	RECEPT NURSE TLT D119	AC52	20A		
	20A	AC53	RECEPT EXAM D109	20A	1			360 / 360	1	20A	RECEPT ROOM D220, D159	AC54	20A		
	20A	AC55	RECEPT NURSE OFF D103	20A	1	180 / 180			1	20A	RECEPT	AC56	20A		
	20A	AC57	RECEPT ROOM D102, D103	20A	1		540 / 360		1	20A	RECEPT OFFICIALS D115	AC58	20A		
	20A	AC59	RECEPT EARLY CHILDHOOD EDUCATION	20A	1			900 / 1800	1	20A	RECEPT EARLY CHILDHOOD EDUCATION	AC60	20A		
	20A	AC61	RECEPT ROOM C06C, C10B	20A	1	1620 / 360			1	20A	RECEPT STUB C06C	AC62	20A		
	20A	AC63	RECEPT SPACE L017	20A	1		360 / 360		1	20A	RECEPT SPACE L017	AC64	20A		
	20A	AC65	RECEPT SPACE L017	20A	1			180 / 720	1	20A	RECEPT RELAYED C06F	AC66	20A		
	20A	AC67	RECEPT SPACE L06F	20A	1	540 / 360			1	20A	RECEPT RELAYED C06F	AC68	20A		
--	--	AC69	SPARE	20A	1		0 / 0		1	20A	SPARE	AC70	20A	--	
--	--	AC71	SPARE	20A	1			0 / 0	1	20A	SPARE	AC72	20A	--	
--	--	AC73	SPARE	20A	1	0 / 68			2	20A	EQUIPMENT	AC74	20C		
--	--	AC75	SPARE	20A	1		0 / 68		1	20A	RECEPT WEIGHTS D115	AC76	20A		
	20A	AC79	RECEPT WEIGHTS D115	20A	1	720 / 180			1	20A	DRINKING FOUNTAIN	AC80	20A	GF	
	20A	AC81	RECEPT FITNESS D118	20A	1		720 / 540		1	20A	RECEPT FITNESS D118	AC82	20A		
	20A	AC83	RECEPT RELAYED C06F	20A	1			180 / 180	1	20A	RECEPT TLT D119B	AC84	20A		
		Load Per...				17624 VA	13616 VA	17994 VA							
Load Classification		Connected...		Demand...		Est. Demand		Panel Totals							
EQUIPMENT		6055 VA		75.00%		4561 VA		TOTAL CONNECTED LOAD		14545 VA					
RECEPT		4380 VA		61.53%		2680 VA		TOTAL ESTIMATED DEMAND		12121 VA					
								TOTAL CONNECTED CURRENT		127 A					
								TOTAL ESTIMATED DEMAND CURRENT		87 A					
NOTES:															

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Panelboard: LP-4A-S1																			
Location: Supply From: LP-4A Mounting: SURFACE Enclosure: TYPE 1					Distribution System: 120/208 Wye Phases: 3 Wires: 4					A.I.C. Rating: 10kAIC Main Type: MCB Mains Rating: 200 A MCB Rating: 150 A									
Modifications:																			
Notes	Wiring	Qty. No.	Load Description	Tripp	Poles	A	B	C	Poles	Tripp	Load Description	Qty. No.	Wiring	Notes					
	20A	AK1	ROBOTICS WORKBENCH	20A	1	1440 / 1440			1	20A	ROBOTICS WORKBENCH	AK2	20A						
	20A	AK3	ROBOTICS WORKBENCH	20A	1		1440 / 1440		1	20A	ROBOTICS WORKBENCH	AK4	20A						
	20A	AK5	ROBOTICS WORKBENCH	20A	1			1440 / 1440	1	20A	ROBOTICS WORKBENCH	AK6	20A						
	20A	AK7	ROBOTICS WORKBENCH	20A	1	1440 / 1440			1	20A	ROBOTICS WORKBENCH	AK8	20A						
	20A	AK9	ROBOTICS WORKBENCH	20A	1		1440 / 1440		1	20A	ROBOTICS WORKBENCH	AK10	20A						
	20A	AK11	ROBOTICS WORKBENCH	20A	1			1440 / 1440	1	20A	ROBOTICS WORKBENCH	AK12	20A						
	20A	AK13	FABRICATION LAB WORKBENCH	20A	1	720 / 540			1	20A	ROBOTIC ARMS	AK14	20A						
	20A	AK15	EDUCATIONAL ROBOTS	20A	1		360 / 540		1	20A	INDUSTRIAL ARM ROBOTS	AK16	20A						
	30C	AK17	ROBOT - WATER JET CUTTER	30A	2		3600 / 180		1	20A	BAND SAW	AK18	20A						
	20A	AK19		20A	1			180 / 180	1	20A	SCHOOL SAW	AK20	20A						
	20A	AK21	DRILL PRESS	20A	1			180 / 180	1	20A	BELT SANDER	AK22	20A						
	20A	AK23	GRINDER	20A	1			180 / 180	1	20A	CNC CART	AK24	20A						
	20A	AK25	3D PRINTERS	20A	1	720 / 540			1	20A	3D PRINTERS	AK26	20A						
	20A	AK27	SHOPVAC	20A	1			180 / 180	1	20A	CNC CART	AK28	20A						
	20A	AK29	LAPTOP CHARGING CARTS	20A	1				360 / 360	1	20A	SIMULATOR	AK30	20A					
	20A	AK31	OFFICE	20A	1	360 / 720			1	20A	TRANSERS	AK32	20A						
	20A	AK33	TRAINERS	20A	1		360 / 1800		1	20A	CLASSROOM	AK34	20A						
	20A	AK35	CLASSROOM	20A	1			1440 / 1440	1	20A	CLASSROOM LAPTOPS	AK36	20A						
	20A	AK37	RECEPT - INTERACTIVE PROJECTOR	20A	1	1260 / 900			1	20A	UNDERCLASSMEN LAB	AK38	20A						
	20A	AK39	RECEPT - INTERACTIVE PROJECTOR	20A	1		900 / 360		1	20A	FABRICATION LAB	AK40	20A						
	20A	AK41	RECEPT - INTERACTIVE PROJECTOR	20A	1			1260 / 360	1	20A	STORAGE BAY	AK42	20A						
	20A	AK43	OFFICE RECEPT	20A	1	180 / 540			1	20A	STORAGE BAY	AK44	20A						
	V	AK45	UPPERCLASSMEN LAB	20A	1		1440 / 720		1	20A	UNDERCLASSMEN LAB	AK46	20A						
GF	30C	AK47	WATER JET CUTTER PLTW / ENGINEERING	30A	2			180 / 1080	1	20A	RECEPT PLTW / ENGINEERING B401	AK48	20A						
	20A	AK49	B401	20A	1	180 / 1440			1	20A	RECEPT PLTW / ENGINEERING B401	AK50	20A						
	20A	AK51	CORD REEL PLTW / ENGINEERING B401	20A	1		720 / 720		1	20A	CORD REEL PLTW / ENGINEERING B401	AK52	20A						
	20A	AK53	CORD REEL PLTW / ENGINEERING B401	20A	1			720 / 360	1	20A	RECEPT PLTW / ENGINEERING B401	AK54	20A						
	20A	AK55	RECEPT - INTERACTIVE PROJECTOR	20A	1	1260 / 180			1	20A	LASER CUTTER PLTW / ENGINEERING B401	AK56	20A						
	20A	AK57	LASER CUTTER PLTW / ENGINEERING B401	20A	1		180 / 360		1	20A	3D PRINTER PLTW / ENGINEERING B401	AK58	20A						
	20A	AK59	3D PRINTER PLTW / ENGINEERING B401	20A	1			360 / 180	1	20A	3D PRINTER PLTW / ENGINEERING B401	AK60	20A						
	20A	AK61	WIRE SAW PLTW / ENGINEERING B401	20A	1	180 / 180			1	20A	TABLE SAW PLTW / ENGINEERING B401	AK62	20A						
	20A	AK63	GRINDER PLTW / ENGINEERING B401	20A	1		180 / 180		1	20A	SANDER PLTW / ENGINEERING B401	AK64	20A						
	20A	AK65	DRILL PRESS & SAW PLTW / ENGINEERING	20A	1			360 / 360	1	20A	BAND SAW PLTW / ENGINEERING B401	AK66	20A						
	20A	AK67	RECEPT SPACE 1334	20A	1		180 / 7200		2	20A	RECEPT SPACE 1332	AK68	20C						
	20A	AK69	RECEPT SPACE 1334	20A	1		180 / 7200		1	20A	RECEPT PLTW / ENGINEERING B401	AK70	20A						
	20A	AK71	RECEPT SPACE 1334	20A	1			180 / 360	1	20A	RECEPT PLTW / ENGINEERING B401	AK72	20A						
	20A	AK73	RECEPT SPACE 1334	20A	1	180 / 720			1	20A	RECEPT PLTW / ENGINEERING B401	AK74	20A						
	20A	AK75	RECEPT SPACE 1334	20A	1		180 / 0		1	20A	SPARE	AK76	--						
	20A	AK77	RECEPT SPACE 1334	20A	1			180 / 0	1	20A	SPARE	AK78	--						
	20A	AK79	RECEPT SPACE 1334	20A	1	180 / 0			1	20A	SPARE	AK80	--						
	20A	AK81	RECEPT SPACE 1334	20A	1			0 / 0	1	20A	SPARE	AK82	--						
--		AK83	SPARE	20A	1				1	20A	SPARE	AK84	--						
Load Per...						27800 VA	23000 VA	19400 VA											
Load Classification						Connected...		Est. Demand		Panel Totals									
EQUIPMENT						7200 VA		75.00%		TOTAL CONNECTED LOAD: 70380 VA									
RECEPT						63180 VA		57.91%		TOTAL ESTIMATED DEMAND: 41990 VA									
										TOTAL CONNECTED CURRENT: 119 A									
										TOTAL ESTIMATED DEMAND CURRENT: 117 A									
NOTES:																			

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225 Oakland Road
Studio 205
South Windsor, CT
06074200 Charles Street
Suite 300
Waltham, MA
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Panelboard: LP-4B(2)						Distribution System: 120/208 Vye Phases: 3 Wires: 4 Modifications:				A.I.C. Rating: 10kA/C Main Type: MLO Main Rating: 400 A MCB Rating:					
Location: Supply From: LP-4B Mounting: SURFACE Enclosure: TYPE 1															
Notes	Wiring	Ckt. No.	Load Description	Tripp	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Tripp	Load Description	Ckt. No.	Wiring	Notes	
	30C	AL2.1	ACCU-1.9	30A	2	1976 / 0	1976 / 0		1	20 A	SPARE	AL2.2	--	--	
	30C	AL2.3	ACCU-3.4	30A	2	1498 / 1498		1498 / 1498	2	30 A	ACCU-2.6	AL2.4	--	--	
--	--	AL2.5	SPARE	20 A	1		0 / 0		1	20 A	SPARE	AL2.10	--	--	
--	--	AL2.11	SPARE	20 A	1			0 / 0	1	20 A	SPARE	AL2.12	--	--	
	30C	AL2.13	ACCU-1.8	20 A	2	1581 / 0	1581 / 0		1	20 A	SPARE	AL2.14	--	--	
	30C	AL2.15	ACCU-4.4	20 A	2	1581 / 1581		1581 / 1581	2	20 A	SPARE	AL2.16	--	--	
	30C	AL2.17	ACCU-1.7	20 A	2		1581 / 1498		1	20 A	ACCU-3.5	AL2.18	30C	--	
	30C	AL2.19	ACCU-1.6	20 A	2	1581 / 0		1581 / 1498	2	30 A	ACCU-4.2	AL2.20	30C	--	
	30C	AL2.21	ACCU-1.6	20 A	2				1	20 A	SPARE	AL2.22	30C	--	
	30C	AL2.23	ACCU-1.6	20 A	2	1581 / 0		1581 / 0	1	20 A	SPARE	AL2.26	--	--	
	30C	AL2.25	CU-20	20 A	2		1976 / 0		1	20 A	SPARE	AL2.28	--	--	
--	--	AL2.31	SPARE	20 A	1	0 / 0	0 / 0		1	20 A	SPARE	AL2.30	--	--	
--	--	AL2.33	SPARE	20 A	1				1	20 A	SPARE	AL2.32	--	--	
--	--	AL2.35	SPARE	20 A	1				1	20 A	SPARE	AL2.34	--	--	
--	--	AL2.37	SPARE	20 A	1	0 / 0		0 / 0	1	20 A	SPARE	AL2.36	--	--	
--	--	AL2.39	SPARE	20 A	1	0 / 0	0 / 0		1	20 A	SPARE	AL2.38	--	--	
--	--	AL2.41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	AL2.40	--	--	
			Load Per:			12699 VA	8215 VA	11210 VA	1	20 A	SPARE	AL2.42	--	--	
Load Classification						Connected	Demand	Est. Demand	Panel Totals						
EQUIPMENT						30895 VA	75.00%	24521 VA	TOTAL CONNECTED LOAD: 30895 VA						
									TOTAL ESTIMATED DEMAND: 24521 VA						
									TOTAL CONNECTED CURRENT: 91 A						
									TOTAL ESTIMATED DEMAND CURRENT: 88 A						
NOTES:															

Panelboard: LP-1L															
Location: Supply From: T-1L Mounting: SURFACE Enclosure: TYPE 1			Distribution System: 120/208 Vye Phases: 3 Wires: 4 Modifications:				A.I.C. Rating: 10kA/C Main Type: MCB Main Rating: 400 A MCB Rating: 400 A								
Notes	Wiring	Ckt. No.	Load Description	Tripp	Poles	A	B	C	Poles	Tripp	Load Description	Ckt. No.	Wiring	Notes	
	20A	AM1	RECEPT CARPENTRY A141	20A	1	720 / 720			1	20A	RECEPT CARPENTRY A141	AM2	20A		
	20A	AM3	RECEPT CARPENTRY A141	20A	1		720 / 720		1	20A	RECEPT CARPENTRY A141	AM4	20A		
	20A	AM5	RECEPT CARPENTRY A141	20A	1	720 / 720		720 / 360	1	20A	RECEPT CARPENTRY A141	AM6	20A		
	20A	AM7	RECEPT CARPENTRY A141	20A	1				1	20A	RECEPT CARPENTRY A141	AM8	20A		
	20A	AM9	RECEPT CARPENTRY A141	20A	1		360 / 1857		3	20A	EQUIPMENT CARPENTRY A141	AM10	20A		
	20A	AM11	OTHER PLUMBING & PIPING B101	20A	1	540 / 1857		300 / 1857	3	20A	EQUIPMENT CARPENTRY A141	AM12	20E		
	20A	AM13	SPINDLE SANDER	20A	1							AM14	20E		
	20A	AM15					1618 / 167					AM16			
	20E	AM17	CP07 - INVERTED ROUTER	20A	3		1618 / 167		3	20A	EDGE SANDER	AM18			
	20A	AM19										AM20			
	20A	AM21	DRUM SANDER	20A	1		2000 / 1319		167 / 1319	3	20A	CP09 - JOINTER	AM22	20E	
	20E	AM23	JOINTER	20A	3		167 / 1319					AM24			
	20A	AM25						167 / 360		1	20A	RECEPT CARPENTRY A141	AM26	20A	
	20A	AM27	RECEPT CARPENTRY A141	20A	1			360 / 180	1	20A	RECEPT CARPENTRY A141	AM28	20A		
	20A	AM29	RECEPT CARPENTRY A141	20A	1	180 / 14400				1	20A	RECEPT CARPENTRY A141	AM30	20A	
	20A	AM31	RECEPT CARPENTRY A141	20A	1		180 / 4800			1	20A	RECEPT CARPENTRY A141	AM32	20A	
	20A	AM33	RECEPT CARPENTRY A141	20A	1			180 / 180	1	20A	RECEPT CARPENTRY A141	AM34	20A		
	20A	AM35	RECEPT CARPENTRY A141	20A	1				1	20A	RECEPT CARPENTRY A141	AM36	20A		
	20A	AM37	RECEPT CARPENTRY A141	20A	1	180 / 1319				1	20A	RECEPT CARPENTRY A141	AM38	20A	
	20A	AM39										AM40	20E		
	40E	AM41	CP11 - PLANNER	40A	3		1109 / 1319		1109 / 1319	3	20A	CP09 - JOINTER	AM42	20E	
	20A	AM43										AM44			
	20A	AM45	RECEPT CARPENTRY A141	20A	1	1109 / 2231				3	20A	CP13 - BANDSAW	AM46	20E	
	20A	AM47	RECEPT CARPENTRY A141	20A	1		180 / 2231		180 / 2231	3	20A	CP13 - BANDSAW	AM48	20E	
	20A	AM49	RECEPT CARPENTRY A141	20A	1	180 / 180				1	20A	RECEPT CARPENTRY A141	AM50	20A	
	20A	AM51	RECEPT CARPENTRY A141	20A	1			180 / 180	1	20A	RECEPT CARPENTRY A141	AM52	20A		
	20A	AM53	RECEPT CARPENTRY A141	20A	1			180 / 180	1	20A	RECEPT CARPENTRY A141	AM54	20A		
	20A	AM55	RECEPT CARPENTRY A141	20A	1	180 / 180			1	20A	RECEPT CARPENTRY A141	AM56	20A		
	20A	AM57	RECEPT CARPENTRY A141	20A	1		180 / 180		1	20A	RECEPT CARPENTRY A141	AM58	20A		
	20A	AM59	RECEPT CARPENTRY A141	20A	1			180 / 180	1	20A	RECEPT CARPENTRY A141	AM60	20A		
	20A	AM61	RECEPT CARPENTRY A141	20A	1	1800 / 2000			1	20A	RECEPT CARPENTRY A141	AM62	20A		
	20A	AM63	RECEPT CARPENTRY A141	20A	1		2000 / 2000		1	20A	RECEPT CARPENTRY A141	AM64	20A		
	20A	AM65	RECEPT CARPENTRY A141	20A	1			2000 / 2000	1	20A	RECEPT CARPENTRY A141	AM66	20A		
	20A	AM67	RECEPT CARPENTRY A141	20A	1	2000 / 360			1	20A	RECEPT CARPENTRY A141	AM68	20E		
	20E	AM69					4244 / 3806					AM70			
	20E	AM71	CP05 - TABLE SAW	20A	3	4244 / 3806			4244 / 3806	3	20A	CP08 - PLANNER	AM72	20E	
	20E	AM73										AM74			
	20E	AM75					504 / 4152		504 / 4152	3	20A	CP10 - OSCILLATING UNIVERSAL EDGE SANDER	AM76		
	20E	AM77	CP01 - DRILL PRESS	20A	3		504 / 4152			3	20A		AM78		
	20C	AM79				504 / 4152						AM80			
	20C	AM81	RECEPT CARPENTRY A141	20A	2		1664 / 8996		1664 / 8996	2	20A	CP12 - LARGE CNC	AM82	20C	
		AM83										AM84			
Load Per...						47554 VA	47194 VA	40334 VA	Panel Totals						
Load Classification						Connected...	Demanded...	Est. Demanded	Panel Totals						
Other						300 VA	100.00%	300 VA	TOTAL CONNECTED LOAD: 150801 VA						
EQUIPMENT						86474 VA	75.00%	84104 VA	TOTAL ESTIMATED DEMAND: 84606 VA						
RECEPT						49308 VA	60.44%	29604 VA	TOTAL CONNECTED CURRENT: 379 A						
									TOTAL ESTIMATED DEMAND CURRENT: 261 A						
NOTES:															

Panelboard: LP-1D														
Location: Supply From: T-1D Mounting: SURFACE Enclosure: TYPE 1			Distribution System: 120/208 Vye Phases: 3 Wires: 4 Modifications:					A.I.C. Rating: 10kA/C Main Type: MCB Main Rating: 400 A MCB Rating: 700 A						
Notes	Wiring	Ckt. No.	Load Description	Tripp	Poles	A	B	C	Poles	Tripp	Load Description	Ckt. No.	Wiring	Notes
	20A	AN1	RECEPT PLUMBING & PIPING B101	20A	1	720 / 720			1	20A	RECEPT PLUMBING & PIPING B101	AN2	20A	--
	20A	AN3	RECEPT PLUMBING & PIPING B101	20A	1		720 / 720		1	20A	RECEPT PLUMBING & PIPING B101	AN4	20A	--
	20A	AN5	BANDSAW	20A	1			180 / 360	1	20A	FUME EXTRACTOR	AN6	20A	--
	20A	AN7	RECEPT TOOL CRIB B101H	20A	1	180 / 360			1	20A	RECEPT TOOL CRIB B101H	AN8	20A	--
	20A	AN9	RECEPT TOOL CRIB B101H	20A	1		360 / 1080		1	20A	RECEPT RELATED CR A14C	AN10	20A	--
	20A	AN11	RECEPT RELATED CR A14C	20A	1			1260 / 720	1	20A	RECEPT ROOM B101A, B101B	AN12	20A	--
	20A	AN13	RECEPT ROOM B101C, B101D	20A	1	360 / 1260			1	20A	RECEPT RELATED CR B101E	AN14	20A	--
	20A	AN15	RECEPT - INTERACTIVE FLAT PANEL	20A	1		900 / 720		1	20A	RECEPT RELATED CR B101E	AN16	20A	--
	20A	AN17	RECEPT SPACE LQ06	20A	1			900 / 540	1	20A	RECEPT ROOM LQ20, B101F	AN18	20A	--
	20A	AN19	RECEPT ROOM LQ20, B101F	20A	1	540 / 720			1	20A	RECEPT PLUMBING & PIPING B101	AN20	20A	--
	20A	AN21	RECEPT PLUMBING & PIPING B101	20A	1		1080 / 720		1	20A	RECEPT PLUMBING & PIPING B101	AN22	20A	--
	20A	AN23	PIPE THREADER	20A	1			180 / 180	1	20A	PIPE THREADER	AN24	20A	--
	20A	AN25	RECEPT PLUMBING & PIPING B101	20A	1	720 / 720			1	20A	RECEPT PLUMBING & PIPING B101	AN26	20A	--
	20A	AN27	RECEPT PLUMBING & PIPING B101	20A	1		720 / 720		1	20A	RECEPT PLUMBING & PIPING B101	AN28	20A	--
	20A	AN29	RECEPT PLUMBING & PIPING B101	20A	1			720 / 540	1	20A	RECEPT PLUMBING & PIPING B101	AN30	20A	--
	20A	AN31	RECEPT PLUMBING & PIPING B101	20A	1	540 / 900			1	20A	RECEPT PLUMBING & PIPING B101	AN32	20A	--
	20A	AN33	RECEPT PLUMBING & PIPING B101	20A	1		720 / 720		1	20A	RECEPT PLUMBING & PIPING B101	AN34	20A	--
	20A	AN35	RECEPT PLUMBING & PIPING B101	20A	1			540 / 180	1	20A	RECEPT HVAC TECHNOLOGY 1-B1031	AN36	20A	--
	20A	AN37	RECEPT TOOL CRIB B101G	20A	1	180 / 180			1	20A	RECEPT RESTAURANT B113	AN38	20A	--
	20A	AN39	RECEPT TOOL CRIB B101H	20A	1		180 / 540		1	20A	RECEPT	AN40	20A	--
	20A	AN41	RECEPT - INTERACTIVE FLAT PANEL	20A	1			180 / 720	1	20A	RECEPT	AN42	20A	--
	20A	AN43	LIGHTING	20A	1	460 / 0			1	20A	SPARE	AN44	--	--
--		AN45	SPARE	20A	1		0 / 0		1	20A	SPARE	AN46	--	--
--		AN47	SPARE	20A	1		0 / 0	0 / 0	1	20A	SPARE	AN48	--	--
--		AN49	SPARE	20A	1	0 / 0			1	20A	SPARE	AN50	--	--
--		AN51	SPARE	20A	1		0 / 0		1	20A	SPARE	AN52	--	--
--		AN53	SPARE	20A	1		0 / 0	0 / 0	1	20A	SPARE	AN54	--	--
--		AN55	SPARE	20A	1	0 / 0			1	20A	SPARE	AN56	--	--
--		AN57	SPARE	20A	1		0 / 0		1	20A	SPARE	AN58	--	--
--		AN59	SPARE	20A	1			0 / 0	1	20A	SPARE	AN60	--	--
--		AN61	SPARE	20A	1	0 / 0			1	20A	SPARE	AN62	--	--
--		AN63	SPARE	20A	1		0 / 0	0 / 0	1	20A	SPARE	AN64	--	--
--		AN65	SPARE	20A	1			0 / 0	1	20A	SPARE	AN66	--	--
--		AN67	SPARE	20A	1	0 / 0			1	20A	SPARE	AN68	--	--
--		AN69	SPARE	20A	1		0 / 0	0 / 0	1	20A	SPARE	AN70	--	--
--		AN71	SPARE	20A	1			0 / 0	1	20A	SPARE	AN72	--	--
--		AN73	SPARE	20A	1	0 / 0			1	20A	SPARE	AN74	--	--
--		AN75	SPARE	20A	1			0 / 0	1	20A	SPARE	AN76	--	--
--		AN77	SPARE	20A	1	0 / 0		0 / 0	1	20A	SPARE	AN78	--	--
--		AN79	SPARE	20A	1	0 / 0		0 / 0	1	20A	SPARE	AN80	--	--
--		AN81	SPARE	20A	1			0 / 0	1	20A	SPARE	AN82	--	--
--		AN83	SPARE	20A	1			0 / 0	1	20A	SPARE	AN84	--	--
Load Per...						8569 VA	9600 VA	7200 VA						
Load Classification		Connected...		Demand...		Est. Demand		Panel Totals						
RECEPT		469 VA		100.00%		469 VA		TOTAL CONNECTED LOAD: 26669 VA						
		25200 VA		66.94%		17800 VA		TOTAL ESTIMATED DEMAND: 16895 VA						
								TOTAL CONNECTED CURRENT: 71 A						
								TOTAL ESTIMATED DEMAND CURRENT: 50 A						
NOTES:														

Panelboard: LP-3C														
Location: Supply From: T-3C Mounting: SURFACE Enclosure: TYPE 1			(TRAPEZE)			Distribution System: 120/208 Wye Phases: 3 Wires: 4 Modifications:			A.I.C. Rating: 10kAIC Mains Type: MLO Mains Rating: 100 A MCB Rating:					
Notes	Wiring	Qty.	Load Description	Tripp	Poles	A	B	C	Poles	Tripp	Load Description	Qty.	Wiring	Notes
	CTL	20A	AS.1 RECEPT - INTERACTIVE PROJECTOR	20A	1	540 / 180			1	20A	RECEPT SCI LAB A320	AS.2	20A	
		20A	AS.3 RECEPT SCI LAB A320	20A	1		180 / 180		1	20A	RECEPT SCI LAB A320	AS.4	20A	
		20A	AS.5 RECEPT SCI LAB A320	20A	1			180 / 180	1	20A	RECEPT SCI LAB A320	AS.6	20A	
		20A	AS.7 RECEPT SCI LAB A320	20A	1	180 / 180			1	20A	RECEPT SCI LAB A320	AS.8	20A	
		20A	AS.9 RECEPT SCI LAB A320	20A	1		180 / 180		1	20A	RECEPT SCI LAB A320	AS.10	20A	
		20A	AS.11 RECEPT SCI LAB A320	20A	1			180 / 360	1	20A	RECEPT SCI LAB A316	AS.12	20A	
	CTL	20A	AS.13 RECEPT - INTERACTIVE PROJECTOR	20A	1	720 / 360			1	20A	RECEPT SCI LAB A316	AS.14	20A	
		20A	AS.15 RECEPT REF. SCI PREP A319	20A	1		180 / 180		1	20A	RECEPT REF. SCI PREP A319	AS.16	20A	
		20A	AS.17 RECEPT REF. SCI PREP A319	20A	1			180 / 540	1	20A	RECEPT REF. SCI PREP A319	AS.18	20A	
		20A	AS.19 RECEPT SCI LAB A318	20A	1	180 / 180			1	20A	RECEPT SCI LAB A318	AS.20	20A	
		20A	AS.21 RECEPT SCI LAB A318	20A	1		180 / 180		1	20A	RECEPT SCI LAB A318	AS.22	20A	
		20A	AS.23 RECEPT SCI LAB A318	20A	1			180 / 180	1	20A	RECEPT SCI LAB A318	AS.24	20A	
		20A	AS.25 RECEPT SCI LAB A318	20A	1	180 / 180			1	20A	RECEPT SCI LAB A318	AS.26	20A	
		20A	AS.27 RECEPT SCI LAB A318	20A	1		180 / 180		1	20A	RECEPT SCI LAB A318	AS.28	20A	
--	--	AS.29 SPARE	20A	1				0 / 0	1	20A	SPARE	AS.30	--	--
--	--	AS.31 SPARE	20A	1		0 / 0			1	20A	SPARE	AS.32	--	--
--	--	AS.33 SPARE	20A	1			0 / 0		1	20A	SPARE	AS.34	--	--
--	--	AS.35 SPARE	20A	1				0 / 0	1	20A	SPARE	AS.36	--	--
--	--	AS.37 SPARE	20A	1		0 / 0			1	20A	SPARE	AS.38	--	--
--	--	AS.39 SPARE	20A	1			0 / 0		1	20A	SPARE	AS.40	--	--
--	--	AS.41 SPARE	20A	1				0 / 0	1	20A	SPARE	AS.42	--	--
Load Per...:						2880 VA	1800 VA	1800 VA						
Load Classification			Connected...			Demand...			Est. Demand			Panel Totals		
RECEPT			6660 VA			100.00%			6660 VA			TOTAL CONNECTED LOAD: 6660 VA		
												TOTAL ESTIMATED DEMAND: 6660 VA		
												TOTAL CONNECTED CURRENT: 18 A		
												TOTAL ESTIMATED DEMAND CURRENT: 18 A		
NOTES:														

Panelboard: LP-2D														
Location: Supply From: T-2D Mounting: SURFACE Enclosure: TYPE 1					Distribution System: 120/208 Wye Phases: 3 Wires: 4 Modifications:					A.I.C. Rating: 10kAIC Mains Type: MCB Mains Rating: 225 A MCB Rating: 225 A				
Notes	Wiring	Qty.	Load Description	Tripp	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Tripp	Load Description	Qty.	Wiring	Notes
	20A	AT.1	CONV. RECEPT	20A	1	900 / 900			1	20A	RECEPT GYMNASIUM 1 D202-1	AT.2	20A	
15A	AT.3	F-17 3RD FLOOR AREA C	15A	1			862 / 180		1	20A	MAIN/CONV. RECEPT - 3RD FLOOR AREA C	AT.4	20A	
--	--	AT.5	SPARE	20A	1			0 / 360	1	20A	MAIN/CONV. RECEPT FOR 4TH 3RD FLOOR	AT.6	20A	
--	--	AT.7	SPARE	20A	1	0 / 666			1	20A	F-20 3RD FLOOR AREA C	AT.8	20A	
--	--	AT.9	SPARE	20A	1			0 / 0	1	20A	SPARE	AT.10	--	--
--	--	AT.11	SPARE	20A	1			0 / 0	1	20A	SPARE	AT.12	--	--
30C	AT.13	ACCU 01 ROOF LEVEL	30A	2	1591 / 1591				2	30A	ACCU 113 ROOF LEVEL	AT.14	30C	
--	--	AT.15					1591 / 1591					AT.16		
--	--	AT.17	SPARE	20A	1			0 / 1591	2	30A	ACCU 112 ROOF LEVEL	AT.18	30C	
--	--	AT.19	SPARE	20A	1	0 / 1591			1	20A	SPARE	AT.20	30C	
20A	AT.21	ROOF MAINT. RECEPT	20A	1			360 / 900		1	20A	RECEPT GYMNASIUM 1 D202-1	AT.22	20A	
20A	AT.23	RECEPT GYMNASIUM 1 D202-1	20A	1				900 / 720	1	20A	RECEPT GYMNASIUM 1 D202-1	AT.24	20A	
--	--	AT.25	SPARE	20A	1	0 / 0			1	20A	SPARE	AT.26	--	--
--	--	AT.27	SPARE	20A	1		0 / 0		1	20A	SPARE	AT.28	--	--
--	--	AT.29	SPARE	20A	1			0 / 0	1	20A	SPARE	AT.30	--	--
--	--	AT.31	SPARE	20A	1	0 / 0			1	20A	SPARE	AT.32	--	--
--	--	AT.33	SPARE	20A	1		0 / 0		1	20A	SPARE	AT.34	--	--
--	--	AT.35	SPARE	20A	1			0 / 0	1	20A	SPARE	AT.36	--	--
--	--	AT.37	SPARE	20A	1			0 / 0	1	20A	SPARE	AT.38	--	--
--	--	AT.39	SPARE	20A	1			0 / 0	1	20A	SPARE	AT.40	--	--
--	--	AT.41	SPARE	20A	1			0 / 0	1	20A	SPARE	AT.42	--	--
Load Per...				7269 VA		5484 VA		5571 VA						
Load Classification				Connected...		Demand...		Est. Demand		Panel Totals				
EQUIPMENT				12004 VA		75.00%		9203 VA		TOTAL CONNECTED LOAD: 18324 VA				
RECEPT				4320 VA		100.00%		4320 VA		TOTAL ESTIMATED DEMAND: 18324 VA				
										TOTAL CONNECTED CURRENT: 46 A				
										TOTAL ESTIMATED DEMAND CURRENT: 37 A				
NOTES:														

Panelboard: LP-4C														
Location: Supply From: T-4C Mounting: SURFACE Enclosure: TYPE 1				Distribution System: 120/208 Wye Phases: 3 Wires: 4 Modifications:				A.I.C. Rating: 10kAIC Mains Type: MCB Mains Rating: 100 A MCB Rating: 100 A						
Notes	Wiring	Qty.	Load Description	Tripp	Poles	A	B	C	Poles	Tripp	Load Description	Qty.	Wiring	Notes
	20A	AU.1	RECEPT SCI LAB A427	20A	1	360 / 720			1	20A	RECEPT - INTERACTIVE PROJECTOR	AU.2	20A	CTL
	20A	AU.3	RECEPT SCI LAB A427	20A	1		360 / 360		1	20A	RECEPT SCI LAB A427	AU.4	20A	
	20A	AU.5	RECEPT SCI LAB A427	20A	1			180 / 180	1	20A	RECEPT SCI LAB A427	AU.6	20A	
	20A	AU.7	RECEPT SCI LAB A427	20A	1	180 / 180			1	20A	RECEPT SCI LAB A427	AU.8	20A	
	20A	AU.9	RECEPT SCI LAB A427	20A	1		180 / 180		1	20A	RECEPT SCI LAB A427	AU.10	20A	
	20A	AU.11	RECEPT SCI LAB A427	20A	1			180 / 180	1	20A	RECEPT SCI LAB A427	AU.12	20A	
	20A	AU.13	RECEPT SCI LAB A427	20A	1	180 / 180			1	20A	RECEPT REF. SCI PREP A428	AU.14	20A	GF
	20A	AU.15	RECEPT SCI PREP A428	20A	1		180 / 180		1	20A	RECEPT SCI PREP A428	AU.16	20A	
	20A	AU.17	RECEPT SCI PREP A428	20A	1			180 / 180	1	20A	RECEPT SCI PREP A428	AU.18	20A	
	20A	AU.19	RECEPT SCI LAB A428	20A	1	180 / 180			1	20A	RECEPT SCI LAB A428	AU.20	20A	
	20A	AU.21	RECEPT SCI LAB A428	20A	1		180 / 180		1	20A	RECEPT SCI LAB A428	AU.22	20A	
	20A	AU.23	RECEPT SCI LAB A428	20A	1			180 / 180	1	20A	RECEPT SCI LAB A428	AU.24	20A	
	20A	AU.25	RECEPT SCI LAB A428	20A	1	180 / 180			1	20A	RECEPT SCI LAB A428	AU.26	20A	
	20A	AU.27	RECEPT SCI LAB A428	20A	1		180 / 180		1	20A	RECEPT SCI LAB A428	AU.28	20A	
	20A	AU.29	RECEPT SCI LAB A428	20A	1			360 / 720	1	20A	RECEPT - INTERACTIVE PROJECTOR	AU.30	20A	CTL
--	--	AU.31	SPARE	20A	1	180 / 0			1	20A	SPARE	AU.32	--	--
--	--	AU.33	SPARE	20A	1		0 / 0		1	20A	SPARE	AU.34	--	--
--	--	AU.35	SPARE	20A	1			0 / 0	1	20A	SPARE	AU.36	--	--
--	--	AU.37	SPARE	20A	1	0 / 0			1	20A	SPARE	AU.38	--	--
--	--	AU.39	SPARE	20A	1			0 / 0	1	20A	SPARE	AU.40	--	--
--	--	AU.41	SPARE	20A	1			0 / 0	1	20A	SPARE	AU.42	--	--
Load Per--			2700 VA			2160 VA			2520 VA					
Load Classification			Connected--			Demand--			Est. Demand			Panel Totals		
RECEPT			7380 VA			100.00%			7380 VA			TOTAL CONNECTED LOAD: 7380 VA		
												TOTAL ESTIMATED DEMAND: 7380 VA		
												TOTAL CONNECTED CURRENT: 20 A		
												TOTAL ESTIMATED DEMAND CURRENT: 20 A		
NOTES:														

Panelboard: LP-4D						Distribution System: 120/208 Wye				A.I.C. Rating: 10kAIC				
Location:						Phases: 3				Mains Type: MCB				
Supply From: T-4D						Wires: 4				Mains Rating: 225 A				
Mounting: SURFACE						Modifications:				MCB Rating: 225 A				
Enclosure: TYPE 1														
Notes	Wiring	Qty.	Load Description	Tripp	Poles	A	B	C	Poles	Tripp	Load Description	Qty.	Wiring	Notes
	20A	AV.1	FLOOR BOX - THEORY A402A	20A	1	1080 / 1080			1		20A FLOOR BOX - THEORY A402A	A12	20A	
	20A	AV.3	FLOOR BOX - THEORY A402A	20A	1		1080 / 1440		1		20A FLOOR BOX - THEORY A402A	A14	20A	
	20A	AV.5	RECEPT - INTERACTIVE PROJECTOR	20A	1			1620 / 1260	1		20A RECEPT - INTERACTIVE PROJECTOR	A16	20A	
	20A	AV.7	MODEL TRIMMER - MODEL MAKING A402B	20A	1	180 / 180			1		20A MODEL TRIMMER - MODEL MAKING A402B	A18	20A	
	20A	AV.9	POUSHING LAUNGE - MODEL MAKING A402B	20A	1		360 / 180		1		20A DUST COLLECTOR - MODEL MAKING A402B	A19	20A	
	20A	AV.11	RECEPT SPACE 878	20A	1			180 / 180	1		20A AIR PURIFIER - MODEL MAKING A402B	A12	20A	
	20A	AV.13	RECEPT SPACE 1123	20A	1	360 / 360			1		20A DENTAL CHAIR - DENTAL ASSITING A402	A17A	20A	
	20A	AV.15	DENTAL CHAIR - DENTAL ASSITING A402	20A	1		360 / 360		1		20A DENTAL CHAIR - DENTAL ASSITING A402	A18	20A	
	20A	AV.17	DENTAL CHAIR - DENTAL ASSITING A402	20A	1			360 / 360	1		20A DENTAL CHAIR - DENTAL ASSITING A402	A19	20A	
	20A	AV.19	DENTAL CHAIR - DENTAL ASSITING A402	20A	1	360 / 360			1		20A DENTAL CHAIR - DENTAL ASSITING A402	A20A	20A	
	20A	AV.21	DENTAL CHAIR - DENTAL ASSITING A402	20A	1		360 / 720		1		20A CORD REEL - DENTAL ASSITING A402	A22	20A	
	20A	AV.23	CORD REEL - DENTAL ASSITING A402	20A	1			720 / 720	1		20A CORD REEL - DENTAL ASSITING A402	A23A	20A	
	20A	AV.25	RECEPT SPACE 1149	20A	1	720 / 720			1		20A CORD REEL - DENTAL ASSITING A402	A24	20A	
	20A	AV.27	RECEPT - DENTAL ASSITING A402	20A	1		720 / 360		1		20A INTERACTIVE PAPER	A26	20A	
	20A	AV.29	RECEPT SPACE 1149	20A	1			360 / 900	2		20A INSTRUMENT WASHER - STER. A402B	A28	20A	GF
	20A	AV.31	CASSETTE AUTOClave - STER. A402B	20A	1	180 / 900					20A SMALL AUTOClave - STER. A402B	A29	20A	
	20A	AV.33	FULLSIZE AUTOClave - STER. A402B	20A	1		180 / 180	180 / 90	1		20A HANDPEK CLEANERULU - STER. A402B	A30	20A	GF
	20A	AV.35	ULTRASONIC CLEANER - STER. A402B	20A	1			180 / 90	1		20A RECEPT - OFF. A402B	A32A	20A	
	20A	AV.37	RECEPT - STER. A402B	20A	1	360 / 90			2		20A RECEPT - OFF. A402B	A34	20A	
	20A	AV.39	RECEPT - OFF. A402B	20A	1		720 / 540		1		20A PANORAMIC XRAY - XRAY A402J	A36	20A	
	20A	AV.41	XRAY CHAIR - XRAY A402J	20A	1			360 / 1664	2		20A PANORAMIC XRAY - XRAY A402J	A38	20C	
	20A	AV.43	PANORAMIC XRAY - XRAY A402J	2	1	180 / 1664					20A	AV.44	20A	
	20A	AV.45	RECEPT SPACE 878	20A	1		540 / 900		1		20A INSTRUMENT WASHER - STER. A402B	A46	20A	
	20A	AV.47	CASSETTE AUTOClave - STER. A402B	20A	1			180 / 900	2		20A SMALL AUTOClave - STER. A402B	A48	20C	GF
	20A	AV.49	FULLSIZE AUTOClave - STER. A402B	20A	1		180 / 180		1		20A HANDPEK CLEANERULU - STER. A402B	A49	20C	
	20A	AV.51	ULTRASONIC CLEANER - STER. A402B	20A	1			180 / 90	2		20A RECEPT - STER. A402B	A50	20A	GF
	20A	AV.53	RECEPT - STER. A402B	20A	1			360 / 90	1		20A RECEPT - STER. A402B	A51	20A	
	20A	AV.55	RECEPT - STER. A402B	20A	1	360 / 360			1		20A DENTAL CHAIR - DENTAL ASSITING A402	A55A	20A	
	20A	AV.57	DENTAL CHAIR - DENTAL ASSITING A402	20A	1		360 / 360		1		20A DENTAL CHAIR - DENTAL ASSITING A402	A56A	20A	
	20A	AV.59	DENTAL CHAIR - DENTAL ASSITING A402	20A	1			360 / 360	1		20A DENTAL CHAIR - DENTAL ASSITING A402	A57A	20A	
	20A	AV.61	DENTAL CHAIR - DENTAL ASSITING A402	20A	1	360 / 360			1		20A CORD REEL - DENTAL ASSITING A402	A58A	20A	
	20A	AV.63	DENTAL CHAIR - DENTAL ASSITING A402	20A	1		360 / 360		1		20A DENTAL CHAIR - DENTAL ASSITING A402	A59A	20A	
	20A	AV.65	CORD REEL - DENTAL ASSITING A402	20A	1			720 / 720	1		20A CORD REEL - DENTAL ASSITING A402	A60A	20A	
	20A	AV.67	CORD REEL - DENTAL ASSITING A402	20A	1	720 / 360			1		20A CORD REEL - DENTAL ASSITING A402	A61A	20A	
	20A	AV.69	RECEPT - DENTAL ASSITING A402	20A	1		720 / 720		1		20A RECEPT - DENTAL ASSITING A402	A70	20A	
	20A	AV.71	RECEPT - DENTAL ASSITING A402	20A	1			360 / 360	1		20A INTERACTIVE PAPER	A72	20A	
	20A	AV.73	RECEPT SPACE 886	20A	1	360 / 180			1		20A RECEPT SPACE 1149	A74	20A	
	20A	AV.75	SPARE	20A	1		0 / 180		1		20A RECEPT SPACE 1193	A76	20A	
	20A	AV.77	RECEPT CUST 841	20A	1			1800 / 2399	1		20A VAC-2	A78	20E	
SEE AV.79	20A			20A	3	3478 / 2399			3		20A SPARE	A80	20E	
ONE A801 - A803	20A			20A	3	3478 / 2399			3			A82	20E	
LINE A803	20A			20A								A84	20E	-
				Load Per...		31089 VA	27325 VA	27819 VA						
				Connected...		35264 VA	75.00%	26448 VA						
				Demanded...		50968 VA	59.81%	3584 VA						
				Est. Demand										
				Panel Totals										
				Load Classification										
				EQUIPMENT										
				RECEPT										

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Wakefield, MA 01880

Panelboard: LP-2C														
Location: Supply From: T-2C Mounting: SURFACE Enclosure: TYPE 1				Distribution System: 120/208 Wye Phases: 3 Wires: 4 Modifications:				A.I.C. Rating: 10kAIC Main Type: MCB Mains Rating: 100 A MCB Rating: 100 A						
Notes	Wiring	Ckt. No.	Load Description	Tripp	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Tripp	Load Description	Ckt. No.	Wiring	Notes
		20A	AX01 RECEPT SCILAB A211	20A	1	180 / 540			1	20A	RECEPT INTERACTIVE PROJECTOR	AX02	20A	CTL
		20A	AX03 RECEPT SCILAB A211	20A	1		180 / 180		1	20A	RECEPT SCILAB A211	AX04	20A	
		20A	AX05 RECEPT SCILAB A211	20A	1			180 / 180	1	20A	RECEPT SCILAB A211	AX06	20A	
		20A	AX07 RECEPT SCILAB A211	20A	1	180 / 180			1	20A	RECEPT SCILAB A211	AX08	20A	
		20A	AX09 RECEPT SCILAB A211	20A	1		180 / 180		1	20A	RECEPT SCILAB A211	AX10	20A	
		20A	AX11 RECEPT SCILAB A211	20A	1			180 / 180	1	20A	RECEPT SCILAB A211	AX12	20A	
		20A	AX13 RECEPT SCILAB A209	20A	1	360 / 540			1	20A	RECEPT INTERACTIVE PROJECTOR	AX14	20A	CTL
		20A	AX15 RECEPT SCILAB A209	20A	1		180 / 180		1	20A	RECEPT SCILAB A209	AX16	20A	
		20A	AX17 RECEPT SCILAB A209	20A	1			180 / 180	1	20A	RECEPT SCILAB A209	AX18	20A	
		20A	AX19 RECEPT SCILAB A209	20A	1	180 / 180			1	20A	RECEPT SCILAB A209	AX20	20A	
--	--	20A	AX21 SPARE	20A	1		0 / 0		1	20A	SPARE	AX22	--	--
		20A	AX23 RECEPT SCILAB A209	20A	1			180 / 180	1	20A	RECEPT SCILAB A209	AX24	20A	
		20A	AX25 RECEPT SCILAB A209	20A	1	180 / 180			1	20A	RECEPT SCILAB A209	AX26	20A	GF
		20A	AX27 RECEPT SCILAB A210	20A	1	180 / 360			1	20A	RECEPT SCILAB A210	AX28	20A	
		20A	AX29 RECEPT SCILAB A211	20A	1		180 / 180	180 / 1720	1	20A	RECEPT CORRIDOR C201	AX30	20A	
		20A	AX31 RECEPT SPARE227	20A	1		180 / 180		1	20A	RECEPT SPARE 197	AX32	20A	
		20A	AX33 RECEPT	20A	1		180 / 180		1	20A	RECEPT	AX34	20A	
		20A	AX35 RECEPT AUTO CONTROLS C283	20A	1			180 / 180	1	20A	RECEPT AUTO CONTROLS C283	AX36	20A	
		20A	AX37 RECEPT SPARE 181	20A	1		180 / 1080		1	20A	RECEPT CORRIDOR C202	AX38	20A	
--	--	20A	AX39 SPARE	20A	1		0 / 0		1	20A	SPARE	AX40	--	--
		20A	AX41	20A	1		0 / 0		1	20A	SPARE	AX42	--	--
Load Per...						4320 VA	1980 VA							
Load Classification				Connected...	Demand...	Est. Demand		Panel Totals						
RECEPT				9000 VA	100.00%	9000 VA		TOTAL CONNECTED LOAD: 9000 VA						
								TOTAL ESTIMATED DEMAND: 9000 VA						
								TOTAL CONNECTED CURRENT: 35.4 A						
								TOTAL ESTIMATED DEMAND CURRENT: 25.4 A						
NOTES:														



Wakefield, MA 01880

Panelboard: LP-LB-S1

Distribution System: 120/208 Vys

A.I.C. Rating: 10KAIC

Location:

Supply From: LP-LB

Mounting: SURFACE

Enclosure: TYPE 1

Wires: 3

Main Type: MCB

Main Rating: 200 A

MCB Rating: 200 A

Notes	Wiring	Ckt. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trips	Load Description	Ckt. No.	Wiring	Notes
	20C	MA-1	RECEIPT SPACE 1035	20 A	2	1000 / 1000	1000 / 1000		2	20 A	RECEIPT SPACE 1035	MA-2	20C	
		MA-3										MA-4		
		MA-5	RECEIPT SPACE 1035	20 A	2	1000 / 1000		1000 / 1000				MA-6		
		MA-7										MA-8		
	20C	MA-9	RECEIPT SPACE 1035	20 A	2	1000 / 1000	1000 / 1000		2	20 A	RECEIPT SPACE 1035	MA-10	20C	
		MA-11										MA-12		
		MA-13	RECEIPT SPACE 1035	20 A	2	1000 / 1000			2	20 A	RECEIPT SPACE 1035	MA-14	20C	
		MA-15										MA-16		
		MA-17	RECEIPT SPACE 1035	20 A	2	1000 / 1000	1000 / 1000		2	20 A	RECEIPT SPACE 1035	MA-18	20C	
	20C	MA-19				1000 / 1000	1000 / 1000					MA-20		
		MA-21	RECEIPT SPACE 1035	20 A	2	1000 / 1000	1000 / 1000		2	20 A	RECEIPT SPACE 1035	MA-22	20C	
		MA-23										MA-24		
		MA-25	RECEIPT SPACE 1035	20 A	2	1000 / 540		1000 / 1000		2	20 A	RECEIPT SPACE 1035	MA-26	20A
		MA-27										MA-28	20A	
		MA-29	RECEIPT SPACE 1035	20 A	1		1000 / 540		540 / 720	1	20 A	RECEIPT SPACE 1035	MA-30	20A
		MA-31	RECEIPT SPACE 1035	20 A	1					1	20 A	SPARE	MA-32	
--	--	MA-33	SPARE	20 A	1	380 / 0	0 / 0			1	20 A	SPARE	MA-34	--
--	--	MA-35	SPARE	20 A	1			0 / 0		1	20 A	SPARE	MA-36	--
--	--	MA-37	SPARE	20 A	1	0 / 0			0 / 0	1	20 A	SPARE	MA-38	--
--	--	MA-39	SPARE	20 A	1		0 / 0			1	20 A	SPARE	MA-40	--
--	--	MA-41	SPARE	20 A	1			0 / 0		1	20 A	SPARE	MA-42	--
				Lead Per:		8900 VA	\$640 VA			9260 VA				
Load Classification				Connected--		Demand--		Est. Demand		Panel Totals				
Other				360 VA		100.00%		360 VA		TOTAL CONNECTED LOAD: 28700 VA				
RECEIPT				28340 VA		67.64%		19170 VA		TOTAL ESTIMATED DEMAND: 19500 VA				
										TOTAL CONNECTED LOAD: 80 A				
										TOTAL ESTIMATED DEMAND CURRENT: 54 A				

NOTES:

Panelboard: LP-LLD

Location:
Supply From: T-LLD
Mounting: SURFACE
Enclosure: TYPE 1

Distribution System: 120/208 Vyle
Phases: 3
Wires: 4
Modifications:

A.I.C. Rating: 10kAIC
Main Types: MCB
Main Rating: 400 A
MCB Rating: 400 A

Notes	Wiring	Chk. No.	Load Description	20A / Pole	LOAD PHASE A (VA)	LOAD PHASE B (VA)	LOAD PHASE C (VA)	Poles	1 Trip	2 Trip	Load Description	Chk. No.	Wiring Notes
		20A	B61 OP-1	20A 1	865 / 1440				1	20A	RECEPT - INTERACTIVE FLAT PANEL..	B61-2	20C
		20A	B63 RECEPT RELATED CIR 0003D	20A 1		900 / 720			1	20A	RECEPT TOOL CDRB 0033 & D003G	B64-2	20A
		20A	B65 RECEPT OFF_000A	20A 1			900 / 177		2	20A	FOU - LOWER LEVEL	B65-3	20C
		20A	B67 RECEPT - AUTO TECH SHOP	20A 1	360 / 177				2	20A	FOU - LOWER LEVEL	B67-3	20C
		20A	B69 ALIGNMENT CONSOLE/SENSORS	20A 1		180 / 180			2	20A	ALIGNMENT RACK	B610-2	20A
		20A	B611 SPARE	20A 1			0 / 2496		2	20A	AT05 - TIRE CHANGER	B612-3	20C
		20A	B613 RECEPT SPACE 1027	20A 1	720 / 2496				2	20A	AT05 - TIRE CHANGER	B614-2	20C
		20A	B615 RECEPT SPACE 1027	20A 1		720 / 720			2	20A	RECEPT SPACE 1027	B616-2	20A
		50C	B617 SPARE	50A 2			1000 / 360		1	20A	WORKENCHES	B618-3	20C
		50C	B619 SOA RECEPT - OUTDOOR	50A 2	1000 / 360				2	50A	WORKENCHES	B620-3	20C
		20A	B621 RECEPT SPACE 1156	20A 1		180 / 360			2	20A	WORKENCHES	B622-2	20A
		20A	B623 WORKENCHES	20A 1			360 / 360		1	20A	WORKENCHES	B624-3	20C
		20A	B625 WORKENCHES	20A 1	360 / 360				1	20A	WORKENCHES	B626-3	20C
		20A	B627 WORKENCHES	20A 1		360 / 360			1	20A	WORKENCHES	B628-2	20A
		20A	B629 WORKENCHES	20A 1			360 / 180		1	20A	BRAKE LATE	B630-3	20C
		20A	B631 DRILL PRESS	20A 1	180 / 180				2	20A	GRINDER	B632-3	20A
		20A	B633 WHEEL BALANCER	20A 1		180 / 2496			2	20A	AT05 - TIRE CHANGER	B634-3	20C
		20A	B635 BRAKE LATE	20A 1			180 / 2496		2	20A	AT05 - TIRE CHANGER	B636-3	20C
		40C	B637	40A 2	5200 / 5200				2	40A	AT04 - EV CHARGER	B638-3	20C
		40C	B639 AT04 - EV CHARGER	40A 2	5200 / 5200				2	40A	AT04 - EV CHARGER	B640-3	20C
		20A	B641 RECEPT - SMALL ENGINES	20A 1			1440 / 1440		2	20A	RECEPT - SMALL ENGINES	B642-3	20A
		20A	B643 RECEPT - SMALL ENGINES	20A 1	1080 / 360				1	20A	RECEPT - AUTO TECH SHOP	B644-2	20A
		20E	B645	20A 3		167 / 2000			2	50A	WELDERS - BOOTHS	B646-3	20C
		20E	B647 EQUIPMENT SPACE 1166	20A 3		167 / 540			2	50A	WELDERS - BOOTHS	B648-3	20C
		50C	B651	50A 2		1000 / 1000			2	50A	RECEPT - ACOTAS	B650-3	20C
		50C	B653	50A 2			1000 / 1000		2	50A	SOA RECEPT - SMALL ENGINES	B652-3	20C
		50C	B655	50A 2	1000 / 1000				2	50A	SOA RECEPT - SMALL ENGINES	B654-3	20C
		50C	B657	50A 2	1000 / 1000				2	50A	SOA RECEPT - SMALL ENGINES	B656-3	20C
		20C	B659 RECEPT SPACE 1028	20A 2	1000 / 2000		1000 / 2000		2	20A	RECEPT SPACE 1027	B658-3	20C
		50C	B661	50A 2	2000 / 2000				2	50A	SOA RECEPT - SHOP	B660-3	20C
		50C	B663	50A 2			2000 / 2000		2	50A	SOA RECEPT - SHOP	B662-3	20C
		50C	B665	50A 2	2000 / 2000		</td>						

Load Classification

RECEPT

EQUIPMENT

20A

50A

40A

600/39

862/35

862/35

40 VA

75.00%

88.99%

100.00%

51/179

3411 VA

4200 VA

3628 VA

Estimated Demand

Panel Totals

TOTAL CONNECTED LOAD

TOTAL ESTIMATED DEMAND

TOTAL CONNECTED CURRENT

TOTAL ESTIMATED DEMAND CURRENT

12613 VA

8638 VA

81 A

227 A

NOTES:

Panelboard: LP-FS3

Location:

Supply From: LP-1K(2)

Mounting: SURFACE

Enclosure: TYPE 1

Distribution System: 120/208 Vye

Phases: 3

Wires: 4

Modifications:

A.I.C. Rating: 10KAIC

Main Type: MCB

Mains Rating: 100 A

MCB Rating: 100 A

Notes	Wire #	Ckt No.	Load Description	Trips	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trips	Writing Notes
--	20A	HMA1 SPARE	20A 1	0 / 0.00	500 / 500			1	20 A	DOUBLE CONVECTION OVEN
--	20A	HMA3 CONVEYOR OVEN	20A 1					1	20 A	10 PAN STEAMER
--	20A	HMA5 40 GAL TILTING BRASSING PAN	20A 1				500 / 500	1	20 A	SUBMER RANGE WITH OVEN
--	--	HMA7 40 GAL TILTING KETTLE	20A 1	500 / 0				1	20 A	SPARE
--	--	HMA9 SPARE	20A 1		0 / 0			1	20 A	SPARE
--	--	HMA11 SPARE	20A 1			0 / 0		1	20 A	SPARE
--	--	HMA13 SPARE	20A 1	0 / 0				1	20 A	SPARE
--	--	HMA15 SPARE	20A 1		0 / 0			1	20 A	SPARE
--	--	HMA17 SPARE	20A 1			0 / 0		1	20 A	SPARE
--	--	HMA19 SPARE	20A 1	0 / 0				1	20 A	SPARE
--	--	HMA21 SPARE	20A 1			0 / 0		1	20 A	SPARE
--	--	HMA23 SPARE	20A 1				0 / 0	1	20 A	SPARE
--	--	HMA25 SPARE	20A 1	0 / 0				1	20 A	SPARE
--	--	HMA27 SPARE	20A 1					1	20 A	SPARE
--	--	HMA29 SPARE	20A 1			0 / 0		1	20 A	SPARE
--	--	HMA31 SPARE	20A 1	0 / 0				1	20 A	SPARE
--	--	HMA33 SPARE	20A 1		0 / 0			1	20 A	SPARE
--	--	HMA35 SPARE	20A 1			0 / 0		1	20 A	SPARE
--	--	HMA37 SPARE	20A 1				0 / 0	1	20 A	SPARE
--	--	HMA39 SPARE	20A 1	0 / 0		0 / 0		1	20 A	SPARE
--	--	HMA41	1000 VA	1000 VA			0 / 0	1	20 A	SPARE
Lead Per...										
Load Classification				Connected...	Demand...	Est. Demand		Panel Totals		
EQUIPMENT				3000 VA	75.00%	2250 VA		TOTAL CONNECTED LOAD: 3000 VA		
								TOTAL ESTIMATED DEMAND: 2250 VA		
								TOTAL CONNECTED CURRENT: 8 A		
								TOTAL ESTIMATED DEMAND CURRENT: 6 A		
					</					

Scale: _____
Job No.: 60-20-409
Drawn By: DRA
Date: August 28th, 2021

DRA

Drummett Rosane Anderson, Inc.
225 Oakland Road
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South Windsor, CT
06074

260 Charles Street
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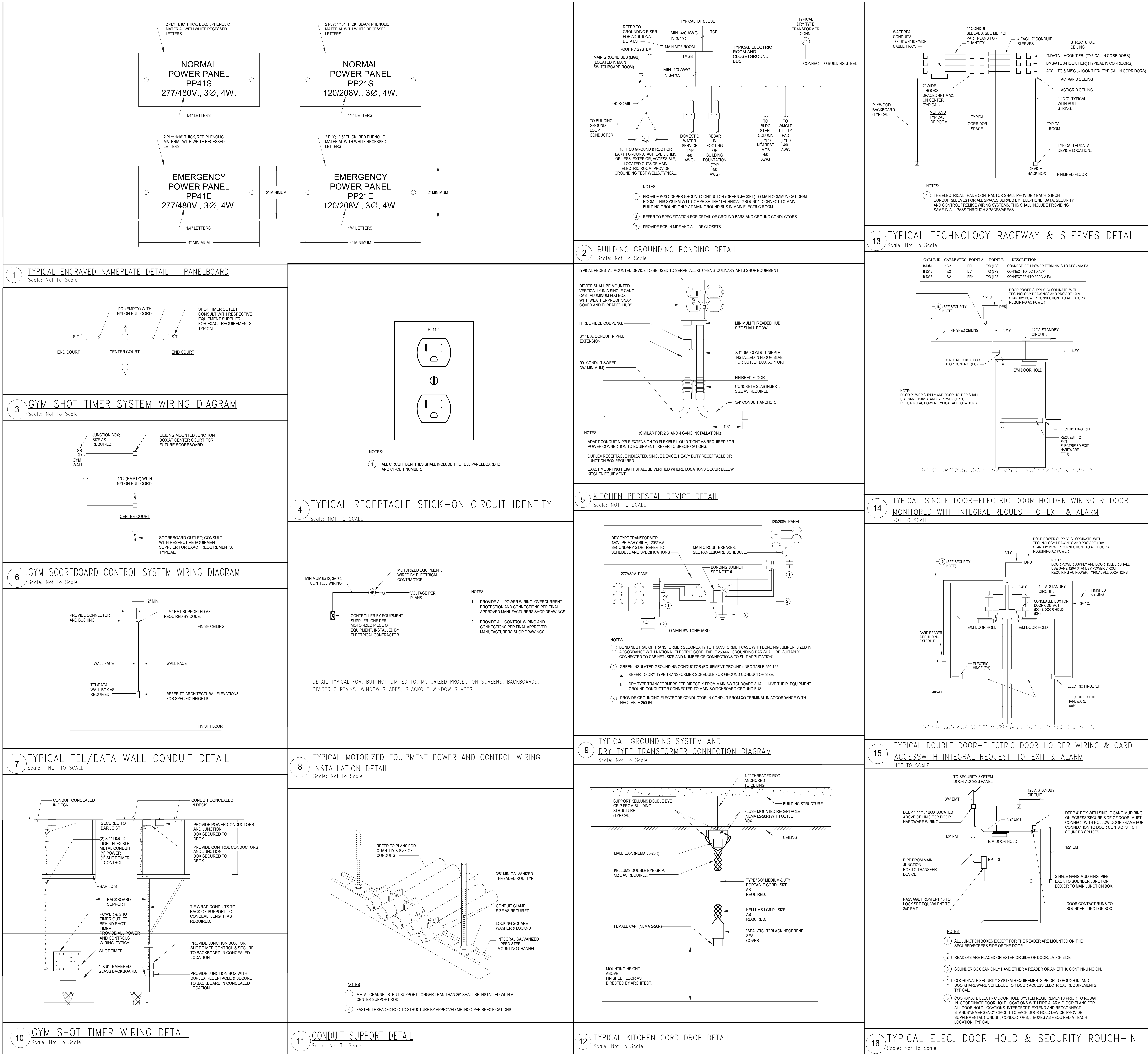
Panelboard: LP-EVSE3														
Location: Supply From: T-EVSE3 Mounting: SURFACE Enclosure: TYPE 1					Distribution System: 120/208 Wye Phases: 3 Wires: 4 Modifications:					A.I.C. Rating: 10kAIC Mains Type: MCB Mains Rating: 225 A MCB Rating: 150 A				
Notes	Wiring	Chk. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description	Chk. No.	Wiring	Notes
	2#4 1#6 3	1	EV CHARGER - EVSE3-1-A	40 A	2	3600 / 3600	3600 / 3600	3600 / 3600	2	40 A	EV CHARGER - EVSE3-2-A	2	2#4 1#6 3	
	2#4 1#6 7	2	EV CHARGER - EVSE3-1-B	20 A	2	3600 / 3600			2	20 A	EV CHARGER - EVSE3-2-B	2	2#4 1#6 7	
--	--	--	11 SPARE	20 A	1		0 / 0		1	20 A	SPARE	10	--	--
--	--	--	13 SPARE	20 A	1	0 / 0		0 / 0	1	20 A	SPARE	14	--	--
--	--	--	15 SPARE	20 A	1		0 / 0		1	20 A	SPARE	16	--	--
--	--	--	17 SPARE	20 A	1		0 / 0		1	20 A	SPARE	18	--	--
Load Per...						14400 VA	7200 VA	7200 VA						
Load Classification						Connected...	Demand...	Est. Demand	Panel Totals					
EQUIPMENT						28800 VA	75.00%	21600 VA	TOTAL CONNECTED LOAD: 28800 VA					
									TOTAL ESTIMATED DEMAND: 21600 VA					
									TOTAL CONNECTED CURRENT: 80 A					
									TOTAL ESTIMATED DEMAND CURRENT: 60 A					
NOTES:														

Panelboard: LPH-MB																
Location: Supply From: LPH-CB Mounting: SURFACE Enclosure: TYPE 1					Distribution System: 480/277 Wye Phases: 3 Wires: 4					A.I.C. Rating: 22KAIC Mains Type: MCB Mains Rating: 150 A MCB Rating: 150 A						
Modifications:					LOAD PHASE-A (VA)		LOAD PHASE-B (VA)		LOAD PHASE-C (VA)							
Notes	Wiring	Chk. No.	Load Description		Trip	Poles				Poles	Trip	Load Description		Chk. No.	Wiring	Notes
--	3#A	RA-1	LIGHTING		20 A	1	336 / 635				1	20 A	LIGHTING	RA-2	3#A	--
--	3#A	RA-3	LIGHTING		20 A	1		550 / 0		0 / 0	1	20 A	SPARE	RA-4	--	--
--	--	RA-5	SPARE		20 A	1					1	20 A	SPARE	RA-6	--	--
--	--	RA-7	SPARE		20 A	1	0 / 0				1	20 A	SPARE	RA-8	--	--
--	--	RA-9	SPARE		20 A	1		0 / 0			1	20 A	SPARE	RA-10	--	--
--	--	RA-11	SPARE		20 A	1			0 / 0		1	20 A	SPARE	RA-12	--	--
--	--	RA-13	SPARE		20 A	1	0 / 11868				3	70 A	T-MB	RA-14	SEE	--
--	--	RA-15	SPARE		20 A	1	0 / 7076			0 / 12588			RA-15	LINE	ONE	--
--	--	RA-17	SPARE		20 A	1							RA-18	LINE		--
Load Per...:					12942 VA		7626 VA		0 / 12588							
Load Classification					Connected...		Demand...		Est. Demand		Panel Totals					
LIGHTING					1512 VA		125.00%		1860 VA		TOTAL CONNECTED LOAD: 13305 VA					
Other					0 VA		0.00%		0 VA		TOTAL ESTIMATED DEMAND: 26878 VA					
EQUIPMENT					27021 VA		75.00%		2022 VA		TOTAL CONNECTED CURRENT: 40 A					
RECEPT					4500 VA		100.00%		4500 VA		TOTAL ESTIMATED DEMAND CURRENT: 32 A					
LOADING-EXIT					12 VA		125.00%		15 VA							
NOTES:																

Panelboard: LPH-EAST														
Location: PEDESTAL CABINET					Distribution System: 480/277 Wye					A.I.C. Rating: 22kAIC				
Supply From:					Phases: 3					Mains Type: MCB				
Mounting: SURFACE					Wires: 4					Mains Rating: 100 A				
Enclosure: TYPE 1					Modifications:					MCB Rating: 100 A				
Notes	Wiring	Chk. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Trip	Poles	Load Description	Chk. No.	Wiring	Notes
3#8	1	1	SITE LIGHTING	20 A	1	900 / 0	700 / 0		1	20 A	SPARE	2	--	--
3#8	3	3	SITE LIGHTING	20 A	1				1	20 A	SPARE	4	--	--
3#8	5	5	SITE LIGHTING	20 A	1			500 / 0	1	20 A	SPARE	6	--	--
--	9	9	SPARE	20 A	1	0 / 0			1	20 A	SPARE	8	--	--
--	11	11	SPARE	20 A	1		0 / 0		1	20 A	SPARE	10	--	--
--	13	13	SPARE	20 A	1	0 / 7468			3	20 A	T-EAST	12	--	--
--	15	15	SPARE	20 A	1		0 / 6736					14	--	--
--	17	17	SPARE	20 A	1			0 / 6188				16	--	--
Load Per...						8388 VA	7438 VA	6888 VA						
Load Classification						Connected...	Demand...	Est. Demand	Panel Totals					
EQUIPMENT						22492 VA	75.00%	16889 VA	TOTAL CONNECTED LOAD: 122492 VA					
									TOTAL ESTIMATED DEMAND: 16889 VA					
									TOTAL CONNECTED CURRENT: 27 A					
									TOTAL ESTIMATED DEMAND CURRENT: 20 A					
NOTES:														

Panelboard: LP-EVSE1														
Location: Supply From: T-EVSE1 Mounting: SURFACE Enclosure: TYPE 1			Distribution System: 120/208 Wye Phases: 3 Wires: 4 Modifications:						A.I.C. Rating: 10kAIC Mains Type: MLO Mains Rating: 300 A MCB Rating:					
Notes	Wiring	Chk. No.	Load Description	Trip	Poles	LOAD PHASE-A (VA)	LOAD PHASE-B (VA)	LOAD PHASE-C (VA)	Poles	Trip	Load Description	Chk. No.	Wiring	Notes
	2#4 1#6 3	1	EV CHARGER - EVSE1-1-A	40 A	2	3600 / 3600			2	40 A	EV CHARGER - EVSE1-2-A	2	2#4 1#6 3	
	2#4 1#6 5	2	EV CHARGER - EVSE1-1-B	40 A	2	3600 / 3600		3600 / 3600	2	40 A	EV CHARGER - EVSE1-2-B	2	2#4 1#6 5	
--	9		SPARE	20 A	1		0 / 0		1	20 A	SPARE	10	--	
--	11		SPARE	20 A	1			0 / 0	1	20 A	SPARE	12	--	
--	13		SPARE	20 A	1	0 / 0			1	20 A	SPARE	14	--	
--	15		SPARE	20 A	1		0 / 0		1	20 A	SPARE	16	--	
--	17		SPARE	20 A	1			0 / 0	1	20 A	SPARE	18	--	
Load Per...:						14400 VA	7200 VA	7200 VA						
Load Classification						Connected...	Demand...	Est. Demand	Panel Totals					
EQUIPMENT						28800 VA	75.00%	21600 VA	TOTAL CONNECTED LOAD: 28800 VA					
									TOTAL ESTIMATED DEMAND: 21600 VA					
									TOTAL CONNECTED CURRENT: 80 A					
									TOTAL ESTIMATED DEMAND CURRENT: 60 A					
NOTES:														

Panelboard: LP-EVSE2														
Location: Supply From: T-EVSE2 Mounting: SURFACE Enclosure: TYPE 1			Distribution System: 120/208 Wye Phases: 3 Wires: 4			A.I.C. Rating: 10kAIC Mains Type: MCB Mains Rating: 150 A MCB Rating: 150 A								
Modifications:			LOAD PHASE-A (VA)			LOAD PHASE-B (VA)			LOAD PHASE-C (VA)					
Notes	Wiring	Chk. No.	Load Description	Trip	Poles	Trip	Poles	Trip	Load Description	Chk. No.	Wiring	Notes		
2#4 1#6 3	1	2#4 1#6 3	EV CHARGER - EVSE2-1-A	20 A	2	3600 / 3600	3600 / 3600	2	20 A	EV CHARGER - EVSE2-1-B	2	2#4 1#6 3	EV CHARGER - EVSE2-1-B	2
--	5		SPARE	20 A	1			1	20 A	SPARE	6	--	--	--
--	7		SPARE	20 A	1			1	20 A	SPARE	8	--	--	--
--	9		SPARE	20 A	1			1	20 A	SPARE	10	--	--	--
--	11		SPARE	20 A	1			1	20 A	SPARE	12	--	--	--
--	13		SPARE	20 A	1			1	20 A	SPARE	14	--	--	--
--	15		SPARE	20 A	1			1	20 A	SPARE	16	--	--	--
--	17		SPARE	20 A	1			1	20 A	SPARE	18	--	--	--
Load Classification			Connected...			Demand...			Est. Demand			Panel Totals		
EQUIPMENT			14400 VA			75.00%			10800 VA			TOTAL		



DRA

Drummeys Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
Tel: 817.984.1700
www.dra.com

260 Charles Street
Studio 300
Waltham, MA 02453
Tel: 817.984.1700
www.dra.com

Planning | Architecture | Interior Design

Northeast Metropolitan Regional Vocational High School

Wakefield, MA 01880

BID SET

August 28th, 2023

PROJECT NORTH

MAGNETIC NORTH

ELECTRICAL DETAILS SHEET

1

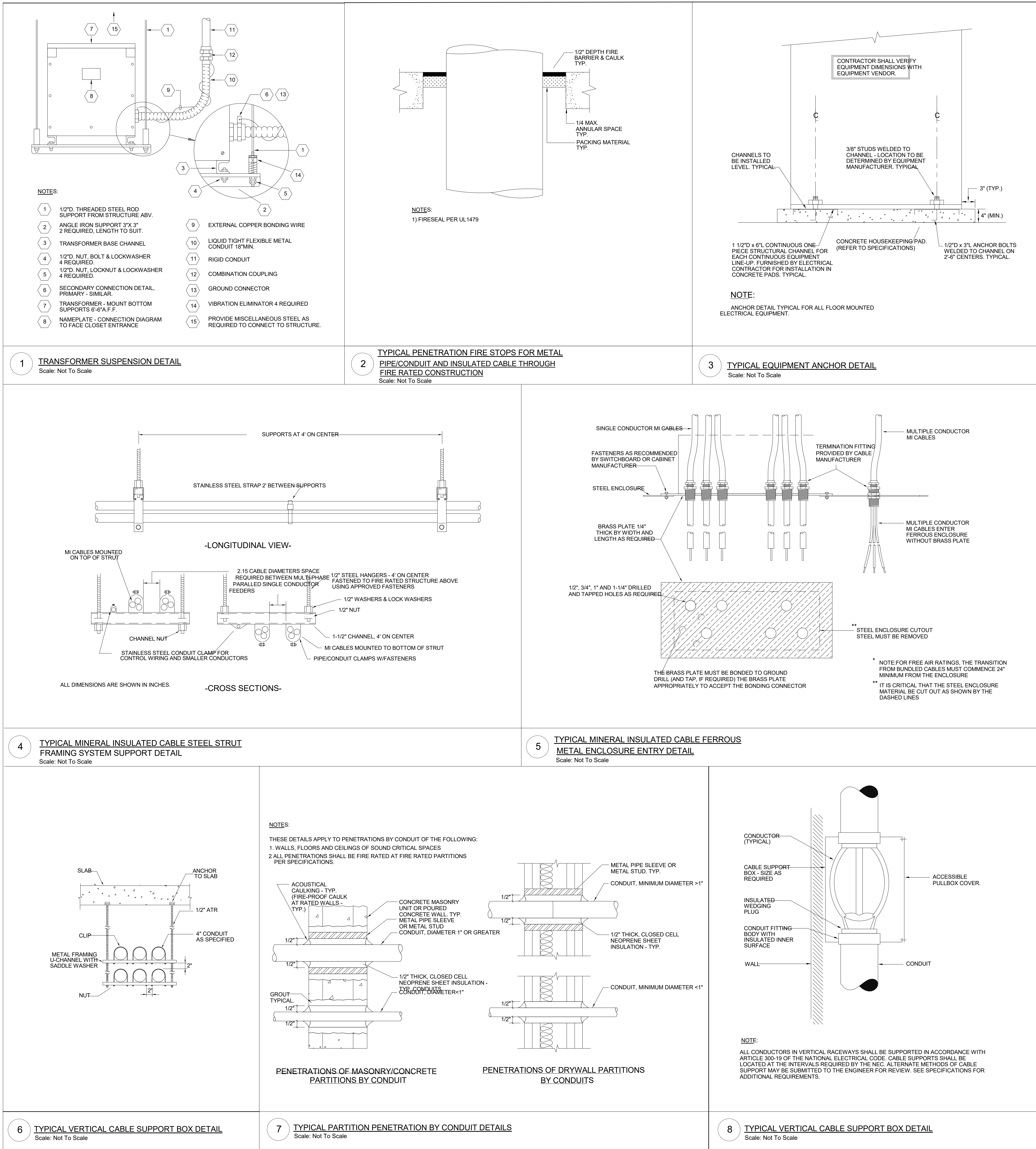
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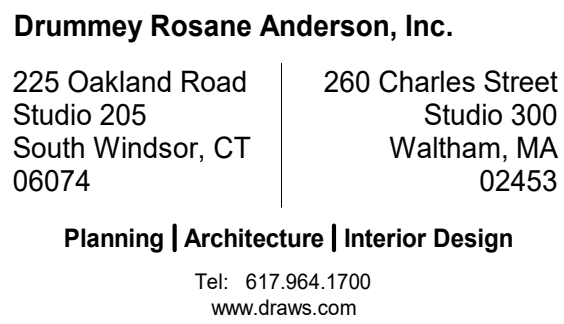
Job No.: 60-20-409

Drawn By: ZMB

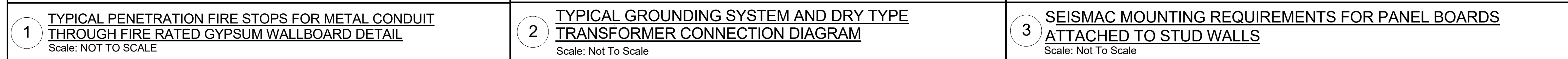
Date: August 28th, 2023

E4-0-15



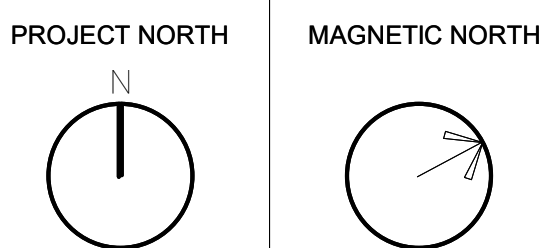


Wakefield, MA 01880

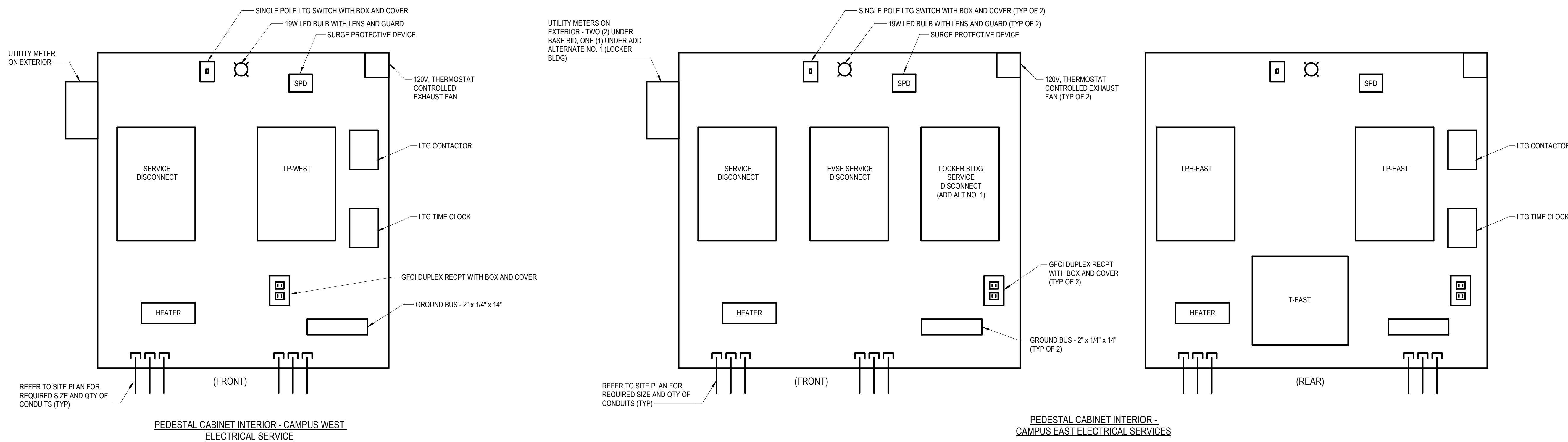
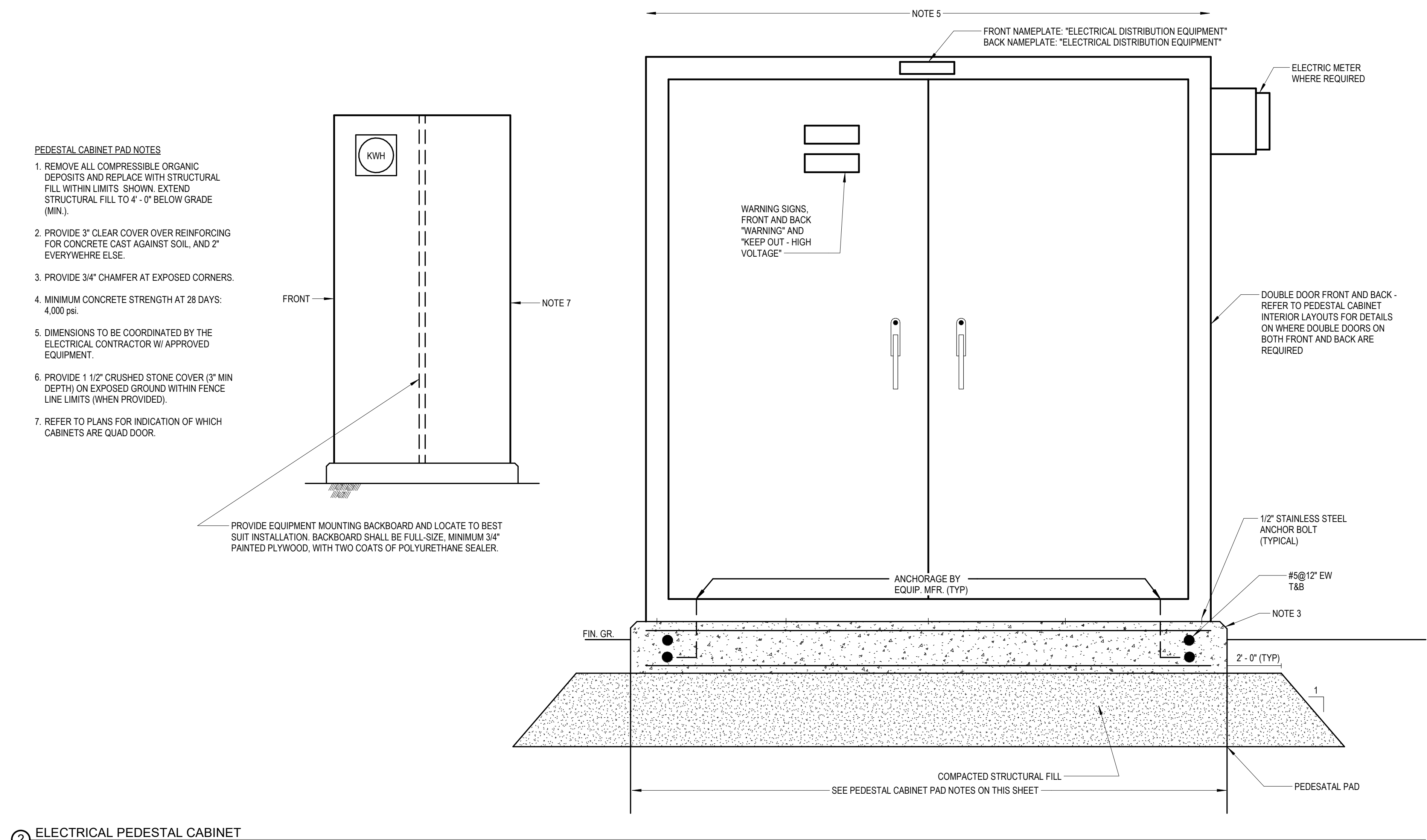
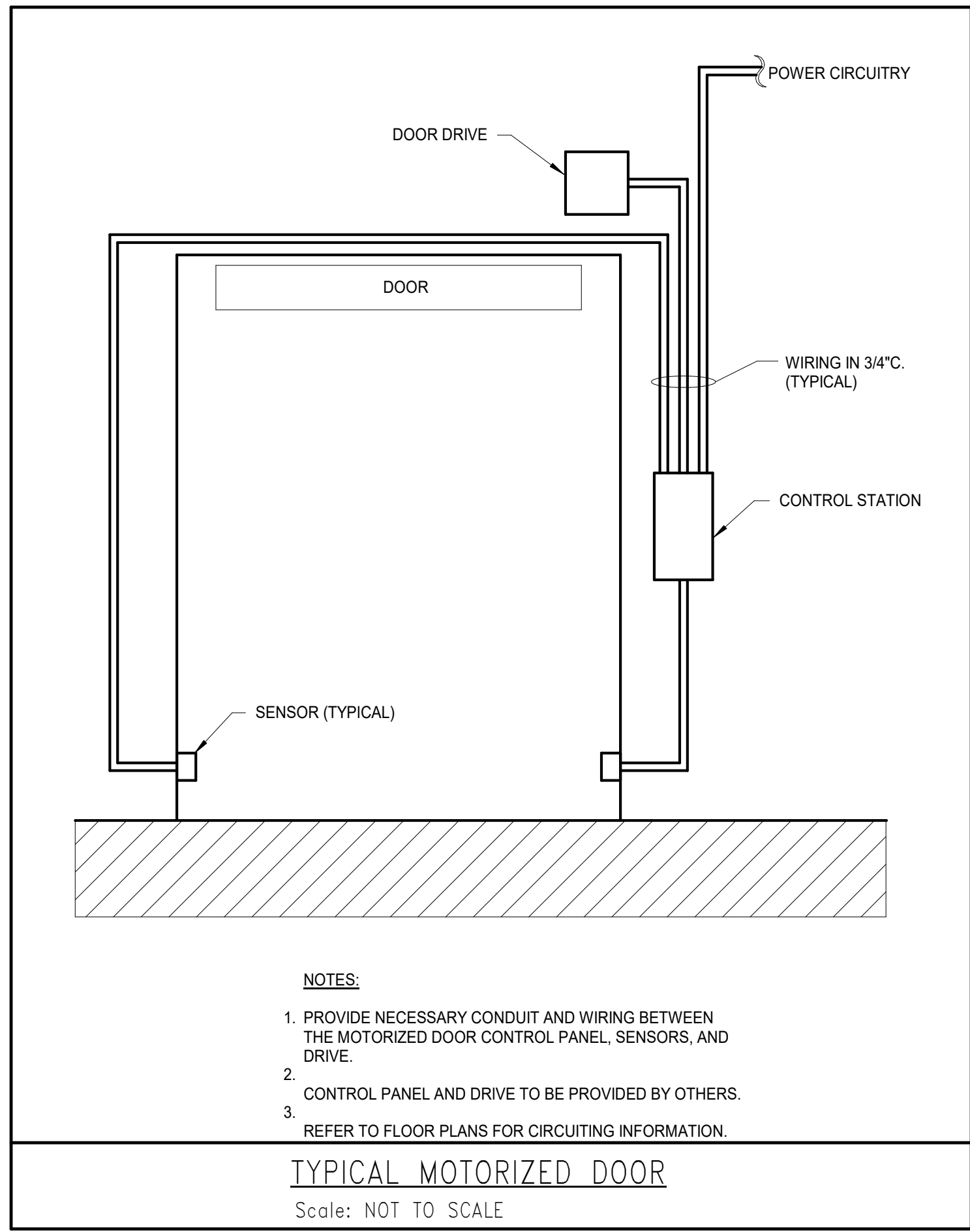
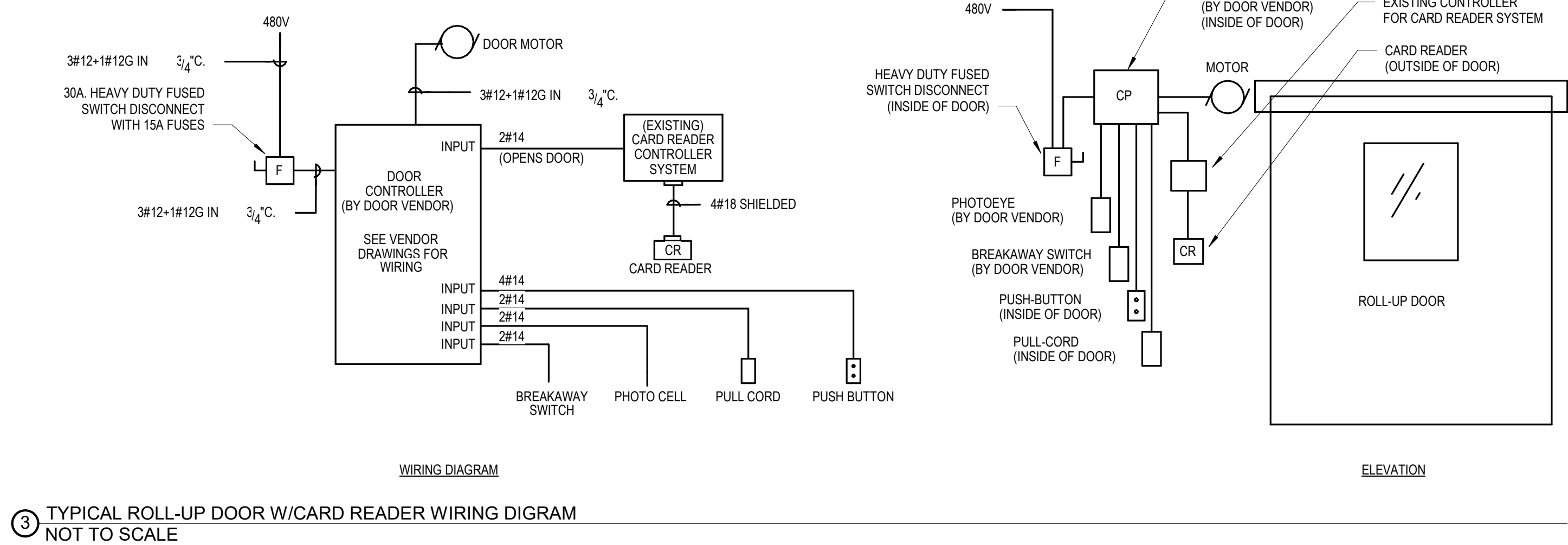
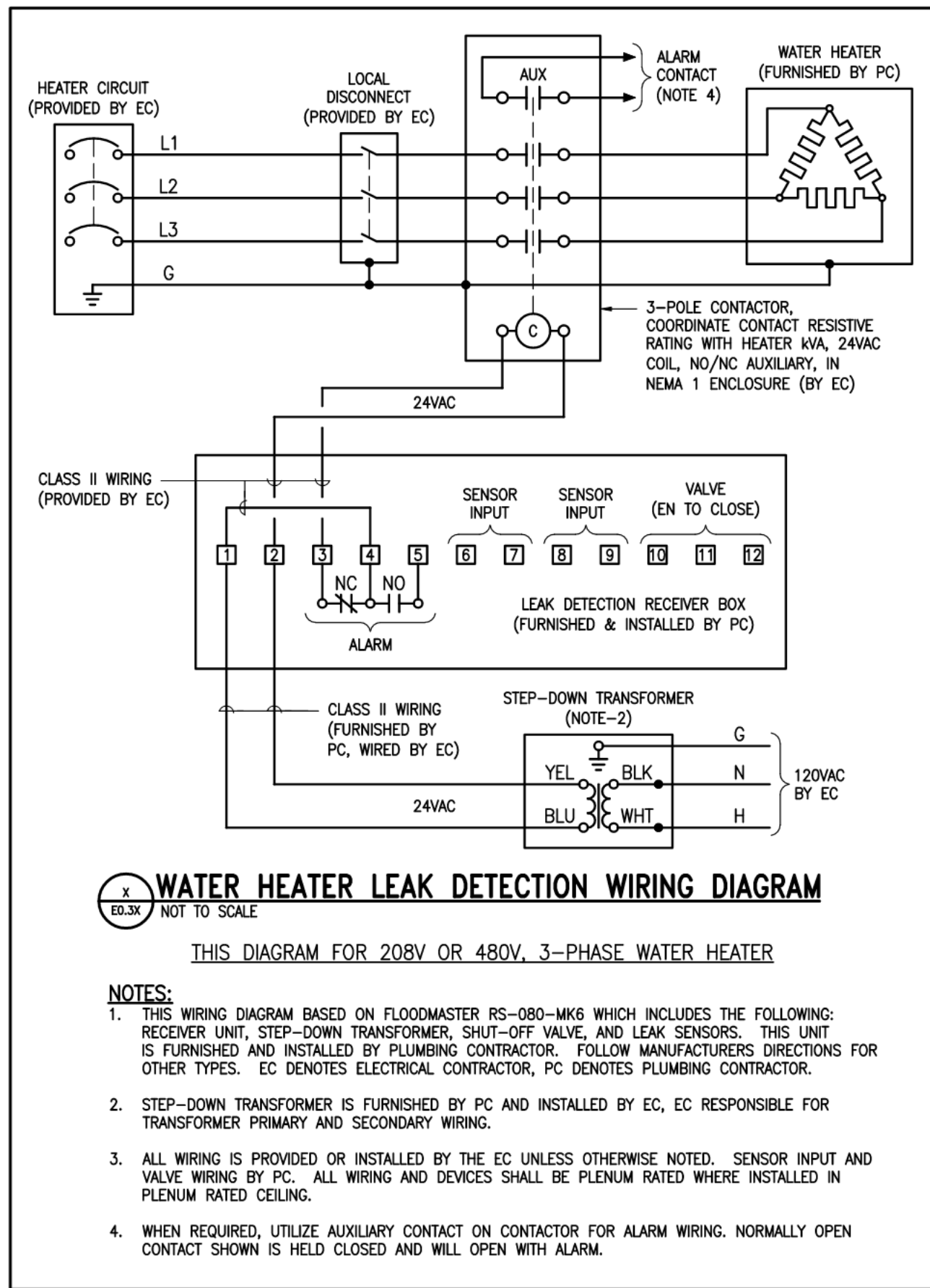
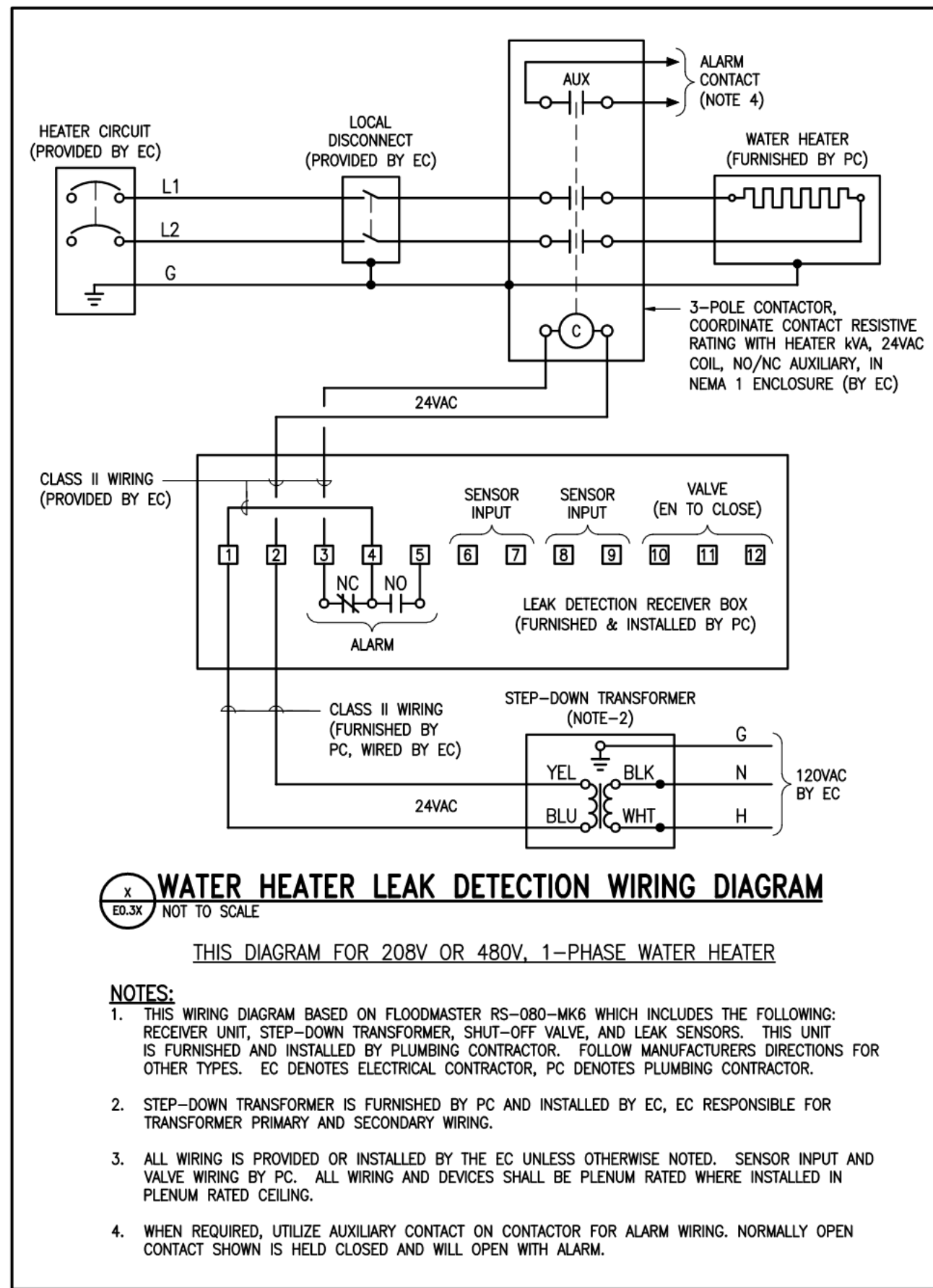
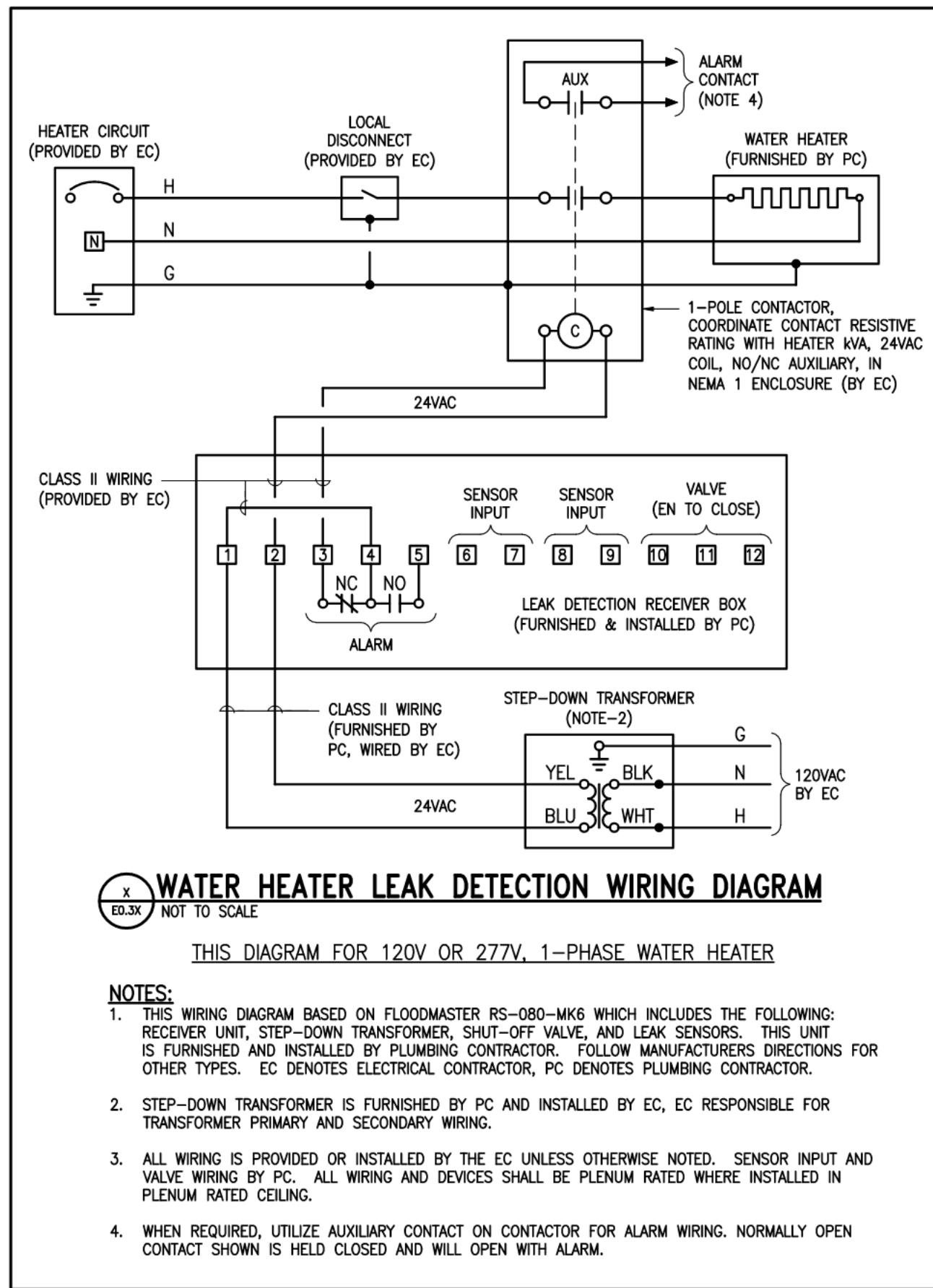


BID SET

August 28th, 2023



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te: August 28th, 2023

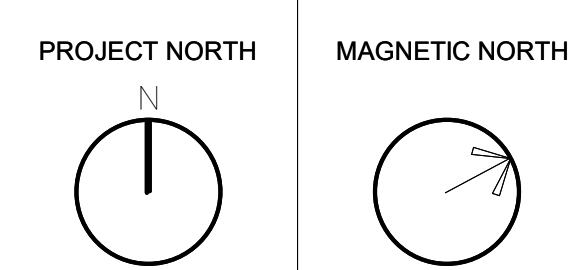


ELECTRICAL PEDESTAL CABINET INTERIORS
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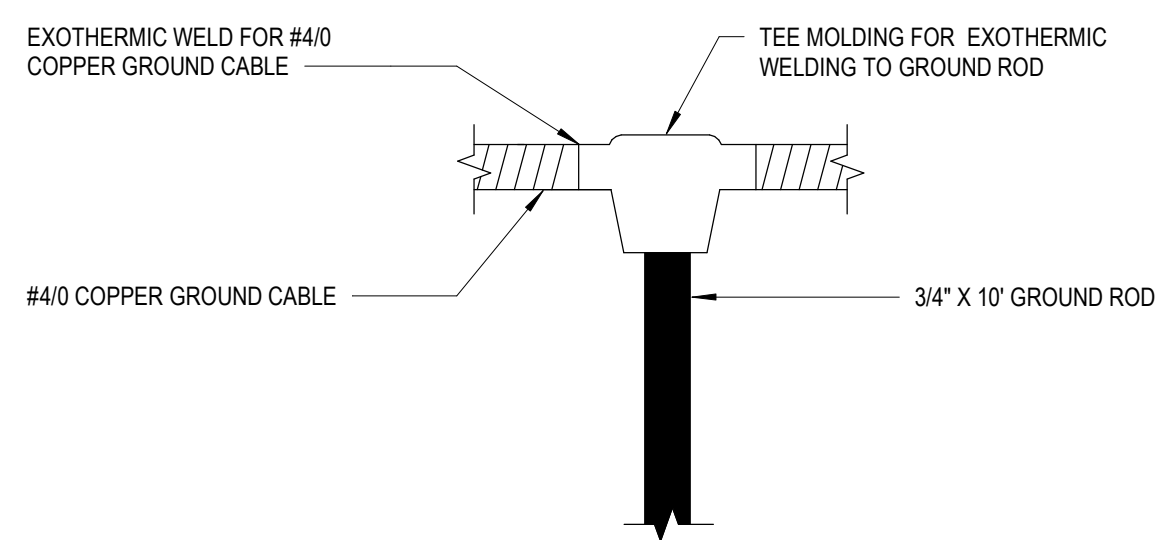
Northeast Metropolitan Regional Vocational High School

Wakefield, MA 01880

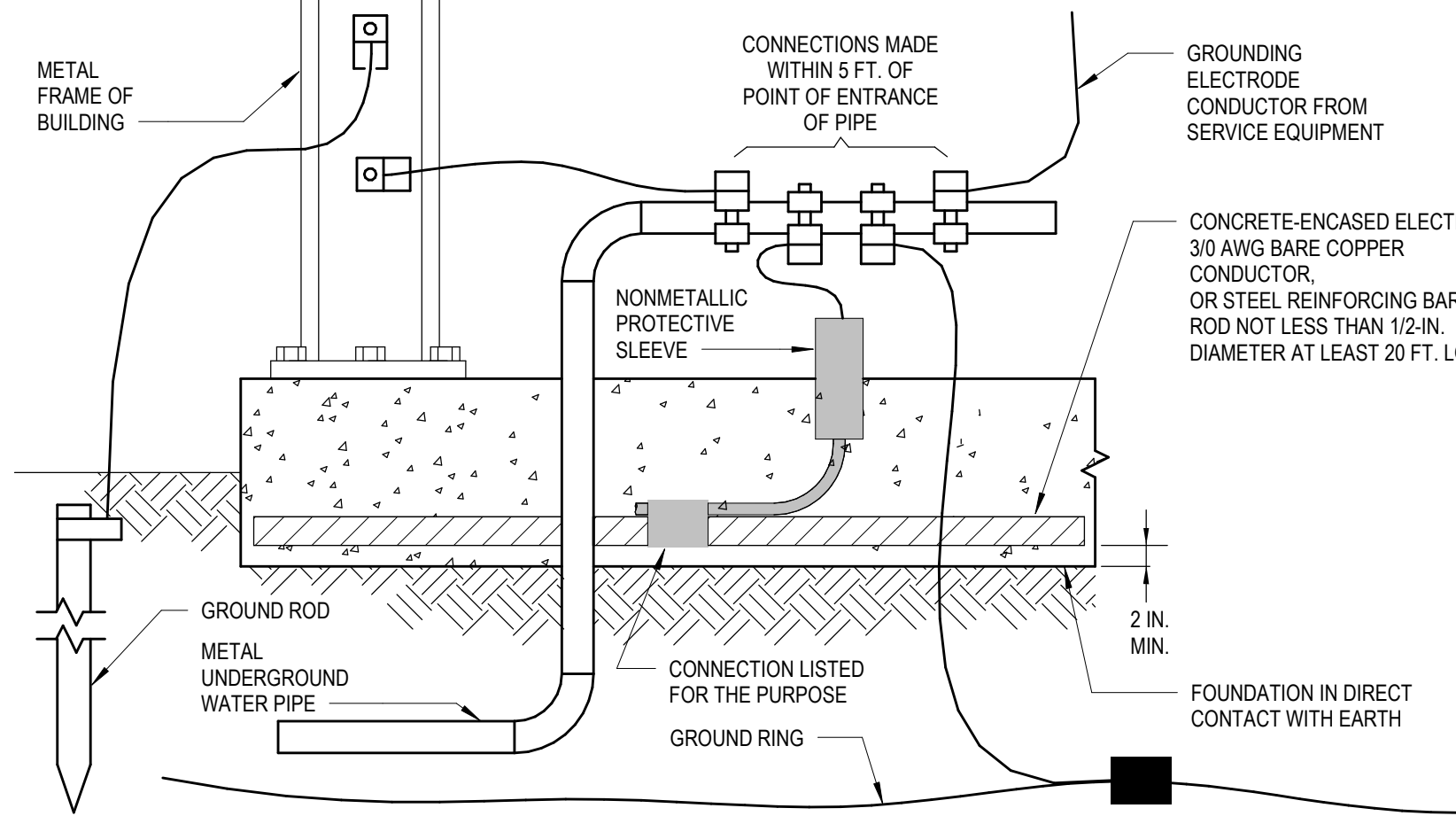
BID SET
August 28th, 2023



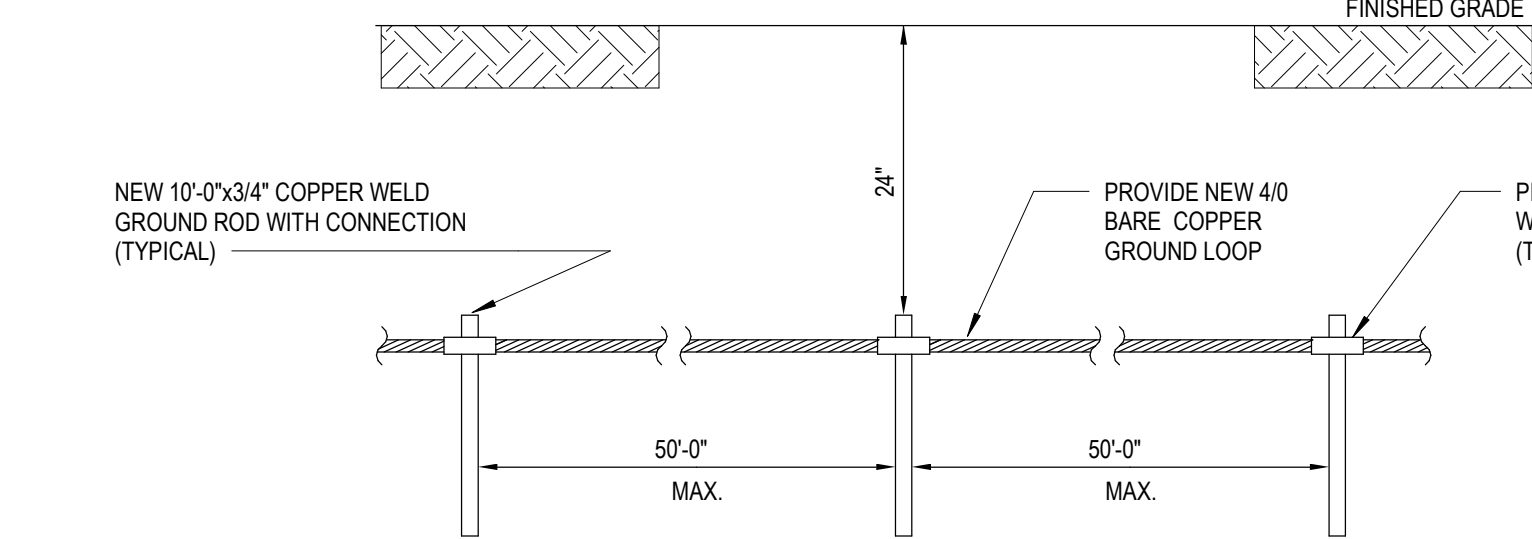
ELECTRICAL DETAILS SHEET 4



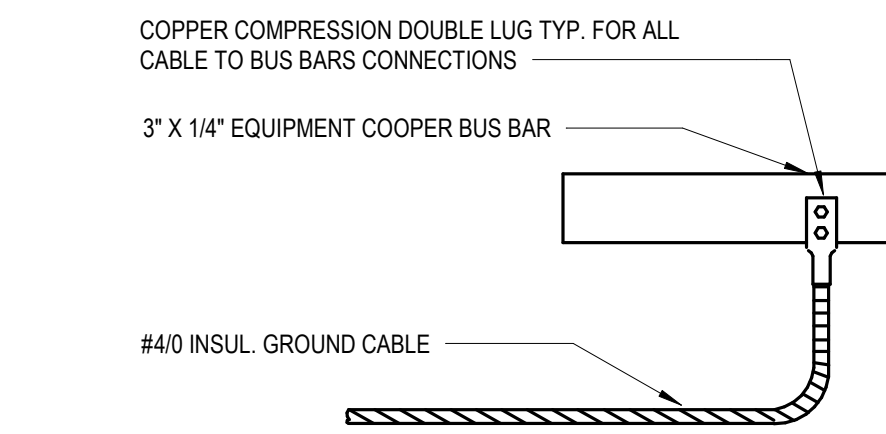
1 BELOW GRADE GROUND CABLE
E4-0-19 NOT TO SCALE



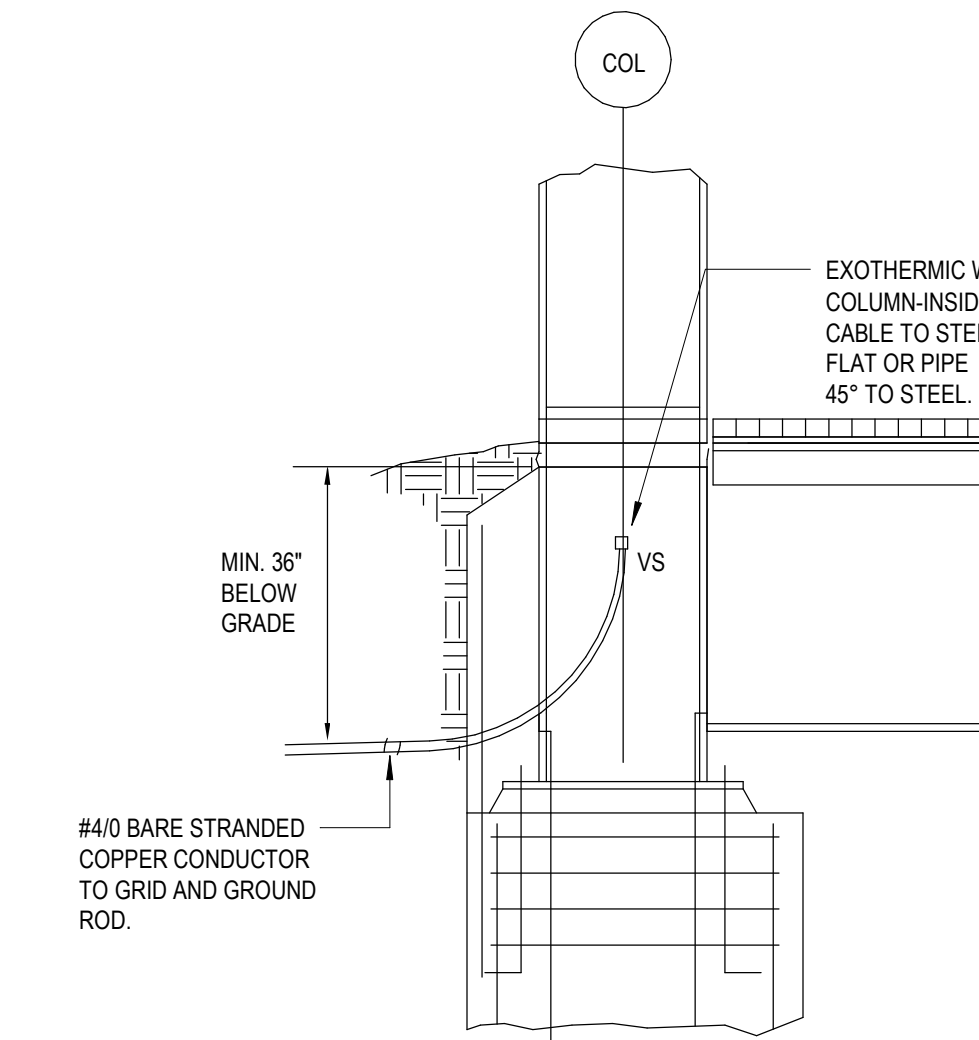
2 CONCRETE ENCASED ELECTRODE DETAIL
E4-0-19 NOT TO SCALE



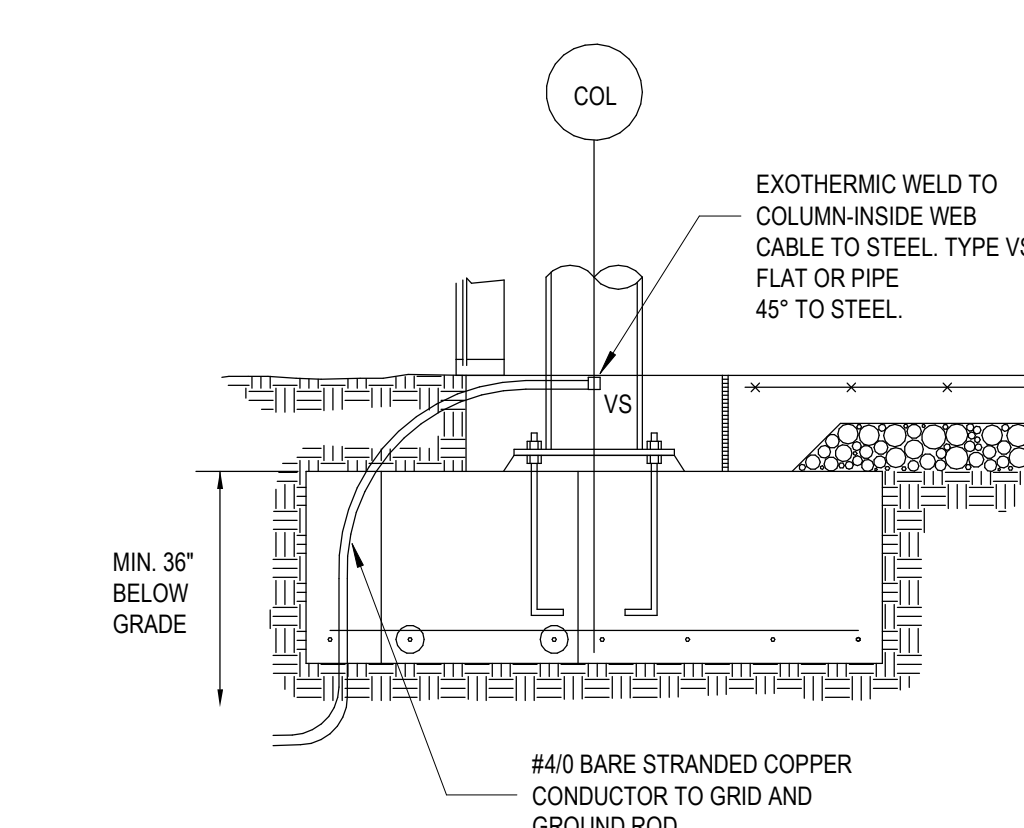
3 GROUND - LOOP/GRID DETAIL
E4-0-19 NOT TO SCALE



4 CABLE TO GROUND BUS
E4-0-19 NOT TO SCALE



5 RAISED GROUNDING DETAIL
E4-0-19 NOT TO SCALE

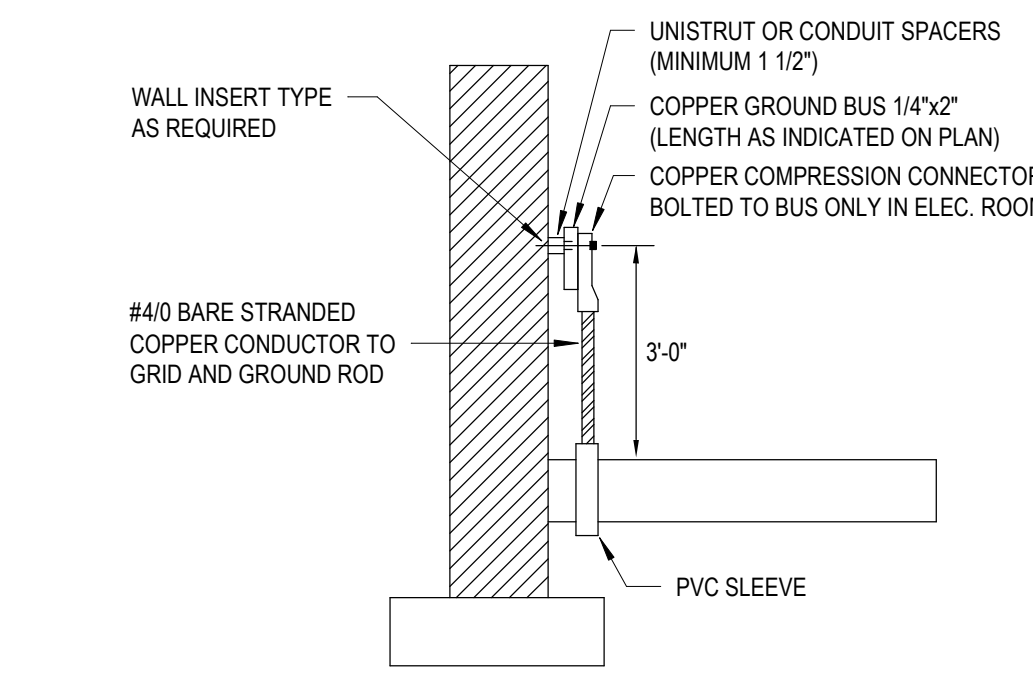


6 TYPICAL COLUMN FOOTING DETAIL
E4-0-19 NOT TO SCALE

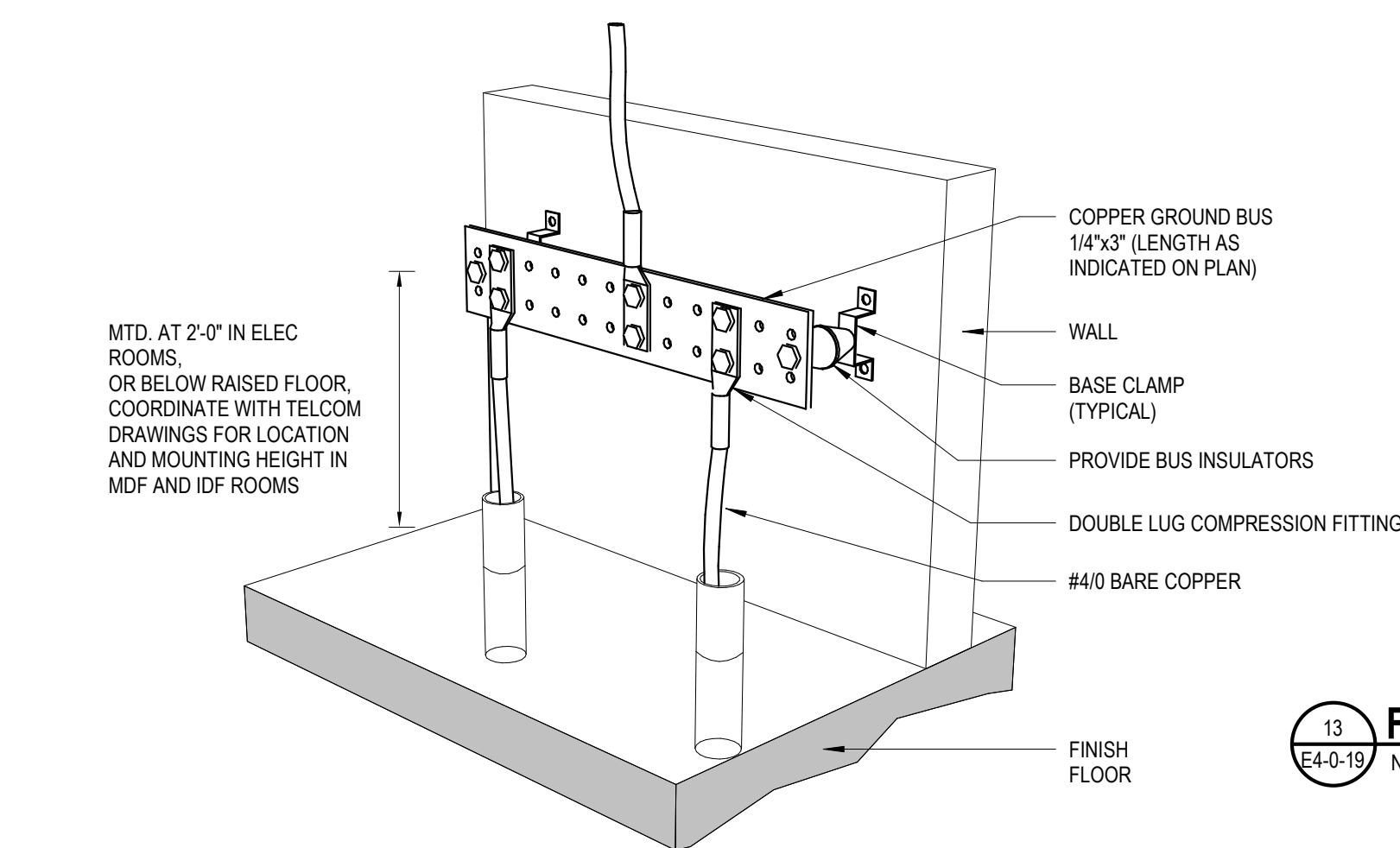
BUILDING GROUNDING SHEET NOTES:

1. CONTRACTOR SHALL VERIFY LOCATION OF SWITCHGEAR PRIOR TO INSTALLATION OF GROUND BUS.
2. ALL EMBEDDED CONDUIT STUB-UPS TO BE RGS CONDUIT.
3. GROUNDING SHALL BE IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRIC CODE (NEC), AND THE NOTES AND DETAILS ON THIS DWG.
4. ALL BELOW GRADE AND EMBEDDED GROUND CONNECTIONS SHALL BE BY EXOTHERMIC WELDING PROCESS OR APPROVED EQUAL.
5. ALL EXPOSED GROUND CONNECTIONS SHALL BE MECHANICAL TYPE.
6. SURFACES WHERE GROUNDING CONNECTIONS ARE TO BE MADE SHALL BE CLEANED TO BARE METAL AND SHALL BE FREE OF ALL PAINT, SCALE, GREASE, DIRT AND OXIDES.
7. UNDERGROUND CABLES AND GROUND LOOP TO BE BACKFILLED COMPLETELY AROUND CABLE WITH NON-CORROSIVE FILL.
8. GROUND LOOP CONDUCTORS SHALL BE INSTALLED 2 FT. FROM BUILDING FOUNDATION/FOOTER WITH A MINIMUM OF 3\"/>
- 9. CONTRACTOR SHALL INVESTIGATE FOR UNDERGROUND OBSTACLES PRIOR TO EXCAVATION FOR UNDERGROUND WORK.

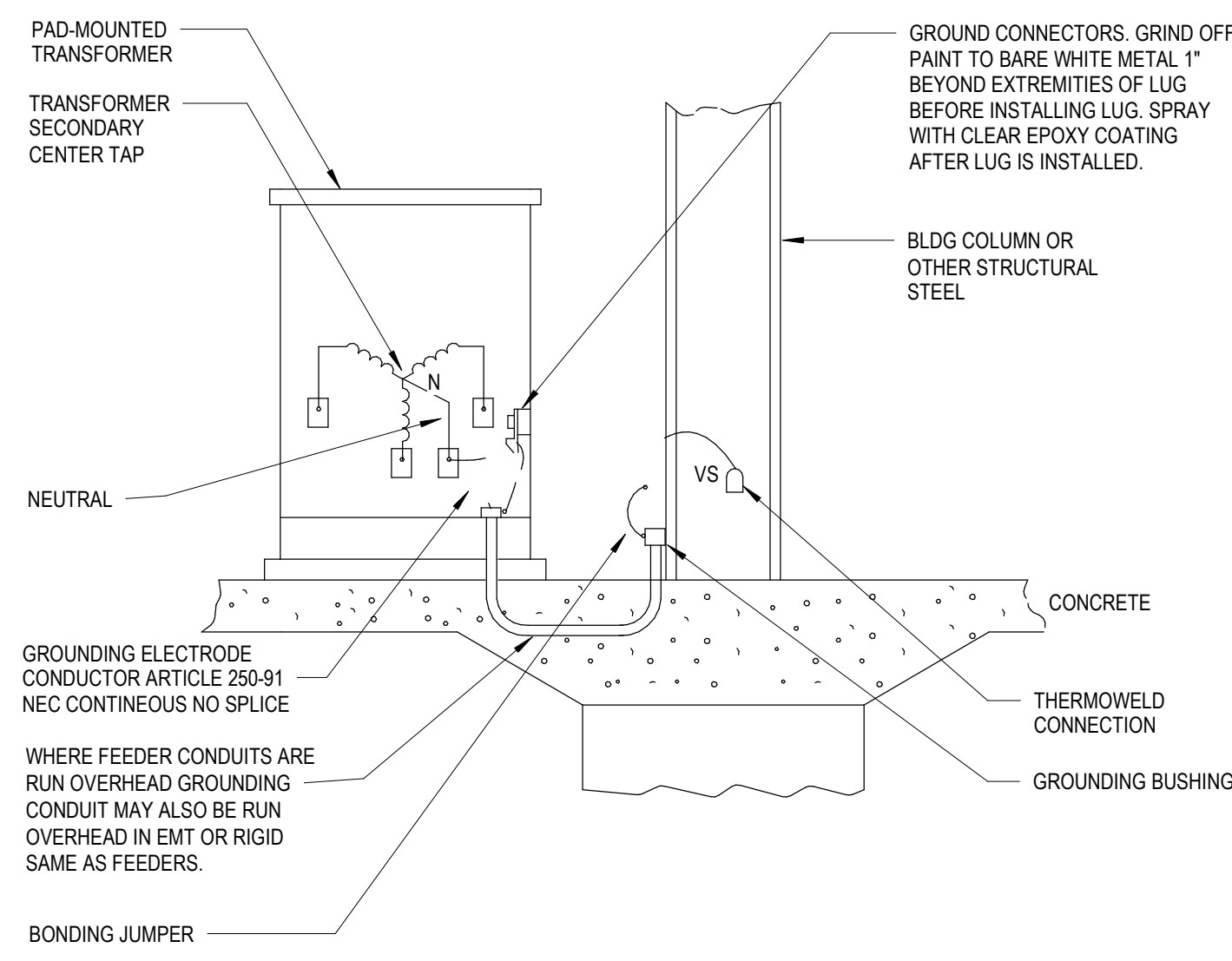
BUILDING GROUNDING SHEET NOTES
E4-0-19 NOT TO SCALE



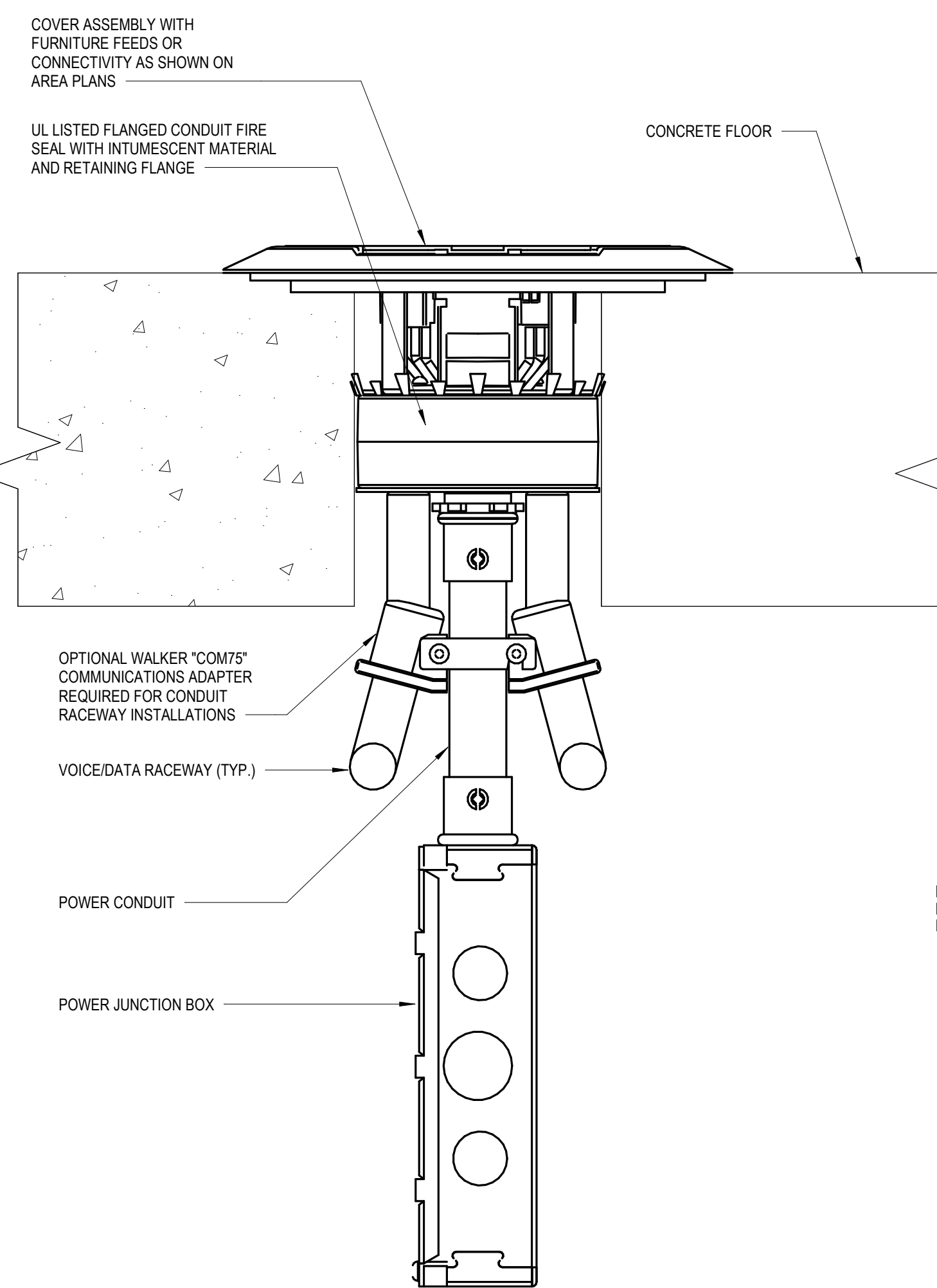
7 TYPICAL GROUND BUS DETAIL
E4-0-19 NOT TO SCALE



8 GROUND BUS DETAIL
E4-0-19 NOT TO SCALE



9 PAD-MOUNTED XFMR. & GENERATOR GROUNDING DETAIL
E4-0-19 NOT TO SCALE



10 FLOORBOX DETAIL, WALKER POKE-THRU
E4-0-19 NOT TO SCALE

NOTES:

1. FOLLOW MANUFACTURERS' INSTRUCTIONS FOR MINIMUM AND MAXIMUM O.D. CORE BIT SIZES.
2. HOLES SHALL BE SPACED A MINIMUM OF 24\"/>
- 3. MINIMUM THICKNESS OF STRUCTURAL CONCRETE TOPPING TO BE 2 1/4\"/>

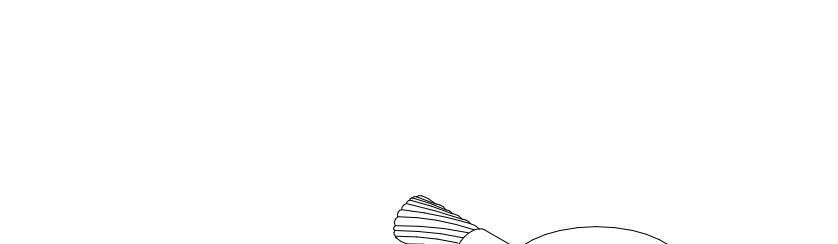
LINK SEAL CORE DRILLED WALL OPENING
E4-0-19 NOT TO SCALE



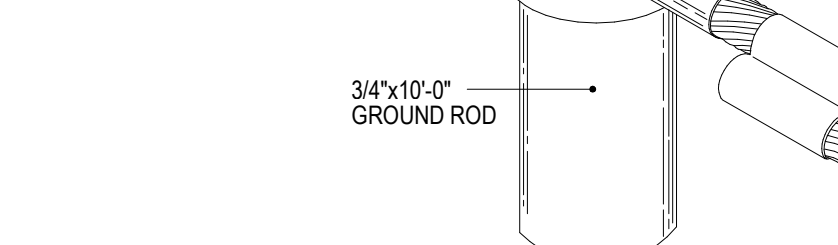
11 LINK SEAL CORE DRILLED WALL OPENING
E4-0-19 NOT TO SCALE



12 EMERGENCY SHUT-OFF DIAGRAM FOR SHOP EQUIPMENT
E4-0-19 NOT TO SCALE



13 GROUND ROD CONNECTION
E4-0-19 NOT TO SCALE



14 TYPICAL BENCH TOP MULTI-OUTLET RACEWAY DETAIL
E4-0-19 NOT TO SCALE



15 TYPICAL BENCH TOP MULTI-OUTLET RACEWAY DETAIL
E4-0-19 NOT TO SCALE



16 TYPICAL BENCH TOP MULTI-OUTLET RACEWAY DETAIL
E4-0-19 NOT TO SCALE



17 TYPICAL BENCH TOP MULTI-OUTLET RACEWAY DETAIL
E4-0-19 NOT TO SCALE

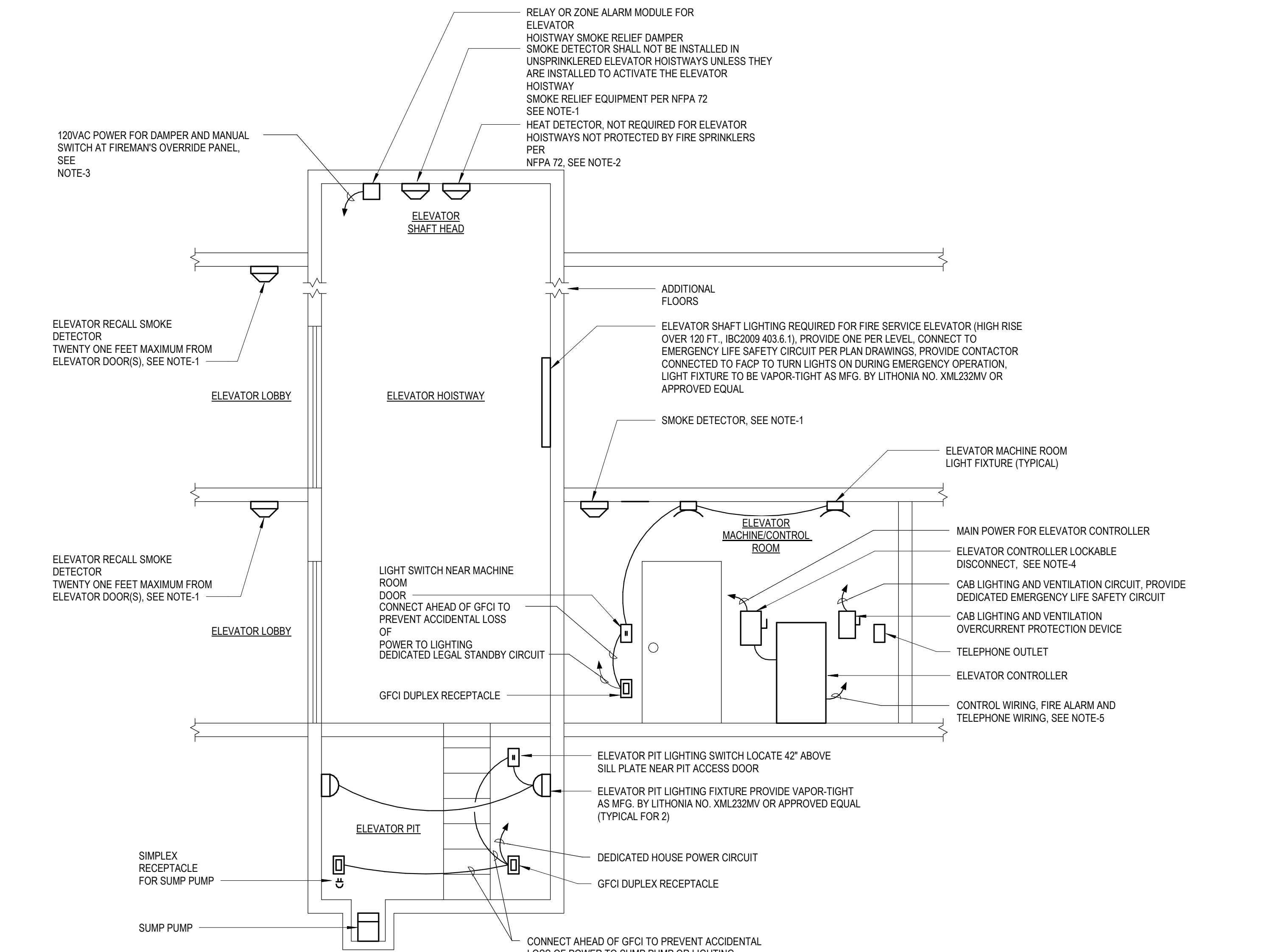


18 TYPICAL BENCH TOP MULTI-OUTLET RACEWAY DETAIL
E4-0-19 NOT TO SCALE

NOTES:

1. ACTIVATION OF ANY OF THE SMOKE DETECTORS SHOWN SHALL INITIATE ELEVATOR RECALL. ACTIVATION OF SMOKE DETECTORS ON DESIGNATED LEVEL SHALL CAUSE THE ELEVATOR TO RETURN TO AN ALTERNATE LEVEL DESIGNATED AND ALTERNATE LEVELS TO BE DETERMINED BY THE ELEVATOR INSPECTOR AND FIRE MARSHAL.
2. IF THE HOIST-WAY OR MACHINE-CONTROL ROOM IS SPRINKLERED, THEN THERE MUST BE A 15C DEGREE RATE OF RISE OR RATE COMPENSATION HEAT DETECTOR INSTALLED WITHIN 24\"/>
- 3. DAMPER AT TOP OF SHAFT SHALL BE MANUALLY CONTROLLED FROM FIRE ALARM PANEL.
- 4. USABLE ELEVATOR DISCONNECT, LOCATE ADJACENT TO DOOR ENTERING MACHINE ROOM, PROVIDE WITH MEANS FOR LOCKING IN OPEN POSITION PROVIDE WITH CLASS II JUNGLE ELEMENT, TIME-DELAY FUSES.
- 5. CONTROL AND COMMUNICATION WIRING, PROVIDE THE FOLLOWING TO EACH ELEVATOR CONTROLLER.
 - 5.1 SHUNT TRIP CONTROL WIRES TO HEAT DETECTOR(S) OR CONTROL PANEL
 - 5.2 AUXILIARY CONTACTS FOR SELF LOWERING ELEVATORS (IF APPLICABLE)
 - 5.3 TELEPHONE AND DATA CABLES
 - 5.4 COMMUNICATION WIRES FROM AUTOMATIC TRANSFER SWITCH
 - 5.5 COMMUNICATION WIRES FROM FIRE ALARM CONTROL PANEL

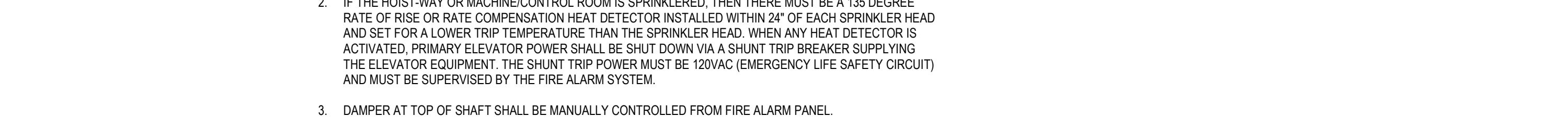
ELECTRICAL - TYPICAL ELEVATOR REQUIREMENTS
E4-0-19 NOT TO SCALE



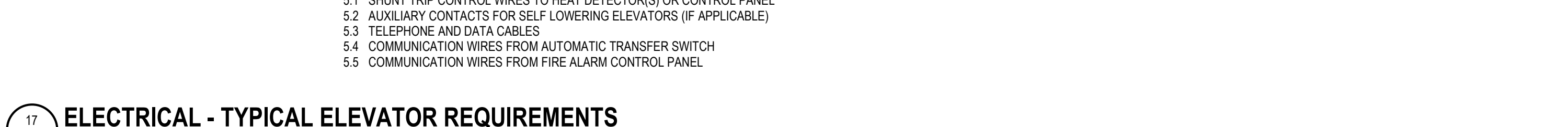
19 TYPICAL ELEVATOR REQUIREMENTS
E4-0-19 NOT TO SCALE



20 TYPICAL ELEVATOR REQUIREMENTS
E4-0-19 NOT TO SCALE



21 TYPICAL ELEVATOR REQUIREMENTS
E4-0-19 NOT TO SCALE



22 TYPICAL ELEVATOR REQUIREMENTS
E4-0-19 NOT TO SCALE

NOTES:

1. ACTIVATION OF ANY OF THE SMOKE DETECTORS SHOWN SHALL INITIATE ELEVATOR RECALL. ACTIVATION OF SMOKE DETECTORS ON DESIGNATED LEVEL SHALL CAUSE THE ELEVATOR TO RETURN TO AN ALTERNATE LEVEL DESIGNATED AND ALTERNATE LEVELS TO BE DETERMINED BY THE ELEVATOR INSPECTOR AND FIRE MARSHAL.
2. IF THE HOIST-WAY OR MACHINE-CONTROL ROOM IS SPRINKLERED, THEN THERE MUST BE A 15C DEGREE RATE OF RISE OR RATE COMPENSATION HEAT DETECTOR INSTALLED WITHIN 24\"/>
- 3. DAMPER AT TOP OF SHAFT SHALL BE MANUALLY CONTROLLED FROM FIRE ALARM PANEL.
- 4. USABLE ELEVATOR DISCONNECT, LOCATE ADJACENT TO DOOR ENTERING MACHINE ROOM, PROVIDE WITH MEANS FOR LOCKING IN OPEN POSITION PROVIDE WITH CLASS II JUNGLE ELEMENT, TIME-DELAY FUSES.
- 5. CONTROL AND COMMUNICATION WIRING, PROVIDE THE FOLLOWING TO EACH ELEVATOR CONTROLLER.
 - 5.1 SHUNT TRIP CONTROL WIRES TO HEAT DETECTOR(S) OR CONTROL PANEL
 - 5.2 AUXILIARY CONTACTS FOR SELF LOWERING ELEVATORS (IF APPLICABLE)
 - 5.3 TELEPHONE AND DATA CABLES
 - 5.4 COMMUNICATION WIRES FROM AUTOMATIC TRANSFER SWITCH
 - 5.5 COMMUNICATION WIRES FROM FIRE ALARM CONTROL PANEL

ELECTRICAL - TYPICAL ELEVATOR REQUIREMENTS
E4-0-19 NOT TO SCALE

DRA

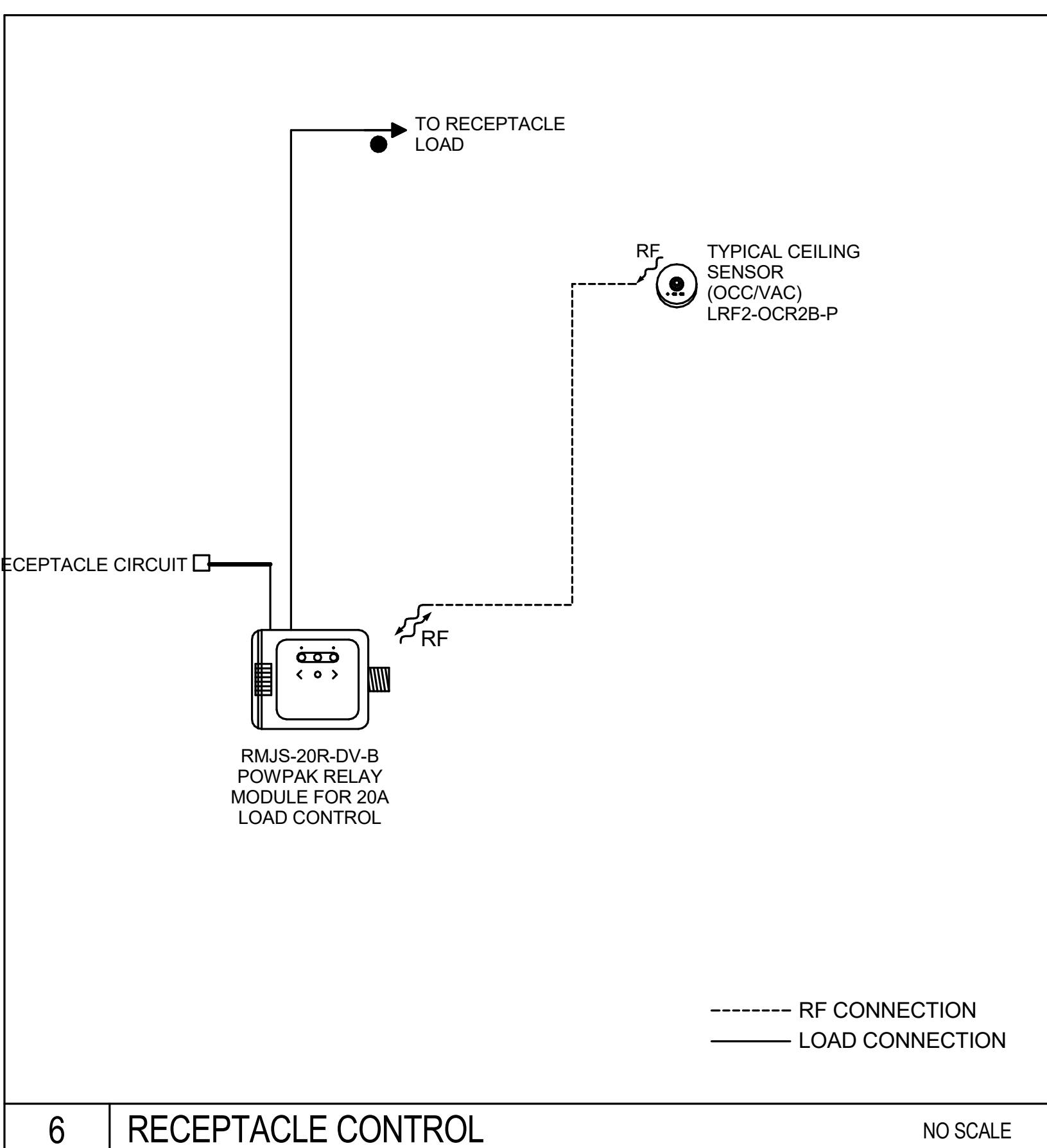
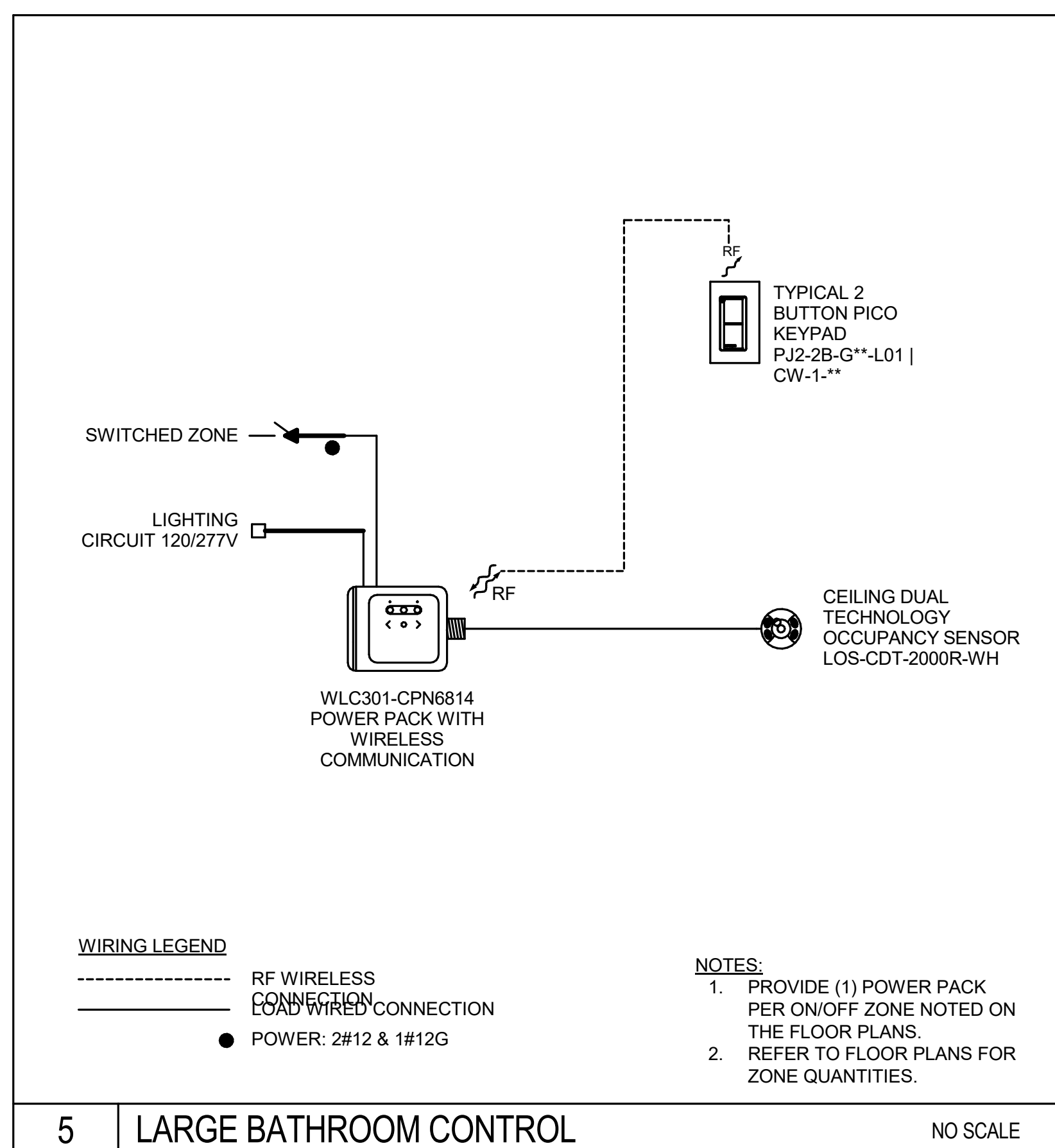
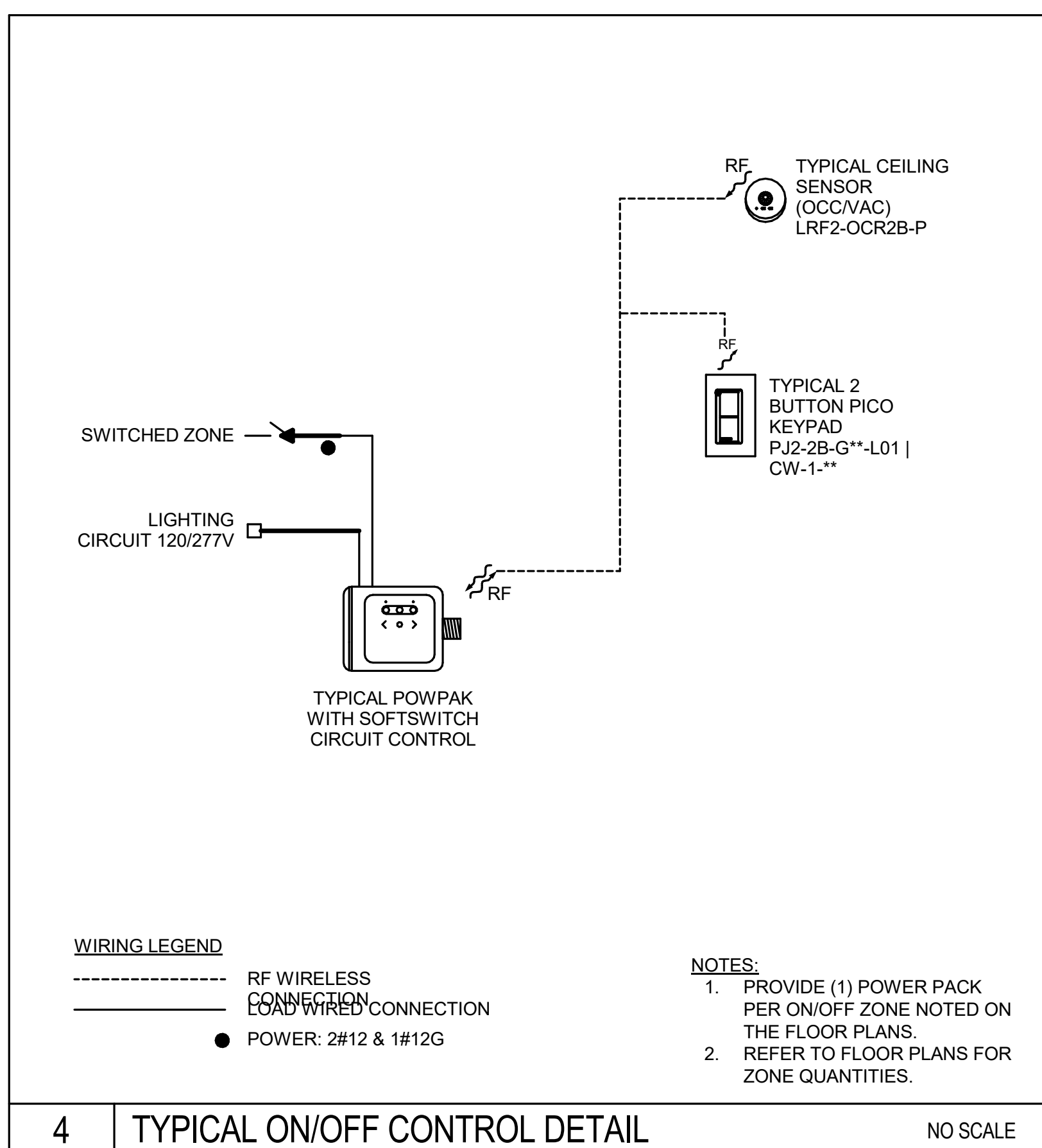
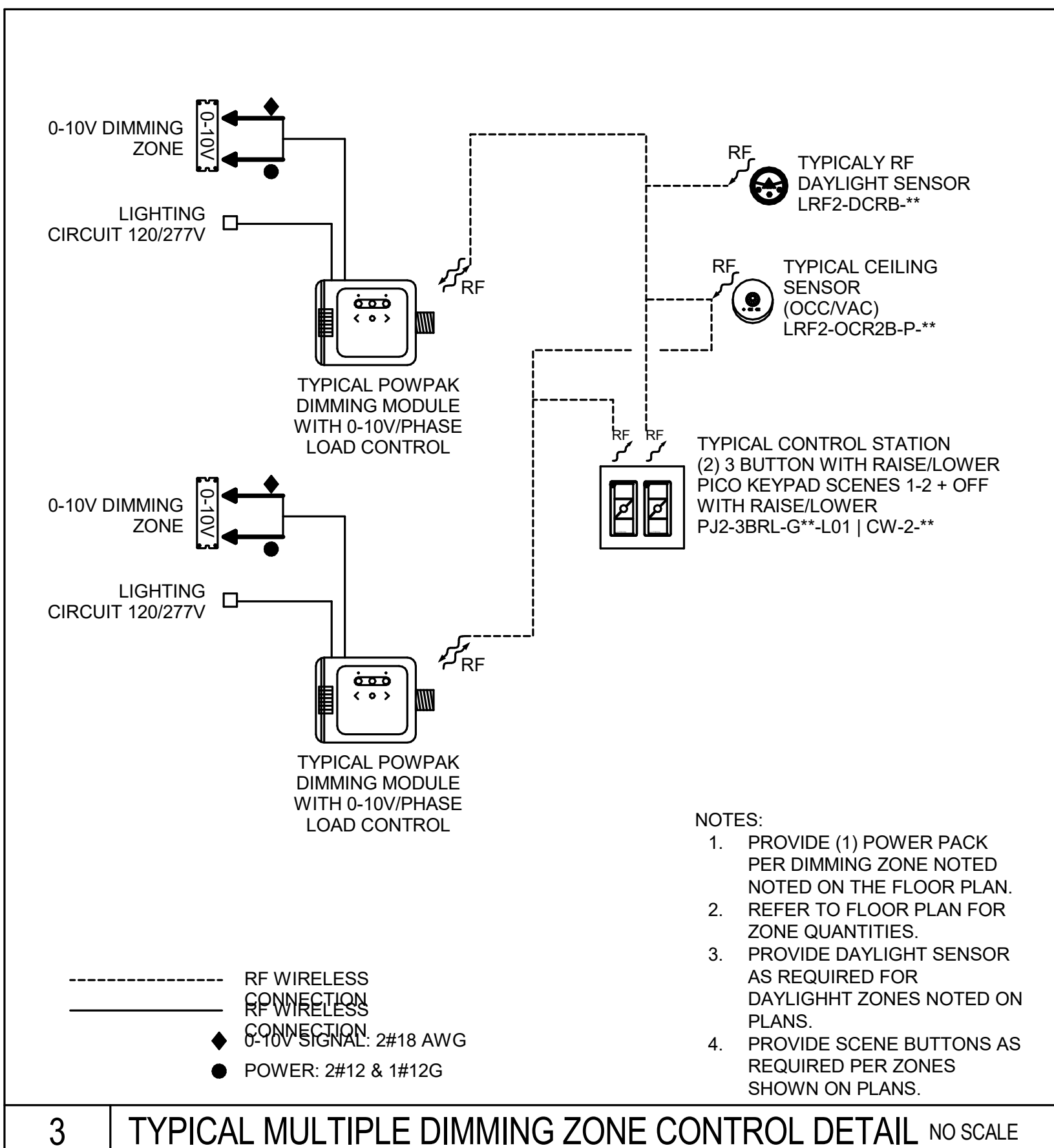
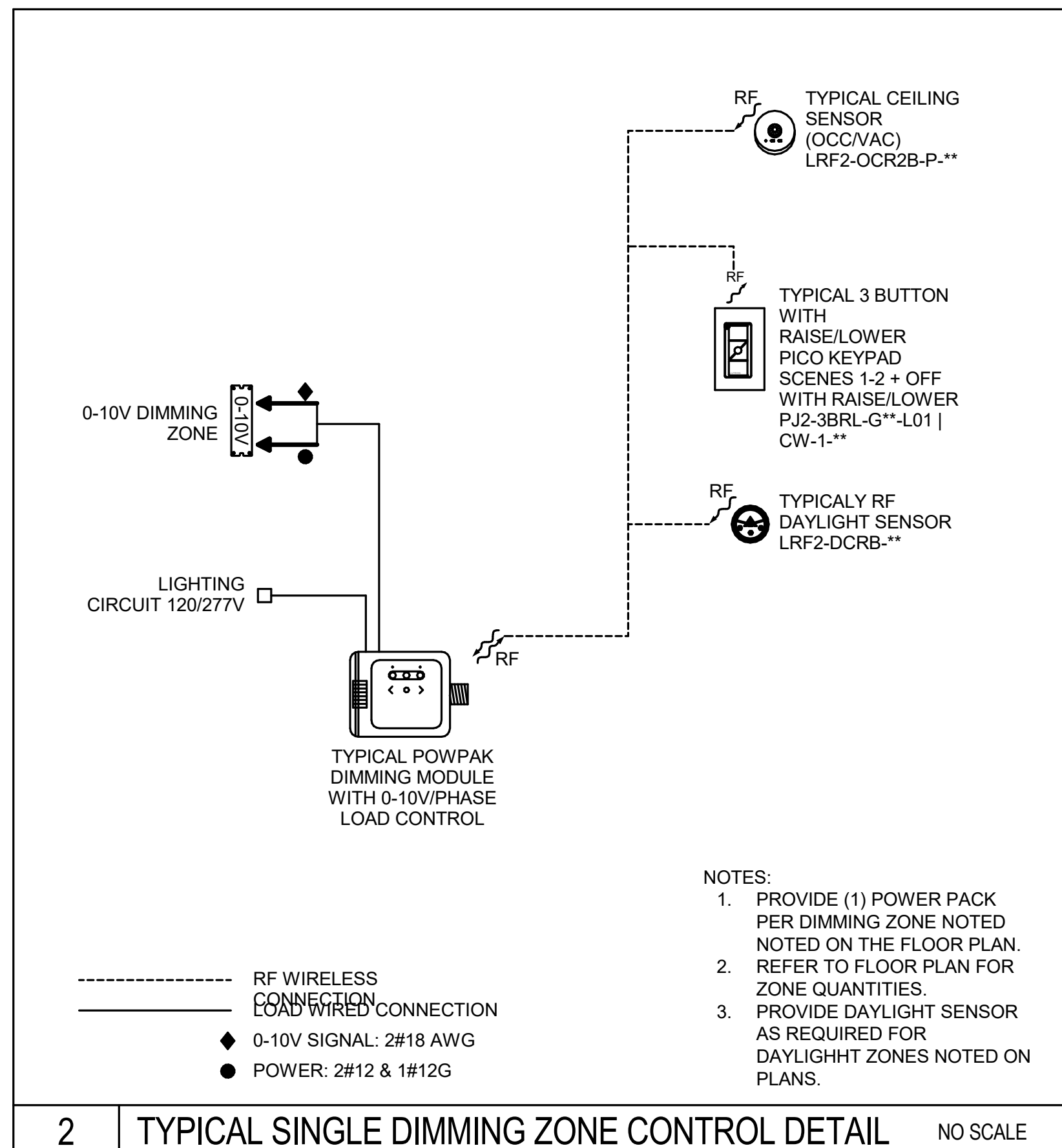
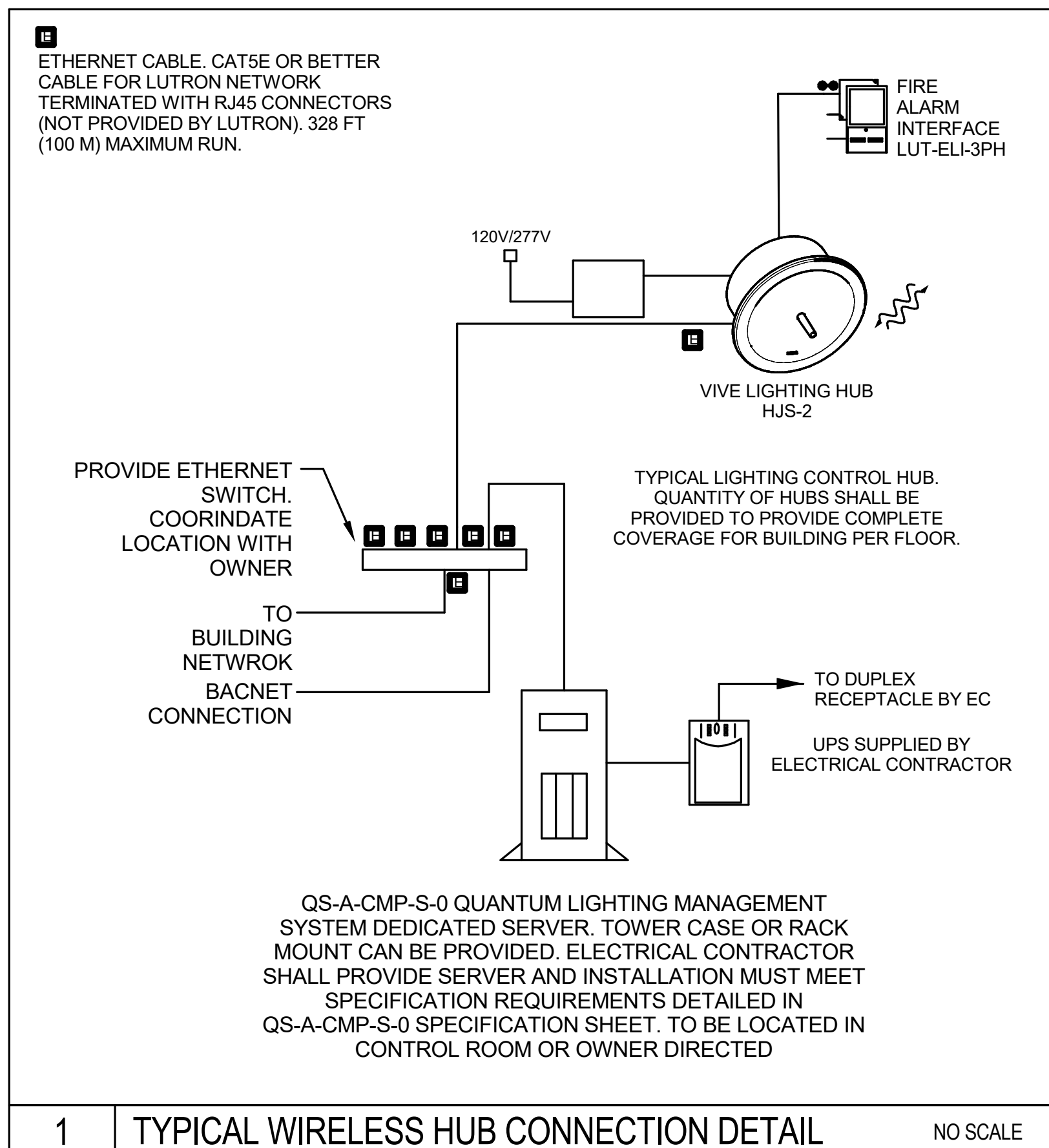
Drumme Rosane Anderson, Inc.
225 Oakland Road
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South Windsor, CT
06074

260 Charles Street
Studio 300
Waltham, MA
02453

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www.dra-inc.com

**Northeast
Metropolitan
Regional
Vocational High
School**

Wakefield, MA 01880



LUTRON SERVICES	
QTY	SERVICE TITLE (MODEL NUMBER)
THE QUANTITY OF SERVICES BELOW ARE TO BE INCLUDED AS PART OF THIS PROJECT'S SCOPE OF WORK AND SPECIFIED INTO THE WRITTEN SPEC DOCUMENTS	
PRE-STARTUP SERVICES	
1	ONSITE PRE-WIRE VISIT (LSC-PREWIRE)
1	SYSTEM & NETWORK INTEGRATION CONSULTATION (LSC-INT-VISIT)
1	SENSOR LAYOUT & TUNING (LSC-SENS-LT)
STARTUP SUPPORT SERVICES	
(THESE SERVICES ARE ADDITIONAL TO YOUR SPECIFIED STARTUP BASED ON YOUR REQUIREMENTS)	
1	AFTER HOURS STARTUP (LSC-AH-SU)
1	ONSITE SCENE & LEVEL TUNING (LSC-AR-VISIT)
1	ONSITE PERFORMANCE-VERIFICATION WALKTHROUGH (LSC-WALK)
1	SYSTEM PERFORMANCE-VERIFICATION DOCUMENTATION (LSC-SRV-DOC)
POST-STARTUP SERVICES	
1	CUSTOMER-SITE SOLUTION TRAINING (LSC-TRAINING-SP)
1	SYSTEM OPTIMIZATION (LSC-SYST-SP)
MAINTENANCE & SUPPORT SERVICES	
1	SOFTWARE MAINTENANCE AGREEMENT (LSC-SMA-SP)
1	COMMERCIAL SYSTEMS 2-YEAR LIMITED WARRANTY (LSC-2Y)
1	ENHANCED SILVER (LSC-EBS)
1	ENHANCED GOLD (LSC-EGS)
1	ENHANCED PLATINUM (LSC-EP)
1	SILVER TECHNOLOGY SUPPORT PLAN (LSC-SILV-W)
1	GOLD TECHNOLOGY SUPPORT PLAN (LSC-GOLD-W)
1	PLATINUM TECHNOLOGY SUPPORT PLAN (LSC-PLAT-W)
1	PREVENTIVE MAINTENANCE VISIT(S) (LSC-SCH-MAINT)
PLEASE GO TO WWW.LUTRON.COM/SERVICES FOR FURTHER INFORMATION.	

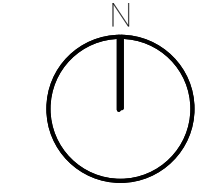
○ LIGHTING AND RECEPTACLE CONTROL WIRING DIAGRAMS
1/2" = 1'-0"

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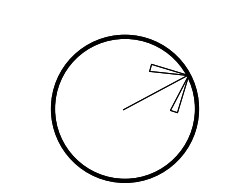
BID SET

August 28th, 2023

PROJECT NORTH



MAGNETIC NORTH



**LIGHTING
CONTROL SINGLE
LINE DIAGRAM**

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

Job No.: 60-20-409

Drawn By: DRA

Date: August 28th, 2023

E4-0-20

Fixture Schedule					Construction Documents					Northeast Metro Tech Vocational High School					Fixture Schedule					Construction Documents					Northeast Metro Tech Vocational High School					Fixture Schedule					Construction Documents																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Type	Manufacturer	Description	Lamp/Details	Scope/Notes/Location	Type	Manufacturer	Description	Lamp/Details	Scope/Notes/Location	Type	Manufacturer	Description	Lamp/Details	Scope/Notes/Location	Type	Manufacturer	Description	Lamp/Details	Scope/Notes/Location	Type	Manufacturer	Description	Lamp/Details	Scope/Notes/Location	Type	Manufacturer	Description	Lamp/Details	Scope/Notes/Location																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
	OCL Architectural Lighting GL1-P1DB-36-MW-TBD-LED2-35K-UNV-100-DM1-TBD	36" Diameter x 4.5" high pendant mounted omnidirectional LED ring with acoustic felt in center of luminaire. Fixture has frosted acrylic lens with aircraft cable suspension.	85 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80 Beam Spread: Omnidirectional Lumens: 7905 delivered per fixture Dim: 0-10V Mount: Pendant Finish: Per Architect	Notes: 1, 2, 6, 8 Suspension heights are to be provided per fixture schedule description. Default height applies to all bottom of fixture locations on the project unless otherwise noted in plans or fixture schedule. Location: Principal Office		Luminis Lighting SN1100C-L1L13-K30-XXX-TBD	11" Diameter x 2.75" deep surface mounted LED downlight fixture with sealed gasketed patterned tempered glass lens, and exterior rated housing.	14 Watts Volts: Per EE Color Temp: 3000K CRI: 80+ Lumens: 1288 delivered per fixture Dim: 0-10V Mount: Surface Finish: Per Architect Rating: IP65/K10	Notes: 1, 2, 6 Location: Entrances		Mercury Lighting MLS3-DI-VARIES-400-400-939K-ASO-BW-1%-2C-XXX-TBD-TBD	3" Wide x 4 1/8" tall pendant mounted LED linear direct/indirect fixture with extruded aluminum housing, snap-in acrylic lens, and baffling indirect optics. Independent control of direct vs indirect.	6.5 W per foot Volts: Per EE Color Temp: 3500K CRI: 90+ Beam Spread: Direct/ Indirect Lumens: 400 Direct/400 Indirect per foot Dim: 0-10V Mount: Pendant Finish: Per Architect	Notes: 1, 2, 5, 6, 11 Suspension heights are to be provided per fixture schedule description. Default height applies to all bottom of fixture locations on the project unless otherwise noted in plans or fixture schedule. Location: Facial & Resting	Or Equal by:	ALW MoonRing 3 Acoustic Series - Med Output Edison Lighting Group Sonic Ring+	-Suspension Heights— Default Height - +10'-0" AFF Admin 101B - +8'-0" AFF Waiting A120 - +8'-6" AFF																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									</

DRA / Bala Consulting Engineers

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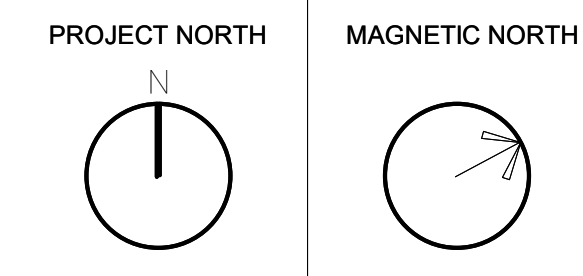
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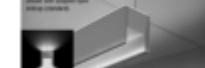
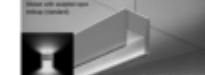
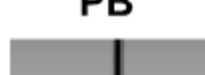
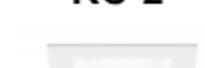
1 Luminaire schedule 1
1" = 160'-0"

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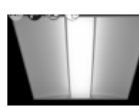
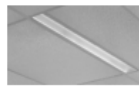
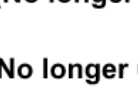
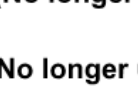
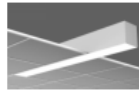
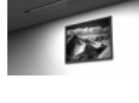
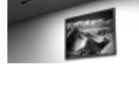
BID SET

August 28th, 2023



Northeast Metro Tech Vocational High School					Northeast Metro Tech Vocational High School					Northeast Metro Tech Vocational High School					Northeast Metro Tech Vocational High School				
Fixture Schedule					Construction Documents					Fixture Schedule					Construction Documents				
Type	Manufacturer	Description	Lamp/Details	Scope/Notes/Location	Type	Manufacturer	Description	Lamp/Details	Scope/Notes/Location	Type	Manufacturer	Description	Lamp/Details	Scope/Notes/Location					
	Finelite	H04-ID-RO-VARIES-B-H-835-WSOTG-OPN-XXX-FA-OE-DC-C-	4" Aperture x 4-3/4" tall direct/indirect pendant mounted linear LED light fixture with indirect widespread top glow optics. Independent control of direct vs indirect.	11.3 W per foot Volts: Per EE Color Temp: 3500K CRI: 80+ Beam Spread: Direct/ Indirect Lumens: 764/576 per foot Dim: 0-10V Mount: Pendant Finish: Per Architect	Notes: 1, 2, 5, 6, 11 Suspension heights are to be provided per fixture schedule description. Default height applies to all bottom of fixture locations on the project unless otherwise noted in plans or fixture schedule.		Lithonia Lighting	FEM-L96-9000LM-LPAFL-WD-35K-80CRI	6.8" W x 4.2" H x 8' low profile surface mounted LED linear fixture with low profile acrylic frosted lens.	53.4 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80+ Lumens: 9000 per fixture Dim: 0-10V Mount: Surface Finish: Standard	Notes: 5, 6 Location: Mezzanine Mech Areas		Focal Point	FEQ2-22-AC-2500LH-35K-1C-XXX-L11-GX-XXX	2' Wide x 2' long x 3.91" tall recessed LED troffer with center panel and angled side luminous lens panels mounted in ACT ceiling.	23 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80+ Beam Spread: Lambertian Lumens: 2500 per fixture Dim: 0-10V to 1% Mount: Recessed Finish: Per Architect	Notes: 1, 6 Location: Throughout		
	Or Equal By:						Or Equal by:												
	Prudential Lighting	Stream Square Series					FSC Lighting	L27600- AOK SERIES			Metalux		Cruze ST 22CZ2						
	Peerless	OPM4 Series	—Suspension Heights— Default Height - +1'-6" BFC Corridor B111 - +10'-0" AFF Stair 7 - +10'-6" AFF				Day-Brite	Vaporlume LED DW			Day-O-Lite		Harmony Series						
	Mercury Lighting	MLS3-M-VARIES-950-35K-HTA-1%-XXX-TBD-TBD-TBD-TBD	3-1/2" Tall x 3" wide pendant mounted LED linear direct distribution fixture with extruded aluminum housing, snap-in acrylic lens, and batwing indirect optics.	8.7 W per foot Volts: Per EE Color Temp: 3500K CRI: 80+ Beam Spread: Direct View Lumens: 950 per foot Dim: 0-10V to 10% Mount: Pendant Finish: Per Architect	Notes: 1, 2, 5, 6, 11 Suspension heights are to be provided per fixture schedule description. Default height applies to all bottom of fixture locations on the project unless otherwise noted in plans or fixture schedule.		Lithonia Lighting	RLNK-VARIES-120-35K-80CRI-M4	1.82" High x 1.58" wide surface mounted linkable LED strip light with steel body and acrylic lens.	5 W per foot Volts: 120V Color Temp: 3500K CRI: 80+ Beam Spread: Lambertian Lumens: 470 per foot Dim: 0-10V Mount: Unistrut Finish: Standard	Notes: 5, 6, 11 Location: Task lighting booths		Focal Point	FEQ2-22-AC-2500LH-35K-1C-XXX-L11-F-XXX	2' Wide x 2' long x 3.91" tall recessed LED troffer with center panel and angled side luminous lens panels mounted in gypsum board ceiling.	23 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80+ Beam Spread: Lambertian Lumens: 2500 per fixture Dim: 0-10V to 1% Mount: Recessed Finish: Per Architect	Notes: 1, 6 Location: Throughout		
	Or Equal by:						Or Equal by:												
	Mojo Illumination	L63b Series	—Suspension Heights— Default Height - +12'-0" AFF				Feelux	FLX Stix HDPro			Metalux		Cruze ST 22CZ2						
	Axis Lighting	Beam 3 Series					Signify	SLS LED Linkable Strip			Day-O-Lite		Harmony Series						
	Finelite	H04-ID-RO-VARIES-V-S-835-WSOTG-OPN-XXX-FA-OE-DC-C4	4" Aperture x 4 3/4" tall pendant mounted LED linear direct/indirect fixture with extruded aluminum housing, snap-in acrylic lens, and batwing indirect optics mounted to exposed j-box	12.5 W per foot Volts: Per EE Color Temp: 3500K CRI: 80+ Beam Spread: Direct/ Indirect Lumens: 396/1129 per foot Dim: 0-10V Mount: Pendant Finish: Per Architect Connection: J-Box	Notes: 1, 2, 5, 6, 11 Suspension heights are to be provided per fixture schedule description. Default height applies to all bottom of fixture locations on the project unless otherwise noted in plans or fixture schedule.		Peerless	RNNAWID-LCB-8FT-MSL8-90CRI-35K-I150LMF-300LMF-SSH-MINI1-ZT-XXX-DCT-XXX -F1-TBD-SQEP	1 1/2" Tall x 4 1/2" wide x 8' long wall-mounted LED linear direct/indirect fixture with remote driver aluminum extruded body, square end caps, and independent control of direct vs indirect.	44 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80+ Beam Spread: Direct/ Indirect Lumens: 2824/1128 per fixture Dim: 0-10V to 1% Mount: Wall Mount Finish: Per Architect	Notes: 1, 2, 6 Location: Staircase		Focal Point	FEQ2-22-AC-2500LH-935K-1C-XXX-L11-GX-XXX	2' Wide x 2' long x 3.91" tall recessed LED troffer with center panel and angled side luminous lens panels mounted in ACT ceiling.	23 W per fixture Volts: Per EE Color Temp: 3500K CRI: 90+ Beam Spread: Lambertian Lumens: 2500 per fixture Dim: 0-10V Mount: Recessed Finish: Per Architect	Notes: 1, 6 Location: Cosmetology area		
	Or Equal by:						Or Equal by:												
	Prudential	Stream 2 Series					Day-O-Lite	Elite Series			Metalux		Cruze ST 22CZ2						
	Peerless	Open Series	—Suspension Heights— Default Height - +1'-6" BFC				Axis Lighting	Pose Wallmount			Day-O-Lite		Harmony Series						
	Mercury Lighting	MLS3-DI-VARIES-400-400-35K-ASO-BW-1%-2C-XXX-TBD-TBD	3" Wide x 4 1/8" tall pendant mounted LED linear direct/indirect fixture with extruded aluminum housing, snap-in acrylic lens, and batwing indirect optics. Independent control of direct vs indirect.	6.5 W per foot Volts: Per EE Color Temp: 3500K CRI: 80+ Beam Spread: Direct/ Indirect Lumens: 400/400 per foot Dim: 0-10V Mount: Pendant Finish: Per Architect	Notes: 1, 2, 5, 6, 11 Suspension heights are to be provided per fixture schedule description. Default height applies to all bottom of fixture locations on the project unless otherwise noted in plans or fixture schedule.		H. E. Williams Inc.	96-8-L40-835-HIAFR-DIM-XXX	7 3/8" W x 5" H x 4" L Wall mounted LED linear fixture with fully enclosed and gasket housing, tool-less latches, internal white reflector, and frosted, ribbed impact resistant acrylic shielding.	30 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80 Beam Spread: Lambertian Lumens: 4000 per fixture Dim: 0-10V Mount: Wall Mount Finish: Per Architect	Notes: 1, 2, 5, 6 Provide with suspended mounting kit. Location: Metal Fabrications		Lithonia Lighting	STAK-2X2-2000LM-80CRI-35K-COLT-MINI1-ZT-XXX-TBD-TBD-TBD-TBD	2' Wide x 2' long x 1.9" tall recessed LED troffer with center lensed section and angled metallic side reflectors.	16.8 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80+ Beam Spread: Lambertian Lumens: 2000 per fixture Dim: 0-10V Mount: Recessed Finish: Per Architect	Notes: 1, 6 Location: Shop Classroom & Storage		
	Or equal by:						Or Equal by:												
	Mojo Illumination	L63b Series					Lithonia	FEM Series			Metalux		Cruze ST 22CZ2						
	Axis Lighting	Beam 3 Series	—Suspension Heights— Default Height - +12'-0" AFF Restaurant B113 - +12'-0" AFF				Current	Albeo ALR Series			Day-O-Lite		Harmony Series						
	Mercury Lighting	MLS3-DI-VARIES-625-625-935K-ASO-BW-1%-2C-XXX-TBD-TBD	3" Wide x 4 1/8" tall pendant mounted LED linear direct/indirect fixture with extruded aluminum housing, snap-in acrylic lens, and batwing indirect optics. Independent control of direct vs indirect.	10.3 W per foot Volts: Per EE Color Temp: 3500K CRI: 90+ Beam Spread: Direct/ Indirect Lumens: 625/625 per foot Dim: 0-10V Mount: Pendant Finish: Per Architect	Notes: 1, 2, 5, 6, 11 Suspension heights are to be provided per fixture schedule description. Default height applies to all bottom of fixture locations on the project unless otherwise noted in plans or fixture schedule.		Meteor	WS2-170-358-XXX-STV-60-TBD-ST5-6"-WG	16.24" Diameter x 4.44" tall pendant mounted LED round hi-bay fixture with 60 degree optics and wire guard accessory. Provide with 5'-6" rigid stem.	170 W per fixture Volts: Per EE Color Temp: 3500K CRI: 85 Beam Spread: 60° Lumens: 19450 per fixture Dim: 0-10V to 10% Mount: Pendant Finish: Per Architect	Notes: 1, 2, 5, 6 Suspension heights are to be provided per fixture schedule description. Default height applies to all bottom of fixture locations on the project unless otherwise noted in plans or fixture schedule.		Lithonia Lighting	STAK-2X4-4000LM-80CRI-35K-COLT-MINI1-ZT-XXX-TBD-TBD-TBD-TBD	2' Wide x 4' long x 1.9" tall Recessed troffer with center lensed section and angled metallic side reflectors.	33.2 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80+ Beam Spread: Lambertian Lumens: 4000 per fixture Dim: 0-10V Mount: Recessed Finish: Per Architect	Notes: 1, 6 Location: Shop Classroom & Storage		
	Or Equal by:						Or equal by:												
	Mojo Illumination	L63b Series					SpecGrade LED	The Saturn Series			Metalux		Cruze ST 22CZ2						
	Axis Lighting	Beam 3 Series	—Suspension Heights— Default Height - +12'-0" AFF				PacLights				Day-O-Lite		Harmony Series						
	Day-Brite	LINCS100E-Varies-935-XXX-TBD-DIM-RSx	1" High x 4" Wide surface mounted linkable linear LED undercabinet fixture with integral switch.	6 W per foot Volts: Per EE Color Temp: 3500K CRI: 90+ Beam Spread: Lambertian Lumens: 270 per foot Dim: ELV Mount: Surface Finish: Per Architect	Notes: 1, 6, 11 Location: Classroom Throughout		Gotham Lighting	IC04CC-35/30-BR-LD-40D-XXX-EDXB-SGB-CCAN45-C120-DBL	5-1/2" Diameter x 9" tall pendant mounted LED cylinder downlight fixture with 45° swivel canopy, cord, and black reflector.	34.12 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80 Beam Spread: 40° Lumens: 2610 delivered per fixture Dim: DMX Mount: Pendant Finish: Matte Black	Notes: 1, 2, 6 Suspension heights are to be provided per fixture schedule description. Default height applies to all bottom of fixture locations on the project unless otherwise noted in plans or fixture schedule.		Focal Point	FLC22D-SDO-SW-900L-XXX-LD1-1C-LC22-SDO-900L-835K-DNS-WFL1-TBD	2.5" x 2.5" Square recessed LED downlight fixture with die-cast aluminum trim with 60° cutoff, flange, and regressed solite lens.	9.3 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80+ Beam Spread: Wide Flood Lumens: 900 per fixture Dim: 0-10V Mount: Recessed Finish: Per Architect	Notes: 1, 6 Location: Throughout		
	Provide with:						Or Equal By:												
	Or Equal by:						ALW	Core 3			USAI Lighting		B3SD Basic Series						
	Picasso Lighting	Task					HE Williams	Cylinder 4CR-L25-M			Specialty Lighting Industries		Scope Original Series						
	focal Point	FCOLT-HF-500-35K-1-XXX-LD1-CV-NF-VARIES	2" High x 4" wide surface mounted linear LED cove fixture with asymmetric distribution and quick connects for mounting in coves.	5 W per foot Volts: Per EE Color Temp: 3500K CRI: 80+ Beam Spread: Asymmetric Lumens: 500 per foot Dim: 0-10V to 10% Mount: Cove Finish: Standard	Notes: 6, 8, 11 Location: Level 4 Corridor		Gotham Lighting	IC04CC-35/25-BR-LD-45D-XXX-EDXB-SGB-CCAN45-C120-DBL	5-1/2" Diameter x 9" tall pendant mounted LED cylinder downlight fixture with 45° swivel canopy, cord, and black reflector.	26.5 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80 Beam Spread: 45° Lumens: 2419 delivered per fixture Dim: DMX Mount: Pendant Finish: Matte Black	Notes: 1, 2, 6 Suspension heights are to be provided per fixture schedule description. Default height applies to all bottom of fixture locations on the project unless otherwise noted in plans or fixture schedule.		Focal Point	FLC22D-SDO-SW-900L-XXX-LD1-1C-LC22-SDO-900L-935K-DNS-WFL1-TBD	2.5" x 2.5" Square recessed LED downlight fixture with die-cast aluminum trim with 60° cutoff, flange, and regressed solite lens.	9.3 W per fixture Volts: Per EE Color Temp: 3500K CRI: 90+ Beam Spread: Wide Flood Lumens: 900 per fixture Dim: 0-10V Mount: Recessed Finish: Per Architect	Notes: 1, 6 Location: Cosmetology area		
	Or Equal by:						Or Equal By:												
	Mercury Lighting	CV4 Indirect Cove System Series					ALW	Core 3			USAI Lighting		B3SD Basic Series						
	Elliptipar	S320 Series					HE Williams	Cylinder 4CR-L25-M			Specialty Lighting Industries		Scope Original Series						
	Lumini	KXL-HE-VARIES-35K-SO-F-TBD-TBD	.51" Tall by .83" Wide Surface mounted linear LED fixture with extruded aluminum channel, frosted lens, and remote driver(s).	2.8 W per foot Volts: Per EE Color Temp: 3500K Beam Spread: Lambertian Lumens: 271 per foot Dim: Yes Mount: Surface Finish: Per Architect	Notes: 1, 6, 8, 11 Location: Auditorium Entry		Gotham Lighting	IC04CC-35/15-AR-LSS-35D-MVOLT-GZ1-XXX-CCAN-C120-X-X-DBL	5-1/2" Diameter x 9" tall pendant mounted LED cylinder downlight fixture with 45° swivel canopy and field interchangeable optics	15.1 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80 Beam Spread: 35° Lumens: 1545 delivered per fixture Dim: 0-10V to <1% Mount: Pendant Finish: Matte Black	Notes: 1, 2, 6 Location: Media Center		Kenall Lighting	CSETO-24-45LD-35K8-DIM1-DV-TBD-2H-SYM-FN	9.8" Tall x 24" Wide x 48" long recessed LED food safe high-bay fixture with FDA approved clear poly carbonate outer lens and diffused acrylic inner lens.	45 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80 Beam Spread: Symmetric Lumens: 6771 delivered per fixture Dim: 0-10V Mount: Recessed Finish: Per Architect	Notes: 1, 6 Location: Culinary Arts Area		
	Provide with:						Or Equal By:												
	- Dimmable power supply						ALW	Core 3			Or Equal per performance								
	- Mounting clips						HE Williams	Cylinder 4CR-L25-M			specifications in lamp/details section and description.								
	PreciseLED	BEAM Tape Series with Figure Slim Channel					Gotham Lighting	IC04CC-35/25-AR-LSS-15D-MVOLT-GZ1-XXX-CCAN-C120-X-X-DBL	5-1/2" Diameter x 9" tall pendant mounted LED cylinder downlight fixture with 45° swivel canopy and field interchangeable optics.	26.5 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80 Beam Spread: 15° Lumens: 2419 delivered per fixture Dim: 0-10V to <1% Mount: Pendant Finish: Matte Black	Notes: 1, 2, 6 Location: Media Center		Gotham Lighting	EV04-35/35-AR-WD-LSS-XXX-GZ1-TRW	4" Diameter recessed LED downlight with semi-specular reflector cone with painted flange	38.4 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80+ Beam Spread: Wide Flood Lumens: 3612 delivered per fixture Dim: 0-10V to 1% Mount: Recessed Finish: White	Notes: 1, 6 Location: Media Center		
	Or Equal by:						Or Equal By:												
	Scout Lighting	Slim Fixture Series					ALW	Core 3			Cooper Lighting Solutions		Portfolio LD4C						
	Lithonia Lighting	FEM-L48-3000LM-LPAFL-MD-35K-80CRI	6.8" W x 4.2" H x 4' low profile surface mounted LED linear fixture with low profile acrylic frosted lens.	18 W per fixture Volts: Per EE Color Temp: 3500K CRI: 80+ Lumens: 2902 delivered per fixture Dim: 0-10V Mount: Surface Finish: Standard	Notes: 5, 6 Location: Closets & Storage		HE Williams	Cylinder 4CR-L25-M			HE Williams		4DR L40 Wide						
	FSC Lighting	L27600- AOK SERIES					Provide with:							Focal Point	FLC2W-RDO-500L-XXX-LD1-1C (Housing) LC2-RDO-500L-835K-WW-TBD-TBD (Trim)	2.5" aperture recessed LED lensed wallwash with angled lens, semi-specular reflector cone, painted trim flange.	11.7 Watts Volts: Per EE Color Temp: 3500K CRI: 80+ Beam Spread: Wall-Wash Lumens: 500 per fixture Dim: 0-10V Mount: Recessed Finish: Per Architect	Notes: 1, 6 Location: Restrooms	
	Or Equal by:						Or Equal By:												
	Day-Brite	Vaporlume LED DW					Or Equal By:				Cooper Lighting Solutions	Portfolio LD2B							
											Lightolier	C3RWW Series							

LIGHTING FIXTURE SCHEDULE					
FIXTURE TYPE	MANUFACTURER	CATALOG NUMBER	LAMP	BALLAST/DRIVER	REMARKS
EC1	EMERG-LITE	LX-11N-R-C-0JA-A			EDGE LIT EXIT SIGN - INDICATING CHEVRONS AND FACE SHADING AS SHOWN ON PLAN
F1	LITHONIA LIGHTING	FINLW-48-840-ZT-MVOLT			4FT SURFACE MOUNTED LINEAR LED
LS1	MANUFACTURER	CATALOG NUMBER			SUSPENDED LINEAR LED - VERIFY STEM LENGTHS
RA-1					
T1	MANUFACTURER	CATALOG NUMBER			TRACK

Northeast Metro Tech Vocational High School					Northeast Metro Tech Vocational High School					Northeast Metro Tech Vocational High School					Northeast Metro Tech Vocational High School				
Fixture Schedule					Construction Documents					Fixture Schedule					Construction Documents				
Type	Manufacturer	Description	Lamp/Details	Scope/Notes/Location	Type	Manufacturer	Description	Lamp/Details	Scope/Notes/Location	Type	Manufacturer	Description	Lamp/Details	Scope/Notes/Location					
	Gotham Lighting	EV08DSH-3307-DFF-SOL-XXX-XX	6" Square recessed LED shower-grade downlight with flush, textured lens.	Notes: 1, 6		Mercury Lighting	MLP3-G-3-VARIES-400-35-ASO-1%-XXX-TEL	6 7/8" Tall x 3.25" wide recessed LED perimeter system with acrylic smooth opal lensing and telescoping ends mounted in ACT ceiling.	Notes: 6, 11		Elipagar	S-215-M112-T-02-M-TBD-0-835-ED	3'-0" Long x 6-3/4" tall x 4-3/4" wide semi-recessed linear LED wall wash fixture.						
	Or Equal By:					Or equal by:					Or Equal per performance specifications in lamp/details section and description.								
	Cooper Lighting Solutions	Portfolio LDD50C	Beam Spread: Lambertian Lumens: 866 delivered per fixture Dim: Per EE Mount: Recessed Finish: White Rating: IP66	Location: Showers		Xico	PRObeam 3 Perimeter Series	Beam Spread: Perimeter Lumens: 400 per foot Dim: 0-10V Mount: Recessed Finish: Matte White	Location: Restaurant										
	HE Williams	6DS L10 N Series				Ledallie	Linear Trugroove Series				Erico	Testis-Size 4-3000K-OVAL FLOOD-0-10V	8" diameter x 6-5/8" deep in-grade mounted uplight fixture with wall wash optics and tilting light module.	Notes: 1, 6, 8					
	Or Equal By:					Mercury Lighting	MLP3-G-3-VARIES-400-35-ASO-1%-XXX-TEL	6 7/8" Tall x 3.25" wide recessed LED perimeter system with acrylic smooth opal lensing and telescoping ends mounted in hardid ceiling.	Notes: 6, 11		Or equal by:								
	USA Lighting	BevelLED Woodworks Series	2.5" by 2.5" Wall-rated recessed LED trimless downlight fixture mounted in wood ceiling with trimless wood ceiling installation kit.	Notes: 1, 6		Xico	PRObeam 3 Perimeter Series	Beam Spread: Perimeter Lumens: 400 per foot Dim: 0-10V Mount: Recessed Finish: Matte White	Location: Restaurant										
	Specialty Lighting Industries	Scope Original Series				Ledallie	Linear Trugroove Series				Focal Point	FEQ2-22-AC-2500LH-35K-1C-XXX-L11-SM-XXX	2" Wide x 2' long x 3.9" tall surface mounted LED troffer with center panel and angled side luminous lens panels mounted to ceiling.	Notes: 1, 6					
	Or Equal By:					Mercury Lighting	MLP3-G-3-VARIES-400-935-ASO-1%-XXX-TEL	6 7/8" Tall x 3.25" wide recessed LED perimeter system with acrylic smooth opal lensing and telescoping ends mounted in ACT ceiling.	Notes: 6, 11		Or Equal by:								
	Metalex	Crux ST 22C22 Series	2" Wide x 4' long x 3.9" tall recessed LED troffer with center panel and angled side luminous lens panels mounted in ACT ceiling.	Notes: 1, 6		Xico	PRObeam 3 Perimeter Series	Beam Spread: Perimeter Lumens: 400 per foot Dim: 0-10V Mount: Recessed Finish: Matte White	Location: Cosmetology area		Cooper Lighting	Crux ST 22C22 Series	Beam Spread: Lambertian Lumens: 2500 per fixture Dim: 0-10V Mount: Surface Finish: Per Architect	Location: Lower Level					
	Mark Architectural	Whisper LED Series				Ledallie	Linear Trugroove Series				Lumina Lighting	L1L15-R30-XXX-BKT-K3-SL	6" x 12" Wall mount exterior rated architectural LED wall sconce with down light integral LED lamp, isolate lens, and adjustable LED modules.	Notes: 1, 2, 6					
	Or Equal By:					Mercury Lighting	MLP3-G-3-VARIES-400-935-ASO-1%-XXX-TEL	6 7/8" Tall x 3.25" wide recessed LED perimeter system with acrylic smooth opal lensing and telescoping ends mounted in hardid ceiling.	Notes: 6, 11		Or equal by:								
	Metalex	Crux ST 22C22 Series	2" Wide x 4' long x 3.9" tall recessed LED troffer with center panel and angled side luminous lens panels mounted in ACT ceiling.	Notes: 1, 6		Xico	PRObeam 3 Perimeter Series	Beam Spread: Perimeter Lumens: 400 per foot Dim: 0-10V Mount: Recessed Finish: Matte White	Location: Cosmetology area		NLS	Trac Linear Wall Mount Series - 10W	Beam Spread: 30° Lumens: 1599 per fixture Dim: Yes Mount: Wall Mount Finish: Black Rating: Wet Rated	Location: Exterior					
	Mark Architectural	Whisper LED Series				Ledallie	Linear Trugroove Series				FC Lighting	FCQ50400 WUD Series	11 1/16" Tall x 1 3/8" wide pendant mounted track.	Notes: 1, 2, 5, 6, 8, 11					
	Or Equal By:					Finelle	H04-RO-VARIES-H-835-OPN-835-XXX-SC-SE-CK	4" Wide x 4" tall recessed LED linear fixture with indirect reflector mounted in ACT ceiling.	Notes: 1, 6, 11		Or equal by:								
	Gotham Lighting	IC04-3535-AR-SS-150-XXX-QZ1-TRW	4" Diameter recessed LED downlight with additional field changeable optics, semi-specular clear reflector, and painted trim.	Notes: 1, 6		Or equal by:					Special Lighting Industries	Yashar Mains Pendant Track Series	—Suspension Heights— Default Height: +9'-0" AFF						
	Provide with:	- OPTC4-200 (20" additional optic)				Prudential	Steam 2 series				Nora Lighting	Recessed Track Series							
	Or equal by:					Peerless	Open series												
	Gotham Lighting	EV04-3510-AR-FL-WD-LSS-XXX-QZ1-TBD	4" Diameter recessed LED round downlight fixture with semi-specular clear reflector and painted trim.	Notes: 1, 6		Finelle	H04-RO-VARIES-H-835-OPN-835-XXX-SC-SE-CK	4" Wide x 4" tall recessed LED linear fixture with indirect reflector mounted in ACT ceiling.	Notes: 1, 6, 11		Juno Lighting	R6011-30K-80CRI-PDMM-NFL-TBD-AHRE10_ (future)	3 1/2" Diameter Track mounted spot fixture with phase dimming compatibility, uniformly lensing, flood reflector, and accessory holder.	Notes: 1					
	Cooper Lighting - Portfolio	LD4C Series	Beam Spread: Wide Lumens: 1000 delivered per fixture Dim: 0-10V to 1% Mount: Recessed Finish: White	Location: Level 1 Corridor	Or equal by:						Special Lighting Industries	Yashar Mosaic Large Series - C24	21 W per fixture						
	HE Williams	4DR Series			Prudential	Steam 2 series					Or equal by:								
	Gotham Lighting	EV04-3515-AR-FL-MWD-LSS-XXX-QZ1-TBD	4" Diameter recessed LED round downlight fixture with semi-specular clear reflector and painted trim.	Notes: 1, 6	Mercury Lighting	MLS3-G-VARIES-625-35K-ASO-1%-XXX	3-3/4" Wide x 3-1/2" recessed linear LED fixture mounted in grid ceiling.	Notes: 1, 6, 11	Nora Lighting		NTE-865 Series	Beam Spread: Narrow Flood Lumens: 2341 delivered per fixture Dim: 0-10V Mount: Track Finish: Per Architect	Location: Photo						
	Cooper Lighting - Portfolio	LD4C Series	Beam Spread: Medium Wide Lumens: 1500 delivered per fixture Dim: 0-10V Mount: Recessed Finish: Per Architect	Location: Level 1 Lobby		Or equal by:													
	Focal Point	ID+ 3.5 Series				Mercury Lighting	MLS3-G-VARIES-625-35K-ASO-1%-XXX	3-3/4" Wide x 3-1/2" tall recessed linear LED fixture mounted in hardid ceiling.	Notes: 1, 6, 11		Or equal by:								
	Gotham Lighting	EV04WW-3520-AR-LSS-XXX-QZ1-TRW	4" Diameter recessed LED downlight fixture with wall wash wash optics.	Notes: 1, 6	Or equal by:														
	Cooper Lighting - Portfolio	LD4C Series	Beam Spread: Wall-Wash Lumens: 1881 delivered per fixture Dim: 0-10V to 1% Mount: Recessed Finish: White	Location: Level 3 Corridor		Xico	PRObeam3 Recessed Series	Beam Spread: Lambertian Lumens: 625 per foot Dim: 0-10V Mount: Recessed Finish: Per Architect	Location: Throughout										
	HE Williams	4DR Series				Mercury Lighting	MLS3-G-VARIES-625-35K-ASO-1%-XXX	3-3/4" Wide x 3-1/2" tall recessed linear LED fixture mounted in grid ceiling with 8.90" corners to create rectangular light patterns.	Notes: 1, 6, 11		Or Equal By:								
	Focal Point	FLC3D-RT-SW-1500L-XXX-L11-TW-LC3-RT-SW-1500L-35K-WFL-CD-LC3-WOOD-KIT	4" Diameter recessed LED round downlight fixture with semi-specular clear reflector and fireless wood ceiling installation kit.	Notes: 1, 6	Or equal by:														
	DMP	DRD Series - DRD2M				Day-O-Lite	PREFL-44-D Series				Or Equal By:								
	USA! BevelLED Series - B4RD-G1					Mercury Lighting	MLW2-G-VARIES-350-935K-1%-XXX-TBD	3-9/16" Tall by 2 3/8" Wide Recessed lensed LED linear wallwash fixture with angled lens and kicker reflector mounted in grid ceiling.	Notes: 1, 6, 11		Or equal by:								
	Mercury Lighting	MLW2-G-VARIES-350-935K-1%-XXX-TBD	3-9/16" Tall by 2 3/8" Wide Recessed lensed LED linear wallwash fixture with angled lens and kicker reflector mounted in grid ceiling.	Notes: 1, 6, 11		Or equal by:													
	Gammalux	G-Beam Series - Wall Wash	Beam Spread: Wall-Wash Lumens: 350 per foot Dim: 0-10V Mount: Recessed Finish: Per Architect	Location: Throughout		Or equal by:					Mercury Lighting	MLP3-G-3-VARIES-400-35-ASO-1%-XXX-TEL	6 7/8" Tall x 3.25" wide recessed LED perimeter system with acrylic smooth opal lensing and telescoping ends mounted in ACT ceiling.	Notes: 1, 6, 11					
	Permaedge	EDGE Wall Wash Series				Or equal by:					Or equal by:								
	Mercury Lighting	MLW2-F-VARIES-350-935K-1%-XXX-TBD	3-9/16" Tall by 2 3/8" Wide Recessed lensed LED linear wallwash fixture with angled lens and kicker reflector mounted in hard id ceiling.	Notes: 1, 6, 11		Xico	PRObeam 3 Perimeter Series	Beam Spread: Perimeter Lumens: 400 per foot Dim: 0-10V Mount: Recessed Finish: Matte White	Location: Corridors		Ledallie	Linear Trugroove Series							

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Available Light • 617.944.6800
31 State Street, 6th Floor - Boston MA 02109

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Available Light • 617.944.6800
31 State Street, 6th Floor - Boston MA 02109

17 Jul 2023 DRA / Bala Consulting Engineers

Available Light • 617.944.6800
31 State Street, 6th Floor - Boston MA 02109

17 Jul 2023

① Luminaire Schedule 3
1" = 300'-0"

DRA

Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
Waltham, MA 02453

Planning | Architecture | Interior Design
Tel: 800.644.8300
www.draan.com

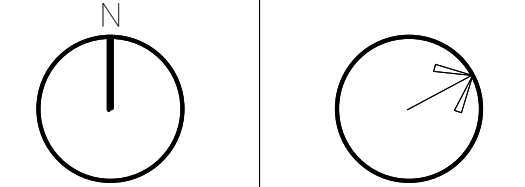
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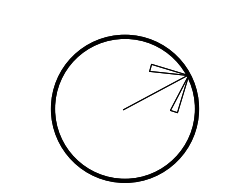
BID SET

August 28th, 2023

PROJECT NORTH



MAGNETIC NORTH



LUMINAIRE
SCHEDULE

Scale: 1" = 300'-0"
Job No.: 60-20-409
Drawn By: DRA
Date: August 28th, 2023

E4-0-23

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Fixture Schedule		Construction Documents		Fixture Schedule		Construction Documents		Fixture Schedule		Construction Documents	
General Notes		General Notes		General Notes		General Notes		General Notes		General Notes	
A Contractor shall supply and install a complete, fully functioning lighting system, including but not limited to: mounting hardware and accessories; appropriately sized transformers; power supplies; drivers; lamps; optical accessories; and electrical appurtenances.		8 Remote transformers, power supplies, or drivers shall be located in nearby accessible, concealed-from-view location with manufacturer recommended ventilation available. As per manufacturer's recommendations, Contractor shall not exceed the maximum allowable distance between any luminaire and its associated remote control devices. Contractor shall supply manufacturer's transformer, power supply or driver of proper capacity.		9 "Local Control" means the controller or dimmer is mounted within the exhibit, rather than a central lighting controller.		10 Prior to aim and focus, all DMX fixtures shall be properly addressed per Available Light's specification and tested using the specified control system (i.e. not a local test device).		11 Refer to tags on electrical drawings for fixture lengths required. Example: LSA-10 length equals 10'-0" for Type LSA.			
B Contractor shall be responsible for final fixture counts of all lighting fixtures and accessories, as well as linear fixture run lengths, as shown on Architect's drawings.											
C Contractor shall be responsible for verifying mounting conditions with mounting locations to ensure compatibility. Contractor shall notify Owner and Architect of any conflicts with all trades prior to the ordering of the equipment. For fixtures where more than one manufacturer is specified, mounting requirements may vary.											
D Contractor shall verify compliance of all lighting equipment specified in its intended application on this project with all applicable national and local codes, ordinances, regulations and jurisdictions prior to ordering any equipment.											
E Contractor shall supply "Contractor net" unit pricing for each lighting product specified. Unit price shall be for equipment only and shall not include installation or other costs. The unit price supplied shall be guaranteed for the project and valid for additions and deletions of product throughout the duration of the project.											
F All drawings represent visual concepts and suggestions only. Available Light is not qualified to determine structural or electrical suitability and will not assume liability for improper engineering, construction or handling of design concepts.											
G The accompanying drawings and all the ideas, arrangements, designs, and plans indicated thereon or represented thereby are owned by and remain the property of Available Light and have been created and developed for use on and in connection with the specified project. Neither this drawing, nor any such ideas, arrangements, designs, or plans shall be appropriated by or disclosed to any person, firm, or corporation for any use or purpose whatsoever, except by the specific and written permission of Available Light.											
H Written dimensions on drawings shall have authority over scaled measurements. Contractor shall field verify all dimensions on the job and inform the Architect of any proposed variations from drawings prior to performing the work.											
I Do not scale electrical drawings for exact location of the lighting fixtures. Refer to Architect reflected ceiling plans and other lighting layouts for proper locations of lighting fixtures.											
J Contractor shall not substitute products unless approved in writing by Available Light and/or Architect. Lighting fixture, ballast, driver, power supply, lamp, and/or accessory substitutions shall be formally presented to Available Light no later than fourteen (14) working days prior to bid due date.											
All proposed substitute fixtures must:											
1) Be proven to meet or exceed the standards of quality, design, appearance, and performance as established by the lighting fixture specified by Available Light. See next note for list of items to be submitted for all substitutions.											
2) Afford to the owner a significant economic benefit.											
Contractor shall coordinate changes due to use of approved substitutes with all trades.											
K For a fixture type where a manufacturer is named as equal, the equal shall meet aesthetic criteria of the specified fixture, including but not limited to: dimensional criteria, finishes, including custom finishes; mounting details; and specified modifications.											
Additionally, for a fixture type where a manufacturer is named as equal, the equal shall meet the minimum performance requirements as defined by specified product, including but not limited to: regulatory listings; output as measured in delivered lumens; center beam candle power (CBCP); baseline efficacies as measured in lumens delivered per watt; cut-off angle as measured from nadir; LED binning; color rendering (CRI); color temperature (CCT); Duv per Manufacturer's supporting documentation; dimming and method; five (5) year minimum warranty including LED engine and driver; L70 lumen maintenance tested according to IES LM79; and specified modifications.											
L Contractor shall provide the following items to the Architect and Available Light for evaluation of proposed substitutions:											
1) A current manufacturer's data sheet with luminaire catalog numbers.											
2) A complete and working sample wired with cord and plug for 120V operation furnished upon request.											
3) A complete photometric report for the proposed substitute fixture using the same lamp type, wattage, and distribution as per the specification. The photometric report should include TM-30 or CRI documentation with R 1-14 values, tabulated candlepower values, a coefficient of utilization table, and an ISO foot-candle diagram from an independent testing laboratory. The photometric report must reflect the fixture specified without modification to the file.											
4) The specified product defines minimum performance requirements as defined by specified product including but not limited to: regulatory listings; output as measured in delivered lumens; center beam candle power (CBCP); baseline efficacies as measured in lumens delivered per watt; cut-off angle as measured from nadir; LED binning; color rendering (CRI); color temperature (CCT); Duv per Manufacturer's supporting documentation; dimming and method; five (5) year minimum warranty including LED engine and driver; and L70 lumen maintenance tested according to IES LM79.											
5) The Contractor shall submit a signed document stating that if the proposed substitution is accepted the project schedule will not be negatively affected.											
M Contractor shall provide the following items to the Architect and Available Light for evaluation of specified fixtures:											
1) Manufacturer's product data sheets for each luminaire indicating luminaire type, dimensions, driver/ballast/power supply/transformer quantity and type, lamp quantity and type, photometric data (including lumen output, CRI & TM-30 data), materials, finishes, accessories, voltage, input wattage, CFM data, and photographic image of luminaire.											
2) Manufacturer's data sheet for each driver/ballast/power supply/transformer including driver/ballast/power supply/transformer type, power factor, input voltage, input watts, and ballast factor.											
3) Scaled and dimensioned detail plan and elevation drawings of custom and continuous row type luminaires including joints, mounting points and type, power connection locations(s), and emergency or separate switching configurations.											
4) For custom luminaires, manufacturer shall perform and submit all engineering calculations as required to ensure the safe and proper installation and operation of the luminaire.											
5) Dimming Power Supply Compatibility Certificates: Signed by driver/ballast/power supply manufacturer certifying that driver/ballast/power supply is compatible with dimming systems and equipment with which they are used.											
6) For all submittals contractor shall submit within 2 weeks of award of bid. All submittals shall have project name and luminaire type clearly shown.											
N Electronic devices that generate radio frequency energy must not interfere with other electronic devices and must not be susceptible to interference from other devices. Equipment shall not be an Electromagnetic (EM) polluter or be effected by EM pollution. All relevant equipment shall comply with current EMC standards.											
O Unless otherwise specified all downlights (recessed, wallwasher, and adjustable) shall be supplied by the same manufacturer, and all linear fixtures (recessed, pendant, and surface mounted) shall be supplied by the same manufacturer.											
P Unless otherwise specified, all retrofit LED lamps shall be manufactured by LEDvance (Osram-Sylvania), Philips, GE, Sora, or Green Creative. All lamps of a given type shall be supplied by the same manufacturer.											
Q Unless otherwise specified, all LED drivers shall be manufactured by one of the following: Advance (Philips), LEDvance (Osram Sylvania), Hatch, Eiko LED, or Lutron.											
R All fixtures shall be supplied with specified lamp(s). Contractor shall provide an additional 10% replacement lamps (minimum two of each lamp type specified). For fixtures that use replaceable LED modules and drivers rather than lamps, Contractor shall provide an additional 5% (minimum one) of each driver and module type.											
S Fixture construction and installation shall ensure no light leaks between ceiling trims of recessed lighting equipment and the ceiling plane. For applications in perforated or partially transparent ceilings, fixture construction shall also ensure no light leaks above the ceiling line.											
T Reflectors, reflector cones, and visible trim of all lighting fixtures shall not be installed until completion of plastering, ceiling the work, painting, and general cleanup. Reflectors, reflector cones, and visible trim shall be carefully handled to avoid scratching or fingerprinting.											
U At the time of acceptance by the Owner, all lighting fixtures shall have been thoroughly cleaned with materials and methods recommended by the manufacturers, all broken parts shall have been replaced, and all lamps and/or LED modules shall be operative.											
V The Owner shall perform regular maintenance on all luminaires in order to ensure expected performance. Fixtures may produce light past their rated life, however, lamps/ballasts/drivers/components must be replaced at or before rated end-of-life for the luminaire to meet minimum photometric performance standards. Neither the Architect nor Available Light shall be held responsible or liable for improper service and maintenance of lighting systems.											
W Budget pricing is the cost the Owner should be prepared to pay for a specific luminaire or system. Price includes lamp(s) but does not include freight, tax, or installation costs. Owner level fixture prices were received directly from the manufacturer's agent, or derived by adding a 15% distributor markup and a 15% contractor markup to a Distributor Net price received from the manufacturer's agent, unless otherwise noted. Details regarding the source of individual fixture budget prices are available upon request.											
X Contractor shall supply all low-voltage control data lines and wiring in order to properly network and dim fixtures together per control intent documentation and manufacturer's documentation. Data runs must be properly terminated.											
Y Due to rapid advances in LED technology, Available Light reserves the right to change lamp or LED module specifications at the time of submittal to another lamp or LED module of equal or lesser cost.											
1 Final finish of fixture shall be approved in writing by Architect.											
2 Mounting height shall be coordinated with Architect's elevations. Contractor to ensure specified cable lengths are adequate for installation prior to procurement for suspended fixtures.											
3 Fixture shall be aimed and focused by Contractor under the direction of Available Light.											
4 The Contractor shall provide all ladders and mechanical lifts (i.e. scissor lifts, articulating boom arm lifts, etc.) for the exclusive use of the aim and focus effort. The number and type of lifts and/or ladders to be pre-approved by Available Light. Crew shall arrive at aim and focus equipped with appropriate aim and focus tools including wrenches, gloves, electrical testers, etc., as per industry standards for a theatrical lighting technician. All costs associated with aiming and focusing shall be included in the bid, including but not limited to travel expenses, parking, storage, etc.											
5 Junction boxes and/or conduit that is used to wire fixtures and that is open to view shall be painted to match adjacent structure.											
6 Fixture or track shall be mounted to structure in a manner recommended by the manufacturer without compromising the integrity of the structure. Contractor shall be responsible for all materials required to insure a safe and proper pendant installation. Contractor to coordinate changes in size of fixtures or track due to use of approved substitutes with all trades. Tracks shall be mounted to prevent twisting when fixtures are aimed and focused causing an asymmetrical load.											
7 Prior to the onsite arrival of Available Light, all luminaires shall be installed in the proper positions as indicated in the construction documents with all mechanical shutters pulled and beams of light directed straight down. Accessories (spread lenses, color filters, screens, gobos, top hats, snoots, etc.) shall be installed under the supervision of Available Light during the aim and focus period.											
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① Luminaire Schedule 4
1" = 160'-0"

DRA

Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074
260 Charles Street
Studio 300
Waltham, MA
02453
Tel: 800.644.8302
www.dra.com

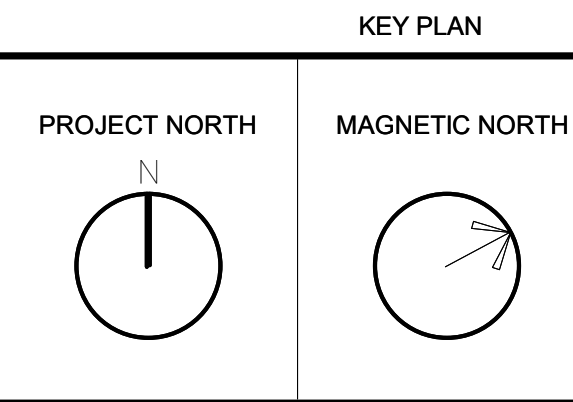
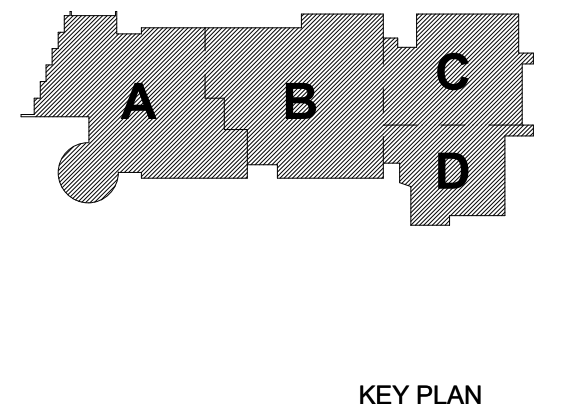
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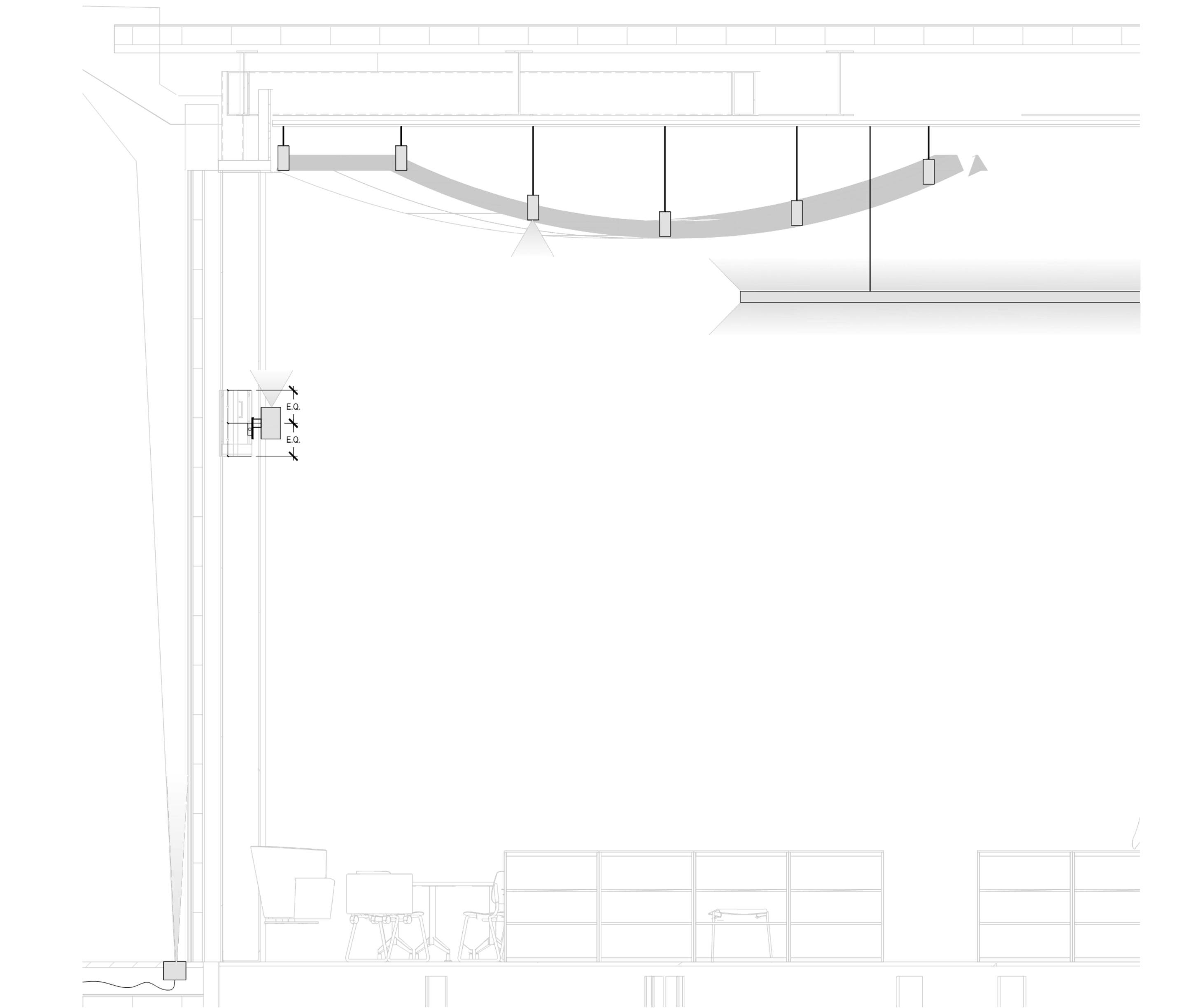
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August 28th, 2023



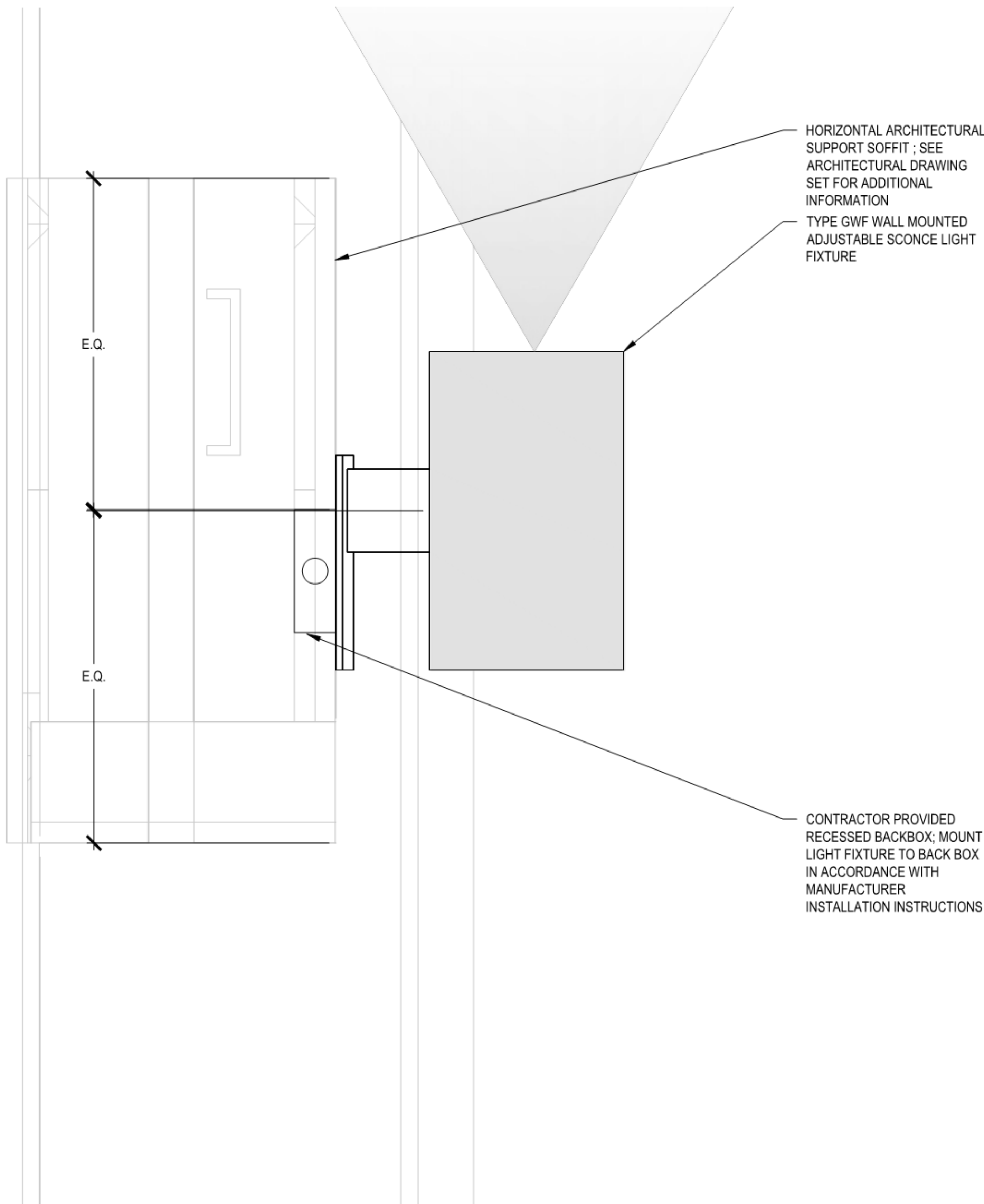
LUMINAIRE
SCHEDULE

Scale: 1" = 160'-0"
Job No.: 60-20-409
Drawn By: DRA
Date: August 28th, 2023

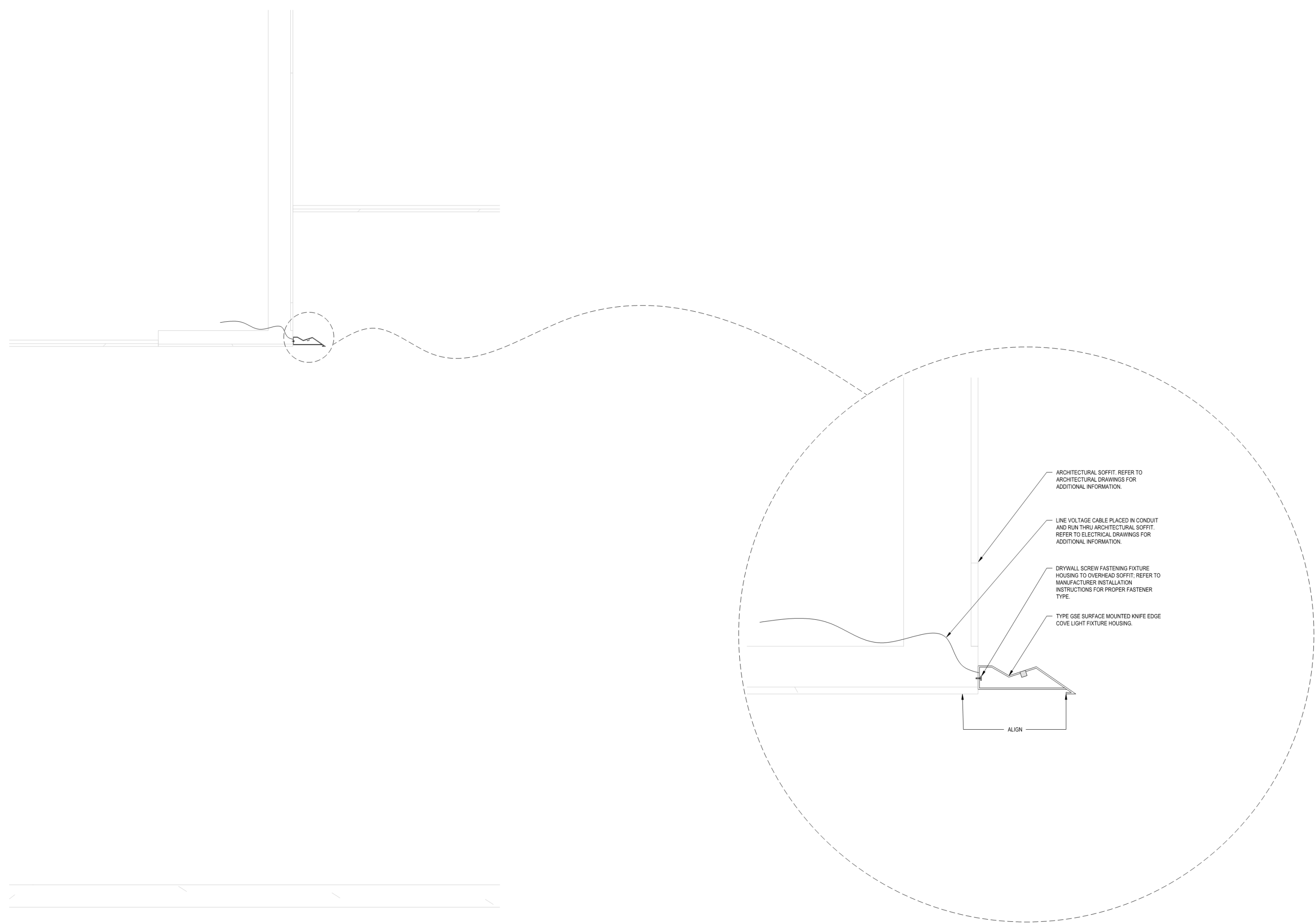
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① OVERALL LIBRARY LIGHTING SECTION DETAIL
1/16" = 1'-0"



TYPE GWF - ADJUSTABLE WALL SCONCE MOUNTING DETAIL -
ENLARGED
1/16" = 1'-0"



② TYPE GSE - MOUNTING DETAIL
1" = 50'-0"

DRA

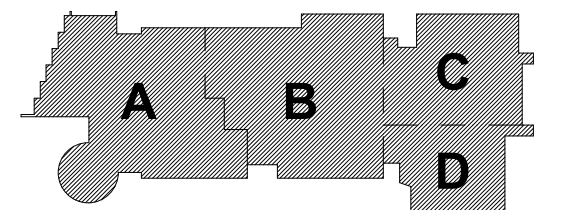
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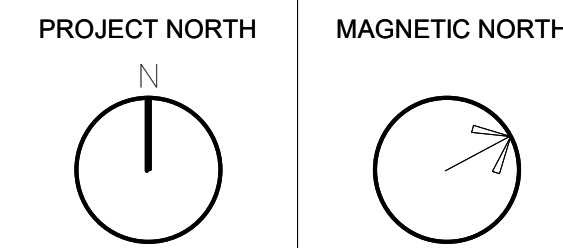
Wakefield, MA 01880

BID SET

August 28th, 2023



KEY PLAN



LIGHTING
FIXTURE DETAILS
SHEET 1

Scale: As indicated
Job No.: 60-20-409
Drawn By: DRA
Date: August 28th, 2023

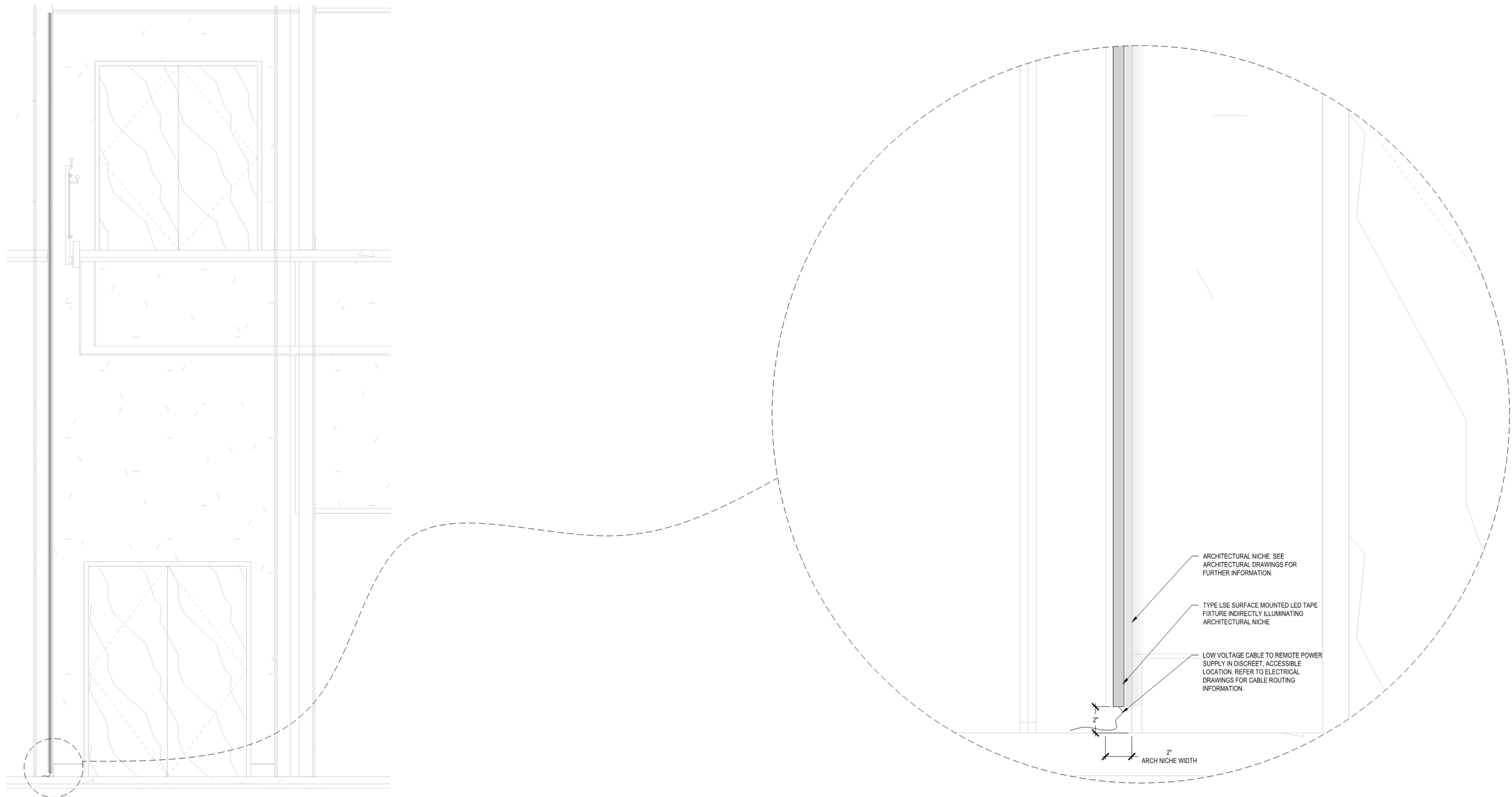
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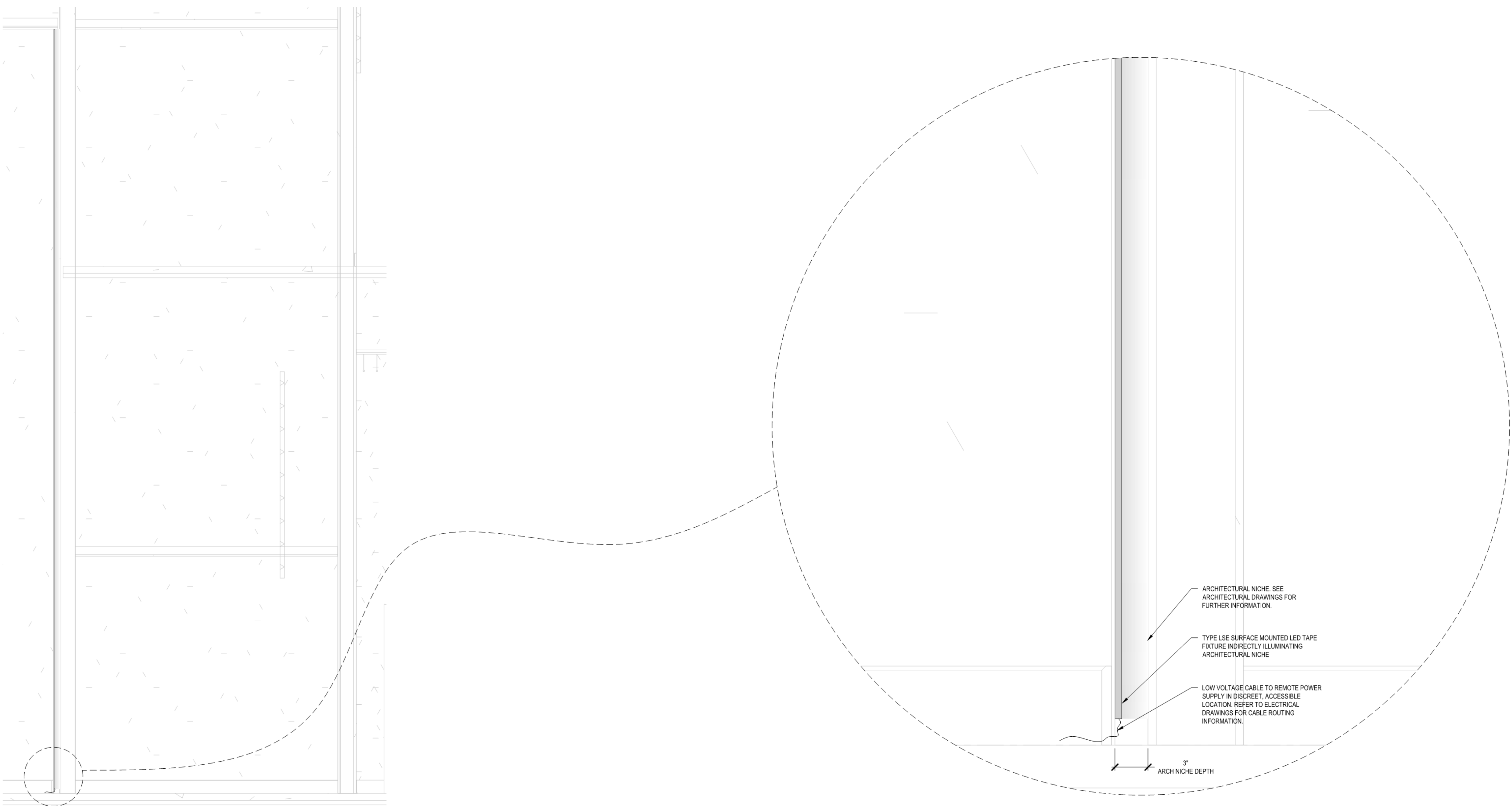
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① TYPE LSE - MOUNTING ELEVATION
1" = 30'-0"

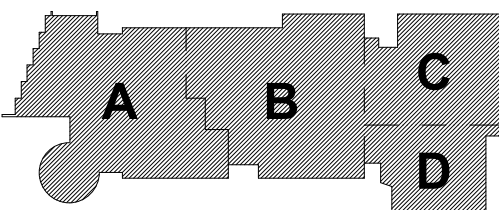


② TYPE LSE - MOUNTING SECTION
1" = 30'-0"

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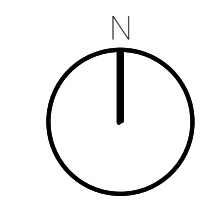
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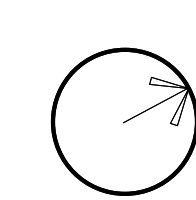


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



LIGHTING
FIXTURE DETAILS
SHEET 2

Scale: 1" = 30'-0"
Job No.: 60-20-409
Drawn By: DRA
Date: August 28th, 2023

E4-0-26



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225 Oakland Road
Studio 205
South Windsor, CT
06074
260 Charles Street
Studio 300
Waltham, MA
02453
Planning | Architecture | Interior Design
Tel: 860.644.8300
www.draa.com

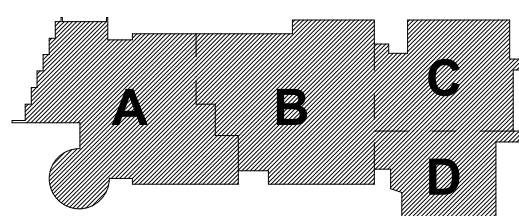
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School

Wakefield, MA 01880

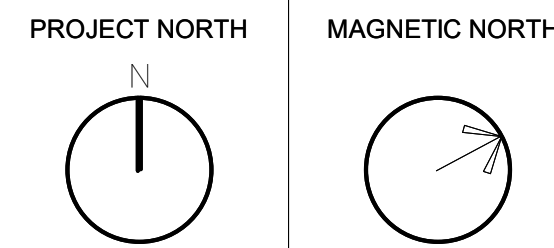
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BID SET

August 28th, 2023

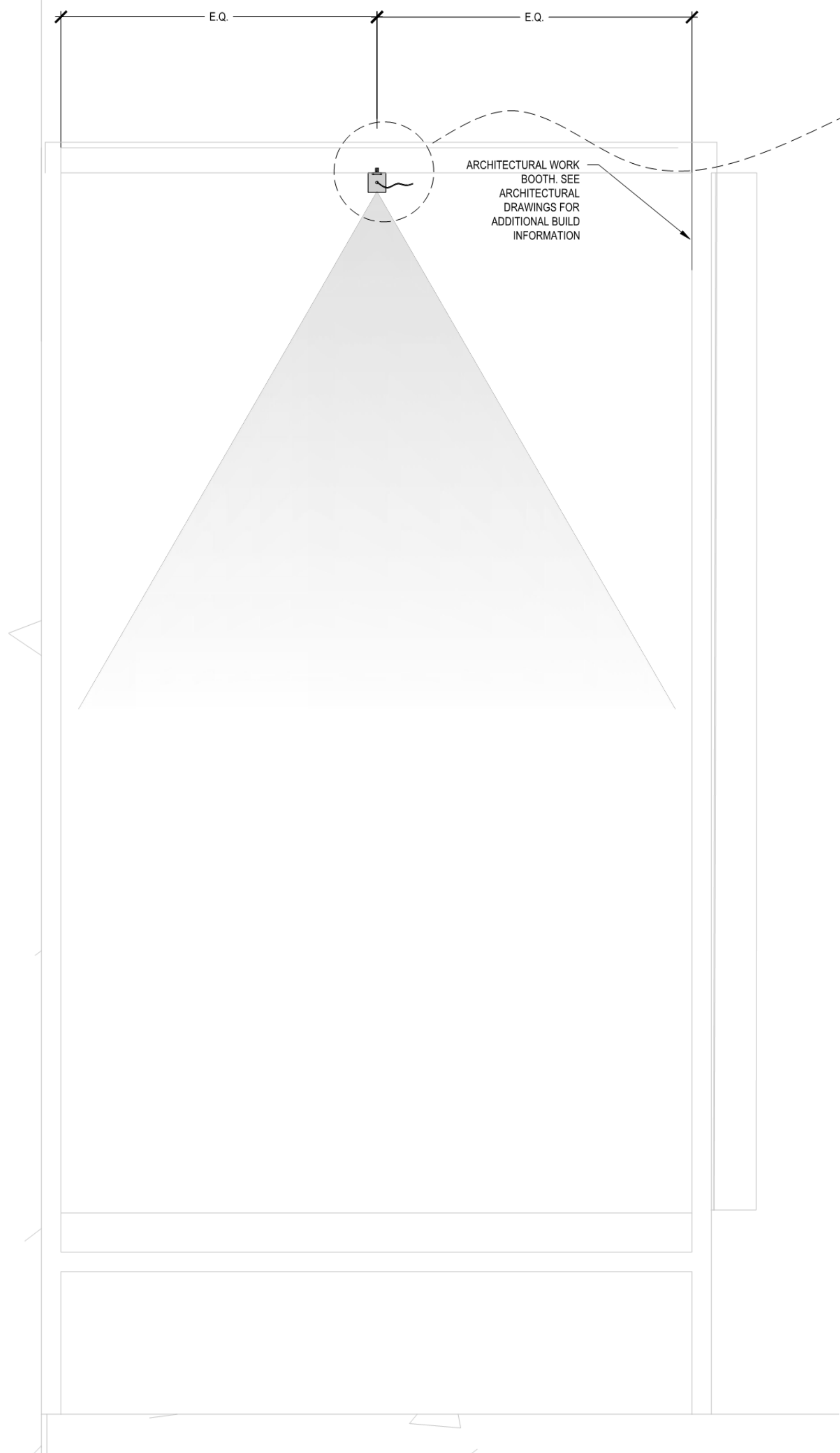


KEY PLAN

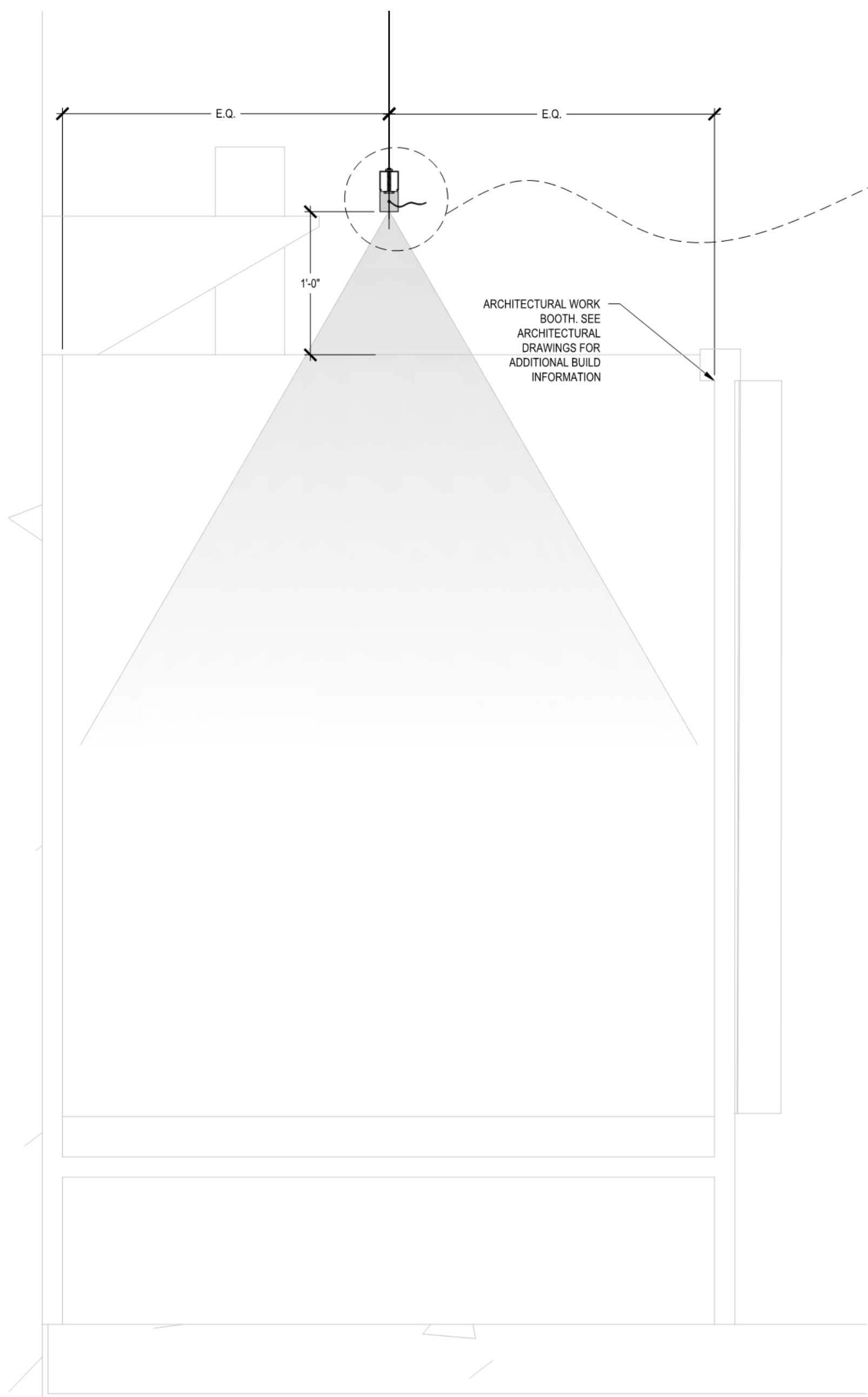
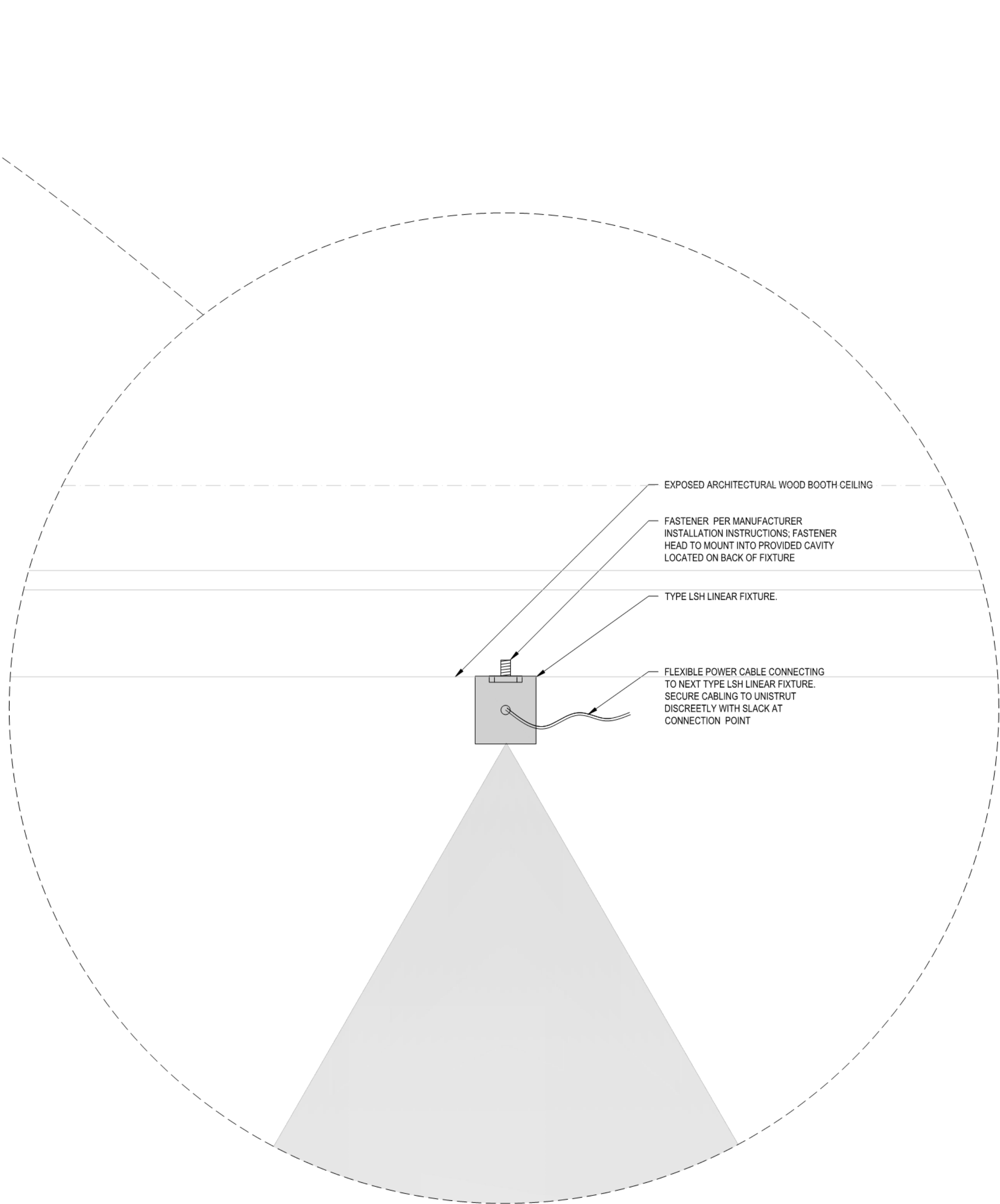


LIGHTING
FIXTURE DETAILS
SHEET 3

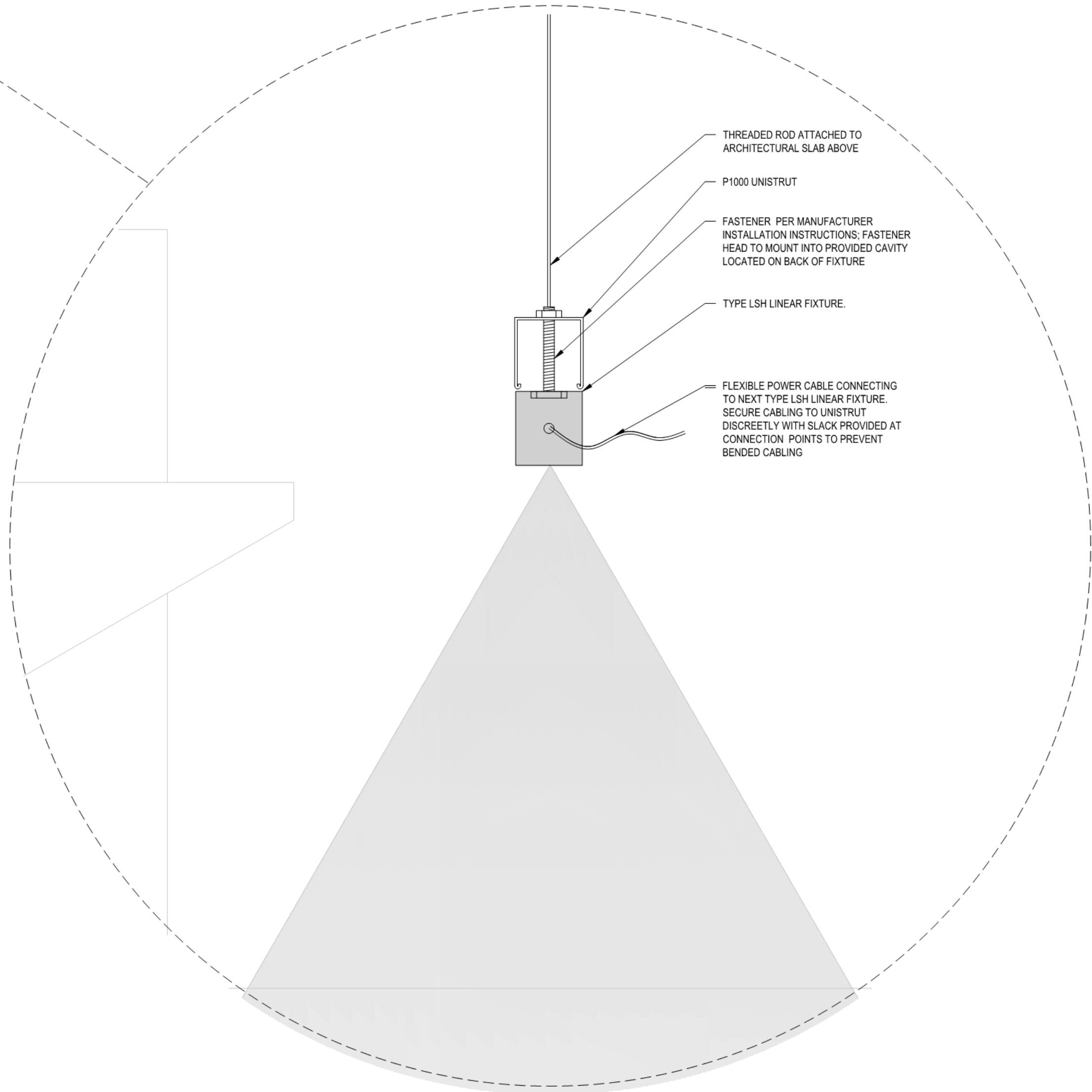
Scale: 1" = 3'-0"
Job No.: 60-20-409
Drawn By: DRA
Date: August 28th, 2023
E4-0-27

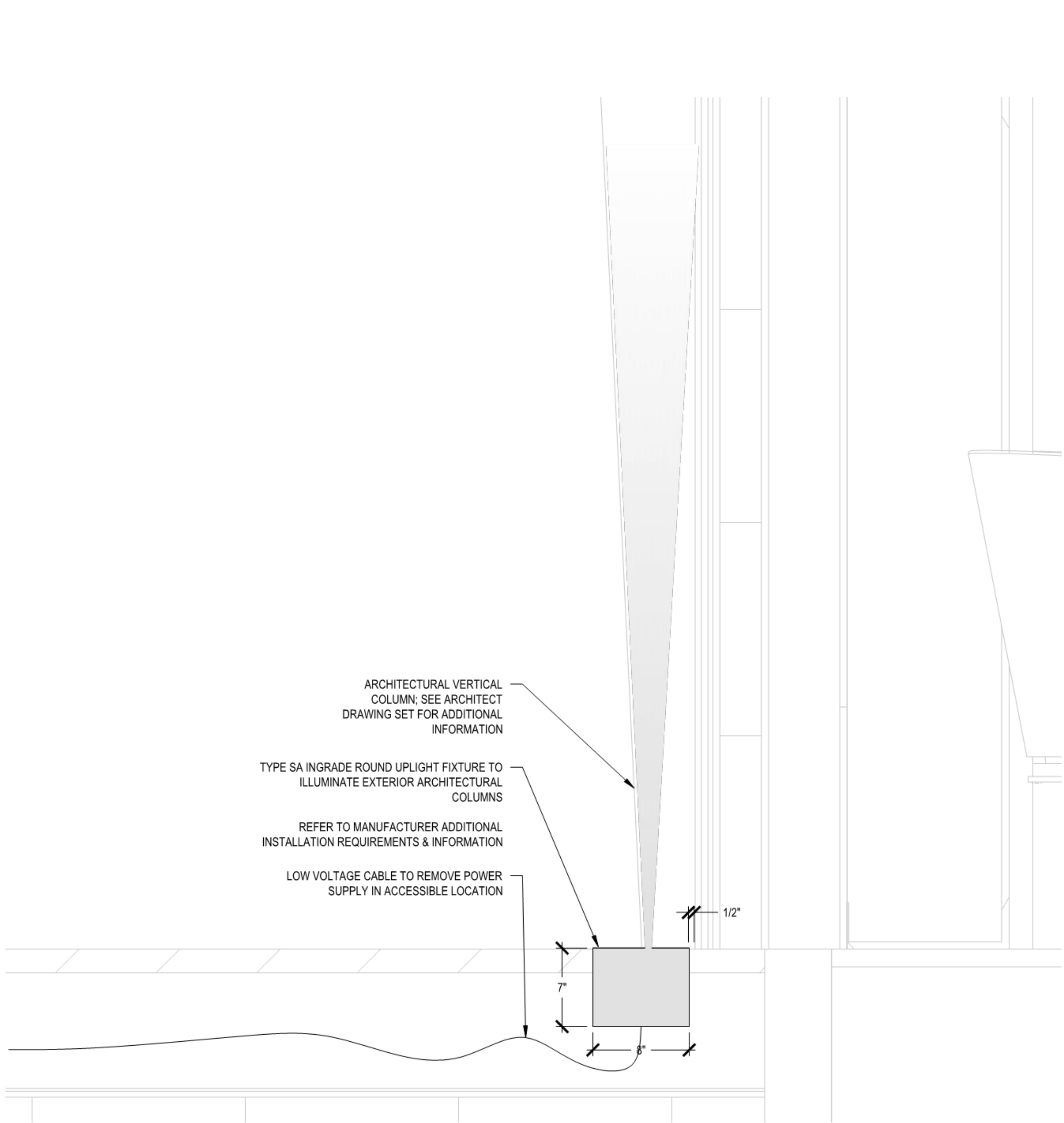


① TYPE LSH - CLOSED BOOTH MOUNTING DETAIL
1" = 3'-0"

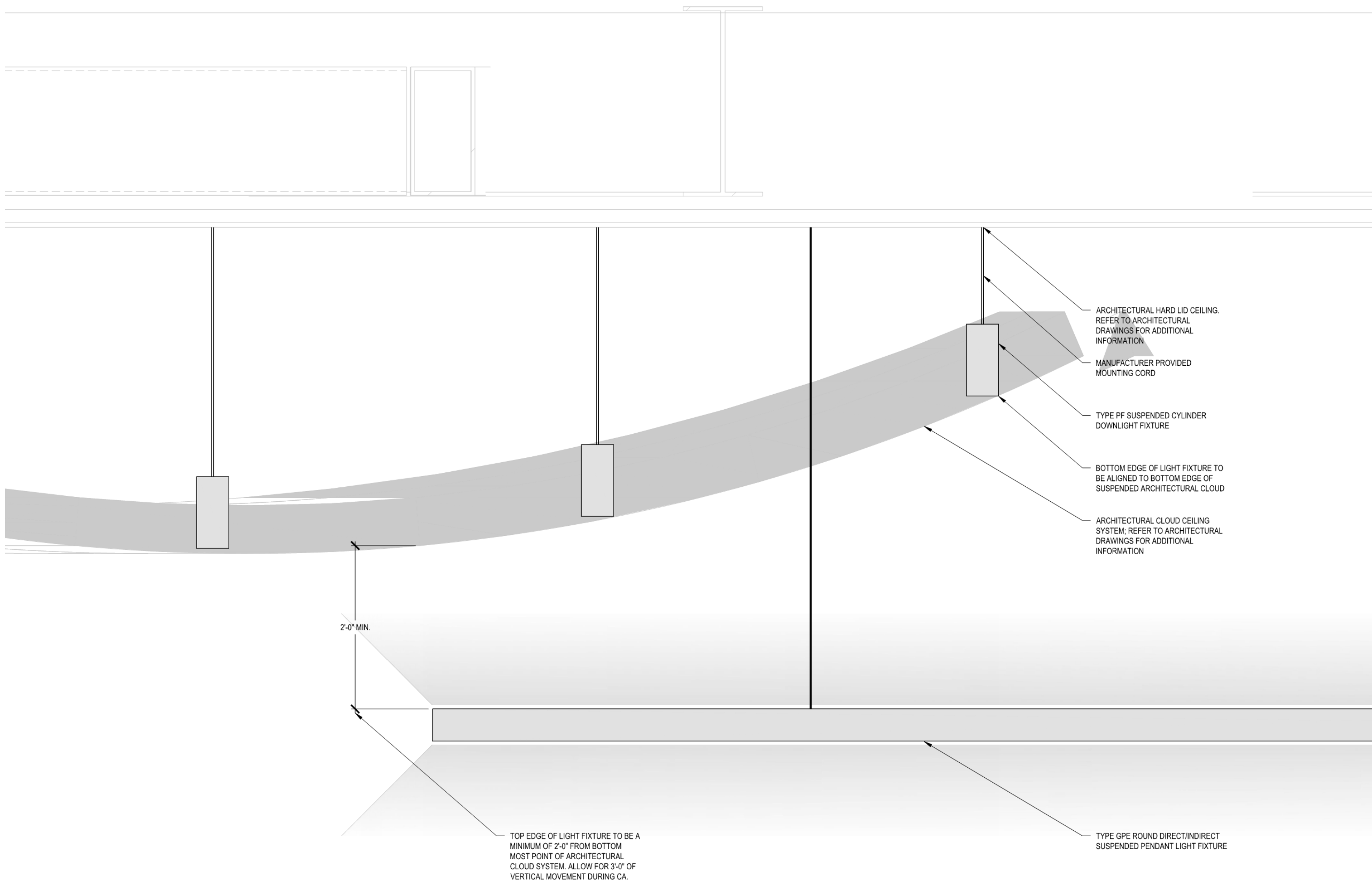


② TYPE LSH - OPEN BOOTH MOUNTING DETAIL
1" = 3'-0"





TYPE SA - INGRADE ROUND UPLIGHT MOUNTING DETAIL - ENLARGED
1" = 20'-0"



TYPE PF AND GPE - MOUNTING DETAILS - ENLARGED
1" = 30'-0"

DRA

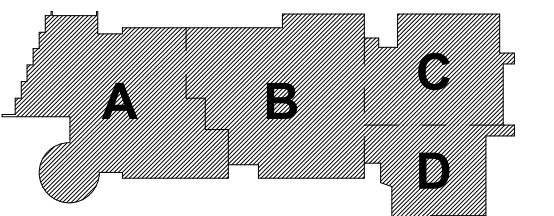
Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT 06074
260 Charles Street
Studio 300
Waltham, MA 02453
Planning | Architecture | Interior Design
Tel: 860.644.8300
www.draa.com

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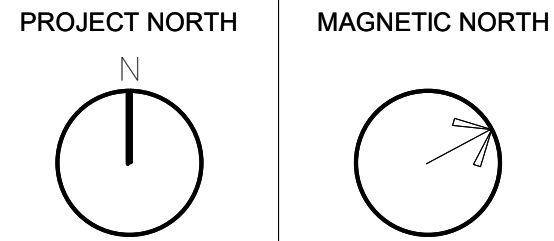
Wakefield, MA 01880

BID SET

August 28th, 2023



KEY PLAN



LIGHTING
FIXTURE DETAILS
SHEET 4

Scale: As indicated
Job No.: 60-20-409
Drawn By: DRA
Date: August 28th, 2023
E4-0-28

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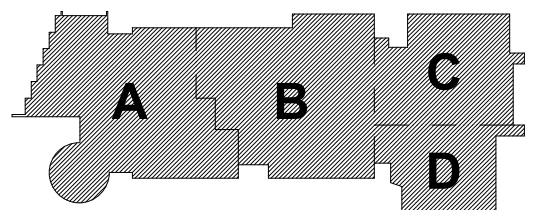
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Wakefield, MA 01880

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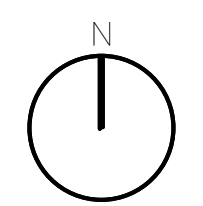
BID SET

August 28th, 2023

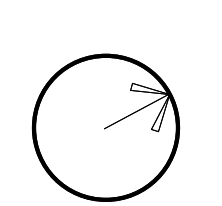


KEY PLAN

PROJECT NORTH



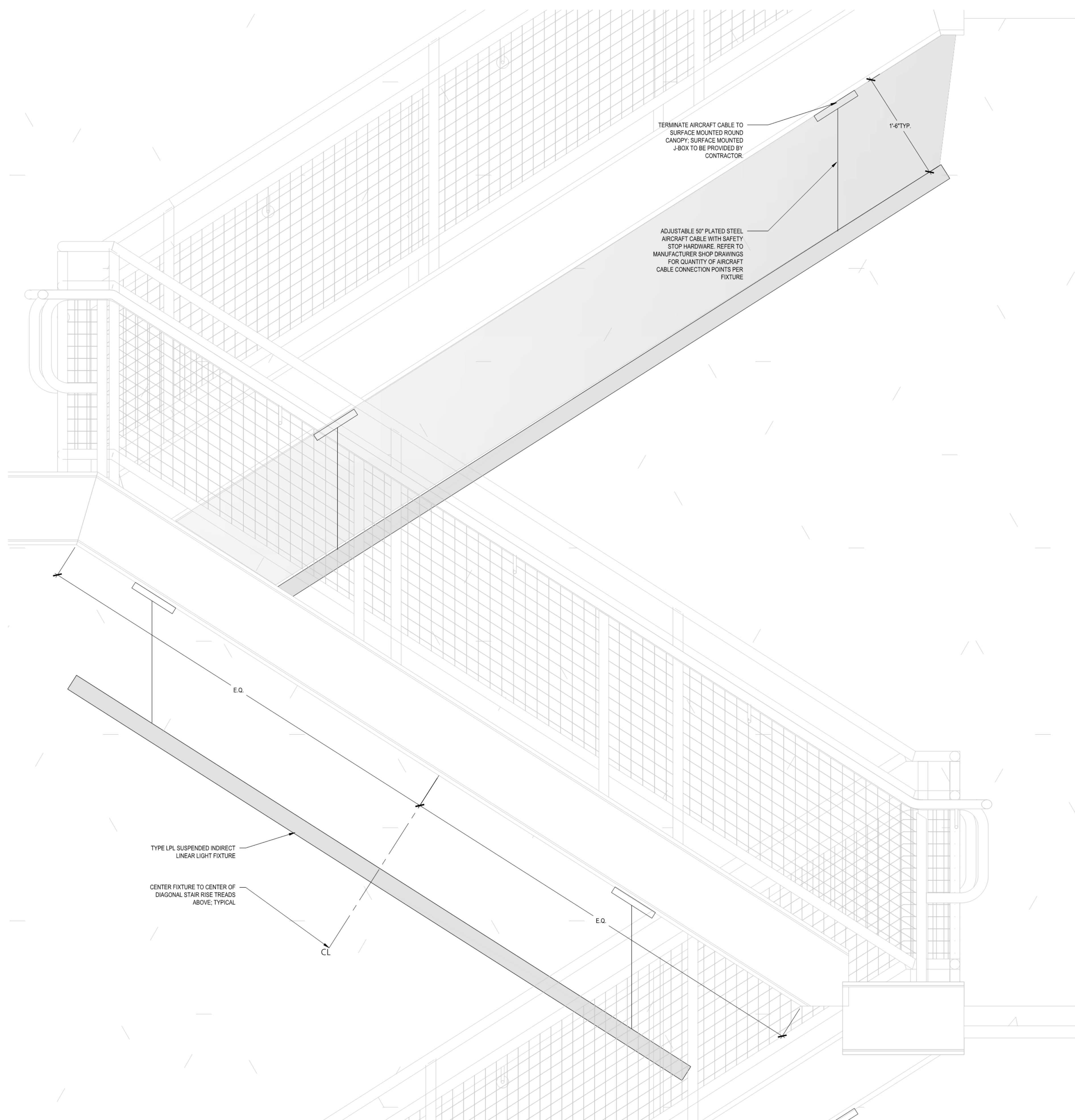
MAGNETIC NORTH



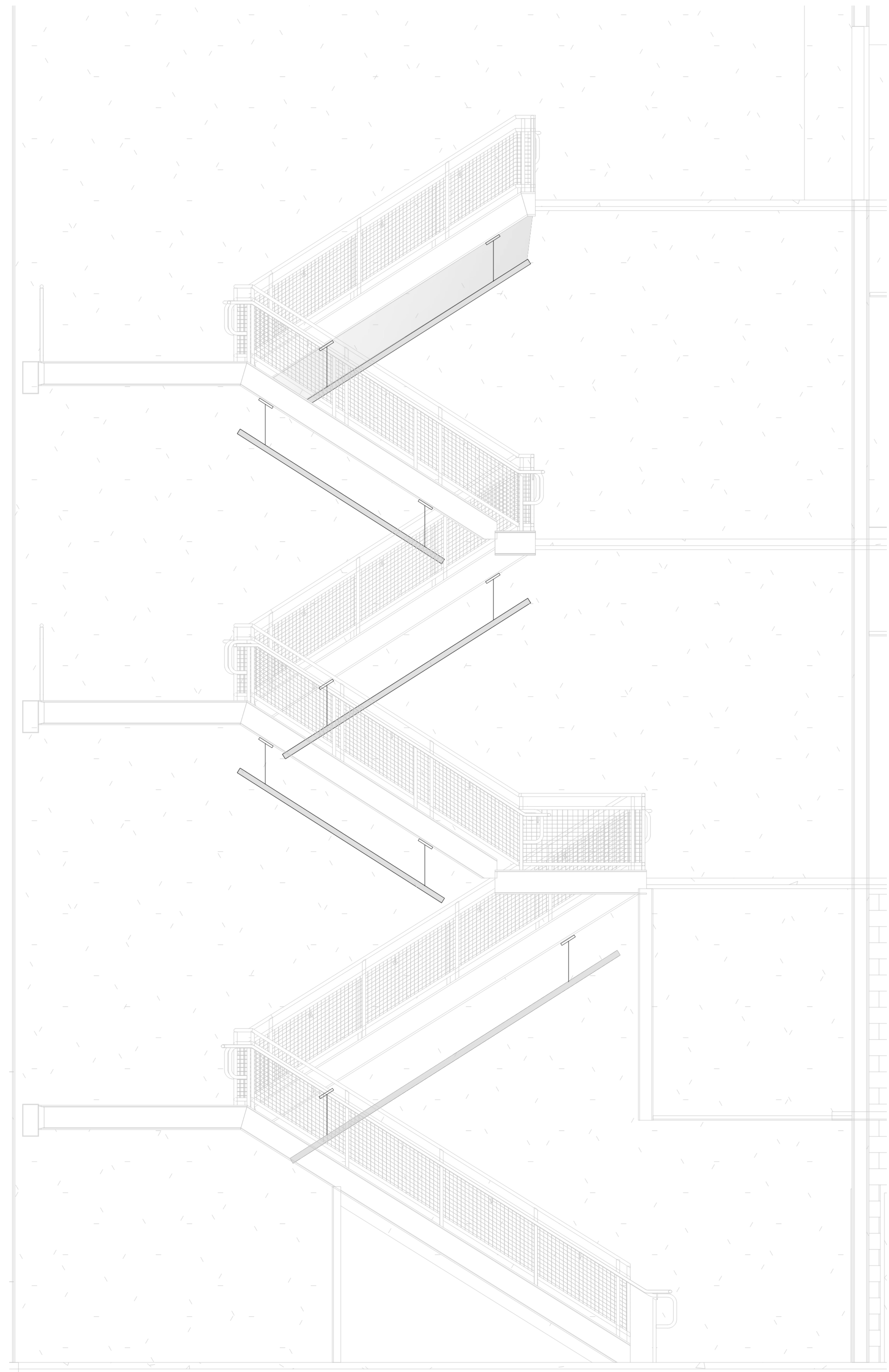
**LIGHTING
FIXTURE DETAILS
SHEET 5**

Scale: 1" = 30'-0"
Job No.: 60-20-409
Drawn By: DRA
Date: August 28th, 2023

E4-0-29



② TYPICAL STAIR TOWER MOUNTING SECTION - ENLARGED
1" = 30'-0"



① TYPICAL STAIR TOWER MOUNTING SECTION
1" = 30'-0"

LARGE VENUE AUDIOVISUAL SYSTEM SYMBOLS (CONTINUED)					
POWER REQUIRED	SYMBOL	DESCRIPTION (REFER TO DRAWINGS AND SPECIFICATIONS FOR DETAILS)	TYPICAL LOCATION	BACK BOX	NOTES
120 VAC QUAD DEDICATED		AV BACK MIDDLE ATLANTIC WR SERIES AUDIOVISUAL SYSTEM EQUIPMENT WALL RACK	AS NOTED ON DRAWINGS	N/A	REFER TO NOTE P
120 VAC QUAD DEDICATED		AV BACK MIDDLE ATLANTIC DRW SERIES AUDIOVISUAL SYSTEM EQUIPMENT WALL RACK	AS NOTED ON DRAWINGS	N/A	REFER TO NOTE P
120 VAC QUAD DEDICATED		AV BACK MIDDLE ATLANTIC BWR SERIES AUDIOVISUAL SYSTEM EQUIPMENT RACK	AS NOTED ON DRAWINGS	N/A	REFER TO NOTE P
NONE		AUDIOVISUAL SYSTEM WALL CONTROL, TOUCH PANEL WITH SECURITY COVER: PROGRAM CONTROL TOUCH PANEL AS REQUIRED BY OWNER	48" A.F.F. TYPICAL REFER TO ARCH. DWGS.	2-GANG	REFER TO NOTE P
NONE		AUDIOVISUAL SYSTEM TABLETOP CONTROL, TOUCH PANEL: PROGRAM CONTROL TOUCH PANEL AS REQUIRED BY OWNER	N/A	N/A	REFER TO NOTE P
NONE		DANTE INPUT WALL PLATE: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	18" A.F.F.	1-GANG	REFER TO NOTE P
NONE		AUDIO INPUT WALL PLATE: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	18" A.F.F.	1-GANG	REFER TO NOTE P
NONE		AUDIO INPUT WITH BLUETOOTH WALL PLATE: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	18" A.F.F. TYPICAL REFER TO ARCH. DWGS.	1-GANG	REFER TO NOTE P
NONE		BLUETOOTH WALL PLATE: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	48" A.F.F.	1-GANG	REFER TO NOTE P
NONE		VIDEO INPUT WALL PLATE: BACK BOX WITH 1" CONDUIT TO LOCAL AUDIOVISUAL CONTROL RACK	18" A.F.F.	2-GANG	REFER TO NOTE P
120 VAC QUAD		CUSTOM PLATE 1: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK REFER TO PLATE DRAWING AND SPECIFICATIONS FOR CONNECTOR DETAILS.	18" A.F.F. OR IN FRM SERIES 600 FLOOR BOX	5-GANG	REFER TO NOTE P
120 VAC QUAD		CUSTOM PLATE 2: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK REFER TO PLATE DRAWING AND SPECIFICATIONS FOR CONNECTOR DETAILS.	18" A.F.F.	4-GANG	REFER TO NOTE P
120 VAC QUAD		CUSTOM PLATE 1: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK REFER TO PLATE DRAWING AND SPECIFICATIONS FOR CONNECTOR DETAILS.	18" A.F.F.	2-GANG	REFER TO NOTE P
120 VAC QUAD		CUSTOM PLATE 1: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK REFER TO PLATE DRAWING AND SPECIFICATIONS FOR CONNECTOR DETAILS.	18" A.F.F.	2-GANG	REFER TO NOTE P
NONE		WIRELESS MICROPHONE RF ANTENNA PLATE: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	ON CEILING/STRUCTURE OR AS NOTED	1-GANG	REFER TO NOTE P
NONE		LOCAL AUDIO SYSTEM ASSISTED LISTENING ANTENNA: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	ON CEILING OR 8'-6" A.F.F.	1-GANG	REFER TO NOTE P
120 VAC DUPLEX		LOCAL AUDIO SYSTEM POWERED SPEAKER, SURFACE WALL MOUNTED	AS NOTED	N/A	REFER TO NOTE P
NONE		LOCAL AUDIO SYSTEM SPEAKER, SURFACE WALL MOUNTED OR RECESSED 3/4" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	8'-6" A.F.F. TYPICAL REFER TO ARCH. DWGS.	N/A	REFER TO NOTE P
NONE		LOCAL AUDIO SYSTEM SPEAKER, CEILING MOUNTED 3/4" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK X=SUBWOOFER	REFER TO ARCH. DWGS.	N/A	REFER TO NOTE P
NONE		LOCAL AUDIO SYSTEM SUSPENDED SPEAKER: 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK XXX= LSS = LOCAL SOUND SPEAKER, FULL-FILL IN SPEAKER, SUB-SUBWOOFER SPEAKER	SUSPENDED FROM CEILING OR STRUCTURE	N/A	REFER TO NOTE P
120 VAC QUAD		VIDEO PROJECTOR OUTLET: BACK BOX WITH 1" CONDUIT TO LOCAL AUDIOVISUAL EQUIPMENT RACK FOR AUDIOVISUAL CABLING.	REFER TO ARCH. DRAWINGS	1-GANG	REFER TO NOTE P
120 VAC QUAD		LARGE VENUE VIDEO PROJECTOR: REFER TO SPECIFICATIONS FOR DETAILS.	AS NOTED	N/A	REFER TO NOTE P
NONE		KEYED PROJECTION SCREEN LOW VOLTAGE CONTROLLER SWITCH WALL PLATE: BACK BOX WITH 1" CONDUIT TO PROJECTION SCREEN LOW VOLTAGE CONTROLLER SWITCH BY CMF	48" A.F.F. TYPICAL REFER TO ARCH. DWGS.	REFER TO NOTE P	REFER TO NOTE P

LOCAL INSTRUCTIONAL AUDIOVISUAL SYSTEM SYMBOLS (CONTINUED)					
POWER REQUIRED	SYMBOL	DESCRIPTION	LOCATION	FACEPLATE	NOTES
NONE		EMPTY BACK BOX WITH PASS-THRU FACEPLATE AND CONDUIT STUDDED ABOVE CEILING: BACK BOX FOR WIRING FOR PASSIVE AUDIO WALL SPEAKER FOR INTERACTIVE PROJECTOR, PASSIVE SPEAKER AND AUDIO WIRING WILL BE PROVIDED BY OWNER UNDER SEPARATE CONTRACT.	ABOVE WHITEBOARDS REFER TO DETAIL 4		REFER TO NOTE G
120 VAC QUAD		INTERACTIVE FLAT PANEL DISPLAY: X=X-BASIS, SIZE AS NOTED. INTERACTIVE FLAT PANEL DISPLAYS WILL BE PROVIDED BY OWNER UNDER SEPARATE CONTRACT.	REFER TO DETAIL 3	N/A	REFER TO NOTES A, E, H
120 VAC QUAD		NON-INTERACTIVE FLAT PANEL DISPLAY: X=X-BASIS, SIZE AS NOTED. NON-INTERACTIVE FLAT PANEL DISPLAYS WILL BE PROVIDED BY OWNER UNDER SEPARATE CONTRACT.	REFER TO DETAIL 3	N/A	REFER TO NOTES A, E, H

DIGITAL SIGNAGE SYSTEM SYMBOLS

POWER REQUIRED	SYMBOL	DESCRIPTION	LOCATION	FACEPLATE	NOTES
120 VAC DUPLEX		VCE - CEILING VIDEO OUTLET: TWO (2) RJ-45, CAT 6E, 8-POSITION CONNECTORS FOR DATA CABLED TO DATA PATCH PANEL IN THE NEAREST WIRE CENTER.	ON CEILING		REFER TO NOTES A, H
120 VAC DUPLEX		VU - HIGH VIDEO OUTLET: ONE (1) RJ-45, CAT 6E, 8-POSITION CONNECTOR FOR DATA CABLED TO DATA PATCH PANEL IN THE NEAREST WIRE CENTER.	DETAILS AND LOCATION REFER TO DETAIL 4		REFER TO NOTES A, H
120 VAC DUPLEX		FLAT PANEL TV DISPLAY PANEL FOR DIGITAL SIGNAGE: TWO (2) STRAND SINGLE MODE FIBER CABLE WITH LC CONNECTORS CABLED TO A215 TV STUDIO CONTROL ROOM PATCH PANEL.	REFER TO DETAIL 4	N/A	REFER TO NOTES A, E, H

LIVE BROADCAST SYSTEM SYMBOLS

POWER REQUIRED	SYMBOL	DESCRIPTION	LOCATION	FACEPLATE	NOTES
120 VAC DUPLEX		FO - FIBER OPTIC OUTLET: ONE (1) RJ-45, CAT 6E, 8-POSITION CONNECTOR FOR DATA CABLED TO A215 TV STUDIO CONTROL ROOM PATCH PANEL.	18" A.F.F. OR AS NOTED		REFER TO NOTE A
120 VAC DUPLEX		RC - ROBOTIC CAMERA WALL OUTLET: EMPTY BACK BOX WITH BLANK FACEPLATE FOR FUTURE ROBOTIC OR SPORTS CAMERA. 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK AND CABLING BY OWNER UNDER SEPARATE CONTRACT.	AS NOTED, REFER TO ARCH. DETAILS AND DRAWINGS		N/A

VIDEO SURVEILLANCE CAMERA SYMBOLS

POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	BACK BOX	NOTES
PdE		H264 HD IP CCTV DOME CAMERA WITH IR COLOR, DAY/NIGHT, PW, VARIABLE FOCAL LENGTH LENS, INDOOR/OUTDOOR DOME, VANDAL RESISTANT, REFER TO CAMERA LOCATION, TYPE, RESOLUTION, AND MOUNT INFORMATION BELOW	ON CEILING, OR 15' TO 25' A.F.F.	TWO GANG	REFER TO NOTES A, J
PdE		LICENSE PLATE RECOGNITION CAMERA: X=X-BASIS, SIZE AS NOTED. LICENSE PLATE RECOGNITION CAMERA WITH INFRARED-CUT FILTER AND INFRARED-PASS FILTER, OPTIMIZED IR, MEMORY 128K MB, EIS, FLASH, REFER TO CAMERA LOCATION, TYPE, RESOLUTION, AND MOUNT INFORMATION BELOW	12' TO 15' A.F.F. TYPICAL	TWO GANG	REFER TO NOTES A, J
PdE		H264 HD 180° MULTI-LENS IP CCTV CAMERA WITH IR COLOR, DAY/NIGHT, PW, VARIABLE FOCAL LENGTH LENS, INDOOR/OUTDOOR, VANDAL RESISTANT, REFER TO CAMERA LOCATION, TYPE, RESOLUTION, AND MOUNT INFORMATION BELOW	ON CEILING, OR 15' TO 30' A.F.F./A.F.G.	TWO GANG	REFER TO NOTES A, J
PdE		H264 HD 270° MULTI-SENSOR IP CCTV CAMERA WITH IR COLOR, DAY/NIGHT, PW, VARIABLE FOCAL LENGTH LENS, INDOOR/OUTDOOR, VANDAL RESISTANT, REFER TO CAMERA LOCATION, TYPE, RESOLUTION, AND MOUNT INFORMATION BELOW	ON CEILING, OR 15' TO 35' A.F.F./A.F.G.	TWO GANG	REFER TO NOTES A, J
PdE		H264 HD 360° MULTI-SENSOR IP CCTV CAMERA WITH IR COLOR, DAY/NIGHT, PW, VARIABLE FOCAL LENGTH LENS, INDOOR/OUTDOOR, VANDAL RESISTANT, REFER TO CAMERA LOCATION, TYPE, RESOLUTION, AND MOUNT INFORMATION BELOW	ON CEILING, OR 15' TO 35' A.F.F./A.F.G.	TWO GANG	REFER TO NOTES A, J

DOOR AUDIO / VIDEO INTERCOM CONTROL SYSTEM					
POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	BACK BOX	NOTES
12/24 VAC		AES - IP AUDIO ENTRANCE STATION: ONE (1) RJ-45, CAT 6E, 8-POSITION CONNECTOR FOR DATA CABLED TO SECURITY/BUILDING SYSTEMS DATA PATCH PANEL IN NEAREST WIRE CENTER AND PATCHED TO SECURITY/BUILDING SYSTEMS PSE SWITCH.	48" A.F.F.	ONE GANG	REFER TO NOTES A, J
12/24 VAC		VES - IP VIDEO/AUDIO ENTRANCE STATION: ONE (1) RJ-45, CAT 6E, 8-POSITION CONNECTOR FOR DATA CABLED TO SECURITY/BUILDING SYSTEMS DATA PATCH PANEL IN NEAREST WIRE CENTER AND PATCHED TO SECURITY/BUILDING SYSTEMS PSE SWITCH.	48" A.F.F.	ONE GANG	REFER TO NOTES A, J
12/24 VAC		MTS - MULTI-TENANT VIDEO/AUDIO ENTRANCE STATION: ONE (1) RJ-45, CAT 6E, 8-POSITION CONNECTOR FOR DATA CABLED TO SECURITY/BUILDING SYSTEMS DATA PATCH PANEL IN NEAREST WIRE CENTER AND PATCHED TO SECURITY/BUILDING SYSTEMS PSE SWITCH.	48" A.F.F.	ONE GANG	REFER TO NOTES A, J
120 VAC DUPLEX		VMS - IP VIDEO/MONITOR/HANDSET MASTER STATION: ONE (1) RJ-45, CAT 6E, 8-POSITION CONNECTOR FOR DATA CABLED TO SECURITY/BUILDING SYSTEMS DATA PATCH PANEL IN NEAREST WIRE CENTER AND PATCHED TO SECURITY/BUILDING SYSTEMS PSE SWITCH.	18" A.F.F.	ONE GANG	REFER TO NOTES A, J

INTRUSION DETECTION SYSTEM SYMBOLS

POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	BACK BOX	NOTES
NONE		DC - DOOR CONTACTS, FLUSH MOUNTED: CABLING: #22 AWG 4-CONDUCTOR UNSHIELDED, OR AS PER MANUFACTURER RECOMMENDATION.	DOOR FRAME & DOOR	N/A, CONDUIT TO DOOR FRAME	REFER TO NOTE K
NONE		MS - MOTION SENSOR: WALL MOUNTED TYPICAL: CABLING: #22 AWG 4-CONDUCTOR, OR AS PER MANUFACTURER RECOMMENDATION.	MAX OF 96" A.F.F. OR 6" C=CEILING MOUNTED	N/A, CONDUIT WITH BUSHING FLUSH TO WALL SURFACE	REFER TO NOTE K
NONE		MS LR - MOTION SENSOR WITH LONG RANGE LENS: WALL MOUNTED TYPICAL: CABLING: #22 AWG 4-CONDUCTOR, OR AS PER MANUFACTURER RECOMMENDATION.	MAX OF 96" A.F.F. OR 6" C=CEILING MOUNTED	N/A, CONDUIT WITH BUSHING FLUSH TO WALL SURFACE	REFER TO NOTE K
12/24 VAC		SA - SIREN FOR INTRUSION ALARM SYSTEM: CABLING: #22 AWG 4-CONDUCTOR UNSHIELDED CABLE, OR AS PER MANUFACTURER RECOMMENDATION, HOME RUN TO INTRUSION ALARM SYSTEM HEADEND.	96" A.F.F.	ONE GANG	REFER TO NOTE K
12/24 VAC		BEACON FOR INTRUSION ALARM SYSTEM, BLUE: CABLING: #22 AWG 4-CONDUCTOR UNSHIELDED CABLE, OR AS PER MANUFACTURER RECOMMENDATION, HOME RUN TO INTRUSION ALARM SYSTEM HEADEND.	MIN. 120" COORDINATE LOCATION W/ ARCH.	ONE GANG	REFER TO NOTE K
NONE		KP - KEY PAD, WALL MOUNTED: CABLING: #22 AWG 4-CONDUCTOR UNSHIELDED, OR AS PER MANUFACTURER RECOMMENDATION, HOME RUN TO INTRUSION ALARM SYSTEM HEADEND.	48" A.F.F.	ONE GANG	REFER TO NOTE K

ACCESS CONTROL SYSTEM SYMBOLS

POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	BACK BOX	NOTES
NONE		OR - PROXIMITY/CARD READER: CABLING: #22 AWG 4-CONDUCTOR UNSHIELDED, OR AS PER MANUFACTURER RECOMMENDATION. ELECTRONIC LOCK LATCH AND REQUEST TO EXIT DEVICE BY DOOR HARDWARE VENDOR. POWER SUPPLY FOR DOOR HARDWARE FURNISHED BY OWNER UNDER SEPARATE CONTRACT.	48" A.F.F.	ONE GANG	REFER TO NOTES A, L

PANIC BUTTON/DURESS ALERT SYSTEM SYMBOLS

POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	BACK BOX	NOTES
NONE		PB - PANIC BUTTON/DURESS ALERT SYSTEM WIRELESS BUTTON: BUTTON ALERT DEVICES FURNISHED BY OWNER UNDER SEPARATE CONTRACT. COORDINATE EXACT LOCATION FOR FIXED BUTTONS WITH OWNER AND OWNER'S CONTRACTOR PRIOR TO ALL WORK.	COORDINATE WITH OWNER	N/A	REFER TO NOTE M
24VDC		PWS - PANIC BUTTON/DURESS ALERT SYSTEM PRISM STROBE LIGHT: SURFACE WALL MOUNTED PRISM STROBE LIGHT. REQUIRES POWER WIRING FROM 24VDC LIFE SAFETY POWER SUPPLY. POWER AND POWER SUPPLIES WILL BE FURNISHED BY OWNER UNDER SEPARATE CONTRACT. COORDINATE INSTALLATIONS WITH OWNER'S CONTRACTOR PRIOR TO ALL WORK.	96" A.F.F. OR AS NOTED	ONE GANG	REFER TO NOTE M
120VAC DUPLEX		RPT - PANIC BUTTON/DURESS ALERT SYSTEM REPEATER: REPEATER AND ELECTRICAL RECEPTACLE INSTALLED IN NON-METALLIC ALL-WEATHER NEMA WALL BOX ENCLOSURE. REPEATER WILL BE FURNISHED BY OWNER UNDER SEPARATE CONTRACT. COORDINATE NEMA BOX AND LOCATIONS WITH OWNER'S CONTRACTOR PRIOR TO ALL WORK.	TOE TO ORING REFER TO ARCH. DWGS	N/A	REFER TO NOTE M
120 VAC HARDWIRED		CTRL - PANIC BUTTON/DURESS ALERT SYSTEM CONTROL PANEL: DURESS ALERT SYSTEM CONTROL PANEL INSTALLED ON BACKDROP IN MOF/HEAD END ROOM. CONTROL PANEL BY OWNER UNDER SEPARATE CONTRACT.	ON BACKBOARD	N/A	REFER TO NOTE M

WIRELESS DOOR CHIME SYMBOLS

POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	BACK BOX	NOTES
NONE		WIRELESS BATTERY OPERATED DOOR CONTACT FOR DOOR CHIME SYSTEM.	ABOVE CORRIDOR ENTRY DOOR	N/A	REFER TO NOTE N
24VDC		WIRELESS RECEIVER/CHIME FOR DOOR CHIME SYSTEM: PROVIDE TWO (2) RECEIVERS FOR SHOP OFFICE AND OTHER LOCATION DETERMINED BY SHOP INSTRUCTIONS.	REFER TO DRAWINGS	N/A	REFER TO NOTE N

TELECOMMUNICATIONS WORK AREA OUTLET SYMBOLS					
POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	TYPICAL FACEPLATE	NOTES
120 VAC QUAD FOR EACH DATA DROP		DX - DATA OUTLET: RJ-45, CAT 6E, 8-POSITION CONNECTORS FOR DATA CABLED TO DATA PATCH PANEL IN NEAREST WIRE CENTER. DX = NUMBER OF DATA JACKS = (1, 2, 3, 4, 5, 6). (X) - (C) = INSTALL OUTLET ABOVE COUNTER, (H) = INSTALL OUTLET ON CEILING. (X) - (P) = VOIP PHONE HANSET, (IP, ONT) = VOIP TERMINATION PHONE/VOIP PHONE HANSET. VOIP HANSETS WILL BE PROVIDED BY OWNER UNDER SEPARATE CONTRACT.	18" A.F.F. OR AS NOTED.		REFER TO NOTE A
120 VAC QUAD DUPLEX FLUSH RECEPTACLE FOR COPIER		T02 - TEL/DATA WORK AREA OUTLET: ONE (1) RJ-45, CAT 6E, 8-POSITION CONNECTOR FOR VOICE CABLED TO SEPARATE VOICE PATCH PANEL IN NEAREST WIRE CENTER. ONE (1) RJ-45, CAT 6E, 8-POSITION CONNECTORS FOR DATA CABLED TO DATA PATCH PANEL IN NEAREST WIRE CENTER. (F) = ONE (1) DEDICATED FAX LINE.	18" A.F.F. OR AS NOTED.		REFER TO NOTES A, B
NONE		V0P* WALL TELEPHONE OUTLET: ONE (1) CAT 6E, RJ-45 8-POSITION CONNECTOR FOR DATA CABLED TO DATA PATCH PANEL IN NEAREST WIRE CENTER. (IP) = VOIP PHONE HANSET PROVIDED BY OWNER UNDER SEPARATE CONTRACT.	48" A.F.F.		REFER TO NOTE A
NONE		TELEPHONE OUTLET: ONE (1) CAT 6E, RJ-45 CONNECTOR FOR DEDICATED POTS PHONE LINE CABLED TO SEPARATE VOICE PATCH PANEL IN NEAREST WIRE CENTER AND CROSS-CONNECTED TO VOICE TERMINATION FIELD. (X) = TYPE OF POTS PHONE LINE. (E) = DEDICATED EMERGENCY ELEVATOR LINE. (F) = DEDICATED FAX LINE. (M) = DEDICATED MOBILE LINE. (T) = DEDICATED TOLL FREE VOICE LINE.	18" A.F.F.		REFER TO NOTES A, B
NONE		DPI - DOOR PHONE INTERCOM OUTLET: ONE (1) CAT 6E, RJ-45 8-POSITION CONNECTOR FOR DATA CABLED TO DATA PATCH PANEL IN NEAREST WIRE CENTER. (SP) = DOOR PHONE/INTERCOM SIP DEVICE PROVIDED BY OWNER UNDER SEPARATE CONTRACT.	48" A.F.F.		REFER TO NOTE A
NONE		WAP - ABOVE CEILING WIRELESS ACCESS POINT DATA OUTLET: TWO (2) RJ-45, CAT 6E, 8-POSITION CONNECTORS INSTALLED ABOVE CEILING FOR DATA AND CABLED TO DATA PATCH PANEL IN NEAREST WIRE CENTER.	ABOVE CEILING OUTLET, REFER TO ARCH. DETAILS AND LOCATIONS.		REFER TO NOTE A
NONE		WAP - FLUSH WALL MOUNTED WIRELESS ACCESS POINT DATA OUTLET: TWO (2) RJ-45, CAT 6E, 8-POSITION CONNECTORS FOR DATA CABLED TO DATA PATCH PANEL IN NEAREST WIRE CENTER. INSTALLED IN CONJUNCTION WITH WALL ENCLOSURE (\"WC\").	FLUSH WALL, REFER TO ARCH. DETAILS AND LOCATIONS.		REFER TO NOTES A, H

SECURITY AND BUILDING SYSTEMS SYMBOLS

POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	TYPICAL FACEPLATE	NOTES
PdE		CCTV - ABOVE CEILING CCTV DATA OUTLET: ONE (1) RJ-45, CAT 6E, 8-POSITION CONNECTOR FOR DATA INSTALLED ABOVE CEILING AND CABLED TO SEPARATE SECURITY/BUILDING SYSTEMS PATCH PANEL IN THE NEAREST WIRE CENTER AND PATCHED TO SECURITY/BUILDING SYSTEMS PSE SWITCHES. COORDINATE EXACT LOCATIONS WITH SECURITY CONTRACTOR AND ARCHITECT PRIOR TO ALL WORK.	ABOVE CEILING, COORDINATE LOCATION PRIOR TO INSTALLATION		REFER TO NOTES A, I
PdE		CCTV - FLUSH WALL MOUNTED CCTV DATA OUTLET: ONE (1) RJ-45, CAT 6E, 8-POSITION CONNECTOR FOR DATA FLUSH WALL MOUNTED AND CABLED TO SEPARATE SECURITY/BUILDING SYSTEMS PATCH PANEL IN THE NEAREST WIRE CENTER AND PATCHED TO SECURITY/BUILDING SYSTEMS PSE SWITCHES. COORDINATE EXACT LOCATIONS AND ELEVATIONS WITH SECURITY CONTRACTOR AND ARCHITECT PRIOR TO ALL WORK.	ON WALL, COORDINATE LOCATION & ELEVATION PRIOR TO INSTALLATION		REFER TO NOTES A, I
PdE		VAP - ABOVE CEILING VAP DETECTOR SENSOR DATA OUTLET: TWO (2) RJ-45, CAT 6E, 8-POSITION CONNECTOR FOR DATA INSTALLED ABOVE CEILING AND CABLED TO SEPARATE SECURITY/BUILDING SYSTEMS PATCH PANEL IN THE NEAREST WIRE CENTER AND PATCHED TO SECURITY/BUILDING SYSTEMS PSE SWITCHES. COORDINATE EXACT LOCATIONS WITH SECURITY CONTRACTOR AND ARCHITECT PRIOR TO ALL WORK.	ABOVE CEILING, COORDINATE LOCATION PRIOR TO INSTALLATION		REFER TO NOTES A, I
PdE		VAP - DATA OUTLET FOR VAP DETECTORS: TWO (2) RJ-45, CAT 6E, 8-POSITION CONNECTORS FOR DATA CABLED TO SEPARATE BUILDING SYSTEMS DATA PATCH PANEL IN NEAREST WIRE CENTER AND PATCHED TO PSE SWITCHES FOR BUILDING SYSTEMS. DETECTION DEVICE PROVIDED BY THE OWNER UNDER SEPARATE CONTRACT.	ABOVE CEILING		REFER TO NOTES A, N
PdE		GDS - ABOVE CEILING GUNSHOT DETECTOR SENSOR DATA OUTLET: ONE (1) RJ-45, CAT 6E, 8-POSITION CONNECTOR FOR DATA INSTALLED ABOVE CEILING AND CABLED TO SEPARATE SECURITY/BUILDING SYSTEMS PATCH PANEL IN THE NEAREST WIRE CENTER AND PATCHED TO SECURITY/BUILDING SYSTEMS PSE SWITCHES. COORDINATE EXACT LOCATIONS WITH SECURITY CONTRACTOR AND ARCHITECT PRIOR TO ALL WORK. DETECTION DEVICE PROVIDED BY THE OWNER UNDER SEPARATE CONTRACT.	ABOVE CEILING, COORDINATE LOCATION PRIOR TO INSTALLATION		REFER TO NOTE A, O
PdE		GDS - FLUSH WALL MOUNTED GUNSHOT DETECTOR SENSOR DATA OUTLET: ONE (1) RJ-45, CAT 6E, 8-POSITION CONNECTOR FOR DATA FLUSH WALL MOUNTED AND CABLED TO SEPARATE SECURITY/BUILDING SYSTEMS PATCH PANEL IN THE NEAREST WIRE CENTER AND PATCHED TO SECURITY/BUILDING SYSTEMS PSE SWITCHES. COORDINATE EXACT LOCATIONS AND ELEVATIONS WITH SECURITY CONTRACTOR AND ARCHITECT PRIOR TO ALL WORK. DETECTION DEVICE PROVIDED BY THE OWNER UNDER SEPARATE CONTRACT.	ON WALL, COORDINATE LOCATION & ELEVATION PRIOR TO INSTALLATION		REFER TO NOTE A, O
REFER TO 120 VAC REQUIRED		SX - BUILDING SYSTEMS DATA OUTLET: RJ-45, CAT 6E, 8-POSITION CONNECTOR FOR DATA CABLED TO SEPARATE SECURITY/BUILDING SYSTEMS DATA PATCH PANEL IN THE NEAREST WIRE CENTER AND PATCHED TO SECURITY/BUILDING SYSTEMS PSE SWITCHES. X = NUMBER OF DATA JACKS - (1, 2, 3, 4, 5, 6).	COORDINATE AND/OR LOCATE PRIOR TO INSTALLATION		REFER TO NOTES A

REFER TO ELECTRICAL SITE PLANS AND DETAILS.

9. CONSULT ALL DRAWINGS AND SPECIFICATIONS FOR COORDINATION REQUIREMENTS BETWEEN ALL TRADES PRIOR TO COMMENCING INSTALLATION. INTEGRATED SECURITY DIVISION 281600 CONTRACTOR AND COMMUNICATIONS CABLE DIVISION 271000 CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR FOR INSTALLATION OF ALL EQUIPMENT AND LOW VOLTAGE CABLEING PRIOR TO ALL WORK.
10. INTEGRATED SECURITY DIVISION 281600 CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD AND REPORT ANY AND ALL DISCREPANCIES TO THE OWNER'S REPRESENTATIVE IMMEDIATELY. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY OF ANY AND ALL CONFLICTS BETWEEN PROPOSED SITEWORK AND WORK OF ALL OTHER TRADES
11. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD SHALL BE PROMPTLY REPORTED BY THE SECURITY CONTRACTOR TO THE OWNER'S REPRESENTATIVE AND RECORDED ON RECORD DRAWINGS
12. INTEGRATED SECURITY DIVISION 281600 CONTRACTOR AND COMMUNICATIONS CABLE DIVISION 271000 CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF PERMITS AND LICENSES ISSUED BY COJANIZANT FEDERAL, STATE AND LOCAL AGENCIES
13. INTEGRATED SECURITY DIVISION 281600 CONTRACTOR AND COMMUNICATIONS CABLE DIVISION 271000 CONTRACTOR SHALL PROVIDE FIBER, APHONE STATION, CARD READER, AND SDS SENSOR TO THE SECURITY EQUIPMENT PROVIDER. THE SECURITY EQUIPMENT PROVIDER SHALL INTERFACE TO THE SENSOR SECURITY SYSTEMS.

REFER TO DIVISION 0 AND 1 SPECIFICATIONS FOR ADDITIONAL DETAIL
ON ADD ALTERNATES.

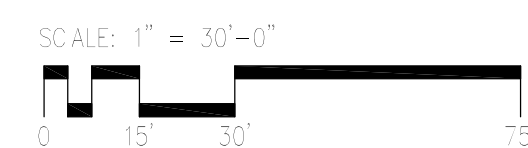
- ### SITE LIGHT POLES NOTE

SITE LIGHTING POLES ON THIS PLAN ARE REPRESENTED BY VARIOUS SYMBOLS. REFER TO SITE LIGHTING FIXTURE SCHEDULE FOR POLE AND FIXTURE DETAILS.

PROVIDE CAMERAS AND ALL REQUIRED MOUNTING BRACKETS AND ACCESSORIES. REFER TO SPECIFICATIONS FOR DETAILS.

E-ND-15-PP
H.264 HD DOME CAMERA WITH THREE LENS MOUNTED ON LIGHT POLE,
TYPICAL
-E = EXTERIOR, ALL WEATHER
-MD = 3X3 MULTI-IMAGE SENSOR DOME CAMERA WITH IR
-15 = RESOLUTION (3) 5.0, 15.0 MEGAPIXEL
-PP = PENDANT POLE MOUNT

SYMBOL	DESCRIPTION
CCTV	
	F.O. - CCTV CAMERA; 2-STRAND OM4 FIBER CABLE



SCOPE OF WORK NOTES

REFER TO ELECTRICAL SITE PLANS AND DETAILS.

1. ALL FIBER CABLING SHALL BE PROVIDED BY THE COMMUNICATIONS CABLING DIVISION 271000 CONTRACTOR. ALL FIBER CABLING SHALL BE 2-STRAND OM4.
2. ALL NEMA ENCLOSURES/BOXES WITH INTEGRATED UTP MEDIA CONVERTER, AND 12-24 VDC TRANSFORMERS SHALL BE FURNISHED BY THE INTEGRATED SECURITY DIVISION 281600 CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
3. 120 VOLTAGE ELECTRICAL SERVICE FOR EACH NEMA ENCLOSURE SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
4. ALL CCTV VIDEO SURVEILLANCE EQUIPMENT INCLUDING IP CAMERAS, REQUIRED MOUNTS AND ACCESSORIES, FIBER TO UTP MEDIA CONVERTERS, AND LOW VOLTAGE TRANSFORMERS SHALL BE PROVIDED BY THE INTEGRATED SECURITY DIVISION 281600 CONTRACTOR.
5. CCTV CAMERAS AND NEMA ENCLOSURES INSTALLED ON LIGHT POLES SHALL BE INSTALLED AT APPROXIMATELY 15' A.F.G.
6. LOW VOLTAGE CABLING FOR FIBER TO UTP MEDIA CONVERTER, AND 12-24 VDC TRANSFORMERS SHALL BE PROVIDED BY THE INTEGRATED SECURITY DIVISION 281600 CONTRACTOR.
8. CCTV CAMERAS SHALL BE INSTALLED ON THE NEMA ENCLOSURES BY THE INTEGRATED SECURITY DIVISION 281600 CONTRACTOR.

9. CONSULT ALL DRAWINGS AND SPECIFICATIONS FOR COORDINATION REQUIREMENTS BETWEEN ALL TRADES PRIOR TO COMMENCING INSTALLATION. INTEGRATED SECURITY DIVISION 281600 CONTRACTOR AND COMMUNICATIONS CABLING DIVISION 271000 CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR FOR INSTALLATION OF ALL EQUIPMENT AND LOW VOLTAGE CABLING PRIOR TO ALL WORK.
10. INTEGRATED SECURITY DIVISION 281600 CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD AND REPORT ANY AND ALL DISCREPANCIES TO THE OWNER'S REPRESENTATIVE. SECURITY CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY OF ANY AND ALL CONFLICTS BETWEEN PROPOSED SITEWORK AND WORK OF ALL OTHER TRADES.
11. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD SHALL BE PROMPTLY REPORTED BY THE SECURITY CONTRACTOR TO THE OWNER'S REPRESENTATIVE AND RECORDED ON RECORD DRAWINGS.
12. INTEGRATED SECURITY DIVISION 281600 CONTRACTOR AND COMMUNICATIONS CABLING DIVISION 271000 CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF PERMITS AND LICENSES ISSUED BY COGNIZANT FEDERAL, STATE AND LOCAL AGENCIES.
13. INTEGRATED SECURITY DIVISION 281600 CONTRACTOR AND COMMUNICATIONS CABLING DIVISION 271000 CONTRACTOR SHALL PROVIDE FIBER, ALPHONE STATION, CARD READER, AND SOS SENSOR AT GATES. SECURITY DEVICES SHALL INTERFACE TO THE SCHOOL SECURITY SYSTEMS.

ADD ALTERNATES NOTES

REFER TO DIVISION 0 AND 1 SPECIFICATIONS FOR ADDITIONAL DETAIL ON ADD ALTERNATES.

1. ADD ALTERNATE NO. 1 - ALL TELECOM AND SECURITY WORK ASSOCIATED WITH THE LOCKER BUILDING.
2. ADD ALTERNATE NO. 3 - ALL TELECOM AND SECURITY WORK ASSOCIATED WITH THE MAINTENANCE BUILDING.

SITE LIGHT POLES NOTE

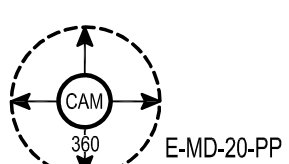
SITE LIGHTING POLES ON THIS PLAN ARE REPRESENTED BY VARIOUS SYMBOLS. REFER TO SITE LIGHTING FIXTURE SCHEDULE FOR OLE AND FIXTURE DETAILS.

CCTV CAMERA SYMBOLS

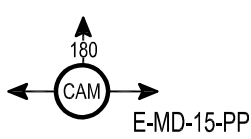
PROVIDE CAMERAS AND ALL REQUIRED MOUNTING BRACKETS AND ACCESSORIES. REFER TO SPECIFICATIONS FOR DETAILS.

E-LPR

LICENSE PLATE RECOGNITION CAMERA MOUNTED ON LIGHT POLES, TYPICAL
- EXTERIOR, ALL WEATHER
- DAY/NIGHT WITH INFRARED-CUT FILTER AND INFRARED-PASS FILTER
- OPTIMIZED IR, HORZ. FIELD OF VIEW 16°-23° & VERT. FIELD OF VIEW 9.6°-13°
- MEMORY 1024 MB, 512 FLASH
- PP = PENDANT POLE MOUNT



H.264 HD DOME CAMERA WITH FOUR LENS MOUNTED ON LIGHT POLE, TYPICAL
- E = EXTERIOR, ALL WEATHER
- MD = 4X4 MULTI-IMAGE SENSOR DOME CAMERA WITH IR
- 20 = RESOLUTION (4) 5.0, 20.0 MEGAPIXEL
- PP = PENDANT POLE MOUNT

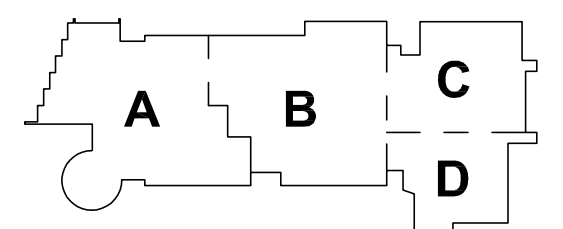
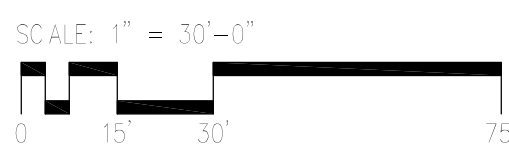
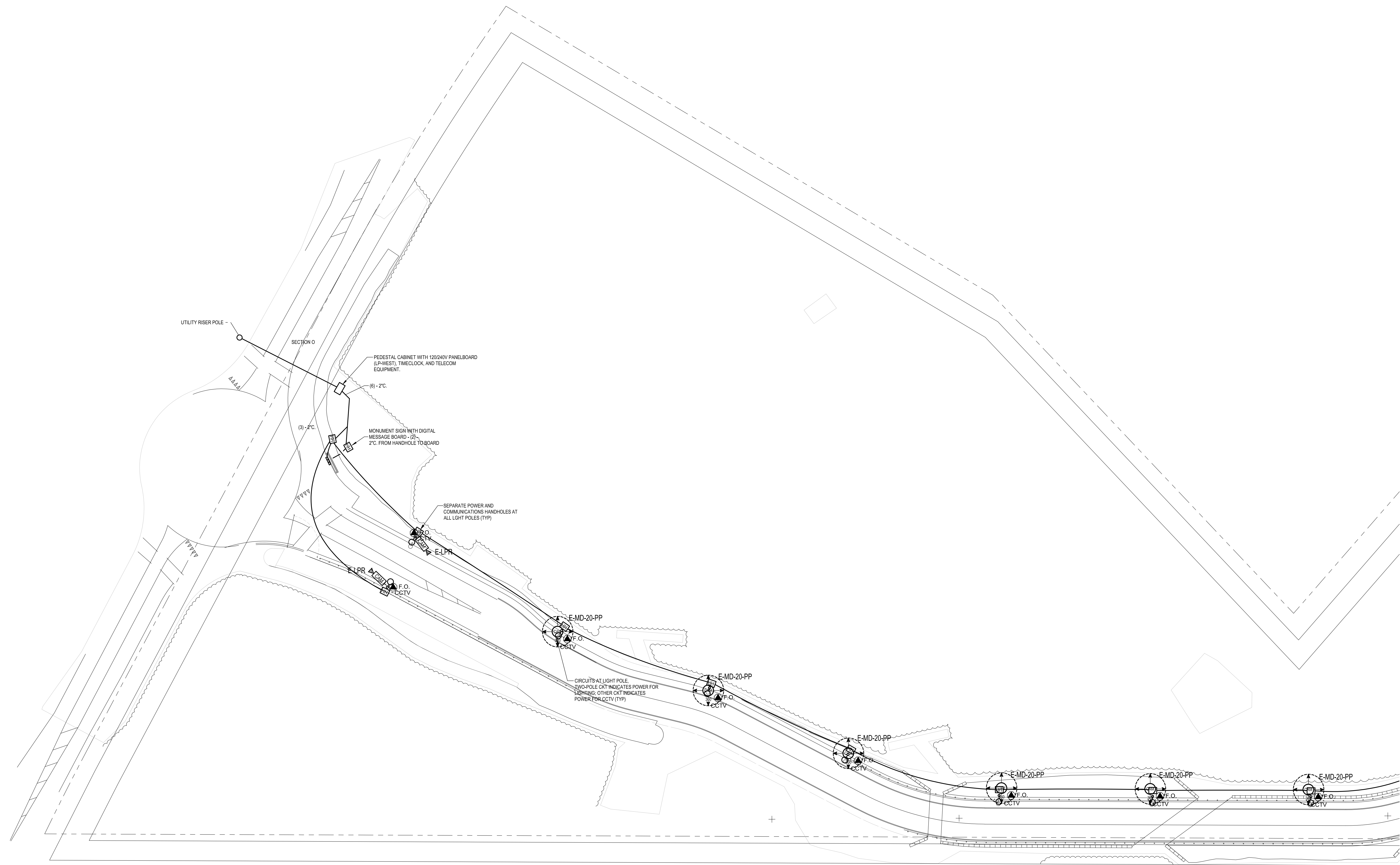


H.264 HD DOME CAMERA WITH THREE LENS MOUNTED ON LIGHT POLE, TYPICAL
- E = EXTERIOR, ALL WEATHER
- MD = 3X3 MULTI-IMAGE SENSOR DOME CAMERA WITH IR
- 15 = RESOLUTION (3) 5.0, 15.0 MEGAPIXEL
- PP = PENDANT POLE MOUNT

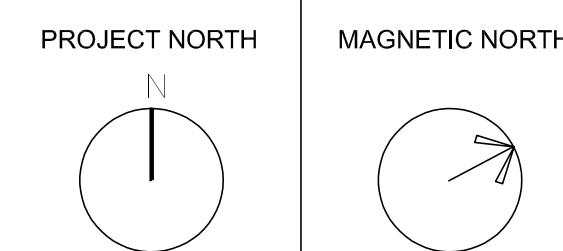
FIBER SYMBOLS

SYMBOL DESCRIPTION

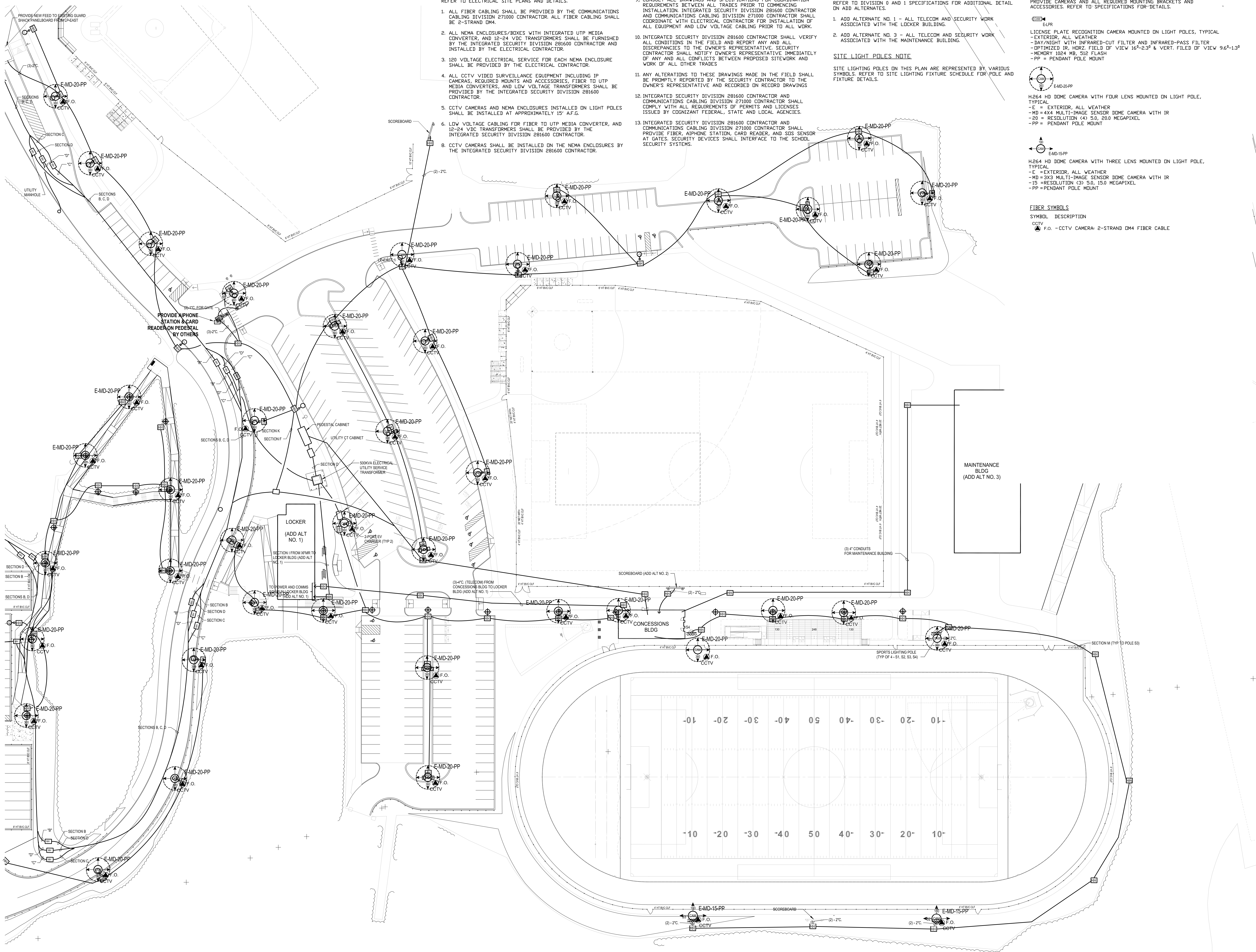
CCTV F.O. - CCTV CAMERA; 2-STRAND OM4 FIBER CABLE



KEY PLAN



TECHNOLOGY
AND SECURITY
SITE PLAN 2



SCOPE OF WORK NOTES

REFER TO ELECTRICAL SITE PLANS AND DETAILS.

1. ALL FIBER CABLEING SHALL BE PROVIDED BY THE COMMUNICATIONS CABLING DIVISION 271000 CONTRACTOR. ALL FIBER CABLEING SHALL BE 2-STRAND DM4.
2. ALL NEMA ENCLOSURES/BOXES WITH INTEGRATED UTP MEDIA CONVERTER, AND 12-24 VDC TRANSFORMERS SHALL BE FURNISHED BY THE INTEGRATED SECURITY DIVISION 281600 CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
3. 120 VOLTAGE ELECTRICAL SERVICE FOR EACH NEMA ENCLOSURE SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
4. ALL CCTV VIDEO SURVEILLANCE EQUIPMENT INCLUDING IP CAMERAS, REQUIRED MOUNTS AND ACCESSORIES, FIBER TO UTP MEDIA CONVERTERS, AND LOW VOLTAGE TRANSFORMERS SHALL BE PROVIDED BY THE INTEGRATED SECURITY DIVISION 281600 CONTRACTOR.
5. CCTV CAMERAS AND NEMA ENCLOSURES INSTALLED ON LIGHT POLES SHALL BE INSTALLED AT APPROXIMATELY 15' A.F.G.
6. LOW VOLTAGE CABLEING FOR FIBER TO UTP MEDIA CONVERTER, AND 12-24 VDC TRANSFORMERS SHALL BE PROVIDED BY THE INTEGRATED SECURITY DIVISION 281600 CONTRACTOR.
8. CCTV CAMERAS SHALL BE INSTALLED ON THE NEMA ENCLOSURES BY THE INTEGRATED SECURITY DIVISION 281600 CONTRACTOR.

9. CONSULT ALL DRAWINGS AND SPECIFICATIONS FOR COORDINATION REQUIREMENTS BETWEEN ALL TRADES PRIOR TO COMMENCING INSTALLATION. INTEGRATED SECURITY DIVISION 281600 CONTRACTOR AND COMMUNICATIONS CABLING DIVISION 271000 CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR FOR INSTALLATION OF ALL EQUIPMENT AND LOW VOLTAGE CABLEING PRIOR TO ALL WORK.
10. INTEGRATED SECURITY DIVISION 281600 CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD AND REPORT ANY AND ALL DISCREPANCIES TO THE OWNER'S REPRESENTATIVE. SECURITY CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY OF ANY AND ALL CONFLICTS BETWEEN PROPOSED SITEWORK AND WORK OF ALL OTHER TRADES.
11. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD SHALL BE PROMPTLY REPORTED BY THE SECURITY CONTRACTOR TO THE OWNER'S REPRESENTATIVE AND RECORDED ON RECORD DRAWINGS.
12. INTEGRATED SECURITY DIVISION 281600 CONTRACTOR AND COMMUNICATIONS CABLING DIVISION 271000 CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF PERMITS AND LICENSES ISSUED BY COGNIZANT FEDERAL, STATE AND LOCAL AGENCIES.
13. INTEGRATED SECURITY DIVISION 281600 CONTRACTOR AND COMMUNICATIONS CABLING DIVISION 271000 CONTRACTOR SHALL PROVIDE FIBER, ALPHONE STATION, CARD READER, AND SOS SENSOR AT GATES. SECURITY DEVICES SHALL INTERFACE TO THE SCHOOL SECURITY SYSTEMS.

ADD ALTERNATES NOTES

REFER TO DIVISION 0 AND 1 SPECIFICATIONS FOR ADDITIONAL DETAIL ON ADD ALTERNATES.

1. ADD ALTERNATE NO. 1 - ALL TELECOM AND SECURITY WORK ASSOCIATED WITH THE LOCKER BUILDING.
2. ADD ALTERNATE NO. 3 - ALL TELECOM AND SECURITY WORK ASSOCIATED WITH THE MAINTENANCE BUILDING.

SITE LIGHT POLES NOTE

SITE LIGHTING POLES ON THIS PLAN ARE REPRESENTED BY VARIOUS SYMBOLS. REFER TO SITE LIGHTING FIXTURE SCHEDULE FOR POLE AND FIXTURE DETAILS.

CCTV CAMERA SYMBOLS

PROVIDE CAMERAS AND ALL REQUIRED MOUNTING BRACKETS AND ACCESSORIES. REFER TO SPECIFICATIONS FOR DETAILS.

E-MD-PP

- EXTERIOR, ALL WEATHER
- DAY/NIGHT WITH INFRARED-CUT FILTER AND INFRARED-PASS FILTER
- OPTIMIZED IR, HORZ. FIELD OF VIEW 16°-2.3° & VERT. FIELD OF VIEW 9.6°-1.3°
- MEMORY 128K MB, SILE FLASH
- PP = PENDANT POLE MOUNT

E-MD-20-PP

E-MD-15-PP

- H264 HD DOME CAMERA WITH FOUR LENS MOUNTED ON LIGHT POLE, TYPICAL
- EXTERIOR, ALL WEATHER
- DAY/NIGHT WITH INFRARED-CUT FILTER AND INFRARED-PASS FILTER
- OPTIMIZED IR, HORZ. FIELD OF VIEW 16°-2.3° & VERT. FIELD OF VIEW 9.6°-1.3°
- MEMORY 128K MB, SILE FLASH
- PP = PENDANT POLE MOUNT

E-MD-20-PP

E-MD-15-PP

- H264 HD DOME CAMERA WITH THREE LENS MOUNTED ON LIGHT POLE, TYPICAL
- EXTERIOR, ALL WEATHER
- DAY/NIGHT WITH INFRARED-CUT FILTER AND INFRARED-PASS FILTER
- OPTIMIZED IR, HORZ. FIELD OF VIEW 16°-2.3° & VERT. FIELD OF VIEW 9.6°-1.3°
- MEMORY 128K MB, SILE FLASH
- PP = PENDANT POLE MOUNT

E-MD-20-PP

E-MD-15-PP

E-MD-20-PP

E-MD-15-PP

E-MD-20-PP

E-MD-15-PP

E-MD-20-PP

E-MD-15-PP

E-MD-20-PP

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E-MD-15-PP

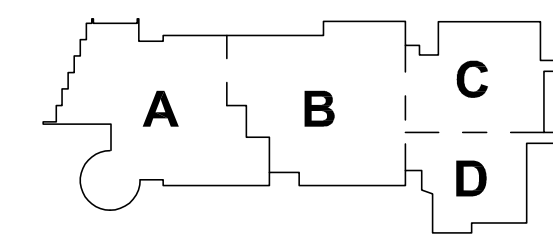
E-MD-20-PP

E-MD-15-PP

E-MD-20-PP

E-MD-15-PP

E-MD-20-PP



KEY PLAN

PROJECT NORTH

MAGNETIC NORTH

TECHNOLOGY AND SECURITY SITE PLAN 3

DRA

Drumme Rosane Anderson, Inc.

225 Oakland Road
Studio 205
South Windsor, CT
06074

260 Charles Street
Studio 300
Wattham, MA
02453

Tel: 617.964.1700
www.dra.com

Planning / Architecture / Interior Design

Northeast
Metropolitan
Regional
Vocational High
School

Wakefield, MA 01880

BSI

HYDROTECH, SOFTWARE,
SUPPORT INC.
160 MAIN STREET
SUITE 2
NORTHFIELD, MA 01360
413-456-5501
www.bsi.net

DRA

Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074
Planning | Architecture | Interior Design
Tel: 617.964.1700
www.draa.com

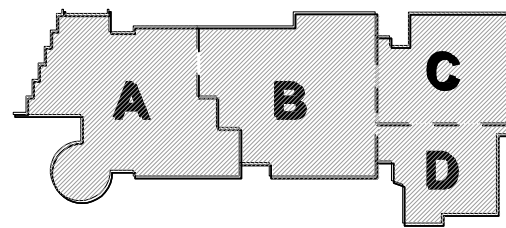
Northeast
Metropolitan
Regional
Vocational High
School

Wakefield, MA 01880

BSI
SYSTEMS, SOFTWARE,
SUPPORT INC.
165 MAIN STREET
SUITE 3
NORTHFIELD, MA 01340
413-456-5001
WWW.BSI.NET

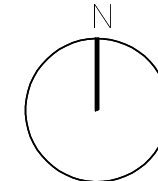
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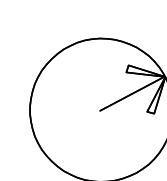


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



LOWER LEVEL
TECHNOLOGY
CABLE ROUTING

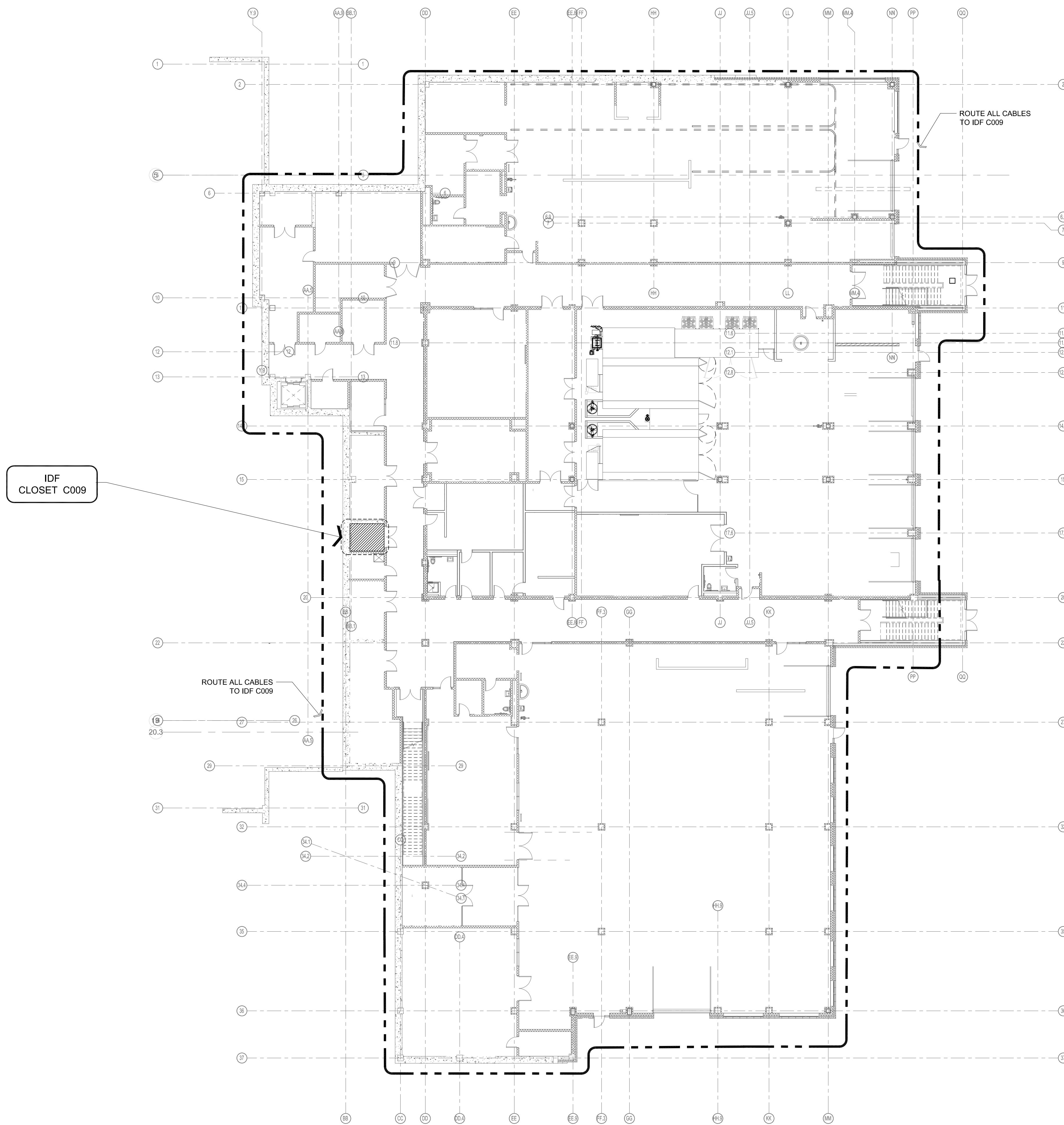
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Job No.: 20202

Drawn By: MLD/AMD

Date: 06/28/2023

T1-1-0



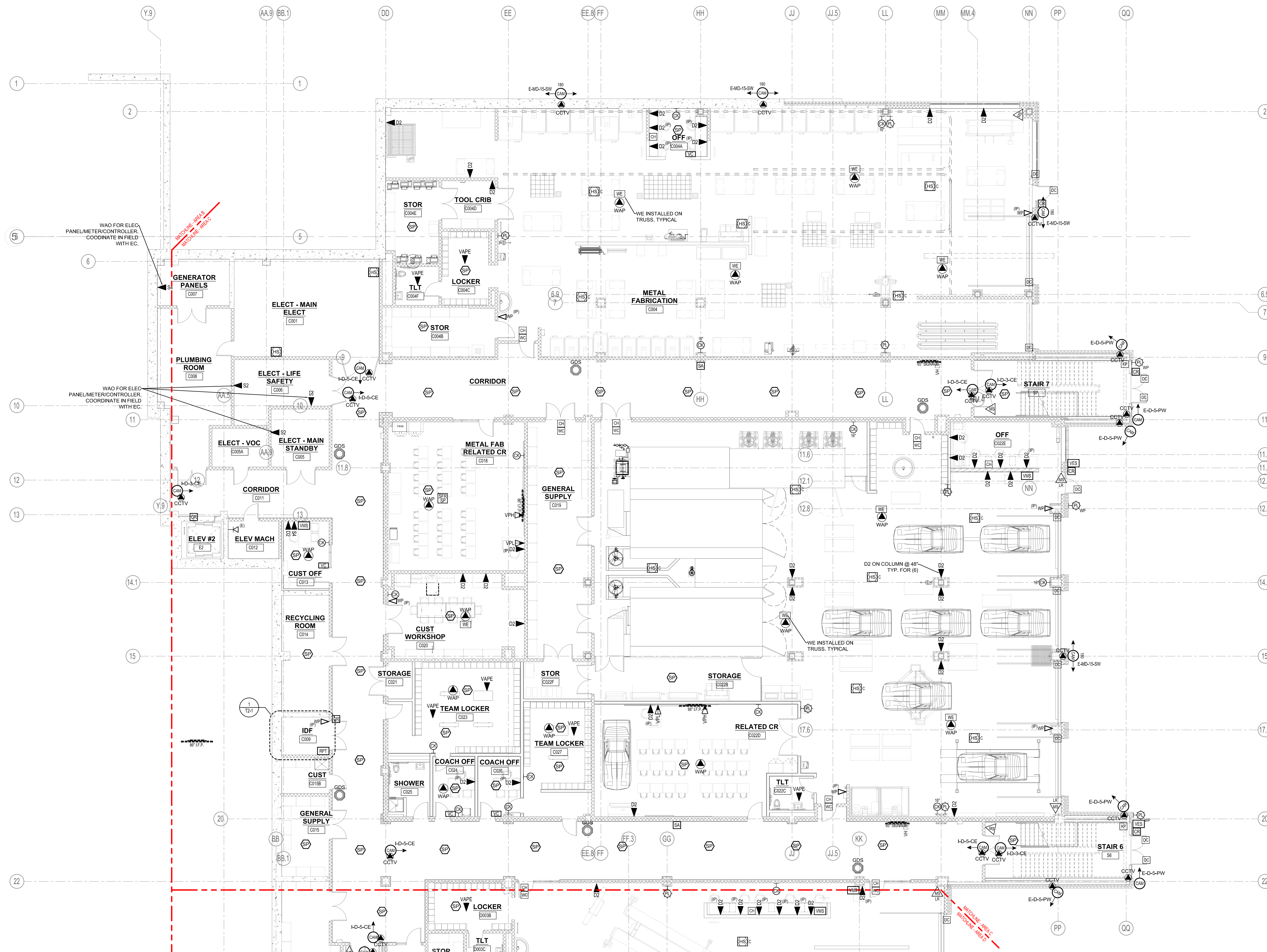
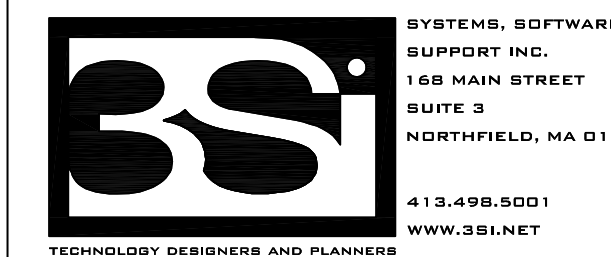
1 LOWER LEVEL - CBLE ROUTING
1/16" = 1'-0"

DRA

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225 Oakland Road
Studio 205
South Windsor, CT
06074
Planning / Architecture / Interior Design
Tel: 617.964.1700
www.draa.com

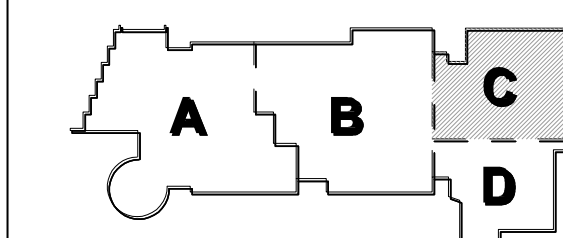
**Northeast
Metropolitan
Regional
Vocational High
School**

Wakefield, MA 01880

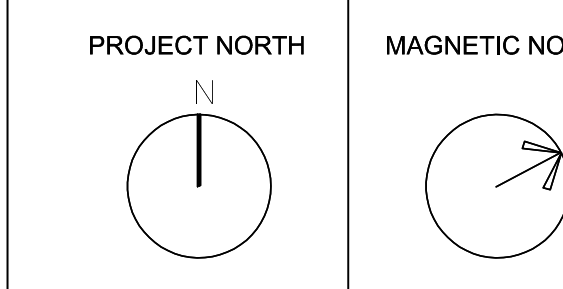


1 LOWER LEVEL - AREA C
1/8" = 1'-0"

BID SET



KEY PLAN



**LOWER LEVEL
TECHNOLOGY
AND SECURITY
PLAN - AREA C**

Scale: 1/8" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023

T1-1-0C

DRA

Drumme Rosane Anderson, Inc.
225 Oakland Road
Studio 205
South Windsor, CT
06074
Planning | Architecture | Interior Design
Tel: 617.964.1700
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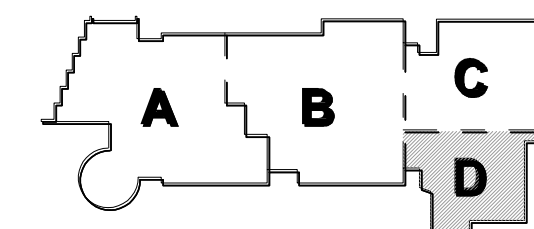
Northeast
Metropolitan
Regional
Vocational High
School

Wakefield, MA 01880

BSI
SYSTEMS, SOFTWARE,
SUPPORT INC.
165 MAIN STREET
SUITE 3
NORTHFIELD, MA 01340
413-456-5501
WWW.BSI.NET

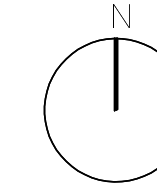
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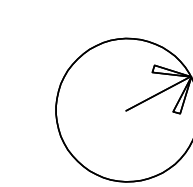


KEY PLAN

PROJECT NORTH



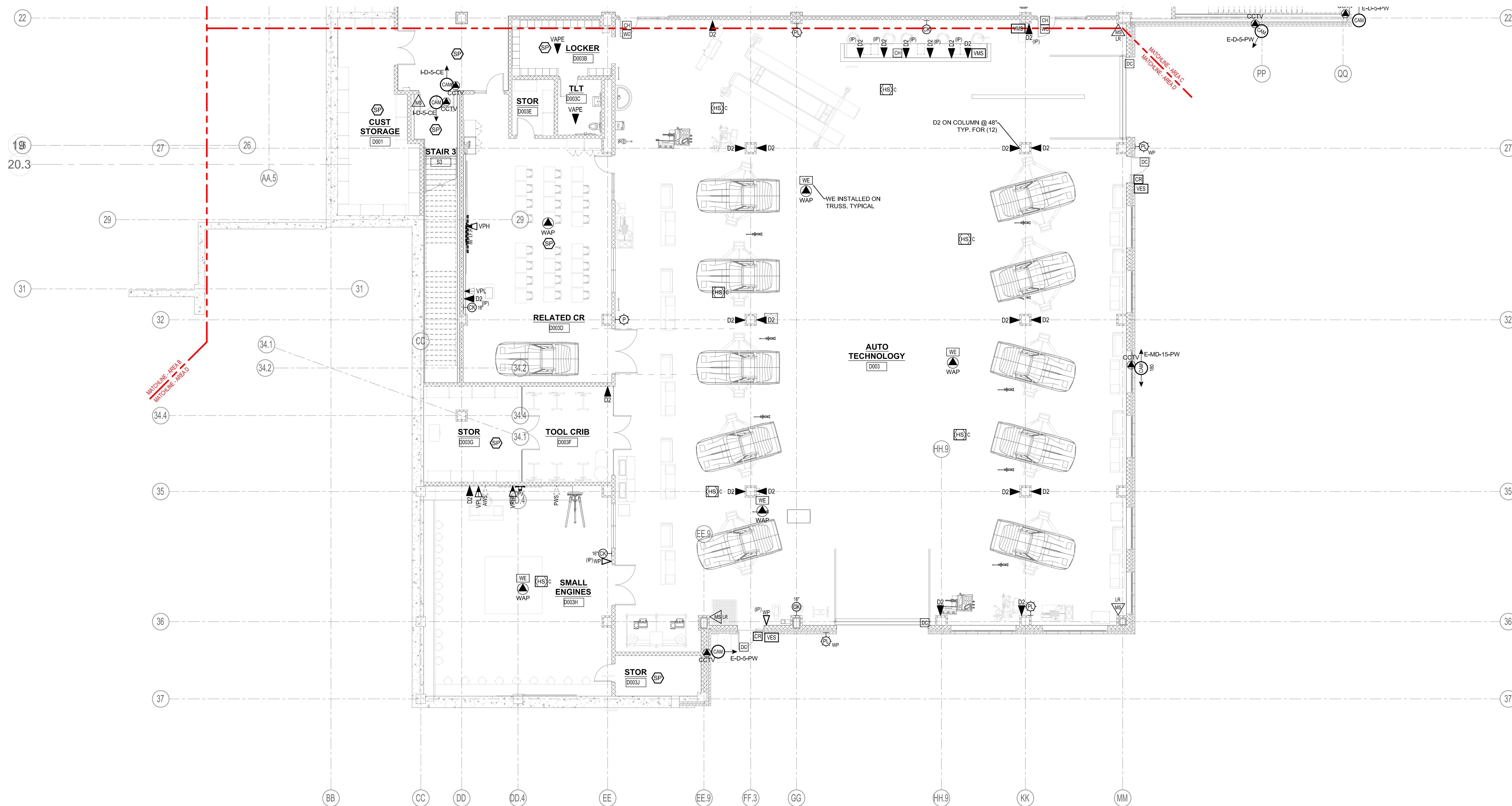
MAGNETIC NORTH



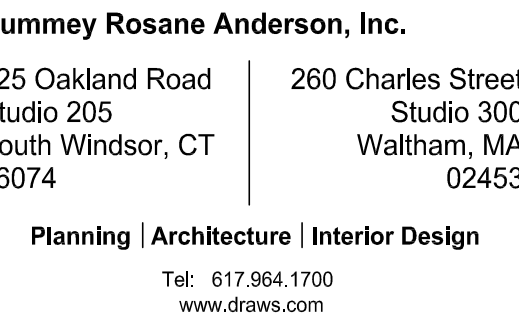
LOWER LEVEL
TECHNOLOGY
AND SECURITY
PLAN - AREA D

Scale: 1/8" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023

T1-1-0D

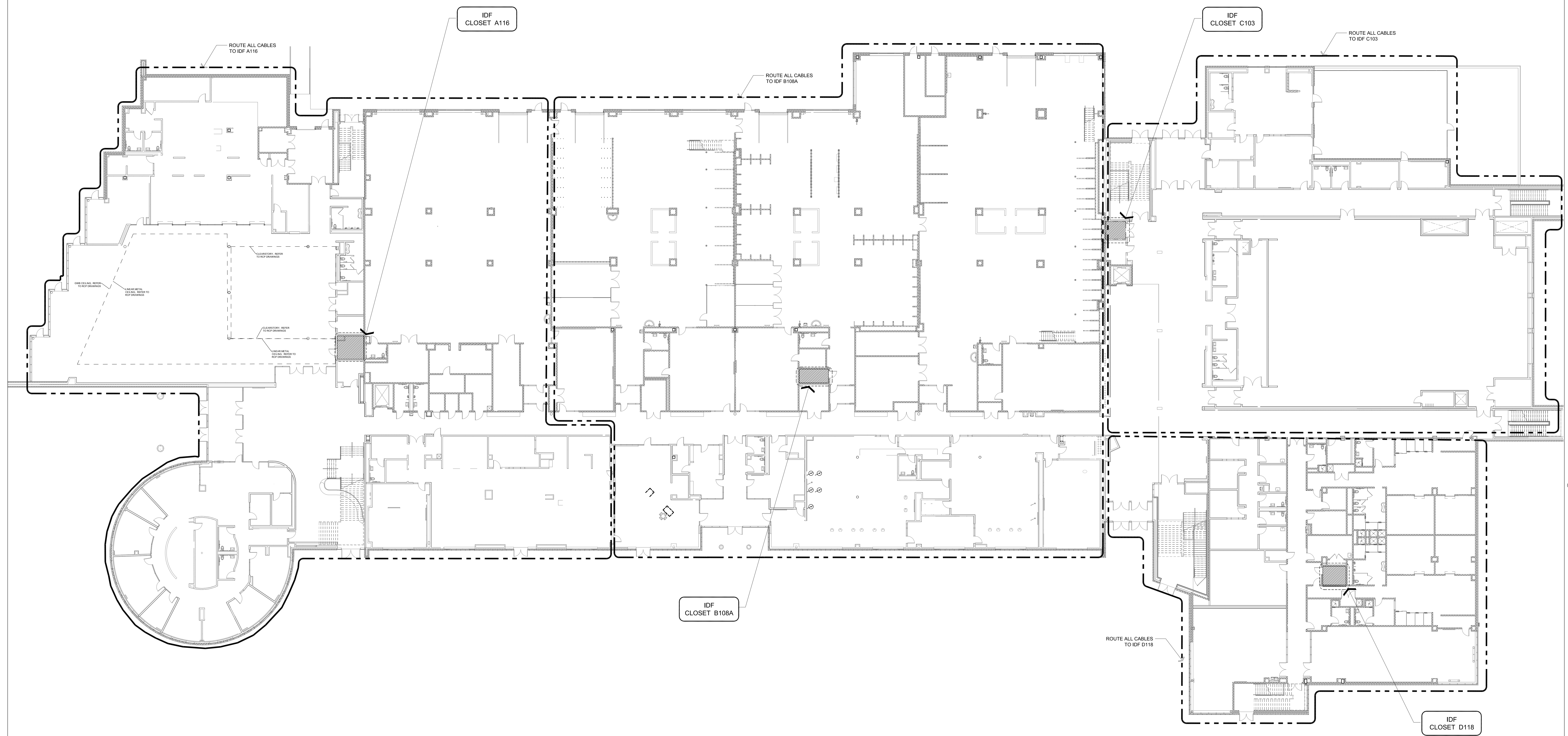
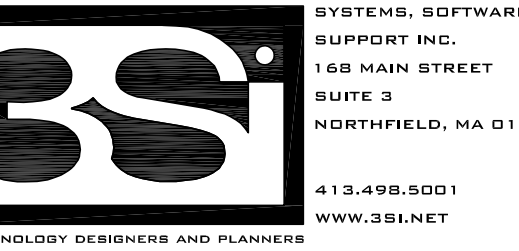


1 LOWER LEVEL - AREA D
1/8" = 1'-0"



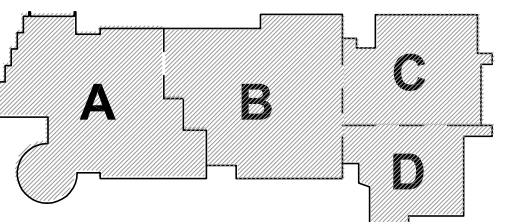
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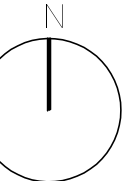
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Y PLAN

PROJECT NORTH

MAGNETIC NORTH



FIRST FLOOR TECHNOLOGY CABLE ROUTING

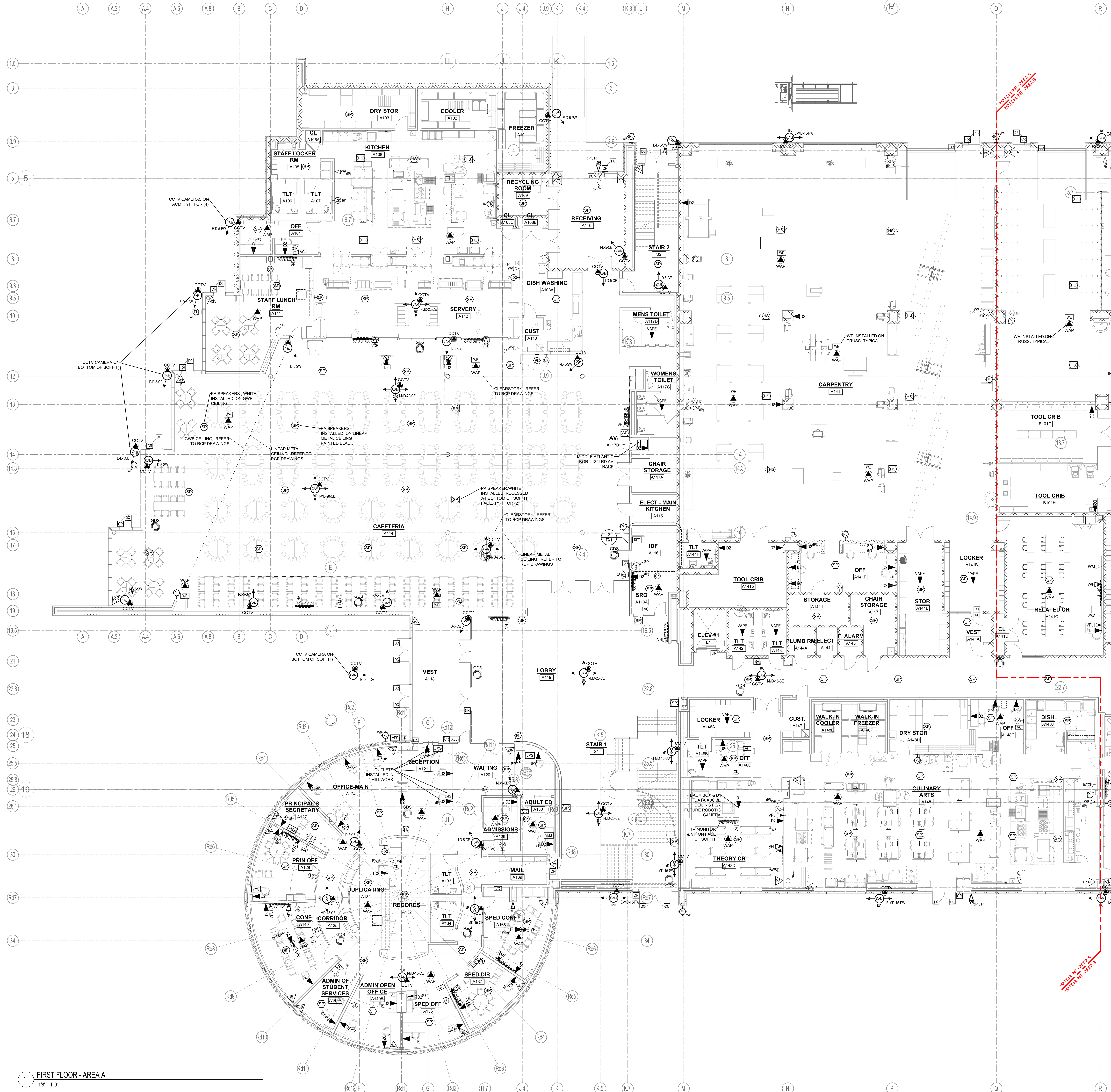
c	$1/16" = 1'-0"$
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No.: 20202

By:MLD/AMD

06/28/2023

1-1-1



1 FIRST FLOOR - AREA A
1/8" = 1'-0"

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A B C D

KEY PLAN

PROJECT NORTH

MAGNETIC NORTH

FIRST FLOOR
TECHNOLOGY
AND SECURITY
PLAN - AREA A

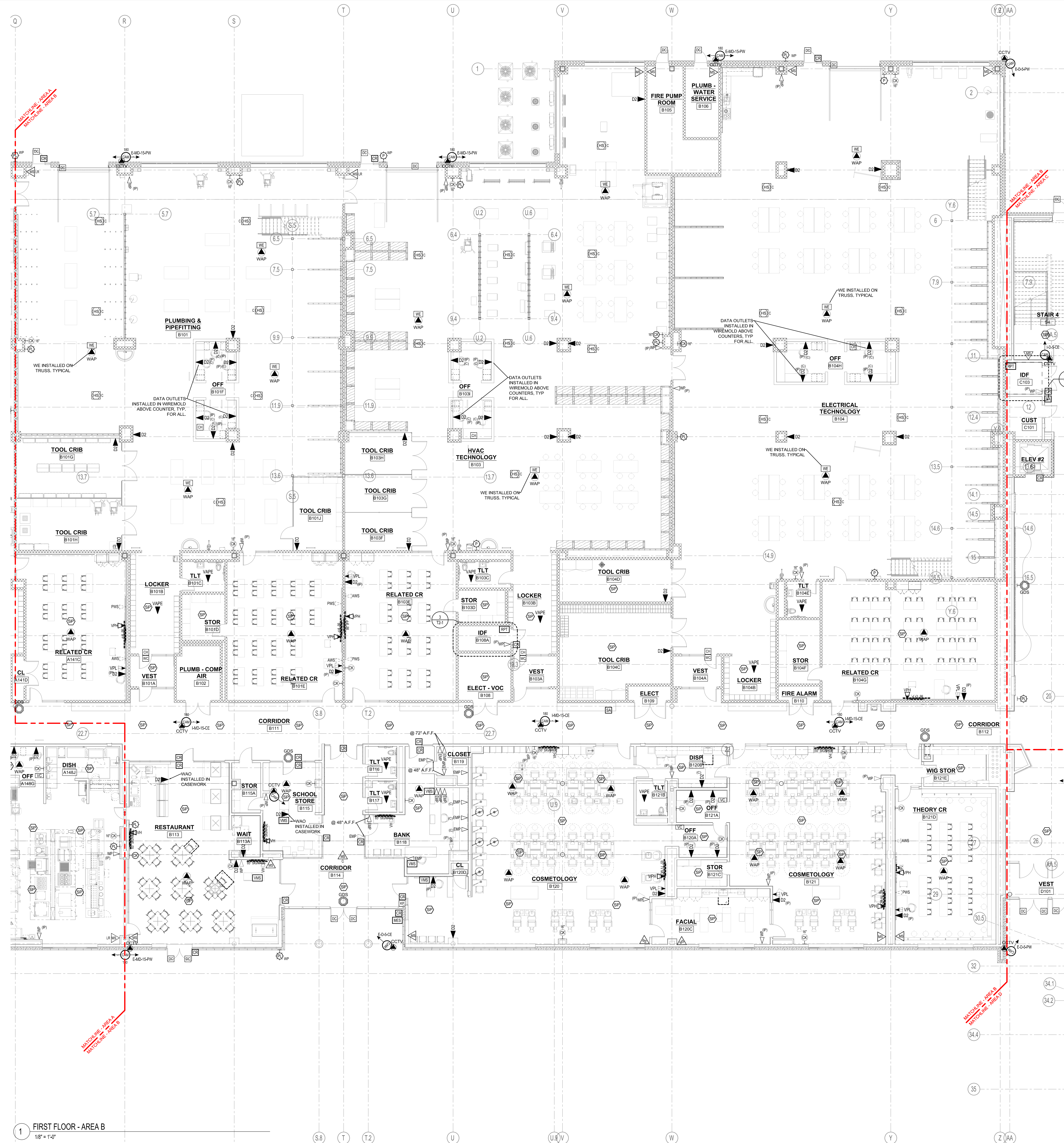
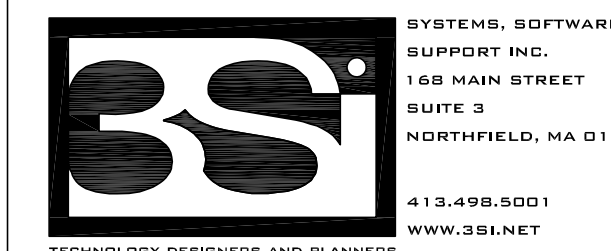
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Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023

T1-1-1A

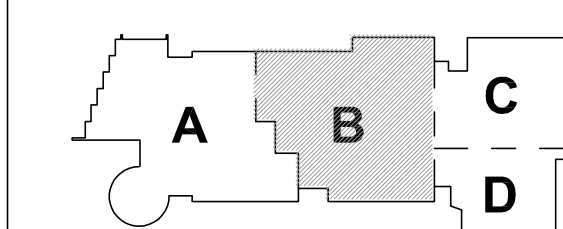


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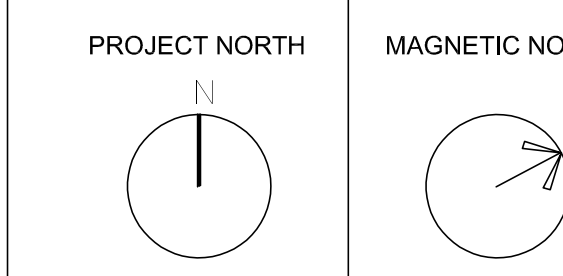
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KEY PLAY



**FIRST FLOOR
TECHNOLOGY
AND SECURITY
PLAN - AREA B**

Scale: 1/8" = 1'-0"
Job No.: 20202
Drawn By:MLD/AMD
Date: 08/28/2023

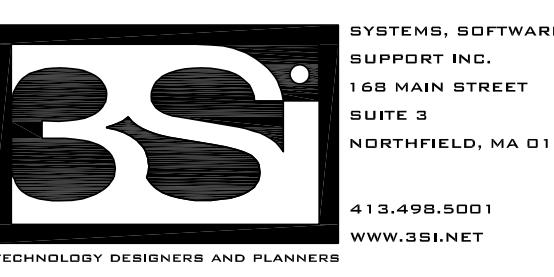
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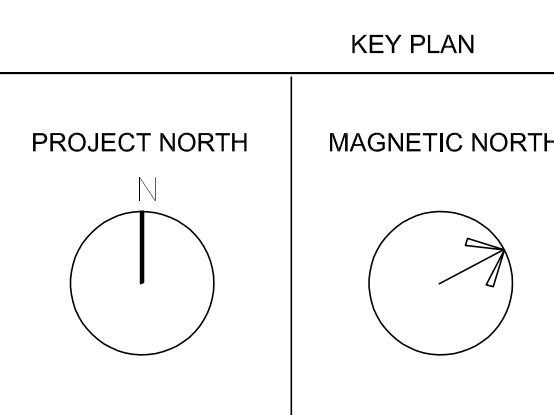
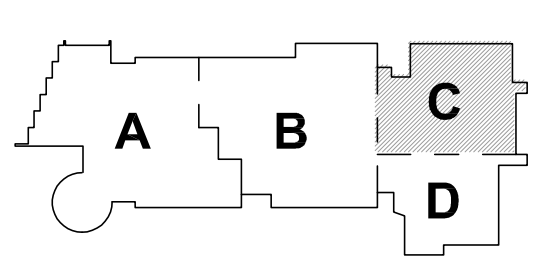
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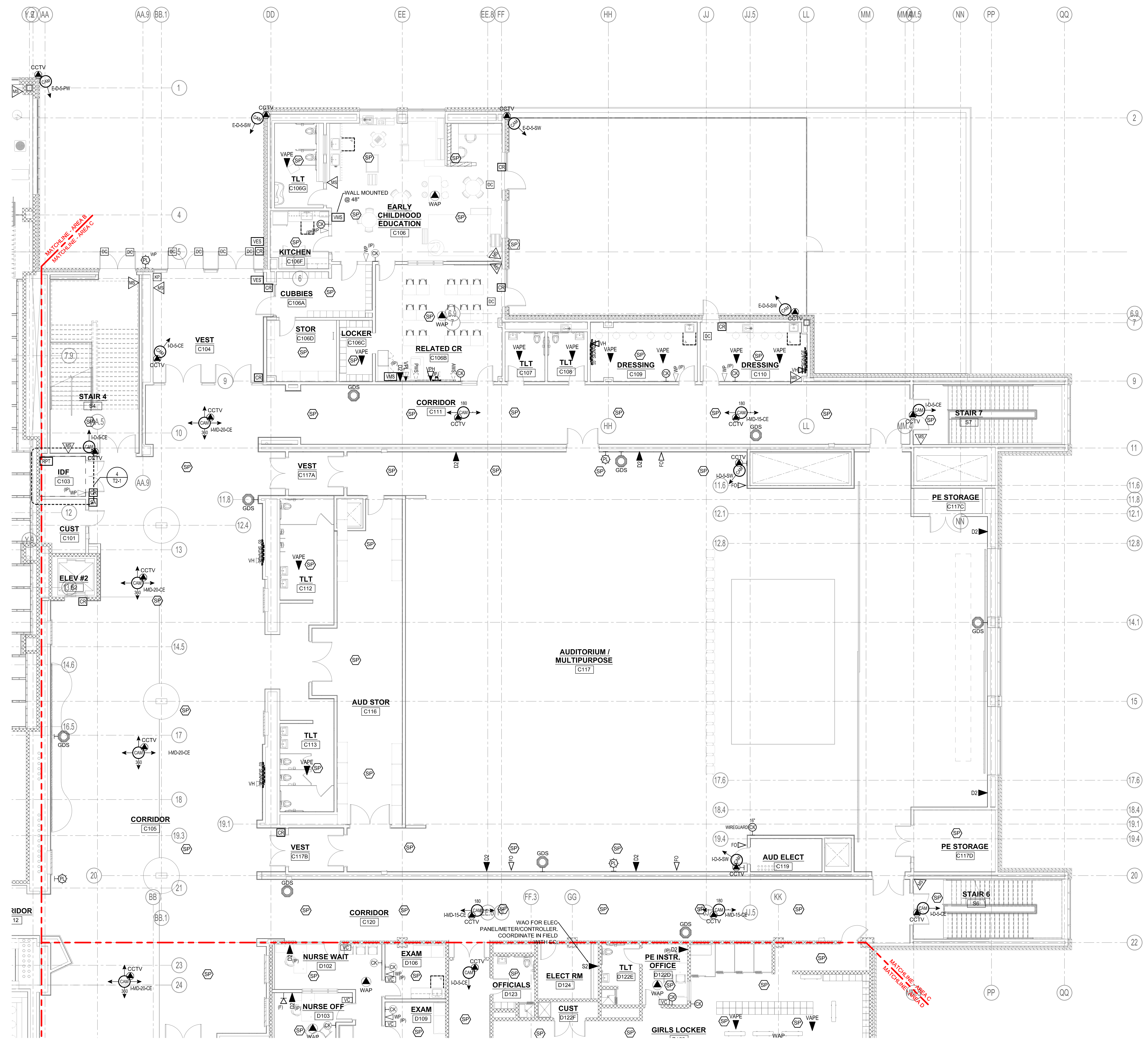
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**FIRST FLOOR
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AND SECURITY
PLAN - AREA C**

Scale: 1/8" = 1'-0"
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Date: 06/28/2023
T1-1-1C



1 FIRST FLOOR - AREA C
1/8" = 1'-0"



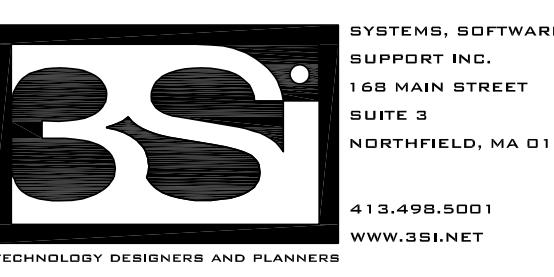
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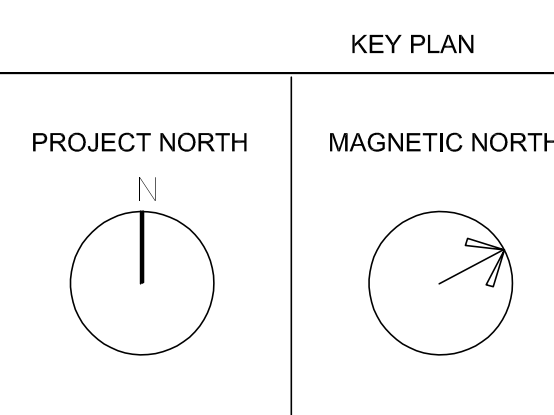
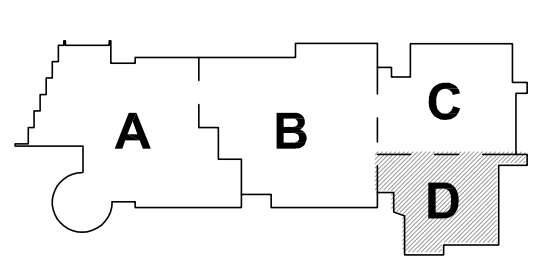
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1 FIRST FLOOR - AREA D
1/8" = 1'-0"

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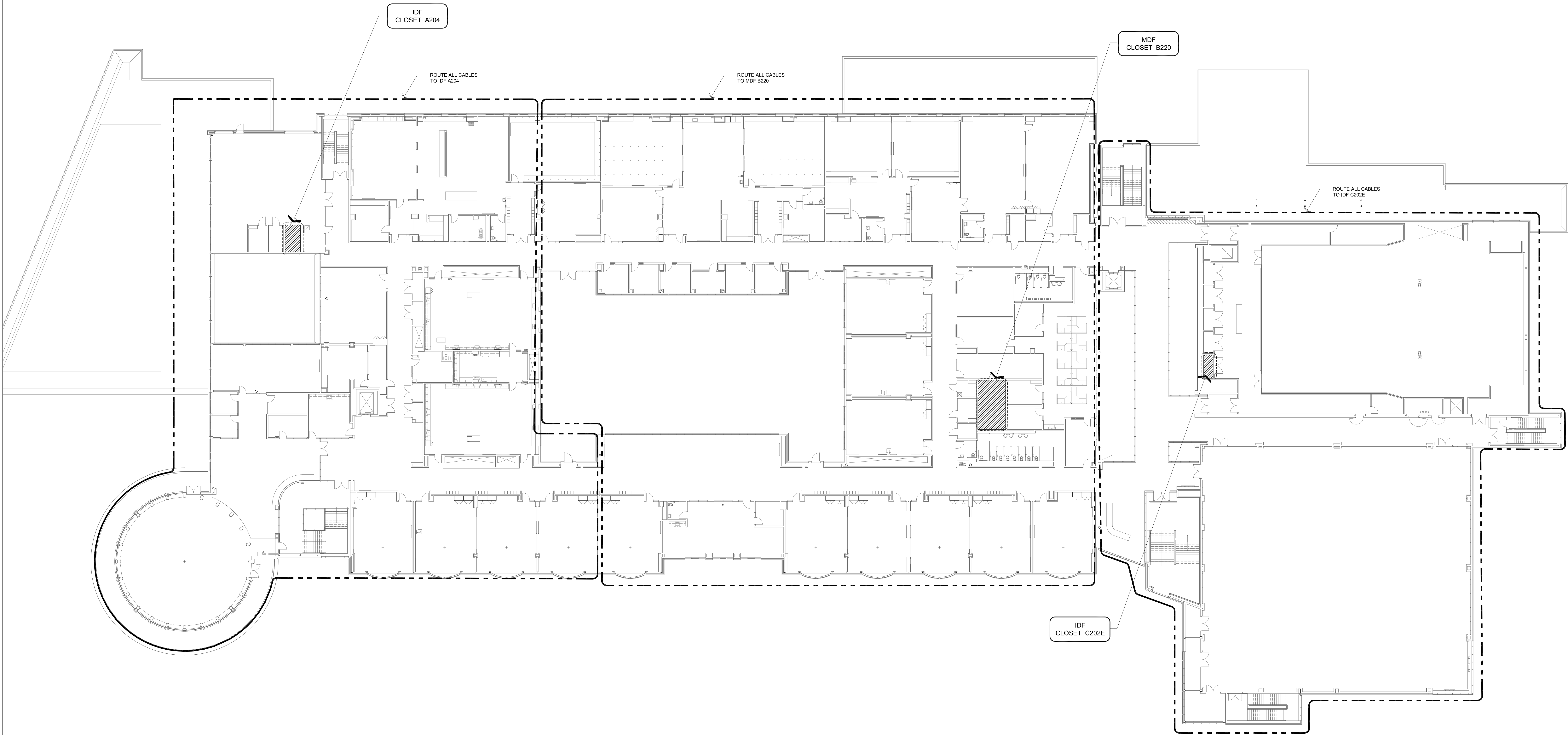


FIRST FLOOR TECHNOLOGY AND SECURITY PLAN - AREA D

Scale: 1/8" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023

T1-1-1D

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1 SECOND FLOOR - CABLE ROUTING
1/16" = 1'-0"

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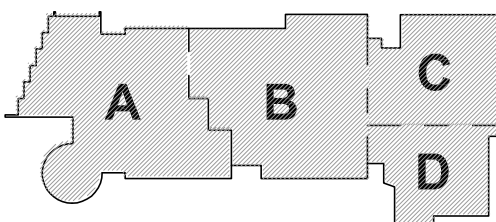
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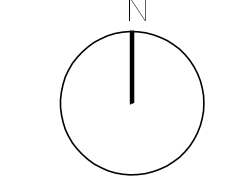
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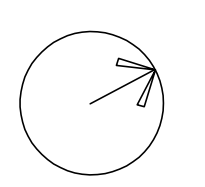


KEY PLAN

PROJECT NORTH



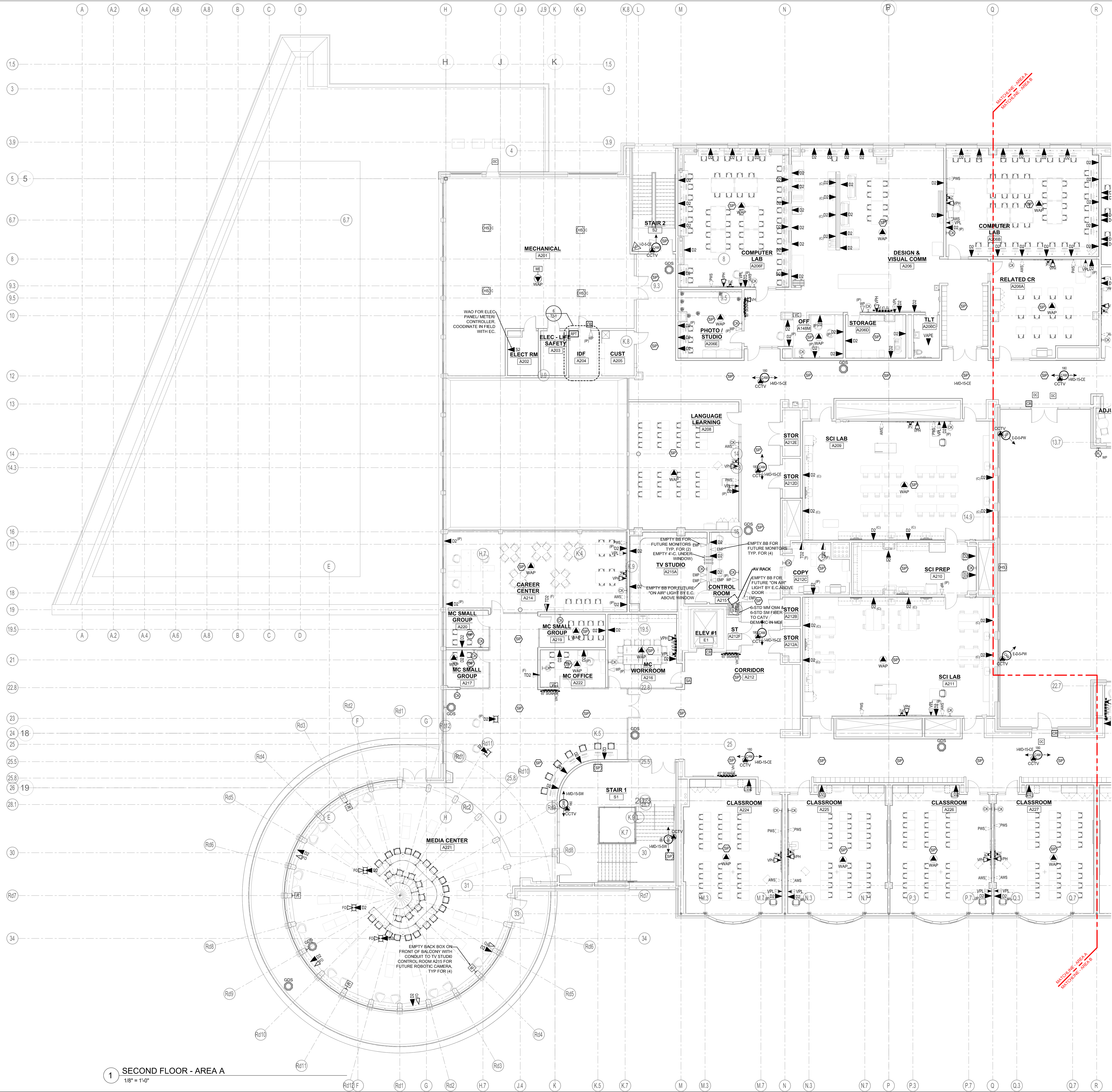
MAGNETIC NORTH



SECOND FLOOR
TECHNOLOGY
CABLE ROUTING

Scale: 1/16" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023

T1-1-2



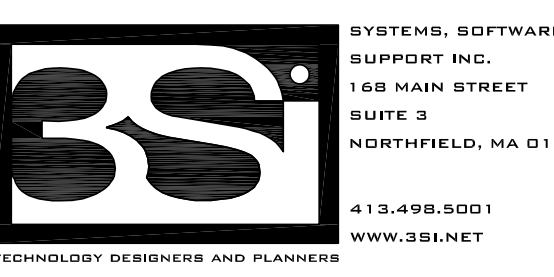
1 SECOND FLOOR - AREA A
1/8" = 1'-0"



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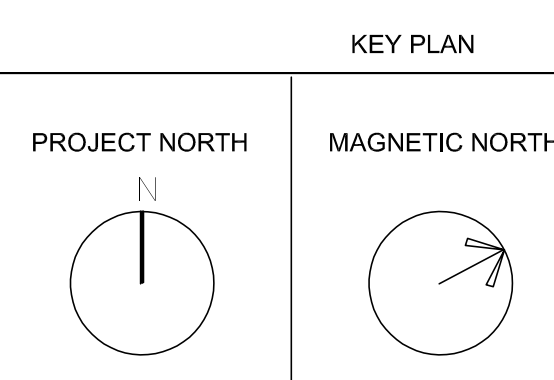
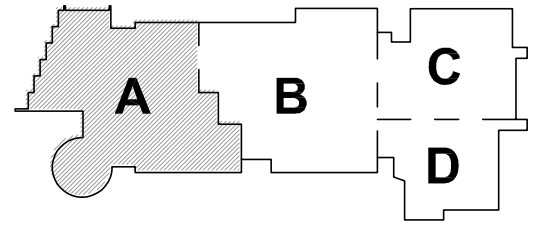
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T1-1-2A

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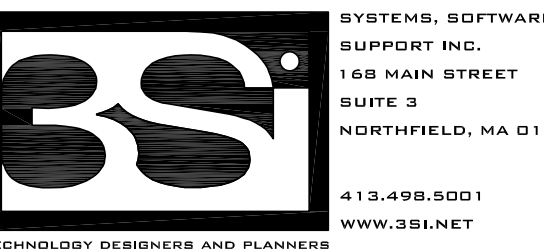
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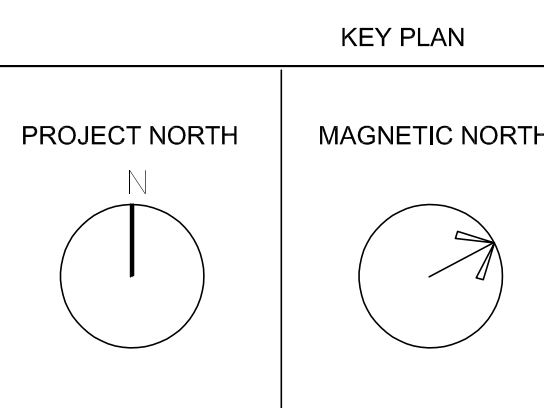
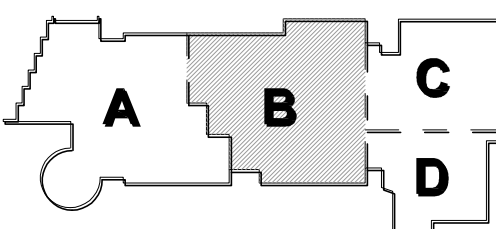
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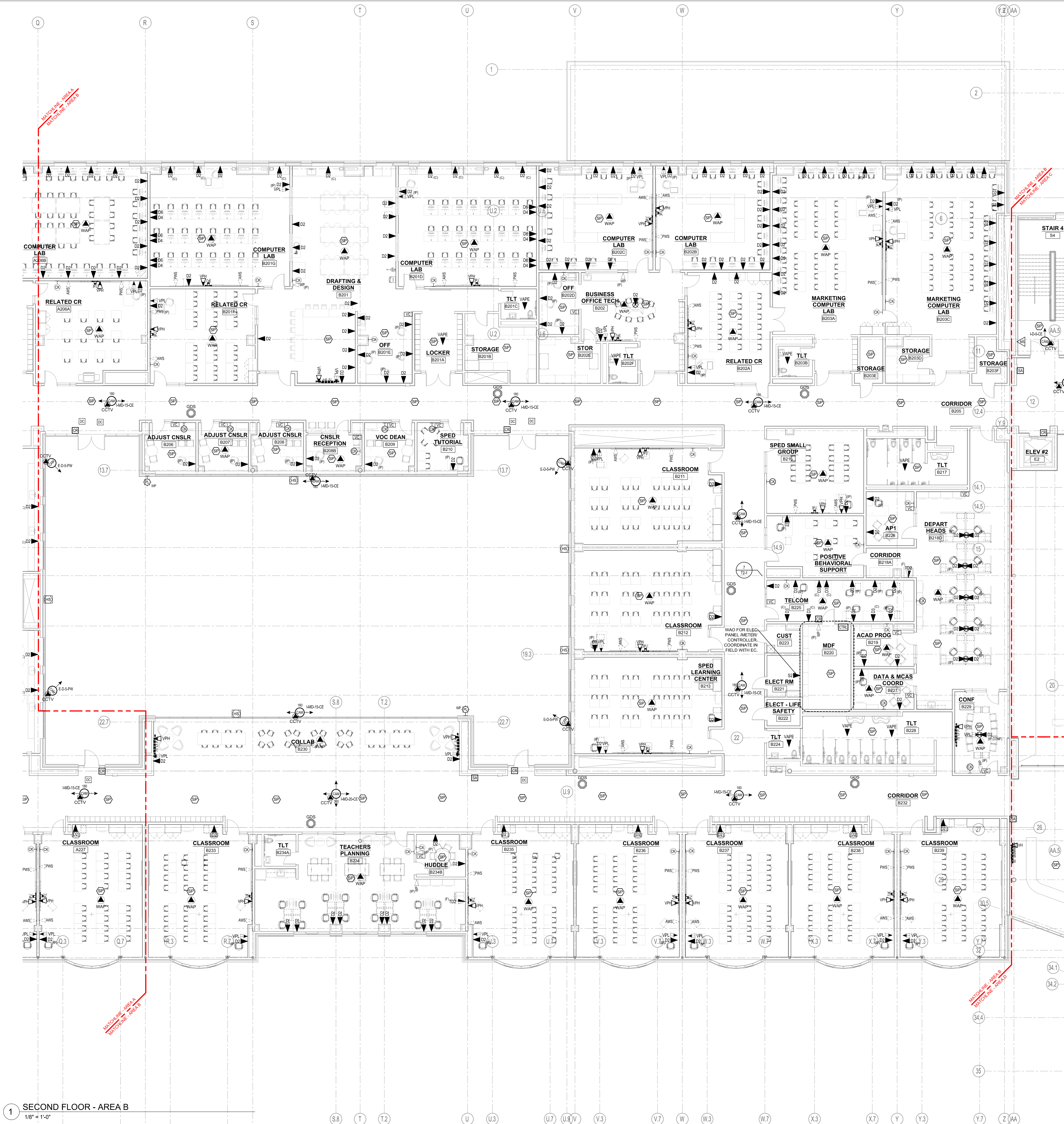
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**SECOND FLOOR
TECHNOLOGY
AND SECURITY
PLAN - AREA B**

Scale: 1/8" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023

T1-1-2B

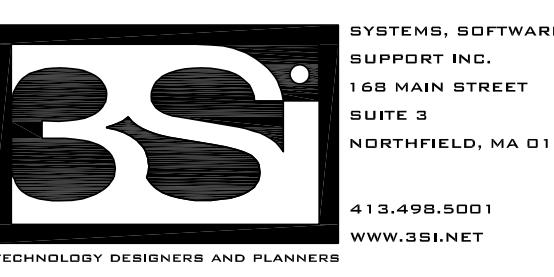




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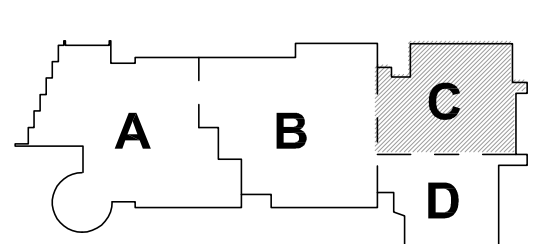
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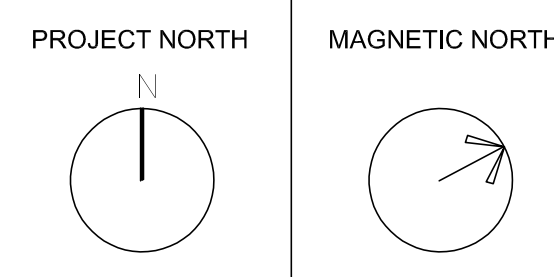
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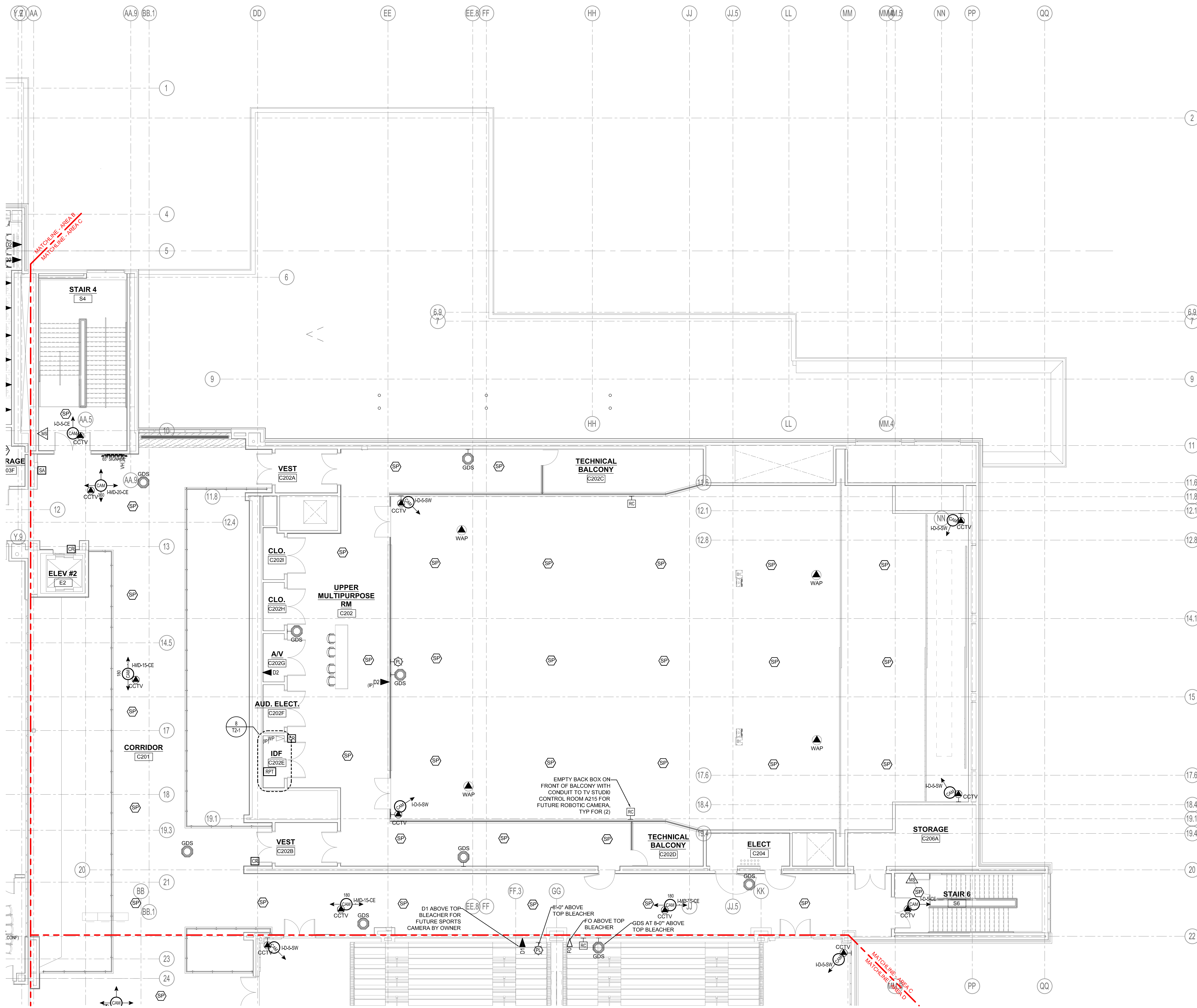
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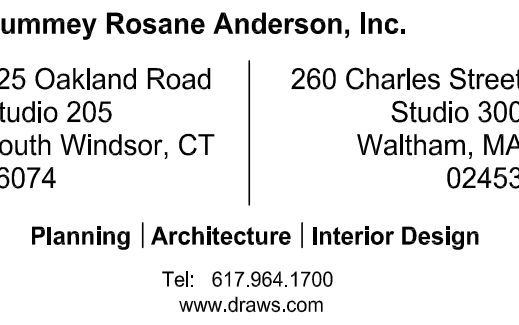
SECOND FLOOR
TECHNOLOGY
AND SECURITY
PLAN - AREA C

Scale: 1/8" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023

T1-1-2C

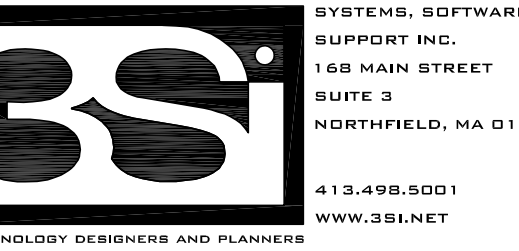


1 SECOND FLOOR - AREA C
1/8" = 1'-0"

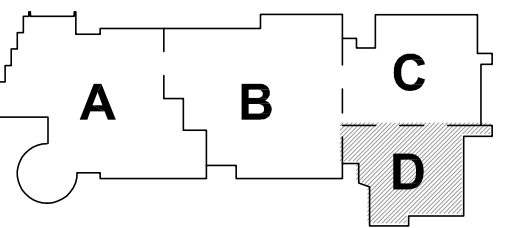


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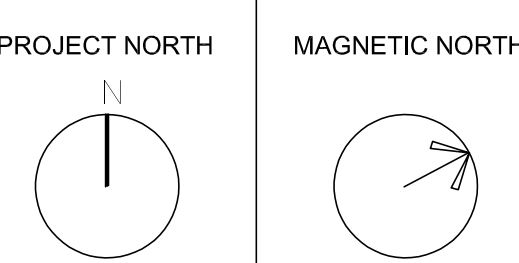
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SECOND FLOOR TECHNOLOGY AND SECURITY PLAN - AREA D

Scale: 1/8" = 1'-0"
 No.: 20202
 Design By: MLD/AMD
 Date: 08/28/2023

T1-1-2D

T1-1-2D

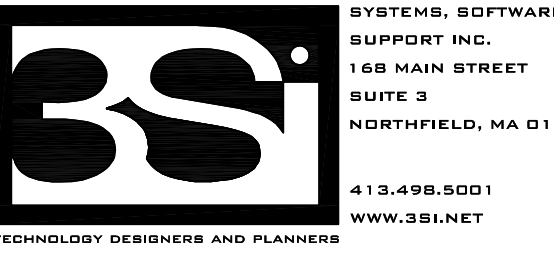


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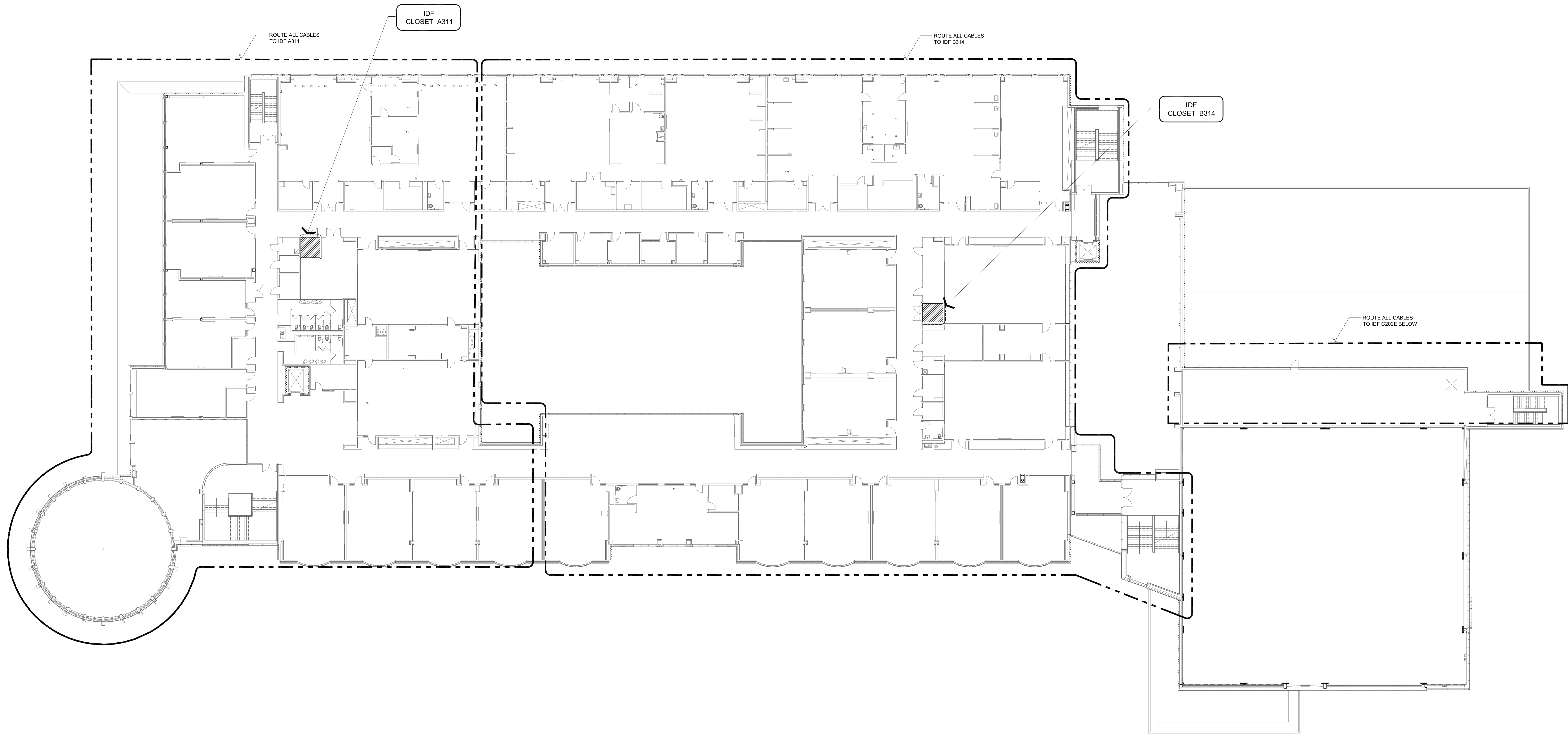
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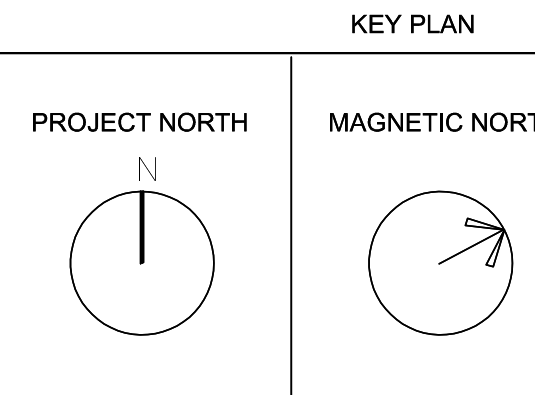
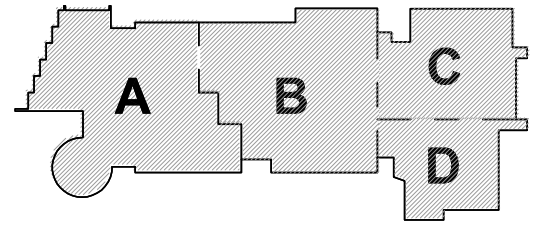


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1 THIRD FLOOR - CABLE ROUTING
1/16" = 1'-0"

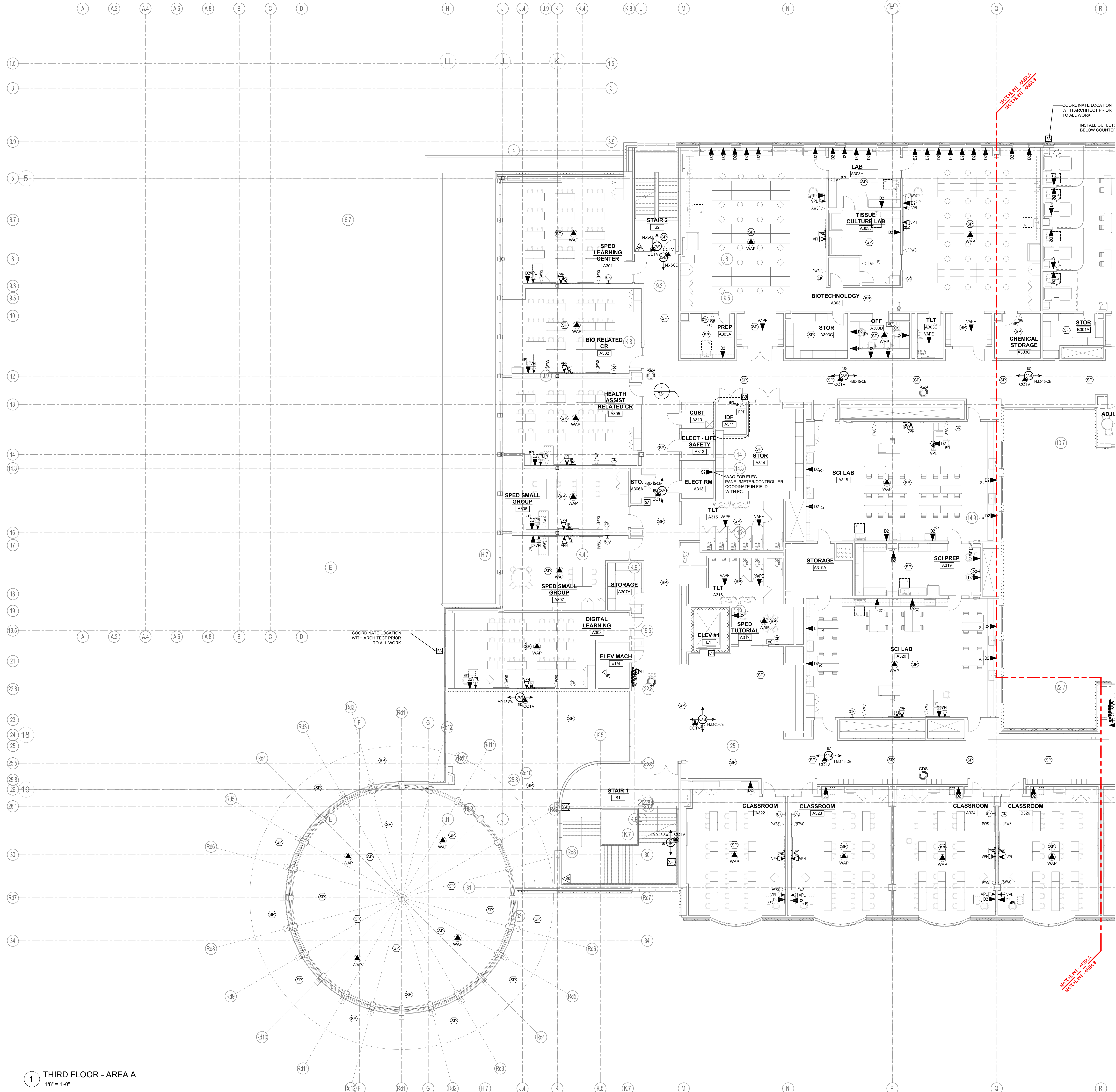
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THIRD FLOOR
TECHNOLOGY
CABLE ROUTING

Scale: 1/16" = 1'-0"
Job No.: 20202
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T1-1-3



1 THIRD FLOOR - AREA A
1/8" = 1'-0"

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KEY PLAN

PROJECT NORTH

MAGNETIC NORTH

THIRD FLOOR
TECHNOLOGY
AND SECURITY
PLAN - AREA A

Scale: 1/8" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023

T1-1-3A

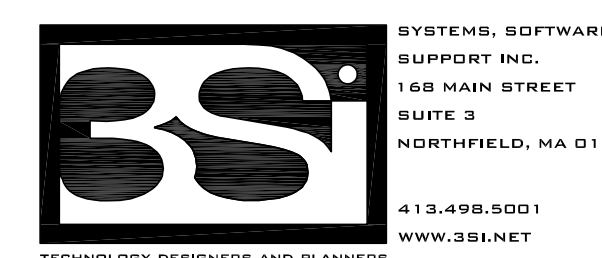
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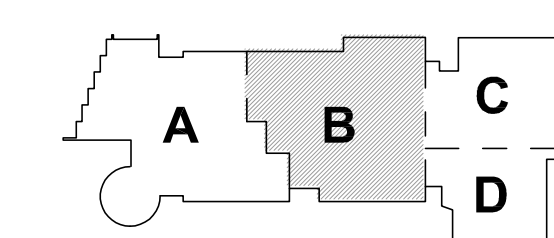
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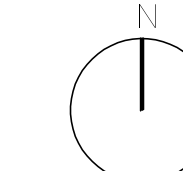
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KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



THIRD FLOOR
TECHNOLOGY
AND SECURITY
PLAN - AREA B

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

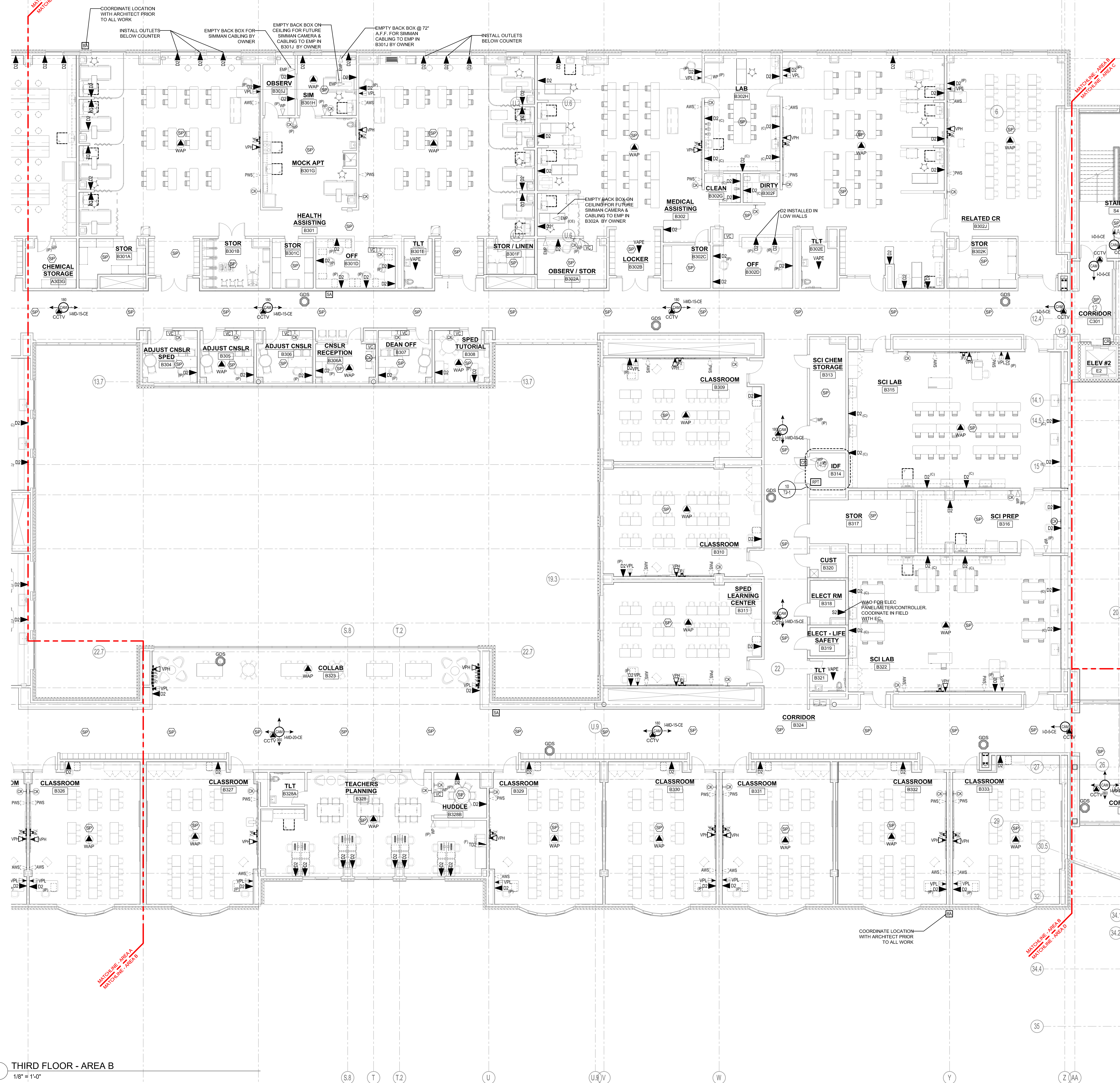
Job No.: 20202

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Date: 06/28/2023

T1-1-3B

1 THIRD FLOOR - AREA B
1/8" = 1'-0"

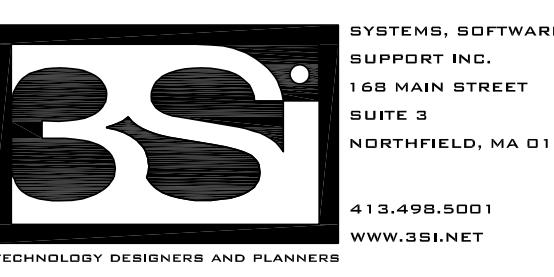




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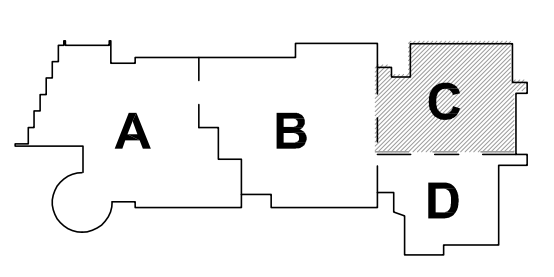
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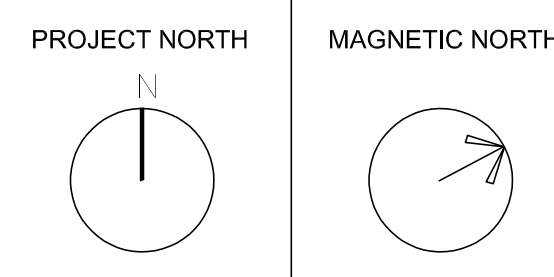


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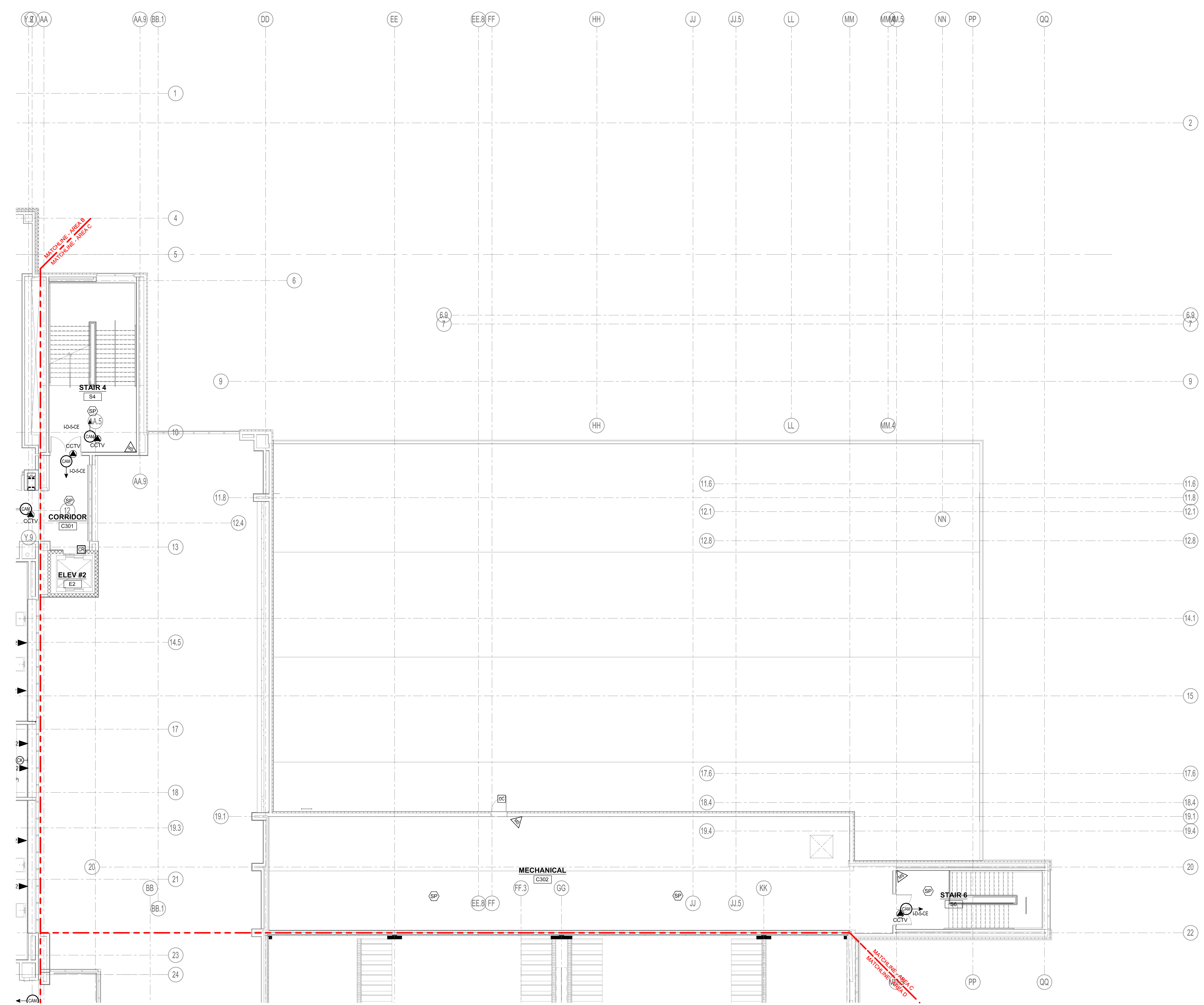


KEY PLAN



THIRD FLOOR
TECHNOLOGY
AND SECURITY
PLAN - AREA C

Scale: 1/8" = 1'-0"
Job No.: 20202
Drawn By: MLD/ASD
Date: 06/25/2023
T1-1-3C



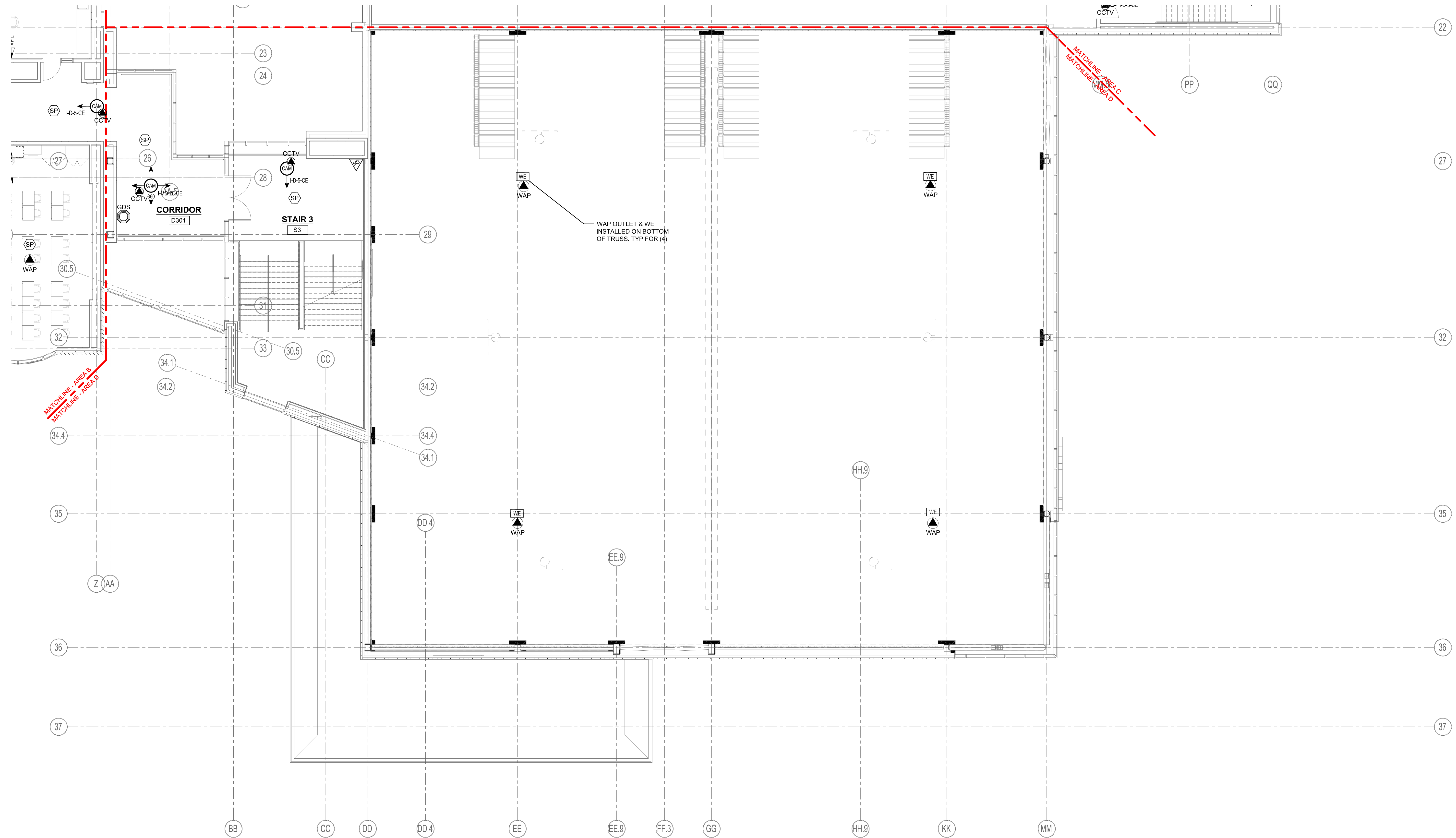
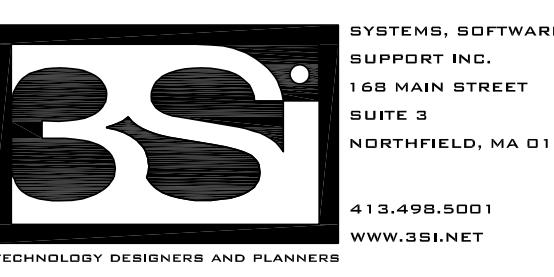
1 THIRD FLOOR - AREA C
1/8" = 1'-0"



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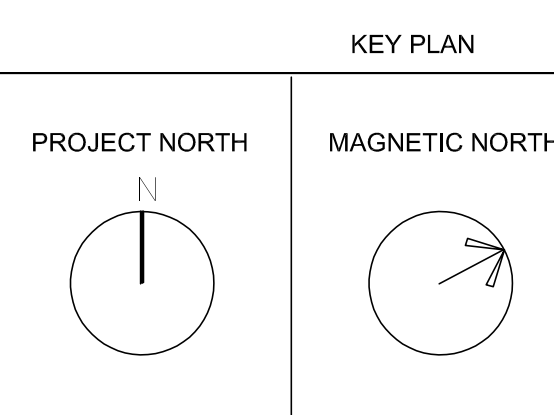
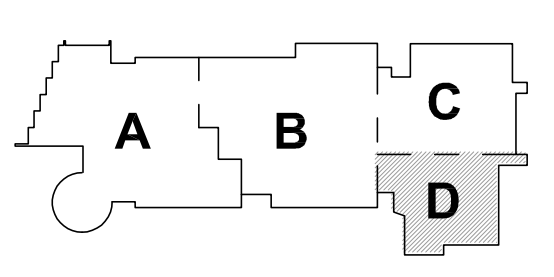
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1 THIRD FLOOR - AREA D
1/8" = 1'-0"

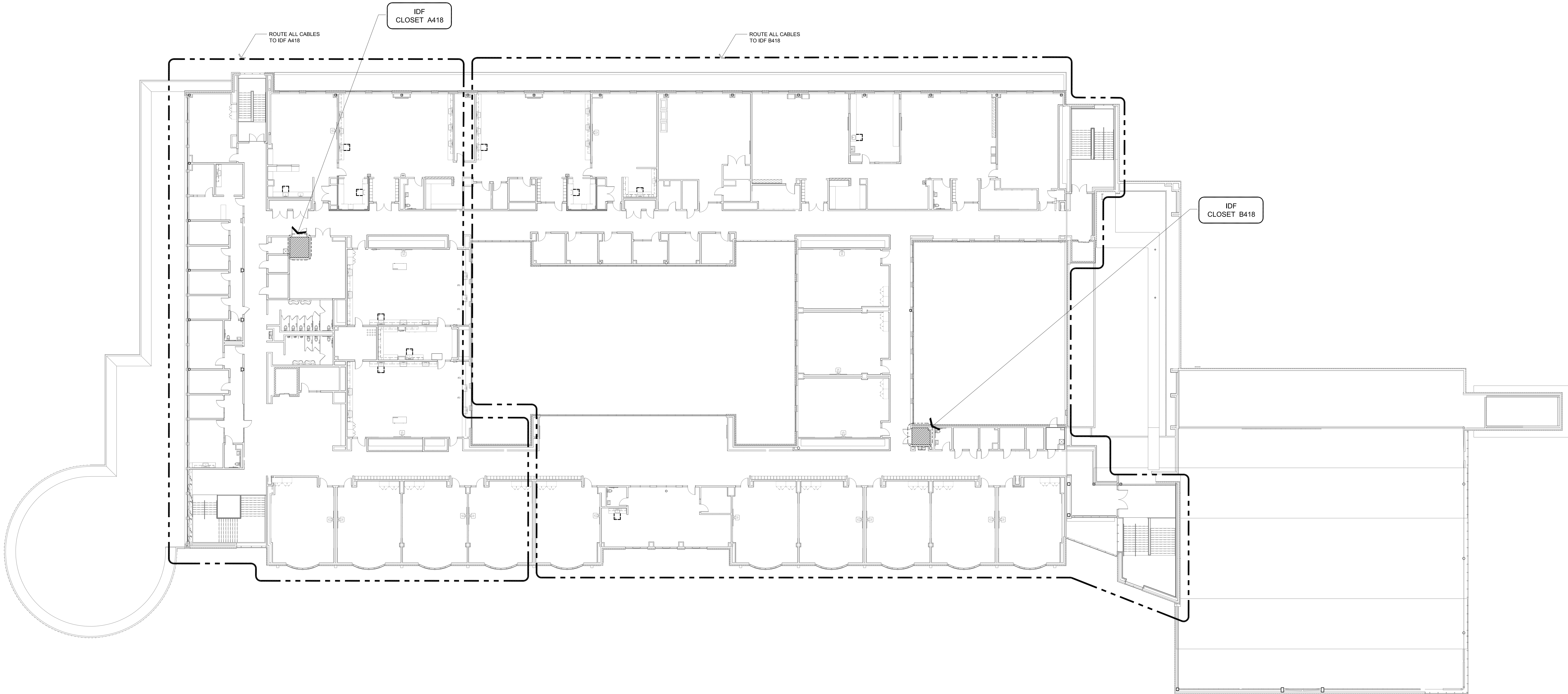
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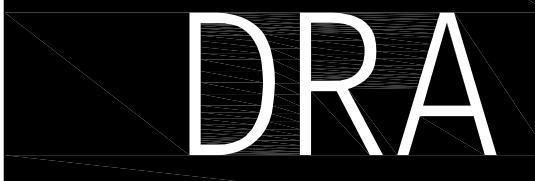


THIRD FLOOR
TECHNOLOGY
AND SECURITY
PLAN - AREA D

Scale: 1/8" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023
T1-1-3D



1 FOURTH FLOOR - CABLE ROUTING
1/16" = 1'-0"

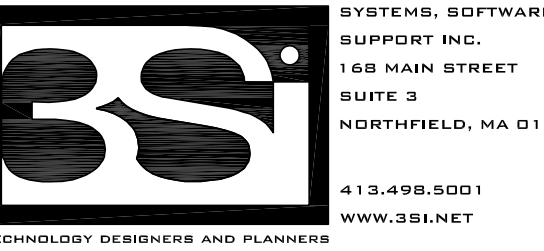


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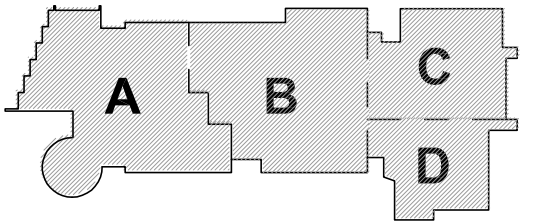
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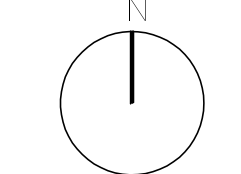
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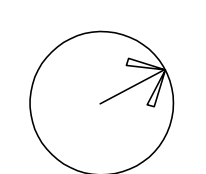


KEY PLAN

PROJECT NORTH



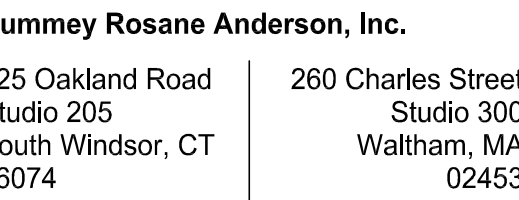
MAGNETIC NORTH



FOURTH FLOOR
TECHNOLOGY
CABLE ROUTING

Scale: 1/16" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023

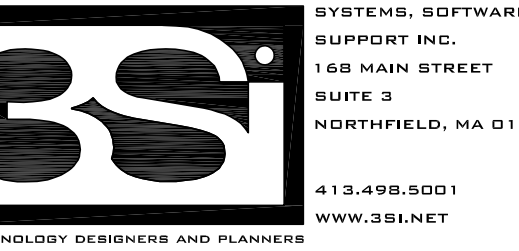
T1-1-4



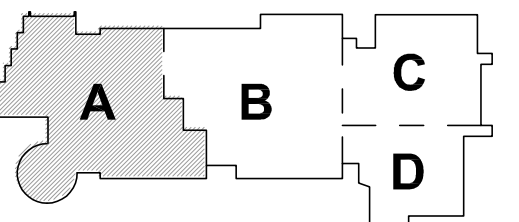
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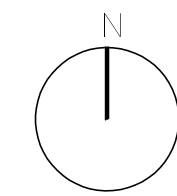


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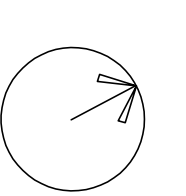


KEY PLAN

PROJECT NOR



MAGNETIC NORTH



FOURTH FLOOR TECHNOLOGY AND SECURITY PLAN - AREA A

c. $1/8'' = 1'-0''$

No.: 20202

By:MLD/AMC

08/28/2023

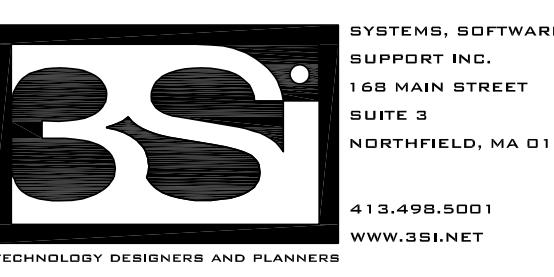
T1-1-4A



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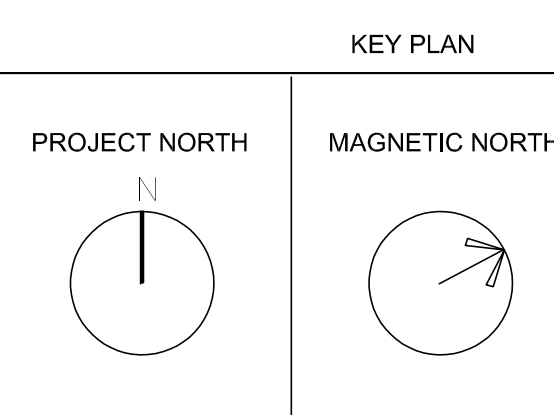
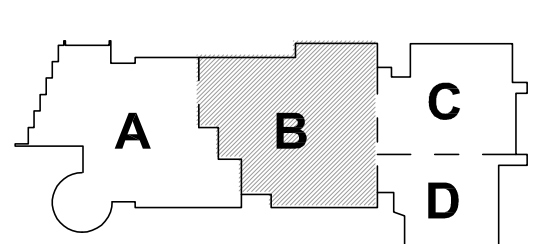
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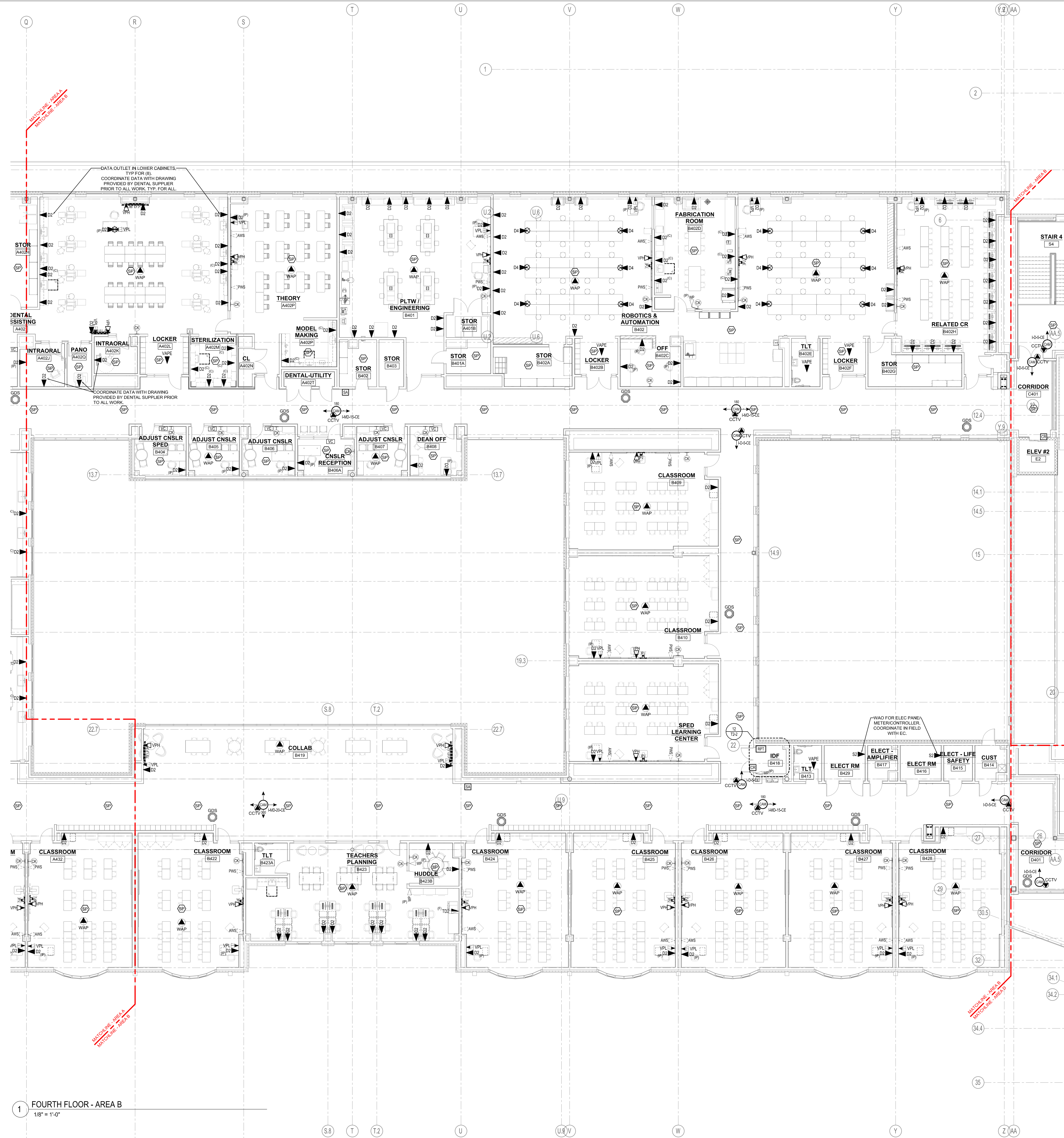
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BID SET



FOURTH FLOOR TECHNOLOGY AND SECURITY PLAN - AREA B

Scale: 1/8" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023
T1-1-4B

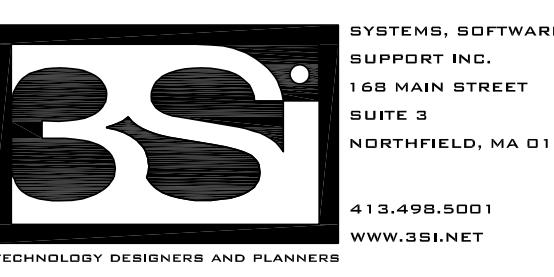




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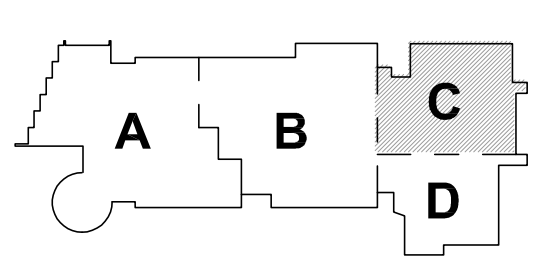
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Regional
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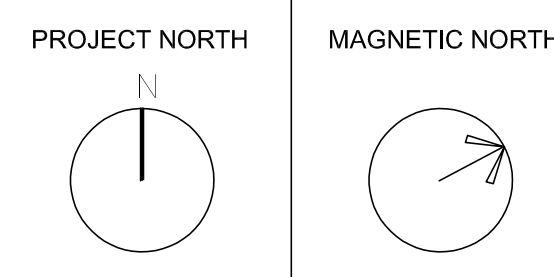


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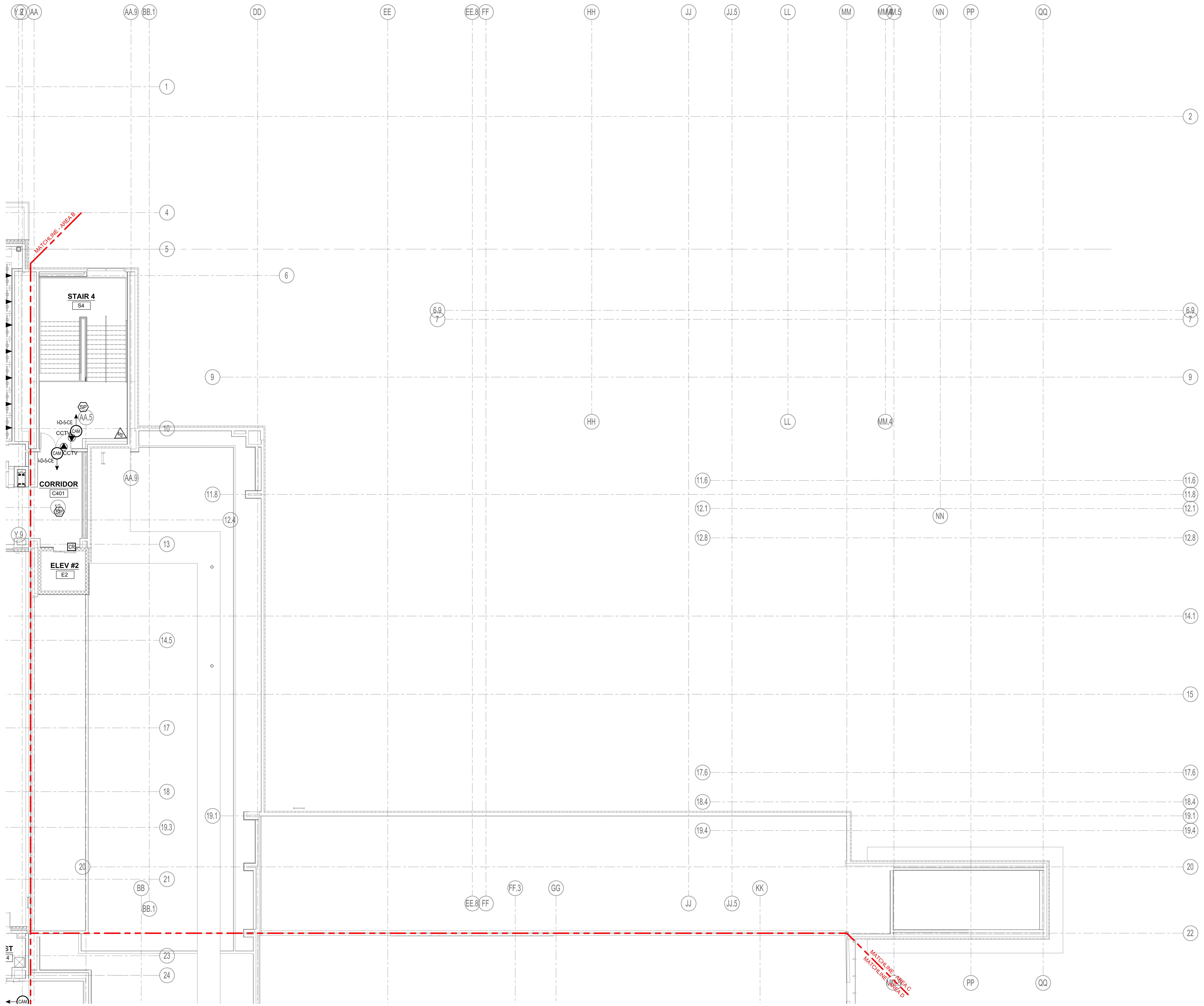


KEY PLAN



FOURTH FLOOR
TECHNOLOGY
AND SECURITY
PLAN - AREA C

Scale: 1/8" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023
T1-1-4C



1 FOURTH FLOOR - AREA C
1/8" = 1'-0"

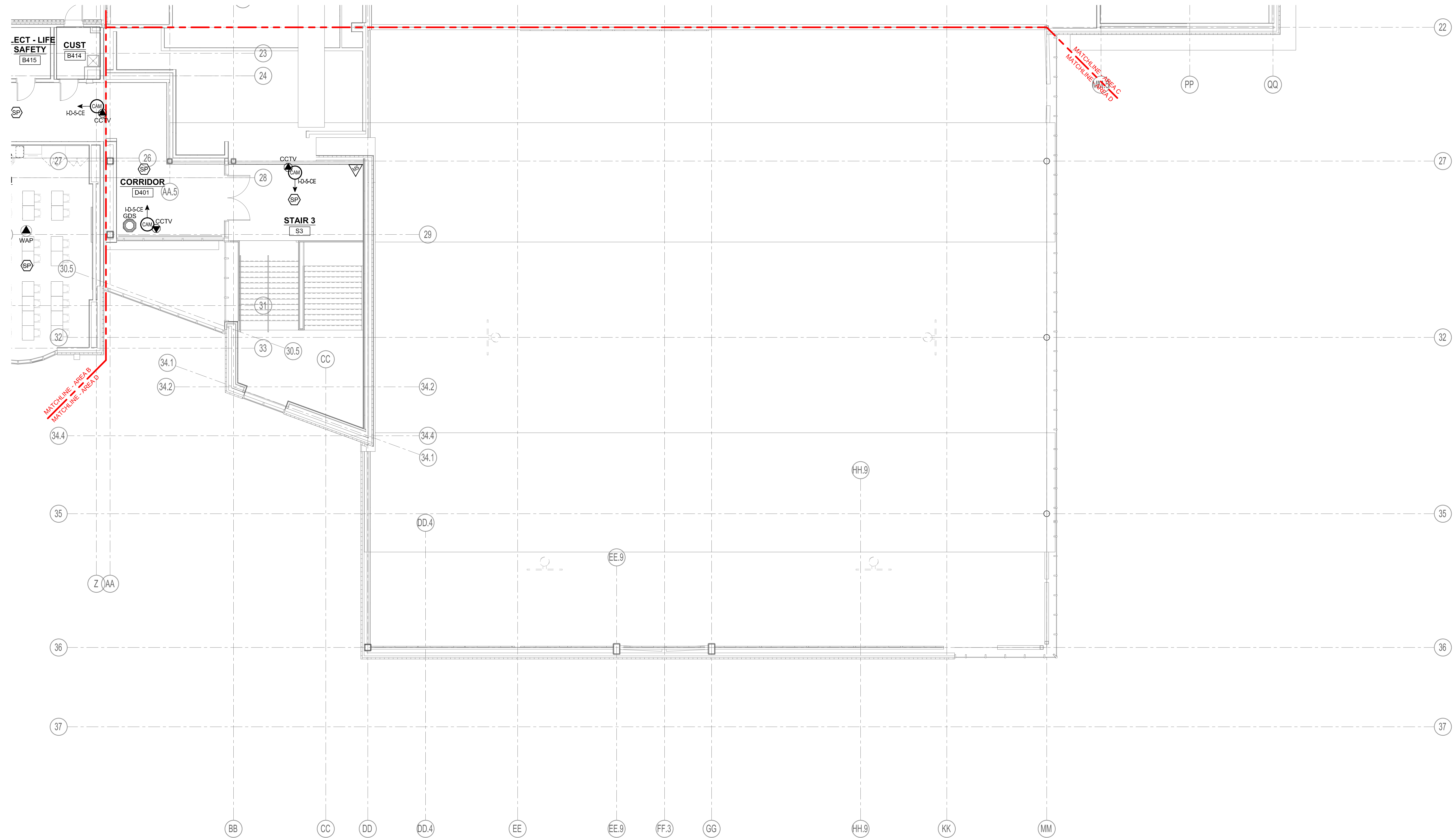
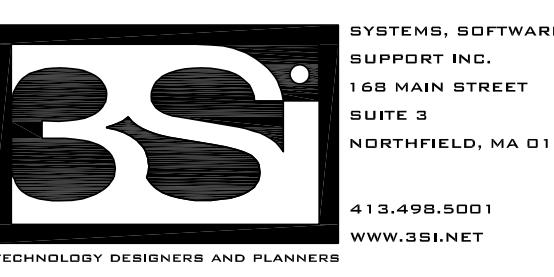


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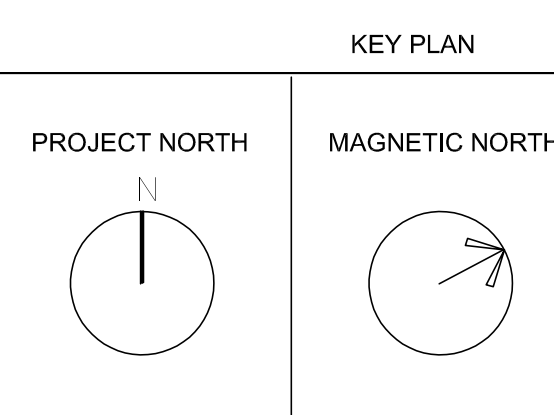
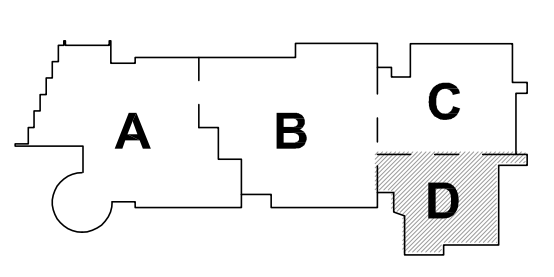
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1 FOURTH FLOOR - AREA D
1/8" = 1'-0"

BID SET



FOURTH FLOOR
TECHNOLOGY
AND SECURITY
PLAN - AREA D

Scale: 1/8" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023

T1-1-4D

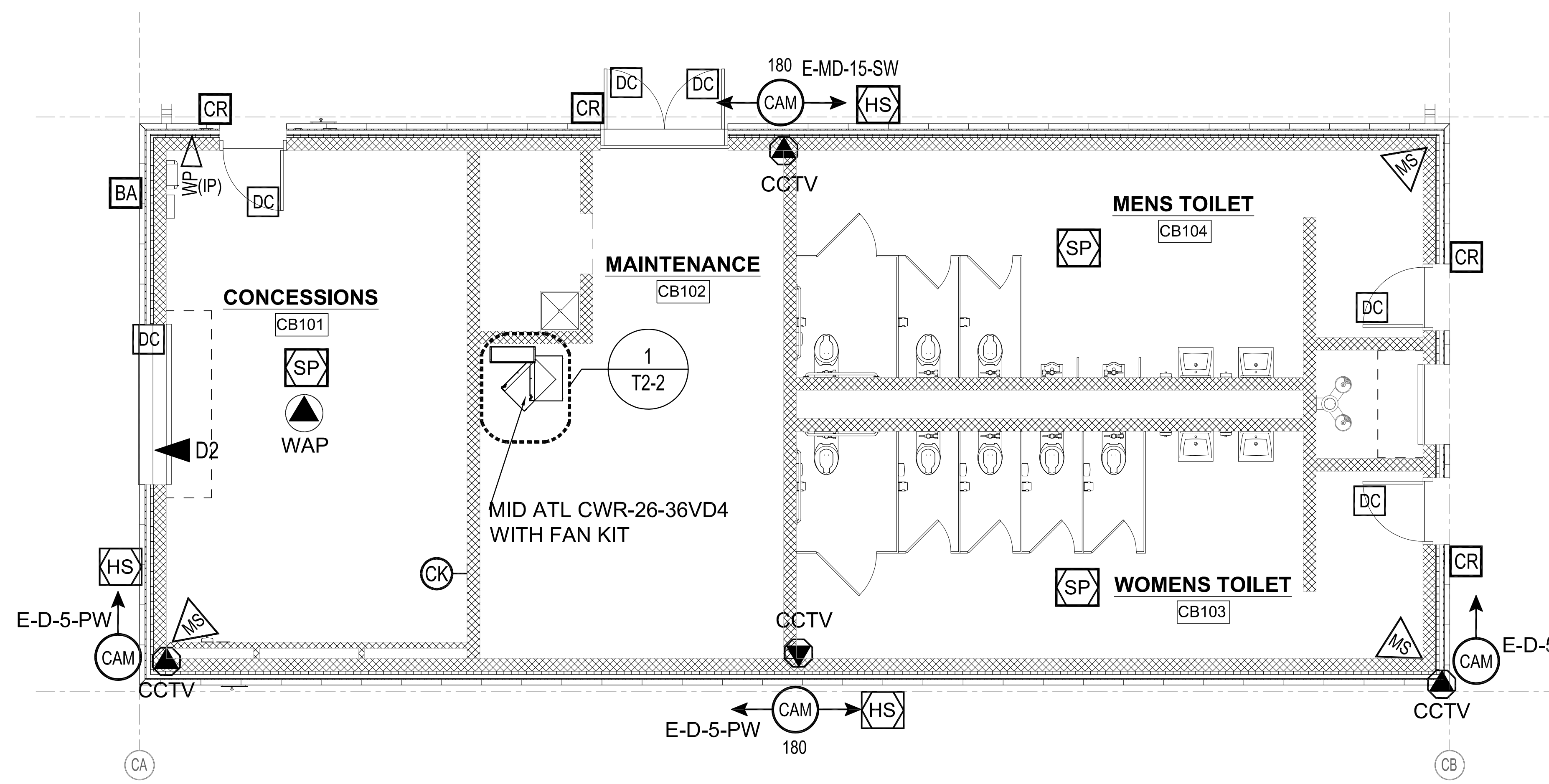
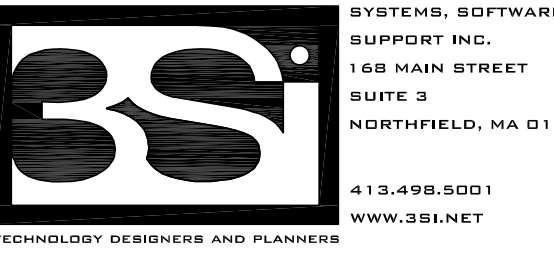


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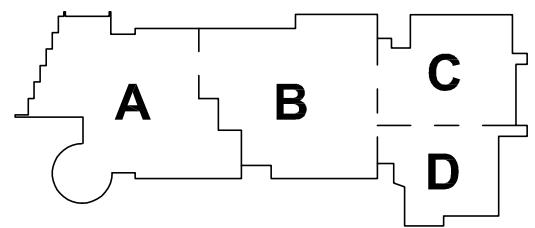
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1 CONCESSION BUILDING FLOOR PLAN
1/4" = 1'-0"

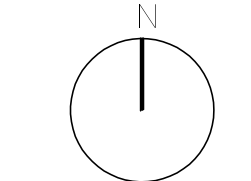
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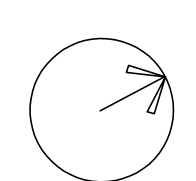


KEY PLAN

PROJECT NORTH



MAGNETIC NORTH



CONCESSION
BUILDING
TECHNOLOGY &
SECURITY PLAN

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

Job No.: 20202

Drawn By: MLD/AMD

Date: 06/28/2023

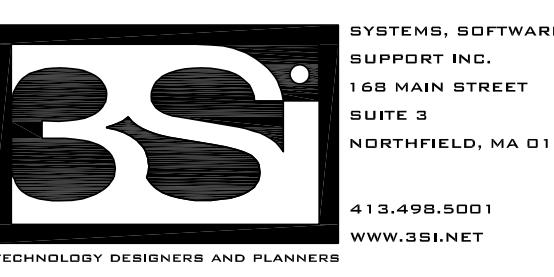
TC-1-1



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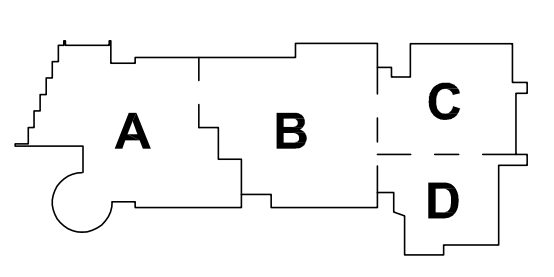
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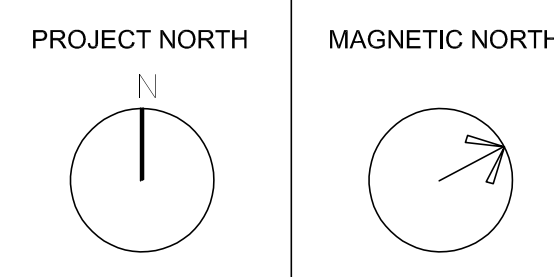


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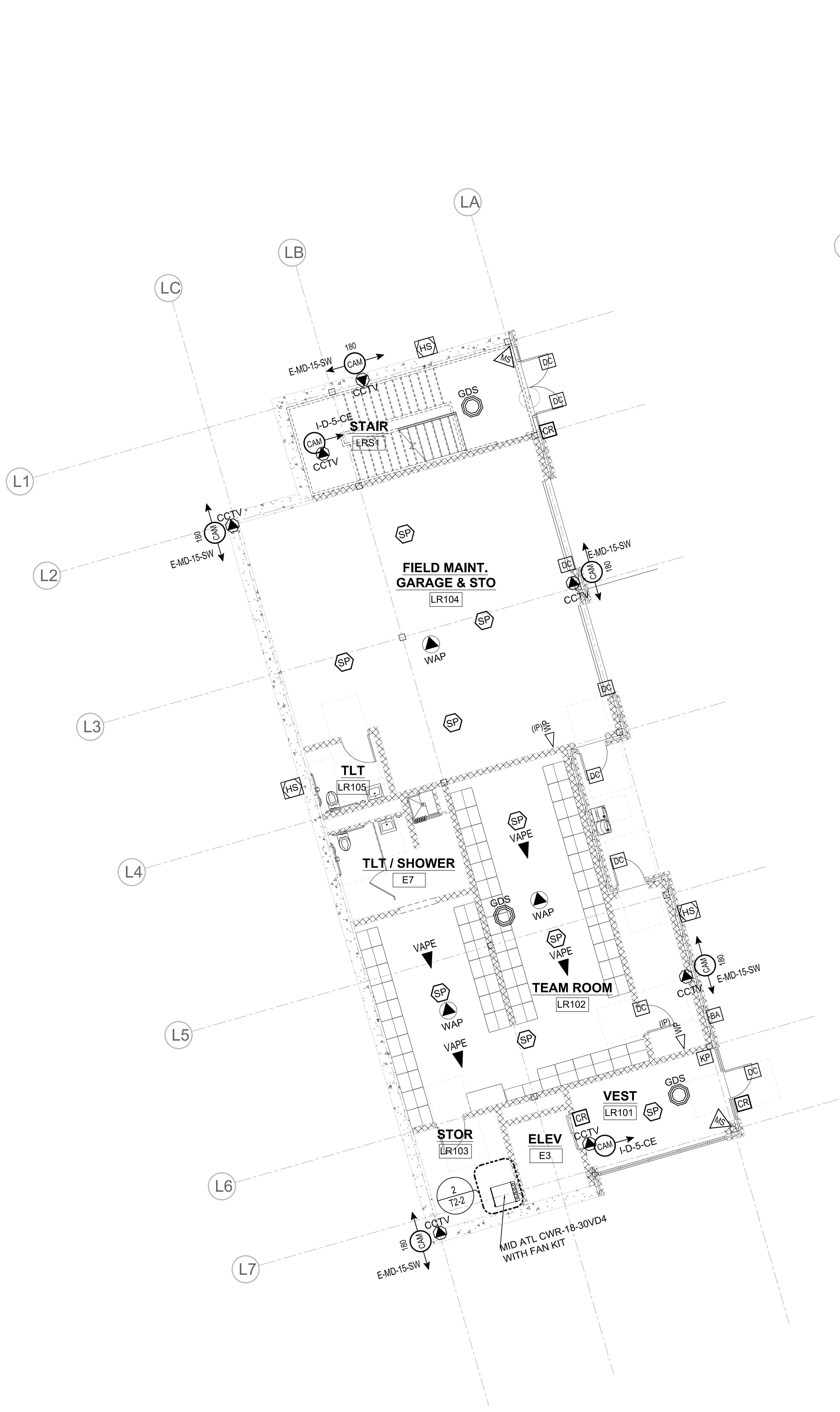
KEY PLAN



**ADD ALTERNATE #1
LOCKER BUILDING
TECHNOLOGY AND
SECURITY PLAN**

Scale: 3/16" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023

TL-1-1



1 LOCKER BUILDING ADD ALTERNATE #1 FIRST FLOOR PLAN
3/16" = 1'-0"



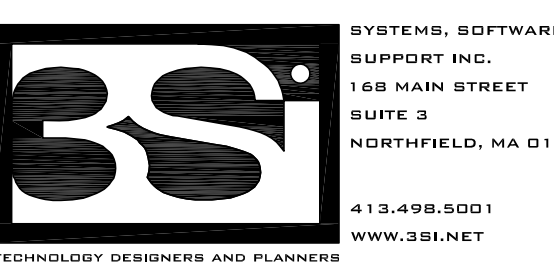
2 LOCKER BUILDING ADD ALTERNATE #1 SECOND FLOOR PLAN
3/16" = 1'-0"



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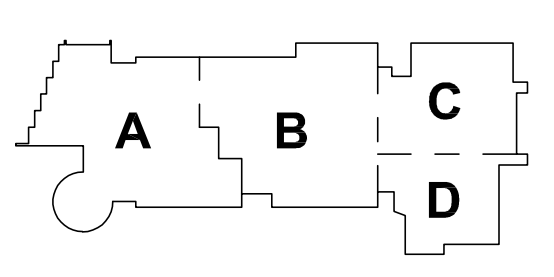
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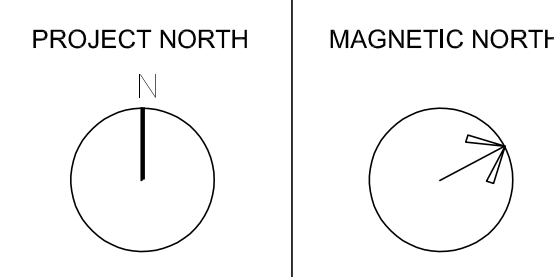
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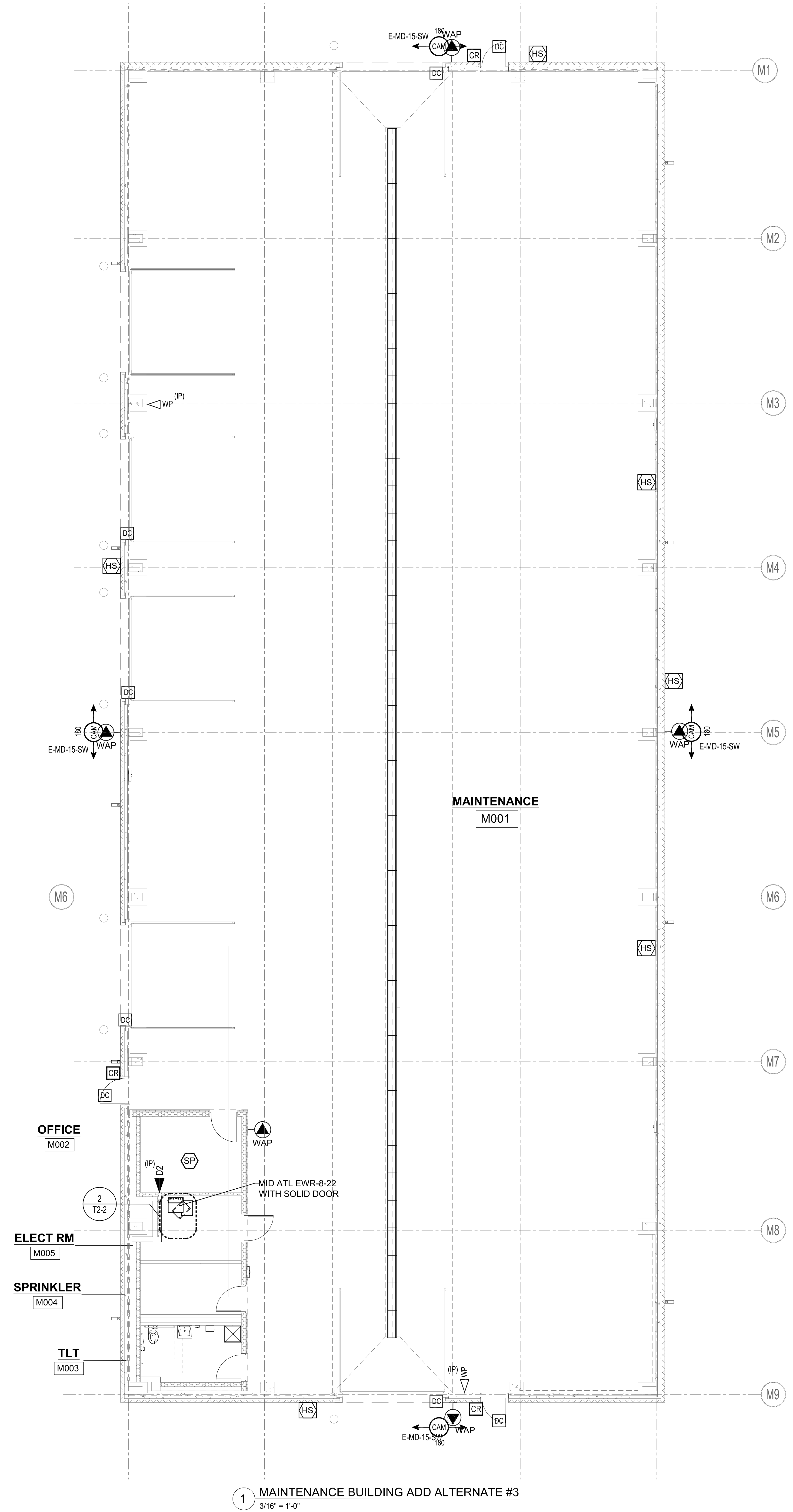
KEY PLAN



ADD ALTERNATE #3
MAINTENANCE
BUILDING
TECHNOLOGY &
SECURITY PLAN

Scale: 3/16" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 08/28/2023

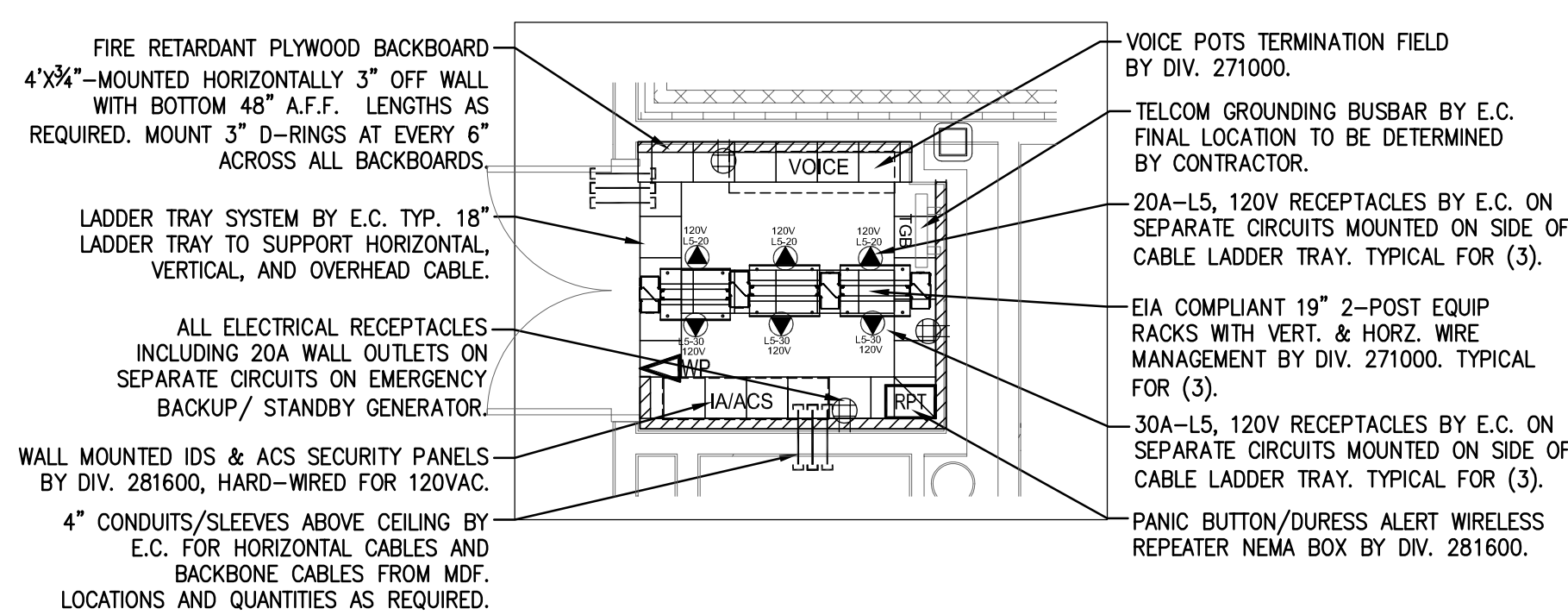
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1 MAINTENANCE BUILDING ADD ALTERNATE #3
3/16" = 1'-0"

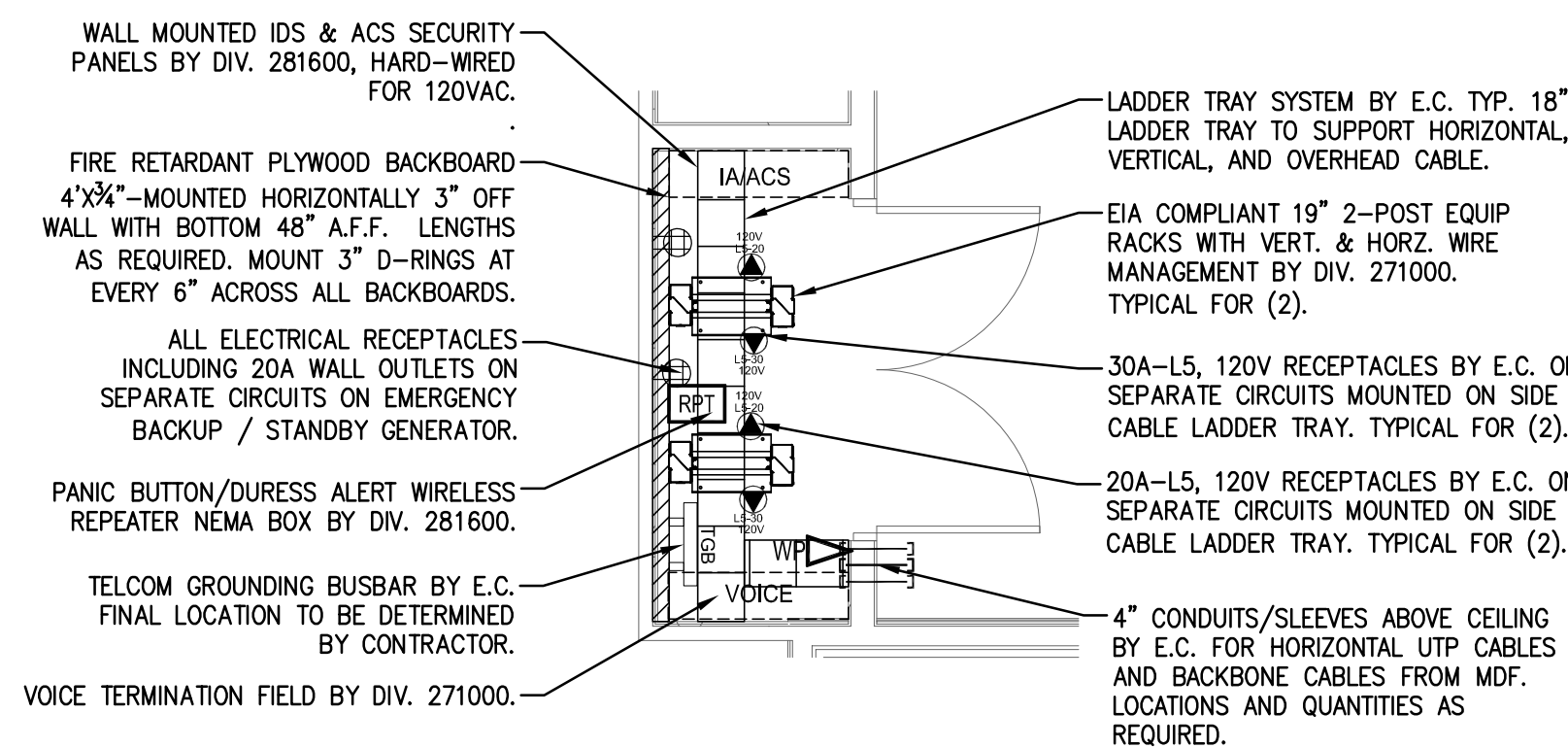
IDF

B418

12 IDF B418 ENLARGED PLAN
SCALE: 1/4"=1'-0"

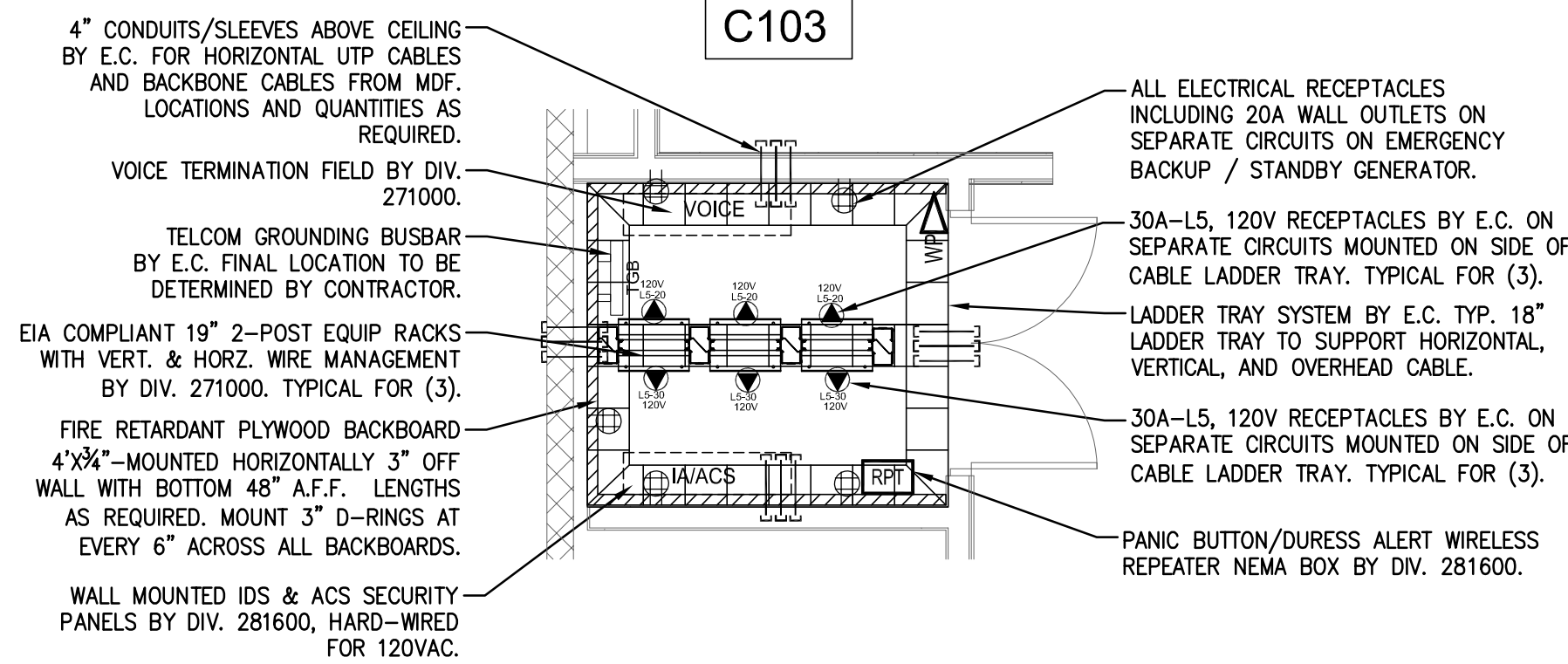
IDF

C202E

8 IDF C202E4 ENLARGED PLAN
SCALE: 1/4"=1'-0"

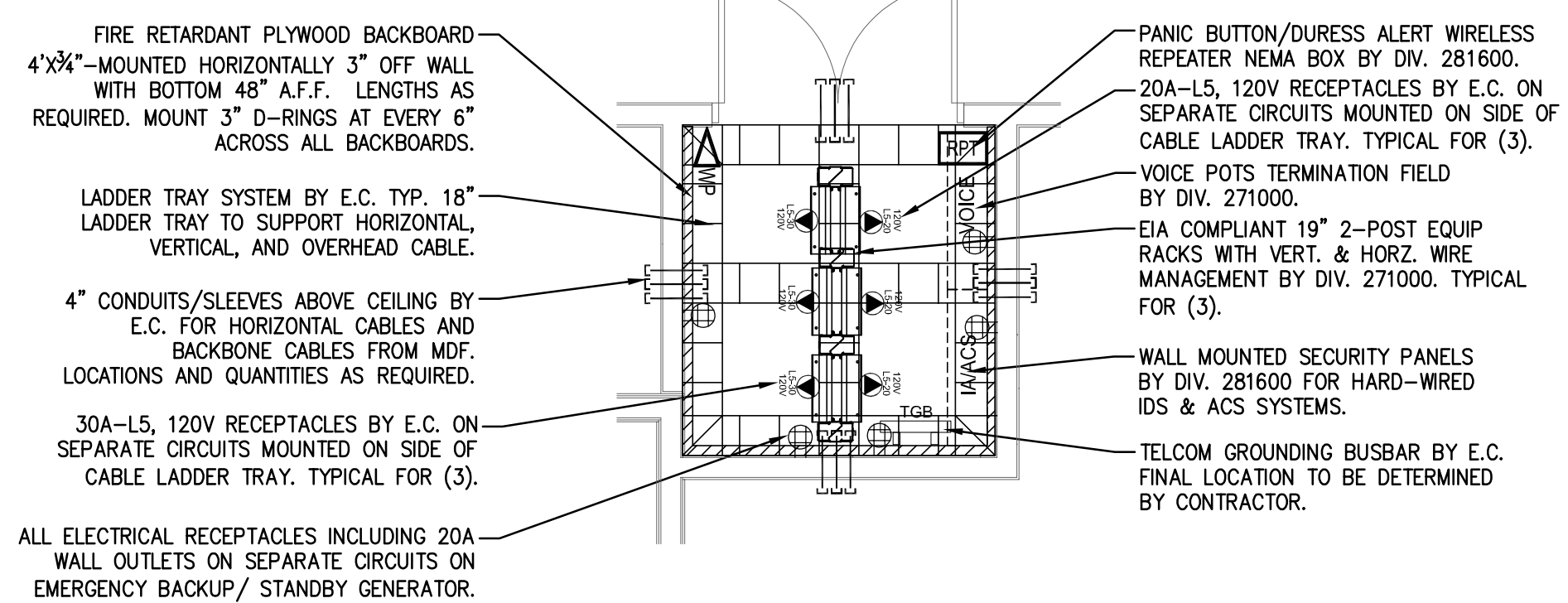
IDF

C103

4 IDF C103 ENLARGED PLAN
SCALE: 1/4"=1'-0"

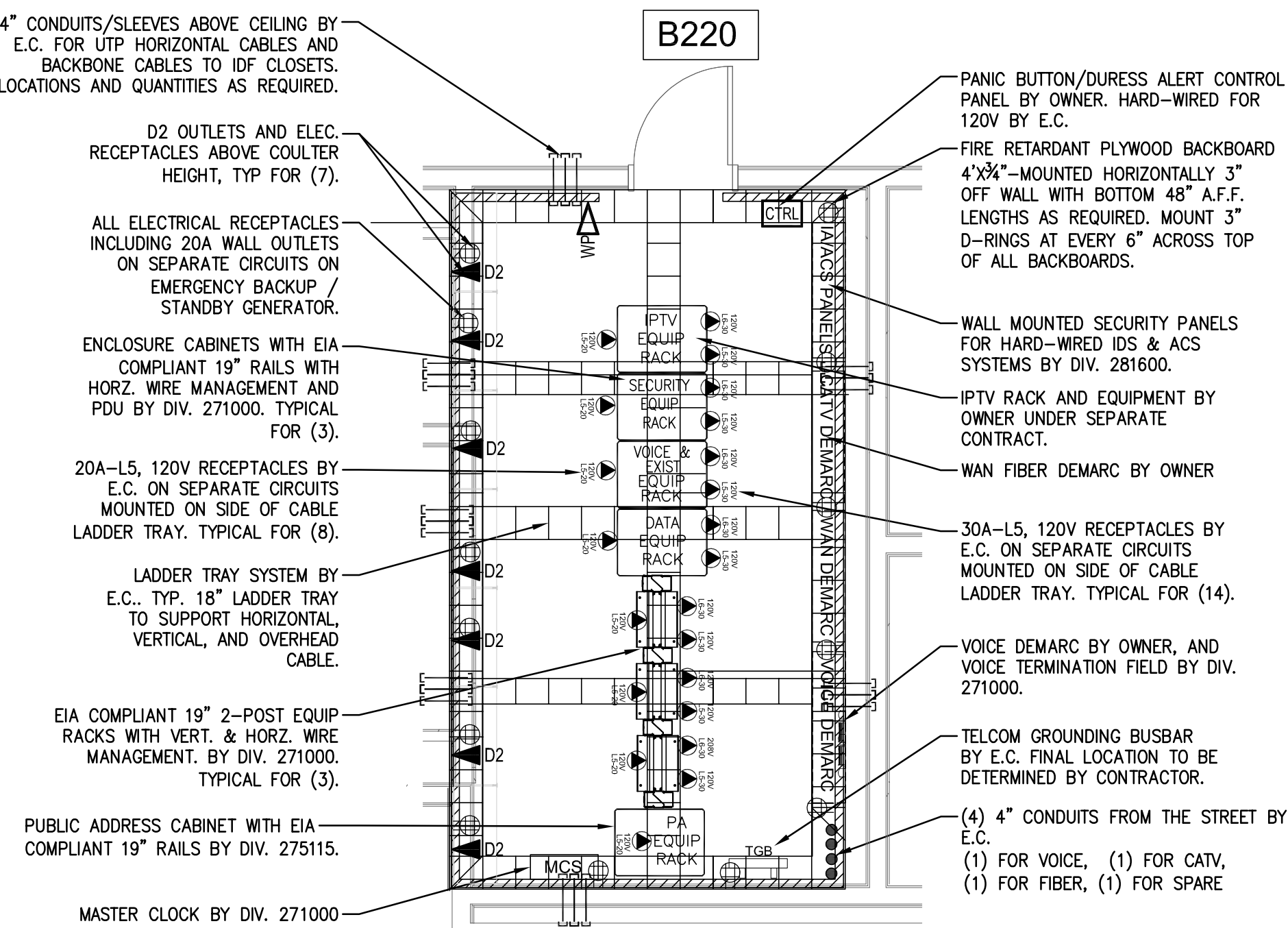
IDF

A418

11 IDF A418 ENLARGED PLAN
SCALE: 1/4"=1'-0"

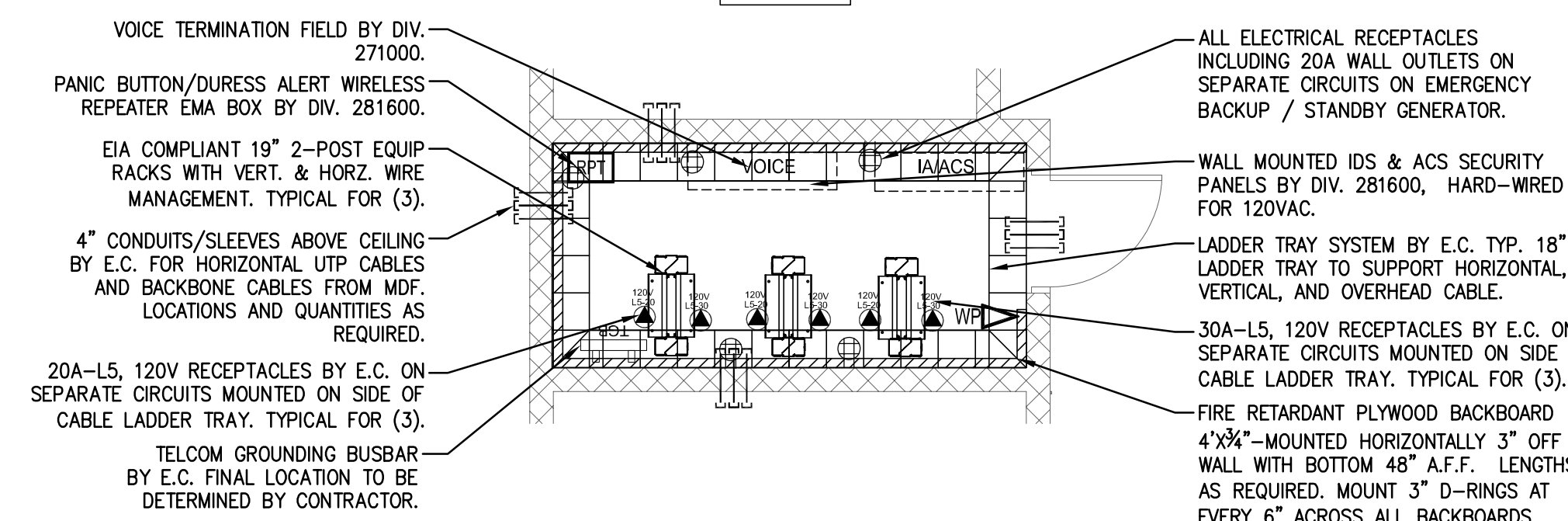
MDF

B220

7 MDF B220 ENLARGED PLAN
SCALE: 1/4"=1'

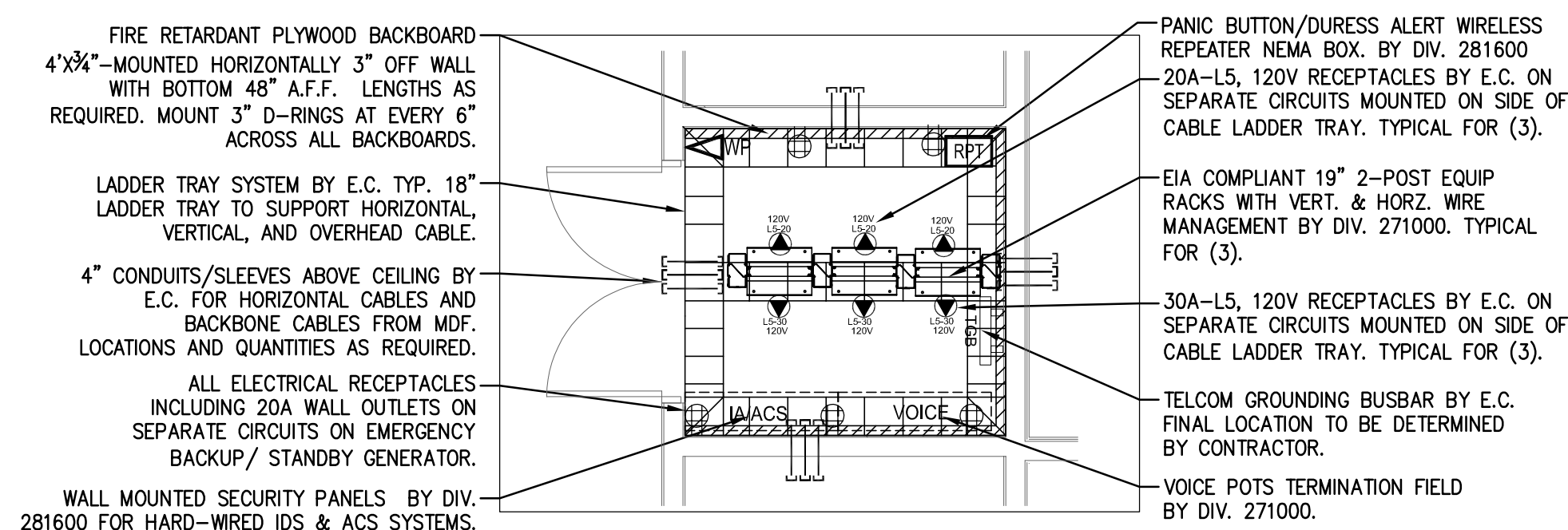
IDF

B108A

3 IDF B108A ENLARGED PLAN
SCALE: 1/4"=1'

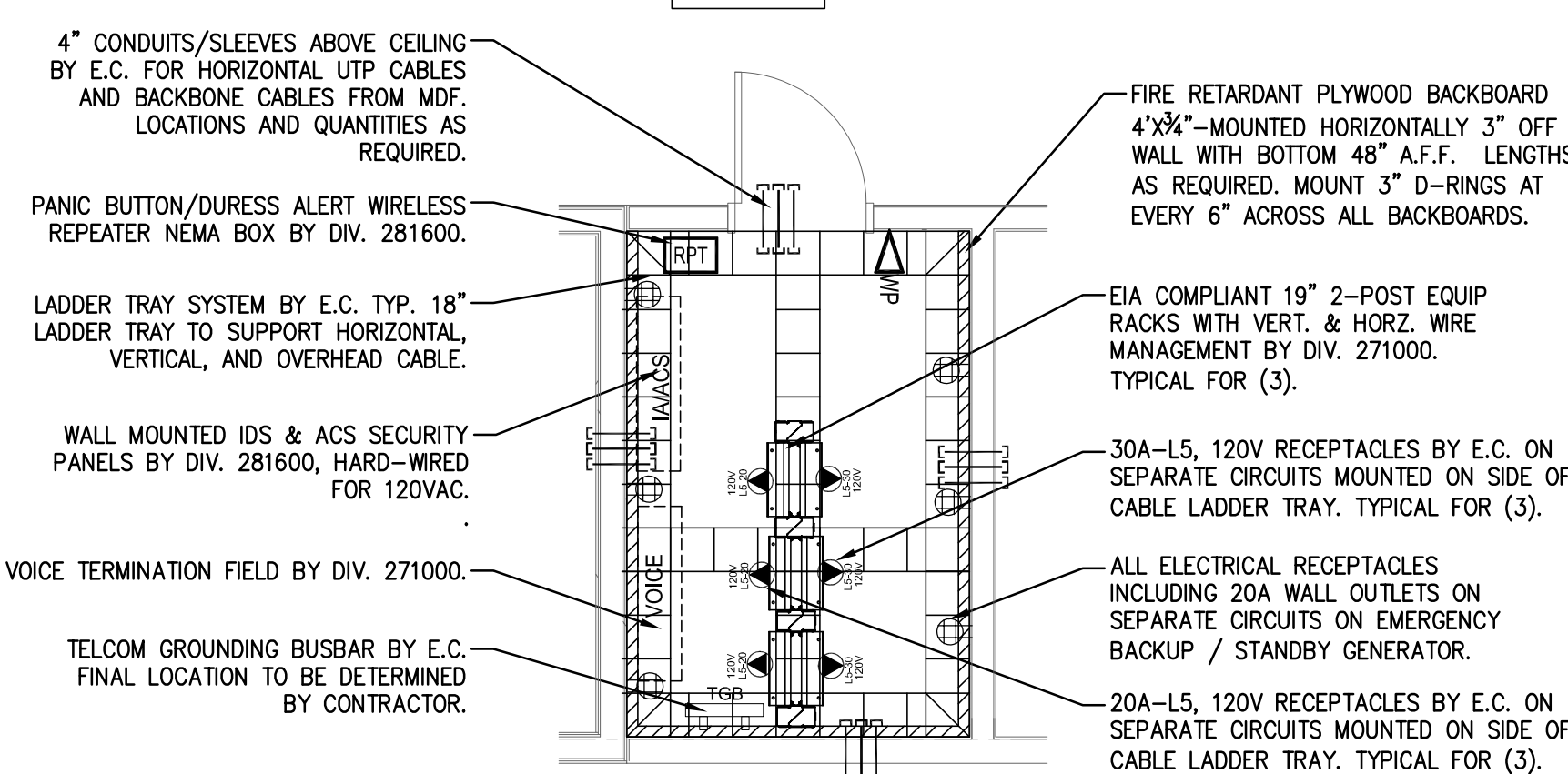
IDF

B314

10 IDF B314 ENLARGED PLAN
SCALE: 1/4"=1'-0"

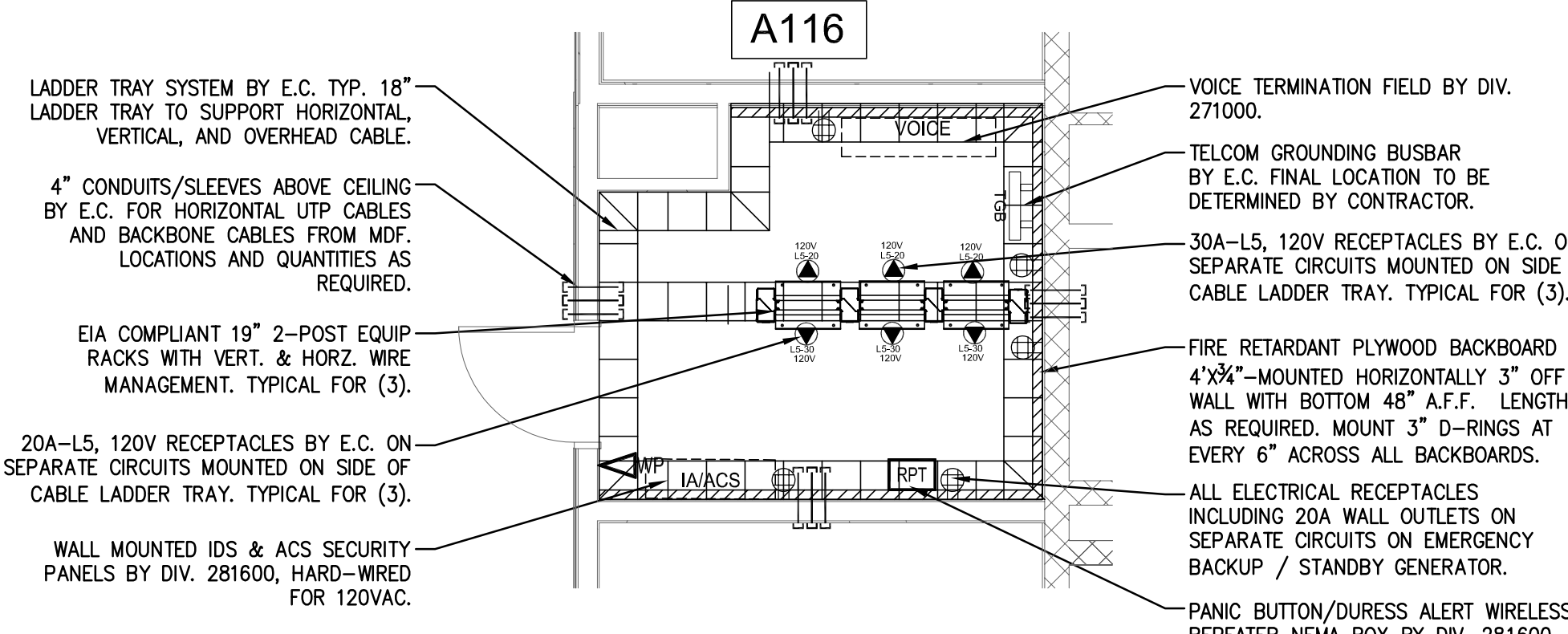
IDF

A204

6 IDF A204 ENLARGED PLAN
SCALE: 1/4"=1'

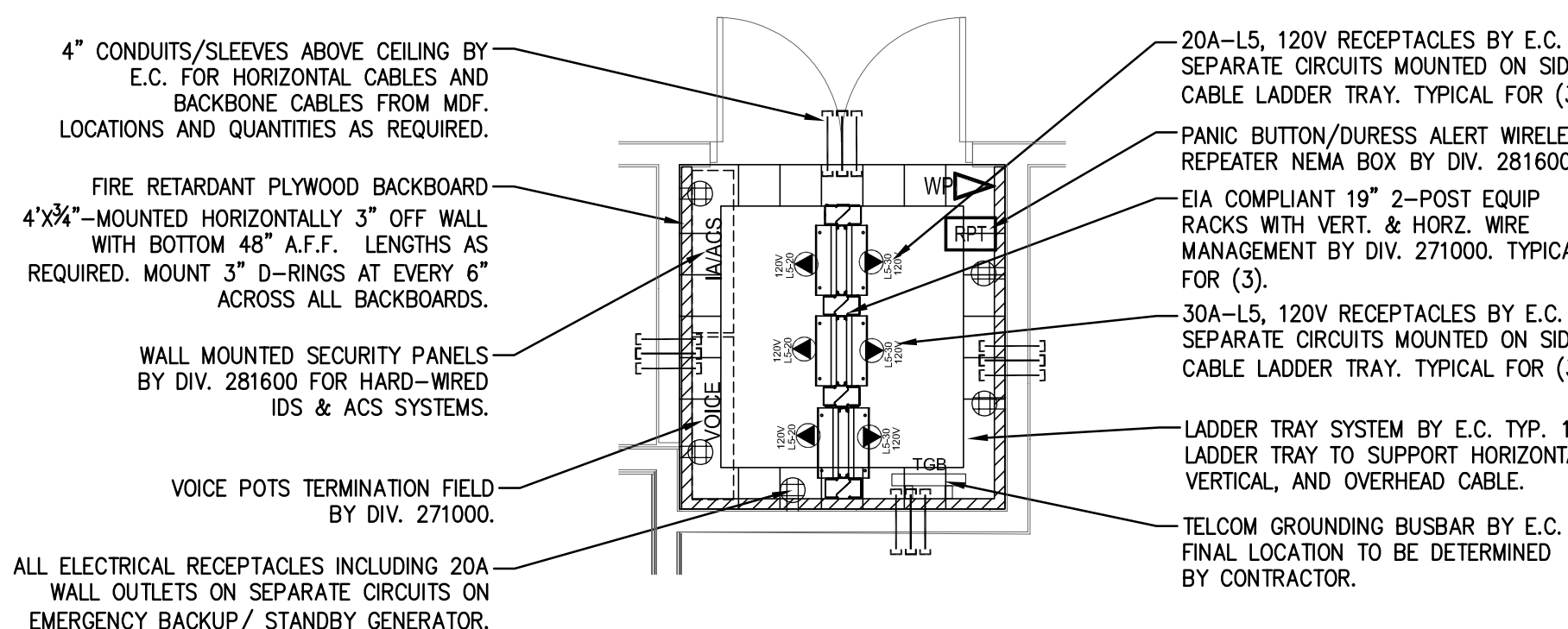
IDF

A116

2 IDF A116 ENLARGED PLAN
SCALE: 1/4"=1'

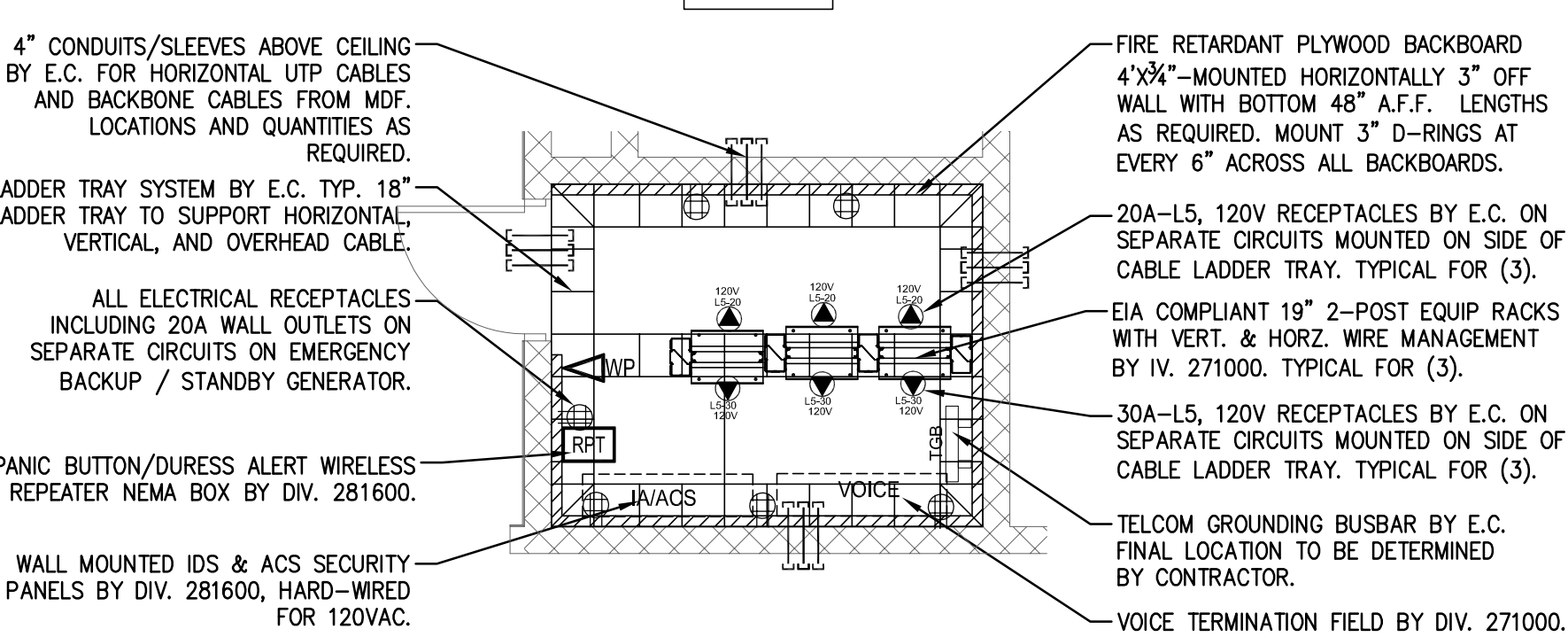
IDF

A311

9 IDF A311 ENLARGED PLAN
SCALE: 1/4"=1'-0"

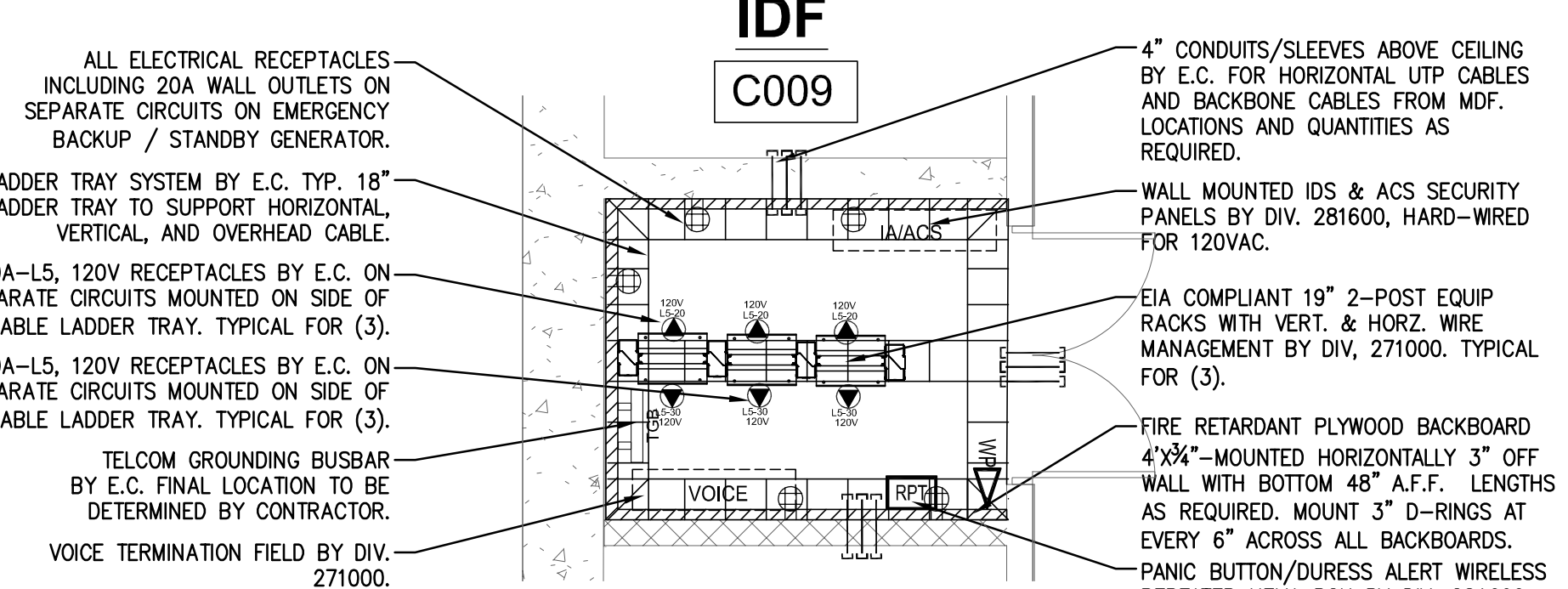
IDF

D118

5 IDF D118 ENLARGED PLAN
SCALE: 1/4"=1'

IDF

C009

1 IDF C009 ENLARGED PLAN
SCALE: 1/4"=1'

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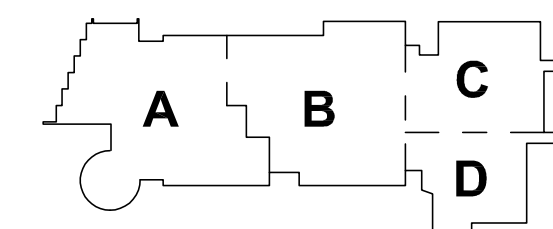
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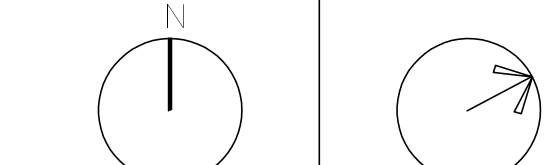
BID SET



KEY PLAN

PROJECT NORTH

MAGNETIC NORTH

ENLARGED
PLANS
TECHNOLOGY

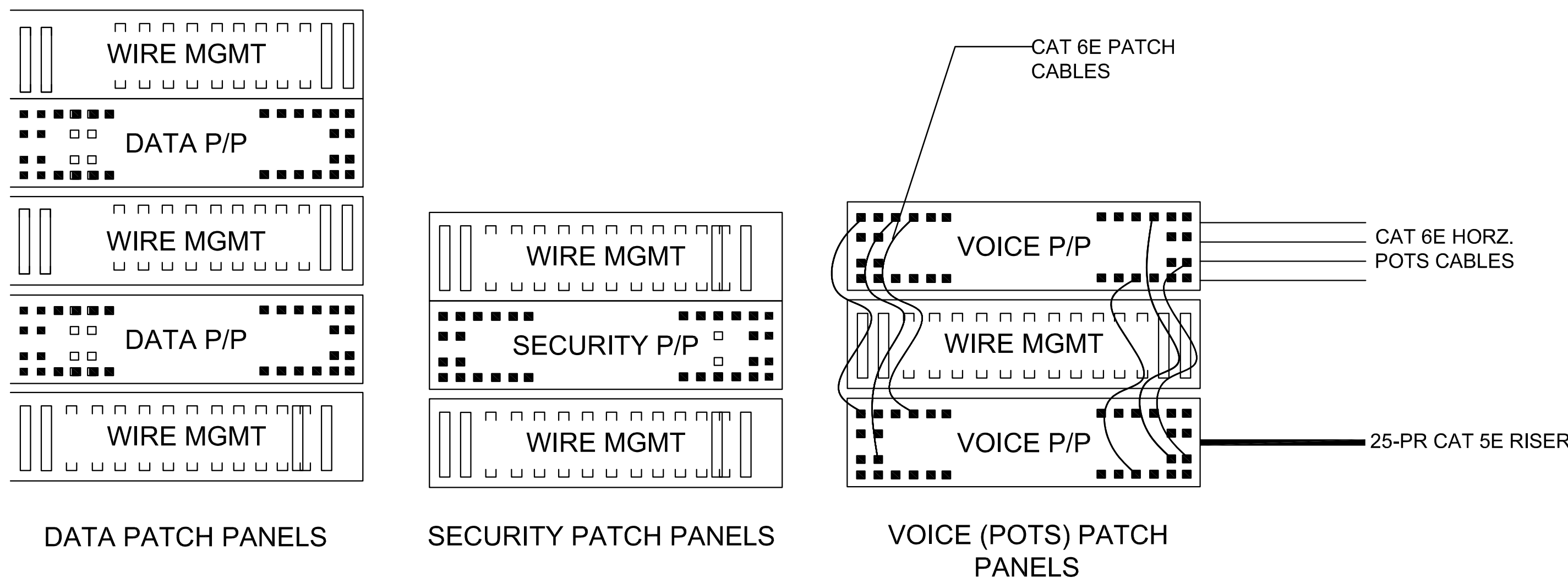
Scale: AS NOTED

Job No.: 20202

Drawn By:MLD/AMD

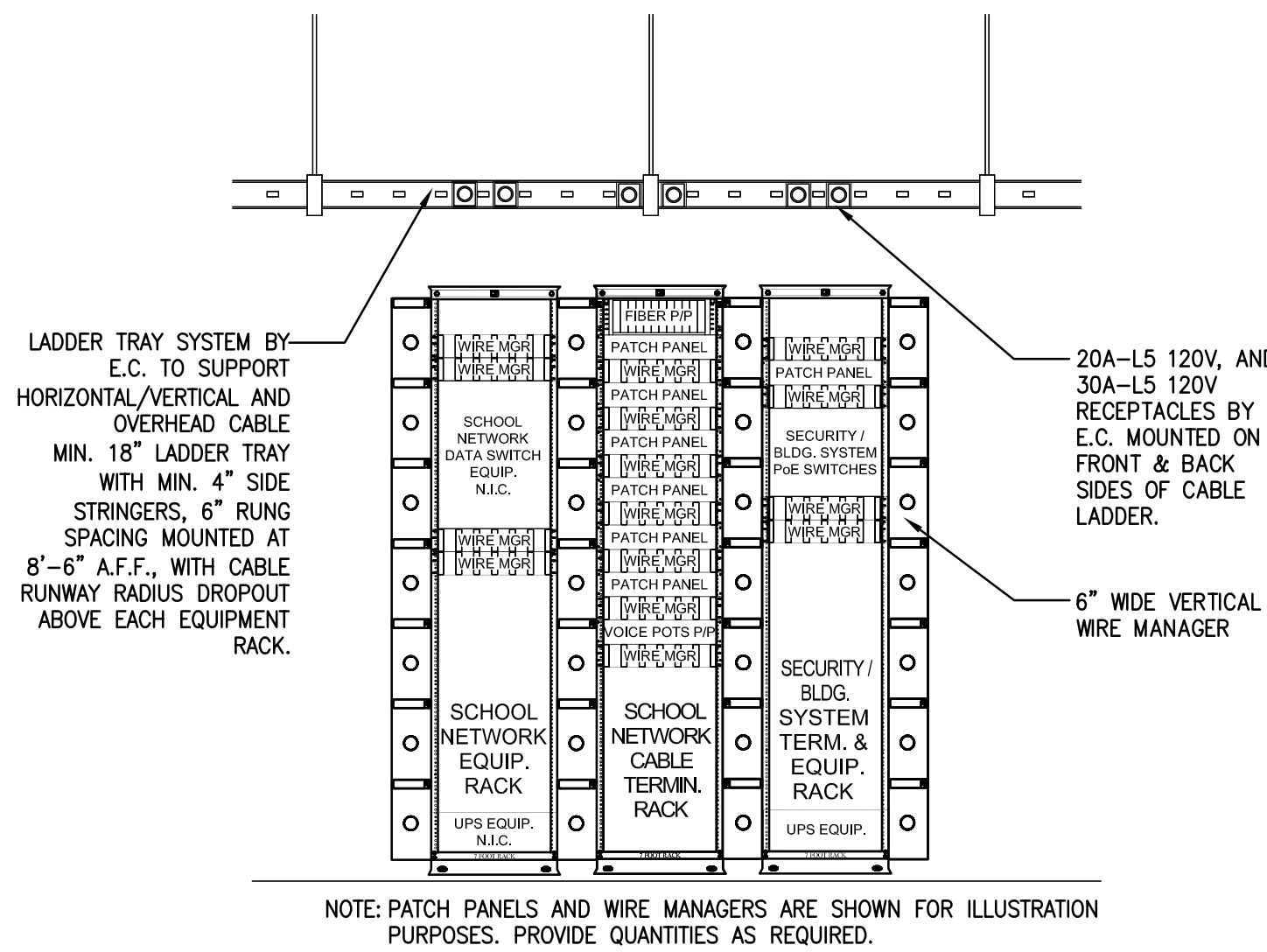
Date: 06/28/2023

T2-1

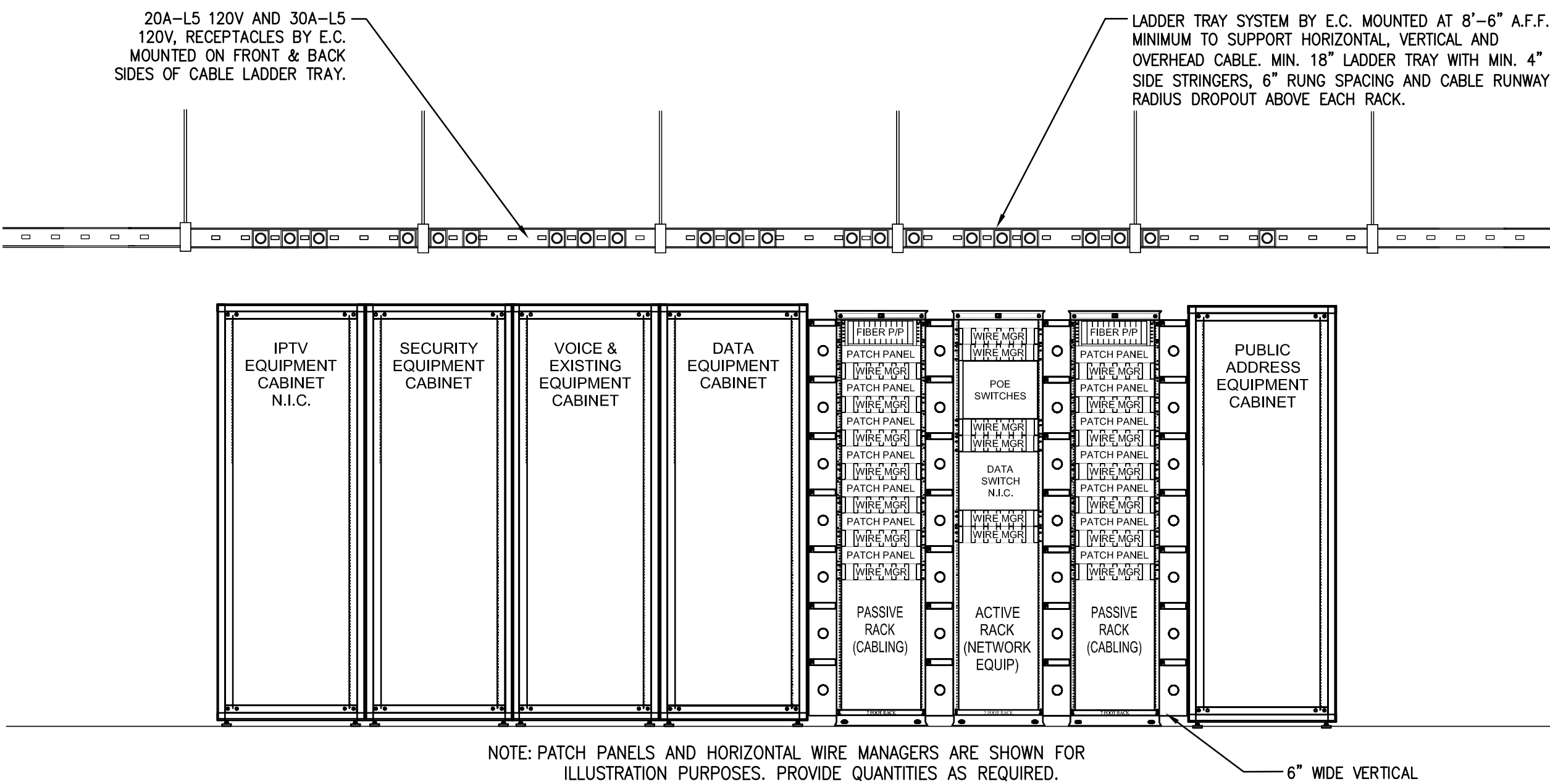


NOTE: PATCH PANELS AND HORZ. WIRE MANAGERS ARE SHOWN FOR ILLUSTRATION PURPOSES. PROVIDE QUANTITIES AS REQUIRED.

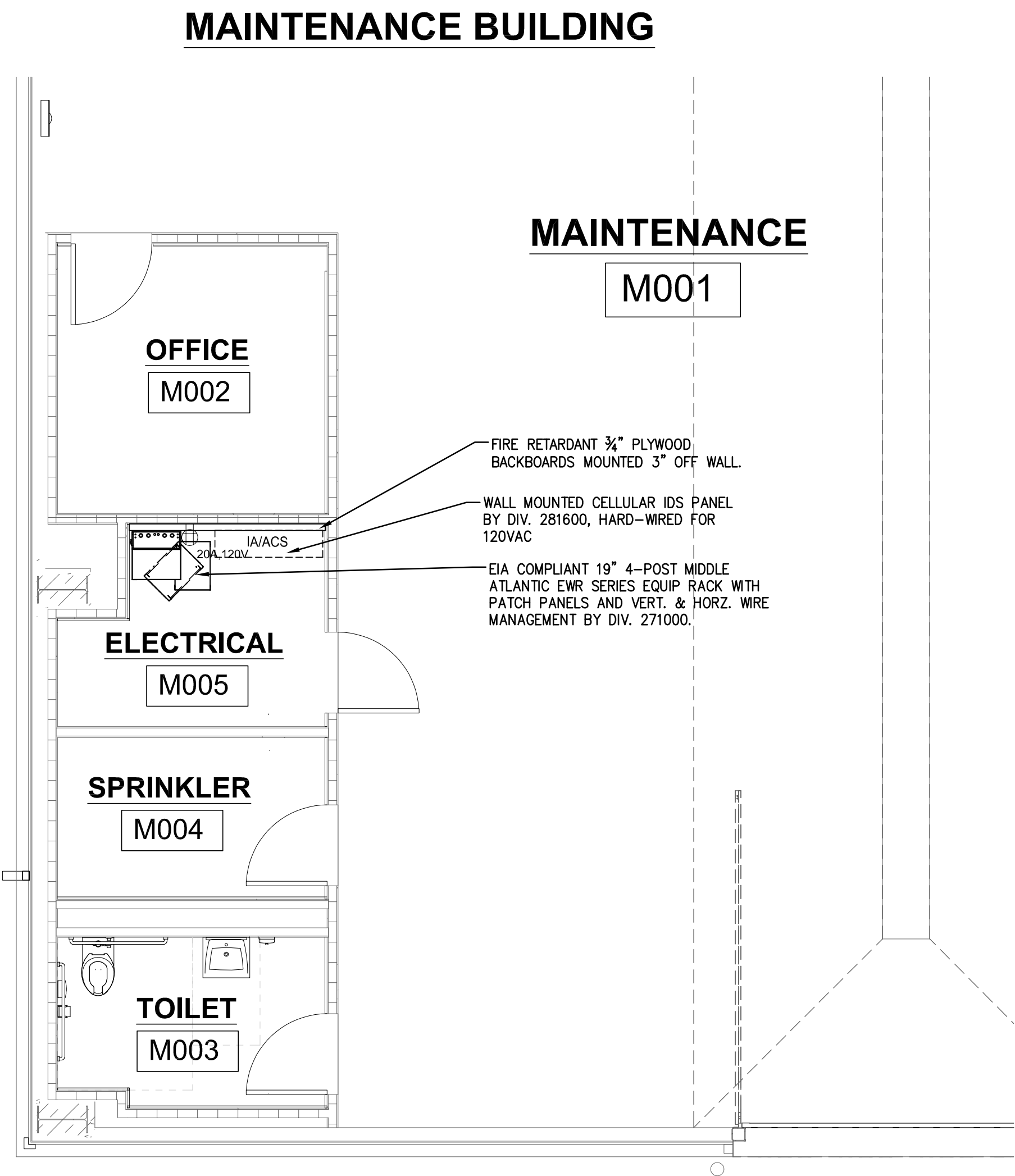
6 PATCH PANEL AND WIRE MANAGER LAYOUTS
DATA, SECURITY, AND VOICE (POTS) PATCH PANELS
SCALE: N.T.S.



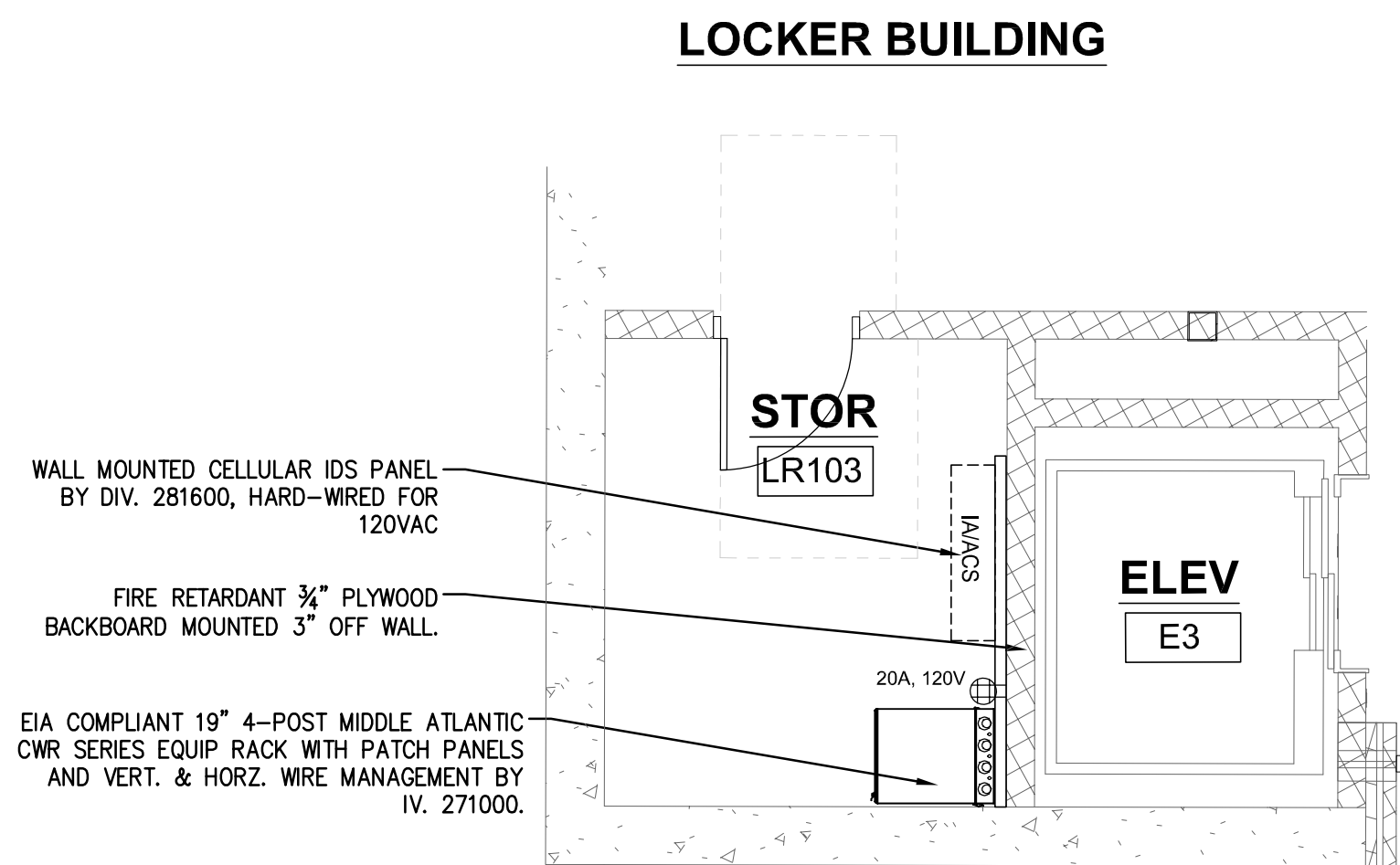
5 IDF RACK ELEVATIONS AND DETAILS
SCALE: N.T.S.



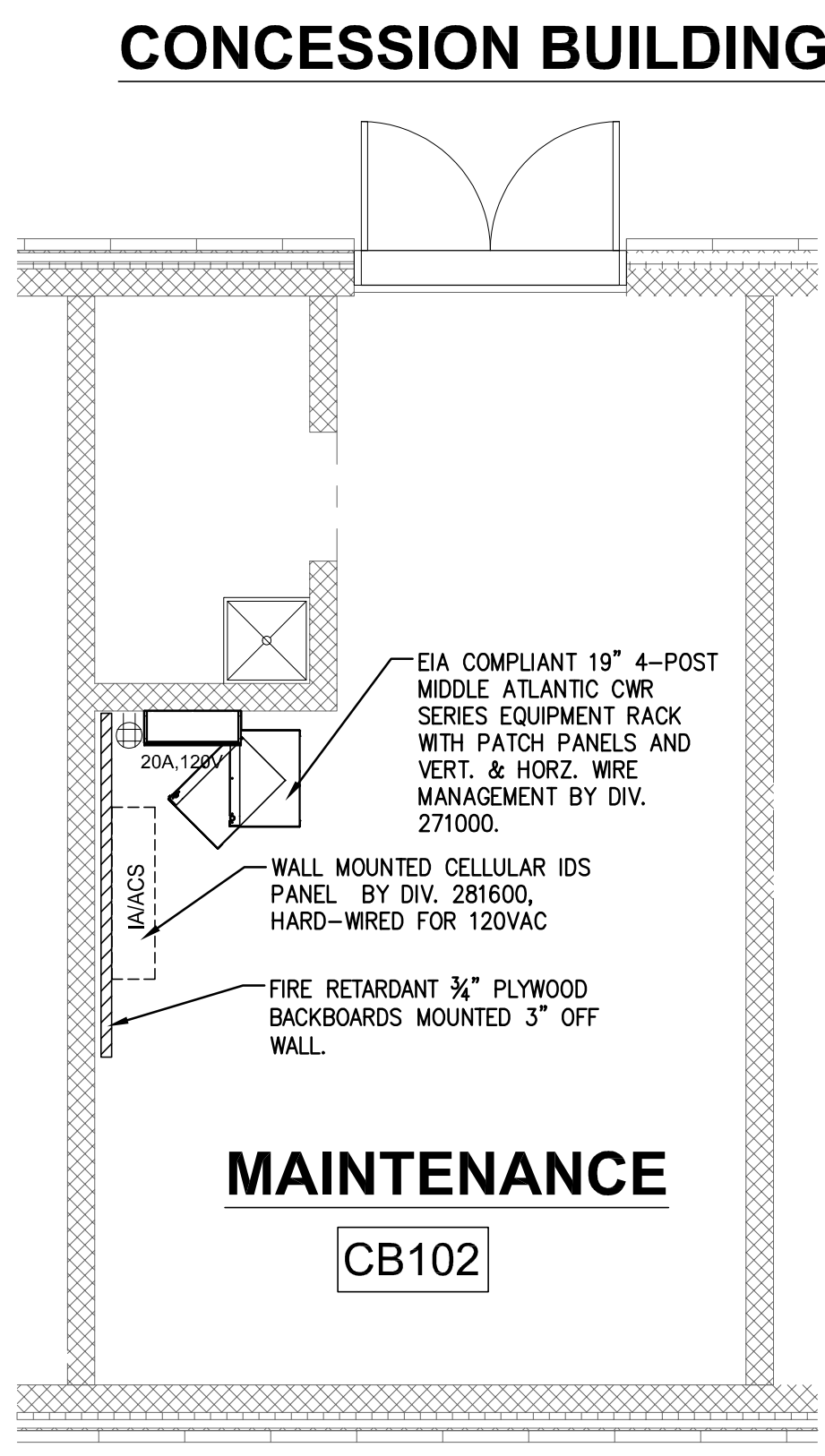
4 RACK ELEVATIONS AND DETAILS - MDF D108
SCALE: N.T.S.



3 MAINTENANCE BUILDING IDF (ADD ALTERNATE NO. 3)
SCALE: 1/4" = 1'



2 LOCKER BUILDING IDF (ADD ALTERNATE NO. 1)
SCALE: 1/4" = 1'



1 CONCESSION BUILDING IDF
SCALE: 1/4" = 1'

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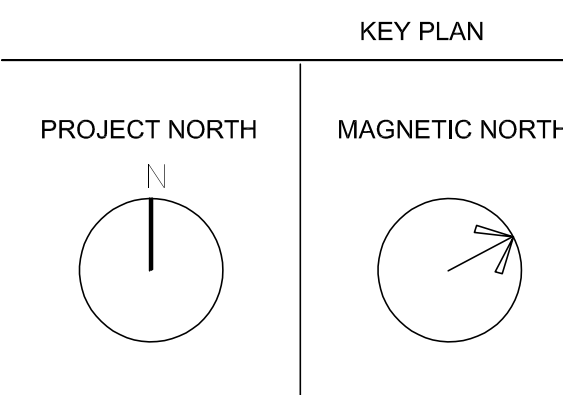
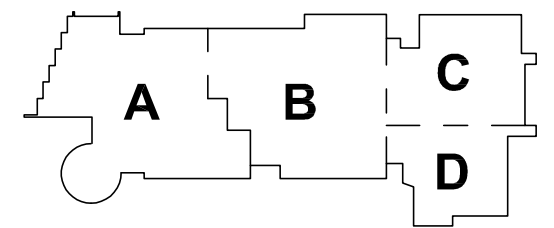
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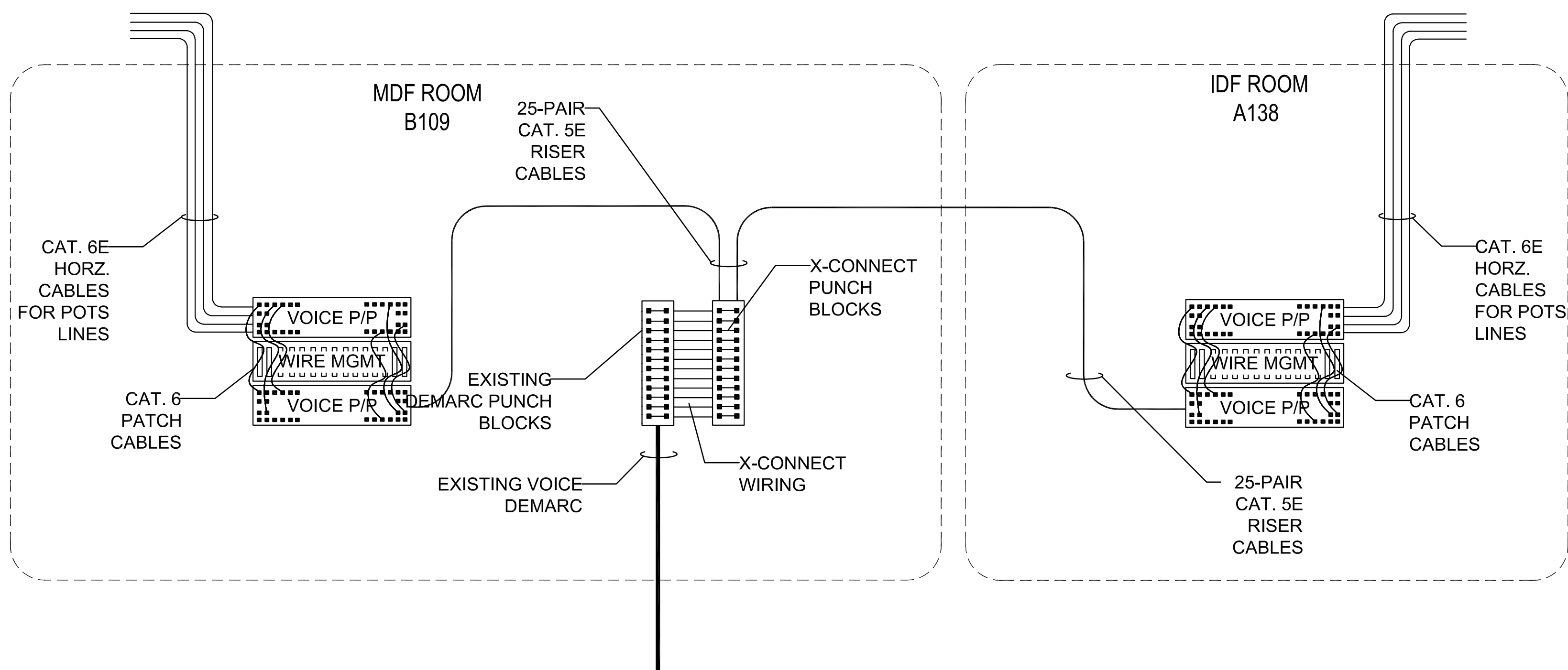
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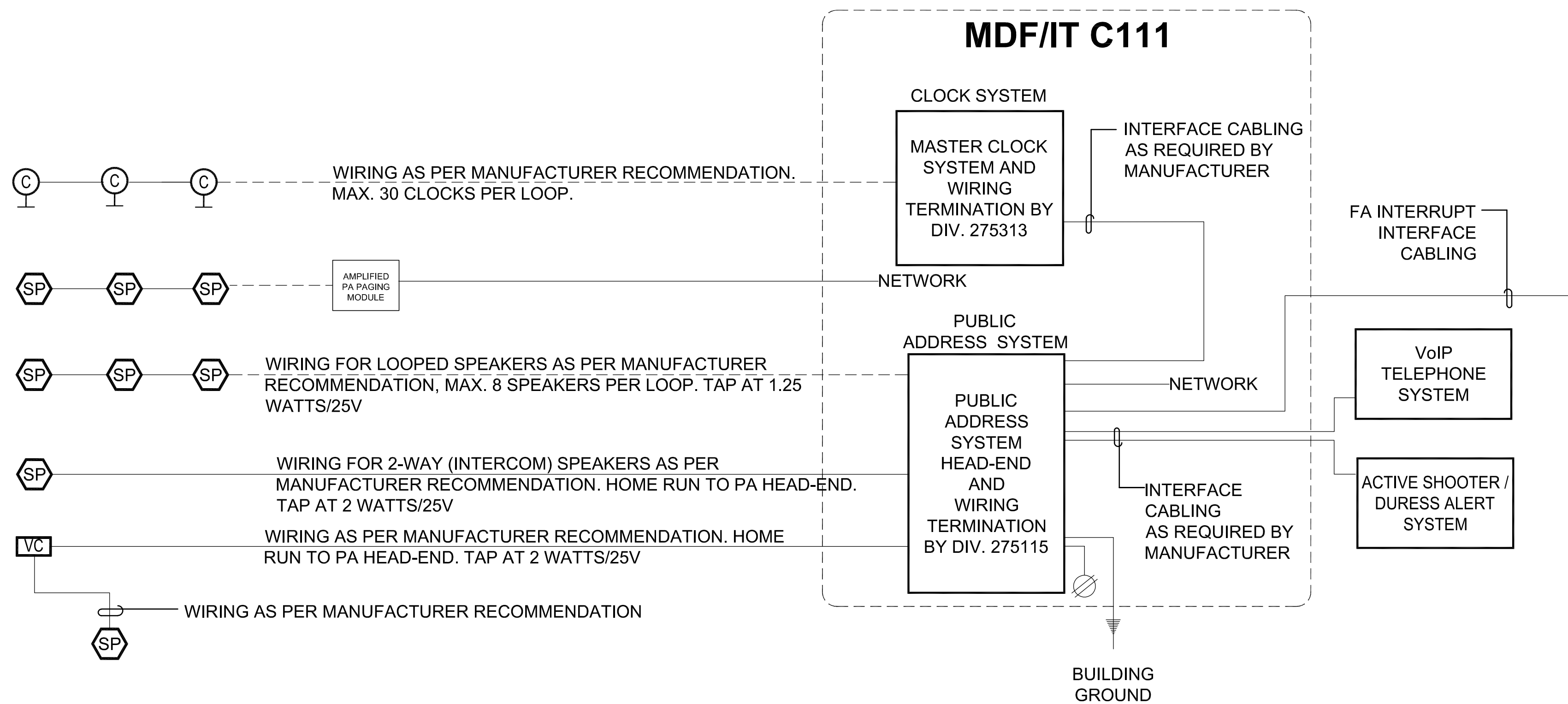


ENLARGED PLANS
AND RACK
DETAILS
TECHNOLOGY

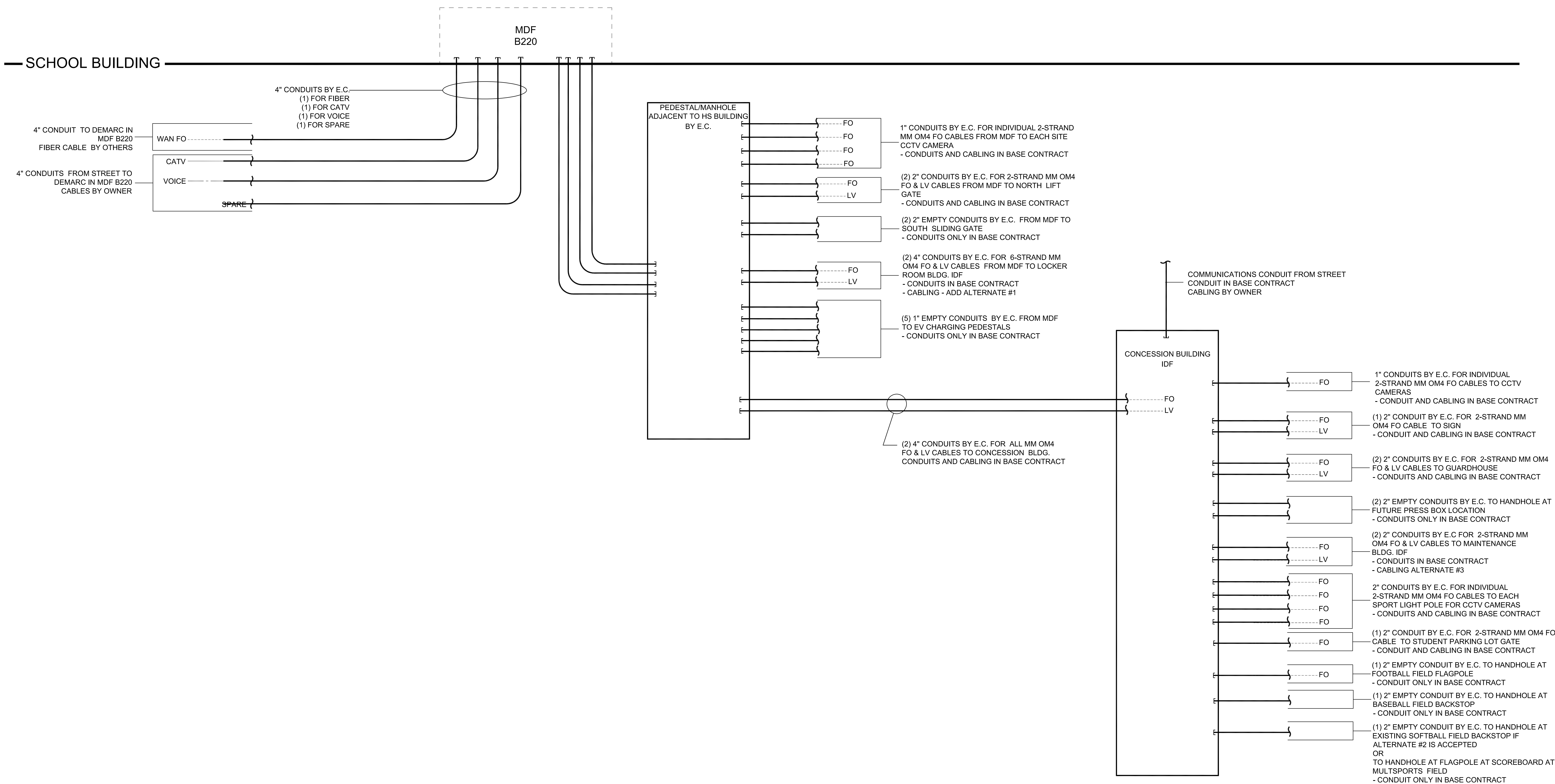
Scale: AS NOTED
Job No.: 20202
Drawn By:MLD/AMD
Date: 06/28/2023
T2-2



3 ANALOG (POTS) VOICE CABLING RISER DIAGRAM
SCALE: NONE



2 PUBLIC ADDRESS & CLOCK SYSTEMS RISER DIAGRAMS
SCALE: NONE



1 SITE CONDUIT AND CABLE RISER DIAGRAM
SCALE: NONE

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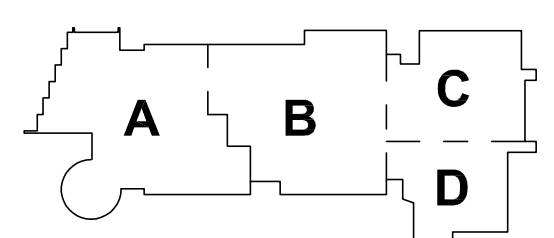
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DIAGRAMS
TECHNOLOGY
AND SECURITY**

CSi
T2-3
TECHNOLOGY DESIGN AND PLANNING

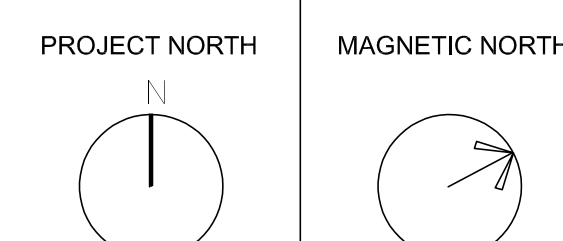
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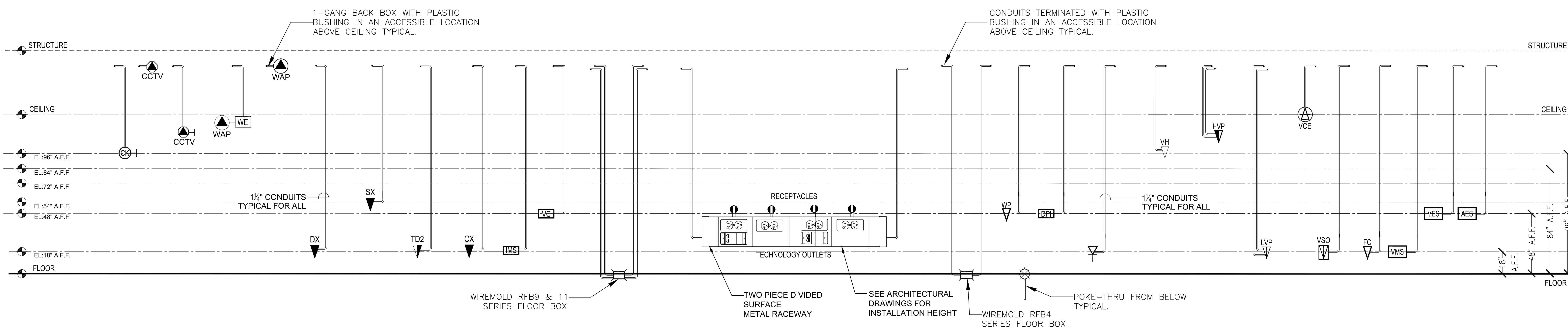
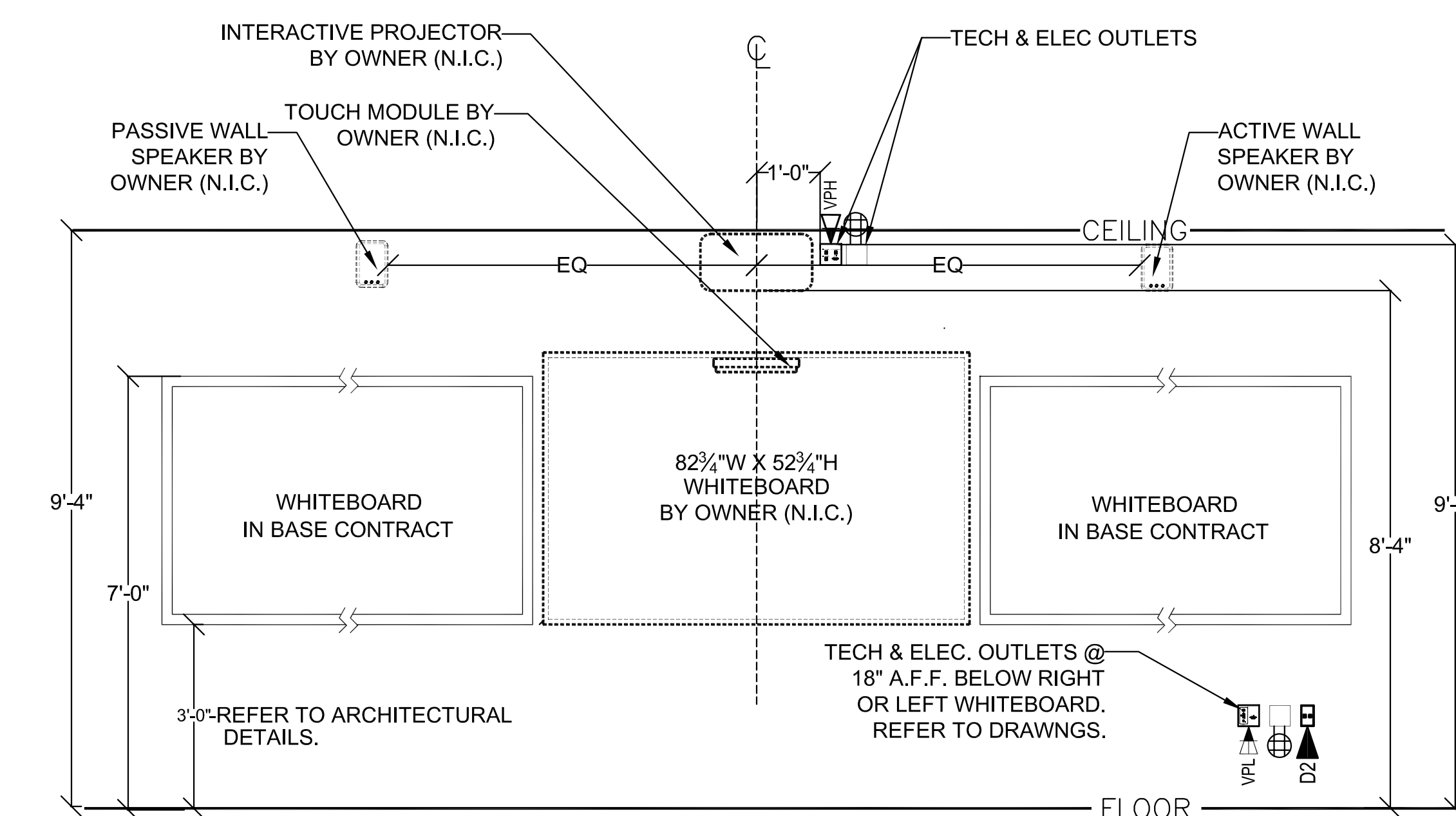
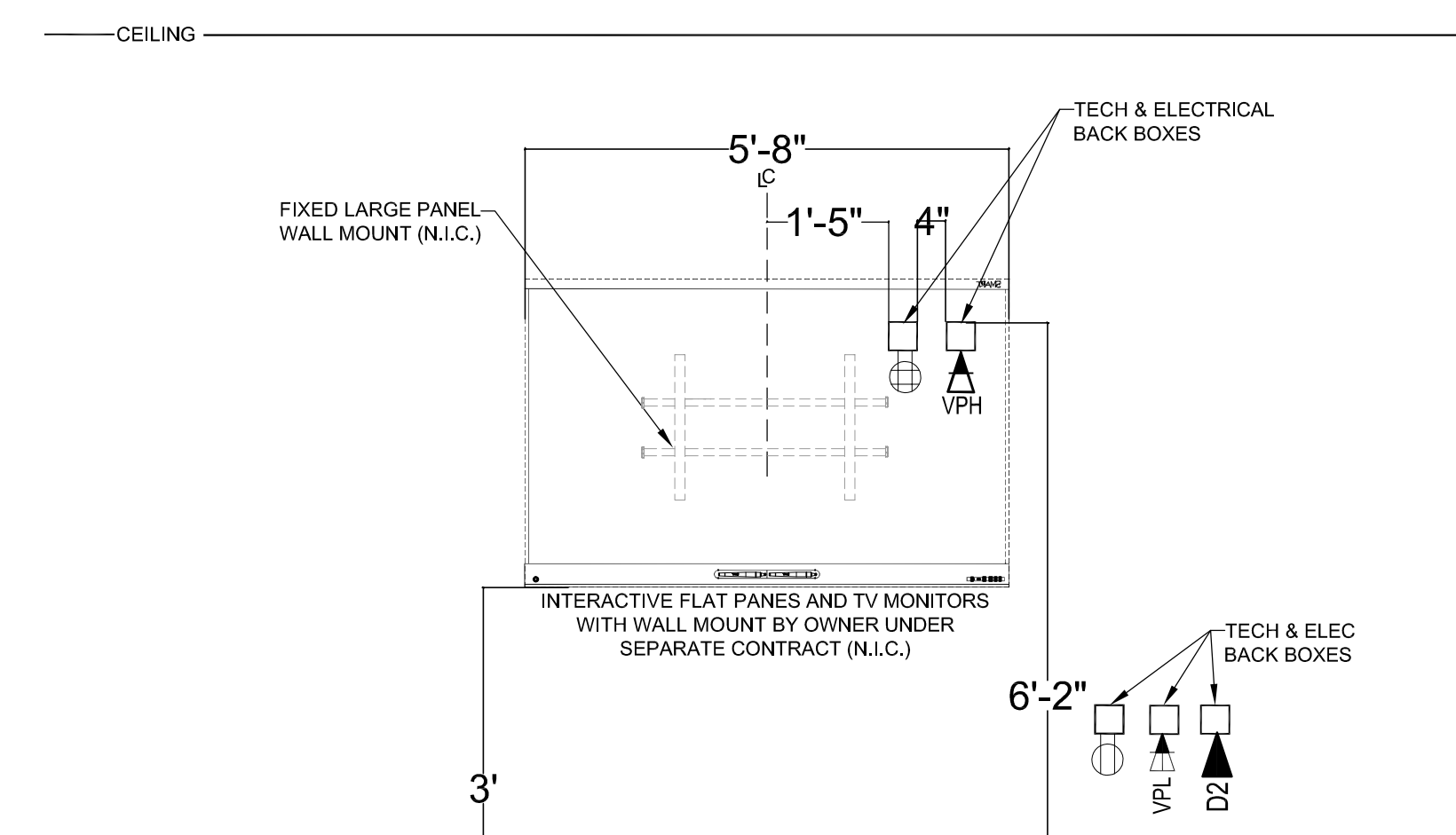
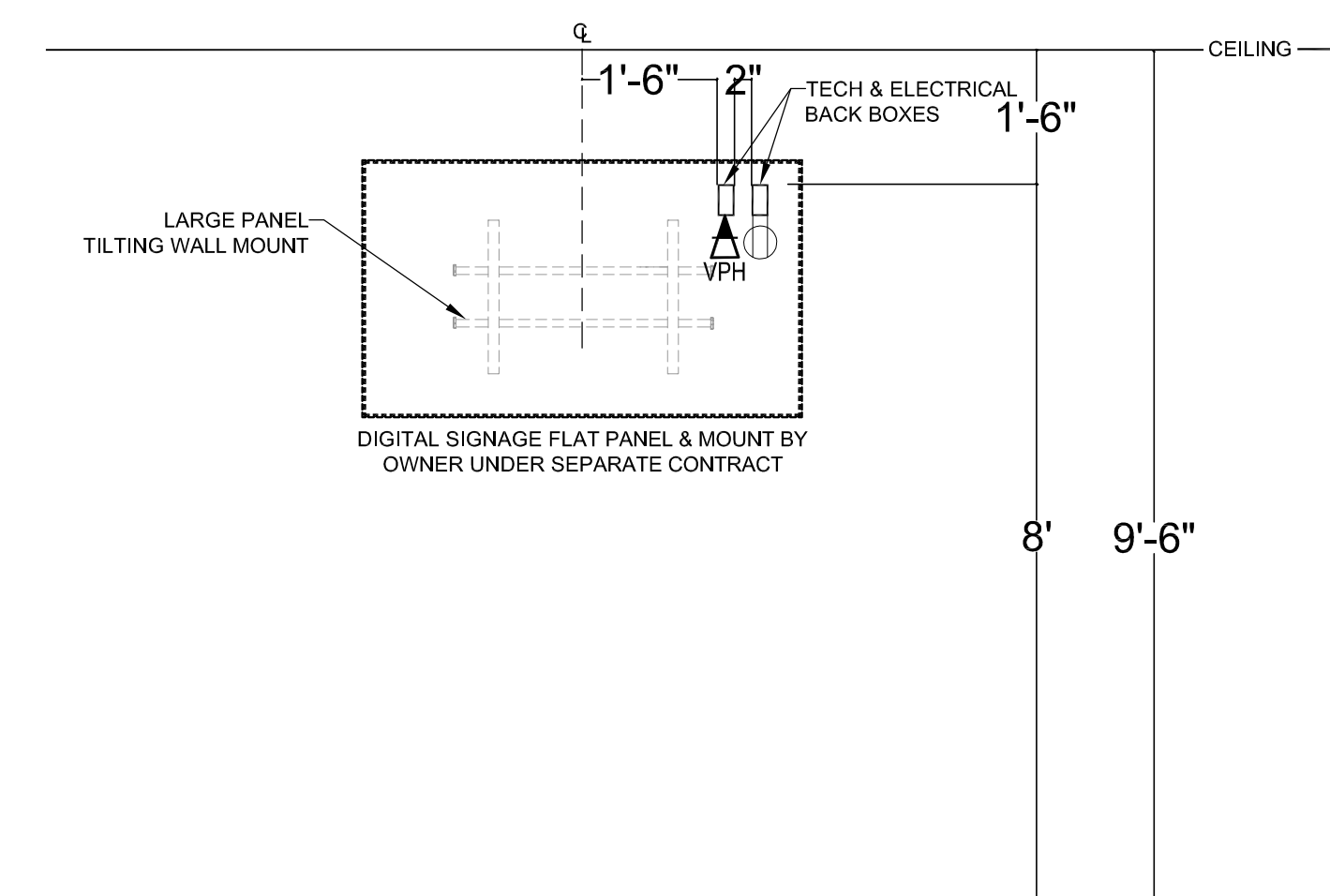
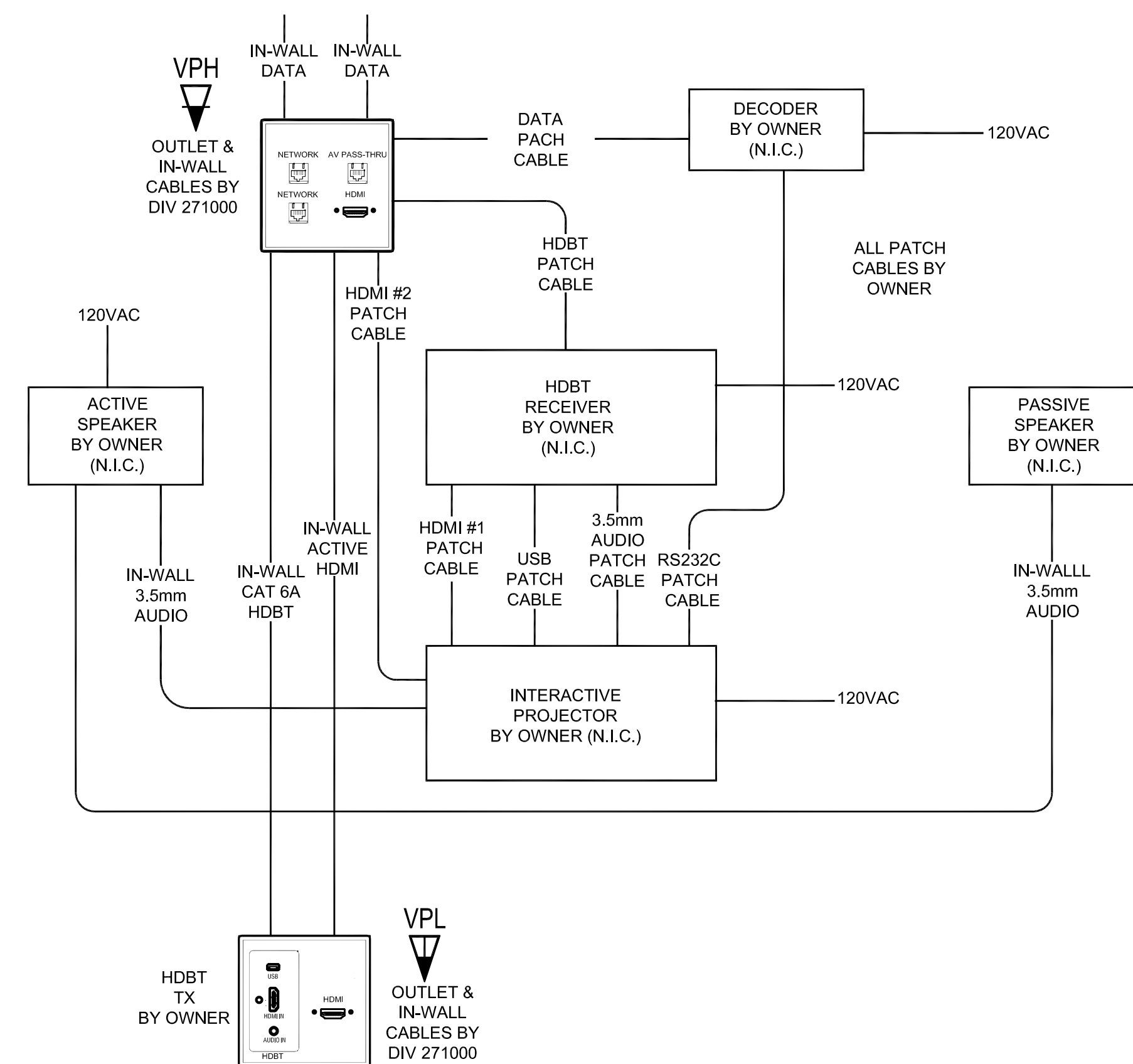
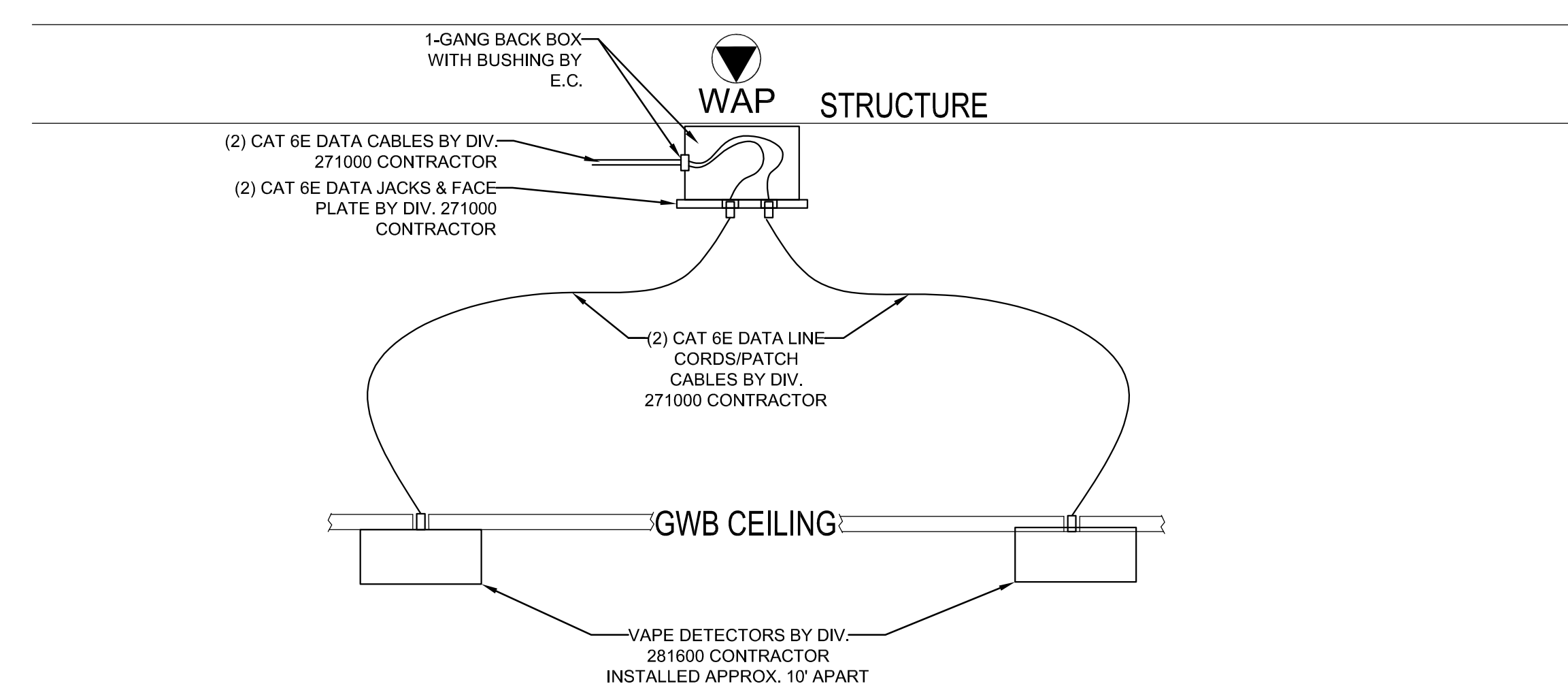
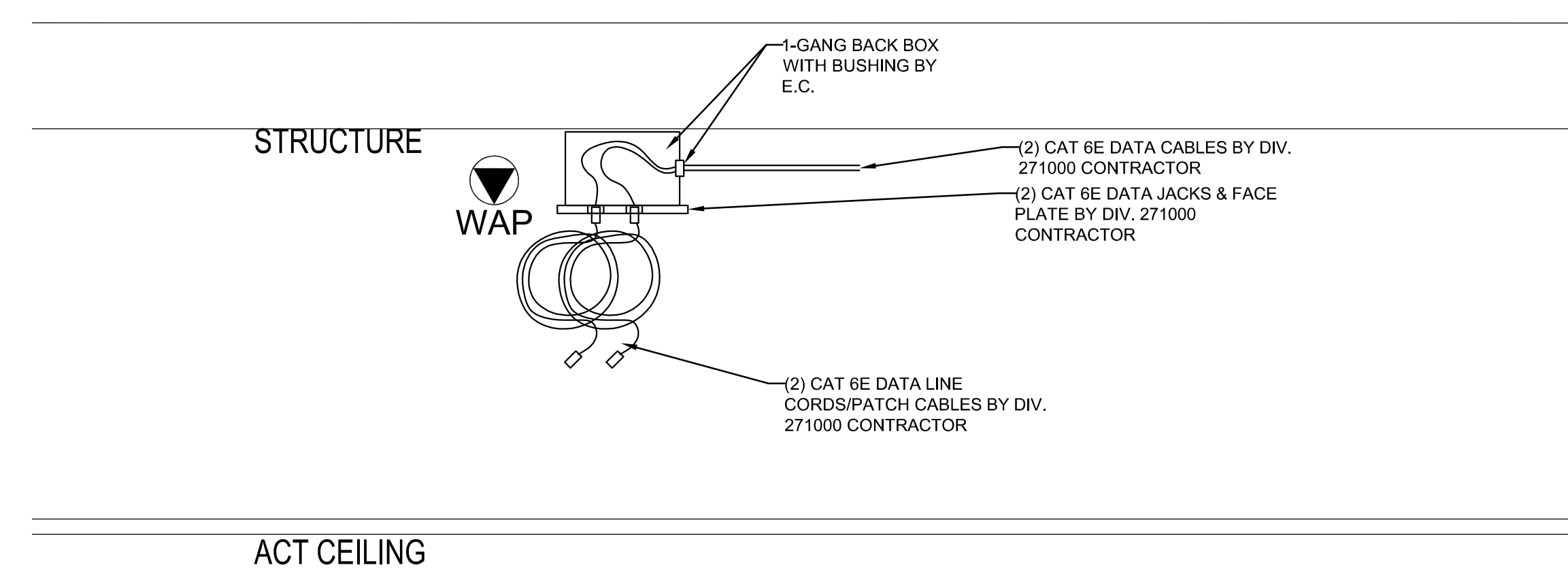


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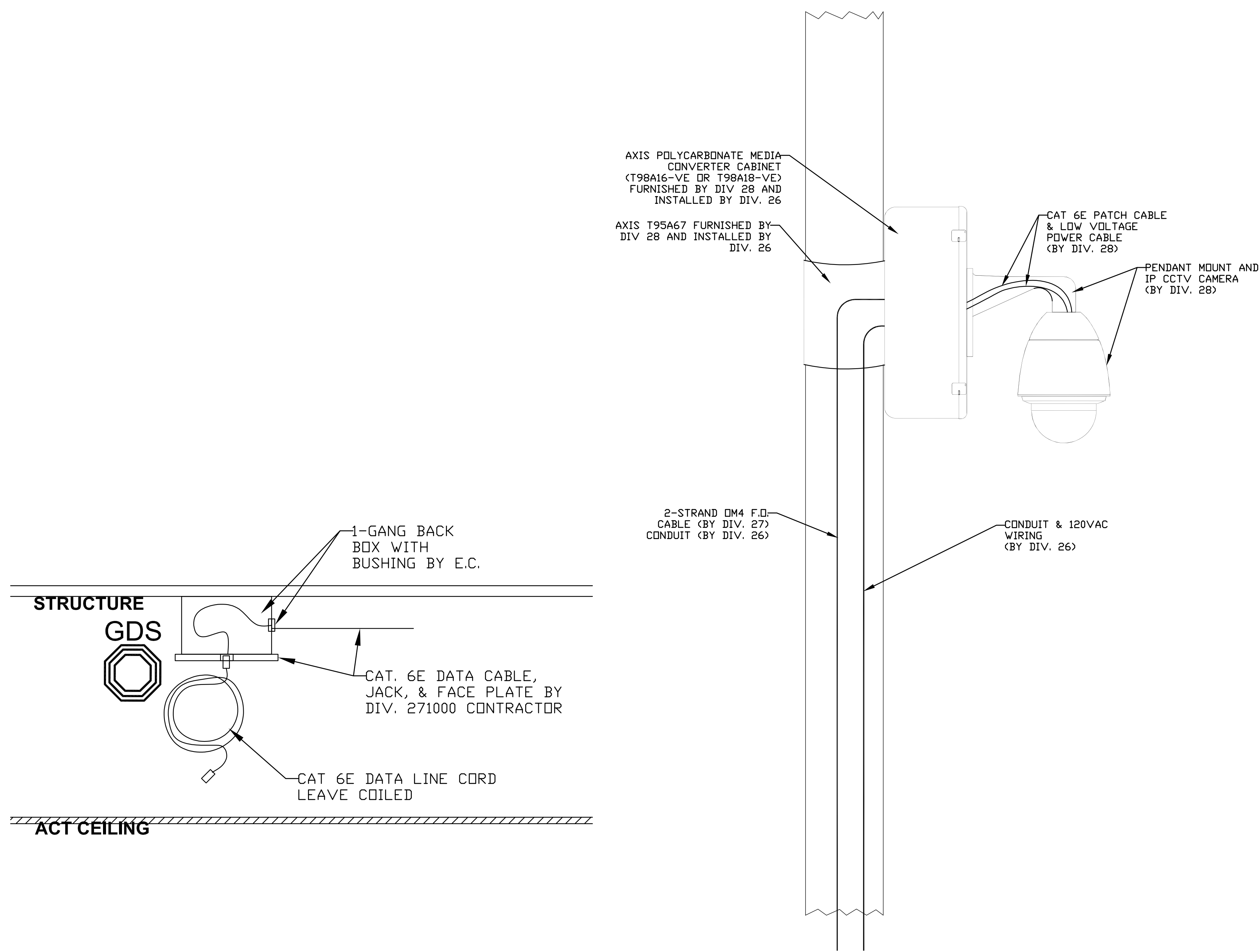
**RISER
DIAGRAMS
TECHNOLOGY**

Scale: NONE
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023
T2-3



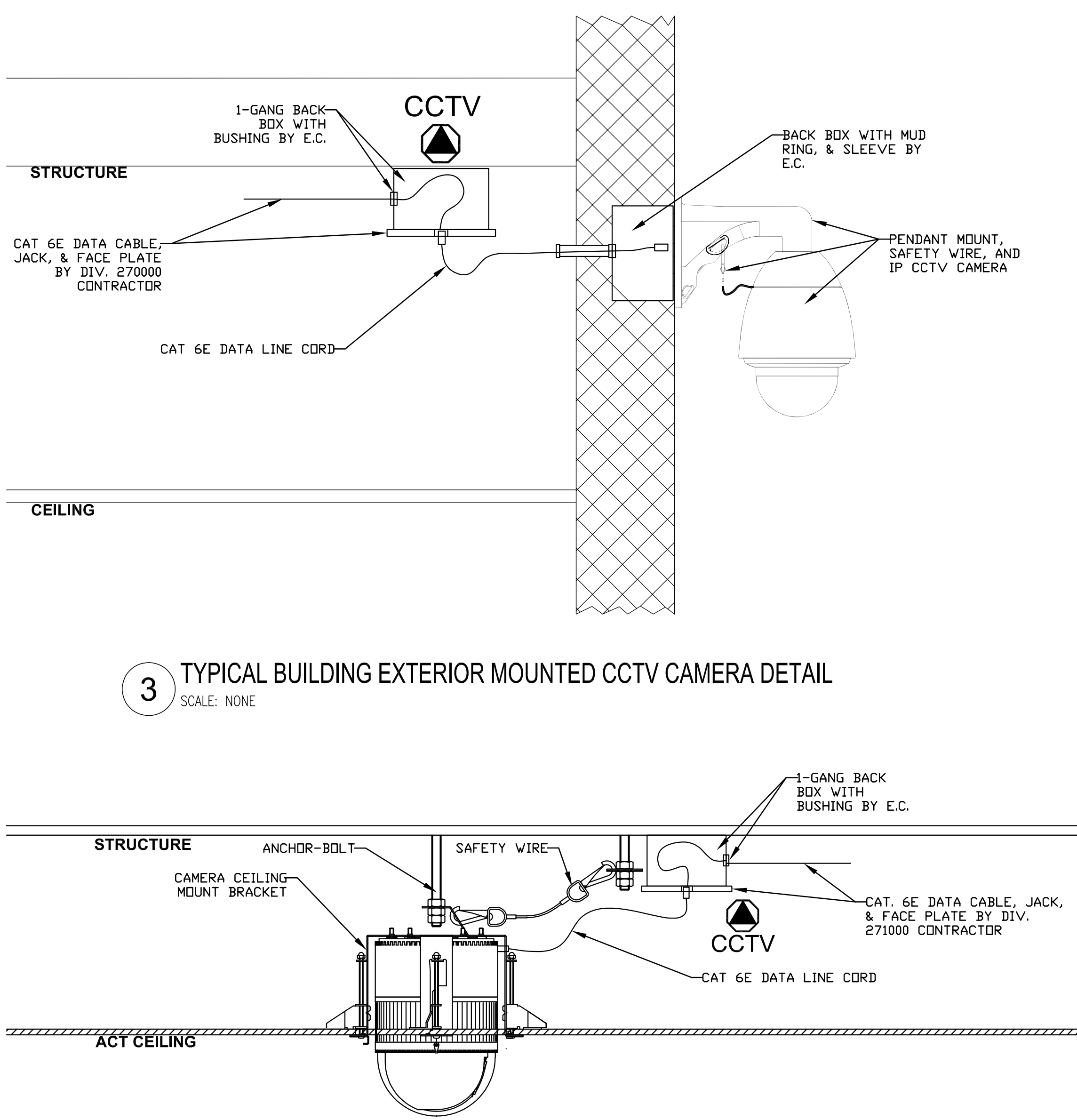
GENERAL NOTES:

1. PROVIDE ALL MOUNTING HARDWARE AND ACCESSORIES.
2. DEVICES SHOWN ARE TYPICAL FOR DEVICES PROVIDED IN THE PROJECT. REFER TO "T" DRAWINGS FOR LOCATIONS AND QUANTITIES.
3. PROVIDE SETUP, TUNING, AND CONFIGURATION OF ALL SYSTEMS.
4. COORDINATE ALL PROGRAMMING WITH OWNER'S FACILITY AND I.T. STAFF.
5. CCTV SYSTEM AND ACCESS CONTROL DEVICES SHALL BE INTEGRATED WITH THE EXISTING DISTRICT ACCESS CONTROL AND VIDEO MANAGEMENT SYSTEM.
6. INTRUSION ALARM HEAD-END PANEL SHALL PROVIDE DIAL-OUT TO MONITORING SERVICES COMPANY IN EVENT OF AN ALARM CONDITION. COORDINATE EXACT REQUIREMENTS WITH OWNER.
7. PROVIDE ALL LOW VOLTAGE CABLING TO INTERFACE DOOR HARDWARE TO THE ACCESS CONTROL SYSTEM.
8. PROVIDE ALL REQUIRED LOW VOLTAGE WIRING FOR ADA ACTUATORS AND OPERATORS AT LOCATIONS SHOWN ON THE ELECTRICAL DRAWINGS.
9. PROGRAM THE ACCESS CONTROL SYSTEM SO THAT ADA ACTUATORS ARE OPERABLE ONLY WHEN DOORS ARE UNLOCKED.
10. ELECTRICAL LOCKING HARDWARE AND ASSOCIATED POWER SUPPLIES SHALL BE PROVIDED BY DIVISION 8. REFER TO DOOR HARDWARE SCHEDULES.
11. COORDINATE ROUTING OF WIRING WITHIN DOOR FRAME WITH DIVISION 8.
12. 120VAC POWER SUPPLIES FOR ACCESS AND INTRUSION CONTROLLERS AND PANELS SHALL BE PROVIDED BY DIVISION 28 CONTRACTOR. UNITS SHALL BE UL LISTED, MANUFACTURED BY ALTRONIX OR APPROVED EQUAL.
13. REFER TO SPECIFICATIONS AND DRAWING T0-0-0 FOR ADDITIONAL EQUIPMENT AND SCOPE OF WORK INFORMATION.

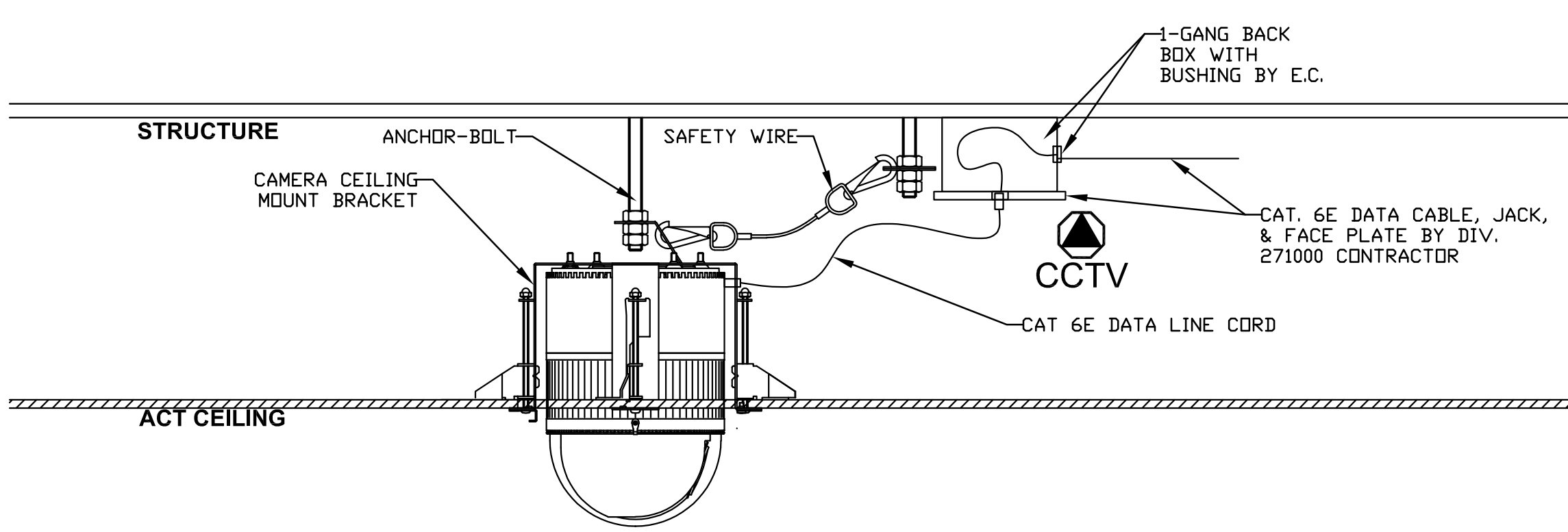


5 TYPICAL CEILING GDS DATA OUTLET DETAIL
SCALE: N.T.S.

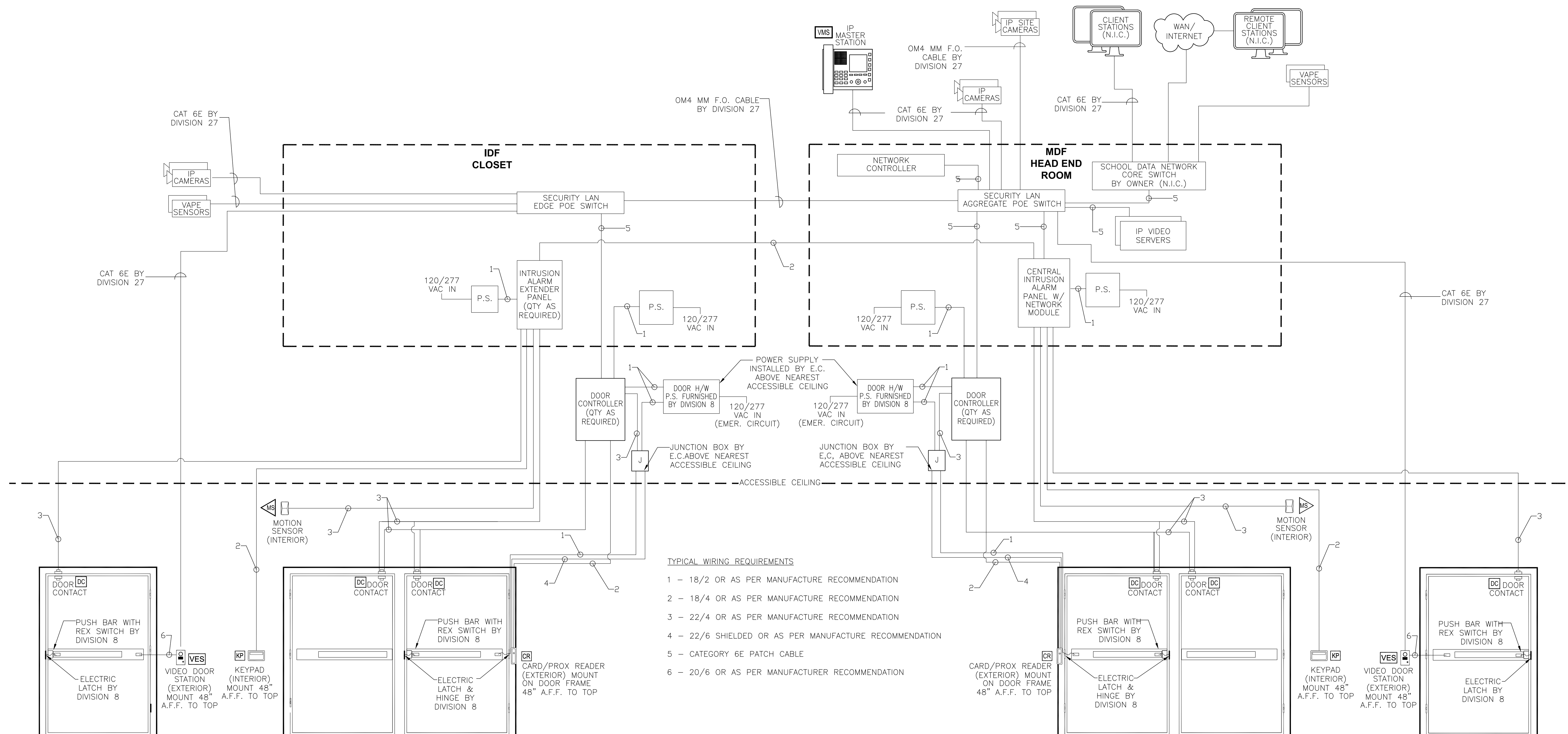
4 TYPICAL POLE MOUNTED CCTV CAMERA DETAIL
SCALE: NONE



3 TYPICAL BUILDING EXTERIOR MOUNTED CCTV CAMERA DETAIL
SCALE: NONE



2 TYPICAL CEILING MOUNTED CCTV CAMERA DETAIL
SCALE: NONE



- TYPICAL WIRING REQUIREMENTS
- 1 - 18/2 OR AS PER MANUFACTURE RECOMMENDATION
 - 2 - 18/4 OR AS PER MANUFACTURE RECOMMENDATION
 - 3 - 22/4 OR AS PER MANUFACTURE RECOMMENDATION
 - 4 - 22/6 SHIELDED OR AS PER MANUFACTURE RECOMMENDATION
 - 5 - CATEGORY 6E PATCH CABLE
 - 6 - 20/6 OR AS PER MANUFACTURE RECOMMENDATION

1 TYPICAL INTEGRATED ELECTRONIC SECURITY SYSTEM WIRING
SCALE: NONE

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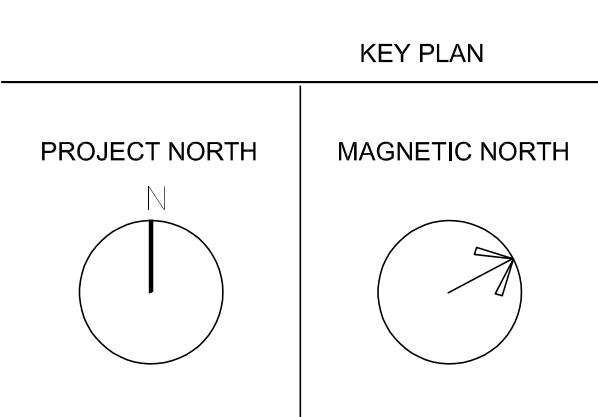
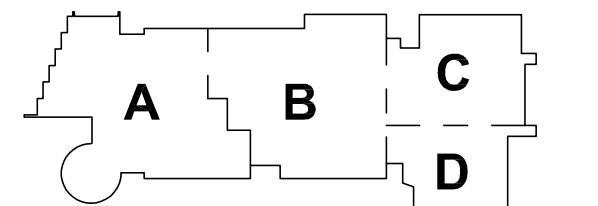
Wakefield, MA 01880

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TECHNOLOGY DESIGN AND PLANNING

HYDROLOG. SOFTWARE,
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WORTHFIELD, MA 01581
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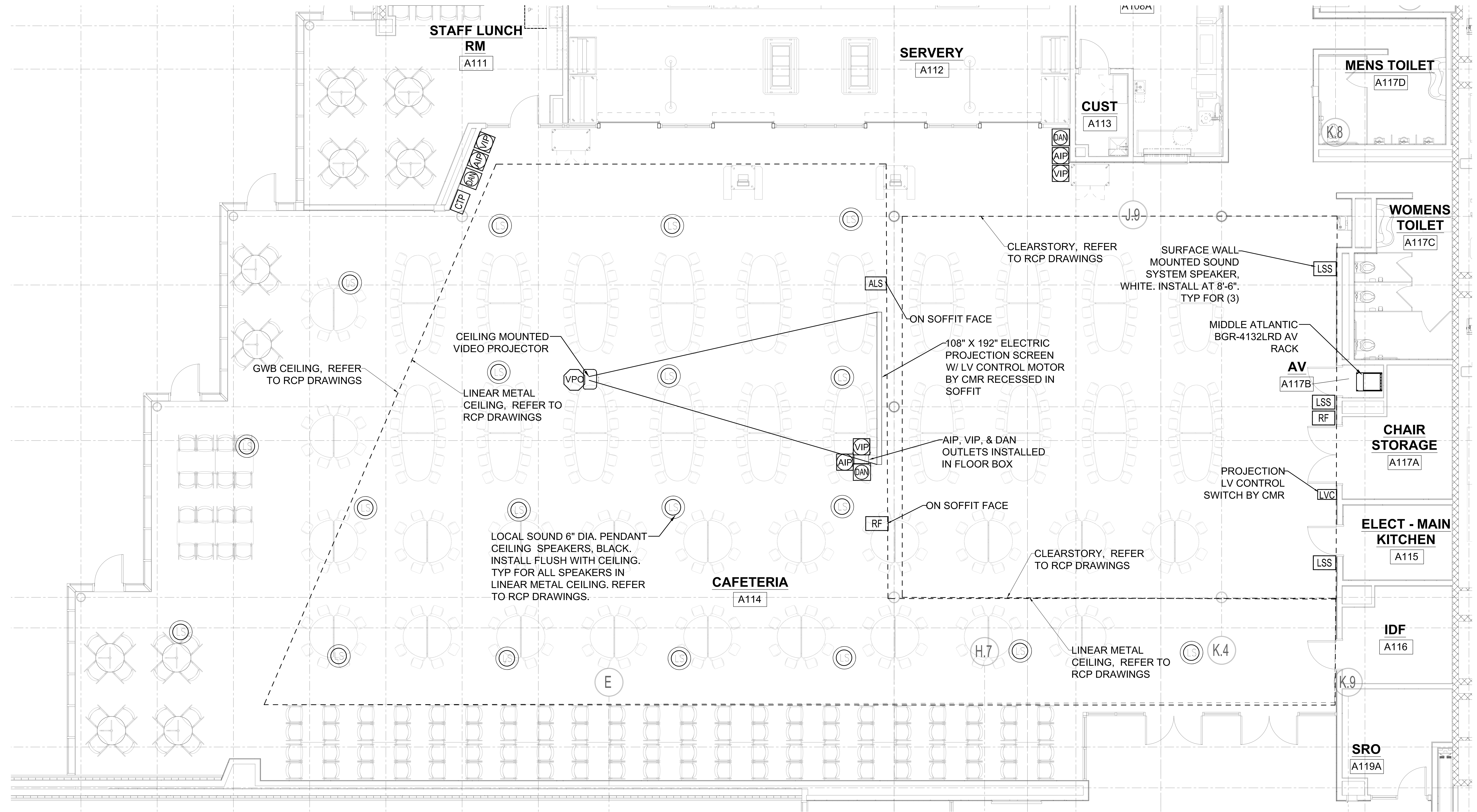
TYPICAL WIRING
AND DETAIL
DIAGRAMS
SECURITY

Scale: AS NOTED
Job No.: 20202
Drawn By:MLD/AMD
Date: 06/28/2023

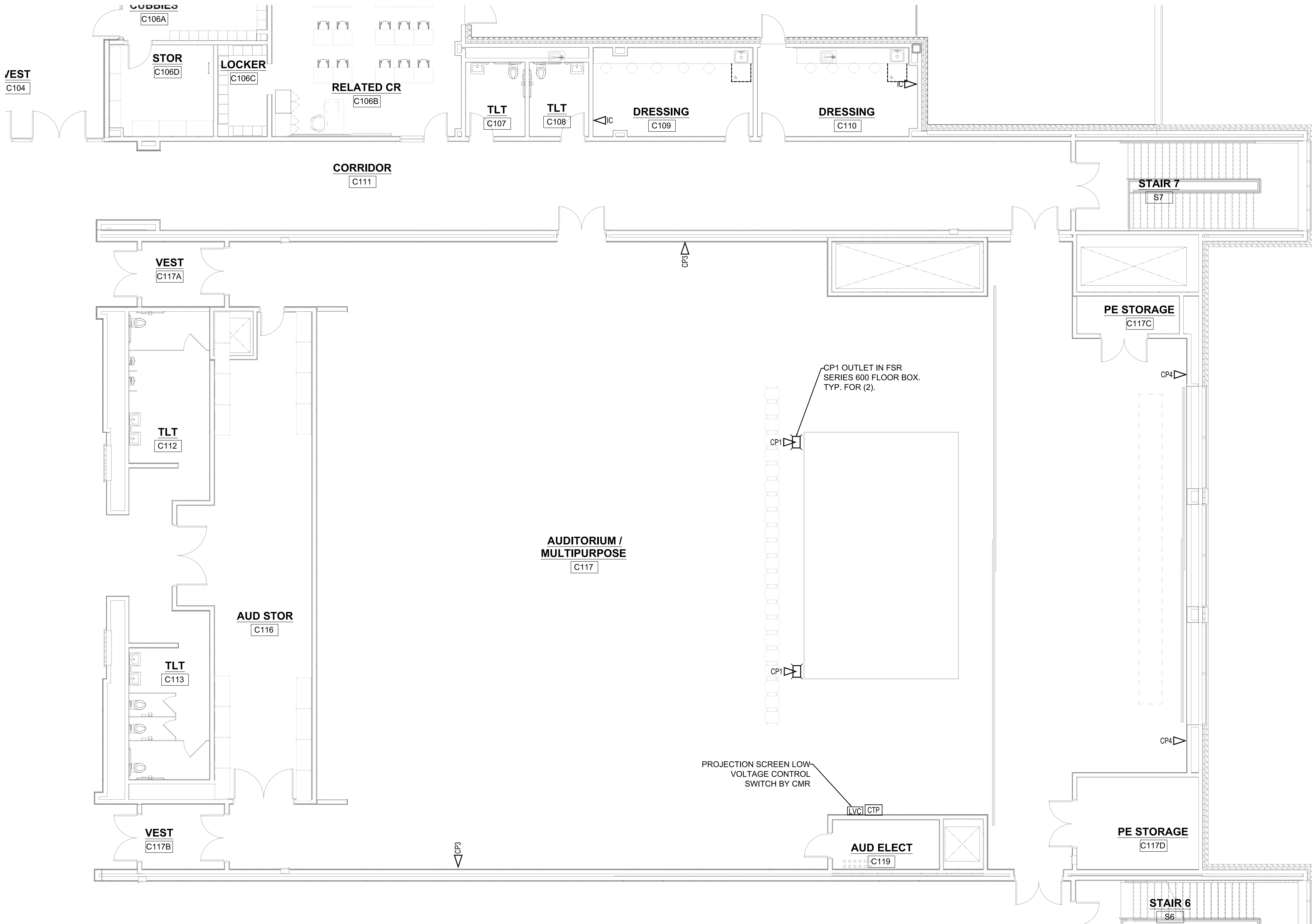
T3-1

LARGE VENUE AUDIOVISUAL SYSTEM SYMBOLS

POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	BACK BOX	POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	BACK BOX
120 VAC QUAD DEDICATED		AV RACK MIDDLE ATLANTIC BGR SERIES AUDIOVISUAL SYSTEM EQUIPMENT RACK	AS NOTED ON DRAWINGS	N/A	NONE		LOCAL AUDIO SYSTEM ASSISTED LISTENING ANTENNA: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	REFER TO ARCH DWGS FOR ELEVATION & DETAILS.	1-GANG
NONE		AUDIOVISUAL SYSTEM WALL MOUNTED CONTROL TOUCH PANEL WITH SECURITY COVER: PROGRAM CONTROL TOUCH PANEL AS AS REQUIRED BY OWNER BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	48" A.F.F. TYPICAL. REFER TO ARCH DWGS.	48" A.F.F.	NONE		LOCAL AUDIO SYSTEM SPEAKER, SURFACE WALL MOUNTED OR RECESSED 3/4" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	8'-6" A.F.F. TYPICAL. REFER TO ARCH DWGS	N/A
NONE		DANTE INPUT WALL PLATE: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	18" A.F.F.	1-GANG	NONE		LOCAL AUDIO SYSTEM SPEAKER, CEILING MOUNTED 3/4" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK X-S=SUBWOOFER	REFER TO ARCH DWGS.	N/A
NONE		AUDIO INPUT WALL PLATE: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	18" A.F.F.	1-GANG	NONE		VIDEO PROJECTOR OUTLET: BACK BOX WITH 1" CONDUIT TO LOCAL AUDIOVISUAL EQUIPMENT RACK FOR AUDIOVISUAL CABLING.	REFER TO ARCH DWGS.	1-GANG
NONE		VIDEO INPUT WALL PLATE: BACK BOX WITH 1" CONDUIT TO LOCAL AUDIOVISUAL CONTROL RACK.	18" A.F.F.	2-GANG	120 VAC ONE QUAD		LARGE VENUE VIDEO PROJECTOR: REFER TO SPECIFICATIONS FOR DETAILS.	REFER TO ARCH DWGS.	N/A
NONE		WIRELESS MICROPHONE RF ANTENNA PLATE: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	REFER TO ARCH DWGS FOR ELEVATION & DETAILS.	1-GANG	NONE		KEYED PROJECTION SCREEN LOW VOLTAGE CONTROLLER SWITCH WALL PLATE BY CMR BACK BOX WITH 1" CONDUIT TO PROJECTION SCREEN LOW VOLTAGE CONTROLLER	48" A.F.F. TYPICAL. REFER TO ARCH DWGS.	1-GANG



LARGE VENUE AUDIOVISUAL SYSTEM SYMBOLS									
POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	BACK BOX	POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	BACK BOX
120 VAC QUAD DEDICATED		AV RACK MIDDLE ATLANTIC BGR SERIES AUDIOVISUAL SYSTEM EQUIPMENT RACK	AS NOTED ON DRAWINGS	N/A	120 VAC QUAD		CUSTOM PLATE 1: REFER TO PLATE DRAWING DRAWING AND SPECIFICATIONS FOR DETAILS.	18" A.F.F.	2-GANG
NONE		AUDIOVISUAL SYSTEM WALL MOUNTED CONTROL TOUCH PANEL WITH SECURITY COVER: PROGRAM CONTROL TOUCH PANEL AS AS REQUIRED BY OWNER BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	48" A.F.F. TYPICAL. REFER TO ARCH DWGS.	48" A.F.F.	120 VAC QUAD		CUSTOM PLATE 1: REFER TO PLATE DRAWING DRAWING AND SPECIFICATIONS FOR DETAILS.	18" A.F.F.	2-GANG
NONE		AUDIOVISUAL SYSTEM TABLETOP CONTROL TOUCH PANEL: PROGRAM CONTROL TOUCH PANEL AS AS REQUIRED BY OWNER	N/A	N/A	NONE		LOCAL AUDIO SYSTEM SUSPENDED SPEAKER: 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK XXX- LSS = LOCAL SOUND SPEAKER, FILL=FILL IN SPEAKER, SUB=SUBWOOFER SPEAKER	SUSPENDED FROM CEILING OR STRUCTURE	N/A
NONE		LOCAL AUDIO SYSTEM ASSISTED LISTENING ANTENNA: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	REFER TO ARCH DWGS FOR ELEVATION & DETAILS.	1-GANG	NONE		VIDEO PROJECTOR OUTLET: BACK BOX WITH 1" CONDUIT TO LOCAL AUDIOVISUAL EQUIPMENT RACK FOR AUDIOVISUAL CABLING.	REFER TO ARCH DWGS.	1-GANG
NONE		WIRELESS MICROPHONE RF ANTENNA PLATE: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	REFER TO ARCH DWGS FOR ELEVATION & DETAILS.	1-GANG	120 VAC ONE QUAD		LARGE VENUE VIDEO PROJECTOR: REFER TO SPECIFICATIONS FOR DETAILS.	REFER TO ARCH DWGS.	N/A
120 VAC QUAD		CUSTOM PLATE 1: REFER TO PLATE DRAWING AND SPECIFICATIONS FOR DETAILS.	18" A.F.F. OR IN FSR SERIES 600 FLOOR BOX	5-GANG	NONE		KEYED PROJECTION SCREEN LOW VOLTAGE CONTROLLER SWITCH WALL PLATE BY CMR BACK BOX WITH 1" CONDUIT TO PROJECTION SCREEN LOW VOLTAGE CONTROLLER	48" A.F.F. TYPICAL. REFER TO ARCH DWGS.	1-GANG
120 VAC QUAD		CUSTOM PLATE 2: REFER TO PLATE DRAWING AND SPECIFICATIONS FOR DETAILS.	18" A.F.F.	4-GANG					



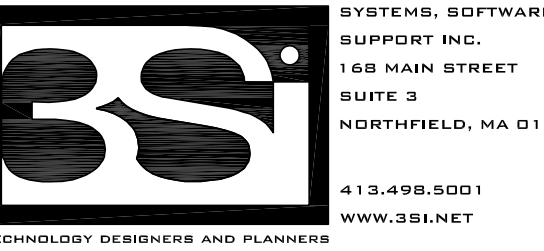
1 FIRST FLOOR - MULTIPURPOSE ROOM AV DEVICES
3/16" = 1'-0"



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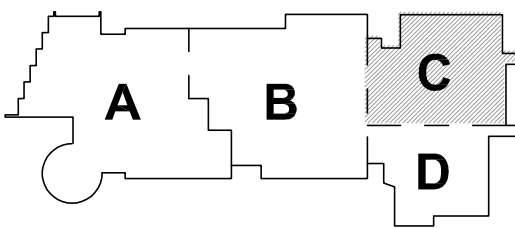
Wakefield, MA 01880



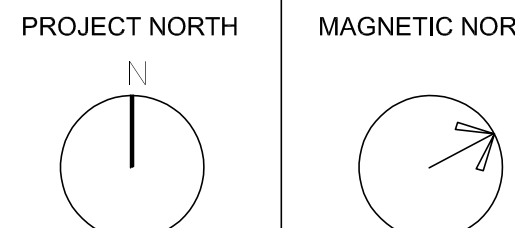
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KEY PLAN

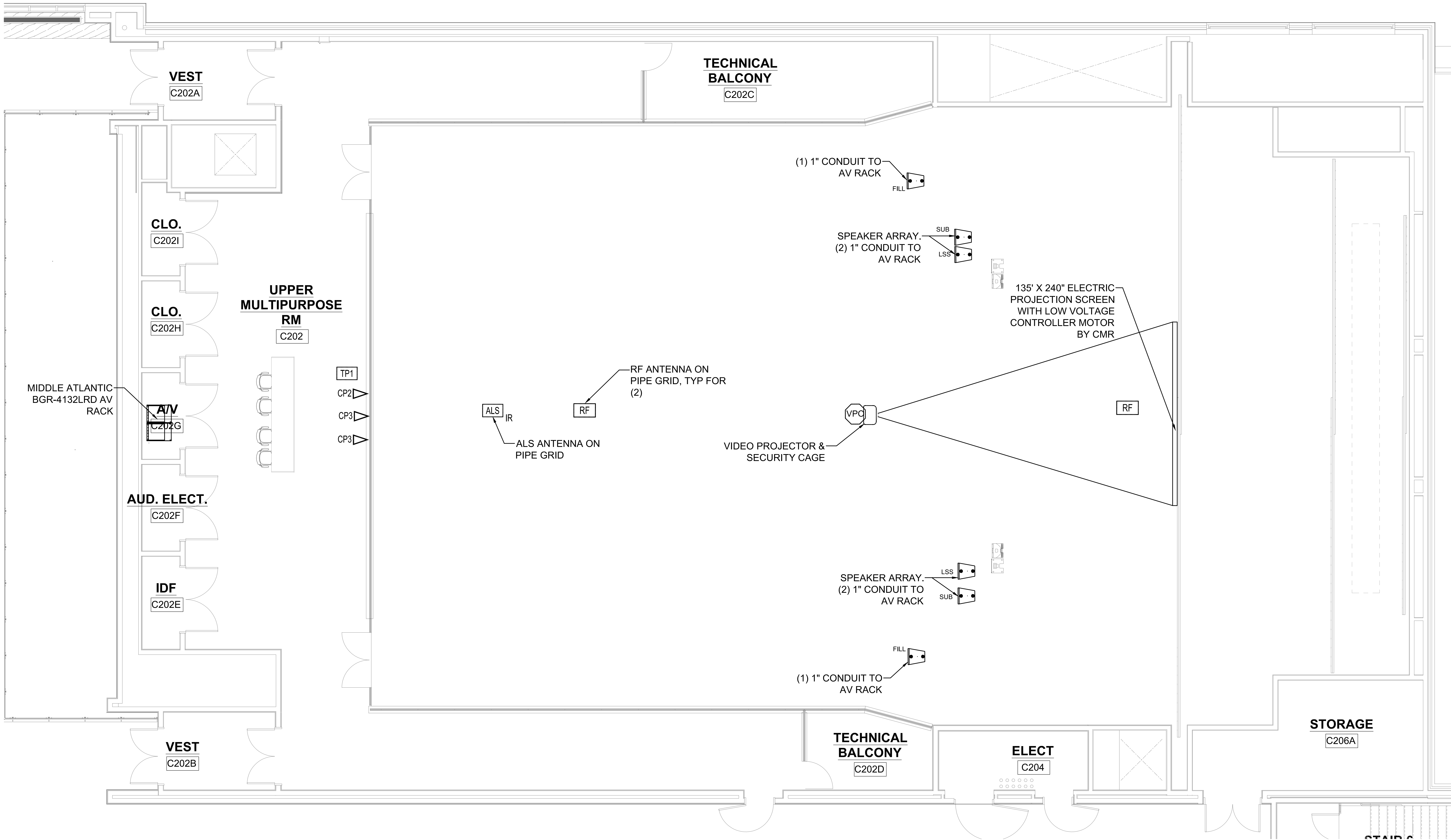


FIRST FLOOR
MULTIPURPOSE
ROOM
AUDIOVISUAL
DEVICES

Scale: 3/16" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023

AV-02a

LARGE VENUE AUDIOVISUAL SYSTEM SYMBOLS									
POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	BACK BOX	POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	BACK BOX
120 VAC QUAD DEDICATED		AV RACK MIDDLE ATLANTIC BGR SERIES AUDIOVISUAL SYSTEM EQUIPMENT RACK	AS NOTED ON DRAWINGS	N/A	120 VAC QUAD		CUSTOM PLATE 1: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK REFER TO PLATE DRAWING AND SPECIFICATIONS FOR CONNECTOR DETAILS.	18" A.F.F.	2-GANG
NONE		AUDIOVISUAL SYSTEM CONTROL TOUCH PANEL WALL MOUNTED WITH KEYED SECURITY COVER: PROGRAM CONTROL TOUCH PANEL AS AS REQUIRED BY OWNER BACK BOX WITH 1" CONDUIT TO ASSOCIATED AUDIOVISUAL EQUIPMENT RACK	48" A.F.F. TYPICAL. REFER TO ARCH DWGS.	48" A.F.F.	120 VAC QUAD		CUSTOM PLATE 1: REFER TO PLATE DRAWING DRAWING AND SPECIFICATIONS FOR DETAILS.	18" A.F.F.	2-GANG
NONE		AUDIOVISUAL SYSTEM TABLETOP CONTROL TOUCH PANEL: PROGRAM CONTROL TOUCH PANEL AS AS REQUIRED BY OWNER	N/A	N/A	NONE		LOCAL AUDIO SYSTEM SUSPENDED SPEAKER: 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK XXX- LSS = LOCAL SOUND SPEAKER, FILL= FILL IN SPEAKER, SUB= SUBWOOFER SPEAKER	SUSPENDED FROM CEILING OR STRUCTURE	N/A
NONE		LOCAL AUDIO SYSTEM ASSISTED LISTENING ANTENNA: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	ON CEILING OR 8'-6" A.F.F.	1-GANG	NONE		VIDEO PROJECTOR OUTLET: BACK BOX WITH 1" CONDUIT TO LOCAL AUDIOVISUAL EQUIPMENT RACK FOR AUDIOVISUAL CABLING.	REFER TO ARCH DWGS.	1-GANG
NONE		WIRELESS MICROPHONE RF ANTENNA PLATE BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	REFER TO ARCH DWGS FOR ELEVATION & DETAILS.	1-GANG	120 VAC ONE QUAD		LARGE VENUE VIDEO PROJECTOR: REFER TO SPECIFICATIONS FOR DETAILS.	REFER TO ARCH DWGS.	N/A
120 VAC QUAD		CUSTOM PLATE 1: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK REFER TO PLATE DRAWING AND SPECIFICATIONS FOR CONNECTOR DETAILS.	18" A.F.F. OR IN FSR SERIES 600 FLOOR BOX	5-GANG	NONE		KEYED PROJECTION SCREEN LOW VOLTAGE CONTROLLER SWITCH WALL PLATE BY CMR BACK BOX WITH 1" CONDUIT TO PROJECTION SCREEN LOW VOLTAGE CONTROLLER	48" A.F.F. TYPICAL. REFER TO ARCH DWGS.	1-GANG
120 VAC QUAD		CUSTOM PLATE 2: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK REFER TO PLATE DRAWING AND SPECIFICATIONS FOR CONNECTOR DETAILS.	18" A.F.F.	4-GANG					



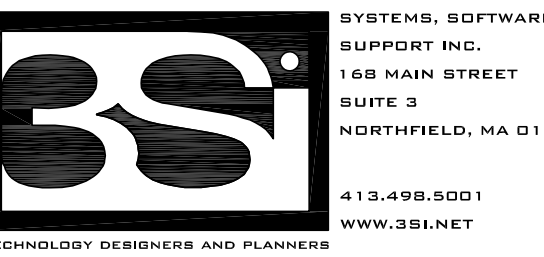
1 UPPER MULTIPURPOSE ROOM - AV DEVICES
1/4" = 1'-0"



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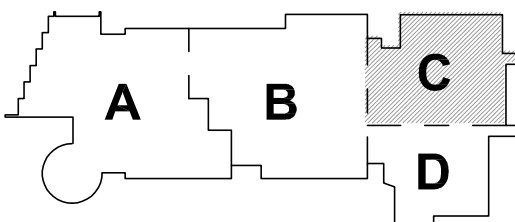
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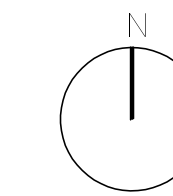
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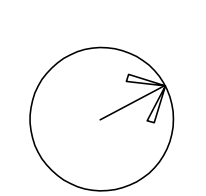


KEY PLAN

PROJECT NORTH



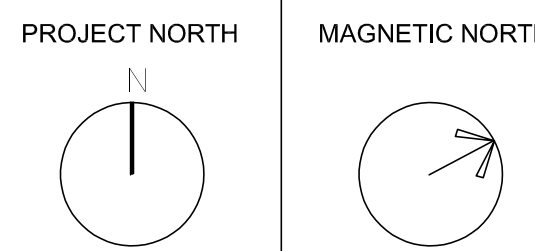
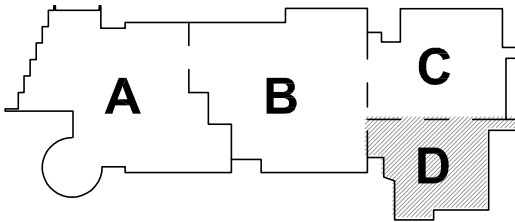
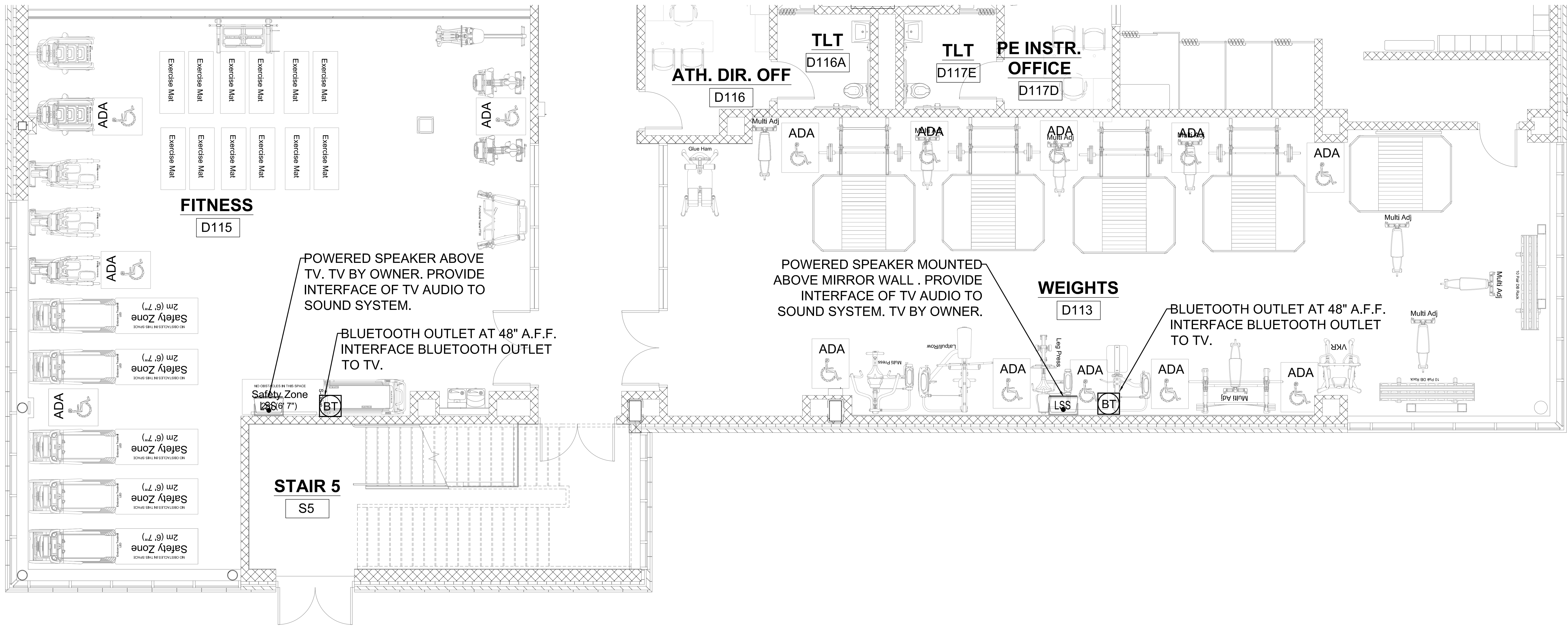
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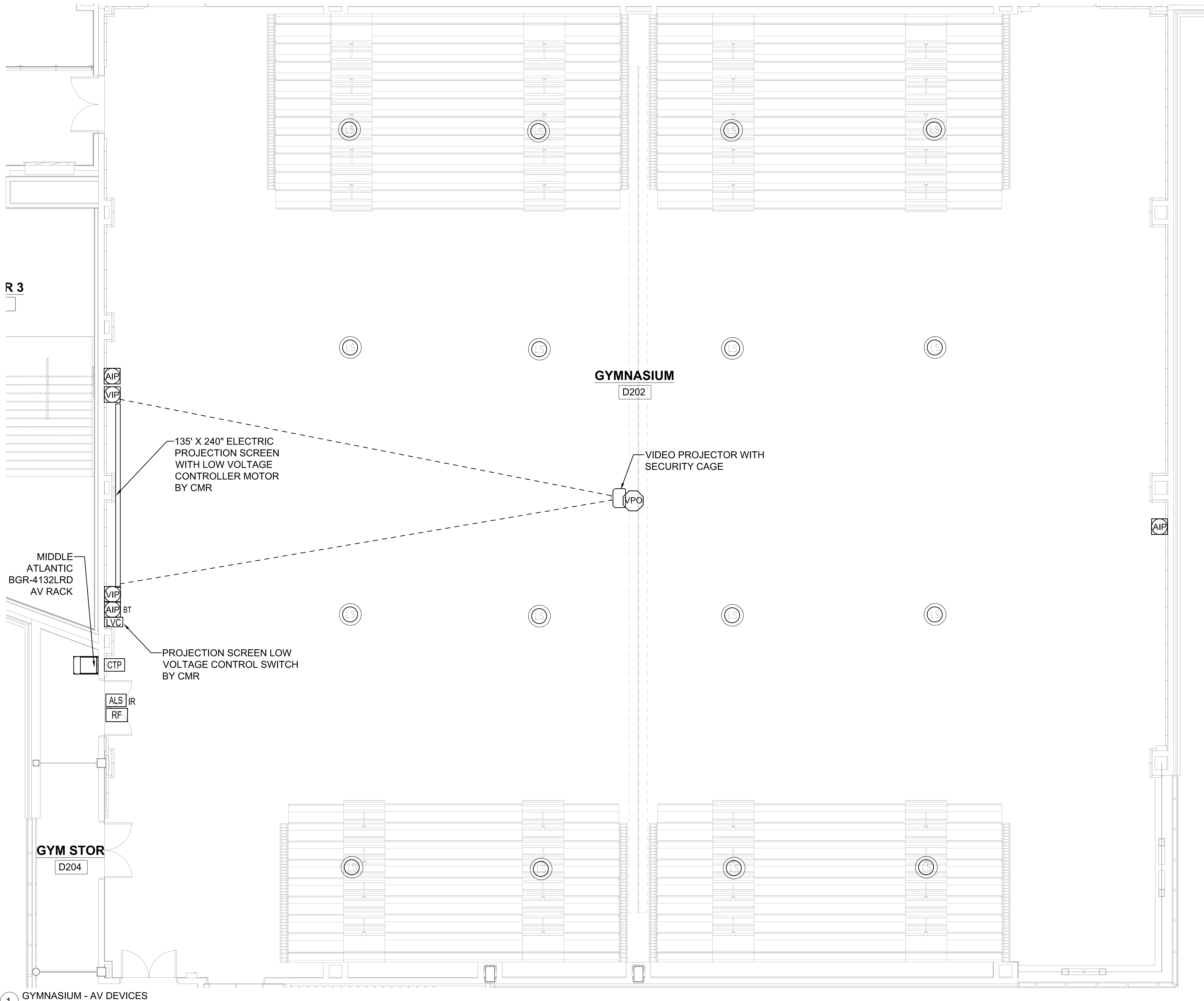
SECOND FLOOR
MULTIPURPOSE
ROOM
AUDIOVISUAL
DEVICES

Scale: 1/4" = 1'-0"
Job No.: 20202
Drawn By:MLD/AMD
Date: 06/28/2023

AV-02b



LARGE VENUE AUDIOVISUAL SYSTEM SYMBOLS									
POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	BACK BOX	POWER REQUIRED	SYMBOL	DESCRIPTION	TYPICAL LOCATION	BACK BOX
120 VAC QUAD DEDICATED		AV RACK MIDDLE ATLANTIC BGR SERIES AUDIOVISUAL SYSTEM EQUIPMENT RACK	AS NOTED ON DRAWINGS	N/A	NONE	ALS _R	LOCAL AUDIO SYSTEM ASSISTED LISTENING ANTENNA: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	ON CEILING OR 8'-6" A.F.F.	1-GANG
NONE	CTP	AUDIOVISUAL SYSTEM CONTROL TOUCH PANEL WALL MOUNTED WITH KEYED SECURITY COVER; PROGRAM CONTROL TOUCH PANEL AS AS REQUIRED BY OWNER BACK BOX WITH 1" CONDUIT TO ASSOCIATED AUDIOVISUAL EQUIPMENT RACK	48" A.F.F. TYPICAL. REFER TO ARCH DWGS.	48" A.F.F.	NONE	RF	WIRELESS MICROPHONE RF ANTENNA PLATE BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	REFER TO ARCH DWGS FOR ELEVATION & DETAILS.	1-GANG
NONE	DM	DANTE INPUT WALL PLATE: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	18" A.F.F.	1-GANG	NONE	X	LOCAL AUDIO SYSTEM SPEAKER, CEILING MOUNTED 3/4" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK X-S=SUBWOOFER	REFER TO ARCH DWGS.	N/A
NONE	AIP	AUDIO INPUT WALL PLATE: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	18" A.F.F.	1-GANG	NONE	VPO	VIDEO PROJECTOR OUTLET: BACK BOX WITH 1" CONDUIT TO LOCAL AUDIOVISUAL EQUIPMENT RACK FOR AUDIOVISUAL CABLING.	REFER TO ARCH DWGS.	1-GANG
NONE	AIP _{BT}	AUDIO INPUT WITH BLUETOOTH WALL PLATE: BACK BOX WITH 1" CONDUIT TO AUDIOVISUAL EQUIPMENT RACK	18" A.F.F. TYPICAL. REFER TO ARCH DWGS.	1-GANG	120 VAC ONE QUAD		LARGE VENUE VIDEO PROJECTOR: REFER TO SPECIFICATIONS FOR DETAILS.	REFER TO ARCH DWGS.	N/A
NONE	VLC	VIDEO INPUT WALL PLATE: BACK BOX WITH 1" CONDUIT TO LOCAL AUDIOVISUAL CONTROL RACK.	18" A.F.F.	2-GANG	NONE	LVC	KEYED PROJECTION SCREEN LOW VOLTAGE CONTROLLER SWITCH WALL PLATE BY CMR BACK BOX WITH 1" CONDUIT TO PROJECTION SCREEN LOW VOLTAGE CONTROLLER	48" A.F.F. TYPICAL. REFER TO ARCH DWGS.	1-GANG



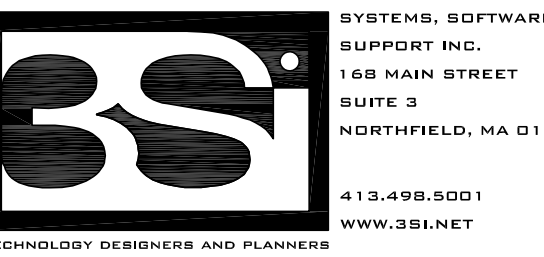
1 GYMNASIUM - AV DEVICES
1/4" = 1'-0"



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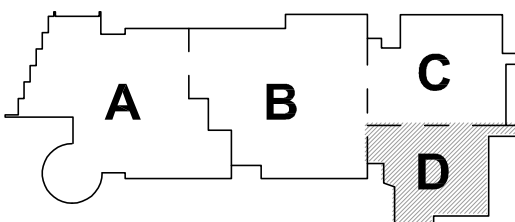
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Wakefield, MA 01880

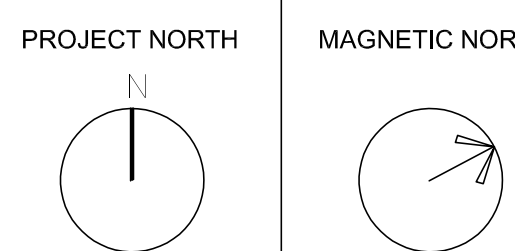


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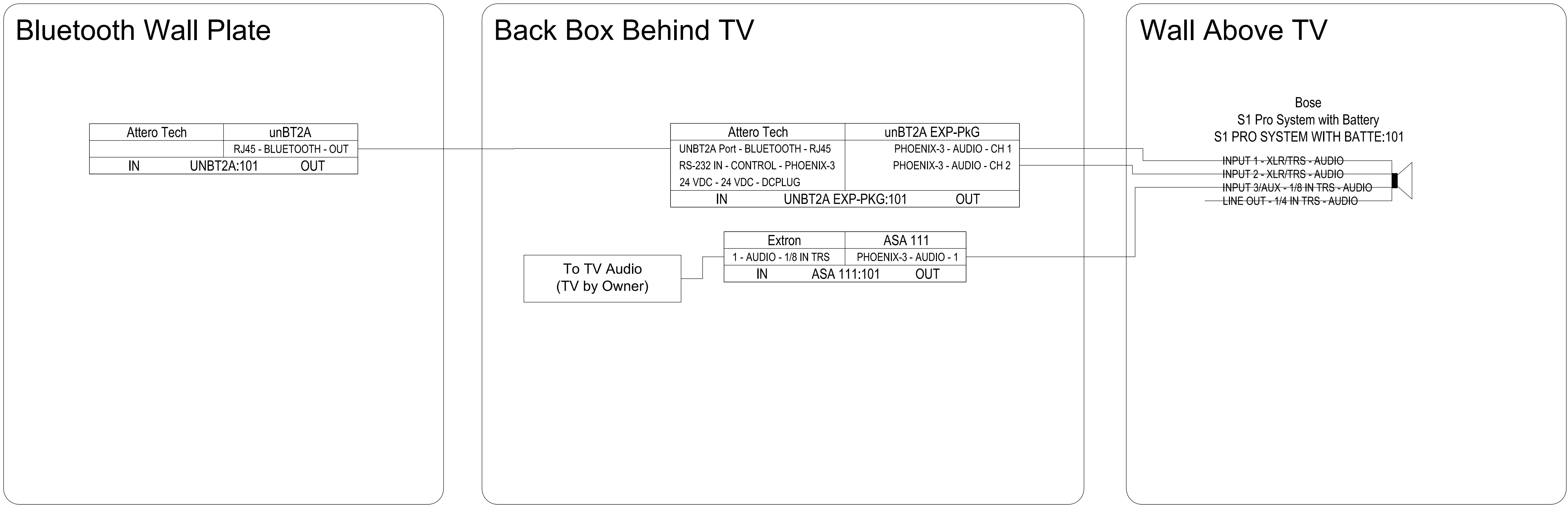
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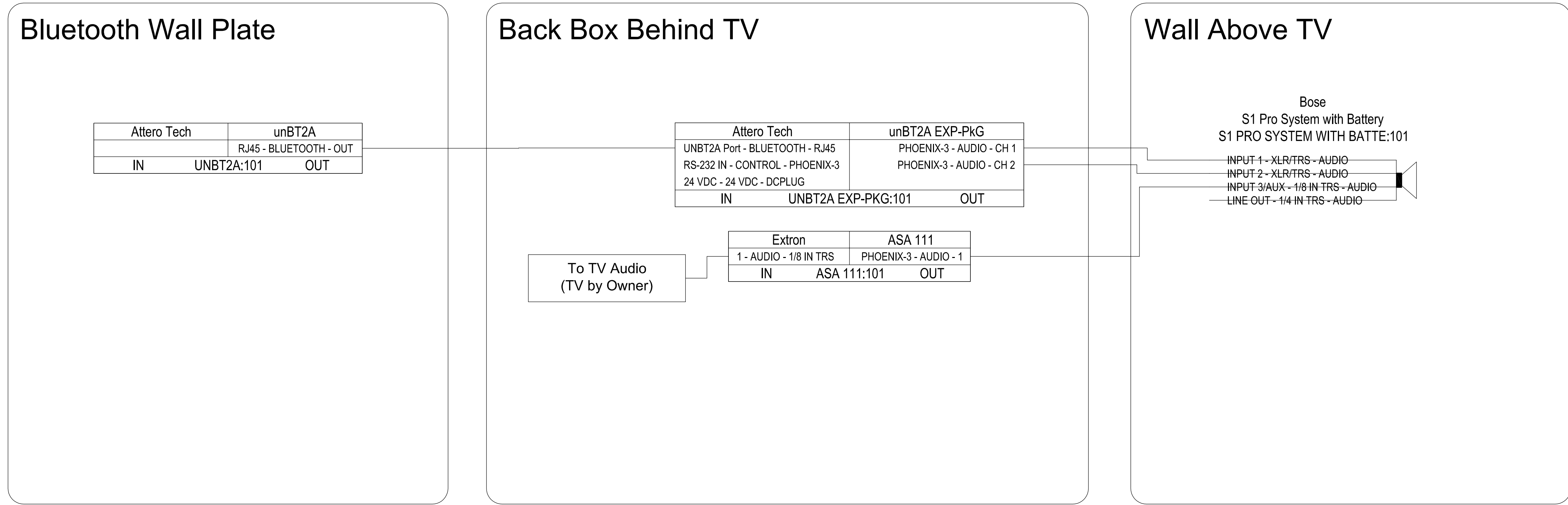
GYMNASIUM
AUDIOVISUAL
DEVICES

Scale: 1/4" = 1'-0"
Job No.: 20202
Drawn By: MLD/AMD
Date: 06/28/2023

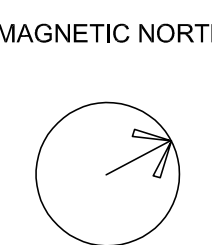
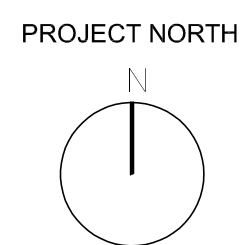
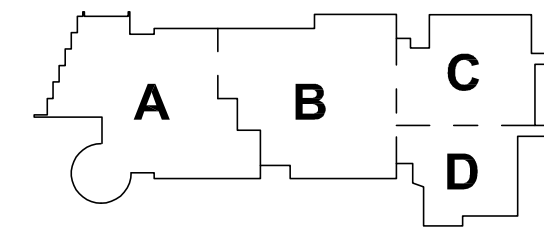
AV- 04

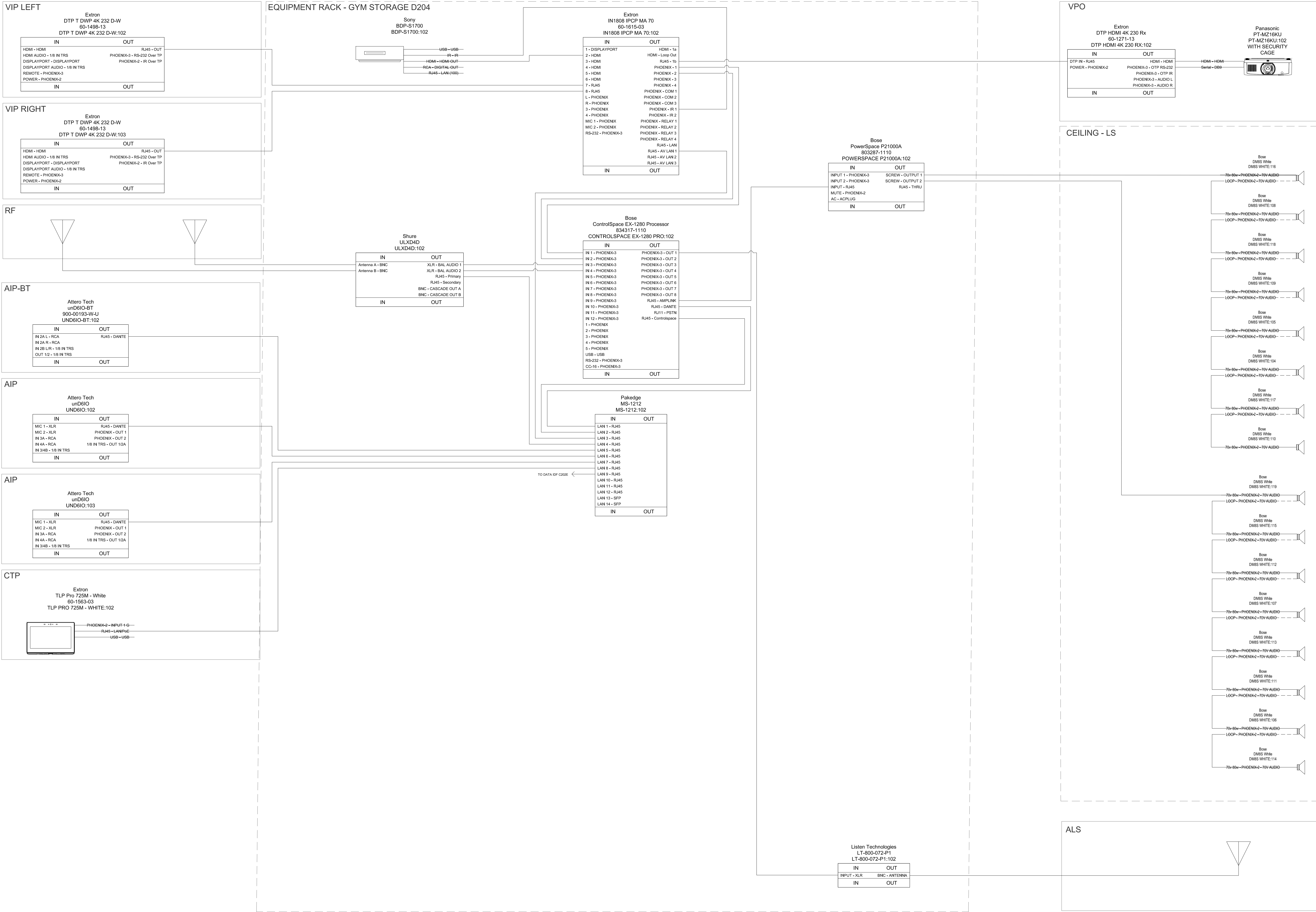


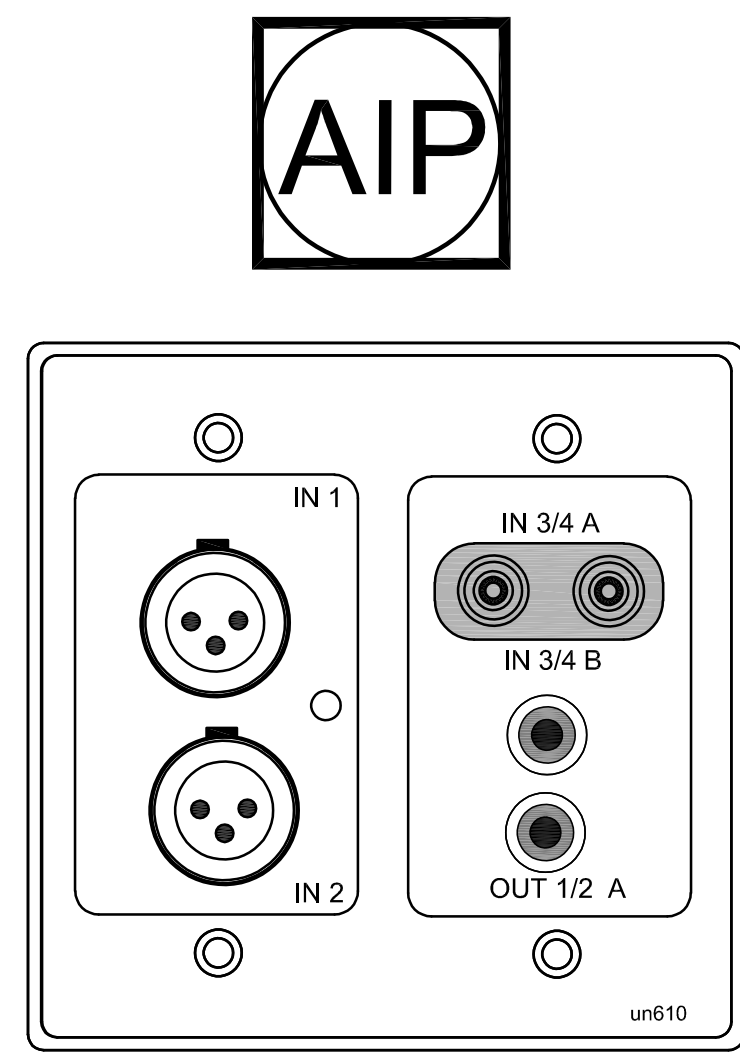
2 FITNESS ROOM AUDIO SYSTEM FLOW DIAGRAM
SCALE: NONE



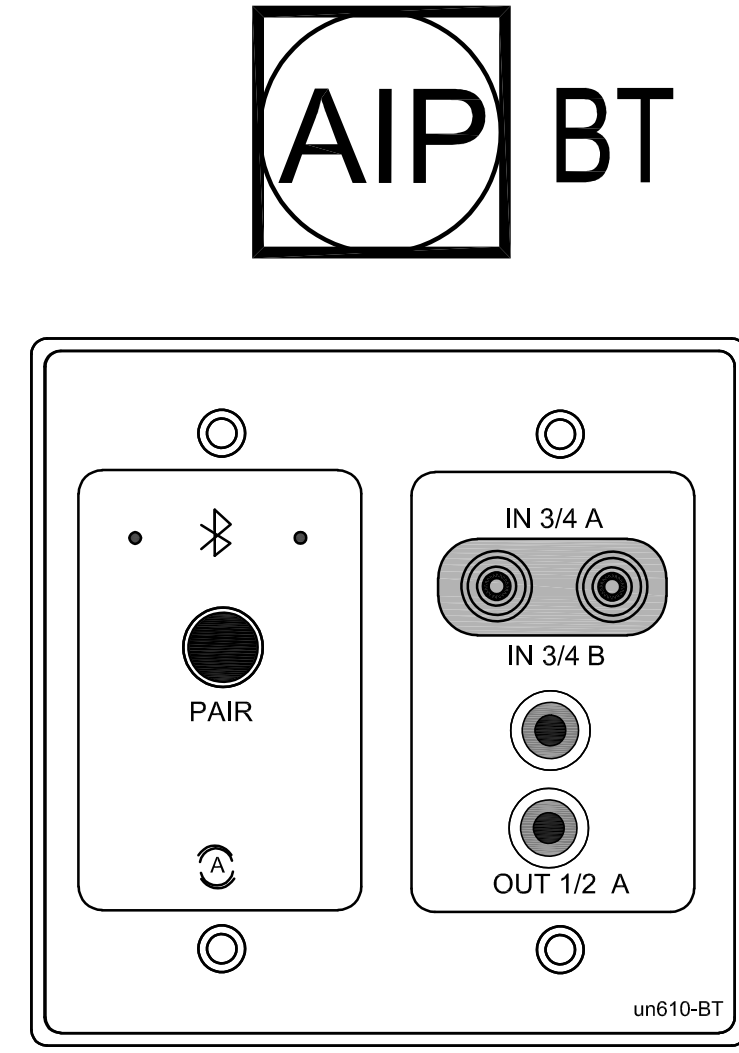
1 WEIGHTS ROOM AUDIO SYSTEM FLOW DIAGRAM
SCALE: NONE



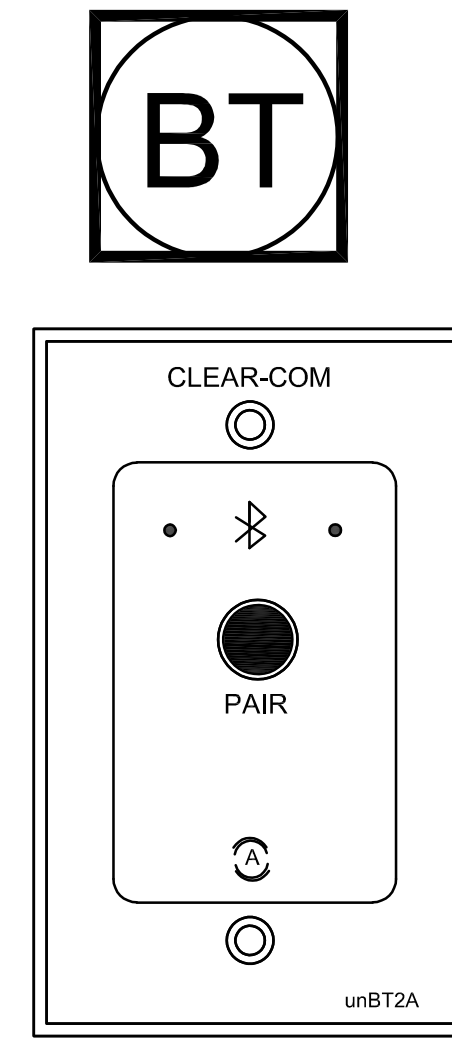




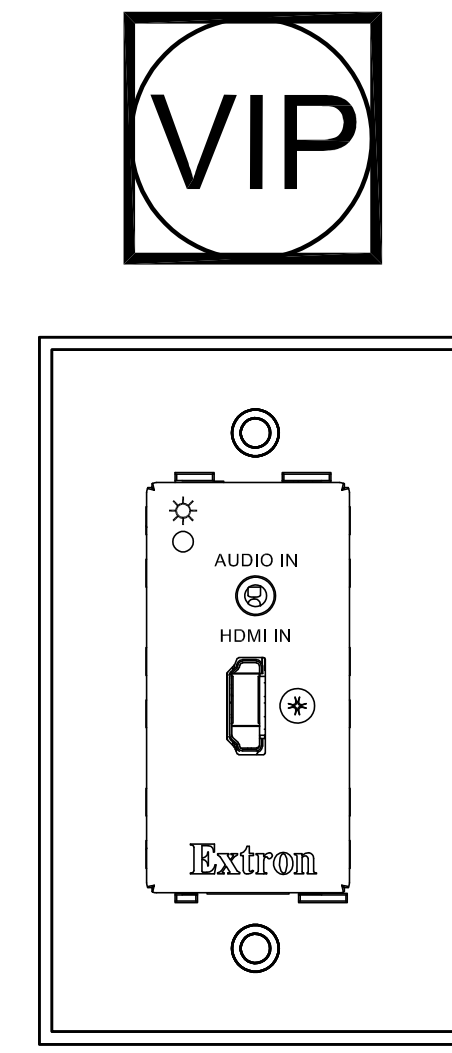
1 AUDIO INPUT PLATE
SCALE: NONE



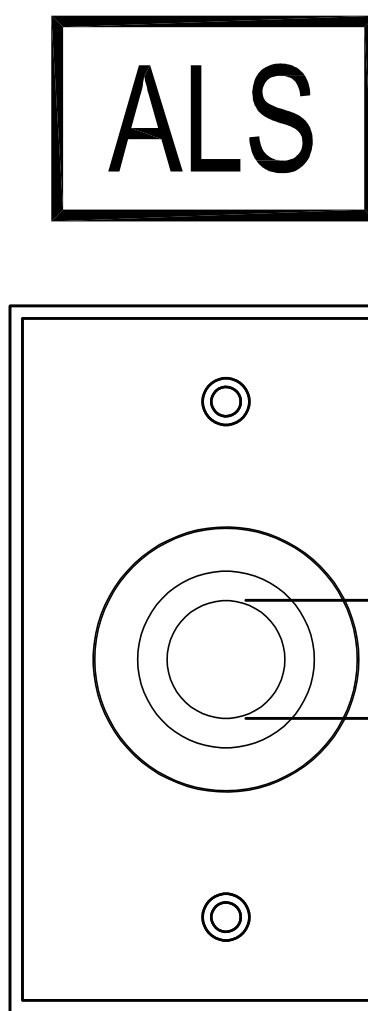
2 AUDIO INPUT/BLUETOOTH PLATE
SCALE: NONE



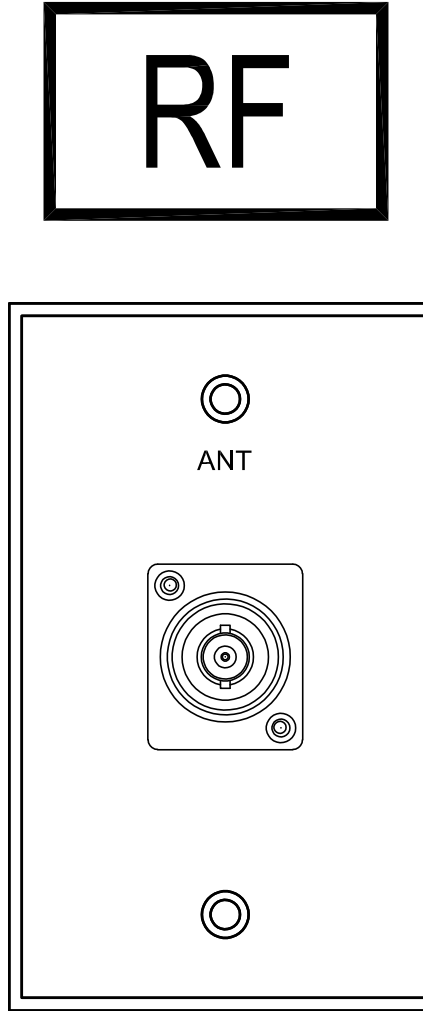
3 BLUETOOTH RX PLATE
SCALE: NONE



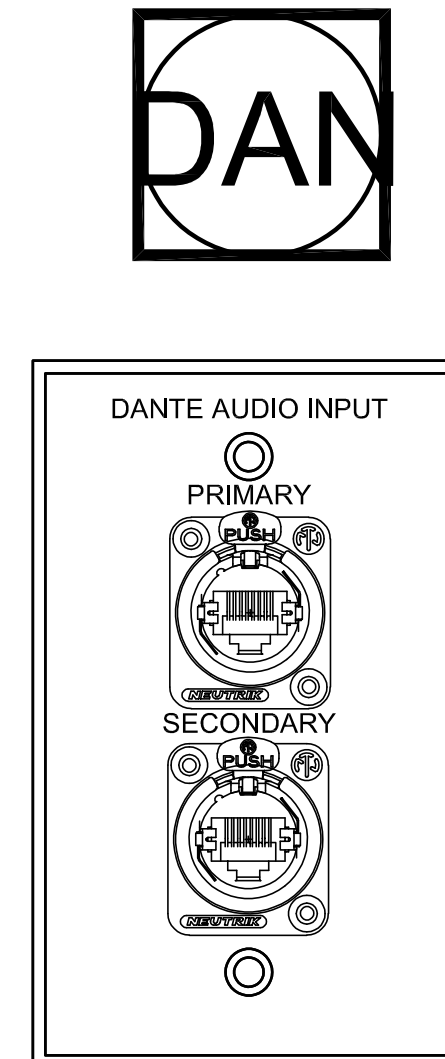
4 VIDEO INPUT PLATE
SCALE: NONE



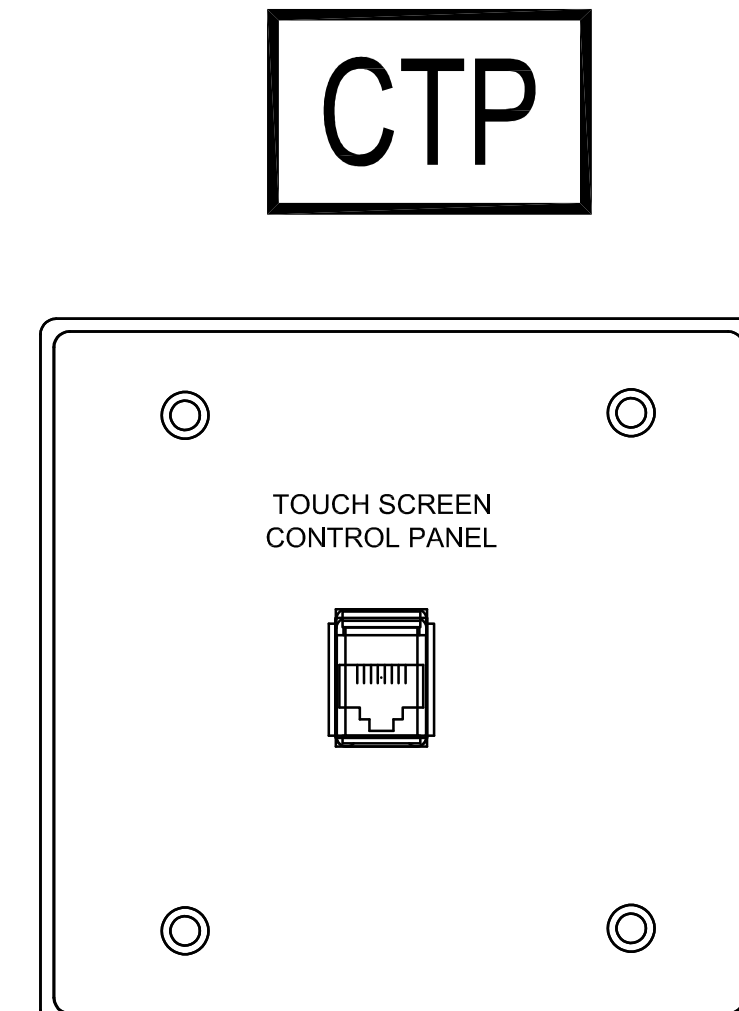
5 ALS IR PLATE
SCALE: NONE



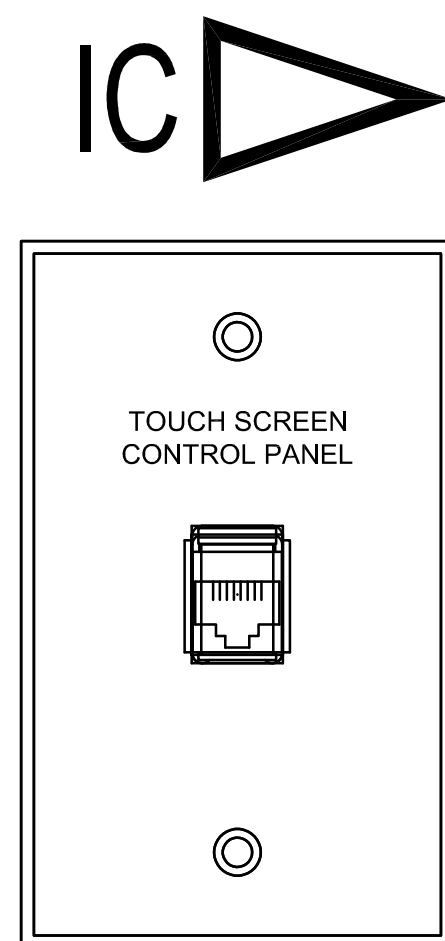
6 RF ANTENNA PLATE
SCALE: NONE



7 DANTE INPUT PLATE
SCALE: NONE



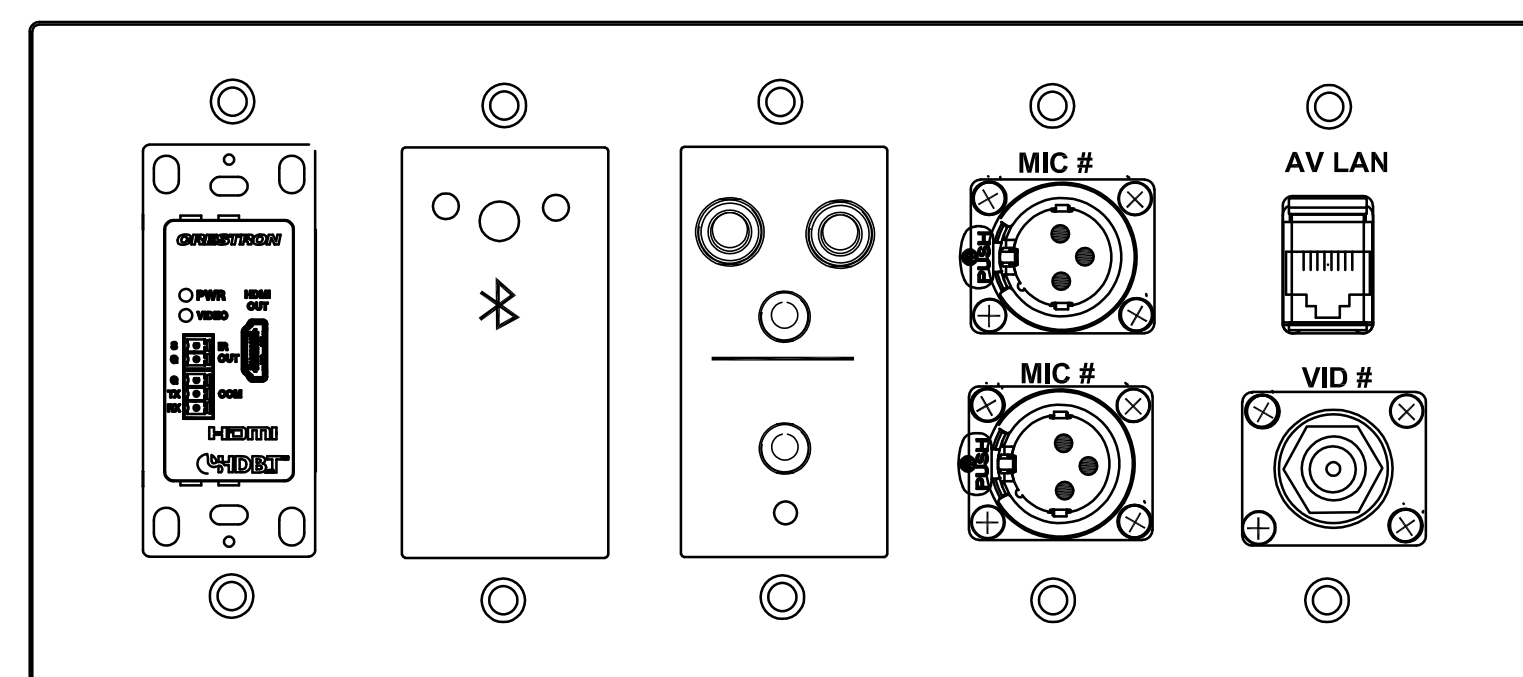
8 TOUCH PANEL INPUT
SCALE: NONE



9 INTERCOM PLATE
SCALE: NONE

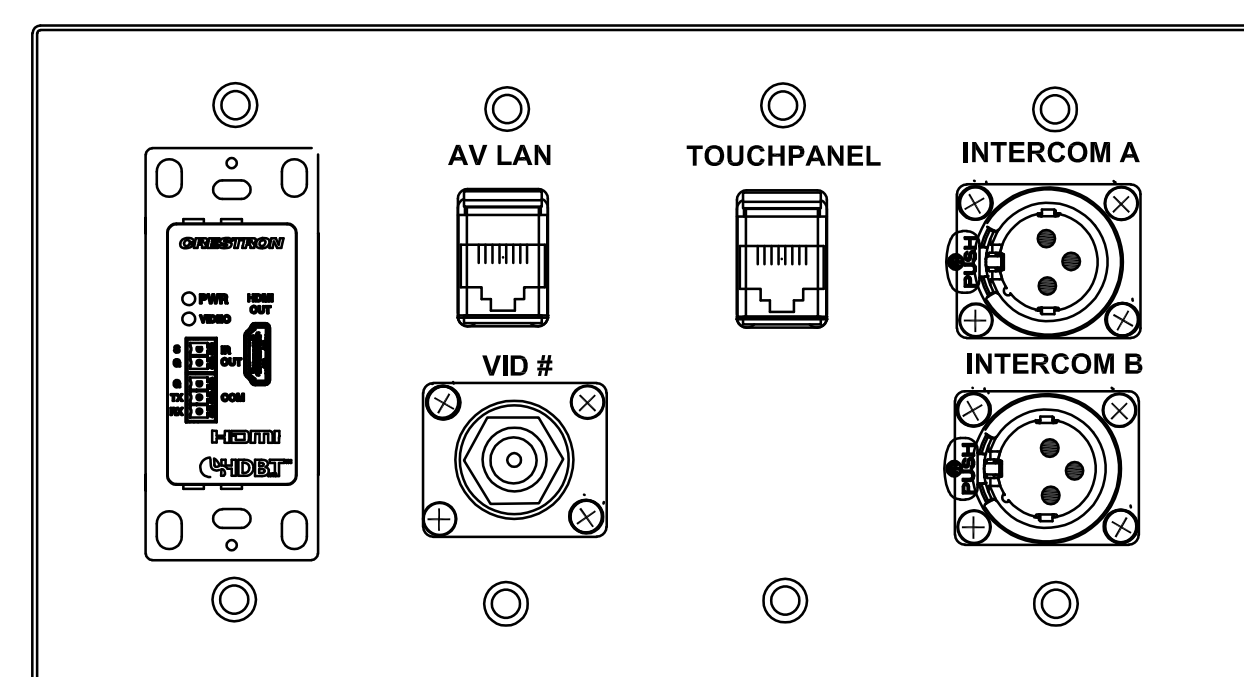
MULTIPURPOSE ROOM CUSTOM PLATES (REFER TO DRAWINGS AV-102a & b)

CP1



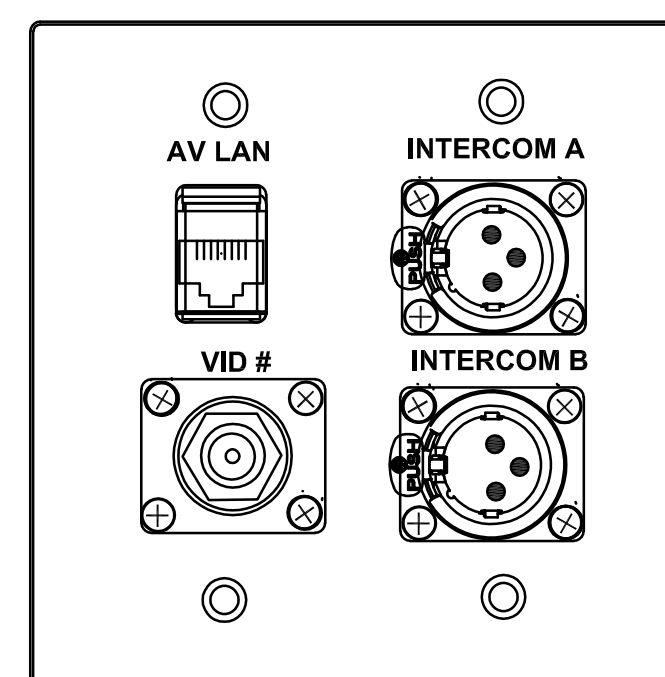
10 CP1 (STAGE FLOOR BOX)
SCALE: NONE

CP2



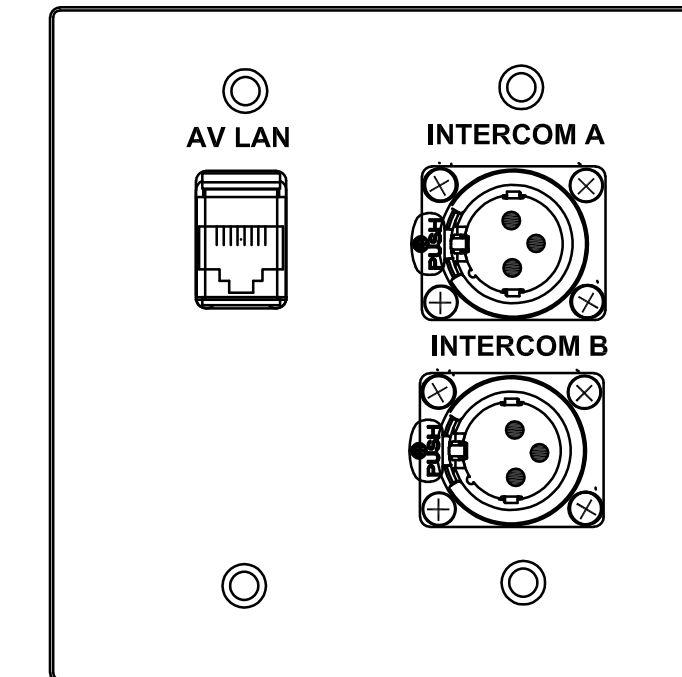
11 CP2 (MIXING)
SCALE: NONE

CP3



12 CP3 (SIDE WALL)
SCALE: NONE

CP4



13 CP4 (ALT PE WALL)
SCALE: NONE

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225 Oakland Road
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South Windsor, CT
06074

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BID SET

KEY PLAN

PROJECT NORTH

MAGNETIC NORTH

AV PLATE
DETAILS

Scale: NONE
Job No.: 20202
Drawn By: MLD/AMD
Date: 08/28/2023

AV-201